



AGENDA
August 2, 2017

CITY COUNCIL CLOSED SESSION
6:45 P.M.
CITY COUNCIL MEETING
7:00 P.M.
City Council Chambers
311 Vernon Street
Roseville, California

CLOSED SESSION

6:45 p.m.

- A. CLOSED SESSION CALL TO ORDER
- B. CLOSED SESSION ROLL CALL
- C. CLOSED SESSION PUBLIC COMMENTS
- D. CLOSED SESSION ITEM
 - 1. Conference with Legal Counsel - Existing Litigation
Pursuant to Government Code Section 54956.9(d)(1)
In the Matter of the Appeal Regarding Post-Retirement Employment of:
John L. Sprague, City of Roseville, *et al.*
Board of Administration CalPERS, Agency Case No. 2016-0753
OAH No. 2016110762
CONTACT: Robert Schmitt 916-774-5323 rschmitt@roseville.ca.us
- E. CLOSED SESSION ADJOURNMENT

1. CALL TO ORDER

2. ROLL CALL

Vice Mayor: Bonnie Gore
Councilmember: Scott Alvord
Councilmember: Tim Herman
Councilmember: John Allard
Mayor: Susan Rohan

3. PLEDGE OF ALLEGIANCE

4. MEETING PROCEDURES

NOTICE TO THE PUBLIC

All Items on the agenda will be open for the public comment before final action is taken. Speakers are requested to restrict comments to the item as it appears on the agenda and stay within a five (5) - minute time limit. The Mayor has the discretion of limiting the total discussion time for an item.

5. PUBLIC COMMENTS

NOTICE TO THE PUBLIC

Persons may address the City Council on items not on this agenda. Please complete a "Speaker Information Card" and present it to the City Clerk prior to the start of the meeting. Speakers shall restrict their comments to issues that are within the subject jurisdiction of the City Council and limit their comments to three (3) minutes per person. The total time allocated for Public Comment is 25 minutes. The Brown Act, with certain exceptions, does not permit the City Council to discuss or take action on issues that are not listed on the agenda.

6. CONSENT CALENDAR

NOTICE TO THE PUBLIC

All matters listed under Consent Calendar are considered to be routine and all will be passed by one motion. There will be no discussion of these items unless members of the City Council or the public request specific items be removed from the Consent Calendar for separate discussion. Any member of the public may address the City Council on items on the Consent Calendar. Public comments on any item or items on the Consent Calendar are limited to five (5) minutes per speaker

BEGINNING OF CONSENT CALENDAR

Bids / Purchases / Services

6.1. Roseville Aquatics Complex Deck Replacement and Pool Re-plaster Project: Approval of Plans and Specifications and Authorize Staff to Call for Bids

Memo from Park Development Analyst Rjahja Canlas and Parks, Recreation & Libraries Director Dion Louthan recommending Council approve the plans and specifications for the Roseville Aquatics Complex Deck Replacement and Pool Re-plaster Project and authorize staff to call for bids. The project will include removal and replacement of the concrete deck and plaster at the 50 meter competition pool. The estimate for construction is \$1,200,000.00. Funding for the project was approved in FY2016/17 using funds from the General CIP Rehab Fund and grant monies from Placer Valley Tourism.

CC #: 8659

File #: 0707

CONTACT: Rjahja Canlas 916-774-5342 rcanlas@roseville.ca.us

6.2. Moving Services - Service Agreement

Memo from Facilities Manager Dan Allen and Central Services Director Paul

Diefenbach recommending Council adopt RESOLUTION NO. 17-333 APPROVING A SERVICE AGREEMENT BETWEEN CITY OF ROSEVILLE AND SIERRA VALLEY MOVING & STORAGE INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE (S1808047). This service agreement with Sierra Valley Moving & Storage will provide moving services on an as-needed basis. The bid allows for four optional renewal years at one-year intervals. The total amount of the agreement is \$40,000.00. Funding is included in the Building Maintenance Division FY2017/18 budget.

CC #: 8651

File #: 0203-04

CONTACT: Dan Allen 774-5741 dallen@roseville.ca.us

6.3. Sprinkler Parts and Related Items (RFQ 01-3003) - Purchase Orders Renewal

Memo from Buyer Tiffany Valdez and Central Services Director Paul Diefenbach recommending Council adopt RESOLUTION NO. 17-334 APPROVING A PURCHASE ORDER BETWEEN THE CITY OF ROSEVILLE AND SITEONE LANDSCAPE SUPPLY, LLC; and adopt RESOLUTION NO. 17-335 APPROVING A PURCHASE ORDER BETWEEN THE CITY OF ROSEVILLE AND EWING IRRIGATION PRODUCTS, INC. as the lowest responsive bidders to RFQ 01-3003. The Parks Maintenance and Building Maintenance Divisions have an ongoing requirement for sprinkler parts and related items for City properties that require irrigation. The purchase orders will be issued on an as-needed basis. The estimated total combined value of the awards is \$55,000.00 or not to exceed department budgeted amounts. Staff requests authorization to renew without further Council approval.

CC #: 8652

File #: 0203-10

CONTACT: Tiffany Valdez 916-774-5708 tvaldez@roseville.ca.us

Resolutions

6.4. Hamel Park Restroom Installation Project – Notice of Completion

Memo from Park Development Analyst Rjahja Canlas and Parks, Recreation & Libraries Director Dion Louthan recommending Council adopt RESOLUTION NO. 17-338 ACCEPTING THE PUBLIC WORK KNOWN AS THE HAMEL PARK RESTROOM INSTALLATION PROJECT, APPROVING THE "NOTICE OF COMPLETION", AND AUTHORIZING THE PARKS, RECREATION & LIBRARIES DIRECTOR TO EXECUTE SAID NOTICE ON BEHALF OF THE CITY OF ROSEVILLE. The Parks, Recreation & Libraries Department has made a final inspection of the Hamel Park Restroom Installation Project and has found that all contract work has been completed in accordance with the improvement plans and specifications. The project is now ready for acceptance. The project scope of work included construction of a new restroom building at Mel Hamel Park. In accordance with City specifications, the contractor shall guarantee the installation of these improvements for a period of twelve (12) months from the date of this Notice of Completion. The project

cost was \$198,578.00 and was funded with monies from the North Roseville Specific Plan (NSRP III) Park Development Fund.

CC #: 8656

File #: 0704-01

CONTACT: Rjahja Canlas 916-774-5342 rcanlas@roseville.ca.us

6.5. Child Development Services Agreement

Memo from Recreation Superintendent Rob Nakamura and Parks, Recreation & Libraries Director Dion Louthan recommending Council adopt RESOLUTION NO. 17-340 APPROVING AN AGREEMENT BY AND BETWEEN THE CITY OF ROSEVILLE AND THE CALIFORNIA DEPARTMENT OF EDUCATION, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE. The Child Development Services grant provides subsidized child care services for over 80 qualifying families at four Adventure Club locations. Under this agreement, the City can receive a maximum reimbursable amount of \$355,228.00 in FY2017/18 to offset direct program expense. Reimbursement revenues offset program expenses budgeted within the Youth Development Fund.

CC #: 8661

File #: 0704

CONTACT: Rob Nakamura 916-774-5135 makamura@Roseville.ca.us

6.6. California Greenhouse Gas Cap-and-Trade Program - 2018 Free Allowance Allocation

Memo from Electric Resources Analyst David Saio and Electric Utility Director Michelle Bertolino recommending Council adopt RESOLUTION NO. 17-342 APPROVING REQUEST TO CONSIGN 475,432 OF CITY'S 2018 ALLOCATION OF GREENHOUSE CAP-AND-TRADE PROGRAM ALLOWANCES TO AUCTION. Staff recommends allocating none of the City's 2018 allocation of greenhouse gas emission allowances for its direct compliance obligation. There is no fiscal impact associated with this resolution.

CC #: 8663

File #: 0800-03

CONTACT: David Siao 916-746-1613 dsiao@roseville.ca.us

6.7. Wastewater Collections System Rehabilitation Project - Change Order Approval

Memo from Associate Engineer Edward Winston and Environmental Utilities Director Richard Plecker recommending Council adopt RESOLUTION NO. 17-341 APPROVING AUTHORITY TO ENVIRONMENTAL UTILITIES DIRECTOR FOR THE CONSTRUCTION CHANGE ORDER TO COMPLETE THE WASTEWATER COLLECTIONS SYSTEM REHABILITATION PROJECT. This item requests approval to authorize the Environmental Utilities Director or his designee to approve and pay for additional construction change orders in the amount of \$3,413.29 to complete the installation of the Wastewater Collections System Rehabilitation Project.

The total cost of the construction contract including all previously authorized funds by Council and additional requested change order costs in this staff report is \$223,897.29. The project is funded under the Wastewater Rehabilitation Fund.

CC #: 8662

File #: 0800-02

CONTACT: Edward Winston 916-774-5566 ewinston@roseville.ca.us

6.8. Internship Program Affiliation Agreement

Memo from Recreation Manager Kathy Barsotti and Parks, Recreation & Libraries Director Dion Louthan recommending Council adopt RESOLUTION NO. 17-339 APPROVING AN AFFILIATION AGREEMENT BY AND BETWEEN THE CITY OF ROSEVILLE AND THE UNIVERSITY OF KANSAS, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE. The term of this Affiliation Agreement with the University of Kansas is through May 5, 2020. The purpose of the internship program is to provide experiential learning opportunities for students, while simultaneously helping the Parks, Recreation & Libraries Department meet customer expectations. All expenses associated with the internship are the responsibility of each individual student. There is no fiscal impact to City budgets in conjunction with this agreement.

CC #: 8660

File #: 0704

CONTACT: Kathy M. Barsotti 916-774-5955 kbarsotti@roseville.ca.us

6.9. Street Closure Request - Rods-N-Ribs Event - August 5, 2017 - Agreement Amendment

Memo from Community Relations Analyst Jamie Hazen and Parks, Recreation & Libraries Director Dion Louthan recommending Council adopt RESOLUTION NO. 17-337 APPROVING A FIRST AMENDMENT TO AGREEMENT BY AND BETWEEN THE CITY OF ROSEVILLE AND WATER FOR A WARRIOR AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE. Staff requests approval for the closure of Vernon Street from East Washington Street to Taylor Street and South Grant Street between Oak Street and Atlantic Street on Saturday, August 5, 2017 for the Water for a Warrior Rods-N-Ribs Cook-Off event. The closure times are scheduled from 5:00 a.m. – 5:00 p.m. All costs for City services associated with this event will be reimbursed by the Water for a Warrior non-profit group. This street closure request was previously approved by City Council but is being amended to extend the time associated with re-opening the streets from 3:00 p.m. to 5:00 p.m.

CC #: 8655

File #: 0109-02

CONTACT: Jamie Hazen 916-774-5978 jhazen@Roseville.ca.us

6.10. Computer Aided Dispatch/ Records Management License Agreement

Amendments

Memo from Administrative Analyst Shelly Bracco and Police Chief Daniel Hahn recommending Council adopt RESOLUTION NO. 17-344 APPROVING AMENDMENTS TO THE LICENSE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND TYLER TECHNOLOGIES, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE THEM ON BEHALF OF THE CITY OF ROSEVILLE. The contract amendments with Tyler Technologies are for the Public Safety computer system interface, services, support and maintenance in the amount of \$11,870.59, which will be covered by current contract credits in the same amount. There is no additional cost per license, but there will be an additional yearly maintenance fee associated with having these additional licenses. The additional maintenance costs should be offset by the discontinued use of the corrections module. Any additional fees incurred will be covered by funds budgeted in the existing CAD/RMS CIP.

CC #: 8668

File #: 0203-06 & 0323

CONTACT: Claudia Villa 916-774-5003 cvilla@roseville.ca.us

Ordinances (for introduction and adoption - appropriation/urgency measures)

6.11. Council Discretionary Funds- Carry Forward FY2017 Unappropriated Funds - Budget Adjustment

Memo from Management Assistant Amy Ruiz and City Clerk Sonia Orozco recommending Council adopt ORDINANCE NO. 5859 OF THE COUNCIL OF THE CITY OF ROSEVILLE AUTHORIZING CERTAIN AMENDMENTS TO THE 2017-18 BUDGET AND DECLARING THIS ORDINANCE TO BE IMMEDIATELY EFFECTIVE AS AN APPROPRIATION MEASURE. The budget adjustment is necessary to carry forward unappropriated FY2017 Council Discretionary Funds in the amount of \$10,909.62. This will increase the Council Discretionary Funds for FY2018 to \$25,909.62.

CC #: 8669

File #: 0201-01 & 0102

CONTACT: Sonia Orozco 916-774-5269 sorozco@roseville.ca.us
Amy Ruiz 916-746-1362 aruiz@roseville.ca.us

Reports / Requests

6.12. Out of State Travel Request - Police Department

Memo from Department Public Information Officer Dee Dee Gunther and Police Chief Daniel Hahn recommending Council approve out of state travel for police bomb squad commander Adrian Coghlan to attend the FBI-sponsored bomb commander's training conference in Huntsville, Alabama from August 21-25, 2017. The conference and all associated travel expenses are paid by the FBI at no cost to the City.

CC #: 8650

File #: 0600-02

CONTACT: Dee Dee Gunther 916-774-5015 ddgunther@roseville.ca.us

6.13. League of California Cities - Voting Delegate Annual Conference 2017

Memo from Government Relations Administrator Mark Wolinski and Public Affairs and Communications Director Megan MacPherson recommending Council appoint City Treasurer/Chief Financial Officer Jay Panzica as the voting delegate for the League of California Cities business meeting of the General Assembly. The annual conference is being held September 13 – 15, 2017 at the Sacramento Convention Center. The annual business meeting will be held at noon on Friday, September 15, 2017 when the membership takes action on Conference resolutions. Registration is approximately \$650.00 for the delegate and the funds were approved in the City Manager's 2017/18 budget.

CC #: 8657

File #: 0102-12

CONTACT: Mark Wolinski 916-774-5179 mwolinski@roseville.ca.us

Ceremonial Documents

6.14. Resolution of Commendation and Appreciation to Charles Rachoff

Charles Rachoff be commended for his outstanding service and dedication to the City of Roseville, congratulated on his many accomplishments, and wished a long, healthy, and enjoyable retirement.

CC #: 8665

File #: 0102-10

CONTACT: Ryan Carroll 916-774-5265 rcarroll@roseville.ca.us

6.15. Resolution of Commendation and Appreciation to Jim O'Connell

Jim O'Connell be commended for his outstanding service and dedication to the City of Roseville, congratulated on his many accomplishments, and wished a long, healthy, and enjoyable retirement.

CC #: 8666

File #: 0102-10

CONTACT: Ryan Carroll 916-774-5265 rcarroll@roseville.ca.us

6.16. Resolution of Commendation and Appreciation to Ronald Miller

Ronald Miller be commended for his outstanding service and dedication to the City of Roseville, congratulated on his many accomplishments, and wished a long, healthy, and enjoyable retirement.

CC #: 8667

File #: 0102-10

CONTACT: Ryan Carroll 916-774-5265 rcarroll@roseville.ca.us

END OF CONSENT CALENDAR

7. PUBLIC HEARING

NOTICE TO THE PUBLIC

City Council, when considering the matter scheduled for hearing, will take the following actions:

1. Open the Public Hearing
2. Presentation by Staff
3. Presentation by applicant or Appellant
4. Accept Public Testimony
5. Appellant or Applicant Rebuttal Period
6. Close the Public Hearing
7. City Council Comments and Questions
8. City Council Action

In the future, if you wish to challenge in court any of the matters on this agenda for which a public hearing is to be conducted, you may be limited to raising only those issues, which you, or someone else raised orally at the Public Hearing or in written correspondence received by the City or before the hearing

Public Hearings listed for continuance will be continued as noted and posting of this agenda serves as notice of continuation.

7.1. VillaSport Athletic Club and Spa - Appeal

Memo from Associate Planner Lauren Hocker and Development Services Director Kevin Payne recommending Council deny the appeal and adopt RESOLUTION NO. 17-343 CERTIFYING A FINAL ENVIRONMENTAL IMPACT REPORT RELATING TO THE VILLASPORT ATHLETIC CLUB AND SPA PROJECT, ADOPTING FINDINGS OF FACT, ADOPTING MITIGATION MEASURES, AND ADOPTING A MITIGATION MONITORING PROGRAM. On May 11, 2017 the Planning Commission approved the VillaSport Athletic Club and Spa project. On May 22, 2017 the Roseville Citizens for Quality Development filed an appeal of the Planning Commission's action. This request includes approval of a Conditional Use Permit to allow an outdoor sports and recreation use in the Community Commercial zone and a Design Review Permit to allow the construction of an 88,000 square-foot, two-story fitness facility that includes a 50,000 square-foot outdoor area, and associated parking lot, landscaping, and lighting. Outdoor amenities include a pool area with two swimming pools (one with 26-foot slides), whirlpools, a café, a play area with play structures, and an artificial turf field. The proposed operating hours for the facility are from 5:00 am to 11:00 pm, seven days a week. This project is funded by the applicant and will not have a negative impact on the City's General Fund.

CC #: 8664

File #: 0400-08 & 0400-04-1

CONTACT: Lauren Hocker 916-774-5272 lhocker@roseville.ca.us

7.2. West Roseville Specific Plan Fiddymont Ranch - Development Agreement Amendment

Memo from Associate Planner Ron Miller and Development Services Director Kevin Payne recommending Council introduce for first reading ORDINANCE OF THE COUNCIL OF THE CITY OF ROSEVILLE ADOPTING A SEVENTH AMENDMENT TO DEVELOPMENT AGREEMENT REGARDING THE WEST ROSEVILLE SPECIFIC PLAN, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE, and adopt the five (5) findings of fact as recommended by the Planning Commission. The purpose of this request is to modify the Fiddymment Ranch Development Agreement such that two specific impact fees (Placer County Traffic Mitigation Fee and Downtown Benefit Fee) would continue to be assessed on the final 1,661 dwelling units of the project area. These actions are applicant-initiated and the proposed fees will mitigate the project's fiscal impact on City facilities.

CC #: 8654

File #: 0400-04-09-1

CONTACT: Ron Miller 916-774-5282 rmiller@roseville.ca.us

7.3. Municipal Code Amendment - Marijuana Regulations

Memo from Planning Manager Gregory Bitter, Deputy City Attorney Joseph Speaker, Development Services Director Kevin Payne, and City Attorney Robert Schmitt recommending Council introduce for first reading ORDINANCE OF THE COUNCIL OF THE CITY OF ROSEVILLE AMENDING SECTIONS 19.62.010, 19.62.020, 19.62.030, 19.62.040 OF CHAPTER 19.62 AND AMENDING SECTIONS 19.63.010, 19.63.020, 19.63.030, 19.63.040, 19.63.050, 19.63.060, 19.63.070 OF CHAPTER 19.63 OF TITLE 19 ROSEVILLE MUNICIPAL CODE REGARDING MARIJUANA CULTIVATION, DISPENSARIES, AND USE. The requested Ordinance is to amend Chapters 19.62 (Medical Marijuana Dispensaries) and 19.63 (Marijuana Cultivation) of Title 19 – Zoning, of the Roseville Municipal Code to address the State requirements of Proposition 64 and Senate Bill 94. The proposed ordinance will amend the Roseville Municipal Code to add regulations related to marijuana that is dispensed, used and/or cultivated for non-medical purposes. The proposed ordinance will regulate marijuana used for medical purposed and non-medical purposes in the same manner. This item will not have any additional impacts to the General Fund.

CC #: 8658

File #: 0800-06

CONTACT: Greg Bitter 916-744-5294 gbitter@roseville.ca.us

Joseph Speaker 916-774-5329 jspeaker@roseville.ca.us

8. **COUNCIL / STAFF / REPORTS/ COMMENTS**

9. **ADJOURNMENT**



COUNCIL COMMUNICATION

CC #: 8659

File #: 0707

Title: Roseville Aquatics Complex Deck Replacement and Pool Re-plaster Project:
Approval of Plans and Specifications and Authorize Staff to Call for Bids

Contact: Rjahja Canlas 916-774-5342 rcanlas@roseville.ca.us

Meeting Date: 8/2/2017

Item #: 6.1.

RECOMMENDATION TO COUNCIL

Recommend Council approve the plans and specifications for the Roseville Aquatics Complex Deck Replacement and Pool Re-plaster Project and authorize staff to call for bids.

BACKGROUND

The Roseville Aquatics Complex was constructed in 1995. It is a facility that is heavily used and hosts many different events and programs throughout the year. As the facility has aged, it has started to show signs of wear, specifically related to the pool plaster and deck. As such, an assessment on the condition of the facility was conducted in 2007. The plaster of the 50 meter competition pool and the pool deck were identified in the report as the top two areas of concern. In the past several years, the plaster of the competition pool has cracked and been repaired numerous times - some of which included underwater patches. Additionally, the pool deck has continued to crack and deteriorate since the report. Certain areas have become slick, excessive puddling is occurring at settling drain locations, and joints on the deck are separating. Areas have been patched repeatedly to address the surfacing, however, these patches are temporary and not a long term solution. The drainage repairs have not been addressed, as they involve a more invasive and costly process. Proper drainage is integral to the longevity of the pool deck system.

This project will address the drainage issues as part of the removal and replacement of the concrete deck and plaster of the 50 meter competition pool.

Bids are scheduled to be opened on August 7, 2017. Staff plans to return to Council in September 2017 to seek approval to award the project.

The architect's estimate for construction for the base bid is \$1,200,000.00.

FISCAL IMPACT

This project has been identified via General CIP Rehab Fund in past years, but due to the many other high priority projects, there has not been sufficient funding to execute it. In October 2016, Placer Valley Tourism informed the City of a \$500,000.00 grant award to re-plaster the competition pool and repair the surrounding concrete deck at the Roseville Aquatics Complex.

Funding for the project was approved in FY2016/17 using funds from the General CIP Rehab Fund and grant monies from Placer Valley Tourism.

ECONOMIC DEVELOPMENT / JOBS CREATED

Based on Federal guidelines, there is one job created for every \$92,000.00 in direct government spending. Based on that guideline, this project will create 13 new jobs.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15061(b)(3)). Council approval of plans and specifications and authorization to call for bids does not include the potential for a significant environmental effect, and therefore is not subject to CEQA.

Respectfully Submitted,

Rjahja Canlas, Park Development Analyst

Dion Louthan, Director, Parks, Recreation, and Libraries



Rob Jensen, City Manager

ATTACHMENTS:

Description

RAC Deck Replacement Plans

RAC Deck Replacement - Project Manual - Cover Sheet Only

These drawings & specifications are the property & copyright of the ARCHITECT and shall not be used on any other work except by written agreement with the ARCHITECT. Written dimension takes precedence over scale & shall be verified on job site. Any discrepancy shall be brought to the attention of the ARCHITECT prior to the commencement of any work.

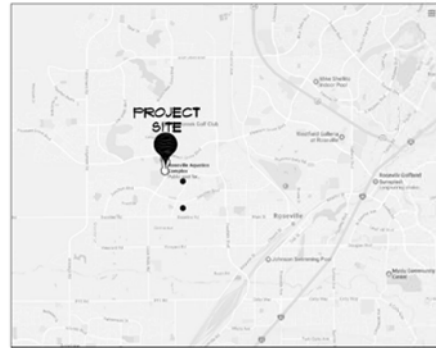
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SP2-1 POOL PLAN
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SP4-1 POOL SECTIONS
SP3-1 POOL DETAILS
SP3-2 POOL DETAILS
SP3-3 POOL DETAILS
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SP3-5 POOL DETAILS
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SP1-1 TIMING PLAN

BUILDING CODES & STANDARDS

- LIST OF 2016 CALIFORNIA CODE OF REGULATIONS
- 2016 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
 - 2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R. (2016 CALIFORNIA AMENDMENTS)
 - 2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2014 NATIONAL ELECTRICAL CODE WITH CALIFORNIA AMENDMENTS)
 - 2016 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R. (2015 UNIFORM MECHANICAL CODE WITH CALIFORNIA AMENDMENTS)
 - 2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R. (2015 UNIFORM PLUMBING CODE WITH CALIFORNIA AMENDMENTS)
 - 2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 C.C.R.
 - 2016 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R. (2015 INTERNATIONAL FIRE CODE WITH CALIFORNIA AMENDMENTS)
 - 2016 CALIFORNIA REFERENCE STANDARDS, PART 11, TITLE 24 C.C.R.
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 - 2016 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 C.C.R.
 - LOCAL HEALTH DEPARTMENT REVIEW & APPROVAL
 - 2016 ADA STANDARDS FOR ACCESSIBLE DESIGN 28 CFR PART 35 FOR TITLE II ENTITIES
 - CFC CHAPTER 14, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION & CBC CHAPTER 33, SAFETY DURING CONSTRUCTION WILL BE ENFORCED.

VICINITY MAP



POOL DATA

1. POOL PERIMETER: 510 FT. 5 IN.	
2. POOL SURFACE AREA: 12,963 SQ. FT.	
3. POOL VOLUME: 691,441 GALLONS	
4. REQUIRED TURNOVER: 1321 GPM	
5. POOL USER CAPACITY: 1/20 SF. 649 PERSONS	
6. DECK AREA AFFECTED: 14,413 SQ. FT.	
1. INLETS REQUIRED	12 PROVIDED
8. SURGE CAPACITY	
A. GUTTER CAPACITY	7,180 GAL.
B. SURGE TANK CAPACITY	11,448 GAL.
C. TOTAL CAPACITY	18,628 GAL. TOTAL CAPACITY
	2 SF X 510 FT PERIMETER
	170 SF X 9 FT DEPTH = 1530 CU. FT.
	12,963 GAL. REQUIRED @ 1 GAL./FT ²

LEGEND

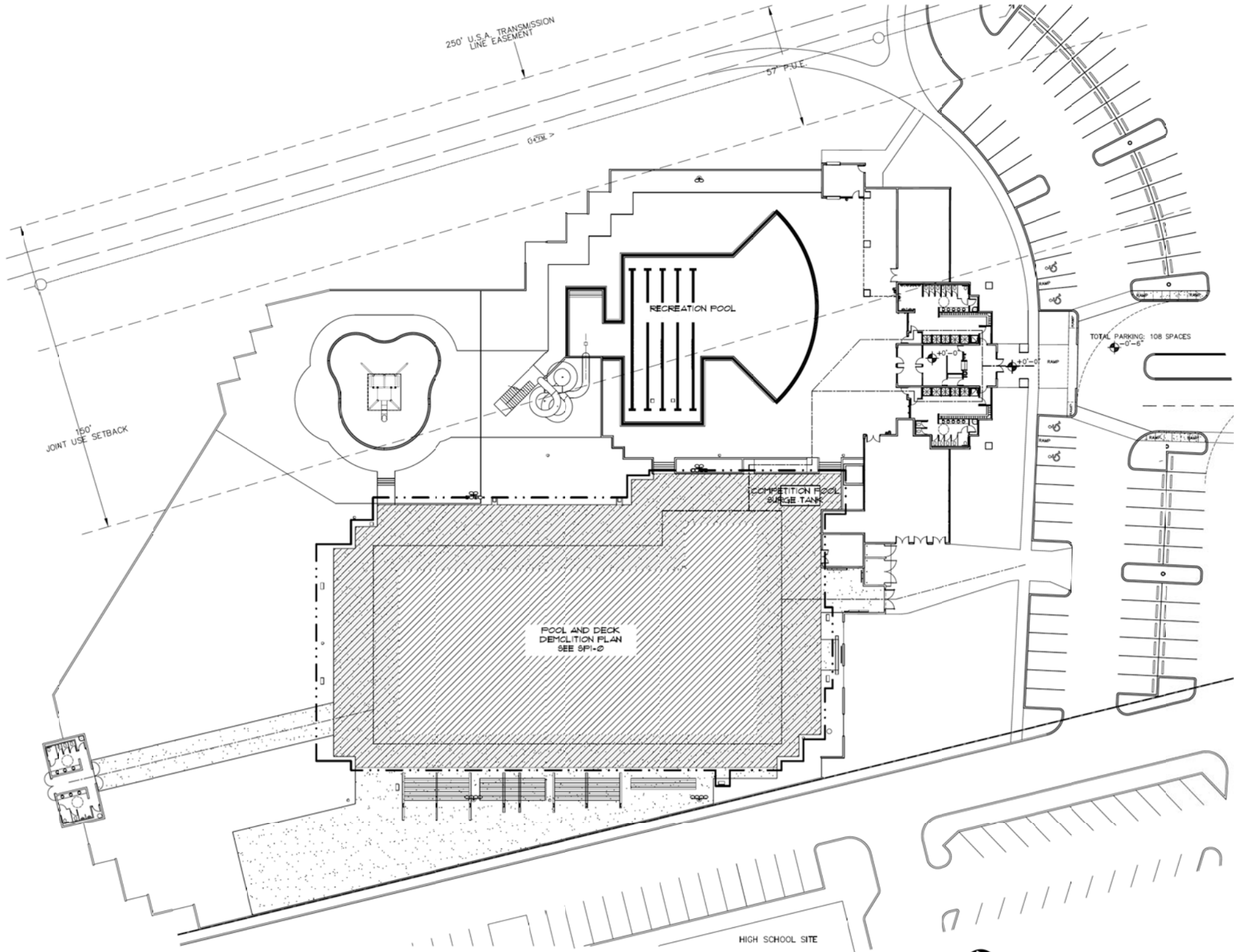
- POOL CONC. DECK TO BE REMOVED COMPLETE
- PLASTER FINISH & ALL TILE TO BE REMOVED TO EXPOSE POOL SHELL (WALL & FLOOR) TYP. SEE SP2-2.
- LIMIT OF WORK
- (E) POOL FENCE
- ACCESSIBLE PATH OF TRAVEL

- AS FIRST ORDER OF WORK, CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS PRIOR TO REMOVAL OF DECK. REPORT ELEVATIONS TO ARCHITECT.
- ENSURE ALL METAL COMPONENTS REMAIN BONDED, SEE 1/8PS-9.
- ALL J-BOXES & POOL ELECTRICAL CONDUIT TO REMAIN. CONTRACTOR TO PRESSURE TEST FLOOR INLET SYSTEM PRIOR TO FLOOR REMOVAL. REPORT TO ARCHITECT.
- WORK WILL INCLUDE REMOVAL OF POOL PIPING LOCATED UNDER DECK AND REPLACEMENT.
- NOTE LOCATION OF AND MARK STORM DRAIN CONNECTION LOCATION, AND RE-CONNECT NEW STORM DRAIN TO EXISTING P.O.C.
- LOCATE AND PROTECT ALL UTILITIES AND CONNECTIONS BEFORE BEGINNING DEMOLITION WORK. ANY EXISTING WORK REMOVED THAT SHOULD AND COULD HAVE BEEN RETAINED WILL BE REPLACED AT NO COST TO OWNER.
- UTILITIES: THE EXISTENCE AND APPROXIMATE LOCATIONS OF

- ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE ARCHITECT ASSUMES NO LIABILITY AS TO THE EXACT LOCATION OF SAID LINES NOR FOR UTILITY OR IRRIGATION LINES OR WHOSE LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK OR EXCAVATION TO DETERMINE THE EXACT LOCATIONS OF ALL LINES AFFECTING THIS WORK, WHETHER OR NOT SHOWN HEREON, AND FOR ANY DAMAGE OR PROTECTION TO THESE LINES.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION OF THE SITE AND SHALL REMOVE AND DISPOSE OF ALL STRUCTURES ABOVE AND OR BELOW GROUND. ANY HAZARDOUS MATERIALS ENCOUNTERED SHALL BE HANDLED AND REMOVED AS REQUIRED BY LOCAL AND OR STATE LAWS AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL EXERCISE DUE CARE TO AVOID DAMAGE TO EXISTING HARDSCAPE IMPROVEMENTS, UTILITY

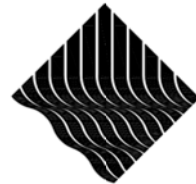
- FACILITIES, AND LANDSCAPING FEATURES THAT ARE NOT TO BE REMOVED.
- ALL EXISTING OBJECTIONABLE MATERIALS THAT CONFLICT WITH PROPOSED IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, BUILDING FOUNDATIONS, UTILITIES AND APPURTENANCES, TREES, SIGNS, AND STRUCTURES, ETC. SHALL BE REMOVED AND DISPOSED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER, UNLESS OTHERWISE INDICATED HEREIN, OR AS DIRECTED BY THE ARCHITECT.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING CONCRETE FROM DAMAGE CAUSED BY HIS OPERATIONS. ANY CONCRETE DAMAGED DURING HIS OPERATIONS SHALL BE SAW CUT AND REPLACED AT NO COST TO THE OWNER. ALL EXISTING CONCRETE IDENTIFIED AS POTENTIALLY NEEDING TO BE REPLACED SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR THE OWNER REPRESENTATIVE PRIOR TO THE COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL PERFORM AND BE RESPONSIBLE

- FOR ALL CLEARING AND GRUBBING OPERATIONS AS NECESSARY TO COMPLETE THE WORK, INCLUDING TRANSPORTATION AND DISPOSAL OF ALL REMOVED MATERIALS, AND ALL ASSOCIATED COSTS.
- IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND DETERMINE THE EXTENT OF DEMOLITION BASED ON THE PROPOSED IMPROVEMENTS SHOWN IN THIS SET OF PLANS.
- ALL EXISTING TREES OUTSIDE LIMITS OF WORK BUT NEAR CONSTRUCTION SITE TO BE PRESERVED.
- EXISTING IRRIGATION VALVES AND HEADS TO REMAIN. PROTECT IN PLACE DURING CONSTRUCTION AND OPERATIONS.
- ALL LANDSCAPING AND IRRIGATION THAT IS DAMAGE BY CONSTRUCTION ACTIVITIES SHALL BE REPAIR OR REPLACED TO THE APPROVAL OF THE CITY.



SITE PLAN OVERVIEW
1" = 20'-0"

GENERAL NOTES



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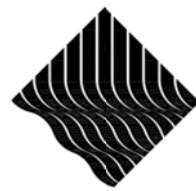
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CITY OF ROSEVILLE	CLIENT	316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678	ADDRESS
ROSEVILLE AQUATICS COMPLEX	DRAWING TITLE	3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747	PROJECT ADDRESS
SP0-0	DRAWING NO.:		

LEGEND		KEY NOTES		GENERAL NOTES
	- POOL CONC. DECK TO BE REMOVED COMPLETE	1. REMOVE POOL DECK AND CANTILEVER POOL EDGE COMPLETE.	5. EXISTING STARTING BLOCKS TO BE REMOVED & PROTECTED FOR REUSE.	- REPLACE ALL GRAVITY FLOW VENTS AND PIPING DAMAGED DURING DEMO. SEE 3/8PS-2. - TRENCH TO TOMBSTONES SUFFICIENT FOR INSTALLATION OF NEW CONDUIT. SEE SPTI-1.
	- PLASTER FINISH & ALL TILE TO BE REMOVED TO EXPOSE POOL SHELL (WALL & FLOOR) TYP.	2. EXISTING PLASTER & TILE TO BE REMOVED TO EXPOSE EXISTING POOL SHELL. (ONCE PLASTER HAS BEEN REMOVED THE ARCHITECT SHALL VISUALLY INSPECT SHELL, NOTING ANY SIGNS OF DETERIORATION & SHALL MARK THEM FOR REMOVAL BY CONTRACTOR.	6. EXISTING FLOOR INLETS TO REMAIN. CONTRACTOR TO REPLACE ALL INLETS DAMAGED DURING DEMO.	
	- LIMIT OF WORK	3. THE CONTRACTOR SHALL REMOVE ANY POOL SHELL AREA SHOWING SIGNS OF RUST OR DETERIORATION. SEE TSPS-3 4. REPAIR ANY CRACKS BY GRINDING & INJECTING EPOXY, 8/SPS-3. 5. CLEAN AND PREPARE GUTTER FOR APPLICATION OF THOROSEAL PER SPECIFICATIONS.	7. REMOVE EXPANSION JOINT COMPLETE. 8. REMOVE EXISTING GRATE AND FRAME COMPLETE. EXISTING MAIN DRAIN SUMPS TO BE PREPARED FOR INSTALLATION OF NEW MAIN DRAIN COVERS AND VGB COMPLIANCE PER 3/8PS-2. 9. EXISTING BLEACHERS AND SHADE STRUCTURE TO REMAIN. PROTECT IN PLACE. 10. EXISTING CONCRETE TO REMAIN. PROTECT IN PLACE. 11. EXISTING SURGE PIT TO REMAIN. PROTECT IN PLACE. 12. EXISTING ROPE ANCHORS TO BE PROTECTED IN-PLACE. REPLACE ANY DAMAGED ANCHORS PER 3/8PS-1. 13. REMOVE MEMORIAL PLAQUE. INSTALL IN (N) DECK IN SAME LOCATION. 14. REMOVE EXISTING CONCRETE AND PREPARE FOR NEW DECK INSTALLATION. 15. EXISTING 1-M DIVING BOARD TO BE REMOVED & PROTECTED FOR REUSE.	



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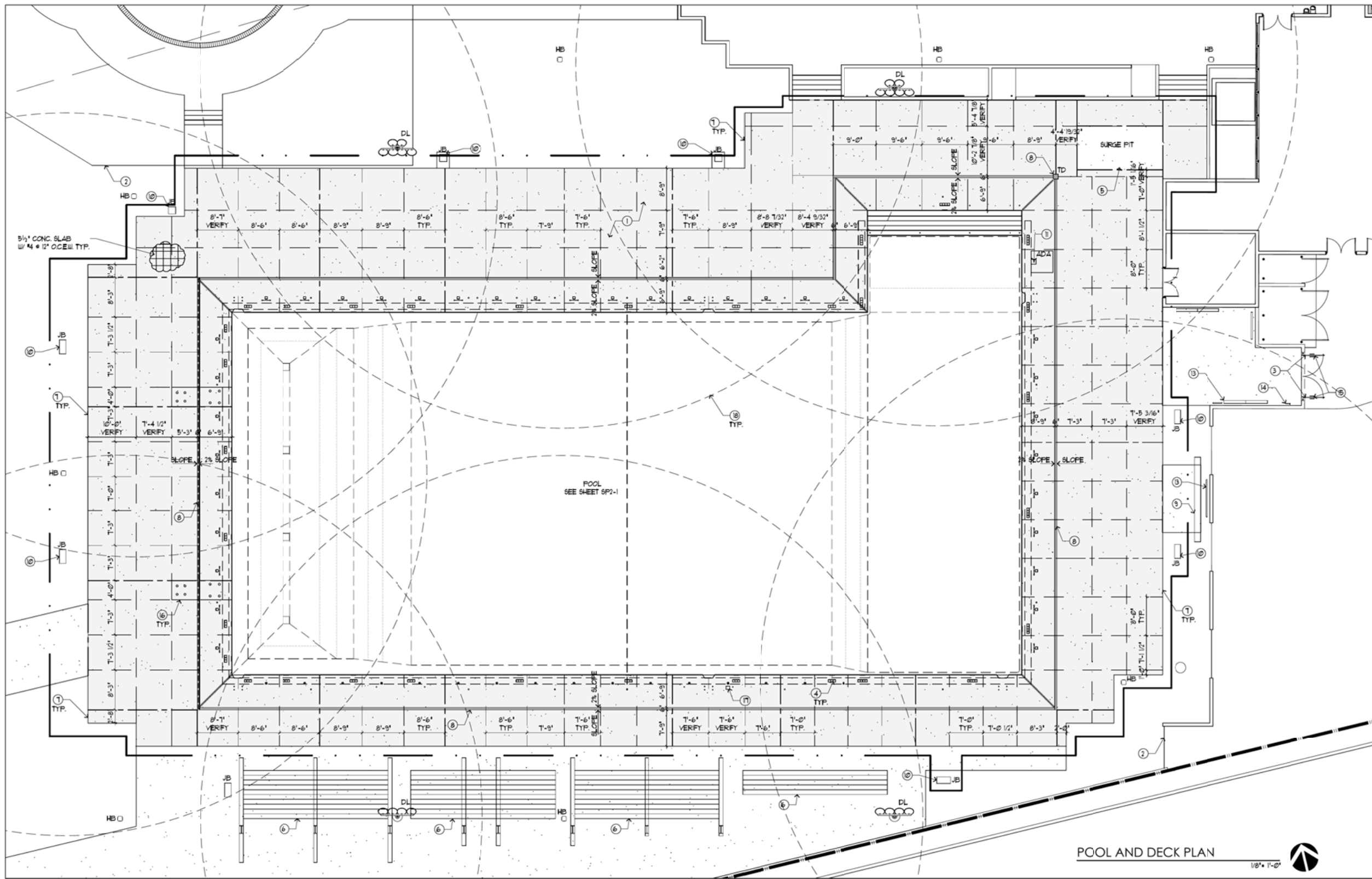
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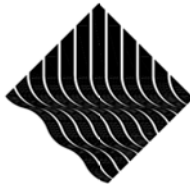
DRAWING NO.:		DRAWING TITLE:		NO.		DATE:		REVISION:		CLIENT:	
SP1-0		POOL AND DECK DEMO PLAN		△						CITY OF ROSEVILLE	
SC01		ROSEVILLE AQUATICS COMPLEX		△						ADDRESS	
DRAWN BY:		PROJECT ADDRESS:		△						316 VERNON STREET, SUITE 480	
MT		3031 WOODCREEK OAKS BOULEVARD,		△						ROSEVILLE, CA 95678	
		ROSEVILLE, CA 95747		△							

DRAWING NO.: SP1-0	DRAWN BY: WT	PROJECT ADDRESS: 305 W. CEDAR ST. ROSEVILLE, CA	SUB TITLE: ROSEVILLE	DRAWING TITLE: POOL AND
	SHEET NO.:			

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LEGEND		EQUIPMENT LIST & SYMBOLS				KEY NOTES	GENERAL NOTES
	POOL CONC. DECK TO BE REMOVED COMPLETE	ITEM	DESCRIPTION DETAIL	MAKE AND CATALOG #	REMARKS	1. (N) CONCRETE DECK W/ MED. BROOM FINISH. TEXTURE PERPENDICULAR TO TRENCH DRAIN. DECK REINFORCING TO CONSIST OF #4 @ 12" O.C.E.W. CENTERED IN 5 1/2" THICK, 4500 PSI CONCRETE SLAB 0' 6" A.B.C. 2. (E) FENCE AROUND ENTIRE POOL AREA. SEE SP2-2 FOR FULL EXTENT. 3. (E) KEYED GATE. 4. (N) 6X6 NON-SLIP CERAMIC TILE- "NO RUNNING", "NO DIVING", 4" DEPTH MARKER TILES TO BE 2'-0" FROM POOL EDGE. SEE 1/SP3-4. 5. (E) POOL SURGE TANK. 6. (E) BLEACHERS. 7. (N) CONCRETE SLAB TURNDOWN. SEE 6/SP3-3. 8. (N) TRENCH DRAIN AND CATCH BASIN. CONNECT TO EXISTING STORM WATER SYSTEM. SEE 5/SP3-3. 9. (E) SCOREBOARD. 10. (E) TOMBSTONES WITH (N) TIMING CONDUIT. SEE SP1-1. 11. (E) ADA ACCESSIBLE LIFT IN (N) LOCATION. SEE 1/SP3-3. 12. (N) ADA ACCESSIBLE STAR ENTRY. SEE 8/SP3-1. 13. (E) POOL RELATED SIGNAGE. SEE 8/SP3-4. 14. (N) EXIT SIGN. SEE 8B/SP3-4. 15. (N) KEEP CLOSED SIGN ON BOTH SIDES OF GATE. SEE 8B/SP3-4. 16. (N) DIVING BOARD ANCHORS AND FOUNDATION. SEE 4/SP3-3. 17. (E) MEMORIAL PLAQUE INSTALLED IN (N) LOCATION. 18. 15' FT RADIUS REACH OF (E) HOSE B/B LOCATION.	- ALL ANCHORS & STRUCTURAL STEEL IN POOL DECK TO BE BONDED & GROUNDING. SEE 1/SP3-3. - WATER LEVEL USED AS ELEVATION REFERENCE. - CONCRETE DECKS TO SLOPE 2% MAX. AWAY FROM POOL TO TRENCH DRAIN. TYP. ALL REMAINING CONCRETE DECK TO HAVE A SLOPE NO LESS THAN 1% BUT NO MORE THAN 2% TOWARDS EXISTING DRAINAGE SYSTEM OR NEW TRENCH DRAIN. - CONTRACTOR TO COORDINATE DEPTH MARKER LOCATIONS WITH CONTROL JOINTS MIN 6" SEPARATION FROM JOINTS. - CONTRACTOR TO COORDINATE ANCHOR LOCATIONS WITH CONTROL JOINTS MIN 6" SEPARATION FROM ANCHORS.
	LIMIT OF WORK	ADA	ACCESS LIFT W/ SOCKETS & CAP	SEE DETAIL	(E) ADA LIFT, (N) LIFT ANCHOR		
	CONTROL JOINT	DL	(E) DECK LIGHT	-	(E)		
	EXPANSION JOINT	TOMBSTONE	SEE TIMING PLAN	SEE TIMING PLAN	(E) TOMBSTONE (N) JB & TIMING CONDUIT		
	DOUBLE EXPANSION JOINT	TD	TRENCH DRAIN AND BASIN	SEE DETAIL	-		
		HB	(E) HOSE B/B	-	(E)		



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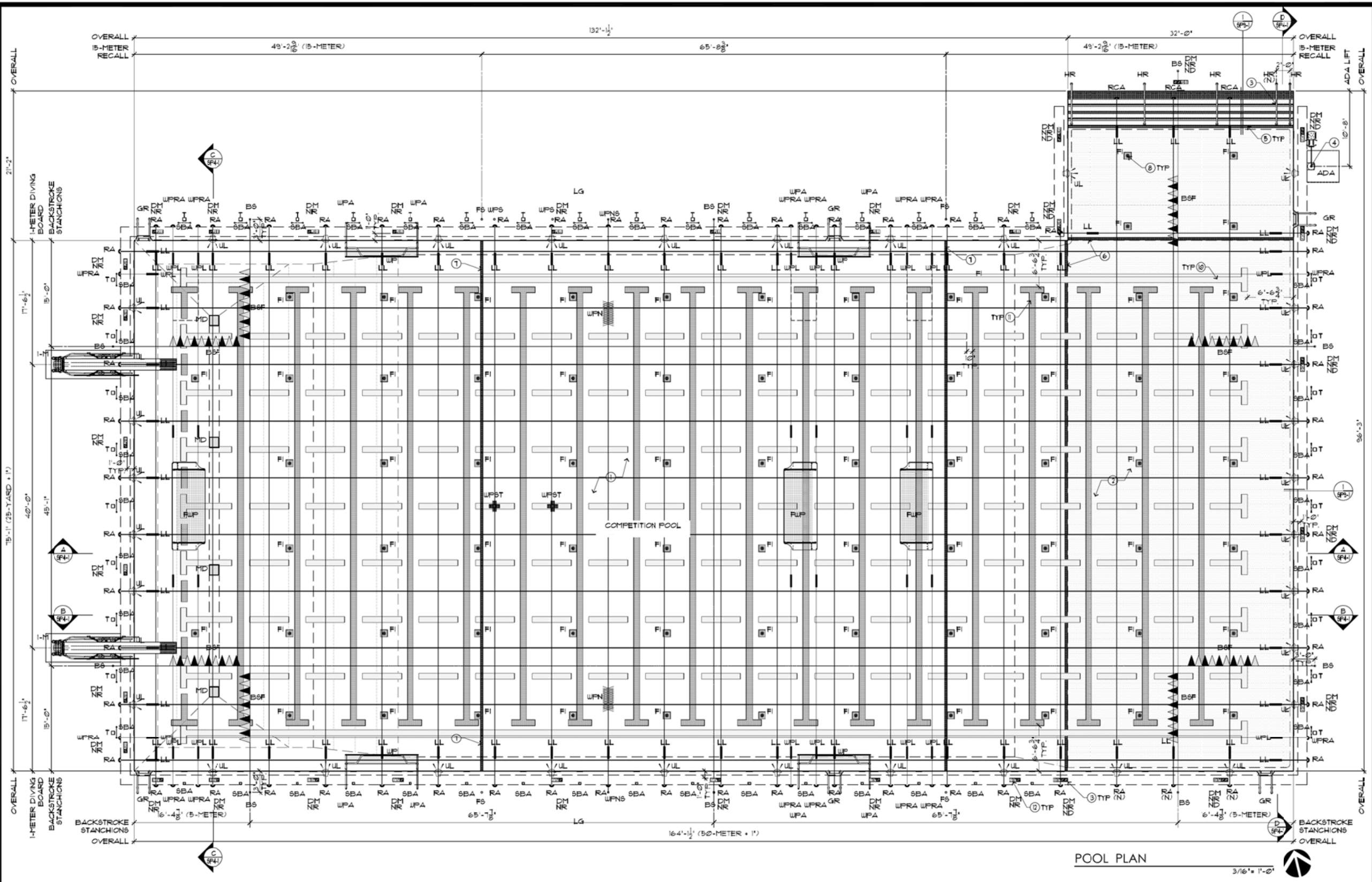
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DRAWING TITLE: POOL AND DECK PLAN		NO. ☐		DATE	REVISION:	CLIENT: CITY OF ROSEVILLE	ADDRESS 316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678
		NO. ☐					
PROJECT TITLE: ROSEVILLE AQUATICS COMPLEX		NO. ☐					
DRAWN BY: M		NO. ☐					
PROJECT ADDRESS: 3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747		NO. ☐					

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EQUIPMENT LIST & SYMBOLS															
ITEM	DESCRIPTION DETAIL	MAKE AND CATALOG #	REMARKS		ITEM	DESCRIPTION DETAIL	MAKE AND CATALOG #	REMARKS		ITEM	DESCRIPTION DETAIL	MAKE AND CATALOG #	REMARKS		
1M	1-METER DIVING BOARD	SEE DETAIL	(E) 1-METER DIVING BOARD, (N) ANCHORS		GR	GRABRAILS W/ SOCKETS & ESCUTCHIONS	SEE DETAIL	(E) GRABRAILS, (N) ANCHORS		SBA	"BROCK SOLID" STARTING BLOCK ANCHOR & CAP	SEE DETAIL	(N) ANCHORS & CENTER OF (E) LANE LOCATIONS		
ADA	ACCESS LIFT W/ SOCKETS & CAP	SEE DETAIL	(E) ADA LIFT, (N) LIFT ANCHOR		NR	HAND RAIL	SEE DETAIL	ONE (N) HAND RAIL TO MATCH (E) HAND RAILS, (N) ANCHORS		T	TYING SYSTEM	SEE DETAIL	(N) CARBON PVC BOX & COVER		
BS	BACKSTROKE STANCHIONS	SEE DETAIL	(N) W/ SOCKET, COVER PLATE, & ESCUTCHION PLATE		LG	LIFE GUARD (MOVABLE)	-	(E)		UL	UNDERWATER LIGHT	-	(E) FINCHES & FIXTURES	-	
BSF	BACKSTROKE FLAG	-	(E)		LL	LANE LINE	-	(E)		UP	WATER POLO GOAL DECK ANCHOR	SEE DETAIL	(E) WATER POLO GOAL, (N) ANCHORS		
DT	DEPTH MARKERS & WARNING TILES	SEE DETAIL	(N) 6"x6" NON-SLIP CERAMIC TILE		MD	MAIN DRAIN - (8' X 10')	SEE DETAIL	(E) 5/8" W/ (N) VSD APPROVED GRATING		UPA	WATER POLO LINE W/ ROPE ANCHOR	SEE DETAIL	6" X 6" 66 GABLE	(N)	
F	FLOOR INLET	STAINITE 00417	(N) 1/4" ABS PLASTIC IPS SLIP BALANCED		RA	ROPE ANCHOR	SEE DETAIL	(E) ROPE ANCHORS, (N) ROPE ANCHORS PER PLAN		UPN	WATER POLO DIVIDING NET	-	(N)	-	
FS	FALSE START STANCHIONS	SEE DETAIL	(N) W/ ADJUSTABLE COLLAR, SOCKET, & COVER PLATE		RCA	ROPE CUP ANCHOR	SEE DETAIL	(N) ROPE CUP ANCHORS PER PLAN		UPNS	WATER POLO NET STANCHIONS	SEE DETAIL	(N) W/ SOCKET, COVER PLATE, & ESCUTCHION PLATE		
FG	FLOATING WATER POLO GOAL	SEE DETAIL	(E) FLOATING GOAL, (N) ANCHORS & BOUNDARY LINES		SBA	"BROCK SOLID" STARTING BLOCK ANCHOR & CAP	SEE DETAIL	(N) ANCHORS & CENTER OF (E) LANE LOCATIONS		UPRA	WATER POLO COURSE ROPE ANCHORS	SEE DETAIL	(N)		

- ### KEY NOTES
- PLASTER FINISH (WHITE) TYP.
 - PLASTER FINISH (WHITE) NON-SLIP TEXTURE TYP. ON FLOOR SURFACE FROM 0'-0" TO 4'-6" DEPTH.
 - (N) HANDRAIL FOR ADA ACCESSIBLE STAIR ENTRY. SEE 8/SPS-1.
 - ADA ACCESSIBLE LIFT ANCHOR AND FOUNDATION SEE 1/SPS-3.
 - 2" WIDE 1" X 1" NON-SLIP TILE STEP TRIM BLACK IN COLOR. SEE 8/SPS-1.
 - 4" WIDE 1" X 1" NON-SLIP TILE BAND 4'-6" DEPTH RED IN COLOR W/ FLOATING BOY LINE.
 - 4" WIDE 1" X 1" TILE BAND 5-METER MARKER RED IN COLOR.
 - NOT USED.
 - (N) FLOOR INLETS IN EXISTING LOCATIONS CENTERED ON 12"x12" FIELD OF 12"x12" NON-SLIP CERAMIC TILE WHITE IN COLOR. SEE 1/SPS-2.
 - 12"x12" CERAMIC TILE FINA RACING LANE AND TARGET (50 METER DIRECTION), BLACK IN COLOR. SEE 6/SPS-4.
 - 12"x12" CERAMIC TILE FINA RACING LANE AND TARGET (25 YARD DIRECTION), BLACK IN COLOR. SEE 6/SPS-4.
 - 6"x6" NON-SLIP CERAMIC TILE- NO RUNNING, 1 DEPTH MARKER TILE. SEE 1/SPS-4.
 - 6"x6" NON-SLIP CERAMIC TILE- NO RUNNING, NO DIVING, 1 DEPTH MARKER TILE. SEE 1/SPS-4.

- ### GENERAL NOTES
- CERTIFY ALL COMPETITIVE DISTANCES IN ALL LANES W/ A LICENSED SURVEYOR PER USA SWIMMING GUIDELINES.
 - ALIGN ALL STARTING BLOCK ANCHORS AND TILED RACING LANES IN CENTER OF LANE AS DETERMINED BY THE EXISTING ROPE ANCHOR LOCATIONS.



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CITY OF ROSEVILLE

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ROSEVILLE, CA 95678

ROSEVILLE AQUATICS COMPLEX

3035 WOODCREEK OAKS BOULEVARD,
ROSEVILLE, CA 95747

POOL PLAN

SP2-1

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[illegible]

KEY NOTES

1. WATER POLO START MARKER: 1' X 1' NON-SLIP CERAMIC TILE, RED IN COLOR. SEE 1/SP9-4.
2. FLOATING WATERPOLO BOUNDARY LINE W/ 25Y COURSE DISCONNECTS, DISK COLOR TO MEET FINA REQUIREMENTS. COORDINATE WITH WATERPOLO COACH.
3. WATERPOLO GOAL TETHER LINES W/ 2M RE-ENTRY AREA.

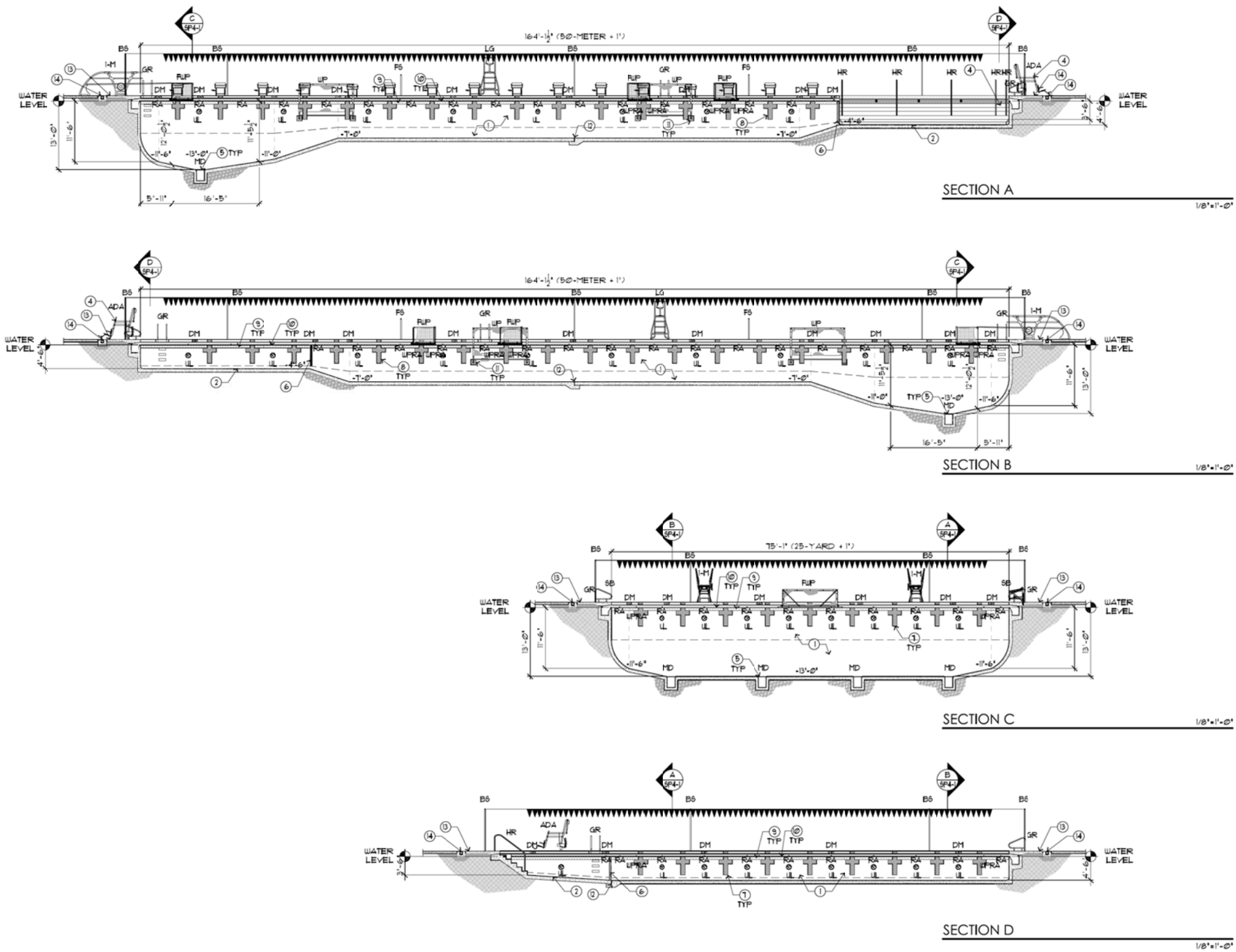
GENERAL NOTES

- CERTIFY ALL COMPETITIVE DISTANCES IN ALL LANES W/ A LICENSED SURVEYOR PER USA SWIMMING GUIDELINES.



DRAWING NO.: SP2-2	DRAWING TITLE: POOL WATER POLO PLAN		NO. ☐	DATE:	REVISION:	CLIENT: CITY OF ROSEVILLE
	SCALE:		NO. ☐	DATE:	REVISION:	ADDRESS: 316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678
DRAWN BY: [Signature]		PROJECT ADDRESS: 3000 CREEK OAKS BOULEVARD, ROSEVILLE, CA 95747	NO. ☐	DATE:	REVISION:	

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EQUIPMENT LIST & SYMBOLS								KEY NOTES				GENERAL NOTES	
ITEM	DESCRIPTION DETAIL	MAKE AND CATALOG #	REMARKS	ITEM	DESCRIPTION DETAIL	MAKE AND CATALOG #	REMARKS	ITEM	DESCRIPTION DETAIL	MAKE AND CATALOG #	REMARKS		
I-M	1-METER DIVING BOARD	SEE DETAIL	(E) 1-METER DIVING BOARD, (N) ANCHORS	4	FUP	SEE DETAIL	(N) W/ WATERPOLO GOAL	RCA	ROPE CUP ANCHOR	SEE DETAIL	(N) ROPE ANCHORS PER PLAN		
ADA	ACCESS LIFT W/ SOCKETS & CAP	SEE DETAIL	(E) ADA LIFT, (N) LIFT ANCHOR	1	GR	SEE DETAIL	(E) GRABRAILS, (N) ANCHORS	UL	UNDERWATER LIGHT	-	(E) NICHES & FIXTURES		
B5	BACKSTROKE STANCHIONS	SEE DETAIL	(N) W/ SOCKET & COVER PLATE	1	HR	SEE DETAIL	ONE (N) HAND RAIL TO MATCH (E) HAND RAILS, (N) ANCHORS	UP	WATER POLO GOAL, DECK ANCHORED	SEE DETAIL	(E) WATER POLO GOAL, (N) ANCHORS		
BSP	BACKSTROKE FLAGS	-	(E)	-	LG	-	(E)	UPRA	WATER POLO COURSE ROPE ANCHORS	SEE DETAIL	-		
DM	DEPTH MARKER TILES	SEE DETAIL	(N) 6"x6" GLAZED CERAMIC TILE	1	MD	SEE DETAIL	(E) SUPP W/ (N) VGB APPROVED GRATING	-	-	-	-		
F5	FALSE START STANCHIONS	SEE DETAIL	(N) W/ SOCKET & COVER PLATE	4	RA	SEE DETAIL	(E) ROPE ANCHORS, (N) ROPE ANCHORS PER PLAN	-	-	-	-		

1. PLASTER FINISH (WHITE) TYP.

2. PLASTER FINISH (WHITE) NON-SLIP TEXTURE TYP. ON FLOOR SURFACE FROM 0'-0" TO 4'-6" DEPTH.

3. ADA ACCESSIBLE STAIR ENTRY. SEE 8/SP3-1.

4. ADA ACCESSIBLE LIFT ANCHOR AND FOUNDATION. SEE 1/SP3-3.

5. (E) MAIN DRAIN WITH (N) VGB COMPLIANT GRATE. SEE 3/SP3-2.

6. 4" WIDE 1" X 1" NON-SLIP TILE BAND @ 4'-6" DEPTH RED IN COLOR.

7. 1"x1" CERAMIC TILE FINA RACING LANE AND TARGET (50' METER DIRECTION); BLACK IN COLOR. SEE 6/SP3-4.

8. 1"x1" CERAMIC TILE FINA RACING LANE AND TARGET (25 YARD DIRECTION); BLACK IN COLOR. SEE 6/SP3-4.

9. 6" X 6" GLAZED CERAMIC TILE AT WATERLINE. BLUE IN COLOR. SEE 1/SP3-4.

10. 2 1/2" X 6" DOUBLE BULLNOSE. BLUE IN COLOR. SEE 1/SP3-4.

11. CERAMIC TILE PADS FOR (E) WATER POLO GOAL BUMPERS, COORDINATE W/ WATER POLO GOAL MANUFACTURER. 9" SQUARE OF 1/2" TILE. WHITE IN COLOR. SEE 1/SP3-1.

12. (E) EXPANSION JOINT WITH (N) SEALANT AND BACKER BEAD.

13. CONCRETE DECK W/ MEDIUM BROOM FINISH TEXTURE PERPENDICULAR TO TRENCH DRAIN.

14. NEW TRENCH DRAIN AND CATCH BASIN. CONNECT TO EXISTING STORM WATER WATER SYSTEM. SEE 5/SP3-3.

• ALL DECK DRAINS TO STORM WATER SYSTEM.

• EXTERIOR SLAB TO HAVE 1/4" PER FT. MAX CROSS SLOPE.

• ALL DECKS TO BE SLIP-RESISTANT.

• CONC. DECKS TO SLOPE 1% MIN. 2% MAX. AWAY FROM POOL TO TRENCH DRAIN.

• 40'-0" WATER LEVEL USED AS ELEVATION REFERENCE.

• FILL POOL AS PART OF WORK.

• CERTIFY ALL COMPETITIVE DISTANCES IN ALL LANES W/ A LICENSED SURVEYOR PER USA SWIMMING GUIDELINES.

• ALIGN ALL STARTING BLOCK ANCHORS AND TILED RACING LANES IN CENTER OF LANE AS DETERMINED BY THE EXISTING ROPE ANCHOR LOCATIONS.



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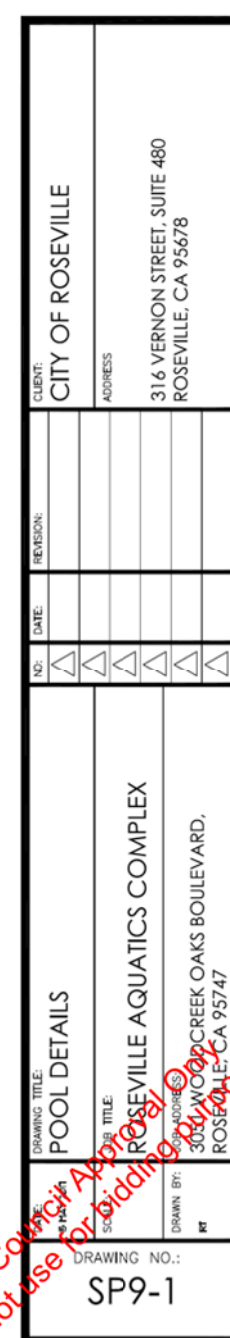
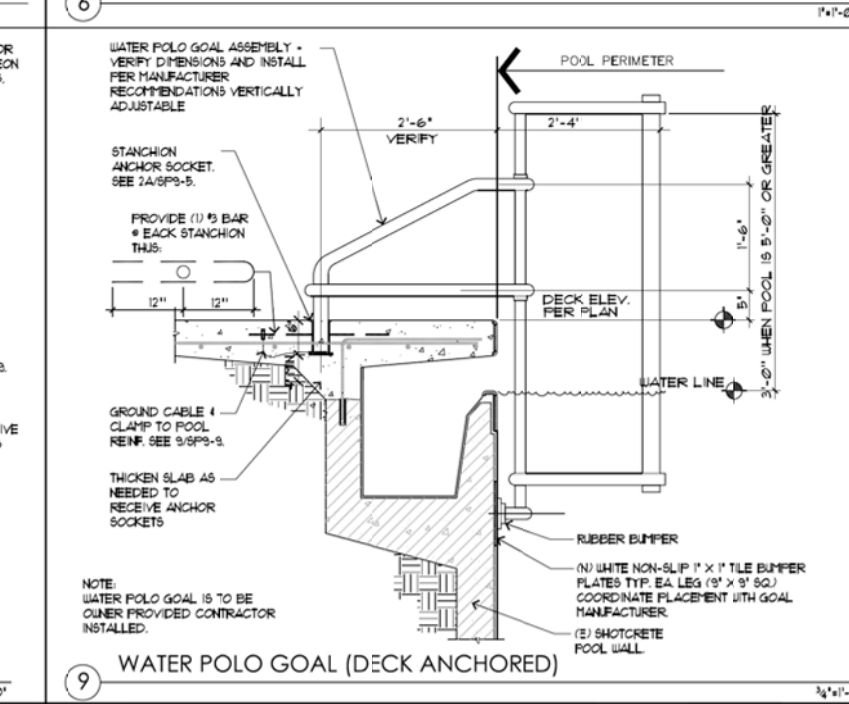
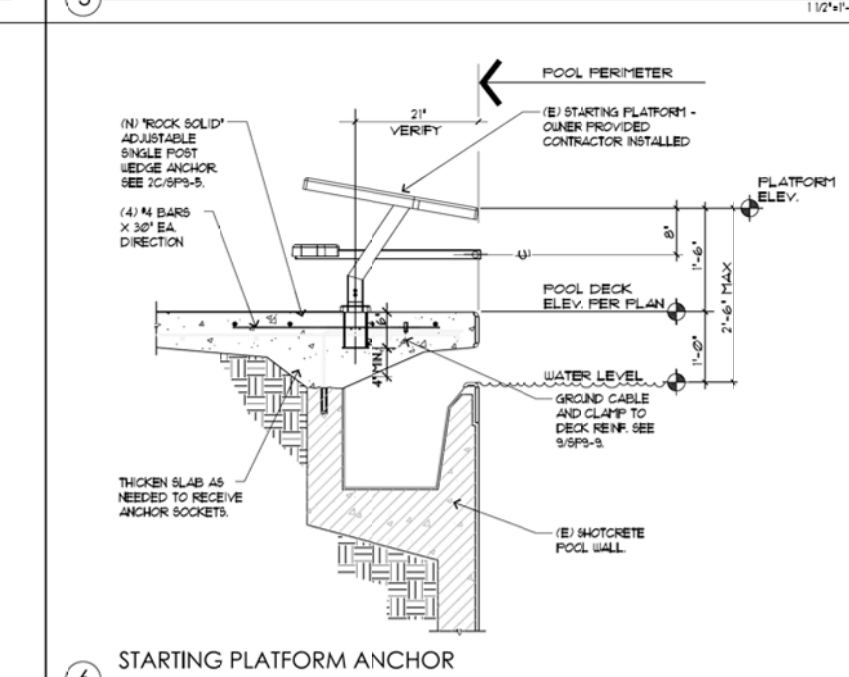
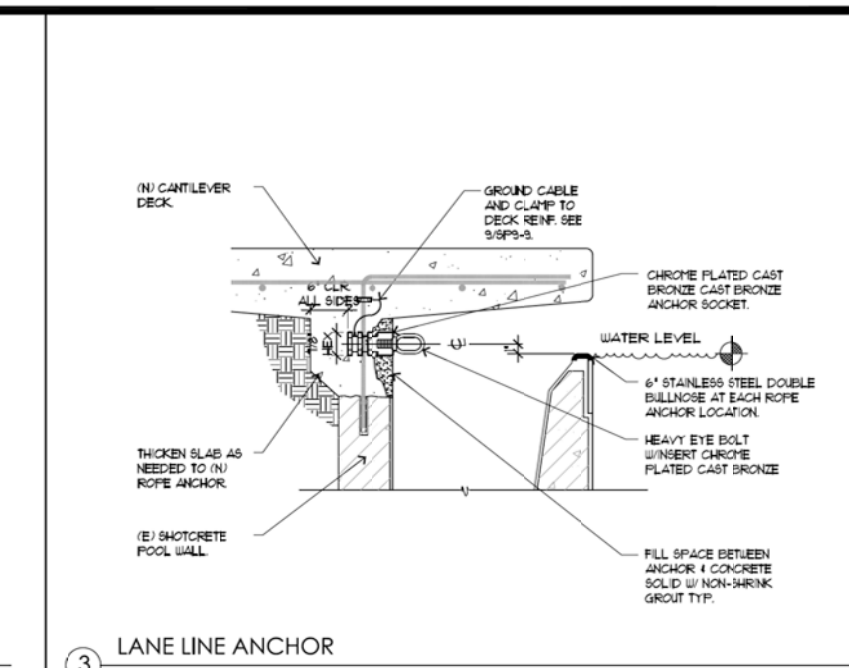
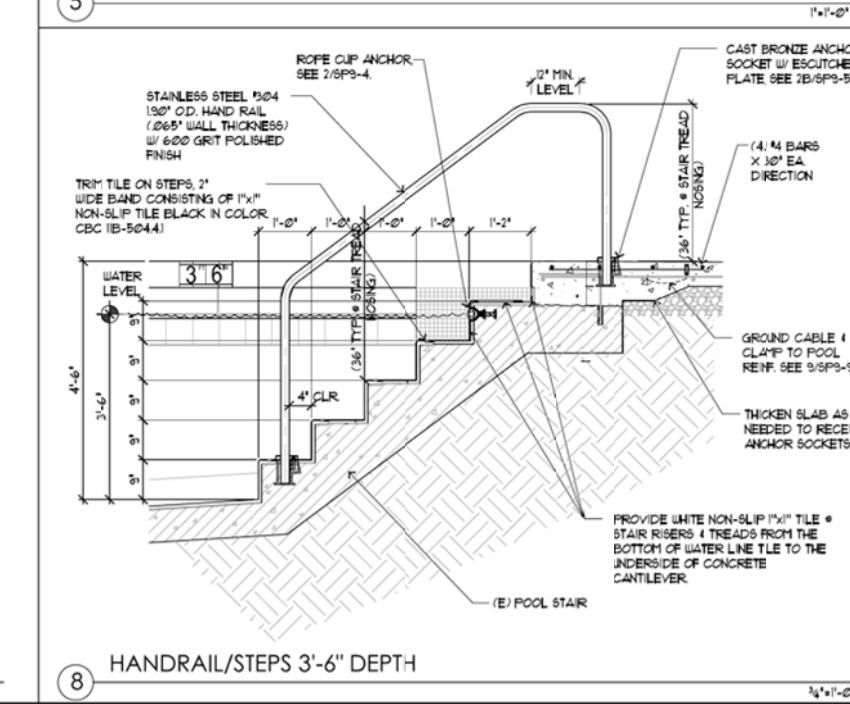
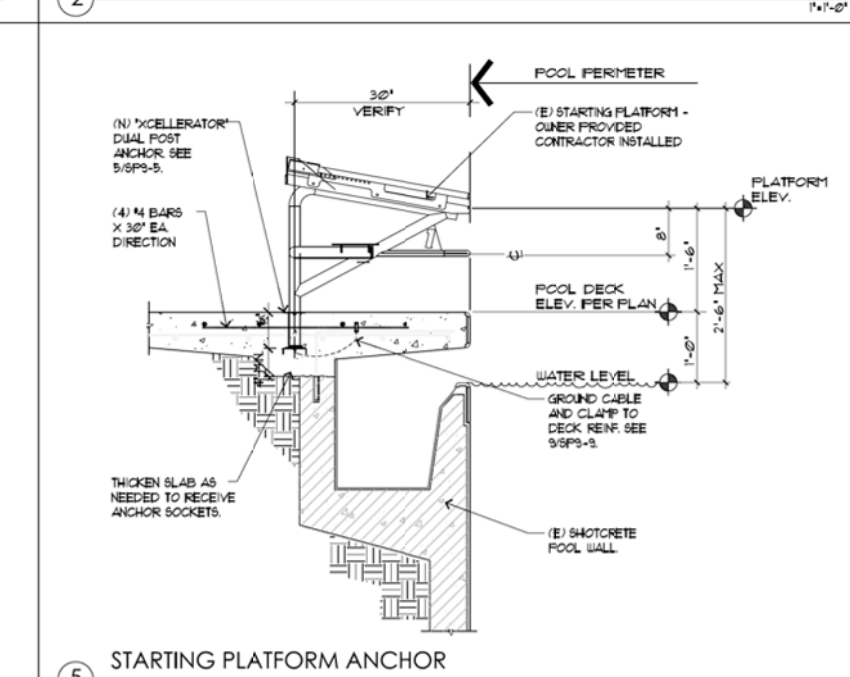
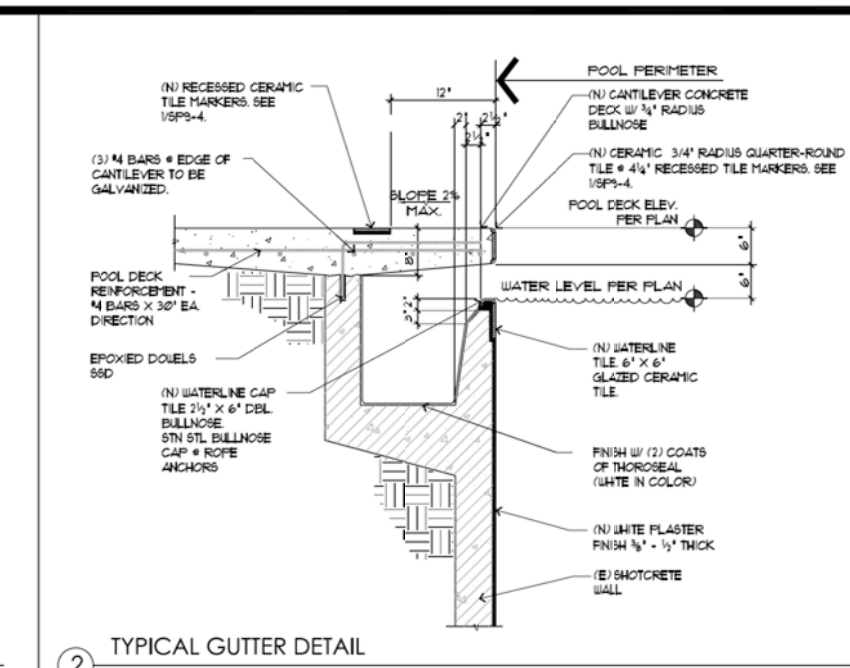
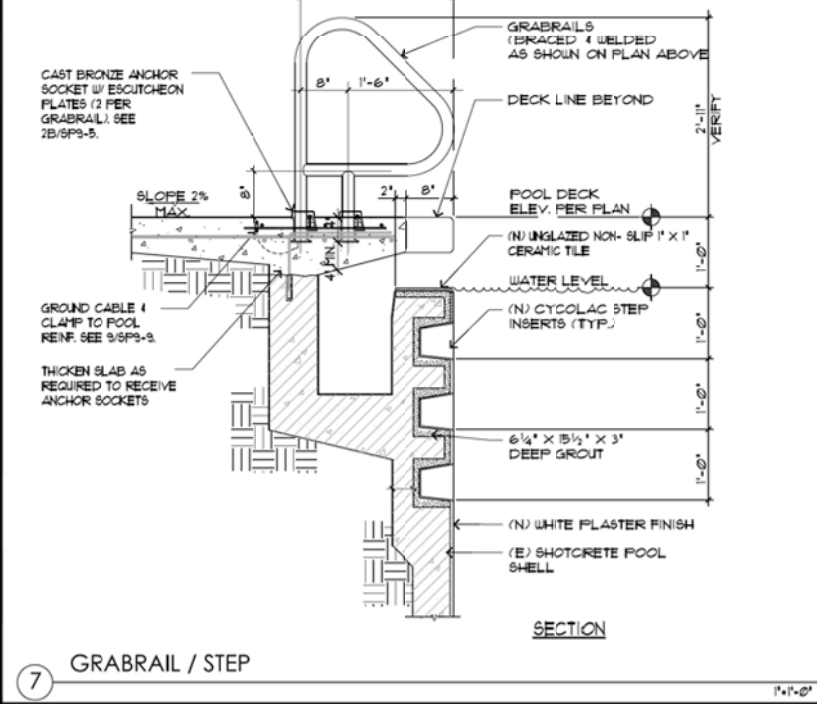
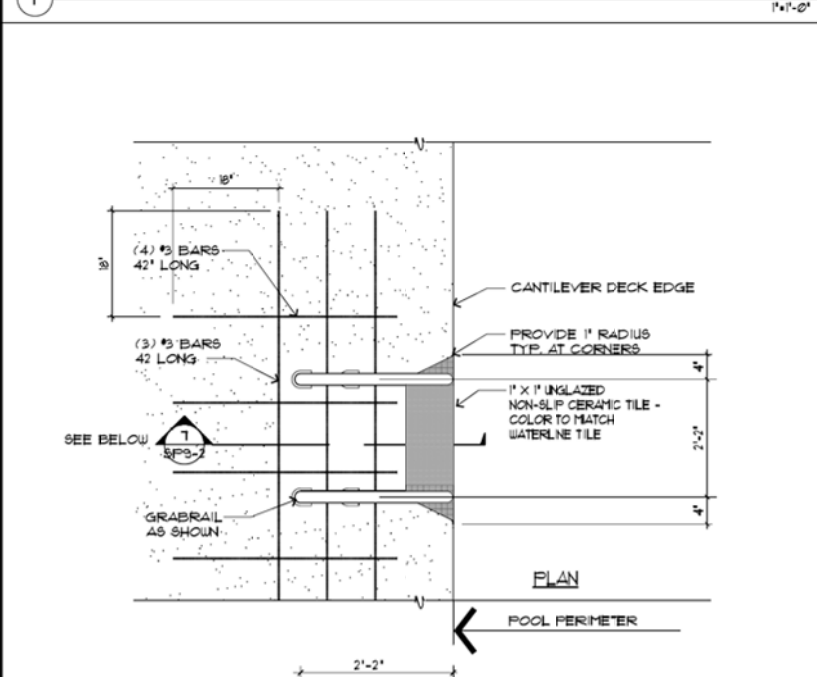


DRAWING NO.: SP4-1		DRAWING TITLE: POOL SECTIONS		NO: △		DATE:		REVISION:		CLIENT: CITY OF ROSEVILLE	
PROJECT NO: 1000											

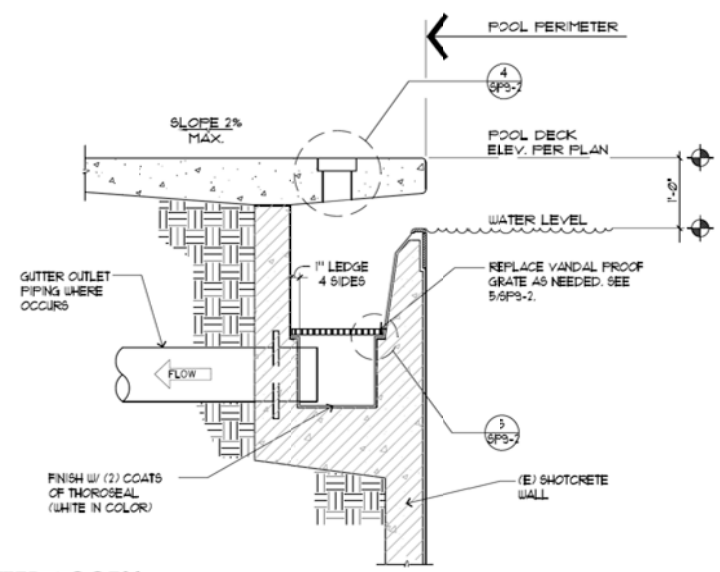
Diagram illustrating a typical gutter detail for a pool deck. The diagram shows a cross-section of the pool structure with the following components and labels:

- POOL PERIMETER**: Indicated by a horizontal line at the top right.
- (E) POOL DECK TO BE REMOVED**: Points to the upper horizontal section of the deck.
- (E) CANTILEVER TO BE REMOVED**: Points to the horizontal section of the deck extending over the gutter.
- POOL DECK ELEV. PER PLAN**: A horizontal line with a diamond symbol indicating the deck's elevation.
- WATER LEVEL PER PLAN**: A wavy line with a diamond symbol indicating the water level.
- (E) GUTTER**: Points to the sloped section of the gutter.
- TILE AND PLASTER TO BE REMOVED COMPLETE**: Points to the vertical wall section above the gutter.
- (E) SHOTCRETE WALL**: Points to the vertical wall section below the gutter.

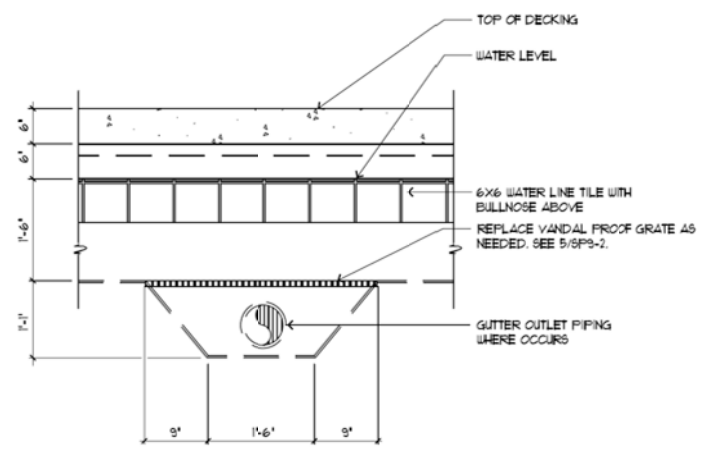
The diagram shows a cross-section of a pool structure. A horizontal line at the top right is labeled "POOL PERIMETER". A horizontal line with a diamond symbol is labeled "POOL DECK ELEV. PER PLAN". A wavy line with a diamond symbol is labeled "WATER LEVEL PER PLAN". A horizontal line with a diamond symbol is labeled "(E) CANTILEVER TO BE REMOVED". A horizontal line with a diamond symbol is labeled "(E) POOL DECK TO BE REMOVED". A sloped section of the gutter is labeled "(E) GUTTER". A vertical wall section above the gutter is labeled "TILE AND PLASTER TO BE REMOVED COMPLETE". A vertical wall section below the gutter is labeled "(E) SHOTCRETE WALL".



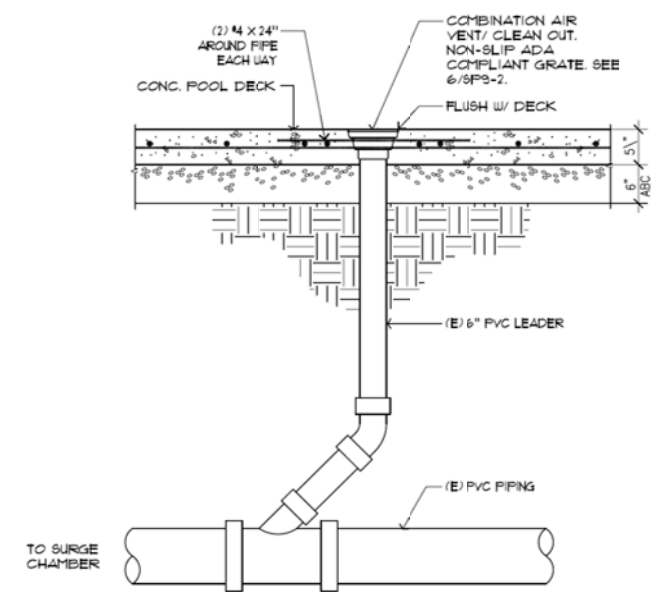
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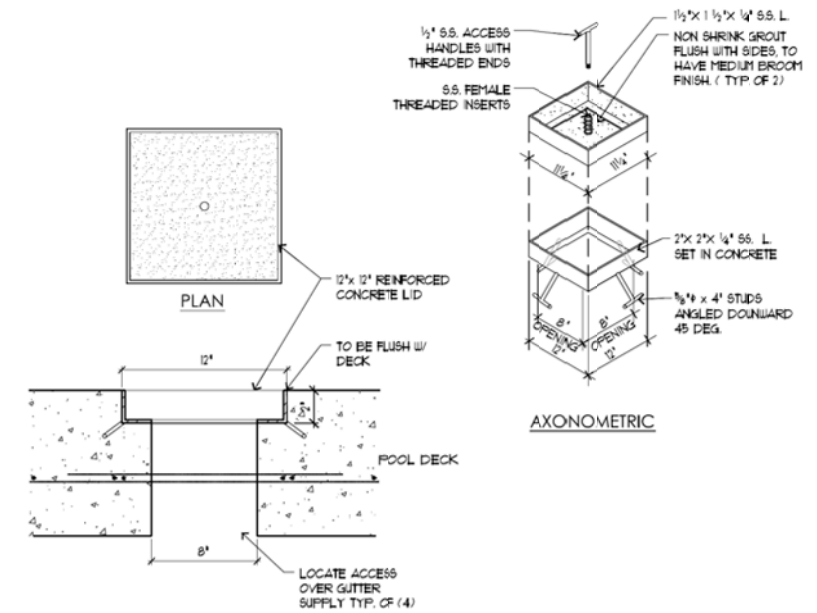
1 GUTTER ACCESS



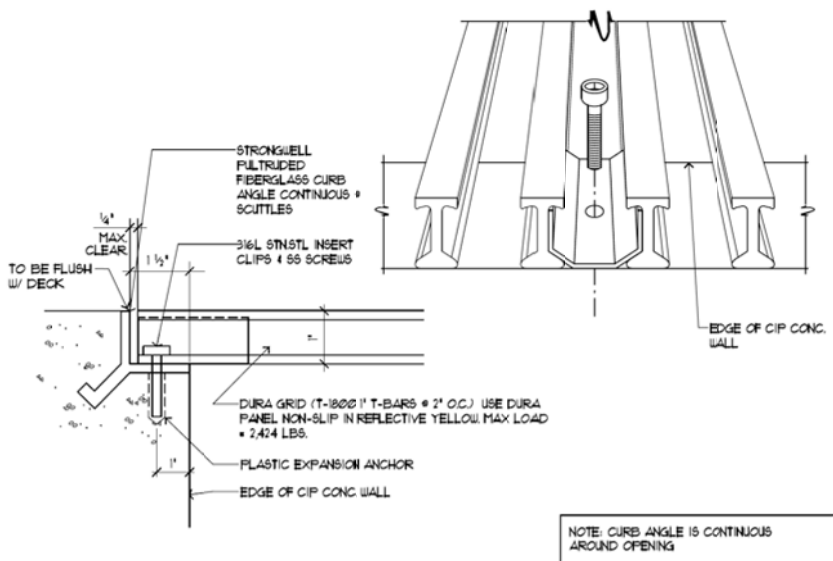
ELEVATION



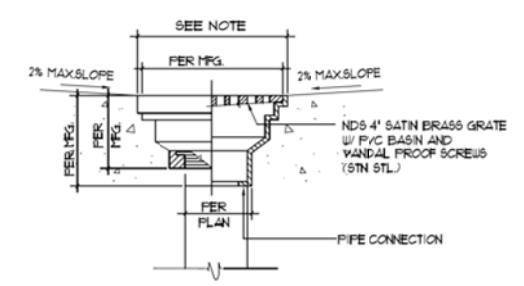
3 CLEAN OUT / AIR VENT



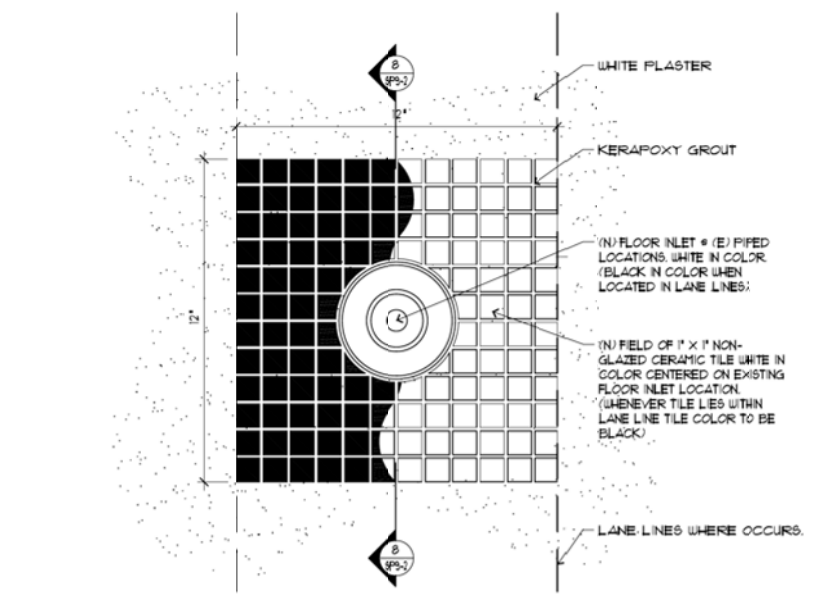
4 GUTTER ACCESS



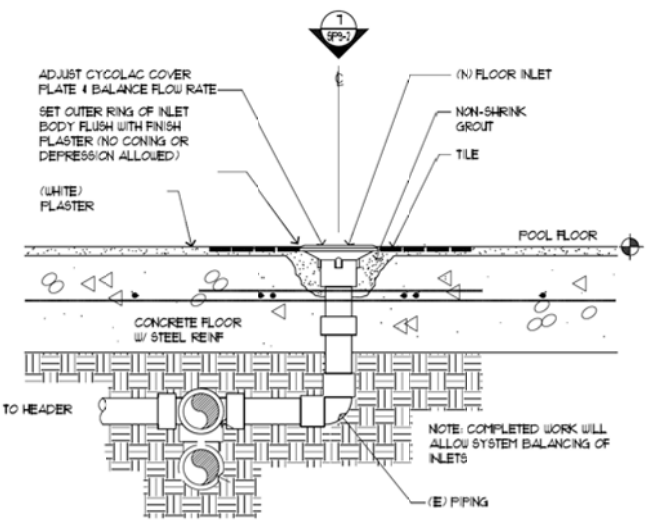
5 GUTTER OUTLET GRATING SUPPORT ANGLE



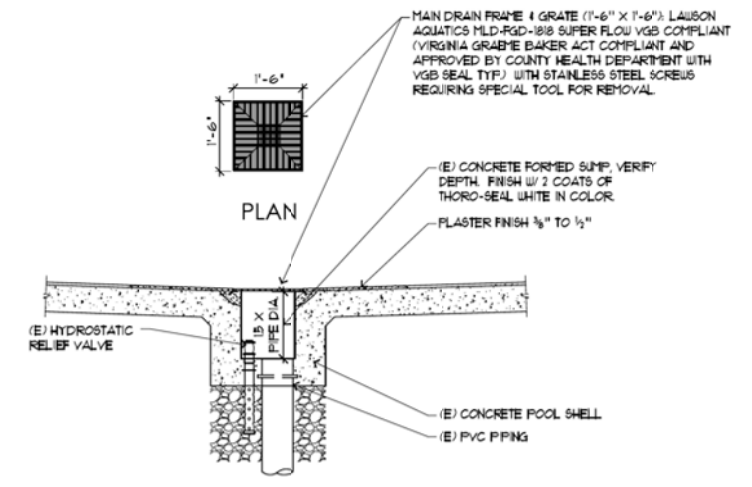
6 AIR VENT GRATE



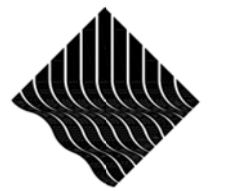
7 FLOOR INLET/PLAN VIEW



8 FLOOR INLET (SECTION VIEW)



9 MAIN DRAIN



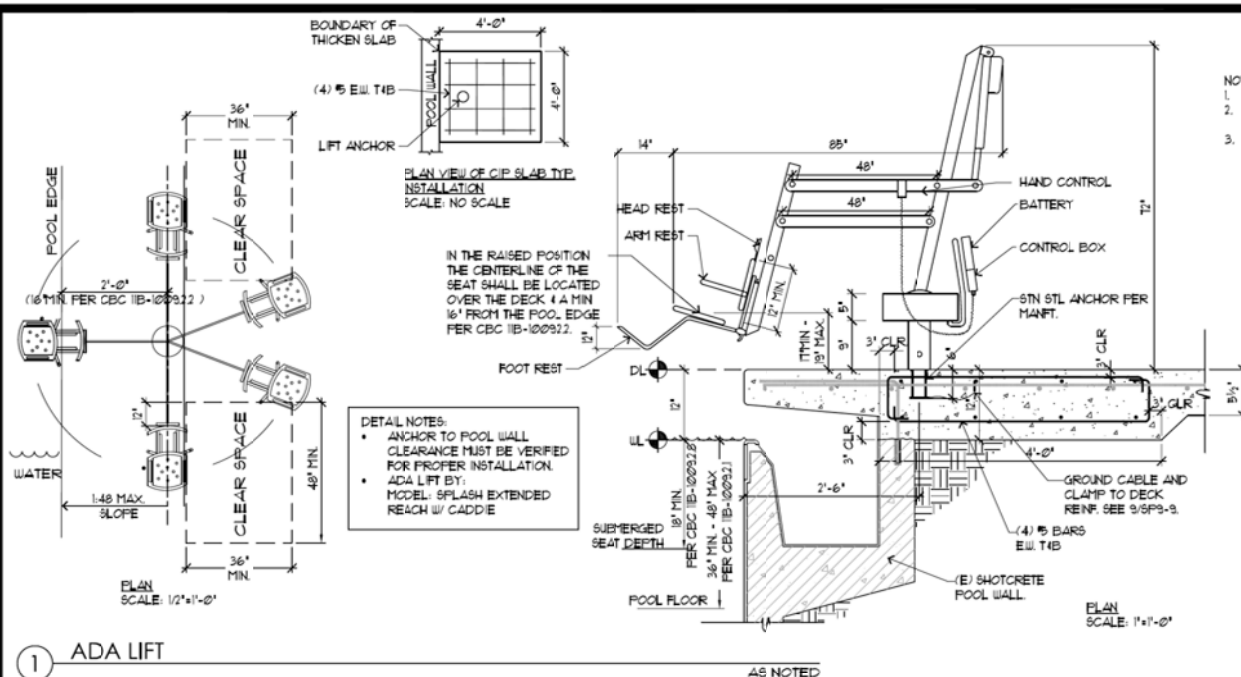
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DISTRIBUTION WAY
VISTA - CA 92081
PH: 760-734-1600
FX: 760-734-1611



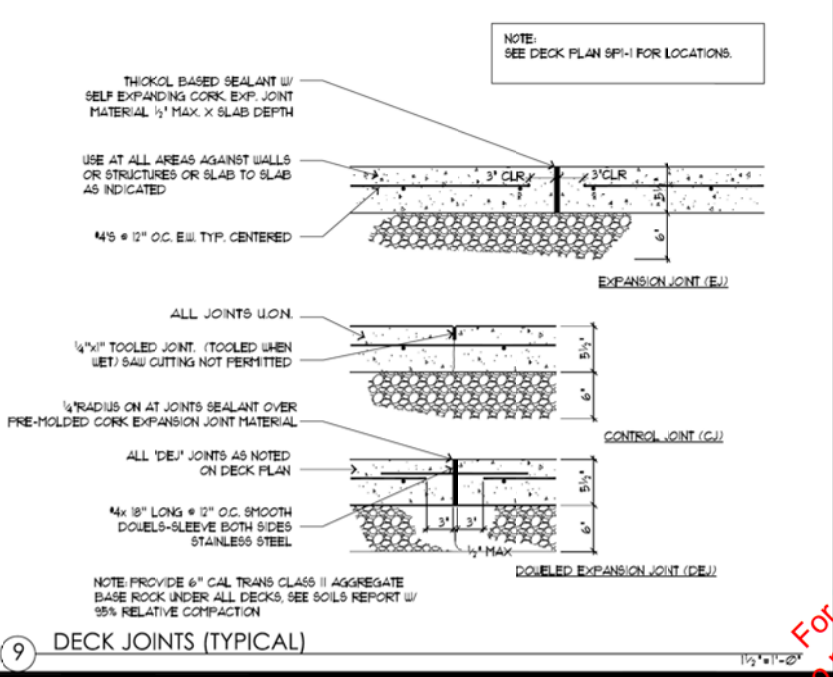
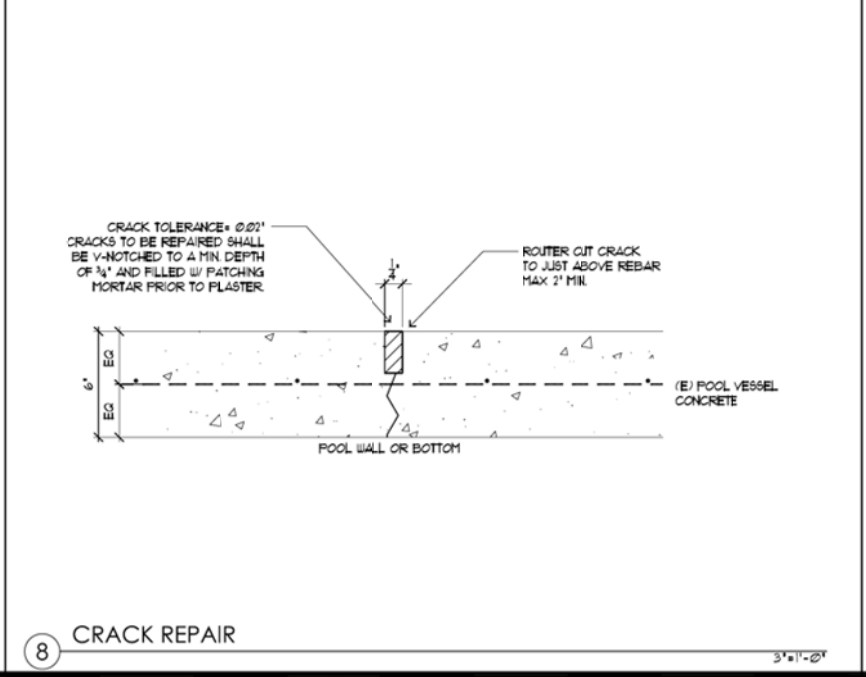
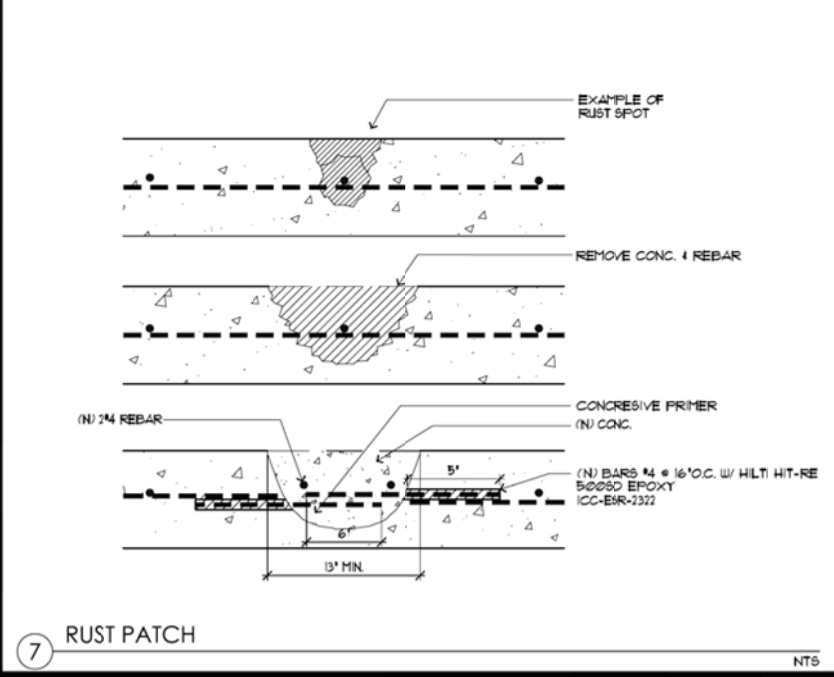
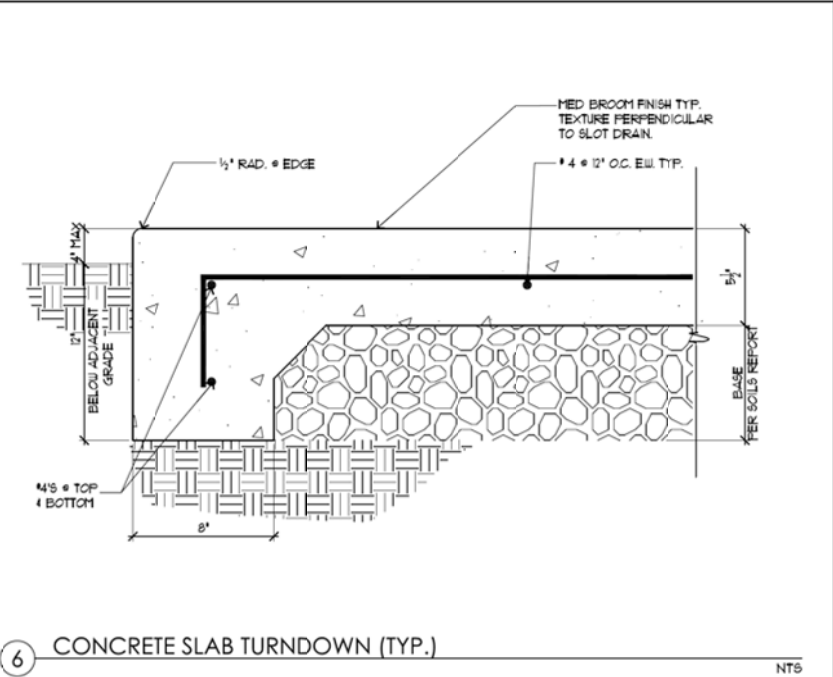
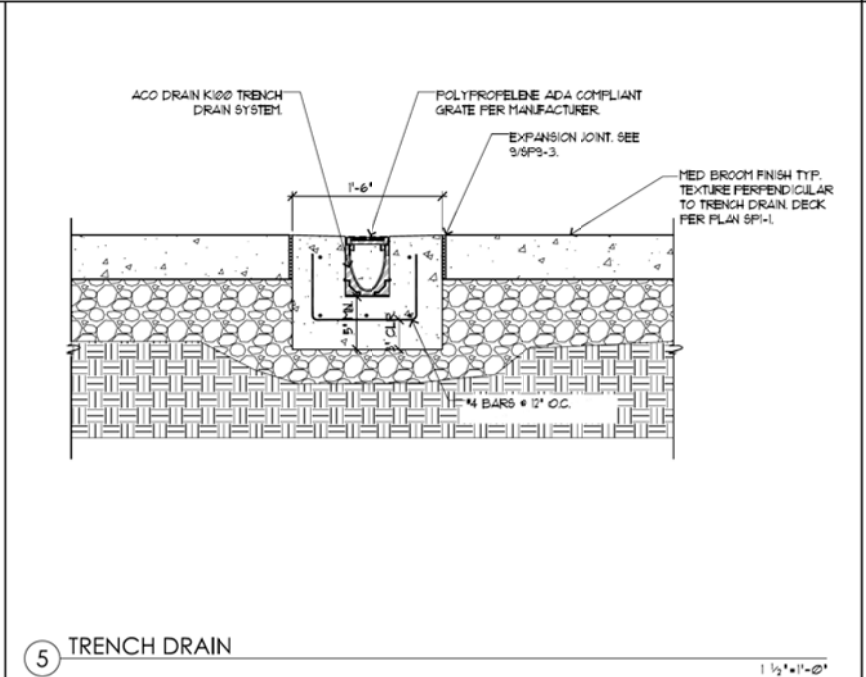
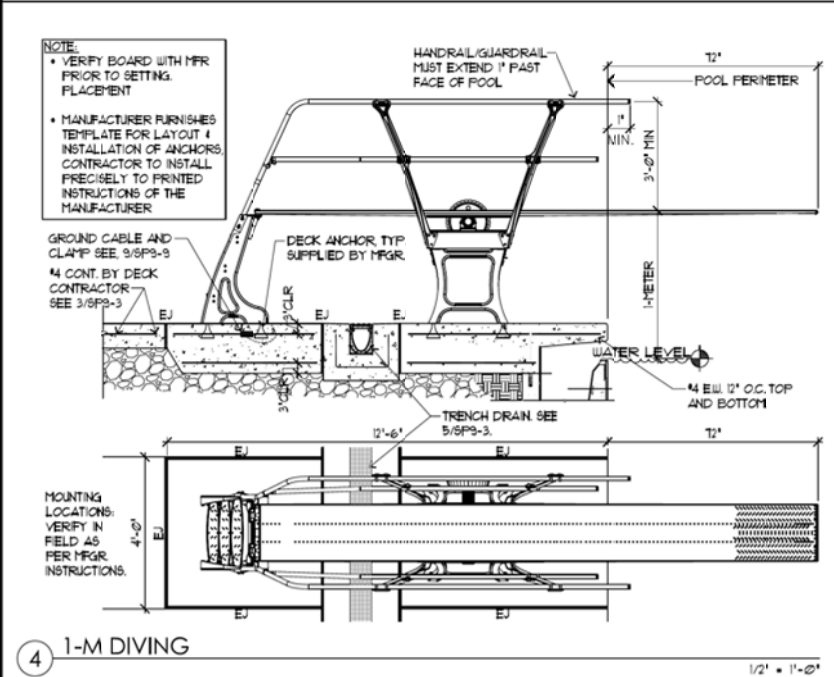
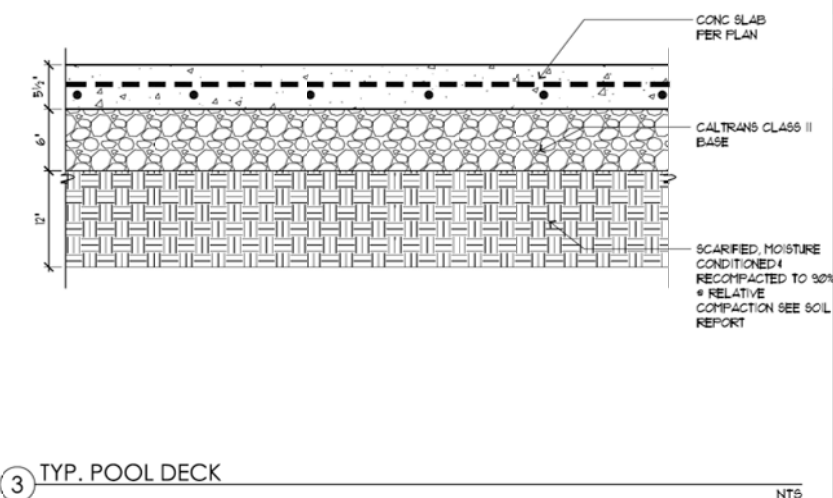
CLIENT:	CITY OF ROSEVILLE	
	ADDRESS:	316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678
REVISION:	DATE:	
NO:		
DRAWING TITLE:	POOL DETAILS	
PROJECT TITLE:	ROSEVILLE AQUATICS COMPLEX	
LOCATION:	3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747	
DRAWN BY:	MT	
DRAWING NO.:	SP9-2	

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- NOTES:
1. SWIMMING POOL DECK AREA SHALL BE ACCESSIBLE PER CBC 1B-1009.1
 2. MECHANISM TO ASSIST PERSONS WITH DISABILITIES IN GAINING ENTRY INTO THE POOL AND EXITING SHALL BE PROVIDED PER CBC 1B-1009.1
 3. THE SWIMMING POOL LIFT SHALL COMPLY WITH THE FOLLOWING PER CBC 1B-1009.2:
 - a. THE SEAT MUST BE RIGID PER CBC 1B-1009.2.4
 - b. THE SEAT MUST BE NOT LESS THAN 17 INCHES (432MM) AND NOT MORE THAN 19 INCHES (483MM) INCLUSIVE OF ANY CUSHIONED SURFACE THAT MIGHT BE PROVIDED, ABOVE THE POOL DECK. PER CBC 1B-1009.2.4
 - c. THE SEAT MUST HAVE TWO ARMRESTS. THE ARMREST ON THE SIDE OF THE SEAT BY WHICH ACCESS IS GAINED SHALL BE EITHER REMOVABLE OR FOLD CLEAR OF THE SEAT. PER CBC 1B-1009.2.6
 - d. THE SEAT MUST BE 16\"/>
 - e. THE SEAT MUST HAVE AN OCCUPANT RESTRAINT FOR USE BY THE OCCUPANT OF THE SEAT, AND THE RESTRAINT MUST MEET THE STANDARDS FOR OPERABLE CONTROLS IN COMPLIANCE WITH SECTION CBC 1B-309.3. BE OPERABLE WITH ONE HAND AND NOT REQUIRE A TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST, AND NOT REQUIRE A FORCE GREATER THAN 5 LBS TO ACTIVATE HAND CONTROLS. PER CBC 1B-309.4
 - f. LIFT SHALL BE CAPABLE OF 'UNASSISTED OPERATION' FROM DECK TO WATER LEVEL. PER CBC 1B-1009.2.1
 - g. LIFT SHALL BE STABLE AND NOT PERMIT UNINTENDED MOVEMENT WHEN A PERSON IS GETTING INTO OR OUT OF THE SEAT. PER CBC 1B-1009.2.7
 - h. LIFT SHALL BE DESIGNED TO HAVE A LIVE-LOAD CAPACITY OF NOT LESS THAN 300 LBS. PER CBC 1B-1009.2.9
 - i. LIFT SHALL BE POSITIONED SO THAT OPERATOR IS PLACED INTO WATER THAT IS 36\"/>
 - j. LIFT SHALL BE ABLE TO LOWER THE OPERATOR AT LEAST 18\"/>

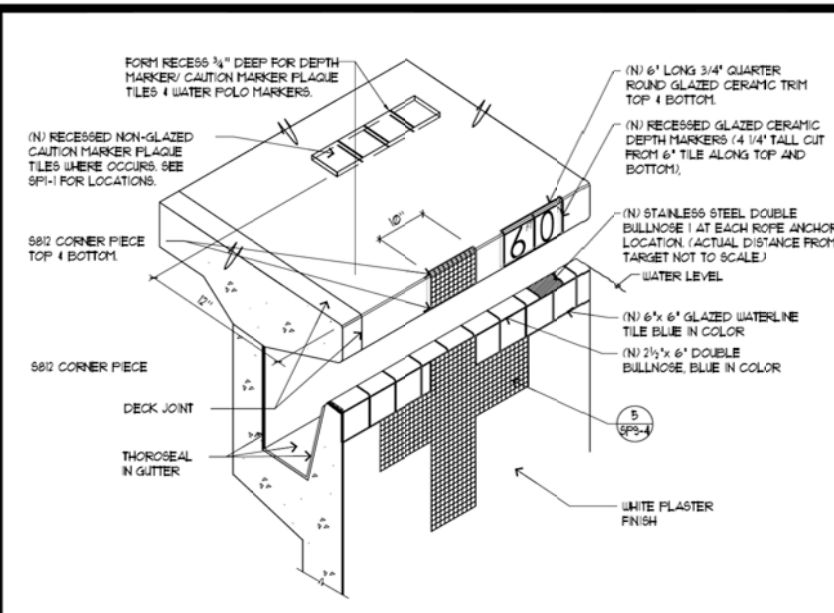


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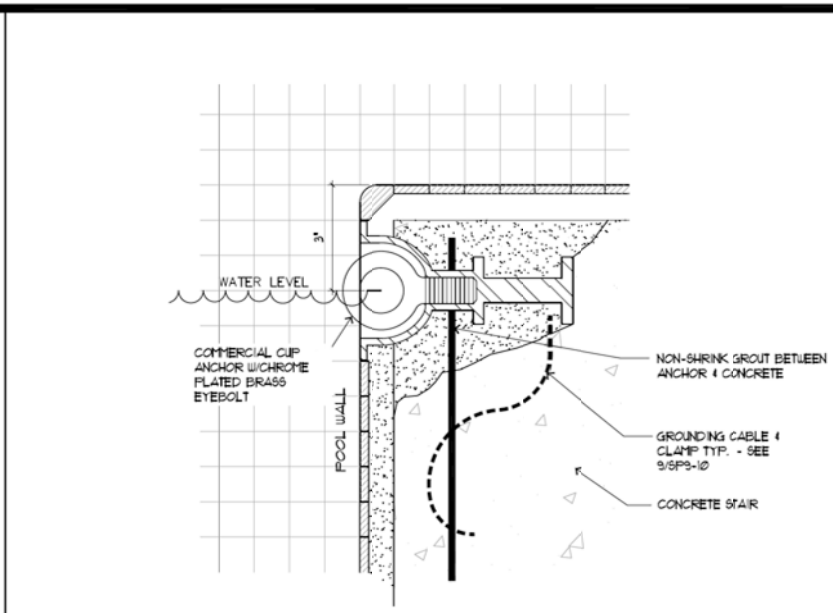
ARCHITECT
NORTH PAUL MORRIS
No. C15-022
Exp. 06/30/2019
STATE OF CALIFORNIA

CITY OF ROSEVILLE	CITY OF ROSEVILLE
316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678	316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678
REVISION:	REVISION:
DATE:	DATE:
NO:	NO:
POOL DETAILS	POOL DETAILS
ROSEVILLE AQUATICS COMPLEX	ROSEVILLE AQUATICS COMPLEX
3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747	3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747
DRAWING NO.: SP9-3	DRAWING NO.: SP9-3

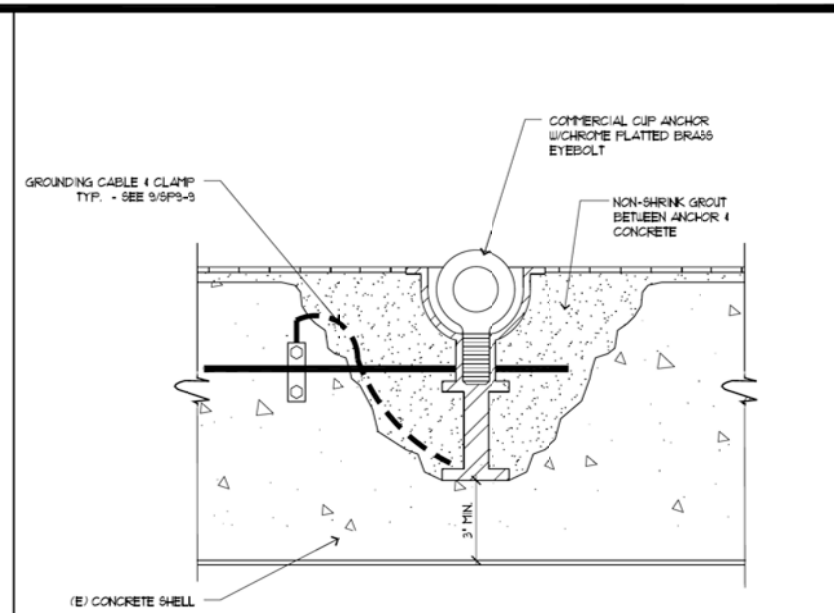
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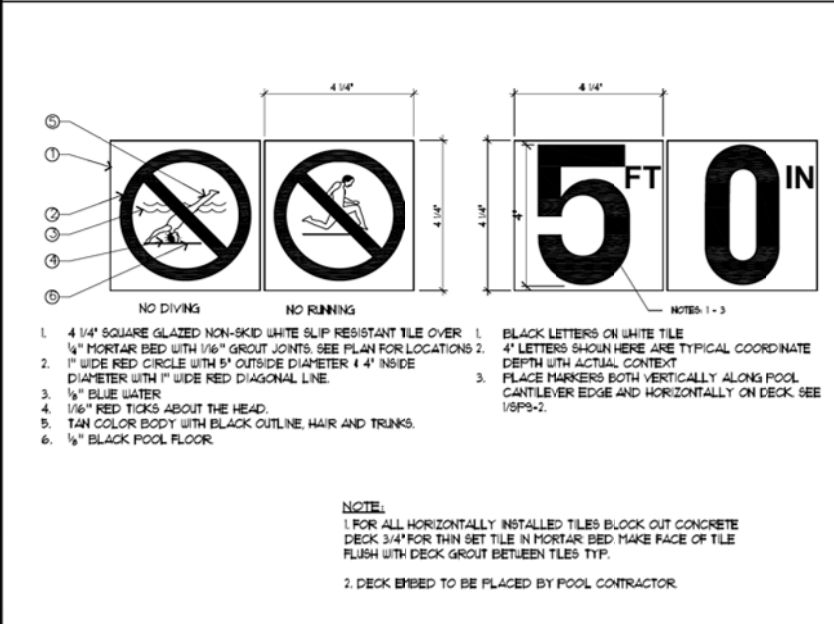
1 ISOMETRIC TILE LAYOUT NTS



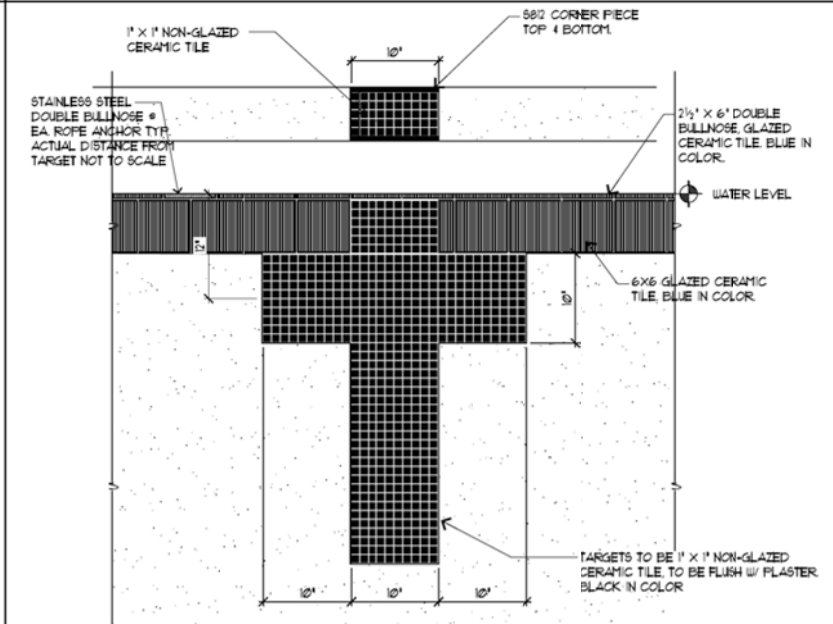
2 ROPE CUP ANCHORS @ STEPPED ENTRY 6\"/>



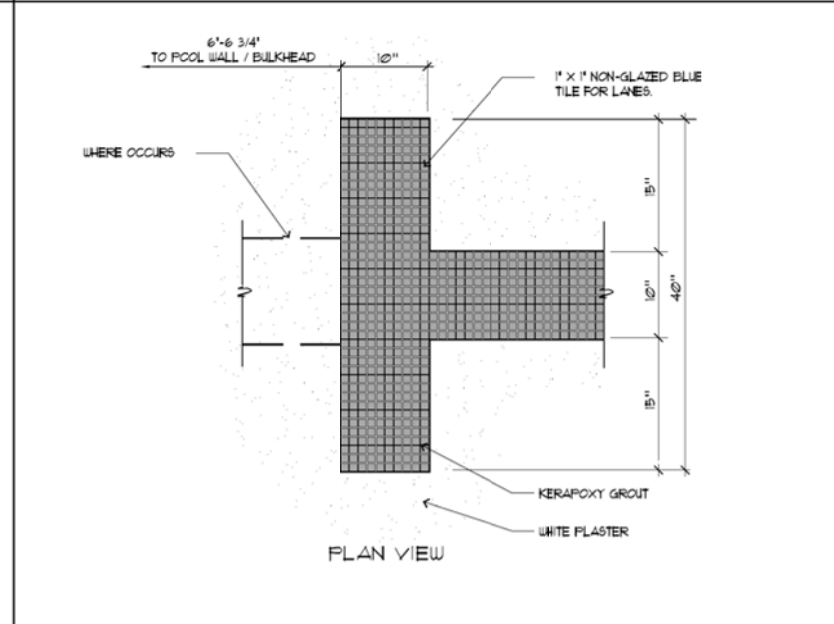
3 WATER POLO START ROPE ANCHORS 6\"/>



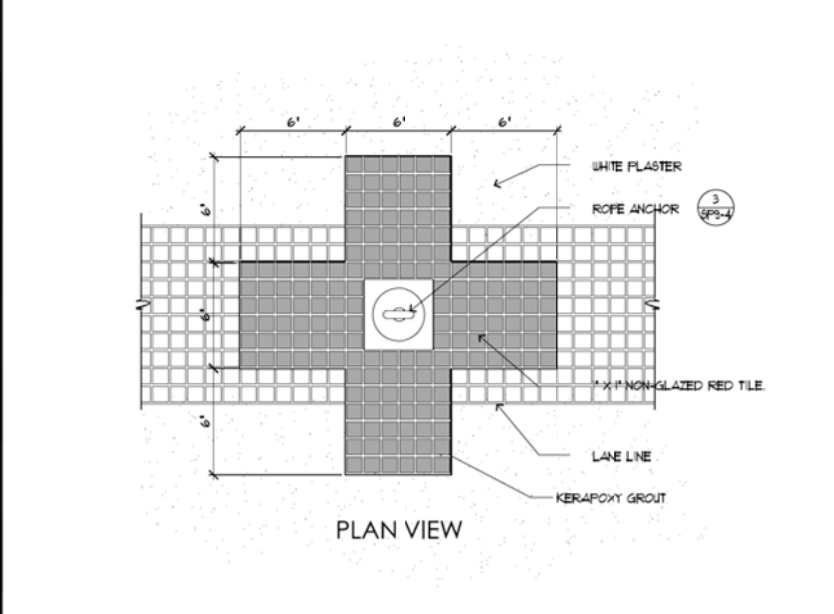
4 DEPTH MARKERS AND SAFETY MARKERS HALF SCALE



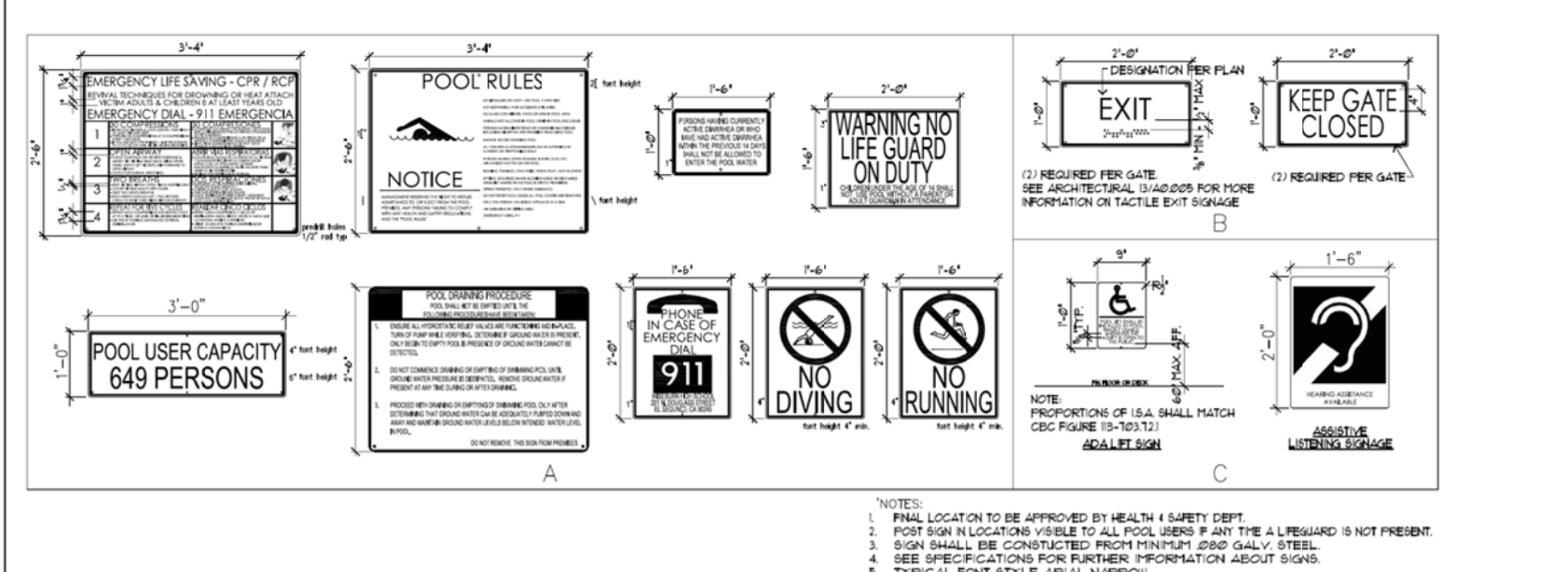
5 CERAMIC TILE FINA TARGETS 1 1/2\"/>



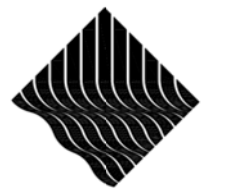
6 CERAMIC TILE FINA RACE LANES 1 1/2\"/>



7 WATER POLO TARGETS 3\"/>



8 POOL SIGNAGE SEE SPEC'S FOR MODEL #S NTS

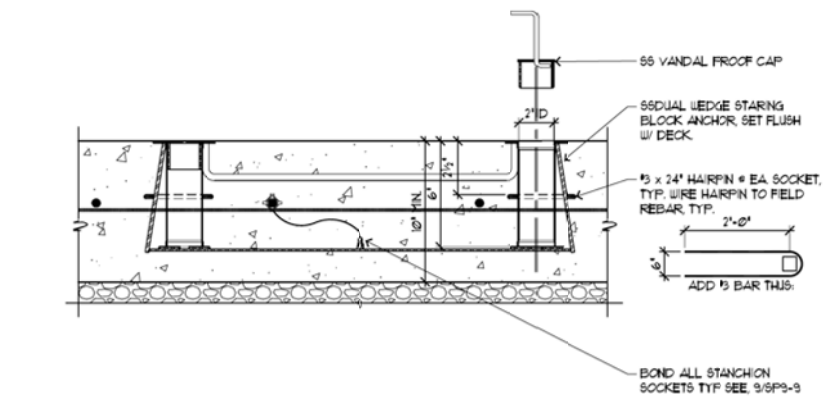
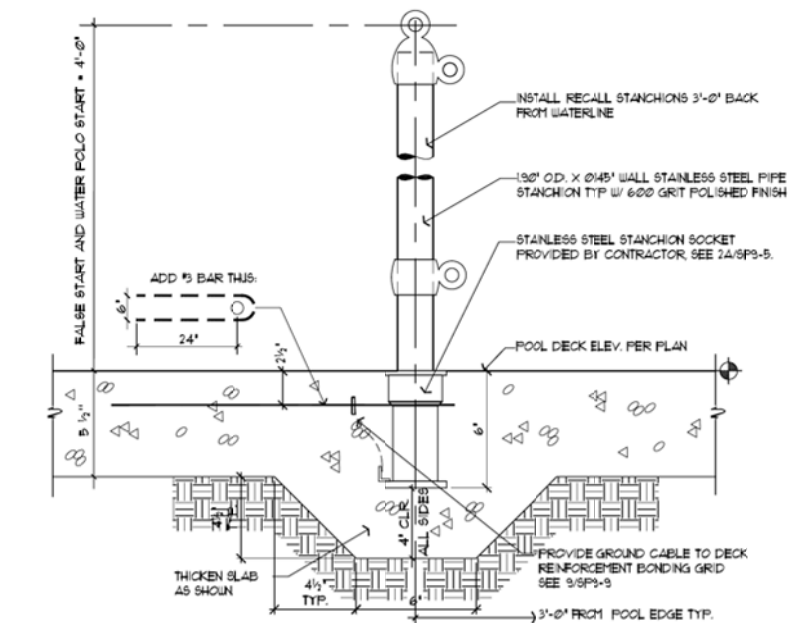
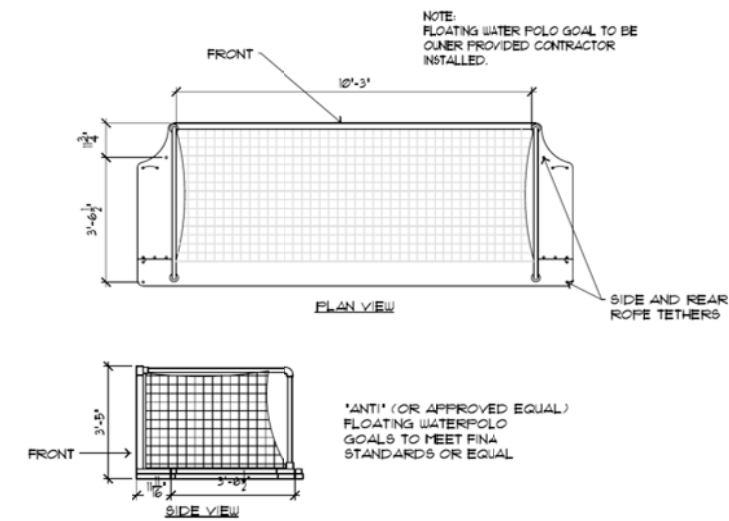
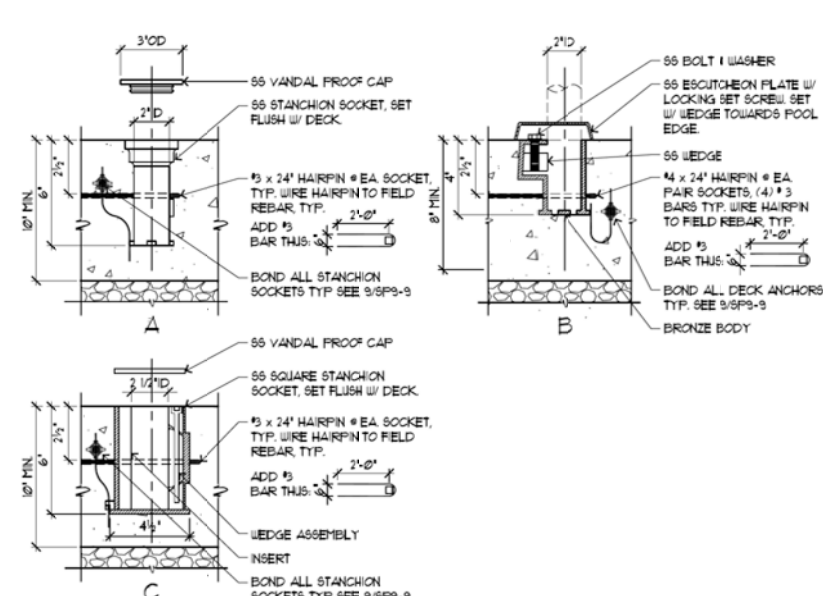
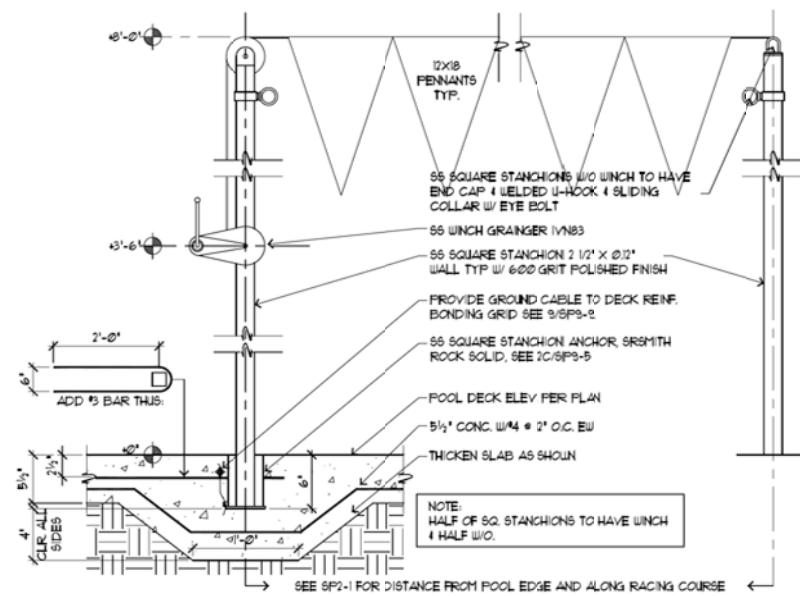


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CLIENT:	CITY OF ROSEVILLE	
	316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678	
REVISION:		
DATE:		
NO:		
DRAWING TITLE:	POOL DETAILS	
PROJECT TITLE:	ROSEVILLE AQUATICS COMPLEX	
ADDRESS:	3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747	
DRAWN BY:	[Signature]	
DRAWING NO.:	SP9-4	

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6 NOT USED

NONE

7 NOT USED

NONE

8 NOT USED

NONE

9 NOT USED

NONE



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1251-SUITE 1.

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PH: 760-734-1600



DRAWING NO.: SP9-5		DRAWING TITLE: POOL DETAILS		NO. ☐		DATE: ☐		REVISION:		CLIENT: CITY OF ROSEVILLE	
SCHEMATIC TITLE: ROSEVILLE AQUATICS COMPLEX		SCHEMATIC ADDRESS: 305 W WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747		NO. ☐		DATE: ☐		REVISION:		ADDRESS: 316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678	

DRAWING NO.: SP9-5	DRAWN BY: WT	SOURCE: ROSEVILLE	DRAWING TITLE: POOL DETAIL
	PROJECT ADDRESS: 305 WOODCROFT ROSEVILLE, CA		

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1 NOT USED

NONE

2 NOT USED

NONE

3 NOT USED

NONE

4 NOT USED

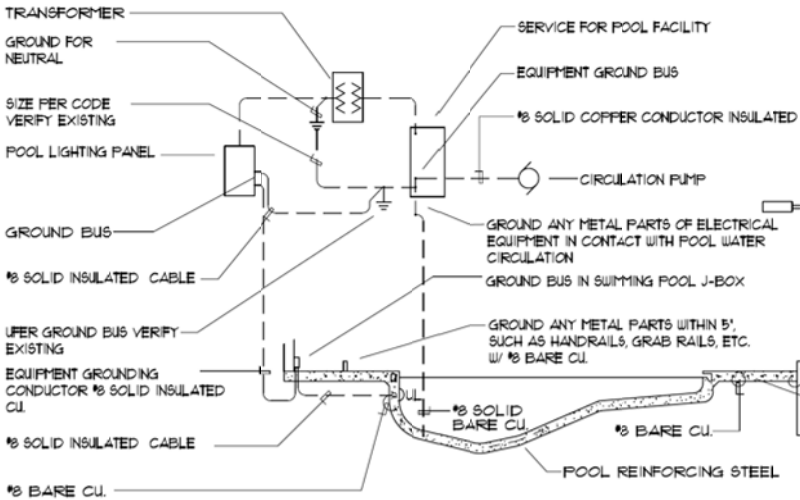
NONE

5 NOT USED

NONE

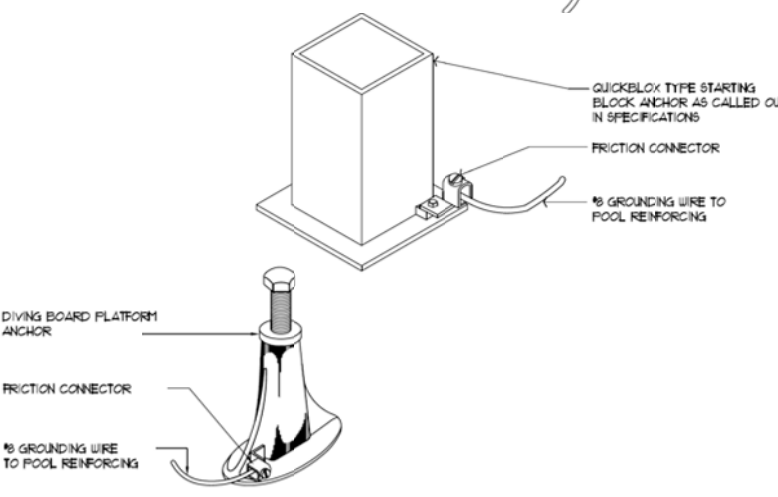
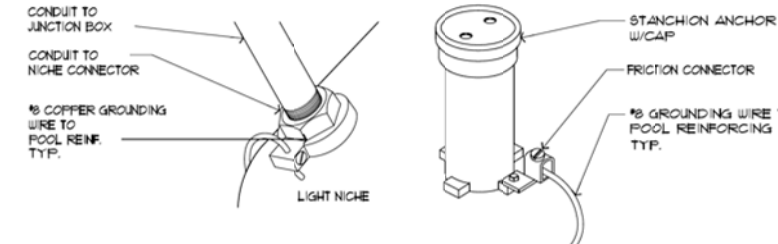
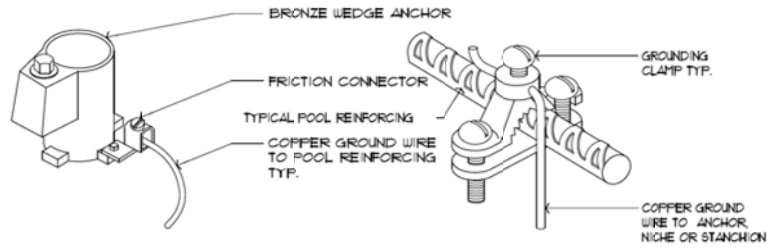
BONDING & GROUNDING NOTES:

1. STRUCTURAL STEEL IN POOL DECK AND POOL SHALL BE BONDED TOGETHER (STEEL TIE-WIRES ARE ACCEPTABLE FOR BONDING STRUCTURAL REBAR ELEMENTS).
2. BONDING CONNECTOR TO COMMON GRID. (POOL STEEL IS ACCEPTABLE FOR THIS PURPOSE). CONTACT SHALL BE MADE BY PRESSURE CONNECTORS OR CLAMPS OF BRASS, COPPER, OR COPPER ALLOY.
3. ALL GROUND BUSES SHALL BE SIZED FOR CONNECTION TO AUG SIZE #8 WIRE PROVIDING ONE SPARE TERMINAL.
4. GROUND AND BOND IN ACCORDANCE WITH CEC SECT 250 OF THE NATIONAL ELECTRICAL CODE. IE. LADDERS, FENCING, POLE LIGHTS, DIVING & STARTING STANCHIONS, HANDICAP LIFT, ETC.



7 BONDING SCHEMATIC (TYPICAL)

N.T.S.



9 GROUNDING DETAILS (TYPICAL)

N.T.S.



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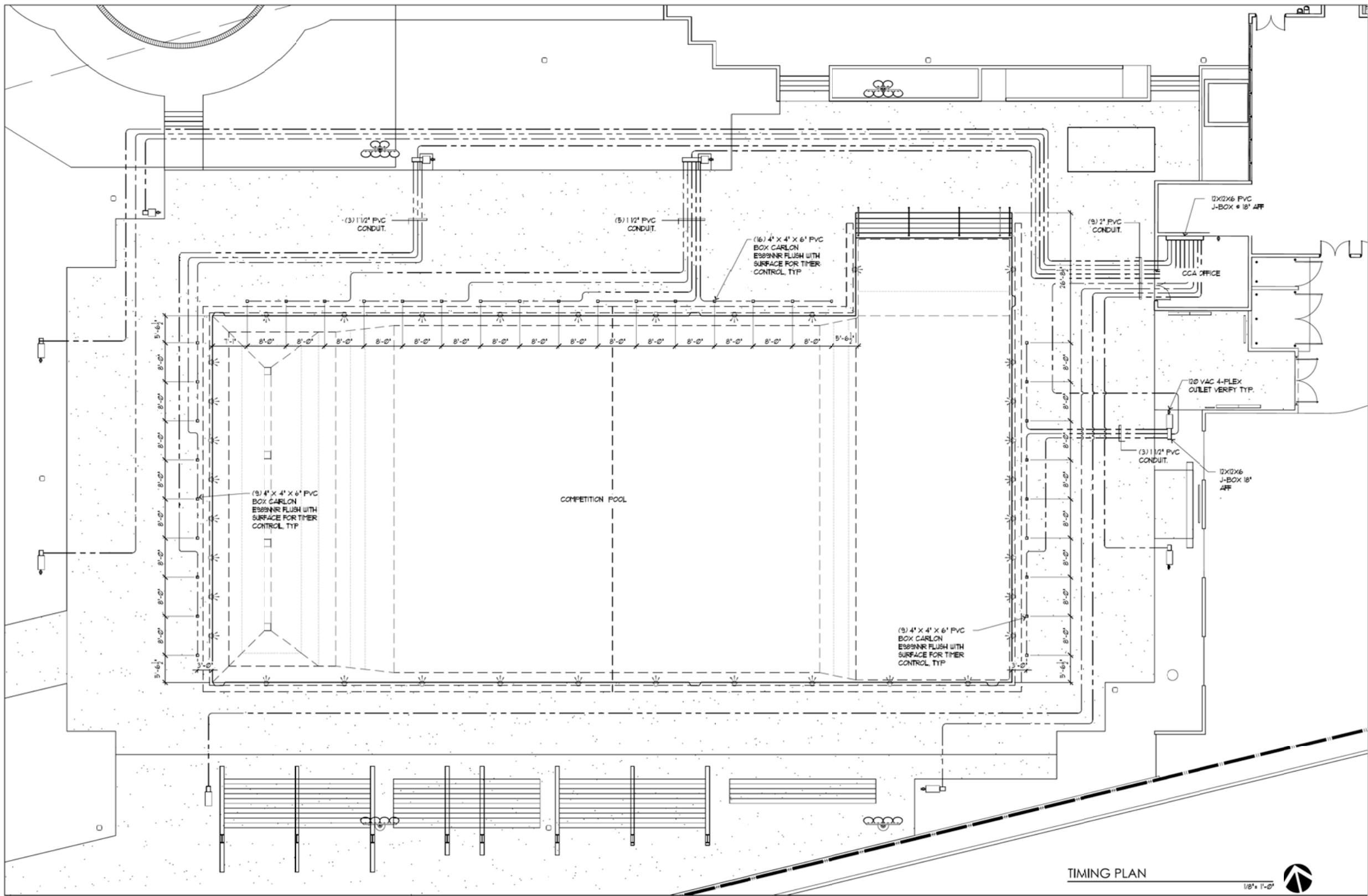
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CLIENT		CITY OF ROSEVILLE	
ADDRESS		316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678	
REVISION:			WATER LEVEL
DATE:			
NO:			
DRAWING TITLE	POOL DETAILS		
PROJECT TITLE	ROSEVILLE AQUATICS COMPLEX		
ADDRESS	3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747		
DRAWN BY:	MT		
DRAWING NO.:	SP9-9		

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GENERAL NOTES

- VERIFY POWER TO ALL MONUMENTS. IF NONE IS PRESENT INSTALL 120 VAC 4-FLEX OUTLET AND CONDUIT TO 20AMP CIRCUIT BREAKER.
- PVC CONDUIT TO BE INSTALLED WITH PULL STRING FOR FUTURE COLORADO TIMING SPECIFIED WIRING FOR TIMING SYSTEM.
- PVC CARLON BOX TO BE INSTALLED FLUSH WITH CONCRETE DECK AND PROVIDED WITH COVER PLATE IN LIEU OF COLORADO TIMING SYSTEM COVER PLATE.



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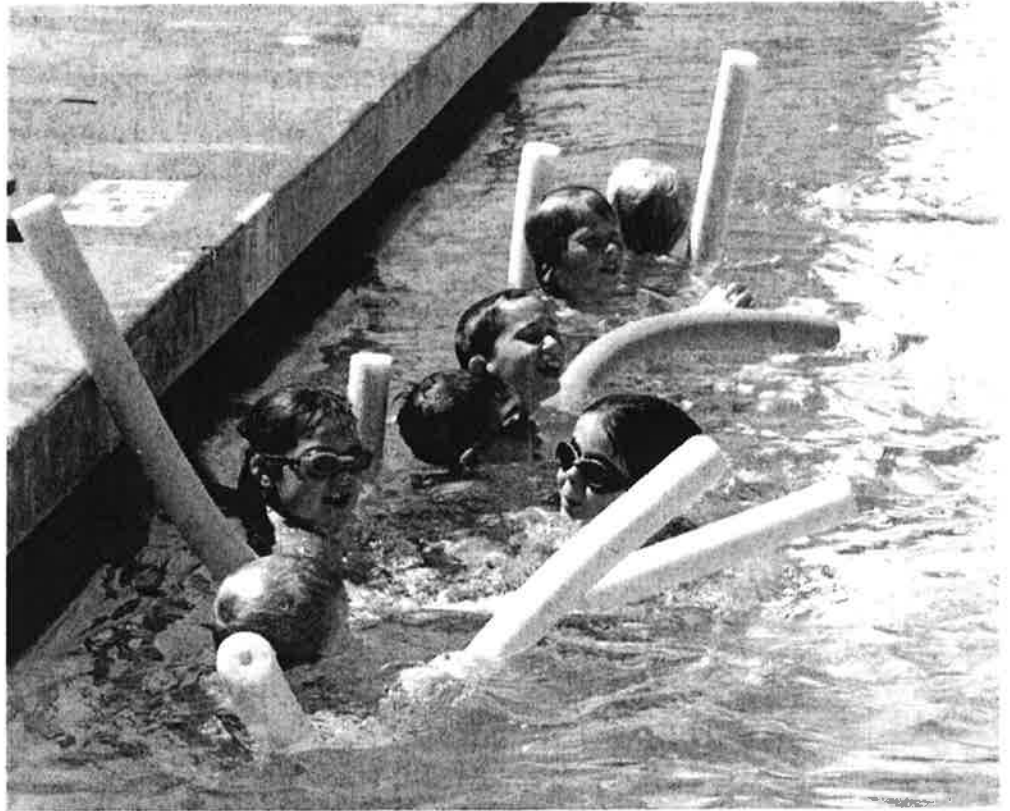
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VISTA - CA 92081

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DRAWING TITLE TIMING PLAN	CLIENT CITY OF ROSEVILLE	REVISION:	DATE:	NO:
	ADDRESS 316 VERNON STREET, SUITE 480 ROSEVILLE, CA 95678			
PROJECT TITLE ROSEVILLE AQUATICS COMPLEX	PROJECT ADDRESS 3055 WOODCREEK OAKS BOULEVARD, ROSEVILLE, CA 95747			
DRAWN BY MT	DRAWING NO.: SPT1-1			

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Project Manual for the

Roseville Aquatics Complex Deck Replacement and Pool Re-plaster Project

August 2017

The latest edition of the City of Roseville Parks Construction Standards are incorporated by reference as a part of this Project Manual. The Parks Construction Standards can be purchased at the address listed below.

Parks, Recreation & Libraries
316 Vernon Street, Ste. 400
Roseville, California 95678
www.roseville.ca.us

**FOR REVIEW,
A COMPLETE COPY
IS ON FILE IN THE
CITY CLERK DEPARTMENT**

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CITY OF
ROSEVILLE
CALIFORNIA



COUNCIL COMMUNICATION

CC #: 8651
File #: 0203-04

Title: Moving Services - Service Agreement
Contact: Dan Allen 774-5741 dallen@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.2.

RECOMMENDATION TO COUNCIL

Recommend Council approve a service agreement S1808047 with Sierra Valley Moving & Storage for moving services on an as-needed basis. The bid allowed for four optional renewal years at one-year intervals. Staff requests authorization to utilize the optional renewal years of the bid contract without further Council approvals until the contract expires or until City staff determines that continuing with the same vendor is not in the City's best interest. Additionally, adopt a resolution authorizing the City Manager to sign the service agreement. The total value of the agreement renewal is \$40,000.00. Funding is included in the Building Maintenance Division FY2017/18 budget.

BACKGROUND

Staff solicited proposals for moving services in May of 2017. Five qualified proposals were received. After careful review and rating of each proposal staff recommends the award of one service agreement with Sierra Valley Moving & Storage to perform moving services on an as needed basis. Total annual value of this agreement is not to exceed \$40,000.00.

FISCAL IMPACT

The service agreement S1808047 with sierra Valley Moving & Storage total annual value is \$40,000.00. Funding is included in the Building Maintenance Division FY2017/18 budget. Projected spending for the optional renewal years is as follows: FY2018-19, \$45,000.00; FY2019-20, \$50,000.00; FY 2020-21, \$55,000.00; FY2021-2022, \$55,000.00.

ECONOMIC DEVELOPMENT / JOBS CREATED

N/A

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in

a direct or reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15061(b)(3)). The moving services service agreement does not include the potential for a significant environmental effect, and therefore is not subject to CEQA.

Respectfully Submitted,

Dan Allen, Facility Manager

Paul Diefenbach, Central Services Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-333

Sierra Valley Service Agreement

RESOLUTION NO. 17-333

APPROVING A SERVICE AGREEMENT BETWEEN CITY OF ROSEVILLE AND SIERRA VALLEY MOVING & STORAGE INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a Service Agreement (Service Agreement No. S1808047) for moving services, between City of Roseville and Sierra Valley Moving & Storage Inc., has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said Service Agreement is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

BE IT FURTHER RESOLVED, that the City Manager is authorized to execute four additional one year renewals of the service agreement provided that its respective budget is approved by the City Council, until the contract expires or until City staff determine that continuing with the same vendor is not in the City's best interest.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

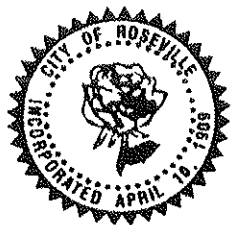
NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



PURCHASING
CITY OF ROSEVILLE

2005 HILLTOP CIRCLE, ROSEVILLE, CA 95747
(916) 774-5720 • TDD (916) 774-5220 • FAX (916) 774-5736

SERVICE AGREEMENT

SERVICE AGREEMENT

No: **S1808047**

SERVICE LOCATION: CITY OF ROSEVILLE
AS DIRECTED

REQ. NO.: R1715740 DATE: 7/6/17

SUBMIT ALL INVOICES TO:

CITY OF ROSEVILLE
Finance Department
311 Vernon Street
Roseville, CA 95678

Contractor No.: V29492
Telephone No.: 916-649-3400 Fax: 916-649-0500
Email address: RAY@SVMOVING.COM
Contractor: SIERRA VALLEY MOVING & STORAGE INC.
ATTN: RAY MARTINEZ
5071 KELTON WAY
SUITE 200
SACRAMENTO, CA 95838

Department: FACILITY SERVICES

Acct. Code: 03340-5100

Buyer: TIFFANY VALDEZ
Phone: 916-774-5708

Start Date	Terms	Completion Date	Insurance Limits	Contact
7/6/17	NET 30	7/5/18	Approved by Risk Mgt.	LORI HOGAN

The contractor shall furnish all labor, equipment and materials necessary to accomplish the following:

The services called for under City of Roseville Request for Proposal #01-013 and contractor's proposal thereto titled Moving Services (hereinafter "Proposal"). The terms and scope of work of City of Roseville Request for Proposal #01-013 and contractor's Proposal are herein made part of this Service Agreement and fully incorporated by reference.

Please contact Lori Hogan at 916-774-5707 for questions regarding this contract.

The total amount listed is an approximation only. The City does not guarantee whatsoever the actual value of this contract.

Total Cost of Service: \$ **40,000.00**

ATTENTION: Total cost of service not to exceed the agreement amount without prior approval of the Purchasing Office.

The Contractor named hereon by the acceptance of this order agrees to the provisions of this document titled "Service Agreement" and Attachment "A".

Business License No.: 00836012 Contractor License No.: _____ DIR Registration No.: 1000007860

☐ SOLE PROPRIETOR

☐ PARTNERSHIP

☒ CORPORATION

CONTRACTOR: Ray Martinez RAY L MARTINEZ CEO
SIGNATURE PRINT NAME TITLE

CONTRACTOR: Larry J. Stokes LARRY J. STOKES CEO
SIGNATURE PRINT NAME TITLE

By: _____
Rob Jensen, City Manager
CITY OF ROSEVILLE, A MUNICIPAL CORPORATION



COUNCIL COMMUNICATION

CC #: 8652
File #: 0203-10

Title: Sprinkler Parts and Related Items (RFQ 01-3003) - Purchase Orders Renewal
Contact: Tiffany Valdez 916-774-5708 tvaldez@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.3.

RECOMMENDATION TO COUNCIL

Recommend Council approve the renewal of purchase orders to SiteOne Landscape Supply LLC and Ewing Irrigation Products Inc., as the lowest responsive bidders to RFQ 01-3003, and adopt a resolution to authorize the City Manager to execute it. The estimated total combined value of the awards is \$55,000.00 or up to department budgeted amounts.

BACKGROUND

The Parks Maintenance Division and Building Maintenance Division have an ongoing requirement for sprinkler parts and related items. These materials are used for landscape maintenance of the City's parks and various other properties that require irrigation. These items are purchased and stocked in the City's Central Stores warehouse for use on an as-needed basis by the end using departments.

A bid was issued in July 2015 for sprinkler parts and related items and allowed for optional renewal years with this being the second of four years. Staff requests authorization to continue renewing the contract without further Council approvals until the contract expires or until City staff determines that continuing with the same vendor is not in the City's best interest.

FISCAL IMPACT

The estimated total combined value of the awards to Site One Landscape Supply and Ewing Irrigation is \$55,000.00. Funding is included in the FY2017-18 Central Stores Inventory Replacement account budget with the cost being ultimately charged to the end using departments as the stock items are issued on an as-needed basis. Spending for future renewals will be contingent upon Council approval of budgets. Projected spending for the optional renewal years is as follows: FY2018-19, \$58,000.00; FY2019-20, \$60,000.00.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15061(b)(3)). The purchase of sprinkler parts and related items does not include the potential for a significant environmental effect, and therefore is not subject to CEQA.

Respectfully Submitted,

Tiffany Valdez, Buyer

Paul Diefenbach, Central Services Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-334

Resolution No. 17-335

RESOLUTION NO. 17-334

APPROVING A PURCHASE ORDER BETWEEN THE CITY OF ROSEVILLE
AND SITEONE LANDSCAPE SUPPLY, LLC

WHEREAS, a purchase order for sprinkler parts and related items, between the City of Roseville and SiteOne Landscape Supply, LLC, has been reviewed by the Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said purchase order is approved and the City Manager or his designee is additionally authorized to execute two optional one-year renewals of the purchase orders provided that the applicable budget is approved by the City Council or until City staff determines that continuing with the same vendor is not in the City's best interest.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

RESOLUTION NO. 17-335

APPROVING A PURCHASE ORDER BETWEEN THE CITY OF ROSEVILLE
AND EWING IRRIGATION PRODUCTS, INC.

WHEREAS, a purchase order for sprinkler parts and related items, between the City of Roseville and Ewing Irrigation Products, Inc., has been reviewed by the Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said purchase order is approved and the City Manager or his designee is additionally authorized to execute two optional one-year renewals of the purchase orders provided that the applicable budget is approved by the City Council or until City staff determines that continuing with the same vendor is not in the City's best interest.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



COUNCIL COMMUNICATION

CC #: 8656
File #: 0704-01

Title: Hamel Park Restroom Installation Project – Notice of Completion
Contact: Rjahja Canlas 916-774-5342 rcanlas@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.4.

RECOMMENDATION TO COUNCIL

Recommend Council:

1. Accept the Hamel Park Restroom Installation Project as complete; and
2. Adopt a resolution authorizing the City Manager to delegate execution of the attached Notice of Completion to the Director, Parks, Recreation & Libraries.

BACKGROUND

The Parks, Recreation & Libraries Department has made a final inspection of the Hamel Park Restroom Installation Project and has found that all contract work has been completed in accordance with the improvement plans and specifications. The project is now ready for acceptance.

The project constructed a new restroom building at Mel Hamel Park. In accordance with our specifications, the Contractor shall guarantee the installation of these improvements for a period of twelve (12) months from the date of this Notice of Completion.

FISCAL IMPACT

Funding for the project was originally approved in FY2014/15 through the North Roseville Specific Plan (NSRP III) Park Development Fund. The cost of maintenance is funded by the Crocker Ranch Community Facilities District for services.

ECONOMIC DEVELOPMENT / JOBS CREATED

Based on Federal guidelines, there is one job created for every \$92,000 in direct government spending. Based on that figure, two new jobs were created as a result of this project.

ENVIRONMENTAL REVIEW

The proposed project involves the construction of small restroom facilities which are appurtenant to the existing park uses. This activity is categorically exempt from CEQA as a Class 3 Exemption (State CEQA Guidelines Section 15303). The Exemption has been prepared and no further CEQA action is required.

Respectfully Submitted,

Rjahja Canlas, Park Development Analyst

Dion Louthan, Director, Parks, Recreation, and Libraries



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-338

Hamel - Notice of Completion

RESOLUTION NO. 17-338

ACCEPTING THE PUBLIC WORK KNOWN AS THE HAMEL PARK RESTROOM
INSTALLATION PROJECT, APPROVING THE “NOTICE OF COMPLETION”, AND
AUTHORIZING THE PARKS, RECREATION & LIBRARIES DIRECTOR TO EXECUTE
SAID NOTICE ON BEHALF OF THE CITY OF ROSEVILLE

BE IT RESOLVED by the City Council of the City of Roseville as follows:

1. The “Notice of Completion” on file in the City Clerk’s Department relative to that public work known as the Hamel Park Restroom Installation Project has been approved and the public work accepted.
2. The Parks, Recreation & Libraries Director is hereby authorized and directed to execute said Notice on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of
_____, 20____, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

AFTER RECORDING RETURN TO:
CITY CLERK
311 VERNON STREET
ROSEVILLE, CA 95678

NOTICE OF COMPLETION

NOTICE IS HEREBY GIVEN that the public work known as the Hamel Park Restroom Installation Project, was completed and accepted by the City of Roseville on _____. The location is indicated on the attached map, marked as Exhibit "A" and incorporated herein by this reference.

The general contractor on said project was PBM Construction, Inc.

The surety on said project was Western Surety Company.

DION LOUTHAN
Parks, Recreation, & Libraries Director
City of Roseville

ATTEST:

SONIA OROZCO
City Clerk

I, Dion Louthan, being first duly sworn, depose and say: I am the Director of Parks, Recreation & Libraries of the City of Roseville, a municipal corporation in the State of California, owner of the property described in the above Notice. I am duly authorized to make this verification for and on behalf of the City of Roseville. I have read the Notice of Completion and know its contents and the facts stated therein are true.

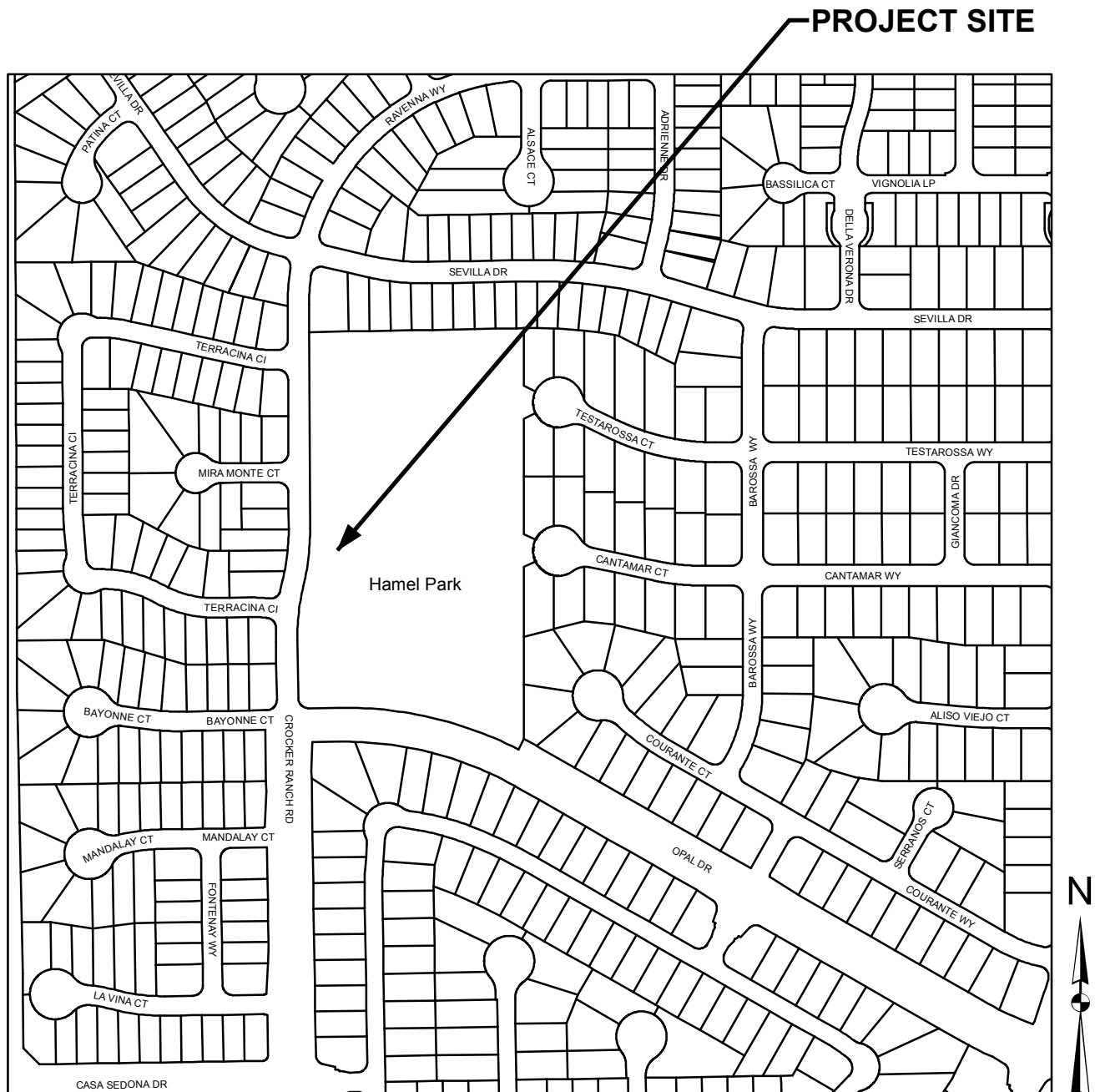
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

DION LOUTHAN
Parks, Recreation & Libraries Director
City of Roseville

State of California
County of Placer

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20____, by _____ proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Notary Public in and for said County and State





COUNCIL COMMUNICATION

CC #: 8661

File #: 0704

Title: Child Development Services Agreement

Contact: Rob Nakamura 916-774-5135 rnakamura@Roseville.ca.us

Meeting Date: 8/2/2017

Item #: 6.5.

RECOMMENDATION TO COUNCIL

Recommend Council adopt a resolution and authorize the City Manager to sign the agreement for child development services, as well as any related forms, between the City of Roseville and the California Department of Education. Under this agreement, the City can receive a maximum reimbursable amount of \$355,228.00 in FY2017/18 to offset direct program expense.

BACKGROUND

Beginning in 1996 the City of Roseville's Adventure Club program began offering subsidized child care for qualifying families through this California Department of Education grant. This grant currently provides childcare services for over 80 children enrolled at Cirby, Kaseberg, Sargeant and Woodbridge Adventure Clubs. The California Department of Education has requested a resolution to authorize the City Manager to sign the contract documents for FY2017/18.

FISCAL IMPACT

Under this agreement, the City can receive a maximum reimbursable amount of \$355,228.00 in FY2017/18 to offset direct program expenses. Reimbursement revenues offset program expenses budgeted within the Youth Development Fund.

ECONOMIC DEVELOPMENT / JOBS CREATED

Funding allows for qualified families to receive child care services based on household income, employment status, and/or education.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15061(b)(3)). The Child Development Services Agreement Renewal project does not include the potential for a significant environmental effect, and therefore is not subject to CEQA.

Respectfully Submitted,

Rob Nakamura, Recreation Superintendent

Dion Louthan, Director, Parks, Recreation & Libraries



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-340

2017-18 Child Development Agreement

RESOLUTION NO. 17-340

APPROVING AN AGREEMENT BY AND BETWEEN THE CITY OF ROSEVILLE AND THE CALIFORNIA DEPARTMENT OF EDUCATION, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, since 1996 the City of Roseville's Adventure Club program began offering subsidized childcare for qualifying families through a California Department of Education grant; and

WHEREAS, the California Department of Education has requested a resolution to authorize the current City Manager to sign the contract documents for Fiscal Year 2017-18; and

WHEREAS, an Agreement to cover direct childcare expense by and between the City of Roseville and the California Department of Education, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Roseville authorizes entering into local agreement number CCTR-7167 and that the City Manager is authorized to execute it and all related forms on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**CALIFORNIA DEPARTMENT OF EDUCATION**

1430 N Street

Sacramento, CA 95814-5901

F.Y. 17 - 18**LOCAL AGREEMENT FOR CHILD DEVELOPMENT SERVICES****DATE:** July 01, 2017**CONTRACT NUMBER:** CCTR-7167**PROGRAM TYPE:** GENERAL CHILD CARE &
DEV PROGRAMS**PROJECT NUMBER:** 31-2191-00-7**CONTRACTOR'S NAME:** CITY OF ROSEVILLE

This Agreement is entered into between the State Agency and the Contractor named above. The Contractor agrees to comply with the terms and conditions of the CURRENT APPLICATION; the GENERAL TERMS AND CONDITIONS (GTC 04/2017)*; the GENERAL CHILD CARE AND DEVELOPMENT PROGRAM REQUIREMENTS*; and the FUNDING TERMS AND CONDITIONS (FT&C)*, which are by this reference made a part of this Agreement. Where the GTC 04/2017 conflicts with either the Program Requirements or the FT&C, the Program Requirements or the FT&C will prevail.

Funding of this Agreement is contingent upon appropriation and availability of sufficient funds. This Agreement may be terminated immediately by the State if funds are not appropriated or available in amounts sufficient to fund the State's obligations under this Agreement.

The period of performance for this Agreement is July 01, 2017 through June 30, 2018. For satisfactory performance of the required services, the Contractor shall be reimbursed in accordance with the Determination of Reimbursable Amount Section of the FT&C, at a rate not to exceed \$40.20 per child per day of full-time enrollment and a Maximum Reimbursable Amount (MRA) of \$355,228.00.

SERVICE REQUIREMENTS

Minimum Child Days of Enrollment (CDE) Requirement 8,837.0

Minimum Days of Operation (MDO) Requirement 248

Any provision of this Agreement found to be in violation of Federal and State statute or regulation shall be invalid, but such a finding shall not affect the remaining provisions of this Agreement.

Items shown with an Asterisk (*), are hereby incorporated by this reference and made part of this Agreement as if attached hereto. These documents can be viewed at <http://www.cde.ca.gov/fg/aa/cd/ftc2017.asp>

STATE OF CALIFORNIA		CONTRACTOR	
BY (AUTHORIZED SIGNATURE)		BY (AUTHORIZED SIGNATURE)	
PRINTED NAME OF PERSON SIGNING VALARIE BLISS,		PRINTED NAME AND TITLE OF PERSON SIGNING Rob Jensen, City Manager	
TITLE CONTRACT MANAGER		ADDRESS 311 Vernon St., Roseville, CA 95678	
AMOUNT ENCUMBERED BY THIS DOCUMENT \$ 355,228	PROGRAM/CATEGORY (CODE AND TITLE) Child Development Programs	FUND TITLE	
PRIOR AMOUNT ENCUMBERED FOR THIS CONTRACT \$ 0	(OPTIONAL USE) See Attached		
TOTAL AMOUNT ENCUMBERED TO DATE \$ 355,228	ITEM See Attached	CHAPTER	STATUTE FISCAL YEAR
	OBJECT OF EXPENDITURE (CODE AND TITLE) 702		
I hereby certify upon my own personal knowledge that budgeted funds are available for the period and purpose of the expenditure stated above.		T.B.A. NO.	B.R. NO.
SIGNATURE OF ACCOUNTING OFFICER See Attached		DATE	

Department of General Services
use only

CONTRACTOR'S NAME: CITY OF ROSEVILLE

CONTRACT NUMBER: CCTR-7167

AMOUNT ENCUMBERED BY THIS DOCUMENT \$ 102,835	PROGRAM/CATEGORY (CODE AND TITLE) Child Development Programs	FUND TITLE Federal		
PRIOR AMOUNT ENCUMBERED \$ 0	(OPTIONAL USE)0656 13609-2191	FC# 93.596 PC# 000321		
TOTAL AMOUNT ENCUMBERED TO DATE \$ 102,835	ITEM 30.10.020.001 6100-194-0890	CHAPTER B/A	STATUTE 2017	FISCAL YEAR 2017-2018
	OBJECT OF EXPENDITURE (CODE AND TITLE) 702 SACS: Res-5025 Rev-8290			

AMOUNT ENCUMBERED BY THIS DOCUMENT \$ 47,269	PROGRAM/CATEGORY (CODE AND TITLE) Child Development Programs	FUND TITLE Federal		
PRIOR AMOUNT ENCUMBERED \$ 0	(OPTIONAL USE)0656 15136-2191	FC# 93.575 PC# 000324		
TOTAL AMOUNT ENCUMBERED TO DATE \$ 47,269	ITEM 30.10.020.001 6100-194-0890	CHAPTER B/A	STATUTE 2017	FISCAL YEAR 2017-2018
	OBJECT OF EXPENDITURE (CODE AND TITLE) 702 SACS: Res-5025 Rev-8290			

AMOUNT ENCUMBERED BY THIS DOCUMENT \$ 205,124	PROGRAM/CATEGORY (CODE AND TITLE) Child Development Programs	FUND TITLE General		
PRIOR AMOUNT ENCUMBERED \$ 0	(OPTIONAL USE)0656 23254-2191			
TOTAL AMOUNT ENCUMBERED TO DATE \$ 205,124	ITEM 30.10.020.001 6100-194-0001	CHAPTER B/A	STATUTE 2017	FISCAL YEAR 2017-2018
	OBJECT OF EXPENDITURE (CODE AND TITLE) 702 SACS: Res-6105 Rev-8590			

I hereby certify upon my own personal knowledge that budgeted funds are available for the period and purpose of the expenditure stated above.	T.B.A NO.	B.R. NO.
SIGNATURE OF ACCOUNTING OFFICER	DATE	



COUNCIL COMMUNICATION

CC #: 8663
File #: 0800-03

Title: California Greenhouse Gas Cap-and-Trade Program - 2018 Free Allowance Allocation
Contact: David Siao 916-746-1613 dsiao@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.6.

RECOMMENDATION TO COUNCIL

Staff recommends that City Council adopt a resolution allocating none (0) of the City's 2018 allocation of greenhouse gas emission allowances for its direct compliance obligation, and consign all 475,432 allowances to auction. There is no fiscal impact associated with this resolution.

BACKGROUND

In 2006, the State of California passed Assembly Bill 32 (AB 32), the "Global Warming Solutions Act of 2006." This law created the statewide Cap-and-Trade program designed to reduce greenhouse gas (GHG) emissions in California to 1990 levels by 2020.

To address the City's legal and fiscal responsibilities under the California Greenhouse Gas Cap-and-Trade Program, Roseville Electric developed a Greenhouse Gas Cap-and-Trade Program that was approved by City Council in August 2012 and, with revisions, in February 2013. This program defines how Roseville Electric will use the emission allowances it receives from the State each year.

Each year, by the first business day of September, the City must allocate the following calendar year's allowances between those used to meet its direct compliance obligation and those to be auctioned with Roseville receiving the proceeds. Roseville's direct compliance obligation is accrued from Roseville Energy Park (REP) generation and out-of-state imports of electricity.

Allowances can be banked and do not expire, so the maximum free allowances potentially needed for Roseville's direct compliance obligation should be allocated and moved into the compliance account. Initially, 300,000 allowances were moved into the compliance account as a baseline. In subsequent years, allowances are generally added to the compliance account to replace those allowances withdrawn for compliance purposes.

Roseville will receive 475,432 allowances of 2018 vintage. Due to the reduced operation of the

REP, a balance of approximately 400,000 allowances is projected for the end of 2017. Accordingly, no additional allowances need to be added to the compliance account. Therefore, Staff recommends all 475,432 allowances be consigned to auction.

FISCAL IMPACT

The City will receive proceeds from the auction of its free allowances which must be spent pursuant to the restrictions set forth in Assembly Bill 32. The proceeds will be determined by the auction price and sales volume in each quarterly auction.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable.

ENVIRONMENTAL REVIEW

This approval is not considered a "project" as defined by the California Environmental Quality Act ("CEQA") (CEQA Guidelines § 15378). Consequently, no CEQA action is required.

Respectfully Submitted,

David Siao, Electric Resources Analyst

Michelle Bertolino, Electric Utility Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-342

RESOLUTION NO. 17-342

APPROVING REQUEST TO CONSIGN 475,432 OF CITY'S 2018 ALLOCATION OF
GREENHOUSE CAP-AND-TRADE PROGRAM ALLOWANCES TO AUCTION

WHEREAS, the City Council approved the Roseville Greenhouse Gas Cap-and-Trade Program in August 2012 and updated said program in February 2013; and

WHEREAS, this program defines how Roseville Electric will use the emission allowances it receives from the State each year; and

WHEREAS, each year the City must allocate the following calendar year's allowances between those used to meet its direct compliance obligation and those to be auctioned with Roseville receiving the proceeds;

WHEREAS, due to the reduced operation of the Roseville Energy Park, a balance of approximately 400,000 allowances is project for the end of 2017 and no additional allowances need to be added to the compliance account; and

WHEREAS, staff recommends all 475,432 allowances be consigned to auction; and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Roseville that it hereby approves the consignment of 475,432 of the City's 2018 allocation of Greenhouse Cap-and-Trade allowances to auction.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



COUNCIL COMMUNICATION

CC #: 8662
File #: 0800-02

Title: Wastewater Collections System Rehabilitation Project - Change Order Approval
Contact: Edward Winston 916-774-5566 ewinston@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.7.

RECOMMENDATION TO COUNCIL

Staff recommends City Council adopt a resolution to authorize the Environmental Utilities Director or his designee to approve and pay for a construction change order in the amount of \$3,413.29 to complete the Wastewater Collections System Rehabilitation Project.

BACKGROUND

On November 2, 2016, City Council awarded a construction contract to Southwest Pipeline and Trenchless (SWPT) for the Wastewater Collections System Rehabilitation Project in the amount of \$200,440.00 to repair 1,600 feet of defective sewer mains using a trenchless technology known as "cured in place pipe" (CIPP). City Council also authorized a contingency of 10%, not-to-exceed \$20,044.00 to be authorized by the Environmental Utilities Director or his designee to pay for construction contract change orders. This allows a not-to-exceed contract total of \$220,484.00. The total cost to complete the construction contract including the current request for \$3,413.29 will be \$223,897.29. The project is funded under the Wastewater Rehabilitation Fund.

The following unforeseen conditions encountered during construction resulted in the contract change orders:

- 1) During routine scheduled maintenance of the sewer collection system, EU staff identified a 365 foot long 8-inch diameter sewer main installed across Linda Creek (off West Colonial Parkway), that required immediate rehabilitation. Due to the added environmental concerns of a potential sewer main leak into the creek, EU Staff requested that Southwest Pipeline and Trenchless include this 8-inch sewer main as part of the project rehabilitation work scope.
- 2) Twenty-nine (29) linear feet of additional 6-inch diameter piping that was not listed in the City's lineal sewer assets database and therefore not originally accounted for in the project plans, was lined during construction.
- 3) Twelve (12) additional existing sewer services associated with the mains that were being lined were located and reinstated.

A summary of the contract status is provided below.

Total Approved Contract

Approved SWPT Construction Contract Amount	\$200,440.00
Approved Change Order Amount	<u>\$ 20,044.00</u>
Subtotal	\$220,484.00

Necessary Expenditures to Complete Work

Contract Approved Work Installed by SWPT	\$200,440.00
Project Change Orders Requested	<u>\$ 23,457.29</u>
Subtotal	\$223,897.29

Current Change Order Approval Request \$ 3,413.29

The total project change order amount of \$23,457.29 exceeds the total authorized contract expenditure that was originally allocated by the City Council by \$3,413.29. It is therefore necessary to request additional change order approval authority in the amount of \$3,413.29 to complete the project.

FISCAL IMPACT

This total project construction cost of \$223,897.29 is being funded from the Environmental Utilities Wastewater Rehabilitation Fund. This fund was created by the City to provide the necessary means to design and construct rehabilitation projects for the City's wastewater utilities. The project budget has sufficient funds to cover the increased change order request.

ECONOMIC DEVELOPMENT / JOBS CREATED

Approval to pay for contract change orders for the project will provide funds for the construction project to be completely funded. We do not anticipate that the work involved with the change orders for this project will create new jobs.

ENVIRONMENTAL REVIEW

The project involved the reconstruction of existing structures and facilities. This activity is categorically exempt from CEQA as a Class 2 Exemption (State CEQA Guidelines Section 15302). The Exemption has been prepared and no further CEQA action is required.

Respectfully Submitted,

Edward Winston, Associate Engineer

Richard Plecker, Environmental Utilities Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-341

RESOLUTION NO. 17-341

APPROVING AUTHORITY TO ENVIRONMENTAL UTILITIES DIRECTOR FOR THE
CONSTRUCTION CHANGE ORDER TO COMPLETE THE WASTEWATER
COLLECTIONS SYSTEM REHABILITATION PROJECT

WHEREAS, on November 2, 2016, City Council awarded a construction contract to Southwest Pipeline and Trenchless for the Wastewater Collections System Rehabilitation project; and

WHEREAS, unforeseen conditions encountered during construction resulted in change orders of which \$3,413.29 was over the 10% contingency amount approved; and

WHEREAS, staff is requesting authority for the Environmental Utilities Director to pay \$3,413.29 in order to complete the project; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that the Environmental Utilities Director is hereby authorized to approve the change order balance of \$3,413.29 for the completion of the Wastewater Collections System Rehabilitation project; and

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



COUNCIL COMMUNICATION

CC #: 8660

File #: 0704

Title: Internship Program Affiliation Agreement

Contact: Kathy M. Barsotti 916-774-5955 kbarsotti@roseville.ca.us

Meeting Date: 8/2/2017

Item #: 6.8.

RECOMMENDATION TO COUNCIL

Recommend Council adopt the resolution authorizing the City Manager or his designee to sign the agreement with University of Kansas to provide internship opportunities at the City of Roseville, for university students.

BACKGROUND

The University of Kansas (KU) School of Education, Department of Health, Sport, and Exercise Science has requested the City of Roseville allow university students attending KU to intern with the City. The purpose of the internship program is to provide experiential learning opportunities for students to learn skills needed to become competent practitioners by obtaining practical experience in their field.

The City and KU will mutually agree on the number of students to be placed at any one time. All student expenses, including meals, medical expenses, and transportation, will be the responsibility of each individual student. The City will be required to assign a "program manager" to each student and agree to provide meaningful educational experience(s). The university is responsible to assign students for clinical education experience, only if they meet the universities established standards. The term of the agreement will end May 5, 2020.

FISCAL IMPACT

There is no fiscal impact to City budgets in conjunction, with this agreement. All student expenses, including meals, medical expenses, and transportation, will be the responsibility of each individual student.

ECONOMIC DEVELOPMENT / JOBS CREATED

There are no jobs created as a result of this agreement.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15061(b)(3)). The University of Kansas (KU) agreement does not include the potential for a significant environmental effect, and therefore is not subject to CEQA.

Respectfully Submitted,

Kathy M. Barsotti, Recreation Manager

Dion Louthan, Parks, Recreation & Libraries Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-339

Internship Affiliation Agreement-University of Kansas

RESOLUTION NO. 17-339

APPROVING AN AFFILIATION AGREEMENT BY AND BETWEEN THE CITY OF ROSEVILLE AND THE UNIVERSITY OF KANSAS, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, an Affiliation Agreement for the Bachelor of Science Degree at the University of Kansas School of Education, Department of Health, Sport, and Exercise Sciences, by and between the City of Roseville and The University of Kansas, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is hereby approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

AFFILIATION AGREEMENT
for the Bachelor of Science Degree at the
University of Kansas
School of Education, Department of Health, Sport, and Exercise Sciences

This AFFILIATION AGREEMENT is made and entered into this 25th day of May, 2017, by and between City of Roseville, a municipal corporation ("Agency"), and THE UNIVERSITY OF KANSAS School of Education, Department of Health, Sport and Exercise Sciences ("University").

WHEREAS, University is engaged in a program for the education of health, sport, and exercise science students; and

WHEREAS, University and Agency mutually desire to provide experiential learning opportunities for students to learn the skills needed to become competent practitioners; and

WHEREAS, the parties desire to enter into an agreement so that University's students may obtain practical experience in their field;

NOW, THEREFORE, Agency and University and agree as follows:

1. Agency Responsibilities.

- A. Agency shall provide opportunities for experience in this clinical setting that are sufficient in extent and variety to provide a satisfactory education for all students placed at Agency. Agency will provide facilities and make available members of its staff for providing field instruction of health, sport, and exercise science students. The facilities shall include all equipment as necessary for the student to work with Agency and/or with patients. Agency is not obligated to accept University students and may accept students from other schools.
- B. The furnishing of Agency facilities and staff members shall be subject to the scheduling and control of the Agency. Agency will maintain complete authority and control over all Agency administration, functions and activities. Agency will provide a qualified Program Manager, acceptable to University, to supervise students for the unit(s) where students are placed. The Program Manager will consult with the Field Liaison as needed to provide the student(s) with a meaningful educational experience.
- C. Agency shall help orient students to the Agency and will furnish students with a set of all policies and procedures applicable to the educational program in force within Agency.

2. University Responsibilities.

- A. University will assign students to Agency only if they meet University's established standards for clinical education and experience and have satisfactorily completed the prerequisite portion of their curriculum. University will retain ultimate responsibility for the education of its students. University is not obligated to place students with Agency and may place students at other facilities.
- B. University will provide a faculty member, acceptable to Agency, who will be responsible for the program of instruction and educational requirements and for the assignment of the student(s) in the selected area (the "Field Liaison").
- C. The Field Liaison will plan the student learning program in conjunction with the Program Manager. The Field Liaison will consult with the Agency at least once per semester and at other mutually agreed upon times. The University Field Liaison will in no way become involved in the administration or management of any unit within the Agency structure.
- D. University faculty and students, while functioning on Agency premises, will abide by Agency policies and procedures covering the operation of the facility.

3. Mutual Responsibilities.

- A. Agency and University shall mutually agree on the number of students to be placed at Agency at any one time.
- B. Agency may request the removal of or remove any student from its facility who in its opinion is not acting in accordance with Agency policies. Likewise, the University can remove students from the Agency if the student is not being provided an adequate learning experience, if the "match" of this student with this placement is not working out satisfactorily, or for any other reason. The parties will confer if there is any question concerning the adequacy of this placement for the student or the student for this placement, and any decision about the removal, whenever possible, will be made following joint consultation between Agency and University. Routine administrative details will be resolved at conferences between the Field Liaison and Program Director or other individuals designated by the parties. It is understood that only University can dismiss a student from the program.
- C. The parties to this Agreement are responsible for explaining the relevant terms of this Agreement to relevant employees and students.

4. Student Responsibilities.

- A. Expenses. All student expenses, including meals, medical expenses, and transportation, will be the responsibility of the individual student. Agency will reimburse students for any mileage expenses incurred in rendering services for Agency or at Agency's request at the rate per mile designated for Agency employees. Under no circumstances is any student of University to be considered as agent, servant or employee of Agency but rather will be considered to be on Agency premises for the purpose of acquiring training in work-related skills.
- B. Professional Liability. Students shall be required to provide professional liability insurance in the amount of \$1,000,000 for injury to or death of one person and \$3,000,000 aggregate for all claims within a one year period regardless of the number of claims or number of persons injured or deceased. University agrees to inform students referred to Agency of their responsibility to provide evidence of coverage by a professional liability insurance policy in an amount covered by the professional organizations providing coverage. Agency can request evidence of professional liability insurance from each participating student, before Agency allows the student to begin internship.

5. Term & Termination: The initial term of this Agreement shall be from date of execution until May 9, 2020. This Agreement shall renew for successive three-year periods unless either party gives written notice of termination to the other at least sixty (60) days prior to the expiration of this Agreement. Except as otherwise provided herein, either party may terminate this Agreement at any time without cause upon at least sixty (60) days prior written notice, provided that all students currently participating in the program at Agency at the time of notice of termination shall be given the opportunity to complete their program at Agency, such period not to exceed University's then-current academic year.

6. Independent Contractors. The parties hereby acknowledge that they are independent contractors, and neither the University nor any of its agents, representatives, students, or employees shall be considered agents, representatives, or employees of Agency. No Student or other third person is entitled to, and shall not, receive any rights under this Agreement.

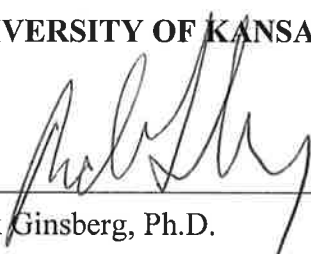
7. Non-Discrimination. There shall be no discrimination on the basis of race, national origin, religion, creed, sex, age, veteran status, or handicap in either the selection of students for participation in the program, or as to any aspect of the clinical training; provided, however, that with respect to handicap, the handicap must not be such as would, even with reasonable accommodation, in and of itself preclude the student's effective participation in the program.

8. Entire Agreement. This Agreement and its accompanying Exhibits set forth the entire Agreement with respect to the subject matter hereof and supersedes all prior agreements, oral or

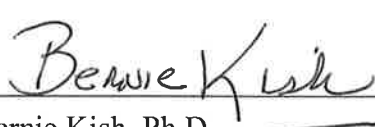
written, and all other communications between the parties relating to such subject matter. This Agreement may not be amended or modified except by mutual written agreement.

SO AGREED.

UNIVERSITY OF KANSAS



Rick Ginsberg, Ph.D.
Dean, School Of Education



Bernie Kish, Ph.D.
Internship Supervisor

**CITY OF ROSEVILLE, a
municipal corporation**

BY: _____
ROB JENSEN
City Manager

ATTEST:

BY: _____
SONIA OROZCO
City Clerk

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY:  _____
DION LOUTHAN
Director of Parks, Recreation & Libraries



May 9, 2017

ATTN: Dustin Diplacito
City of Roseville Recreation Department
316 Vernon Street
Roseville, CA 95678

Dear Mr. Diplacito,

Enclosed is a copy of the Affiliation Agreement that the Department of Health, Sport, and Exercise Sciences uses to establish a working relationship with agencies who want to have interns from our Sport Management, Exercise Sciences and Community Health programs.

It has been brought to my attention by a student and/or a member of your staff that you have an interest in working with one or more of our interns. Enclosed is the Affiliation Agreement that we use in order for our interns to work with an agency outside of the university. Please review this Agreement and if you find it acceptable, sign and return to me at the University of Kansas, HSES Dept., 161 Robinson Center, 1301 Sunnyside Avenue, Lawrence, KS 66045.

If you have questions about the Affiliation Agreement or the internship, please call me at 785-864-0703. We look forward to working with you in the future. Thank you for your interest in our students and our internship program.

Respectfully,

A handwritten signature in black ink, appearing to read "Bernie Kish".

Bernie Kish
Ph.D.
Internship Coordinator

PGH:jss

Enclosure

Re: Daniel Keifer



COUNCIL COMMUNICATION

CC #: 8655
File #: 0109-02

Title: Street Closure Request - Rods-N-Ribs Event - August 5, 2017 - Agreement Amendment
Contact: Jamie Hazen 916-774-5978 jhazen@Roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.9.

RECOMMENDATION TO COUNCIL

Recommend Council adopt the resolution authorizing the City Manager or his designee to sign the first amendment to agreement with Water for a Warrior nonprofit group for the following street closures from 5:00 a.m. – 5:00 p.m., on Saturday, August 5, 2017 for the Rods-N-Ribs event:

Vernon Street between E. Washington and Taylor Streets
S. Grant Street between Oak and Atlantic Streets

BACKGROUND

Staff is bringing this agreement before City Council again to extend the timing of the street reopening at the conclusion of the event. The previous agreement stated the streets would reopen at 3:00 p.m., however, the event is scheduled to end at 3:00 p.m., and additional time is necessary to allow vendors to clean up and remove their items. The revised time to reopen the streets will now be 5:00 p.m., as noted in the amended agreement, and will be conducted as quickly as possible to minimize traffic disruptions.

FISCAL IMPACT

There will be no fiscal impact to City budgets for this event. The applicant will reimburse the City for staff time and resources.

ECONOMIC DEVELOPMENT / JOBS CREATED

Although there are no jobs created as a result of this event, the exposure could have a positive impact to the businesses in the downtown area, and supports the Council goal of having a vibrant downtown.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15061(b)(3)). The Rods-N-Ribs Event does not include the potential for a significant environmental effect, and therefore is not subject to CEQA.

Respectfully Submitted,

Jamie Hazen, Community Relations Analyst

Dion Louthan, Parks, Recreation & Libraries Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-337

First Amendment to Agreement for Street Closure Rods-N-Ribs

RESOLUTION NO. 17-337

APPROVING A FIRST AMENDMENT TO AGREEMENT BY AND BETWEEN THE CITY OF ROSEVILLE AND WATER FOR A WARRIOR AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a First Amendment to Agreement for Special Event and Temporary Street Closure regarding Water for a Warrior Rods-N-Ribs event, between the City of Roseville and Water for a Warrior, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said first amendment to agreement is hereby approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**FIRST AMENDMENT TO
AGREEMENT FOR SPECIAL EVENT AND
TEMPORARY STREET CLOSURE**

Event: Water for a Warrior Rods-N-Ribs

THIS FIRST AMENDMENT TO AGREEMENT is made and entered into this ____ day of _____, 20__, by and between the City of Roseville, a municipal corporation ("CITY"), and Water for a Warrior, a California nonprofit corporation ("PROMOTER"); and

W I T N E S S E T H:

WHEREAS, CITY and PROMOTER previously entered into an Agreement for Special Event and Temporary Street Closure dated June 21, 2017 ("Agreement") regarding Water for a Warrior Rods-N-Ribs ("Event"); and

WHEREAS, CITY desires to amend the Agreement as described below; and

NOW, THEREFORE, the parties agree as follows:

1. Paragraph 2 of the Agreement is amended to read as follows:

"The following streets may be closed to traffic between 5:00 a.m. and 5:00 p.m. on Saturday, August 5, 2017:

- a. Vernon Street, between East Washington and Taylor Streets; and
- b. South Grant Street, between Oak and Atlantic Streets."

2. Paragraph 4 of the Agreement is amended to read as follows:

“All debris, booths, exhibits, or other materials resulting from the Event shall be completely removed and all streets and alleyways shall be reopened to traffic by 5:00 p.m. on the date of the Event.”

3. All other provisions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this First Amendment to Agreement in duplicate by its City Manager and attested to by its City Clerk under the authority of Resolution No. _____, adopted by the Council of the City of Roseville on the ____ day of _____, 20__, and PROMOTER has caused this First Amendment to Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation

BY: _____
ROB JENSEN
City Manager

ATTEST:

BY: _____
SONIA OROZCO
City Clerk

WATER FOR A WARRIOR, a
California nonprofit corporation

BY: _____
its: _____
President

and
BY: _____
its: _____
Treasurer

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY:  _____
DION LOUTHAN
Parks, Recreation & Libraries Director



COUNCIL COMMUNICATION

CC #: 8668

File #: 0203-06 & 0323

Title: Computer Aided Dispatch/ Records Management License Agreement Amendments
Contact: Claudia Villa 916-774-5003 cvilla@roseville.ca.us

Meeting Date: 8/2/2017

Item #: 6.10.

RECOMMENDATION TO COUNCIL

Adopt a resolution authorizing the City Manager to execute the attached contract amendments with Tyler Technologies on behalf of the City.

BACKGROUND

The original licensing agreement with Tyler Technologies was set into effect on November 6, 2014, for the purchase and installation of a public safety computer system, including computer-aided dispatch, police records, fire records, mobile computing and field reporting, jail management and related interfaces and services, support and maintenance.

With the closing of the jail and removal of the jail management programming module, as well as needed standard software enhancements, property room bar coding, and additional licenses, it was necessary to create contract amendments which would allow us to make the necessary changes.

The police department currently has a credit of \$11,870.59 available with Tyler Technologies from the return of equipment not being used due to the anticipated amendment changes. The credit will be used towards the amended contract costs.

FISCAL IMPACT

Contract amendment 1767-17A1C is for a two-way custom Thinkstream super query interface in the amount of \$7,680, which will be paid for by an existing credit the Police Department has with Tyler Technologies. Contract amendment 1767-17A2A is for the acquisition of sixty (60) additional workstation licenses; this is a no-cost change order. Contract amendment 1767-17A3B is for the acquisition of a property and evidence module at a cost of \$29,950, of which \$4,190.59 in current department credits will be applied, leaving a balance of \$25,759.41 to be paid out of the Capital Improvement Project designated for this project. The amendments will result in an additional \$7,056 in annual maintenance costs which will be offset by the discontinued use of the corrections module, and will be paid out of the Information Technology Internal Service

Fund, with any shortfalls being funded by the Police Department operating budget. Adequate funds have been included in this year's budget, and no budget adjustment is requested.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable to existing contract

ENVIRONMENTAL REVIEW

The request for amendment approval is not a "project" as defined by the California Environmental Quality Act (CEQA) (CEQA Guidelines §15378). Consequently no CEQA action is required.

Respectfully Submitted,

Shelly Bracco, Administrative Analyst

Daniel Hahn, Police Chief



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution No. 17-344

Tyler Technologies Amendment 1767-17A2A

Tyler Technologies Amendment 1767-17A3B

Tyler Technologies Amendment 1767-17A1C

RESOLUTION NO. 17-344

APPROVING AMENDMENTS TO THE LICENSE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND TYLER TECHNOLOGIES, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE THEM ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a license agreement between City of Roseville and Tyler Technologies, Inc., was entered into November 6, 2014; and

WHEREAS, the following amendments to the original license agreement have been reviewed by the City Council:

- Amendment 1767-17A2A for 60 additional licenses for New World in-station field-based reporting software;
- Amendment 1767-17A3B for property room bar coding;
- Amendment 1767-17A1C for two-way custom Thinkstream Super Query Interface.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said amendments are approved and that the City Manager is authorized to execute them on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



Document #: 1767-17A2A

AMENDMENT

This amendment ("Amendment") is effective as of the date of signature of the last party to sign as indicated below ("Amendment Effective Date"), by and between Tyler Technologies, Inc., a Delaware corporation with offices at 840 West Long Lake Road, Troy, MI 48098 ("Tyler") and City of Roseville, a municipal corporation, with offices at 1051 Junction Blvd., Roseville, CA 95678 ("Client").

WHEREAS, Tyler and the Client are parties to a License Agreement with an effective date of November 6, 2014 (the "Agreement");

WHEREAS, Tyler and Client now desire to amend the Agreement;

NOW THEREFORE, in consideration of the mutual promises hereinafter contained, Tyler and the Client agree as follows:

1. The software set forth in Exhibit 1 to this Amendment are hereby added to the Agreement.
2. The following payment terms, as applicable, shall apply:
 - a. Additional software fees will be invoiced 100% on the Amendment Effective Date.
 - b. Associated maintenance and support fees will be invoiced on a pro rata basis beginning on the first day of the month following the Amendment Effective Date, and thereafter in a lump sum amount together with Client's then-current maintenance and support fees for previously licensed software.
3. This Amendment shall be governed by and construed in accordance with the terms and conditions of the Agreement.
4. All other terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, a duly authorized representative of each party has executed this Amendment as of the date of signature of the last party to sign as indicated below.

Tyler Technologies, Inc.

City of Roseville, CA

By: 
Name: ~~Greg Sebastian~~ Bryan Porter
Title: ~~President~~ SUP, Public Safety Division
Date: 7/24/17

By: _____
Name: _____
Title: _____
Date: _____



Exhibit 1
Investment Summary

The following Investment Summary details the software, products, and services to be delivered by us to you under the Agreement. This Investment Summary is effective as of the Effective Date

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

A. LICENSE FEES		
ITEM	DESCRIPTION	INVESTMENT
MOBILE SOFTWARE		
1.	New World In-Station Field-Based Reporting Software (60 Units)	24,000
	LE Field Reporting (Federal Standards)	400 ea. 24,000
	- Incident (1 form)	
	- Case (1 form)	
	- Arrest (1 form)	
	- Supplement (1 form)	
	- Impound Vehicle (1 form)	
	STANDARD NEW WORLD SOFTWARE LICENSE FEE	\$24,000
	LESS DISCOUNT	(24,000)
TOTAL ONE TIME COST		\$0

B. MAINTENANCE AND SUPPORT FEES		
ITEM	DESCRIPTION	INVESTMENT
1.	MAINTENANCE AND SUPPORT AGREEMENT (Year 1 Cost):	
	Associated Maintenance and Support fees will be added to the Client's current Maintenance and Support Agreement and will be invoiced on a pro rata basis beginning on the first day of the month following Amendment Effective Date, and thereafter in a lump sum amount together with Client's then-current maintenance and support fees for previously licensed software.	
	Year 1 Maintenance:	\$5,040

PRICING VALID THROUGH AUGUST 31, 2017.

Pricing Assumptions

Personal Computers must meet the minimum hardware requirements for New World products. Microsoft Windows 7/8 or later is required for all client machines. Windows 2008/2012 Server and SQL Server 2008/2012 are required for the Application and Database Server(s).

New World product requires Microsoft Windows 2008/2012 Server and SQL Server 2008/2012 including required Client Access Licenses (CALs) for applicable Microsoft products. Servers must meet minimum hardware requirements provided by Tyler.

New World product requires Microsoft Excel or Windows Search 4.0 for document searching functionality; Microsoft Word is required on the application server for report formatting.

Tyler recommends a 100/1000MB (GB) Ethernet network for the local area network. Wide area network requirements vary based on system configuration, Tyler will provide further consultation for this environment.

Does not include any required 3rd party hardware or software.



Document #: 1767-17A3B

AMENDMENT

This amendment ("Amendment") is effective as of the date of signature of the last party to sign as indicated below ("Amendment Effective Date"), by and between Tyler Technologies, Inc., a Delaware corporation with offices at 840 West Long Lake Road, Troy, MI 48098 ("Tyler") and City of Roseville, a municipal corporation, with offices at 1051 Junction Blvd., Roseville, CA 95678 ("Client").

WHEREAS, Tyler and the Client are parties to a License Agreement with an effective date of November 6, 2014 (the "Agreement");

WHEREAS, Tyler and Client now desire to amend the Agreement;

NOW THEREFORE, in consideration of the mutual promises hereinafter contained, Tyler and the Client agree as follows:

1. The software and/or services set forth in Exhibit 1 and 2 and associated services as noted in Schedules 1 and 2 to this Amendment are hereby added to the Agreement.
2. The following payment terms, as applicable, shall apply:
 - a. Additional software fees will be invoiced 100% on the Amendment Effective Date.
 - b. Associated maintenance and support fees will be invoiced on a pro rata basis beginning on the first day of the month following the Amendment Effective Date, and thereafter in a lump sum amount together with Client's then-current maintenance and support fees for previously licensed software.
 - c. Additional Implementation and other professional services (including training) are billed and invoiced as delivered, at the rates set forth in the Investment Summary.
 - d. Except as otherwise provided, other fixed price services are invoiced upon complete delivery of the service.
 - e. *Conversions*: Fixed-fee conversions are invoiced 50% upon acceptance of the Conversion Analysis Document, and 50% upon initial delivery of converted data.
 - f. *Custom Interfaces*: Credit for the deleted interfaces in Exhibit 2, Schedule 2 assumes that all milestone payments of original agreement dated 11/6/14 will be paid in full.
 - g. Travel expenses shall be invoiced as incurred, as applicable.
 - h. Client currently has an outstanding credit of \$4,190.59 available, which Client has requested to be used towards this amendment, bringing their credit to \$0. Upon execution of this Amendment, if the credit has already been applied towards other Client invoices, Client will be responsible for the full amount.
3. This Amendment shall be governed by and construed in accordance with the terms and conditions of the Agreement.
4. All other terms and conditions of the Agreement shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, a duly authorized representative of each party has executed this Amendment as of the date of signature of the last party to sign as indicated below.

Tyler Technologies, Inc.

City of Roseville, CA

By: 

By: _____

Name: ~~Greg Sebastian~~ *Bryan Praetor*

Name: _____

Title: *SVP*
~~President~~, Public Safety Division

Title: _____

Date: *7/24/17*

Date: _____



Exhibit 1

Investment Summary

The following Investment Summary details the software, products, and services to be delivered by us to you under the Agreement. This Investment Summary is effective as of the Effective Date

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

A. LICENSE FEES		
ITEM	DESCRIPTION	INVESTMENT
LAW ENFORCEMENT RECORDS		
1.	Additional New World Software for Law Enforcement Records	
	- Property Room Bar Coding	12,000
	STANDARD NEW WORLD SOFTWARE LICENSE FEE	\$12,000
	LESS DISCOUNT	(2,400)
TOTAL TYLER SOFTWARE LICENSE FEES DUE		\$9,600

B. PROFESSIONAL SERVICES		
ITEM	DESCRIPTION	INVESTMENT
PROFESSIONAL SERVICES		

CANCELLED PROFESSIONAL SERVICES

1.	CUSTOM SOFTWARE/CUSTOM SOFTWARE INTERFACES	(9,000)
	Third Party Software Product (Custom Interfaces)	
	Custom Interfaces	
	- Revolution/Evidence Interface	(4,800)
	- Crossroads eCitation Interface	(4,200)

(Note: Credit assumes all milestone payments of original agreement dated 11/6/14 will be paid in full.)

ADDED PROFESSIONAL SERVICES

2.	Up to 80 hours of Implementation and Training Services are included for:	11,600
	- Software Tailoring and Set Up	
	- User Education and Training	
	- Other Technical Support	
	* Assumes train-the-trainer approach	

3. DATA FILE CONVERSIONS

	Data File Conversion Pricing (One Source - Revolution)	11,750
	Base Conversion	
	Master Files	11,750
	- Master Vehicles	
	- Master Guns	
	- Master Property (all, but gun and vehicle)	
	Property	
	- Property Storage and Dispositions	
	- Property Chain of Custody	
	- Property Analysis Results	
	- Property Association to Cases	

TOTAL IMPLEMENTATION SERVICES	\$14,350
--------------------------------------	-----------------

C. TRAVEL AND LIVING EXPENSES (Estimate)		
ITEM	DESCRIPTION	INVESTMENT

1.	TRAVEL AND LIVING EXPENSES (Estimate) Estimated 3 trips at \$2,000 per trip.	\$6,000
----	---	---------

TOTAL ONE TIME COST	\$29,950
----------------------------	-----------------

D. MAINTENANCE AND SUPPORT FEES		
ITEM	DESCRIPTION	INVESTMENT

1.	MAINTENANCE AND SUPPORT AGREEMENT (Year 1 Cost): Associated Maintenance and Support fees will be added to the Client's current Maintenance and Support Agreement and will be invoiced on a pro rata basis beginning on the first day of the month following Amendment Effective Date, and thereafter in a lump sum amount together with Client's then-current maintenance and support fees for previously licensed software.	
----	---	--

Year 1 Maintenance: \$2,016

PRICING VALID THROUGH SEPTEMBER 15, 2017.

Pricing Assumptions

Personal Computers must meet the minimum hardware requirements for New World products. Microsoft Windows 7/8 or later is required for all client machines. Windows 2008/2012 Server and SQL Server 2008/2012 are required for the Application and Database Server(s).

New World product requires Microsoft Windows 2008/2012 Server and SQL Server 2008/2012 including required Client Access Licenses (CALs) for applicable Microsoft products. Servers must meet minimum hardware requirements provided by Tyler.

New World product requires Microsoft Excel or Windows Search 4.0 for document searching functionality; Microsoft Word is required on the application server for report formatting.

Tyler recommends a 100/1000MB (GB) Ethernet network for the local area network. Wide area network requirements vary based on system configuration, Tyler will provide further consultation for this environment.

Does not include any required 3rd party hardware or software.



Exhibit 2

Professional Services

1. Support Services

Up to 80 hours have been allocated to provide Property Room and additional training services. Actual usage may be higher or lower based on your requirements and use of these support services. You will be invoiced for the actual amount of services you receive, at your then current hourly rate. The installation and training support services are typically performed at your premises but may be provided at our offices in Troy, Michigan.

We make all reasonable efforts to schedule our personnel for travel, including arranging travel reservations, at least two (2) weeks in advance of commitments. Therefore, if you cancel services less than two (2) weeks in advance (other than for Force Majeure or breach by us), you will be liable for all (a) non-refundable expenses incurred by us on your behalf, and (b) daily fees associated with cancelled professional services if we are unable to reassign our personnel. We will make all reasonable efforts to reassign personnel in the event you cancel within two (2) weeks of scheduled commitments.



Exhibit 2
Schedule 1
Data File Conversion Assistance

We will provide conversion assistance to you to help convert the existing data files specified below. If additional files are identified after contract execution, estimates will be provided to you prior to us beginning work on those newly identified files.

General

1. This conversion effort includes data coming from one unique database or source, not multiple sources.
2. No data cleansing, consolidation of records, or editing of data will be part of the data conversion effort. Any data cleansing, removal of duplicate records, or editing must take place by you prior to providing the data to us.

Our Responsibilities

1. We will create and provide you with a conversion design document for signoff prior to beginning development work on the data conversion. No conversion programming by us will commence until you approve this document.
2. We will provide the data conversion programs to convert your data from a single data source to the Tyler Software for the specified files that contain 500 or more records.
3. As provided in the approved project plan for conversions, we will schedule on-site trips to your location in order to conduct the following:
 - a. Conversion Analysis,
 - b. Assistance for Mapping and Testing, and
 - c. Conversion Go-Live Implementation and Support

You will be responsible for travel expenses as set forth in the Invoicing and Payment Policy.

4. We will provide you up to three (3) test iterations of converted data. One test iteration consists of:
 - a. Running a conversion test in your test environment,
 - b. Your reviewing a conversion test and responding in writing to us (see Client responsibilities paragraph 3 below),
 - c. We correct or otherwise respond to issues discovered and reported by you,
 - d. We will conduct internal testing to verify corrections, and
 - e. Both parties planning for the next test iteration and/or the live implementation.

Client Responsibilities

1. You will extract data from the legacy system to submit to us. Data will be submitted to us in one or more of the following formats:
 - a. AS/400 files (SAV files),
 - b. Microsoft SQL Server database,
 - c. Microsoft Access database,
 - d. Microsoft Excel spreadsheet,
 - e. Visual Fox Pro database or similar format (.dbf files),
 - f. An ASCII-format delimited text file (including embedded column headings and text delimiters), or
 - g. An ASCII-format fixed-width file (along with structured column definitions in an electronic format suitable for parsing, such as a spreadsheet or document table).

Data may be delivered using any common media or data-delivery format such as ¼-inch tape (AS400), Ultrium 1 Tape (AS/400), CD, DVD, USB device, hard drive, or FTP server.

In the event that you request data extraction assistance from us, data extraction services shall be billed at our then-current rates, according to the Agreement.

2. You will respond to each test iteration in writing, on a form provided by us, either:
 - a. Indicating acceptance that the Data Conversion Process is ready for the final conversion, or
 - b. Indicating a list of changes that need to be applied to the Data Conversion Process for the next test iteration.

Up to three (3) test iterations are provided as part of the Data Conversion Process. After the third (3rd) test iteration, you shall pay our then-current flat fee for each additional test iteration. You will promptly review each test iteration when delivered by us. Prompt review by you will reduce the likelihood that a need for additional test iteration(s) may arise due to an extended delay between delivery of a test iteration and its review.

3. A data dictionary (data descriptors) containing all data elements must be provided to us for each file submitted with the media.
4. As provided in the project plan for conversions, you will provide a dedicated resource in each application area to focus on conversion mapping and testing. This includes dedicating a support person(s) whenever our staff is on site regarding conversions. Roughly a one to one ratio exists for your commitment and our commitment. You understand that thorough and timely testing of the converted data by your personnel is a key part of a successful data conversion.
5. You agree to promptly review and signoff on both the conversion design document, and on the final conversions after appropriate review.

Only one data source for each of the files described in the Investment Summary.



Exhibit 2
Schedule 2
Custom Software Interfaces to be Deleted

1. Definition

Client has requested the following custom software interfaces be deleted from the 11/6/14 agreement.

a) Custom Software/Interfaces

- (1) Revolution/Evidence Interface**
- (2) Crossroads eCitation Interface**



Document #: 1767-17A1C

AMENDMENT

This amendment ("Amendment") is effective as of the date of signature of the last party to sign as indicated below ("Amendment Effective Date") by and between Tyler Technologies, Inc., a Delaware corporation with offices at 840 West Long Lake Road, Troy, MI 48098 ("Tyler") and Roseville Police Department, CA, with offices at 1051 Junction Boulevard, Roseville, CA 95678 ("Client").

WHEREAS, Tyler and the Client are parties to a License Agreement with an effective date of November 6, 2014 (the "Agreement");

WHEREAS, Tyler and Client now desire to amend the Agreement;

NOW THEREFORE, in consideration of the mutual promises hereinafter contained, Tyler and the Client agree as follows:

1. The services set forth in Exhibit 1, and Schedule 1, to this Amendment are hereby added to the Agreement. Any additional adjustments to scope not set forth herein must be reflected in another amendment to the Agreement.
2. The following payment terms, as applicable, shall apply:
 - a. Client currently has an outstanding credit of \$11,870.59 available. The \$7,680 due on this Amendment will be applied towards this credit leaving a balance of \$4,190.59. Upon execution of this Amendment, if the credit has already been applied towards other Client invoices, Client will be responsible for the full amount.
 - b. Travel expenses shall be invoiced as incurred, if applicable.
3. This Amendment shall be governed by and construed in accordance with the terms and conditions of the Agreement.
4. All other terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment as of the dates set forth below.

Tyler Technologies, Inc.

Roseville Police Department, CA

By: _____

By: _____

Name: ~~Greg Sebastian~~ *Bryan Proctor*

Name: _____

Title: *SVP*
~~President~~, Public Safety Division

Title: _____

Date: *7/24/17*

Date: _____

Exhibit 1
Investment Summary

MAY 17, 2017

A. PROFESSIONAL SERVICES		
ITEM	DESCRIPTION	INVESTMENT
PROFESSIONAL SERVICES		
1.	CUSTOM SOFTWARE/CUSTOM SOFTWARE INTERFACE(S)	\$7,680
	Third Party Software Product (Custom Interface)	
	- Two-Way Custom Thinkstream Super Query Interface	\$7,680
TOTAL IMPLEMENTATION SERVICES		\$7,680

PRICING VALID THROUGH AUGUST 31, 2017.

Schedule 1

Customer Requested Standard Software Enhancements and/or Custom Software

1. Definition

We will provide you requested standard software enhancements and/or custom software services as discussed below. You agree to cooperate in limiting the scope of those modifications and enhancements, as described below.

An analysis and assessment to verify the scope of effort for these services will be conducted. A revised estimate for the enhancements/customizations may be provided at the conclusion of the assessment. You may elect to cancel or proceed with the enhancements/customizations based on the revised estimate.

Capabilities included in the initial scope:

a) **Custom Software/Interface(s)**

While we will provide reasonable consultation, you are responsible for obtaining technical contacts and/or technical specifications from the third parties involved.

(1) **Two-Way Custom Thinkstream Super Query Interface:**

1. Enhance the current Thinkstream Super Query interface as follows:
 - a. The global subject web service will poll the field level auditing table for global jackets to return modified dates for the following global jacket fields:
 - i. Address
 - ii. Primary Phone number
 - iii. Vehicle associations (whenever a vehicle association to a jacket is changed/added - not a change in the vehicle, just the association)
 - b. If a modified date is not found in the auditing table for one of the fields above, the most recent jacket modified date will be returned
 - c. The global subject web service will be modified to optionally allow converted records (those created/modified by the NWS conversion user as part of the data conversion) to be excluded from the query
 - d. The global subject web service will be modified to return the document ID of the jacket's most recent mugshot
 - e. A new web service will be exposed to allow Thinkstream to retrieve a jacket's most recent mugshot (as an XML byte array) and modified date using the document ID returned in the global jacket query
2. No other changes will be made to the interface - all other functionality will remain the same

2. Methodology to Provide Enhancements and/or Custom Software

a) Our Responsibility

As part of our delivery of these services, we will:

- (1) Review the required features for the items set forth in paragraph 1, above, with you.
- (2) Prepare a Requirements Document (RD) to include:
 - Detailed description of the required feature
 - menu samples
 - screen samples
 - report samples
- (3) Conduct the programming and programming test.
- (4) Provide the associated in-scope training, testing and/or other support services.

For an enhancement or custom software requiring over seven (7) days of services, we will utilize the design document procedure described below. For enhancements or custom software that require less than seven (7) days of services, we will use a Request For Service (RFS) procedure. Both procedures are reviewed with you at a pre-installation planning meeting. The RFS procedure utilizes a form with a narrative description and supporting documentation if applicable to define the work to be done.

b) Design and Development Procedure

<u>Activity</u>	<u>Targeted Time Period</u>
(1) We will work with your staff in completing the RD. You agree to be reasonable and flexible in not attempting to design the modifications to be more extensive than called for in the scope (cost and schedule) of this project.	To be determined
(2) We submit completed RD to you.	To be determined
(3) You will review and sign off on the RD. Once you sign off on the RD, any subsequent changes must be documented along with the impact on pricing and schedule, if any. No programming will be done by us until the formal sign-off and your authorization to proceed in writing.	To be determined
(4) We complete programming from RD and provide the associated deliverable to you.	To be determined
(5) You test software modification based on RD.	To be determined

3. Third Party Responsibilities

- a) The third-party will provide a documented API that will allow access to required data via a file transfer, web service, or TCP/IP.
- b) We will not be responsible for making any modification in the 3rd party software to support this interface.
- c) The third-party will work with us and you to test the interface.



COUNCIL COMMUNICATION

CC #: 8669

File #: 0201-01 & 0102

Title: Council Discretionary Funds- Carry Forward FY2017 Unappropriated Funds - Budget Adjustment

Contact: Sonia Orozco 916-774-5269 sorozco@roseville.ca.us
Amy Ruiz 916-746-1362 aruiz@roseville.ca.us

Meeting Date: 8/2/2017

Item #: 6.11.

RECOMMENDATION TO COUNCIL

Direct staff to process a budget adjustment in the amount of \$10,909.62 to carry forward unappropriated FY2017 Discretionary Funds for use in FY 2018.

BACKGROUND

The Citizens' Benefit Fund was established in 1993 with the net proceeds from the sale of the Roseville Hospital. The City Council may, after receiving recommendation of the Roseville Grants Advisory Commission, annually appropriate up to 90 percent of the annual earnings of the Citizens' Benefit Fund for the purpose of improving the quality of life for the citizens of the City of Roseville. In addition, the City Council, without the recommendation of the Roseville Grants Advisory Commission, may annually appropriate a minor amount up to \$15,000 of the annual earnings for the purpose of improving the quality of life in Roseville.

The City's fiscal year ended on June 30, 2017, at which time the balance was \$16,909.62. Due to two pending requests at the meeting of July 5th and one pending on July 19th this request for a budget adjustment was on hold. At the July 5th meeting those two requests were approved by Council for Crimestoppers in the amount of \$1,000 and Excel Roseville in the amount of \$2,500, which made the balance \$13,409.62. On July 19, 2017 The Health Education Council \$2,500 request was approved by Council which makes the new balance \$10,909.62.

Per section 4.06.040 of the Roseville Municipal Code, the unappropriated amounts will be carried forward to subsequent fiscal years. Doing so would allow the Council greater flexibility on discretionary request received in FY2018. Carrying forward the unspent \$10,909.62 will increase the Council Discretionary Funds for FY2018 to \$25,909.62. The vehicle to transact the carry-over is the standard budget adjustment form.

FISCAL IMPACT

There is no fiscal impact to the City's general fund. Annually the City Treasurer allocates \$15,000 of the annual earnings of the Citizens Benefit Fund per section 4.06.04 in the Municipal Code and is included in the annual budget along with the Citizens' Benefit Funds available for appropriation each year. These earnings are restricted for the purpose of improving the quality of life for the citizens in Roseville and appropriated by the City Council.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable.

ENVIRONMENTAL REVIEW

The Council Discretionary funds is not considered a project as defined by the California Environmental Quality Act (CEQA) (CEQA Guidelines §15378). Consequently, no CEQA action is required.

Respectfully Submitted,

Amy Ruiz, Management Assistant

Sonia Orzoco, City Clerk



Rob Jensen, City Manager

ATTACHMENTS:

Description

Ordinance No. 5859

Carry Forward Budget Adjustment 7-20-17

ORDINANCE NO. 5859

ORDINANCE OF THE COUNCIL OF THE CITY OF ROSEVILLE
AUTHORIZING CERTAIN AMENDMENTS TO THE 2017-18
BUDGET AND DECLARING THIS ORDINANCE TO BE IMMEDIATELY
EFFECTIVE AS AN APPROPRIATION MEASURE

THE CITY OF ROSEVILLE ORDAINS:

SECTION 1. The City of Roseville Annual Budget, Fiscal Year 2017-18, is hereby amended by transferring appropriation to and from the activities indicated below:

Appropriate funds for unappropriated Council discretionary funds, per request of the City Managers' Department, as listed on the attached Request for Budget Adjustment totaling \$10,909.00.

SECTION 2. This ordinance is hereby declared to be an appropriation measure, immediately effective pursuant to the provisions of Section 5.03 of the Charter.

SECTION 3. The City Clerk is hereby authorized and directed to post a true copy of the foregoing ordinance in each of three (3) conspicuous locations in the City and she shall immediately after such posting enter in the ordinance book, under the record of the ordinance, a certificate under her hand stating the time and place of such publication by posting.

PASSED AND ADOPTED by the Council of the City of Roseville, this
_____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



REQUEST FOR BUDGET ADJUSTMENT
FINANCE DEPARTMENT

Instructions: Complete all necessary fields. Fields marked with an asterisk (*) are mandatory and required for processing. Obtain required approvals and process according to the procedure outlined in:

[A.R. 6.01 Budget Adjustment Policy & Procedure.](#)

For more detailed budget adjustment training information, including examples, please click on the following link:

[Miscellaneous Budget Training Information.](#)

REQUESTER*: Amy Ruiz

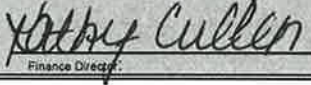
DEPARTMENT/DIVISION*: City Manager

FISCAL YEAR/EFFECTIVE DATE*: FY2018

PROPOSED COUNCIL DATE (if applicable): 08/02/2017

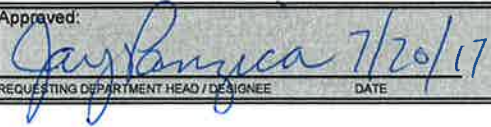
USE OF FUNDS*						
AMOUNT*	ACCOUNT NUMBER					Account Title/Activity Description*
	GL			JL		
	ORG KEY*	OBJECT*	FUND*	PROJECT	ACTIVITY	
10,909	01002	5000	280			unappropriated Council discretionary funds
\$ 10,909	TOTAL					

SOURCE OF FUNDS*						
AMOUNT*	ACCOUNT NUMBER					Account Title/Activity Description*
	GL			JL		
	ORG KEY	OBJECT	FUND*	PROJECT	ACTIVITY	
10,909			280			fund balance
\$ 10,909	TOTAL					

FINANCE USE	Approved:	
	 7/20/17	 7/20/17
	BUDGET MANAGER/DESIGNEE	DATE
		Finance Director: DATE

Justification for Budget Adjustment*:

Per section 4.060.040 of the Roseville Municipal Code, the City Council has the authority to carry forward any unappropriated Council Discretionary funds from one fiscal year to the next. Council Action taken at 8/2/2017 meeting to carry forward the balance from the FY2017 Council Discretionary Funds (\$10,909.62) into Council's FY2018 Discretionary Funds for appropriation to requests received in FY2018.

Approved:	 7/20/17	Approved:	 7/20/17
REQUESTING DEPARTMENT HEAD / DESIGNEE	DATE	CITY MANAGER	DATE



REQUEST FOR BUDGET ADJUSTMENT
FINANCE DEPARTMENT

Instructions: Complete all necessary fields. Fields marked with an asterisk (*) are mandatory and required for processing. Obtain required approvals and process according to the procedure outlined in:

[A.R. 6.01 Budget Adjustment Policy & Procedure.](#)

For more detailed budget adjustment training information, including examples, please click on the following link:

[Miscellaneous Budget Training Information.](#)

REQUESTER*: Amy Ruiz

DEPARTMENT/DIVISION*: City Manager

FISCAL YEAR/EFFECTIVE DATE*: FY2018

PROPOSED COUNCIL DATE (if applicable): 08/02/2017

USE OF FUNDS*						
AMOUNT*	ACCOUNT NUMBER					Account Title/Activity Description*
	GL			JL		
	ORG KEY*	OBJECT*	FUND*	PROJECT	ACTIVITY	
10,909	01002	5000	280			<i>unappropriated Council discretionary funds</i>
\$ 10,909	TOTAL					

SOURCE OF FUNDS*						
AMOUNT*	ACCOUNT NUMBER					Account Title/Activity Description*
	GL			JL		
	ORG KEY	OBJECT	FUND*	PROJECT	ACTIVITY	
10,909			280			<i>fund balance</i>
\$ 10,909	TOTAL					

FINANCE USE	Approved:	
	<i>[Signature]</i> 7/20/17	<i>Kathy Cullen</i> 7/20/17
	BUDGET MANAGER/DESIGNEE	DATE
		Finance Director: DATE

Justification for Budget Adjustment*:

Per section 4.060.040 of the Roseville Municipal Code, the City Council has the authority to carry forward any unappropriated Council Discretionary funds from one fiscal year to the next. Council Action taken at 8/2/2017 meeting to carry forward the balance from the FY2017 Council Discretionary Funds (\$10,909.62) into Council's FY2018 Discretionary Funds for appropriation to requests received in FY2018.

Approved:	<i>[Signature]</i> 7/20/17	Approved:	<i>[Signature]</i> 7.20.17
REQUESTING DEPARTMENT HEAD / DESIGNEE	DATE	CITY MANAGER	DATE



COUNCIL COMMUNICATION

CC #: 8650
File #: 0600-02

Title: Out of State Travel Request - Police Department
Contact: Dee Dee Gunther 916-774-5015 ddgunther@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.12.

RECOMMENDATION TO COUNCIL

Approve travel for police bomb squad commander Adrian Coghlan to attend bomb commander's training conference in Huntsville, Alabama from August 21-25, 2017.

BACKGROUND

The police department has an FBI-certified explosive ordnance disposal unit, or bomb squad, in partnership with the Rocklin Police Department. The unit responds to calls about suspected explosive devices, suspicious objects and SWAT call-outs in the cities of Roseville and Rocklin. The unit is also a member of the Sacramento regional EOD task force. The member agencies share resources and assist each other as needed.

As an FBI-certified bomb squad commander, Detective Coghlan is eligible to attend the commander's annual training conference at the FBI's national hazardous devices training center in Huntsville, Alabama. The conference will include updates from federal agencies, training on the latest tools, techniques and procedures, and case studies presented by bomb squad commanders from throughout the United States. This year the conference will also include special training presented by the FBI's hazardous devices school on threat assessment.

FISCAL IMPACT

All costs associated with the training conference, including tuition, airfare, lodging, ground transportation and per diem are borne by the FBI at no cost to the City.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable to this request.

ENVIRONMENTAL REVIEW

This request for out of state travel is not considered a "project" as defined by the California Environmental Quality Act (CEQA) (CEQA Guidelines §15378). Consequently no CEQA action is required.

Respectfully Submitted,

Dee Dee Gunther, Department Public Information Officer

Daniel Hahn, Police Chief



Rob Jensen, City Manager

ATTACHMENTS:

Description

Conference description



Roseville Police Department
1051 Junction Blvd
Roseville, CA 95678

Daniel Hahn, Chief of Police

RPD 70 / 2012

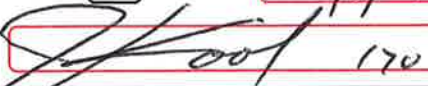
TRAINING REQUEST FORM

Course Title	Bomb Squad Commanders Training Conference	Cost	\$0		
POST Plan #	N/A	STC	☐	NON-POST	☒
Student #1	A. Coghlan				
Student #2					
Location	Redstone Arsenal, Huntsville, AL	Course Date(s)	Aug 21st to 25th		
Vendor	FBI	Contact Name	Dave Marker		
Address	Redstone Arsenal, Huntsville, AL				
Email	david.marker@hdps-hsv.com	Contact Phone	(256)705-3579	Fax	
Notes					

JUSTIFICATION FOR TRAINING

Bomb squad commanders training

NOTES

Approve	☒	Deny	☐	Date	7/3/17
Manager Sign					
Notes					

Approve	☐	Deny	☐	Date	
Captain Sign					
Budget Code					

2017 Bomb Squad Commanders Training Conference

August 22-24, 2017

Information Sheet

The 2017 Bomb Squad Commanders Training Conference (BSCTC) is being funded by the FBI and hosted by the FBI at Redstone Arsenal, AL. This event is open to all certified Bomb Squad Commanders. Application for registration is being completed through the Intelink National Bomb Squad Commanders Advisory Board (NBSCAB) website. In order to register, a LEEP account is required. Instructions to access the NBSCAB website are included with this email. The deadline for registration is July 24, 2017.

All eligible, certified Bomb Squad Commanders are invited to attend the 2017 BSCTC. Certified Bomb Squad Commanders of record with HDS will be able to name a replacement if they are unable to attend. The replacement must be a certified Bomb Technician and in a position to speak for the squad.

Dates: August 22-24, 2017 (Travel dates are August 21 and 25)

Location: Redstone Arsenal, Huntsville, Alabama.

Airline Travel: DO NOT book airline travel. Airline travel will be arranged and air fares will be direct billed to the FBI. Information on who to contact for travel arrangements will be provided after your application has been accepted.

Ground Transportation at Huntsville, AL: Rental cars are not authorized. Hotel shuttles or taxis will be used for transportation from the Huntsville Airport to the hotel. Daily transportation for all BSCTC events will be managed using vans rented by the FBI.

Lodging: Specific lodging information will be provided after your application has been accepted. You will be responsible for paying lodging fees while in Huntsville and then file a reimbursement voucher with your local FBI office after the trip is completed.

Meals: Meals will not be provided during the conference. Attendees will be reimbursed at the standard per diem rate of \$51.00 per each full day and \$38.25 for each travel day.

Auction & Dinner: Plans are underway to coordinate an auction to benefit the Bomb Technician Memorial Foundation (BTMF) and a dinner for the BSCTC attendees (there will be a fee for the dinner). More details to follow.

Agenda: The conference agenda this year, which is being developed in consultation with the NBSCAB and the federal partners, will feature a theme of “Threat Assessment.”

The agenda is still under development, but will include:

- NBSCAB Update
- Updates from supporting Federal agencies
- FBI HDS presentation on “Threat Assessment”, developed with funding provided by DHS S&T
- Range demonstrations of new tools, techniques, or procedures
- Breakout sessions to identify current gaps and/or capabilities needed in the community
- Commander presentations on recent cases. (Any Bomb Squad Commander who has a case study they would like to present, should send a summary to David Marker at david.marker@hdps-hsv.com so they can be submitted to NBSCAB for review.)

If you have any questions, please contact David Marker at david.marker@hdps-hsv.com, (256) 705-3579 or Shirley Short at shirley.short@hdps-hsv.com, (256) 705-3580.



COUNCIL COMMUNICATION

CC #: 8657
File #: 0102-12

Title: League of California Cities - Voting Delegate Annual Conference 2017
Contact: Mark Wolinski 916-774-5179 mwolinski@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.13.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council appoint by motion, City Treasurer/Chief Financial Officer, Jay Panzica as the voting delegate for the League of California Cities business meeting of the General Assembly. The meeting will be held at noon on Friday, September 15, 2017 at the Sacramento Convention Center.

BACKGROUND

The League of California Cities Annual Conference is being held September 13 – 15, 2017 at the Sacramento Convention Center. The annual business meeting will be held at noon on Friday, September 15, 2017 when the membership takes action on Conference resolutions.

Designated voting delegates or their alternates registered to attend the Annual Conference constitute the League's General Assembly. One very important aspect of the conference is the annual business meeting where the membership takes action on conference resolutions. Annual conference resolutions guide cities and the League in efforts to improve the quality, responsiveness and vitality of local government in California.

FISCAL IMPACT

Registration is approximately \$650 for the delegate and the funds were approved in the City Manager's 2017/18 budget.

ECONOMIC DEVELOPMENT / JOBS CREATED

N/A

ENVIRONMENTAL REVIEW

This action is not considered a "project" as defined by the California Environmental Quality Act

(CEQA) and therefore no CEQA action is required.

Respectfully Submitted,

Mark Wolinski, Government Relations Administrator

Megan MacPherson, Public Affairs and Communications Director

A handwritten signature in blue ink, appearing to read 'Rob Jensen', with a long horizontal stroke extending to the right.

Rob Jensen, City Manager



COUNCIL COMMUNICATION

CC #: 8665
File #: 0102-10

Title: Resolution of Commendation and Appreciation to Charles Rachoff
Contact: Ryan Carroll 916-774-5265 rcarroll@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.14.

RECOMMENDATION TO COUNCIL

Recommend Charles Rachoff be commended for his outstanding service and dedication to the City of Roseville, congratulated on his many accomplishments, and wished a long, healthy, and enjoyable retirement.

BACKGROUND

Not applicable.

FISCAL IMPACT

Not applicable.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable.

ENVIRONMENTAL REVIEW

Not applicable.

Respectfully Submitted,

Ryan Carroll, Deputy City Clerk

Sonia Orozco, City Clerk



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution of Commendation and Appreciation to Charles Rachoff

City of Roseville RESOLUTION

COMMENDATION AND APPRECIATION

WHEREAS, Charles Rachoff began his career with the City of Roseville as a Parks Maintenance Worker I – Tree Maintenance in September 1988; and

WHEREAS, Charles was promoted to a Parks Maintenance Worker II in 1989, promoted to Parks Maintenance Lead Worker in 2001, and reclassified as Senior Parks Maintenance Worker; and

WHEREAS, Charles was valued for his work in creek maintenance, and at various Parks including Maidu managing the sports fields, working on construction projects, plumbing, miscellaneous repairs, and playgrounds; and

WHEREAS, Charles deservingly received the Pride of Roseville Award in 1999 for the Top Team Award, the Pride of Roseville Award in 2015 for Distinguished Service Category, and the James Farrell Award of Excellence multiple times for working on projects such as the Maidu skate park, and performing field renovations at Mahany Park; and

WHEREAS, Charles has earned the respect of his colleagues for his many years of hard work, pride, and loyalty to his team and the City of Roseville, for his excellence in field maintenance, for his personality, sense of humor, and pride in workmanship; and

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF ROSEVILLE, CALIFORNIA, that CHARLES RACHOFF be commended for his outstanding service and dedication to the City of Roseville, congratulated for his many accomplishments, and wished a long, healthy, and enjoyable retirement.

SIGNED AND APPROVED this 2nd day of August, 2017.

SUSAN ROHAN, MAYOR

ATTEST:

SONIA OROZCO, CITY CLERK
CITY OF ROSEVILLE, CALIFORNIA





COUNCIL COMMUNICATION

CC #: 8666
File #: 0102-10

Title: Resolution of Commendation and Appreciation to Jim O'Connell
Contact: Ryan Carroll 916-774-5265 rcarroll@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.15.

RECOMMENDATION TO COUNCIL

Recommend Jim O'Connell be commended for his outstanding service and dedication to the City of Roseville, congratulated on his many accomplishments, and wished a long, healthy, and enjoyable retirement.

BACKGROUND

Not applicable.

FISCAL IMPACT

Not applicable.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable.

ENVIRONMENTAL REVIEW

Not applicable.

Respectfully Submitted,

Ryan Carroll, Deputy City Clerk

Sonia Orozco, City Clerk



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution of Commendation and Appreciation to Jim O'Connell

City of Roseville

RESOLUTION

COMMENDATION AND APPRECIATION

WHEREAS, Jim O'Connell began his distinguished career with the City of Roseville as a Parks Maintenance Worker I on May 17, 2004; and

WHEREAS, Jim was promoted to a Parks Maintenance Worker II in November 2004, and promoted to Senior Parks Maintenance Worker in 2009; and

WHEREAS, Jim worked in various parks throughout the City including Mahany Park and the West Roseville neighborhood parks diligently renovating the Mahany softball fields to Bermuda grass and having a lead role on the Parks Irrigation team; and

WHEREAS, Jim transitioned to Park Development as a construction inspector in 2014 thereby refining the role and enhancing customer service to internal city departments, developers and contractors, advancing processes and knowledge toward the completion of parks and streetscapes, obtaining his playground safety inspector certification, and completing an average of 30+ capital projects a year by problem-solving and finding solutions to enforce the standards while achieving quality workmanship; and

WHEREAS, Jim has earned the respect of his colleagues for his ability to provide responsive solutions to field problems, by communicating with the development community and other city departments, and by becoming an integral part of the Park Development team; and

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF ROSEVILLE, CALIFORNIA, that JIM O'CONNELL be commended for his outstanding service and dedication to the City of Roseville, congratulated for his many accomplishments, and wished a long, healthy, and enjoyable retirement.

SIGNED AND APPROVED this 2nd day of August, 2017.

SUSAN ROHAN, MAYOR

ATTEST:

SONIA OROZCO, CITY CLERK
CITY OF ROSEVILLE, CALIFORNIA





COUNCIL COMMUNICATION

CC #: 8667
File #: 0102-10

Title: Resolution of Commendation and Appreciation to Ronald Miller
Contact: Ryan Carroll 916-774-5265 rcarroll@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 6.16.

RECOMMENDATION TO COUNCIL

Recommend Ronald Miller be commended for his outstanding service and dedication to the City of Roseville, congratulated on his many accomplishments, and wished a long, healthy, and enjoyable retirement.

BACKGROUND

Not applicable.

FISCAL IMPACT

Not applicable.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable.

ENVIRONMENTAL REVIEW

Not applicable.

Respectfully Submitted,

Ryan Carroll, Deputy City Clerk

Sonia Orozco, City Clerk



Rob Jensen, City Manager

ATTACHMENTS:

Description

Resolution of Commendation and Appreciation to Ronald Miller

City of Roseville

RESOLUTION

COMMENDATION AND APPRECIATION

WHEREAS, Ronald Miller began his career with the City of Roseville on January 9, 2006 as Assistant Planner in Development Services; and

WHEREAS, Ronald promoted to Associate Planner on July 7, 2008; and

WHEREAS, Ronald has faithfully served as Chairperson of the Employee Recognition Committee thereby contributing to numerous Pride of Roseville events and the City's bi-annual employee lunch events; and

WHEREAS, Ronald has managed many challenging development applications to successful resolution including his work on the Third Fiddymont Ranch Specific Plan Amendment, Adventist Health Corporate Headquarters, and many other major development applications; and

WHEREAS, Ronald has faithfully served the Citizens of Roseville by providing excellent customer service at the City's Permit Center, tackled challenging development applications, and kept an exemplary attendance record including not missing a single day of work during 2008; and

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF ROSEVILLE, CALIFORNIA, that RONALD MILLER be commended for his outstanding service and dedication to the City of Roseville, congratulated for his many accomplishments, and wished a long, healthy, and enjoyable retirement.

SIGNED AND APPROVED this 2nd day of August, 2017.

SUSAN ROHAN, MAYOR

ATTEST:

SONIA OROZCO, CITY CLERK
CITY OF ROSEVILLE, CALIFORNIA





COUNCIL COMMUNICATION

CC #: 8664

File #: 0400-08 & 0400-04-04-1

Title: VillaSport Athletic Club and Spa - Appeal
Contact: Lauren Hocker 916-774-5272 lhocker@roseville.ca.us

Meeting Date: 8/2/2017

Item #: 7.1.

RECOMMENDATION TO COUNCIL

City staff recommends that the City Council deny the appeal and take the following actions consistent with the recommendations of the Planning Commission:

- A. Adopt a Resolution certifying the Final Environmental Impact Report, adopting the CEQA Findings of Fact, adopting mitigation measures, and adopting the Mitigation Monitoring and Reporting Program;
- B. By motion, adopt the three (3) findings of fact for the Use Permit and approve the Conditional Use Permit (CUP) subject to one (1) condition of approval, and
- C. By motion, adopt the four (4) findings of fact for the Design Review Permit (DRP) and approve the DRP subject to eighty-six (86) conditions of approval.

BACKGROUND

On May 11, 2017 the Planning Commission, by a vote of 3-2, approved the Villa Sport Athletic Club and Spa project. On May 22, 2017 the Roseville Citizens for Quality Development (represented by Soluri Meserve, a law corporation) filed an appeal of the Planning Commission's action. The appeal of the Villa Sport proposal is now before the City Council. Based on the Planning Commission vote, staff is recommending the City Council deny the appeal and approve the necessary entitlements for the project.

The project site is located in the North Central Roseville Specific Plan (NCRSP), which was adopted in 1990. Since 1990, the project site has had a land use designation of Business Professional/Community Commercial (BP/CC) and a zoning designation of Community Commercial/Special Area – North Roseville Specific Plan (CC/SA-NC). A Section 404 Permit to remove wetlands on the site was issued in 1989, and the project area was rough-graded to remove all wetlands, and mitigation for those wetlands was completed. In July 2005, the specific plan was amended to make land use changes to NCRSP Parcels 40 and 44 (Resolution No. 05-346); the project site was a portion of Parcel 40. The result was the approval of a 50,000 square-foot (sf) conference center, 500 hotels rooms in towers up to 10 stories in height, and 5,000 sf of restaurant services. The City's 2035 General Plan land use assumptions included development of the project site at greater intensity than is currently proposed, as does the City's current Capital Improvement Program for roadway system improvements.

In December 2011, the City acquired the parcel and subsequently divided it into three smaller parcels ranging in size from 4.0 to 7.5 acres. In summer 2013 the Villa Sport project applicant purchased the 7.5 acre parcel. The applicant submitted the Villa Sport project application on April 2, 2013, and has been maintaining the property while processing the application since that time.

The proposed project is a request for a CUP to allow Outdoor Sports and Recreation within a Community Commercial zone and a Design Review Permit to allow the construction of an 88,000 square-foot, two-story fitness facility that includes a 50,000 square-foot outdoor area, and associated parking lot, landscaping, and lighting. Outdoor amenities include a pool area with two swimming pools (one with 26-foot slides), whirlpools, a café, a play area with play structures, and an artificial turf field. The proposed operating hours for the facility are from 5:00 am to 11:00 pm, seven days a week.

OUTSTANDING ISSUES

The project was appealed by the Roseville Citizens for Quality Development (RCQD) based on their assertion that nearly every chapter of the EIR is deficient. In response to RCQD comments on the Draft EIR, changes were made which are captured in Chapter 2 of the Final EIR (Exhibit A). As the comments covered most of the chapters of the EIR, so do the changes. The changes were made to clarify or augment the analysis in response to comments. Chapter 3 of the FEIR contains the comment letters received, and the City's responses to those comments. The FEIR concludes that the analysis is adequate and recirculation is not required.

At the Planning Commission public hearing on May 11, 2017, a representative for RCQD submitted a comment letter and highlighted the contents of the letter as part of oral comments made at the public hearing. The letter covered the same issues which had previously been raised within the RCQD letter on the DEIR. In addition, concerns were raised during public comments by Marcus Lo Duca, of the Law Offices of Marcus Lo Duca, on behalf of Lifetime Fitness. The concern raised was that the project's traffic evaluation was not consistent with the City's General Plan, and that the project should have been evaluated under 2035 conditions using the Highway Capacity Manual methods. City staff provided verbal responses to these issues, at the request of the Planning Commission.

The issue regarding General Plan consistency proved to be a point of concern for some members of the Planning Commission, which lead to detailed discussions. For this reason the vote to approve the project was not unanimous, with a 3-2 split.

The Villa Sport project has come before the City Council on appeal. As a result of the concern expressed by members of the Planning Commission, the applicant agreed to augment the traffic impact study with a 2035 cumulative condition analysis using the Highway Capacity Manual methods. This additional analysis has been documented within an Addendum to the EIR. The Addendum also contains written responses to the RCQD letter which was hand-delivered to the Planning Commission. As documented in the Addendum, the additional analysis did not identify any new impacts, nor does this analysis require recirculation.

SUMMARY EVALUATION: CONDITIONAL USE PERMIT

The City of Roseville Zoning Ordinance Chapter 19.12 includes a table of "Commercial Zone Districts Permitted Uses." On this table, Indoor Sports and Recreation is listed as a principally permitted use in the Community Commercial zone, while Outdoor Sports and Recreation is

permissible with approval of a Conditional Use Permit. The purpose of the Conditional Use Permit is to provide the City with discretionary approval and the ability to evaluate the interface between the proposed use and surrounding properties. The City evaluates the consistency with the City's General Plan, conformance with the City's Zoning Ordinance, and any potential for impacts to the health, safety, and welfare of persons who live or work in the area.

As mentioned above, the land use designation for the subject property is BP/CC and the zoning designation of the subject property is CC/SA-NC. The intent of the NCRSP designation was to provide high visibility for commercial uses and employment centers by locating them along the Highway 65 corridor, while reserving the less intense single-family residential uses for locations farthest from the highway. The project is a large commercial building that is consistent with this land use pattern, and with the land use designation of the property. Health clubs (indoor sports and recreation) are usually located in proximity to neighborhoods where their members live and the commercial districts where they work. In these areas they serve as a recreation option for residents and employees and are consistent with the intent of the BP/CC land use and the CC zone. Refer to the "Summary Evaluation: Design Review Permit" section for a discussion of Zoning Ordinance standards and the Community Design Guidelines.

The proposed project has been evaluated to ensure that the use is compatible with the surrounding existing and future land uses. An Environmental Impact Report was prepared to describe the potential impacts of the project (see Exhibit A), which found that impacts related to the project would be less than significant, or less than significant with mitigation. Issues such as noise, light/glare, and visual quality were found to be less than significant without the need for any mitigation. Only one traffic and circulation impact was identified in cumulative conditions, and that impact was reduced to less than significant levels with mitigation. This is partly due to the project's land use setting, which is appropriate and suitable for a use of this kind. The proposed commercial use is surrounded on all sides by other commercial or office uses, or land designated for such uses. Given these facts, staff has found that the project is consistent with the General Plan, Specific Plan, and Zoning Ordinance standards. A more detailed evaluation of the CUP is contained in the PC staff report (see Attachment 1).

SUMMARY EVALUATION: DESIGN REVIEW PERMIT

The Zoning Ordinance establishes standards related to maximum building height, parking, and compliance with the Community Design Guidelines. For a detailed discussion of these items, please refer to Attachment 1, the Planning Commission staff report. To summarize, the maximum allowable building height in the CC zone is 50 feet, unless modified through a Design Review Permit (the NCRSP allows buildings up to ten stories on this site). The proposed building is 48 feet tall at the entry canopy, while the remainder of the building is 37 feet tall at the parapet, which is well within the standard for the zone. A total of 419 parking spaces are required pursuant to the Zoning Ordinance, and a total of 433 spaces are being provided. A review of the proposed site layout and building design has determined that the project complies with the Community Design Guidelines as well as other City plans, such as the Bicycle Master Plan. Items of note include:

- The City's Bicycle Master Plan indicates that a Class I bicycle trail is planned extending along Highway 65 and connecting to the Galleria Mall. The project includes construction of the portion of the trail which is located on the project site, consistent with the Bicycle Master Plan. In addition, the proposed landscape plan shows a connection from the project site to this new segment of trail, with the connection leading directly to the location of some of the proposed bicycle racks and lockers.
- The City's Design Guidelines and the NCRSP require a minimum of 50% parking lot

shading. The project landscape plan has provided a tree density that will result in 64% parking lot shading, which is well above the minimum standard.

- The entire perimeter of the project includes landscaping, with deeper 25-foot setbacks along the northern and western boundaries alongside the existing and proposed Class I bicycle trail. This landscape provides an open space buffer between the project site and the trail.
- The main body of the building is proposed to be painted cement plaster, with accents provided by a composite metal entry canopy and stone veneer around the base and entry of the building. Five complementary colors are proposed. The colors are used on all elevations to highlight architectural variations in the wall planes and to provide interest on longer portions of the façade.

The project conforms with all applicable standards and requirements of the Zoning Ordinance, the City's Design Guidelines, and the NCRSP Design Guidelines.

PUBLIC OUTREACH

Public outreach for the proposed project has occurred at multiple points during the processing of the project, as described below.

- The proposed project was distributed to the various agencies and departments which have requested notice of City applications, and all comments were considered and incorporated into the Conditions of Approval, as appropriate. Notice of the application was also distributed to the Roseville Coalition of Neighborhood Associations. No comments were received.
- On September 15, 2014 the City published the Notice of Preparation (NOP) for the Environmental Impact Report (EIR). Comments were received from the California Department of Transportation, California Native American Heritage Commission, Central Valley Regional Water Quality Control Board, Placer County Flood Control and Water Conservation District, City of Rocklin, Pacific Gas and Electric, and the Law Offices of Gregory D. Thatch. These comments were considered and incorporated into the Draft EIR.
- On October 19, 2016 the Draft EIR was published. Notice of the EIR was mailed to RCONA, interested persons, to all property owners within 300 feet of the project, and to the State Clearinghouse (to distribute to state agencies). Comment letters were received from the California Department of Transportation, the California Department of Fish and Wildlife, the Central Valley Regional Water Quality Control Board, the Placer County Air Pollution Control District, the Roseville Citizens for Quality Development, and the United Auburn Indian Community of the Auburn Rancheria. Responses to these comments were provided in the Final EIR (see below).
- On December 9, 2015 from 6:30 pm to 8:00 pm the applicant held a public informational meeting at the Hyatt Place Hotel near the project site. Notice of this meeting was mailed to RCONA and to all property owners within 500 feet of the project, as well as to the single-family homes west of Roseville Parkway between Chase Dr and Castaic Drive. The purpose of the informational meeting was to provide the public with an opportunity to ask questions about the project. Three attendees from the business community were in attendance, and one resident of the single-family neighborhood. No opposition to the project was expressed.
- The Final EIR was published on April 28, 2017 and notice was distributed to all agencies and organizations which had commented on the Draft EIR, as well as to the State

Clearinghouse.

- A public notice of the Planning Commission hearing was published on April 27, 2017, and was distributed to all property owners within 300 feet of the project site, to RCONA, the nearby Neighborhood Associations, and to the apartment complex and condominium complex on Gibson Drive. To date, no comments have been received.

FISCAL IMPACT

The development of the site with a fitness center will not result in negative impacts to the City's General Fund. All costs associated with development of the site will be borne by the project applicant.

ECONOMIC DEVELOPMENT / JOBS CREATED

The project will generate construction jobs and the applicant anticipates an addition of approximately 250 employees once the project is operational.

ENVIRONMENTAL REVIEW

A Draft Environmental Impact Report (Draft EIR) was published on October 19, 2016. No significant and unavoidable impacts were identified; all impacts were found to be less than significant or found to be less than significant with mitigation. The following impacts required mitigation to ensure impacts would be less than significant:

- Mitigation is included to require preconstruction surveys for burrowing owl and tree-nesting birds, and to provide replacement habitat for Swainson's hawk.
- Cultural Resources: No cultural resources or tribal cultural resources are known to be present on the site, but standard mitigation for unanticipated discoveries of such resources or of human remains has been included.
- Transportation and Traffic: Under cumulative (City buildout) traffic conditions, one mitigation measure to restripe the intersection of Pleasant Grove Boulevard and Rose Creek Drive, which will result in operating conditions of Level of Service C.

A total of six comment letters were received on the Draft EIR and one comment letter on the Final EIR was hand-delivered to the Planning Commission at the May 11, 2017 public hearing. Five of the letters on the Draft EIR were from agencies, and raised technical issues which have been addressed and responded to in the Final EIR. The sixth letter and the hand-delivered letter were both from Roseville Citizens and covered most of the topics in the EIR and Initial Study. In response, some changes were made to the EIR, captured in Chapter 2 of the Final EIR (published April 28, 2017). Subsequent to the Planning Commission hearing, an addendum to the FEIR was prepared to augment the traffic analysis and to provide responses to the hand-delivered letter provided by RCQD. Though changes to the EIR were made in the FEIR, and an addendum was prepared, no new impacts were identified as a result and recirculation is not required. The Draft and Final EIRs are included as Exhibit A and the Addendum as Exhibit B. The required CEQA Findings of Fact are included as Exhibit C.

Respectfully Submitted,

Lauren Hocker, Associate Planner

Kevin Payne, Development Services Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Attachment 1 Planning Commission Staff Report

Attachment 2 Lifetime Record of Proceedings

Exhibit A FEIR and DEIR Link

Exhibit B Addendum to FEIR

Resolution No. 17-343

Exhibit C CEQA Findings

Exhibit D Site Plan

Exhibit E Grading Plan

Exhibit F Drainage Sheds

Exhibit G Landscape Plan

Exhibit H Photometric Plan

Exhibit I Floor Plans

Exhibit J Elevations

Exhibit K Line of Sight

Exhibit L Conditions of Approval



Planning Division Staff Report
Planning Commission Meeting

May 11, 2017

Prepared by: Lauren Hocker, Associate Planner

ITEM V-B: **CONDITIONAL USE PERMIT AND DESIGN REVIEW PERMIT – 291 CONFERENCE CENTER DR – VILLASPORT ATHLETIC CLUB AND SPA – 2013PL-019**

REQUEST

The applicant requests approval of a Conditional Use Permit to allow an outdoor sports and recreation use in the Community Commercial zone and a Design Review Permit to allow the construction of an 88,000 square-foot, two-story fitness facility that includes a 50,000 square-foot outdoor area, and associated parking lot, landscaping, and lighting. Outdoor amenities include a pool area with two swimming pools (one with 26-foot slides), whirlpools, a café, a play area with play structures, and an artificial turf field. The proposed operating hours for the facility are from 5:00 am to 11:00 pm, seven days a week. The project also includes a request to certify a Final Environmental Impact Report (EIR) and adopt of Findings of Fact.

Applicant/Owner – Michael Fassler, VillaSport Roseville, LLC

SUMMARY RECOMMENDATION

The Planning Division recommends that the Planning Commission take the following actions:

- A. Certify the Final Environmental Impact Report and adopt the Mitigation Monitoring and Reporting Plan and CEQA Findings of Fact,
- B. Adopt the three (3) findings of fact for the Conditional Use Permit and approve the Conditional Use Permit subject to one (1) condition of approval, and
- C. Adopt the four (4) findings of fact for the Design Review Permit and approve the Design Review Permit subject to eighty-five (85) conditions of approval.

SUMMARY OF OUTSTANDING ISSUES

A total of six comment letters were received on the Draft EIR. Five of these letters were from agencies, and raised technical issues which have been addressed and responded to in the Final EIR. The remaining letter is from a private group, the Roseville Citizens for Quality Development (represented by Soluri Meserve, a law corporation), which states that the EIR is deficient and requires recirculation. City staff thoroughly reviewed the comment letter and does not agree. The FEIR contains responses to each point raised by the Roseville Citizens for Quality Development, and concludes that the analysis is adequate and that recirculation is not required. There are no other outstanding issues with the request. The applicant has reviewed and is in agreement with the recommended conditions of approval.

BACKGROUND

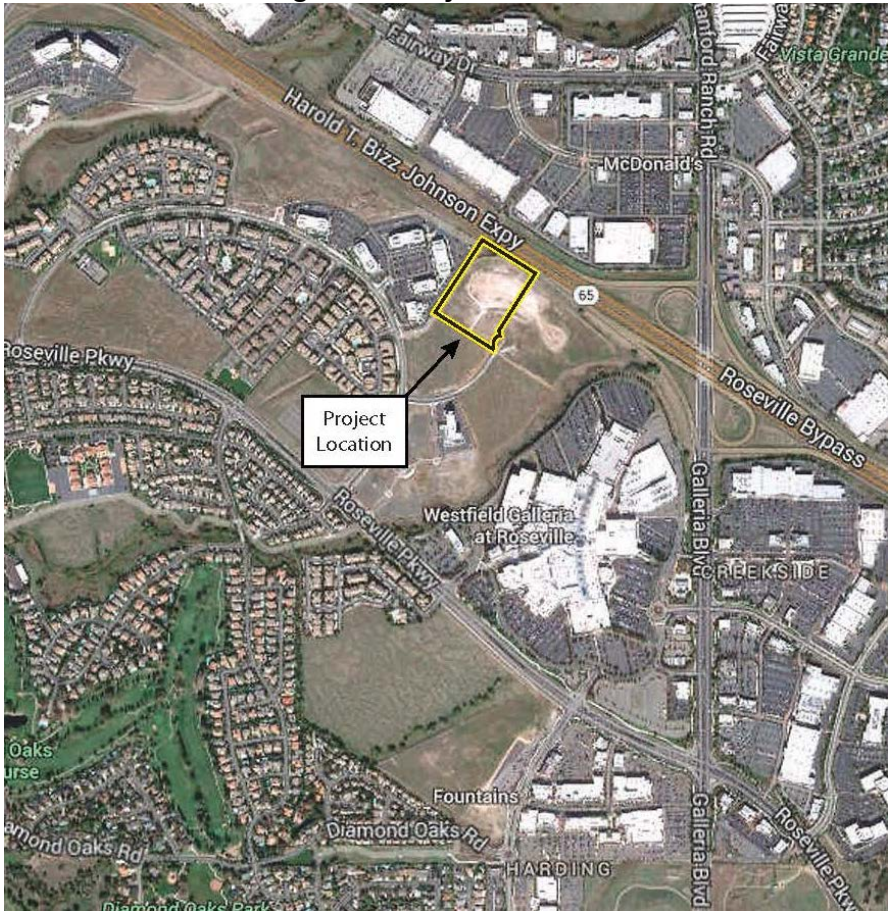
The project site is located within the North Central Roseville Specific Plan (NCRSP). The NCRSP area encompasses approximately 1,824 acres and contains a diverse mix of residential, commercial and office uses. A Section 404 Permit was issued for the specific plan, and the project area was rough-graded to remove all wetlands, and mitigation for those wetlands was completed.

In July 2005, the specific plan was amended to make land use changes to NCRSP Parcels 40 and 44 (Resolution No. 05-346¹); the project site was a portion of Parcel 40. The original 50-acre Parcel 40 was subdivided into four parcels. A 20-acre site (Parcel 40A) was created along State Route 65 (SR 65) for development of a Hotel/Conference Center. Three parcels ranging in size from 6.7 to 15.4 acres were created on the balance of Parcel 40 (Parcels 40B, 40C and 40D).

¹ GPA 04-06, SPA 04-01 and 04-07, RZ 04-08, and DAA 04-02 and 04-16.

In addition, the City Council approved a Specific Plan Amendment and Development Agreement Amendment for Parcel 40 (A–D) to increase the development intensity by allowing the Floor Area Ratio (FAR) to increase from 40 percent to 80 percent. The amendments also allowed buildings up to 10 stories in height to be located on Parcel 40 (A–D). The increased FAR allowed a maximum of 1,045,440 square feet (sf) of business professional and commercial land uses on Parcels 40B, C, and D. Parcel 40A, which includes the project site, was specifically approved for development of a 50,000 sf conference center, 500 hotel rooms in towers up to ten stories in height, and 5,000 sf of restaurant services. An addendum to the NCRSP Specific Plan EIR was prepared to analyze the environmental impacts of these changes.

Figure 1: Project Location



Construction of a 10-story, 250-room hotel and 35,000-square-foot conference center that was partially financed by the City of Roseville began on Parcel 40A in fall 2005. However, due to a lack of financing on the part of the developer, construction of foundation work was halted in spring 2006. Thereafter negotiations between the City and the developer failed to revive the project and the project was halted and the foundations were demolished. In December 2011, the City acquired the parcel with the intent to develop a hotel and conference center, consistent with the NCRSP. After acquiring the parcel, the City divided it into three smaller parcels ranging in size from 4.0 to 7.5 acres. In summer 2013 the project applicant purchased the 7.5 acre parcel. The applicant submitted the VillaSport project application on April 2, 2013, and has been maintaining the property while processing the application since that time. The remaining parcels were set aside by the City for a hotel and conference center, which was approved in summer 2014.

SITE INFORMATION

Location: 291 Conference Center Drive

Total Size: 7.5 acres

Topography and Setting: The project site is relatively flat and does not contain any trees, waterways, or streams. Highway 65 is located to the north of the site, an office complex is located to the west (which includes dental offices, title companies, financial services, and similar), vacant land is located to the east (a hotel/conference center is approved on the site), and additional vacant commercial land is located directly to the south. There are other uses such as a hotel, retail uses, apartments, and condominiums located in the vicinity along Gibson Drive, and the Galleria Mall is located to the east (see Figure 1).

EVALUATION: CONDITIONAL USE PERMIT

The City of Roseville Zoning Ordinance Chapter 19.12 includes a table of “Commercial Zone Districts Permitted Uses.” On this table, Indoor Sports and Recreation is listed as a principally permitted use in the Community Commercial zone, while Outdoor Sports and Recreation is permissible with approval of a Conditional Use Permit. The purpose of the Conditional Use Permit is to provide the City with discretionary approval and the ability to evaluate the interface between the proposed use and surrounding properties. The City evaluates the consistency with the City’s General Plan, conformance with the City’s Zoning Ordinance, and any potential for impacts to the health, safety, and welfare of persons who live or work in the area. The three findings for a Conditional Use Permit are listed below in *italicized, bold* text and are followed by an evaluation of the project in relation to each finding.

1. The proposed use or development is consistent with the City of Roseville General Plan and the North Central Roseville Specific Plan.

The land use designation for the subject property is Business Professional/Commercial (BP/CC). The CC land use designation is intended to include retail stores and businesses with a full range of goods and services that are provided to an expanded service area. The BP designation is intended to provide areas for small and large office uses, including uses supportive of offices. The subject property and the surroundings are designated BP/CC to indicate that the area is intended for a mix of commercial and office uses. Health clubs (indoor sports and recreation) are usually located in proximity to neighborhoods where their members live and the commercial districts where they work. In these areas they serve as a recreation option for residents and employees and are consistent with the intent of the BP/CC land use. The General Plan establishes the general land use intent and relies on the Specific Plan, Zoning Ordinance, and Community Design Guidelines to address more site-specific or use-specific compatibility and design issues. With approval of the Conditional Use Permit, the proposed project will be consistent with the General Plan land use designation.

The NCRSP designates the site and surrounding properties as Business Professional/Commercial (BP/CC). The NCRSP envisioned the areas of land closest to Highway 65—including the project site—as an area of Business Professional, Light Industrial, and Commercial uses (NCRSP Figure 2.2, Conceptual Land Use Pattern), due to its high visibility from and proximity to the highway. The intent was to provide high visibility for commercial uses and employment centers by locating them along the Highway 65 corridor, while reserving the less intense single-family residential uses for locations farthest from the highway. The project is a large commercial building that is consistent with this land use pattern, and with the land use designation of the property.

The NCRSP also includes some general design guidelines, which were reviewed for applicability and project consistency. The NCRSP was approved in 1990, and by this time many of the design guidelines which were only recommendations in the NCRSP are now *required* by other City or state-wide regulations. For example, the NCRSP encourages the installation of bike racks and lockers, which is now a requirement pursuant to the California Building Code, and also includes a parking lot shading standard of 50%, which is now a citywide requirement found in the Community Design Guidelines. The project has been reviewed and has been found to be consistent with the NCRSP design guidelines and the NCRSP land use designation.

2. The proposed use or development conforms with all applicable standards and requirements of the Zoning Ordinance.

The zoning designation of the subject property is Community Commercial/Special Area – North Central Roseville Specific Plan (CC/SA-NC). The CC zone is intended to serve the principal retail shopping needs of the entire community by providing areas for shopping centers and other retail and service uses.

The SA-NC designation reflects the project's location within the North Central Roseville Specific Plan, consistency with which is described as part of Finding 1, above. As noted in the setting of this evaluation, the proposed Indoor Sports and Recreation use (the fitness club building) is principally permitted in the CC zone, while the Outdoor Sports and Recreation use (the pool and other outdoor spaces associated with the fitness club) requires a Conditional Use Permit.

The Zoning Ordinance establishes standards related to maximum building height, parking, and compliance with the Community Design Guidelines. All of these items are discussed in more detail in the "Evaluation: Design Review Permit" section of this staff report, as they are relevant to Design Review, but a summary is provided here. The maximum allowable building height in the CC zone is 50 feet, unless modified through a Design Review Permit (the NCRSP allows buildings up to ten stories on this site). The proposed building is 48 feet tall at the entry canopy, while the remainder of the building is 37 feet tall at the parapet, which is well within the standard for the zone. A total of 419 parking spaces are required pursuant to the Zoning Ordinance, and a total of 433 spaces are being provided. A review of the proposed site layout and building design has determined that the project complies with the Community Design Guidelines. Thus, the project conforms with all applicable standards and requirements of the Zoning Ordinance.

3. The location, size, design and operating characteristics of the project is compatible with and shall not adversely affect or be materially detrimental to the health, safety, or welfare of persons residing or working in the area, or be detrimental or injurious to public or private property or improvements.

The proposed project has been evaluated to ensure that the use is compatible with the surrounding existing and future land uses. Highway 65 is located to the north of the site, an office complex is located to the west (which includes dental offices, title companies, financial services, and similar), vacant land is located to the east (a hotel/conference center is approved on the site), and additional vacant commercial land is located directly to the south. There are other uses such as a hotel, retail uses, apartments, and condominiums located in the vicinity along Gibson Drive, and the Galleria Mall is located to the east (see Figure 1).

An Environmental Impact Report was prepared to describe the potential impacts of the project (see Exhibit A), which found that impacts related to the project would be less than significant, or less than significant with mitigation. Issues such as noise, light/glare, and visual quality were found to be less than significant without the need for any mitigation. Only one traffic and circulation impact was identified in cumulative conditions, and that impact was reduced to less than significant levels with mitigation. This is partly due to the project's land use setting, which is appropriate and suitable for a use of this kind. The proposed commercial use is surrounded on all sides by other commercial or office uses, or land designated for such uses. The nearest potentially sensitive uses are the apartments, which are located at least 400 feet away from the site, across Gibson Drive and separated from the site by an undeveloped commercial property of nearly seven acres in size. It is staff conclusion that the proposed fitness center is suitable in this location, as it is located near several employment centers (the adjacent offices and the nearby Galleria Mall), can serve the residential neighborhoods in this portion of the City, and is also near other uses such as the existing hotel and the planned hotel/conference center, whose visitors may benefit from having this use in walking distance. The location, size, design, and operating characteristics of the project are compatible with and will not adversely affect or be materially detrimental to the health, safety, or welfare of persons residing or working in the area, or be detrimental or injurious to public or private property or improvements.

EVALUATION: DESIGN REVIEW PERMIT

- 1. The project as approved preserves and accentuates the natural features of the property, such as open space, topography, trees, wetlands and water courses, provides adequate drainage for the project, and allows beneficial use to be made of the site for development.***

As described in the “Background” section of this staff report, the project site was mass graded, foundations were constructed on the site and then excavated and removed, and since that time the site has been annually maintained (e.g. disking for fire control). The site is essentially flat and contains predominantly non-native grasses as vegetation. There are no intact natural features on the site to be preserved. The project includes a stormwater treatment and control designs which have been reviewed by the City Engineering Division and have been found to be adequate. The proposed improvements with regard to access, circulation, utilities, and other facilities/structures will allow beneficial use of the site, consistent with the land use and zoning designation.

- 2. The project site design as approved provides open space, access, vehicle parking, vehicle, pedestrian and bicycle circulation, pedestrian walks and links to alternative modes of transportation, loading areas, landscaping and irrigation and lighting which results in a safe, efficient, and harmonious development and which is consistent with the applicable goals, policies and objectives set forth in the General Plan, the Community Design Guidelines and the applicable Specific Plan and/or applicable design guidelines.***

The proposed site plan, landscaping plan, and photometric plans are included as Exhibits C, F, and G, and the site plan is also included as Figure 2.

Access and Circulation

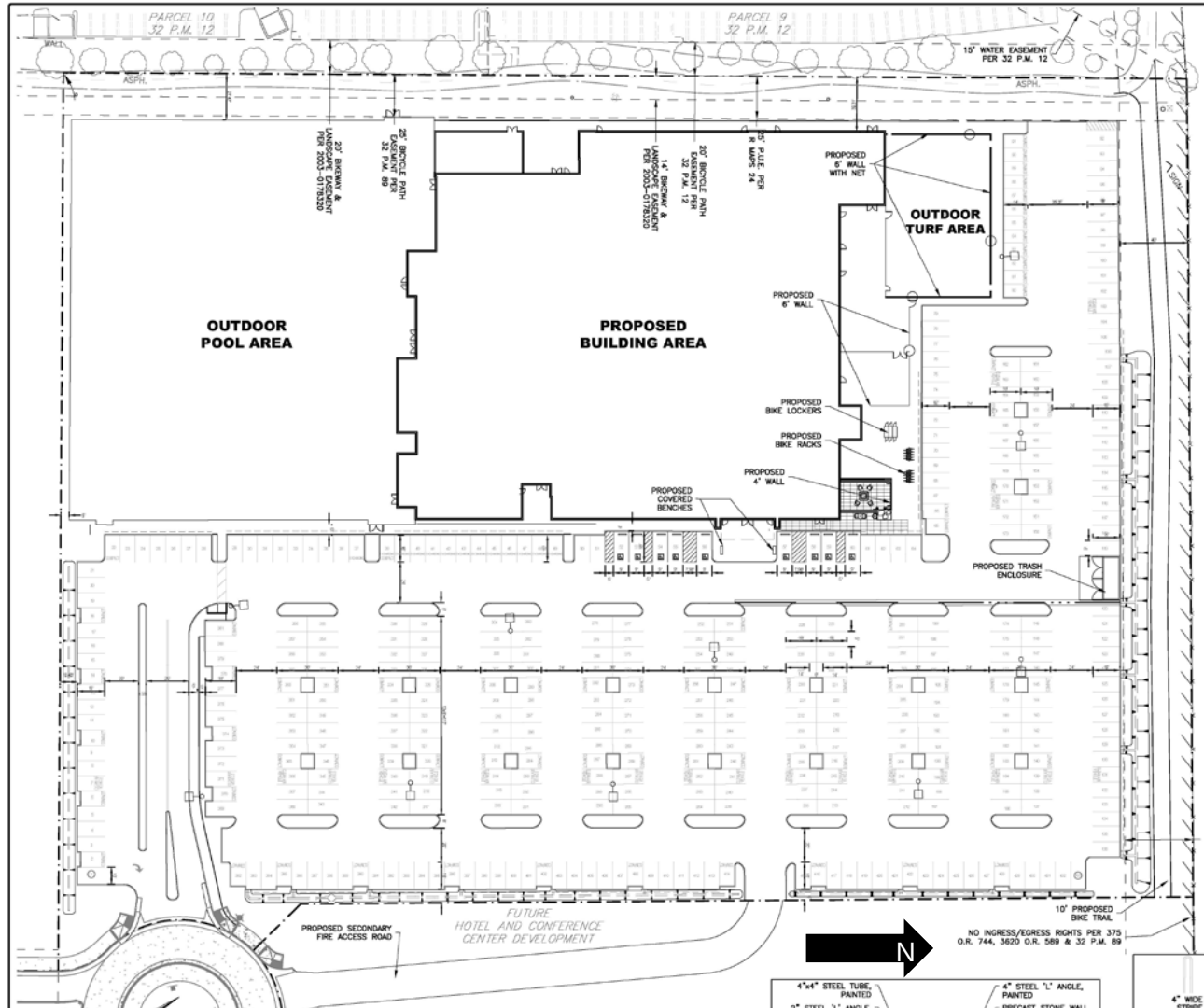
The project site is located at the end of Conference Center Drive, on a corner of the roundabout. A Traffic Impact Study (see Appendix A) was prepared for the project, which included an evaluation of the proposed access and circulation for the project. The recommendations from the study were incorporated into the site design, including a proposed secondary fire access road on the adjacent property, which would be temporary until the neighboring property develops and a cross-access connection is completed. The EIR for the project found only one potentially significant impact, which would occur in cumulative (City buildout) conditions, but also determined that mitigation in the form of the restriping the intersection of Pleasant Grove Boulevard and Rose Creek Drive would reduce this impact to less than significant levels. The project has also been reviewed by the City’s Engineering Division, and has found to provide access and circulation designs which conform to City requirements.

Pedestrian and Bicycle Circulation and Linkages

An existing paved bicycle trail is located along the western property boundary, in between the project site and the adjacent office complex. There is an existing easement over this trail, which is reflected on the project plans. The City’s Bicycle Master Plan indicates that a Class I bicycle trail is planned extending along Highway 65 and connecting to the Galleria Mall. The project includes construction of the portion of the trail which is located on the project site, consistent with the Bicycle Master Plan. In addition, the proposed landscape plan shows a connection from the project site to this new segment of trail, with the connection leading directly to the proposed café, and the location of some of the proposed bicycle racks and lockers. In addition to this trail, there are existing sidewalks along Conference Center Drive leading into the site, which is continued into the site and to the front of the building. The City’s Pedestrian Master Plan does not identify any other facilities for the site. The project is consistent with the Bicycle Master Plan and Pedestrian Master Plan, and provides connections to both the pedestrian and bicycle system.

There is an existing bus shelter near the intersection of Conference Center Drive and Gibson Drive, approximately ¼-mile from the site. In addition, the Galleria Mall just to the east of the site is a Transfer Point, allowing access to Route A, Route B, Route M, and Route S, which provide connections throughout the City. In addition, a seating area is provided at the front entrance for use by dial-a-ride patrons. The project includes bicycle and pedestrian connections that provide access to these transit facilities.

Figure 2: Proposed Site Plan



Parking

Zoning Ordinance Section 19.26.030 provides the parking standards applicable to health clubs and athletic clubs. The standard varies depending upon the type of space, with higher standards applies to spaces that fit the most people (such as open-floor group fitness classes) and lower standards for spaces such as weight rooms, which have fixed equipment taking up floor space. Common areas, such as closets and hallways, do not count toward the parking calculations. Based on Zoning Ordinance standards, the required parking is as shown in the table below. Group fitness classrooms require 1 space per 50 square feet, while all other fitness areas (weight rooms and other open floor areas, pools and spas without defined lanes, cycle studios, and training rooms) require 1 space per 150 square feet. The Zoning Ordinance also notes “additional spaces as required for other uses,” based on the capacity of the facilities

not on the list. Such uses include the proposed café, offices, spa, and basketball courts. The proposed project includes 433 parking spaces, and a required parking amount of 419 spaces. The project includes sufficient parking spaces to support the use.

Use	Standard	Requirement
Fitness Classroom	1 per 50 SF	73
Open Floor	1 per 150 SF	127
Basketball Courts	10 per court	20
Swimming Pools	1 per 100 SF	132
Lap Pools	2 per lane	36
Café	1 per 150 SF	21
Offices	1 per 250 SF	2
Spa	1 per 250 SF	8
TOTAL		419
PARKING PROVIDED		433

Landscaping, Lighting, and Open Space

The proposed landscaping plan (Exhibit F) includes a variety of trees, shrubs, and groundcovers which provide a cohesive color and texture palette that will create visual interest, and conform to the City's Water Efficient Landscape Ordinance. The entire perimeter of the project includes landscaping, with deeper 25-foot setbacks along the northern and western boundaries alongside the existing and proposed Class I bicycle trail. This landscape provides an open space buffer between the project site and the trail. Corner landscape treatment is provided at Conference Center Drive, to provide additional detailing and highlights for the entrance. The selected tree palette includes a species mix that will provide seasonal interest, with some evergreen (Italian Cypress), trees with spring blooms (western redbud), and fall color (Chinese pistache). The City's Design Guidelines and the NCRSP require a minimum of 50% parking lot shading. The project landscape plan has provided a tree density that will result in 64% parking lot shading, which is well above the minimum standard.

The project includes typical parking lot lighting, with flat head lighting standards set at 20 feet in height and spaced throughout the parking to provide adequate illumination. The proposed fixture is consistent with the City's Design Guidelines, as it includes cut-off lenses and is directed downward to prevent off-site spillover of light. Lower-intensity fixtures are proposed along the building itself and walkways to provide pedestrian-scale lighting, also in conformance with the City's Design Guidelines.

- 3. The building design, including the materials, colors, height, bulk, size and relief, and the arrangement of the structures on the site, as approved is harmonious with other development and buildings in the vicinity and which is consistent with the applicable goals, policies and objectives set forth in the General Plan, the Community Design Guidelines and the applicable Specific Plan and/or applicable design guidelines.***

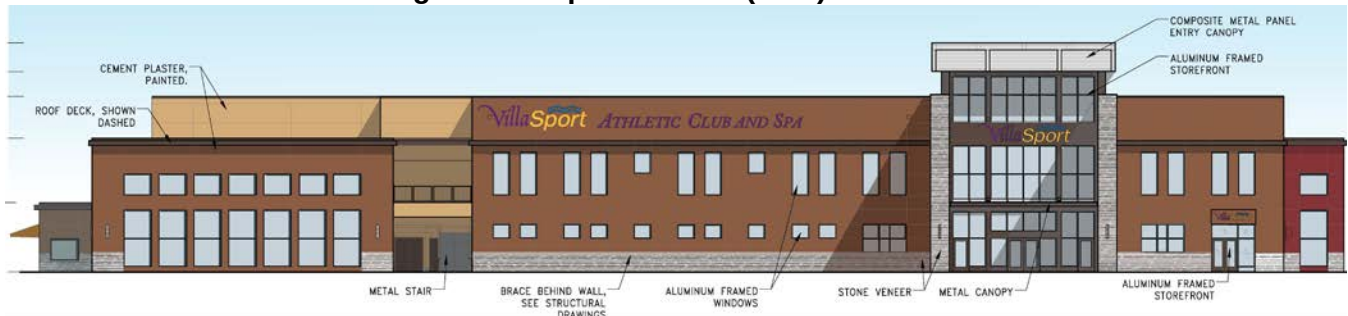
The proposed building elevations are included as Exhibit I and the front (east) elevation is included as Figure 3. The main body of the building is proposed to be painted cement plaster, with accents provided by a composite metal entry canopy and stone veneer around the base and entry of the building. Five complementary colors are proposed. On the building front (the east elevation), the main body color is a medium brown (Behr Artisan), with a dark brown (Behr Bear Rug) used along the roof lines. A lighter taupe (Behr Cork) is used on recessed wall planes, and a dark red (Behr Dozen Roses) is used on a

corner pop-out. The colors are used similarly on all other elevations, to highlight architectural variations in the wall planes and also to provide interest on the longer portions of the façade. The main entry tower is proposed to be 48 feet tall, the upper parapet is 37 feet tall, and the lower parapets are 28 feet tall. This is consistent with the City's Design Guidelines, which call for variation in materials and colors (Policy CC-46) and variations in wall planes and rooflines (Policy CC-41). The overall height of the building conforms to standards, as previously noted.

Also consistent with the Design Guidelines, the building includes a main building entry which is emphasized through building articulation and form (Policy CC-44). The entry includes a tower element with a metal panel canopy, three rows of windows that extend all the way to the canopy, and stone veneer extending up the sides of the tower. Windows are also used on the other portions of the elevations, to provide natural lighting inside the building, as well as to provide symmetry and interest along the façade consistent with Policy CC-41.

The adjacent office buildings are designed using similar primary building materials in pale neutral colors (white, cream, and adobe clay). The existing Hyatt Place hotel building nearby also uses neutral colors, using a beige and a darker adobe clay color, as well as extensive use of glass and some metal. The proposed project building color scheme and overall design is compatible and harmonious with the other buildings in the vicinity. As described in the analyses above, the project is consistent with the applicable goals, policies and objectives set forth in the General Plan, the Community Design Guidelines and the NCRSP.

Figure 3: Proposed Front (East) Elevation



- 4. The design of the public services, as approved, including, but not limited to trash enclosures and service equipment are located so as not to detract from the appearance of the site, and are screened appropriately and effectively using construction materials, colors and landscaping that are harmonious with the site and the building designs.**

As discussed in the section above, the mechanical equipment for the building is roof-mounted, and will be shielded by the roof parapet and mechanical screen finished to look like the exterior walls (see Exhibit J). The required trash enclosure for the site is located on the interior of the site, where it will not be noticeable from public streets, and will be surrounded on three sides by a wall designed to match the building. The rear of the enclosure, which faces Highway 65 and the bicycle trail, will be screened by a 25-foot-deep landscaping buffer. The mechanical equipment and trash enclosure will be screened appropriately and effectively.

PUBLIC OUTREACH

Public outreach for the proposed project has occurred at multiple points during the processing of the project, as described below.

- The proposed project was distributed to the various agencies and departments which have requested notice of City applications, and all comments were considered and incorporated into the Conditions of Approval, as appropriate. Notice of the application was also distributed to the Roseville Coalition of Neighborhood Associations. No comments were received.
- On September 15, 2014 the City published the Notice of Preparation (NOP) for the Environmental Impact Report (EIR). Comments were received from the California Department of Transportation, California Native American Heritage Commission, Central Valley Regional Water Quality Control Board, Placer County Flood Control and Water Conservation District, City of Rocklin, Pacific Gas and Electric, and the Law Offices of Gregory D. Thatch. These comments were considered and incorporated into the Draft EIR.
- On October 19, 2016 the Draft EIR was published. Notice of the EIR was mailed to RCONA, interested persons, to all property owners within 300 feet of the project, and to the State Clearinghouse (to distribute to state agencies). Comment letters were received from the California Department of Transportation, the California Department of Fish and Wildlife, the Central Valley Regional Water Quality Control Board, the Placer County Air Pollution Control District, the Roseville Citizens for Quality Development, and the United Auburn Indian Community of the Auburn Rancheria. Responses to these comments were provided in the Final EIR (see below).
- On December 9, 2015 from 6:30 pm to 8:00 pm the applicant held a public informational meeting at the Hyatt Place Hotel near the project site. Notice of this meeting was mailed to RCONA and to all property owners within 500 feet of the project, as well as to the single-family homes west of Roseville Parkway between Chase Dr and Castaic Drive. The purpose of the informational meeting was to provide the public with an opportunity to ask questions about the project. Three attendees from the business community were in attendance, and one resident of the single-family neighborhood. No opposition to the project was expressed.
- The Final EIR was published on April 28, 2017 and notice was distributed to all agencies and organizations which had commented on the Draft EIR, as well as to the State Clearinghouse.
- A public notice of the Planning Commission hearing was published on April 27, 2017, and was distributed to all property owners within 300 feet of the project site, to RCONA, the nearby Neighborhood Associations, and to the apartment complex and condominium complex on Gibson Drive. To date, no comments have been received.

ENVIRONMENTAL DETERMINATION

A Draft Environmental Impact Report (Draft EIR) was published on October 19, 2016. No significant and unavoidable impacts were identified; all impacts were found to be less than significant or found to be less than significant with mitigation. The following impacts required mitigation to ensure impacts would be less than significant:

- **Biological Resources:** The site is heavily disturbed by past construction activities, but there remains some potential for the site to provide habitat for burrowing owls and Swainson's hawk, and there is also some potential for birds to nest in trees nearby. Mitigation is included to require preconstruction surveys for burrowing owl and tree-nesting birds, and to provide replacement habitat for Swainson's hawk.

- Cultural Resources: No cultural resources or tribal cultural resources are known to be present on the site, but standard mitigation for unanticipated discoveries of such resources or of human remains has been included.
- Transportation and Traffic: Under cumulative (City buildout) traffic conditions, one mitigation measure to restripe the intersection of Pleasant Grove Boulevard and Rose Creek Drive, which will result in operating conditions of Level of Service C.

A total of six comment letters were received on the Draft EIR. As noted previously, five of the letters on the Draft EIR were from agencies, and raised technical issues which have been addressed and responded to in the Final EIR. The letter from the Roseville Citizens for Quality Development discussed many issues, and covered most of the topics discussed in the EIR and the Initial Study. In response, some changes were made to the EIR, which is captured in Chapter 2 of the Final EIR; the Final EIR was published on April 28, 2017. Topical chapters were changes were made include the project description chapter, air quality, biological resources, cultural resources, greenhouse gases, hydrology and water quality, noise, and transportation and traffic. The Final EIR also includes a Mitigation Monitoring and Reporting Program. The Draft and Final EIRs are included as Exhibit A. The required CEQA Findings of Fact are included as Exhibit B.

RECOMMENDATION

The Planning Division recommends the Planning Commission take the following actions:

- A. Certify the Final Environmental Impact Report and adopt the Mitigation Monitoring and Reporting Plan and the CEQA Findings of Fact,
- B. Adopt the findings of fact as stated in the staff report and approve the **USE PERMIT – 291 CONFERENCE CENTER DR – VILLASPORT ATHLETIC CLUB AND SPA – 2013PL-019** subject to one (1) condition of approval.
- C. Adopt the findings of fact as stated in the staff report and approve the DESIGN REVIEW PERMIT – **291 CONFERENCE CENTER DR – VILLASPORT ATHLETIC CLUB AND SPA – 2013PL-019** subject to eighty-five (85) conditions of approval.

CONDITIONS OF APPROVAL FOR THE CONDITIONAL USE PERMIT

1. The Conditional Use Permit is approved based on the operational parameters established in the staff report and the exhibits thereto, including the Environmental Impact Report. The operating hours of the facility are 5 am to 11 pm. (Planning)

CONDITIONS OF APPROVAL FOR THE DESIGN REVIEW PERMIT

1. This Design Review Permit approval shall be effectuated within a period of two (2) years from **May 11, 2017** and if not effectuated shall expire on **May 11, 2019**. Prior to said expiration date, the applicant may apply for an extension of time, provided this approval is does not extend the expiration beyond **May 11, 2020**. (Planning)
2. The project is approved as shown in Exhibits A – J and as conditioned or modified below. (Planning)
3. The project shall comply with all required environmental mitigation identified in the VillaSport Environmental Impact Report. The applicable mitigation measures shall be included as construction notes on the Improvement Plans and/or Building Plans. (Planning)

4. The applicant shall pay City's actual costs for providing plan check, mapping, GIS, and inspection services. This may be a combination of staff costs and direct billing for contract professional services. (Engineering, Environmental Utilities, Electric, Finance)
5. The design and construction of all improvements shall conform to the Design and Construction Standards of the City of Roseville, or as modified by these conditions of approval, or as directed by the City Engineer. (Engineering)
6. The applicant shall not commence with any on-site improvements or improvements within the right-of-way until such time as grading, underground and/or improvement plans are approved and grading and/or encroachment permits are issued by the Development Services Department – Land Development Engineering Division. (Engineering)
7. The approval of this project does not constitute approval of proposed improvements as to size, design, materials, or location, unless specifically addressed in these conditions of approval. (Engineering)

PRIOR TO ISSUANCE OF BUILDING PERMITS:

8. Parking stalls shall meet, or exceed, the following minimum standards:
 - a. All parking stalls shall be double-striped. Parking stalls adjacent to sidewalks, landscaped areas or light fixtures, and all Accessible stalls shall have a 6" raised curb or concrete bumper. (Planning)
 - b. Standard -- 9 feet x 18 feet; Compact--9 feet x 16 feet; Accessible--14 feet x 18 feet (a 9 foot wide parking area plus a 5 foot wide loading area) and a minimum of one (1) parking space shall be Accessible van accessible--17 feet x 18 feet (9 foot wide parking area plus an 8 foot wide loading area). (Planning)
 - c. An 'exterior routes of travel' site accessibility plan incorporating slope, cross-slope, width, pedestrian ramps, curb ramps, handrails, signage, detectable warnings or speed limit signs or equivalent means shall comprise part of the site improvement plans submitted to City for review, prior to building plan check approvals. This site accessibility plan shall also include:
 - i) Accessible parking stalls shall be dispersed and located closest to accessible entrances. The total number of accessible parking spaces shall be established by Table 11B-208.2 of the CBC.
 - ii) Accessible Parking spaces and crosswalks shall be signed, marked and maintained as required by Chapter 11B of the CBC.
 - iii) Accessible parking and exterior route of travel shall comply with CBC, Chapter 11B. (Building)
9. Signs and/or striping shall be provided on-site as required by the Planning Department to control on-site traffic movements. Parking lot striping and signage shall be maintained in a visible and legible manner. (Planning)
10. The plans submitted to the Building Department for permits shall indicate all approved revisions/alterations as approved by the Commission including all conditions of approval. (Planning)
11. The mechanical roof screens shall be painted cement plaster, consistent with the proposed building materials. (Planning)
12. The project Landscape Plans shall comply with the following:

- a. The Landscape Plan shall indicate the location of, and be designed to avoid conflicts with, all pole-mounted light fixtures and utility equipment including (but not limited to) electric transformers, switchgear, and overhead lines, backflow preventers, fire department connections, and public water, sewer, and storm drain facilities. (Planning, Fire, EUD, Electric, Public Works)
 - b. The tree plantings in the parking lot shall be designed to provide a minimum of 50% shade coverage after 15 years. (Planning)
 - c. At a minimum, landscaped areas not covered with live material shall be covered with a rock, (3") bark (no shredded bark) or (3") mulch covering. (Planning)
 - d. The landscape plan shall comply with the Landscape Guidelines for the North Central Roseville Specific Plan and the City of Roseville Water Efficient Landscape ordinance. (Planning)
 - e. All landscaping in areas containing electrical service equipment shall conform with the Electric Department's Landscape Requirements and Work Clearances as outlined in Section 10.00 of the Departments "Specification for Commercial Construction." (Electric)
13. Any roof-mounted equipment and satellite dishes proposed shall be shown on the building plans. The equipment shall be fully screened from public streets and the surrounding properties. (Planning)
 14. At the time of building permit application and plan submittal, the project applicant shall submit a proposed plan which shows the suite addressing plan for individual tenant spaces within the building. The Chief Building Official, or the designate, shall approve said plan prior to building permit approval. (Building)
 15. A separate Site Accessibility Plan which details the project's site accessibility information as required by California Title 24, Part 2 shall be submitted as part of the project Building Permit Plans. (Building)
 16. For Multiple Building Complexes: As part of the required Site Accessibility Plan, the developer shall delineate the extent of the site accessibility improvements being installed as part of the initial improvements for the project, and those that are planned to be developed as part of subsequent phases (i.e. around future pad buildings). (Building)
 17. For all work to be performed off-site, permission to enter and construct shall be obtained from the property owner, in the form of a notarized right-of-entry. Said notarized right-of-entry shall be provided to the Engineering Division prior to approval of any plans. (Engineering)
 18. The Improvement Plans shall include a complete set of Landscape Plans. The Landscape Plans shall be approved with the Improvement Plans. (Planning, Engineering, Fire, Environmental Utilities, Electric)
 19. Construction access shall not cross the existing bike trail. The developer shall be responsible for any damage to the existing trail during construction. (Engineering, Alternative Transportation)
 20. A bike trail shall be constructed per City Standards along the northern boundary of the project site, parallel to Highway 65, as shown in the City Bicycle Master Plan. Plants and irrigation shall be set back a minimum of 5 feet from the edge of pavement of the existing and new bike trail. Irrigation shall be designed to avoid overspray on the trails and positive drainage shall be provided away from the existing bike trail. (Engineering, Alternative Transportation, Planning)
 21. Grading adjacent to the existing bike trail shall be designed to avoid nuisance or standing water on the bike trail. Construction plans shall include a detail and cross-section for the bicycle trail and drainage, for review and approval by Alternative Transportation. (Alternative Transportation)

22. A note shall be added to the grading plans that states:

*“Prior to the commencement of grading operations, the contractor shall identify the site where the **excess/borrow** earthen material shall be imported/deposited. If the **borrow/deposit** site is within the City of Roseville, the contractor shall produce a report issued by a geotechnical engineer to verify that the exported materials are suitable for the intended fill, and shall show proof of all approved grading plans. Haul routes to be used shall be specified.”* (Engineering)

23. The applicant shall dedicate all necessary rights-of-way or Public Utility Easement for the widening of any streets or transfer of public utilities across and over any portion of the property as required with this entitlement. A separate document shall be drafted for approval and acceptance by the City of Roseville, and recorded at the County Recorder's Office. (Engineering)
24. All storm drainage, including roof drains, shall be collected on site and treated with Best Management Practices (BMP's) per the City's Stormwater Quality Design Manual and in conformance with the City's current MS4 Permit. All storm water shall be routed to the nearest existing storm drain system or natural drainage facility. Drain outfalls shall extend down to the receiving water and shall be constructed with adequate velocity attenuation devices. Access shall be provided to the stormwater swales to allow for maintenance. The grading/improvement plans for the site shall be accompanied with a shed map that defines that area tributary to this site and all drainage facilities shall be designed to accommodate the tributary flow. The storm drain system and proposed BMP's shall be privately owned and maintained by the property owner. Prior to the issuance of any permits, the owner shall provide a plan for the maintenance of the proposed BMP's and enter into a stormwater maintenance agreement with the City. (Engineering)
25. Prior to the issuance of any permits, the property owner shall prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the City, as defined by the Regional Water Quality Control Board. The SWPPP shall be submitted in a single three ring binder. Upon approval, the SWPPP will be returned to the property owner during the pre-construction meeting. (Engineering)
26. To ensure that the design for any necessary widening, construction, or modifications of Public Streets does not conflict with existing dry utilities generally located behind the curb and gutter, and prior to the approval of design drawings for those frontage improvements, the project proponent shall have the existing dry utilities pot holed for verification of location and depth. (Engineering)
27. Sight distances for all driveways shall be clearly shown on the improvement plans to verify that minimum standards are achieved. It will be the responsibility of the project proponent to provide appropriate landscaping and improvement plans, and to relocate and/or modify existing facilities as needed to meet these design objectives. (Engineering)
28. The applicant shall remove and reconstruct any existing damaged curb, gutter, and sidewalk along the property frontage. During plan check of the improvement plans and/or during inspection, the Engineering Division will designate the exact areas to be reconstructed. Any existing public facilities damaged during the course of construction shall be repaired by the property owner and at the property owner's expense, to the satisfaction of the City. (Engineering)
29. Prior to construction within any phase of the project, high visibility temporary construction fencing shall be installed along the parcel adjacent to the Preserve. Fencing shall be maintained daily until permanent fencing is installed, at which time the temporary fencing shall be removed from the project site. (Engineering, Development Services, Planning)

30. With the exception of access required for maintenance and/or emergency vehicles, the project shall be designed to prevent vehicle access into the Preserve. Post and cable fencing or other improvements shall be utilized to meet this requirement. (Engineering, Development Services, Planning)
31. Prior to the approval of the improvement plans, it will be the project proponent's responsibility to pay the standard City Trench Cut Recovery Fee for any cuts within the City streets that are required for the installation of underground utilities. (Engineering)
32. The project shall be addressed as 291 Conference Center Drive. All projects with multi-tenants or buildings must submit a plot plan with building footprint(s) to the Public Works Department (Engineering - Land Development Division) for building/suite addressing. (Planning)
33. Prior to the issuance of building permits, the property owner shall pay into the following fee programs: Citywide Drainage Fee, Citywide Traffic Mitigation Fee (TMF), Highway 65 Joint Partners Association (JPA), South Placer Regional Transportation Authority (SPRTA), and City/County Fee. (Engineering)
34. The applicant/developer shall prepare a Transportation Systems Management (TSM) Plan for VillaSport Club to be reviewed and approved by the Transportation Commission. (Public Works)
35. Bike parking and clean air vehicle spaces shall be provided per the California Green Building Standards. Both long-term and short term bicycle parking is required, with long-term bicycle parking consisting of covered and secure bicycle lockers and short-term bicycle parking consisting of bicycle racks near the front entrance. Based on preliminary calculations of the number of employees, it is anticipated that a minimum of 5 of the 22 bicycle parking spaces must be designated as long term bicycle parking. The location, layout, and design of short- and long-term bicycle parking shall be subject to the review and approval of Alternative Transportation. (Alternative Transportation, Building)
36. Prior to the issuance of a grading permit or approval of Improvement Plans, the grading plans shall clearly identify all existing water, sewer and recycled water utilities within the boundaries of the project (including adjoining public right of way). Existing utilities shall be identified in plan-view and in profile view where grading activities will modify existing site elevations over top of or within 15 feet of the utility. Any utilities that could potentially be impacted by the project shall be clearly identified along with the proposed protection measures. The developer shall be responsible for taking measures and incurring costs associated with protecting the existing water, sewer and recycled water utilities to the satisfaction of the Environmental Utilities Director. (Environmental Utilities)
37. The applicant shall pay all applicable water and sewer fees. (Environmental Utilities)
38. Water and sewer infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards and shall include:
 - a. Utilities or permanent structures shall not be located within the area which would be disturbed by an open trench needed to expose sewer trunk mains deeper than 12' unless approved by Environmental Utilities in these conditions. The area needed to construct the trench is a sloped cone above the sewer main. The cone shall have 1:1 side slopes.
 - b. Water and sewer shall not exceed a depth of 12' below finished grade, unless authorized in these conditions of approval.
 - c. All sewer manholes shall have all-weather 10-ton vehicle access unless authorized by these conditions of approval. (Environmental Utilities)
39. Trees and their driplines shall not encroach within any water easement. (Environmental Utilities)

40. The sewer system shall be a public system and shall be installed within a public utility easement. (Environmental Utilities)
41. Trash enclosures, recycling areas, and enclosure approaches shall be designed to current Refuse Division specifications, the materials and colors shall match the building, and the location of such facilities shall be reviewed and approved by the Refuse Division, Planning and the Fire Department. The enclosure must have inside dimensions of 12 feet wide and 9 feet deep and be built to the specifications of the Solid Waste Department's Enclosure Description. (Refuse, Planning, Fire)
42. Access to trash enclosures shall have an inside turning radius of 25 feet and an outside turning radius of 45 feet must be maintained to allow the refuse truck access to and from the enclosure. Enclosures must have a clear approach of 65 feet in front of the enclosure to allow servicing bins. (Refuse)
43. A trash enclosure and recycling enclosure is required for each building and each tenant, otherwise, the building owner is responsible for the trash service. (Refuse)
44. The design and installation of all fire protection equipment shall conform to the California Fire Code and the amendments adopted by the City of Roseville, along with all standards and policies implemented by the Roseville Fire Department. (Fire)
45. The applicable codes and standards adopted by the City shall be enforced at the time construction plans have been submitted to the City for permitting (Fire)
46. The fire flow required, at a 50% reduction due to the buildings being sprinklered, will be based on the largest single structure in accordance with the California Fire Code at the time detail plans are submitted to the City of Roseville for review. The maximum fire flow will not exceed 4,000 gpm based on the Appendix III-AA of the California Fire Code. (Fire)
47. The fire department access road shall meet the City's requirements for width and turning radii as noted on the fire department standards for access. This shall be enforced at the time plans are submitted for review. Additional information can be found on the City's web site www.roseville.ca.us or contact Patrick Chew, Senior Fire Inspector, at 916-774-5823 or pchew@roseville.ca.us with the Fire Prevention Division for information. (Fire)
48. Automatic fire extinguishing system risers, fire alarm system panels and digital alarm communicator system panels shall be located within an approved fire control room and shall be accessible from an adjacent fire apparatus roadway. Said fire control room shall be a minimum size of thirty-five (35) square feet in size and shall be openable from the exterior via an approved door opening. (Fire)
49. Use, increase of hazardous materials or storage, liquids, gases and/or chemicals shall meet the requirements of the Chapter 6.95 of the Health and Safety Code, the Roseville Fire Department and the National Fire Codes. Submit a complete plan set and the Hazardous Materials Business Plan, including names and amount of any hazardous materials that will be stored or used, to the Fire and Life Safety Division for review and approval. A permit application shall also be provided at the time of submittal. Contact Steve Anderson of our Hazardous Materials Division within the Fire Department at (916) 774-5821 to initiate the process. Satisfaction of storage and use shall be determined prior to requesting occupancy. (Fire)
50. Adequate radio coverage shall be provided within all buildings for public safety agencies, as required by Roseville Municipal Code and the California Fire Code. A field test shall be provided by a person in possession of a current FCC License, or a current technician certification issued by the Associated

Public-Safety Communications Officials International (APCO), or the National Association of Business and Educational Radio (NABER). The building owner shall retain all test records on the inspected premises and a copy shall be submitted to the Fire Department officials in accordance with Section 510 of the California Fire Code.

Adequate radio coverage shall include all of the following:

- a. A minimum signal strength of 95 dBm available in 90% of the area of each floor of the building when transmitted from the closest City of Roseville Radio Communication site.
 - b. A minimum signal strength of 95 dBm received at the closest City of Roseville Communication site when transmitted from 90% of the area of each floor of the building.
 - c. The frequency range that must be supported shall be 821-824 MHz and 866-869 MHz.
 - d. A 100 % reliability factor. (Fire, Police)
51. The Electric Department requires the submittal of the following information in order to complete the final electric design for the project:
- a. one (1) set of improvement plans
 - b. load calculations
 - c. electrical panel one-line drawings (Electric)
52. All on-site external lighting shall be installed and directed to have no off-site glare. Lighting within the parking areas and pedestrian walkways shall provide a maintained minimum of one (1) foot candle, and 0.5 foot candle of light, respectively. All exterior light fixtures shall be vandal resistant. (Planning and Police)
53. The parking lot shall have properly posted signs that state the use of the parking area is for the exclusive use of employees and customers of this project. (See California Vehicle Code Sections 22507.8, 22511.5, 22511.8, 22658(a), and the City of Roseville Municipal Code Section 11.20.110). The location of the signs shall be shown on the approved site plan. (Planning and Police)
54. Fencing shall be installed to protect the existing trees adjacent to the proposed swale, to restrict vehicle or equipment parking. (Parks, Recreation, and Libraries)
55. It is the developer's responsibility to notify PG&E of any work required on PG&E facilities. (PG&E)

DURING CONSTRUCTION & PRIOR TO ISSUANCE OF OCCUPANCY PERMITS:

56. Any backflow preventers visible from the street shall be painted green to blend in with the surrounding landscaping. The backflow preventers shall be screened with landscaping and shall comply with the following criteria:
- a. There shall be a minimum clearance of four feet (4'), on all sides, from the backflow preventer to the landscaping.
 - b. For maintenance purposes, the landscaping shall only be installed on three sides and the plant material shall not have thorns.
 - c. The control valves and the water meter shall be physically unobstructed.
 - d. The backflow preventer shall be covered with a green cover that will provide insulation. (Planning, Environmental Utilities)

57. The following easements shall be provided by separate instrument and shown on the site plan, unless otherwise provided for in these conditions:
 - a. Water, sewer, and reclaimed water easements.
 - b. A public access and maintenance easement shall be provided over the bike trail. The width of the easement shall be 20 feet or as otherwise determined by the City Engineer. (Engineering, Alternative Transportation)
 - c. A private drainage easement, minimum 10 feet in width, shall be recorded across the adjacent Parcel 3 to allow the site to drain to the open space. (Engineering)
58. Easement widths shall comply with the City's Improvement Standards and Construction Standards. Separate document easements required by the City shall be prepared in accordance with the City's "Policy for Dedication of Easements to the City of Roseville". All legal descriptions shall be prepared by a licensed land Surveyor. All existing public utility, electric, water, sewer and reclaimed water easements shall be maintained unless otherwise authorized by these conditions of approval. (Public Works, Environmental Utilities, Electric)
59. Inspection of the potable water supply system on new commercial/ industrial/ office projects shall be as follows:
 - a. The Environmental Utilities Inspector will inspect all potable water supply up to the downstream side of the backflow preventer.
 - b. The property owner/applicant shall be responsible for that portion of the water supply system from the backflow preventer to the building. The builder/contractor shall engage a qualified inspector to approve the installation of this portion of the water supply. The Building Division will require from the builder/ contractor, a written document certifying that this portion of the potable water supply has been installed per improvement plans and in accordance with the Uniform Plumbing Code. This certificate of compliance shall be submitted to the Building Division before a temporary occupancy or a building final is approved.
 - c. The building inspectors will exclusively inspect all potable water supply systems for the building from the shutoff valve at the building and downstream within the building. (Building, Environmental Utilities)
60. All improvements being constructed in accordance with the approved grading and improvement plans shall be accepted as complete by the City. (Engineering)
61. The words "traffic control appurtenances" shall be included in the list of utilities allowed in public utilities easements (PUE's) located along public roadways. (Engineering)
62. The applicant/developer shall prepare a Transportation Systems Management (TSM) Agreement for VillaSport Club to be reviewed and approved by the City Manager. (Public Works, Alternative Transportation)
63. Water, sewer and reclaimed water shall be constructed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. (Environmental Utilities)
64. All water backflow devices shall be tested and approved by the Environmental Utilities Department. (Environmental Utilities)
65. **Restaurants or other Food Service Establishment (FSE).** The applicant shall design for installation and/or install an exterior grease interceptor if the proposed business could potentially discharge substances containing fats, oils and grease (FOG) into the sewer system. The grease

interceptor shall be adequate to separate and remove FOG contained in the wastewater from FSE's prior to discharge to the public sewer. (Environmental Utilities)

66. In the event an exterior grease interceptor cannot be installed due to space limitation, the developer shall install a grease trap, per City Standards, that will mechanically separate the FOG contained in the wastewater from the FSE prior to discharge to the public sewer. (Environmental Utilities)
67. Pursuant to the Municipal Code, the applicant shall apply for and obtain a FOG waste discharge permit (FOG WDP) from the Environmental Utilities Industrial Waste Division prior to occupancy or prior to discharging waste to the public sewer. The applicant shall submit information required by the Environmental Utilities Department for evaluation, including but not limited to: site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, FOG control device, grease interceptor or other pretreatment equipment and appurtenances by size, location and elevation. Additional information related to the applicant's business operations and potential discharge may be requested to properly evaluate the FOG WDP application. (Environmental Utilities)
68. All Electric Department facilities, including streetlights where applicable, shall be designed and built to the "City of Roseville Specifications for Commercial Construction." (Electric)
69. The City of Roseville Electric Department has electrical construction charges which are to be paid by the developer and which are explained in the City of Roseville "Specification for Commercial Construction." These charges will be determined upon completion of the final electrical design. (Electric)
70. Any relocation, rearrangement, or change of existing electric facilities due to this development shall be at the developer's expense. (Electric)
71. Any facilities proposed for placement within public/electric utility easements shall be subject to review and approval by the Electric Department before any work commences in these areas. This includes, but is not limited to, landscaping, lighting, paving, signs, trees, walls, and structures of any type. (Electric)
72. All electric metering shall be directly outside accessible. This can be accomplished in any of the following ways:
 - a. Locate the metered service panel on the outside of the building.
 - b. Locate the metered service panel in a service room with a door that opens directly to the outside. The developer will be required to provide a key to the door for placement in a lock box to be installed on the outside of the door. Any doors leading from the service room to other areas of the building shall be secured to prohibit unauthorized entry. (Electric)
73. One 3/4" conduit with a 2-pair phone line shall be installed from the buildings telephone service panel to the meter section of the customer's electrical switchgear or panel. (Electric)
74. It is the responsibility of the developer to insure that all existing electric facilities remain free and clear of any obstruction during construction and when the project is complete. (Electric)

OTHER CONDITIONS OF APPROVAL:

75. Signs shown on the elevations are not approved as part of the Design Review Permit. A Sign Permit is required for all project signs. (Planning)

76. Following the installation of the landscaping, all landscape material shall be maintained in a healthy and weed free condition; dead plant material shall be replaced immediately. All trees shall be maintained and pruned in accordance with the accepted practices of the International Society of Arboriculture (ISA). (Planning)
77. The City reserves the right to restrict vehicle turning movements within the public right-of-way in the future if deemed necessary by the City Engineer. (Engineering)
78. The required width of fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. Minimum required widths and vertical clearances established by the Fire Code shall be maintained at all times during construction. Closure of accesses for fire apparatus by gates, barricades and other devices shall be prohibited unless approved by the Fire Chief. (Fire)
79. Temporary aboveground storage tanks may be used at construction sites for diesel fuel only and shall not exceed 1,000 gallon capacity. Tanks shall comply with all provisions found within the Fire Code. A Fire Department Permit shall be obtained prior to tank installation. The permit shall expire after 90 days from the date of issuance, unless extended by the Fire Chief. (Fire)
80. If site survey or earth moving work results in the discovery of hazardous materials in containers or what appears to be hazardous wastes released into the ground, the contractor or person responsible for the building permit must notify the Roseville Fire Department immediately. A representative from the Fire Department will make a determination as to whether the incident is reportable or not and if site remediation is required. (Fire)
81. The location and design of the gas service shall be determined by PG&E. The design of the gas service for this project shall not begin until PG&E has received a full set of City approved improvement plans for the project. (PG&E)
82. The project is subject to the noise standards established in the City's Noise Ordinance. In accordance with the City's Noise Ordinance project construction is exempt between the hours of seven a.m. and seven p.m. Monday through Friday, and between the hours of eight a.m. and eight p.m. Saturday and Sunday. Provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order. (Building)
83. The developer (or designated consultant) shall certify that the building foundation location has been placed according to all approved setback requirements shown on the approved site plan. The developer shall prepare a written statement confirming building placement and provide an original copy to the City Building Division Field Inspector at the time of or prior to the foundation inspection. (Building)
84. Prior to Certificate of Occupancy, the applicant may apply for a Temporary Occupancy (TO) of the building. If a TO is desired, the applicant must submit a written request to the Building Division a minimum of thirty (30) days prior to the expected temporary occupancy date and shall include a schedule for occupancy and a description of the purpose for the Temporary Occupancy. (Building)
85. Concurrent with submittal for plan check and prior to a request for final building inspection, the applicant may request City approval of an occupancy phasing plan to allow individual or multiple building occupancies. This request shall be made in writing to the Building Department and shall include 10 copies of the following:

- a. A description of measures that will be undertaken to minimize conflict between residents/building occupants and construction traffic (e.g. fencing, etc.);
- b. A phasing plan showing the proposed buildings, internal roads and access routes, landscaping, trash enclosure locations, and any other improvements planned for each phase; and
- c. Estimated time frame for each phase and a specific date for the first phase. (Planning, Building)

Attachments

1. Lifetime Fitness Records (requested as part of record by Roseville Citizens for Quality Development)

Exhibits

- A. Draft and Final Environmental Impact Report
- B. CEQA Findings of Fact
- C. Site Plan
- D. Grading Plan
- E. Drainage Plan
- F. Landscape Plan
- G. Photometric Plan
- H. Floor Plans
- I. Elevations
- J. Line of Sight

NOTE: The attachments and exhibits are not included as part of CC Attachment 1, the Planning Commission Staff Report, because they are already included as attachments and exhibits to the City Council Communication.

Note to Applicant and/or Developer: Please contact the Planning Division staff at (916) 774-5276 prior to the Commission meeting if you have any questions on any of the recommended conditions for your project. If you challenge the decision of the Commission in court, you may be limited to raising only those issues which you or someone else raised at the public hearing held for this project, or in written correspondence delivered to the Planning Manager at, or prior to, the public hearing.

Attachment 2 – Lifetime Record of Proceedings
may be viewed at the City of Roseville, Permit Center,
311 Vernon Street, Roseville, CA

Exhibit A – Draft and Final Environmental Impact Report may be viewed at the City of Roseville, Permit Center, 311 Vernon Center, Roseville, CA or online at http://roseville.ca.us/gov/development_services/planning/current_projects/villasport_athletic_club_nspa.asp

CC Exhibit B

City of Roseville

Addendum to VillaSport Athletic Club and Spa Final Environmental Impact Report

SCH No. 2014092038



Prepared by:

**IMPACT
SCIENCES**

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Submitted to:

City of Roseville
311 Vernon Street
Roseville, CA 95678

July 2017

Addendum to
VILLASPORT ATHLETIC CLUB AND SPA
Final Environmental Impact Report

SCH No. 2014092038

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July 2017

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Appendix A – Roseville Citizens for Quality Environment Letter and Responses

Appendix B – Cumulative (Year 2035) Technical Calculations

1.0 INTRODUCTION

On May 11, 2017, the City of Roseville Planning Commission (“Planning Commission” or “Commission”), acting as a decisionmaking body, certified the Final Environmental Impact Report (FEIR) (State Clearinghouse Number 2014092038) for the VillaSport Athletic Club and Spa project (“the Project”) and then took action to approve the Project. These actions would have been final in the absence of an administrative appeal to the City Council, which would make that body the final decisionmaking body. On May 22, 2017, Roseville Citizens for Quality Development (“RCQD”) filed such an appeal. The matter is therefore now before the City Council, which has the option of approving the Project, denying it, or approving it in a form different than that approved by the Commission. Before the City Council can approve the Project on its own, however, the Council would have to certify the Final EIR again, substituting its judgment for that of the Planning Commission. The City’s record under the California Environmental Quality Act (CEQA) therefore remains open.

Based on written and oral comments received from the public at the Planning Commission hearing to certify the FEIR, the City of Roseville staff, in order to assist the City Council on appeal, has elected to conduct additional environmental analysis with respect to cumulative traffic and traffic-related noise impacts. As demonstrated in this Addendum to the Final EIR, the conclusions of the updated cumulative traffic and traffic-related noise impact analyses remain consistent with the impact conclusions in the FEIR. For this reason, this Addendum does not trigger the recirculation requirement found in CEQA Guidelines section 15088.5.

2.0 BACKGROUND

During the hearing before the City of Roseville Planning Commission to certify the FEIR, the City received a letter from RCQD commenting on the analysis included in the FEIR. In addition the attorney for RCQD (Patrick Soluri) and an attorney representing Lifetime Fitness (Marcus Lo Duca), spoke before the Planning Commission and provided oral comments on the adequacy of the analysis in the FEIR and the consistency of the project with the General Plan, respectively. A copy of the letter received from RCQD along with written responses to the comments is provided in **Appendix A**.

Several of the written and oral comments expressed an interest in understanding the Project’s traffic impacts under cumulative (2035) conditions, as the City Council had amended Implementation Measure-2 of the General Plan in June 2016 to require that traffic studies for development proposals include a “‘full build-out’ analysis that evaluates traffic conditions assuming build-out of the City and 2035 Market development outside of the City.” At the same time (June 2016), the City Council also updated the discussion in the Circulation Element related to permissible levels of service (LOS) at key intersections

throughout the City, recommending that the analysis be conducted using the Highway Capacity Manual (HCM) methodology. The Draft EIR for the Project, however, had analyzed the Project's traffic impacts under cumulative (2025 CIP) conditions using the Circular 212 methodology, as had been required by the General Plan at the time that the traffic study was completed in November 2015.

City staff does not believe that the November 2015 traffic study violated the General Plan, because the June 2016 amendments described above came long after City staff had deemed the VillaSport application complete, and long after initial traffic study for the Project had been prepared (see Draft EIR, Appendix 4.8). In fact, during the early phases of the administrative process for the Project, City staff had very good reasons for choosing to prepare a traffic study using the Circular 212 methodology, and looking at 2025 market development outside of the City. (See the response to comment 7-3 in **Appendix A** for a detailed discussion of these reasons.) Once the June 2016 General Plan amendments were in place, City staff assumed that they applied prospectively only, and that projects already "in the pipeline" were not required to change analytical processes already underway or completed. Importantly, the General Plan amendments did not include express language making the new requirements retroactive. Even so, because two out of the five Planning Commissioners present at the May 11, 2017, hearing on the Project expressed concern about such an interpretation, and because the Commission received testimony arguing for a retroactive interpretation, City staff and the applicant determined that the best course of action with respect to these issues was to prepare a supplemental traffic cumulative impact analysis using both the HCM methodology and a 2035 time frame for market development outside of the City.

3.0 CEQA REQUIREMENTS

CEQA case law is clear that a public agency's final decisionmaking body (e.g., a City Council) must be responsible for certifying an EIR prepared for a proposed project, regardless of whether a subsidiary agency body (e.g., a Planning Commission) has previously certified the document prior to the filing of an administrative appeal. (See, e.g., *California Clean Energy Committee v. City of San Jose* (2013) 220 Cal.App.4th 1325, 1347-1342; *Citizens for the Restoration of L Street v. City of Fresno* (2014) 229 Cal.App.4th 340, 360, citing *POET, LLC v. State Air Resources Board* (2013) 218 Cal.App.4th 681, 731 ["CEQA is violated when the authority to approve or disapprove a project is separated from the responsibility to complete the environmental review"].) "[T]he elected decision makers must have a real confrontation with the EIR; they cannot avoid the required 'consideration' by omitting a procedure for appeal." (*Vedanta Society of So. California v. California Quartet, Ltd.* (2000) 84 Cal. App. 4th 517, 527; see also Pub. Resources Code, § 21151, subd. (c) ["[i]f a nonelected decision-making body of a local lead agency certifies an environmental impact report,... that certification ... may be appealed to the agency's elected decision-making body, if any"].)

For these reasons, the City Council, before taking action on the Project, may consider information beyond what the Planning Commission considered prior to the latter body's action certifying the Final EIR on May 11, 2017. Because any document described as a Final EIR remains merely a *proposed* Final EIR until such time as it is formally and definitively certified, an intra-agency appeal from an inferior body to a superior body provides an opportunity for the superior decisionmaking body to assess the adequacy of the Final EIR before deciding whether to certify the document. One of the superior body's options is to augment with Final EIR as previously certified by the inferior body with new information relevant to the environmental effects of a proposed project. Although there is no recognized CEQA term of art for a document that augments a proposed final EIR, case law has upheld a lead agency's use of a document the agency called an "addendum" to a final EIR. Such a document can add new analysis to a final EIR as originally published, and can become part of the ultimate final EIR as certified by the final decisionmaking body. (See, e.g., *Beverly Hills Unified School District v. Los Angeles County Metropolitan Transportation Authority* (2015) 241 Cal.App.4th 627, 664-666 [describes process whereby a lead agency prepared an addendum to a final EIR after publicly releasing a proposed final EIR].) Such an addendum should not be confused with an addendum prepared pursuant to CEQA Guidelines Section 15164. The latter type of addendum, for which a term of art does exist, can only be prepared where an agency has previously approved a project in a final form, and is considering whether to reapprove the project under changed circumstances or to approve a modified version of the same project. Here, the Planning Commission's actions ceased to be "final" and binding with the filing of an administrative appeal by RCQD.

4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The FEIR addressed the following environmental topics in depth: Air Quality; Biological Resources; Cultural Resources; Greenhouse Gas Emissions; Hydrology and Water Quality; Noise; Water Supply; Transportation and Traffic; and Energy. As discussed above, there are no changes to the Project. The only change is the addition of a supplemental traffic analysis to document the effects of a 2035 modeling year, along with use of the HCM methodology to evaluate cumulative traffic impacts.¹ These changes affect only the cumulative traffic analysis and cumulative traffic-related noise impact analysis, which relies on the cumulative traffic volumes. A discussion of cumulative traffic and cumulative traffic noise impacts is provided below to determine whether new or more severe environmental effects would occur from utilizing the 2035 buildout year.

¹ Please note that the FEIR utilized the HCM methodology to analyze existing plus project conditions.

Cumulative Traffic Impacts

FEIR Conclusion

Implementation of the Project could conflict with the City of Roseville standards for signalized intersections under cumulative (2025 CIP) plus project conditions. However, with mitigation this impact would be reduced to a less than significant level.

Summary of Cumulative Traffic Analysis in the FEIR

Citywide Intersection LOS

Vehicle trips generated by cumulative development would cause an increase in traffic on city roadways. **Table 1, Citywide PM Peak Hour Intersection LOS Results – Cumulative (2025 CIP) Conditions**, presents the number of existing/planned signalized intersections operating at LOS A – C, LOS D, and LOS E, and LOS F, during the PM peak hour under cumulative (2025 CIP) conditions, without and with the Project. As shown, the Project, in combination with other reasonably foreseeable development, would not cause the overall percentage of signalized intersections Citywide operating at LOS C or better during the PM peak hour to fall below 70 percent. The AM peak hour operations are also reported in FEIR Appendix 4.8, but a higher proportion of intersections operate unacceptably during PM peak hour, so the PM peak hour is the most conservative.

Table 1
Citywide PM Peak Hour Intersection LOS Results – Cumulative (2025 CIP) Conditions

Number (Percentage) of Signalized Intersections Operating at...	Cumulative (2025 CIP) No Project Conditions	Cumulative (2025 CIP) Plus Project Conditions
LOS A – LOS C	159	158
LOS D	25	26
LOS E	9	9
LOS F	11	11
Total	204	204
Percentage Operating at LOS C or better	77.9%	77.5%

Source: Fehr & Peers, 2015

¹ The “no project” scenario represents no development on the Project site.

² The “plus project” scenario assumes the Project is developed on the Project site.

³ List of study intersections excludes those located in the downtown Pedestrian Overlay district, for which policy does not apply.

Intersection LOS

The Project, in combination with other reasonably foreseeable development, would not cause the LOS of the study intersections to degrade significantly during the AM peak hour. However, traffic added by the Project would cause the LOS at the intersection of Pleasant Grove Boulevard/Rose Creek to degrade from LOS C to D, which the City considers unacceptable.² As a result, the Project's incremental increase in traffic at the intersection of Pleasant Grove Boulevard/Rose Creek is potentially significant. However, with the implementation of Mitigation Measure MM TRA-6, which requires the applicant to pay a fair share of the cost of improvements to the Pleasant Grove Boulevard/Rose Creek Drive intersection, the Project's contribution to this cumulative impact would be reduced to a less than significant level. To implement the measure, the City will modify its CIP, and the supporting fee program, to include improvements at the affected intersection.

Summary of Supplemental Cumulative Traffic Analysis

Citywide Intersection LOS

Table 2 below displays the number of existing/planned signalized intersections operating at LOS A – C, LOS D, and LOS E, and LOS F under 2035 conditions, without and with the project. Results are shown for both AM and PM peak hour conditions (refer to **Appendix B** for individual intersection LOS results).

Table 2
Citywide PM Peak Hour Intersection LOS Results – Cumulative (2035) Conditions

Number (Percentage) of Signalized Intersections Operating at...	Cumulative (2035) No Project Conditions	Cumulative (2035) Plus Project Conditions
LOS A – LOS C	169	169
LOS D	30	30
LOS E	18	18
LOS F	16	16
Total	233	233
Percentage Operating at LOS C or better	72.5%	72.5%

Source: Fehr & Peers, 2017

¹ The "no project" scenario represents no development on the project site.

² The "plus project" scenario assumes the Project is developed on the project site.

³ List of study intersections excludes those located in the downtown Pedestrian Overlay district, for which policy does not apply.

² According to the City's General Plan, a project would have a significant impact if it would cause a signalized intersection that is currently operating at LOS C or better to degrade to LOS D or worse during the AM or PM peak hours.

As shown in Table 2, the Project, in combination with other reasonably foreseeable development, would not cause the overall percentage of signalized intersections operating at LOS C or better during the PM peak hour to fall below 70 percent. The individual intersection results shown in **Appendix B** which led to the results of Table 2 cannot precisely match previous studies conducted in the City of Roseville for several reasons. First, the analysis relied upon the most recently updated version of the 2035 model, which was used for the Final Transportation Impact Study for Kaiser Permanente Riverside Medical Office Expansion in Roseville, CA (Fehr & Peers, 2016). At the City's request, that model removed the widening of Cirby Way between Foothills Boulevard and Riverside Avenue to six lanes, which caused a large redistribution of traffic. This improvement was removed because expansion of the roadway is no longer planned, as City Council found that the expansion was undesirable. Second, the Synchro software program, which is used to analyze intersections using HCM methods, has been updated to version 9.0, which can also cause minor differences in results.

Intersection LOS

The individual intersection results shown in **Appendix B** also show that traffic from the Project would not cause a signalized intersection to worsen from LOS C or better to LOS D or worse during the AM or PM peak hours. In fact, LOS remains *unchanged or improves* with the addition of Project traffic at all intersections in the study area, except the intersection of Gibson Drive and Conference Center Drive, which would change from LOS B to LOS C (an acceptable LOS) under 2035 cumulative conditions. Therefore, the potentially significant impact identified in the FEIR to the intersection of Pleasant Grove Boulevard/Rose Creek from Project traffic under cumulative (2025 CIP) conditions would not occur, and the approved Mitigation Measure TRA-6, which requires that the applicant pay its fair share of the cost of improving the intersection, would not be required. Despite this result, Mitigation Measure TRA-6 remains in the Mitigation Monitoring and Reporting Program and is recommended for adoption.

Conclusion

CEQA Guidelines Section 15088.5 requires a lead agency to recirculate an EIR when significant new information is added to the analysis. The updated cumulative traffic impact analysis does not reveal any "significant new information" that would trigger recirculation of the EIR pursuant to CEQA Guidelines Section 15088.5. In particular, the updated cumulative traffic analysis does *not* reveal any new significant impacts or a substantial increase in the severity of any previously-identified environmental impact. In fact, the only identified impact no longer occurs.

Cumulative Traffic Noise Impacts

FEIR Conclusion

Traffic generated by cumulative development would result in a substantial permanent increase in ambient noise levels along roadway segments in the vicinity of the Project. However, the Project's contribution to the cumulative impact would not be cumulatively considerable.

Summary of Cumulative Traffic Noise Analysis in the FEIR

Cumulative development in the City of Roseville would generate increased traffic on city roadways and the Project would also add trips to nearby roadways. Based on modeling, roadway noise levels would increase by more than 3 dB(A) CNEL³ along two segments, Roseville Parkway between Trestle Road and Pleasant Grove Boulevard and Gibson Drive between Roseville Parkway and Conference Center Drive. Consequently, the cumulative noise impact from increased traffic would be significant. However, as the noise contribution from the traffic associated with the Project at these locations would be less than 0.5 dB(A) CNEL, which is an imperceptible increase in the noise levels, the Project's contribution to the impact would not be cumulatively considerable. Therefore, the Project's cumulative impact would be less than significant.

Summary of Supplemental Cumulative Traffic Noise Analysis

As discussed in Response 7-18 in **Appendix A**, there is a less than 1 percent difference between the land use and roadway volume forecasts in the 2025 and 2035 versions of the City's traffic models. The models also carried forward very similar planned roadway networks. The most recent substantive change in the City's roadway network is in the vicinity of Campus Oaks (westerly portion of HP Property) and the Amoruso Ranch Specific Plan. The 2025 and 2035 models each include both projects and their respective roadway improvements (e.g., extension of HP Way to Blue Oaks Boulevard). On aggregate, the 2025 volumes sum to about one percent *more* daily traffic than the 2035 volumes. As a result, the number of trips added to City roadways between 2025 and 2035 would not substantially change the modeled results of cumulative roadway noise levels in the FEIR. The noise increase along the segments of Roseville Parkway between Trestle Road and Pleasant Grove Boulevard and Gibson Drive between Roseville Parkway and Conference Center Drive under 2035 cumulative conditions would still increase by more more than 3 dB(A) CNEL, and the Project's contribution would be unchanged at less than 0.5 dB(A) CNEL, which is an imperceptible increase in the noise levels. As a result, the Project's contribution to this impact would remain not cumulatively considerable, and the Project's cumulative impact would remain less than significant.

³ Changes above 3 dB(A) may be noticed by some individuals who are sensitive to changes in noise.

Conclusion

The discussion of cumulative traffic noise under 2035 cumulative conditions above does not reveal any “significant new information” that would trigger recirculation of the EIR pursuant to CEQA Guidelines Section 15088.5. In particular, the discussion of cumulative traffic noise under 2035 cumulative conditions does *not* reveal any new significant impacts or a substantial increase in the severity of any previously-identified environmental impact.

5.0 REFERENCES

City of Roseville. 2017. *VillaSport Athletic Club and Spa Final Environmental Impact Report*, SCH No. 2014092038. May 11.

Fehr & Peers. 2015. *Transportation Impact Study for VillaSport Athletic Club and Spa in Roseville, California*. November 2.

Fehr & Peers. 2017. *Transportation Impact Study for VillaSport Athletic Club and Spa in Roseville, California*. June 15.

6.0 REPORT PREPARERS

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May 11, 2017

SENT VIA HAND DELIVERY

Krista Bernasconi, Chair
City of Roseville, Planning Commission
City Council Chambers
311 Vernon Street
Roseville, CA 95678

**RE: Comments on Final Environmental Impact Report for
VillaSport Athletic Club and Spa Project (Project No. 2013PL-019)**

Dear Chair Bernasconi and Members of the Planning Commission:

Having reviewed the Final Environmental Impact Report ("EIR") prepared for the VillaSport Athletic Club and Spa Project ("Project") before the Planning Commission this evening, Roseville Citizens for Quality Development ("Citizens") strongly urge the City to delay further consideration of the proposed Project until such time as a legally adequate EIR is prepared pursuant to the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq. ("CEQA")). As detailed herein, the Final EIR failed to remedy or cure the inadequacies identified in our December 5, 2016 comment letter, including the deficiencies identified by traffic consulting firm MRO Engineers ("MRO"), noise consulting firm j.c. brennan and associates ("Brennan"), and environmental consulting and natural resource sustainability firm Helix Environmental Planning ("Helix"). Citizens therefore incorporate those comments herein by reference.

Citizens further note that, in light of the inadequate analysis in the EIR, the City's proposed CEQA findings and mitigation monitoring program are also legally inadequate. In addition to the inadequate CEQA documents, the City's findings in support of the Conditional Use Permit ("CUP") are unsupported by the evidence in the record. Specifically, the CUP findings conclude that the proposed development is consistent with the City of Roseville General Plan and the North Central Roseville Specific Plan. As described in our previous comment letter and highlighted herein, because the analysis failed to rely on the General Plan standards for evaluating traffic impacts in the City, and the responses to comments on this point do nothing to justify this discrepancy, any finding that concludes the proposed Project is consistent with the General Plan is unsupported by the evidence.

Because no substantial changes or additions were made to the EIR's analysis of the proposed Project's impacts to address the comments previously submitted, Citizens reiterates its previous comments and offers the following additional comments to highlight specific outstanding deficiencies. In order to remedy these deficiencies, the City must undertake additional analysis and mitigation of the proposed Project's significant impacts on the environment and thereafter recirculate the EIR prior to approval. (Pub. Resources Code, § 21092.1; CEQA Guidelines, §15088.5.) On behalf of Citizens, we urge the City to take a step back and continue its consideration of the proposed Project and the EIR. Failure to do so will force Citizens to consider the appropriate legal action it may take to ensure identified deficiencies are rectified.

1

I. The Project Description Remains Inadequate.

Despite the revisions made to clarify that the artificial turf field will now be constructed concurrently with the rest of the project, the project description otherwise remains light on project details, precluding meaningful analysis of impacts in the remainder of the document. As discussed in Citizens' December comment letter, the substantive EIR sections raise questions as to the details of the proposed Project, such as bicycle facilities, and driveway design, that have yet to be finalized. These details are critical to a meaningful analysis of impacts. Without such detail, the EIR is based on an incomplete and inconsistent project description, rendering its analysis of potentially significant impacts unreliable. (*San Joaquin Raptor / Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730, quoting *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193.) (*San Joaquin Raptor, supra*, 149 Cal.App.4th at p. 659.)

2

II. The Final EIR Does Not Remedy the Inadequacies Identified in the Evaluation of the Proposed Project's Transportation and Traffic Impacts.

The response to comments failed to remedy the deficiencies identified in our previous comment letter with respect to the analysis of the proposed Project's transportation and traffic impacts. Because no substantial changes or additions were made to the EIR's analysis of transportation and traffic impacts, Citizens reiterates the comments made in its December letter and offers the following additional comments to highlight specific outstanding deficiencies.

3

A. The Final EIR Does Not Remedy the Failure to Perform Traffic Analysis as Required by the City's General Plan.

In June 2016, ten months prior to issuing the FEIR, the City adopted a new General Plan, which required the use of new methodologies to study traffic impacts. As noted in Citizens prior comment letter, the General Plan requires that traffic studies include "a 'full build-out' analysis that evaluates traffic conditions assuming build-out of the City and 2035 Market development outside of the City." (FEIR, p. 3.0-37.) Neither the DEIR nor the FEIR analyzed cumulative 2035 conditions." Nor did either EIR use the Highway Capacity Manual to assess cumulative level of service impacts, as required by the General Plan. (FEIR, p. 3.0-27.) Instead, those documents used Circular 212, which the City has admitted understates LOS conditions compared to the Highway Capacity Manual. (See FEIR, p. 3.0-69.) The City's response to Citizens' comments on this issue was to claim that because the General Plan was not issued until after the Notice of Preparation ("NOP"), the City had no duty to use the prescribed methodologies. (FEIR, p. 3.08-108.)

3

The City has incorrectly applied the standard for baseline conditions to methodology. While there is a general rule that the baseline for measuring environmental impacts is set "at the time the notice of preparation is published" (CEQA Guidelines, § 15125, subd. (a)) the baseline this provision refers to is "the physical environmental conditions in the vicinity of the project." (*Ibid.*) The methodology by which an agency measures whether impacts are significant is not governed by this provision, and the City has cited no authority to justify ignoring admittedly superior methodologies to measure impacts merely because the methods became official policy after publication of the NOP. Indeed, the City updated its methodology for measuring greenhouse gas emissions based on new thresholds adopted by the local air district in October 2016, after the General Plan adoption. (FEIR, p. 3.0-124-25.) The City's refusal to use current methodologies to obtain the most accurate results about level of service conditions results in a failure to satisfy CEQA's disclosure obligations. (See *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs.* (2001) 91 Cal.App.4th 1344, 1367.)

B. The Final EIR Continues to Improperly Limit the Analysis of Impacts to Freeway Facilities.

As stated in our previous comment letter, the EIR includes an inadequate analysis of the State Route ("SR") 65 freeway facilities. The response on this comment indicates a failure to understand what the mainline is. As explained in the MRO letter attached hereto as Exhibit A, "SR 65 facilities" encompass all components of the freeway system (mainline, weaving, and merge and diverge segments); however, the EIR analysis is limited to exclude consideration of the mainline. The response refers to "the weave

4

section,” which was analyzed, as the mainline, but that is incorrect. The EIR failed to correct the deficiency in the EIR traffic analysis apparently because of a failure to understand what constitutes the mainline. As stated by MRO, given the congested conditions documented on the SR 65 mainline, it is essential that the proposed Project’s impacts thereto be analyzed.

4

Further, by continuing to improperly round density calculations, the EIR fails to disclose a significant increase in degradation for at least one freeway facility under existing plus project conditions. (See Exhibit A attached hereto.) Freeway mainline conditions and facilities impacts must be analyzed in accordance with current model, methodology, and horizon year, and the analysis must be recirculated for public review.

5

C. The Final EIR Does Not Remedy the Deficiencies in the Substantial Evidence to Support Project Trip Generation and Distribution Estimates.

In addition, as described in our previous comments, the default trip generation estimates are not supported by substantial evidence. The Final EIR does not remedy this deficiency, but instead states in a conclusory fashion that the higher trip generation estimates applied for the LifeTime Fitness Facility EIR would result in a “modest” increase in delay and no new impact. (Response 5-15.) The response does nothing to address what MRO identifies as a substantial shortcoming in the traffic analysis based on the failure to consider what would amount to an 85 percent increase in project trip generation compared to the values used in the EIR, as well as the failure to consider the full 138,000 square feet of the proposed Project site by excluding 50,000 square feet of outdoor space and only estimating trips based on the 88,000-square-foot building. The analysis should be revised with more specific trip generation rates based on the actual size of the proposed Project. (See Exhibit A.)

6

III. The FEIR Fails to Disclose and Evaluate the Full Extent of the Proposed Project’s Noise Impacts.

The response to comments also failed to remedy the deficiencies identified in our previous comment letter with respect to the analysis of the proposed Project’s noise impacts. Because no substantial changes or additions were made to the EIR’s analysis of noise impacts, Citizens reiterates the comments made in its December letter and offers the following additional comments to highlight specific outstanding deficiencies.

7

A. The FEIR Fails to Analyze Non-Transportation Related Noise Impacts.

As detailed in the Brennan letter attached hereto as Exhibit B, the response to comments did nothing to remedy the failure to analyze non-transportation related noise impacts according to industry standards, or the standards of the General Plan Noise Element. Instead, the response on this issue dismisses the potential impact to sensitive receptors by claiming that noise from the project's outdoor features (swimming pool, outdoor café, use of amplified sound in outdoor areas, outdoor play areas with play structures, outdoor artificial turf area, parking lots, HVAC mechanical equipment, and pool mechanical equipment) would be below ambient noise due to the distance of 500 feet to the nearest sensitive receptors and the presence of existing traffic noise. (FEIR, Response 5-29.)

The FEIR provides no evidence to show what potential project noise levels would be in terms of the City's hourly average (Leq) or maximum (Lmax) noise level standards. Rather than providing evidence, the response states that the noise from the project would consist of "happy children in swimming pools," suggesting that it should not be offensive to sensitive receptors in the area. (FEIR, Response 5-29.) However, the question is not whether the noise is a pleasant one; the question is whether the noise will exceed the City's noise standards. The FEIR does not include an analysis to provide an answer.

The FEIR also states that, due to existing high levels of traffic noise, noise from the project's outdoor features would "not be discernable." However, as detailed in the Brennan letter, traffic noise varies throughout the day, typically with an a.m. and p.m. peak hour, and would not be a constant masking noise source. It is very likely that sensitive receptors around the project site would hear noise from the proposed project during the periods of time between the a.m. and p.m. peak traffic hours, and even more so on weekends and holidays. (See Exhibit B, attached hereto.) The FEIR must be revised and recirculated to include a complete analysis of all Project-related non-transportation noise sources at the noise sensitive uses identified in the Draft EIR. (CEQA Guidelines, § 15088.5 [recirculation is required when the draft EIR is inadequate and precludes "meaningful public review and comment"].)

B. The FEIR Fails to Disclose Existing Ambient Conditions at Nearby Sensitive Receptors.

The Draft EIR also failed to disclose the existing ambient noise levels at sensitive receptors in the project vicinity, and the Final EIR has done nothing to remedy this deficiency. Specifically, the Draft EIR identifies the Hyatt Place Hotel and the Venu at Galleria Condominiums as sensitive receptors located within 500-600 feet of the project site; however, the Draft EIR did not disclose existing ambient noise conditions at these identified sensitive receptors.

The Final EIR failed to remedy this deficiency. No actual data has been collected, despite the requirement in Table IX-2 of the City of Roseville General Plan Noise Element to do so, and despite the requirement in CEQA Guidelines section 15125 that the EIR describe the existing physical environmental conditions in the project vicinity. The response to comment on this issue continues to rely on modeled traffic noise levels based on the daily Ldn/CNEL noise standard. As explained in the Brennan letter, however, the City's General Plan Noise Element and Noise Ordinance standards for non-transportation noise are not based on the daily Ldn/CNEL noise criterion, which do not show how noise levels vary over a 24-hour period. As stated in the Brennan letter, this ambient information, along with calculation of the hourly noise generation of outdoor noise sources, are both critical to determining the project's noise impacts to sensitive receptors in the project area. (See Exhibit B.)

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In order to comply with CEQA and the City's General Plan, the EIR must be revised to quantify existing ambient noise conditions and provide actual field measurements of existing ambient noise conditions at the noise sensitive receptors in the Project vicinity and the revised analysis must be recirculated. (CEQA Guidelines, § 15088.5 [recirculation is required when the draft EIR is inadequate and precludes "meaningful public review and comment"].)

IV. The Final EIR Does Not Remedy the Deficiencies Identified in the Analysis of Air Quality Impacts.

The response to comments also failed to remedy the deficiencies identified in our previous comment letter with respect to the analysis of the proposed Project's air quality impacts. Notably, the Final EIR includes a completely new analysis of the proposed Project's potential to expose people to cancer risks based on a different methodology than previously relied upon in the Draft EIR. In addition to reiterating the comments made in its December letter on other portions of the air quality analysis, Citizens offers the following comments on the revised analysis of toxic air contaminants ("TACs").

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A. The Final EIR Relies on a Completely New Methodology to Analyze the Potential for the Proposed Project to Expose People to Increased Cancer Risks, Which Must Be Recirculated.

1. *The FEIR Mislead the Public by Impermissibly Disregarding Its “Industry Standard” Methodology in Order to Avoid Recirculating the DEIR.*

The DEIR identified the correct threshold of significance for TAC emissions, stating in relevant part:

The industry standard and the threshold of significance for TAC impacts recommended by the PCAPCD is an increased cancer risk of 10 cases per million people over background cancer risk levels and a Hazard Index of 1 for acute and chronic health effects.

(DEIR, p. 4.1-24.)

This industry standard threshold was curiously abandoned in the FEIR, and begs the question of why it was done. The Placer County Air Quality Management District comment letter revealed a math error in the DEIR’s analysis, and that correcting for the math error revealed a screening health risk of 37,000 increased cancer risks. In response, the FEIR consultants abandoned reliance on a screening assessment for health risk in favor of a site-specific health risk analysis, and yet the resulting health risks remained well above the 10 increased cancer risks. (FEIR, p. 2.0-8.) In fact, the lowest resulting health risk for the “typical worker” would be nearly double that standard at 18 increased cancers. The risk to children is more than 10 times the significance standard at 123 increased cancers.

As also explained in the attached Helix report (Exhibit C), rather than acknowledge the significant impact and recirculate the DEIR as required by CEQA (CEQA Guidelines, § 15088.5), the FEIR instead formulated a completely different significance threshold for TAC emissions, namely 410 increased cancer risks per million. (FEIR, p. 2.0-6) However, the City has not adequately explained its change to this newly-fashioned significance standard, which also violates CEQA.

The FEIR attempts to justify its drastically increased threshold of significance—from 10 increased cancer risk to 410 increased cancer risks—based up the recent decision in *California Business Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (*CBLA*). The City claims that the EIR was not required in the first place to analyze health risk for sensitive receptors located within the Project site because the

Project did not “exacerbate” SR 65 emissions. (FEIR, p. 3.0-26.) This analysis is incorrect because it is a flawed interpretation of the *CBIA* decision and also misconstrues the nature of the “existing environmental hazard” subject to review.

CBIA addressed the issue of whether “CEQA require[s] an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project.” (*CBIA, supra*, 62 Cal.4th at 382.) The BAAQMD had promulgated a significance threshold for particulate matter that *CBIA* argued would have unlawfully required lead agencies to consider the impacts that the environment had on the project, rather than the project’s impacts on the environment. (*Id.* at 380.) The *CBIA* decision concluded that CEQA requires agencies to consider a project’s “potentially significant exacerbating effects on existing environmental hazards,” (*Id.* at 388) which include “those existing conditions impacted directly by a project’s siting or development.” (*Id.* at 388-389.)

The FEIR’s discussion of this issue reveals a fundamental misunderstanding of CEQA’s requirements. First, the FEIR contended that because the Project would not cause significant impacts to the transportation and circulation system, it would not exacerbate emissions on State Road 65. (FEIR, p. 3.0-65.) This response is incorrect and misleading; a project need not cause significant traffic impacts in order to emit additional mobile source TAC emissions. These are two independent analyses under CEQA. (See CEQA Guidelines, Appendix G, §§ III (air quality), XVI (traffic/transportation).)

Likely recognizing the flaw in the FEIR’s first argument, the FEIR alternatively argued that the Project would not “exacerbate” the TAC impacts because the Project’s vehicle trip distribution would not include the portion of State Road 65 that is closest to the Project site. (FEIR, pp. 3.0-26, 3.0-123-24.) This argument is also flawed, however, because it is premised on an arbitrarily cramped interpretation of the relevant environmental effect subject to exacerbation. It is well settled that multiple sources of TAC emissions aggregate for purposes of an overall health risk. ((Placer County Air Pollution Control District, CEQA Air Quality Handbook (2012) Appendix E, pp. E-5-6; see also Sacramento Metropolitan Air Quality Management District, CEQA Guide (2009, Revised 2014), p. 5-8, California Air Resources Board, Diesel Particulate Matter Health Risk Assessment for the West Oakland Community (Draft) (2008), pp. 11-12 [providing an inventory of all emissions sources included in the health risk assessment].) Thus, the “existing environmental hazards” for this Project is the TAC-related health risk for sensitive receptors at the Project site. The Project’s “potentially significant exacerbating effects” on TAC emissions include TAC emissions from *all* sources that may impact sensitive receptors as the Project, and not only those vehicles travelling along State Road 65.

The DEIR acknowledges that the Project will add at least 2,898 vehicle trips per day to the area (DEIR, p. 4.1-7). Even if it were true that the Project generates no vehicle trips along that particular segment of SR 65, this is irrelevant to the question of whether the Project results in additional mobile source TAC emissions since, for example, 100 percent of the Project's vehicle trips travel along Gibson Drive, which is equally if not closer to the Project than SR 65. The TAC emissions from these 2,898 vehicles will unquestionably exacerbate, by some amount, the health risk for sensitive receptors at the Project site. The additional risk may well be less than significant (i.e. less than 10 additional increased cancer risks per million population), but the public is deprived of knowing this incremental additional risk because the EIR refused to perform any analysis.

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In summary, the City's arguments for abandoning its acknowledged "industry standard" analytical methodology for TAC emissions have no merit. The dramatic methodological change appears instead to be a cynical attempt to avoid identifying a potentially significant impact that triggers the need to recirculate the DEIR.

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2. *The FEIR Conflates Baseline Conditions with the Significance Threshold for TAC Emissions.*

As established above, the DEIR relied upon the "industry standard" of 10 increased cancer risks as the significance standard, and only adopted a new threshold after being alerted that it would require recirculating the DEIR. In addition to being impermissibly outcome determinative, the FEIR's newly-adopted 410 increased cancer risk standard is legally defective under long established CEQA case law.

The FEIR states that the background cancer risk level in the Project area is 410 cases per million people (FEIR, p. 2.0-6). It also states that the recommended significance threshold is 410 cases per million people, and thus because the Project's incremental increase is 18 cases per million, the impact is not significant. (FEIR, p. 2.0-8, Table 4.1-7.) This is a fatally flawed approach to the TAC health risk analysis. Although it is appropriate to use the background cancer risk as the baseline against which the City measures whether the Project's health risk impacts are significant (CEQA Guidelines, § 15125, subd. (a)), there is no authority that states that Project impacts are not significant unless they exceed background conditions.

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The City is, in effect, using a variation of the "ratio" methodology of assessing significance, which was held invalid in *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692 (*Kings County*). In *Kings County*, the CEQA lead agency took the position that where a project's impacts on air quality were "relatively minor" compared to other sources, the project could not have significant impacts on air quality.

(*Id.* at 720.) The court rejected this reasoning and its implication that “the greater the over-all problem, the less significance a project has.” (*Id.* at 721.) Instead, an agency must consider a Project’s incremental effects in determining significance. Thus, it is improper for the City to claim, as it has, that the Project’s impact on cancer risk is insignificant because it does not individually exceed the cancer risk generated by *all* existing projects and conditions.

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In summary, the FEIR’s dramatic revision to the DEIR’s analysis of health risk from TAC emissions falls well short of CEQA’s mandate for good faith public disclosure. The FEIR has offered no factually or legally defensible argument for refusing to analyze and disclose how the Project would exacerbate health risk for new sensitive receptors against the industry standard 10 increased cancer risks. Further, the City violated CEQA Guidelines by not recirculating the DEIR with this new information, as required by CEQA Guidelines section 15088.5.

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V. The Final EIR Does Not Provide Substantial Evidence to Support the Significance Thresholds and Conclusions Regarding Greenhouse Gas Emissions.

The response to comments also failed to remedy the deficiencies identified in our previous comment letter with respect to the analysis of the proposed Project’s greenhouse impacts. As explained in Citizens’ prior comments, the City must demonstrate how complying with the Placer County Air Control Pollution District’s (“PCAPCD’s”) Efficiency Threshold ensures that the Project’s incremental contribution to the cumulative effect of greenhouse gas emissions is not cumulatively considerable. (FEIR, p. 3.0-51; *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204, 230.) The City responded that the supporting data and analysis appears in a PCAPCD Justification Report (FEIR, p. 3.0-125), but failed to include this report as an appendix. In addition, the FEIR quotes language from the Justification Report, which provides the numerical values that the City considers “cumulatively considerable” (FEIR, p. 3.0-125), without any explanation of *why* these numbers were chosen as threshold values. By failing to provide the documentation that purportedly contains the justification for its conclusions, the City has committed prejudicial error by failing to “ensure strict compliance with the procedures and mandates of [CEQA].” (*Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 118.)

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VI. The Draft EIR Fails to Disclose and Evaluate the Full Extent of the Proposed Project’s Biological Resources Impacts.

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The response to several comments made on the analysis of impacts to biological resources highlights the problem with the EIR's reliance on outdated technical appendices. Our December comment letter raised several inconsistencies between the EIR analysis and the Biological Habitat Evaluation Report in Appendix 4.2, including the list of species potentially impacted and the potential presence of wetlands on the site. The responses to these comments indicate that these inconsistencies arise because of changed circumstances between the time the Biological Habitat Evaluation Report was prepared in 2013, and the time the analysis in the Draft EIR was prepared in 2014. (Responses 5-4, 5-45 – 5-52.) Without the support of up-to-date relevant technical appendices, there is no substantial evidence to support the EIR's conclusions.

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Further, while some changes were made to the text of mitigation measures in response to comments from the California Department of Fish and Wildlife and Citizens, no substantial changes or additions were otherwise made to the EIR's analysis of biological resource impacts. Citizens therefore reiterates the comments made in its December letter regarding impacts to biological resources.

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VII. The Analysis of Cumulative Impacts Remains Inadequate.

As discussed in our previous comment, the Draft EIR identifies a cumulative context that only includes projects within ½ mile of the proposed Project. The ½ mile distance is arbitrary and not supported by substantial evidence. Moreover, as a result of this arbitrary limitation, the Draft EIR identifies only two projects in the cumulative condition—the Roseville Hotel and Conference Center and the Falls Event Center. (Draft EIR, p. 4.0-4.) The Draft EIR fails to consider other reasonably foreseeable cumulative projects including, but not limited to, the Parcel 49 project to the west, including Topgolf and the Bayside Church complex.

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The response to this comment states that Parcel 49 is located 1.5 miles away from the Project site and that from this distance, impacts would be attenuated to negligible levels. (Response 5-63.) Parcel 49 is located roughly halfway between Galleria Boulevard and Pleasant Grove Boulevard, which are one mile apart. The east end of Parcel 49, where Topgolf is located, is roughly half a mile from Pleasant Grove Boulevard. The response simply fails to explain why a 60-acre site with a major project being developed was excluded from the analysis. The Draft EIR must be revised and recirculated to properly analyze the potential cumulative impacts.

VIII. General Plan Consistency Must Be Analyzed in the EIR.

In response to comments that the EIR failed to analyze consistency with the General Plan, the Final EIR states in a conclusory fashion that no evidence of

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inconsistency with the objectives, policies, general land uses, and programs of the General Plan has been presented. To the contrary, as described in detail in our December comment letter and in Section II.A above, Citizens have identified at least one glaring inconsistency with the General Plan. Inconsistency between a project and planning policies must be disclosed as a significant impact on the environment, and mitigation to reduce or avoid that impact must be identified. (See, e.g., *Napa Citizens for Honest Gov't. v. Napa County Bd. of Supervisors* (2001) 91 Cal.App.4th 342, 379.) In that the EIR includes no analysis of the proposed Project's consistency with the General Plan, a detailed analysis is required to substantiate any claim of consistency, including the findings needed to approve the CUP, which as described above, cannot be reconciled with the EIR's failure to follow the methodology required in the General Plan for consideration of the proposed Project's traffic impacts.

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IX. The EIR Must Be Revised and Recirculated for Further Public Review to Comply with CEQA.

As discussed in our December comment letter, CEQA requires recirculation when "significant new information is added to an environmental impact report" after the public comment period has closed but before certification. (Pub. Resources Code, § 21092.1.) New information is considered "significant" if the information is necessary to provide the public and interested agencies with "meaningful opportunity to comment upon a substantial adverse environmental effect of the project or . . . feasible project alternative[s]" (CEQA Guidelines, § 15088.5, subd. (a).) As outlined in the December comment letter and the exhibits attached thereto, and as further highlighted in this letter and its attachments, the EIR fails to disclose or adequately discuss critical information related to the proposed Project and its associated environmental impacts, and the responses to comments do nothing to remedy these deficiencies. The omitted information is necessary to provide the public and interested agencies with a meaningful opportunity to comment upon potential adverse environmental effects of the proposed Project. Therefore, these necessary revisions require the City to revise and recirculate the EIR prior to approval.

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* * * * *

Citizens strongly urge the City to continue its consideration of the proposed Project until such time as a revised analysis has been prepared and circulated for public review to identify the myriad inadequacies identified herein and in our previous comment letter. Failure to do so will force Citizens to consider other appropriate legal remedies.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: 
Patrick M. Soluri

PS/mre

Attachments:

Exhibit A: MRO Engineering comment letter

Exhibit B: j.c. brennan and associates comment letter

Exhibit C: Helix Environmental Planning comment letter

EXHIBIT A



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May 11, 2017

Roseville Citizens for Quality Development
c/o Ms. Osha Meserve
Soluri Meserve
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Sacramento, California 95814

Subject: ***Review of "Transportation and Traffic" Analysis
Final Environmental Impact Report –
Proposed VillaSport Athletic Club and Spa Project – Roseville, California***

Dear Ms. Meserve:

On December 5, 2016, MRO Engineers, Inc., (MRO) provided a letter documenting our review of the "Transportation and Traffic" section of the Draft Environmental Impact Report (DEIR) for the proposed VillaSport Athletic Club and Spa in Roseville, California. (Reference: Impact Sciences, Inc., *VillaSport Athletic Club and Spa Draft Environmental Impact Report*, October 2016). The "Transportation and Traffic" section of the DEIR was based on a transportation impact analysis prepared by Fehr & Peers (F&P). (Reference: Fehr & Peers, *Final Transportation Impact Study for Villasport Athletic Club and Spa in Roseville, CA*, November 2, 2015.) The F&P traffic study was presented as Appendix 4.8 to the DEIR.

Our letter described several substantial issues affecting the validity of the conclusions presented in the DEIR. Among other issues, we determined that a corrected traffic impact analysis would reveal a significant impact to State Route 65 that was not documented in the DEIR.

We have now reviewed the Final Environmental Impact Report (FEIR), which presents responses to our comments concerning the proposed project. Based on that review, we find that several of the responses are deficient in that they fail to address the issues fully or provide misleading or inaccurate information.

FEIR Transportation and Traffic Analysis Review

The following sections document outstanding issues regarding the "Transportation and Traffic" analysis for the proposed VillaSport Athletic Club and Spa, following the numbering scheme employed in the FEIR.

Comment 5-70. -- Transportation and Traffic Analysis Violates the City of Roseville General Plan

In this comment, we pointed out that, in conjunction with its approval of the Amoruso Ranch Specific Plan (ARSP), the Roseville City Council adopted a General Plan amendment that, among other actions, modified the General Plan horizon year from 2025 to 2035. (We noted that Caltrans also requested an analysis of traffic operations on its system in the year 2035.) It also changed the Capital Improvement Program (CIP) study methodology from "Circular 212" to the *Highway Capacity Manual* (HCM),

The VillaSport DEIR, however, violated these two provisions of the amended General Plan, as well as ignoring the specific request of Caltrans.



In our comment, we laid out a chronology that clearly demonstrated that the VillaSport traffic impact analysis was underway at the same time as the traffic study for the ARSP, and that the ARSP analysis employed the new General Plan parameters. To briefly summarize key points in that chronology:

- The F&P study that served as the basis for the “Transportation and Traffic” section of the VillaSport DEIR was completed in November 2015.
- The Amoruso Ranch Specific Plan was approved by the Roseville City Council on June 15, 2016.
- The General Plan amendment described above was approved at the same time as the ARSP (i.e., June 15, 2016).
- The VillaSport DEIR was completed in October 2016, almost a full year following completion of the F&P traffic study.

This series of events make it clear that adequate time was available to undertake and complete an update of the VillaSport traffic analysis under the amended General Plan parameters.

FEIR Response 70 states that:

The NOP for the Draft [VillaSport] EIR was issued in September 2014. The majority of the transportation impact analysis occurred in fall 2014 and early/mid 2015. The [MRO] suggestion that the study began in May 2015 is not accurate.

However, as we noted in our comment, the DEIR (p. 4.8-8) states, under the heading “AM and PM Peak Hour Intersection Traffic Volumes”:

*Traffic count data was obtained at the majority of study intersections from the City of Roseville’s online traffic count database (based on calibrated loop detector vehicle data collection collected in **May 2015**). [Emphasis added.]*

Given that data collection is among the very first activities conducted as part of a traffic impact analysis, it is extremely unlikely that substantial activity occurred prior to May 2015, contrary to the claim in the FEIR.

Moreover, FEIR Response 5-11, which addresses this same issue states:

First, the issuance of the NOP establishes the baseline setting relative to which project impacts are evaluated. When the NOP was issued (and the traffic study undertaken), the City’s modeling horizon was 2025.

The same is true, of course, for the ARSP; when its NOP was issued, the City’s modeling horizon was 2025. Despite that, however, the ARSP traffic analysis appropriately addressed a 2035 horizon year.

FEIR Response 5-11 goes on to say, in effect, that it doesn’t matter which horizon year is considered as, “. . . the underlying list of cumulative projects in the 2035 traffic model is very similar to that of the 2025 traffic model.” That response addresses only one aspect of future traffic flow patterns. It fails to address transportation system changes that can reasonably be expected between 2025 and 2035.



Further, it is unclear if this statement refers only to projects within the boundaries of Roseville, or if it suggests that, in effect, no growth is expected in the entire Sacramento region between 2025 and 2035. A December 6, 2013 document prepared for the Board of Directors of the Sacramento Area Council of Governments (SACOG) addresses regional growth projections. It indicates that SACOG staff have projected that population within the SACOG region will grow by an annual rate of 1.28 percent between 2008/2010 and 2035. That same document shows that the California Department of Finance projected an annual growth rate in that same time frame of 1.19 percent. Clearly, substantial growth will occur between 2025 and 2035. (Reference: Sacramento Area Council of Governments, Board of Directors Item #13-12-12A, "MTP/SCS: Regional Growth Projections, December 6, 2013.)

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FEIR Response 5-11 also emphasizes that, "... the 2025 horizon was only used for areas located *outside* the City of Roseville." Within Roseville, the response claims that the analysis represented buildout at some undefined point in the future ("well after 2015"). This response seems to suggest that there is no connection between what happens within Roseville and what happens outside of the city, so it makes no difference if the time frames (and land use projections) for the two areas are consistent. Of course, based on its population and the magnitude of its employment and retail base, Roseville is a major generator and attractor of trips within the Sacramento region. Consequently, substantial travel occurs across the city limits. Constraining the external land use (and population) to 2025 levels while supposedly considering buildout of all internal land uses results in an unreasonable, unrealistic estimate of future travel into and out of Roseville.

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Finally, Response 5-70 suggests that the proposed VillaSport project is so minuscule that it really doesn't matter if they evaluate conditions in the year 2025 or the year 2035. In reality, of course, the regional growth described above will lead to increased traffic volumes in 2035 that will be reflected in degraded operations at intersections throughout Roseville and beyond. The resulting increases in either volume/capacity (V/C) ratios or intersection delays will show up as reduced levels of service, which will make it increasingly likely that the project-related impact will exceed the City's established level of service criteria.

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In summary, there is no question that the "Transportation and Traffic" analysis presented in the VillaSport DEIR violates the current City of Roseville General Plan. Further, that violation could easily have been avoided by updating the analysis in the months between adoption of the amended General Plan and release of the VillaSport DEIR. Consequently, we continue to believe that the traffic impact analysis must be updated and incorporated into a revised DEIR, which must then be recirculated for further public review and comment.

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Comment 5-71 -- Invalid Cumulative Conditions Analysis

This comment further addressed the deficiencies associated with the use of the city's superseded 2025 travel demand forecasting model. The discussion presented above describes the shortcomings of the FEIR's response to this comment.

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Comment 5-72 -- Obsolete Cumulative (2025 CIP) Conditions Level of Service Calculation Methodology

This comment pointed out the obsolete nature of the "Circular 212" intersection level of service (LOS) calculation methodology employed in the analysis of cumulative (2025 CIP) conditions. The response points out that other agencies also use this methodology.

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We also noted that the superiority of the current *Highway Capacity Manual* (HCM) methodology (as required by the amended General Plan) is directly acknowledged in the *Final Traffic Study for the Amoruso Ranch Specific Plan*, completed by F&P on February 16, 2016 (p. 1), as follows:

The HCM methodology produces more accurate LOS results.

Further, we commented that use of the obsolete Circular 212 calculation methodology in the VillaSport DEIR skews the intersection level of service results, making it appear that the Roseville roadway system operates better than it actually does. Specifically, the HCM procedures indicate that 81 percent of the city's intersections would operate at acceptable PM peak-hour levels of service in the future, compared to 96 percent based on the Circular 212 method.

Finally, we noted that the intersection analyses for Existing and Existing Plus Project conditions were performed using a method that is, "... consistent with the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010." (DEIR p. 4.8-22) This raises obvious questions regarding consistency among time frames and why the HCM method is appropriate for the short-term analysis, but not the long-term.

In any event, we acknowledge that a Lead Agency has the discretion to use any antiquated analysis procedure it designates. However, we believe that this approach does the public a disservice, as it deprives them of meaningful, up-to-date conclusions regarding the operation of the road system.

Comment 5-73 -- Inadequate Study Area

In this comment, we suggested that a thorough analysis of the proposed project's traffic impacts requires analysis of five additional intersections in the East Roseville Parkway corridor (including one that Response 5-73 says operates at LOS D). The response also states that these intersections would have less than significant impacts. It specifically states, with unwarranted and unsubstantiated certainty, that the proposed project, "... would not have caused the East Roseville Parkway/Douglas Boulevard intersection to worsen from LOS D to E." These conclusions are based on the four-year-old analysis for the Life Time Fitness project.

Time marches on and conditions change. It is not unreasonable to suggest that conditions at the East Roseville Parkway/Douglas Boulevard intersection might have deteriorated in the past four years. An up-to-date analysis of that location using current traffic volume information might very well reveal that the intersection currently operates near the LOS D/E boundary, so that the project-generated traffic would cause it to degrade from LOS D to LOS E. Of course, the only way to determine this with certainty is to do the analysis, as we suggested.

We also expressed concern regarding the extremely limited freeway facility study area, despite the fact that (DEIR p. 4.8-2):

Caltrans also requested that SR-65 [State Route 65] facilities in the vicinity of the project also [sic] be studied.

The reference to "SR 65 facilities" would correctly be interpreted as encompassing all components of the freeway system. According to the *Highway Capacity Manual*, those components are basic freeway segments (i.e., the freeway mainline), weaving segments, and merge and diverge segments (i.e., on-ramps and off-ramps).

However, the freeway system analysis in the DEIR was limited to the SR 65/Pleasant Grove Boulevard and SR 65/Galleria Boulevard interchanges, including the intersections where the ramps

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meet the arterial streets and the locations where the freeway and the ramp intersect. No analysis of the SR 65 freeway mainline was conducted, despite the fact that DEIR p. 4.8-12 says:

Conditions are particularly congested for multiple hours each day in both directions of SR 65.

Response 5-73 correctly states that, “For the southbound SR 65 off-ramp at Pleasant Grove Boulevard, its ramp junction operation is determined by the weave section that feeds into it.” However, it goes on to say:

In this instance, the weave section is considered the mainline.

This is, of course, incorrect. “Weaving” refers to maneuvers directly associated with vehicles entering or exiting the freeway and, in this case, refers to activity associated with vehicles moving into and out of the “auxiliary lane” (i.e., an additional lane along the right-hand edge of the freeway) that connects the southbound Blue Oaks Boulevard on-ramp with the southbound Pleasant Grove Boulevard off-ramp.

The *Highway Capacity Manual* (p. 9-11) provides the following definition for mainline:

The primary through roadway as distinct from ramps, auxiliary lanes, and collector-distributor roads.

Thus, the freeway mainline refers to the lanes that are available to drivers who are passing through the area and who are not using on-ramps or off-ramps. Adjacent to the auxiliary lane described above are two lanes for the use of such drivers; those are the mainline lanes. Similarly, on the northbound side of SR 65 are two mainline lanes adjacent to an auxiliary lane for the use of drivers entering from Pleasant Grove Boulevard and exiting at Blue Oaks Boulevard. The same two mainline lanes are available in each direction on SR 65 between Pleasant Grove Boulevard and Galleria Boulevard/Stanford Ranch Road.

In short, this deficiency in the DEIR traffic analysis seems to be due to a failure to understand what constitutes the freeway mainline. Given the congested conditions that are documented for the SR 65 mainline in the DEIR, it is essential that the project’s impacts on the SR 65 mainline be fully evaluated between Interstate 80 and Pleasant Grove Boulevard.

Comment 5-74 – Misleading Freeway Impact Analysis

We noted that DEIR Table 4.8-3 (p. 4.8-12) and Table 4.8-6 (p. 4.8-31), which show the freeway ramp analysis results for Existing and Existing Plus Project conditions, respectively, show only levels of service. However, no detail is provided with respect to the value of the “performance measure” that defines the level of service (i.e., traffic density).

Response 5-74 simply summarizes the analysis results and states that Table 4.8-3 is correct. It provides no further illumination regarding the specific traffic density values that apply to each of the levels of service. Thus, the table is correct, but imprecise. We believe that the missing information is critical to gaining a full understanding of the magnitude of the proposed project’s impact on these freeway ramp facilities.

We had made a comment regarding the inappropriate nature of rounding the freeway ramp analysis results to the nearest integer value, based on protocols established in the *Highway Capacity Manual*. The response acknowledges that our comment was correct, but attempts to justify the improper approach taken in the DEIR by saying that the HCM-recommended approach suggests a



greater degree of precision than is appropriate. If that were the case, it is unlikely that the HCM, which is the primary source of documented research regarding freeway capacity analyses, would make such a recommendation.

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With regard to our questioning of the validity of the significance threshold of 0.5 passenger cars per mile per lane (pc/mi/ln), the response claims, without substantiation, that the threshold, “. . . is supported by substantial evidence regarding its development.” We believe the public should be allowed to review this “substantial evidence,” so that its validity can be independently judged.

32

As stated in our comment, when the HCM-recommended convention for reporting freeway facility densities is employed and when the Caltrans-designated significance threshold is correctly employed, the SR 65 Northbound Galleria Boulevard off-ramp is shown to have a significant impact in the PM peak hour under Existing Plus Project conditions. Operating conditions also degrade at that location in the AM peak hour, based on the V/C ratio.

33

Finally, we pointed out that insufficient information was provided to allow independent confirmation of the claimed “less than significant” impacts at the freeway ramps. Specifically, no freeway facility calculation sheets are presented for cumulative conditions. Response 5-74 simply reiterated the claimed findings of the DEIR, but did not address the missing information.

34

Comment 5-75 -- Underestimated Project Trip Generation

In this comment, we questioned the use of the standard trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (Ninth Edition, 2012) instead of the higher, more conservative rates used in the Life Time Fitness analysis. This issue was raised based on a statement in the Life Time Fitness traffic analysis report, which described those rates as providing a, “. . . more reliable trip generation estimate than the trip rates found in ITE’s *Trip Generation*.”

We pointed out that, while the PM peak hour trip generation would not be substantially different, in the AM peak hour, use of the Life Time Fitness rates would result in an additional 106 trips due to completion of the proposed project, representing an 85 percent increase in project trip generation compared to the values used in the DEIR analysis.

We also noted that the project trip generation estimate ignored a 50,000 SF outdoor area that is proposed in addition to the 88,000 SF VillaSport building. That outdoor area would include an outdoor pool area with two swimming pools (one with 26-foot slides); whirlpools; an outdoor café; an outdoor play area with play structures; and an area for a potential future artificial turf field. Thus, in reality, the proposed project is a 138,000 SF athletic club and spa, not an 88,000 SF facility. Inclusion of this area would substantially alter the trip generation estimates for both the AM and PM peak hours.

35

In summary, our comment indicated that the volume of project-generated traffic had been substantially underestimated due to the use of inappropriate trip generation rates and the failure to include significant elements of the proposed project.

The response (presented at Response 5-15) amounts to an unsubstantiated, conclusory statement that, “. . . increases in delay would have still been modest and no new impacts would have been identified.” We believe this response inadequately addresses a substantial shortcoming of the DEIR traffic analysis.

Comment 5-76 -- Deficient Transit System Threshold of Significance

We commented that the threshold of significance for transit, as presented at DEIR p. 4.8-19, is inappropriately vague, as the DEIR presents no information to define what constitutes a “substantial negative impact.” We also stated that the threshold of significance must relate to some measurable value.

FEIR Response 5-76 points out that not all significance criteria are measurable, and some are necessarily qualitative. Examples provided include the issue areas of aesthetic, cultural and historic resources, and visual impacts. We grant the validity of that point. However, we also note that quantitative, measurable values are available in the area of transit impacts. Such factors might include ridership, load factor (i.e., percentage of occupied seats), and delays/on-time performance. A better effort needs to be made to define a reasonable significance criterion for transit impacts.

36

Comment 5-77 -- Deficient Transit System Analysis

We noted that the transit system analysis consists of the following conclusory statement (DEIR p. 4.8-33):

The project would not have a negative impact on transit operations, travel times, and/or circulation. The project would generate few, if any, new transit riders in the near-term.

Response 5-77 acknowledges that a detailed investigation was not performed, and also states that none is needed based on guidance associated with the yet-to-be-implemented SB 743.

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While the lack of a meaningful analysis of transit impacts might be technically acceptable, it provides no information that would allow the public (and especially current transit riders) to judge the potential impacts on their day-to-day lives. We continue to believe that this is a substantial deficiency in the EIR.

Comment 5-79 -- Questionable Signalized Intersection Level of Service Results --

In this comment, we pointed out that, at five of the seventeen signal-controlled study intersections, addition of the 311 PM peak hour trips causes the intersection delay values to improve under Existing Plus Project conditions. (DEIR Table 4.8-5, p. 4.8-29) That is, the delay values upon addition of the project traffic are lower than they are without that additional traffic, including a 10 percent improvement at Roseville Parkway/Pleasant Grove Boulevard, from 70 seconds/vehicle to 63 seconds/vehicle.

Although the explanation provided in Response 5-79 is reasonable, it is disconcerting to be informed that with the supposed state-of-the practice micro-simulation tool employed in the traffic analysis:

. . . it is not uncommon for random variation to cause minor differences in reported delay (i.e., up to 10 seconds) for model runs with identical inputs.

A 10-second variation in delay (with identical inputs!) could easily represent the difference between acceptable and unacceptable operation. The entire LOS C range of delays encompasses only 15 seconds (from 20.1 seconds/vehicle to 35.0 seconds/vehicle).

This statement causes us to further question the validity and credibility of the intersection delay values reported in the DEIR.

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CONCLUSION

The Final Environmental Impact Report for the proposed VillaSport Athletic Club and Spa in Roseville, California has failed to satisfy our concerns regarding the deficiencies we identified in the traffic impact analysis prepared for the project. We believe that there is a reasonable likelihood that a corrected analysis would reveal a previously-unreported significant impact on the State Route 65 freeway system. We also remain concerned about violations of the City of Roseville General Plan and the other issues discussed above.

We hope this information is useful. If you have questions concerning anything presented here, please feel free to contact me at (916) 783-3838.

Sincerely,

MRO ENGINEERS, INC.

A handwritten signature in blue ink, reading 'Neal K. Liddicoat', is positioned above the printed name.

Neal K. Liddicoat, P.E.
Traffic Engineering Manager

EXHIBIT B



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May 8, 2017

Roseville Citizens for Quality Development
c/o Osha Meserve
Soluri Meserve
1010 F Street, Suite 100
Sacramento, CA 95814

Subject: Peer Review of the Final EIR Noise Section – VillaSport Athletic Club and Spa – City of Roseville, California

Dear Ms. Meserve:

j.c. brennan & associates, Inc. has completed our peer review of the above-referenced project and the Final EIR¹ noise section prepared by Impact Sciences, Inc. The intent of the review was to determine if the documents met the technical requirements for evaluating potential noise impacts and determining if the analysis met the requirements of CEQA and the City of Roseville.

Specifically, we reviewed the report for accuracy and thoroughness with special attention to the following areas:

- < Applicable noise level standards;
- < Methodology;
- < Assessment of noise impacts, including cumulative impact assessment;
- < Compliance with CEQA requirements and Stanislaus County noise requirements.

General Comment.

The comments in this letter were previously submitted during the DEIR public comment period. However, no substantial additions or alternations were made to the DEIR noise section in the FEIR to address the majority of the issues raised by us. Therefore, these comments will reiterate the comments previously submitted.

Most importantly, the FEIR continues to fail to provide any evaluation of non-transportation noise generated by operation of the project on the surrounding noise-sensitive receptors identified in the DEIR. These receptors include the Hyatt Placer Hotel and the Venu at Galleria Condominiums. The following is a list of noise sources associated with the project that the FEIR and DEIR fail to analyze:

- Swimming pool noise (lap swimming, recreational swimming, water slides, whirlpools, etc.)
- Outdoor café

¹ VillaSport Athletic Club and Spa Final EIR, Section 4.6 Noise. Impact Sciences, Inc. May 2017.

- Use of amplified sound in outdoor areas
- Outdoor play area with play structures
- Outdoor artificial turf area
- Parking lots
- HVAC mechanical equipment
- Pool mechanical equipment

Based upon the project's proposed operating hours from 5:00 a.m. to 11:00 p.m. seven days a week, the City's nighttime noise level standards of 45 dBA L_{eq} / 65 dBA L_{max} may be exceeded by these proposed activities. Additionally, outdoor activities such as pool usage often consist primarily of speech and are subject to a 5 dB penalty under the City's General Plan Noise Element and Noise Ordinance standards.

The DEIR must be updated to include a complete analysis of all project-related non-transportation noise sources at the noise sensitive uses identified in the DEIR. This analysis should include measurement of noise levels from a similar VillaSport facility to document the magnitude of noise generated by facilities which are comparable in size and operation to the proposed project facilities.

In response 5-29 of the FEIR (page 3.0-117), the EIR consultant dismisses the potential impact of non-transportation noise at sensitive receptors by claiming that noise from the project's outdoor features (swimming pool, outdoor café, use of amplified sound in outdoor areas, outdoor play areas with play structures, outdoor artificial turf area, parking lots, HVAC mechanical equipment, and pool mechanical equipment) would be below ambient noise due to the distance of 500 feet to the nearest sensitive receptors and the presence of existing traffic noise. The EIR consultant provides no scientific evidence to show what potential project noise levels would actually be in terms of the City's hourly average (L_{eq}) or maximum (L_{max}) noise level standards. Instead they evaluate only HVAC noise from existing office uses in terms of the daily L_{dn}/C_{NEL} noise level criterion and compare that value to the L_{dn}/C_{NEL} predicted for traffic noise. No analysis of the myriad of other project-related outdoor noise sources is provided. The EIR consultant even goes so far as to suggest that the noise from the project would consist of "happy children in swimming pools" suggesting that it should not be offensive to people living in the area. It is not the job of the EIR consultant to make a judgement as to whether a particular source of noise should, or should not, be offensive. It is the job of the EIR preparer to quantify the noise generation of the project according to the City's standards, and that has not been done.

The EIR consultant also argues that due to existing high levels of traffic noise, noise from the project's outdoor features would "not be discernable." However, traffic noise varies throughout the day, typically with an a.m. and p.m. peak hour, and would not be a constant masking noise source. It is very likely that sensitive receptors around the project site would hear noise from the proposed project during the periods of time between the a.m. and p.m. peak traffic hours, and even more so on weekends and holidays. Again, the EIR consultant does not quantify these outdoor activities according to the standards of the City of Roseville.

DEIR Page 4.6-3. Existing Noise Conditions in Project Area.

The FEIR still contains no measurement of existing ambient noise levels at sensitive receptors in the project vicinity. The DEIR identifies the Hyatt Place Hotel and the Venu at Galleria Condominiums as sensitive receptors located within 500-600 feet of the project site. However, no attempt was made to document existing ambient noise conditions at these identified sensitive receptors. The only quantification of existing ambient noise is a modeled noise level of 80.4 dBA CNEL at 75 feet from State Route 65. However, this is simply a modeled value that does not represent ambient noise exposure at project-area receptors. In order to conduct a CEQA level analysis of potential noise impacts, the analysis must quantify existing ambient noise conditions. Additionally, the City of Roseville General Plan Noise Element Table IX-2 specifically requires that an acoustical analysis prepared in the City shall "Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources." The FEIR and DEIR fail to do this as no measurement of ambient noise has been performed. The DEIR should be revised to include actual field-measurement of existing ambient noise conditions at the noise-sensitive receptors in the project vicinity.

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CONCLUSIONS

It is our opinion that the FEIR and DEIR do not fully evaluate all of the project's potential noise impacts on the surrounding community or on the proposed project itself. Additionally, the FIER and DEIR fail to provide any substantial quantification of existing ambient noise conditions at existing noise sensitive receptors identified in the DEIR. This fails to meet the requirements of both the City of Roseville and CEQA.

If you have any questions, please contact me at (530) 823-0960.

Respectfully submitted,

j.c. brennan & associates, Inc.



Luke Saxelby, INCE Bd. Cert.

Vice President

Board Certified, Institute of Noise Control Engineering (INCE)

EXHIBIT C

May 8, 2017

Subject: Review of VillaSport Athletic Club and Spa Project –Air Quality/Greenhouse Gas Emissions Analyses

HELIX was requested to review the Air Quality/Greenhouse Gas Emissions analyses of the final environmental impact report (EIR) and supporting technical reports/appendices for the VillaSport Athletic Club and Spa Project (City Project Number 2013PL-019 [CUP and DRP]) for adequacy under the California Environmental Quality Act (CEQA).

The final EIR identifies the project site as previously being approved for commercial land use, including 50,000 square feet of conference center, 500 hotel rooms in towers up to 10 stories in height, and 5,000 square feet of restaurant space as part of the North Central Roseville Specific Plan (NCRSP).

In 2011, the City acquired the subject property and subdivided it into three smaller parcels, including the project parcel – a rectangular lot of 7.5 acres. As shown on Figure 3.0-4 of the draft EIR, approximately half of the parcel would be given to structure or active recreational uses with the remaining half used for surface parking. Proposed project improvements include an 88,000-square foot building with an average roof height of 36-feet and a focused entry canopy/overhang of approximately 48-feet in height, exterior future play field and two pools with approximately 26-foot slides, an outdoor play area with play structures, an outdoor café, and surface parking.

Air Quality Analysis – Health Risk Assessment

In response to comments received on the draft EIR, the health risk assessment (HRA) for the project has been revised using a different model, updated methodology, and new threshold. Appendix 3.2 to the final EIR makes the point that the new purpose of the HRA is to determine if the project would be located in an area with higher than average background risk levels, but the analysis only includes one source. If the goal of the revised analysis is to demonstrate the ambient background at the project site is no worse than average, the modeling should include every source in the vicinity, such as the local roadways (Roseville Parkway, Pleasant Grove Boulevard, and Galleria Boulevard), nearby stationary sources including generators at the nearby Westfield Galleria at Roseville, and the mobile and stationary sources at the Costco Wholesale located across CA-65. Furthermore, though the trips generated by the project may not travel on the adjacent portion of CA-65, the project would result in increased TACs on local roadways. Additionally, the revised analysis applies a threshold of 410 chances of contracting cancer per million people. To our knowledge, a threshold of existing ambient background levels has never been used in this manner. Though it may not be required as pointed out in Appendix 3.2, every HRA disclosing cancer risk to new sensitive receptors located near or adjacent an existing toxic

air contaminant (TAC) source we have ever come across uses the 10 per million threshold. We find it highly suspect that upon re-analysis and calculation of higher results, the threshold being applied to the analysis suddenly jumps by a factor of 41. Finally, Attachment A, *HRA Modeling Results*, to Appendix 3.2 is missing the HARP output for pregnant workers. Accuracy of the results cannot be verified without this information.

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Greenhouse Gas Analysis – Operational Emissions

Attachment B, *Air Quality and GHG Modeling Results*, to Appendix 3.2 shows that the carbon dioxide (CO₂) intensity factor was changed from the Roseville Electric Utility default of 793.8 pounds (lbs) CO₂ per megawatt-hour (MWhr) to 616.63 lbs CO₂/MWhr with only a simple comment as justification; “CO₂ Intensity Factor adjusted for Roseville Electric progress towards RPS.” An assumption of this magnitude requires supporting documentation and should be included in the text of the final EIR, not buried in an attachment to an appendix. Using the CalEEMod default CO₂ intensity factor results in increased energy source emissions, which can be estimated using the information available by application of simple ratios as shown below.

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Default value = 793.8 lbs/MWhr

Adjusted value = 616.63 lbs/MWhr

Energy source emissions (Table 4.4-5) = 506.26 metric tons (MT) CO₂

Default energy source emissions = $506.26 * 793.8 / 616.63 = 651.72$ MT CO₂

Use of the adjust value results in a 145.46 MT decrease (651.72-506.26). Adding this value to the total project emissions reported in Table 4.4-5 (3,532.64) yields a result of 3,678.10 MT CO₂e. When divided by the project's square footage, the resulting emissions are 26.65 MT CO₂e per 1,000 square feet per year which exceeds the 26.5 threshold. Therefore, the analysis fails to identify a potentially significant impact.

We appreciate the opportunity to comment on this project.

Sincerely,

Victor Ortiz
Air Quality Technician

Letter No 7: Roseville Citizens for Quality Development, dated May 11, 2017

Response 7-1 – Supplemental Evaluation of Project Impacts under Year 2035 Conditions using Highway Capacity Manual (HCM) Methods

The EIR preparers remain confident that the traffic analysis included in the Draft and Final EIR is legally adequate and appropriate. However, several individual comments expressed an interest in understanding project impacts under 2035 conditions using Highway Capacity Manual (HCM) methods, and this was the subject of much discussion before the Planning Commission. City staff conferred with the applicant, and it was agreed that a cumulative conditions analysis using the 2035 model could be quickly prepared, and would bolster the EIR preparers' argument that the project's impacts would not change with the 2035 model. Therefore, to address these requests, the City of Roseville 2035 travel demand model was used to analyze project impacts at all existing and future signalized intersections within the City of Roseville. This analysis supplements the analysis of the Draft and Final EIR.

Notably, the decision to prepare this supplemental traffic analysis renders moot the legal contention that the original traffic analysis was prepared in violation of the City's General Plan as updated in June 2016, when the City Council approved the Amoruso Ranch Specific Plan. As modified at that time, Implementation Measure 2 of the General Plan Circulation Element now requires that traffic studies for development proposals include a "'full build-out' analysis that evaluates traffic conditions assuming build-out of the City and 2035 Market development outside of the City." (Italics added.) Previously, what was required was analysis of build-out of the City and 2025 Market development outside of the City. At the same time, the City Council updated the Circulation Element's discussion of permissible levels of service (LOS) at key intersections throughout the City, as determined through the use of the Highway Capacity Manual (HCM) methodology. The discussion of the City's "Roadway Circulation System" now states that HCM "is an appropriate method of forecasting future roadway needs and is consistent with the City's Level-of-service policy. This method considers the actual operational characteristics of intersections utilizing the City's Intelligent Transportation System (ITS) which provide measurable improved level-of-service. Because the operational characteristics are a critical portion of a transportation system, the City should continue to place an emphasis on corridor and intersection operation to maximize the efficiency of its transportation system." The updated cumulative impact analysis comports with these new General Plan requirements by (i) relying on the HCM method and (ii) addressing 2035 market development outside of the City.

City Staff does not believe that the earlier traffic study violated the General Plan, because the June 2016 amendments described above came long after City staff had deemed the Villa Sport application complete, and long after November 2015, when the initial traffic study for the project had been prepared (see Draft EIR, Appendix 4.8). In fact, during the early phases of the administrative process for the Villa Sport project, City staff had very good reasons for choosing to prepare a traffic study using the Circular 212 methodology, and looking at 2025 market development outside of the City. (See the response to comment 7-3 below for a detailed discussion of these reasons.) Once the June 2016 General Plan amendments were in place, City

staff assumed that they applied prospectively only, and that projects already “in the pipeline” were not required to change analytical processes already underway or completed. Importantly, the new language did not include express language making the new requirements retroactive. Even so, because two out of the five Planning Commissioners present at the May 11, 2017, hearing on the proposed project expressed concern about such an interpretation, and because the Commission received testimony arguing for a retroactive interpretation, City staff and the applicant determined that the best course of action with respect to these issues was to prepare an updated traffic cumulative impact analysis using both the HCM methodology and a 2035 time frame for market development outside of the City.

Because the amended General Plan is silent on the point in time in the planning process when an up-to-date traffic study can be introduced, staff saw no problem in introducing the new study after the Planning Commission’s action but before the City Council’s action on the proposed project. For other projects going forward, the new approach will be required of the traffic studies that are fed into future draft EIRs and negative declarations. The up-to-date traffic study for the Villa Sport project has come late in the planning process only because, as explained above, the project was already “in the pipeline” at the time the new General Plan language was added. The updated cumulative impact analysis does not reveal any “significant new information” that would trigger recirculation of the EIR traffic chapter pursuant to CEQA Guidelines section 15088.5. In particular, the updated study does *not* reveal any new significant impacts or any substantial increase in the severity of any previously-identified environmental impact. If any such significant new information had been revealed, the City would have had to recirculate the traffic analysis.

Table 1 below (following page) displays the number of existing/planned signalized intersections operating at LOS A – C, LOS D, and LOS E, and LOS F under 2035 conditions, without and with the project. Results are shown for both AM and PM peak hour conditions (refer to Appendix B for individual intersection LOS results).

The individual intersection results shown in Appendix B cannot precisely match previous studies conducted in the City of Roseville for several reasons. First, the analysis relied upon the most recently updated version of the 2035 model, which was used for the *Final Transportation Impact Study for Kaiser Permanente Riverside Medical Office Expansion in Roseville, CA* (Fehr & Peers, 2016). At the City’s request, that model removed the widening of Cirby Way between Foothills Boulevard and Riverside Avenue to six lanes, which caused a large redistribution of traffic. This improvement was removed because expansion of the roadway is no longer planned, as City Council found that the expansion was undesirable. Second, the Synchro software program, which is used to analyze intersections using HCM methods, has been updated to version 9.0, which can also cause minor differences in results. Despite these changes, the results in Table 1 and in Appendix B support the EIR preparers’ conclusions based on the 2025 Villa Sport traffic study.

TABLE 1: CITYWIDE INTERSECTION LOS RESULTS – CUMULATIVE (2035) CONDITIONS				
Number (Percentage) of Signalized Intersections Operating at...	Cumulative (2035) No Project Conditions		Cumulative (2035) Plus Project Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
LOS A – LOS C	194	169	194	169
LOS D	20	30	21	30
LOS E	10	18	9	18
LOS F	9	16	9	16
Total	233	233	233	233
Percentage Operating at LOS C or better	83.3%	72.5%	83.3%	72.5%
Notes:				
1. The “no project” scenario represents no development on the project site. 2. The “plus project” scenario assumes the proposed project is developed on the project site. 3. List of study intersections excludes those located in the downtown Pedestrian Overlay district, for which policy doesn’t apply.				

The results of the DEIR analysis and this supplemental analysis indicate the following:

1. Both the results of the 2025 and 2035 modeling show the project would not cause a signalized intersection to worsen from LOS C or better to LOS D or worse during the AM or PM peak hours. In fact, LOS remains *unchanged or improved* by the addition of project traffic at all intersections in the study area except the intersection of Gibson Drive and Conference Center Drive, which is changed from LOS B to LOS C (an acceptable LOS) in both the 2025 and 2035 modeling runs.
2. The project would not cause a signalized intersection to worsen from LOS D to E, worsen from LOS E to F, or increase delay by 12.5 seconds or more at an intersection operating at LOS F.
3. With the addition of project trips, 83.3 percent and 72.5 percent of signalized intersections in the City would continue operating at LOS C or better during the AM and PM peak hours, respectively.

Therefore, the project would not cause any cumulatively considerable impacts under 2035 conditions, and there is *no change* in project impacts between the 2025 and 2035 modeling.

Response 7-2

The project description in the Draft EIR presents a complete description of the proposed project. This comment raises no new issues, nor does it point to any specific flaws in the City's previous response to this comment found in FEIR Response 5-3.

Response 7-3

The commenter states that the DEIR should have analyzed cumulative (2035) conditions. The comment also states that DEIR should have used *Highway Capacity Manual* (HCM) techniques to assess cumulative level of service impacts, as required by the City's General Plan. The comment also states that the DEIR applied the incorrect intersection methodology for analyzing cumulative intersection level of service. Responses to each of these comments are provided below.

A cumulative (2035) conditions analysis was performed using the City's 2035 travel demand model. Refer to response to comment 7-1 for the analysis results and conclusions of that evaluation. Refer to response to comment 7-22 for a detailed discussion of why the land use and roadway network assumptions between the 2025 and 2035 models are nearly identical. As described in the response to comment 7-1, the project would not cause any significant impacts using the 2035 model and employing HCM techniques to analyze intersections under that scenario. Therefore, had the DEIR relied upon the cumulative (2035) model and HCM methodology instead of the 2025 model and the Circular 212 methodology, no new impacts would have been identified.

The following discussion, along with some of the discussion in response to comment 7-1, is offered in support of why the 2025 model was selected for use in the DEIR versus the 2035 model. In early 2015, the City of Roseville and the EIR consulting team faced an important methodology-related decision. Namely, should cumulative conditions continue to rely upon the current 2025 traffic model (which formed the basis of the City's Circulation Element at that time) or should it instead make use of the recently updated 2035 model. The 2035 model was developed in conjunction with the then-proposed Amoruso Ranch Specific Plan, and that Specific Plan was intended to be the first project to be analyzed under CEQA using that model. Ultimately, the City and EIR consultants decided there was more risk in relying on the 2035 model because it necessarily relied upon the release of a Draft EIR for the Amoruso Ranch Specific Plan, followed by EIR certification, project approval, and General Plan Amendments, before Villa Sport's Draft EIR could be released. Given the deliberate pace at which the Amoruso project had progressed through the City's application and environmental review process (i.e., studies on Amoruso began as early as 2006), there was strong concern at that time that the continued uncertain of the timing of the Amoruso project could hold up the Villa Sport Draft EIR.

The commenter is correct in that the DEIR relied upon the Circular 212 methodology to analyze intersections under cumulative (2025) conditions. This was a necessity because the cumulative (2025) model is not compatible with the HCM in terms of reported results. In other words, no known City

environmental documents have analyzed 2025 conditions using HCM methods. The City has applied the cumulative (2025) model in numerous prior environmental documents and relied upon the Circular 212 methodology to analyze intersections based on the forecasts derived from that model. The City's General Plan (prior to any amendments resulting from the approval of the Amoroso Ranch Specific Plan) included a list of intersections anticipated to operate worse than LOS C in 2025 using the Circular 212 methodology. Had the DEIR instead employed HCM techniques to analyze cumulative intersection LOS, a different set of intersections would most likely have been shown to operate at worse than LOS C due solely to the different analysis method. In summary, because the DEIR utilized the 2025 CIP travel demand model, it necessarily had to rely upon the Circular 212 methodology to analyze cumulative intersection operations. For reasons explained in the response to comment 7-1, however, City staff, with the applicant's support, decide to prepare an updated cumulative traffic study consistent with the new directives in the General Plan as modified in June 2016.

Finally, when the commenter states that "the City updated its methodology for measuring greenhouse gas emissions based on new thresholds adopted by the local air district in October 2016, after the General Plan adoption," the commenter is confusing analysis methodology with thresholds of significance. The Placer County Air Pollution Control District adopted new thresholds of significance for greenhouse gases (GHGs), but did not change the recommended modeling methodology. Thus, the City did not update its methodology in response to the October 2016 thresholds, but simply compared already-modeled results to the new thresholds. This was a much easier adjustment to make than would have been required if the District had recommended a whole new analytical methodology. The updated GHG thresholds were used because threshold changes have a clear effect on conclusions about level of significance, unlike the case of using the 2025 versus 2035 model, where substantial evidence bolstered by expert opinion concluded that revising the methodology would not change the significance conclusions of the EIR—and indeed, that has been definitively demonstrated, as discussed in Response 7-1.

Response 7-4

The commenter states that the EIR did not correctly analyze SR 65 freeway facilities. As this comment essentially restates comment 29 from this letter, please refer to the response to that comment.

Response 7-5

As this comment essentially restates comment 32 from this letter, please refer to the response to that comment.

Response 7-6

As this comment essentially restates comment 35 from this letter, please refer to the response to that comment.

Response 7-7

It is not accurate to state that no evidence has been provided to demonstrate that non-transportation noise would not result in substantial impacts. A screening analysis was performed to determine whether substantial noise could be detected at the nearest sensitive receptors, and substantial evidence showed it would not. See FEIR Response 5-29. Furthermore, the commenter has misread General Plan policy on this issue. The policy regarding non-transportation noise (Fixed Noise Sources) reads as follows: “Require proposed fixed noise sources **adjacent to noise-sensitive uses** to be mitigated so as not to exceed the noise level performance standards of Table IX-3.” [emphasis added] Noise-sensitive uses listed by the General Plan Noise Element include residential, schools, religious institutions, hospitals, and convalescent hospitals, and other uses where there is an expectation of quiet in the spaces where the standard applies. The project is not adjacent to any noise-sensitive uses; it is surrounded by commercial property.

Response 7-8

See FEIR Response 5-29 and 5-31. Commenter has misread the requirements of the General Plan Noise Element. Table IX-2 includes the requirements for an in-depth acoustical analysis. Noise Element Policy 4 and Policy 8 specify when such an analysis is required. Relevant here, Policy 8 provides that such an analysis is required where “[p]roposed non-residential or other fixed noise sources are likely to produce noise levels exceeding the performance standards of Table IX-3 at existing or planned *noise-sensitive uses*.” (emphasis added) The purpose of the acoustical analysis in such situations is to provide a detailed evaluation for the purpose of developing mitigation for an identified impact. However, the area surrounding the project site does not include noise-sensitive uses, the proposed project results in no significant noise exposure, and mitigation is not required. Therefore, further acoustical analysis pursuant to Table IX-2 is not required.

Response 7-9

The Final EIR included responses to the commenter’s previous comments on the Draft EIR, as seen in the Final EIR, Responses 5-37 through 5-46 and Responses 5-102 through 5-107. Further responses to concerns regarding air quality and greenhouse gas emissions were also provided in Response 4-1.

Response 4-1 provides an in-depth explanation regarding the changing regulatory setting that justified both conducting a full Health Risk Assessment (HRA) for the Final EIR and using the background DPM risk of 410 chances of contracting cancer in a million people as a threshold of significance.

As noted on page 3.0-27 of the Final EIR, the Placer County Air Pollution Control District’s (PCAPCD) “cancer risk threshold of 10 cases per million people is specifically intended for new sources of Toxic Air Contaminants (TAC), particularly for new stationary sources that would typically require obtaining a permit to operate from the local air district.” New sources of TACs would include individual pieces of equipment or specific activities that would emit TACs during operations, including gasoline dispensing facilities, dry cleaning operations, chrome-plating operations, rail yards, and petroleum refineries. The

proposed project does not include any of the aforementioned new sources of TACs, for which the 10 cases per million threshold was intended for use. Rather, the TAC concern for the proposed project is the exposure of new sensitive receptors to pre-existing mobile-related diesel particulate matter (DPM) emissions from existing traffic along State Route (SR) 65. As explained in Response 4-1 and in Response 7-9 below, however, the California Supreme Court, in late 2015, identified the limited circumstances in which CEQA is concerned with the effects of existing environmental conditions on a project's future users or residents. In general, CEQA is *not* concerned with such effects, except that "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impacts of such hazards on future residents or users. In those specific instances, it the project's impact on the environment – and not the environment's impact on the project – that compels an evaluation of how future residents or users could be affected by exacerbated conditions." (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 377-378 (CBIA), italics deleted.) Thus, the question is whether air pollutant emissions from the proposed project would themselves cause significant effects on project users or residents.

While the 10 cases per million people threshold was not intended for use to analyze existing mobile sources of TACs, as discussed in Response 4-1 of the Final EIR, the Draft EIR used the 10 cases per million threshold simply because other thresholds specifically intended for the analysis of existing TACs or mobile TACs were not available. In cases where a threshold for mobile-related emissions on new sensitive receptors does not exist, the industry standard is typically to apply the 10 cases per million threshold, as was done in the Draft EIR. Following release of the Draft EIR, however, the PCAPCD advised that, because the increased cancer risk of 10 cases per million threshold was specifically intended for use in evaluating individual new sources of TACs, a threshold that captures the cumulative nature of background mobile sourced DPM emissions would be more appropriate.

As discussed in Response 4-1 of the Final EIR, at the direction of the PCAPCD, which is a trustee agency for air quality issues within Placer County and Roseville, the Final EIR analyzed the potential health risks related to mobile source TAC emissions in comparison to the current background cancer risk level in the Sacramento Valley Air Basin (SVAB). The California Air Resources Board (CARB) previously assessed the background cancer risk level associated with DPM in the entire SVAB as being approximately 410 chances of contracting cancer per million people. Given the CARB determined background risk, any project involving the location of new sensitive receptors within the SVAB would be anticipated to experience a background cancer risk of 410 chances of contracting cancer per million people. As noted in Response 4-1, actual cancer risks throughout the SVAB vary depending on site location and proximity to sources of DPM. Therefore, if future receptors at the project site were exposed to a cancer risk of 410 chances of contracting cancer per million people or less, the future receptors would experience a cancer risk within the CARB's estimated background risk. On the other hand, any increase in cancer risk beyond the 410 chances per million level would be considered to exceed the background risk for the SVAB and would experience an exacerbated risk. Thus, following the recommendation of the PCAPCD, and, as explained within Response 4-1, the City chose to use the CARB calculated background risk level of 410 chances of contracting cancer

per million people as the basis for the analysis of risks related to SR 65 operations, within the EIR. The preceding information was provided in Response 4-1 of the Final EIR; thus, the Final EIR provides justification for why the threshold of significance was altered for the Final EIR.

In addition to providing further guidance regarding the appropriate threshold of significance, the PCAPCD noted that the health risk screening assessment used in the Draft EIR had substantially overestimated the potential maximum DPM concentrations in the project area. In response to the PCAPCD's comment, and following further consultation with the PCAPCD, the Final EIR included a full site-specific Health Risk Assessment (HRA). The reasoning for such modeling, as well as an overview of the HRA modeling process, were provided in Response 4-1 of the Final EIR, and the Draft EIR was updated accordingly.

Response 4-1 of the Final EIR provided ample information regarding the process used to update the HRA and the thresholds of significance used therein. Therefore, use of the 410 chances of contracting cancer per million people threshold and preparation of an updated HRA were fully explained and substantiated within the Final EIR

Response 7-10

As discussed in Response 7-9, the primary justification for the use of the 410 chances of contracting cancer per million people threshold was direction from the PCAPCD, the relevant trustee agency for air quality issues in Roseville and Placer County. However, the *California Building Industry Association v. Bay Area Air Quality Management District* (CBIA) case provides substantiation to the PCAPCD's direction by reflecting the California Supreme Court's conclusion that an EIR must only evaluate existing hazards when a proposed project may exacerbate the existing hazard. In the case of the proposed project, the existing hazard would be the background risk from DPM emissions of 410 chances of contracting cancer per million people. The project site is located in close proximity to an existing source of DPM, SR 65, and project operations would include employees working at the site as well as operation of a daycare. The proximity of the project site to SR 65 creates the potential that workers or children at the day care could be exposed to increased concentrations of DPM. If the potential increase in DPM exposure of workers or children at the project site results in an increase in the cancer risk in excess of the 410 chances per million threshold, the project would be considered to have an exacerbating effect on an existing environmental hazard. However, if the project does not result in an increased cancer risk above 410 chances per million, then the proposed project would not be understood to result in an exacerbating affect. As explained above and as noted by the commenter, the CBIA case requires CEQA analysis only evaluate "potentially significant exacerbating effects on existing environmental hazards" in addition to potential impacts of the project on the environment. The City maintains that given the CBIA case, and in the absence of an exacerbating effect on DPM emissions in the area, the EIR adequately analyzes health risks for future on-site sensitive receptors. Nevertheless, in the interest of full public disclosure, the City completed an HRA to assess the potential exposure of workers and children to DPM concentrations at the site, related to the nearest major source of DPM, SR 65.

The main TAC of concern for the proposed project is DPM emissions related to heavy duty diesel vehicle traffic along SR 65. Diesel vehicles emit DPM during vehicle operations, and the longer a diesel engine runs in a given location, the higher the resulting DPM concentration is at that location. Therefore, if increased traffic volumes were to degrade traffic operations on SR 65, and vehicles on SR 65 experience increased congestion moving past the project site, heavy duty diesel trucks would spend more time in proximity to the project site, and increased localized concentration of DPM emissions would then result. Because DPM emission concentrations are related to traffic operations on SR 65, the presence or absence of potential impacts related to Transportation and Traffic does have bearing on the potential exacerbation of existing DPM hazards. Indeed, if the proposed project would result in significant impacts to operations of SR 65, the project would have the potential to exacerbate the existing hazard due to DPM emissions in the project area. Inversely, if the project does not result in impacts to operations of SR 65, the proposed project would not be anticipated to result in significant increases in congestion, and DPM concentrations. Given the above discussion, the conclusions of the Transportation and Traffic chapter of the Draft EIR carried substantial importance to the conclusions of the Air Quality analysis.

However, in contrast to the assertions of the comment, the Final EIR does not attempt to draw conclusions related to DPM hazards based solely on the conclusions of the Transportation and Traffic chapter. Rather, the Draft EIR and Final EIR were drafted with the understanding that the areas of Transportation and Traffic, as well as Air Quality are separate resource areas that received individual consideration and analysis, as evidenced by the inclusion of separate chapters in the Draft EIR; Chapter 4.1 dealt with Air Quality and Greenhouse Gas Emissions issues, while Chapter 4.8 focused on issues of Transportation and Traffic. Nevertheless, DPM emissions are dependent on the volume of heavy duty diesel vehicle traffic in a given area; thus, a relationship does exist between potential impacts to Transportation and Traffic and potential impacts related to hazards from DPM emissions. Considering the relationship between Transportation and Traffic and Air Quality, the Final EIR correctly argued that, in the absence of significant impacts to SR 65, the proposed project would not be anticipated to exacerbate the existing hazard related to vehicle traffic along SR 65.

The Final EIR supports the assertion that the proposed project is not anticipated to increase traffic volumes on SR 65 near the site by directing the reader to Figures 4.8-5a and -5b. Both figures show that traffic from the proposed project would not use the section of SR 65 near the project site. Directing the reader's attention to the aforementioned figures does not constitute an alternative argument or a recognition of any flaws in the previous statements of the Final EIR. On the contrary, Figures 4.8-5a and -5b lend further support to the Final EIR's argument that the proposed project would not increase traffic volumes on SR 65 near the project site, which could exacerbate the existing hazard posed by DPM in the project area.

As discussed in Response 7-9, above, TACs can originate from a variety of sources; and a plethora of chemical compounds constitute TACs. The CARB identifies a number of major sources of TACs, and provides recommended setback distances from such sources. Common sources of TACs identified by the CARB include rail yards, ports, distribution centers, petroleum refineries, chrome-plating operations, dry

cleaners using perchloroethylene, gasoline dispensing facilities, and freeways. Current land uses surrounding the project site include residential, commercial, and office type developments. Considering the surrounding land uses, the only existing major source of TACs within the project area is SR 65. The TAC of concern from freeways and high traffic roads, such as SR 65, is DPM emissions from heavy duty diesel vehicle traffic. Therefore, while TAC emissions can work cumulatively to affect sensitive receptors, the only known source of TACs in proximity to the project site is SR 65. Additionally, the proposed project does not include any new sources of TACs. As such, the only TAC hazard that could be exacerbated by the proposed project would be DPM emissions from the operations of SR 65. The CARB estimates that approximately 70 percent of total known cancer risk related to airborne TACs is related to DPM. Therefore, DPM emissions represent the largest source of TAC health risks. Consequently, the only major source of TACs known to occur in the project area is SR 65, because DPM from the operation of SR 65 represents the largest cancer risk; the Final EIR was thus justified in limiting the scope of the HRA to DPM emissions.

Although the commenter previously stated that traffic and air quality are separate issues, the commenter acknowledges that vehicle trips may affect air quality by suggesting that traffic on Gibson Road could impact the project. As discussed above, given the large number of heavy duty trucks that use SR 65, increased congestion on SR 65 near the project site would increase the DPM emissions in proximity to the area. However, the same cannot be said for Gibson Road. While all of the trips generated by the proposed project would use Gibson Road to access the site, the trips generated by the proposed project would be employee and patron trips. Employees and patrons would travel to the site using passenger vehicles. The majority of passenger vehicles are gasoline fueled, and operational project trips would not be considered a significant source of DPM. Whereas SR 65 experiences frequent and substantial heavy duty diesel truck traffic, the majority of traffic accessing the existing residential, office and commercial land uses along Gibson Road are passenger vehicles, the operation of which would not involve substantial DPM emissions. Because Gibson Road does not currently experience substantial heavy duty diesel truck traffic, the addition of project related vehicle trips to Gibson Road would not result in substantial increases to congestion related idling of heavy duty diesel truck traffic. As such, current traffic along Gibson Road is not considered a substantial TAC source, and project related trips along Gibson Road would not have the potential to exacerbate an existing hazard.

In light of the above discussion regarding Gibson Road, the comment's claim that vehicle traffic along Gibson Road would exacerbate an existing health risk is not supported by detailed information. On the other hand, the Final EIR's analysis of DPM emissions from SR 65 represents a good faith effort to identify, model, and present the worst possible DPM emissions from existing sources of DPM in the project area. Therefore, the Final EIR performed an adequate analysis of potential hazards related to DPM, and informs the public of such risks.

Response 7-11

See Response 7-9 and 7-10 above concerning the analytical methodology and justification for the HRA presented in the Final EIR.

Response 7-12

As discussed in Response 4-1, of the Final EIR, and Response 7-9 above, the Final EIR adopted the threshold of 410 cases per million following the recommendation of PCAPCD. The PCAPCD's recommendation is supported by the recent CBIA case, both of which provide authority for the updated threshold of significance.

Response to Comment 4-1, of the Final EIR, and Comment 7-10 above, note that the Supreme Court's ruling in the CBIA case directed future CEQA analysis to focus on a proposed project's potential impacts on the environment, and potential impacts of the environment on the project should only be analyzed where a proposed project would have the potential to exacerbate an existing environmental hazard. In context of the proposed project, the PCAPCD advised that the background increase in cancer risk for residents of the SVAB is 410 cases per million due to DPM. Under the California Supreme Court's CBIA case decision, the background cancer risk from DPM would be considered the impact of the existing environment on the proposed project. Therefore, an analysis of the risk of DPM would only be required if the proposed project would exacerbate the existing background risk. As discussed in Response 7-10, above, and Response 4-1 of the Final EIR, the project is not anticipated to exacerbate the existing DPM cancer risk of 410 cases per million in the SVAB. The Final EIR included a full HRA to address whether the proposed project would exacerbate the existing cancer risk by exposing sensitive receptors to a cancer risk in excess of the background rate of 410 cases per million.

The methodology discussed above, and previously presented in further depth in Response 4-1 of the Final EIR, does not equate to the "ratio" method of assessing significance found to be problematic in *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 719-721. In that case, the lead agency concluded that the cumulative impacts associated with air pollution from a proposed coal-fired cogeneration plant would be less than significant because the project's anticipated emissions, if permitted to occur, would represent a relatively small percentage of the overall air pollution within the San Joaquin Valley Air Basin. Under such an approach, "the greater the overall problem, the less significance a project has in a cumulative impacts analysis." (*Id.* at p. 721.) Relatively large amounts of air pollution could be seen as a contributing a small *percentage* to an enormous problem. Such an approach "avoids analyzing the severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling." (*Ibid.*) The case had nothing to do with "baseline" issues, a term that did not exist in CEQA at the time. Here, the City approached its analysis much differently. Instead, the Final EIR used methodology under consultation with the PCAPCD to address the directive of the California Supreme Court in the CBIA case, which held that potential environmental impacts of existing hazards on the residents or users of a project should only be analyzed where a proposed project would exacerbate an existing hazard. With regard to the proposed project, the existing environmental impact is the existing background risk level of 410 cases per million. Therefore, the Final EIR does not conclude that because the incremental increase is 18 cases per million, the impact is less than significant. Rather, the Final EIR concludes that because the proposed project would not expose future sensitive receptors to cancer risks in

excess of the background rate, the project would not exacerbate the existing risk. As such, the Final EIR does not use the “ratio” method as alleged by the commenter. To the extent that the commenter may perceive tension between the holding in the *Kings County Farm Bureau* decision and the holding in the *CBIA* decision, the City notes that a California Supreme Court decision provides a more binding and powerful precedent than a Court of Appeal decision. To the extent that the latter cannot be reconciled with the former, the Court of Appeal decision must give way to the Supreme Court decision.

Considering the above discussion, the analysis and conclusions of the Final EIR are supported by the recent *CBIA* case, and are not based on methodologies that were previously found to be invalid.

Response 7-13

The California Supreme Court’s recent decision in the *CBIA* case restricts environmental review under CEQA to issues involving the project’s impact on the environment, and a project’s potential to exacerbate an existing environmental hazard. The proposed project would not result in the release of TACs during project operation, as discussed in Response 7-10 above. Nor would the project result in increased traffic volumes along SR 65, where increased traffic volumes would have the potential to increase hazards related to DPM emissions, as discussed in Response 4-1 of the Final EIR. Because the project would not exacerbate existing environmental hazards related to TACs, in compliance with the *CBIA* case, an analysis of TAC impacts from SR 65 on the project is not required under CEQA. However, precisely for the reason of providing good faith public disclosure under CEQA, the City conducted a full HRA, in accordance with PCAPCD guidance, to analyze the potential risk that would occur to future sensitive receptors at the project site. The HRA concluded that the proposed project would not expose sensitive receptors to cancer risks above the background risk rate of 410 cases per million; as such, the proposed project would not expose project receptors to exacerbated health risks.

Under CEQA Guidelines section 15088.5 recirculation is only required where new “significant” information is added to an EIR, specifically where such information involves the severity or significance of an impact. Although the Final EIR included updated methodology and presented the results of a project specific HRA, the Final EIR, based on the results of the HRA, arrived at the same conclusion as the Draft EIR, and affirmed that the proposed project would result in a less-than-significant impact related to exposure of project receptors to exacerbated risks. Thus, recirculation of the Draft EIR was not required as the Final EIR did not present significant new information.

Response 7-14

There is no requirement in CEQA that all documents relied upon in the preparation of an EIR be included as an Appendix. An EIR may also cite relevant sections of a document and include it as a bibliography reference, and/or incorporate by reference an entire document. Indeed, commenter has done so himself, by incorporating the entirety of the LifeTime Fitness EIR by reference in Letter 5 without including it as an attachment to the letter. It is not reasonable or supported by CEQA regulation to suggest that, where an

EIR relies on a threshold of significance formally adopted by a regulatory or trustee agency with jurisdiction in the project area, the Lead Agency must exhaustively justify the agency's threshold. Commenter recognizes the agency itself has already provided this justification as part of the public adoption process, and yet does not point to any specific flaws in the threshold or its supporting documentation. If the commenter would like to review the City's copies of the Placer County Air Pollution Control District's "Justification Report," he should contact Associate Planner Lauren Hocker of the City's Development Services Department, who can make the document available to him.

Response 5-44 in the Final EIR provides an in-depth explanation of the regulatory environment for GHG emissions regulations. In particular, Response 5-44 explains that the PCAPCD thresholds applied to the proposed project were developed with the specific purpose of achieving compliance with state regulations such as Assembly Bill (AB) 32 and Senate Bill (SB) 32. AB 32 and SB 32 are California's legislative actions focused on confronting climate change and reducing statewide cumulative effects related to greenhouse gas emissions. Because the PCAPCD's efficiency thresholds were established specifically to comply with statewide GHG emissions reductions targets, compliance with the PCAPCD's efficiency thresholds would ensure compliance with the State's regulations regarding cumulative greenhouse gas emissions. Therefore, Response 5-44 shows that compliance with the PCAPCD's efficiency threshold would ensure that the project would avoid a cumulatively considerable contribution to global climate change because PCAPCD's efficiency thresholds are designed to ensure District-wide compliance with Statewide GHG emissions reductions targets.

The PCAPCD provides detailed support for the district's thresholds in a Justification Report which was published on October 2016. Although the Justification Report was not included as an appendix to the Final EIR, the Justification Report was cited properly, and is publicly available for free, on the PCAPCD's website.¹

Response 7-15

This comment mischaracterizes the nature of the response to comments as describing "changed circumstances," when in fact the technical studies were simply supplemented with additional information. The Biological Habitat Evaluation Report is not an analysis, it is a standard habitat inventory. The Initial Study and ultimately the EIR expanded upon that baseline information with additional research and analysis, which is proper. There are no conflicts between the EIR and technical study. The technical appendices are not out of date. This comment offers no new criticisms of the EIR. It merely references prior comments without identifying any specific flaws in the City's response to the prior comments. See FEIR Response 5-4 and 5-45 through 5-56. As noted in these responses, the EIR properly characterizes the baseline environmental setting.

¹ Placer County Air Pollution Control District. *CEQA Thresholds and Review Principles*. Available at <https://www.placer.ca.gov/departments/air/landuseceqa/ceqathresholds>. Accessed June 2017.

Response 7-16

This comment raises no new issues, and does not point to any specific flaws in the City's response to the prior comment letter. See FEIR Response 5-45 through 5-56.

Response 7-17

This comment incorrectly states that the cumulative context is limited to projects within ½-mile of the site. The cumulative context varies by impact type (for instance, the entire Pleasant Grove watershed is used for hydrology and water quality impacts). The only impact limited to a ½-mile radius is noise, and this comment fails to provide any evidence that this context is inappropriate. Beyond such a distance, additive impacts from multiple noise sources combining together are not possible. Unlike some other categories of environmental impacts, noise is fundamentally affected by distance, as all noise attenuates (reduces in volume) with distance, generally halving in intensity for each doubling of distance, and noise is also blocked by intervening structures. Furthermore, both of the projects referenced by this comment went through the City's review process and were found to meet General Plan noise standards at the *nearest* sensitive receptors. The commenter provides no evidence which suggests that noise from these projects, which meet standards for uses adjacent to those sites, will combine with noise from the proposed project and result in the exceedance of noise standards 1.5 miles away. See FEIR Response 5-62 and 5-63.

Response 7-18

EIRs are not required to address each and every policy in a local agency's general plan to assess whether or not a proposed project is consistent with them. Instead, an EIR need only "discuss any *inconsistencies* between the proposed project and applicable general plans, specific plans, and regional plans." (CEQA Guidelines, § 15125, subd. (d) (*italics added*)). "Because EIRs are required only to evaluate any inconsistencies with plans, no analysis should be required if the project is consistent with the relevant plans." (*Pfeiffer v. City of Sunnyvale City Council* (2011) 200 Cal.App.4th 1552, 1566, quoting *City of Long Beach v. Los Angeles Unified School District* (2009) 176 Cal.App.4th 889, 918–919; see also *North Coast Rivers Alliance v. Marin Mun. Water Dist. Bd. of Directors* (2013) 216 Cal.App.4th 614, 632 [*same*].)

This comment does not point to any specific General Plan inconsistency, except regarding the traffic impact analysis model year. (See FEIR Response 5-67.) The City's response regarding the traffic model year is found in many places in both the FEIR responses to Letter 5 (Response 5-11 through 5-12, 5-67, and 5-70 through 5-72) as well as in responses to this letter, Letter 7 (Responses 7-1 and 7-3), because this item was raised in multiple locations in both letters. For clarity, a consolidated response is provided here. It explains why neither the proposed project itself nor the traffic studies prepared for it violate the City's General Plan.

The City's 2035 General Plan Circulation Element, in the Level of Service section, describes the City's transportation setting and outlook, establishes goals and policies, and describes implementation measures intended to identify the means by which the City may carry out the stated goals and policies. As described in the setting of the Circulation Element, the cumulative transportation environment for the General Plan

was based on full build-out of the General Plan and market development conditions as of the year 2035 for areas outside of the City, and used the Highway Capacity Manual methodology (HCM). The commenter has argued that EIR's use of full build-out of the General Plan, 2025 market development conditions outside of the City, and the Circular 212 method makes the project inconsistent with the General Plan. The EIR preparers have disagreed on multiple grounds.

Firstly, the City's traffic consultant, Fehr and Peers, completed both this project's traffic study and the traffic study for Amoruso Ranch, which updated the General Plan. After examining the development forecasts, predicted roadway volumes, and other data, it was concluded that there was a less than 1% difference between the land use and roadway volume forecasts in the 2025 and 2035 model versions. Based on the consultants' knowledge and understanding of the Circular 212 and HCM methods, the consultant concluded that, while model outputs regarding No Project intersection operations would vary based on the results of the use of the two methods, no new impacts were expected to be identified. The updated analysis described in Response 7-1 proves this conclusion to be correct. LOS remains *unchanged or improved* by the addition of traffic from the project at all intersections in the study area, except for the intersection of Gibson Drive and Conference Center Drive, which is changed from LOS B to LOS C (an acceptable LOS) in both the 2025 and 2035 modeling.

In addition, the Villa Sport project is consistent with the land use assumptions used to generate the 2035 General Plan and its list of impacted intersections, as well as the current Capital Improvement Program (CIP). Development of the site has already been considered, and was modeled in the General Plan and CIP at greater land use intensity than the applicant proposes. Pursuant to the City's Traffic Impact Study standards (City of Roseville Design Standards, Section 4), a cumulative conditions traffic impact analysis is generally required only when a project will generate more than 50 pm peak hour trip ends and the land use is not consistent with the land use and zoning designations. The Villa Sport project is consistent with land use and zoning, and thus a traffic study was *not required* for this project. A traffic study was prepared because of the potential for litigation, not because a study was required by City standards and guidelines. The voluntary nature of the City decision to prepare a formal traffic study is relevant due to the language in the General Plan cited by the commenter, found in the Implementation Measures section of the Circulation Element: "Development proposals determined by the City **to require a traffic impact study** shall prepare such analysis consistent with the assumptions and methodology of the citywide traffic model." [emphasis added] A traffic impact study was *not* required by the City's standards. Therefore, the EIR preparers focused on whether the project's potential impacts were adequately described by the traffic study, which they were, because the traffic consultant determined that no new impacts were expected to be identified using the 2035 model.

Finally, the Findings which must be made to approve the Design Review Permit require that the project is "consistent with the applicable goals, policies, and objectives set forth in the General Plan." The Findings for a Conditional Use Permit state more generally that a project must be "consistent with the General Plan," but the intent is clearly the same. It is staff's opinion that the proposed project meets the goals, policies,

and objectives of the General Plan. It is a commercial development on commercial property, surrounded by other commercial property, and is entirely suitable for the land use setting. The reference to 2035 market development conditions is not within a goal, policy, or objective of the General Plan; rather, it is within the implementation measures. The purpose of the implementation measures is to describe different pathways to achieve General Plan goals, policies, and objectives, and it is the opinion of the City Attorney that the City has the discretion to approve other methods as long as those methods can also be demonstrated to achieve compliance.

For the sake of clarity, the EIR preparer's arguments have been laid out sequentially above, but ultimately this issue has been made irrelevant. Recognizing that this issue was causing concern, City staff directed the preparation of a 2035 cumulative conditions analysis, which has confirmed the EIR conclusion that the project will not result in any significant cumulative impacts to City facilities. The updated cumulative impact analysis, using the HCM method and addressing 2035 market conditions outside the City, therefore resolves any lingering concern regarding General Plan consistency.

Response 7-19

The circumstances that require recirculation are clear, and are not present in this case. (See FEIR Response 5-69.) The commenter states that significant new information is that which deprives the public and agencies with "meaningful opportunity to comment upon a substantial adverse environmental effect of the project" This is correct statement of the general principle set forth in CEQA Guidelines section 15088.5; but the commenter fails to include the subsequent language further defining those circumstances, such as the occurrence of a new significant impact, a substantial increase in the severity of a previously-identified effect, etc. (see FEIR Response 5-69).

Exhibit A – MRO Letter

Response 7-20

Please see response to comment 3.

This comment also claims that the Final EIR falsely concluded that there was no substantial work accomplished on the traffic analysis prior to May 2015 because traffic data was collected in May 2015. That assertion is incorrect. Although the traffic study that supported the DEIR was finalized in November 2015, work on that study originally began in 2013 (as can be readily established through invoicing, progress reports, interim work products, technical calculations, etc.). In fact, the original traffic report was submitted to the City in October 2013. Due to the age of the traffic counts associated with the original traffic report, the existing conditions analysis was updated based on new counts collected in May 2015.

Response 7-21

Please see response to comment 3. This comment also grossly misunderstands the ARSP project itself, by suggesting that the ARSP used a 2035 horizon because it was in some manner already required or more appropriate. That is not the case. The City has used the Specific Plan process as a means of making continuous updates to the City's General Plan horizon year and technical studies without needing to perform a stand-alone General Plan update. Consistent with that practice, the ARSP itself included an update to the General Plan and its horizon year from 2025 to 2035. As noted in the response to comment 3, it would have been inappropriate for the Villa Sport project to use a 2035 General Plan horizon year before the new General Plan was even adopted. Given the timing uncertainties, the Villa Sport traffic model relied upon the existing General Plan horizon year for modeling, rather than presupposing that the update would be adopted.

Response 7-22

The comment relates to differences in land use and roadway network assumptions between the City's 2025 and 2035 travel demand models. The 2025 model consists of 74,050 dwelling units, 20,184,000 square feet of retail, 13,221,000 square feet of office, 12,393,000 square feet of industrial, and 6,378,000 square feet of high-tech industrial (as well as numerous other land use types). The 2035 model consists of 74,403 dwelling units, 20,324,000 square feet of retail, 13,175,000 square feet of office, 12,354,000 square feet of industrial, and 6,378,000 square feet of high-tech industrial. Thus, the 2025 and 2035 models differ in their City-wide land use absorption totals by a mere 353 dwelling units, 140,000 square feet of retail, 46,000 square feet of office, and 39,000 square feet of industrial. These totals represent less than a one percent difference for a given land use category between the two models.

While it may seem peculiar for two different horizons to have essentially the same land use absorptions, this was purposefully completed by City staff because the 2025 model was originally developed in early 2008, prior to the severe recession, which substantially limited development for several years. In other words, the 2025 model, viewed in retrospect, substantially overestimated the amount of growth and development that would occur between 2008 and 2025. Levels of development that, as of early 2008, appeared reasonably foreseeable by 2025, will likely not occur until 2035, or perhaps even later. As a result of the overly optimistic projections built into the 2025 model, the new 2035 model (developed in 2011–2012) carried forward essentially the same amount of land use growth as the 2025 model. Both models assume that over 26,000 new dwelling units are developed in the City of Roseville, which is substantially more than the 18,900 new units projected by SACOG in the 2036 MTP/SCS (https://www.sacog.org/sites/main/files/file-attachments/appendix_e-3_land_use_forecast_background_documentation.pdf).

The models also carried forward very similar planned roadway networks. The most recent substantive change in the City's roadway network is in the vicinity of Campus Oaks (westerly portion of HP Property) and the Amoruso Ranch Specific Plan. The 2025 and 2035 models each include both projects and their

respective roadway improvements (e.g., extension of HP Way to Blue Oaks Boulevard). Comparisons of the 2025 and 2035 model average daily traffic (ADT) forecasts reveal the following:

- 2025 model (Source: Table 9 (2025 CIP Plus Project) from the *Final Transportation Impact Study for Villasport Athletic Club and Spa*, Fehr & Peers, 2015):
 - o Roseville Parkway east of Pleasant Grove Boulevard: 74,900 ADT
 - o Roseville Parkway across I-80: 66,000 ADT
 - o Galleria Boulevard north of Roseville Parkway: 55,600 ADT
 - o Galleria Boulevard south of Roseville Parkway: 46,400 ADT
 - o Pleasant Grove Boulevard east of Roseville Parkway: 73,300 ADT
 - o Pleasant Grove Boulevard west of Roseville Parkway: 61,800 ADT
- 2035 model (source: Figure 11 (2035 CIP Plus Project) from the *Final Traffic Study for the Amoruso Ranch Specific Plan*, Fehr & Peers, 2016):
 - o Roseville Parkway east of Pleasant Grove Boulevard: 75,700 ADT
 - o Roseville Parkway across I-80: 63,100 ADT
 - o Galleria Boulevard north of Roseville Parkway: 60,700 ADT
 - o Galleria Boulevard south of Roseville Parkway: 41,500 ADT
 - o Pleasant Grove Boulevard east of Roseville Parkway: 71,900 ADT
 - o Pleasant Grove Boulevard west of Roseville Parkway: 61,500 ADT

This comparison indicates that the daily volume forecasts are very similar between the two models. On aggregate, the 2025 volumes sum to about one percent more daily traffic than the 2035 volumes. Therefore, it is readily apparent from this evaluation that the 2025 and 2035 models utilized very similar land use and roadway networks, which led to comparable traffic forecasts.

Response 7-23

The comment relates to assumed land use development outside of the City of Roseville that could affect the City. As noted in response to comment 22, the 2025 land use forecasts (both within and beyond Roseville) were carried forward with very little modification to represent 2035 conditions for reasons described in the response. The City's methodology is not illogical, as the commenter suggests. Rather, the

City's approach errs on the side of caution by possibly overestimating the amount of development that could occur within City limits between the present and 2025 or 2035. By assuming full buildout of approved development within the City limits, the City takes what might be called a reasonable worst case scenario. Such an approach is defensible within the City, which exercises ultimate control not only over future development, but also over future infrastructure such as roads and traffic signals. The City considers it important to plan for infrastructure sufficient to serve all development that might occur within the City. Extending such a very conservative approach to areas outside the City limits, however, would tend to introduce undue speculation into the traffic analysis. Because many jurisdictions have planned and zoned far more land than could be developed within a reasonable time frame (particularly within the Light Industrial category), addressing buildout in surrounding jurisdictions, as opposed to looking out in time a reasonable distance into the future, could lead to inflated, unrealistic development projections that would not contribute to sound land use planning.

Response 7-24

This comment asserts that regional growth will lead to increased traffic in 2035 that will show worse operations, thereby increasing the likelihood that project-related impacts will exceed the City's LOS thresholds. Please see Response 7-22 and Response 7-1.

Response 7-25

This is a summary comment reiterating concerns about using the 2025 model. Please see Response 7-22, Response 7-1, and Response 7-3.

Response 7-26

This is a summary comment pertaining to concerns regarding the cumulative conditions analysis. Please see Response 7-22, Response 7-1, and Response 7-3.

Response 7-27

This comment reiterates comments made on the DEIR and provides additional comments on responses published in the Final EIR. The comment concludes by asserting that using Circular 212 to analyze intersections "does the public a disservice, as it deprives them of meaningful, up-to-date conclusions regarding the operation of the road system". In response to this opinion, it is noted that Circular 212 (and similar methodologies such as Intersection Capacity Utilization, ICU) have been and continue to be used in numerous jurisdictions, including cities and counties in the Sacramento region, Bay Area, and Southern California. The commenter would appear to be asserting that each of these agencies is depriving the public of meaningful conclusions by using these methods.

Additionally, Page 19-40 of the recently released *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2016) provides further evidence that alternative methods that do not strictly rely on highly technical HCM procedures may be acceptable. This page states the following:

“The methodology (for evaluating the performance of signalized intersections) is computationally intense and is most efficiently implemented using software. The intensity stems partly from the need to model traffic-actuated signal operation. A planning-level analysis application for evaluating intersection performance is provided in Chapter 31. This method is not computationally intense and can be applied by using hand calculations.”

Similar to the HCM planning-level intersection analysis, Circular 212 is not computationally challenging and can be performed using hand calculations. So, if such methods are obsolete and deprive the public of meaningful conclusions regarding intersection operations as stated in this comment, the 6th edition of the HCM, released in 2016 would not have included such a methodology for practitioners to use.

Response 7-28

This comment suggests that previous responses regarding the size of the study area are insufficient because it cannot be known with certainty whether additional intersections along East Roseville Parkway have actually experienced degraded operations and may now be on the cusp of operating unacceptably. It is irrelevant from a CEQA perspective because issuance of the NOP establishes the baseline setting for which project impacts are analyzed. The VillaSport NOP was issued in September 2014, and the traffic counts were collected in May 2015. Furthermore, the commenter has offered no evidence—in the form of traffic counts or other substantial evidence—to support the assertion that a revision is needed. It is quite common for a traffic study and the EIR which relies on it to take two years to reach final hearing stage. This comment suggests that merely the passage of that normal time-span is enough to warrant a traffic study revision, which is not reasonable. Please see FEIR response to comment 5-73 for further information.

Response 7-29

This comment raises two primary points. First, the commenter asserts that the DEIR is deficient because it evaluated the segment of SR 65 between Pleasant Grove Boulevard and Blue Oaks Boulevard only as a ‘weave section’ instead of all components of the freeway system, which include weaving areas, the mainline, and ramp merge/diverges. Second, it suggests the DEIR is deficient because project impacts were not fully evaluated on SR 65 between I-80 and Pleasant Grove Boulevard. Each point is responded to below.

Page 12-10 of the *Highway Capacity Manual* (TRB, 2010) specifies that merge and diverge analysis is required on freeways that have an auxiliary lane connecting successive on- and off-ramps only if the weaving distance exceeds the maximum distance specified in Equation 12-4 of Chapter 12. The weave sections on SR 65 between Blue Oaks Boulevard and Pleasant Grove Boulevard do not exceed the maximum value calculated from Equation 12-4. Therefore, it was not appropriate to analyze the ramps as merge and

diverge areas. Example Problem 2 starting on page 12-36 of the *Highway Capacity Manual* (TRB, 2010) provides an excellent example of how the HCM analyzes weaving associated with the auxiliary lane connecting successive on- and off-ramps. It calculates the density and speed of weaving and non-weaving vehicles on the freeway segment, and then calculates the weaving segment LOS. Chapter 11 of the HCM contains the methodologies used to analyze basic freeway segments. Those methodologies do not describe how the presence of an auxiliary lane is considered because the basic freeway segment calculation does not assume such a facility. In fact, the very first sentence of Chapter 11 states: “basic freeway segments are defined as those freeway segments that are outside the influence, of merging, diverging, or weaving maneuvers”. The comment letter from Caltrans received on the Draft EIR did not identify or express any analysis deficiencies or express any concerns about the analysis.

Lastly, it is noted that the *Transportation Analysis Report for the I-80/SR 65 Interchange Improvements* (ES 03-4E3200, Project ID 0300000696, Fehr & Peers, 2014) was completed in August 2014 and approved by Caltrans. That study analyzed SB SR 65 between Blue Oaks Boulevard and Pleasant Grove Boulevard as a weave section, consistent with the approach in the DEIR.

The second point raised in this comment pertains to the extent of the study area along SR 65. Those facilities that would be used to a significant degree by project trips were studied. Impacts associated with travel to/from the north were captured by studying the weave sections between Blue Oaks Boulevard and Pleasant Grove Boulevard (i.e., would be used by motorists who exit Pleasant Grove Boulevard to access the site). Impacts associated with travel to/from the south were captured by studying the NB SR 65 diverge at Galleria Boulevard and the SB SR 65 merge from Galleria Boulevard. Tables 8 and 11 of the VillaSport Traffic Study display the volume of project-added traffic added to SR 65 study facilities. These are the routes which would be most used by the project trips. Based on the volume and the significance criteria, impacts were found to be less than significant. Had the analysis been geographically expanded (i.e., to include NB SR 65 from I-80 to Galleria Boulevard), the same conclusions would have been reached.

Response 7-30

This comment requests clarification for why density was not reported in Tables 4.8-3 and 4.8-6 of the DEIR. Caltrans prefers weave sections to be analyzed using the Leisch Methodology, which calculates a LOS result but does not report a density. Although density values were not shown for the ramp merge and diverge movements in these tables, they can be readily found in the technical appendices to the VillaSport traffic study. Thus, this comment pertains principally to how information was presented, and not to the adequacy of the environmental document.

Response 7-31

This comment reiterates previous comments regarding the allegedly inappropriate nature of rounding ramp junction density results to the nearest integer value. Exhibits 11-5 and 12-10 of the *Highway Capacity Manual* (TRB, 2010) belie this claim, in that they show density ranges in integer values for a given LOS for

basic freeway and weaving sections. Further, the descriptions of those tables include repeated density references, which are described in integer values. As an example, Page 11-7 of the HCM states: “The upper value shown for LOS F (45 pc/mi/ln) is the maximum density at which sustained flows at capacity are expected to occur”.

This comment also asserts that the DEIR stated that “the HCM-recommended approach suggests a greater degree of precision than is appropriate”. The HCM contains no explicit guidance as to whether performance measures such as density or delay should be represented in integer or decimal values. However, Page 11-7 of the HCM states: “The specification of maximum densities for LOS A to D is based on the collective professional judgment of the members of the Transportation Research Board’s Highway Capacity and Quality of Service Committee.” This statement implies that a certain level of qualitative judgment was necessary to determine the density at which a facility degrades from LOS D to E for instance. In the EIR consultants’ view, this statement offers further justification for not reporting density values to the nearest decimal point.

Response 7-32

This comment requests substantial evidence in support of why a 0.5 density increase was used as a significance criterion. Per this request, the following substantial evidence is offered:

1. Case law recognizes that lead agencies have substantial discretion in developing thresholds of significance. (See, e.g., *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) CEQA Guidelines section 15064 provides lead agencies with some discretion in setting thresholds for the transportation network, noting that “an ironclad definition of significant effect is not always possible”. In this instance, Caltrans (through the publication of the *State Route 65 Corridor System Management Plan*, Caltrans, 2009) implied a performance standard whereby no further degradation of LOS F conditions may be allowed, as indicated by a change in the applicable performance measure (i.e., density for freeways). If a freeway experienced a 0.5 or greater density increase, the reported density (rounded to the nearest integer value) would increase to the next integer value. Through technical calculations, it was determined that a 40 peak hour trip increase in a given direction to a four-lane freeway operating at LOS E would result in an approximate 0.5 increase in density. This threshold of significance has been applied in multiple EIRs in the City of Roseville. In their reviews of those documents, Caltrans has issued comment letters, but not taken issue with the significance criteria.
2. In *Rocklin Residents for Responsible Growth v. City of Rocklin et al.* (Superior Court of California, County of Sacramento, February 23, 2010), Judge Frawley found that the City of Rocklin’s use (as a significance criterion) of a 5 percent increase in the v/c ratio at roadways or intersections already operating unacceptably was supported by substantial evidence in the record. The City relied on the expert views of the City’s staff and consultants to determine that 5% degradation is significant because it would be “noticeable to the average driver”. The court found that because the City’s

threshold of significance is reasonable and supported by substantial evidence, nothing in CEQA precluded the City from applying its threshold of significance across the board to facilities already operating at an unacceptable LOS. This ruling is noteworthy because when applied to the four-lane freeway portion of SR 65, it would translate into a threshold of approximately 200 peak hour trips in a given direction. The threshold applied in the VillaSport EIR (40 peak hour trips in a given direction) is far more stringent.

In summary, the commenter has not offered any evidence as to why this threshold of significance is not applicable. Nor has the commenter recommended an alternative significance criterion. Therefore, it is the City and EIR consultant's expert opinions that the significance criterion used in the VillaSport EIR for determining impacts on SR 65 are reasonable, transparent, and supported by substantial evidence.

Response 7-33

This comment states that a significant impact should have been identified at the SR 65 Galleria Boulevard NB off-ramp diverge during the PM peak hour under existing plus project conditions. According to the technical appendix in the VillaSport TIS, this ramp diverge has an existing density of 41.9 passenger cars per mile per lane (pcpmpl). The project would add 14 trips to this off-ramp, which would increase the density to 42.0 pcpmpl. A significant impact was not identified at this facility because the density increase is less than 0.5. Project added traffic would result in a 0.3 percent increase in total traffic on NB SR 65 approaching Galleria Boulevard.

Response 7-34

This comment reiterates previous comments that the DEIR should have included freeway LOS calculations under cumulative conditions. The cumulative conditions analysis did not assume any improvements on SR 65 within the study area. Accordingly, the same bottlenecks that exist currently would remain in place. For these reasons, existing LOS F conditions reported on NB SR 65 at the Galleria off-ramp and on the SB SR 65 weave between Blue Oaks Boulevard and Pleasant Grove Boulevard would remain at LOS F in the future. The NB SR 65 weave between Pleasant Grove Boulevard and Blue Oaks Boulevard is downstream of the bottleneck at Galleria Boulevard. Accordingly, operations marginally worsen at this location. Operations worsen to LOS F at the Galleria Boulevard SB on-ramp merge due to additional background traffic growth.

Response 7-35

This comment suggests that the VillaSport project's trip generation was underestimated because it did not apply the trip generation rates observed and used for the LifeTime Family Fitness DEIR and that it did not consider the 50,000 square-foot outdoor space included as part of the project.

As part of the LifeTime Family Fitness EIR, traffic counts were conducted at two existing facilities located in Arizona. This was deemed necessary given that project's size and amenities. The measured PM peak

hour trip rates from the two Arizona facilities were within one percent of the trip rate contained in the *Trip Generation Manual* (ITE, 2012). However, the measured AM peak hour trip rate was 85 percent higher than the ITE rate.

The VillaSport EIR did not rely upon trip rates measured at the two LifeTime Family Fitness Facilities in Arizona for several reasons. First, it is unknown whether operations (e.g., group exercise classes, day care), clientele travel patterns, and staffing are similar between the two programs. Second, the size of VillaSport put its size much closer to the range of observational data represented by ITE's Health/Fitness Club land use category, whereas the larger size of the LifeTime Family Fitness facility put it well beyond that range. Third, the measured LifeTime Family Fitness facility trip rate was close to the ITE trip rate during the PM peak hour, which is the most critical period of time of operations on City of Roseville streets. So, either data source would have yielded similar/identical conclusions during the most critical PM peak hour. While it is acknowledged that the measured LifeTime Family Fitness facility trip rate was much higher during the AM peak hour than the ITE rate, this hour has considerably less background traffic and is more capable of absorbing new trips without causing any adverse impacts.

Both LifeTime Fitness Facility clubs in Arizona that were surveyed include outside pool/recreation areas. However, their overall trip generation was expressed in terms of trips per thousand square feet of building space. As noted previously, ITE's *Trip Generation* also acknowledges that ancillary uses such as swimming pools are present at the Health/Fitness Club facilities that were studied. Therefore, the PM peak hour trip rates derived both from ITE and the LifeTime Fitness Facility club studies in Arizona are very similar to one another (within one percent) and each consider outdoor pool/recreation areas in their estimates. Accordingly, it was not necessary to develop a separate, additive trip generation estimate for the outdoor pool area, since those trips are already reflected in the overall trip rate applied in the DEIR. If square footage associated with those outdoor uses were to be included in the VillaSport project's size for trip generation estimate purposes (as suggested by the commenter), this would have introduced a double-counting effect, which would have resulted in a substantial overestimation of the project's trip generation.

If trip rates applied for the LifeTime Fitness Facility EIR were to be applied to VillaSport project (instead of using Institute of Transportation Engineers' *Trip Generation* rates), the project's AM peak hour trip generation would increase from 124 to 230 trips and the project's PM peak hour trip generation would increase from 311 to 314 trips. A three-trip increase during the PM peak hour is clearly not sufficient to cause a new significant impact. It is apparent from Table 4.8-5 of the DEIR that the VillaSport project would cause almost no changes in delay during the AM peak hour (i.e., four intersections experience a 1-second increase in delay, while the remaining 15 experience no increase). If the analysis were to be updated to reflect the higher trip generation total of 230 AM peak hour trips, increases in delay would have still been modest and no new impacts would have been identified. More importantly, commenter has not provided any evidence that the higher trip rate *ought* to have been used, as discussed earlier in this response.

Response 7-36

This comment reiterates previous comments regarding the threshold of significance for transit impacts, and does not raise any new issues. Please refer to response to comment 5-76 and 5-77 in the Final EIR.

Response 7-37

This comment reiterates previous comments regarding transit system analysis, and does not raise any new issues. Please refer to response to comment 5-76 and 5-77 in the Final EIR.

Response 7-38

This comment pertains to variability in intersection delay estimates from the microsimulation model. The commenter reiterates an FEIR response that it is not uncommon for an intersection to experience a 10-second difference in delay with identical inputs due to random variation between one model run and the next. This is accurate, and higher degrees of variability often occur in busier intersections such as Pleasant Grove Boulevard/Roseville Parkway. To minimize the effects of this, the EIR consultants followed microsimulation modeling best practices of running a minimum of 15 models, reviewing system-wide delay estimates, removing both high/low delay outliers, and then averaging results from ten model runs to yield reported delay values. This approach is routinely applied for projects on the state highway system that require review and approval from Caltrans. It should also be noted that some of the delay decreases are due to the project adding traffic to movements with 'below average' delay such as through travel on Roseville Parkway and 'free right-turns' at the Roseville Parkway/Pleasant Grove Boulevard intersection. Since the reported delay is the weighted average of all movements at the intersection, adding vehicles to below average movements tends to reduce the average overall delay.

Exhibit B – J.C. Brennan & Associates**Response 7-39**

The first half of this comment reiterates previous comments regarding non-transportation noise generated by the proposed project. Please refer to response to comment 5-29 in the Final EIR for a discussion of this issue. See response to comment 7-7 for a discussion of evidence demonstrating that non-transportation noise from the project would not result in substantial impacts and General Plan policy requirements with respect to non-transportation noise.

Response 7-40

The first half of this comment reiterates previous comments regarding the disclosure of existing ambient conditions at nearby sensitive receptors. Please refer to response to comment 5-31 in the Final EIR for a discussion of this issue. See response to comment 7-8 above for a discussion of when an acoustical analysis is required by the General Plan Noise Element.

Exhibit C – Helix Environmental Planning

Response 7-41

Response 4-1 of the Final EIR, as well as Responses 7-9 and 7-10 above, discuss the justification, reasoning, and methodology for the HRA and 410 cases per million threshold.

The HRA focused on the major source of DPM emissions in proximity to the proposed project, which is SR 65. The HRA did not include modeling for surrounding roadways, emergency generators in the area or Costco for several reasons, all of which are discussed below.

As noted in Response 7-10, vehicle traffic on local roadways primarily serves the residential, office, and commercial developments within the area. Traffic related to such land uses would primarily consist of passenger vehicles, which are not considered a significant source of DPM emissions. Furthermore, the City of Roseville prohibits heavy duty trucks from using roadways other than those specifically approved as truck routes, and shown on the City's Truck Routes map included as Attachment A. As shown in Attachment A, truck routes do not exist in proximity to the project site; thus, the volume of heavy duty vehicle traffic in the project area (other than SR 65) is expected to be low. The closest truck route to the project site, other than SR 65, is Fairway Drive and a portion of Pleasant Grove Boulevard, adjacent to SR 65. Both the truck routes on Fairway Drive and Pleasant Grove Boulevard are located to the north of the project site, and the predominant wind direction in the project area is from the south to the north.² Consequently, DPM emissions from Fairway Drive and Pleasant Grove Boulevard would be downwind of the project site, and would not be anticipated to significantly affect DPM concentrations at the project site.

The Roseville Galleria obtains electrical power from Roseville Electric Utility. The Galleria does not rely on the generators for continuous power sources, and the generators are instead meant to supply emergency power only. Emergency generators are only used for periodic testing, maintenance, and in emergency situations. Furthermore, generators are permitted and regulated by the PCAPCD. Per the required PCAPCD permitting, the generator would be regulated and monitored. Any generators located at the Galleria would be at least 1,300 feet away from the location of the proposed structure. According to the Bay Area Air Quality Management District, DPM is highly dispersive in the atmosphere and is reduced by 70 percent at a distance of approximately 500 feet.³ Considering the distance between the Galleria and the proposed structure, the infrequent DPM emissions from the generator would disperse prior to reaching the project receptors. As a result of the infrequent use of the generator, the regulated nature of generator use, and the distance between the generator and the proposed structure, the emergency generators were not considered to contribute a significant amount of DPM to the area.

² Western Regional Climate Center. *Prevailing Wind Direction*. Available at <https://wrcc.dri.edu/htmlfiles/westwinddir.html#CALIFORNIA>. Accessed June 2017.

³ Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2017.

The Costco Wholesale location is located north of the project site, across SR 65. Operations of the Costco would involve deliveries of goods through heavy duty diesel trucks and potential operation of an emergency generator. The Costco loading area is located over 600 feet to the north of the project site. The prevailing wind pattern in the project area is south to north, which would result in the movement of DPM from Costco operations away from the project site. Furthermore, as discussed above, DPM is highly dispersive and concentrations would be reduced by at least 70 percent prior to reaching the project site. Similar to generators at the Galleria, PCAPCD permitting would apply to any stationary diesel generators located on the Costco site. Given the Costco's location downwind of the project site, the dispersive nature of DPM, and the infrequent use of emergency generators, DPM from operation of the Costco would be unlikely to affect the background levels of DPM at the project site.

Per the 2015 Office of Environmental Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments⁴, in cases where women of childbearing age could be the maximally exposed worker, the analysis may be adjusted to account for the higher susceptibility during the third trimester of pregnancy (i.e., use an age sensitivity factor of 10, rather than the 1.0 used for workers of ages 16 to 70, which would equate to multiplying the resultant cancer risk for the worker by 10).⁵ Therefore, the HARP 2 Risk Assessment Standalone Tool (RAST)⁶ modeling completed for the proposed project was conducted for workers at the proposed project and children at the daycare facility. Once the HARP 2 RAST modeling for workers was completed, the age sensitivity factor for pregnant workers was applied to the cancer risk output to obtain the pregnant worker output risk. Thus, the worker cancer risk of 17.8 (which was rounded up to 18 in the Final EIR) was multiplied by a sensitivity factor of ten to obtain a pregnant worker sensitivity factor of 178. As such, in compliance with OEHHA and CARB guidance, a specific run of HARP 2 RAST was not completed for pregnant workers. The HARP 2 RAST outputs for workers were included in Attachment A of Appendix 3.2 of the Final EIR.

Response 7-42

The carbon dioxide (CO₂) intensity factor used in estimating GHG emissions from the proposed project is related to the amount of CO₂ emitted during the production and distribution of energy. The electric utility for the proposed project would be Roseville Electric. Like all other publicly traded utility companies, Roseville Electric is subject to the regulations of SB 1078, SB 107, and SB 2, which establish a Renewable Portfolio Standard (RPS). The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and 50 percent of total procurement by 2030. The increased use of

⁴ Office of Environmental Health Hazard Assessment. *Air Toxics Hot Spots Program Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments* [pg. 8-18]. February 2015.

⁵ California Air Resources Board. *User Manual for the Hotspots Analysis and Reporting Program Health Risk Assessment Standalone Tool, Version 2* [pg. 42]. March 17, 2015.

⁶ California Air Resources Board. *User Manual for the Hotspots Analysis and Reporting Program Health Risk Assessment Standalone Tool, Version 2*. March 17, 2015.

renewable energy to generate electricity reduces the amount of CO₂ emitted per unit of energy produced and distributed. GHG emissions for the proposed project were modeled using the California Emissions Estimator Model (CalEEMod); the CO₂ intensity factor used by CalEEMod for Roseville Electric is from the year 2007, when Roseville Electric had an RPS value of 9 percent. In order to meet the RPS standards required by law, Roseville Electric is required to increase the RPS for energy production from 9 percent in 2007 to at least 33 percent by 2020. Assuming that the RPS acquisition occurs evenly throughout that period, Roseville Electric would have improved the RPS from 9 percent in 2007 to 29.31 percent in 2018, which is the anticipated year of operation. Roseville Electric's progress towards meeting the RPS goals would result in reductions in the CO₂ intensity of electricity produced by Roseville Electric. Thus, following the direction of the PCAPCD, as noted by the commenter, the CO₂ intensity for Roseville Electric was adjusted to accurately reflect Roseville Electric's anticipated CO₂ intensity.

Adjustment of Roseville Electric's CO₂ intensity factor allows for the most accurate analysis of the potential GHG emissions related to the proposed project. While allowing for increased accuracy, the RPS adjustment maintains a conservative approach; as noted above, Roseville Electric is required to meet a 50 percent RPS goal by 2030. Considering the 50 percent RPS goal, Roseville Electric will continue to procure more energy from renewable sources each year, which will further reduce Roseville Electric's CO₂ intensity factor into the future. Therefore, the CO₂ intensity factor used in the CalEEMod estimation for the proposed project represents the highest CO₂ intensity factor that would occur during the lifetime of the proposed project, and, as a result, the highest energy related CO₂ emissions.

The calculations provided by the commenter represent an oversimplification of the energy demands estimated by CalEEMod. Using the ratio of the default CO₂ intensity factor to the RPS adjusted CO₂ intensity factor assumes that all energy-related GHG emissions would result from electricity consumption. In reality, and as shown in the CalEEMod outputs included as Attachment B of Appendix 3.2 of the Final EIR, GHG emissions related to natural gas consumption would contribute approximately 35 percent of the total energy related emissions from operation of the proposed project. GHG emissions from natural gas consumption would not be affected by adjustments to the CO₂ intensity factor of Roseville Electric. Considering that 35 percent of the energy related GHG emissions would be unchanged by changes to the CO₂ intensity factor, the commenter overestimates the potential impact of the CO₂ intensity factor on total energy related GHG Emissions.

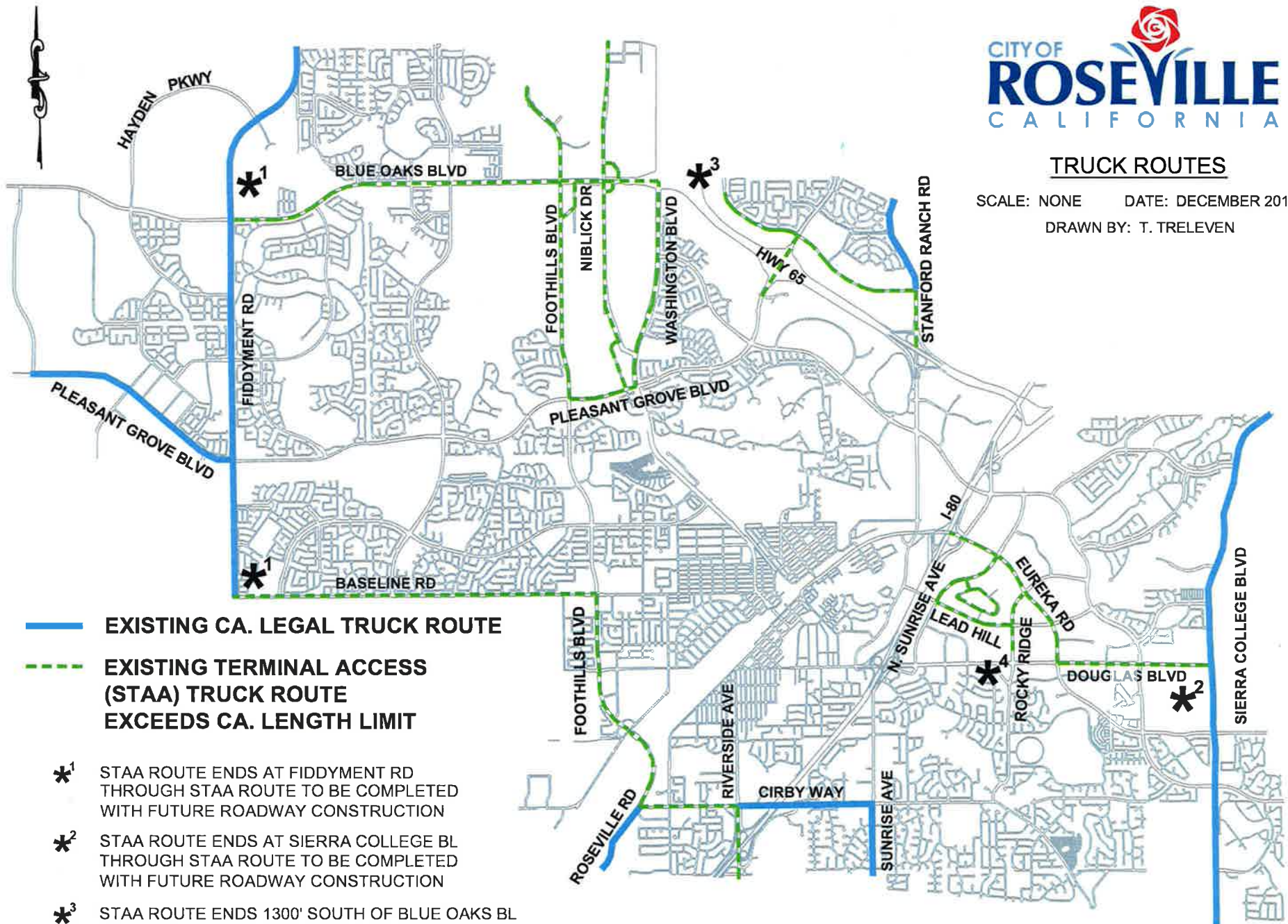
Nevertheless, the Final EIR's adjustment for RPS represents a good faith effort to present an accurate estimation of the proposed project's operational GHG emissions. Because the RPS adjustment is reasonable, rooted in State law, and supported by PCAPCD, the GHG emissions analysis included in the EIR is considered accurate, and the project would not have the potential to result in a significant impact related to operational GHG emissions.



TRUCK ROUTES

SCALE: NONE DATE: DECEMBER 2011

DRAWN BY: T. TRELEVEN



EXISTING CA. LEGAL TRUCK ROUTE

**EXISTING TERMINAL ACCESS
(STAA) TRUCK ROUTE
EXCEEDS CA. LENGTH LIMIT**

- *¹ STAA ROUTE ENDS AT FIDDYMMENT RD
THROUGH STAA ROUTE TO BE COMPLETED
WITH FUTURE ROADWAY CONSTRUCTION
- *² STAA ROUTE ENDS AT SIERRA COLLEGE BL
THROUGH STAA ROUTE TO BE COMPLETED
WITH FUTURE ROADWAY CONSTRUCTION
- *³ STAA ROUTE ENDS 1300' SOUTH OF BLUE OAKS BL
- *⁴ STAA ROUTE ENDS 800' NORTH OF DOUGLAS BL

*Supplement to Final Transportation Impact Study for Villasport Athletic Club and Spa
in Roseville, CA June 15, 2017*

APPENDIX B: CUMULATIVE (YEAR 2035) TECHNICAL CALCULATIONS

Villasport EIR

Intersection Delay and LOS

2035 Cumulative No Project and Plus Project

Intersections		233		233		233		233
LOS A-C	83.3%	194	72.5%	169	83.3%	194	72.5%	169
LOS D	8.6%	20	12.9%	30	9.0%	21	12.9%	30
LOS E	4.3%	10	7.7%	18	3.9%	9	7.7%	18
LOS F	3.9%	9	6.9%	16	3.9%	9	6.9%	16

Synchrono ID	Intersection	Analysis Method		SimTraffic_ID	Final Intersection LOS Results							
					Cumulative No Project				Cumulative Plus Project			
					AM		PM		AM		PM	
		Delay	LOS		Delay	LOS	Delay	LOS	Delay	LOS		
1	Blue Oaks Blvd & Grasscreek Drive	Synchro	Synchro		13	B	13.9	B	13	B	13.9	B
2	Westbrook Blvd & Blue Oaks Blvd	Synchro	Synchro		70.9	E	36.2	D	71.1	E	36.0	D
3	Blue Oaks Blvd & Creekview Plaza	Synchro	Synchro		13.1	B	17.0	B	13.1	B	17.0	B
4	West Park Drive & Blue Oaks Blvd	Synchro	Synchro		12.9	B	12.9	B	12.9	B	12.9	B
5	Hayden Pkwy & Blue Oaks Blvd	Synchro	Synchro		28.1	C	21.2	C	28	C	21.2	C
6	Fiddymment Rd & Blue Oaks Blvd	Synchro	Synchro		49.7	D	36.5	D	49.7	D	36.5	D
7	Blue Oaks Blvd & Orchard View Rd	Synchro	Synchro		6.9	A	7.2	A	6.9	A	7.2	A
8	Del Webb Blvd & Blue Oaks Blvd	Synchro	Synchro		10.8	B	9.1	A	10.8	B	9.1	A
9	Blue Oaks Blvd & Crocker Ranch Rd	Synchro	Synchro		14.4	B	15.2	B	14.4	B	15.2	B
10	Diamond Creek Blvd & Blue Oaks Blvd	Synchro	Synchro		20.6	C	33.3	C	20.6	C	33.4	C
11	Woodcreek Oaks Blvd & Blue Oaks Blvd	Synchro	Synchro		56.3	E	88.7	F	55.6	E	88.4	F
12	Blue Oaks Blvd & Wood Meadow Dr	Synchro	Synchro		28.9	C	19.6	B	28.9	C	19.7	B
13	Blue Oaks Blvd & New Meadow Dr	Synchro	Synchro		10.8	B	5.9	A	11	B	5.9	A
14	Collector C & Blue Oaks Blvd	Synchro	Synchro		1	A	1.8	A	1	A	1.8	A
15	Foothills Blvd & Blue Oaks Blvd	Synchro	Synchro		31	C	82.6	F	31	C	83.1	F
16	Fidelity Way & Blue Oaks Blvd	Synchro	Synchro		9.7	A	12.3	B	9.7	A	12.3	B
17	Washington Blvd & Blue Oaks Blvd	Synchro	Synchro		84.9	F	195.4	F	85.1	F	196.7	F
18	Santucci Blvd & Pleasant Grove Blvd	Synchro	Synchro		19.2	B	24.3	C	19.2	B	23.4	C
19	Silver Spruce Dr & Pleasant Grove Blvd	Synchro	Synchro		7.5	A	6.9	A	7.5	A	6.9	A
20	Westbrook Blvd & Pleasant Grove Blvd	Synchro	Synchro		24.7	C	34.1	C	24.7	C	34.1	C
21	Sierra Trail Dr & Pleasant Grove Blvd	Synchro	Synchro		9.2	A	7.0	A	9.2	A	7.0	A
22	Market St & Pleasant Grove Blvd	Synchro	Synchro		21.2	C	23.7	C	21.2	C	23.7	C
23	Monument Dr & Pleasant Grove Blvd	Synchro	Synchro		12.8	B	11.9	B	12.8	B	11.9	B
24	Upland Dr & Pleasant Grove Blvd	Synchro	Synchro		9.7	A	10.1	B	9.8	A	10.1	B
25	Fiddymment Rd & Pleasant Grove Blvd	Synchro	Synchro		119.6	F	65.8	E	122.2	F	65.6	E
26	Pleasant Grove Blvd & Sun City Blvd	Synchro	Synchro		7.2	A	7.3	A	7.2	A	7.3	A
27	Pleasant Grove Blvd & Rose Creek Rd	Synchro	Synchro		5.2	A	9.0	A	5.2	A	8.8	A
28	Pleasant Grove Blvd & Michener Dr	Synchro	Synchro		5.5	A	10.6	B	5.5	A	10.5	B
29	Woodcreek Oaks Blvd & Pleasant Grove Blvd	Synchro	Synchro		37.1	D	36.2	D	37.1	D	35.3	D
30	Country Club Dr & Pleasant Grove Blvd	Synchro	Synchro		25.4	C	20.2	C	25.4	C	19.8	B
31	Foothills Blvd & Pleasant Grove Blvd	Synchro	Synchro		55.3	E	77.3	E	53.6	D	77.4	E
32	Washington Blvd & Pleasant Grove Blvd	Synchro	Synchro		41.5	D	46.3	D	41.5	D	46.3	D
33	Pleasant Grove Blvd & Hallissy Dr	Synchro	Synchro		9.8	A	35.8	D	9.8	A	37.0	D
34	Roseville Pkwy & Pleasant Grove Blvd	Synchro	Synchro		118.4	F	288.4	F	119.3	F	292.5	F
35	Pleasant Grove Blvd & Highland Pointe Dr/W	Synchro	Synchro		30.9	C	69.6	E	31	C	69.9	E
36	Pleasant Grove Blvd & Hwy-65 SB Ramps	Synchro	Synchro		10.5	B	12.4	B	10.6	B	12.6	B
37	Hwy-65 NB Ramps & Pleasant Grove Blvd	Synchro	Synchro		12.5	B	28.0	C	12.6	B	28.4	C
38	Pleasant Grove Blvd & Fairway Dr	Synchro	Synchro		67	E	77.5	E	67.1	E	76.8	E
39	Pleasant Grove Blvd & Highland Park Dr	Synchro	Synchro		17.5	B	27.6	C	17.6	B	27.8	C
40	Vista Grande Blvd & Santucci Blvd	Synchro	Synchro		11.4	B	11.7	B	11.4	B	11.8	B
41	Silver Spruce Dr & Vista Grande Blvd	Synchro	Synchro		12.8	B	12.3	B	12.8	B	12.2	B
42	Westbrook Blvd & Vista Grande Blvd	Synchro	Synchro		16.3	B	19.0	B	16.4	B	18.8	B
43	Vista Park Dr & Vista Grande Blvd	Synchro	Synchro		11	B	10.6	B	11	B	10.6	B
44	Market St & Vista Grande Blvd	Synchro	Synchro		11.1	B	13.3	B	11.1	B	13.3	B
45	Monarch Grove St & Vista Grande Blvd	Synchro	Synchro		11.3	B	10.8	B	11.3	B	10.8	B
46	Upland Dr & Vista Grande Blvd	Synchro	Synchro		12.1	B	15.4	B	12.2	B	15.4	B
47	Westhills Dr & Fiddymment Rd	Synchro	Synchro		47.3	D	21.3	C	47.3	D	21.0	C
48	Regional Park Access & Baseline Rd	Synchro	Synchro		9.8	A	12.2	B	9.8	A	12.2	B
49	Watt Ave/Santucci Blvd & Baseline Rd	Synchro	Synchro		31	C	42.0	D	31	C	41.6	D
50	Baseline Rd & W Shopping Center Access	Synchro	Synchro		9.1	A	19.5	B	9.1	A	19.6	B
51	Baseline Rd & Westbrook Blvd	Synchro	Synchro		37.8	D	36.8	D	37.5	D	36.6	D
52	Baseline Rd & C Shopping Center Access	Synchro	Synchro		3	A	5.5	A	3	A	5.5	A

Villasport EIR

Intersection Delay and LOS

2035 Cumulative No Project and Plus Project

Intersections		233		233		233		233	
	LOS A-C	83.3%	194	72.5%	169	83.3%	194	72.5%	169
	LOS D	8.6%	20	12.9%	30	9.0%	21	12.9%	30
	LOS E	4.3%	10	7.7%	18	3.9%	9	7.7%	18
	LOS F	3.9%	9	6.9%	16	3.9%	9	6.9%	16

Synchrono ID	Intersection	Analysis Method		SimTraffic_ID	Final Intersection LOS Results							
					Cumulative No Project				Cumulative Plus Project			
		AM	PM		AM		PM		AM		PM	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
53	Market St & Baseline Rd	Synchro	Synchro		13.5	B	13.6	B	13.6	B	13.6	B
54	Baseline Road & E Shopping Access Center	Synchro	Synchro		7.4	A	14.1	B	7.5	A	14.0	B
55	Baseline Rd & Upland Dr	Synchro	Synchro		5.7	A	6.6	A	5.7	A	6.6	A
56	Fiddymment Rd & Baseline Rd	Synchro	Synchro		46.2	D	55.3	E	46.2	D	55.7	E
57	Baseline Rd & Junction Blvd	Synchro	Synchro		24.1	C	19.6	B	23.5	C	21.1	C
58	Woodcreek Oaks Blvd & Baseline Rd	Synchro	Synchro		99.7	F	64.5	E	100.8	F	63.9	E
59	Foothills Blvd & Baseline Rd	Synchro	Synchro		82.6	F	60.6	E	82	F	60.4	E
60	Foothills Blvd & HP-Main Dwy	Synchro	Synchro		34.1	C	56.6	E	34.2	C	56.7	E
61	Washington Blvd & Roseville Pkwy	Synchro	Synchro		30.4	C	30.0	C	30.2	C	30.0	C
62	Roseville Pkwy & Trestle Rd	Synchro	Synchro		10.3	B	13.0	B	10.3	B	13.1	B
63	Roseville Pkwy & Gibson Drive (w)	Synchro	Synchro		39.7	D	20.1	C	43	D	24.1	C
64	Chase Dr & Roseville Pkwy	Synchro	Synchro		6.9	A	47.8	D	6.9	A	47.1	D
65	Gibson Dr & Roseville Pkwy	Synchro	Synchro		23	C	63.3	E	23.8	C	70.2	E
66	Roseville Pkwy & West Mall	Synchro	Synchro		7.6	A	9.0	A	7.7	A	9.0	A
67	Reserve Dr & Roseville Pkwy	Synchro	Synchro		33.7	C	110.9	F	33.7	C	113.1	F
68	Galleria Blvd & Roseville Pkwy	Synchro	Synchro		50.4	D	88.7	F	51.2	D	90.5	F
69	Creekside Ridge Dr & Roseville Pkwy	Synchro	Synchro		26.6	C	146.7	F	26.6	C	147.0	F
70	Taylor Rd & E. Roseville Pkwy	Synchro	Synchro		56.3	E	53.6	D	56.3	E	53.7	D
71	N. Sunrise Ave & E. Roseville Pkwy	Synchro	Synchro		16.9	B	63.1	E	16.9	B	64.0	E
72	Secret Ravine Pkwy & E. Roseville Pkwy	Synchro	Synchro		48.1	D	88.0	F	48.1	D	87.2	F
73	E. Roseville Pkwy & Alexandra Dr	Synchro	Synchro		7.6	A	4.5	A	7.6	A	4.5	A
74	Roseville Pkwy/E. Roseville Pkwy & Rocky Ridge Dr	Synchro	Synchro		6.1	A	8.4	A	6.1	A	8.1	A
75	Roseville Pkwy & Orvietto Dr	Synchro	Synchro		31.1	C	43.2	D	31.1	C	43.2	D
76	Roseville Pkwy & Olympus Dr	Synchro	Synchro		18.5	B	23.9	C	18.5	B	23.7	C
77	Douglas Blvd & Roseville Pkwy	Synchro	Synchro		58.3	E	48.9	D	58	E	48.7	D
78	E. Roseville Pkwy & Village Dr	Synchro	Synchro		18.2	B	17.9	B	18.1	B	17.8	B
79	E. Roseville Pkwy & Eureka Rd	Synchro	Synchro		29.1	C	44.8	D	28.8	C	46.4	D
80	N. Cirby Way & E. Roseville Pkwy	Synchro	Synchro		6.8	A	9.1	A	6.8	A	8.9	A
81	Sierra College Blvd & E. Roseville Pkwy	Synchro	Synchro		32.3	C	48.1	D	32.6	C	47.7	D
82	Atlantic St & Yosemite St	Synchro	Synchro		12.2	B	10.2	B	12.3	B	10.3	B
83	Center St/Tiger Way & Atlantic St	Synchro	Synchro		15	B	33.9	C	15	B	34.6	C
84	Wills Rd & Atlantic St	Synchro	Synchro		20.8	C	17.0	B	21.1	C	16.9	B
85	I-80 WB Ramps & Atlantic St/Eureka Rd	Synchro	Synchro		29.2	C	118.8	F	29.4	C	117.7	F
86	I-80 EB Ramps & Eureka Rd	Synchro	Synchro		19.8	B	150.5	F	20.1	C	147.9	F
87	N. Sunrise Ave & Eureka Rd	Synchro	Synchro		22.4	C	53.8	D	22.3	C	52.9	D
88	Eureka Rd & Rocky Ridge Dr	Synchro	Synchro		27.1	C	33.9	C	27	C	34.0	C
89	Eureka Rd & Lead Hill Blvd	Synchro	Synchro		33	C	31.0	C	33	C	31.0	C
90	Eureka Road & Douglas Blvd	Synchro	Synchro		45.5	D	51.3	D	45.5	D	51.7	D
91	Eureka Rd & Deer Valley Apts Dwy	Synchro	Synchro		14.4	B	11.4	B	14.3	B	11.4	B
92	Ashland Dr & Eureka Rd	Synchro	Synchro		15.3	B	13.9	B	14.7	B	13.9	B
93	Sierra College Blvd & Eureka Rd	Synchro	Synchro		41	D	36.6	D	40.6	D	36.4	D
94	Banjo Alley/Judah St & Douglas Blvd	Synchro	Synchro		7	A	14.8	B	7.1	A	14.8	B
95	Park Dr & Douglas Blvd	Synchro	Synchro		9	A	8.8	A	9	A	8.8	A
96	Keehner Ave & Douglas Blvd	Synchro	Synchro		9.5	A	12.3	B	9.6	A	12.5	B
97	Folsom Rd & Douglas Blvd	Synchro	Synchro		18.9	B	26.4	C	18.8	B	26.5	C
98	Douglas Blvd & Harding Blvd	Synchro	Synchro		59.5	E	89.6	F	59.8	E	90.5	F
99	Douglas Blvd & I-80 WB Ramps	Synchro	Synchro		16	B	33.4	C	16	B	33.3	C
100	I-80 EB Ramps & Douglas Blvd	Synchro	Synchro		27.1	C	20.5	C	27	C	20.4	C
101	Douglas Blvd & North Sunrise Ave	Synchro	Synchro		33.9	C	37.6	D	33.9	C	37.7	D
102	Santa Clara Dr & Douglas Blvd	Synchro	Synchro		20.1	C	37.5	D	20.1	C	37.7	D
103	Sierra Gardens Dr & Douglas Blvd	Synchro	Synchro		35.8	D	184.8	F	35.8	D	184.2	F
104	Target Dwy & Douglas Blvd	Synchro	Synchro		14.8	B	31.8	C	14.8	B	32.7	C

Villasport EIR
Intersection Delay and LOS
2035 Cumulative No Project and Plus Project

Intersections		233		233		233		233	
	LOS A-C	83.3%	194	72.5%	169	83.3%	194	72.5%	169
	LOS D	8.6%	20	12.9%	30	9.0%	21	12.9%	30
	LOS E	4.3%	10	7.7%	18	3.9%	9	7.7%	18
	LOS F	3.9%	9	6.9%	16	3.9%	9	6.9%	16

Synchr o ID	Intersection	Analysis Method		SimTraffic ic_ID	Final Intersection LOS Results							
					Cumulative No Project				Cumulative Plus Project			
					AM		PM		AM		PM	
		Delay	LOS		Delay	LOS	Delay	LOS	Delay	LOS		
105	Rocky Ridge Drive & Douglas Blvd	Synchro	Synchro		52.5	D	144.8	F	52.8	D	90.7	F
106	Sierra College Blvd & Douglas Blvd	Synchro	Synchro		40.2	D	45.7	D	40.4	D	45.9	D
107	Foothills Blvd & Cirby Way	SimTraffic	SimTraffic	1	75	E	72.9	E	78.9	E	79.4	E
108	Vernon St & Cirby Way	SimTraffic	SimTraffic	2	32.9	C	75.9	E	33.5	C	70.9	E
109	Northridge Dr/Lindsay Dr & Cirby Way	SimTraffic	SimTraffic	102	15.4	B	5.8	A	13.2	B	9.0	A
110	Melody Ln & Cirby Way	SimTraffic	SimTraffic	3	34.9	C	14.2	B	32.9	C	13.6	B
111	Riverside Ave & Cirby Way	SimTraffic	SimTraffic	4	83.1	F	72.8	E	84.7	F	72.5	E
112	Orlando Ave & Cirby Way	SimTraffic	SimTraffic	6	24.5	C	27.7	C	21.1	C	30.2	C
113	San Simeon Dr & Cirby Way	SimTraffic	SimTraffic	104	19	B	17.2	B	16.6	B	15.9	B
114	Sunrise Ave & Cirby Way	SimTraffic	SimTraffic	7	118.9	F	134.4	F	114.4	F	140.5	F
115	Oakridge Dr & Cirby Way	Synchro	Synchro		25.3	C	30.6	C	25.4	C	33.8	C
116	Parkview Dr & Cirby Way	Synchro	Synchro		6.3	A	4.7	A	6.3	A	4.7	A
117	Cirby Way & Rocky Ridge Dr	Synchro	Synchro		18.8	B	32.8	C	18.9	B	33.0	C
118	Champion Oaks Dr & Cirby Way	Synchro	Synchro		10.5	B	11.6	B	10.5	B	11.8	B
119	Cirby Way & Old Auburn Rd	Synchro	Synchro		24.8	C	23.0	C	24.8	C	22.8	C
120	Westbrook Blvd & Holt Parkway	Synchro	Synchro		20.9	C	15.2	B	20.9	C	15.2	B
121	Westbrook Blvd & Nobo Dr	Synchro	Synchro		9.5	A	8.9	A	9.5	A	8.8	A
122	Westbrook Blvd & N Brookstone Drive	Synchro	Synchro		7.5	A	5.5	A	7.5	A	5.5	A
123	Westbrook Blvd & S Brookstone Dr	Synchro	Synchro		4.3	A	3.6	A	4.3	A	3.6	A
124	Westbrook Blvd & Octave Avenue/Payson Ave	Synchro	Synchro		11.5	B	8.9	A	11.5	B	8.9	A
125	Wal*Mart & Lead Hill Blvd	Synchro	Synchro		4.7	A	9.1	A	4.7	A	9.0	A
126	Westbrook Blvd & Solaire Dr	Synchro	Synchro		11.6	B	9.6	A	11.6	B	9.5	A
127	Westbrook Blvd & Federico Dr	Synchro	Synchro		14.1	B	12.6	B	14.1	B	12.6	B
128	Westbrook Blvd & Sierra Glen Dr	Synchro	Synchro		5.1	A	2.8	A	5	A	2.8	A
129	Westbrook Blvd & Sierra Village Dr	Synchro	Synchro		14.1	B	13.8	B	14.1	B	13.8	B
130	Fiddymment Road & Angus Road	Synchro	Synchro		21.9	C	42.1	D	21.9	C	42.1	D
131	Fiddymment Rd & Hayden Pkwy (North)	Synchro	Synchro		16	B	18.5	B	16	B	18.5	B
132	Fiddymment Ranch EW Rd & Fiddymment Rd	Synchro	Synchro		17.1	B	17.1	B	17.2	B	17.1	B
133	Fiddymment Rd & Hayden Pkwy (South)	Synchro	Synchro		8.5	A	10.0	A	8.5	A	10.0	A
134	Fiddymment Rd & Village Green Dr/Del Webb	Synchro	Synchro		19.5	B	19.9	B	19.5	B	19.6	B
135	Fiddymment Rd & Westlake Dr	Synchro	Synchro		7.2	A	5.2	A	7.2	A	5.2	A
136	Fiddymment Road & San Fernando Drive	Synchro	Synchro		11.4	B	16.2	B	11.4	B	16.2	B
137	Woodcreek Oaks Blvd & Northpark Dr	Synchro	Synchro		15.8	B	12.0	B	15.9	B	12.0	B
138	Woodcreek Oaks Blvd & Parkside Way	Synchro	Synchro		19.7	B	12.6	B	19.8	B	12.7	B
139	Woodcreek Oaks Blvd & Painted Desert Dr	Synchro	Synchro		17.5	B	21.9	C	17.5	B	21.8	C
140	Woodcreek Oaks Blvd & Crimson Drige Dr/C	Synchro	Synchro		16	B	14.7	B	16	B	14.7	B
141	Woodcreek Oaks Blvd & Horncastle Ave	Synchro	Synchro		13.6	B	12.3	B	13.6	B	12.3	B
142	Woodcreek Oaks Blvd & Camino Capistrano/	Synchro	Synchro		13.5	B	14.3	B	13.5	B	14.3	B
143	Woodcreek Oaks Blvd & Canevari Dr	Synchro	Synchro		19.6	B	21.1	C	19.8	B	21.1	C
144	Woodcreek Oaks Blvd & McAnally Dr	Synchro	Synchro		39.1	D	86.2	F	38.7	D	88.1	F
145	Woodcreek Oaks Blvd & Trailee Ln	Synchro	Synchro		8.5	A	6.9	A	8.5	A	7.0	A
146	Foothills Blvd & Albertsons Dr	Synchro	Synchro		20.8	C	20.9	C	20.8	C	20.9	C
147	Foothills Blvd & HP-South Dwy	Synchro	Synchro		5.2	A	14.5	B	5.2	A	14.4	B
148	Foothills Blvd & NEC	Synchro	Synchro		26.7	C	23.5	C	26.8	C	23.5	C
149	Foothills Blvd & Mistywood Dr	Synchro	Synchro		15.5	B	15.3	B	15.5	B	15.2	B
150	Foothills Blvd & McAnally Dr	Synchro	Synchro		20.6	C	36.9	D	20.6	C	36.8	D
151	Foothills Blvd & Junction Blvd	Synchro	Synchro		38.1	D	41.4	D	38.2	D	41.9	D
152	Foothills Blvd & Pilgrim Dr/Rand Way	Synchro	Synchro		19.9	B	5.2	A	19.9	B	5.2	A
153	Foothills Blvd & Vineyard Rd	Synchro	Synchro		28.4	C	28.2	C	28.4	C	28.3	C
154	Foothills Blvd & Denio Loop	Synchro	Synchro		10	A	11.6	B	10	A	11.2	B
155	Washington Blvd & Freedom Way	Synchro	Synchro		33.2	C	38.2	D	33.2	C	40.9	D
156	Washington Blvd & Hallissy Dr	Synchro	Synchro		6.3	A	6.4	A	6.3	A	6.4	A

Villasport EIR
Intersection Delay and LOS
2035 Cumulative No Project and Plus Project

Intersections		233		233		233		233
LOS A-C	83.3%	194	72.5%	169	83.3%	194	72.5%	169
LOS D	8.6%	20	12.9%	30	9.0%	21	12.9%	30
LOS E	4.3%	10	7.7%	18	3.9%	9	7.7%	18
LOS F	3.9%	9	6.9%	16	3.9%	9	6.9%	16

Synchrono ID	Intersection	Analysis Method		SimTraffic_ID	Final Intersection LOS Results							
					Cumulative No Project				Cumulative Plus Project			
		AM			PM		AM		PM			
		Delay	LOS		Delay	LOS	Delay	LOS	Delay	LOS		
157	Washington Blvd & Industrial Blvd	Synchro	Synchro		9.8	A	48.6	D	9.8	A	49.1	D
158	Washington Blvd & Diamond Oaks Rd	Synchro	Synchro		11.4	B	26.6	C	11.5	B	26.6	C
159	Washington Blvd & Sawtell Rd	Synchro	Synchro		10.6	B	12.4	B	10.6	B	12.5	B
160	Washington Blvd & Junction Blvd	Synchro	Synchro		22.4	C	60.9	E	22.5	C	61.9	E
161	Washington Blvd & All American City Blvd	Synchro	Synchro		12.5	B	13.2	B	12.5	B	13.3	B
162	Fairway Dr & Cortina Cir	Synchro	Synchro		15.1	B	17.4	B	15.1	B	17.4	B
163	Westbrook Blvd & High School Road	Synchro	Synchro		9	A	9.6	A	9	A	9.6	A
164	Target Dwy & Fairway Dr	Synchro	Synchro		8.5	A	11.8	B	8.5	A	11.8	B
165	Lowes Dwy/Central Park Dr & Fairway Dr	Synchro	Synchro		10.2	B	16.2	B	10.2	B	16.2	B
166	Home Depot Dwy & Fairway Dr	Synchro	Synchro		8.3	A	27.9	C	8.3	A	27.9	C
167	Five Star Blvd & Fairway Dr	Synchro	Synchro		8.9	A	26.1	C	8.9	A	26.1	C
168	Stanford Ranch Rd & Highland Park	Synchro	Synchro		12.1	B	10.9	B	12.1	B	10.9	B
169	Stanford Ranch Rd & Fairway Dr	Synchro	Synchro		24.9	C	28.9	C	24.8	C	29.0	C
170	Stanford Ranch Rd & 5 Star Blvd	Synchro	Synchro		29.1	C	49.4	D	29.1	C	49.3	D
171	Galleria Blvd/Stanford Ranch & Hwy-65 NB Ramps	Synchro	Synchro		6.8	A	27.3	C	6.8	A	27.3	C
172	Galleria Blvd & Hwy-65 SB Ramps	Synchro	Synchro		21.6	C	15.0	B	21.6	C	15.0	B
173	JC Penny & Galleria Circle	Synchro	Synchro		8.4	A	8.7	A	8.4	A	8.7	A
174	Galleria Blvd & Antelope Creek Dr	Synchro	Synchro		24	C	78.8	E	24	C	77.7	E
175	Galleria Blvd & Berry St	Synchro	Synchro		17.2	B	25.1	C	17.2	B	24.9	C
176	Harding Blvd & Wills Rd	Synchro	Synchro		22.7	C	22.7	C	22.7	C	22.9	C
177	Harding Blvd & Lead Hill Blvd	Synchro	Synchro		18	B	22.1	C	17.9	B	22.4	C
178	Harding Blvd & Estates Dr	Synchro	Synchro		17.7	B	29.1	C	17.7	B	29.1	C
179	Harding Blvd & Roseville Square	Synchro	Synchro		13.7	B	29.4	C	13.7	B	29.4	C
180	N. Sunrise Ave & Stone Point Dr	Synchro	Synchro		10.8	B	16.0	B	10.8	B	15.1	B
181	Automall Dr & N. Sunrise Ave	Synchro	Synchro		18.1	B	43.1	D	18	B	44.6	D
182	N. Sunrise Ave & Lead Hill Blvd	Synchro	Synchro		24.7	C	60.4	E	25	C	61.7	E
183	N. Sunrise Ave & Sierra Gardens Dr	Synchro	Synchro		13.6	B	30.6	C	13.6	B	30.4	C
184	Sunrise Ave/Sunrise & Oak Ridge Dr	Synchro	Synchro		6.8	A	7.6	A	6.8	A	7.4	A
185	Sunrise Ave & Frances Dr	Synchro	Synchro		2.5	A	3.3	A	2.5	A	3.3	A
186	Sunrise Ave & Coloma Way	Synchro	Synchro		25.3	C	23.5	C	25.2	C	23.8	C
187	Sunrise Ave & Sun Tree Dr	Synchro	Synchro		12	B	35.9	D	11.9	B	36.0	D
188	Sunrise Ave & Kensington Dr/Sandringham Dr	Synchro	Synchro		5.5	A	27.1	C	5.6	A	25.9	C
189	Rocky Ridge Dr & Stone Point Dr	Synchro	Synchro		4.6	A	7.0	A	4.6	A	6.7	A
190	Rocky Ridge Dr & Lead Hill Blvd	Synchro	Synchro		18.9	B	28.8	C	18.9	B	28.9	C
191	Rocky Ridge Dr & Professional Dr	Synchro	Synchro		7.9	A	13.8	B	7.9	A	13.8	B
192	Rocky Ridge Dr & Meadowlark Way/Maidu Dr	Synchro	Synchro		6.2	A	18.3	B	6.2	A	18.3	B
193	Rocky Ridge Dr & McLaren Dr	Synchro	Synchro		6.9	A	12.2	B	6.9	A	12.2	B
194	Sierra College & Secret Ravine Pkwy	Synchro	Synchro		14.8	B	25.5	C	14.8	B	25.8	C
195	Sierra College Blvd & Miners Ravine Pkwy	Synchro	Synchro		12.8	B	12.5	B	12.8	B	12.5	B
196	Sierra College Blvd & Olympus Dr	Synchro	Synchro		39.8	D	50.8	D	40.3	D	49.5	D
197	Sierra College Blvd/Sierra College Blvd & Industrial Blvd	Synchro	Synchro		28.6	C	34.4	C	28.7	C	34.4	C
198	Sierra College Blvd & Old Auburn Rd	Synchro	Synchro		25.3	C	26.2	C	25.3	C	26.2	C
199	Europa St & Olympus Dr	Synchro	Synchro		8.2	A	7.0	A	8.2	A	7.0	A
200	Scarborough Dr & Secret Ravine Pkwy	Synchro	Synchro		13.1	B	12.7	B	13.1	B	12.7	B
201	Alexandra Dr & Secret Ravine Pkwy	Synchro	Synchro		7.5	A	8.0	A	7.5	A	8.0	A
202	Gibson Dr & Convention Center Dr	Synchro	Synchro		39.8	D	17.3	B	52.5	D	22.6	C
203	Riverside Ave & I-80 WB Ramps	SimTraffic	SimTraffic	8	42.4	D	34.5	C	42.4	D	33.7	C
204	Riverside Ave & Orlando Ave	SimTraffic	SimTraffic	9	89.4	F	61.8	E	90.8	F	61.7	E
205	Stonecrest Dr & Junction Blvd	Synchro	Synchro		32.1	C	28.1	C	31.2	C	29.2	C
206	Park Regency & Junction Blvd	Synchro	Synchro		21.9	C	15.1	B	21.6	C	14.9	B
207	Woodcreek Oaks Blvd & Junction Blvd	Synchro	Synchro		23.1	C	33.6	C	23.2	C	33.5	C
208	Country Club Dr & Junction Blvd	Synchro	Synchro		42.1	D	27.2	C	42.1	D	27.0	C

Villasport EIR
Intersection Delay and LOS
2035 Cumulative No Project and Plus Project

Intersections		233		233		233		233
LOS A-C	83.3%	194	72.5%	169	83.3%	194	72.5%	169
LOS D	8.6%	20	12.9%	30	9.0%	21	12.9%	30
LOS E	4.3%	10	7.7%	18	3.9%	9	7.7%	18
LOS F	3.9%	9	6.9%	16	3.9%	9	6.9%	16

Synchr o ID	Intersection	Analysis Method		SimTraff ic_ID	Final Intersection LOS Results							
					Cumulative No Project				Cumulative Plus Project			
		AM	PM		AM		PM		AM		PM	
					Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
209	Junction Blvd & Revere Dr	Synchro	Synchro		5.1	A	7.0	A	5.1	A	7.1	A
210	Americana Dr & Junction Blvd	Synchro	Synchro		11.2	B	7.1	A	11.2	B	7.1	A
211	Porter Dr/Sawtell Rd & Junction Blvd	Synchro	Synchro		29.8	C	11.3	B	31.7	C	11.4	B
212	Del Rd/Hilltop Cir & PFE Rd	Synchro	Synchro		12.7	B	14.0	B	12.7	B	14.0	B
213	Santucci Blvd & Solaire Dr	Synchro	Synchro		11.3	B	12.6	B	11.3	B	12.6	B
214	Santucci Rd & Federico Dr	Synchro	Synchro		14.8	B	14.7	B	14.8	B	14.8	B
215	Santucci Blvd & Sierra Village Dr	Synchro	Synchro		15.5	B	12.8	B	15.5	B	12.8	B
216	Hayden Parkway & Holt Parkway	Synchro	Synchro		14.5	B	14.6	B	14.5	B	14.6	B
217	Industrial Ave & Alantown Dr	Synchro	Synchro		87.9	F	40.7	D	86.3	F	40.7	D
218	Industrial Avenue & Freedom Way	Synchro	Synchro		3	A	4.4	A	3	A	4.4	A
219	La Sierra Drive & Pleasant Grove Blvd	Synchro	Synchro		4.8	A	4.2	A	4.8	A	4.2	A
220	Westbrook Blvd & Road D	Synchro	Synchro		8.9	A	8.6	A	8.9	A	8.6	A
222	Wesbrook Blvd/Westbrook Blvd & Road B	Synchro	Synchro		6.5	A	5.5	A	6.5	A	5.5	A
224	Westbrook Blvd & Road A	Synchro	Synchro		16.5	B	12.3	B	16.5	B	12.3	B
225	Falcon Pointe Lane/Medical Plaza Drive & Se	Synchro	Synchro		7.9	A	8.5	A	7.9	A	8.5	A
226	Hayden Pkwy & High School Road	Synchro	Synchro		13.7	B	11.7	B	13.7	B	11.7	B
227	Cirby Way & Cirby Hills Dr-Kaiser Driveway	SimTraffic	SimTraffic	5	68.7	E	33.0	C	70.2	E	34.6	C
1001	Riverside & Darling	Synchro	Synchro		20.2	C	20.2	C	20.3	C	20.3	C
1002	Riverside & Vernon	Synchro	Synchro		16.3	B	22.2	C	16.3	B	22.2	C
1003	Grant & Vernon	Synchro	Synchro		4.5	A	8.5	A	4.5	A	8.7	A
1004	Judah & Vernon	Synchro	Synchro		4.2	A	9.1	A	4.2	A	9.1	A
1005	Lincoln & Vernon	Synchro	Synchro		22	C	57.5	E	22.5	C	57.8	E
1006	Washington & Main	Synchro	Synchro		55.9	E	48.8	D	56.7	E	48.9	D
1007	Oak Street & S Grant Street	Synchro	Synchro		4.4	A	8.1	A	4.5	A	8.1	A
1008	Oak Street & Lincoln Street	Synchro	Synchro		14.3	B	130.9	F	14.2	B	133.8	F

HCM 2010 Signalized Intersection Summary

1: Blue Oaks Blvd & Grasscreek Drive

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	23	545	304	20	92	76		
Future Volume (veh/h)	23	545	304	20	92	76		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	24	574	320	21	97	80		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	41	1602	1050	325	911	813		
Arrive On Green	0.02	0.31	0.21	0.21	0.51	0.51		
Sat Flow, veh/h	1774	5253	5253	1576	1774	1583		
Grp Volume(v), veh/h	24	574	320	21	97	80		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1576	1774	1583		
Q Serve(g_s), s	0.6	4.1	2.5	0.5	1.3	1.2		
Cycle Q Clear(g_c), s	0.6	4.1	2.5	0.5	1.3	1.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	41	1602	1050	325	911	813		
V/C Ratio(X)	0.59	0.36	0.30	0.06	0.11	0.10		
Avail Cap(c_a), veh/h	152	3048	2177	675	911	813		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.6	12.4	15.7	14.9	5.8	5.8		
Incr Delay (d2), s/veh	12.9	0.1	0.2	0.1	0.2	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.4	1.9	1.2	0.2	0.7	1.6		
LnGrp Delay(d),s/veh	35.5	12.5	15.9	15.0	6.1	6.1		
LnGrp LOS	D	B	B	B	A	A		
Approach Vol, veh/h		598	341		177			
Approach Delay, s/veh		13.4	15.8		6.1			
Approach LOS		B	B		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				18.7		28.0	5.1	13.6
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				28.0		24.0	4.0	20.0
Max Q Clear Time (g_c+l1), s				6.1		3.3	2.6	4.5
Green Ext Time (p_c), s				5.8		0.5	0.0	5.0
Intersection Summary								
HCM 2010 Ctrl Delay			13.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

2: Westbrook Blvd & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	186	419	33	241	141	201	23	642	374	662	875	156				
Future Volume (veh/h)	186	419	33	241	141	201	23	642	374	662	875	156				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863				
Adj Flow Rate, veh/h	196	441	35	254	148	212	24	676	394	697	921	164				
Adj No. of Lanes	1	3	1	2	3	1	1	3	2	1	3	1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	186	1097	323	371	1112	328	57	1542	813	455	2684	817				
Arrive On Green	0.10	0.22	0.20	0.11	0.22	0.21	0.03	0.30	0.29	0.26	0.53	0.52				
Sat Flow, veh/h	1774	5085	1583	3442	5085	1583	1774	5085	2787	1774	5085	1583				
Grp Volume(v), veh/h	196	441	35	254	148	212	24	676	394	697	921	164				
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1583	1774	1695	1393	1774	1695	1583				
Q Serve(g_s), s	9.0	6.4	1.5	6.1	2.0	10.5	1.1	9.2	10.0	22.0	9.0	4.8				
Cycle Q Clear(g_c), s	9.0	6.4	1.5	6.1	2.0	10.5	1.1	9.2	10.0	22.0	9.0	4.8				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Lane Grp Cap(c), veh/h	186	1097	323	371	1112	328	57	1542	813	455	2684	817				
V/C Ratio(X)	1.05	0.40	0.11	0.69	0.13	0.65	0.42	0.44	0.48	1.53	0.34	0.20				
Avail Cap(c_a), veh/h	186	1838	554	442	1957	591	124	1838	975	455	2787	849				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	38.4	28.9	27.8	36.9	27.0	31.1	40.7	24.0	25.1	31.9	11.7	11.2				
Incr Delay (d2), s/veh	80.5	0.2	0.1	3.4	0.1	2.1	4.9	0.2	0.4	250.0	0.1	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	8.5	3.0	0.7	3.1	1.0	4.8	0.6	4.3	3.9	42.2	4.2	2.1				
LnGrp Delay(d),s/veh	118.9	29.1	27.9	40.3	27.0	33.3	45.7	24.2	25.5	281.9	11.7	11.3				
LnGrp LOS	F	C	C	D	C	C	D	C	C	F	B	B				
Approach Vol, veh/h	672				614				1094							
Approach Delay, s/veh	55.2				34.7				25.1							
Approach LOS	E				C				C							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	25.0	28.0	12.2	20.5	5.7	47.3	12.0	20.7								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	21.0	29.0	10.0	29.0	5.0	45.0	8.0	31.0								
Max Q Clear Time (g_c+I1), s	24.0	12.0	8.1	8.4	3.1	11.0	11.0	12.5								
Green Ext Time (p_c), s	0.0	12.0	0.2	4.4	0.0	18.9	0.0	4.2								
Intersection Summary																
HCM 2010 Ctrl Delay	70.9															
HCM 2010 LOS	E															

HCM 2010 Signalized Intersection Summary

3: Blue Oaks Blvd & Creekview Plaza

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	57	1381	620	6	60	11		
Future Volume (veh/h)	57	1381	620	6	60	11		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	60	1454	653	6	63	12		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	77	2342	1755	545	702	626		
Arrive On Green	0.04	0.46	0.35	0.35	0.40	0.40		
Sat Flow, veh/h	1774	5253	5253	1579	1774	1583		
Grp Volume(v), veh/h	60	1454	653	6	63	12		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1579	1774	1583		
Q Serve(g_s), s	1.9	12.0	5.4	0.1	1.2	0.3		
Cycle Q Clear(g_c), s	1.9	12.0	5.4	0.1	1.2	0.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	77	2342	1755	545	702	626		
V/C Ratio(X)	0.78	0.62	0.37	0.01	0.09	0.02		
Avail Cap(c_a), veh/h	191	2744	1829	568	702	626		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	26.3	11.3	13.7	12.0	10.5	10.2		
Incr Delay (d2), s/veh	15.3	0.3	0.1	0.0	0.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	5.6	2.5	0.1	0.6	0.3		
LnGrp Delay(d),s/veh	41.7	11.7	13.8	12.0	10.8	10.3		
LnGrp LOS	D	B	B	B	B	B		
Approach Vol, veh/h		1514	659		75			
Approach Delay, s/veh		12.9	13.8		10.7			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				29.6		26.0	6.4	23.2
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				30.0		22.0	6.0	20.0
Max Q Clear Time (g_c+I1), s				14.0		3.2	3.9	7.4
Green Ext Time (p_c), s				11.6		0.1	0.0	9.6
Intersection Summary								
HCM 2010 Ctrl Delay			13.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: West Park Drive & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗		
Traffic Volume (veh/h)	1363	79	1	646	59	1		
Future Volume (veh/h)	1363	79	1	646	59	1		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1435	83	1	680	62	1		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2010	624	3	2387	682	608		
Arrive On Green	0.40	0.40	0.00	0.47	0.38	0.38		
Sat Flow, veh/h	5253	1579	1774	5253	1774	1583		
Grp Volume(v), veh/h	1435	83	1	680	62	1		
Grp Sat Flow(s),veh/h/ln	1695	1579	1774	1695	1774	1583		
Q Serve(g_s), s	13.0	1.8	0.0	4.5	1.2	0.0		
Cycle Q Clear(g_c), s	13.0	1.8	0.0	4.5	1.2	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2010	624	3	2387	682	608		
V/C Ratio(X)	0.71	0.13	0.31	0.28	0.09	0.00		
Avail Cap(c_a), veh/h	2140	665	130	2884	682	608		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.9	10.6	27.3	8.9	10.7	10.4		
Incr Delay (d2), s/veh	1.1	0.1	46.4	0.1	0.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.2	0.8	0.1	2.1	0.6	0.0		
LnGrp Delay(d),s/veh	15.0	10.6	73.7	8.9	11.0	10.4		
LnGrp LOS	B	B	E	A	B	B		
Approach Vol, veh/h	1518			681	63			
Approach Delay, s/veh	14.8			9.0	11.0			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		25.0	4.1	25.6				29.7
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		21.0	4.0	23.0				31.0
Max Q Clear Time (g_c+I1), s		3.2	2.0	15.0				6.5
Green Ext Time (p_c), s		0.1	0.0	6.6				16.1
Intersection Summary								
HCM 2010 Ctrl Delay			12.9					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

5: Hayden Pkwy & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1286	24	89	504	79	34	68	126	366	87	109
Future Volume (veh/h)	54	1286	24	89	504	79	34	68	126	366	87	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	1354	25	94	531	83	36	72	133	385	92	115
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	1871	564	139	2004	606	68	249	212	439	639	543
Arrive On Green	0.05	0.37	0.36	0.08	0.39	0.38	0.04	0.13	0.13	0.25	0.34	0.34
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	57	1354	25	94	531	83	36	72	133	385	92	115
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.7	19.9	0.9	4.5	6.1	3.0	1.7	3.0	6.9	18.1	3.0	4.5
Cycle Q Clear(g_c), s	2.7	19.9	0.9	4.5	6.1	3.0	1.7	3.0	6.9	18.1	3.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	1871	564	139	2004	606	68	249	212	439	639	543
V/C Ratio(X)	0.61	0.72	0.04	0.68	0.26	0.14	0.53	0.29	0.63	0.88	0.14	0.21
Avail Cap(c_a), veh/h	184	2047	619	163	2004	606	204	707	601	490	1007	856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	23.7	18.3	39.0	17.8	17.5	41.1	34.0	35.6	31.5	19.8	20.2
Incr Delay (d2), s/veh	6.4	1.2	0.0	8.5	0.1	0.1	6.3	0.6	3.1	15.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.5	0.4	2.5	2.9	1.3	1.0	1.6	3.2	10.7	1.6	2.0
LnGrp Delay(d),s/veh	46.7	24.8	18.3	47.5	17.9	17.6	47.4	34.6	38.7	46.7	19.9	20.4
LnGrp LOS	D	C	B	D	B	B	D	C	D	D	B	C
Approach Vol, veh/h	1436				708				241			
Approach Delay, s/veh	25.6				21.8				38.8			
Approach LOS	C				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.5	15.6	10.8	35.0	7.3	33.8	8.6	37.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	23.0	32.0	7.0	33.0	9.0	46.0	8.0	32.0				
Max Q Clear Time (g_c+I1), s	20.1	8.9	6.5	21.9	3.7	6.5	4.7	8.1				
Green Ext Time (p_c), s	0.4	1.7	0.0	8.1	0.0	1.8	0.0	14.2				
Intersection Summary												
HCM 2010 Ctrl Delay	28.1											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

6: Fiddymment Rd & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	1471	114	303	482	90	78	765	511	364	966	142
Future Volume (veh/h)	101	1471	114	303	482	90	78	765	511	364	966	142
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	106	1548	120	319	507	95	82	805	538	383	1017	149
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	672	1499	431	362	934	255	344	1319	548	362	1263	523
Arrive On Green	0.20	0.29	0.27	0.11	0.18	0.16	0.10	0.37	0.35	0.11	0.36	0.33
Sat Flow, veh/h	3442	5085	1575	3442	5085	1569	3442	3539	1576	3442	3539	1576
Grp Volume(v), veh/h	106	1548	120	319	507	95	82	805	538	383	1017	149
Grp Sat Flow(s),veh/h/ln	1721	1695	1575	1721	1695	1569	1721	1770	1576	1721	1770	1576
Q Serve(g_s), s	2.4	28.0	3.9	8.7	8.6	3.8	2.1	17.5	32.1	10.0	24.6	6.6
Cycle Q Clear(g_c), s	2.4	28.0	3.9	8.7	8.6	3.8	2.1	17.5	32.1	10.0	24.6	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	672	1499	431	362	934	255	344	1319	548	362	1263	523
V/C Ratio(X)	0.16	1.03	0.28	0.88	0.54	0.37	0.24	0.61	0.98	1.06	0.81	0.29
Avail Cap(c_a), veh/h	672	1499	431	362	1445	413	362	1319	548	362	1319	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	33.5	12.9	41.9	35.2	19.9	39.4	24.2	30.7	42.5	27.6	23.4
Incr Delay (d2), s/veh	0.0	32.1	0.5	20.6	0.7	1.3	0.1	1.2	34.0	63.2	4.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	17.5	1.7	5.2	4.1	1.7	1.0	8.7	19.1	7.9	12.7	3.0
LnGrp Delay(d),s/veh	31.8	65.6	13.4	62.6	35.9	21.2	39.5	25.4	64.7	105.7	31.7	24.0
LnGrp LOS	C	F	B	E	D	C	D	C	E	F	C	C
Approach Vol, veh/h	1774				921				1425			
Approach Delay, s/veh	60.1				43.6				41.0			
Approach LOS	E				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	38.0	13.0	31.0	14.5	36.5	23.5	20.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	6.0	* 6	6.0	* 6				
Max Green Setting (Gmax), s	9.0	32.0	9.0	25.0	9.0	* 32	10.0	* 24				
Max Q Clear Time (g_c+I1), s	12.0	34.1	10.7	30.0	4.1	26.6	4.4	10.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	3.8	3.8	4.4	3.3				

Intersection Summary

HCM 2010 Ctrl Delay 49.7
HCM 2010 LOS D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
7: Blue Oaks Blvd & Orchard View Rd

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	7	2334	860	96	243	8		
Future Volume (veh/h)	7	2334	860	96	243	8		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	7	2457	905	101	256	8		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	49	3576	3184	991	350	313		
Arrive On Green	0.03	0.70	0.63	0.63	0.20	0.20		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	7	2457	905	101	256	8		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.2	16.8	4.9	1.5	8.2	0.2		
Cycle Q Clear(g_c), s	0.2	16.8	4.9	1.5	8.2	0.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	49	3576	3184	991	350	313		
V/C Ratio(X)	0.14	0.69	0.28	0.10	0.73	0.03		
Avail Cap(c_a), veh/h	381	3868	3184	991	821	733		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.7	5.2	5.1	4.5	22.8	19.6		
Incr Delay (d2), s/veh	0.5	0.6	0.1	0.1	1.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	7.7	2.3	0.7	4.1	0.2		
LnGrp Delay(d),s/veh	29.2	5.7	5.2	4.6	23.9	19.6		
LnGrp LOS	C	A	A	A	C	B		
Approach Vol, veh/h		2464	1006		264			
Approach Delay, s/veh		5.8	5.2		23.7			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				45.5		14.9	4.7	40.9
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				43.0		27.0	12.0	27.0
Max Q Clear Time (g_c+I1), s				18.8		10.2	2.2	6.9
Green Ext Time (p_c), s				20.8		0.9	0.0	19.7
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

8: Del Webb Blvd & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	2601	13	64	937	18	92		
Future Volume (veh/h)	2601	13	64	937	18	92		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2738	14	67	986	19	97		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3332	1037	174	4018	223	199		
Arrive On Green	0.66	0.66	0.10	0.79	0.13	0.13		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	2738	14	67	986	19	97		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	32.9	0.3	2.9	4.1	0.8	4.7		
Cycle Q Clear(g_c), s	32.9	0.3	2.9	4.1	0.8	4.7		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3332	1037	174	4018	223	199		
V/C Ratio(X)	0.82	0.01	0.38	0.25	0.09	0.49		
Avail Cap(c_a), veh/h	3355	1045	217	4163	674	602		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.5	4.9	34.6	2.2	31.6	33.3		
Incr Delay (d2), s/veh	1.8	0.0	0.5	0.0	0.1	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	15.8	0.1	1.4	1.9	0.4	2.1		
LnGrp Delay(d),s/veh	12.4	4.9	35.1	2.3	31.7	34.0		
LnGrp LOS	B	A	D	A	C	C		
Approach Vol, veh/h	2752			1053	116			
Approach Delay, s/veh	12.3			4.4	33.6			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.2	11.0	56.6				67.7
Change Period (Y+Rc), s		4.9	4.0	6.0				6.0
Max Green Setting (Gmax), s		30.1	9.0	51.0				64.0
Max Q Clear Time (g_c+I1), s		6.7	4.9	34.9				6.1
Green Ext Time (p_c), s		0.2	0.0	15.7				53.6
Intersection Summary								
HCM 2010 Ctrl Delay			10.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

9: Blue Oaks Blvd & Crocker Ranch Rd

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	10	2653	914	169	395	47		
Future Volume (veh/h)	10	2653	914	169	395	47		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	11	2793	962	178	416	49		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	52	3246	2902	900	485	433		
Arrive On Green	0.03	0.64	0.57	0.57	0.27	0.27		
Sat Flow, veh/h	1774	5253	5253	1576	1774	1583		
Grp Volume(v), veh/h	11	2793	962	178	416	49		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1576	1774	1583		
Q Serve(g_s), s	0.5	34.3	7.8	4.3	17.4	1.8		
Cycle Q Clear(g_c), s	0.5	34.3	7.8	4.3	17.4	1.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	52	3246	2902	900	485	433		
V/C Ratio(X)	0.21	0.86	0.33	0.20	0.86	0.11		
Avail Cap(c_a), veh/h	159	3334	2902	900	728	650		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.0	11.3	8.9	8.1	26.9	21.2		
Incr Delay (d2), s/veh	0.8	2.6	0.1	0.2	4.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	16.5	3.7	1.9	9.0	1.8		
LnGrp Delay(d),s/veh	37.7	13.9	9.0	8.3	31.3	21.3		
LnGrp LOS	D	B	A	A	C	C		
Approach Vol, veh/h		2804	1140		465			
Approach Delay, s/veh		14.0	8.8		30.3			
Approach LOS		B	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				52.7		25.2	5.3	47.5
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				48.1		31.0	6.0	38.1
Max Q Clear Time (g_c+I1), s				36.3		19.4	2.5	9.8
Green Ext Time (p_c), s				10.4		0.9	0.0	27.5
Intersection Summary								
HCM 2010 Ctrl Delay			14.4					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

10: Diamond Creek Blvd & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	2676	252	28	970	179	40	5	1	118	95	33
Future Volume (veh/h)	116	2676	252	28	970	179	40	5	1	118	95	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	122	2817	265	29	1021	188	46	0	1	124	100	35
Adj No. of Lanes	1	3	1	1	3	1	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	3506	1092	71	3263	1016	274	0	122	177	132	46
Arrive On Green	0.09	0.69	0.69	0.04	0.64	0.64	0.08	0.00	0.08	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3548	0	1583	1774	1319	462
Grp Volume(v), veh/h	122	2817	265	29	1021	188	46	0	1	124	0	135
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1583	1774	0	1781
Q Serve(g_s), s	9.8	55.9	9.0	2.3	13.1	7.0	1.8	0.0	0.1	9.8	0.0	10.7
Cycle Q Clear(g_c), s	9.8	55.9	9.0	2.3	13.1	7.0	1.8	0.0	0.1	9.8	0.0	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	156	3506	1092	71	3263	1016	274	0	122	177	0	178
V/C Ratio(X)	0.78	0.80	0.24	0.41	0.31	0.19	0.17	0.00	0.01	0.70	0.00	0.76
Avail Cap(c_a), veh/h	232	3506	1092	159	3263	1016	318	0	142	319	0	321
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.7	15.7	8.4	67.9	11.7	10.6	62.6	0.0	61.8	63.1	0.0	63.5
Incr Delay (d2), s/veh	4.9	2.1	0.5	1.4	0.3	0.4	0.5	0.0	0.0	5.1	0.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	26.5	4.1	1.2	6.1	3.1	0.9	0.0	0.0	5.1	0.0	5.6
LnGrp Delay(d),s/veh	69.7	17.7	8.9	69.3	11.9	11.0	63.0	0.0	61.8	68.2	0.0	70.2
LnGrp LOS	E	B	A	E	B	B	E		E	E		E
Approach Vol, veh/h	3204				1238				47		259	
Approach Delay, s/veh	19.0				13.1				63.0		69.3	
Approach LOS	B				B				E		E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	14.8		8.8	103.0	18.4		15.8	96.0				
Change Period (Y+Rc), s	4.6		4.0	6.0	4.9		4.0	6.0				
Max Green Setting (Gmax), s	12.0		12.0	76.4	25.1		18.0	70.4				
Max Q Clear Time (g_c+I1), s	3.8		4.3	57.9	12.7		11.8	15.1				
Green Ext Time (p_c), s	0.1		0.0	18.5	0.8		0.1	55.1				
Intersection Summary												
HCM 2010 Ctrl Delay	20.6											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

11: Woodcreek Oaks Blvd & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	2526	117	266	981	125	169	135	474	165	143	46
Future Volume (veh/h)	43	2526	117	266	981	125	169	135	474	165	143	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	45	2659	123	280	1033	132	178	142	499	174	151	48
Adj No. of Lanes	2	3	1	2	4	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	2771	863	309	3138	775	607	715	298	285	342	153
Arrive On Green	0.26	1.00	1.00	0.09	0.49	0.49	0.18	0.20	0.19	0.08	0.10	0.10
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	45	2659	123	280	1033	132	178	142	499	174	151	48
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.4	0.0	0.0	11.7	14.2	4.5	6.5	4.8	27.3	7.1	5.8	4.1
Cycle Q Clear(g_c), s	1.4	0.0	0.0	11.7	14.2	4.5	6.5	4.8	27.3	7.1	5.8	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	451	2771	863	309	3138	775	607	715	298	285	342	153
V/C Ratio(X)	0.10	0.96	0.14	0.91	0.33	0.17	0.29	0.20	1.67	0.61	0.44	0.31
Avail Cap(c_a), veh/h	475	2771	863	309	3138	775	607	715	298	309	715	320
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	0.0	0.0	65.4	22.5	9.4	51.8	48.1	58.9	64.3	61.8	61.0
Incr Delay (d2), s/veh	0.0	10.0	0.3	28.3	0.3	0.5	0.1	0.2	317.6	1.9	1.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.6	0.1	6.8	6.4	2.1	3.1	2.4	38.3	3.5	2.9	1.9
LnGrp Delay(d),s/veh	47.0	10.0	0.3	93.7	22.8	9.9	51.9	48.3	376.4	66.2	63.0	62.6
LnGrp LOS	D	A	A	F	C	A	D	D	F	E	E	E
Approach Vol, veh/h	2827				1445				819			
Approach Delay, s/veh	10.1				35.3				249.0			
Approach LOS	B				D				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	32.0	16.0	82.0	30.3	16.7	24.0	74.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	5.7	* 5.7	6.0	* 6				
Max Green Setting (Gmax), s	12.0	26.3	12.0	75.0	12.0	* 26	19.0	* 68				
Max Q Clear Time (g_c+I1), s	9.1	29.3	13.7	2.0	8.5	7.8	3.4	16.2				
Green Ext Time (p_c), s	0.1	0.0	0.0	67.6	1.5	1.0	15.3	19.1				

Intersection Summary

HCM 2010 Ctrl Delay 56.3
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

12: Blue Oaks Blvd & Wood Meadow Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	3498	0	187	1133	76	0	0	58	14	0	0
Future Volume (veh/h)	0	3498	0	187	1133	76	0	0	58	14	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	3682	0	197	1193	80	0	0	61	15	0	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	4665	1131	171	5460	1327	1	111	94	34	198	169
Arrive On Green	0.00	0.49	0.00	0.10	0.85	0.84	0.00	0.00	0.06	0.02	0.00	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	3682	0	197	1193	80	0	0	61	15	0	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	69.4	0.0	14.0	4.9	1.2	0.0	0.0	5.5	1.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	69.4	0.0	14.0	4.9	1.2	0.0	0.0	5.5	1.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1	4665	1131	171	5460	1327	1	111	94	34	198	169
V/C Ratio(X)	0.00	0.79	0.00	1.15	0.22	0.06	0.00	0.00	0.65	0.44	0.00	0.00
Avail Cap(c_a), veh/h	147	4665	1131	171	5460	1327	147	552	470	147	552	470
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.93	0.93	0.93	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	27.9	0.0	65.5	1.9	2.0	0.0	0.0	66.7	70.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	0.0	112.7	0.0	0.0	0.0	0.0	7.2	8.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	31.2	0.0	12.2	2.2	0.5	0.0	0.0	2.6	0.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	29.3	0.0	178.2	2.0	2.0	0.0	0.0	73.9	78.7	0.0	0.0
LnGrp LOS		C		F	A	A			E	E		
Approach Vol, veh/h		3682			1470			61			15	
Approach Delay, s/veh		29.3			25.6			73.9			78.7	
Approach LOS		C			C			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	12.6	18.0	107.6	0.0	19.4	0.0	125.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	42.0	13.0	59.0	11.0	42.0	11.0	61.0				
Max Q Clear Time (g_c+I1), s	3.2	7.5	16.0	71.4	0.0	0.0	0.0	6.9				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.0	0.0	53.6				
Intersection Summary												
HCM 2010 Ctrl Delay				28.9								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary

13: Blue Oaks Blvd & New Meadow Dr

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	18	3133	0	1621	33	595	30	
Future Volume (veh/h)	18	3133	0	1621	33	595	30	
Number	7	4		8	18	1	16	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	19	3298		1706	35	626	32	
Adj No. of Lanes	1	4		4	1	2	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	51	4817		4499	1112	700	322	
Arrive On Green	0.06	1.00		0.70	0.70	0.20	0.20	
Sat Flow, veh/h	1774	6669		6669	1583	3442	1583	
Grp Volume(v), veh/h	19	3298		1706	35	626	32	
Grp Sat Flow(s),veh/h/ln	1774	1602		1602	1583	1721	1583	
Q Serve(g_s), s	1.5	0.0		15.7	1.0	25.7	2.4	
Cycle Q Clear(g_c), s	1.5	0.0		15.7	1.0	25.7	2.4	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	51	4817		4499	1112	700	322	
V/C Ratio(X)	0.37	0.68		0.38	0.03	0.89	0.10	
Avail Cap(c_a), veh/h	159	4817		4499	1112	762	351	
HCM Platoon Ratio	2.00	2.00		1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.49	0.49		1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	67.0	0.0		8.8	6.6	56.2	47.0	
Incr Delay (d2), s/veh	0.8	0.4		0.1	0.0	11.7	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.7	0.1		6.9	0.4	13.4	2.3	
LnGrp Delay(d),s/veh	67.8	0.4		8.9	6.6	67.9	47.0	
LnGrp LOS	E	A		A	A	E	D	
Approach Vol, veh/h		3317		1741		658		
Approach Delay, s/veh		0.8		8.8		66.9		
Approach LOS		A		A		E		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				111.6		33.4	7.2	104.4
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				87.0		31.1	12.0	87.0
Max Q Clear Time (g_c+I1), s				2.0		27.7	3.5	17.7
Green Ext Time (p_c), s				80.8		0.8	0.0	31.1
Intersection Summary								
HCM 2010 Ctrl Delay			10.8					
HCM 2010 LOS			B					
Notes								
User approved ignoring U-Turning movement.								

HCM 2010 Signalized Intersection Summary

14: Collector C & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	4281	0	0	1435	0	0	0	0	0	0	0
Future Volume (veh/h)	0	4281	0	0	1435	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	4506	0	0	1511	0	0	0	0	0	0	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	6143	1518	1	6143	1518	1	1	0	0	1	0
Arrive On Green	0.00	0.96	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	0	1863	0
Grp Volume(v), veh/h	0	4506	0	0	1511	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	0	1863	0
Q Serve(g_s), s	0.0	14.2	0.0	0.0	1.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.2	0.0	0.0	1.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	1	6143	1518	1	6143	1518	1	1	-48	0	1	0
V/C Ratio(X)	0.00	0.73	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	126	6143	1518	122	6143	1518	196	206	126	0	206	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	1.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A				A							
Approach Vol, veh/h	4506				1511				0			
Approach Delay, s/veh	1.2				0.3				0.0			
Approach LOS	A				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	0.0		0.0	145.0	0.0		0.0	145.0				
Change Period (Y+Rc), s	4.5		4.5	6.0	4.5		4.5	6.0				
Max Green Setting (Gmax), s	16.0		10.0	83.5	16.0		10.3	83.2				
Max Q Clear Time (g_c+I1), s	0.0		0.0	16.2	0.0		0.0	3.9				
Green Ext Time (p_c), s	0.0		0.0	66.9	0.0		0.0	78.8				
Intersection Summary												
HCM 2010 Ctrl Delay	1.0											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

15: Foothills Blvd & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	686	2380	833	167	1305	430	270	499	246	184	524	207
Future Volume (veh/h)	686	2380	833	167	1305	430	270	499	246	184	524	207
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	722	2505	877	176	1374	453	284	525	0	194	552	218
Adj No. of Lanes	2	4	1	2	4	1	3	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	928	3630	897	246	2271	561	407	640	260	308	916	285
Arrive On Green	0.54	1.00	1.00	0.07	0.35	0.35	0.08	0.18	0.00	0.09	0.18	0.18
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	5003	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	722	2505	877	176	1374	453	284	525	0	194	552	218
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1668	1770	1583	1721	1695	1583
Q Serve(g_s), s	24.2	0.0	0.0	7.3	25.5	26.5	8.0	20.7	0.0	7.9	14.5	19.0
Cycle Q Clear(g_c), s	24.2	0.0	0.0	7.3	25.5	26.5	8.0	20.7	0.0	7.9	14.5	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	928	3630	897	246	2271	561	407	640	260	308	916	285
V/C Ratio(X)	0.78	0.69	0.98	0.72	0.60	0.81	0.70	0.82	0.00	0.63	0.60	0.76
Avail Cap(c_a), veh/h	1021	3630	897	309	2271	561	449	644	262	309	950	296
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	0.0	65.9	38.5	21.1	64.9	57.1	0.0	63.7	54.7	56.5
Incr Delay (d2), s/veh	3.1	1.1	25.2	3.8	1.2	11.8	3.1	8.1	0.0	3.1	2.4	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	0.3	6.3	3.6	11.4	13.4	3.8	10.9	0.0	3.9	7.0	9.5
LnGrp Delay(d),s/veh	33.0	1.1	25.2	69.7	39.7	32.9	67.9	65.2	0.0	66.8	57.1	72.4
LnGrp LOS	C	A	C	E	D	C	E	E		E	E	E
Approach Vol, veh/h	4104				2003				809			
Approach Delay, s/veh	11.9				40.8				66.2			
Approach LOS	B				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	28.0	44.1	54.0	16.0	28.8	13.4	84.7				
Change Period (Y+Rc), s	6.0	* 5.3	6.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	12.0	* 24	42.0	* 48	12.0	23.0	12.0	78.0				
Max Q Clear Time (g_c+I1), s	10.0	21.0	26.2	28.5	9.9	22.7	9.3	2.0				
Green Ext Time (p_c), s	0.8	1.7	11.9	16.2	0.1	0.1	0.1	74.7				

Intersection Summary

HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
16: Fidelity Way & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↑	↗	↙	↑↑↑		↗		
Traffic Volume (veh/h)	2543	52	118	2435	0	16		
Future Volume (veh/h)	2543	52	118	2435	0	16		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863		
Adj Flow Rate, veh/h	2677	55	124	2563	0	17		
Adj No. of Lanes	4	1	1	3	0	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	0	2		
Cap, veh/h	3132	774	158	3503	0	0		
Arrive On Green	0.49	0.49	0.09	0.69	0.00	0.00		
Sat Flow, veh/h	6669	1583	1774	5253	0			
Grp Volume(v), veh/h	2677	55	124	2563	0.0			
Grp Sat Flow(s),veh/h/ln	1602	1583	1774	1695				
Q Serve(g_s), s	16.5	0.8	3.1	14.2				
Cycle Q Clear(g_c), s	16.5	0.8	3.1	14.2				
Prop In Lane		1.00	1.00					
Lane Grp Cap(c), veh/h	3132	774	158	3503				
V/C Ratio(X)	0.85	0.07	0.79	0.73				
Avail Cap(c_a), veh/h	3133	774	158	3503				
HCM Platoon Ratio	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	10.1	6.1	20.1	4.4				
Incr Delay (d2), s/veh	2.5	0.0	22.6	0.8				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	7.6	0.4	2.5	6.7				
LnGrp Delay(d),s/veh	12.6	6.1	42.7	5.2				
LnGrp LOS	B	A	D	A				
Approach Vol, veh/h	2732			2687				
Approach Delay, s/veh	12.5			6.9				
Approach LOS	B			A				
Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4				8
Phs Duration (G+Y+Rc), s			9.0	27.0				36.0
Change Period (Y+Rc), s			5.0	5.0				5.0
Max Green Setting (Gmax), s			4.0	22.0				31.0
Max Q Clear Time (g_c+I1), s			5.1	18.5				16.2
Green Ext Time (p_c), s			0.0	3.5				14.7
Intersection Summary								
HCM 2010 Ctrl Delay			9.7					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
17: Washington Blvd & Blue Oaks Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↗↗	↑↑↑	↗	↗↗		↗↗	↗	↑↑	↗
Traffic Volume (veh/h)	0	2288	500	527	989	401	315	0	723	3	622	137
Future Volume (veh/h)	0	2288	500	527	989	401	315	0	723	3	622	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	1863	1863	0	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2408	526	555	1041	0	332	0	761	3	655	0
Adj No. of Lanes	0	4	1	2	3	1	2	0	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	2	2	0	2	2	2	2
Cap, veh/h	0	2107	499	649	2700	841	0	0	0	366	780	349
Arrive On Green	0.00	0.33	0.31	0.19	0.53	0.00	0.01	0.00	0.01	0.21	0.22	0.00
Sat Flow, veh/h	0	6669	1583	3442	5085	1583		0		1774	3539	1583
Grp Volume(v), veh/h	0	2408	526	555	1041	0		0.0		3	655	0
Grp Sat Flow(s),veh/h/ln	0	1602	1583	1721	1695	1583				1774	1770	1583
Q Serve(g_s), s	0.0	47.7	45.7	22.6	17.5	0.0				0.2	25.7	0.0
Cycle Q Clear(g_c), s	0.0	47.7	45.7	22.6	17.5	0.0				0.2	25.7	0.0
Prop In Lane	0.00		1.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2107	499	649	2700	841				366	780	349
V/C Ratio(X)	0.00	1.14	1.05	0.86	0.39	0.00				0.01	0.84	0.00
Avail Cap(c_a), veh/h	0	2107	499	736	2700	841				404	854	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	48.7	49.7	56.9	20.0	0.0				45.7	54.1	0.0
Incr Delay (d2), s/veh	0.0	70.6	55.5	8.0	0.4	0.0				0.0	7.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	31.4	27.6	11.5	8.3	0.0				0.1	13.4	0.0
LnGrp Delay(d),s/veh	0.0	119.3	105.2	64.9	20.5	0.0				45.7	62.0	0.0
LnGrp LOS		F	F	E	C					D	E	
Approach Vol, veh/h		2934			1596						658	
Approach Delay, s/veh		116.7			35.9						61.9	
Approach LOS		F			D						E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			29.3	51.7		35.9		81.0				
Change Period (Y+Rc), s			4.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s			29.0	42.0		33.0		75.0				
Max Q Clear Time (g_c+l1), s			24.6	49.7		27.7		19.5				
Green Ext Time (p_c), s			0.7	0.0		2.3		53.9				
Intersection Summary												
HCM 2010 Ctrl Delay			84.9									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary
18: Santucci Blvd & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	461	604	5	200	21	360	42	2	71	128	0
Future Volume (veh/h)	0	461	604	5	200	21	360	42	2	71	128	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	485	636	5	211	22	379	44	2	75	135	0
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	1716	743	37	2011	875	563	729	301	123	396	152
Arrive On Green	0.00	0.48	0.47	0.02	0.57	0.55	0.16	0.21	0.19	0.07	0.11	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	485	636	5	211	22	379	44	2	75	135	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	5.2	22.8	0.2	1.8	0.4	6.6	0.6	0.1	2.6	2.3	0.0
Cycle Q Clear(g_c), s	0.0	5.2	22.8	0.2	1.8	0.4	6.6	0.6	0.1	2.6	2.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	3	1716	743	37	2011	875	563	729	301	123	396	152
V/C Ratio(X)	0.00	0.28	0.86	0.13	0.10	0.03	0.67	0.06	0.01	0.61	0.34	0.00
Avail Cap(c_a), veh/h	139	1936	841	139	2011	875	968	1991	866	277	1548	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.8	15.1	30.8	6.3	6.5	25.2	20.4	21.0	28.9	26.2	0.0
Incr Delay (d2), s/veh	0.0	0.1	7.9	1.6	0.0	0.0	1.4	0.0	0.0	4.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	11.5	0.1	0.9	0.2	3.3	0.3	0.0	1.5	1.1	0.0
LnGrp Delay(d),s/veh	0.0	9.9	23.0	32.4	6.4	6.5	26.6	20.5	21.0	33.7	26.8	0.0
LnGrp LOS		A	C	C	A	A	C	C	C	C	C	
Approach Vol, veh/h	1121			238				425			210	
Approach Delay, s/veh	17.3			6.9				25.9			29.2	
Approach LOS	B			A				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	16.2	5.3	34.0	14.5	10.2	0.0	39.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	9.0	34.0	4.0	33.0	17.0	26.0	4.0	33.0				
Max Q Clear Time (g_c+I1), s	4.6	2.6	2.2	24.8	8.6	4.3	0.0	3.8				
Green Ext Time (p_c), s	0.0	1.0	0.0	4.2	0.9	0.9	0.0	8.6				
Intersection Summary												
HCM 2010 Ctrl Delay	19.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
19: Silver Spruce Dr & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗		
Traffic Volume (veh/h)	527	12	40	214	12	0		
Future Volume (veh/h)	527	12	40	214	12	0		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	555	13	42	225	13	0		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1265	566	69	1965	225	201		
Arrive On Green	0.36	0.36	0.04	0.56	0.13	0.00		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	555	13	42	225	13	0		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	3.8	0.2	0.7	1.0	0.2	0.0		
Cycle Q Clear(g_c), s	3.8	0.2	0.7	1.0	0.2	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1265	566	69	1965	225	201		
V/C Ratio(X)	0.44	0.02	0.61	0.11	0.06	0.00		
Avail Cap(c_a), veh/h	3261	1459	845	5510	1184	1056		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	7.7	6.6	14.9	3.3	12.1	0.0		
Incr Delay (d2), s/veh	0.2	0.0	8.3	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	0.1	0.5	0.4	0.1	0.0		
LnGrp Delay(d),s/veh	8.0	6.6	23.1	3.4	12.2	0.0		
LnGrp LOS	A	A	C	A	B			
Approach Vol, veh/h	568			267	13			
Approach Delay, s/veh	7.9			6.5	12.2			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	6.2	16.2				22.5
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		21.0	15.0	29.0				49.0
Max Q Clear Time (g_c+I1), s		2.2	2.7	5.8				3.0
Green Ext Time (p_c), s		0.0	0.0	5.6				6.3
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
20: Westbrook Blvd & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	518	8	35	221	201	17	822	78	395	831	88
Future Volume (veh/h)	145	518	8	35	221	201	17	822	78	395	831	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	153	545	8	37	233	212	18	865	82	416	875	93
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	1396	417	133	833	354	95	1310	568	536	2533	771
Arrive On Green	0.08	0.27	0.26	0.04	0.24	0.22	0.03	0.37	0.36	0.16	0.50	0.49
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	153	545	8	37	233	212	18	865	82	416	875	93
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	3.7	7.6	0.3	0.9	4.7	10.4	0.4	17.7	3.0	10.1	9.1	2.8
Cycle Q Clear(g_c), s	3.7	7.6	0.3	0.9	4.7	10.4	0.4	17.7	3.0	10.1	9.1	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	1396	417	133	833	354	95	1310	568	536	2533	771
V/C Ratio(X)	0.57	0.39	0.02	0.28	0.28	0.60	0.19	0.66	0.14	0.78	0.35	0.12
Avail Cap(c_a), veh/h	475	1987	601	475	1383	601	475	1586	692	633	2533	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	25.6	23.7	40.6	27.2	30.3	41.3	22.8	18.9	35.3	13.2	12.2
Incr Delay (d2), s/veh	1.9	0.2	0.0	1.1	0.2	1.6	0.9	0.8	0.1	5.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.6	0.1	0.5	2.3	4.7	0.2	8.8	1.3	5.2	4.2	1.2
LnGrp Delay(d),s/veh	40.6	25.8	23.8	41.8	27.4	31.9	42.3	23.6	19.0	40.4	13.3	12.2
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	B	B
Approach Vol, veh/h	706				482				965			
Approach Delay, s/veh	29.0				30.5				23.6			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	35.2	7.4	26.9	6.4	46.3	10.8	23.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	37.0	11.0	32.0	11.0	41.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	12.1	19.7	2.9	9.6	2.4	11.1	5.7	12.4				
Green Ext Time (p_c), s	0.5	10.5	0.0	6.3	0.0	14.9	0.2	6.0				
Intersection Summary												
HCM 2010 Ctrl Delay	24.7											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
21: Sierra Trail Dr & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	988	4	19	448	9	8	0	94	39	0	0
Future Volume (veh/h)	0	988	4	19	448	9	8	0	94	39	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	1040	4	20	472	9	8	0	99	41	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1650	738	35	2067	925	174	0	136	65	45	0
Arrive On Green	0.00	0.47	0.47	0.02	0.58	0.58	0.10	0.00	0.09	0.04	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	0	1583	1774	1863	0
Grp Volume(v), veh/h	0	1040	4	20	472	9	8	0	99	41	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	0
Q Serve(g_s), s	0.0	9.1	0.1	0.5	2.6	0.1	0.2	0.0	2.5	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.1	0.1	0.5	2.6	0.1	0.2	0.0	2.5	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	4	1650	738	35	2067	925	174	0	136	65	45	0
V/C Ratio(X)	0.00	0.63	0.01	0.57	0.23	0.01	0.05	0.00	0.73	0.63	0.00	0.00
Avail Cap(c_a), veh/h	174	2166	969	174	2166	969	174	0	1202	174	1414	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.2	5.8	19.8	4.1	3.6	16.7	0.0	18.2	19.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	13.5	0.1	0.0	0.5	0.0	7.2	9.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	0.0	0.3	1.3	0.0	0.1	0.0	1.3	0.6	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.6	5.8	33.3	4.1	3.6	17.2	0.0	25.4	29.3	0.0	0.0
LnGrp LOS		A	A	C	A	A	B		C	C		
Approach Vol, veh/h	1044			501				107			41	
Approach Delay, s/veh	8.6			5.3				24.8			29.3	
Approach LOS	A			A				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	7.5	4.8	23.0	8.0	5.0	0.0	27.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s	2.9	4.5	2.5	11.1	2.2	0.0	0.0	4.6				
Green Ext Time (p_c), s	0.0	0.5	0.0	8.0	0.0	0.0	0.0	10.0				
Intersection Summary												
HCM 2010 Ctrl Delay	9.2											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

22: Market St & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1059	12	104	515	151	26	158	207	22	224	124
Future Volume (veh/h)	99	1059	12	104	515	151	26	158	207	22	224	124
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	104	1115	13	109	542	159	27	166	218	23	236	131
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	1398	626	188	1403	628	142	376	320	128	362	308
Arrive On Green	0.10	0.40	0.40	0.11	0.40	0.40	0.08	0.20	0.20	0.07	0.19	0.19
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	104	1115	13	109	542	159	27	166	218	23	236	131
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.7	18.6	0.3	3.9	7.3	4.5	0.9	5.2	8.5	0.8	7.8	4.9
Cycle Q Clear(g_c), s	3.7	18.6	0.3	3.9	7.3	4.5	0.9	5.2	8.5	0.8	7.8	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	1398	626	188	1403	628	142	376	320	128	362	308
V/C Ratio(X)	0.56	0.80	0.02	0.58	0.39	0.25	0.19	0.44	0.68	0.18	0.65	0.43
Avail Cap(c_a), veh/h	319	1501	671	213	1403	628	558	773	657	558	809	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	17.8	12.3	28.4	14.4	13.5	28.7	23.3	24.6	29.1	24.8	23.6
Incr Delay (d2), s/veh	1.0	3.3	0.0	1.4	0.3	0.4	0.2	0.3	1.0	0.2	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	9.6	0.1	2.0	3.6	2.0	0.5	2.7	3.8	0.4	4.1	2.1
LnGrp Delay(d),s/veh	29.4	21.1	12.3	29.8	14.7	13.9	28.9	23.6	25.6	29.3	25.5	24.0
LnGrp LOS	C	C	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1232				810				411			
Approach Delay, s/veh	21.7				16.5				25.0			
Approach LOS	C				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	17.3	10.1	31.1	7.8	17.8	10.0	31.2				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.7	4.0	5.3	4.0	5.7				
Max Green Setting (Gmax), s	20.0	* 28	7.0	27.3	20.0	26.7	11.0	23.3				
Max Q Clear Time (g_c+I1), s	2.9	9.8	5.9	20.6	2.8	10.5	5.7	9.3				
Green Ext Time (p_c), s	0.0	2.0	0.0	4.8	0.0	2.0	0.0	11.9				

Intersection Summary

HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
23: Monument Dr & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1402	12	92	684	36	25	25	18	50	7	12
Future Volume (veh/h)	26	1402	12	92	684	36	25	25	18	50	7	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	1476	13	97	720	38	26	26	19	53	7	13
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1994	868	125	2160	966	78	82	70	106	83	94
Arrive On Green	0.04	0.56	0.55	0.07	0.61	0.61	0.04	0.04	0.04	0.06	0.04	0.06
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	27	1476	13	97	720	38	26	26	19	53	7	13
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	20.8	0.2	3.6	6.6	0.6	0.9	0.9	0.8	1.9	0.2	0.5
Cycle Q Clear(g_c), s	1.0	20.8	0.2	3.6	6.6	0.6	0.9	0.9	0.8	1.9	0.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1994	868	125	2160	966	78	82	70	106	83	94
V/C Ratio(X)	0.39	0.74	0.01	0.78	0.33	0.04	0.33	0.32	0.27	0.50	0.08	0.14
Avail Cap(c_a), veh/h	346	2087	910	319	2160	966	538	565	480	559	559	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	10.9	6.9	30.4	6.4	5.2	30.9	30.9	30.8	30.4	30.5	29.7
Incr Delay (d2), s/veh	1.4	1.6	0.0	3.8	0.2	0.0	0.9	0.8	0.8	1.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.5	0.1	1.9	3.2	0.3	0.5	0.5	0.4	1.0	0.1	0.2
LnGrp Delay(d),s/veh	32.6	12.5	6.9	34.3	6.5	5.2	31.8	31.7	31.6	31.7	30.7	30.0
LnGrp LOS	C	B	A	C	A	A	C	C	C	C	C	C
Approach Vol, veh/h	1516		855				71		73			
Approach Delay, s/veh	12.8		9.6				31.7		31.3			
Approach LOS	B		A				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	7.8		8.7	42.2	7.9		5.6	45.4				
Change Period (Y+Rc), s	4.9		4.0	5.7	4.9		4.0	5.7				
Max Green Setting (Gmax), s	20.2		12.0	38.3	20.0		12.0	38.3				
Max Q Clear Time (g_c+I1), s	2.9		5.6	22.8	3.9		3.0	8.6				
Green Ext Time (p_c), s	0.1		0.1	13.7	0.1		0.0	26.2				
Intersection Summary												
HCM 2010 Ctrl Delay	12.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
24: Upland Dr & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

									
Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗			
Traffic Volume (veh/h)	1448	97	35	531	40	120			
Future Volume (veh/h)	1448	97	35	531	40	120			
Number	4	14	3	8	5	12			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	1524	102	37	559	42	126			
Adj No. of Lanes	2	1	1	2	1	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	2			
Cap, veh/h	2046	915	56	2478	210	187			
Arrive On Green	0.58	0.58	0.03	0.70	0.12	0.12			
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583			
Grp Volume(v), veh/h	1524	102	37	559	42	126			
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583			
Q Serve(g_s), s	17.6	1.6	1.1	3.1	1.2	4.2			
Cycle Q Clear(g_c), s	17.6	1.6	1.1	3.1	1.2	4.2			
Prop In Lane		1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	2046	915	56	2478	210	187			
V/C Ratio(X)	0.74	0.11	0.66	0.23	0.20	0.67			
Avail Cap(c_a), veh/h	2247	1005	129	2825	515	460			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	8.6	5.2	26.4	2.9	21.9	23.3			
Incr Delay (d2), s/veh	1.3	0.1	12.8	0.0	0.5	4.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.8	0.7	0.8	1.5	0.6	2.1			
LnGrp Delay(d),s/veh	9.9	5.3	39.2	3.0	22.4	27.4			
LnGrp LOS	A	A	D	A	C	C			
Approach Vol, veh/h	1626			596	168				
Approach Delay, s/veh	9.6			5.2	26.2				
Approach LOS	A			A	C				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs		2	3	4				8	
Phs Duration (G+Y+Rc), s		11.5	6.7	36.9				43.6	
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0	
Max Green Setting (Gmax), s		16.0	4.0	35.0				44.0	
Max Q Clear Time (g_c+l1), s		6.2	3.1	19.6				5.1	
Green Ext Time (p_c), s		0.3	0.0	12.3				24.4	
Intersection Summary									
HCM 2010 Ctrl Delay			9.7						
HCM 2010 LOS			A						

HCM 2010 Signalized Intersection Summary

25: Fiddymment Rd & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	759	746	429	407	31	326	916	1012	39	1188	31
Future Volume (veh/h)	66	759	746	429	407	31	326	916	1012	39	1188	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	69	799	785	452	428	33	343	964	1065	41	1251	33
Adj No. of Lanes	2	2	1	3	2	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	1010	452	510	989	76	436	2233	695	212	1902	592
Arrive On Green	0.09	0.29	0.29	0.10	0.30	0.30	0.13	0.44	0.44	0.06	0.37	0.37
Sat Flow, veh/h	3442	3539	1583	5003	3331	256	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	69	799	785	452	227	234	343	964	1065	41	1251	33
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1668	1770	1818	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	2.0	22.5	30.8	9.6	11.1	11.2	10.4	14.2	47.4	1.2	22.0	1.4
Cycle Q Clear(g_c), s	2.0	22.5	30.8	9.6	11.1	11.2	10.4	14.2	47.4	1.2	22.0	1.4
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	1010	452	510	526	540	436	2233	695	212	1902	592
V/C Ratio(X)	0.22	0.79	1.74	0.89	0.43	0.43	0.79	0.43	1.53	0.19	0.66	0.06
Avail Cap(c_a), veh/h	351	1010	452	510	526	540	510	2233	695	287	1903	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	35.6	38.6	47.9	30.6	30.6	45.7	21.0	30.3	48.1	28.0	21.6
Incr Delay (d2), s/veh	0.1	4.7	341.2	16.5	0.8	0.8	5.7	0.3	246.6	0.2	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.7	56.3	5.2	5.5	5.7	5.3	6.7	68.2	0.6	10.5	0.6
LnGrp Delay(d),s/veh	45.7	40.4	379.7	64.4	31.4	31.4	51.5	21.2	276.9	48.3	29.1	21.7
LnGrp LOS	D	D	F	E	C	C	D	C	F	D	C	C
Approach Vol, veh/h	1653				913				2372			
Approach Delay, s/veh	201.8				47.8				140.4			
Approach LOS	F				D				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	50.0	14.0	34.3	16.7	43.0	12.7	35.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	8.0	44.0	10.0	* 28	15.0	37.0	10.0	28.0				
Max Q Clear Time (g_c+I1), s	3.2	49.4	11.6	32.8	12.4	24.0	4.0	13.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	12.7	0.0	11.8				

Intersection Summary

HCM 2010 Ctrl Delay 119.6
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

26: Pleasant Grove Blvd & Sun City Blvd

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	7	1765	772	69	207	18		
Future Volume (veh/h)	7	1765	772	69	207	18		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	7	1858	813	0	218	0		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	62	2433	2096	874	359	304		
Arrive On Green	0.03	0.69	0.59	0.00	0.20	0.00		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	7	1858	813	0	218	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.2	17.2	6.1	0.0	5.6	0.0		
Cycle Q Clear(g_c), s	0.2	17.2	6.1	0.0	5.6	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	62	2433	2096	874	359	304		
V/C Ratio(X)	0.11	0.76	0.39	0.00	0.61	0.00		
Avail Cap(c_a), veh/h	321	2632	2096	874	981	859		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	23.3	5.1	5.4	0.0	18.1	0.0		
Incr Delay (d2), s/veh	0.3	1.4	0.2	0.0	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	8.5	3.0	0.0	2.8	0.0		
LnGrp Delay(d),s/veh	23.6	6.5	5.6	0.0	18.7	0.0		
LnGrp LOS	C	A	A		B			
Approach Vol, veh/h		1865	813		218			
Approach Delay, s/veh		6.6	5.6		18.7			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				37.2		12.6	4.7	32.5
Change Period (Y+Rc), s				6.0		4.0	4.0	* 6
Max Green Setting (Gmax), s				34.0		26.0	8.0	* 22
Max Q Clear Time (g_c+I1), s				19.2		7.6	2.2	8.1
Green Ext Time (p_c), s				12.0		0.4	0.0	13.2
Intersection Summary								
HCM 2010 Ctrl Delay			7.2					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
27: Pleasant Grove Blvd & Rose Creek Rd

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	8	1924	815	10	47	13		
Future Volume (veh/h)	8	1924	815	10	47	13		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900		
Adj Flow Rate, veh/h	8	2025	858	11	49	14		
Adj No. of Lanes	1	2	2	0	0	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	0	0		
Cap, veh/h	65	2618	2284	29	173	49		
Arrive On Green	0.04	0.74	0.64	0.60	0.13	0.13		
Sat Flow, veh/h	1774	3632	3672	46	1324	378		
Grp Volume(v), veh/h	8	2025	424	445	64	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1855	1730	0		
Q Serve(g_s), s	0.2	16.1	5.3	5.3	1.5	0.0		
Cycle Q Clear(g_c), s	0.2	16.1	5.3	5.3	1.5	0.0		
Prop In Lane	1.00			0.02	0.77	0.22		
Lane Grp Cap(c), veh/h	65	2618	1130	1184	226	0		
V/C Ratio(X)	0.12	0.77	0.38	0.38	0.28	0.00		
Avail Cap(c_a), veh/h	499	2908	1130	1184	785	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	21.6	3.7	4.0	4.0	18.1	0.0		
Incr Delay (d2), s/veh	0.3	1.4	0.4	0.3	0.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	7.8	2.6	2.7	0.7	0.0		
LnGrp Delay(d),s/veh	21.9	5.1	4.3	4.3	18.4	0.0		
LnGrp LOS	C	A	A	A	B			
Approach Vol, veh/h	2033		869	64				
Approach Delay, s/veh	5.2		4.3	18.4				
Approach LOS	A		A	B				
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4	6			
Phs Duration (G+Y+Rc), s				37.2	9.0			
Change Period (Y+Rc), s				5.7	4.0			
Max Green Setting (Gmax), s				35.3	20.0			
Max Q Clear Time (g_c+I1), s				18.1	3.5			
Green Ext Time (p_c), s				13.4	0.1			
Intersection Summary								
HCM 2010 Ctrl Delay				5.2				
HCM 2010 LOS				A				
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
28: Pleasant Grove Blvd & Michener Dr

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	37	1997	815	14	2	42		
Future Volume (veh/h)	37	1997	815	14	2	42		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	39	2102	858	15	2	44		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	136	2710	2239	943	182	162		
Arrive On Green	0.08	0.77	0.63	0.60	0.10	0.10		
Sat Flow, veh/h	1774	3632	3632	1570	1774	1583		
Grp Volume(v), veh/h	39	2102	858	15	2	44		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1570	1774	1583		
Q Serve(g_s), s	1.1	18.2	6.2	0.2	0.1	1.4		
Cycle Q Clear(g_c), s	1.1	18.2	6.2	0.2	0.1	1.4		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	136	2710	2239	943	182	162		
V/C Ratio(X)	0.29	0.78	0.38	0.02	0.01	0.27		
Avail Cap(c_a), veh/h	267	2800	2239	943	702	626		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.1	3.6	4.7	4.3	21.4	22.0		
Incr Delay (d2), s/veh	0.4	1.5	0.2	0.0	0.0	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	9.0	3.0	0.1	0.0	1.2		
LnGrp Delay(d),s/veh	23.6	5.1	4.9	4.3	21.4	22.3		
LnGrp LOS	C	A	A	A	C	C		
Approach Vol, veh/h		2141	873		46			
Approach Delay, s/veh		5.4	4.9		22.3			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.6		8.4	7.1	37.6
Change Period (Y+Rc), s				6.7		4.0	4.0	6.7
Max Green Setting (Gmax), s				39.3		20.0	7.0	28.3
Max Q Clear Time (g_c+I1), s				20.2		3.4	3.1	8.2
Green Ext Time (p_c), s				17.8		0.0	0.0	19.6
Intersection Summary								
HCM 2010 Ctrl Delay			5.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
29: Woodcreek Oaks Blvd & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	1530	160	258	700	209	124	453	749	193	553	139
Future Volume (veh/h)	132	1530	160	258	700	209	124	453	749	193	553	139
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	139	1611	0	272	737	0	131	477	0	203	582	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	2109	633	401	2453	740	204	625	256	279	748	311
Arrive On Green	0.07	0.46	0.00	0.13	0.54	0.00	0.07	0.20	0.00	0.09	0.23	0.00
Sat Flow, veh/h	3097	4577	1425	3097	4577	1425	3097	3185	1425	3097	3185	1425
Grp Volume(v), veh/h	139	1611	0	272	737	0	131	477	0	203	582	0
Grp Sat Flow(s),veh/h/ln	1549	1526	1425	1549	1526	1425	1549	1593	1425	1549	1593	1425
Q Serve(g_s), s	5.3	35.1	0.0	10.1	10.7	0.0	5.0	17.0	0.0	7.7	20.5	0.0
Cycle Q Clear(g_c), s	5.3	35.1	0.0	10.1	10.7	0.0	5.0	17.0	0.0	7.7	20.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	2109	633	401	2453	740	204	625	256	279	748	311
V/C Ratio(X)	0.65	0.76	0.00	0.68	0.30	0.00	0.64	0.76	0.00	0.73	0.78	0.00
Avail Cap(c_a), veh/h	258	2109	633	401	2453	740	232	725	300	284	778	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.5	26.9	0.0	49.8	15.4	0.0	54.7	45.6	0.0	53.1	43.0	0.0
Incr Delay (d2), s/veh	2.4	2.7	0.0	3.8	0.1	0.0	3.1	5.1	0.0	7.7	5.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	15.3	0.0	4.5	4.5	0.0	2.2	7.9	0.0	3.6	9.6	0.0
LnGrp Delay(d),s/veh	56.9	29.6	0.0	53.6	15.5	0.0	57.8	50.6	0.0	60.8	48.5	0.0
LnGrp LOS	E	C		D	B		E	D		E	D	
Approach Vol, veh/h	1750			1009			608			785		
Approach Delay, s/veh	31.8			25.8			52.2			51.6		
Approach LOS	C			C			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	26.2	20.2	58.0	10.9	30.9	11.2	67.0				
Change Period (Y+Rc), s	5.7	* 5.7	5.7	* 5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	10.0	* 24	14.0	* 52	8.0	26.3	9.0	57.3				
Max Q Clear Time (g_c+I1), s	9.7	19.0	12.1	37.1	7.0	22.5	7.3	12.7				
Green Ext Time (p_c), s	0.2	1.6	0.3	10.5	0.0	1.7	0.0	7.5				

Intersection Summary

HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
30: Country Club Dr & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↱		↰	↑↑↑	↰	↱		
Traffic Volume (veh/h)	2627	11	105	948	191	208		
Future Volume (veh/h)	2627	11	105	948	191	208		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2765	12	111	998	201	219		
Adj No. of Lanes	3	0	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3184	14	136	3657	293	261		
Arrive On Green	0.61	0.59	0.08	0.72	0.17	0.17		
Sat Flow, veh/h	5394	23	1774	5253	1774	1583		
Grp Volume(v), veh/h	1793	984	111	998	201	219		
Grp Sat Flow(s),veh/h/ln	1695	1859	1774	1695	1774	1583		
Q Serve(g_s), s	52.6	52.8	7.4	8.2	12.8	16.1		
Cycle Q Clear(g_c), s	52.6	52.8	7.4	8.2	12.8	16.1		
Prop In Lane		0.01	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2066	1132	136	3657	293	261		
V/C Ratio(X)	0.87	0.87	0.82	0.27	0.69	0.84		
Avail Cap(c_a), veh/h	2066	1132	163	3657	390	348		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.4	19.5	54.6	5.9	47.2	48.5		
Incr Delay (d2), s/veh	5.3	9.2	19.9	0.2	1.4	9.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	25.9	29.7	4.4	3.9	6.4	7.7		
LnGrp Delay(d),s/veh	24.7	28.6	74.5	6.1	48.6	58.4		
LnGrp LOS	C	C	E	A	D	E		
Approach Vol, veh/h	2777			1109	420			
Approach Delay, s/veh	26.1			12.9	53.7			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.4	13.2	76.8				90.0
Change Period (Y+Rc), s		4.9	4.0	5.7				5.7
Max Green Setting (Gmax), s		25.1	11.0	69.3				84.3
Max Q Clear Time (g_c+I1), s		18.1	9.4	54.8				10.2
Green Ext Time (p_c), s		0.4	0.0	14.4				72.1
Intersection Summary								
HCM 2010 Ctrl Delay			25.4					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

31: Foothills Blvd & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	740	1936	69	554	831	98	79	1291	585	82	273	121
Future Volume (veh/h)	740	1936	69	554	831	98	79	1291	585	82	273	121
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	779	2038	0	583	875	0	83	1359	0	86	287	0
Adj No. of Lanes	2	3	1	3	3	1	2	3	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1146	2473	770	567	1366	425	124	1419	442	115	1770	437
Arrive On Green	0.33	0.49	0.00	0.11	0.27	0.00	0.04	0.28	0.00	0.03	0.28	0.00
Sat Flow, veh/h	3442	5085	1583	5003	5085	1583	3442	5085	1583	3442	6408	1583
Grp Volume(v), veh/h	779	2038	0	583	875	0	83	1359	0	86	287	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1668	1695	1583	1721	1695	1583	1721	1602	1583
Q Serve(g_s), s	29.3	51.5	0.0	17.0	22.8	0.0	3.6	39.4	0.0	3.7	5.1	0.0
Cycle Q Clear(g_c), s	29.3	51.5	0.0	17.0	22.8	0.0	3.6	39.4	0.0	3.7	5.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1146	2473	770	567	1366	425	124	1419	442	115	1770	437
V/C Ratio(X)	0.68	0.82	0.00	1.03	0.64	0.00	0.67	0.96	0.00	0.75	0.16	0.00
Avail Cap(c_a), veh/h	1146	2473	770	567	1366	425	184	1424	443	115	1770	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.1	33.0	0.0	66.5	48.5	0.0	71.4	53.2	0.0	71.9	41.1	0.0
Incr Delay (d2), s/veh	1.4	3.3	0.0	45.2	2.3	0.0	2.3	15.0	0.0	21.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	24.7	0.0	10.2	11.0	0.0	1.7	20.5	0.0	2.1	2.3	0.0
LnGrp Delay(d),s/veh	44.5	36.3	0.0	111.7	50.8	0.0	73.7	68.2	0.0	93.2	41.2	0.0
LnGrp LOS	D	D		F	D		E	E		F	D	
Approach Vol, veh/h	2817				1458				1442			
Approach Delay, s/veh	38.6				75.1				68.5			
Approach LOS	D				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	48.3	23.0	78.9	9.4	47.8	55.9	46.0				
Change Period (Y+Rc), s	4.0	* 6.4	6.0	5.7	4.0	6.4	5.7	5.7				
Max Green Setting (Gmax), s	5.0	* 42	17.0	64.3	8.0	38.6	41.3	40.3				
Max Q Clear Time (g_c+I1), s	5.7	41.4	19.0	53.5	5.6	7.1	31.3	24.8				
Green Ext Time (p_c), s	0.0	0.4	0.0	10.1	0.0	18.8	9.4	7.3				

Intersection Summary

HCM 2010 Ctrl Delay 55.3
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

32: Washington Blvd & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	1997	86	155	1061	124	138	907	432	77	421	325
Future Volume (veh/h)	262	1997	86	155	1061	124	138	907	432	77	421	325
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	276	2102	91	163	1117	0	145	955	0	81	443	342
Adj No. of Lanes	2	3	1	2	4	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	2339	728	334	2935	700	397	1111	472	178	1177	367
Arrive On Green	0.13	0.61	0.61	0.10	0.46	0.00	0.12	0.31	0.00	0.05	0.23	0.23
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	276	2102	91	163	1117	0	145	955	0	81	443	342
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	11.7	53.5	3.6	6.7	17.2	0.0	5.8	38.0	0.0	3.4	11.0	24.2
Cycle Q Clear(g_c), s	11.7	53.5	3.6	6.7	17.2	0.0	5.8	38.0	0.0	3.4	11.0	24.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	2339	728	334	2935	700	397	1111	472	178	1177	367
V/C Ratio(X)	0.81	0.90	0.12	0.49	0.38	0.00	0.37	0.86	0.00	0.45	0.38	0.93
Avail Cap(c_a), veh/h	390	2339	728	334	2935	700	397	1203	513	184	1614	502
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	26.1	16.4	64.2	26.7	0.0	61.3	48.4	0.0	69.1	48.5	32.9
Incr Delay (d2), s/veh	9.3	6.0	0.4	0.4	0.1	0.0	0.2	6.6	0.0	0.7	0.3	22.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	26.1	1.6	3.2	7.6	0.0	2.8	19.6	0.0	1.6	5.2	12.9
LnGrp Delay(d),s/veh	73.1	32.1	16.8	64.6	26.8	0.0	61.5	54.9	0.0	69.7	48.8	55.6
LnGrp LOS	E	C	B	E	C		E	D		E	D	E
Approach Vol, veh/h	2469				1280				1100			
Approach Delay, s/veh	36.1				31.6				55.8			
Approach LOS	D				C				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	50.1	17.2	72.0	22.7	38.1	17.9	71.3				
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0				
Max Green Setting (Gmax), s	7.0	47.6	7.0	66.0	10.0	* 45	16.0	59.0				
Max Q Clear Time (g_c+I1), s	5.4	40.0	8.7	55.5	7.8	26.2	13.7	19.2				
Green Ext Time (p_c), s	0.0	3.6	0.0	9.0	1.4	5.5	0.2	10.7				

Intersection Summary

HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

33: Pleasant Grove Blvd & Hallissy Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	2413	21	40	1220	78	45	39	35	106	3	27
Future Volume (veh/h)	28	2413	21	40	1220	78	45	39	35	106	3	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	29	2540	0	42	1284	0	47	41	0	112	3	0
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	2892	900	340	3818	1189	61	55	46	134	131	112
Arrive On Green	0.04	1.00	0.00	0.19	0.75	0.00	0.03	0.03	0.00	0.08	0.07	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	29	2540	0	42	1284	0	47	41	0	112	3	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.4	0.0	0.0	2.9	12.6	0.0	3.9	3.3	0.0	9.3	0.2	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	2.9	12.6	0.0	3.9	3.3	0.0	9.3	0.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	37	2892	900	340	3818	1189	61	55	46	134	131	112
V/C Ratio(X)	0.79	0.88	0.00	0.12	0.34	0.00	0.78	0.75	0.00	0.84	0.02	0.00
Avail Cap(c_a), veh/h	142	2892	900	340	3818	1189	142	236	201	189	274	233
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.6	0.0	0.0	50.2	6.2	0.0	71.9	72.3	0.0	68.5	64.9	0.0
Incr Delay (d2), s/veh	12.8	4.2	0.0	0.1	0.1	0.0	7.7	14.2	0.0	14.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.1	0.0	1.5	5.9	0.0	2.1	1.9	0.0	5.1	0.1	0.0
LnGrp Delay(d),s/veh	84.4	4.2	0.0	50.3	6.3	0.0	79.6	86.5	0.0	83.0	65.0	0.0
LnGrp LOS	F	A		D	A		E	F		F	E	
Approach Vol, veh/h	2569			1326			88			115		
Approach Delay, s/veh	5.1			7.7			82.8			82.5		
Approach LOS	A			A			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	9.3	34.4	91.0	9.1	15.5	7.1	118.3				
Change Period (Y+Rc), s	4.0	* 4.9	5.7	* 5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	16.0	* 19	12.0	* 85	12.0	22.1	12.0	85.3				
Max Q Clear Time (g_c+I1), s	11.3	5.3	4.9	2.0	5.9	2.2	4.4	14.6				
Green Ext Time (p_c), s	0.1	0.1	0.2	69.8	0.0	0.1	0.0	22.4				

Intersection Summary

HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

34: Roseville Pkwy & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1410	1081	1046	833	186	566	1051	488	160	1010	36
Future Volume (veh/h)	29	1410	1081	1046	833	186	566	1051	488	160	1010	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	31	1484	0	1101	877	0	596	1106	0	168	1063	0
Adj No. of Lanes	3	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1203	517	849	2655	805	597	1392	408	244	963	274
Arrive On Green	0.05	0.34	0.00	0.25	0.52	0.00	0.06	0.09	0.00	0.07	0.19	0.00
Sat Flow, veh/h	5003	3539	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	31	1484	0	1101	877	0	596	1106	0	168	1063	0
Grp Sat Flow(s),veh/h/ln	1668	1770	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.9	51.0	0.0	37.0	14.9	0.0	26.0	32.0	0.0	7.2	28.4	0.0
Cycle Q Clear(g_c), s	0.9	51.0	0.0	37.0	14.9	0.0	26.0	32.0	0.0	7.2	28.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	1203	517	849	2655	805	597	1392	408	244	963	274
V/C Ratio(X)	0.12	1.23	0.00	1.30	0.33	0.00	1.00	0.79	0.00	0.69	1.10	0.00
Avail Cap(c_a), veh/h	334	1203	517	849	2655	805	597	1392	408	443	963	274
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.6	49.5	0.0	56.5	20.7	0.0	70.7	64.1	0.0	68.1	60.8	0.0
Incr Delay (d2), s/veh	0.1	112.3	0.0	142.3	0.3	0.0	36.6	3.5	0.0	5.0	61.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	43.7	0.0	34.3	7.1	0.0	15.4	15.5	0.0	3.6	18.8	0.0
LnGrp Delay(d),s/veh	67.7	161.8	0.0	198.8	21.0	0.0	107.3	67.6	0.0	73.1	122.6	0.0
LnGrp LOS	E	F		F	C		F	E		E	F	
Approach Vol, veh/h	1515				1978				1702			
Approach Delay, s/veh	159.9				120.0				81.5			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	45.7	40.0	54.0	28.0	33.0	13.0	81.0				
Change Period (Y+Rc), s	5.7	8.0	4.0	6.0	3.0	* 8	6.0	* 5.7				
Max Green Setting (Gmax), s	18.3	24.0	36.0	48.0	25.0	* 25	9.0	* 75				
Max Q Clear Time (g_c+I1), s	9.2	34.0	39.0	53.0	28.0	30.4	2.9	16.9				
Green Ext Time (p_c), s	0.5	0.0	0.0	0.0	0.0	0.0	5.0	12.1				

Intersection Summary

HCM 2010 Ctrl Delay 118.4
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
35: Pleasant Grove Blvd & Highland Pointe Dr/Wal-Mart

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	4	161	58	15	47	212	1680	113	318	1797	187
Future Volume (veh/h)	214	4	161	58	15	47	212	1680	113	318	1797	187
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	225	4	169	61	16	49	223	1768	119	335	1892	197
Adj No. of Lanes	2	1	1	2	1	1	2	4	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	413	236	201	200	108	92	294	2941	198	901	3351	1043
Arrive On Green	0.12	0.13	0.13	0.06	0.06	0.06	0.09	0.48	0.48	0.26	0.66	0.66
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	6179	416	3442	5085	1583
Grp Volume(v), veh/h	225	4	169	61	16	49	223	1375	512	335	1892	197
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1602	1789	1721	1695	1583
Q Serve(g_s), s	9.2	0.3	15.7	2.5	1.2	4.5	9.5	31.5	31.5	11.9	30.3	7.3
Cycle Q Clear(g_c), s	9.2	0.3	15.7	2.5	1.2	4.5	9.5	31.5	31.5	11.9	30.3	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	413	236	201	200	108	92	294	2288	852	901	3351	1043
V/C Ratio(X)	0.54	0.02	0.84	0.31	0.15	0.53	0.76	0.60	0.60	0.37	0.56	0.19
Avail Cap(c_a), veh/h	413	236	201	413	224	190	413	2288	852	901	3351	1043
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.1	57.3	64.0	67.7	67.1	68.7	67.1	28.8	28.8	45.3	13.9	10.0
Incr Delay (d2), s/veh	1.5	0.0	26.4	0.9	0.6	4.7	5.1	1.2	3.1	0.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.1	8.3	1.2	0.6	2.1	4.7	14.1	16.2	5.7	14.1	3.2
LnGrp Delay(d),s/veh	63.6	57.4	90.4	68.6	67.7	73.4	72.2	30.0	32.0	45.5	14.1	10.0
LnGrp LOS	E	E	F	E	E	E	E	C	C	D	B	B
Approach Vol, veh/h	398				126				2110			
Approach Delay, s/veh	74.9				70.3				35.0			
Approach LOS	E				E				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	43.3	74.0		21.0	15.8	101.5		11.7				
Change Period (Y+Rc), s	6.0	* 6		4.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	29.0	* 68		17.0	17.0	81.0		16.0				
Max Q Clear Time (g_c+I1), s	13.9	33.5		17.7	11.5	32.3		6.5				
Green Ext Time (p_c), s	9.3	16.8		0.0	0.3	26.0		0.2				

Intersection Summary

HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
36: Pleasant Grove Blvd & Hwy-65 SB Ramps

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↖		↖
Traffic Volume (veh/h)	0	1194	829	0	1781	554	0	0	0	125	0	544
Future Volume (veh/h)	0	1194	829	0	1781	554	0	0	0	125	0	544
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1909	1909	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	1257	873	0	1875	0				132	0	573
Adj No. of Lanes	0	3	1	0	3	1				2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	3265	995	0	3185	992				873	0	707
Arrive On Green	0.00	0.63	0.61	0.00	1.00	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	5384	1623	0	5253	1583				3442	0	2787
Grp Volume(v), veh/h	0	1257	873	0	1875	0				132	0	573
Grp Sat Flow(s),veh/h/ln	0	1737	1623	0	1695	1583				1721	0	1393
Q Serve(g_s), s	0.0	8.9	33.8	0.0	0.0	0.0				2.2	0.0	14.5
Cycle Q Clear(g_c), s	0.0	8.9	33.8	0.0	0.0	0.0				2.2	0.0	14.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3265	995	0	3185	992				873	0	707
V/C Ratio(X)	0.00	0.38	0.88	0.00	0.59	0.00				0.15	0.00	0.81
Avail Cap(c_a), veh/h	0	3265	995	0	3185	992				1133	0	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.78	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	12.1	0.0	0.0	0.0				21.7	0.0	26.3
Incr Delay (d2), s/veh	0.0	0.3	10.8	0.0	0.3	0.0				0.0	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	17.8	0.0	0.1	0.0				1.1	0.0	5.9
LnGrp Delay(d),s/veh	0.0	7.2	23.0	0.0	0.3	0.0				21.8	0.0	29.6
LnGrp LOS		A	C		A					C		C
Approach Vol, veh/h	2130				1875						705	
Approach Delay, s/veh	13.7				0.3						28.1	
Approach LOS	B				A						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	51.7		23.3		51.7							
Change Period (Y+Rc), s	5.7		5.3		5.7							
Max Green Setting (Gmax), s	40.3		23.7		40.3							
Max Q Clear Time (g_c+I1), s	35.8		16.5		2.0							
Green Ext Time (p_c), s	4.5		1.5		36.4							
Intersection Summary												
HCM 2010 Ctrl Delay			10.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
37: Hwy-65 NB Ramps & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗		↑↑↑	↖↖↖	↗↗		
Traffic Volume (veh/h)	937	243	0	1817	585	431		
Future Volume (veh/h)	937	243	0	1817	585	431		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1909	1909	0	1863	1863	1863		
Adj Flow Rate, veh/h	986	0	0	1913	616	454		
Adj No. of Lanes	3	1	0	3	3	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	0	2	2	2		
Cap, veh/h	3218	1002	0	3139	1055	588		
Arrive On Green	1.00	0.00	0.00	0.62	0.21	0.21		
Sat Flow, veh/h	5384	1623	0	5421	5003	2787		
Grp Volume(v), veh/h	986	0	0	1913	616	454		
Grp Sat Flow(s),veh/h/ln	1737	1623	0	1695	1668	1393		
Q Serve(g_s), s	0.0	0.0	0.0	17.3	8.3	11.5		
Cycle Q Clear(g_c), s	0.0	0.0	0.0	17.3	8.3	11.5		
Prop In Lane		1.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3218	1002	0	3139	1055	588		
V/C Ratio(X)	0.31	0.00	0.00	0.61	0.58	0.77		
Avail Cap(c_a), veh/h	3218	1002	0	3139	1181	658		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.94	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	0.0	0.0	8.8	26.6	27.9		
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.9	0.3	4.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	8.2	3.8	4.8		
LnGrp Delay(d),s/veh	0.1	0.0	0.0	9.7	26.9	32.2		
LnGrp LOS	A			A	C	C		
Approach Vol, veh/h	986			1913	1070			
Approach Delay, s/veh	0.1			9.7	29.2			
Approach LOS	A			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		51.0				51.0		22.1
Change Period (Y+Rc), s		5.7				5.7		7.3
Max Green Setting (Gmax), s		29.3				45.3		16.7
Max Q Clear Time (g_c+I1), s		2.0				19.3		13.5
Green Ext Time (p_c), s		23.6				22.6		1.3
Intersection Summary								
HCM 2010 Ctrl Delay			12.5					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

38: Pleasant Grove Blvd & Fairway Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	130	277	358	217	36	344	661	310	98	1261	94
Future Volume (veh/h)	62	130	277	358	217	36	344	661	310	98	1261	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1909	1909	1909	1863	1863	1863
Adj Flow Rate, veh/h	65	137	292	377	228	38	362	696	326	103	1327	99
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	393	176	428	727	325	426	2388	945	147	1875	584
Arrive On Green	0.03	0.11	0.11	0.12	0.21	0.21	0.12	0.46	0.46	0.04	0.37	0.37
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3528	5212	1623	3442	5085	1583
Grp Volume(v), veh/h	65	137	292	377	228	38	362	696	326	103	1327	99
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1764	1737	1623	1721	1695	1583
Q Serve(g_s), s	2.8	5.4	10.5	16.2	8.2	2.9	15.1	12.5	15.7	4.4	33.4	4.0
Cycle Q Clear(g_c), s	2.8	5.4	10.5	16.2	8.2	2.9	15.1	12.5	15.7	4.4	33.4	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	393	176	428	727	325	426	2388	945	147	1875	584
V/C Ratio(X)	0.63	0.35	1.66	0.88	0.31	0.12	0.85	0.29	0.34	0.70	0.71	0.17
Avail Cap(c_a), veh/h	275	621	278	597	960	430	541	2388	945	275	1875	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	61.7	26.2	64.6	50.6	48.5	64.6	25.4	16.4	70.9	40.4	12.9
Incr Delay (d2), s/veh	2.3	0.7	321.2	8.6	0.4	0.3	8.3	0.3	1.0	2.3	2.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.7	20.3	8.2	4.1	1.3	7.8	6.1	7.3	2.1	16.0	1.8
LnGrp Delay(d),s/veh	74.2	62.4	347.4	73.2	51.0	48.8	72.9	25.7	17.4	73.1	42.7	13.6
LnGrp LOS	E	E	F	E	D	D	E	C	B	E	D	B
Approach Vol, veh/h	494				643				1384			
Approach Delay, s/veh	232.4				63.9				36.1			
Approach LOS	F				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	74.4	22.7	22.4	23.8	61.0	8.5	36.5				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	* 5.7				
Max Green Setting (Gmax), s	12.0	66.3	26.0	26.3	23.0	* 55	12.0	* 41				
Max Q Clear Time (g_c+I1), s	6.4	17.7	18.2	12.5	17.1	35.4	4.8	10.2				
Green Ext Time (p_c), s	0.1	12.8	0.5	4.2	1.0	13.2	0.0	5.6				

Intersection Summary

HCM 2010 Ctrl Delay	67.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
39: Pleasant Grove Blvd & Highland Park Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	18	50	137	12	35	13	512	149	79	1328	3
Future Volume (veh/h)	9	18	50	137	12	35	13	512	149	79	1328	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1710	1676	1676	1710	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	9	19	53	144	13	37	14	539	157	83	1398	3
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	28	79	180	66	187	28	2922	910	115	2206	987
Arrive On Green	0.01	0.07	0.07	0.11	0.17	0.17	0.02	0.64	0.64	0.07	0.69	0.69
Sat Flow, veh/h	1597	392	1092	1597	386	1097	1597	4577	1425	1597	3185	1425
Grp Volume(v), veh/h	9	0	72	144	0	50	14	539	157	83	1398	3
Grp Sat Flow(s),veh/h/ln	1597	0	1484	1597	0	1483	1597	1526	1425	1597	1593	1425
Q Serve(g_s), s	0.7	0.0	5.7	10.6	0.0	3.5	1.0	5.8	5.4	6.1	28.9	0.1
Cycle Q Clear(g_c), s	0.7	0.0	5.7	10.6	0.0	3.5	1.0	5.8	5.4	6.1	28.9	0.1
Prop In Lane	1.00		0.74	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	24	0	108	180	0	253	28	2922	910	115	2206	987
V/C Ratio(X)	0.38	0.00	0.67	0.80	0.00	0.20	0.49	0.18	0.17	0.72	0.63	0.00
Avail Cap(c_a), veh/h	53	0	241	239	0	414	53	2922	910	173	2206	987
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	0.0	54.4	51.9	0.0	42.9	58.4	8.9	8.8	54.5	10.1	5.7
Incr Delay (d2), s/veh	3.7	0.0	6.0	9.5	0.0	0.3	4.8	0.1	0.4	3.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.5	5.1	0.0	1.5	0.5	2.5	2.2	2.8	12.7	0.0
LnGrp Delay(d),s/veh	62.3	0.0	60.4	61.4	0.0	43.2	63.2	9.0	9.2	57.7	10.9	5.7
LnGrp LOS	E		E	E		D	E	A	A	E	B	A
Approach Vol, veh/h	81		194				710				1484	
Approach Delay, s/veh	60.6		56.7				10.1				13.5	
Approach LOS	E		E				B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	79.6	16.6	12.2	5.1	86.1	4.8	24.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	12.0	54.0	17.0	18.0	3.0	63.0	3.0	32.0				
Max Q Clear Time (g_c+I1), s	8.1	7.8	12.6	7.7	3.0	30.9	2.7	5.5				
Green Ext Time (p_c), s	0.0	30.4	0.1	0.2	0.0	23.5	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			17.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
40: Vista Grande Blvd & Santucci Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	10	24	62	3	60	6	587	55	42	1136	3
Future Volume (veh/h)	6	10	24	62	3	60	6	587	55	42	1136	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	6	11	25	65	3	63	6	618	58	44	1196	3
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	11	118	53	93	280	125	11	1771	552	69	1937	603
Arrive On Green	0.01	0.03	0.03	0.05	0.08	0.08	0.01	0.35	0.35	0.04	0.38	0.38
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	6	11	25	65	3	63	6	618	58	44	1196	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.1	0.1	0.6	1.4	0.0	1.4	0.1	3.4	0.9	0.9	7.2	0.0
Cycle Q Clear(g_c), s	0.1	0.1	0.6	1.4	0.0	1.4	0.1	3.4	0.9	0.9	7.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	11	118	53	93	280	125	11	1771	552	69	1937	603
V/C Ratio(X)	0.52	0.09	0.47	0.70	0.01	0.50	0.52	0.35	0.11	0.63	0.62	0.00
Avail Cap(c_a), veh/h	514	2984	1335	514	2984	1335	514	2144	668	514	2144	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	17.8	18.0	17.7	16.1	16.8	18.8	9.2	8.4	18.0	9.5	7.3
Incr Delay (d2), s/veh	32.4	0.3	6.5	9.2	0.0	3.1	32.4	0.1	0.1	9.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.3	0.9	0.0	0.7	0.2	1.6	0.4	0.6	3.4	0.0
LnGrp Delay(d),s/veh	51.2	18.1	24.5	26.9	16.1	19.9	51.2	9.3	8.4	27.2	10.0	7.3
LnGrp LOS	D	B	C	C	B	B	D	A	A	C	A	A
Approach Vol, veh/h	42				131				682			
Approach Delay, s/veh	26.6				23.3				9.6			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	18.2	7.0	6.3	5.2	19.5	5.2	8.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	11.0	32.0	11.0	16.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	2.9	5.4	3.4	2.6	2.1	9.2	2.1	3.4				
Green Ext Time (p_c), s	0.0	7.6	0.1	0.3	0.0	5.2	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	11.4											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

41: Silver Spruce Dr & Vista Grande Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	137	3	2	84	8	6	1	0	38	5	1
Future Volume (veh/h)	0	137	3	2	84	8	6	1	0	38	5	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	144	3	2	88	8	6	1	0	40	5	1
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	451	202	5	971	434	11	5	5	514	530	450
Arrive On Green	0.00	0.13	0.13	0.00	0.27	0.27	0.01	0.00	0.00	0.29	0.28	0.28
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	144	3	2	88	8	6	1	0	40	5	1
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	1.3	0.1	0.0	0.6	0.1	0.1	0.0	0.0	0.6	0.1	0.0
Cycle Q Clear(g_c), s	0.0	1.3	0.1	0.0	0.6	0.1	0.1	0.0	0.0	0.6	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	451	202	5	971	434	11	5	5	514	530	450
V/C Ratio(X)	0.00	0.32	0.01	0.39	0.09	0.02	0.52	0.19	0.00	0.08	0.01	0.00
Avail Cap(c_a), veh/h	206	1662	743	206	1713	766	206	1555	1321	566	1933	1643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.7	13.2	17.2	9.3	9.1	17.1	17.2	0.0	8.9	8.9	8.8
Incr Delay (d2), s/veh	0.0	0.4	0.0	41.8	0.0	0.0	32.2	15.7	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	0.1	0.3	0.1	0.2	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.1	13.2	59.0	9.4	9.1	49.2	32.9	0.0	9.0	8.9	8.8
LnGrp LOS		B	B	E	A	A	D	C		A	A	A
Approach Vol, veh/h		147			98			7			46	
Approach Delay, s/veh		14.1			10.4			46.9			9.0	
Approach LOS		B			B			D			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	5.0	5.1	9.4	5.2	14.8	0.0	14.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	* 5				
Max Green Setting (Gmax), s	11.0	28.8	4.0	16.2	4.0	35.8	4.0	* 17				
Max Q Clear Time (g_c+I1), s	2.6	2.0	2.0	3.3	2.1	2.1	0.0	2.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.2				

Intersection Summary

HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

42: Westbrook Blvd & Vista Grande Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	154	20	188	54	85	11	751	410	64	1210	9
Future Volume (veh/h)	28	154	20	188	54	85	11	751	410	64	1210	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	29	162	21	198	57	89	12	791	432	67	1274	9
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	374	167	232	690	309	50	2284	685	113	2462	741
Arrive On Green	0.04	0.11	0.11	0.13	0.19	0.19	0.03	0.45	0.43	0.06	0.48	0.47
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	29	162	21	198	57	89	12	791	432	67	1274	9
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.0	2.6	0.7	6.7	0.8	2.9	0.4	6.2	13.0	2.2	10.5	0.2
Cycle Q Clear(g_c), s	1.0	2.6	0.7	6.7	0.8	2.9	0.4	6.2	13.0	2.2	10.5	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	374	167	232	690	309	50	2284	685	113	2462	741
V/C Ratio(X)	0.39	0.43	0.13	0.85	0.08	0.29	0.24	0.35	0.63	0.59	0.52	0.01
Avail Cap(c_a), veh/h	145	1913	856	232	2087	934	145	2391	718	145	2462	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	25.6	24.7	25.9	20.1	21.0	29.0	11.0	13.5	27.8	10.8	8.7
Incr Delay (d2), s/veh	1.2	0.3	0.1	23.8	0.0	0.2	0.9	0.2	3.0	1.9	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	0.3	4.8	0.4	1.3	0.2	2.9	6.2	1.2	4.9	0.1
LnGrp Delay(d),s/veh	29.7	25.9	24.9	49.8	20.1	21.2	29.9	11.2	16.5	29.7	11.3	8.7
LnGrp LOS	C	C	C	D	C	C	C	B	B	C	B	A
Approach Vol, veh/h	212				344		1235				1350	
Approach Delay, s/veh	26.3				37.5		13.2				12.2	
Approach LOS	C				D		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	30.7	12.0	10.5	5.7	32.9	6.6	15.9				
Change Period (Y+Rc), s	5.0	5.3	5.0	5.0	5.0	5.3	5.0	5.0				
Max Green Setting (Gmax), s	4.0	26.7	7.0	32.0	4.0	26.7	4.0	35.0				
Max Q Clear Time (g_c+I1), s	4.2	15.0	8.7	4.6	2.4	12.5	3.0	4.9				
Green Ext Time (p_c), s	0.0	10.4	0.0	1.1	0.0	13.6	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			16.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

43: Vista Park Dr & Vista Grande Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	1	648	0	3	298	0	40	1	15	0	0	1
Future Volume (veh/h)	1	648	0	3	298	0	40	1	15	0	0	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	682	0	3	314	0	42	1	16	0	0	1
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1287	576	6	1295	579	66	486	413	4	185	157
Arrive On Green	0.00	0.36	0.00	0.00	0.37	0.00	0.04	0.26	0.26	0.00	0.00	0.10
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	1	682	0	3	314	0	42	1	16	0	0	1
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	6.1	0.0	0.1	2.5	0.0	0.9	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.1	0.0	0.1	2.5	0.0	0.9	0.0	0.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1287	576	6	1295	579	66	486	413	4	185	157
V/C Ratio(X)	0.23	0.53	0.00	0.52	0.24	0.00	0.64	0.00	0.04	0.00	0.00	0.01
Avail Cap(c_a), veh/h	176	2284	1022	176	2284	1022	264	1434	1218	176	1341	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	10.1	0.0	20.0	8.9	0.0	19.1	11.0	11.1	0.0	0.0	16.4
Incr Delay (d2), s/veh	24.3	0.3	0.0	56.6	0.1	0.0	9.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	0.0	0.1	1.2	0.0	0.6	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	44.3	10.4	0.0	76.6	9.0	0.0	28.8	11.0	11.2	0.0	0.0	16.4
LnGrp LOS	D	B		E	A		C	B	B			B
Approach Vol, veh/h	683			317			59			1		
Approach Delay, s/veh	10.5			9.6			23.7			16.4		
Approach LOS	B			A			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	15.5	5.1	19.7	6.5	9.0	5.0	19.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	26.0	6.0	29.0	4.0	26.0				
Max Q Clear Time (g_c+I1), s	0.0	2.3	2.1	8.1	2.9	2.0	2.0	4.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	6.5	0.0	0.0	0.0	7.1				
Intersection Summary												
HCM 2010 Ctrl Delay			11.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

44: Market St & Vista Grande Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	701	72	8	190	4	82	33	31	7	106	61
Future Volume (veh/h)	34	701	72	8	190	4	82	33	31	7	106	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	36	738	76	8	200	4	86	35	33	7	112	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	1330	554	62	1243	514	158	448	339	60	345	252
Arrive On Green	0.06	0.38	0.35	0.03	0.35	0.32	0.09	0.24	0.21	0.03	0.19	0.16
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	36	738	76	8	200	4	86	35	33	7	112	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.7	6.3	1.2	0.2	1.5	0.1	1.8	0.6	0.6	0.1	2.0	1.3
Cycle Q Clear(g_c), s	0.7	6.3	1.2	0.2	1.5	0.1	1.8	0.6	0.6	0.1	2.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	1330	554	62	1243	514	158	448	339	60	345	252
V/C Ratio(X)	0.34	0.55	0.14	0.13	0.16	0.01	0.54	0.08	0.10	0.12	0.32	0.25
Avail Cap(c_a), veh/h	256	1719	728	256	1719	728	256	1394	1143	256	1394	1143
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	9.4	8.5	17.8	8.5	8.7	16.6	11.2	12.0	17.8	13.5	14.0
Incr Delay (d2), s/veh	1.9	0.4	0.1	0.9	0.1	0.0	2.9	0.1	0.1	0.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.0	0.6	0.1	0.7	0.0	1.0	0.3	0.3	0.1	1.1	0.6
LnGrp Delay(d),s/veh	19.1	9.7	8.6	18.8	8.6	8.7	19.5	11.3	12.1	18.7	14.0	14.6
LnGrp LOS	B	A	A	B	A	A	B	B	B	B	B	B
Approach Vol, veh/h	850				212				154			
Approach Delay, s/veh	10.0				8.9				16.1			
Approach LOS	B				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.8	11.7	4.8	16.8	6.9	9.6	5.8	15.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.5	26.5	4.5	16.5	4.5	26.5	4.5	16.5				
Max Q Clear Time (g_c+I1), s	2.1	2.6	2.2	8.3	3.8	4.0	2.7	3.5				
Green Ext Time (p_c), s	0.0	1.1	0.0	4.1	0.0	1.1	0.0	5.5				
Intersection Summary												
HCM 2010 Ctrl Delay	11.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

45: Monarch Grove St & Vista Grande Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	841	7	13	201	0	19	3	87	0	2	17
Future Volume (veh/h)	14	841	7	13	201	0	19	3	87	0	2	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	885	7	14	212	0	20	3	92	0	2	18
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	1500	671	25	1496	669	35	415	353	4	168	143
Arrive On Green	0.02	0.42	0.42	0.01	0.42	0.00	0.02	0.22	0.22	0.00	0.09	0.09
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	15	885	7	14	212	0	20	3	92	0	2	18
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.4	8.5	0.1	0.3	1.6	0.0	0.5	0.1	2.1	0.0	0.0	0.5
Cycle Q Clear(g_c), s	0.4	8.5	0.1	0.3	1.6	0.0	0.5	0.1	2.1	0.0	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	27	1500	671	25	1496	669	35	415	353	4	168	143
V/C Ratio(X)	0.56	0.59	0.01	0.55	0.14	0.00	0.57	0.01	0.26	0.00	0.01	0.13
Avail Cap(c_a), veh/h	160	2639	1181	160	2639	1181	200	1221	1037	160	1178	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	9.8	7.4	21.7	7.8	0.0	21.5	13.4	14.2	0.0	18.3	18.5
Incr Delay (d2), s/veh	16.6	0.4	0.0	17.4	0.0	0.0	13.9	0.0	0.4	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.1	0.1	0.3	0.8	0.0	0.4	0.0	1.0	0.0	0.0	0.2
LnGrp Delay(d),s/veh	38.3	10.2	7.4	39.1	7.9	0.0	35.4	13.4	14.6	0.0	18.4	18.9
LnGrp LOS	D	B	A	D	A		D	B	B		B	B
Approach Vol, veh/h	907				226				115			
Approach Delay, s/veh	10.6				9.8				18.2			
Approach LOS	B				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	14.9	5.6	23.8	5.9	9.0	5.7	23.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	29.0	4.0	33.0	5.0	28.0	4.0	33.0				
Max Q Clear Time (g_c+I1), s	0.0	4.1	2.3	10.5	2.5	2.5	2.4	3.6				
Green Ext Time (p_c), s	0.0	0.3	0.0	8.2	0.0	0.3	0.0	9.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

46: Upland Dr & Vista Grande Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	784	106	86	178	3	20	30	45	18	98	16
Future Volume (veh/h)	37	784	106	86	178	3	20	30	45	18	98	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	39	825	112	91	187	3	21	32	47	19	103	17
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	1650	706	153	1763	756	72	275	201	69	272	198
Arrive On Green	0.05	0.47	0.45	0.09	0.50	0.48	0.04	0.15	0.13	0.04	0.15	0.13
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	39	825	112	91	187	3	21	32	47	19	103	17
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	7.9	2.1	2.4	1.4	0.0	0.6	0.7	1.3	0.5	2.4	0.5
Cycle Q Clear(g_c), s	1.0	7.9	2.1	2.4	1.4	0.0	0.6	0.7	1.3	0.5	2.4	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	1650	706	153	1763	756	72	275	201	69	272	198
V/C Ratio(X)	0.41	0.50	0.16	0.60	0.11	0.00	0.29	0.12	0.23	0.27	0.38	0.09
Avail Cap(c_a), veh/h	456	2095	904	456	2095	904	456	708	569	456	708	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	9.0	8.0	21.4	6.5	6.7	22.7	18.0	19.1	22.7	18.8	18.8
Incr Delay (d2), s/veh	2.7	0.5	0.2	3.7	0.1	0.0	2.2	0.2	0.6	2.1	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.9	0.9	1.3	0.7	0.0	0.3	0.4	0.6	0.3	1.3	0.2
LnGrp Delay(d),s/veh	25.0	9.5	8.3	25.1	6.5	6.7	24.8	18.2	19.7	24.8	19.7	19.0
LnGrp LOS	C	A	A	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h	976				281				100		139	
Approach Delay, s/veh	10.0				12.5				20.3		20.3	
Approach LOS	B				B				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	9.7	7.7	25.9	5.5	9.6	6.1	27.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	5.2	4.5	4.5	4.5	5.2				
Max Green Setting (Gmax), s	11.5	16.5	11.5	26.8	11.5	16.5	11.5	26.8				
Max Q Clear Time (g_c+I1), s	2.5	3.3	4.4	9.9	2.6	4.4	3.0	3.4				
Green Ext Time (p_c), s	0.0	0.7	0.1	10.8	0.0	0.7	0.0	13.5				
Intersection Summary												
HCM 2010 Ctrl Delay	12.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

47: Westhills Dr & Fiddymment Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	853	0	49	0	0	96	30	1328	17	560	1521	226
Future Volume (veh/h)	853	0	49	0	0	96	30	1328	17	560	1521	226
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	898	0	52	0	0	101	32	1398	18	589	1601	238
Adj No. of Lanes	2	0	1	1	0	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	987	0	0	1	0	0	40	1462	455	542	2898	902
Arrive On Green	0.29	0.00	0.00	0.00	0.00	0.00	0.02	0.29	0.29	0.31	0.57	0.57
Sat Flow, veh/h	3442	898		1774	0		1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	898	52.8		0	0.0		32	1398	18	589	1601	238
Grp Sat Flow(s),veh/h/ln	1721	D		1774			1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	31.3			0.0			2.2	33.6	1.0	38.0	24.6	9.5
Cycle Q Clear(g_c), s	31.3			0.0			2.2	33.6	1.0	38.0	24.6	9.5
Prop In Lane	1.00			1.00			1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	987			1			40	1462	455	542	2898	902
V/C Ratio(X)	0.91			0.00			0.79	0.96	0.04	1.09	0.55	0.26
Avail Cap(c_a), veh/h	1133			57			86	1471	458	542	2898	902
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			0.00			1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8			0.0			60.5	43.6	32.0	43.2	16.8	13.6
Incr Delay (d2), s/veh	10.0			0.0			28.1	14.4	0.0	64.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2			0.0			1.4	17.7	0.5	28.2	11.5	4.2
LnGrp Delay(d),s/veh	52.8			0.0			88.6	58.0	32.0	107.9	17.0	13.7
LnGrp LOS	D						F	E	C	F	B	B
Approach Vol, veh/h								1448			2428	
Approach Delay, s/veh								58.3			38.7	
Approach LOS								E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3		5	6	7					
Phs Duration (G+Y+Rc), s	43.0	40.8	0.0		7.8	76.0	40.7					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	38.0	36.0	4.0		6.0	68.0	41.0					
Max Q Clear Time (g_c+I1), s	40.0	35.6	0.0		4.2	26.6	33.3					
Green Ext Time (p_c), s	0.0	0.2	0.0		0.0	32.1	2.4					
Intersection Summary												
HCM 2010 Ctrl Delay			47.3									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
48: Regional Park Access & Baseline Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1138	64	29	1223	12	0	8	2	102	21	20
Future Volume (veh/h)	8	1138	64	29	1223	12	0	8	2	102	21	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	8	1198	67	31	1287	13	0	8	2	107	22	21
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	2446	699	85	2545	730	4	184	156	171	511	434
Arrive On Green	0.03	0.48	0.44	0.05	0.50	0.46	0.00	0.10	0.10	0.10	0.27	0.27
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	8	1198	67	31	1287	13	0	8	2	107	22	21
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.2	8.1	1.3	0.9	8.6	0.2	0.0	0.2	0.1	2.9	0.4	0.5
Cycle Q Clear(g_c), s	0.2	8.1	1.3	0.9	8.6	0.2	0.0	0.2	0.1	2.9	0.4	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	50	2446	699	85	2545	730	4	184	156	171	511	434
V/C Ratio(X)	0.16	0.49	0.10	0.37	0.51	0.02	0.00	0.04	0.01	0.62	0.04	0.05
Avail Cap(c_a), veh/h	175	2709	781	175	2709	781	175	1286	1093	315	1433	1218
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	8.9	8.3	23.4	8.5	7.4	0.0	20.7	20.6	22.0	13.5	13.5
Incr Delay (d2), s/veh	1.5	0.2	0.1	2.6	0.2	0.0	0.0	0.1	0.0	3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.8	0.6	0.5	4.0	0.1	0.0	0.1	0.0	1.6	0.2	0.2
LnGrp Delay(d),s/veh	25.5	9.1	8.3	26.0	8.6	7.4	0.0	20.8	20.6	25.7	13.5	13.6
LnGrp LOS	C	A	A	C	A	A		C	C	C	B	B
Approach Vol, veh/h	1273					1331		10		150		
Approach Delay, s/veh	9.1					9.0		20.7		22.2		
Approach LOS	A					A		C		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	9.0	6.4	26.4	0.0	17.9	5.4	27.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	34.0	4.0	24.0	4.0	38.0	4.0	24.0				
Max Q Clear Time (g_c+I1), s	4.9	2.2	2.9	10.1	0.0	2.5	2.2	10.6				
Green Ext Time (p_c), s	0.1	0.2	0.0	11.3	0.0	0.2	0.0	10.9				
Intersection Summary												
HCM 2010 Ctrl Delay			9.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
49: Watt Ave/Santucci Blvd & Baseline Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1054	1	211	885	34	53	468	397	103	861	412
Future Volume (veh/h)	145	1054	1	211	885	34	53	468	397	103	861	412
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	153	1109	1	222	932	36	56	493	418	108	906	434
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	1619	504	294	1733	539	107	1791	558	167	1879	585
Arrive On Green	0.06	0.32	0.32	0.09	0.34	0.34	0.03	0.35	0.35	0.05	0.37	0.37
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	153	1109	1	222	932	36	56	493	418	108	906	434
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.5	19.5	0.0	6.5	15.1	1.6	1.6	7.1	23.8	3.2	14.0	24.4
Cycle Q Clear(g_c), s	4.5	19.5	0.0	6.5	15.1	1.6	1.6	7.1	23.8	3.2	14.0	24.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	1619	504	294	1733	539	107	1791	558	167	1879	585
V/C Ratio(X)	0.70	0.68	0.00	0.75	0.54	0.07	0.52	0.28	0.75	0.65	0.48	0.74
Avail Cap(c_a), veh/h	303	1888	588	471	2136	665	168	2037	634	235	2136	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	30.4	23.8	45.7	27.2	22.8	48.8	23.8	29.2	47.8	24.8	28.0
Incr Delay (d2), s/veh	4.3	0.8	0.0	3.9	0.3	0.1	3.9	0.1	4.3	4.2	0.2	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	9.2	0.0	3.2	7.1	0.7	0.8	3.3	11.0	1.6	6.6	11.2
LnGrp Delay(d),s/veh	51.3	31.3	23.8	49.7	27.5	22.8	52.7	23.9	33.5	52.0	24.9	31.9
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h	1263				1190				967		1448	
Approach Delay, s/veh	33.7				31.5				29.7		29.1	
Approach LOS	C				C				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	41.0	13.8	37.6	8.2	42.8	11.5	39.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	41.0	14.0	38.0	5.0	43.0	9.0	43.0				
Max Q Clear Time (g_c+I1), s	5.2	25.8	8.5	21.5	3.6	26.4	6.5	17.1				
Green Ext Time (p_c), s	0.0	10.3	0.3	11.1	0.0	10.9	0.1	14.9				
Intersection Summary												
HCM 2010 Ctrl Delay			31.0									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
50: Baseline Rd & W Shopping Center Access

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	250	1304	1047	97	50	83		
Future Volume (veh/h)	250	1304	1047	97	50	83		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	263	1373	1102	102	53	87		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	332	3584	2134	665	176	157		
Arrive On Green	0.19	0.70	0.42	0.42	0.10	0.10		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	263	1373	1102	102	53	87		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	7.2	5.6	8.2	2.0	1.4	2.7		
Cycle Q Clear(g_c), s	7.2	5.6	8.2	2.0	1.4	2.7		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	332	3584	2134	665	176	157		
V/C Ratio(X)	0.79	0.38	0.52	0.15	0.30	0.55		
Avail Cap(c_a), veh/h	765	5083	2392	745	1008	900		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.8	3.0	11.0	9.2	21.3	21.9		
Incr Delay (d2), s/veh	4.3	0.1	0.2	0.1	1.0	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.9	2.6	3.8	0.9	0.7	0.1		
LnGrp Delay(d),s/veh	24.1	3.1	11.2	9.3	22.3	24.9		
LnGrp LOS	C	A	B	A	C	C		
Approach Vol, veh/h		1636	1204		140			
Approach Delay, s/veh		6.5	11.0		23.9			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				41.0		10.1	14.5	26.4
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				51.0		29.0	22.0	24.0
Max Q Clear Time (g_c+l1), s				7.6		4.7	9.2	10.2
Green Ext Time (p_c), s				25.9		0.4	0.6	11.2
Intersection Summary								
HCM 2010 Ctrl Delay			9.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

51: Baseline Rd & Westbrook Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	526	819	9	167	653	161	27	571	372	273	732	465
Future Volume (veh/h)	526	819	9	167	653	161	27	571	372	273	732	465
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	554	862	9	176	687	169	28	601	392	287	771	489
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	636	1864	551	270	1323	383	105	1734	525	288	2005	610
Arrive On Green	0.18	0.37	0.35	0.08	0.26	0.24	0.03	0.34	0.33	0.08	0.39	0.38
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	554	862	9	176	687	169	28	601	392	287	771	489
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	16.8	13.9	0.4	5.3	12.4	9.7	0.9	9.5	23.6	9.0	11.6	29.5
Cycle Q Clear(g_c), s	16.8	13.9	0.4	5.3	12.4	9.7	0.9	9.5	23.6	9.0	11.6	29.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	636	1864	551	270	1323	383	105	1734	525	288	2005	610
V/C Ratio(X)	0.87	0.46	0.02	0.65	0.52	0.44	0.27	0.35	0.75	1.00	0.38	0.80
Avail Cap(c_a), veh/h	641	2272	678	352	1846	545	160	1799	545	288	2005	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	25.9	23.0	48.1	34.0	34.6	50.9	26.5	31.9	49.2	23.2	29.4
Incr Delay (d2), s/veh	12.4	0.2	0.0	2.7	0.3	0.8	1.4	0.2	6.5	51.7	0.2	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	6.5	0.2	2.6	5.8	4.3	0.4	4.5	11.3	6.3	5.5	14.3
LnGrp Delay(d),s/veh	54.9	26.1	23.0	50.7	34.3	35.4	52.3	26.7	38.3	100.8	23.5	37.8
LnGrp LOS	D	C	C	D	C	D	D	C	D	F	C	D
Approach Vol, veh/h	1425			1032				1021			1547	
Approach Delay, s/veh	37.3			37.3				31.9			42.4	
Approach LOS	D			D				C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	39.6	12.4	42.4	7.3	45.4	23.9	31.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	6.0	5.0	5.0	5.0	6.0				
Max Green Setting (Gmax), s	8.0	36.0	10.0	45.0	4.0	40.0	19.0	36.0				
Max Q Clear Time (g_c+I1), s	11.0	25.6	7.3	15.9	2.9	31.5	18.8	14.4				
Green Ext Time (p_c), s	0.0	9.0	0.1	12.1	0.0	7.8	0.1	10.5				
Intersection Summary												
HCM 2010 Ctrl Delay	37.8											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
52: Baseline Rd & C Shopping Center Access

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	1464	948	146	0	33		
Future Volume (veh/h)	0	1464	948	146	0	33		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	1541	998	154	0	35		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	4	3626	3626	1129	145	130		
Arrive On Green	0.00	0.71	0.71	0.71	0.00	0.08		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	0	1541	998	154	0	35		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.0	6.1	3.4	1.5	0.0	1.0		
Cycle Q Clear(g_c), s	0.0	6.1	3.4	1.5	0.0	1.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	4	3626	3626	1129	145	130		
V/C Ratio(X)	0.00	0.43	0.28	0.14	0.00	0.27		
Avail Cap(c_a), veh/h	145	5213	4275	1331	1091	974		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	0.0	2.9	2.5	2.2	0.0	21.0		
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.7	1.6	0.7	0.0	0.9		
LnGrp Delay(d),s/veh	0.0	3.0	2.5	2.3	0.0	22.1		
LnGrp LOS		A	A	A		C		
Approach Vol, veh/h		1541	1152		35			
Approach Delay, s/veh		3.0	2.5		22.1			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.8		9.0	0.0	39.8
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				50.0		30.0	4.0	41.0
Max Q Clear Time (g_c+I1), s				8.1		3.0	0.0	5.4
Green Ext Time (p_c), s				26.7		0.1	0.0	24.0
Intersection Summary								
HCM 2010 Ctrl Delay			3.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

53: Market St & Baseline Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1335	122	4	891	64	168	66	14	191	114	34
Future Volume (veh/h)	7	1335	122	4	891	64	168	66	14	191	114	34
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	1405	128	4	938	67	177	69	15	201	120	36
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	2318	692	41	2302	687	254	262	193	281	289	216
Arrive On Green	0.03	0.46	0.44	0.02	0.45	0.43	0.14	0.14	0.12	0.16	0.16	0.14
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	7	1405	128	4	938	67	177	69	15	201	120	36
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.2	11.2	2.7	0.1	6.7	1.3	5.1	1.8	0.5	5.8	3.1	1.1
Cycle Q Clear(g_c), s	0.2	11.2	2.7	0.1	6.7	1.3	5.1	1.8	0.5	5.8	3.1	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	46	2318	692	41	2302	687	254	262	193	281	289	216
V/C Ratio(X)	0.15	0.61	0.18	0.10	0.41	0.10	0.70	0.26	0.08	0.72	0.42	0.17
Avail Cap(c_a), veh/h	198	2360	705	198	2360	705	362	1245	1029	362	1245	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	11.0	9.3	25.8	9.9	9.0	22.0	20.7	21.0	21.5	20.5	20.5
Incr Delay (d2), s/veh	1.5	0.6	0.2	1.0	0.2	0.1	3.4	0.5	0.2	4.7	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.3	1.2	0.1	3.1	0.6	2.7	1.0	0.2	3.2	1.7	0.5
LnGrp Delay(d),s/veh	27.2	11.7	9.5	26.8	10.1	9.1	25.4	21.2	21.1	26.2	21.5	20.9
LnGrp LOS	C	B	A	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h	1540				1009				261			
Approach Delay, s/veh	11.6				10.1				24.0			
Approach LOS	B				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.5	9.6	4.2	28.6	10.7	10.4	4.4	28.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	6.0	4.0	4.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	34.0	5.0	23.0	10.0	34.0	5.0	23.0				
Max Q Clear Time (g_c+I1), s	7.8	3.8	2.1	13.2	7.1	5.1	2.2	8.7				
Green Ext Time (p_c), s	0.1	1.2	0.0	9.4	0.1	1.2	0.0	13.5				
Intersection Summary												
HCM 2010 Ctrl Delay	13.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
54: Baseline Road & E Shopping Access Center

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	173	1367	901	160	57	57		
Future Volume (veh/h)	173	1367	901	160	57	57		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	182	1439	948	168	60	60		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	237	3367	2073	645	171	153		
Arrive On Green	0.13	0.66	0.41	0.41	0.10	0.10		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	182	1439	948	168	60	60		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	4.1	5.5	5.6	2.9	1.3	1.5		
Cycle Q Clear(g_c), s	4.1	5.5	5.6	2.9	1.3	1.5		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	237	3367	2073	645	171	153		
V/C Ratio(X)	0.77	0.43	0.46	0.26	0.35	0.39		
Avail Cap(c_a), veh/h	514	4297	2210	688	1285	1147		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.3	3.3	8.9	8.1	17.5	17.6		
Incr Delay (d2), s/veh	5.1	0.1	0.2	0.2	1.2	1.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.3	2.6	2.7	1.3	0.7	1.4		
LnGrp Delay(d),s/veh	22.5	3.4	9.1	8.3	18.7	19.2		
LnGrp LOS	C	A	A	A	B	B		
Approach Vol, veh/h		1621	1116		120			
Approach Delay, s/veh		5.5	9.0		19.0			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				32.4		9.0	10.5	21.9
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				35.0		30.0	12.0	18.0
Max Q Clear Time (g_c+I1), s				7.5		3.5	6.1	7.6
Green Ext Time (p_c), s				19.9		0.3	0.2	8.9
Intersection Summary								
HCM 2010 Ctrl Delay			7.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

55: Baseline Rd & Upland Dr

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	69	1355	1030	34	128	31		
Future Volume (veh/h)	69	1355	1030	34	128	31		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	73	1426	1084	36	135	33		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	141	3440	2605	773	273	205		
Arrive On Green	0.08	0.68	0.51	0.49	0.15	0.13		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	73	1426	1084	36	135	33		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	1.6	5.2	5.4	0.5	2.9	0.8		
Cycle Q Clear(g_c), s	1.6	5.2	5.4	0.5	2.9	0.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	141	3440	2605	773	273	205		
V/C Ratio(X)	0.52	0.41	0.42	0.05	0.49	0.16		
Avail Cap(c_a), veh/h	366	4380	2900	864	1399	1210		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	18.2	3.0	6.2	5.5	16.0	15.9		
Incr Delay (d2), s/veh	2.9	0.1	0.1	0.0	1.4	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	2.4	2.5	0.2	1.5	0.7		
LnGrp Delay(d),s/veh	21.2	3.1	6.3	5.6	17.4	16.3		
LnGrp LOS	C	A	A	A	B	B		
Approach Vol, veh/h		1499	1120		168			
Approach Delay, s/veh		4.0	6.3		17.2			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				31.4		9.8	6.8	24.6
Change Period (Y+Rc), s				5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s				33.5		31.5	7.5	21.5
Max Q Clear Time (g_c+I1), s				7.2		4.9	3.6	7.4
Green Ext Time (p_c), s				18.7		0.5	0.0	11.4
Intersection Summary								
HCM 2010 Ctrl Delay			5.7					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

56: Fiddymment Rd & Baseline Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	1326	73	270	823	270	219	919	519	423	876	273
Future Volume (veh/h)	72	1326	73	270	823	270	219	919	519	423	876	273
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1863	1827	1827	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	76	1396	77	284	866	284	231	967	546	445	922	287
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	2	2	4	4	2	2	2	2	2	2
Cap, veh/h	153	1636	492	351	1850	576	345	1644	512	439	1826	569
Arrive On Green	0.04	0.33	0.31	0.10	0.37	0.37	0.10	0.32	0.32	0.13	0.36	0.36
Sat Flow, veh/h	3442	4988	1583	3442	4988	1553	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	76	1396	77	284	866	284	231	967	546	445	922	287
Grp Sat Flow(s),veh/h/ln	1721	1663	1583	1721	1663	1553	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	2.5	30.7	4.1	9.5	15.5	16.5	7.6	18.7	38.0	15.0	16.7	16.7
Cycle Q Clear(g_c), s	2.5	30.7	4.1	9.5	15.5	16.5	7.6	18.7	38.0	15.0	16.7	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	1636	492	351	1850	576	345	1644	512	439	1826	569
V/C Ratio(X)	0.50	0.85	0.16	0.81	0.47	0.49	0.67	0.59	1.07	1.01	0.50	0.50
Avail Cap(c_a), veh/h	410	1740	525	351	1850	576	410	1644	512	439	1826	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	36.9	29.3	51.7	28.1	28.5	51.0	33.2	39.8	51.3	29.5	29.5
Incr Delay (d2), s/veh	2.5	4.6	0.3	13.1	0.2	0.7	3.3	0.8	58.8	46.3	0.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	14.8	1.9	5.2	7.2	7.2	3.8	8.9	24.9	9.9	7.8	7.5
LnGrp Delay(d),s/veh	57.3	41.4	29.6	64.8	28.3	29.1	54.3	34.1	98.5	97.6	29.9	30.8
LnGrp LOS	E	D	C	E	C	C	D	C	F	F	C	C
Approach Vol, veh/h	1549				1434				1744			
Approach Delay, s/veh	41.6				35.7				56.9			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	42.0	15.0	41.6	14.8	46.2	9.2	47.3				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	* 6				
Max Green Setting (Gmax), s	14.0	36.0	10.0	38.0	12.0	38.0	13.0	* 36				
Max Q Clear Time (g_c+I1), s	17.0	40.0	11.5	32.7	9.6	18.7	4.5	18.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.8	0.2	18.1	0.1	15.5				

Intersection Summary

HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
57: Baseline Rd & Junction Blvd

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	582	1516	1078	79	125	248		
Future Volume (veh/h)	582	1516	1078	79	125	248		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	613	1596	1135	83	132	261		
Adj No. of Lanes	2	2	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	539	2555	1816	812	308	920		
Arrive On Green	0.16	0.72	0.51	0.51	0.17	0.17		
Sat Flow, veh/h	3442	3632	3632	1583	1774	2787		
Grp Volume(v), veh/h	613	1596	1135	83	132	261		
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1393		
Q Serve(g_s), s	9.0	13.1	13.2	1.5	3.8	4.0		
Cycle Q Clear(g_c), s	9.0	13.1	13.2	1.5	3.8	4.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	539	2555	1816	812	308	920		
V/C Ratio(X)	1.14	0.62	0.63	0.10	0.43	0.28		
Avail Cap(c_a), veh/h	539	2586	1847	827	309	921		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.2	4.0	10.0	7.2	21.2	14.2		
Incr Delay (d2), s/veh	82.5	0.6	0.8	0.1	0.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.4	6.4	6.5	0.7	1.9	3.5		
LnGrp Delay(d),s/veh	106.8	4.6	10.8	7.3	21.5	14.3		
LnGrp LOS	F	A	B	A	C	B		
Approach Vol, veh/h		2209	1218		393			
Approach Delay, s/veh		33.0	10.6		16.7			
Approach LOS		C	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.5		13.0	12.0	32.5
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				39.0		9.0	8.0	27.0
Max Q Clear Time (g_c+l1), s				15.1		6.0	11.0	15.2
Green Ext Time (p_c), s				22.1		0.3	0.0	11.3
Intersection Summary								
HCM 2010 Ctrl Delay			24.1					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

58: Woodcreek Oaks Blvd & Baseline Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	535	1145	29	75	738	100	131	0	422	274	0	294
Future Volume (veh/h)	535	1145	29	75	738	100	131	0	422	274	0	294
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	563	1205	31	79	777	0	138	0	444	288	0	0
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	546	1724	753	131	898	387	289	0	243	270	0	255
Arrive On Green	0.31	0.49	0.48	0.07	0.25	0.00	0.16	0.00	0.15	0.16	0.00	0.00
Sat Flow, veh/h	1774	3539	1575	1774	3539	1583	1774	0	1583	1774	0	1583
Grp Volume(v), veh/h	563	1205	31	79	777	0	138	0	444	288	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1575	1774	1770	1583	1774	0	1583	1774	0	1583
Q Serve(g_s), s	34.0	29.3	1.2	4.8	23.2	0.0	7.8	0.0	17.0	16.8	0.0	0.0
Cycle Q Clear(g_c), s	34.0	29.3	1.2	4.8	23.2	0.0	7.8	0.0	17.0	16.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	546	1724	753	131	898	387	289	0	243	270	0	255
V/C Ratio(X)	1.03	0.70	0.04	0.60	0.87	0.00	0.48	0.00	1.82	1.07	0.00	0.00
Avail Cap(c_a), veh/h	546	1724	753	177	945	408	289	0	243	270	0	255
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.3	22.0	15.4	49.6	39.4	0.0	42.0	0.0	46.8	46.4	0.0	0.0
Incr Delay (d2), s/veh	46.9	1.6	0.0	1.6	8.9	0.0	1.2	0.0	386.2	74.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.6	14.6	0.5	2.4	12.4	0.0	3.9	0.0	33.5	13.7	0.0	0.0
LnGrp Delay(d),s/veh	85.2	23.6	15.4	51.2	48.4	0.0	43.2	0.0	433.0	120.4	0.0	0.0
LnGrp LOS	F	C	B	D	D		D		F	F		
Approach Vol, veh/h	1799				856				582			
Approach Delay, s/veh	42.7				48.6				340.6			
Approach LOS	D				D				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.0	10.2	57.9		21.5	36.0	32.0				
Change Period (Y+Rc), s		5.0	4.0	6.0		5.7	4.0	6.0				
Max Green Setting (Gmax), s		16.0	9.0	50.5		15.8	32.0	27.5				
Max Q Clear Time (g_c+I1), s		19.0	6.8	31.3		18.8	36.0	25.2				
Green Ext Time (p_c), s		0.0	0.0	17.2		0.0	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	99.7											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary

59: Foothills Blvd & Baseline Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	475	1066	67	187	47	295	1420	72	55	1065	171
Future Volume (veh/h)	173	475	1066	67	187	47	295	1420	72	55	1065	171
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	182	500	1122	71	197	49	311	1495	76	58	1121	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	1	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	1858	831	74	2469	769	344	1526	475	59	1495	343
Arrive On Green	0.08	0.52	0.52	0.04	0.49	0.49	0.10	0.30	0.30	0.03	0.23	0.00
Sat Flow, veh/h	3442	3539	1583	1774	5085	1583	3442	5085	1583	1774	6408	1583
Grp Volume(v), veh/h	182	500	1122	71	197	49	311	1495	76	58	1121	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1695	1583	1721	1695	1583	1774	1602	1583
Q Serve(g_s), s	6.2	9.4	63.0	4.8	2.5	2.0	10.7	35.0	4.2	3.9	19.5	0.0
Cycle Q Clear(g_c), s	6.2	9.4	63.0	4.8	2.5	2.0	10.7	35.0	4.2	3.9	19.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	265	1858	831	74	2469	769	344	1526	475	59	1495	343
V/C Ratio(X)	0.69	0.27	1.35	0.96	0.08	0.06	0.90	0.98	0.16	0.98	0.75	0.00
Avail Cap(c_a), veh/h	315	1858	831	74	2469	769	344	1526	475	59	1495	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.0	15.8	28.5	57.4	16.5	16.4	53.4	41.6	30.9	58.0	42.7	0.0
Incr Delay (d2), s/veh	3.2	0.1	165.4	90.3	0.0	0.1	26.0	18.7	0.7	109.6	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	4.6	65.4	4.2	1.2	0.9	6.3	19.0	2.0	3.7	8.9	0.0
LnGrp Delay(d),s/veh	57.2	15.9	193.9	147.7	16.6	16.5	79.4	60.4	31.6	167.6	45.1	0.0
LnGrp LOS	E	B	F	F	B	B	E	E	C	F	D	
Approach Vol, veh/h	1804				317				1882			
Approach Delay, s/veh	130.7				45.9				62.4			
Approach LOS	F				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	39.0	8.0	66.0	15.0	31.0	12.2	61.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	3.0	33.0	4.0	60.0	11.0	25.0	10.0	* 55				
Max Q Clear Time (g_c+I1), s	5.9	37.0	6.8	65.0	12.7	21.5	8.2	4.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.2	0.1	31.6				

Intersection Summary

HCM 2010 Ctrl Delay 82.6
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

60: Foothills Blvd & HP-Main Dwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	66	23	372	372	473	183	928	618	561	510	57
Future Volume (veh/h)	5	66	23	372	372	473	183	928	618	561	510	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	5	69	0	392	392	498	193	977	651	591	537	0
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	213	201	508	490	730	251	1126	668	686	1419	587
Arrive On Green	0.02	0.11	0.00	0.15	0.26	0.26	0.14	0.32	0.28	0.20	0.40	0.00
Sat Flow, veh/h	1774	1863	1583	3442	1863	1574	1774	3539	1575	3442	3539	1583
Grp Volume(v), veh/h	5	69	0	392	392	498	193	977	651	591	537	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1574	1774	1770	1575	1721	1770	1583
Q Serve(g_s), s	0.2	2.7	0.0	8.7	15.7	19.9	8.4	20.8	22.0	13.3	8.6	0.0
Cycle Q Clear(g_c), s	0.2	2.7	0.0	8.7	15.7	19.9	8.4	20.8	22.0	13.3	8.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	213	201	508	490	730	251	1126	668	686	1419	587
V/C Ratio(X)	0.12	0.32	0.00	0.77	0.80	0.68	0.77	0.87	0.98	0.86	0.38	0.00
Avail Cap(c_a), veh/h	222	213	201	905	490	730	311	1126	668	776	1419	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.1	32.5	0.0	32.7	27.5	16.9	33.0	25.7	22.6	30.9	16.9	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.0	2.5	9.2	2.6	6.8	7.6	28.6	8.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	0.0	4.3	9.3	9.1	4.5	11.2	19.3	7.2	4.2	0.0
LnGrp Delay(d),s/veh	38.6	32.8	0.0	35.3	36.7	19.5	39.8	33.3	51.3	39.8	17.1	0.0
LnGrp LOS	D	C		D	D	B	D	C	D	D	B	
Approach Vol, veh/h	74			1282				1821			1128	
Approach Delay, s/veh	33.2			29.6				40.4			29.0	
Approach LOS	C			C				D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.9	28.0	16.8	14.1	14.3	34.6	4.9	26.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	18.0	22.0	21.0	* 9	13.0	28.0	9.0	21.0				
Max Q Clear Time (g_c+I1), s	15.3	24.0	10.7	4.7	10.4	10.6	2.2	21.9				
Green Ext Time (p_c), s	0.7	0.0	1.0	1.9	0.1	13.8	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 34.1
HCM 2010 LOS C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

61: Washington Blvd & Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	526	2	27	854	441	2	783	27	385	706	13
Future Volume (veh/h)	42	526	2	27	854	441	2	783	27	385	706	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	44	554	2	28	899	0	2	824	0	405	743	14
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1122	499	213	1037	464	54	1084	485	504	1546	689
Arrive On Green	0.09	0.32	0.32	0.06	0.29	0.00	0.02	0.31	0.00	0.15	0.44	0.44
Sat Flow, veh/h	3442	3539	1576	3442	3539	1583	3442	3539	1583	3442	3539	1578
Grp Volume(v), veh/h	44	554	2	28	899	0	2	824	0	405	743	14
Grp Sat Flow(s),veh/h/ln	1721	1770	1576	1721	1770	1583	1721	1770	1583	1721	1770	1578
Q Serve(g_s), s	1.1	11.3	0.1	0.7	21.4	0.0	0.1	18.7	0.0	10.1	13.3	0.4
Cycle Q Clear(g_c), s	1.1	11.3	0.1	0.7	21.4	0.0	0.1	18.7	0.0	10.1	13.3	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	1122	499	213	1037	464	54	1084	485	504	1546	689
V/C Ratio(X)	0.15	0.49	0.00	0.13	0.87	0.00	0.04	0.76	0.00	0.80	0.48	0.02
Avail Cap(c_a), veh/h	426	1122	499	775	1155	517	349	1275	570	504	1546	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	24.6	20.8	39.4	29.8	0.0	43.1	27.9	0.0	36.7	17.8	14.2
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.1	6.7	0.0	0.1	3.0	0.0	8.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.5	0.0	0.3	11.3	0.0	0.0	9.6	0.0	5.4	6.6	0.2
LnGrp Delay(d),s/veh	37.7	24.7	20.8	39.5	36.4	0.0	43.2	30.9	0.0	45.3	18.3	14.2
LnGrp LOS	D	C	C	D	D		D	C		D	B	B
Approach Vol, veh/h	600				927				826			
Approach Delay, s/veh	25.6				36.5				30.9			
Approach LOS	C				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	32.2	8.5	32.2	4.4	43.8	10.6	30.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	12.0	31.0	19.0	* 19	8.0	35.0	10.0	28.0				
Max Q Clear Time (g_c+I1), s	12.1	20.7	2.7	13.3	2.1	15.3	3.1	23.4				
Green Ext Time (p_c), s	0.0	5.4	0.0	3.1	0.0	13.4	0.0	1.6				

Intersection Summary

HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

62: Roseville Pkwy & Trestle Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	10	154	20	3	1	56	1111	7	1	987	10
Future Volume (veh/h)	28	10	154	20	3	1	56	1111	7	1	987	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	29	11	162	21	3	1	59	1169	7	1	1039	11
Adj No. of Lanes	0	1	1	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	84	267	91	13	4	107	1921	860	37	1781	797
Arrive On Green	0.17	0.17	0.17	0.06	0.06	0.04	0.06	0.54	0.54	0.02	0.50	0.50
Sat Flow, veh/h	1303	494	1583	1492	213	71	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	40	0	162	25	0	0	59	1169	7	1	1039	11
Grp Sat Flow(s),veh/h/ln	1798	0	1583	1776	0	0	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.0	0.0	4.8	0.7	0.0	0.0	1.6	11.4	0.1	0.0	10.4	0.2
Cycle Q Clear(g_c), s	1.0	0.0	4.8	0.7	0.0	0.0	1.6	11.4	0.1	0.0	10.4	0.2
Prop In Lane	0.72		1.00	0.84		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	0	267	109	0	0	107	1921	860	37	1781	797
V/C Ratio(X)	0.13	0.00	0.61	0.23	0.00	0.00	0.55	0.61	0.01	0.03	0.58	0.01
Avail Cap(c_a), veh/h	631	0	556	208	0	0	141	1921	860	141	1896	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	19.4	22.5	0.0	0.0	23.0	7.9	5.3	24.2	8.8	6.3
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.4	0.0	0.0	1.6	0.7	0.0	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.1	0.3	0.0	0.0	0.8	5.5	0.0	0.0	5.2	0.1
LnGrp Delay(d),s/veh	17.9	0.0	20.2	22.9	0.0	0.0	24.7	8.5	5.3	24.3	9.3	6.3
LnGrp LOS	B		C	C			C	A	A	C	A	A
Approach Vol, veh/h	202				25		1235				1051	
Approach Delay, s/veh	19.7				22.9		9.3				9.3	
Approach LOS	B				C		A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.0	30.4	10.8		6.0	28.4	5.2					
Change Period (Y+Rc), s	4.0	6.0	* 4.2		4.0	6.0	4.0					
Max Green Setting (Gmax), s	3.0	24.0	* 16		3.0	24.0	4.0					
Max Q Clear Time (g_c+I1), s	2.0	13.4	6.8		3.6	12.4	2.7					
Green Ext Time (p_c), s	0.0	9.6	0.3		0.0	10.0	0.0					

Intersection Summary

HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
63: Roseville Pkwy & Gibson Drive (w)

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	829	2007	0	1819	52	88	209	
Future Volume (veh/h)	829	2007	0	1819	52	88	209	
Number	5	2		6	16	7	14	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	873	2113		1915	0	93	0	
Adj No. of Lanes	1	3		3	1	1	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	721	4238		2000	623	177	158	
Arrive On Green	0.41	0.83		0.79	0.00	0.10	0.00	
Sat Flow, veh/h	1774	5253		5253	1583	1774	1583	
Grp Volume(v), veh/h	873	2113		1915	0	93	0	
Grp Sat Flow(s),veh/h/ln	1774	1695		1695	1583	1774	1583	
Q Serve(g_s), s	61.0	17.8		48.8	0.0	7.5	0.0	
Cycle Q Clear(g_c), s	61.0	17.8		48.8	0.0	7.5	0.0	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	721	4238		2000	623	177	158	
V/C Ratio(X)	1.21	0.50		0.96	0.00	0.52	0.00	
Avail Cap(c_a), veh/h	721	4238		2000	623	177	158	
HCM Platoon Ratio	1.00	1.00		2.00	2.00	1.00	1.00	
Upstream Filter(l)	1.00	1.00		0.91	0.00	1.00	0.00	
Uniform Delay (d), s/veh	44.5	3.6		14.9	0.0	64.1	0.0	
Incr Delay (d2), s/veh	107.2	0.4		11.5	0.0	10.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	51.3	8.4		23.8	0.0	4.2	0.0	
LnGrp Delay(d),s/veh	151.7	4.0		26.4	0.0	74.8	0.0	
LnGrp LOS	F	A		C		E		
Approach Vol, veh/h		2986		1915		93		
Approach Delay, s/veh		47.2		26.4		74.8		
Approach LOS		D		C		E		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		130.0		20.0	66.0	64.0		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		116.0		15.0	61.0	59.0		
Max Q Clear Time (g_c+I1), s		19.8		9.5	63.0	50.8		
Green Ext Time (p_c), s		83.2		0.1	0.0	8.1		
Intersection Summary								
HCM 2010 Ctrl Delay			39.7					
HCM 2010 LOS			D					
Notes								
User approved pedestrian interval to be less than phase max green.								

HCM 2010 Signalized Intersection Summary
64: Chase Dr & Roseville Pkwy

Cumulative No Project
AM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗		
Traffic Volume (veh/h)	2263	107	100	1624	118	146		
Future Volume (veh/h)	2263	107	100	1624	118	146		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2382	0	105	1709	124	0		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3402	1059	138	3899	158	141		
Arrive On Green	1.00	0.00	0.08	0.77	0.09	0.00		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	2382	0	105	1709	124	0		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	0.0	0.0	8.7	17.7	10.3	0.0		
Cycle Q Clear(g_c), s	0.0	0.0	8.7	17.7	10.3	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3402	1059	138	3899	158	141		
V/C Ratio(X)	0.70	0.00	0.76	0.44	0.78	0.00		
Avail Cap(c_a), veh/h	3402	1059	213	3899	336	300		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.86	0.00	0.83	0.83	1.00	0.00		
Uniform Delay (d), s/veh	0.0	0.0	67.8	6.2	66.9	0.0		
Incr Delay (d2), s/veh	1.1	0.0	2.7	0.3	3.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	0.0	4.4	8.3	5.2	0.0		
LnGrp Delay(d),s/veh	1.1	0.0	70.6	6.5	70.0	0.0		
LnGrp LOS	A		E	A	E			
Approach Vol, veh/h	2382			1814	124			
Approach Delay, s/veh	1.1			10.2	70.0			
Approach LOS	A			B	E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		17.0	14.6	103.4				118.0
Change Period (Y+Rc), s		4.6	4.0	6.0				6.0
Max Green Setting (Gmax), s		27.4	17.0	91.0				112.0
Max Q Clear Time (g_c+I1), s		12.3	10.7	2.0				19.7
Green Ext Time (p_c), s		0.2	0.1	81.9				84.7
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

65: Gibson Dr & Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	243	2159	1	44	1536	916	3	5	32	398	3	172
Future Volume (veh/h)	243	2159	1	44	1536	916	3	5	32	398	3	172
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	256	2273	1	46	1617	0	3	5	34	421	0	0
Adj No. of Lanes	1	3	1	1	3	1	0	1	1	3	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	3676	1140	71	3042	922	25	41	55	598	0	164
Arrive On Green	0.16	0.72	0.72	0.04	0.60	0.00	0.04	0.04	0.04	0.11	0.00	0.00
Sat Flow, veh/h	1774	5085	1578	1774	5085	1583	686	1143	1518	5322	0	1583
Grp Volume(v), veh/h	256	2273	1	46	1617	0	8	0	34	421	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1578	1774	1695	1583	1828	0	1518	1774	0	1583
Q Serve(g_s), s	21.1	33.6	0.0	3.8	28.1	0.0	0.6	0.0	3.3	11.4	0.0	0.0
Cycle Q Clear(g_c), s	21.1	33.6	0.0	3.8	28.1	0.0	0.6	0.0	3.3	11.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	292	3676	1140	71	3042	922	66	0	55	598	0	164
V/C Ratio(X)	0.88	0.62	0.00	0.65	0.53	0.00	0.12	0.00	0.62	0.70	0.00	0.00
Avail Cap(c_a), veh/h	426	3675	1140	154	3042	922	158	0	132	887	0	250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.85	0.85	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	61.2	10.4	5.8	71.0	17.7	0.0	70.0	0.0	71.3	64.2	0.0	0.0
Incr Delay (d2), s/veh	10.5	0.6	0.0	8.2	0.2	0.0	0.8	0.0	10.9	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	15.8	0.0	2.0	13.1	0.0	0.3	0.0	1.6	5.7	0.0	0.0
LnGrp Delay(d),s/veh	71.7	11.0	5.8	79.1	17.9	0.0	70.8	0.0	82.1	65.7	0.0	0.0
LnGrp LOS	E	B	A	E	B		E		F	E		
Approach Vol, veh/h	2530				1663				42		421	
Approach Delay, s/veh	17.2				19.6				80.0		65.7	
Approach LOS	B				B				E		E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	8.4		9.0	110.7	21.9		27.7	92.0				
Change Period (Y+Rc), s	4.0		4.0	5.7	7.3		4.0	5.7				
Max Green Setting (Gmax), s	12.0		12.0	82.3	22.7		35.0	59.3				
Max Q Clear Time (g_c+I1), s	5.3		5.8	35.6	13.4		23.1	30.1				
Green Ext Time (p_c), s	0.0		0.0	42.8	1.1		0.5	27.6				
Intersection Summary												
HCM 2010 Ctrl Delay	23.0											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

66: Roseville Pkwy & West Mall

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	2	37	14	1	65	15	2432	43	105	2473	3
Future Volume (veh/h)	56	2	37	14	1	65	15	2432	43	105	2473	3
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	59	2	39	16	0	0	16	2560	45	111	2603	3
Adj No. of Lanes	0	1	1	2	0	1	1	4	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	3	82	70	0	31	35	5094	1256	179	5300	1307
Arrive On Green	0.05	0.05	0.05	0.02	0.00	0.00	0.02	0.79	0.79	0.05	0.83	0.83
Sat Flow, veh/h	1719	58	1539	3548	0	1583	1774	6408	1580	3442	6408	1580
Grp Volume(v), veh/h	61	0	39	16	0	0	16	2560	45	111	2603	3
Grp Sat Flow(s),veh/h/ln	1777	0	1539	1774	0	1583	1774	1602	1580	1721	1602	1580
Q Serve(g_s), s	5.0	0.0	3.7	0.7	0.0	0.0	1.3	20.5	0.9	4.7	17.7	0.0
Cycle Q Clear(g_c), s	5.0	0.0	3.7	0.7	0.0	0.0	1.3	20.5	0.9	4.7	17.7	0.0
Prop In Lane	0.97		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	0	82	70	0	31	35	5094	1256	179	5300	1307
V/C Ratio(X)	0.64	0.00	0.47	0.23	0.00	0.00	0.46	0.50	0.04	0.62	0.49	0.00
Avail Cap(c_a), veh/h	178	0	154	402	0	179	154	5094	1256	344	5300	1307
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.81	0.81	0.81	0.72	0.72	0.72
Uniform Delay (d), s/veh	69.6	0.0	68.9	72.4	0.0	0.0	72.7	5.3	3.2	69.7	3.8	2.2
Incr Delay (d2), s/veh	2.7	0.0	1.6	1.5	0.0	0.0	2.8	0.1	0.0	0.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.6	0.3	0.0	0.0	0.7	8.9	0.4	2.3	7.9	0.0
LnGrp Delay(d),s/veh	72.2	0.0	70.5	73.9	0.0	0.0	75.6	5.3	3.3	70.6	4.0	2.2
LnGrp LOS	E		E	E			E	A	A	E	A	A
Approach Vol, veh/h	100		16				2621				2717	
Approach Delay, s/veh	71.6		73.9				5.7				6.7	
Approach LOS	E		E				A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.9		5.9	127.1	11.0		10.8	122.2				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	16.0		12.0	89.6	14.0		14.0	87.6				
Max Q Clear Time (g_c+I1), s	2.7		3.3	19.7	7.0		6.7	22.5				
Green Ext Time (p_c), s	0.0		0.0	68.4	0.1		0.1	63.1				
Intersection Summary												
HCM 2010 Ctrl Delay			7.6									
HCM 2010 LOS			A									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

67: Reserve Dr & Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2275	180	365	2309	132	204	76	324	63	15	7
Future Volume (veh/h)	14	2275	180	365	2309	132	204	76	324	63	15	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	2395	189	384	2431	0	148	174	341	41	51	0
Adj No. of Lanes	2	4	1	2	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	804	2990	709	736	2864	682	319	335	285	106	111	94
Arrive On Green	0.23	0.47	0.45	0.43	0.89	0.00	0.18	0.18	0.18	0.06	0.06	0.00
Sat Flow, veh/h	3442	6408	1573	3442	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	15	2395	189	384	2431	0	148	174	341	41	51	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1573	1721	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	47.7	11.3	12.3	25.1	0.0	11.2	12.7	27.0	3.3	4.0	0.0
Cycle Q Clear(g_c), s	0.5	47.7	11.3	12.3	25.1	0.0	11.2	12.7	27.0	3.3	4.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	804	2990	709	736	2864	682	319	335	285	106	111	94
V/C Ratio(X)	0.02	0.80	0.27	0.52	0.85	0.00	0.46	0.52	1.20	0.39	0.46	0.00
Avail Cap(c_a), veh/h	804	2990	709	736	3289	787	319	335	285	201	211	179
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.34	0.34	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.2	34.1	25.7	37.3	5.7	0.0	55.0	55.6	61.5	67.9	68.2	0.0
Incr Delay (d2), s/veh	0.0	2.1	0.8	0.1	0.7	0.0	0.8	1.1	117.4	2.3	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	21.5	5.0	5.9	9.9	0.0	5.6	6.6	21.1	1.7	2.1	0.0
LnGrp Delay(d),s/veh	44.2	36.1	26.5	37.4	6.5	0.0	55.8	56.7	178.9	70.2	71.2	0.0
LnGrp LOS	D	D	C	D	A		E	E	F	E	E	
Approach Vol, veh/h	2599				2815				663			
Approach Delay, s/veh	35.5				10.7				119.4			
Approach LOS	D				B				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	30.0		35.1	73.0	11.9		38.0	70.0				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	26.0		23.0	66.6	16.0		16.0	73.6				
Max Q Clear Time (g_c+I1), s	29.0		14.3	49.7	6.0		2.5	27.1				
Green Ext Time (p_c), s	0.0		0.5	15.4	0.2		0.6	36.6				
Intersection Summary												
HCM 2010 Ctrl Delay	33.7											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

68: Galleria Blvd & Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	306	1484	795	83	1574	387	911	528	44	926	794	284
Future Volume (veh/h)	306	1484	795	83	1574	387	911	528	44	926	794	284
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	322	1562	0	87	1657	0	959	556	0	975	836	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	2236	552	128	1730	427	964	728	227	1523	920	286
Arrive On Green	0.20	0.70	0.00	0.07	0.54	0.00	0.28	0.14	0.00	0.40	0.24	0.00
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	3442	5085	1583	5003	5085	1583
Grp Volume(v), veh/h	322	1562	0	87	1657	0	959	556	0	975	836	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1721	1695	1583	1668	1695	1583
Q Serve(g_s), s	13.8	21.6	0.0	3.7	37.0	0.0	41.7	15.8	0.0	23.5	24.0	0.0
Cycle Q Clear(g_c), s	13.8	21.6	0.0	3.7	37.0	0.0	41.7	15.8	0.0	23.5	24.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	2236	552	128	1730	427	964	728	227	1523	920	286
V/C Ratio(X)	0.94	0.70	0.00	0.68	0.96	0.00	1.00	0.76	0.00	0.64	0.91	0.00
Avail Cap(c_a), veh/h	344	2236	552	184	1730	428	964	1020	318	1523	983	306
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.71	0.71	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	59.5	18.0	0.0	68.6	33.7	0.0	53.9	61.8	0.0	38.0	55.8	0.0
Incr Delay (d2), s/veh	25.3	0.7	0.0	2.4	13.7	0.0	27.7	3.0	0.0	0.9	12.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	9.4	0.0	1.8	17.8	0.0	23.6	7.6	0.0	10.9	12.2	0.0
LnGrp Delay(d),s/veh	84.9	18.8	0.0	70.9	47.4	0.0	81.6	64.8	0.0	38.9	68.0	0.0
LnGrp LOS	F	B		E	D		F	E		D	E	
Approach Vol, veh/h	1884				1744				1515			
Approach Delay, s/veh	30.1				48.6				75.4			
Approach LOS	C				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.4	27.5	9.6	58.7	46.0	34.8	21.4	46.9				
Change Period (Y+Rc), s	7.7	6.0	4.0	6.4	4.0	* 7.7	6.4	6.4				
Max Green Setting (Gmax), s	37.9	30.1	8.0	49.9	42.0	* 29	15.0	40.5				
Max Q Clear Time (g_c+I1), s	25.5	17.8	5.7	23.6	43.7	26.0	15.8	39.0				
Green Ext Time (p_c), s	8.6	3.7	0.0	15.8	0.0	1.2	0.0	1.4				

Intersection Summary

HCM 2010 Ctrl Delay	50.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
69: Creekside Ridge Dr & Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	2398	4	12	2088	245	67	0	141	104	1	31
Future Volume (veh/h)	48	2398	4	12	2088	245	67	0	141	104	1	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	2524	4	13	2198	258	71	0	148	110	0	33
Adj No. of Lanes	1	3	1	1	3	1	2	0	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	3216	997	15	3017	935	380	0	167	163	0	73
Arrive On Green	0.03	0.63	0.63	0.01	0.59	0.59	0.11	0.00	0.11	0.05	0.00	0.05
Sat Flow, veh/h	1774	5085	1577	1774	5085	1577	3548	0	1561	3548	0	1583
Grp Volume(v), veh/h	51	2524	4	13	2198	258	71	0	148	110	0	33
Grp Sat Flow(s),veh/h/ln	1774	1695	1577	1774	1695	1577	1774	0	1561	1774	0	1583
Q Serve(g_s), s	4.3	54.3	0.1	1.1	46.4	11.9	2.7	0.0	14.0	4.6	0.0	3.0
Cycle Q Clear(g_c), s	4.3	54.3	0.1	1.1	46.4	11.9	2.7	0.0	14.0	4.6	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	3216	997	15	3017	935	380	0	167	163	0	73
V/C Ratio(X)	0.83	0.78	0.00	0.85	0.73	0.28	0.19	0.00	0.89	0.67	0.00	0.45
Avail Cap(c_a), veh/h	118	3216	997	59	3017	935	402	0	177	364	0	163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.51	0.51	0.51	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.0	20.1	10.2	74.3	21.8	14.8	61.0	0.0	66.1	70.4	0.0	69.7
Incr Delay (d2), s/veh	10.5	1.4	0.0	20.6	0.8	0.4	0.1	0.0	34.7	5.9	0.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	25.7	0.1	0.6	21.8	5.3	1.3	0.0	7.7	2.4	0.0	1.4
LnGrp Delay(d),s/veh	82.5	21.5	10.2	94.9	22.7	15.2	61.1	0.0	100.7	76.4	0.0	75.1
LnGrp LOS	F	C	B	F	C	B	E		F	E		E
Approach Vol, veh/h	2579				2469				219			
Approach Delay, s/veh	22.7				22.3				87.9			
Approach LOS	C				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	20.1		5.3		100.9		11.5		11.2		95.0	
Change Period (Y+Rc), s	4.0		4.0		6.0		4.6		6.0		* 6	
Max Green Setting (Gmax), s	17.0		5.0		94.0		15.4		10.0		* 89	
Max Q Clear Time (g_c+I1), s	16.0		3.1		56.3		6.6		6.3		48.4	
Green Ext Time (p_c), s	0.0		0.0		33.4		0.3		0.1		33.5	
Intersection Summary												
HCM 2010 Ctrl Delay	26.6											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
70: Taylor Rd & E. Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	2389	67	289	1945	214	293	227	325	707	101	117
Future Volume (veh/h)	169	2389	67	289	1945	214	293	227	325	707	101	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1891	1891	1891	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	2515	71	304	2047	225	308	239	342	744	106	123
Adj No. of Lanes	2	4	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2688	1067	1085	3502	1088	868	712	219	757	547	168
Arrive On Green	0.05	0.41	0.41	0.32	0.69	0.69	0.25	0.14	0.14	0.22	0.11	0.11
Sat Flow, veh/h	3493	6504	1601	3442	5085	1580	3442	5085	1566	3442	5085	1561
Grp Volume(v), veh/h	178	2515	71	304	2047	225	308	239	342	744	106	123
Grp Sat Flow(s),veh/h/ln	1747	1626	1601	1721	1695	1580	1721	1695	1566	1721	1695	1561
Q Serve(g_s), s	7.6	55.5	0.0	10.0	31.5	6.5	11.0	6.4	21.0	32.3	2.8	12.9
Cycle Q Clear(g_c), s	7.6	55.5	0.0	10.0	31.5	6.5	11.0	6.4	21.0	32.3	2.8	12.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	2688	1067	1085	3502	1088	868	712	219	757	547	168
V/C Ratio(X)	0.96	0.94	0.07	0.28	0.58	0.21	0.35	0.34	1.56	0.98	0.19	0.73
Avail Cap(c_a), veh/h	186	2688	1067	1085	3502	1088	868	712	219	757	1119	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.8	42.1	8.8	38.6	12.2	5.9	46.0	58.2	64.5	58.2	61.0	82.7
Incr Delay (d2), s/veh	43.4	5.8	0.1	0.1	0.2	0.1	0.2	0.3	272.9	28.3	0.2	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	25.9	1.1	4.7	14.7	2.8	5.3	3.0	25.7	18.3	1.3	5.9
LnGrp Delay(d),s/veh	114.2	47.9	8.9	38.6	12.4	6.0	46.2	58.5	337.4	86.5	61.2	89.6
LnGrp LOS	F	D	A	D	B	A	D	E	F	F	E	F
Approach Vol, veh/h	2764				2576				889			
Approach Delay, s/veh	51.1				14.9				161.6			
Approach LOS	D				B				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	37.0	27.0	53.5	68.0	41.8	22.2	12.0	109.5				
Change Period (Y+Rc), s	4.0	6.0	6.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	33.0	21.0	14.0	* 62	21.0	33.0	8.0	68.0				
Max Q Clear Time (g_c+I1), s	34.3	23.0	12.0	57.5	13.0	14.9	9.6	33.5				
Green Ext Time (p_c), s	0.0	0.0	0.3	4.5	2.1	1.1	0.0	30.6				

Intersection Summary

HCM 2010 Ctrl Delay	56.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
71: N. Sunrise Ave & E. Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	359	2423	711	216	2130	3	189	178	153	13	46	131
Future Volume (veh/h)	359	2423	711	216	2130	3	189	178	153	13	46	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	378	2551	0	227	2242	3	199	187	0	14	48	138
Adj No. of Lanes	2	3	1	2	3	1	3	1	1	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	3312	1031	269	3084	958	372	229	195	17	100	150
Arrive On Green	0.16	0.87	0.00	0.16	1.00	1.00	0.07	0.12	0.00	0.01	0.05	0.05
Sat Flow, veh/h	3442	5085	1583	3442	5085	1579	5003	1863	1583	1774	1863	2787
Grp Volume(v), veh/h	378	2551	0	227	2242	3	199	187	0	14	48	138
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1579	1668	1863	1583	1774	1863	1393
Q Serve(g_s), s	16.1	30.2	0.0	9.6	0.0	0.0	5.8	14.7	0.0	1.2	3.8	6.0
Cycle Q Clear(g_c), s	16.1	30.2	0.0	9.6	0.0	0.0	5.8	14.7	0.0	1.2	3.8	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	424	3312	1031	269	3084	958	372	229	195	17	100	150
V/C Ratio(X)	0.89	0.77	0.00	0.84	0.73	0.00	0.53	0.82	0.00	0.84	0.48	0.92
Avail Cap(c_a), veh/h	528	3312	1031	344	3084	958	534	302	256	47	133	199
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.22	0.22	0.00	0.75	0.75	0.75	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	5.5	0.0	62.4	0.0	0.0	66.9	64.1	0.0	74.2	68.9	46.2
Incr Delay (d2), s/veh	3.5	0.4	0.0	8.9	0.7	0.0	0.4	14.8	0.0	31.9	1.3	31.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	13.6	0.0	4.9	0.2	0.0	2.7	8.5	0.0	0.7	2.0	3.0
LnGrp Delay(d),s/veh	65.2	5.9	0.0	71.3	0.7	0.0	67.4	78.9	0.0	106.1	70.2	77.9
LnGrp LOS	E	A		E	A	A	E	E		F	E	E
Approach Vol, veh/h	2929				2472				386			
Approach Delay, s/veh	13.6				7.2				73.0			
Approach LOS	B				A				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	25.1	15.7	103.7	17.9	12.7	22.5	97.0				
Change Period (Y+Rc), s	4.0	* 6.7	4.0	6.0	6.7	4.6	4.0	6.0				
Max Green Setting (Gmax), s	4.0	* 24	15.0	87.0	16.0	10.7	23.0	79.0				
Max Q Clear Time (g_c+I1), s	3.2	16.7	11.6	32.2	7.8	8.0	18.1	2.0				
Green Ext Time (p_c), s	0.0	1.1	0.1	54.5	1.2	0.1	0.4	76.5				

Intersection Summary

HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
72: Secret Ravine Pkwy & E. Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	354	2038	4	10	1703	111	0	0	0	110	0	658
Future Volume (veh/h)	354	2038	4	10	1703	111	0	0	0	110	0	658
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	373	2145	4	11	1793	117	0	0	0	116	0	693
Adj No. of Lanes	2	3	0	1	3	1	1	1	1	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	464	3078	6	13	2258	701	1	1	1	586	0	528
Arrive On Green	0.27	1.00	1.00	0.01	0.44	0.44	0.00	0.00	0.00	0.17	0.00	0.17
Sat Flow, veh/h	3442	5241	10	1774	5085	1578	1774	1863	1583	3516	0	3167
Grp Volume(v), veh/h	373	1387	762	11	1793	117	0	0	0	116	0	693
Grp Sat Flow(s),veh/h/ln	1721	1695	1861	1774	1695	1578	1774	1863	1583	1758	0	1583
Q Serve(g_s), s	15.2	0.0	0.0	0.9	45.4	6.7	0.0	0.0	0.0	4.3	0.0	25.0
Cycle Q Clear(g_c), s	15.2	0.0	0.0	0.9	45.4	6.7	0.0	0.0	0.0	4.3	0.0	25.0
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	464	1991	1093	13	2258	701	1	1	1	586	0	528
V/C Ratio(X)	0.80	0.70	0.70	0.84	0.79	0.17	0.00	0.00	0.00	0.20	0.00	1.31
Avail Cap(c_a), veh/h	551	1991	1093	35	2258	701	166	174	148	586	0	528
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.58	0.88	0.88	0.88	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.0	0.0	0.0	74.4	35.8	25.0	0.0	0.0	0.0	53.9	0.0	62.5
Incr Delay (d2), s/veh	3.6	0.7	1.2	35.1	2.6	0.5	0.0	0.0	0.0	0.1	0.0	154.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.2	0.4	0.6	21.8	3.0	0.0	0.0	0.0	2.1	0.0	22.2
LnGrp Delay(d),s/veh	56.6	0.7	1.2	109.4	38.4	25.5	0.0	0.0	0.0	53.9	0.0	216.5
LnGrp LOS	E	A	A	F	D	C				D		F
Approach Vol, veh/h	2522				1921				0		809	
Approach Delay, s/veh	9.1				38.1				0.0		193.2	
Approach LOS	A				D						F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	0.0		5.1	94.5	31.0		26.6	73.0				
Change Period (Y+Rc), s	4.0		4.0	6.4	6.0		6.4	* 6.4				
Max Green Setting (Gmax), s	14.0		3.0	87.6	25.0		24.0	* 67				
Max Q Clear Time (g_c+I1), s	0.0		2.9	2.0	27.0		17.2	47.4				
Green Ext Time (p_c), s	0.0		0.0	45.6	0.0		3.0	14.3				
Intersection Summary												
HCM 2010 Ctrl Delay	48.1											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
73: E. Roseville Pkwy & Alexandra Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	123	104	1658	47	64	1942		
Future Volume (veh/h)	123	104	1658	47	64	1942		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	129	109	1745	49	67	2044		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	156	139	3849	1198	85	4228		
Arrive On Green	0.09	0.09	1.00	1.00	0.05	0.83		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	129	109	1745	49	67	2044		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	10.7	10.1	0.0	0.0	5.6	17.0		
Cycle Q Clear(g_c), s	10.7	10.1	0.0	0.0	5.6	17.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	156	139	3849	1198	85	4228		
V/C Ratio(X)	0.83	0.78	0.45	0.04	0.79	0.48		
Avail Cap(c_a), veh/h	358	320	3849	1198	189	4228		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.92	0.92	0.84	0.84		
Uniform Delay (d), s/veh	67.3	67.0	0.0	0.0	70.7	3.6		
Incr Delay (d2), s/veh	8.0	7.0	0.4	0.1	5.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.6	8.9	0.1	0.0	2.9	7.9		
LnGrp Delay(d),s/veh	75.3	73.9	0.4	0.1	75.8	3.9		
LnGrp LOS	E	E	A	A	E	A		
Approach Vol, veh/h	238		1794			2111		
Approach Delay, s/veh	74.7		0.3			6.2		
Approach LOS	E		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				131.1		18.9	11.2	119.9
Change Period (Y+Rc), s				6.4		5.7	4.0	6.4
Max Green Setting (Gmax), s				107.6		30.3	16.0	87.6
Max Q Clear Time (g_c+I1), s				19.0		12.7	7.6	2.0
Green Ext Time (p_c), s				81.0		0.5	0.0	78.5
Intersection Summary								
HCM 2010 Ctrl Delay			7.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
 74: Roseville Pkwy/E. Roseville Pkwy & Rocky Ridge Dr

Cumulative No Project
 AM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	118	66	139	1600	1902	185		
Future Volume (veh/h)	118	66	139	1600	1902	185		
Number	5	12	3	8	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	124	69	146	1684	2002	195		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	200	92	192	3841	3422	1065		
Arrive On Green	0.06	0.06	0.11	1.00	1.00	1.00		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	124	69	146	1684	2002	195		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	5.3	6.4	6.2	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	5.3	6.4	6.2	0.0	0.0	0.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	200	92	192	3841	3422	1065		
V/C Ratio(X)	0.62	0.75	0.76	0.44	0.59	0.18		
Avail Cap(c_a), veh/h	580	267	619	3841	3422	1065		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00		
Upstream Filter(I)	1.00	1.00	0.86	0.86	0.85	0.85		
Uniform Delay (d), s/veh	69.0	69.6	65.7	0.0	0.0	0.0		
Incr Delay (d2), s/veh	1.2	4.5	2.0	0.3	0.6	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	2.9	3.0	0.1	0.2	0.1		
LnGrp Delay(d),s/veh	70.2	74.1	67.7	0.3	0.6	0.3		
LnGrp LOS	E	E	E	A	A	A		
Approach Vol, veh/h	193			1830	2197			
Approach Delay, s/veh	71.6			5.7	0.6			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.4	12.4	106.9				119.3
Change Period (Y+Rc), s		5.7	4.0	6.0				* 6
Max Green Setting (Gmax), s		25.3	27.0	82.0			* 1.1E2	
Max Q Clear Time (g_c+I1), s		8.4	8.2	2.0				2.0
Green Ext Time (p_c), s		0.3	0.2	76.3				104.3
Intersection Summary								
HCM 2010 Ctrl Delay			6.1					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

75: Roseville Pkwy & Orvietto Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	11	185	3	39	15	224	1696	8	9	1846	158
Future Volume (veh/h)	45	11	185	3	39	15	224	1696	8	9	1846	158
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	30	36	195	3	41	16	236	1785	8	9	1943	166
Adj No. of Lanes	1	1	1	1	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	260	221	6	155	60	259	3231	1006	15	2532	788
Arrive On Green	0.02	0.14	0.14	0.00	0.12	0.12	0.15	0.64	0.64	0.01	0.50	0.50
Sat Flow, veh/h	1774	1863	1583	1774	1277	498	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	30	36	195	3	0	57	236	1785	8	9	1943	166
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1775	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	2.5	2.5	18.1	0.3	0.0	4.4	19.7	29.6	0.3	0.8	46.6	8.8
Cycle Q Clear(g_c), s	2.5	2.5	18.1	0.3	0.0	4.4	19.7	29.6	0.3	0.8	46.6	8.8
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	38	260	221	6	0	215	259	3231	1006	15	2532	788
V/C Ratio(X)	0.79	0.14	0.88	0.54	0.00	0.27	0.91	0.55	0.01	0.61	0.77	0.21
Avail Cap(c_a), veh/h	83	335	285	47	0	308	367	3231	1006	47	2532	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	0.83	0.83	0.83
Uniform Delay (d), s/veh	73.0	56.6	63.3	74.7	0.0	59.9	63.1	15.4	10.0	74.1	30.6	21.1
Incr Delay (d2), s/veh	12.3	0.3	23.5	27.0	0.0	0.5	15.8	0.6	0.0	11.8	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.3	9.4	0.2	0.0	2.2	10.8	13.9	0.1	0.4	22.1	3.9
LnGrp Delay(d),s/veh	85.3	57.0	86.8	101.6	0.0	60.4	79.0	16.0	10.0	85.9	32.0	21.3
LnGrp LOS	F	E	F	F		E	E	B	B	F	C	C
Approach Vol, veh/h	261				60				2029			
Approach Delay, s/veh	82.5				62.4				23.3			
Approach LOS	F				E				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.5	26.9	25.9	80.4	7.2	24.2	5.3	101.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	* 6	4.0	5.7				
Max Green Setting (Gmax), s	4.0	27.0	31.0	68.3	7.0	* 26	4.0	95.3				
Max Q Clear Time (g_c+I1), s	2.3	20.1	21.7	48.6	4.5	6.4	2.8	31.6				
Green Ext Time (p_c), s	0.0	0.8	0.2	19.6	0.0	1.4	0.0	62.3				

Intersection Summary

HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

76: Roseville Pkwy & Olympus Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	9	5	147	251	297	32	1559	118	125	1630	37
Future Volume (veh/h)	2	9	5	147	251	297	32	1559	118	125	1630	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	9	5	155	264	0	34	1641	0	132	1716	39
Adj No. of Lanes	1	1	1	1	2	1	1	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	28	24	178	400	179	44	3580	1115	178	3740	85
Arrive On Green	0.00	0.01	0.01	0.10	0.11	0.00	0.02	0.70	0.00	0.05	0.73	0.73
Sat Flow, veh/h	1774	1863	1583	1774	3539	1583	1774	5085	1583	3442	5116	116
Grp Volume(v), veh/h	2	9	5	155	264	0	34	1641	0	132	1137	618
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1721	1695	1842
Q Serve(g_s), s	0.2	0.7	0.5	12.9	10.7	0.0	2.9	21.2	0.0	5.7	20.4	20.4
Cycle Q Clear(g_c), s	0.2	0.7	0.5	12.9	10.7	0.0	2.9	21.2	0.0	5.7	20.4	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	4	28	24	178	400	179	44	3580	1115	178	2478	1347
V/C Ratio(X)	0.53	0.32	0.21	0.87	0.66	0.00	0.78	0.46	0.00	0.74	0.46	0.46
Avail Cap(c_a), veh/h	142	250	212	296	762	341	142	3580	1115	321	2478	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.63	0.63	0.00	0.68	0.68	0.68
Uniform Delay (d), s/veh	74.8	73.1	73.0	66.5	63.8	0.0	72.8	9.7	0.0	70.2	8.2	8.2
Incr Delay (d2), s/veh	36.5	18.5	12.5	7.6	2.9	0.0	6.9	0.1	0.0	1.6	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.3	6.7	5.4	0.0	1.5	9.9	0.0	2.7	9.6	10.6
LnGrp Delay(d),s/veh	111.3	91.7	85.5	74.1	66.7	0.0	79.7	9.8	0.0	71.7	8.6	8.9
LnGrp LOS	F	F	F	E	E		E	A		E	A	A
Approach Vol, veh/h	16				419				1675			
Approach Delay, s/veh	92.2				69.4				11.2			
Approach LOS	F				E				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	7.9	7.7	115.3	4.3	22.6	11.7	111.3				
Change Period (Y+Rc), s	4.0	* 5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	25.0	* 20	12.0	74.3	12.0	32.3	14.0	72.3				
Max Q Clear Time (g_c+I1), s	14.9	2.7	4.9	22.4	2.2	12.7	7.7	23.2				
Green Ext Time (p_c), s	0.1	2.3	0.0	49.1	0.0	2.5	0.1	46.6				

Intersection Summary

HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
77: Douglas Blvd & Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1149	101	44	1695	621	284	1025	62	1047	491	172
Future Volume (veh/h)	95	1149	101	44	1695	621	284	1025	62	1047	491	172
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	1209	106	46	1784	0	299	1079	65	1102	517	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	1899	589	78	1845	575	346	1200	371	1384	2154	671
Arrive On Green	0.03	0.37	0.37	0.02	0.36	0.00	0.10	0.24	0.24	0.09	0.14	0.00
Sat Flow, veh/h	3442	5085	1577	3442	5085	1583	3442	5085	1573	5003	5085	1583
Grp Volume(v), veh/h	100	1209	106	46	1784	0	299	1079	65	1102	517	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1577	1721	1695	1583	1721	1695	1573	1668	1695	1583
Q Serve(g_s), s	4.3	29.3	6.8	2.0	51.6	0.0	12.8	30.9	4.7	32.4	13.6	0.0
Cycle Q Clear(g_c), s	4.3	29.3	6.8	2.0	51.6	0.0	12.8	30.9	4.7	32.4	13.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	1899	589	78	1845	575	346	1200	371	1384	2154	671
V/C Ratio(X)	0.87	0.64	0.18	0.59	0.97	0.00	0.86	0.90	0.18	0.80	0.24	0.00
Avail Cap(c_a), veh/h	115	1899	589	115	1865	581	436	1231	381	1384	2154	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.84	0.84	0.00
Uniform Delay (d), s/veh	72.2	38.6	31.6	72.6	46.9	0.0	66.5	55.6	41.5	64.0	43.0	0.0
Incr Delay (d2), s/veh	45.5	1.6	0.7	2.6	13.8	0.0	11.8	9.3	0.4	2.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	14.1	3.1	1.0	26.5	0.0	6.7	15.5	2.1	15.3	6.4	0.0
LnGrp Delay(d),s/veh	117.7	40.3	32.2	75.2	60.7	0.0	78.3	64.8	41.8	66.6	43.2	0.0
LnGrp LOS	F	D	C	E	E		E	E	D	E	D	
Approach Vol, veh/h	1415				1830				1443			
Approach Delay, s/veh	45.1				61.1				66.6			
Approach LOS	D				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	62.0	19.1	69.5	9.0	60.4	47.4	41.1				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	6.0	5.7	* 5.7				
Max Green Setting (Gmax), s	5.0	55.0	19.0	51.3	5.0	55.0	34.0	* 36				
Max Q Clear Time (g_c+I1), s	4.0	31.3	14.8	15.6	6.3	53.6	34.4	32.9				
Green Ext Time (p_c), s	0.0	22.6	0.2	8.0	0.0	0.8	0.0	2.5				

Intersection Summary

HCM 2010 Ctrl Delay	58.3
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
78: E. Roseville Pkwy & Village Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	2	22	34	2	141	35	1098	28	71	542	2
Future Volume (veh/h)	44	2	22	34	2	141	35	1098	28	71	542	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	46	2	23	36	2	148	37	1156	29	75	571	2
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	9	189	275	15	258	115	1644	41	159	1775	6
Arrive On Green	0.12	0.12	0.12	0.16	0.16	0.16	0.06	0.47	0.44	0.09	0.49	0.46
Sat Flow, veh/h	1704	74	1583	1685	94	1583	1774	3528	88	1774	3617	13
Grp Volume(v), veh/h	48	0	23	38	0	148	37	580	605	75	279	294
Grp Sat Flow(s),veh/h/ln	1778	0	1583	1779	0	1583	1774	1770	1847	1774	1770	1861
Q Serve(g_s), s	1.8	0.0	0.9	1.3	0.0	6.2	1.4	18.7	18.8	2.9	6.9	6.9
Cycle Q Clear(g_c), s	1.8	0.0	0.9	1.3	0.0	6.2	1.4	18.7	18.8	2.9	6.9	6.9
Prop In Lane	0.96		1.00	0.95		1.00	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	212	0	189	290	0	258	115	825	861	159	868	913
V/C Ratio(X)	0.23	0.00	0.12	0.13	0.00	0.57	0.32	0.70	0.70	0.47	0.32	0.32
Avail Cap(c_a), veh/h	272	0	242	1037	0	923	197	917	957	197	917	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	28.3	25.8	0.0	27.8	32.2	15.3	15.3	31.2	11.1	11.1
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	0.8	0.6	2.7	2.6	0.8	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.4	0.6	0.0	2.8	0.7	9.6	10.0	1.5	3.4	3.6
LnGrp Delay(d),s/veh	28.9	0.0	28.5	25.9	0.0	28.6	32.8	18.0	17.9	32.0	11.5	11.4
LnGrp LOS	C		C	C		C	C	B	B	C	B	B
Approach Vol, veh/h		71			186			1222			648	
Approach Delay, s/veh		28.8			28.0			18.4			13.8	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.6	7.7	38.0		14.7	9.4	36.3				
Change Period (Y+Rc), s		4.0	4.0	5.7		4.0	4.0	5.7				
Max Green Setting (Gmax), s		10.0	7.0	34.3		41.0	7.0	34.3				
Max Q Clear Time (g_c+I1), s		3.8	3.4	8.9		8.2	4.9	20.8				
Green Ext Time (p_c), s		0.1	0.0	15.4		0.5	0.0	9.8				
Intersection Summary												
HCM 2010 Ctrl Delay			18.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
79: E. Roseville Pkwy & Eureka Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	195	360	71	684	491	411	717	179	110	386	21
Future Volume (veh/h)	14	195	360	71	684	491	411	717	179	110	386	21
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1966	1891	1891	1966	1891	1891	1966	1891	1891	1947	1872	1872
Adj Flow Rate, veh/h	15	205	379	75	720	517	433	755	188	116	406	22
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	83	1244	762	185	1440	642	544	1189	530	387	1477	458
Arrive On Green	0.04	0.35	0.33	0.10	0.40	0.40	0.15	0.33	0.33	0.11	0.29	0.29
Sat Flow, veh/h	1873	3592	1600	1873	3592	1601	3633	3592	1600	3597	5110	1583
Grp Volume(v), veh/h	15	205	379	75	720	517	433	755	188	116	406	22
Grp Sat Flow(s),veh/h/ln	1873	1796	1600	1873	1796	1601	1816	1796	1600	1798	1703	1583
Q Serve(g_s), s	0.8	3.9	16.0	3.7	14.8	28.1	11.3	17.5	8.8	2.9	6.0	1.0
Cycle Q Clear(g_c), s	0.8	3.9	16.0	3.7	14.8	28.1	11.3	17.5	8.8	2.9	6.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	1244	762	185	1440	642	544	1189	530	387	1477	458
V/C Ratio(X)	0.18	0.16	0.50	0.41	0.50	0.81	0.80	0.63	0.35	0.30	0.27	0.05
Avail Cap(c_a), veh/h	210	1437	848	210	1440	642	703	1364	607	403	1524	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	22.3	17.7	41.6	22.1	26.0	40.3	27.8	24.9	40.4	27.0	25.2
Incr Delay (d2), s/veh	0.4	0.1	0.9	0.5	0.5	8.0	3.7	1.1	0.7	0.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.0	7.2	1.9	7.4	13.8	5.9	8.9	4.0	1.5	2.8	0.4
LnGrp Delay(d),s/veh	45.6	22.4	18.6	42.1	22.5	34.1	44.0	29.0	25.6	40.6	27.1	25.3
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h	599			1312				1376			544	
Approach Delay, s/veh	20.5			28.2				33.2			29.9	
Approach LOS	C			C				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	36.7	17.7	31.1	7.4	42.1	13.6	35.2				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	10.0	36.3	18.0	26.3	10.0	36.3	10.0	34.3				
Max Q Clear Time (g_c+I1), s	5.7	18.0	13.3	8.0	2.8	30.1	4.9	19.5				
Green Ext Time (p_c), s	0.0	13.0	0.4	11.3	0.0	5.3	0.1	9.7				
Intersection Summary												
HCM 2010 Ctrl Delay	29.1											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

80: N. Cirby Way & E. Roseville Pkwy

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	736	24	13	976	77	131		
Future Volume (veh/h)	736	24	13	976	77	131		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	775	25	14	1027	81	138		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1972	830	84	2344	394	352		
Arrive On Green	0.56	0.52	0.05	0.66	0.22	0.22		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	775	25	14	1027	81	138		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	6.4	0.4	0.4	7.2	1.9	3.9		
Cycle Q Clear(g_c), s	6.4	0.4	0.4	7.2	1.9	3.9		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1972	830	84	2344	394	352		
V/C Ratio(X)	0.39	0.03	0.17	0.44	0.21	0.39		
Avail Cap(c_a), veh/h	2045	863	307	2978	922	823		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	6.5	6.0	23.7	4.2	16.5	17.2		
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.2	0.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.2	0.2	0.2	3.5	1.0	1.7		
LnGrp Delay(d),s/veh	6.7	6.0	24.1	4.4	16.6	17.5		
LnGrp LOS	A	A	C	A	B	B		
Approach Vol, veh/h	800			1041	219			
Approach Delay, s/veh	6.7			4.7	17.1			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.5	5.5	31.9				37.4
Change Period (Y+Rc), s		4.0	4.0	5.7				* 5.7
Max Green Setting (Gmax), s		26.0	8.0	27.3				* 41
Max Q Clear Time (g_c+l1), s		5.9	2.4	8.4				9.2
Green Ext Time (p_c), s		0.3	0.0	15.0				22.5
Intersection Summary								
HCM 2010 Ctrl Delay			6.8					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

81: Sierra College Blvd & E. Roseville Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	171	576	62	352	262	606	1505	39	83	659	16
Future Volume (veh/h)	110	171	576	62	352	262	606	1505	39	83	659	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	116	180	0	65	371	0	638	1584	0	87	694	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	574	257	283	575	257	739	2627	818	421	2242	698
Arrive On Green	0.08	0.16	0.00	0.08	0.16	0.00	0.21	0.52	0.00	0.12	0.44	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	116	180	0	65	371	0	638	1584	0	87	694	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	3.8	5.4	0.0	2.1	11.8	0.0	21.4	26.2	0.0	2.7	10.6	0.0
Cycle Q Clear(g_c), s	3.8	5.4	0.0	2.1	11.8	0.0	21.4	26.2	0.0	2.7	10.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	574	257	283	575	257	739	2627	818	421	2242	698
V/C Ratio(X)	0.41	0.31	0.00	0.23	0.64	0.00	0.86	0.60	0.00	0.21	0.31	0.00
Avail Cap(c_a), veh/h	315	767	343	315	779	348	1032	2627	818	421	2242	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.4	44.4	0.0	51.5	47.0	0.0	45.4	20.4	0.0	47.4	21.7	0.0
Incr Delay (d2), s/veh	0.4	0.5	0.0	0.2	2.1	0.0	4.3	1.0	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.7	0.0	1.0	5.9	0.0	10.6	12.4	0.0	1.3	5.0	0.0
LnGrp Delay(d),s/veh	52.7	44.9	0.0	51.7	49.1	0.0	49.7	21.4	0.0	47.5	21.8	0.0
LnGrp LOS	D	D		D	D		D	C		D	C	
Approach Vol, veh/h	296				436				2222			
Approach Delay, s/veh	48.0				49.5				29.5			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.7	65.0	12.9	22.5	28.8	55.9	12.8	22.5				
Change Period (Y+Rc), s	6.0	* 6	4.0	5.7	4.0	6.0	4.0	* 5.7				
Max Green Setting (Gmax), s	8.0	* 59	10.0	23.3	35.0	32.0	10.0	* 24				
Max Q Clear Time (g_c+I1), s	4.7	28.2	4.1	7.4	23.4	12.6	5.8	13.8				
Green Ext Time (p_c), s	0.2	14.5	0.0	3.6	1.3	4.7	0.1	2.8				

Intersection Summary

HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
82: Atlantic St & Yosemite St

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	122	839	621	407	406	140		
Future Volume (veh/h)	122	839	621	407	406	140		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827		
Adj Flow Rate, veh/h	128	883	654	428	427	147		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	4	4	4	4	4	4		
Cap, veh/h	170	1935	1393	619	590	739		
Arrive On Green	0.10	0.56	0.40	0.40	0.34	0.34		
Sat Flow, veh/h	1740	3563	3563	1543	1740	1553		
Grp Volume(v), veh/h	128	883	654	428	427	147		
Grp Sat Flow(s),veh/h/ln	1740	1736	1736	1543	1740	1553		
Q Serve(g_s), s	3.7	7.7	7.1	11.8	11.0	2.8		
Cycle Q Clear(g_c), s	3.7	7.7	7.1	11.8	11.0	2.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	170	1935	1393	619	590	739		
V/C Ratio(X)	0.75	0.46	0.47	0.69	0.72	0.20		
Avail Cap(c_a), veh/h	170	1935	1739	773	1052	1151		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.5	6.7	11.3	12.7	14.8	7.8		
Incr Delay (d2), s/veh	15.7	0.2	0.2	1.9	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	3.7	3.4	5.3	5.3	3.2		
LnGrp Delay(d),s/veh	38.2	6.9	11.6	14.6	15.5	7.8		
LnGrp LOS	D	A	B	B	B	A		
Approach Vol, veh/h		1011	1082		574			
Approach Delay, s/veh		10.9	12.8		13.5			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.3		19.0	8.0	24.3		
Change Period (Y+Rc), s		5.7		4.6	4.0	5.7		
Max Green Setting (Gmax), s		24.7		28.0	4.0	23.7		
Max Q Clear Time (g_c+I1), s		9.7		13.0	5.7	13.8		
Green Ext Time (p_c), s		8.2		1.4	0.0	4.7		
Intersection Summary								
HCM 2010 Ctrl Delay			12.2					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

83: Center St/Tiger Way & Atlantic St

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	774	11	63	1009	122	31	3	30	126	5	27
Future Volume (veh/h)	181	774	11	63	1009	122	31	3	30	126	5	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1881	1810	1810	1881	1881	1900	1862	1776	1773
Adj Flow Rate, veh/h	191	815	12	66	1062	128	33	3	32	133	5	28
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	1	5	5	1	1	1	1	1	5
Cap, veh/h	263	1839	27	115	1518	671	117	9	97	178	7	160
Arrive On Green	0.15	0.53	0.51	0.06	0.44	0.44	0.07	0.07	0.07	0.11	0.11	0.11
Sat Flow, veh/h	1723	3470	51	1792	3438	1521	1792	139	1481	1633	61	1466
Grp Volume(v), veh/h	191	404	423	66	1062	128	33	0	35	138	0	28
Grp Sat Flow(s),veh/h/ln	1723	1720	1801	1792	1719	1521	1792	0	1620	1694	0	1466
Q Serve(g_s), s	5.8	7.9	7.9	2.0	13.7	2.8	1.0	0.0	1.1	4.3	0.0	1.0
Cycle Q Clear(g_c), s	5.8	7.9	7.9	2.0	13.7	2.8	1.0	0.0	1.1	4.3	0.0	1.0
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.91	0.96		1.00
Lane Grp Cap(c), veh/h	263	912	955	115	1518	671	117	0	106	185	0	160
V/C Ratio(X)	0.73	0.44	0.44	0.57	0.70	0.19	0.28	0.00	0.33	0.75	0.00	0.17
Avail Cap(c_a), veh/h	283	918	961	196	1647	728	522	0	472	185	0	160
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	7.9	7.9	25.0	12.4	9.3	24.4	0.0	24.5	23.7	0.0	22.2
Incr Delay (d2), s/veh	6.9	0.3	0.3	1.7	1.2	0.1	0.5	0.0	0.7	15.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	3.8	4.0	1.0	6.6	1.2	0.5	0.0	0.5	2.8	0.0	0.4
LnGrp Delay(d),s/veh	29.1	8.3	8.3	26.6	13.6	9.5	24.9	0.0	25.2	38.8	0.0	22.7
LnGrp LOS	C	A	A	C	B	A	C		C	D		C
Approach Vol, veh/h	1018				1256				68		166	
Approach Delay, s/veh	12.2				13.9				25.1		36.1	
Approach LOS	B				B				C		D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	32.8		9.0	11.4	27.9		6.6				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	5.0	27.3		5.0	8.0	24.3		15.0				
Max Q Clear Time (g_c+I1), s	4.0	9.9		6.3	7.8	15.7		3.1				
Green Ext Time (p_c), s	0.0	11.3		0.0	0.0	6.5		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	15.0											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

84: Wills Rd & Atlantic St

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	971	278	344	875	135	213		
Future Volume (veh/h)	971	278	344	875	135	213		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1022	293	362	921	142	224		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1121	497	414	2242	267	714		
Arrive On Green	0.32	0.30	0.23	0.63	0.15	0.15		
Sat Flow, veh/h	3632	1570	1774	3632	1774	1583		
Grp Volume(v), veh/h	1022	293	362	921	142	224		
Grp Sat Flow(s),veh/h/ln	1770	1570	1774	1770	1774	1583		
Q Serve(g_s), s	16.6	9.4	11.8	7.7	4.4	5.4		
Cycle Q Clear(g_c), s	16.6	9.4	11.8	7.7	4.4	5.4		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1121	497	414	2242	267	714		
V/C Ratio(X)	0.91	0.59	0.87	0.41	0.53	0.31		
Avail Cap(c_a), veh/h	1121	497	414	2242	503	924		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.78	0.78	1.00	1.00		
Uniform Delay (d), s/veh	19.7	17.2	22.2	5.5	23.5	10.5		
Incr Delay (d2), s/veh	11.2	1.8	14.5	0.4	0.6	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	9.8	4.4	7.4	3.8	2.2	3.7		
LnGrp Delay(d),s/veh	30.9	19.0	36.6	5.9	24.1	10.6		
LnGrp LOS	C	B	D	A	C	B		
Approach Vol, veh/h	1315			1283	366			
Approach Delay, s/veh	28.2			14.6	15.9			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	4		6			
Phs Duration (G+Y+Rc), s	19.0	23.0	12.0		42.0			
Change Period (Y+Rc), s	6.0	* 6	4.0		6.0			
Max Green Setting (Gmax), s	13.0	* 17	16.0		34.0			
Max Q Clear Time (g_c+I1), s	13.8	18.6	7.4		9.7			
Green Ext Time (p_c), s	0.0	0.0	0.6		4.6			
Intersection Summary								
HCM 2010 Ctrl Delay			20.8					
HCM 2010 LOS			C					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

85: I-80 WB Ramps & Atlantic St/Eureka Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑↑	↑↑				↑			↑
Traffic Volume (veh/h)	0	961	245	590	624	0	0	0	1139	0	0	613
Future Volume (veh/h)	0	961	245	590	624	0	0	0	1139	0	0	613
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	0	1012	258	621	657	0	0	0	0	0	0	0
Adj No. of Lanes	0	3	1	2	2	0	0	0	1	0	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	0	0	2	0	0	2
Cap, veh/h	0	1115	343	2380	3392	0	0	0	0	0	0	0
Arrive On Green	0.00	0.22	0.22	0.69	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	5253	1565	3442	3632	0		0			0	
Grp Volume(v), veh/h	0	1012	258	621	657	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	0	1695	1565	1721	1770	0						
Q Serve(g_s), s	0.0	23.3	18.5	8.1	1.1	0.0						
Cycle Q Clear(g_c), s	0.0	23.3	18.5	8.1	1.1	0.0						
Prop In Lane	0.00		1.00	1.00		0.00						
Lane Grp Cap(c), veh/h	0	1115	343	2380	3392	0						
V/C Ratio(X)	0.00	0.91	0.75	0.26	0.19	0.00						
Avail Cap(c_a), veh/h	0	1115	343	2380	3392	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	0.74	0.74	0.53	0.53	0.00						
Uniform Delay (d), s/veh	0.0	45.7	43.8	7.0	0.1	0.0						
Incr Delay (d2), s/veh	0.0	9.6	10.8	0.0	0.0	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	11.9	9.0	3.8	0.5	0.0						
LnGrp Delay(d),s/veh	0.0	55.3	54.6	7.0	0.1	0.0						
LnGrp LOS		E	D	A	A							
Approach Vol, veh/h		1270			1278							
Approach Delay, s/veh		55.1			3.5							
Approach LOS		E			A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	88.0	32.0				120.0						
Change Period (Y+Rc), s	5.0	* 5.7				5.0						
Max Green Setting (Gmax), s	24.0	* 26				16.0						
Max Q Clear Time (g_c+I1), s	10.1	25.3				3.1						
Green Ext Time (p_c), s	2.2	0.8				4.5						
Intersection Summary												
HCM 2010 Ctrl Delay				29.2								
HCM 2010 LOS				C								
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
86: I-80 EB Ramps/Taylor Rd & Eureka Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	1677	0	0	1790	286	153	374	728	92	0	377
Future Volume (veh/h)	199	1677	0	0	1790	286	153	374	728	92	0	377
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1863	1863	1863	1863	1863	0	1863
Adj Flow Rate, veh/h	209	1765	0	0	1884	301	161	394	0	97	0	397
Adj No. of Lanes	2	2	1	0	3	1	1	2	1	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	266	2257	1010	0	2680	835	500	564	252	269	0	0
Arrive On Green	0.10	0.85	0.00	0.00	0.53	0.53	0.28	0.16	0.00	0.08	0.00	0.00
Sat Flow, veh/h	3442	3539	1583	0	5253	1583	1774	3539	1583	3442	97	
Grp Volume(v), veh/h	209	1765	0	0	1884	301	161	394	0	97	52.8	
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	0	1695	1583	1774	1770	1583	1721	D	
Q Serve(g_s), s	7.1	27.0	0.0	0.0	33.4	8.8	8.6	12.6	0.0	3.2		
Cycle Q Clear(g_c), s	7.1	27.0	0.0	0.0	33.4	8.8	8.6	12.6	0.0	3.2		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	266	2257	1010	0	2680	835	500	564	252	269		
V/C Ratio(X)	0.79	0.78	0.00	0.00	0.70	0.36	0.32	0.70	0.00	0.36		
Avail Cap(c_a), veh/h	402	2257	1010	0	2680	835	500	1023	458	287		
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.84	0.84	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	52.9	5.4	0.0	0.0	21.3	7.3	34.1	47.7	0.0	52.5		
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.0	0.7	0.3	0.5	2.2	0.0	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.4	12.5	0.0	0.0	15.7	3.9	4.3	6.4	0.0	1.5		
LnGrp Delay(d),s/veh	53.1	5.6	0.0	0.0	22.1	7.6	34.6	50.0	0.0	52.8		
LnGrp LOS	D	A			C	A	C	D		D		
Approach Vol, veh/h	1974			2185			555					
Approach Delay, s/veh	10.6			20.1			45.5					
Approach LOS	B			C			D					
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3			5	6	7	8			
Phs Duration (G+Y+Rc), s	82.2		37.8			13.3	68.9	13.4	24.4			
Change Period (Y+Rc), s	5.7		4.0			4.0	5.7	4.0	5.3			
Max Green Setting (Gmax), s	60.3		20.0			14.0	42.3	10.0	34.7			
Max Q Clear Time (g_c+I1), s	29.0		10.6			9.1	35.4	5.2	14.6			
Green Ext Time (p_c), s	30.2		0.6			0.2	6.8	0.1	3.1			
Intersection Summary												
HCM 2010 Ctrl Delay	19.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

87: N. Sunrise Ave & Eureka Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1972	343	68	1745	33	160	262	141	181	282	162
Future Volume (veh/h)	197	1972	343	68	1745	33	160	262	141	181	282	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	207	2076	0	72	1837	0	168	276	0	191	297	171
Adj No. of Lanes	2	3	1	2	4	1	3	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	2563	798	235	3060	756	415	770	240	286	699	215
Arrive On Green	0.16	1.00	0.00	0.07	0.48	0.00	0.08	0.15	0.00	0.08	0.14	0.14
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	5003	5085	1583	3442	5085	1566
Grp Volume(v), veh/h	207	2076	0	72	1837	0	168	276	0	191	297	171
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1668	1695	1583	1721	1695	1566
Q Serve(g_s), s	6.9	0.0	0.0	2.4	25.2	0.0	3.8	5.8	0.0	6.5	6.4	12.7
Cycle Q Clear(g_c), s	6.9	0.0	0.0	2.4	25.2	0.0	3.8	5.8	0.0	6.5	6.4	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	2563	798	235	3060	756	415	770	240	286	699	215
V/C Ratio(X)	0.75	0.81	0.00	0.31	0.60	0.00	0.40	0.36	0.00	0.67	0.43	0.79
Avail Cap(c_a), veh/h	344	2563	798	258	3060	756	417	835	260	344	903	278
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	0.0	0.0	53.2	23.0	0.0	52.2	45.7	0.0	53.4	47.4	50.1
Incr Delay (d2), s/veh	3.2	1.4	0.0	0.3	0.9	0.0	0.2	0.4	0.0	2.3	0.5	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.3	0.0	1.1	11.3	0.0	1.8	2.8	0.0	3.2	3.0	6.2
LnGrp Delay(d),s/veh	52.3	1.4	0.0	53.5	23.8	0.0	52.4	46.1	0.0	55.6	47.9	62.5
LnGrp LOS	D	A		D	C		D	D		E	D	E
Approach Vol, veh/h	2283				1909				444			
Approach Delay, s/veh	6.0				25.0				48.5			
Approach LOS	A				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	23.5	12.2	66.2	15.3	22.2	15.4	63.0				
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	5.3	* 5.7	5.7	* 5.7				
Max Green Setting (Gmax), s	12.0	19.7	9.0	60.3	10.0	* 21	12.0	* 57				
Max Q Clear Time (g_c+I1), s	8.5	7.8	4.4	2.0	5.8	14.7	8.9	27.2				
Green Ext Time (p_c), s	0.1	1.9	0.0	34.9	0.9	1.5	0.8	19.3				

Intersection Summary

HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

88: Eureka Rd & Rocky Ridge Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	394	205	4	42	140	67	6	1254	82	54	1447	252
Future Volume (veh/h)	394	205	4	42	140	67	6	1254	82	54	1447	252
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	415	216	0	44	147	0	6	1320	0	57	1523	0
Adj No. of Lanes	2	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	510	706	296	71	323	125	312	3078	939	88	2365	716
Arrive On Green	0.15	0.20	0.00	0.04	0.09	0.00	0.18	0.61	0.00	0.05	0.47	0.00
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	415	216	0	44	147	0	6	1320	0	57	1523	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	14.0	6.2	0.0	2.9	4.7	0.0	0.3	16.6	0.0	3.8	27.4	0.0
Cycle Q Clear(g_c), s	14.0	6.2	0.0	2.9	4.7	0.0	0.3	16.6	0.0	3.8	27.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	510	706	296	71	323	125	312	3078	939	88	2365	716
V/C Ratio(X)	0.81	0.31	0.00	0.62	0.46	0.00	0.02	0.43	0.00	0.65	0.64	0.00
Avail Cap(c_a), veh/h	746	1203	519	103	634	264	312	3078	939	148	2365	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.5	41.0	0.0	56.7	51.7	0.0	40.9	12.6	0.0	56.0	24.5	0.0
Incr Delay (d2), s/veh	2.8	0.4	0.0	3.3	1.4	0.0	0.0	0.2	0.0	3.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	3.1	0.0	1.5	2.4	0.0	0.2	7.7	0.0	1.9	13.1	0.0
LnGrp Delay(d),s/veh	52.3	41.3	0.0	60.0	53.1	0.0	40.9	12.8	0.0	59.0	25.9	0.0
LnGrp LOS	D	D		E	D		D	B		E	C	
Approach Vol, veh/h	631				191				1326			
Approach Delay, s/veh	48.5				54.7				12.9			
Approach LOS	D				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	27.4	25.8	59.0	20.8	14.4	8.9	75.8				
Change Period (Y+Rc), s	4.0	* 6	5.7	* 5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	6.0	* 38	3.0	* 53	25.0	19.0	9.0	47.3				
Max Q Clear Time (g_c+I1), s	4.9	8.2	2.3	29.4	16.0	6.7	5.8	18.6				
Green Ext Time (p_c), s	0.0	2.5	0.0	13.2	0.8	1.8	0.0	12.3				

Intersection Summary

HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

89: Eureka Rd & Lead Hill Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	126	133	63	184	96	131	1234	52	171	1151	9
Future Volume (veh/h)	55	126	133	63	184	96	131	1234	52	171	1151	9
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	58	133	0	66	194	0	138	1299	0	180	1212	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	339	132	99	359	141	179	2068	624	250	2344	710
Arrive On Green	0.05	0.10	0.00	0.06	0.10	0.00	0.10	0.41	0.00	0.14	0.46	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	58	133	0	66	194	0	138	1299	0	180	1212	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	3.9	4.2	0.0	4.4	6.3	0.0	9.1	24.4	0.0	11.6	20.2	0.0
Cycle Q Clear(g_c), s	3.9	4.2	0.0	4.4	6.3	0.0	9.1	24.4	0.0	11.6	20.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	339	132	99	359	141	179	2068	624	250	2344	710
V/C Ratio(X)	0.65	0.39	0.00	0.67	0.54	0.00	0.77	0.63	0.00	0.72	0.52	0.00
Avail Cap(c_a), veh/h	148	652	272	177	711	298	266	2068	624	355	2344	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.0	51.0	0.0	55.6	51.3	0.0	52.6	28.4	0.0	49.3	22.9	0.0
Incr Delay (d2), s/veh	3.0	0.9	0.0	2.9	1.7	0.0	3.8	1.5	0.0	1.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.1	0.0	2.2	3.2	0.0	4.7	11.7	0.0	5.8	9.5	0.0
LnGrp Delay(d),s/veh	58.9	51.9	0.0	58.4	53.0	0.0	56.4	29.8	0.0	51.0	23.2	0.0
LnGrp LOS	E	D		E	D		E	C		D	C	
Approach Vol, veh/h	191			260			1437			1392		
Approach Delay, s/veh	54.0			54.4			32.4			26.8		
Approach LOS	D			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	15.4	15.1	58.5	9.0	16.1	21.6	52.0				
Change Period (Y+Rc), s	4.0	6.4	4.0	5.7	4.0	6.4	5.7	* 5.7				
Max Green Setting (Gmax), s	11.0	19.6	17.0	52.3	9.0	21.6	23.0	* 46				
Max Q Clear Time (g_c+I1), s	6.4	6.2	11.1	22.2	5.9	8.3	13.6	26.4				
Green Ext Time (p_c), s	0.0	1.4	0.1	11.7	0.0	1.4	2.3	10.0				

Intersection Summary

HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

90: Eureka Road & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	1255	445	60	1300	580	619	492	18	463	457	25
Future Volume (veh/h)	180	1255	445	60	1300	580	619	492	18	463	457	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	189	1321	468	63	1368	0	652	518	19	487	481	26
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	3	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	1898	591	138	1822	567	717	1103	40	578	623	33
Arrive On Green	0.02	0.12	0.12	0.04	0.36	0.00	0.21	0.22	0.22	0.12	0.13	0.13
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5037	184	5003	4941	265
Grp Volume(v), veh/h	189	1321	468	63	1368	0	652	348	189	487	329	178
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1830	1668	1695	1816
Q Serve(g_s), s	6.6	29.9	14.6	2.1	28.3	0.0	22.2	10.7	10.8	11.4	11.3	11.4
Cycle Q Clear(g_c), s	6.6	29.9	14.6	2.1	28.3	0.0	22.2	10.7	10.8	11.4	11.3	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.15
Lane Grp Cap(c), veh/h	247	1898	591	138	1822	567	717	742	401	578	428	229
V/C Ratio(X)	0.77	0.70	0.79	0.46	0.75	0.00	0.91	0.47	0.47	0.84	0.77	0.78
Avail Cap(c_a), veh/h	315	2076	647	143	1822	567	860	819	442	709	452	242
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.6	46.1	8.7	56.3	33.8	0.0	46.4	40.8	40.8	52.0	50.7	50.8
Incr Delay (d2), s/veh	5.9	1.1	6.9	0.9	2.9	0.0	11.0	0.6	1.2	6.5	8.0	15.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	14.3	7.5	1.0	13.7	0.0	11.6	5.1	5.6	5.6	5.8	6.7
LnGrp Delay(d),s/veh	63.5	47.2	15.6	57.2	36.7	0.0	57.4	41.4	42.0	58.5	58.8	65.8
LnGrp LOS	E	D	B	E	D		E	D	D	E	E	E
Approach Vol, veh/h	1978				1431				1189			
Approach Delay, s/veh	41.3				37.6				50.3			
Approach LOS	D				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	50.8	29.0	21.1	12.6	49.0	17.9	32.3				
Change Period (Y+Rc), s	6.0	* 6	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	5.0	* 49	30.0	16.0	11.0	43.0	17.0	29.0				
Max Q Clear Time (g_c+I1), s	4.1	31.9	24.2	13.4	8.6	30.3	13.4	12.8				
Green Ext Time (p_c), s	0.7	12.9	0.8	1.7	0.1	9.0	0.4	7.4				

Intersection Summary

HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
91: Eureka Rd & Deer Valley Apts Dwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	0	0	32	6	61	14	1115	13	35	518	4
Future Volume (veh/h)	33	0	0	32	6	61	14	1115	13	35	518	4
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	0	0	34	6	64	15	1174	14	37	545	4
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	164	0	223	39	233	73	1734	21	121	1840	14
Arrive On Green	0.09	0.00	0.00	0.15	0.15	0.15	0.04	0.48	0.48	0.07	0.51	0.51
Sat Flow, veh/h	1774	1863	0	1519	268	1583	1774	3582	43	1774	3601	26
Grp Volume(v), veh/h	35	0	0	40	0	64	15	580	608	37	268	281
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1787	0	1583	1774	1770	1855	1774	1770	1858
Q Serve(g_s), s	1.2	0.0	0.0	1.3	0.0	2.3	0.5	16.2	16.2	1.3	5.6	5.6
Cycle Q Clear(g_c), s	1.2	0.0	0.0	1.3	0.0	2.3	0.5	16.2	16.2	1.3	5.6	5.6
Prop In Lane	1.00		0.00	0.85		1.00	1.00		0.02	1.00		0.01
Lane Grp Cap(c), veh/h	156	164	0	262	0	233	73	856	898	121	904	949
V/C Ratio(X)	0.22	0.00	0.00	0.15	0.00	0.28	0.21	0.68	0.68	0.31	0.30	0.30
Avail Cap(c_a), veh/h	304	319	0	584	0	517	221	999	1048	221	999	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	23.9	0.0	24.4	29.8	12.7	12.7	28.5	9.1	9.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.2	0.5	2.1	2.0	0.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.6	0.0	1.0	0.3	8.2	8.6	0.6	2.8	2.9
LnGrp Delay(d),s/veh	27.5	0.0	0.0	24.0	0.0	24.6	30.3	14.8	14.7	29.0	9.4	9.4
LnGrp LOS	C			C		C	C	B	B	C	A	A
Approach Vol, veh/h	35				104		1203				586	
Approach Delay, s/veh	27.5				24.4		14.9				10.6	
Approach LOS	C				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.6	37.5	12.4		7.4	35.8	8.6					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	7.0	35.3	20.0		7.0	35.3	10.0					
Max Q Clear Time (g_c+I1), s	2.5	7.6	4.3		3.3	18.2	3.2					
Green Ext Time (p_c), s	0.0	16.6	0.2		0.0	11.9	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			14.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
92: Ashland Dr & Eureka Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	395	29	34	1165	70	43	5	18	22	17	8
Future Volume (veh/h)	58	395	29	34	1165	70	43	5	18	22	17	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	61	416	31	36	1226	74	45	5	19	23	18	8
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	1634	121	98	1637	678	231	26	228	113	88	176
Arrive On Green	0.08	0.49	0.45	0.06	0.46	0.43	0.14	0.14	0.14	0.11	0.11	0.11
Sat Flow, veh/h	1774	3341	248	1774	3539	1583	1604	178	1583	1016	795	1583
Grp Volume(v), veh/h	61	220	227	36	1226	74	50	0	19	41	0	8
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1770	1583	1783	0	1583	1812	0	1583
Q Serve(g_s), s	1.9	4.2	4.3	1.1	16.6	1.6	1.4	0.0	0.6	1.2	0.0	0.3
Cycle Q Clear(g_c), s	1.9	4.2	4.3	1.1	16.6	1.6	1.4	0.0	0.6	1.2	0.0	0.3
Prop In Lane	1.00		0.14	1.00		1.00	0.90		1.00	0.56		1.00
Lane Grp Cap(c), veh/h	145	866	890	98	1637	678	257	0	228	201	0	176
V/C Ratio(X)	0.42	0.25	0.26	0.37	0.75	0.11	0.19	0.00	0.08	0.20	0.00	0.05
Avail Cap(c_a), veh/h	213	866	890	182	1656	687	367	0	326	683	0	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	8.7	8.8	26.6	12.9	10.0	22.0	0.0	21.6	23.6	0.0	23.2
Incr Delay (d2), s/veh	0.7	0.7	0.7	0.9	3.2	0.3	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.2	2.3	0.6	8.7	0.8	0.7	0.0	0.3	0.6	0.0	0.1
LnGrp Delay(d),s/veh	26.2	9.4	9.5	27.4	16.1	10.3	22.1	0.0	21.7	23.8	0.0	23.2
LnGrp LOS	C	A	A	C	B	B	C		C	C		C
Approach Vol, veh/h	508		1336				69		49			
Approach Delay, s/veh	11.4		16.0				22.0		23.7			
Approach LOS	B		B				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	11.4		6.2	31.2	9.5		7.8	29.7				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	11.0		5.0	25.3	21.0		6.0	24.3				
Max Q Clear Time (g_c+I1), s	3.4		3.1	6.3	3.2		3.9	18.6				
Green Ext Time (p_c), s	0.1		0.0	17.4	0.1		0.0	5.4				
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
93: Sierra College Blvd & Eureka Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	258	69	28	640	265	456	1301	34	202	712	164
Future Volume (veh/h)	160	258	69	28	640	265	456	1301	34	202	712	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	168	272	0	29	674	0	480	1369	0	213	749	0
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	1025	439	206	820	347	666	1987	592	297	1369	400
Arrive On Green	0.12	0.29	0.00	0.06	0.23	0.00	0.19	0.39	0.00	0.09	0.27	0.00
Sat Flow, veh/h	1774	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	168	272	0	29	674	0	480	1369	0	213	749	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	11.1	7.1	0.0	1.0	21.7	0.0	15.7	26.9	0.0	7.2	15.1	0.0
Cycle Q Clear(g_c), s	11.1	7.1	0.0	1.0	21.7	0.0	15.7	26.9	0.0	7.2	15.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	1025	439	206	820	347	666	1987	592	297	1369	400
V/C Ratio(X)	0.80	0.27	0.00	0.14	0.82	0.00	0.72	0.69	0.00	0.72	0.55	0.00
Avail Cap(c_a), veh/h	296	1115	479	315	849	360	774	1987	592	373	1369	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.6	32.8	0.0	53.5	43.8	0.0	45.3	30.5	0.0	53.4	37.6	0.0
Incr Delay (d2), s/veh	6.7	0.2	0.0	0.1	6.9	0.0	2.1	1.2	0.0	3.2	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	3.5	0.0	0.5	11.4	0.0	7.7	12.8	0.0	3.6	7.3	0.0
LnGrp Delay(d),s/veh	58.2	33.0	0.0	53.6	50.7	0.0	47.4	31.7	0.0	56.6	39.2	0.0
LnGrp LOS	E	C		D	D		D	C		E	D	
Approach Vol, veh/h	440				703				1849			
Approach Delay, s/veh	42.6				50.8				35.8			
Approach LOS	D				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.4	49.6	10.2	38.0	27.9	35.0	17.2	31.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7				
Max Green Setting (Gmax), s	12.0	43.3	10.0	35.3	26.0	* 29	19.0	26.3				
Max Q Clear Time (g_c+I1), s	9.2	28.9	3.0	9.1	17.7	17.1	13.1	23.7				
Green Ext Time (p_c), s	0.1	9.6	0.0	8.1	4.5	4.4	0.1	1.6				

Intersection Summary

HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
94: Banjo Alley/Judah St & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑	↑		↑		↑	↑	
Traffic Volume (veh/h)	0	462	0	0	257	268	2	2	0	453	0	8
Future Volume (veh/h)	0	462	0	0	257	268	2	2	0	453	0	8
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	0	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	486	0	0	271	282	2	2	0	484	0	0
Adj No. of Lanes	0	2	0	0	1	1	0	1	0	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	1270	0	0	668	975	36	36	0	912	479	0
Arrive On Green	0.00	0.36	0.00	0.00	0.36	0.36	0.04	0.04	0.00	0.26	0.00	0.00
Sat Flow, veh/h	0	3725	0	0	1863	1583	909	909	0	3548	1863	0
Grp Volume(v), veh/h	0	486	0	0	271	282	4	0	0	484	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1863	1583	1817	0	0	1774	1863	0
Q Serve(g_s), s	0.0	2.9	0.0	0.0	3.1	2.4	0.1	0.0	0.0	3.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.9	0.0	0.0	3.1	2.4	0.1	0.0	0.0	3.4	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.50		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	1270	0	0	668	975	71	0	0	912	479	0
V/C Ratio(X)	0.00	0.38	0.00	0.00	0.41	0.29	0.06	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	0	2109	0	0	668	975	317	0	0	2843	1493	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	6.9	2.6	13.3	0.0	0.0	9.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.4	0.2	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.0	0.0	1.7	1.8	0.0	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.0	0.0	0.0	7.3	2.7	13.4	0.0	0.0	9.4	0.0	0.0
LnGrp LOS		A			A	A	B			A		
Approach Vol, veh/h		486			553			4			484	
Approach Delay, s/veh		7.0			5.0			13.4			9.4	
Approach LOS		A			A			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.2		10.4		14.2		4.1				
Change Period (Y+Rc), s		4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s		16.1		22.0		9.1		4.0				
Max Q Clear Time (g_c+I1), s		4.9		5.4		5.1		2.1				
Green Ext Time (p_c), s		4.4		1.1		2.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				7.0								
HCM 2010 LOS				A								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

95: Park Dr & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑			↕		↵	↑↑	
Traffic Volume (veh/h)	0	922	5	3	541	0	11	0	11	115	0	4
Future Volume (veh/h)	0	922	5	3	541	0	11	0	11	115	0	4
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	971	0	3	569	0	12	0	12	121	0	4
Adj No. of Lanes	0	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1616	0	51	1952	0	57	0	57	287	0	256
Arrive On Green	0.00	0.46	0.00	0.03	0.55	0.00	0.09	0.00	0.09	0.16	0.00	0.16
Sat Flow, veh/h	0	3725	0	1774	3632	0	837	0	837	1774	0	1583
Grp Volume(v), veh/h	0	971	0	3	569	0	24	0	0	121	0	4
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1673	0	0	1774	0	1583
Q Serve(g_s), s	0.0	9.3	0.0	0.1	3.9	0.0	0.6	0.0	0.0	2.8	0.0	0.1
Cycle Q Clear(g_c), s	0.0	9.3	0.0	0.1	3.9	0.0	0.6	0.0	0.0	2.8	0.0	0.1
Prop In Lane	0.00		0.00	1.00		0.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	0	1616	0	51	1952	0	114	0	0	287	0	256
V/C Ratio(X)	0.00	0.60	0.00	0.06	0.29	0.00	0.21	0.00	0.00	0.42	0.00	0.02
Avail Cap(c_a), veh/h	0	1804	0	352	2741	0	332	0	0	822	0	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.2	0.0	21.4	5.4	0.0	19.5	0.0	0.0	17.1	0.0	16.0
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.2	0.1	0.0	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	0.0	0.0	1.9	0.0	0.3	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.7	0.0	21.6	5.5	0.0	19.8	0.0	0.0	17.4	0.0	16.0
LnGrp LOS		A		C	A		B			B		B
Approach Vol, veh/h		971			572			24			125	
Approach Delay, s/veh		9.7			5.6			19.8			17.4	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	4.3	24.6		10.3		28.9		6.1				
Change Period (Y+Rc), s	4.0	4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s	8.0	22.1		20.0		34.1		8.0				
Max Q Clear Time (g_c+I1), s	2.1	11.3		4.8		5.9		2.6				
Green Ext Time (p_c), s	0.0	8.4		0.2		17.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				9.0								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
96: Keehner Ave & Douglas Blvd

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↕↕		↘	↕↕	↘	↗		
Traffic Volume (veh/h)	1043	16	88	599	49	225		
Future Volume (veh/h)	1043	16	88	599	49	225		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1098	17	93	631	52	237		
Adj No. of Lanes	2	0	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1745	27	155	2272	368	328		
Arrive On Green	0.49	0.49	0.09	0.64	0.21	0.21		
Sat Flow, veh/h	3661	55	1774	3632	1774	1583		
Grp Volume(v), veh/h	545	570	93	631	52	237		
Grp Sat Flow(s),veh/h/ln	1770	1853	1774	1770	1774	1583		
Q Serve(g_s), s	10.4	10.4	2.3	3.6	1.1	6.4		
Cycle Q Clear(g_c), s	10.4	10.4	2.3	3.6	1.1	6.4		
Prop In Lane		0.03	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	866	906	155	2272	368	328		
V/C Ratio(X)	0.63	0.63	0.60	0.28	0.14	0.72		
Avail Cap(c_a), veh/h	932	976	194	2483	620	554		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.6	8.6	20.1	3.6	14.8	16.9		
Incr Delay (d2), s/veh	1.2	1.2	1.4	0.1	0.1	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.3	5.5	1.2	1.7	0.5	2.9		
LnGrp Delay(d),s/veh	9.9	9.8	21.5	3.6	14.9	18.0		
LnGrp LOS	A	A	C	A	B	B		
Approach Vol, veh/h	1115			724	289			
Approach Delay, s/veh	9.8			5.9	17.5			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	4		6			
Phs Duration (G+Y+Rc), s	7.0	26.3	12.5		33.3			
Change Period (Y+Rc), s	4.0	4.9	4.0		4.9			
Max Green Setting (Gmax), s	4.0	23.1	15.0		31.1			
Max Q Clear Time (g_c+I1), s	4.3	12.4	8.4		5.6			
Green Ext Time (p_c), s	0.0	9.0	0.3		18.5			
Intersection Summary								
HCM 2010 Ctrl Delay			9.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

97: Folsom Rd & Douglas Blvd

Cumulative No Project
AM Peak Hour

																																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																						
Lane Configurations																																		
Traffic Volume (veh/h)	48	1179	4	34	799	96	4	6	12	392	4	36																						
Future Volume (veh/h)	48	1179	4	34	799	96	4	6	12	392	4	36																						
Number	5	2	12	1	6	16	3	8	18	7	4	14																						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0																						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																						
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863																						
Adj Flow Rate, veh/h	51	1241	4	36	841	101	4	6	13	416	0	38																						
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	2	0	1																						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95																						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2																						
Cap, veh/h	80	2455	8	60	2123	255	8	11	25	528	0	236																						
Arrive On Green	0.05	0.68	0.68	0.03	0.67	0.67	0.03	0.03	0.03	0.15	0.00	0.15																						
Sat Flow, veh/h	1774	3619	12	1774	3183	382	292	438	950	3548	0	1583																						
Grp Volume(v), veh/h	51	607	638	36	468	474	23	0	0	416	0	38																						
Grp Sat Flow(s),veh/h/ln	1774	1770	1861	1774	1770	1795	1681	0	0	1774	0	1583																						
Q Serve(g_s), s	3.4	20.1	20.1	2.4	14.3	14.3	1.6	0.0	0.0	13.6	0.0	2.5																						
Cycle Q Clear(g_c), s	3.4	20.1	20.1	2.4	14.3	14.3	1.6	0.0	0.0	13.6	0.0	2.5																						
Prop In Lane	1.00		0.01	1.00		0.21	0.17		0.57	1.00		1.00																						
Lane Grp Cap(c), veh/h	80	1201	1262	60	1181	1198	44	0	0	528	0	236																						
V/C Ratio(X)	0.63	0.51	0.51	0.60	0.40	0.40	0.52	0.00	0.00	0.79	0.00	0.16																						
Avail Cap(c_a), veh/h	163	1201	1262	89	1181	1198	70	0	0	840	0	375																						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00																						
Uniform Delay (d), s/veh	56.3	9.4	9.4	57.2	9.0	9.0	57.7	0.0	0.0	49.2	0.0	44.5																						
Incr Delay (d2), s/veh	3.1	1.5	1.4	3.5	0.2	0.2	3.5	0.0	0.0	2.0	0.0	0.2																						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																						
%ile BackOfQ(50%),veh/ln	1.7	10.3	10.8	1.2	7.1	7.2	0.8	0.0	0.0	6.8	0.0	1.1																						
LnGrp Delay(d),s/veh	59.4	11.0	10.9	60.6	9.3	9.3	61.2	0.0	0.0	51.2	0.0	44.8																						
LnGrp LOS	E	B	B	E	A	A	E			D		D																						
Approach Vol, veh/h	1296				978				23		454																							
Approach Delay, s/veh	12.8				11.2				61.2		50.7																							
Approach LOS	B				B				E		D																							
Timer	1	2	3	4	5	6	7	8																										
Assigned Phs	1	2	4		5	6	8																											
Phs Duration (G+Y+Rc), s	7.1	85.3	21.5		8.4	84.0	6.1																											
Change Period (Y+Rc), s	4.0	4.9	4.6		4.0	4.9	4.0																											
Max Green Setting (Gmax), s	5.0	66.1	27.4		10.0	61.1	4.0																											
Max Q Clear Time (g_c+I1), s	4.4	22.1	15.6		5.4	16.3	3.6																											
Green Ext Time (p_c), s	0.0	41.8	1.3		0.0	42.5	0.0																											
Intersection Summary																																		
HCM 2010 Ctrl Delay	18.9																																	
HCM 2010 LOS	B																																	
Notes																																		
User approved volume balancing among the lanes for turning movement.																																		

HCM 2010 Signalized Intersection Summary

98: Douglas Blvd & Harding Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	1350	16	70	749	867	19	8	29	686	11	192
Future Volume (veh/h)	228	1350	16	70	749	867	19	8	29	686	11	192
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	240	1421	17	74	788	913	20	8	31	731	0	202
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1810	22	74	1613	722	55	58	49	821	0	367
Arrive On Green	0.27	1.00	1.00	0.04	0.46	0.46	0.03	0.03	0.03	0.23	0.00	0.23
Sat Flow, veh/h	1774	3306	40	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	240	640	798	74	788	913	20	8	31	731	0	202
Grp Sat Flow(s),veh/h/ln	1774	1490	1856	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	16.0	0.0	0.0	5.0	18.7	54.7	1.3	0.5	2.3	23.9	0.0	13.5
Cycle Q Clear(g_c), s	16.0	0.0	0.0	5.0	18.7	54.7	1.3	0.5	2.3	23.9	0.0	13.5
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	816	1016	74	1613	722	55	58	49	821	0	367
V/C Ratio(X)	1.01	0.78	0.79	1.00	0.49	1.26	0.36	0.14	0.63	0.89	0.00	0.55
Avail Cap(c_a), veh/h	237	816	1016	74	1613	722	59	62	53	1038	0	463
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.0	0.0	0.0	57.5	22.9	32.6	57.0	56.6	57.5	44.6	0.0	40.6
Incr Delay (d2), s/veh	62.3	7.5	6.1	105.0	0.3	130.1	1.5	0.4	14.0	7.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	1.7	1.7	4.6	9.1	50.0	0.7	0.3	1.2	12.5	0.0	6.0
LnGrp Delay(d),s/veh	106.4	7.5	6.1	162.5	23.1	162.8	58.5	57.0	71.5	52.1	0.0	41.4
LnGrp LOS	F	A	A	F	C	F	E	E	E	D		D
Approach Vol, veh/h	1678			1775			59			933		
Approach Delay, s/veh	21.0			100.8			65.1			49.8		
Approach LOS	C			F			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	70.6		32.7	20.0	59.6		7.7				
Change Period (Y+Rc), s	4.0	4.9		4.9	4.0	4.9		4.0				
Max Green Setting (Gmax), s	5.0	58.1		35.1	16.0	47.1		4.0				
Max Q Clear Time (g_c+I1), s	7.0	2.0		25.9	18.0	56.7		4.3				
Green Ext Time (p_c), s	0.0	42.7		1.9	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	59.5											
HCM 2010 LOS	E											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
99: Douglas Blvd & I-80 WB Ramps

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↗	↗				↗	↗	↗
Traffic Volume (veh/h)	0	999	338	0	1521	1019	0	0	0	828	0	155
Future Volume (veh/h)	0	999	338	0	1521	1019	0	0	0	828	0	155
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	0	1052	356	0	1601	0				872	0	163
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2336	1037	0	2472	1037				999	0	446
Arrive On Green	0.00	1.00	1.00	0.00	0.66	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3632	1583	0	3725	1583				3548	0	1583
Grp Volume(v), veh/h	0	1052	356	0	1601	0				872	0	163
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1863	1583				1774	0	1583
Q Serve(g_s), s	0.0	0.0	0.0	0.0	30.4	0.0				28.1	0.0	9.9
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	30.4	0.0				28.1	0.0	9.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2336	1037	0	2472	1037				999	0	446
V/C Ratio(X)	0.00	0.45	0.34	0.00	0.65	0.00				0.87	0.00	0.37
Avail Cap(c_a), veh/h	0	2336	1037	0	2472	1037				1458	0	650
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.56	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	11.9	0.0				41.1	0.0	34.5
Incr Delay (d2), s/veh	0.0	0.6	0.9	0.0	0.4	0.0				3.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.3	0.0	15.7	0.0				14.2	0.0	4.4
LnGrp Delay(d),s/veh	0.0	0.6	0.9	0.0	12.3	0.0				44.1	0.0	34.7
LnGrp LOS		A	A		B					D		C
Approach Vol, veh/h	1408			1601						1035		
Approach Delay, s/veh	0.7			12.3						42.7		
Approach LOS	A			B						D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	82.5		37.5		82.5							
Change Period (Y+Rc), s	4.9		5.3		4.9							
Max Green Setting (Gmax), s	62.1		47.7		62.1							
Max Q Clear Time (g_c+I1), s	2.0		30.1		32.4							
Green Ext Time (p_c), s	51.1		2.1		27.2							
Intersection Summary												
HCM 2010 Ctrl Delay				16.0								
HCM 2010 LOS				B								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

100: I-80 EB Ramps & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	1128	0	0	1552	261	0	0	1397	0	0	1005
Future Volume (veh/h)	205	1128	0	0	1552	261	0	0	1397	0	0	1005
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	216	1187	0	0	1634	0	0	0	0	0	0	1058
Adj No. of Lanes	1	4	0	0	3	1	0	0	1	0	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	0	2	2	0	0	2	0	0	2
Cap, veh/h	291	3257	0	0	1798	509	0	0	0	0	0	0
Arrive On Green	0.16	0.51	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sat Flow, veh/h	1774	6669	0	0	5588	1583		0			0	
Grp Volume(v), veh/h	216	1187	0	0	1634	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	1774	1602	0	0	1863	1583						
Q Serve(g_s), s	10.3	10.0	0.0	0.0	24.9	0.0						
Cycle Q Clear(g_c), s	10.3	10.0	0.0	0.0	24.9	0.0						
Prop In Lane	1.00		0.00	0.00		1.00						
Lane Grp Cap(c), veh/h	291	3257	0	0	1798	509						
V/C Ratio(X)	0.74	0.36	0.00	0.00	0.91	0.00						
Avail Cap(c_a), veh/h	538	4111	0	0	1798	509						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(l)	0.80	0.80	0.00	0.00	0.83	0.00						
Uniform Delay (d), s/veh	35.4	13.2	0.0	0.0	28.9	0.0						
Incr Delay (d2), s/veh	1.1	0.1	0.0	0.0	7.0	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	5.1	4.4	0.0	0.0	13.9	0.0						
LnGrp Delay(d),s/veh	36.5	13.3	0.0	0.0	36.0	0.0						
LnGrp LOS	D	B			D							
Approach Vol, veh/h		1403			1634							
Approach Delay, s/veh		16.9			36.0							
Approach LOS		B			D							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		48.1			16.6	31.5						
Change Period (Y+Rc), s		4.9			4.0	4.9						
Max Green Setting (Gmax), s		55.1			25.0	26.1						
Max Q Clear Time (g_c+I1), s		12.0			12.3	26.9						
Green Ext Time (p_c), s		31.3			0.3	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay				27.1								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

101: Douglas Blvd & North Sunrise Ave

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	389	1807	220	109	1345	63	308	560	88	54	169	160
Future Volume (veh/h)	389	1807	220	109	1345	63	308	560	88	54	169	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	409	1902	232	115	1416	66	324	589	93	57	178	168
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	472	2310	928	492	2954	138	458	775	344	97	562	390
Arrive On Green	0.14	0.45	0.45	0.14	0.47	0.47	0.13	0.22	0.22	0.03	0.11	0.11
Sat Flow, veh/h	3442	5085	1578	3442	6321	294	3442	3539	1572	3442	5085	1562
Grp Volume(v), veh/h	409	1902	232	115	1076	406	324	589	93	57	178	168
Grp Sat Flow(s),veh/h/ln	1721	1695	1578	1721	1602	1810	1721	1770	1572	1721	1695	1562
Q Serve(g_s), s	14.0	39.1	0.0	3.6	18.4	18.5	10.8	18.7	5.9	2.0	3.9	7.3
Cycle Q Clear(g_c), s	14.0	39.1	0.0	3.6	18.4	18.5	10.8	18.7	5.9	2.0	3.9	7.3
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	472	2310	928	492	2246	846	458	775	344	97	562	390
V/C Ratio(X)	0.87	0.82	0.25	0.23	0.48	0.48	0.71	0.76	0.27	0.59	0.32	0.43
Avail Cap(c_a), veh/h	660	2310	928	492	2246	846	458	1053	468	143	1072	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	28.6	12.0	45.6	21.9	21.9	49.8	43.9	38.9	57.6	49.2	19.2
Incr Delay (d2), s/veh	5.0	2.6	0.5	0.1	0.3	0.7	4.2	3.2	0.7	2.1	0.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	18.9	3.8	1.7	8.2	9.4	5.4	9.5	2.6	1.0	1.9	3.4
LnGrp Delay(d),s/veh	55.7	31.1	12.4	45.7	22.2	22.7	54.0	47.1	39.6	59.8	49.9	20.9
LnGrp LOS	E	C	B	D	C	C	D	D	D	E	D	C
Approach Vol, veh/h	2543				1597				1006			
Approach Delay, s/veh	33.4				24.0				48.6			
Approach LOS	C				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.1	59.4	20.0	18.6	20.5	61.0	7.4	31.2				
Change Period (Y+Rc), s	4.9	* 4.9	4.0	5.3	4.0	4.9	4.0	4.9				
Max Green Setting (Gmax), s	7.0	* 55	15.0	25.3	23.0	38.5	5.0	35.7				
Max Q Clear Time (g_c+I1), s	5.6	41.1	12.8	9.3	16.0	20.5	4.0	20.7				
Green Ext Time (p_c), s	0.1	12.2	0.2	2.9	0.5	13.3	0.0	5.6				

Intersection Summary

HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

102: Santa Clara Dr & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	1952	44	43	1441	28	38	17	63	32	16	38
Future Volume (veh/h)	88	1952	44	43	1441	28	38	17	63	32	16	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	93	2055	46	45	1517	29	40	18	66	26	29	40
Adj No. of Lanes	1	3	0	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	574	3635	81	58	2094	648	102	107	91	105	110	91
Arrive On Green	0.65	1.00	1.00	0.02	0.28	0.28	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1774	5118	114	1774	5085	1574	1774	1863	1583	1774	1863	1543
Grp Volume(v), veh/h	93	1360	741	45	1517	29	40	18	66	26	29	40
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	1774	1695	1574	1774	1863	1583	1774	1863	1543
Q Serve(g_s), s	2.5	0.0	0.0	3.0	32.4	1.6	2.6	1.1	4.9	1.7	1.8	3.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	3.0	32.4	1.6	2.6	1.1	4.9	1.7	1.8	3.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	574	2408	1308	58	2094	648	102	107	91	105	110	91
V/C Ratio(X)	0.16	0.56	0.57	0.78	0.72	0.04	0.39	0.17	0.73	0.25	0.26	0.44
Avail Cap(c_a), veh/h	574	2408	1308	89	2208	683	103	109	92	458	481	399
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	0.0	58.3	37.3	26.1	54.5	53.8	55.6	53.9	54.0	54.5
Incr Delay (d2), s/veh	0.0	1.0	1.8	9.4	1.7	0.1	1.8	0.5	23.0	0.5	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.6	1.6	15.5	0.7	1.3	0.6	2.7	0.8	0.9	1.3
LnGrp Delay(d),s/veh	14.8	1.0	1.8	67.6	39.0	26.2	56.4	54.4	78.7	54.4	54.4	55.8
LnGrp LOS	B	A	A	E	D	C	E	D	E	D	D	E
Approach Vol, veh/h	2194			1591			124			95		
Approach Delay, s/veh	1.8			39.6			67.9			55.0		
Approach LOS	A			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	90.1		11.1	43.7	54.3		10.9				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.9	* 4.9		4.0				
Max Green Setting (Gmax), s	6.0	59.1		31.0	13.0	* 52		7.0				
Max Q Clear Time (g_c+I1), s	5.0	2.0		5.0	4.5	34.4		6.9				
Green Ext Time (p_c), s	0.0	44.9		0.2	8.1	15.0		0.0				

Intersection Summary

HCM 2010 Ctrl Delay 20.1
HCM 2010 LOS C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

103: Sierra Gardens Dr & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1924	37	15	1452	26	118	47	25	56	5	11
Future Volume (veh/h)	11	1924	37	15	1452	26	118	47	25	56	5	11
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	2025	39	16	1528	27	100	83	26	38	34	12
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	15	2403	732	20	2420	738	138	106	33	180	131	46
Arrive On Green	0.01	0.32	0.32	0.01	0.48	0.48	0.08	0.08	0.08	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1550	1774	5085	1550	1774	1361	426	1774	1292	456
Grp Volume(v), veh/h	12	2025	39	16	1528	27	100	0	109	38	0	46
Grp Sat Flow(s),veh/h/ln	1774	1695	1550	1774	1695	1550	1774	0	1788	1774	0	1748
Q Serve(g_s), s	0.8	44.5	2.1	1.1	27.0	1.1	6.6	0.0	7.2	2.4	0.0	2.9
Cycle Q Clear(g_c), s	0.8	44.5	2.1	1.1	27.0	1.1	6.6	0.0	7.2	2.4	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.26
Lane Grp Cap(c), veh/h	15	2403	732	20	2420	738	138	0	139	180	0	177
V/C Ratio(X)	0.82	0.84	0.05	0.79	0.63	0.04	0.72	0.00	0.78	0.21	0.00	0.26
Avail Cap(c_a), veh/h	44	2420	737	44	2420	738	177	0	179	449	0	443
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.6	36.8	22.3	59.2	23.6	16.8	54.1	0.0	54.3	49.5	0.0	49.8
Incr Delay (d2), s/veh	32.3	3.4	0.1	21.4	1.3	0.1	8.5	0.0	14.0	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	21.6	0.9	0.6	12.9	0.5	3.6	0.0	4.1	1.2	0.0	1.4
LnGrp Delay(d),s/veh	91.9	40.2	22.4	80.6	24.8	16.9	62.6	0.0	68.3	49.7	0.0	50.0
LnGrp LOS	F	D	C	F	C	B	E		E	D		D
Approach Vol, veh/h	2076		1571				209			84		
Approach Delay, s/veh	40.2		25.3				65.6			49.9		
Approach LOS	D		C				E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.4	61.6	16.8		5.0	62.0	13.4					
Change Period (Y+Rc), s	4.0	4.9	4.6		4.0	4.9	4.0					
Max Green Setting (Gmax), s	3.0	57.1	30.4		3.0	57.1	12.0					
Max Q Clear Time (g_c+I1), s	3.1	46.5	4.9		2.8	29.0	9.2					
Green Ext Time (p_c), s	0.0	10.2	0.2		0.0	22.4	0.2					
Intersection Summary												
HCM 2010 Ctrl Delay	35.8											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

104: Target Dwy & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1792	61	11	1476	0	14	4	11	27	1	17
Future Volume (veh/h)	58	1792	61	11	1476	0	14	4	11	27	1	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	61	1886	64	12	1554	0	15	4	12	28	1	18
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	563	4080	138	15	2499	0	18	9	28	35	3	48
Arrive On Green	0.32	0.81	0.81	0.01	0.49	0.00	0.01	0.02	0.02	0.02	0.03	0.03
Sat Flow, veh/h	1774	5051	171	1774	5253	0	1774	397	1190	1774	80	1447
Grp Volume(v), veh/h	61	1265	685	12	1554	0	15	0	16	28	0	19
Grp Sat Flow(s),veh/h/ln	1774	1695	1832	1774	1695	0	1774	0	1587	1774	0	1527
Q Serve(g_s), s	2.9	13.7	13.8	0.8	26.9	0.0	1.0	0.0	1.2	1.9	0.0	1.5
Cycle Q Clear(g_c), s	2.9	13.7	13.8	0.8	26.9	0.0	1.0	0.0	1.2	1.9	0.0	1.5
Prop In Lane	1.00		0.09	1.00		0.00	1.00		0.75	1.00		0.95
Lane Grp Cap(c), veh/h	563	2738	1480	15	2499	0	18	0	37	35	0	51
V/C Ratio(X)	0.11	0.46	0.46	0.82	0.62	0.00	0.85	0.00	0.43	0.80	0.00	0.37
Avail Cap(c_a), veh/h	563	2738	1480	44	2886	0	103	0	212	118	0	216
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.0	3.5	3.5	59.4	22.4	0.0	59.3	0.0	57.8	58.6	0.0	56.8
Incr Delay (d2), s/veh	0.0	0.6	1.0	32.3	0.9	0.0	65.3	0.0	7.6	32.8	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.5	7.3	0.5	12.7	0.0	0.8	0.0	0.6	1.2	0.0	0.7
LnGrp Delay(d),s/veh	29.0	4.1	4.6	91.7	23.2	0.0	124.6	0.0	65.4	91.4	0.0	61.3
LnGrp LOS	C	A	A	F	C		F		E	F		E
Approach Vol, veh/h	2011				1566		31				47	
Approach Delay, s/veh	5.0				23.7		94.1				79.2	
Approach LOS	A				C		F				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	101.8	5.2	8.0	43.0	63.9	6.4	6.8				
Change Period (Y+Rc), s	4.0	4.9	4.0	4.0	4.9	* 4.9	4.0	4.0				
Max Green Setting (Gmax), s	3.0	76.1	7.0	17.0	11.0	* 68	8.0	16.0				
Max Q Clear Time (g_c+I1), s	2.8	15.8	3.0	3.5	4.9	28.9	3.9	3.2				
Green Ext Time (p_c), s	0.0	50.7	0.0	0.1	5.9	30.1	0.0	0.1				

Intersection Summary

HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
105: Rocky Ridge Drive & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1581	51	40	1282	121	163	723	371	93	318	73
Future Volume (veh/h)	150	1581	51	40	1282	121	163	723	371	93	318	73
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	158	1664	0	42	1349	0	172	761	391	98	335	77
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	692	2250	701	435	1871	583	467	1107	342	143	574	176
Arrive On Green	0.07	0.15	0.00	0.04	0.12	0.00	0.14	0.22	0.22	0.04	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1572	3442	5085	1562
Grp Volume(v), veh/h	158	1664	0	42	1349	0	172	761	391	98	335	77
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1572	1721	1695	1562
Q Serve(g_s), s	5.2	37.6	0.0	1.4	30.7	0.0	5.5	16.5	18.9	3.4	7.5	5.5
Cycle Q Clear(g_c), s	5.2	37.6	0.0	1.4	30.7	0.0	5.5	16.5	18.9	3.4	7.5	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	692	2250	701	435	1871	583	467	1107	342	143	574	176
V/C Ratio(X)	0.23	0.74	0.00	0.10	0.72	0.00	0.37	0.69	1.14	0.68	0.58	0.44
Avail Cap(c_a), veh/h	692	2250	701	435	1996	621	467	1623	502	143	1386	426
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	44.6	0.0	50.9	46.8	0.0	47.2	43.2	24.6	56.7	50.5	49.7
Incr Delay (d2), s/veh	0.1	2.2	0.0	0.0	1.9	0.0	0.2	0.7	84.5	10.5	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	18.1	0.0	0.7	14.7	0.0	2.6	7.8	16.2	1.8	3.6	2.5
LnGrp Delay(d),s/veh	47.3	46.8	0.0	50.9	48.6	0.0	47.4	43.8	109.1	67.3	51.5	51.4
LnGrp LOS	D	D		D	D		D	D	F	E	D	D
Approach Vol, veh/h	1822				1391				1324			
Approach Delay, s/veh	46.9				48.7				63.6			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	58.0	23.0	19.8	28.1	49.1	10.0	32.8				
Change Period (Y+Rc), s	4.0	4.9	6.7	* 6.3	4.0	4.9	5.0	6.7				
Max Green Setting (Gmax), s	3.0	53.1	11.0	* 33	9.0	47.1	5.0	38.3				
Max Q Clear Time (g_c+I1), s	3.4	39.6	7.5	9.5	7.2	32.7	5.4	20.9				
Green Ext Time (p_c), s	0.0	12.2	2.0	2.4	0.1	11.5	0.0	5.0				

Intersection Summary

HCM 2010 Ctrl Delay	52.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
106: Sierra College Blvd & Douglas Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1472	209	266	1836	191	415	812	237	191	632	149
Future Volume (veh/h)	220	1472	209	266	1836	191	415	812	237	191	632	149
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	232	1549	0	280	1933	0	437	855	0	201	665	157
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1992	594	440	2265	679	515	1397	409	315	1101	312
Arrive On Green	0.09	0.39	0.00	0.13	0.45	0.00	0.15	0.27	0.00	0.09	0.22	0.20
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1560
Grp Volume(v), veh/h	232	1549	0	280	1933	0	437	855	0	201	665	157
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1560
Q Serve(g_s), s	7.9	32.0	0.0	9.3	40.8	0.0	14.8	17.6	0.0	6.8	14.1	10.7
Cycle Q Clear(g_c), s	7.9	32.0	0.0	9.3	40.8	0.0	14.8	17.6	0.0	6.8	14.1	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	1992	594	440	2265	679	515	1397	409	315	1101	312
V/C Ratio(X)	0.74	0.78	0.00	0.64	0.85	0.00	0.85	0.61	0.00	0.64	0.60	0.50
Avail Cap(c_a), veh/h	315	1992	594	440	2265	679	545	1411	413	373	1157	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	31.9	0.0	49.7	29.8	0.0	49.7	37.9	0.0	52.6	42.4	42.7
Incr Delay (d2), s/veh	8.0	3.1	0.0	2.3	3.4	0.0	10.7	1.0	0.0	1.5	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	15.5	0.0	4.5	19.7	0.0	7.8	8.4	0.0	3.3	6.8	4.8
LnGrp Delay(d),s/veh	61.2	35.0	0.0	52.0	33.2	0.0	60.4	38.9	0.0	54.1	43.5	44.9
LnGrp LOS	E	C		D	C		E	D		D	D	D
Approach Vol, veh/h	1781			2213			1292			1023		
Approach Delay, s/veh	38.4			35.6			46.2			45.8		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.3	50.0	21.0	28.7	13.9	56.5	14.0	35.7				
Change Period (Y+Rc), s	6.0	6.0	4.0	5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	12.0	44.0	18.0	24.3	10.0	48.0	12.0	30.3				
Max Q Clear Time (g_c+I1), s	11.3	34.0	16.8	16.1	9.9	42.8	8.8	19.6				
Green Ext Time (p_c), s	0.6	7.8	0.1	6.6	0.0	4.6	0.1	8.4				
Intersection Summary												
HCM 2010 Ctrl Delay			40.2									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
115: Oakridge Dr & Cirby Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	1188	2	19	668	81	43	64	69	5	8	6
Future Volume (veh/h)	182	1188	2	19	668	81	43	64	69	5	8	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	192	1251	2	20	703	85	45	67	73	5	8	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	2198	4	39	1343	162	69	103	147	14	23	32
Arrive On Green	0.19	0.61	0.60	0.02	0.42	0.41	0.09	0.09	0.09	0.02	0.02	0.02
Sat Flow, veh/h	1774	3626	6	1774	3178	384	734	1092	1558	703	1125	1583
Grp Volume(v), veh/h	192	611	642	20	391	397	112	0	73	13	0	6
Grp Sat Flow(s),veh/h/ln	1774	1770	1862	1774	1770	1792	1826	0	1558	1828	0	1583
Q Serve(g_s), s	11.7	24.9	24.9	1.3	19.7	19.7	7.1	0.0	5.3	0.8	0.0	0.4
Cycle Q Clear(g_c), s	11.7	24.9	24.9	1.3	19.7	19.7	7.1	0.0	5.3	0.8	0.0	0.4
Prop In Lane	1.00		0.00	1.00		0.21	0.40		1.00	0.38		1.00
Lane Grp Cap(c), veh/h	345	1073	1128	39	748	757	172	0	147	37	0	32
V/C Ratio(X)	0.56	0.57	0.57	0.52	0.52	0.52	0.65	0.00	0.50	0.35	0.00	0.19
Avail Cap(c_a), veh/h	429	1073	1128	103	748	757	365	0	312	61	0	53
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	14.2	14.2	58.1	25.7	25.8	52.5	0.0	51.7	58.0	0.0	57.8
Incr Delay (d2), s/veh	0.5	1.1	1.1	3.9	2.6	2.6	1.6	0.0	1.0	2.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	12.4	13.0	0.7	10.1	10.3	3.7	0.0	2.3	0.4	0.0	0.2
LnGrp Delay(d),s/veh	44.2	15.3	15.3	61.9	28.3	28.4	54.0	0.0	52.6	60.2	0.0	58.9
LnGrp LOS	D	B	B	E	C	C	D		D	E		E
Approach Vol, veh/h	1445				808				185			
Approach Delay, s/veh	19.1				29.2				53.5			
Approach LOS	B				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	76.0		5.4	27.7	54.0		14.3				
Change Period (Y+Rc), s	4.0	5.3		4.0	5.3	* 5.3		4.0				
Max Green Setting (Gmax), s	6.0	70.7		3.0	28.0	* 49		23.0				
Max Q Clear Time (g_c+I1), s	3.3	26.9		2.8	13.7	21.7		9.1				
Green Ext Time (p_c), s	0.0	16.3		0.0	8.7	7.4		0.3				

Intersection Summary

HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
116: Parkview Dr & Cirby Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1221	0	25	655	14	68	2	26	43	0	64
Future Volume (veh/h)	21	1221	0	25	655	14	68	2	26	43	0	64
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	22	1285	0	26	689	15	72	2	27	45	0	67
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	2097	0	80	2108	46	271	3	41	408	0	211
Arrive On Green	0.04	0.59	0.00	0.04	0.60	0.56	0.13	0.13	0.13	0.13	0.00	0.13
Sat Flow, veh/h	1774	3632	0	1774	3542	77	828	23	310	1650	0	1583
Grp Volume(v), veh/h	22	1285	0	26	344	360	101	0	0	45	0	67
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1849	1161	0	0	1650	0	1583
Q Serve(g_s), s	0.5	8.9	0.0	0.5	3.8	3.8	2.7	0.0	0.0	0.0	0.0	1.5
Cycle Q Clear(g_c), s	0.5	8.9	0.0	0.5	3.8	3.8	3.5	0.0	0.0	0.9	0.0	1.5
Prop In Lane	1.00		0.00	1.00		0.04	0.71		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	75	2097	0	80	1053	1101	315	0	0	408	0	211
V/C Ratio(X)	0.29	0.61	0.00	0.33	0.33	0.33	0.32	0.00	0.00	0.11	0.00	0.32
Avail Cap(c_a), veh/h	185	2320	0	185	1160	1212	928	0	0	1011	0	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	5.0	0.0	17.8	3.9	3.9	16.4	0.0	0.0	14.8	0.0	15.1
Incr Delay (d2), s/veh	0.8	0.5	0.0	0.9	0.2	0.2	0.4	0.0	0.0	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.4	0.0	0.3	1.9	2.0	1.0	0.0	0.0	0.4	0.0	0.7
LnGrp Delay(d),s/veh	18.6	5.5	0.0	18.7	4.1	4.1	16.8	0.0	0.0	14.9	0.0	15.7
LnGrp LOS	B	A		B	A	A	B			B		B
Approach Vol, veh/h	1307				730				101			
Approach Delay, s/veh	5.7				4.6				16.8			
Approach LOS	A				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	25.7		8.1	4.7	25.6		8.1				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	3.0	22.7		21.0	3.0	22.7		21.0				
Max Q Clear Time (g_c+I1), s	2.5	5.8		5.5	2.5	10.9		3.5				
Green Ext Time (p_c), s	0.0	12.6		0.7	0.0	9.4		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	6.3											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

117: Cirby Way & Rocky Ridge Dr

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	648	538	599	360	146	200		
Future Volume (veh/h)	648	538	599	360	146	200		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	694	549	631	379	154	211		
Adj No. of Lanes	2	1	2	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1303	684	793	476	470	838		
Arrive On Green	0.37	0.37	0.37	0.35	0.14	0.16		
Sat Flow, veh/h	3548	1863	2222	1278	3442	1583		
Grp Volume(v), veh/h	694	549	525	485	154	211		
Grp Sat Flow(s),veh/h/ln	1774	1863	1770	1637	1721	1583		
Q Serve(g_s), s	9.1	15.6	15.6	15.7	2.4	4.3		
Cycle Q Clear(g_c), s	9.1	15.6	15.6	15.7	2.4	4.3		
Prop In Lane	1.00			0.78	1.00	1.00		
Lane Grp Cap(c), veh/h	1303	684	659	610	470	838		
V/C Ratio(X)	0.53	0.80	0.80	0.80	0.33	0.25		
Avail Cap(c_a), veh/h	1336	701	825	764	1343	1239		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.7	16.7	16.5	17.1	23.0	7.5		
Incr Delay (d2), s/veh	0.6	7.1	3.4	3.7	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.5	9.3	8.2	7.7	1.1	3.3		
LnGrp Delay(d),s/veh	15.3	23.8	19.9	20.7	23.2	7.6		
LnGrp LOS	B	C	B	C	C	A		
Approach Vol, veh/h		1243	1010		365			
Approach Delay, s/veh		19.0	20.3		14.2			
Approach LOS		B	C		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				24.4		11.1		23.5
Change Period (Y+Rc), s				5.3		4.0		4.0
Max Green Setting (Gmax), s				19.7		22.0		25.0
Max Q Clear Time (g_c+I1), s				17.6		6.3		17.7
Green Ext Time (p_c), s				1.6		0.8		1.7
Intersection Summary								
HCM 2010 Ctrl Delay			18.8					
HCM 2010 LOS			B					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

118: Champion Oaks Dr & Cirby Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	402	29	19	853	16	95	7	4	4	2	140
Future Volume (veh/h)	183	402	29	19	853	16	95	7	4	4	2	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	193	423	31	20	898	17	100	7	4	4	2	147
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	1782	130	96	1516	29	374	24	9	320	132	294
Arrive On Green	0.16	0.53	0.51	0.05	0.43	0.40	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1774	3345	244	1774	3553	67	1112	130	46	936	709	1583
Grp Volume(v), veh/h	193	223	231	20	447	468	111	0	0	6	0	147
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1851	1288	0	0	1645	0	1583
Q Serve(g_s), s	4.2	2.8	2.8	0.4	7.9	7.9	2.9	0.0	0.0	0.0	0.0	3.4
Cycle Q Clear(g_c), s	4.2	2.8	2.8	0.4	7.9	7.9	3.1	0.0	0.0	0.1	0.0	3.4
Prop In Lane	1.00		0.13	1.00		0.04	0.90		0.04	0.67		1.00
Lane Grp Cap(c), veh/h	285	943	969	96	755	789	406	0	0	452	0	294
V/C Ratio(X)	0.68	0.24	0.24	0.21	0.59	0.59	0.27	0.00	0.00	0.01	0.00	0.50
Avail Cap(c_a), veh/h	390	982	1010	304	896	937	823	0	0	952	0	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	5.1	5.2	18.5	9.0	9.0	14.8	0.0	0.0	13.6	0.0	15.0
Incr Delay (d2), s/veh	1.1	0.2	0.2	0.4	1.2	1.1	0.1	0.0	0.0	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.4	1.4	0.2	4.1	4.3	1.1	0.0	0.0	0.1	0.0	1.5
LnGrp Delay(d),s/veh	17.2	5.3	5.4	18.9	10.2	10.1	14.9	0.0	0.0	13.6	0.0	15.4
LnGrp LOS	B	A	A	B	B	B	B			B		B
Approach Vol, veh/h	647					935		111		153		
Approach Delay, s/veh	8.9					10.4		14.9		15.4		
Approach LOS	A					B		B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.2	25.1	10.6		9.6	20.7	10.6					
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0					
Max Green Setting (Gmax), s	6.0	20.7	20.0		8.0	18.7	20.0					
Max Q Clear Time (g_c+I1), s	2.4	4.8	5.4		6.2	9.9	5.1					
Green Ext Time (p_c), s	0.0	8.4	0.6		0.1	5.5	0.6					
Intersection Summary												
HCM 2010 Ctrl Delay			10.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
119: Cirby Way & Old Auburn Rd

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	 							
Traffic Volume (veh/h)	228	305	552	405	334	137		
Future Volume (veh/h)	228	305	552	405	334	137		
Number	3	18	6	16	5	2		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	240	321	581	426	352	144		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	449	397	732	633	415	1248		
Arrive On Green	0.25	0.25	0.39	0.38	0.23	0.67		
Sat Flow, veh/h	1774	1615	1863	1583	1774	1863		
Grp Volume(v), veh/h	240	321	581	426	352	144		
Grp Sat Flow(s),veh/h/ln	1774	1615	1863	1583	1774	1863		
Q Serve(g_s), s	8.1	12.9	19.1	15.3	13.1	1.9		
Cycle Q Clear(g_c), s	8.1	12.9	19.1	15.3	13.1	1.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	449	397	732	633	415	1248		
V/C Ratio(X)	0.53	0.81	0.79	0.67	0.85	0.12		
Avail Cap(c_a), veh/h	653	583	786	679	436	1324		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.3	24.6	18.6	17.0	25.3	4.1		
Incr Delay (d2), s/veh	0.4	3.2	5.9	2.9	13.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.0	6.1	10.9	7.4	7.9	1.0		
LnGrp Delay(d),s/veh	22.7	27.7	24.4	20.0	38.4	4.1		
LnGrp LOS	C	C	C	B	D	A		
Approach Vol, veh/h	561		1007			496		
Approach Delay, s/veh	25.6		22.5			28.5		
Approach LOS	C		C			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		49.2			19.2	30.0		20.0
Change Period (Y+Rc), s		5.3			4.0	5.3		4.0
Max Green Setting (Gmax), s		46.7			16.0	26.7		24.0
Max Q Clear Time (g_c+I1), s		3.9			15.1	21.1		14.9
Green Ext Time (p_c), s		11.8			0.1	3.6		1.1
Intersection Summary								
HCM 2010 Ctrl Delay			24.8					
HCM 2010 LOS			C					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
120: Westbrook Blvd & Holt Parkway

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	11	138	228	7	69	38	851	56	51	1167	11
Future Volume (veh/h)	37	11	138	228	7	69	38	851	56	51	1167	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	39	12	145	240	7	73	40	896	59	54	1228	12
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	233	198	289	476	405	58	1723	537	70	1760	548
Arrive On Green	0.03	0.12	0.12	0.16	0.26	0.26	0.03	0.34	0.34	0.04	0.35	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	39	12	145	240	7	73	40	896	59	54	1228	12
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.3	0.3	5.3	7.8	0.2	2.2	1.3	8.5	1.5	1.8	12.5	0.3
Cycle Q Clear(g_c), s	1.3	0.3	5.3	7.8	0.2	2.2	1.3	8.5	1.5	1.8	12.5	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	233	198	289	476	405	58	1723	537	70	1760	548
V/C Ratio(X)	0.69	0.05	0.73	0.83	0.01	0.18	0.69	0.52	0.11	0.77	0.70	0.02
Avail Cap(c_a), veh/h	118	995	846	326	1213	1031	118	1723	537	237	1953	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	23.1	25.2	24.3	16.7	17.4	28.7	15.9	13.6	28.5	16.9	12.9
Incr Delay (d2), s/veh	13.9	0.1	5.2	15.0	0.0	0.2	14.0	0.3	0.1	16.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.2	2.6	5.0	0.1	1.0	0.9	3.9	0.7	1.2	6.0	0.1
LnGrp Delay(d),s/veh	42.6	23.2	30.4	39.3	16.7	17.6	42.6	16.2	13.7	44.5	17.9	12.9
LnGrp LOS	D	C	C	D	B	B	D	B	B	D	B	B
Approach Vol, veh/h	196				320				995			
Approach Delay, s/veh	32.4				33.9				17.1			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	25.3	14.7	12.5	6.9	25.7	6.9	20.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	19.0	11.0	32.0	4.0	23.0	4.0	39.0				
Max Q Clear Time (g_c+I1), s	3.8	10.5	9.8	7.3	3.3	14.5	3.3	4.2				
Green Ext Time (p_c), s	0.0	7.2	0.1	0.8	0.0	6.3	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	20.9											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

121: Westbrook Blvd & Nobo Dr

Cumulative No Project
AM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	21	3	71	30	0	11	19	944	12	60	1501	8				
Future Volume (veh/h)	21	3	71	30	0	11	19	944	12	60	1501	8				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863				
Adj Flow Rate, veh/h	22	3	75	32	0	12	20	994	13	63	1580	8				
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	73	186	127	86	201	139	70	2564	767	118	2703	810				
Arrive On Green	0.04	0.10	0.08	0.05	0.00	0.09	0.04	0.50	0.48	0.07	0.53	0.51				
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583				
Grp Volume(v), veh/h	22	3	75	32	0	12	20	994	13	63	1580	8				
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583				
Q Serve(g_s), s	0.6	0.1	2.3	0.9	0.0	0.3	0.5	6.0	0.2	1.7	10.5	0.1				
Cycle Q Clear(g_c), s	0.6	0.1	2.3	0.9	0.0	0.3	0.5	6.0	0.2	1.7	10.5	0.1				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Lane Grp Cap(c), veh/h	73	186	127	86	201	139	70	2564	767	118	2703	810				
V/C Ratio(X)	0.30	0.02	0.59	0.37	0.00	0.09	0.29	0.39	0.02	0.53	0.58	0.01				
Avail Cap(c_a), veh/h	178	1268	1046	284	1380	1141	284	2952	888	178	2703	810				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	23.3	20.3	22.2	23.0	0.0	20.9	23.3	7.6	6.7	22.6	8.0	6.0				
Incr Delay (d2), s/veh	2.3	0.0	4.3	2.6	0.0	0.3	2.2	0.1	0.0	3.7	0.3	0.0				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.2	0.5	0.0	0.2	0.3	2.8	0.1	1.0	4.9	0.1				
LnGrp Delay(d),s/veh	25.5	20.3	26.5	25.6	0.0	21.2	25.5	7.7	6.7	26.2	8.3	6.0				
LnGrp LOS	C	C	C	C		C	C	A	A	C	A	A				
Approach Vol, veh/h	100				44				1027							
Approach Delay, s/veh	26.1				24.4				8.1							
Approach LOS	C				C				A							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	7.3	28.2	6.4	8.0	6.0	29.5	6.1	8.4								
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0								
Max Green Setting (Gmax), s	4.0	27.0	7.0	32.0	7.0	24.0	4.0	35.0								
Max Q Clear Time (g_c+I1), s	3.7	8.0	2.9	4.3	2.5	12.5	2.6	2.3								
Green Ext Time (p_c), s	0.0	15.2	0.0	0.3	0.0	10.2	0.0	0.3								
Intersection Summary																
HCM 2010 Ctrl Delay	9.5															
HCM 2010 LOS	A															

HCM 2010 Signalized Intersection Summary
122: Westbrook Blvd & N Brookstone Drive

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	192	127	54	910	1081	91		
Future Volume (veh/h)	192	127	54	910	1081	91		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	202	134	57	958	1138	96		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	310	277	84	3159	2400	746		
Arrive On Green	0.17	0.17	0.05	0.62	0.47	0.47		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1580		
Grp Volume(v), veh/h	202	134	57	958	1138	96		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1580		
Q Serve(g_s), s	4.2	3.0	1.2	3.4	6.0	1.3		
Cycle Q Clear(g_c), s	4.2	3.0	1.2	3.4	6.0	1.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	310	277	84	3159	2400	746		
V/C Ratio(X)	0.65	0.48	0.68	0.30	0.47	0.13		
Avail Cap(c_a), veh/h	905	808	272	4151	2854	887		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.1	14.6	18.4	3.5	7.0	5.8		
Incr Delay (d2), s/veh	2.3	1.3	9.3	0.1	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.2	2.8	0.8	1.6	2.8	0.6		
LnGrp Delay(d),s/veh	17.4	15.9	27.7	3.5	7.2	5.9		
LnGrp LOS	B	B	C	A	A	A		
Approach Vol, veh/h	336			1015	1234			
Approach Delay, s/veh	16.8			4.9	7.1			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.4		10.9	5.8	22.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	6.0	22.0		
Max Q Clear Time (g_c+I1), s		5.4		6.2	3.2	8.0		
Green Ext Time (p_c), s		16.7		0.9	0.0	10.5		
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
123: Westbrook Blvd & S Brookstone Dr

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	45	56	18	919	1196	12		
Future Volume (veh/h)	45	56	18	919	1196	12		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	47	59	19	967	1259	13		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	131	117	34	3543	2861	889		
Arrive On Green	0.07	0.07	0.02	0.70	0.56	0.56		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1581		
Grp Volume(v), veh/h	47	59	19	967	1259	13		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1581		
Q Serve(g_s), s	0.9	1.2	0.4	2.5	5.0	0.1		
Cycle Q Clear(g_c), s	0.9	1.2	0.4	2.5	5.0	0.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	131	117	34	3543	2861	889		
V/C Ratio(X)	0.36	0.51	0.56	0.27	0.44	0.01		
Avail Cap(c_a), veh/h	1019	909	204	4671	3504	1089		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.4	15.5	16.9	2.0	4.4	3.4		
Incr Delay (d2), s/veh	1.7	3.4	13.3	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	1.2	0.3	1.1	2.4	0.1		
LnGrp Delay(d),s/veh	17.0	18.9	30.2	2.0	4.5	3.4		
LnGrp LOS	B	B	C	A	A	A		
Approach Vol, veh/h	106			986	1272			
Approach Delay, s/veh	18.1			2.6	4.5			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.3		6.6	4.7	23.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	4.0	24.0		
Max Q Clear Time (g_c+l1), s		4.5		3.2	2.4	7.0		
Green Ext Time (p_c), s		17.8		0.2	0.0	12.6		
Intersection Summary								
HCM 2010 Ctrl Delay			4.3					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
124: Westbrook Blvd & Octave Avenue/Payson Avenue

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	69	0	109	32	0	8	29	1128	11	3	1174	14
Future Volume (veh/h)	69	0	109	32	0	8	29	1128	11	3	1174	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	73	0	115	34	0	8	31	1187	12	3	1236	15
Adj No. of Lanes	0	1	0	0	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	0	166	63	0	15	49	2492	774	6	2369	736
Arrive On Green	0.17	0.00	0.17	0.04	0.00	0.04	0.03	0.49	0.49	0.00	0.47	0.47
Sat Flow, veh/h	640	0	1008	1402	0	330	1774	5085	1580	1774	5085	1580
Grp Volume(v), veh/h	188	0	0	42	0	0	31	1187	12	3	1236	15
Grp Sat Flow(s),veh/h/ln	1648	0	0	1731	0	0	1774	1695	1580	1774	1695	1580
Q Serve(g_s), s	5.8	0.0	0.0	1.3	0.0	0.0	0.9	8.4	0.2	0.1	9.2	0.3
Cycle Q Clear(g_c), s	5.8	0.0	0.0	1.3	0.0	0.0	0.9	8.4	0.2	0.1	9.2	0.3
Prop In Lane	0.39		0.61	0.81		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	0	0	78	0	0	49	2492	774	6	2369	736
V/C Ratio(X)	0.69	0.00	0.00	0.54	0.00	0.00	0.63	0.48	0.02	0.52	0.52	0.02
Avail Cap(c_a), veh/h	1162	0	0	1220	0	0	132	2735	850	132	2735	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	0.0	25.2	0.0	0.0	25.9	9.1	7.1	26.8	10.2	7.8
Incr Delay (d2), s/veh	3.1	0.0	0.0	5.8	0.0	0.0	12.8	0.1	0.0	57.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	0.7	0.0	0.0	0.6	3.9	0.1	0.1	4.3	0.1
LnGrp Delay(d),s/veh	24.3	0.0	0.0	31.0	0.0	0.0	38.7	9.3	7.1	84.2	10.3	7.8
LnGrp LOS	C			C			D	A	A	F	B	A
Approach Vol, veh/h	188					42	1230			1254		
Approach Delay, s/veh	24.3					31.0	10.0			10.5		
Approach LOS	C					C	B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.2	30.4	12.9		5.5	29.1	6.4					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	4.0	29.0	38.0		4.0	29.0	38.0					
Max Q Clear Time (g_c+I1), s	2.1	10.4	7.8		2.9	11.2	3.3					
Green Ext Time (p_c), s	0.0	14.4	1.2		0.0	13.9	0.2					
Intersection Summary												
HCM 2010 Ctrl Delay			11.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

125: Wal*Mart & Lead Hill Blvd

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	694	76	37	461	30	15		
Future Volume (veh/h)	694	76	37	461	30	15		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	731	80	39	485	32	16		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1963	878	124	2482	211	189		
Arrive On Green	0.55	0.55	0.07	0.70	0.12	0.12		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	731	80	39	485	32	16		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	4.5	0.9	0.8	1.9	0.6	0.4		
Cycle Q Clear(g_c), s	4.5	0.9	0.8	1.9	0.6	0.4		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1963	878	124	2482	211	189		
V/C Ratio(X)	0.37	0.09	0.31	0.20	0.15	0.08		
Avail Cap(c_a), veh/h	2540	1136	273	3510	955	852		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	4.9	4.1	17.3	2.0	15.4	15.3		
Incr Delay (d2), s/veh	0.2	0.1	0.5	0.1	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.2	0.4	0.4	0.9	0.3	0.2		
LnGrp Delay(d),s/veh	5.1	4.2	17.8	2.1	15.5	15.4		
LnGrp LOS	A	A	B	A	B	B		
Approach Vol, veh/h	811			524	48			
Approach Delay, s/veh	5.0			3.3	15.5			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.7	23.9				29.7		9.4
Change Period (Y+Rc), s	4.0	5.7				* 5.7		5.7
Max Green Setting (Gmax), s	5.0	24.6				* 35		20.0
Max Q Clear Time (g_c+I1), s	2.8	6.5				3.9		2.6
Green Ext Time (p_c), s	0.0	11.7				16.8		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			4.7					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

126: Westbrook Blvd & Solaire Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	10	33	51	18	57	35	728	17	24	823	26
Future Volume (veh/h)	133	10	33	51	18	57	35	728	17	24	823	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	140	11	35	54	19	60	37	766	18	25	866	27
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	299	219	118	189	125	99	2088	615	82	2042	600
Arrive On Green	0.13	0.16	0.14	0.07	0.10	0.08	0.06	0.41	0.39	0.05	0.40	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	140	11	35	54	19	60	37	766	18	25	866	27
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	3.3	0.2	0.9	1.3	0.4	1.6	0.9	4.6	0.3	0.6	5.4	0.5
Cycle Q Clear(g_c), s	3.3	0.2	0.9	1.3	0.4	1.6	0.9	4.6	0.3	0.6	5.4	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	299	219	118	189	125	99	2088	615	82	2042	600
V/C Ratio(X)	0.63	0.04	0.16	0.46	0.10	0.48	0.38	0.37	0.03	0.30	0.42	0.04
Avail Cap(c_a), veh/h	640	1681	1393	280	1303	1072	240	2754	822	200	2639	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	15.7	16.8	19.9	18.1	19.5	20.2	9.1	8.4	20.4	9.6	8.7
Incr Delay (d2), s/veh	2.9	0.0	0.3	2.8	0.2	2.8	2.3	0.1	0.0	2.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.1	0.4	0.7	0.2	0.8	0.5	2.1	0.1	0.3	2.5	0.2
LnGrp Delay(d),s/veh	21.3	15.8	17.2	22.7	18.3	22.4	22.5	9.2	8.4	22.5	9.7	8.7
LnGrp LOS	C	B	B	C	B	C	C	A	A	C	A	A
Approach Vol, veh/h	186				133				821			
Approach Delay, s/veh	20.2				21.9				9.8			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	21.2	6.9	10.1	6.5	20.8	9.6	7.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	22.0	6.0	38.0	5.0	21.0	15.0	29.0				
Max Q Clear Time (g_c+I1), s	2.6	6.6	3.3	2.9	2.9	7.4	5.3	3.6				
Green Ext Time (p_c), s	0.0	9.1	0.0	0.5	0.0	8.4	0.2	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	11.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
127: Westbrook Blvd & Federico Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	119	120	205	29	0	38	708	95	2	887	17
Future Volume (veh/h)	72	119	120	205	29	0	38	708	95	2	887	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	76	125	126	216	31	0	40	745	100	2	934	18
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	291	247	312	480	408	97	2030	600	40	1867	549
Arrive On Green	0.07	0.16	0.16	0.18	0.26	0.00	0.05	0.40	0.38	0.02	0.37	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	76	125	126	216	31	0	40	745	100	2	934	18
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	2.0	3.0	3.6	5.6	0.6	0.0	1.1	5.0	2.0	0.1	6.9	0.4
Cycle Q Clear(g_c), s	2.0	3.0	3.6	5.6	0.6	0.0	1.1	5.0	2.0	0.1	6.9	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	132	291	247	312	480	408	97	2030	600	40	1867	549
V/C Ratio(X)	0.58	0.43	0.51	0.69	0.06	0.00	0.41	0.37	0.17	0.05	0.50	0.03
Avail Cap(c_a), veh/h	436	1298	1104	691	1566	1331	218	2030	600	218	1981	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	18.6	18.9	18.9	13.7	0.0	22.3	10.3	10.0	23.3	12.0	10.5
Incr Delay (d2), s/veh	3.9	1.0	1.6	2.8	0.1	0.0	2.8	0.3	0.4	0.5	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.6	1.7	2.9	0.3	0.0	0.6	2.4	0.9	0.0	3.3	0.2
LnGrp Delay(d),s/veh	25.7	19.6	20.5	21.6	13.7	0.0	25.1	10.6	10.4	23.8	12.5	10.6
LnGrp LOS	C	B	C	C	B		C	B	B	C	B	B
Approach Vol, veh/h	327				247				885			
Approach Delay, s/veh	21.4				20.6				11.2			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.1	22.5	11.6	10.6	5.7	20.9	6.6	15.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	17.0	18.0	33.0	5.0	17.0	11.0	40.0				
Max Q Clear Time (g_c+I1), s	2.1	7.0	7.6	5.6	3.1	8.9	4.0	2.6				
Green Ext Time (p_c), s	0.0	9.0	0.4	1.3	0.0	7.0	0.1	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay	14.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
128: Westbrook Blvd & Sierra Glen Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	68	0	846	31	36	1176		
Future Volume (veh/h)	68	0	846	31	36	1176		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	72	0	891	33	38	1238		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	101	90	2499	778	62	3384		
Arrive On Green	0.06	0.00	0.49	0.49	0.04	0.67		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	72	0	891	33	38	1238		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	1.4	0.0	3.9	0.4	0.8	3.9		
Cycle Q Clear(g_c), s	1.4	0.0	3.9	0.4	0.8	3.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	101	90	2499	778	62	3384		
V/C Ratio(X)	0.71	0.00	0.36	0.04	0.61	0.37		
Avail Cap(c_a), veh/h	1428	1274	2823	879	542	5081		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.7	0.0	5.6	4.8	17.1	2.7		
Incr Delay (d2), s/veh	8.9	0.0	0.1	0.0	9.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.8	0.2	0.5	1.7		
LnGrp Delay(d),s/veh	25.6	0.0	5.7	4.8	26.4	2.7		
LnGrp LOS	C		A	A	C	A		
Approach Vol, veh/h	72		924			1276		
Approach Delay, s/veh	25.6		5.7			3.4		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.3	22.7				29.0		7.1
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	20.0				36.0		29.0
Max Q Clear Time (g_c+I1), s	2.8	5.9				5.9		3.4
Green Ext Time (p_c), s	0.0	10.6				18.1		0.2
Intersection Summary								
HCM 2010 Ctrl Delay			5.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
129: Westbrook Blvd & Sierra Village Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	6	56	147	17	18	15	1104	58	5	1268	145
Future Volume (veh/h)	50	6	56	147	17	18	15	1104	58	5	1268	145
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	53	6	59	155	18	19	16	1162	61	5	1335	153
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	93	79	206	228	194	29	1879	585	10	1824	568
Arrive On Green	0.04	0.05	0.05	0.12	0.12	0.12	0.02	0.37	0.37	0.01	0.36	0.36
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	53	6	59	155	18	19	16	1162	61	5	1335	153
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.3	0.1	1.6	3.7	0.4	0.5	0.4	8.1	1.1	0.1	9.9	3.0
Cycle Q Clear(g_c), s	1.3	0.1	1.6	3.7	0.4	0.5	0.4	8.1	1.1	0.1	9.9	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	93	79	206	228	194	29	1879	585	10	1824	568
V/C Ratio(X)	0.69	0.06	0.75	0.75	0.08	0.10	0.56	0.62	0.10	0.52	0.73	0.27
Avail Cap(c_a), veh/h	448	1369	1163	652	1582	1345	448	1879	585	448	1868	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	19.7	20.4	18.7	16.9	17.0	21.3	11.2	9.0	21.6	12.1	9.9
Incr Delay (d2), s/veh	10.3	0.3	12.9	5.5	0.1	0.2	15.9	0.6	0.1	37.9	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	1.0	2.1	0.2	0.2	0.3	3.9	0.5	0.2	4.8	1.3
LnGrp Delay(d),s/veh	30.9	20.0	33.3	24.2	17.1	17.2	37.1	11.8	9.1	59.5	13.6	10.2
LnGrp LOS	C	C	C	C	B	B	D	B	A	E	B	B
Approach Vol, veh/h	118			192				1239			1493	
Approach Delay, s/veh	31.5			22.8				12.0			13.4	
Approach LOS	C			C				B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	21.1	10.0	7.2	5.7	20.6	6.9	10.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	16.0	32.0	11.0	16.0	11.0	37.0				
Max Q Clear Time (g_c+I1), s	2.1	10.1	5.7	3.6	2.4	11.9	3.3	2.5				
Green Ext Time (p_c), s	0.0	5.3	0.3	0.3	0.0	3.7	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	14.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

130: Fiddymment Road & Angus Road

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	130	64	89	47	151	44	787	130	271	564	24
Future Volume (veh/h)	45	130	64	89	47	151	44	787	130	271	564	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	137	67	94	49	159	46	828	137	285	594	25
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	258	218	120	300	254	141	1224	546	332	1605	717
Arrive On Green	0.04	0.14	0.14	0.07	0.16	0.16	0.08	0.35	0.35	0.19	0.45	0.45
Sat Flow, veh/h	1774	1863	1576	1774	1863	1577	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	47	137	67	94	49	159	46	828	137	285	594	25
Grp Sat Flow(s),veh/h/ln	1774	1863	1576	1774	1863	1577	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	1.6	4.2	2.3	3.2	1.4	5.8	1.5	12.3	3.8	9.6	6.8	0.5
Cycle Q Clear(g_c), s	1.6	4.2	2.3	3.2	1.4	5.8	1.5	12.3	3.8	9.6	6.8	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	258	218	120	300	254	141	1224	546	332	1605	717
V/C Ratio(X)	0.59	0.53	0.31	0.78	0.16	0.62	0.33	0.68	0.25	0.86	0.37	0.03
Avail Cap(c_a), veh/h	144	789	667	144	789	668	260	1498	668	347	1671	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	24.6	23.8	28.2	22.2	24.0	26.7	17.1	14.4	24.2	11.0	9.3
Incr Delay (d2), s/veh	6.8	1.7	0.8	20.3	0.3	2.5	1.3	0.9	0.2	18.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.3	1.1	2.2	0.7	2.7	0.8	6.1	1.7	6.4	3.3	0.2
LnGrp Delay(d),s/veh	35.6	26.3	24.6	48.4	22.4	26.5	28.0	18.1	14.6	42.5	11.2	9.3
LnGrp LOS	D	C	C	D	C	C	C	B	B	D	B	A
Approach Vol, veh/h	251				302				1011			
Approach Delay, s/veh	27.6				32.7				18.0			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	25.2	8.2	12.5	8.9	31.9	6.8	13.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	26.0	5.0	26.0	9.0	29.0	5.0	26.0				
Max Q Clear Time (g_c+I1), s	11.6	14.3	5.2	6.2	3.5	8.8	3.6	7.8				
Green Ext Time (p_c), s	0.0	7.0	0.0	1.6	0.0	9.8	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	21.9											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
131: Fiddymment Rd & Hayden Pkwy (North)

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	18	116	84	4	0	94	737	72	0	668	8
Future Volume (veh/h)	170	18	116	84	4	0	94	737	72	0	668	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	179	19	122	88	4	0	99	776	76	0	703	8
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	558	496	265	230	195	145	1682	731	111	1244	557
Arrive On Green	0.15	0.33	0.35	0.14	0.14	0.00	0.09	0.53	0.51	0.00	0.39	0.39
Sat Flow, veh/h	1597	1676	1425	1118	1676	1425	1597	3185	1425	580	3185	1425
Grp Volume(v), veh/h	179	19	122	88	4	0	99	776	76	0	703	8
Grp Sat Flow(s),veh/h/ln	1597	1676	1425	1118	1676	1425	1597	1593	1425	580	1593	1425
Q Serve(g_s), s	6.9	0.5	3.9	4.8	0.1	0.0	3.9	9.8	1.8	0.0	11.2	0.2
Cycle Q Clear(g_c), s	6.9	0.5	3.9	4.8	0.1	0.0	3.9	9.8	1.8	0.0	11.2	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	558	496	265	230	195	145	1682	731	111	1244	557
V/C Ratio(X)	0.75	0.03	0.25	0.33	0.02	0.00	0.68	0.46	0.10	0.00	0.56	0.01
Avail Cap(c_a), veh/h	321	700	617	301	285	242	173	1921	837	145	1428	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	14.6	15.0	26.1	24.1	0.0	28.5	9.5	8.1	0.0	15.4	12.1
Incr Delay (d2), s/veh	4.1	0.0	0.1	0.3	0.0	0.0	5.4	0.4	0.1	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.2	1.5	1.5	0.1	0.0	1.9	4.4	0.7	0.0	5.0	0.1
LnGrp Delay(d),s/veh	30.5	14.6	15.1	26.4	24.2	0.0	33.9	9.9	8.2	0.0	16.2	12.1
LnGrp LOS	C	B	B	C	C		C	A	A		B	B
Approach Vol, veh/h	320				92				951			
Approach Delay, s/veh	23.7				26.3				12.3			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4	5	6	7	8				
Phs Duration (G+Y+Rc), s	39.2			25.5	8.9	30.3	12.7	12.9				
Change Period (Y+Rc), s	6.0			4.0	4.0	6.0	4.0	4.0				
Max Green Setting (Gmax), s	38.0			27.0	6.0	28.0	12.0	11.0				
Max Q Clear Time (g_c+I1), s	11.8			5.9	5.9	13.2	8.9	6.8				
Green Ext Time (p_c), s	17.0			0.4	0.0	11.1	0.1	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	16.0											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
132: Fiddymment Ranch EW Rd & Fiddymment Rd

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	80	386	72	782	881	12		
Future Volume (veh/h)	80	386	72	782	881	12		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	84	406	76	823	927	13		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	511	456	98	1921	1426	638		
Arrive On Green	0.29	0.29	0.06	0.54	0.40	0.40		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	84	406	76	823	927	13		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	2.1	14.5	2.5	8.2	12.5	0.3		
Cycle Q Clear(g_c), s	2.1	14.5	2.5	8.2	12.5	0.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	511	456	98	1921	1426	638		
V/C Ratio(X)	0.16	0.89	0.78	0.43	0.65	0.02		
Avail Cap(c_a), veh/h	571	510	331	2760	1800	805		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.7	20.1	27.5	8.0	14.2	10.6		
Incr Delay (d2), s/veh	0.1	16.4	12.4	0.2	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.0	13.4	1.6	3.9	6.2	0.1		
LnGrp Delay(d),s/veh	15.9	36.6	40.0	8.2	14.8	10.6		
LnGrp LOS	B	D	D	A	B	B		
Approach Vol, veh/h	490			899	940			
Approach Delay, s/veh	33.0			10.9	14.8			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		37.0		22.0	8.2	28.8		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		46.0		19.0	11.0	30.0		
Max Q Clear Time (g_c+l1), s		10.2		16.5	4.5	14.5		
Green Ext Time (p_c), s		14.3		0.5	0.1	9.3		
Intersection Summary								
HCM 2010 Ctrl Delay			17.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
133: Fiddymment Rd & Hayden Pkwy (South)

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	208	123	70	1091	1267	156		
Future Volume (veh/h)	208	123	70	1091	1267	156		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	219	129	74	1148	1334	164		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	317	283	138	2563	2104	941		
Arrive On Green	0.18	0.18	0.08	0.72	0.59	0.59		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	219	129	74	1148	1334	164		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	6.7	4.2	2.3	7.6	14.1	2.7		
Cycle Q Clear(g_c), s	6.7	4.2	2.3	7.6	14.1	2.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	317	283	138	2563	2104	941		
V/C Ratio(X)	0.69	0.46	0.54	0.45	0.63	0.17		
Avail Cap(c_a), veh/h	647	577	400	2974	2104	941		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.2	21.2	25.6	3.2	7.6	5.3		
Incr Delay (d2), s/veh	1.0	0.4	1.2	0.2	0.8	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.3	3.8	1.2	3.8	6.9	1.2		
LnGrp Delay(d),s/veh	23.2	21.6	26.8	3.5	8.4	5.5		
LnGrp LOS	C	C	C	A	A	A		
Approach Vol, veh/h	348			1222	1498			
Approach Delay, s/veh	22.6			4.9	8.1			
Approach LOS	C			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		44.3		13.3	7.5	36.8		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		45.0		20.0	12.0	29.0		
Max Q Clear Time (g_c+I1), s		9.6		8.7	4.3	16.1		
Green Ext Time (p_c), s		28.7		0.7	0.1	12.2		
Intersection Summary								
HCM 2010 Ctrl Delay			8.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
134: Fiddymment Rd & Village Green Dr/Del Webb Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	87	31	49	25	38	12	898	54	88	1195	86
Future Volume (veh/h)	216	87	31	49	25	38	12	898	54	88	1195	86
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	227	92	33	52	26	40	13	945	57	93	1258	91
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	322	338	274	211	222	188	69	1511	676	186	1745	780
Arrive On Green	0.18	0.18	0.17	0.12	0.12	0.12	0.04	0.43	0.43	0.10	0.49	0.49
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	227	92	33	52	26	40	13	945	57	93	1258	91
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.0	3.2	1.3	2.0	0.9	1.7	0.5	15.6	1.6	3.7	20.9	2.3
Cycle Q Clear(g_c), s	9.0	3.2	1.3	2.0	0.9	1.7	0.5	15.6	1.6	3.7	20.9	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	338	274	211	222	188	69	1511	676	186	1745	780
V/C Ratio(X)	0.71	0.27	0.12	0.25	0.12	0.21	0.19	0.63	0.08	0.50	0.72	0.12
Avail Cap(c_a), veh/h	511	537	444	291	306	260	308	1677	750	308	1745	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	26.4	26.1	30.0	29.5	29.8	34.9	16.8	12.8	31.7	14.9	10.2
Incr Delay (d2), s/veh	3.0	0.4	0.2	0.2	0.1	0.2	0.5	1.0	0.1	0.8	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	1.7	0.6	1.0	0.5	0.8	0.3	7.8	0.7	1.8	10.6	1.0
LnGrp Delay(d),s/veh	31.8	26.9	26.3	30.2	29.6	30.0	35.4	17.8	12.9	32.5	16.7	10.3
LnGrp LOS	C	C	C	C	C	C	D	B	B	C	B	B
Approach Vol, veh/h	352				118				1015			
Approach Delay, s/veh	30.0				30.0				17.7			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	34.6		16.9	5.9	39.5		12.6				
Change Period (Y+Rc), s	4.0	6.0		4.9	4.0	6.0		5.3				
Max Green Setting (Gmax), s	12.0	32.1		20.0	12.0	32.1		10.7				
Max Q Clear Time (g_c+I1), s	5.7	17.6		11.0	2.5	22.9		4.0				
Green Ext Time (p_c), s	0.1	10.9		1.0	0.0	8.4		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	19.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

135: Fiddymment Rd & Westlake Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	75	66	1309	40	64	1505		
Future Volume (veh/h)	75	66	1309	40	64	1505		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	79	69	1378	42	67	1584		
Adj No. of Lanes	0	0	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	0	2	2	2	2		
Cap, veh/h	105	92	2553	795	89	3368		
Arrive On Green	0.12	0.12	0.50	0.50	0.05	0.66		
Sat Flow, veh/h	891	778	5253	1583	1774	5253		
Grp Volume(v), veh/h	149	0	1378	42	67	1584		
Grp Sat Flow(s),veh/h/ln	1681	0	1695	1583	1774	1695		
Q Serve(g_s), s	3.9	0.0	8.4	0.6	1.7	6.9		
Cycle Q Clear(g_c), s	3.9	0.0	8.4	0.6	1.7	6.9		
Prop In Lane	0.53	0.46		1.00	1.00			
Lane Grp Cap(c), veh/h	198	0	2553	795	89	3368		
V/C Ratio(X)	0.75	0.00	0.54	0.05	0.75	0.47		
Avail Cap(c_a), veh/h	1073	0	2553	795	429	4029		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.4	0.0	7.7	5.8	21.3	3.8		
Incr Delay (d2), s/veh	5.7	0.0	0.2	0.0	11.9	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.1	0.0	3.9	0.3	1.1	3.1		
LnGrp Delay(d),s/veh	25.1	0.0	8.0	5.8	33.2	3.9		
LnGrp LOS	C		A	A	C	A		
Approach Vol, veh/h	149		1420			1651		
Approach Delay, s/veh	25.1		7.9			5.1		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.3	27.8				35.1		10.3
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	20.0				36.0		29.0
Max Q Clear Time (g_c+l1), s	3.7	10.4				8.9		5.9
Green Ext Time (p_c), s	0.1	9.0				21.2		0.4
Intersection Summary								
HCM 2010 Ctrl Delay			7.2					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

136: Fiddymment Road & San Fernando Drive

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1	90	49	2	36	11	1237	16	10	1484	86
Future Volume (veh/h)	77	1	90	49	2	36	11	1237	16	10	1484	86
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	1	95	52	2	38	12	1302	17	11	1562	91
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	2	188	73	8	157	22	2566	797	20	2561	796
Arrive On Green	0.06	0.12	0.12	0.04	0.10	0.10	0.01	0.50	0.50	0.01	0.50	0.50
Sat Flow, veh/h	1774	16	1562	1774	79	1507	1774	5085	1580	1774	5085	1580
Grp Volume(v), veh/h	81	0	96	52	0	40	12	1302	17	11	1562	91
Grp Sat Flow(s),veh/h/ln	1774	0	1578	1774	0	1587	1774	1695	1580	1774	1695	1580
Q Serve(g_s), s	2.2	0.0	2.8	1.4	0.0	1.1	0.3	8.5	0.3	0.3	10.9	1.5
Cycle Q Clear(g_c), s	2.2	0.0	2.8	1.4	0.0	1.1	0.3	8.5	0.3	0.3	10.9	1.5
Prop In Lane	1.00		0.99	1.00		0.95	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	190	73	0	166	22	2566	797	20	2561	796
V/C Ratio(X)	0.79	0.00	0.50	0.71	0.00	0.24	0.55	0.51	0.02	0.55	0.61	0.11
Avail Cap(c_a), veh/h	143	0	985	143	0	991	143	2566	797	143	2561	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	20.4	23.5	0.0	20.4	24.4	8.2	6.2	24.4	8.8	6.5
Incr Delay (d2), s/veh	18.3	0.0	2.1	12.0	0.0	0.7	19.9	0.7	0.0	21.1	1.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.3	0.9	0.0	0.5	0.3	4.0	0.1	0.3	5.3	0.7
LnGrp Delay(d),s/veh	41.4	0.0	22.5	35.5	0.0	21.2	44.3	8.9	6.2	45.5	9.9	6.8
LnGrp LOS	D		C	D		C	D	A	A	D	A	A
Approach Vol, veh/h	177					92		1331		1664		
Approach Delay, s/veh	31.2					29.3		9.2		10.0		
Approach LOS	C					C		A		A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.6	29.0	6.0	10.0	4.6	29.0	6.9	9.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	25.0	4.0	31.0	4.0	25.0	4.0	31.0				
Max Q Clear Time (g_c+I1), s	2.3	10.5	3.4	4.8	2.3	12.9	4.2	3.1				
Green Ext Time (p_c), s	0.0	12.9	0.0	0.7	0.0	10.9	0.0	0.7				
Intersection Summary												
HCM 2010 Ctrl Delay	11.4											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
137: Woodcreek Oaks Blvd & Northpark Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	13	335	171	15	0	70	0	45	0	0	0
Future Volume (veh/h)	0	13	335	171	15	0	70	0	45	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	14	353	180	16	0	74	0	47	0	0	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	537	456	266	24	257	104	409	183	5	10	5
Arrive On Green	0.00	0.29	0.29	0.16	0.16	0.00	0.06	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	0	1863	1583	1636	145	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	14	353	196	0	0	74	0	47	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1781	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.2	7.1	3.6	0.0	0.0	1.4	0.0	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.2	7.1	3.6	0.0	0.0	1.4	0.0	0.9	0.0	0.0	0.0
Prop In Lane	0.00		1.00	0.92		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	537	456	289	0	257	104	409	183	5	10	5
V/C Ratio(X)	0.00	0.03	0.77	0.68	0.00	0.00	0.71	0.00	0.26	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1401	1190	1339	0	1190	564	1740	778	564	1740	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.8	11.3	13.6	0.0	0.0	16.0	0.0	13.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.8	2.8	0.0	0.0	8.5	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	3.4	2.0	0.0	0.0	0.9	0.0	0.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.8	14.1	16.4	0.0	0.0	24.5	0.0	14.7	0.0	0.0	0.0
LnGrp LOS		A	B	B			C		B			
Approach Vol, veh/h	367			196			121			0		
Approach Delay, s/veh	13.9			16.4			20.7			0.0		
Approach LOS	B			B			C					
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	0.0	9.0	15.0		7.0	2.0	10.6					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	11.0	17.0	26.0		11.0	17.0	26.0					
Max Q Clear Time (g_c+I1), s	0.0	2.9	9.1		3.4	0.0	5.6					
Green Ext Time (p_c), s	0.0	0.1	1.2		0.1	0.0	1.0					
Intersection Summary												
HCM 2010 Ctrl Delay	15.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

138: Woodcreek Oaks Blvd & Parkside Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	233	96	62	11	6	59	98	20	250	251	5
Future Volume (veh/h)	11	233	96	62	11	6	59	98	20	250	251	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	245	101	65	12	6	62	103	21	263	264	5
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	364	325	92	17	97	84	396	177	335	895	401
Arrive On Green	0.21	0.21	0.21	0.06	0.06	0.06	0.05	0.11	0.11	0.19	0.25	0.25
Sat Flow, veh/h	87	1772	1583	1509	279	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	257	0	101	77	0	6	62	103	21	263	264	5
Grp Sat Flow(s),veh/h/ln	1858	0	1583	1787	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	5.9	0.0	2.5	2.0	0.0	0.2	1.6	1.2	0.6	6.5	2.8	0.1
Cycle Q Clear(g_c), s	5.9	0.0	2.5	2.0	0.0	0.2	1.6	1.2	0.6	6.5	2.8	0.1
Prop In Lane	0.05		1.00	0.84		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	382	0	325	109	0	97	84	396	177	335	895	401
V/C Ratio(X)	0.67	0.00	0.31	0.71	0.00	0.06	0.74	0.26	0.12	0.79	0.29	0.01
Avail Cap(c_a), veh/h	1046	0	892	1006	0	892	346	1226	549	653	1840	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	15.6	21.3	0.0	20.4	21.7	18.8	18.5	17.8	13.9	12.9
Incr Delay (d2), s/veh	2.1	0.0	0.5	8.1	0.0	0.3	11.7	0.3	0.3	4.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	1.1	1.2	0.0	0.1	1.0	0.6	0.3	3.5	1.4	0.0
LnGrp Delay(d),s/veh	19.0	0.0	16.1	29.4	0.0	20.7	33.4	19.1	18.8	21.9	14.1	12.9
LnGrp LOS	B		B	C		C	C	B	B	C	B	B
Approach Vol, veh/h	358			83			186			532		
Approach Delay, s/veh	18.2			28.7			23.8			18.0		
Approach LOS	B			C			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	10.2		14.5	7.2	16.7		7.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	17.0	16.0		26.0	9.0	24.0		26.0				
Max Q Clear Time (g_c+I1), s	8.5	3.2		7.9	3.6	4.8		4.0				
Green Ext Time (p_c), s	0.5	1.9		1.7	0.0	2.3		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			19.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
139: Woodcreek Oaks Blvd & Painted Desert Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	103	346	0	2	40	127	670	0	46	560	102
Future Volume (veh/h)	129	103	346	0	2	40	127	670	0	46	560	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	136	108	364	0	2	42	134	705	0	48	589	107
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	132	445	4	318	270	171	1269	568	70	1067	478
Arrive On Green	0.10	0.35	0.35	0.00	0.17	0.17	0.10	0.36	0.00	0.04	0.30	0.30
Sat Flow, veh/h	1774	375	1264	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	136	0	472	0	2	42	134	705	0	48	589	107
Grp Sat Flow(s),veh/h/ln	1774	0	1640	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.6	0.0	12.6	0.0	0.0	1.1	3.5	7.7	0.0	1.3	6.7	2.4
Cycle Q Clear(g_c), s	3.6	0.0	12.6	0.0	0.0	1.1	3.5	7.7	0.0	1.3	6.7	2.4
Prop In Lane	1.00		0.77	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	0	577	4	318	270	171	1269	568	70	1067	478
V/C Ratio(X)	0.78	0.00	0.82	0.00	0.01	0.16	0.78	0.56	0.00	0.69	0.55	0.22
Avail Cap(c_a), veh/h	222	0	855	148	893	759	222	1550	693	148	1402	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	14.1	0.0	16.5	16.9	21.2	12.3	0.0	22.7	14.0	12.5
Incr Delay (d2), s/veh	13.0	0.0	4.0	0.0	0.0	0.3	12.8	0.4	0.0	11.3	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	6.3	0.0	0.0	0.5	2.3	3.8	0.0	0.8	3.3	1.1
LnGrp Delay(d),s/veh	34.2	0.0	18.1	0.0	16.5	17.2	34.0	12.7	0.0	34.0	14.5	12.8
LnGrp LOS	C		B		B	B	C	B		C	B	B
Approach Vol, veh/h	608			44			839			744		
Approach Delay, s/veh	21.7			17.2			16.1			15.5		
Approach LOS	C			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	21.2	0.0	20.9	8.6	18.5	8.7	12.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	21.0	4.0	25.0	6.0	19.0	6.0	23.0				
Max Q Clear Time (g_c+I1), s	3.3	9.7	0.0	14.6	5.5	8.7	5.6	3.1				
Green Ext Time (p_c), s	0.0	6.2	0.0	2.3	0.0	5.8	0.0	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
140: Woodcreek Oaks Blvd & Crimson Drige Dr/Crimson Ridge Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	7	27	41	2	15	11	564	255	242	317	10
Future Volume (veh/h)	57	7	27	41	2	15	11	564	255	242	317	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	60	7	28	43	2	16	12	594	268	255	334	11
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	13	113	101	106	89	22	1125	502	299	1677	749
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06	0.01	0.32	0.32	0.17	0.47	0.47
Sat Flow, veh/h	1597	186	1573	1774	1863	1573	1774	3539	1578	1774	3539	1580
Grp Volume(v), veh/h	67	0	28	43	2	16	12	594	268	255	334	11
Grp Sat Flow(s),veh/h/ln	1783	0	1573	1774	1863	1573	1774	1770	1578	1774	1770	1580
Q Serve(g_s), s	1.5	0.0	0.7	1.0	0.0	0.4	0.3	5.7	5.8	5.8	2.3	0.2
Cycle Q Clear(g_c), s	1.5	0.0	0.7	1.0	0.0	0.4	0.3	5.7	5.8	5.8	2.3	0.2
Prop In Lane	0.90		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	129	0	113	101	106	89	22	1125	502	299	1677	749
V/C Ratio(X)	0.52	0.00	0.25	0.43	0.02	0.18	0.54	0.53	0.53	0.85	0.20	0.01
Avail Cap(c_a), veh/h	1330	0	1173	1323	1389	1173	171	1703	759	299	1958	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	18.2	19.0	18.5	18.7	20.4	11.6	11.7	16.8	6.4	5.8
Incr Delay (d2), s/veh	3.2	0.0	1.1	2.8	0.1	0.9	19.2	0.4	0.9	20.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	0.6	0.0	0.2	0.3	2.8	2.7	4.5	1.1	0.1
LnGrp Delay(d),s/veh	21.8	0.0	19.3	21.8	18.6	19.6	39.6	12.0	12.5	37.4	6.4	5.8
LnGrp LOS	C		B	C	B	B	D	B	B	D	A	A
Approach Vol, veh/h	95			61			874			600		
Approach Delay, s/veh	21.1			21.1			12.5			19.6		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	17.2		7.0	4.5	23.7		6.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	20.0		31.0	4.0	23.0		31.0				
Max Q Clear Time (g_c+I1), s	7.8	7.8		3.5	2.3	4.3		3.0				
Green Ext Time (p_c), s	0.0	5.3		0.4	0.0	6.5		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				16.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
141: Woodcreek Oaks Blvd & Horncastle Ave

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	3	38	25	9	32	38	713	3	18	358	168
Future Volume (veh/h)	124	3	38	25	9	32	38	713	3	18	358	168
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	131	3	40	26	9	34	40	751	3	19	377	177
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	320	7	292	175	61	208	111	1438	6	68	879	407
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.06	0.40	0.40	0.04	0.37	0.37
Sat Flow, veh/h	1736	40	1583	1334	462	1583	1774	3615	14	1774	2352	1088
Grp Volume(v), veh/h	134	0	40	35	0	34	40	368	386	19	282	272
Grp Sat Flow(s),veh/h/ln	1776	0	1583	1796	0	1583	1774	1770	1860	1774	1770	1671
Q Serve(g_s), s	3.3	0.0	1.1	0.9	0.0	1.0	1.1	7.9	7.9	0.5	5.9	6.1
Cycle Q Clear(g_c), s	3.3	0.0	1.1	0.9	0.0	1.0	1.1	7.9	7.9	0.5	5.9	6.1
Prop In Lane	0.98		1.00	0.74		1.00	1.00		0.01	1.00		0.65
Lane Grp Cap(c), veh/h	327	0	292	235	0	208	111	704	740	68	661	624
V/C Ratio(X)	0.41	0.00	0.14	0.15	0.00	0.16	0.36	0.52	0.52	0.28	0.43	0.44
Avail Cap(c_a), veh/h	747	0	666	468	0	412	462	907	954	462	907	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	17.0	19.2	0.0	19.3	22.4	11.4	11.4	23.3	11.6	11.7
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.1	0.0	0.1	0.7	0.8	0.8	0.8	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.5	0.4	0.0	0.4	0.5	3.9	4.1	0.3	3.0	2.9
LnGrp Delay(d),s/veh	18.3	0.0	17.1	19.3	0.0	19.4	23.2	12.2	12.2	24.1	12.2	12.3
LnGrp LOS	B		B	B		B	C	B	B	C	B	B
Approach Vol, veh/h	174				69		794				573	
Approach Delay, s/veh	18.0				19.4		12.8				12.7	
Approach LOS	B				B		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.9	23.3	12.2		6.1	22.1	9.5					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	12.0	23.3	20.0		12.0	23.3	12.0					
Max Q Clear Time (g_c+I1), s	2.5	9.9	5.3		3.1	8.1	3.0					
Green Ext Time (p_c), s	0.0	7.6	0.5		0.0	8.3	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			13.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
142: Woodcreek Oaks Blvd & Camino Capistrano/Zinnia Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	24	41	29	5	21	20	692	17	4	414	30
Future Volume (veh/h)	90	24	41	29	5	21	20	692	17	4	414	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	95	25	43	31	5	22	21	728	18	4	436	32
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	54	229	91	15	65	45	1383	34	12	1248	91
Arrive On Green	0.14	0.14	0.14	0.10	0.10	0.10	0.03	0.39	0.39	0.01	0.37	0.37
Sat Flow, veh/h	1419	373	1583	910	147	646	1774	3530	87	1774	3345	245
Grp Volume(v), veh/h	120	0	43	58	0	0	21	365	381	4	230	238
Grp Sat Flow(s),veh/h/ln	1792	0	1583	1703	0	0	1774	1770	1847	1774	1770	1820
Q Serve(g_s), s	3.0	0.0	1.2	1.6	0.0	0.0	0.6	7.8	7.8	0.1	4.6	4.7
Cycle Q Clear(g_c), s	3.0	0.0	1.2	1.6	0.0	0.0	0.6	7.8	7.8	0.1	4.6	4.7
Prop In Lane	0.79		1.00	0.53		0.38	1.00		0.05	1.00		0.13
Lane Grp Cap(c), veh/h	259	0	229	170	0	0	45	694	724	12	660	679
V/C Ratio(X)	0.46	0.00	0.19	0.34	0.00	0.00	0.47	0.53	0.53	0.35	0.35	0.35
Avail Cap(c_a), veh/h	904	0	799	309	0	0	179	1154	1205	215	1190	1223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	18.6	20.8	0.0	0.0	23.8	11.5	11.5	24.5	11.2	11.2
Incr Delay (d2), s/veh	0.5	0.0	0.1	0.4	0.0	0.0	2.8	0.7	0.7	6.5	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.5	0.8	0.0	0.0	0.3	3.9	4.1	0.1	2.3	2.4
LnGrp Delay(d),s/veh	19.9	0.0	18.8	21.2	0.0	0.0	26.6	12.3	12.3	31.0	11.6	11.6
LnGrp LOS	B		B	C			C	B	B	C	B	B
Approach Vol, veh/h	163				58		767				472	
Approach Delay, s/veh	19.6				21.2		12.7				11.7	
Approach LOS	B				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.3	25.1	11.2		5.3	24.2	8.9					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	6.0	32.3	25.0		5.0	33.3	9.0					
Max Q Clear Time (g_c+I1), s	2.1	9.8	5.0		2.6	6.7	3.6					
Green Ext Time (p_c), s	0.0	9.6	0.4		0.0	10.3	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			13.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
143: Woodcreek Oaks Blvd & Canevari Dr

Cumulative No Project
AM Peak Hour

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	42	6	295	13	11	13	97	677	12	2	517	13						
Future Volume (veh/h)	42	6	295	13	11	13	97	677	12	2	517	13						
Number	3	8	18	7	4	14	1	6	16	5	2	12						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900						
Adj Flow Rate, veh/h	44	6	311	14	12	14	102	713	13	2	544	14						
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	333	45	336	93	80	151	192	1559	28	39	1241	32						
Arrive On Green	0.21	0.21	0.21	0.10	0.10	0.10	0.11	0.44	0.41	0.02	0.35	0.32						
Sat Flow, veh/h	1570	214	1583	977	837	1583	1774	3556	65	1774	3526	91						
Grp Volume(v), veh/h	50	0	311	26	0	14	102	355	371	2	273	285						
Grp Sat Flow(s),veh/h/ln	1784	0	1583	1814	0	1583	1774	1770	1851	1774	1770	1847						
Q Serve(g_s), s	1.2	0.0	10.0	0.7	0.0	0.4	2.8	7.3	7.3	0.1	6.1	6.1						
Cycle Q Clear(g_c), s	1.2	0.0	10.0	0.7	0.0	0.4	2.8	7.3	7.3	0.1	6.1	6.1						
Prop In Lane	0.88		1.00	0.54		1.00	1.00		0.04	1.00		0.05						
Lane Grp Cap(c), veh/h	379	0	336	173	0	151	192	776	812	39	623	650						
V/C Ratio(X)	0.13	0.00	0.92	0.15	0.00	0.09	0.53	0.46	0.46	0.05	0.44	0.44						
Avail Cap(c_a), veh/h	379	0	336	735	0	642	240	1025	1072	206	991	1034						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Uniform Delay (d), s/veh	16.5	0.0	20.0	21.5	0.0	21.4	21.8	10.2	10.2	24.8	12.9	12.9						
Incr Delay (d2), s/veh	0.2	0.0	30.5	0.4	0.0	0.3	0.8	0.6	0.5	0.2	0.6	0.6						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.6	0.0	7.2	0.4	0.0	0.2	1.4	3.7	3.8	0.0	3.1	3.2						
LnGrp Delay(d),s/veh	16.7	0.0	50.5	21.9	0.0	21.6	22.7	10.8	10.8	25.0	13.5	13.5						
LnGrp LOS	B		D	C		C	C	B	B	C	B	B						
Approach Vol, veh/h	361				40		828				560							
Approach Delay, s/veh	45.8				21.8		12.2				13.5							
Approach LOS	D				C		B				B							
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2	4		5	6	8											
Phs Duration (G+Y+Rc), s	8.6	21.2	7.9		4.1	25.7	14.0											
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0											
Max Green Setting (Gmax), s	6.0	26.3	20.0		5.0	27.3	10.0											
Max Q Clear Time (g_c+I1), s	4.8	8.1	2.7		2.1	9.3	12.0											
Green Ext Time (p_c), s	0.0	7.4	0.1		0.0	7.4	0.0											
Intersection Summary																		
HCM 2010 Ctrl Delay			19.6															
HCM 2010 LOS			B															

HCM 2010 Signalized Intersection Summary
144: Woodcreek Oaks Blvd & McAnally Dr

Cumulative No Project
AM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	58	24	35	100	51	90	35	1219	21	410	517	43								
Future Volume (veh/h)	58	24	35	100	51	90	35	1219	21	410	517	43								
Number	3	8	18	7	4	14	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.98	1.00		0.98								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900								
Adj Flow Rate, veh/h	61	25	37	80	90	95	37	1283	22	432	544	45								
Adj No. of Lanes	0	1	1	1	1	1	1	2	0	1	2	0								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	152	62	178	143	150	127	96	1477	25	480	2088	172								
Arrive On Green	0.12	0.12	0.12	0.08	0.08	0.08	0.05	0.42	0.41	0.27	0.63	0.62								
Sat Flow, veh/h	1276	523	1503	1774	1863	1583	1774	3559	61	1774	3306	273								
Grp Volume(v), veh/h	86	0	37	80	90	95	37	638	667	432	291	298								
Grp Sat Flow(s),veh/h/ln	1799	0	1503	1774	1863	1583	1774	1770	1850	1774	1770	1809								
Q Serve(g_s), s	5.0	0.0	2.5	4.9	5.3	6.6	2.3	37.3	37.3	26.5	8.2	8.3								
Cycle Q Clear(g_c), s	5.0	0.0	2.5	4.9	5.3	6.6	2.3	37.3	37.3	26.5	8.2	8.3								
Prop In Lane	0.71		1.00	1.00		1.00	1.00		0.03	1.00		0.15								
Lane Grp Cap(c), veh/h	214	0	178	143	150	127	96	735	768	480	1118	1143								
V/C Ratio(X)	0.40	0.00	0.21	0.56	0.60	0.75	0.39	0.87	0.87	0.90	0.26	0.26								
Avail Cap(c_a), veh/h	366	0	306	143	150	127	126	765	800	486	1125	1150								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	46.1	0.0	45.0	50.1	50.2	50.9	51.7	30.2	30.3	39.8	9.2	9.2								
Incr Delay (d2), s/veh	0.9	0.0	0.4	4.1	5.8	20.2	0.9	10.5	10.1	18.8	0.2	0.2								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	2.5	0.0	1.1	2.6	3.0	3.6	1.1	20.2	21.1	15.5	4.0	4.1								
LnGrp Delay(d),s/veh	47.0	0.0	45.4	54.2	56.0	71.0	52.6	40.7	40.4	58.6	9.3	9.4								
LnGrp LOS	D		D	D	E	E	D	D	D	E	A	A								
Approach Vol, veh/h	123			265			1342			1021										
Approach Delay, s/veh	46.5			60.8			40.9			30.2										
Approach LOS	D			E			D			C										
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	32.6	50.6	13.4		8.1	75.1	16.4													
Change Period (Y+Rc), s	4.0	5.7	5.3		4.0	5.7	4.0													
Max Green Setting (Gmax), s	29.0	46.9	8.1		6.0	69.9	22.0													
Max Q Clear Time (g_c+I1), s	28.5	39.3	8.6		4.3	10.3	7.0													
Green Ext Time (p_c), s	0.1	5.6	0.0		0.0	18.0	0.3													
Intersection Summary																				
HCM 2010 Ctrl Delay	39.1																			
HCM 2010 LOS	D																			
Notes																				
User approved volume balancing among the lanes for turning movement.																				

HCM 2010 Signalized Intersection Summary
145: Woodcreek Oaks Blvd & Trailee Ln

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	0	108	42	0	72	82	1170	35	44	540	22
Future Volume (veh/h)	57	0	108	42	0	72	82	1170	35	44	540	22
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	60	0	114	44	0	76	86	1232	37	46	568	23
Adj No. of Lanes	1	0	1	1	0	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	180	0	0	181	0	0	148	2102	63	119	1992	860
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.02	0.08	0.60	0.60	0.07	0.56	0.54
Sat Flow, veh/h	1774	60		1774	44		1774	3508	105	1774	3539	1583
Grp Volume(v), veh/h	60	21.4		44	21.1		86	621	648	46	568	23
Grp Sat Flow(s),veh/h/ln	1774	C		1774	C		1774	1770	1844	1774	1770	1583
Q Serve(g_s), s	1.6			1.2			2.4	10.9	10.9	1.3	4.2	0.3
Cycle Q Clear(g_c), s	1.6			1.2			2.4	10.9	10.9	1.3	4.2	0.3
Prop In Lane	1.00			1.00			1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	180			181			148	1060	1105	119	1992	860
V/C Ratio(X)	0.33			0.24			0.58	0.59	0.59	0.39	0.29	0.03
Avail Cap(c_a), veh/h	423			458			423	1311	1366	458	2621	1141
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0			20.8			22.2	6.2	6.2	22.5	5.7	5.3
Incr Delay (d2), s/veh	0.4			0.3			1.3	0.9	0.9	0.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8			0.6			1.2	5.4	5.7	0.6	2.1	0.2
LnGrp Delay(d),s/veh	21.4			21.1			23.6	7.1	7.1	23.3	5.9	5.4
LnGrp LOS	C			C			C	A	A	C	A	A
Approach Vol, veh/h									1355	637		
Approach Delay, s/veh									8.1	7.1		
Approach LOS									A	A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	5		6	7					
Phs Duration (G+Y+Rc), s	6.4	34.9	9.1	8.2		33.1	8.1					
Change Period (Y+Rc), s	4.0	5.7	4.0	4.0		5.7	4.0					
Max Green Setting (Gmax), s	12.0	36.3	12.0	12.0		36.3	12.0					
Max Q Clear Time (g_c+I1), s	3.3	12.9	3.6	4.4		6.2	3.2					
Green Ext Time (p_c), s	0.0	16.2	0.0	0.0		19.4	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	8.5											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

146: Foothills Blvd & Albertsons Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	4	51	63	4	15	294	907	138	97	887	522
Future Volume (veh/h)	86	4	51	63	4	15	294	907	138	97	887	522
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	94	0	0	66	4	0	309	955	0	102	934	549
Adj No. of Lanes	2	0	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	420	0	187	190	199	169	371	2642	771	172	2072	645
Arrive On Green	0.12	0.00	0.00	0.11	0.11	0.00	0.21	0.52	0.00	0.10	0.41	0.41
Sat Flow, veh/h	3548	0	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	94	0	0	66	4	0	309	955	0	102	934	549
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.8	0.0	0.0	2.5	0.1	0.0	12.2	8.1	0.0	4.0	9.8	23.1
Cycle Q Clear(g_c), s	1.8	0.0	0.0	2.5	0.1	0.0	12.2	8.1	0.0	4.0	9.8	23.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	0	187	190	199	169	371	2642	771	172	2072	645
V/C Ratio(X)	0.22	0.00	0.00	0.35	0.02	0.00	0.83	0.36	0.00	0.59	0.45	0.85
Avail Cap(c_a), veh/h	1016	0	453	242	254	216	411	2642	771	242	2108	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	0.0	0.0	30.4	29.3	0.0	27.8	10.4	0.0	31.7	15.8	19.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.0	0.0	11.4	0.1	0.0	3.2	0.3	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.3	0.1	0.0	7.2	3.8	0.0	2.1	4.6	12.0
LnGrp Delay(d),s/veh	29.5	0.0	0.0	31.5	29.4	0.0	39.2	10.6	0.0	34.9	16.0	30.6
LnGrp LOS	C			C	C		D	B		C	B	C
Approach Vol, veh/h	94			70			1264			1585		
Approach Delay, s/veh	29.5			31.3			17.6			22.3		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	40.7		11.7	18.3	32.5		10.8				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	9.0	34.0		20.0	16.0	27.0		9.0				
Max Q Clear Time (g_c+I1), s	6.0	10.1		3.8	14.2	25.1		4.5				
Green Ext Time (p_c), s	0.1	19.9		0.2	0.1	1.4		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				20.8								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

147: Foothills Blvd & HP-South Dwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	18	2	34	1	1616	124	183	606	201
Future Volume (veh/h)	3	2	1	18	2	34	1	1616	124	183	606	201
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	3	1	19	2	36	1	1701	131	193	638	212
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	11	24	63	3	53	18	3086	1332	248	3169	1034
Arrive On Green	0.02	0.01	0.02	0.04	0.04	0.04	0.01	0.87	0.84	0.80	0.83	0.83
Sat Flow, veh/h	1774	1863	1583	1774	84	1512	1774	3539	1583	253	3796	1238
Grp Volume(v), veh/h	2	3	1	19	0	38	1	1701	131	193	569	281
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1596	1774	1770	1583	253	1695	1644
Q Serve(g_s), s	0.1	0.2	0.1	1.2	0.0	2.6	0.1	13.1	1.6	80.0	3.7	3.8
Cycle Q Clear(g_c), s	0.1	0.2	0.1	1.2	0.0	2.6	0.1	13.1	1.6	89.0	3.7	3.8
Prop In Lane	1.00		1.00	1.00		0.95	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	27	11	24	63	0	56	18	3086	1332	248	2830	1372
V/C Ratio(X)	0.07	0.26	0.04	0.30	0.00	0.68	0.06	0.55	0.10	0.78	0.20	0.21
Avail Cap(c_a), veh/h	272	269	243	256	0	231	208	3466	1502	248	2830	1372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	54.8	53.7	52.1	0.0	52.8	54.3	1.7	1.5	17.5	1.8	1.8
Incr Delay (d2), s/veh	1.2	11.9	0.7	2.7	0.0	13.2	1.3	0.2	0.0	14.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.0	0.6	0.0	1.4	0.0	6.2	0.7	6.9	1.7	1.7
LnGrp Delay(d),s/veh	54.9	66.7	54.4	54.8	0.0	65.9	55.5	1.9	1.6	32.1	1.9	1.9
LnGrp LOS	D	E	D	D		E	E	A	A	C	A	A
Approach Vol, veh/h	6				57			1833			1043	
Approach Delay, s/veh	60.7				62.2			1.9			7.5	
Approach LOS	E				E			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	97.1		4.7		4.1		93.0		8.9			
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0		5.0			
Max Green Setting (Gmax), s	105.0		16.0		12.0		89.0		16.0			
Max Q Clear Time (g_c+I1), s	15.1		2.2		2.1		91.0		4.6			
Green Ext Time (p_c), s	63.3		0.0		0.0		0.0		0.1			
Intersection Summary												
HCM 2010 Ctrl Delay	5.2											
HCM 2010 LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

148: Foothills Blvd & NEC

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	2	21	0	6	59	407	1638	0	292	321	45
Future Volume (veh/h)	39	2	21	0	6	59	407	1638	0	292	321	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	41	0	23	0	6	62	428	1724	0	307	338	47
Adj No. of Lanes	1	0	2	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	134	0	249	0	11	115	480	1953	0	344	1682	752
Arrive On Green	0.08	0.00	0.08	0.00	0.08	0.08	0.27	0.55	0.00	0.19	0.48	0.48
Sat Flow, veh/h	1328	0	3167	0	142	1463	1774	3632	0	1774	3539	1583
Grp Volume(v), veh/h	41	0	23	0	0	68	428	1724	0	307	338	47
Grp Sat Flow(s),veh/h/ln	1328	0	1583	0	0	1605	1774	1770	0	1774	1770	1583
Q Serve(g_s), s	2.6	0.0	0.6	0.0	0.0	3.5	19.8	36.3	0.0	14.4	4.7	1.4
Cycle Q Clear(g_c), s	6.1	0.0	0.6	0.0	0.0	3.5	19.8	36.3	0.0	14.4	4.7	1.4
Prop In Lane	1.00		1.00	0.00		0.91	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	0	249	0	0	126	480	1953	0	344	1682	752
V/C Ratio(X)	0.30	0.00	0.09	0.00	0.00	0.54	0.89	0.88	0.00	0.89	0.20	0.06
Avail Cap(c_a), veh/h	435	0	965	0	0	489	832	2116	0	374	1682	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	0.0	36.5	0.0	0.0	37.8	29.9	16.7	0.0	33.5	13.0	12.1
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	3.6	6.5	4.5	0.0	21.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.5	0.0	0.0	1.7	10.5	18.7	0.0	9.0	2.3	0.6
LnGrp Delay(d),s/veh	42.0	0.0	36.6	0.0	0.0	41.4	36.4	21.3	0.0	55.0	13.0	12.1
LnGrp LOS	D		D			D	D	C		E	B	B
Approach Vol, veh/h	64			68			2152			692		
Approach Delay, s/veh	40.1			41.4			24.3			31.6		
Approach LOS	D			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	21.5	52.0	11.7		28.1	45.5	11.7					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	18.0	51.0	26.0		40.0	29.0	26.0					
Max Q Clear Time (g_c+I1), s	16.4	38.3	8.1		21.8	6.7	5.5					
Green Ext Time (p_c), s	0.2	8.7	0.5		1.3	16.6	0.5					
Intersection Summary												
HCM 2010 Ctrl Delay	26.7											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

149: Foothills Blvd & Mistywood Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	9	17	41	1	2	8	1739	329	33	356	6
Future Volume (veh/h)	50	9	17	41	1	2	8	1739	329	33	356	6
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	9	18	44	0	2	8	1831	346	35	375	6
Adj No. of Lanes	0	1	1	2	0	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	36	223	346	0	155	52	2237	417	82	2765	44
Arrive On Green	0.14	0.14	0.14	0.10	0.00	0.10	0.03	0.52	0.52	0.05	0.54	0.54
Sat Flow, veh/h	1527	259	1583	3548	0	1583	1774	4309	802	1774	5156	82
Grp Volume(v), veh/h	62	0	18	44	0	2	8	1435	742	35	246	135
Grp Sat Flow(s),veh/h/ln	1786	0	1583	1774	0	1583	1774	1695	1721	1774	1695	1848
Q Serve(g_s), s	1.8	0.0	0.6	0.7	0.0	0.1	0.3	20.9	21.6	1.1	2.1	2.2
Cycle Q Clear(g_c), s	1.8	0.0	0.6	0.7	0.0	0.1	0.3	20.9	21.6	1.1	2.1	2.2
Prop In Lane	0.85		1.00	1.00		1.00	1.00		0.47	1.00		0.04
Lane Grp Cap(c), veh/h	251	0	223	346	0	155	52	1760	894	82	1818	991
V/C Ratio(X)	0.25	0.00	0.08	0.13	0.00	0.01	0.15	0.82	0.83	0.42	0.14	0.14
Avail Cap(c_a), veh/h	332	0	294	1260	0	562	210	1800	914	150	1818	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	22.1	24.4	0.0	24.1	28.0	11.9	12.0	27.4	6.9	6.9
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	0.0	0.5	3.1	6.7	1.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	0.3	0.0	0.0	0.1	10.3	11.8	0.6	1.0	1.1
LnGrp Delay(d),s/veh	22.8	0.0	22.2	24.4	0.0	24.1	28.5	15.0	18.7	28.7	6.9	6.9
LnGrp LOS	C		C	C		C	C	B	B	C	A	A
Approach Vol, veh/h	80				46		2185				416	
Approach Delay, s/veh	22.7				24.4		16.3				8.8	
Approach LOS	C				C		B				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.7	33.3	8.8		4.7	34.3	11.3					
Change Period (Y+Rc), s	4.0	6.0	4.0		4.0	6.0	4.0					
Max Green Setting (Gmax), s	4.0	28.0	20.0		6.0	26.0	10.0					
Max Q Clear Time (g_c+I1), s	3.1	23.6	2.7		2.3	4.2	3.8					
Green Ext Time (p_c), s	0.0	3.8	0.0		0.0	17.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	15.5											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
150: Foothills Blvd & McAnally Dr

Cumulative No Project
AM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	140	10	306	73	19	48	149	1669	17	8	881	21								
Future Volume (veh/h)	140	10	306	73	19	48	149	1669	17	8	881	21								
Number	7	4	14	3	8	18	1	6	16	5	2	12								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900								
Adj Flow Rate, veh/h	147	11	322	77	20	51	157	1757	18	8	927	22								
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	0								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	458	34	433	144	37	160	223	2227	23	39	1662	39								
Arrive On Green	0.28	0.28	0.28	0.10	0.10	0.10	0.13	0.43	0.40	0.02	0.33	0.29								
Sat Flow, veh/h	1656	124	1566	1422	369	1583	1774	5190	53	1774	5108	121								
Grp Volume(v), veh/h	158	0	322	97	0	51	157	1148	627	8	615	334								
Grp Sat Flow(s),veh/h/ln	1780	0	1566	1792	0	1583	1774	1695	1853	1774	1695	1839								
Q Serve(g_s), s	4.4	0.0	11.7	3.2	0.0	1.9	5.3	18.2	18.3	0.3	9.3	9.4								
Cycle Q Clear(g_c), s	4.4	0.0	11.7	3.2	0.0	1.9	5.3	18.2	18.3	0.3	9.3	9.4								
Prop In Lane	0.93		1.00	0.79		1.00	1.00		0.03	1.00		0.07								
Lane Grp Cap(c), veh/h	492	0	433	181	0	160	223	1455	795	39	1103	598								
V/C Ratio(X)	0.32	0.00	0.74	0.54	0.00	0.32	0.70	0.79	0.79	0.20	0.56	0.56								
Avail Cap(c_a), veh/h	636	0	559	181	0	160	284	1455	795	114	1124	610								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	17.9	0.0	20.6	26.7	0.0	26.1	26.2	15.4	15.4	30.0	17.4	17.4								
Incr Delay (d2), s/veh	0.1	0.0	2.6	1.7	0.0	0.4	3.3	3.5	6.2	0.9	1.1	2.0								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.3	1.7	0.0	0.8	2.8	9.2	10.6	0.1	4.5	5.1								
LnGrp Delay(d),s/veh	18.1	0.0	23.2	28.4	0.0	26.5	29.5	18.9	21.6	30.9	18.4	19.4								
LnGrp LOS	B		C	C		C	C	B	C	C	B	B								
Approach Vol, veh/h	480		148				1932				957									
Approach Delay, s/veh	21.5		27.7				20.6				18.9									
Approach LOS	C		C				C				B									
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	10.9	23.3	20.3		4.4	29.8	8.0													
Change Period (Y+Rc), s	4.0	6.0	5.3		4.0	6.0	4.0													
Max Green Setting (Gmax), s	9.0	17.7	20.0		3.0	23.7	4.0													
Max Q Clear Time (g_c+I1), s	7.3	11.4	13.7		2.3	20.3	5.2													
Green Ext Time (p_c), s	0.0	5.9	0.8		0.0	3.4	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay	20.6																			
HCM 2010 LOS	C																			

HCM 2010 Signalized Intersection Summary

151: Foothills Blvd & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	441	825	87	171	209	127	89	1353	244	167	880	141
Future Volume (veh/h)	441	825	87	171	209	127	89	1353	244	167	880	141
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	464	868	92	180	220	134	94	1424	0	176	926	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	1017	450	221	1280	394	221	2115	632	257	2168	649
Arrive On Green	0.16	0.29	0.29	0.12	0.25	0.25	0.06	0.42	0.00	0.07	0.43	0.00
Sat Flow, veh/h	3442	3539	1567	1774	5085	1564	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	464	868	92	180	220	134	94	1424	0	176	926	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1567	1774	1695	1564	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	15.7	27.8	5.3	11.9	4.1	8.4	3.2	27.3	0.0	6.0	15.3	0.0
Cycle Q Clear(g_c), s	15.7	27.8	5.3	11.9	4.1	8.4	3.2	27.3	0.0	6.0	15.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	1017	450	221	1280	394	221	2115	632	257	2168	649
V/C Ratio(X)	0.84	0.85	0.20	0.81	0.17	0.34	0.43	0.67	0.00	0.68	0.43	0.00
Avail Cap(c_a), veh/h	660	1041	461	296	1369	421	229	2115	632	258	2168	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.9	40.4	32.4	51.2	35.1	36.8	54.0	28.4	0.0	54.1	24.1	0.0
Incr Delay (d2), s/veh	7.1	7.1	0.3	9.0	0.1	0.6	0.5	1.0	0.0	6.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	14.6	2.3	6.4	1.9	3.7	1.5	13.0	0.0	3.1	7.3	0.0
LnGrp Delay(d),s/veh	56.0	47.4	32.7	60.1	35.2	37.4	54.5	29.5	0.0	60.2	24.8	0.0
LnGrp LOS	E	D	C	E	D	D	D	C		E	C	
Approach Vol, veh/h	1424			534			1518			1102		
Approach Delay, s/veh	49.3			44.2			31.0			30.4		
Approach LOS	D			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	54.2	22.2	32.9	12.0	52.9	18.0	37.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	* 6	4.0	5.7				
Max Green Setting (Gmax), s	7.0	42.0	22.0	29.3	8.0	* 41	19.0	32.3				
Max Q Clear Time (g_c+I1), s	5.2	17.3	17.7	10.4	8.0	29.3	13.9	29.8				
Green Ext Time (p_c), s	0.0	19.2	0.5	7.4	0.0	10.4	0.1	1.7				

Intersection Summary

HCM 2010 Ctrl Delay 38.1
HCM 2010 LOS D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

152: Foothills Blvd & Pilgrim Dr/Rand Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	0	39	44	2	21	23	1647	20	10	1167	9
Future Volume (veh/h)	49	0	39	44	2	21	23	1647	20	10	1167	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	52	0	41	46	2	22	24	1734	21	11	1228	9
Adj No. of Lanes	0	1	0	0	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	4	56	122	11	38	895	2936	1291	28	1703	12
Arrive On Green	0.08	0.00	0.08	0.08	0.08	0.08	0.50	0.83	0.82	0.02	0.33	0.31
Sat Flow, veh/h	846	54	709	914	137	482	1774	3539	1583	1774	5208	38
Grp Volume(v), veh/h	93	0	0	70	0	0	24	1734	21	11	799	438
Grp Sat Flow(s),veh/h/ln	1609	0	0	1533	0	0	1774	1770	1583	1774	1695	1856
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	0.0	0.8	19.6	0.3	0.7	24.9	24.9
Cycle Q Clear(g_c), s	6.5	0.0	0.0	5.1	0.0	0.0	0.8	19.6	0.3	0.7	24.9	24.9
Prop In Lane	0.56		0.44	0.66		0.31	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	175	0	0	171	0	0	895	2936	1291	28	1109	607
V/C Ratio(X)	0.53	0.00	0.00	0.41	0.00	0.00	0.03	0.59	0.02	0.39	0.72	0.72
Avail Cap(c_a), veh/h	327	0	0	321	0	0	895	2936	1291	59	2373	1299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	53.2	0.0	0.0	14.9	3.4	2.1	58.5	35.6	35.6
Incr Delay (d2), s/veh	2.5	0.0	0.0	1.6	0.0	0.0	0.0	0.9	0.0	3.2	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	2.3	0.0	0.0	0.4	9.8	0.1	0.4	11.8	13.1
LnGrp Delay(d),s/veh	56.3	0.0	0.0	54.7	0.0	0.0	14.9	4.3	2.1	61.6	36.7	37.7
LnGrp LOS	E			D			B	A	A	E	D	D
Approach Vol, veh/h	93		70				1779				1248	
Approach Delay, s/veh	56.3		54.7				4.4				37.3	
Approach LOS	E		D				A				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.9	102.6	12.5		65.2	42.2	12.5					
Change Period (Y+Rc), s	4.0	5.7	4.0		5.7	* 5.7	4.0					
Max Green Setting (Gmax), s	3.0	82.3	21.0		4.0	* 81	21.0					
Max Q Clear Time (g_c+I1), s	2.7	21.6	8.5		2.8	26.9	7.1					
Green Ext Time (p_c), s	0.0	21.4	0.4		1.0	9.6	0.5					

Intersection Summary

HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

153: Foothills Blvd & Vineyard Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	330	231	109	47	51	122	1591	48	139	2010	39
Future Volume (veh/h)	108	330	231	109	47	51	122	1591	48	139	2010	39
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	114	347	243	115	49	0	128	1675	0	146	2116	41
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	154	687	305	195	582	234	209	2812	849	228	2867	55
Arrive On Green	0.09	0.19	0.19	0.06	0.16	0.00	0.06	0.55	0.00	0.07	0.56	0.54
Sat Flow, veh/h	1774	3539	1571	3442	3539	1583	3442	5085	1583	3442	5136	99
Grp Volume(v), veh/h	114	347	243	115	49	0	128	1675	0	146	1396	761
Grp Sat Flow(s),veh/h/ln	1774	1770	1571	1721	1770	1583	1721	1695	1583	1721	1695	1845
Q Serve(g_s), s	7.5	10.5	17.7	3.9	1.4	0.0	4.4	26.3	0.0	5.0	37.1	37.3
Cycle Q Clear(g_c), s	7.5	10.5	17.7	3.9	1.4	0.0	4.4	26.3	0.0	5.0	37.1	37.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	154	687	305	195	582	234	209	2812	849	228	1893	1030
V/C Ratio(X)	0.74	0.50	0.80	0.59	0.08	0.00	0.61	0.60	0.00	0.64	0.74	0.74
Avail Cap(c_a), veh/h	222	717	318	229	582	234	258	2839	858	258	1893	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	43.2	46.1	55.2	42.5	0.0	55.0	17.9	0.0	54.6	19.9	20.0
Incr Delay (d2), s/veh	3.5	0.8	13.4	1.1	0.1	0.0	1.1	0.4	0.0	2.8	2.6	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.2	8.8	1.9	0.7	0.0	2.1	12.3	0.0	2.5	17.9	20.2
LnGrp Delay(d),s/veh	57.0	44.0	59.5	56.3	42.6	0.0	56.0	18.2	0.0	57.4	22.5	24.7
LnGrp LOS	E	D	E	E	D		E	B		E	C	C
Approach Vol, veh/h	704				164				1803			
Approach Delay, s/veh	51.4				52.2				20.9			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.4	22.4	10.9	69.4	9.8	26.0	10.3	70.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	4.0	5.7	4.0	6.0				
Max Green Setting (Gmax), s	14.0	14.3	8.0	64.0	7.0	21.3	8.0	64.0				
Max Q Clear Time (g_c+I1), s	9.5	3.4	7.0	28.3	5.9	19.7	6.4	39.3				
Green Ext Time (p_c), s	0.1	3.0	0.0	31.4	0.0	0.6	0.0	22.6				
Intersection Summary												
HCM 2010 Ctrl Delay	28.4											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

154: Foothills Blvd & Denio Loop

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	161	334	1509	71	218	2180		
Future Volume (veh/h)	161	334	1509	71	218	2180		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	169	0	1588	75	229	2295		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	251	224	2511	782	300	3620		
Arrive On Green	0.14	0.00	0.49	0.49	0.17	0.71		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	169	0	1588	75	229	2295		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	5.5	0.0	14.1	1.5	7.6	14.5		
Cycle Q Clear(g_c), s	5.5	0.0	14.1	1.5	7.6	14.5		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	251	224	2511	782	300	3620		
V/C Ratio(X)	0.67	0.00	0.63	0.10	0.76	0.63		
Avail Cap(c_a), veh/h	781	697	2511	782	318	3814		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.0	0.0	11.4	8.2	24.3	4.6		
Incr Delay (d2), s/veh	3.1	0.0	0.6	0.1	8.6	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.9	0.0	6.6	0.7	4.4	6.7		
LnGrp Delay(d),s/veh	28.1	0.0	12.0	8.3	32.9	5.0		
LnGrp LOS	C		B	A	C	A		
Approach Vol, veh/h	169		1663			2524		
Approach Delay, s/veh	28.1		11.8			7.5		
Approach LOS	C		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.4	34.3				47.7		13.7
Change Period (Y+Rc), s	4.0	6.0				* 6		6.0
Max Green Setting (Gmax), s	10.0	28.0				* 44		26.0
Max Q Clear Time (g_c+l1), s	9.6	16.1				16.5		7.5
Green Ext Time (p_c), s	0.0	11.4				25.1		0.6
Intersection Summary								
HCM 2010 Ctrl Delay			10.0					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

155: Washington Blvd & Freedom Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	17	15	97	2	179	41	1170	360	623	1320	0
Future Volume (veh/h)	0	17	15	97	2	179	41	1170	360	623	1320	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	18	16	102	0	189	43	1232	379	656	1389	0
Adj No. of Lanes	2	1	1	2	0	2	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	47	40	311	0	278	54	1920	859	574	2402	1074
Arrive On Green	0.00	0.03	0.03	0.09	0.00	0.09	0.03	0.54	0.54	0.17	0.68	0.00
Sat Flow, veh/h	3442	1863	1583	3548	0	3167	1774	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	0	18	16	102	0	189	43	1232	379	656	1389	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	0	1583	1774	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.0	0.9	0.9	2.4	0.0	5.2	2.2	22.0	13.0	15.0	18.7	0.0
Cycle Q Clear(g_c), s	0.0	0.9	0.9	2.4	0.0	5.2	2.2	22.0	13.0	15.0	18.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	88	47	40	311	0	278	54	1920	859	574	2402	1074
V/C Ratio(X)	0.00	0.38	0.40	0.33	0.00	0.68	0.79	0.64	0.44	1.14	0.58	0.00
Avail Cap(c_a), veh/h	612	331	281	631	0	563	79	1920	859	574	2402	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	43.2	43.2	38.6	0.0	39.8	43.3	14.5	12.4	37.5	7.6	0.0
Incr Delay (d2), s/veh	0.0	4.9	6.2	0.6	0.0	2.9	28.3	1.7	1.6	83.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.5	0.5	1.2	0.0	2.4	1.5	11.1	6.0	13.8	9.4	0.0
LnGrp Delay(d),s/veh	0.0	48.1	49.4	39.2	0.0	42.8	71.7	16.1	14.0	121.4	8.7	0.0
LnGrp LOS		D	D	D		D	E	B	B	F	A	
Approach Vol, veh/h	34			291			1654			2045		
Approach Delay, s/veh	48.7			41.5			17.1			44.8		
Approach LOS	D			D			B			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	52.8		6.3	6.7	65.1		11.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	27.0		16.0	4.0	38.0		16.0				
Max Q Clear Time (g_c+I1), s	17.0	24.0		2.9	4.2	20.7		7.2				
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	15.1		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay	33.2											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
156: Washington Blvd & Hallissy Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	113	13	755	171	44	608		
Future Volume (veh/h)	113	13	755	171	44	608		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	119	14	795	180	46	640		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	367	328	1781	797	149	2335		
Arrive On Green	0.21	0.21	0.50	0.50	0.08	0.66		
Sat Flow, veh/h	1774	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	119	14	795	180	46	640		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	1774	1770		
Q Serve(g_s), s	2.4	0.3	5.9	2.6	1.0	3.1		
Cycle Q Clear(g_c), s	2.4	0.3	5.9	2.6	1.0	3.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	367	328	1781	797	149	2335		
V/C Ratio(X)	0.32	0.04	0.45	0.23	0.31	0.27		
Avail Cap(c_a), veh/h	1097	979	2059	921	301	2917		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.9	13.1	6.6	5.7	17.8	2.9		
Incr Delay (d2), s/veh	0.5	0.1	0.3	0.3	0.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	0.1	3.0	1.2	0.5	1.5		
LnGrp Delay(d),s/veh	14.4	13.1	6.9	6.0	18.2	3.0		
LnGrp LOS	B	B	A	A	B	A		
Approach Vol, veh/h	133		975			686		
Approach Delay, s/veh	14.3		6.7			4.1		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.5	23.8				30.2		11.0
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	6.0	21.0				31.0		24.0
Max Q Clear Time (g_c+I1), s	3.0	7.9				5.1		4.4
Green Ext Time (p_c), s	0.0	9.8				16.4		0.4
Intersection Summary								
HCM 2010 Ctrl Delay			6.3					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
157: Washington Blvd & Industrial Blvd

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	105	349	1379	788	33		
Future Volume (veh/h)	0	105	349	1379	788	33		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	111	367	1452	829	35		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	157	140	437	2642	1405	563		
Arrive On Green	0.00	0.09	0.25	0.75	0.40	0.36		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	0	111	367	1452	829	35		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	0.0	3.3	9.5	8.6	8.9	0.7		
Cycle Q Clear(g_c), s	0.0	3.3	9.5	8.6	8.9	0.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	157	140	437	2642	1405	563		
V/C Ratio(X)	0.00	0.79	0.84	0.55	0.59	0.06		
Avail Cap(c_a), veh/h	585	522	585	2992	1460	588		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	21.7	17.4	2.6	11.5	10.3		
Incr Delay (d2), s/veh	0.0	9.6	8.0	0.2	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.2	5.6	4.1	4.4	0.3		
LnGrp Delay(d),s/veh	0.0	31.3	25.4	2.8	12.1	10.3		
LnGrp LOS		C	C	A	B	B		
Approach Vol, veh/h	111			1819	864			
Approach Delay, s/veh	31.3			7.4	12.0			
Approach LOS	C			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		39.2		9.3	17.0	22.3		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		39.0		16.0	16.0	18.0		
Max Q Clear Time (g_c+I1), s		10.6		5.3	11.5	10.9		
Green Ext Time (p_c), s		20.9		0.2	0.5	6.3		
Intersection Summary								
HCM 2010 Ctrl Delay			9.8					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
158: Washington Blvd & Diamond Oaks Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	9	10	53	1	178	6	1289	125	91	555	27
Future Volume (veh/h)	7	9	10	53	1	178	6	1289	125	91	555	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	7	9	11	56	1	187	6	1357	132	96	584	28
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	135	121	383	6	288	52	1868	181	155	2171	104
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.03	0.57	0.57	0.09	0.63	0.63
Sat Flow, veh/h	222	737	660	1389	31	1570	1774	3259	316	1774	3438	165
Grp Volume(v), veh/h	27	0	0	57	0	187	6	734	755	96	300	312
Grp Sat Flow(s),veh/h/ln	1619	0	0	1420	0	1570	1774	1770	1805	1774	1770	1833
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	6.2	0.2	16.9	17.1	2.9	4.2	4.2
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.7	0.0	6.2	0.2	16.9	17.1	2.9	4.2	4.2
Prop In Lane	0.26		0.41	0.98		1.00	1.00		0.17	1.00		0.09
Lane Grp Cap(c), veh/h	378	0	0	389	0	288	52	1014	1035	155	1117	1157
V/C Ratio(X)	0.07	0.00	0.00	0.15	0.00	0.65	0.12	0.72	0.73	0.62	0.27	0.27
Avail Cap(c_a), veh/h	673	0	0	658	0	592	255	1089	1111	191	1117	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	0.0	19.2	0.0	21.1	26.4	8.7	8.7	24.5	4.6	4.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.9	0.4	2.7	2.7	1.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.0	2.7	0.1	8.7	9.2	1.5	2.1	2.1
LnGrp Delay(d),s/veh	18.9	0.0	0.0	19.3	0.0	22.0	26.7	11.4	11.5	26.1	4.8	4.8
LnGrp LOS	B			B		C	C	B	B	C	A	A
Approach Vol, veh/h	27		244				1495				708	
Approach Delay, s/veh	18.9		21.4				11.5				7.7	
Approach LOS	B		C				B				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.9	34.7	13.2		4.6	37.9	13.2					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	5.0	31.3	20.0		7.0	29.3	20.0					
Max Q Clear Time (g_c+I1), s	4.9	19.1	2.7		2.2	6.2	8.2					
Green Ext Time (p_c), s	0.0	9.8	0.6		0.0	19.3	0.5					
Intersection Summary												
HCM 2010 Ctrl Delay			11.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

159: Washington Blvd & Sawtell Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1	47	14	1	15	32	1281	70	21	567	20
Future Volume (veh/h)	80	1	47	14	1	15	32	1281	70	21	567	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	84	1	49	15	1	16	34	1348	74	22	597	21
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	2	126	59	4	55	314	2580	1117	46	1949	69
Arrive On Green	0.08	0.08	0.08	0.04	0.04	0.04	0.18	0.73	0.71	0.03	0.56	0.54
Sat Flow, veh/h	1754	21	1583	1668	111	1541	1774	3539	1581	1774	3488	123
Grp Volume(v), veh/h	85	0	49	16	0	16	34	1348	74	22	303	315
Grp Sat Flow(s),veh/h/ln	1775	0	1583	1779	0	1541	1774	1770	1581	1774	1770	1841
Q Serve(g_s), s	4.2	0.0	2.6	0.8	0.0	0.9	1.4	15.0	1.3	1.1	8.2	8.2
Cycle Q Clear(g_c), s	4.2	0.0	2.6	0.8	0.0	0.9	1.4	15.0	1.3	1.1	8.2	8.2
Prop In Lane	0.99		1.00	0.94		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	142	0	126	63	0	55	314	2580	1117	46	989	1029
V/C Ratio(X)	0.60	0.00	0.39	0.25	0.00	0.29	0.11	0.52	0.07	0.48	0.31	0.31
Avail Cap(c_a), veh/h	335	0	299	99	0	86	314	2580	1117	99	989	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	39.3	42.2	0.0	42.3	31.1	5.3	4.1	43.3	10.6	10.6
Incr Delay (d2), s/veh	1.5	0.0	0.7	0.8	0.0	1.1	0.1	0.4	0.1	2.9	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.2	0.4	0.0	0.4	0.7	7.3	0.6	0.6	4.2	4.3
LnGrp Delay(d),s/veh	41.6	0.0	40.1	43.0	0.0	43.4	31.1	5.8	4.1	46.2	11.4	11.4
LnGrp LOS	D		D	D		D	C	A	A	D	B	B
Approach Vol, veh/h	134					32	1456			640		
Approach Delay, s/veh	41.0					43.2	6.3			12.6		
Approach LOS	D					D	A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	20.6	53.0	6.2		5.3	68.3	10.2					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	5.0	* 47	4.0		4.0	48.3	16.0					
Max Q Clear Time (g_c+I1), s	3.4	10.2	2.9		3.1	17.0	6.2					
Green Ext Time (p_c), s	0.0	8.0	0.0		0.0	21.1	0.2					

Intersection Summary

HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

160: Washington Blvd & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	644	0	789	11	3	1	298	735	0	1	482	142
Future Volume (veh/h)	644	0	789	11	3	1	298	735	0	1	482	142
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	678	0	0	12	3	1	314	774	0	1	507	149
Adj No. of Lanes	2	0	1	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	851	0	362	98	74	25	457	2028	0	43	1683	753
Arrive On Green	0.24	0.00	0.00	0.06	0.06	0.04	0.13	0.57	0.00	0.02	0.48	0.48
Sat Flow, veh/h	3548	0	1583	1774	1338	446	3442	3632	0	1774	3539	1583
Grp Volume(v), veh/h	678	0	0	12	0	4	314	774	0	1	507	149
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1784	1721	1770	0	1774	1770	1583
Q Serve(g_s), s	16.2	0.0	0.0	0.6	0.0	0.2	7.8	10.8	0.0	0.0	7.9	4.9
Cycle Q Clear(g_c), s	16.2	0.0	0.0	0.6	0.0	0.2	7.8	10.8	0.0	0.0	7.9	4.9
Prop In Lane	1.00		1.00	1.00		0.25	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	851	0	362	98	0	98	457	2028	0	43	1683	753
V/C Ratio(X)	0.80	0.00	0.00	0.12	0.00	0.04	0.69	0.38	0.00	0.02	0.30	0.20
Avail Cap(c_a), veh/h	1104	0	475	276	0	278	497	2028	0	177	1683	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	0.0	0.0	40.4	0.0	40.4	37.2	10.5	0.0	42.9	14.5	13.7
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.2	0.0	0.1	2.7	0.5	0.0	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	0.0	0.3	0.0	0.1	3.9	5.3	0.0	0.0	3.9	2.2
LnGrp Delay(d),s/veh	34.5	0.0	0.0	40.6	0.0	40.4	40.0	11.0	0.0	43.0	14.6	13.9
LnGrp LOS	C			D		D	D	B		D	B	B
Approach Vol, veh/h	678		16			1088			657			
Approach Delay, s/veh	34.5		40.6			19.4			14.5			
Approach LOS	C		D			B			B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.2	55.3	23.6		13.0	46.5	7.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		3.0	* 5.7	4.0					
Max Green Setting (Gmax), s	7.0	27.3	26.0		11.0	* 25	12.0					
Max Q Clear Time (g_c+I1), s	2.0	12.8	18.2		9.8	9.9	2.6					
Green Ext Time (p_c), s	0.0	8.3	1.4		0.1	8.6	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	22.4											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
161: Washington Blvd & All American City Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1	14	0	1	25	30	671	0	22	744	60
Future Volume (veh/h)	94	1	14	0	1	25	30	671	0	22	744	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	99	1	15	0	1	26	32	706	0	23	783	63
Adj No. of Lanes	1	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	8	120	0	48	41	53	1412	632	40	1300	105
Arrive On Green	0.08	0.08	0.08	0.00	0.03	0.03	0.03	0.40	0.00	0.02	0.39	0.39
Sat Flow, veh/h	1774	100	1498	0	1863	1583	1774	3539	1583	1774	3318	267
Grp Volume(v), veh/h	99	0	16	0	1	26	32	706	0	23	417	429
Grp Sat Flow(s),veh/h/ln	1774	0	1598	0	1863	1583	1774	1770	1583	1774	1770	1816
Q Serve(g_s), s	2.3	0.0	0.4	0.0	0.0	0.7	0.8	6.3	0.0	0.5	7.9	8.0
Cycle Q Clear(g_c), s	2.3	0.0	0.4	0.0	0.0	0.7	0.8	6.3	0.0	0.5	7.9	8.0
Prop In Lane	1.00		0.94	0.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	142	0	128	0	48	41	53	1412	632	40	693	711
V/C Ratio(X)	0.70	0.00	0.12	0.00	0.02	0.64	0.61	0.50	0.00	0.58	0.60	0.60
Avail Cap(c_a), veh/h	922	0	831	0	969	823	461	1673	748	461	836	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	18.1	0.0	20.1	20.4	20.3	9.5	0.0	20.5	10.2	10.2
Incr Delay (d2), s/veh	6.0	0.0	0.4	0.0	0.2	15.4	10.8	0.3	0.0	12.6	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.2	0.0	0.0	0.5	0.5	3.1	0.0	0.4	4.0	4.1
LnGrp Delay(d),s/veh	24.9	0.0	18.5	0.0	20.3	35.9	31.1	9.8	0.0	33.1	11.1	11.1
LnGrp LOS	C		B		C	D	C	A		C	B	B
Approach Vol, veh/h	115				27				738			
Approach Delay, s/veh	24.0				35.3				10.7			
Approach LOS	C				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	21.9		8.4	6.3	21.6		6.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	20.0		22.0	11.0	20.0		22.0				
Max Q Clear Time (g_c+I1), s	2.5	8.3		4.3	2.8	10.0		2.7				
Green Ext Time (p_c), s	0.0	7.4		0.3	0.0	6.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	12.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

162: Fairway Dr & Cortina Cir

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	0	37	41	1	48	65	459	5	25	388	94
Future Volume (veh/h)	68	0	37	41	1	48	65	459	5	25	388	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	72	0	39	43	1	51	68	483	5	26	408	99
Adj No. of Lanes	2	0	1	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	0	219	230	4	202	150	1281	573	64	1111	497
Arrive On Green	0.14	0.00	0.14	0.13	0.13	0.13	0.08	0.36	0.36	0.04	0.31	0.31
Sat Flow, veh/h	3548	0	1583	1774	31	1557	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	72	0	39	43	0	52	68	483	5	26	408	99
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1588	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.9	0.0	1.1	1.1	0.0	1.5	1.9	5.2	0.1	0.7	4.6	2.4
Cycle Q Clear(g_c), s	0.9	0.0	1.1	1.1	0.0	1.5	1.9	5.2	0.1	0.7	4.6	2.4
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	492	0	219	230	0	206	150	1281	573	64	1111	497
V/C Ratio(X)	0.15	0.00	0.18	0.19	0.00	0.25	0.45	0.38	0.01	0.41	0.37	0.20
Avail Cap(c_a), veh/h	1370	0	611	411	0	368	411	2302	1030	411	2302	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	0.0	19.7	20.1	0.0	20.3	22.6	12.2	10.6	24.4	13.8	13.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.0	0.2	0.8	0.3	0.0	1.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	0.6	0.0	0.7	1.0	2.6	0.0	0.4	2.3	1.1
LnGrp Delay(d),s/veh	19.7	0.0	19.9	20.3	0.0	20.5	23.4	12.5	10.6	26.0	14.1	13.3
LnGrp LOS	B		B	C		C	C	B	B	C	B	B
Approach Vol, veh/h	111				95		556				533	
Approach Delay, s/veh	19.7				20.4		13.8				14.5	
Approach LOS	B				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.9	24.1	11.2		8.4	21.6	10.7					
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0					
Max Green Setting (Gmax), s	12.0	33.7	20.0		12.0	33.7	12.0					
Max Q Clear Time (g_c+I1), s	2.7	7.2	3.1		3.9	6.6	3.5					
Green Ext Time (p_c), s	0.0	9.5	0.1		0.0	9.6	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			15.1									
HCM 2010 LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
163: Westbrook Blvd & High School Road

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	5	26	10	7	41	12		
Future Volume (veh/h)	5	26	10	7	41	12		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	5	27	11	7	43	13		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	102	91	119	101	114	744		
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.40		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	5	27	11	7	43	13		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	0.0	0.3	0.1	0.1	0.4	0.1		
Cycle Q Clear(g_c), s	0.0	0.3	0.1	0.1	0.4	0.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	102	91	119	101	114	744		
V/C Ratio(X)	0.05	0.30	0.09	0.07	0.38	0.02		
Avail Cap(c_a), veh/h	2023	1806	2225	1892	674	3439		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.2	8.3	8.1	8.1	8.3	3.3		
Incr Delay (d2), s/veh	0.2	1.8	0.3	0.3	2.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.1	0.0	0.3	0.0		
LnGrp Delay(d),s/veh	8.4	10.1	8.5	8.4	10.3	3.4		
LnGrp LOS	A	B	A	A	B	A		
Approach Vol, veh/h	32		18			56		
Approach Delay, s/veh	9.9		8.4			8.7		
Approach LOS	A		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.2	6.2				12.4		6.1
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	7.0	22.0				34.0		21.0
Max Q Clear Time (g_c+I1), s	2.4	2.1				2.1		2.3
Green Ext Time (p_c), s	0.0	0.1				0.1		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			9.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

164: Target Dwy & Fairway Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	369	36	45	471	11	38	8	37	6	46	10
Future Volume (veh/h)	3	369	36	45	471	11	38	8	37	6	46	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	3	388	38	47	496	12	46	0	39	6	48	11
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	1339	599	127	1480	662	334	0	149	19	150	34
Arrive On Green	0.06	0.38	0.38	0.07	0.42	0.42	0.09	0.00	0.09	0.11	0.11	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	166	1330	305
Grp Volume(v), veh/h	3	388	38	47	496	12	46	0	39	65	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1801	0	0
Q Serve(g_s), s	0.1	2.6	0.5	0.9	3.2	0.2	0.4	0.0	0.8	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	2.6	0.5	0.9	3.2	0.2	0.4	0.0	0.8	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.09		0.17
Lane Grp Cap(c), veh/h	108	1339	599	127	1480	662	334	0	149	203	0	0
V/C Ratio(X)	0.03	0.29	0.06	0.37	0.34	0.02	0.14	0.00	0.26	0.32	0.00	0.00
Avail Cap(c_a), veh/h	729	3043	1361	677	3043	1361	1770	0	790	740	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	7.4	6.7	15.1	6.7	5.8	14.2	0.0	14.3	14.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.7	0.2	0.0	0.1	0.0	0.3	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	0.2	0.4	1.6	0.1	0.2	0.0	0.3	0.6	0.0	0.0
LnGrp Delay(d),s/veh	15.1	7.6	6.8	15.8	6.9	5.8	14.2	0.0	14.7	14.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B		B	B		
Approach Vol, veh/h	429				555				85		65	
Approach Delay, s/veh	7.6				7.6				14.4		14.3	
Approach LOS	A				A				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	6.2		5.4	16.6	5.8		4.1	17.9				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	16.0		12.0	27.3	12.0		12.0	27.3				
Max Q Clear Time (g_c+I1), s	2.8		2.9	4.6	3.1		2.1	5.2				
Green Ext Time (p_c), s	0.1		0.0	6.3	0.1		0.0	6.2				
Intersection Summary												
HCM 2010 Ctrl Delay	8.5											
HCM 2010 LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
165: Lowes Dwy/Central Park Dr & Fairway Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	356	121	68	372	7	70	9	30	15	36	79
Future Volume (veh/h)	23	356	121	68	372	7	70	9	30	15	36	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	24	375	127	72	392	7	80	0	32	16	38	83
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	1288	576	135	1397	625	361	0	161	202	258	219
Arrive On Green	0.05	0.36	0.36	0.08	0.39	0.39	0.10	0.00	0.10	0.11	0.14	0.14
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	1774	1863	1583
Grp Volume(v), veh/h	24	375	127	72	392	7	80	0	32	16	38	83
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	1583
Q Serve(g_s), s	0.5	2.8	2.0	1.4	2.8	0.1	0.8	0.0	0.7	0.3	0.7	1.7
Cycle Q Clear(g_c), s	0.5	2.8	2.0	1.4	2.8	0.1	0.8	0.0	0.7	0.3	0.7	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	1288	576	135	1397	625	361	0	161	202	258	219
V/C Ratio(X)	0.30	0.29	0.22	0.53	0.28	0.01	0.22	0.00	0.20	0.08	0.15	0.38
Avail Cap(c_a), veh/h	194	2100	939	194	2100	939	485	0	216	810	896	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	8.3	8.0	16.3	7.5	6.7	15.1	0.0	15.1	14.5	13.9	14.3
Incr Delay (d2), s/veh	0.8	0.2	0.3	1.2	0.2	0.0	0.1	0.0	0.2	0.2	0.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.3	0.9	0.7	1.3	0.0	0.4	0.0	0.3	0.2	0.4	0.8
LnGrp Delay(d),s/veh	17.7	8.5	8.3	17.5	7.7	6.7	15.2	0.0	15.3	14.7	14.2	15.9
LnGrp LOS	B	A	A	B	A	A	B		B	B	B	B
Approach Vol, veh/h	526				471				112			
Approach Delay, s/veh	8.8				9.2				15.2			
Approach LOS	A				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				3				4			
Phs Duration (G+Y+Rc), s	6.7				5.8				16.3			
Change Period (Y+Rc), s	4.0				4.0				5.7			
Max Green Setting (Gmax), s	4.0				3.0				19.0			
Max Q Clear Time (g_c+I1), s	2.8				3.4				4.8			
Green Ext Time (p_c), s	0.0				0.0				5.9			
Intersection Summary												
HCM 2010 Ctrl Delay	10.2											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
166: Home Depot Dwy & Fairway Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	300	58	30	363	3	52	15	4	0	7	27
Future Volume (veh/h)	60	300	58	30	363	3	52	15	4	0	7	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	63	316	61	32	382	3	55	16	4	0	7	28
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	1397	625	99	1333	596	131	38	149	0	123	105
Arrive On Green	0.07	0.39	0.39	0.06	0.38	0.38	0.09	0.09	0.09	0.00	0.07	0.07
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1389	404	1583	0	1863	1583
Grp Volume(v), veh/h	63	316	61	32	382	3	71	0	4	0	7	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1793	0	1583	0	1863	1583
Q Serve(g_s), s	1.1	1.8	0.7	0.5	2.3	0.0	1.2	0.0	0.1	0.0	0.1	0.5
Cycle Q Clear(g_c), s	1.1	1.8	0.7	0.5	2.3	0.0	1.2	0.0	0.1	0.0	0.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	0.77		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	131	1397	625	99	1333	596	168	0	149	0	123	105
V/C Ratio(X)	0.48	0.23	0.10	0.32	0.29	0.01	0.42	0.00	0.03	0.00	0.06	0.27
Avail Cap(c_a), veh/h	345	2297	1028	288	2182	976	1339	0	1182	0	302	257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	6.2	5.9	14.0	6.7	6.0	13.2	0.0	12.7	0.0	13.5	13.7
Incr Delay (d2), s/veh	1.0	0.1	0.1	0.7	0.2	0.0	2.0	0.0	0.1	0.0	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.9	0.3	0.3	1.1	0.0	0.7	0.0	0.0	0.0	0.1	0.2
LnGrp Delay(d),s/veh	14.7	6.3	6.0	14.7	6.9	6.0	15.2	0.0	12.8	0.0	13.6	14.2
LnGrp LOS	B	A	A	B	A	A	B		B		B	B
Approach Vol, veh/h	440				417				75		35	
Approach Delay, s/veh	7.5				7.5				15.1		14.1	
Approach LOS	A				A				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.9		4.7	15.2	5.0		5.3	14.6				
Change Period (Y+Rc), s	4.0		4.0	5.0	4.0		4.0	5.0				
Max Green Setting (Gmax), s	22.0		4.0	18.0	4.0		5.0	17.0				
Max Q Clear Time (g_c+I1), s	3.2		2.5	3.8	2.5		3.1	4.3				
Green Ext Time (p_c), s	0.3		0.0	5.7	0.0		0.0	5.3				
Intersection Summary												
HCM 2010 Ctrl Delay	8.3											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

167: Five Star Blvd & Fairway Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	171	137	7	298	110	83	12	4	28	63	8
Future Volume (veh/h)	27	171	137	7	298	110	83	12	4	28	63	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	28	180	144	7	314	116	96	0	4	29	66	8
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	1184	650	70	1011	452	389	0	173	62	141	176
Arrive On Green	0.05	0.33	0.30	0.04	0.29	0.29	0.11	0.00	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	560	1275	1583
Grp Volume(v), veh/h	28	180	144	7	314	116	96	0	4	95	0	8
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1835	0	1583
Q Serve(g_s), s	0.4	1.1	1.7	0.1	2.1	1.7	0.7	0.0	0.1	1.4	0.0	0.1
Cycle Q Clear(g_c), s	0.4	1.1	1.7	0.1	2.1	1.7	0.7	0.0	0.1	1.4	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.31		1.00
Lane Grp Cap(c), veh/h	97	1184	650	70	1011	452	389	0	173	204	0	176
V/C Ratio(X)	0.29	0.15	0.22	0.10	0.31	0.26	0.25	0.00	0.02	0.47	0.00	0.05
Avail Cap(c_a), veh/h	300	2392	1190	240	2272	1016	2997	0	1337	558	0	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	6.9	5.7	13.7	8.3	8.1	12.1	0.0	11.8	12.3	0.0	11.8
Incr Delay (d2), s/veh	0.6	0.1	0.3	0.2	0.3	0.5	0.4	0.0	0.1	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.9	0.1	1.0	0.8	0.4	0.0	0.0	0.7	0.0	0.1
LnGrp Delay(d),s/veh	14.0	7.0	5.9	13.9	8.6	8.6	12.5	0.0	11.8	13.0	0.0	11.8
LnGrp LOS	B	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h	352				437				100			
Approach Delay, s/veh	7.1				8.7				12.4			
Approach LOS	A				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	6.2		4.2	12.9	6.3		5.6	11.5				
Change Period (Y+Rc), s	4.0		4.0	5.0	4.0		5.0	* 5				
Max Green Setting (Gmax), s	24.0		3.0	18.0	8.0		4.0	* 17				
Max Q Clear Time (g_c+I1), s	2.7		2.1	3.7	3.4		2.4	4.1				
Green Ext Time (p_c), s	0.4		0.0	1.9	0.1		0.3	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay	8.9											
HCM 2010 LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

168: Stanford Ranch Rd & Highland Park

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	36	83	43	12	5	23	731	71	39	1153	99
Future Volume (veh/h)	113	36	83	43	12	5	23	731	71	39	1153	99
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1853	1890	1863	1863	1900	1825	1825	1825	1900	1900	1900
Adj Flow Rate, veh/h	119	38	87	45	13	5	24	769	75	41	1214	104
Adj No. of Lanes	1	1	0	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	73	168	392	89	34	77	2310	718	105	2476	769
Arrive On Green	0.19	0.15	0.15	0.11	0.07	0.07	0.04	0.46	0.46	0.06	0.48	0.48
Sat Flow, veh/h	1765	500	1146	3442	1281	493	1739	4984	1548	1810	5187	1612
Grp Volume(v), veh/h	119	0	125	45	0	18	24	769	75	41	1214	104
Grp Sat Flow(s),veh/h/ln	1765	0	1646	1721	0	1774	1739	1661	1548	1810	1729	1612
Q Serve(g_s), s	3.5	0.0	4.2	0.7	0.0	0.6	0.8	5.8	1.6	1.3	9.5	0.4
Cycle Q Clear(g_c), s	3.5	0.0	4.2	0.7	0.0	0.6	0.8	5.8	1.6	1.3	9.5	0.4
Prop In Lane	1.00		0.70	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	0	242	392	0	123	77	2310	718	105	2476	769
V/C Ratio(X)	0.35	0.00	0.52	0.11	0.00	0.15	0.31	0.33	0.10	0.39	0.49	0.14
Avail Cap(c_a), veh/h	338	0	583	696	0	697	176	2361	733	183	2476	769
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	23.4	23.6	0.0	26.0	27.5	10.1	9.0	26.9	10.6	0.3
Incr Delay (d2), s/veh	0.2	0.0	1.5	0.0	0.0	0.2	0.8	0.2	0.1	0.9	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.0	0.3	0.0	0.3	0.4	2.7	0.7	0.7	4.6	0.9
LnGrp Delay(d),s/veh	21.0	0.0	24.8	23.6	0.0	26.2	28.3	10.3	9.1	27.8	10.9	0.5
LnGrp LOS	C		C	C		C	C	B	A	C	B	A
Approach Vol, veh/h	244		63				868				1359	
Approach Delay, s/veh	23.0		24.4				10.7				10.6	
Approach LOS	C		C				B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	30.1	9.8	13.0	5.6	30.9	15.7	7.1				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.3	4.0	6.0	5.3	* 4				
Max Green Setting (Gmax), s	5.0	24.7	11.0	20.0	5.0	24.7	10.0	* 22				
Max Q Clear Time (g_c+I1), s	3.3	7.8	2.7	6.2	2.8	11.5	5.5	2.6				
Green Ext Time (p_c), s	0.0	16.3	0.0	0.6	0.0	13.1	0.4	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

169: Stanford Ranch Rd & Fairway Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	107	99	171	252	11	112	790	85	27	1212	61
Future Volume (veh/h)	29	107	99	171	252	11	112	790	85	27	1212	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	31	113	104	180	265	12	118	832	89	28	1276	64
Adj No. of Lanes	1	2	1	2	1	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	484	217	226	319	14	162	3311	1031	51	3148	980
Arrive On Green	0.02	0.14	0.14	0.07	0.18	0.18	0.09	1.00	1.00	0.01	0.62	0.62
Sat Flow, veh/h	1774	3539	1583	3442	1769	80	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	31	113	104	180	0	277	118	832	89	28	1276	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	0	1849	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	2.6	4.3	9.1	7.7	0.0	21.7	5.0	0.0	0.0	1.2	19.1	2.4
Cycle Q Clear(g_c), s	2.6	4.3	9.1	7.7	0.0	21.7	5.0	0.0	0.0	1.2	19.1	2.4
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	484	217	226	0	333	162	3311	1031	51	3148	980
V/C Ratio(X)	0.78	0.23	0.48	0.79	0.00	0.83	0.73	0.25	0.09	0.55	0.41	0.07
Avail Cap(c_a), veh/h	154	937	419	344	0	514	321	3311	1031	275	3148	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	57.7	59.8	69.1	0.0	59.3	67.0	0.0	0.0	73.4	14.5	11.3
Incr Delay (d2), s/veh	11.7	0.3	2.2	3.6	0.0	8.2	2.3	0.2	0.2	3.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.1	4.1	3.8	0.0	11.8	2.4	0.1	0.0	0.6	9.0	1.1
LnGrp Delay(d),s/veh	84.7	58.0	62.0	72.7	0.0	67.5	69.3	0.2	0.2	76.8	14.7	11.4
LnGrp LOS	F	E	E	E		E	E	A	A	E	B	B
Approach Vol, veh/h	248				457				1039			
Approach Delay, s/veh	63.0				69.5				8.0			
Approach LOS	E				E				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	104.1	13.9	25.8	11.0	99.3	7.3	32.4				
Change Period (Y+Rc), s	4.0	* 6.4	4.0	5.3	4.0	6.4	4.0	5.3				
Max Green Setting (Gmax), s	12.0	* 65	15.0	39.7	14.0	61.6	13.0	41.7				
Max Q Clear Time (g_c+I1), s	3.2	2.0	9.7	11.1	7.0	21.1	4.6	23.7				
Green Ext Time (p_c), s	0.0	47.9	0.1	3.9	0.1	33.7	0.0	3.4				

Intersection Summary

HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

170: Stanford Ranch Rd & 5 Star Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	31	130	179	48	59	105	953	270	110	1393	53
Future Volume (veh/h)	24	31	130	179	48	59	105	953	270	110	1393	53
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	25	33	137	188	51	62	111	1003	284	116	1466	56
Adj No. of Lanes	1	1	1	2	1	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	188	160	304	66	80	157	2441	920	698	3240	1009
Arrive On Green	0.10	0.10	0.10	0.09	0.09	0.09	0.05	0.48	0.48	0.20	0.64	0.64
Sat Flow, veh/h	1774	1863	1583	3548	766	932	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	25	33	137	188	0	113	111	1003	284	116	1466	56
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1698	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	1.9	2.4	12.8	7.7	0.0	9.8	4.8	19.2	13.7	4.2	22.0	2.0
Cycle Q Clear(g_c), s	1.9	2.4	12.8	7.7	0.0	9.8	4.8	19.2	13.7	4.2	22.0	2.0
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	188	160	304	0	146	157	2441	920	698	3240	1009
V/C Ratio(X)	0.14	0.18	0.86	0.62	0.00	0.78	0.71	0.41	0.31	0.17	0.45	0.06
Avail Cap(c_a), veh/h	257	269	229	608	0	291	298	2441	920	698	3240	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.95	0.95	0.95	0.90	0.90	0.90
Uniform Delay (d), s/veh	61.5	61.7	66.4	66.2	0.0	67.2	70.6	25.3	16.1	49.3	13.9	10.2
Incr Delay (d2), s/veh	0.4	0.4	19.4	2.0	0.0	8.6	5.5	0.5	0.8	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.3	6.4	3.8	0.0	4.9	2.4	9.0	7.6	2.0	10.4	0.9
LnGrp Delay(d),s/veh	61.9	62.2	85.8	68.3	0.0	75.7	76.0	25.8	16.9	49.4	14.0	10.3
LnGrp LOS	E	E	F	E		E	E	C	B	D	B	B
Approach Vol, veh/h	195				301		1398				1638	
Approach Delay, s/veh	78.7				71.1		27.9				16.4	
Approach LOS	E				E		C				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	34.4	77.0	18.2		11.8	99.6	20.4					
Change Period (Y+Rc), s	4.0	5.0	5.3		5.0	4.0	5.3					
Max Green Setting (Gmax), s	11.0	72.0	25.7		13.0	70.0	21.7					
Max Q Clear Time (g_c+I1), s	6.2	21.2	11.8		6.8	24.0	14.8					
Green Ext Time (p_c), s	0.3	10.9	1.1		0.1	24.3	0.3					

Intersection Summary

HCM 2010 Ctrl Delay 29.1
HCM 2010 LOS C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
171: Galleria Blvd/Stanford Ranch & Hwy-65 NB Ramps

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations							 	  			  	
Traffic Volume (veh/h)	0	0	284	0	0	269	365	785	0	0	1570	175
Future Volume (veh/h)	0	0	284	0	0	269	365	785	0	0	1570	175
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h	0	0	0	0	0	0	384	826	0	0	1653	184
Adj No. of Lanes	0	0	1	0	0	1	2	3	0	0	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	0	0	0	532	4843	0	0	3875	1206
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.95	0.00	0.00	0.76	0.76
Sat Flow, veh/h		0			0		3442	5253	0	0	5253	1583
Grp Volume(v), veh/h		0.0			0.0		384	826	0	0	1653	184
Grp Sat Flow(s),veh/h/ln							1721	1695	0	0	1695	1583
Q Serve(g_s), s							8.9	0.8	0.0	0.0	9.6	2.6
Cycle Q Clear(g_c), s							8.9	0.8	0.0	0.0	9.6	2.6
Prop In Lane							1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h							532	4843	0	0	3875	1206
V/C Ratio(X)							0.72	0.17	0.00	0.00	0.43	0.15
Avail Cap(c_a), veh/h							819	4843	0	0	3875	1206
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)							0.95	0.95	0.00	0.00	0.88	0.88
Uniform Delay (d), s/veh							33.8	0.1	0.0	0.0	3.5	2.7
Incr Delay (d2), s/veh							1.8	0.1	0.0	0.0	0.3	0.2
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							4.3	0.3	0.0	0.0	4.5	1.2
LnGrp Delay(d),s/veh							35.5	0.2	0.0	0.0	3.8	2.9
LnGrp LOS							D	A			A	A
Approach Vol, veh/h								1210			1837	
Approach Delay, s/veh								11.4			3.7	
Approach LOS								B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		84.0			16.0	68.0						
Change Period (Y+Rc), s		5.0			4.0	5.0						
Max Green Setting (Gmax), s		70.0			19.0	47.0						
Max Q Clear Time (g_c+l1), s		2.8			10.9	11.6						
Green Ext Time (p_c), s		27.2			1.1	20.5						
Intersection Summary												
HCM 2010 Ctrl Delay			6.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
172: Galleria Blvd & Hwy-65 SB Ramps

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  		  	  	
Traffic Volume (veh/h)	0	0	1184	0	0	212	0	957	183	541	1338	0
Future Volume (veh/h)	0	0	1184	0	0	212	0	957	183	541	1338	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	0	0	1246	0	0	0	0	1007	193	569	1408	0
Adj No. of Lanes	0	0	1	0	0	1	0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	0	2	2	2	2	0
Cap, veh/h	0	0	0	0	0	0	0	3185	992	630	4256	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.18	0.84	0.00
Sat Flow, veh/h		0			0		0	5253	1583	3442	5253	0
Grp Volume(v), veh/h		0.0			0.0		0	1007	193	569	1408	0
Grp Sat Flow(s),veh/h/ln							0	1695	1583	1721	1695	0
Q Serve(g_s), s							0.0	15.8	8.9	27.7	10.7	0.0
Cycle Q Clear(g_c), s							0.0	15.8	8.9	27.7	10.7	0.0
Prop In Lane							0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h							0	3185	992	630	4256	0
V/C Ratio(X)							0.00	0.32	0.19	0.90	0.33	0.00
Avail Cap(c_a), veh/h							0	3185	992	674	4256	0
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)							0.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh							0.0	14.9	13.6	68.4	3.1	0.0
Incr Delay (d2), s/veh							0.0	0.3	0.4	12.7	0.2	0.0
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.0	7.4	4.0	14.3	5.0	0.0
LnGrp Delay(d),s/veh							0.0	15.1	14.0	81.0	3.3	0.0
LnGrp LOS								B	B	F	A	
Approach Vol, veh/h								1200			1977	
Approach Delay, s/veh								15.0			25.7	
Approach LOS								B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	36.0	111.8				147.8						
Change Period (Y+Rc), s	5.7	5.7				5.7						
Max Green Setting (Gmax), s	32.5	106.1				37.3						
Max Q Clear Time (g_c+l1), s	29.7	17.8				12.7						
Green Ext Time (p_c), s	0.6	6.8				11.4						
Intersection Summary												
HCM 2010 Ctrl Delay			21.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
173: JC Penny & Galleria Circle

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	1	7	6	7	13	32	0	3	10	12
Future Volume (veh/h)	1	1	1	7	6	7	13	32	0	3	10	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	1	1	7	6	7	14	34	0	3	11	13
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	9	9	304	8	9	20	892	0	11	190	224
Arrive On Green	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.25	0.00	0.00	0.24	0.24
Sat Flow, veh/h	593	593	593	564	483	564	1774	3632	0	1774	779	921
Grp Volume(v), veh/h	3	0	0	20	0	0	14	34	0	3	0	24
Grp Sat Flow(s),veh/h/ln	1778	0	0	1611	0	0	1774	1770	0	1774	0	1700
Q Serve(g_s), s	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Prop In Lane	0.33		0.33	0.35		0.35	1.00		0.00	1.00		0.54
Lane Grp Cap(c), veh/h	320	0	0	321	0	0	20	892	0	11	0	413
V/C Ratio(X)	0.01	0.00	0.00	0.06	0.00	0.00	0.70	0.04	0.00	0.28	0.00	0.06
Avail Cap(c_a), veh/h	779	0	0	778	0	0	539	1937	0	539	0	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.0	0.0	0.0	8.1	0.0	0.0	8.1	4.6	0.0	8.2	0.0	4.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	5.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1
LnGrp Delay(d),s/veh	8.0	0.0	0.0	8.1	0.0	0.0	23.1	4.7	0.0	13.2	0.0	4.8
LnGrp LOS	A			A			C	A		B		A
Approach Vol, veh/h	3			20			48			27		
Approach Delay, s/veh	8.0			8.1			10.0			5.8		
Approach LOS	A			A			B			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.0	8.1	4.3		4.2	8.0	4.3					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	5.0	9.0	5.0		5.0	9.0	5.0					
Max Q Clear Time (g_c+I1), s	2.0	2.1	2.0		2.1	2.2	2.2					
Green Ext Time (p_c), s	0.0	0.1	0.0		0.0	0.1	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	8.4											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
174: Galleria Blvd & Antelope Creek Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	9	8	60	10	64	20	986	91	295	1949	53
Future Volume (veh/h)	75	9	8	60	10	64	20	986	91	295	1949	53
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	79	9	0	63	11	0	21	1038	0	311	2052	56
Adj No. of Lanes	3	1	1	3	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	202	71	55	189	66	51	85	2771	847	390	3221	998
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.00	0.03	0.56	0.00	0.12	0.65	0.65
Sat Flow, veh/h	5322	1863	1583	5322	1863	1583	3343	4940	1538	3343	4940	1531
Grp Volume(v), veh/h	79	9	0	63	11	0	21	1038	0	311	2052	56
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1672	1647	1538	1672	1647	1531
Q Serve(g_s), s	2.2	0.7	0.0	1.7	0.9	0.0	0.9	17.5	0.0	13.6	37.1	2.0
Cycle Q Clear(g_c), s	2.2	0.7	0.0	1.7	0.9	0.0	0.9	17.5	0.0	13.6	37.1	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	71	55	189	66	51	85	2771	847	390	3221	998
V/C Ratio(X)	0.39	0.13	0.00	0.33	0.17	0.00	0.25	0.37	0.00	0.80	0.64	0.06
Avail Cap(c_a), veh/h	479	168	137	483	169	138	301	2793	854	591	3221	998
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	69.8	0.0	70.6	70.2	0.0	71.7	18.3	0.0	64.5	15.5	9.4
Incr Delay (d2), s/veh	1.2	0.8	0.0	1.4	1.6	0.0	0.6	0.1	0.0	2.3	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	0.0	0.9	0.5	0.0	0.4	8.0	0.0	6.4	17.0	0.9
LnGrp Delay(d),s/veh	71.7	70.6	0.0	72.0	71.8	0.0	72.2	18.5	0.0	66.8	16.5	9.5
LnGrp LOS	E	E		E	E		E	B		E	B	A
Approach Vol, veh/h	88			74			1059			2419		
Approach Delay, s/veh	71.6			72.0			19.5			22.8		
Approach LOS	E			E			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	87.3		8.7	6.3	101.0		8.2				
Change Period (Y+Rc), s	4.0	5.7		4.9	4.0	5.7		4.0				
Max Green Setting (Gmax), s	25.0	82.3		12.1	12.0	95.3		12.0				
Max Q Clear Time (g_c+I1), s	15.6	19.5		3.7	2.9	39.1		4.2				
Green Ext Time (p_c), s	0.4	58.6		0.2	0.0	52.9		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
175: Galleria Blvd & Berry St

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	1	119	5	2	4	42	1456	1	5	1559	157
Future Volume (veh/h)	173	1	119	5	2	4	42	1456	1	5	1559	157
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	182	1	125	5	2	4	44	1533	1	5	1641	165
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	2	270	52	21	64	158	1995	1	39	1874	839
Arrive On Green	0.17	0.17	0.17	0.04	0.04	0.04	0.09	0.55	0.53	0.02	0.53	0.53
Sat Flow, veh/h	1765	10	1583	1285	514	1583	1774	3630	2	1774	3539	1583
Grp Volume(v), veh/h	183	0	125	7	0	4	44	747	787	5	1641	165
Grp Sat Flow(s),veh/h/ln	1775	0	1583	1799	0	1583	1774	1770	1862	1774	1770	1583
Q Serve(g_s), s	6.1	0.0	4.6	0.2	0.0	0.2	1.5	21.1	21.1	0.2	26.1	3.5
Cycle Q Clear(g_c), s	6.1	0.0	4.6	0.2	0.0	0.2	1.5	21.1	21.1	0.2	26.1	3.5
Prop In Lane	0.99		1.00	0.71		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	0	270	73	0	64	158	973	1024	39	1874	839
V/C Ratio(X)	0.60	0.00	0.46	0.10	0.00	0.06	0.28	0.77	0.77	0.13	0.88	0.20
Avail Cap(c_a), veh/h	581	0	518	280	0	247	221	973	1024	166	1936	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	23.9	29.6	0.0	29.6	27.3	11.3	11.3	30.8	13.2	7.9
Incr Delay (d2), s/veh	0.7	0.0	0.5	0.2	0.0	0.1	0.4	4.0	3.8	0.5	4.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	2.0	0.1	0.0	0.1	0.7	11.3	11.8	0.1	13.8	1.6
LnGrp Delay(d),s/veh	25.3	0.0	24.4	29.9	0.0	29.8	27.6	15.3	15.1	31.3	18.1	8.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	A
Approach Vol, veh/h	308					11		1578		1811		
Approach Delay, s/veh	24.9					29.8		15.5		17.3		
Approach LOS	C					C		B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.4	39.3	14.9		6.7	37.0	5.6					
Change Period (Y+Rc), s	4.0	6.0	4.9		4.0	6.0	4.0					
Max Green Setting (Gmax), s	5.0	32.1	20.0		5.0	32.1	9.0					
Max Q Clear Time (g_c+I1), s	2.2	23.1	8.1		3.5	28.1	2.2					
Green Ext Time (p_c), s	0.0	8.7	0.6		0.0	2.9	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			17.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
176: Harding Blvd & Wills Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	299	14	355	3	6	18	78	1198	8	7	1392	313
Future Volume (veh/h)	299	14	355	3	6	18	78	1198	8	7	1392	313
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	315	15	374	3	6	19	82	1261	8	7	1465	329
Adj No. of Lanes	2	1	0	1	1	1	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1021	18	454	53	56	47	172	1822	12	32	1675	750
Arrive On Green	0.30	0.30	0.30	0.03	0.03	0.03	0.05	0.51	0.49	0.02	0.47	0.47
Sat Flow, veh/h	3442	61	1531	1774	1863	1583	3442	3605	23	1774	3539	1583
Grp Volume(v), veh/h	315	0	389	3	6	19	82	619	650	7	1465	329
Grp Sat Flow(s),veh/h/ln	1721	0	1593	1774	1863	1583	1721	1770	1859	1774	1770	1583
Q Serve(g_s), s	5.7	0.0	18.2	0.1	0.3	0.9	1.9	21.3	21.3	0.3	29.8	11.1
Cycle Q Clear(g_c), s	5.7	0.0	18.2	0.1	0.3	0.9	1.9	21.3	21.3	0.3	29.8	11.1
Prop In Lane	1.00		0.96	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	1021	0	473	53	56	47	172	894	940	32	1675	750
V/C Ratio(X)	0.31	0.00	0.82	0.06	0.11	0.40	0.48	0.69	0.69	0.22	0.87	0.44
Avail Cap(c_a), veh/h	1333	0	617	89	93	79	172	894	940	89	1725	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	26.2	37.7	37.8	38.1	37.0	15.0	15.1	38.7	18.9	14.0
Incr Delay (d2), s/veh	0.2	0.0	6.9	0.2	0.3	2.0	0.8	3.0	2.9	1.3	5.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	8.9	0.1	0.1	0.4	0.9	11.1	11.6	0.2	15.8	5.0
LnGrp Delay(d),s/veh	21.9	0.0	33.0	37.9	38.1	40.1	37.8	18.1	17.9	40.0	24.7	14.9
LnGrp LOS	C		C	D	D	D	D	B	B	D	C	B
Approach Vol, veh/h	704				28		1351				1801	
Approach Delay, s/veh	28.1				39.5		19.2				22.9	
Approach LOS	C				D		B				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.4	43.4	26.8		7.0	40.9	5.4					
Change Period (Y+Rc), s	4.0	5.5	4.0		4.0	5.5	4.0					
Max Green Setting (Gmax), s	3.0	36.5	30.0		3.0	36.5	3.0					
Max Q Clear Time (g_c+I1), s	2.3	23.3	20.2		3.9	31.8	2.9					
Green Ext Time (p_c), s	0.0	12.9	2.6		0.0	3.6	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			22.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
177: Harding Blvd & Lead Hill Blvd

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	155	462	867	433	920	839		
Future Volume (veh/h)	155	462	867	433	920	839		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	163	486	913	456	968	883		
Adj No. of Lanes	2	1	2	1	2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	432	700	1510	676	1014	2655		
Arrive On Green	0.13	0.15	0.43	0.43	0.29	0.75		
Sat Flow, veh/h	3442	1583	3632	1583	3442	3632		
Grp Volume(v), veh/h	163	486	913	456	968	883		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1721	1770		
Q Serve(g_s), s	2.6	0.0	11.7	13.6	16.2	4.9		
Cycle Q Clear(g_c), s	2.6	0.0	11.7	13.6	16.2	4.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	432	700	1510	676	1014	2655		
V/C Ratio(X)	0.38	0.69	0.60	0.68	0.96	0.33		
Avail Cap(c_a), veh/h	1465	1175	1807	809	1014	2874		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.6	13.2	13.0	13.6	20.3	2.4		
Incr Delay (d2), s/veh	0.2	0.5	0.6	2.1	18.2	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	7.9	5.8	6.2	10.2	2.4		
LnGrp Delay(d),s/veh	23.8	13.6	13.6	15.7	38.5	2.5		
LnGrp LOS	C	B	B	B	D	A		
Approach Vol, veh/h	649		1369			1851		
Approach Delay, s/veh	16.2		14.3			21.4		
Approach LOS	B		B			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				48.4		10.4	20.3	28.1
Change Period (Y+Rc), s				5.3		4.0	5.3	* 5.3
Max Green Setting (Gmax), s				46.7		24.0	15.0	* 28
Max Q Clear Time (g_c+I1), s				6.9		4.6	18.2	15.6
Green Ext Time (p_c), s				11.3		1.8	0.0	7.1
Intersection Summary								
HCM 2010 Ctrl Delay			18.0					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

178: Harding Blvd & Estates Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	315	13	18	36	20	45	13	1048	0	52	801	93
Future Volume (veh/h)	315	13	18	36	20	45	13	1048	0	52	801	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	360	0	0	38	21	47	14	1103	0	55	843	98
Adj No. of Lanes	2	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	516	271	0	47	26	58	19	1433	0	67	1381	161
Arrive On Green	0.15	0.00	0.00	0.08	0.08	0.08	0.01	0.40	0.00	0.04	0.43	0.43
Sat Flow, veh/h	3548	1863	0	609	337	753	1774	3632	0	1774	3195	371
Grp Volume(v), veh/h	360	0	0	106	0	0	14	1103	0	55	467	474
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1699	0	0	1774	1770	0	1774	1770	1797
Q Serve(g_s), s	5.0	0.0	0.0	3.2	0.0	0.0	0.4	13.9	0.0	1.6	10.5	10.5
Cycle Q Clear(g_c), s	5.0	0.0	0.0	3.2	0.0	0.0	0.4	13.9	0.0	1.6	10.5	10.5
Prop In Lane	1.00		0.00	0.36		0.44	1.00		0.00	1.00		0.21
Lane Grp Cap(c), veh/h	516	271	0	131	0	0	19	1433	0	67	765	777
V/C Ratio(X)	0.70	0.00	0.00	0.81	0.00	0.00	0.75	0.77	0.00	0.82	0.61	0.61
Avail Cap(c_a), veh/h	1304	684	0	131	0	0	103	1513	0	103	765	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	23.5	0.0	0.0	25.5	13.3	0.0	24.7	11.3	11.3
Incr Delay (d2), s/veh	0.6	0.0	0.0	27.8	0.0	0.0	19.4	2.6	0.0	14.6	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	2.5	0.0	0.0	0.3	7.3	0.0	1.0	5.4	5.5
LnGrp Delay(d),s/veh	21.7	0.0	0.0	51.3	0.0	0.0	44.9	15.9	0.0	39.3	12.8	12.8
LnGrp LOS	C			D			D	B		D	B	B
Approach Vol, veh/h	360		106			1117			996			
Approach Delay, s/veh	21.7		51.3			16.3			14.3			
Approach LOS	C		D			B			B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.0	26.2	11.5		4.5	27.6	8.0					
Change Period (Y+Rc), s	4.0	* 5.3	4.0		4.0	5.3	4.0					
Max Green Setting (Gmax), s	3.0	* 22	19.0		3.0	21.7	4.0					
Max Q Clear Time (g_c+I1), s	3.6	15.9	7.0		2.4	12.5	5.2					
Green Ext Time (p_c), s	0.0	5.0	0.6		0.0	8.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	17.7											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

179: Harding Blvd & Roseville Square

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	10	27	25	1	7	41	1060	14	8	827	27
Future Volume (veh/h)	76	10	27	25	1	7	41	1060	14	8	827	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	80	11	28	26	1	7	43	1116	15	8	871	28
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	17	123	53	2	49	261	1768	24	11	1164	37
Arrive On Green	0.08	0.08	0.08	0.03	0.03	0.03	0.15	0.49	0.49	0.01	0.33	0.33
Sat Flow, veh/h	1569	216	1583	1711	66	1583	1774	3576	48	1774	3500	113
Grp Volume(v), veh/h	91	0	28	27	0	7	43	552	579	8	440	459
Grp Sat Flow(s),veh/h/ln	1784	0	1583	1777	0	1583	1774	1770	1854	1774	1770	1843
Q Serve(g_s), s	2.1	0.0	0.7	0.6	0.0	0.2	0.9	9.9	9.9	0.2	9.6	9.6
Cycle Q Clear(g_c), s	2.1	0.0	0.7	0.6	0.0	0.2	0.9	9.9	9.9	0.2	9.6	9.6
Prop In Lane	0.88		1.00	0.96		1.00	1.00		0.03	1.00		0.06
Lane Grp Cap(c), veh/h	139	0	123	55	0	49	261	875	917	11	589	613
V/C Ratio(X)	0.66	0.00	0.23	0.49	0.00	0.14	0.16	0.63	0.63	0.71	0.75	0.75
Avail Cap(c_a), veh/h	825	0	732	657	0	585	656	1149	1204	164	658	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	18.7	20.6	0.0	20.4	16.1	8.0	8.0	21.5	12.8	12.8
Incr Delay (d2), s/veh	2.0	0.0	0.3	2.5	0.0	0.5	0.1	1.2	1.1	26.1	4.9	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.3	0.4	0.0	0.1	0.4	5.0	5.3	0.2	5.4	5.6
LnGrp Delay(d),s/veh	21.4	0.0	19.1	23.1	0.0	20.9	16.2	9.2	9.1	47.5	17.7	17.5
LnGrp LOS	C		B	C		C	B	A	A	D	B	B
Approach Vol, veh/h	119					34		1174		907		
Approach Delay, s/veh	20.8					22.7		9.4		17.9		
Approach LOS	C					C		A		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.3	26.3	7.4		11.3	19.3	5.3					
Change Period (Y+Rc), s	4.0	4.9	4.0		4.9	* 4.9	4.0					
Max Green Setting (Gmax), s	4.0	28.1	20.0		16.0	* 16	16.0					
Max Q Clear Time (g_c+I1), s	2.2	11.9	4.1		2.9	11.6	2.6					
Green Ext Time (p_c), s	0.0	9.5	0.3		8.1	2.8	0.0					

Intersection Summary

HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
180: N. Sunrise Ave & Stone Point Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	54	145	327	9	368	593		
Future Volume (veh/h)	54	145	327	9	368	593		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	57	153	344	9	387	624		
Adj No. of Lanes	2	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	788	363	1767	550	503	3412		
Arrive On Green	0.23	0.23	0.35	0.35	0.28	0.67		
Sat Flow, veh/h	3442	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	57	153	344	9	387	624		
Grp Sat Flow(s),veh/h/ln	1721	1583	1695	1583	1774	1695		
Q Serve(g_s), s	0.6	4.1	2.4	0.2	10.0	2.3		
Cycle Q Clear(g_c), s	0.6	4.1	2.4	0.2	10.0	2.3		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	788	363	1767	550	503	3412		
V/C Ratio(X)	0.07	0.42	0.19	0.02	0.77	0.18		
Avail Cap(c_a), veh/h	1513	696	3354	1044	638	5387		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.1	16.5	11.4	10.7	16.4	3.1		
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	3.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	1.8	1.1	0.1	5.3	1.1		
LnGrp Delay(d),s/veh	15.1	16.7	11.5	10.7	19.6	3.1		
LnGrp LOS	B	B	B	B	B	A		
Approach Vol, veh/h	210		353			1011		
Approach Delay, s/veh	16.3		11.5			9.4		
Approach LOS	B		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.2	20.4				36.6		13.5
Change Period (Y+Rc), s	4.0	5.7				5.7		4.0
Max Green Setting (Gmax), s	16.0	30.3				50.3		20.0
Max Q Clear Time (g_c+l1), s	12.0	4.4				4.3		6.1
Green Ext Time (p_c), s	0.2	10.3				12.5		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			10.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

181: Automall Dr & N. Sunrise Ave

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	451	47	212	369	93	20	3	159	90	3	16
Future Volume (veh/h)	34	451	47	212	369	93	20	3	159	90	3	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	36	475	49	223	388	98	21	3	167	97	0	17
Adj No. of Lanes	1	3	0	1	3	1	0	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	1430	146	301	2026	631	271	39	274	554	0	247
Arrive On Green	0.08	0.30	0.28	0.17	0.40	0.40	0.17	0.17	0.17	0.16	0.00	0.16
Sat Flow, veh/h	1774	4691	477	1774	5085	1583	1562	223	1583	3548	0	1583
Grp Volume(v), veh/h	36	341	183	223	388	98	24	0	167	97	0	17
Grp Sat Flow(s),veh/h/ln	1774	1695	1778	1774	1695	1583	1785	0	1583	1774	0	1583
Q Serve(g_s), s	1.2	4.8	4.9	7.3	3.0	2.4	0.7	0.0	6.0	1.5	0.0	0.6
Cycle Q Clear(g_c), s	1.2	4.8	4.9	7.3	3.0	2.4	0.7	0.0	6.0	1.5	0.0	0.6
Prop In Lane	1.00		0.27	1.00		1.00	0.87		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	1033	542	301	2026	631	309	0	274	554	0	247
V/C Ratio(X)	0.27	0.33	0.34	0.74	0.19	0.16	0.08	0.00	0.61	0.18	0.00	0.07
Avail Cap(c_a), veh/h	608	1882	987	579	2740	853	379	0	336	1217	0	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.7	16.5	16.6	24.1	12.0	11.8	21.2	0.0	23.4	22.4	0.0	22.0
Incr Delay (d2), s/veh	0.4	0.4	0.7	1.3	0.1	0.2	0.0	0.0	0.8	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.3	2.5	3.7	1.4	1.1	0.3	0.0	2.6	0.7	0.0	0.2
LnGrp Delay(d),s/veh	27.1	16.8	17.4	25.5	12.1	12.0	21.3	0.0	24.2	22.5	0.0	22.1
LnGrp LOS	C	B	B	C	B	B	C		C	C		C
Approach Vol, veh/h	560				709				191			
Approach Delay, s/veh	17.7				16.3				23.8			
Approach LOS	B				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	13.4	21.7	13.6		7.7	27.4	12.6					
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0					
Max Green Setting (Gmax), s	19.0	31.7	12.0		20.0	30.7	20.0					
Max Q Clear Time (g_c+I1), s	9.3	6.9	8.0		3.2	5.0	3.5					
Green Ext Time (p_c), s	0.3	9.5	0.2		0.0	9.6	0.2					
Intersection Summary												
HCM 2010 Ctrl Delay	18.1											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

182: N. Sunrise Ave & Lead Hill Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	214	759	290	65	218	77	369	431	36	80	332	52
Future Volume (veh/h)	214	759	290	65	218	77	369	431	36	80	332	52
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1928	1928	1928
Adj Flow Rate, veh/h	225	799	305	68	229	81	388	454	38	84	349	55
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1188	532	175	1013	453	495	1434	417	380	1289	401
Arrive On Green	0.16	0.34	0.34	0.10	0.29	0.29	0.14	0.28	0.26	0.11	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	5085	1583	3562	5263	1639
Grp Volume(v), veh/h	225	799	305	68	229	81	388	454	38	84	349	55
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1695	1583	1781	1754	1639
Q Serve(g_s), s	8.5	13.5	11.0	2.5	3.4	2.7	7.6	4.9	1.3	1.5	3.7	1.8
Cycle Q Clear(g_c), s	8.5	13.5	11.0	2.5	3.4	2.7	7.6	4.9	1.3	1.5	3.7	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	1188	532	175	1013	453	495	1434	417	380	1289	401
V/C Ratio(X)	0.80	0.67	0.57	0.39	0.23	0.18	0.78	0.32	0.09	0.22	0.27	0.14
Avail Cap(c_a), veh/h	281	1263	565	230	1176	526	495	2582	774	461	2597	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	19.8	19.0	29.4	18.9	18.7	28.7	19.7	19.3	28.4	21.2	20.5
Incr Delay (d2), s/veh	14.2	1.8	2.2	0.5	0.2	0.3	7.4	0.2	0.1	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	6.8	5.1	1.3	1.7	1.2	4.1	2.3	0.6	0.7	1.8	0.8
LnGrp Delay(d),s/veh	42.4	21.6	21.2	29.9	19.1	19.0	36.1	19.9	19.5	28.5	21.4	20.7
LnGrp LOS	D	C	C	C	B	B	D	B	B	C	C	C
Approach Vol, veh/h	1329				378				880			
Approach Delay, s/veh	25.0				21.0				27.0			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	26.6	13.0	20.0	14.0	22.5	10.4	22.6				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.3	4.0	5.3	4.0	5.3				
Max Green Setting (Gmax), s	8.0	* 23	9.0	32.0	10.0	20.4	8.0	33.0				
Max Q Clear Time (g_c+I1), s	4.5	15.5	9.6	5.7	10.5	5.4	3.5	6.9				
Green Ext Time (p_c), s	0.0	5.9	0.0	9.0	0.0	10.8	0.0	9.0				

Intersection Summary

HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
183: N. Sunrise Ave & Sierra Gardens Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	2	14	25	2	135	49	788	41	137	463	21
Future Volume (veh/h)	11	2	14	25	2	135	49	788	41	137	463	21
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1928	1891	1891	1863	1934	1900	1928	2005	1928
Adj Flow Rate, veh/h	12	2	15	26	2	142	52	829	43	144	487	22
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	15	94	239	18	450	108	1461	76	218	2463	665
Arrive On Green	0.06	0.06	0.06	0.16	0.14	0.16	0.06	0.41	0.39	0.12	0.45	0.41
Sat Flow, veh/h	1531	255	1583	1678	129	1604	1774	3553	184	1836	5474	1639
Grp Volume(v), veh/h	14	0	15	28	0	142	52	429	443	144	487	22
Grp Sat Flow(s),veh/h/ln	1786	0	1583	1807	0	1604	1774	1838	1900	1836	1825	1639
Q Serve(g_s), s	0.4	0.0	0.5	0.7	0.0	3.6	1.5	9.3	9.4	3.9	2.8	0.4
Cycle Q Clear(g_c), s	0.4	0.0	0.5	0.7	0.0	3.6	1.5	9.3	9.4	3.9	2.8	0.4
Prop In Lane	0.86		1.00	0.93		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	106	0	94	257	0	450	108	756	781	218	2463	665
V/C Ratio(X)	0.13	0.00	0.16	0.11	0.00	0.32	0.48	0.57	0.57	0.66	0.20	0.03
Avail Cap(c_a), veh/h	308	0	273	717	0	859	204	821	849	282	2552	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	23.3	19.1	0.0	14.8	23.7	11.8	11.8	22.0	8.7	9.3
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.1	0.0	0.1	1.2	1.6	1.5	1.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	0.3	0.0	1.6	0.8	5.0	5.1	2.1	1.4	0.2
LnGrp Delay(d),s/veh	23.5	0.0	23.6	19.1	0.0	15.0	24.9	13.4	13.4	23.6	8.7	9.4
LnGrp LOS	C		C	B		B	C	B	B	C	A	A
Approach Vol, veh/h	29		170				924			653		
Approach Delay, s/veh	23.5		15.7				14.0			12.0		
Approach LOS	C		B				B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	7.1		7.2	26.5	11.4		9.2	24.4				
Change Period (Y+Rc), s	4.0		4.0	5.3	4.0		4.0	5.3				
Max Green Setting (Gmax), s	9.0		6.0	22.0	20.7		7.0	21.0				
Max Q Clear Time (g_c+I1), s	2.5		3.5	4.8	5.6		5.9	11.4				
Green Ext Time (p_c), s	0.0		0.0	12.4	0.3		0.0	7.7				
Intersection Summary												
HCM 2010 Ctrl Delay			13.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
184: Sunrise Ave/Sunrise & Oak Ridge Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	2	182	797	1	18	448		
Future Volume (veh/h)	2	182	797	1	18	448		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	2	192	839	1	19	472		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	402	359	1629	2	112	2124		
Arrive On Green	0.23	0.23	0.45	0.45	0.06	0.60		
Sat Flow, veh/h	1774	1583	3720	4	1774	3632		
Grp Volume(v), veh/h	2	192	409	431	19	472		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1862	1774	1770		
Q Serve(g_s), s	0.0	3.6	5.7	5.7	0.3	2.1		
Cycle Q Clear(g_c), s	0.0	3.6	5.7	5.7	0.3	2.1		
Prop In Lane	1.00	1.00		0.00	1.00			
Lane Grp Cap(c), veh/h	402	359	795	836	112	2124		
V/C Ratio(X)	0.00	0.54	0.52	0.52	0.17	0.22		
Avail Cap(c_a), veh/h	1103	985	1142	1202	416	3416		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.2	11.6	6.7	6.7	15.1	3.1		
Incr Delay (d2), s/veh	0.0	0.5	0.7	0.7	0.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.3	2.9	3.0	0.2	1.0		
LnGrp Delay(d),s/veh	10.2	12.1	7.4	7.4	15.4	3.2		
LnGrp LOS	B	B	A	A	B	A		
Approach Vol, veh/h	194		840			491		
Approach Delay, s/veh	12.0		7.4			3.7		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				23.4		10.7	5.2	18.2
Change Period (Y+Rc), s				4.9		4.0	4.0	* 4.9
Max Green Setting (Gmax), s				30.9		20.2	7.0	* 20
Max Q Clear Time (g_c+I1), s				4.1		5.6	2.3	7.7
Green Ext Time (p_c), s				8.0		0.4	0.0	5.7
Intersection Summary								
HCM 2010 Ctrl Delay			6.8					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
185: Sunrise Ave & Frances Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	5	0	10	0	1468	27	24	1234	0
Future Volume (veh/h)	0	0	0	5	0	10	0	1468	27	24	1234	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	0	0	0	5	0	11	0	1545	28	25	1299	0
Adj No. of Lanes	0	1	1	1	0	1	0	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	0	3	3	41	0	0	0	2777	50	63	3080	0
Arrive On Green	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.78	0.76	0.04	0.87	0.00
Sat Flow, veh/h	0	-74510	1583	1774	5		0	3650	64	1774	3632	0
Grp Volume(v), veh/h	0	0	0	5	27.0		0	768	805	25	1299	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	C		0	1770	1851	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	0.2			0.0	9.3	9.4	0.8	4.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.2			0.0	9.3	9.4	0.8	4.2	0.0
Prop In Lane	0.00		1.00	1.00			0.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	3	41			0	1382	1445	63	3080	0
V/C Ratio(X)	0.00	0.00	0.00	0.12			0.00	0.56	0.56	0.40	0.42	0.00
Avail Cap(c_a), veh/h	0	806	685	160			0	1408	1473	128	3262	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00			0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	26.5			0.0	2.4	2.4	26.2	0.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5			0.0	1.0	1.0	1.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1			0.0	4.7	4.9	0.4	1.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	27.0			0.0	3.4	3.4	27.7	1.0	0.0
LnGrp LOS				C				A	A	C	A	
Approach Vol, veh/h		0						1573			1324	
Approach Delay, s/veh		0.0						3.4			1.5	
Approach LOS								A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6						
Phs Duration (G+Y+Rc), s	5.0	46.2	4.3	0.0		51.1						
Change Period (Y+Rc), s	4.0	4.9	4.0	4.0		4.9						
Max Green Setting (Gmax), s	3.0	42.1	4.0	24.0		49.1						
Max Q Clear Time (g_c+I1), s	2.8	11.4	2.2	0.0		6.2						
Green Ext Time (p_c), s	0.0	29.2	0.0	0.0		40.1						
Intersection Summary												
HCM 2010 Ctrl Delay			2.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

186: Sunrise Ave & Coloma Way

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	24	30	60	27	55	29	1669	42	85	1171	34
Future Volume (veh/h)	47	24	30	60	27	55	29	1669	42	85	1171	34
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	49	25	32	63	28	58	31	1757	44	89	1233	36
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	192	163	213	64	132	99	1889	47	156	1992	58
Arrive On Green	0.10	0.10	0.10	0.12	0.12	0.12	0.06	0.54	0.52	0.09	0.57	0.55
Sat Flow, veh/h	1774	1863	1583	1774	532	1103	1774	3528	88	1774	3511	102
Grp Volume(v), veh/h	49	25	32	63	0	86	31	879	922	89	621	648
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1635	1774	1770	1846	1774	1770	1844
Q Serve(g_s), s	2.0	1.0	1.5	2.6	0.0	3.9	1.3	36.6	37.1	3.9	18.7	18.8
Cycle Q Clear(g_c), s	2.0	1.0	1.5	2.6	0.0	3.9	1.3	36.6	37.1	3.9	18.7	18.8
Prop In Lane	1.00		1.00	1.00		0.67	1.00		0.05	1.00		0.06
Lane Grp Cap(c), veh/h	183	192	163	213	0	196	99	948	989	156	1004	1046
V/C Ratio(X)	0.27	0.13	0.20	0.30	0.00	0.44	0.31	0.93	0.93	0.57	0.62	0.62
Avail Cap(c_a), veh/h	200	210	178	377	0	347	177	966	1008	177	1004	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	32.6	32.9	32.1	0.0	32.7	36.3	17.1	17.3	35.0	11.5	11.6
Incr Delay (d2), s/veh	0.7	0.3	0.5	0.7	0.0	1.3	0.7	14.7	15.0	1.3	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.5	0.7	1.3	0.0	1.8	0.7	21.4	22.8	1.9	9.3	9.7
LnGrp Delay(d),s/veh	33.8	32.9	33.4	32.8	0.0	34.0	36.9	31.8	32.3	36.3	12.9	12.9
LnGrp LOS	C	C	C	C		C	D	C	C	D	B	B
Approach Vol, veh/h	106				149				1832			
Approach Delay, s/veh	33.4				33.5				32.2			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	48.7		12.6	10.0	46.1		11.2				
Change Period (Y+Rc), s	4.0	* 5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	7.0	* 42		16.0	7.0	41.7		8.0				
Max Q Clear Time (g_c+I1), s	3.3	20.8		5.9	5.9	39.1		4.0				
Green Ext Time (p_c), s	0.0	20.5		0.4	0.0	1.7		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

187: Sunrise Ave & Sun Tree Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	23	5	59	18	22	11	2513	16	12	1617	55
Future Volume (veh/h)	49	23	5	59	18	22	11	2513	16	12	1617	55
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1937	1900	1900	1937	1900	1863	1827	1900	1863	1828	1900
Adj Flow Rate, veh/h	52	24	5	62	19	23	12	2645	17	13	1702	58
Adj No. of Lanes	0	1	0	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	4	2	4	4
Cap, veh/h	87	40	8	99	30	37	46	3115	20	47	3023	103
Arrive On Green	0.07	0.07	0.07	0.09	0.09	0.09	0.03	0.61	0.58	0.03	0.61	0.61
Sat Flow, veh/h	1192	550	115	1079	331	400	1774	5114	33	1774	4956	169
Grp Volume(v), veh/h	81	0	0	104	0	0	12	1719	943	13	1142	618
Grp Sat Flow(s),veh/h/ln	1856	0	0	1810	0	0	1774	1663	1821	1774	1664	1798
Q Serve(g_s), s	2.5	0.0	0.0	3.3	0.0	0.0	0.4	25.1	25.2	0.4	12.2	12.3
Cycle Q Clear(g_c), s	2.5	0.0	0.0	3.3	0.0	0.0	0.4	25.1	25.2	0.4	12.2	12.3
Prop In Lane	0.64		0.06	0.60		0.22	1.00		0.02	1.00		0.09
Lane Grp Cap(c), veh/h	135	0	0	166	0	0	46	2026	1110	47	2029	1097
V/C Ratio(X)	0.60	0.00	0.00	0.63	0.00	0.00	0.26	0.85	0.85	0.28	0.56	0.56
Avail Cap(c_a), veh/h	155	0	0	271	0	0	118	2026	1110	118	2029	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	26.3	0.0	0.0	28.7	9.5	9.5	28.6	7.0	7.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	1.4	0.0	0.0	0.8	3.2	5.8	1.2	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	1.7	0.0	0.0	0.2	12.1	14.1	0.2	5.7	6.2
LnGrp Delay(d),s/veh	29.4	0.0	0.0	27.7	0.0	0.0	29.4	12.7	15.3	29.8	7.4	7.8
LnGrp LOS	C			C			C	B	B	C	A	A
Approach Vol, veh/h	81				104				2674			
Approach Delay, s/veh	29.4				27.7				13.7			
Approach LOS	C				C				B		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	5		6	7	8			
Phs Duration (G+Y+Rc), s	8.5		4.6	39.6	7.4		4.5	39.6				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	8.0		3.0	27.3	4.0		3.0	27.3				
Max Q Clear Time (g_c+I1), s	5.3		2.4	27.2	4.5		2.4	14.3				
Green Ext Time (p_c), s	0.1		0.0	0.1	0.0		0.0	13.0				
Intersection Summary												
HCM 2010 Ctrl Delay			12.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
188: Sunrise Ave & Kensington Dr/Sandringham Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	0	17	64	0	18	6	2504	69	4	1637	4
Future Volume (veh/h)	43	0	17	64	0	18	6	2504	69	4	1637	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	45	0	18	67	0	19	6	2636	73	4	1723	4
Adj No. of Lanes	1	0	1	1	0	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	113	0	0	113	0	0	38	3811	105	64	3919	9
Arrive On Green	0.06	0.00	0.02	0.06	0.00	0.02	0.02	0.75	0.74	0.04	0.75	0.74
Sat Flow, veh/h	1774	45		1774	67		1774	5085	140	1774	5238	12
Grp Volume(v), veh/h	45	28.3		67	29.6		6	1751	958	4	1115	612
Grp Sat Flow(s),veh/h/ln	1774	C		1774	C		1774	1695	1834	1774	1695	1860
Q Serve(g_s), s	1.5			2.2			0.2	16.3	16.7	0.1	7.5	7.5
Cycle Q Clear(g_c), s	1.5			2.2			0.2	16.3	16.7	0.1	7.5	7.5
Prop In Lane	1.00			1.00			1.00		0.08	1.00		0.01
Lane Grp Cap(c), veh/h	113			113			38	2541	1375	64	2536	1392
V/C Ratio(X)	0.40			0.59			0.16	0.69	0.70	0.06	0.44	0.44
Avail Cap(c_a), veh/h	145			145			116	2541	1375	145	2536	1392
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	27.4			27.8			29.3	4.0	4.0	28.4	2.9	2.9
Incr Delay (d2), s/veh	0.8			1.9			0.7	1.6	2.9	0.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8			1.2			0.1	7.8	9.1	0.1	3.5	3.8
LnGrp Delay(d),s/veh	28.3			29.6			30.1	5.5	7.0	28.5	3.0	3.1
LnGrp LOS	C			C			C	A	A	C	A	A
Approach Vol, veh/h									2715			
Approach Delay, s/veh									6.1			
Approach LOS									A	A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1		3	4	5		7	8				
Phs Duration (G+Y+Rc), s	6.9		4.2	49.9	6.9		4.3	49.8				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	4.0		3.0	32.3	4.0		3.0	32.3				
Max Q Clear Time (g_c+I1), s	3.5		2.1	18.7	4.2		2.2	9.5				
Green Ext Time (p_c), s	0.0		0.0	13.4	0.0		0.0	22.3				
Intersection Summary												
HCM 2010 Ctrl Delay	5.5											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
189: Rocky Ridge Dr & Stone Point Dr

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	9	164	244	56	27	4		
Future Volume (veh/h)	9	164	244	56	27	4		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	9	173	257	59	28	4		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	93	1926	1263	565	123	110		
Arrive On Green	0.05	0.54	0.36	0.36	0.07	0.07		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	9	173	257	59	28	4		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.1	0.5	1.1	0.6	0.3	0.1		
Cycle Q Clear(g_c), s	0.1	0.5	1.1	0.6	0.3	0.1		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	93	1926	1263	565	123	110		
V/C Ratio(X)	0.10	0.09	0.20	0.10	0.23	0.04		
Avail Cap(c_a), veh/h	1356	7369	4186	1873	2002	1787		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.0	2.4	5.0	4.8	9.8	9.7		
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.6	0.3	0.2	0.0		
LnGrp Delay(d),s/veh	10.2	2.5	5.1	4.9	10.1	9.7		
LnGrp LOS	B	A	A	A	B	A		
Approach Vol, veh/h		182	316		32			
Approach Delay, s/veh		2.8	5.1		10.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				16.8		5.4	4.2	12.6
Change Period (Y+Rc), s				5.7		4.9	4.0	5.7
Max Green Setting (Gmax), s				45.3		24.1	16.0	25.3
Max Q Clear Time (g_c+I1), s				2.5		2.3	2.1	3.1
Green Ext Time (p_c), s				4.4		0.0	0.0	3.8
Intersection Summary								
HCM 2010 Ctrl Delay			4.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

190: Rocky Ridge Dr & Lead Hill Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	361	299	80	194	39	249	552	84	54	221	52
Future Volume (veh/h)	49	361	299	80	194	39	249	552	84	54	221	52
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	52	380	0	84	204	0	262	581	0	57	233	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	853	333	194	966	384	341	1212	505	163	1229	0
Arrive On Green	0.08	0.24	0.00	0.11	0.27	0.00	0.19	0.34	0.00	0.09	0.24	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	5253	0
Grp Volume(v), veh/h	52	380	0	84	204	0	262	581	0	57	233	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1695	0
Q Serve(g_s), s	1.6	5.1	0.0	2.5	2.5	0.0	7.8	7.2	0.0	1.7	2.0	0.0
Cycle Q Clear(g_c), s	1.6	5.1	0.0	2.5	2.5	0.0	7.8	7.2	0.0	1.7	2.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	138	853	333	194	966	384	341	1212	505	163	1229	0
V/C Ratio(X)	0.38	0.45	0.00	0.43	0.21	0.00	0.77	0.48	0.00	0.35	0.19	0.00
Avail Cap(c_a), veh/h	223	1443	597	255	1532	637	382	1863	797	255	2312	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.4	18.0	0.0	23.2	15.6	0.0	21.3	14.4	0.0	23.7	16.8	0.0
Incr Delay (d2), s/veh	0.6	0.6	0.0	0.6	0.2	0.0	6.9	0.6	0.0	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.5	0.0	1.2	1.2	0.0	4.4	3.6	0.0	0.8	1.0	0.0
LnGrp Delay(d),s/veh	25.0	18.5	0.0	23.7	15.8	0.0	28.2	15.0	0.0	24.2	16.9	0.0
LnGrp LOS	C	B		C	B		C	B		C	B	
Approach Vol, veh/h	432				288				843			
Approach Delay, s/veh	19.3				18.1				19.1			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	16.4	13.7	16.5	7.3	18.2	8.1	22.1				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.3	4.0	* 5.7	4.0	5.3				
Max Green Setting (Gmax), s	7.0	20.0	11.0	23.0	6.0	* 21	7.0	27.0				
Max Q Clear Time (g_c+I1), s	4.5	7.1	9.8	4.0	3.6	4.5	3.7	9.2				
Green Ext Time (p_c), s	0.0	3.7	0.1	7.1	0.0	4.2	0.0	6.9				

Intersection Summary

HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
191: Rocky Ridge Dr & Professional Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	41	32	47	11	38	19	1283	62	50	336	8
Future Volume (veh/h)	10	41	32	47	11	38	19	1283	62	50	336	8
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	43	34	49	12	0	20	1351	65	53	354	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	144	149	183	18	149	277	2398	115	95	2006	0
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.00	0.16	0.70	0.67	0.05	0.57	0.00
Sat Flow, veh/h	296	1526	1583	799	196	1583	1774	3438	165	1774	3632	0
Grp Volume(v), veh/h	54	0	34	61	0	0	20	694	722	53	354	0
Grp Sat Flow(s),veh/h/ln	1822	0	1583	995	0	1583	1774	1770	1834	1774	1770	0
Q Serve(g_s), s	0.0	0.0	1.2	2.6	0.0	0.0	0.6	11.7	11.9	1.7	2.9	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.2	4.2	0.0	0.0	0.6	11.7	11.9	1.7	2.9	0.0
Prop In Lane	0.20		1.00	0.80		1.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	244	0	149	202	0	149	277	1234	1279	95	2006	0
V/C Ratio(X)	0.22	0.00	0.23	0.30	0.00	0.00	0.07	0.56	0.56	0.56	0.18	0.00
Avail Cap(c_a), veh/h	449	0	335	366	0	335	277	1234	1279	148	2006	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.4	0.0	25.2	27.3	0.0	0.0	21.6	4.5	4.6	27.7	6.3	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.6	0.6	0.0	0.0	0.0	0.7	0.7	1.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.5	1.0	0.0	0.0	0.3	5.8	6.1	0.9	1.4	0.0
LnGrp Delay(d),s/veh	25.7	0.0	25.7	27.9	0.0	0.0	21.7	5.2	5.3	29.6	6.5	0.0
LnGrp LOS	C		C	C			C	A	A	C	A	
Approach Vol, veh/h	88				61		1436				407	
Approach Delay, s/veh	25.7				27.9		5.5				9.5	
Approach LOS	C				C		A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4			6	7	8			
Phs Duration (G+Y+Rc), s	8.9		14.1	37.0			8.9	6.2	44.9			
Change Period (Y+Rc), s	4.9		5.7	* 5.7			4.9	4.0	5.7			
Max Green Setting (Gmax), s	11.1		3.0	* 31			11.1	4.0	30.3			
Max Q Clear Time (g_c+I1), s	3.6		2.6	4.9			6.2	3.7	13.9			
Green Ext Time (p_c), s	0.2		0.0	2.1			0.2	0.0	8.3			
Intersection Summary												
HCM 2010 Ctrl Delay			7.9									
HCM 2010 LOS			A									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
192: Rocky Ridge Dr & Meadowlark Way/Maidu Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	4	3	21	1	22	6	1233	31	20	338	5
Future Volume (veh/h)	8	4	3	21	1	22	6	1233	31	20	338	5
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	4	3	22	1	23	6	1298	33	21	356	5
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	20	133	79	2	133	349	2801	71	44	2156	30
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.20	0.79	0.77	0.02	0.60	0.58
Sat Flow, veh/h	2	243	1583	3	22	1583	1774	3527	90	1774	3573	50
Grp Volume(v), veh/h	12	0	3	23	0	23	6	651	680	21	176	185
Grp Sat Flow(s),veh/h/ln	245	0	1583	26	0	1583	1774	1770	1847	1774	1770	1854
Q Serve(g_s), s	0.0	0.0	0.2	0.0	0.0	1.2	0.2	10.8	10.8	1.1	3.9	4.0
Cycle Q Clear(g_c), s	7.6	0.0	0.2	7.6	0.0	1.2	0.2	10.8	10.8	1.1	3.9	4.0
Prop In Lane	0.67		1.00	0.96		1.00	1.00		0.05	1.00		0.03
Lane Grp Cap(c), veh/h	87	0	133	80	0	133	349	1405	1467	44	1068	1119
V/C Ratio(X)	0.14	0.00	0.02	0.29	0.00	0.17	0.02	0.46	0.46	0.47	0.16	0.17
Avail Cap(c_a), veh/h	346	0	405	323	0	405	349	1405	1467	99	1068	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	0.0	37.8	44.4	0.0	38.3	29.1	3.0	3.0	43.3	7.9	7.9
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.7	0.0	0.2	0.0	0.3	0.3	2.9	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.6	0.0	0.5	0.1	5.2	5.4	0.5	2.0	2.1
LnGrp Delay(d),s/veh	38.5	0.0	37.8	45.1	0.0	38.5	29.1	3.4	3.4	46.2	8.2	8.2
LnGrp LOS	D		D	D		D	C	A	A	D	A	A
Approach Vol, veh/h	15			46			1337			382		
Approach Delay, s/veh	38.4			41.8			3.5			10.3		
Approach LOS	D			D			A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	22.4	57.0	10.6		5.2	74.2	10.6					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	* 51	22.0		4.0	50.3	22.0					
Max Q Clear Time (g_c+I1), s	2.2	6.0	9.6		3.1	12.8	9.6					
Green Ext Time (p_c), s	0.0	3.5	0.1		0.0	18.3	0.1					

Intersection Summary

HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
193: Rocky Ridge Dr & McLaren Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	27	105	1155	43	34	327		
Future Volume (veh/h)	27	105	1155	43	34	327		
Number	7	14	6	16	5	2		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	28	111	1216	45	36	344		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	179	160	2668	99	64	2958		
Arrive On Green	0.10	0.10	0.77	0.74	0.07	1.00		
Sat Flow, veh/h	1774	1583	3574	129	1774	3632		
Grp Volume(v), veh/h	28	111	618	643	36	344		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1840	1774	1770		
Q Serve(g_s), s	1.3	6.1	11.3	11.4	1.8	0.0		
Cycle Q Clear(g_c), s	1.3	6.1	11.3	11.4	1.8	0.0		
Prop In Lane	1.00	1.00		0.07	1.00			
Lane Grp Cap(c), veh/h	179	160	1356	1410	64	2958		
V/C Ratio(X)	0.16	0.69	0.46	0.46	0.56	0.12		
Avail Cap(c_a), veh/h	434	387	1356	1410	118	2958		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.0	39.1	3.8	3.8	41.1	0.0		
Incr Delay (d2), s/veh	0.1	2.0	0.3	0.3	2.9	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	5.3	5.4	5.7	0.9	0.0		
LnGrp Delay(d),s/veh	37.1	41.1	4.1	4.1	44.0	0.1		
LnGrp LOS	D	D	A	A	D	A		
Approach Vol, veh/h	139		1261			380		
Approach Delay, s/veh	40.3		4.1			4.2		
Approach LOS	D		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		77.9		12.1	6.2	71.7		
Change Period (Y+Rc), s		5.7		4.0	4.0	5.7		
Max Green Setting (Gmax), s		59.3		21.0	5.0	50.3		
Max Q Clear Time (g_c+I1), s		2.0		8.1	3.8	13.4		
Green Ext Time (p_c), s		14.4		0.2	0.0	13.1		
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
194: Sierra College & Secret Ravine Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	0	199	0	1	0	201	693	1	0	510	205
Future Volume (veh/h)	129	0	199	0	1	0	201	693	1	0	510	205
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1900	1863	1900	1748	1799	1816	1909	1837	1891
Adj Flow Rate, veh/h	136	0	209	0	1	0	212	729	1	0	537	216
Adj No. of Lanes	2	1	0	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	6	3	2	2	6	3
Cap, veh/h	784	0	354	0	37	0	262	1995	901	3	1305	601
Arrive On Green	0.23	0.00	0.23	0.00	0.02	0.00	0.16	0.58	0.58	0.00	0.37	0.37
Sat Flow, veh/h	3408	0	1542	0	1863	0	1664	3417	1544	1818	3491	1607
Grp Volume(v), veh/h	136	0	209	0	1	0	212	729	1	0	537	216
Grp Sat Flow(s),veh/h/ln	1704	0	1542	0	1863	0	1664	1709	1544	1818	1745	1607
Q Serve(g_s), s	1.8	0.0	6.9	0.0	0.0	0.0	7.0	6.4	0.0	0.0	6.5	5.6
Cycle Q Clear(g_c), s	1.8	0.0	6.9	0.0	0.0	0.0	7.0	6.4	0.0	0.0	6.5	5.6
Prop In Lane	1.00		1.00	0.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	784	0	354	0	37	0	262	1995	901	3	1305	601
V/C Ratio(X)	0.17	0.00	0.59	0.00	0.03	0.00	0.81	0.37	0.00	0.00	0.41	0.36
Avail Cap(c_a), veh/h	1342	0	607	0	326	0	262	1995	901	286	1894	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	19.6	0.0	27.4	0.0	23.2	6.3	5.0	0.0	13.2	12.9
Incr Delay (d2), s/veh	0.2	0.0	2.3	0.0	0.1	0.0	15.9	0.2	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.1	0.0	0.0	0.0	4.4	3.0	0.0	0.0	3.2	2.6
LnGrp Delay(d),s/veh	17.8	0.0	21.9	0.0	27.6	0.0	39.1	6.5	5.0	0.0	13.6	13.5
LnGrp LOS	B		C		C		D	A	A		B	B
Approach Vol, veh/h	345			1			942			753		
Approach Delay, s/veh	20.3			27.6			13.8			13.6		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	36.4		16.6	12.0	24.4		4.1				
Change Period (Y+Rc), s	4.0	6.4		6.0	4.0	6.4		4.0				
Max Green Setting (Gmax), s	8.0	27.6		20.0	8.0	27.6		9.0				
Max Q Clear Time (g_c+I1), s	0.0	8.4		8.9	9.0	8.5		2.0				
Green Ext Time (p_c), s	0.0	11.8		1.8	0.0	9.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			14.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
195: Sierra College Blvd & Miners Ravine Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	0	131	2	0	2	47	844	0	7	681	15
Future Volume (veh/h)	56	0	131	2	0	2	47	844	0	7	681	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	59	0	138	2	0	2	49	888	0	7	717	16
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	0	354	19	0	17	111	1404	593	17	1293	579
Arrive On Green	0.22	0.00	0.22	0.01	0.00	0.01	0.06	0.40	0.00	0.01	0.37	0.37
Sat Flow, veh/h	1774	0	1583	1774	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	59	0	138	2	0	2	49	888	0	7	717	16
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.2	0.0	3.4	0.1	0.0	0.1	1.2	9.2	0.0	0.2	7.3	0.3
Cycle Q Clear(g_c), s	1.2	0.0	3.4	0.1	0.0	0.1	1.2	9.2	0.0	0.2	7.3	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	0	354	19	0	17	111	1404	593	17	1293	579
V/C Ratio(X)	0.17	0.00	0.39	0.10	0.00	0.12	0.44	0.63	0.00	0.42	0.55	0.03
Avail Cap(c_a), veh/h	467	0	452	779	0	695	506	1445	612	467	1445	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	0.0	15.1	22.3	0.0	22.3	20.6	11.1	0.0	22.5	11.5	9.3
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.9	0.0	1.1	1.0	1.1	0.0	6.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.5	0.0	0.0	0.0	0.6	4.7	0.0	0.1	3.7	0.1
LnGrp Delay(d),s/veh	14.7	0.0	15.3	23.2	0.0	23.4	21.6	12.2	0.0	28.7	12.1	9.3
LnGrp LOS	B		B	C		C	C	B		C	B	A
Approach Vol, veh/h	197				4		937				740	
Approach Delay, s/veh	15.1				23.3		12.6				12.2	
Approach LOS	B				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4			6	7	8			
Phs Duration (G+Y+Rc), s	13.2		5.8	22.1			4.5	4.4	23.5			
Change Period (Y+Rc), s	4.0		4.0	6.4			4.0	4.0	6.4			
Max Green Setting (Gmax), s	12.0		12.0	17.6			20.0	12.0	17.6			
Max Q Clear Time (g_c+I1), s	5.4		3.2	9.3			2.1	2.2	11.2			
Green Ext Time (p_c), s	0.3		0.0	6.3			0.0	0.0	5.0			
Intersection Summary												
HCM 2010 Ctrl Delay			12.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
196: Sierra College Blvd & Olympus Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	1	276	13	1	7	451	826	32	21	680	96
Future Volume (veh/h)	73	1	276	13	1	7	451	826	32	21	680	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	78	0	291	14	1	7	475	869	34	22	716	101
Adj No. of Lanes	2	0	1	2	1	0	1	2	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	824	0	368	191	11	76	421	1838	822	70	1635	509
Arrive On Green	0.23	0.00	0.23	0.05	0.05	0.05	0.24	0.52	0.52	0.04	0.32	0.32
Sat Flow, veh/h	3548	0	1583	3548	202	1412	1774	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	78	0	291	14	0	8	475	869	34	22	716	101
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1614	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	1.5	0.0	15.3	0.3	0.0	0.4	21.0	13.8	0.9	1.1	9.8	4.1
Cycle Q Clear(g_c), s	1.5	0.0	15.3	0.3	0.0	0.4	21.0	13.8	0.9	1.1	9.8	4.1
Prop In Lane	1.00		1.00	1.00		0.88	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	824	0	368	191	0	87	421	1838	822	70	1635	509
V/C Ratio(X)	0.09	0.00	0.79	0.07	0.00	0.09	1.13	0.47	0.04	0.31	0.44	0.20
Avail Cap(c_a), veh/h	911	0	406	401	0	182	421	1881	841	140	1874	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	31.9	39.8	0.0	39.8	33.7	13.5	10.4	41.3	23.7	21.7
Incr Delay (d2), s/veh	0.1	0.0	10.5	0.3	0.0	0.7	83.4	0.4	0.0	0.9	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.8	0.2	0.0	0.2	19.9	6.9	0.4	0.5	4.6	1.8
LnGrp Delay(d),s/veh	26.7	0.0	42.4	40.0	0.0	40.5	117.2	13.9	10.5	42.2	24.0	22.0
LnGrp LOS	C		D	D		D	F	B	B	D	C	C
Approach Vol, veh/h	369				22		1378				839	
Approach Delay, s/veh	39.1				40.2		49.4				24.2	
Approach LOS	D				D		D				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.5	48.9	23.5		24.0	31.4	9.5					
Change Period (Y+Rc), s	4.0	* 6.4	5.7		4.0	6.4	5.7					
Max Green Setting (Gmax), s	6.0	* 44	20.0		20.0	29.2	9.0					
Max Q Clear Time (g_c+I1), s	3.1	15.8	17.3		23.0	11.8	2.4					
Green Ext Time (p_c), s	0.0	18.9	0.6		0.0	13.2	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	39.8											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
197: Sierra College Glvd/Sierra College Blvd & Indigo Creek Apts Dwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	2	132	45	3	22	152	1423	90	74	906	96
Future Volume (veh/h)	132	2	132	45	3	22	152	1423	90	74	906	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	140	0	139	47	3	23	160	1498	95	78	954	101
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	406	0	181	154	10	146	201	2171	138	422	2722	287
Arrive On Green	0.11	0.00	0.11	0.09	0.09	0.09	0.11	0.44	0.43	0.24	0.58	0.58
Sat Flow, veh/h	3548	0	1583	1672	107	1583	1774	4888	310	1774	4672	493
Grp Volume(v), veh/h	140	0	139	50	0	23	160	1039	554	78	692	363
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1779	0	1583	1774	1695	1808	1774	1695	1776
Q Serve(g_s), s	4.4	0.0	10.2	3.2	0.0	1.6	10.5	29.5	29.5	4.2	12.8	12.9
Cycle Q Clear(g_c), s	4.4	0.0	10.2	3.2	0.0	1.6	10.5	29.5	29.5	4.2	12.8	12.9
Prop In Lane	1.00		1.00	0.94		1.00	1.00		0.17	1.00		0.28
Lane Grp Cap(c), veh/h	406	0	181	164	0	146	201	1506	803	422	1975	1035
V/C Ratio(X)	0.34	0.00	0.77	0.31	0.00	0.16	0.80	0.69	0.69	0.18	0.35	0.35
Avail Cap(c_a), veh/h	650	0	290	326	0	290	281	1506	803	422	1975	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	0.0	51.6	50.9	0.0	50.2	51.8	26.7	26.9	36.5	13.1	13.1
Incr Delay (d2), s/veh	0.2	0.0	2.6	0.4	0.0	0.2	6.7	2.6	4.8	0.1	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	4.6	1.6	0.0	0.7	5.5	14.3	15.7	2.1	6.0	6.4
LnGrp Delay(d),s/veh	49.2	0.0	54.1	51.3	0.0	50.4	58.6	29.3	31.7	36.5	13.4	13.6
LnGrp LOS	D		D	D		D	E	C	C	D	B	B
Approach Vol, veh/h	279					73	1753			1133		
Approach Delay, s/veh	51.6					51.0	32.8			15.1		
Approach LOS	D					D	C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	33.2	56.0	16.7		16.6	72.6	14.0					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	10.0	* 50	21.0		18.0	42.3	21.0					
Max Q Clear Time (g_c+I1), s	6.2	31.5	12.2		12.5	14.9	5.2					
Green Ext Time (p_c), s	0.2	13.8	0.5		0.1	11.8	0.1					

Intersection Summary

HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
198: Sierra College Blvd & Old Auburn Rd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	343	63	298	51	125	90	118	1667	19	29	1048	172
Future Volume (veh/h)	343	63	298	51	125	90	118	1667	19	29	1048	172
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	226	314	54	132	95	124	1755	20	31	1103	181
Adj No. of Lanes	1	2	0	0	2	0	2	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	564	480	0	232	156	254	2876	895	100	2788	868
Arrive On Green	0.16	0.30	0.30	0.00	0.11	0.11	0.07	0.57	0.57	0.06	0.55	0.55
Sat Flow, veh/h	1774	1863	1583	0	2029	1363	3442	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	247	226	314	0	114	113	124	1755	20	31	1103	181
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	0	1770	1622	1721	1695	1583	1774	1695	1583
Q Serve(g_s), s	16.2	11.6	20.7	0.0	7.3	8.0	4.2	27.5	0.7	2.0	15.0	7.0
Cycle Q Clear(g_c), s	16.2	11.6	20.7	0.0	7.3	8.0	4.2	27.5	0.7	2.0	15.0	7.0
Prop In Lane	1.00		1.00	0.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	564	480	0	203	186	254	2876	895	100	2788	868
V/C Ratio(X)	0.85	0.40	0.65	0.00	0.56	0.61	0.49	0.61	0.02	0.31	0.40	0.21
Avail Cap(c_a), veh/h	444	564	480	0	251	230	258	2876	895	148	2788	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	33.2	36.4	0.0	50.3	50.6	53.4	17.3	11.5	54.3	15.6	13.8
Incr Delay (d2), s/veh	6.1	0.7	3.8	0.0	3.8	5.0	0.5	1.0	0.0	0.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	6.1	9.6	0.0	3.8	3.8	2.0	13.1	0.3	1.0	7.1	3.1
LnGrp Delay(d),s/veh	54.9	33.9	40.2	0.0	54.1	55.6	53.9	18.3	11.5	55.0	15.8	14.0
LnGrp LOS	D	C	D		D	E	D	B	B	D	B	B
Approach Vol, veh/h	787			227			1899			1315		
Approach Delay, s/veh	43.0			54.8			20.5			16.5		
Approach LOS	D			D			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	70.9	0.0	39.3	11.9	68.8	22.6	16.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	9.0	48.0	10.0	33.3	8.0	49.0	29.0	14.3				
Max Q Clear Time (g_c+I1), s	4.0	29.5	0.0	22.7	6.2	17.0	18.2	10.0				
Green Ext Time (p_c), s	0.0	17.4	0.0	3.7	0.0	28.9	0.4	1.1				

Intersection Summary

HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
199: Europa St & Olympus Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	207	14	27	348	7	27	3	28	6	2	8
Future Volume (veh/h)	1	207	14	27	348	7	27	3	28	6	2	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	1	218	15	28	366	7	28	3	29	6	2	8
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1144	78	130	1348	26	106	11	110	44	15	58
Arrive On Green	0.03	0.34	0.29	0.07	0.38	0.33	0.14	0.14	0.14	0.07	0.07	0.07
Sat Flow, veh/h	1774	3362	230	1774	3553	68	784	84	812	631	210	841
Grp Volume(v), veh/h	1	114	119	28	182	191	60	0	0	16	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1822	1774	1770	1851	1680	0	0	1683	0	0
Q Serve(g_s), s	0.0	1.4	1.5	0.5	2.2	2.2	1.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.4	1.5	0.5	2.2	2.2	1.0	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.04	0.47		0.48	0.37		0.50
Lane Grp Cap(c), veh/h	60	602	620	130	672	702	228	0	0	116	0	0
V/C Ratio(X)	0.02	0.19	0.19	0.22	0.27	0.27	0.26	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	734	1182	1217	734	1182	1236	1390	0	0	696	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.7	7.3	7.4	13.7	6.7	6.8	12.2	0.0	0.0	13.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.3	0.4	0.4	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.8	0.2	1.1	1.2	0.5	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	14.7	7.6	7.7	14.0	7.1	7.1	12.4	0.0	0.0	13.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h	234		401				60		16			
Approach Delay, s/veh	7.6		7.6				12.4		13.9			
Approach LOS	A		A				B		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	7.3		5.3	13.7	5.2		4.1	14.9				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	25.0		12.0	18.3	12.0		12.0	18.3				
Max Q Clear Time (g_c+I1), s	3.0		2.5	3.5	2.3		2.0	4.2				
Green Ext Time (p_c), s	0.2		0.0	4.4	0.0		0.0	4.3				
Intersection Summary												
HCM 2010 Ctrl Delay	8.2											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
200: Scarborough Dr & Secret Ravine Pkwy

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	229	6	20	489	18	9	2	9	43	0	165
Future Volume (veh/h)	92	229	6	20	489	18	9	2	9	43	0	165
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	97	241	6	21	515	19	9	2	9	45	0	174
Adj No. of Lanes	1	2	1	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1330	595	86	1084	485	51	11	51	384	0	343
Arrive On Green	0.12	0.38	0.38	0.05	0.31	0.31	0.07	0.07	0.07	0.22	0.00	0.22
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	761	169	761	1774	0	1583
Grp Volume(v), veh/h	97	241	6	21	515	19	20	0	0	45	0	174
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1690	0	0	1774	0	1583
Q Serve(g_s), s	2.2	2.0	0.1	0.5	5.1	0.4	0.5	0.0	0.0	0.9	0.0	4.2
Cycle Q Clear(g_c), s	2.2	2.0	0.1	0.5	5.1	0.4	0.5	0.0	0.0	0.9	0.0	4.2
Prop In Lane	1.00		1.00	1.00		1.00	0.45		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	210	1330	595	86	1084	485	114	0	0	384	0	343
V/C Ratio(X)	0.46	0.18	0.01	0.24	0.48	0.04	0.18	0.00	0.00	0.12	0.00	0.51
Avail Cap(c_a), veh/h	530	1788	800	530	1788	800	505	0	0	1194	0	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	9.1	8.5	19.9	12.3	10.6	19.2	0.0	0.0	13.7	0.0	15.0
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.5	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.0	0.0	0.3	2.6	0.2	0.2	0.0	0.0	0.4	0.0	1.9
LnGrp Delay(d),s/veh	18.5	9.2	8.5	20.5	12.6	10.6	19.4	0.0	0.0	13.8	0.0	15.4
LnGrp LOS	B	A	A	C	B	B	B			B		B
Approach Vol, veh/h	344				555				20		219	
Approach Delay, s/veh	11.8				12.9				19.4		15.1	
Approach LOS	B				B				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.9		5.1	19.4	13.1		8.1	16.3				
Change Period (Y+Rc), s	4.0		4.0	6.0	5.7		4.0	6.0				
Max Green Setting (Gmax), s	12.0		12.0	19.0	27.3		12.0	19.0				
Max Q Clear Time (g_c+I1), s	2.5		2.5	4.0	6.2		4.2	7.1				
Green Ext Time (p_c), s	0.0		0.0	3.6	0.5		0.1	3.2				
Intersection Summary												
HCM 2010 Ctrl Delay	13.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
201: Alexandra Dr & Secret Ravine Pkwy

Cumulative No Project
AM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	185	12	52	315	6	55		
Future Volume (veh/h)	185	12	52	315	6	55		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	195	13	55	332	6	58		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	652	292	90	1544	286	255		
Arrive On Green	0.18	0.18	0.05	0.44	0.16	0.16		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	195	13	55	332	6	58		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	1.2	0.2	0.8	1.4	0.1	0.8		
Cycle Q Clear(g_c), s	1.2	0.2	0.8	1.4	0.1	0.8		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	652	292	90	1544	286	255		
V/C Ratio(X)	0.30	0.04	0.61	0.21	0.02	0.23		
Avail Cap(c_a), veh/h	2280	1020	786	4560	1286	1147		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.7	8.3	11.5	4.4	8.8	9.1		
Incr Delay (d2), s/veh	0.3	0.1	6.5	0.1	0.0	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.5	0.7	0.0	0.4		
LnGrp Delay(d),s/veh	9.0	8.4	18.0	4.4	8.8	9.5		
LnGrp LOS	A	A	B	A	A	A		
Approach Vol, veh/h	208			387	64			
Approach Delay, s/veh	9.0			6.4	9.5			
Approach LOS	A			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	6.3	9.6				15.8
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		18.0	11.0	16.0				32.0
Max Q Clear Time (g_c+I1), s		2.8	2.8	3.2				3.4
Green Ext Time (p_c), s		0.1	0.1	2.8				3.7
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
202: Gibson Dr & Convention Center Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	294	10	281	941	411	260		
Future Volume (veh/h)	294	10	281	941	411	260		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	309	11	296	728	433	274		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	386	178	1742	780	461	2822		
Arrive On Green	0.11	0.11	0.49	0.49	0.26	0.80		
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	309	11	296	728	433	274		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770		
Q Serve(g_s), s	9.7	0.7	5.1	47.7	26.4	1.9		
Cycle Q Clear(g_c), s	9.7	0.7	5.1	47.7	26.4	1.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	386	178	1742	780	461	2822		
V/C Ratio(X)	0.80	0.06	0.17	0.93	0.94	0.10		
Avail Cap(c_a), veh/h	623	287	1891	846	482	3012		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	47.8	43.8	15.5	26.3	40.0	2.5		
Incr Delay (d2), s/veh	3.9	0.1	0.0	16.4	26.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.8	0.3	2.5	24.2	16.2	0.9		
LnGrp Delay(d),s/veh	51.7	44.0	15.6	42.8	66.2	2.5		
LnGrp LOS	D	D	B	D	E	A		
Approach Vol, veh/h	320		1024			707		
Approach Delay, s/veh	51.4		34.9			41.5		
Approach LOS	D		C			D		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	33.7	59.4				93.0		17.4
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	30.0	59.0				94.0		20.0
Max Q Clear Time (g_c+l1), s	28.4	49.7				3.9		11.7
Green Ext Time (p_c), s	0.3	4.7				8.8		0.7
Intersection Summary								
HCM 2010 Ctrl Delay			39.8					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary
205: Stonecrest Dr & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	600	3	2	178	188	8	64	2	713	14	104
Future Volume (veh/h)	62	600	3	2	178	188	8	64	2	713	14	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	65	632	3	2	187	198	8	67	2	751	15	109
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	946	423	25	789	353	22	187	179	799	16	727
Arrive On Green	0.06	0.27	0.27	0.01	0.22	0.22	0.11	0.11	0.11	0.46	0.46	0.46
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	198	1655	1583	1741	35	1583
Grp Volume(v), veh/h	65	632	3	2	187	198	75	0	2	766	0	109
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1853	0	1583	1776	0	1583
Q Serve(g_s), s	2.9	13.1	0.1	0.1	3.6	9.1	3.1	0.0	0.1	33.7	0.0	3.3
Cycle Q Clear(g_c), s	2.9	13.1	0.1	0.1	3.6	9.1	3.1	0.0	0.1	33.7	0.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	0.11		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	104	946	423	25	789	353	209	0	179	815	0	727
V/C Ratio(X)	0.62	0.67	0.01	0.08	0.24	0.56	0.36	0.00	0.01	0.94	0.00	0.15
Avail Cap(c_a), veh/h	108	993	444	108	993	444	249	0	212	844	0	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.7	26.8	22.1	39.9	26.1	28.3	33.6	0.0	32.3	21.1	0.0	12.9
Incr Delay (d2), s/veh	7.3	1.7	0.0	0.5	0.2	1.6	0.4	0.0	0.0	17.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.5	0.1	0.0	1.8	4.1	1.6	0.0	0.0	20.3	0.0	1.4
LnGrp Delay(d),s/veh	45.0	28.5	22.1	40.4	26.3	29.9	34.0	0.0	32.3	38.5	0.0	12.9
LnGrp LOS	D	C	C	D	C	C	C		C	D		B
Approach Vol, veh/h	700				387		77				875	
Approach Delay, s/veh	30.0				28.2		34.0				35.3	
Approach LOS	C				C		C				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.2	24.9	40.6		7.8	21.3	12.3					
Change Period (Y+Rc), s	4.0	6.0	4.0		4.0	6.0	4.0					
Max Green Setting (Gmax), s	4.0	20.0	38.0		4.0	20.0	10.0					
Max Q Clear Time (g_c+I1), s	2.1	15.1	35.7		4.9	11.1	5.1					
Green Ext Time (p_c), s	0.0	2.7	1.0		0.0	4.2	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			32.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

206: Park Regency & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1305	13	74	354	52	12	92	92	114	49	17
Future Volume (veh/h)	44	1305	13	74	354	52	12	92	92	114	49	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	46	1374	14	78	373	55	13	97	97	120	52	18
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1617	723	101	1697	759	23	187	159	155	326	277
Arrive On Green	0.03	0.46	0.46	0.06	0.48	0.48	0.01	0.10	0.10	0.09	0.17	0.17
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	46	1374	14	78	373	55	13	97	97	120	52	18
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.7	23.1	0.3	2.9	4.1	1.3	0.5	3.3	3.9	4.4	1.6	0.6
Cycle Q Clear(g_c), s	1.7	23.1	0.3	2.9	4.1	1.3	0.5	3.3	3.9	4.4	1.6	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	1617	723	101	1697	759	23	187	159	155	326	277
V/C Ratio(X)	0.76	0.85	0.02	0.77	0.22	0.07	0.57	0.52	0.61	0.78	0.16	0.07
Avail Cap(c_a), veh/h	291	1690	756	291	1697	759	291	445	378	291	445	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	16.2	10.0	31.2	10.1	9.4	32.9	28.6	28.9	29.9	23.5	23.1
Incr Delay (d2), s/veh	17.0	4.2	0.0	11.8	0.1	0.0	20.6	2.2	3.7	8.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	12.0	0.1	1.8	2.0	0.6	0.4	1.8	1.9	2.5	0.8	0.3
LnGrp Delay(d),s/veh	49.1	20.3	10.0	43.0	10.2	9.4	53.5	30.8	32.6	38.0	23.7	23.2
LnGrp LOS	D	C	A	D	B	A	D	C	C	D	C	C
Approach Vol, veh/h	1434				506				207			
Approach Delay, s/veh	21.2				15.2				33.1			
Approach LOS	C				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	11.7	8.8	35.6	5.9	16.7	7.3	37.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	11.0	32.0	11.0	16.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	6.4	5.9	4.9	25.1	2.5	3.6	3.7	6.1				
Green Ext Time (p_c), s	0.1	0.8	0.1	5.5	0.0	0.9	0.0	15.5				
Intersection Summary												
HCM 2010 Ctrl Delay	21.9											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

207: Woodcreek Oaks Blvd & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	651	837	73	106	159	108	46	496	182	132	388	165
Future Volume (veh/h)	651	837	73	106	159	108	46	496	182	132	388	165
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	685	881	0	112	167	0	48	522	0	139	408	0
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1037	1260	518	362	566	207	290	767	304	422	1006	411
Arrive On Green	0.30	0.36	0.00	0.11	0.16	0.00	0.08	0.22	0.00	0.12	0.28	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	685	881	0	112	167	0	48	522	0	139	408	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	11.9	14.7	0.0	2.1	2.9	0.0	0.9	9.3	0.0	2.5	6.4	0.0
Cycle Q Clear(g_c), s	11.9	14.7	0.0	2.1	2.9	0.0	0.9	9.3	0.0	2.5	6.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1037	1260	518	362	566	207	290	767	304	422	1006	411
V/C Ratio(X)	0.66	0.70	0.00	0.31	0.29	0.00	0.17	0.68	0.00	0.33	0.41	0.00
Avail Cap(c_a), veh/h	1037	1560	652	451	1406	583	451	860	345	851	1287	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.0	19.0	0.0	28.4	25.5	0.0	29.2	24.7	0.0	27.6	19.9	0.0
Incr Delay (d2), s/veh	1.3	1.5	0.0	0.2	0.5	0.0	0.1	2.3	0.0	0.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	7.4	0.0	1.0	1.4	0.0	0.4	4.8	0.0	1.2	3.2	0.0
LnGrp Delay(d),s/veh	22.2	20.5	0.0	28.6	25.9	0.0	29.3	27.0	0.0	27.7	20.4	0.0
LnGrp LOS	C	C		C	C		C	C		C	C	
Approach Vol, veh/h	1566				279				570			
Approach Delay, s/veh	21.2				27.0				27.2			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	27.2	8.8	22.5	23.7	13.7	13.1	18.2				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	5.7	* 6				
Max Green Setting (Gmax), s	8.0	27.3	8.0	22.3	11.0	24.3	16.0	* 14				
Max Q Clear Time (g_c+I1), s	4.1	16.7	2.9	8.4	13.9	4.9	4.5	11.3				
Green Ext Time (p_c), s	0.1	4.8	0.0	2.8	0.0	1.0	2.5	0.9				

Intersection Summary

HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
208: Country Club Dr & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	887	219	93	247	19	26	145	238	182	113	85
Future Volume (veh/h)	115	887	219	93	247	19	26	145	238	182	113	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	121	934	231	98	260	20	27	153	251	192	119	89
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	981	242	146	1111	85	102	191	313	221	364	272
Arrive On Green	0.10	0.35	0.33	0.08	0.33	0.31	0.06	0.30	0.28	0.12	0.37	0.35
Sat Flow, veh/h	1774	2815	695	1774	3333	255	1774	636	1043	1774	991	741
Grp Volume(v), veh/h	121	587	578	98	137	143	27	0	404	192	0	208
Grp Sat Flow(s),veh/h/ln	1774	1770	1740	1774	1770	1818	1774	0	1679	1774	0	1732
Q Serve(g_s), s	5.3	26.0	26.1	4.3	4.5	4.6	1.2	0.0	17.9	8.5	0.0	7.0
Cycle Q Clear(g_c), s	5.3	26.0	26.1	4.3	4.5	4.6	1.2	0.0	17.9	8.5	0.0	7.0
Prop In Lane	1.00		0.40	1.00		0.14	1.00		0.62	1.00		0.43
Lane Grp Cap(c), veh/h	173	617	607	146	590	606	102	0	504	221	0	636
V/C Ratio(X)	0.70	0.95	0.95	0.67	0.23	0.24	0.26	0.00	0.80	0.87	0.00	0.33
Avail Cap(c_a), veh/h	177	617	607	155	595	611	199	0	593	221	0	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	25.5	25.9	35.8	19.3	19.5	36.2	0.0	26.3	34.5	0.0	18.5
Incr Delay (d2), s/veh	9.6	24.8	25.6	7.8	0.3	0.3	0.5	0.0	7.3	27.9	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	16.8	16.9	2.4	2.3	2.4	0.6	0.0	9.2	5.9	0.0	3.4
LnGrp Delay(d),s/veh	44.7	50.3	51.5	43.7	19.6	19.7	36.7	0.0	33.6	62.5	0.0	18.9
LnGrp LOS	D	D	D	D	B	B	D		C	E		B
Approach Vol, veh/h	1286			378				431			400	
Approach Delay, s/veh	50.3			25.9				33.8			39.8	
Approach LOS	D			C				C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	26.7	9.6	31.0	7.6	32.1	10.8	29.8				
Change Period (Y+Rc), s	4.0	4.9	4.0	5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	9.0	26.1	6.0	25.3	8.0	27.1	7.0	24.3				
Max Q Clear Time (g_c+I1), s	10.5	19.9	6.3	28.1	3.2	9.0	7.3	6.6				
Green Ext Time (p_c), s	0.0	2.0	0.0	0.0	0.0	3.7	0.0	8.5				
Intersection Summary												
HCM 2010 Ctrl Delay			42.1									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
209: Junction Blvd & Revere Dr

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	8	1318	362	17	80	13		
Future Volume (veh/h)	8	1318	362	17	80	13		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	8	1387	381	18	84	14		
Adj No. of Lanes	1	2	2	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	438	2395	993	47	307	274		
Arrive On Green	0.25	0.68	0.29	0.24	0.17	0.17		
Sat Flow, veh/h	1774	3632	3535	162	1774	1583		
Grp Volume(v), veh/h	8	1387	195	204	84	14		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1834	1774	1583		
Q Serve(g_s), s	0.1	6.9	2.9	3.0	1.4	0.2		
Cycle Q Clear(g_c), s	0.1	6.9	2.9	3.0	1.4	0.2		
Prop In Lane	1.00			0.09	1.00	1.00		
Lane Grp Cap(c), veh/h	438	2395	510	529	307	274		
V/C Ratio(X)	0.02	0.58	0.38	0.38	0.27	0.05		
Avail Cap(c_a), veh/h	438	3933	1435	1487	1492	1332		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	9.5	2.9	9.5	9.5	11.9	11.5		
Incr Delay (d2), s/veh	0.0	0.3	0.6	0.6	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	3.4	1.5	1.6	0.7	0.2		
LnGrp Delay(d),s/veh	9.5	3.2	10.1	10.2	12.1	11.5		
LnGrp LOS	A	A	B	B	B	B		
Approach Vol, veh/h		1395	399		98			
Approach Delay, s/veh		3.2	10.1		12.0			
Approach LOS		A	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		25.5		7.8	12.9	12.6		
Change Period (Y+Rc), s		5.7		3.0	5.7	* 5.7		
Max Green Setting (Gmax), s		34.3		27.0	6.0	* 24		
Max Q Clear Time (g_c+I1), s		8.9		3.4	2.1	5.0		
Green Ext Time (p_c), s		10.9		0.2	2.8	1.9		
Intersection Summary								
HCM 2010 Ctrl Delay			5.1					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
210: Americana Dr & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1364	54	127	322	0	114	0	120	0	0	0
Future Volume (veh/h)	0	1364	54	127	322	0	114	0	120	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	1436	57	134	339	0	120	0	126	0	0	0
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	1926	803	231	2519	0	356	0	318	0	3	0
Arrive On Green	0.00	0.54	0.51	0.13	0.71	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3632	0	1774	0	1583	0	1863	0
Grp Volume(v), veh/h	0	1436	57	134	339	0	120	0	126	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	0	1774	0	1583	0	1863	0
Q Serve(g_s), s	0.0	16.7	1.0	3.8	1.6	0.0	3.1	0.0	3.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.7	1.0	3.8	1.6	0.0	3.1	0.0	3.7	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	1926	803	231	2519	0	356	0	318	0	3	0
V/C Ratio(X)	0.00	0.75	0.07	0.58	0.13	0.00	0.34	0.00	0.40	0.00	0.00	0.00
Avail Cap(c_a), veh/h	231	2130	894	231	2519	0	727	0	649	0	347	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	9.4	6.8	22.0	2.5	0.0	18.4	0.0	18.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.0	2.4	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.4	0.4	2.0	0.8	0.0	1.6	0.0	1.6	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	10.8	6.8	24.3	2.5	0.0	18.6	0.0	18.9	0.0	0.0	0.0
LnGrp LOS		B	A	C	A		B		B			
Approach Vol, veh/h	1493				473				246			
Approach Delay, s/veh	10.7				8.7				18.8			
Approach LOS	B				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	31.9		0.0	0.0	40.9		12.8				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	5.0	29.3		8.0	5.0	29.3		20.0				
Max Q Clear Time (g_c+I1), s	5.8	18.7		0.0	0.0	3.6		5.7				
Green Ext Time (p_c), s	0.0	7.5		0.0	0.0	17.9		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	11.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
211: Porter Dr/Sawtell Rd & Junction Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1258	12	65	398	3	35	9	122	49	15	13
Future Volume (veh/h)	10	1258	12	65	398	3	35	9	122	49	15	13
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	11	1324	13	68	419	3	37	9	128	52	16	14
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	1416	14	168	1647	12	119	18	584	115	23	584
Arrive On Green	0.03	0.39	0.37	0.09	0.46	0.43	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1774	3591	35	1774	3602	26	46	50	1583	41	62	1583
Grp Volume(v), veh/h	11	652	685	68	206	216	46	0	128	68	0	14
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	1774	1770	1858	96	0	1583	102	0	1583
Q Serve(g_s), s	0.4	22.4	22.4	2.3	4.5	4.5	0.9	0.0	3.5	0.9	0.0	0.4
Cycle Q Clear(g_c), s	0.4	22.4	22.4	2.3	4.5	4.5	23.3	0.0	3.5	23.3	0.0	0.4
Prop In Lane	1.00		0.02	1.00		0.01	0.80		1.00	0.76		1.00
Lane Grp Cap(c), veh/h	57	698	732	168	809	850	138	0	584	138	0	584
V/C Ratio(X)	0.19	0.93	0.93	0.40	0.25	0.25	0.33	0.00	0.22	0.49	0.00	0.02
Avail Cap(c_a), veh/h	196	699	733	168	809	850	176	0	625	174	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	18.4	18.4	27.0	10.6	10.6	24.3	0.0	13.7	25.4	0.0	12.7
Incr Delay (d2), s/veh	0.6	19.9	19.3	0.6	0.2	0.2	0.5	0.0	0.1	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	14.7	15.3	1.1	2.2	2.3	0.8	0.0	1.5	1.2	0.0	0.2
LnGrp Delay(d),s/veh	30.5	38.3	37.7	27.6	10.8	10.8	24.8	0.0	13.8	26.4	0.0	12.7
LnGrp LOS	C	D	D	C	B	B	C		B	C		B
Approach Vol, veh/h	1348				490				174			
Approach Delay, s/veh	37.9				13.1				16.7			
Approach LOS	D				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	28.0		27.2	5.0	31.9		27.2				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	5.0	22.3		24.0	6.0	21.3		24.0				
Max Q Clear Time (g_c+I1), s	4.3	24.4		25.3	2.4	6.5		25.3				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	29.8											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

212: Del Rd/Hilltop Cir & PFE Rd

Cumulative No Project
AM Peak Hour

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	196	799	8	15	298	116	9	0	20	69	0	35						
Future Volume (veh/h)	196	799	8	15	298	116	9	0	20	69	0	35						
Number	5	2	12	1	6	16	3	8	18	7	4	14						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900						
Adj Flow Rate, veh/h	206	841	8	16	314	122	9	0	21	73	0	37						
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	319	1626	15	87	809	308	37	0	87	296	0	264						
Arrive On Green	0.18	0.45	0.42	0.05	0.32	0.29	0.08	0.00	0.08	0.17	0.00	0.17						
Sat Flow, veh/h	1774	3592	34	1774	2508	956	491	0	1145	1774	0	1583						
Grp Volume(v), veh/h	206	414	435	16	220	216	30	0	0	73	0	37						
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	1774	1770	1694	1636	0	0	1774	0	1583						
Q Serve(g_s), s	5.1	7.9	7.9	0.4	4.5	4.8	0.8	0.0	0.0	1.7	0.0	0.9						
Cycle Q Clear(g_c), s	5.1	7.9	7.9	0.4	4.5	4.8	0.8	0.0	0.0	1.7	0.0	0.9						
Prop In Lane	1.00		0.02	1.00		0.56	0.30		0.70	1.00		1.00						
Lane Grp Cap(c), veh/h	319	801	841	87	571	546	125	0	0	296	0	264						
V/C Ratio(X)	0.65	0.52	0.52	0.18	0.38	0.40	0.24	0.00	0.00	0.25	0.00	0.14						
Avail Cap(c_a), veh/h	678	1014	1064	489	826	791	451	0	0	753	0	672						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00						
Uniform Delay (d), s/veh	17.9	9.2	9.2	21.5	12.3	12.8	20.5	0.0	0.0	17.1	0.0	16.7						
Incr Delay (d2), s/veh	0.8	0.7	0.7	0.4	0.6	0.6	0.7	0.0	0.0	0.2	0.0	0.1						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	2.5	4.0	4.1	0.2	2.3	2.3	0.4	0.0	0.0	0.8	0.0	0.4						
LnGrp Delay(d),s/veh	18.8	9.9	9.9	21.9	12.9	13.4	21.2	0.0	0.0	17.2	0.0	16.8						
LnGrp LOS	B	A	A	C	B	B	C			B		B						
Approach Vol, veh/h	1055				452			30			110							
Approach Delay, s/veh	11.6				13.5			21.2			17.1							
Approach LOS	B				B			C			B							
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2			4	5	6	8										
Phs Duration (G+Y+Rc), s	5.3	24.3			10.9	11.5	18.2	6.6										
Change Period (Y+Rc), s	4.0	5.7			4.0	4.0	5.7	4.0										
Max Green Setting (Gmax), s	12.0	24.3			19.0	17.0	19.3	12.0										
Max Q Clear Time (g_c+I1), s	2.4	9.9			3.7	7.1	6.8	2.8										
Green Ext Time (p_c), s	0.0	6.2			0.2	0.3	5.7	0.0										
Intersection Summary																		
HCM 2010 Ctrl Delay					12.7													
HCM 2010 LOS					B													

HCM 2010 Signalized Intersection Summary
213: Santucci Blvd & Solaire Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	9	111	3	24	22	374	117	5	715	16
Future Volume (veh/h)	6	1	9	111	3	24	22	374	117	5	715	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	6	1	9	117	3	25	23	394	123	5	753	17
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	11	20	17	152	167	142	40	1845	575	10	1757	547
Arrive On Green	0.01	0.01	0.01	0.09	0.09	0.09	0.02	0.36	0.36	0.01	0.35	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	6	1	9	117	3	25	23	394	123	5	753	17
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.1	0.0	0.2	2.4	0.1	0.5	0.5	2.0	2.0	0.1	4.2	0.3
Cycle Q Clear(g_c), s	0.1	0.0	0.2	2.4	0.1	0.5	0.5	2.0	2.0	0.1	4.2	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	11	20	17	152	167	142	40	1845	575	10	1757	547
V/C Ratio(X)	0.52	0.05	0.54	0.77	0.02	0.18	0.57	0.21	0.21	0.52	0.43	0.03
Avail Cap(c_a), veh/h	190	1596	1356	570	1994	1695	237	2995	932	190	2859	890
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	18.3	18.4	16.7	15.5	15.7	18.1	8.2	8.2	18.5	9.4	8.1
Incr Delay (d2), s/veh	32.4	1.1	24.3	7.9	0.0	0.6	12.0	0.1	0.2	37.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	1.5	0.0	0.3	0.4	0.9	0.9	0.1	2.0	0.1
LnGrp Delay(d),s/veh	50.9	19.4	42.7	24.6	15.5	16.3	30.1	8.3	8.4	56.0	9.6	8.1
LnGrp LOS	D	B	D	C	B	B	C	A	A	E	A	A
Approach Vol, veh/h	16				145				540			
Approach Delay, s/veh	44.3				23.0				9.2			
Approach LOS	D				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	18.6	8.2	5.4	5.8	17.9	5.2	8.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	22.0	12.0	32.0	5.0	21.0	4.0	40.0				
Max Q Clear Time (g_c+I1), s	2.1	4.0	4.4	2.2	2.5	6.2	2.1	2.5				
Green Ext Time (p_c), s	0.0	7.4	0.1	0.1	0.0	6.7	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
214: Santucci Rd & Federico Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	39	70	271	8	22	22	481	141	15	814	6
Future Volume (veh/h)	11	39	70	271	8	22	22	481	141	15	814	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	41	74	285	8	23	23	506	148	16	857	6
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	214	151	387	560	445	73	1823	537	63	1793	527
Arrive On Green	0.03	0.11	0.10	0.22	0.30	0.28	0.04	0.36	0.34	0.04	0.35	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	12	41	74	285	8	23	23	506	148	16	857	6
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.3	1.0	2.3	7.7	0.2	0.5	0.6	3.6	3.5	0.4	6.7	0.1
Cycle Q Clear(g_c), s	0.3	1.0	2.3	7.7	0.2	0.5	0.6	3.6	3.5	0.4	6.7	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	214	151	387	560	445	73	1823	537	63	1793	527
V/C Ratio(X)	0.21	0.19	0.49	0.74	0.01	0.05	0.31	0.28	0.28	0.25	0.48	0.01
Avail Cap(c_a), veh/h	173	1237	1020	797	1892	1577	173	2384	711	173	2384	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	20.5	22.0	18.7	12.6	13.4	23.8	11.7	12.3	24.0	12.9	11.4
Incr Delay (d2), s/veh	1.9	0.4	2.5	2.8	0.0	0.0	2.4	0.1	0.3	2.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	1.1	4.0	0.1	0.2	0.4	1.7	1.6	0.3	3.1	0.1
LnGrp Delay(d),s/veh	26.0	20.9	24.4	21.4	12.6	13.5	26.2	11.8	12.6	26.1	13.1	11.4
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h	127				316				677			
Approach Delay, s/veh	23.5				20.6				12.5			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	21.4	15.2	8.9	6.1	21.1	5.6	18.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	22.0	22.0	32.0	4.0	22.0	4.0	50.0				
Max Q Clear Time (g_c+I1), s	2.4	5.6	9.7	4.3	2.6	8.7	2.3	2.5				
Green Ext Time (p_c), s	0.0	8.3	0.7	0.5	0.0	7.3	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	14.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
215: Santucci Blvd & Sierra Village Dr

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	9	104	115	4	16	28	580	38	50	1156	15
Future Volume (veh/h)	52	9	104	115	4	16	28	580	38	50	1156	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	9	109	121	4	17	29	611	40	53	1217	16
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	174	148	157	259	220	47	1957	609	73	2033	633
Arrive On Green	0.04	0.09	0.09	0.09	0.14	0.14	0.03	0.38	0.38	0.04	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	55	9	109	121	4	17	29	611	40	53	1217	16
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.6	0.2	3.5	3.5	0.1	0.5	0.8	4.3	0.8	1.5	9.8	0.3
Cycle Q Clear(g_c), s	1.6	0.2	3.5	3.5	0.1	0.5	0.8	4.3	0.8	1.5	9.8	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	174	148	157	259	220	47	1957	609	73	2033	633
V/C Ratio(X)	0.73	0.05	0.74	0.77	0.02	0.08	0.62	0.31	0.07	0.72	0.60	0.03
Avail Cap(c_a), veh/h	240	1152	979	309	1224	1041	137	2133	664	240	2428	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	21.4	22.8	23.1	19.2	19.4	24.9	11.1	10.0	24.5	12.3	9.4
Incr Delay (d2), s/veh	12.9	0.1	7.0	7.9	0.0	0.1	12.7	0.1	0.0	12.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	1.8	2.0	0.1	0.2	0.6	2.1	0.4	1.0	4.6	0.1
LnGrp Delay(d),s/veh	37.4	21.5	29.9	30.9	19.2	19.5	37.6	11.2	10.1	37.2	12.5	9.4
LnGrp LOS	D	C	C	C	B	B	D	B	B	D	B	A
Approach Vol, veh/h	173				142				680			
Approach Delay, s/veh	31.8				29.2				12.3			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	25.2	9.6	9.8	6.4	26.0	7.2	12.2				
Change Period (Y+Rc), s	5.0	5.3	5.0	5.0	5.0	5.3	5.0	5.0				
Max Green Setting (Gmax), s	7.0	21.7	9.0	32.0	4.0	24.7	7.0	34.0				
Max Q Clear Time (g_c+I1), s	3.5	6.3	5.5	5.5	2.8	11.8	3.6	2.5				
Green Ext Time (p_c), s	0.0	10.1	0.1	0.4	0.0	8.9	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	15.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

216: Hayden Parkway & Holt Parkway

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	49	107	18	71	6	21	45	12	8	114	85
Future Volume (veh/h)	62	49	107	18	71	6	21	45	12	8	114	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	65	52	113	19	75	6	22	47	13	8	120	89
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	310	262	35	221	18	40	306	85	15	203	151
Arrive On Green	0.06	0.17	0.17	0.02	0.13	0.13	0.02	0.22	0.22	0.01	0.20	0.20
Sat Flow, veh/h	1774	1863	1574	1774	1701	136	1774	1404	388	1774	992	736
Grp Volume(v), veh/h	65	52	113	19	0	81	22	0	60	8	0	209
Grp Sat Flow(s),veh/h/ln	1774	1863	1574	1774	0	1837	1774	0	1792	1774	0	1729
Q Serve(g_s), s	1.1	0.7	2.0	0.3	0.0	1.2	0.4	0.0	0.8	0.1	0.0	3.4
Cycle Q Clear(g_c), s	1.1	0.7	2.0	0.3	0.0	1.2	0.4	0.0	0.8	0.1	0.0	3.4
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.22	1.00		0.43
Lane Grp Cap(c), veh/h	98	310	262	35	0	239	40	0	391	15	0	354
V/C Ratio(X)	0.66	0.17	0.43	0.55	0.00	0.34	0.56	0.00	0.15	0.52	0.00	0.59
Avail Cap(c_a), veh/h	394	1386	1171	232	0	1199	232	0	1240	232	0	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	11.0	11.5	14.9	0.0	12.1	14.8	0.0	9.7	15.1	0.0	11.0
Incr Delay (d2), s/veh	7.3	0.3	1.1	12.9	0.0	0.8	11.6	0.0	0.2	25.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	0.9	0.3	0.0	0.7	0.3	0.0	0.4	0.2	0.0	1.7
LnGrp Delay(d),s/veh	21.5	11.2	12.6	27.8	0.0	13.0	26.5	0.0	9.9	40.3	0.0	12.6
LnGrp LOS	C	B	B	C		B	C		A	D		B
Approach Vol, veh/h	230				100				82			
Approach Delay, s/veh	14.8				15.8				14.3			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.8	11.2	5.1	9.6	5.2	10.8	6.2	8.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	21.2	4.0	22.8	4.0	21.2	6.8	20.0				
Max Q Clear Time (g_c+I1), s	2.1	2.8	2.3	4.0	2.4	5.4	3.1	3.2				
Green Ext Time (p_c), s	0.0	1.4	0.0	1.0	0.0	1.3	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay	14.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
217: Industrial Ave & Alantown Dr

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	0	465	744	12	156	240		
Future Volume (veh/h)	0	465	744	12	156	240		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	489	783	13	164	253		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	453	404	885	753	101	1123		
Arrive On Green	0.00	0.26	0.48	0.48	0.06	0.60		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	0	489	783	13	164	253		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	0.0	18.0	26.8	0.3	4.0	4.4		
Cycle Q Clear(g_c), s	0.0	18.0	26.8	0.3	4.0	4.4		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	453	404	885	753	101	1123		
V/C Ratio(X)	0.00	1.21	0.88	0.02	1.63	0.23		
Avail Cap(c_a), veh/h	453	404	1004	853	101	1241		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	26.3	16.7	9.8	33.3	6.4		
Incr Delay (d2), s/veh	0.0	115.5	8.7	0.0	324.0	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	20.8	15.8	0.1	11.0	2.3		
LnGrp Delay(d),s/veh	0.0	141.8	25.5	9.8	357.2	6.5		
LnGrp LOS		F	C	A	F	A		
Approach Vol, veh/h	489		796			417		
Approach Delay, s/veh	141.8		25.2			144.5		
Approach LOS	F		C			F		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	38.5				47.5		23.0
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	4.0	38.0				47.0		18.0
Max Q Clear Time (g_c+I1), s	6.0	28.8				6.4		20.0
Green Ext Time (p_c), s	0.0	4.7				9.3		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			87.9					
HCM 2010 LOS			F					

HCM 2010 Signalized Intersection Summary
218: Industrial Avenue & Freedom Way

Cumulative No Project
AM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	5	2	720	33	14	445		
Future Volume (veh/h)	5	2	720	33	14	445		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	5	2	758	35	15	468		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	13	12	1223	1039	555	1223		
Arrive On Green	0.01	0.01	0.66	0.66	0.66	0.66		
Sat Flow, veh/h	1774	1583	1863	1583	681	1863		
Grp Volume(v), veh/h	5	2	758	35	15	468		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	681	1863		
Q Serve(g_s), s	0.1	0.0	6.3	0.2	0.3	3.1		
Cycle Q Clear(g_c), s	0.1	0.0	6.3	0.2	6.7	3.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	13	12	1223	1039	555	1223		
V/C Ratio(X)	0.37	0.17	0.62	0.03	0.03	0.38		
Avail Cap(c_a), veh/h	1060	946	2434	2069	998	2434		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.2	13.2	2.7	1.6	4.6	2.1		
Incr Delay (d2), s/veh	16.2	6.4	0.5	0.0	0.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.1	0.1	0.1	1.6		
LnGrp Delay(d),s/veh	29.4	19.6	3.2	1.6	4.6	2.3		
LnGrp LOS	C	B	A	A	A	A		
Approach Vol, veh/h	7		793			483		
Approach Delay, s/veh	26.6		3.1			2.4		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.6				22.6		4.2
Change Period (Y+Rc), s		5.0				5.0		4.0
Max Green Setting (Gmax), s		35.0				35.0		16.0
Max Q Clear Time (g_c+I1), s		8.3				8.7		2.1
Green Ext Time (p_c), s		9.0				8.9		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			3.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
219: La Sierra Drive & Pleasant Grove Blvd

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	527	12	40	214	0	12	0	0	0	0	0
Future Volume (veh/h)	0	527	12	40	214	0	12	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	555	13	42	225	0	13	0	0	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	1525	681	72	2276	1018	25	26	0	8	8	0
Arrive On Green	0.00	0.43	0.43	0.04	0.64	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1580	1774	3539	1583	1774	1863	0	1774	1863	0
Grp Volume(v), veh/h	0	555	13	42	225	0	13	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1580	1774	1770	1583	1774	1863	0	1774	1863	0
Q Serve(g_s), s	0.0	2.5	0.1	0.5	0.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.5	0.1	0.5	0.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	8	1525	681	72	2276	1018	25	26	0	8	8	0
V/C Ratio(X)	0.00	0.36	0.02	0.58	0.10	0.00	0.53	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	761	10166	4537	1597	11835	5295	989	2875	0	761	2635	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.5	3.8	11.0	1.6	0.0	11.4	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	7.1	0.0	0.0	16.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.1	0.4	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.6	3.8	18.1	1.6	0.0	27.9	0.0	0.0	0.0	0.0	0.0
LnGrp LOS		A	A	B	A		C					
Approach Vol, veh/h		568			267			13			0	
Approach Delay, s/veh		4.6			4.2			27.9			0.0	
Approach LOS		A			A			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	4.3	5.0	14.0	4.3	0.0	0.0	19.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	36.0	21.0	67.0	13.0	33.0	10.0	78.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0	2.5	4.5	2.2	0.0	0.0	2.6				
Green Ext Time (p_c), s	0.0	0.0	0.1	5.5	0.0	0.0	0.0	5.5				
Intersection Summary												
HCM 2010 Ctrl Delay			4.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

220: Westbrook Blvd & Road D

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	18	0	6	33	5	716	0	7	541	8
Future Volume (veh/h)	5	5	18	0	6	33	5	716	0	7	541	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	5	5	19	0	6	35	5	754	0	7	569	8
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	379	322	10	100	85	19	1815	565	26	1826	568
Arrive On Green	0.01	0.20	0.20	0.00	0.05	0.05	0.01	0.36	0.00	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	5	5	19	0	6	35	5	754	0	7	569	8
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.1	0.1	0.3	0.0	0.1	0.7	0.1	3.9	0.0	0.1	2.8	0.1
Cycle Q Clear(g_c), s	0.1	0.1	0.3	0.0	0.1	0.7	0.1	3.9	0.0	0.1	2.8	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	19	379	322	10	100	85	19	1815	565	26	1826	568
V/C Ratio(X)	0.27	0.01	0.06	0.00	0.06	0.41	0.27	0.42	0.00	0.27	0.31	0.01
Avail Cap(c_a), veh/h	1091	859	730	1091	859	730	1091	2492	776	1091	2492	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	11.0	11.1	0.0	15.6	15.9	17.2	8.4	0.0	17.1	8.0	7.2
Incr Delay (d2), s/veh	7.5	0.0	0.1	0.0	0.2	3.2	7.5	0.2	0.0	5.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	0.0	0.1	0.4	0.0	1.8	0.0	0.1	1.3	0.1
LnGrp Delay(d),s/veh	24.6	11.1	11.2	0.0	15.8	19.1	24.6	8.6	0.0	22.6	8.1	7.2
LnGrp LOS	C	B	B		B	B	C	A		C	A	A
Approach Vol, veh/h	29		41				759				584	
Approach Delay, s/veh	13.5		18.6				8.7				8.3	
Approach LOS	B		B				A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	17.4	0.0	12.1	5.2	17.5	5.2	6.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	2.1	5.9	0.0	2.3	2.1	4.8	2.1	2.7				
Green Ext Time (p_c), s	0.0	6.5	0.0	0.1	0.0	6.9	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			8.9									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
222: Westbrook Blvd/Westbrook Blvd & Road B

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	133	0	24	0	687	39	7	699	0
Future Volume (veh/h)	0	0	0	133	0	24	0	687	39	7	699	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	0	0	140	0	25	0	723	41	7	736	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	6	5	183	192	164	6	1955	609	13	2849	887
Arrive On Green	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.38	0.38	0.01	0.56	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	0	0	140	0	25	0	723	41	7	736	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	0.0	0.0	2.3	0.0	0.4	0.0	3.0	0.5	0.1	2.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.3	0.0	0.4	0.0	3.0	0.5	0.1	2.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	6	5	183	192	164	6	1955	609	13	2849	887
V/C Ratio(X)	0.00	0.00	0.00	0.76	0.00	0.15	0.00	0.37	0.07	0.52	0.26	0.00
Avail Cap(c_a), veh/h	657	1003	852	716	1065	906	657	2738	852	657	2849	887
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	13.0	0.0	12.1	0.0	6.6	5.8	14.7	3.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	6.5	0.0	0.4	0.0	0.1	0.0	28.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.4	0.0	0.2	0.0	1.4	0.2	0.2	1.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	19.5	0.0	12.6	0.0	6.7	5.8	42.7	3.4	0.0
LnGrp LOS				B		B		A	A	D	A	
Approach Vol, veh/h		0			165			764			743	
Approach Delay, s/veh		0.0			18.4			6.6			3.8	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	16.4	8.1	0.0	0.0	21.7	0.0	8.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	12.0	16.0	11.0	16.0	11.0	17.0				
Max Q Clear Time (g_c+I1), s	2.1	5.0	4.3	0.0	0.0	4.2	0.0	2.4				
Green Ext Time (p_c), s	0.0	6.4	0.2	0.0	0.0	7.4	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			6.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
224: Westbrook Blvd & Road A

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	293	78	1	0	84	851	22	0	859	3
Future Volume (veh/h)	1	1	293	78	1	0	84	851	22	0	859	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	1	308	82	1	0	88	896	23	0	904	3
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	432	367	187	531	452	194	2100	654	7	1303	406
Arrive On Green	0.00	0.23	0.23	0.05	0.29	0.00	0.06	0.41	0.41	0.00	0.26	0.26
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	1	1	308	82	1	0	88	896	23	0	904	3
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	0.0	9.3	1.2	0.0	0.0	1.2	6.3	0.4	0.0	8.0	0.1
Cycle Q Clear(g_c), s	0.0	0.0	9.3	1.2	0.0	0.0	1.2	6.3	0.4	0.0	8.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	7	432	367	187	531	452	194	2100	654	7	1303	406
V/C Ratio(X)	0.14	0.00	0.84	0.44	0.00	0.00	0.45	0.43	0.04	0.00	0.69	0.01
Avail Cap(c_a), veh/h	759	598	508	759	598	508	759	2100	654	759	1733	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	14.7	18.3	22.8	12.7	0.0	22.8	10.4	8.7	0.0	16.8	13.8
Incr Delay (d2), s/veh	9.3	0.0	8.7	1.6	0.0	0.0	1.6	0.1	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.9	0.6	0.0	0.0	0.6	2.9	0.2	0.0	3.9	0.0
LnGrp Delay(d),s/veh	34.2	14.7	27.0	24.4	12.7	0.0	24.4	10.6	8.7	0.0	17.6	13.8
LnGrp LOS	C	B	C	C	B		C	B	A		B	B
Approach Vol, veh/h	310				83		1007				907	
Approach Delay, s/veh	27.0				24.3		11.7				17.5	
Approach LOS	C				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	25.6	7.7	16.6	7.8	17.8	5.1	19.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	0.0	8.3	3.2	11.3	3.2	10.0	2.0	2.0				
Green Ext Time (p_c), s	0.0	6.7	0.1	0.5	0.1	2.8	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			16.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 225: Falcon Pointe Lane/Medical Plaza Drive & Secret Ravine Pkwy

Cumulative No Project
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	213	0	11	804	9	0	0	3	2	0	10
Future Volume (veh/h)	20	213	0	11	804	9	0	0	3	2	0	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	21	224	0	12	846	9	0	0	3	2	0	11
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	1473	0	23	1462	16	0	0	14	35	0	31
Arrive On Green	0.02	0.42	0.00	0.01	0.41	0.41	0.00	0.00	0.01	0.02	0.00	0.02
Sat Flow, veh/h	1774	3632	0	1774	3587	38	0	0	1576	1774	0	1576
Grp Volume(v), veh/h	21	224	0	12	417	438	0	0	3	2	0	11
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1856	0	0	1576	1774	0	1576
Q Serve(g_s), s	0.3	1.2	0.0	0.2	5.4	5.4	0.0	0.0	0.1	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	1.2	0.0	0.2	5.4	5.4	0.0	0.0	0.1	0.0	0.0	0.2
Prop In Lane	1.00		0.00	1.00		0.02	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	38	1473	0	23	721	756	0	0	14	35	0	31
V/C Ratio(X)	0.55	0.15	0.00	0.53	0.58	0.58	0.00	0.00	0.21	0.06	0.00	0.36
Avail Cap(c_a), veh/h	241	2160	0	241	1080	1133	0	0	1122	1263	0	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	5.4	0.0	14.5	6.8	6.8	0.0	0.0	14.5	14.2	0.0	14.3
Incr Delay (d2), s/veh	11.9	0.0	0.0	18.1	0.7	0.7	0.0	0.0	6.9	0.7	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	0.0	0.2	2.7	2.8	0.0	0.0	0.1	0.0	0.0	0.1
LnGrp Delay(d),s/veh	26.2	5.4	0.0	32.6	7.5	7.5	0.0	0.0	21.4	14.9	0.0	21.2
LnGrp LOS	C	A		C	A	A			C	B		C
Approach Vol, veh/h	245				867				3			
Approach Delay, s/veh	7.2				7.8				21.4		20.2	
Approach LOS	A				A				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	4.3		4.4	16.3	4.6		4.6	16.0				
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s	21.0		4.0	18.0	21.0		4.0	18.0				
Max Q Clear Time (g_c+I1), s	2.1		2.2	3.2	2.2		2.3	7.4				
Green Ext Time (p_c), s	0.0		0.0	5.5	0.0		0.0	4.5				
Intersection Summary												
HCM 2010 Ctrl Delay			7.9									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
226: Hayden Pkwy & High School Road

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	5	45	52	7	62	65	75	16	16	78	94
Future Volume (veh/h)	68	5	45	52	7	62	65	75	16	16	78	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	72	5	47	55	7	65	68	79	17	17	82	99
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	246	208	89	224	189	105	381	323	31	304	257
Arrive On Green	0.06	0.13	0.13	0.05	0.12	0.12	0.06	0.20	0.20	0.02	0.16	0.16
Sat Flow, veh/h	1774	1863	1573	1774	1863	1573	1774	1863	1576	1774	1863	1574
Grp Volume(v), veh/h	72	5	47	55	7	65	68	79	17	17	82	99
Grp Sat Flow(s),veh/h/ln	1774	1863	1573	1774	1863	1573	1774	1863	1576	1774	1863	1574
Q Serve(g_s), s	1.1	0.1	0.7	0.8	0.1	1.0	1.0	0.9	0.2	0.3	1.0	1.5
Cycle Q Clear(g_c), s	1.1	0.1	0.7	0.8	0.1	1.0	1.0	0.9	0.2	0.3	1.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	246	208	89	224	189	105	381	323	31	304	257
V/C Ratio(X)	0.66	0.02	0.23	0.62	0.03	0.34	0.65	0.21	0.05	0.54	0.27	0.39
Avail Cap(c_a), veh/h	330	1525	1287	330	1525	1287	264	1594	1348	264	1594	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	10.1	10.4	12.5	10.4	10.8	12.4	8.9	8.6	13.1	9.8	10.0
Incr Delay (d2), s/veh	6.5	0.0	0.5	6.8	0.1	1.1	6.5	0.3	0.1	13.6	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.3	0.6	0.0	0.5	0.7	0.5	0.1	0.2	0.6	0.7
LnGrp Delay(d),s/veh	18.8	10.2	11.0	19.3	10.5	11.9	18.9	9.1	8.7	26.7	10.3	11.0
LnGrp LOS	B	B	B	B	B	B	B	A	A	C	B	B
Approach Vol, veh/h	124		127				164		198			
Approach Delay, s/veh	15.5		15.1				13.1		12.1			
Approach LOS	B		B				B		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.5	9.5	5.3	7.6	5.6	8.4	5.7	7.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	5.0	22.0	4.0	23.0	5.0	22.0				
Max Q Clear Time (g_c+I1), s	2.3	2.9	2.8	2.7	3.0	3.5	3.1	3.0				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.3	0.0	1.1	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	13.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

1001: Riverside & Darling

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	67	31	169	36	16	54	647	230	28	235	6
Future Volume (veh/h)	43	67	31	169	36	16	54	647	230	28	235	6
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	45	71	33	178	38	17	57	681	242	29	247	6
Adj No. of Lanes	0	1	1	0	1	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	150	212	239	51	23	117	789	670	96	1452	35
Arrive On Green	0.13	0.13	0.13	0.18	0.18	0.18	0.07	0.42	0.42	0.05	0.41	0.41
Sat Flow, veh/h	709	1118	1583	1354	289	129	1774	1863	1583	1774	3532	86
Grp Volume(v), veh/h	116	0	33	233	0	0	57	681	242	29	123	130
Grp Sat Flow(s),veh/h/ln	1827	0	1583	1772	0	0	1774	1863	1583	1774	1770	1848
Q Serve(g_s), s	3.7	0.0	1.2	7.8	0.0	0.0	1.9	20.8	6.5	1.0	2.8	2.8
Cycle Q Clear(g_c), s	3.7	0.0	1.2	7.8	0.0	0.0	1.9	20.8	6.5	1.0	2.8	2.8
Prop In Lane	0.39		1.00	0.76		0.07	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	245	0	212	313	0	0	117	789	670	96	727	760
V/C Ratio(X)	0.47	0.00	0.16	0.74	0.00	0.00	0.49	0.86	0.36	0.30	0.17	0.17
Avail Cap(c_a), veh/h	262	0	227	763	0	0	198	1001	851	198	982	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	24.0	24.5	0.0	0.0	28.3	16.4	12.3	28.5	11.7	11.7
Incr Delay (d2), s/veh	0.5	0.0	0.1	1.3	0.0	0.0	1.2	5.5	0.1	0.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.5	3.9	0.0	0.0	1.0	11.8	2.8	0.5	1.4	1.4
LnGrp Delay(d),s/veh	25.6	0.0	24.2	25.8	0.0	0.0	29.4	21.9	12.4	29.2	11.8	11.8
LnGrp LOS	C		C	C			C	C	B	C	B	B
Approach Vol, veh/h	149			233			980			282		
Approach Delay, s/veh	25.3			25.8			20.0			13.6		
Approach LOS	C			C			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	30.9		14.1	7.1	30.1		11.4				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	* 5.3		4.0				
Max Green Setting (Gmax), s	6.0	32.7		26.0	6.0	* 34		8.0				
Max Q Clear Time (g_c+I1), s	3.0	22.8		9.8	3.9	4.8		5.7				
Green Ext Time (p_c), s	0.0	2.7		0.5	0.0	3.5		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

1002: Riverside & Vernon & Douglas

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	290	25	55	119	3	0	343	328	0	239	244
Future Volume (veh/h)	283	290	25	55	119	3	0	343	328	0	239	244
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	298	305	26	58	125	3	0	361	345	0	252	0
Adj No. of Lanes	1	1	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	0	2	2
Cap, veh/h	455	434	37	303	604	14	0	632	538	0	632	538
Arrive On Green	0.26	0.26	0.26	0.17	0.17	0.17	0.00	0.34	0.34	0.00	0.34	0.00
Sat Flow, veh/h	1774	1693	144	1774	3533	85	0	1863	1583	0	1863	1583
Grp Volume(v), veh/h	298	0	331	58	62	66	0	361	345	0	252	0
Grp Sat Flow(s),veh/h/ln	1774	0	1837	1774	1770	1848	0	1863	1583	0	1863	1583
Q Serve(g_s), s	7.3	0.0	8.0	1.4	1.5	1.5	0.0	7.8	9.0	0.0	5.1	0.0
Cycle Q Clear(g_c), s	7.3	0.0	8.0	1.4	1.5	1.5	0.0	7.8	9.0	0.0	5.1	0.0
Prop In Lane	1.00		0.08	1.00		0.05	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	455	0	471	303	302	316	0	632	538	0	632	538
V/C Ratio(X)	0.65	0.00	0.70	0.19	0.21	0.21	0.00	0.57	0.64	0.00	0.40	0.00
Avail Cap(c_a), veh/h	761	0	788	326	325	340	0	761	647	0	761	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	16.5	17.4	17.4	17.4	0.0	13.2	13.6	0.0	12.3	0.0
Incr Delay (d2), s/veh	1.2	0.0	1.4	0.2	0.2	0.2	0.0	1.7	2.9	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	4.2	0.7	0.7	0.8	0.0	4.2	4.4	0.0	2.7	0.0
LnGrp Delay(d),s/veh	17.4	0.0	17.9	17.6	17.7	17.7	0.0	15.0	16.6	0.0	13.2	0.0
LnGrp LOS	B		B	B	B	B		B	B		B	
Approach Vol, veh/h	629				186				706			
Approach Delay, s/veh	17.7				17.7				15.8			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	19.8		16.9		19.8		12.3					
Change Period (Y+Rc), s	* 4.2		5.3		* 4.2		4.9					
Max Green Setting (Gmax), s	* 19		20.0		* 19		8.0					
Max Q Clear Time (g_c+I1), s	11.0		10.0		7.1		3.5					
Green Ext Time (p_c), s	4.6		1.6		6.2		0.2					
Intersection Summary												
HCM 2010 Ctrl Delay	16.3											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

1003: Grant & Vernon

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	439	166	38	306	33	187	12	38	3	15	7
Future Volume (veh/h)	12	439	166	38	306	33	187	12	38	3	15	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	462	175	40	322	35	197	13	40	3	16	7
Adj No. of Lanes	0	1	1	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	902	782	228	728	75	649	21	346	209	207	85
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	20	1826	1583	89	1474	151	1487	98	1583	103	950	388
Grp Volume(v), veh/h	475	0	175	397	0	0	210	0	40	26	0	0
Grp Sat Flow(s),veh/h/ln	1846	0	1583	1714	0	0	1585	0	1583	1440	0	0
Q Serve(g_s), s	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	1.4	3.0	0.0	0.0	2.3	0.0	0.4	2.3	0.0	0.0
Prop In Lane	0.03		1.00	0.10		0.09	0.94		1.00	0.12		0.27
Lane Grp Cap(c), veh/h	1084	0	782	1031	0	0	670	0	346	501	0	0
V/C Ratio(X)	0.44	0.00	0.22	0.39	0.00	0.00	0.31	0.00	0.12	0.05	0.00	0.00
Avail Cap(c_a), veh/h	2450	0	1970	2242	0	0	1798	0	1617	1870	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.7	0.0	3.1	3.5	0.0	0.0	7.5	0.0	6.8	6.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.6	1.5	0.0	0.0	1.1	0.0	0.2	0.1	0.0	0.0
LnGrp Delay(d),s/veh	3.9	0.0	3.2	3.7	0.0	0.0	7.6	0.0	6.8	6.7	0.0	0.0
LnGrp LOS	A		A	A			A		A	A		
Approach Vol, veh/h	650				397				250		26	
Approach Delay, s/veh	3.7				3.7				7.4		6.7	
Approach LOS	A				A				A		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	13.8		7.7		13.8		7.7					
Change Period (Y+Rc), s	* 4.2		4.0		* 4.2		4.0					
Max Green Setting (Gmax), s	* 26		21.0		* 26		21.0					
Max Q Clear Time (g_c+I1), s	5.7		4.3		5.0		4.3					
Green Ext Time (p_c), s	3.9		0.5		3.9		0.5					
Intersection Summary												
HCM 2010 Ctrl Delay			4.5									
HCM 2010 LOS			A									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1004: Judah & Vernon

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	519	11	37	459	120	14	36	46	39	26	28
Future Volume (veh/h)	96	519	11	37	459	120	14	36	46	39	26	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	101	546	12	39	483	126	15	38	48	41	27	29
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	624	1140	25	667	895	233	337	105	132	300	55	221
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	809	1816	40	848	1425	372	1342	749	946	599	395	1583
Grp Volume(v), veh/h	101	0	558	39	0	609	15	0	86	68	0	29
Grp Sat Flow(s),veh/h/ln	809	0	1856	848	0	1797	1342	0	1696	994	0	1583
Q Serve(g_s), s	2.1	0.0	4.3	0.7	0.0	5.1	0.3	0.0	1.2	1.2	0.0	0.4
Cycle Q Clear(g_c), s	7.2	0.0	4.3	5.0	0.0	5.1	2.7	0.0	1.2	2.4	0.0	0.4
Prop In Lane	1.00		0.02	1.00		0.21	1.00		0.56	0.60		1.00
Lane Grp Cap(c), veh/h	624	0	1165	667	0	1129	337	0	237	355	0	221
V/C Ratio(X)	0.16	0.00	0.48	0.06	0.00	0.54	0.04	0.00	0.36	0.19	0.00	0.13
Avail Cap(c_a), veh/h	868	0	1726	923	0	1671	1106	0	1208	1204	0	1128
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	0.0	2.6	4.0	0.0	2.8	12.2	0.0	10.4	11.5	0.0	10.1
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.3	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.1	0.2	0.0	2.5	0.1	0.0	0.6	0.5	0.0	0.2
LnGrp Delay(d),s/veh	4.9	0.0	2.9	4.0	0.0	3.1	12.2	0.0	10.7	11.6	0.0	10.2
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h	659				648				101		97	
Approach Delay, s/veh	3.2				3.1				11.0		11.2	
Approach LOS	A				A				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4		6		8				
Phs Duration (G+Y+Rc), s	19.9			6.7		19.9		6.7				
Change Period (Y+Rc), s	* 4.2			4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	* 24			18.0		* 24		18.0				
Max Q Clear Time (g_c+I1), s	9.2			4.4		7.1		4.7				
Green Ext Time (p_c), s	6.5			0.5		7.0		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	4.2											
HCM 2010 LOS	A											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1005: Lincoln & Vernon

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	340	26	181	345	4	44	57	481	10	22	26
Future Volume (veh/h)	76	340	26	181	345	4	44	57	481	10	22	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	80	358	27	191	363	4	46	60	506	11	23	27
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	526	40	274	708	8	309	362	541	139	250	237
Arrive On Green	0.08	0.31	0.31	0.15	0.38	0.38	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1774	1711	129	1774	1839	20	582	1059	1583	142	732	694
Grp Volume(v), veh/h	80	0	385	191	0	367	106	0	506	61	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1840	1774	0	1859	1641	0	1583	1568	0	0
Q Serve(g_s), s	2.0	0.0	8.6	4.8	0.0	7.1	0.0	0.0	14.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.0	0.0	8.6	4.8	0.0	7.1	1.9	0.0	14.5	1.1	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.01	0.43		1.00	0.18		0.44
Lane Grp Cap(c), veh/h	137	0	566	274	0	715	671	0	541	626	0	0
V/C Ratio(X)	0.58	0.00	0.68	0.70	0.00	0.51	0.16	0.00	0.94	0.10	0.00	0.00
Avail Cap(c_a), veh/h	227	0	817	341	0	945	671	0	541	626	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.9	0.0	14.2	18.8	0.0	11.0	10.8	0.0	14.9	10.5	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	1.2	2.8	0.0	0.5	0.0	0.0	23.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	4.5	2.5	0.0	3.7	0.9	0.0	9.8	0.5	0.0	0.0
LnGrp Delay(d),s/veh	22.4	0.0	15.4	21.6	0.0	11.5	10.8	0.0	38.5	10.6	0.0	0.0
LnGrp LOS	C		B	C		B	B		D	B		
Approach Vol, veh/h	465		558				612			61		
Approach Delay, s/veh	16.6		14.9				33.7			10.6		
Approach LOS	B		B				C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.2	17.6	19.0		6.6	21.2	19.0					
Change Period (Y+Rc), s	4.0	* 4.2	4.0		4.0	* 4.2	4.0					
Max Green Setting (Gmax), s	8.0	* 20	15.0		5.0	* 23	15.0					
Max Q Clear Time (g_c+I1), s	6.8	10.6	3.1		4.0	9.1	16.5					
Green Ext Time (p_c), s	0.0	2.8	1.4		0.0	3.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	22.0											
HCM 2010 LOS	C											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1006: Washington & Main

Cumulative No Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	83	473	97	62	4	258	671	19	30	902	28
Future Volume (veh/h)	88	83	473	97	62	4	258	671	19	30	902	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	93	87	498	102	65	4	272	706	20	32	949	0
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	453	385	303	318	271	404	1007	426	297	1262	541
Arrive On Green	0.24	0.24	0.24	0.17	0.17	0.17	0.12	0.28	0.27	0.17	0.36	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	93	87	498	102	65	4	272	706	20	32	949	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.6	3.2	21.0	4.4	2.6	0.2	6.5	15.4	0.8	1.3	20.4	0.0
Cycle Q Clear(g_c), s	3.6	3.2	21.0	4.4	2.6	0.2	6.5	15.4	0.8	1.3	20.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	431	453	385	303	318	271	404	1007	426	297	1262	541
V/C Ratio(X)	0.22	0.19	1.29	0.34	0.20	0.01	0.67	0.70	0.05	0.11	0.75	0.00
Avail Cap(c_a), veh/h	431	453	385	431	453	385	1035	1732	751	431	1732	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.1	26.0	32.7	31.5	30.8	29.8	36.6	27.6	23.4	30.5	24.4	0.0
Incr Delay (d2), s/veh	0.1	0.1	150.7	0.2	0.1	0.0	0.7	1.2	0.1	0.1	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.7	25.2	2.2	1.3	0.1	3.1	7.7	0.4	0.7	10.2	0.0
LnGrp Delay(d),s/veh	26.2	26.1	183.4	31.8	30.9	29.8	37.3	28.9	23.4	30.6	26.0	0.0
LnGrp LOS	C	C	F	C	C	C	D	C	C	C	C	
Approach Vol, veh/h	678				171				998			
Approach Delay, s/veh	141.7				31.4				31.1			
Approach LOS	F				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	27.2		24.0	12.1	32.5		17.8				
Change Period (Y+Rc), s	4.0	4.9		4.0	3.0	* 4		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	25.0	* 40		20.0				
Max Q Clear Time (g_c+I1), s	3.3	17.4		23.0	8.5	22.4		6.4				
Green Ext Time (p_c), s	6.0	4.9		0.0	0.6	6.2		0.3				

Intersection Summary

HCM 2010 Ctrl Delay 55.9
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
1007: Oak Street & S Grant Street

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	326	459	351	186	1		
Future Volume (veh/h)	0	326	459	351	186	1		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	0	343	483	369	197	0		
Adj No. of Lanes	1	2	1	1	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	0		
Cap, veh/h	8	1873	986	835	441	201		
Arrive On Green	0.00	0.53	0.53	0.53	0.12	0.00		
Sat Flow, veh/h	1774	3632	1863	1577	3548	1615		
Grp Volume(v), veh/h	0	343	483	369	197	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1863	1577	1774	1615		
Q Serve(g_s), s	0.0	1.2	3.8	3.3	1.2	0.0		
Cycle Q Clear(g_c), s	0.0	1.2	3.8	3.3	1.2	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	8	1873	986	835	441	201		
V/C Ratio(X)	0.00	0.18	0.49	0.44	0.45	0.00		
Avail Cap(c_a), veh/h	307	4597	1774	1503	3380	1538		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	2.8	3.5	3.3	9.4	0.0		
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.4	0.7	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.5	2.0	1.4	0.6	0.0		
LnGrp Delay(d),s/veh	0.0	2.9	3.8	3.7	10.1	0.0		
LnGrp LOS		A	A	A	B			
Approach Vol, veh/h		343	852		197			
Approach Delay, s/veh		2.9	3.8		10.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				16.2		6.9	0.0	16.2
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				30.0		22.0	4.0	22.0
Max Q Clear Time (g_c+I1), s				3.2		3.2	0.0	5.8
Green Ext Time (p_c), s				7.7		0.6	0.0	6.3
Intersection Summary								
HCM 2010 Ctrl Delay			4.4					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

1008: Oak Street & Lincoln Street

Cumulative No Project
AM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	460	668	333	23	1	21		
Future Volume (veh/h)	460	668	333	23	1	21		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.99		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	484	703	368	0	1	22		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	894	798	559	537	50	42		
Arrive On Green	0.50	0.50	0.16	0.00	0.03	0.03		
Sat Flow, veh/h	1774	1583	3548	1863	1863	1568		
Grp Volume(v), veh/h	484	703	368	0	1	22		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1568		
Q Serve(g_s), s	7.2	15.3	3.8	0.0	0.0	0.5		
Cycle Q Clear(g_c), s	7.2	15.3	3.8	0.0	0.0	0.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	894	798	559	537	50	42		
V/C Ratio(X)	0.54	0.88	0.66	0.00	0.02	0.52		
Avail Cap(c_a), veh/h	1012	904	828	1450	821	691		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	6.5	8.5	15.3	0.0	18.3	18.5		
Incr Delay (d2), s/veh	0.5	9.3	1.3	0.0	0.2	9.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.6	13.2	1.9	0.0	0.0	0.3		
LnGrp Delay(d),s/veh	7.0	17.8	16.6	0.0	18.4	28.1		
LnGrp LOS	A	B	B		B	C		
Approach Vol, veh/h	1187			368	23			
Approach Delay, s/veh	13.4			16.6	27.7			
Approach LOS	B			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		15.1		23.4	10.1	5.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		30.0		22.0	9.0	17.0		
Max Q Clear Time (g_c+I1), s		0.0		17.3	5.8	2.5		
Green Ext Time (p_c), s		0.0		2.2	0.4	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			14.3					
HCM 2010 LOS			B					
Notes								
User approved volume balancing among the lanes for turning movement.								

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
AM Peak Hour

Intersection 1 **Cirby Way/Foothills Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	567	577	101.7%	101.3	30.3	F
	Right Turn	469	390	83.0%	201.4	54.0	F
	Subtotal	1,036	966	93.3%	142.0	33.6	F
SB	Left Turn	1,751	1,586	90.6%	86.5	22.9	F
	Through	828	786	95.0%	61.0	26.0	E
	Right Turn						
	Subtotal	2,579	2,372	92.0%	78.1	24.0	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	460	328	71.4%	66.2	29.4	E
	Through						
	Right Turn	1,300	1,047	80.6%	9.5	2.1	A
	Subtotal	1,760	1,376	78.2%	23.3	9.4	C
Total		5,375	4,714	87.7%	75.0	17.3	E

Intersection 2 **Cirby Way/Vernon St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	24	119.7%	74.5	17.7	E
	Through	150	146	97.5%	46.6	4.3	D
	Right Turn	130	119	91.5%	31.8	4.5	C
	Subtotal	300	289	96.4%	42.7	3.2	D
SB	Left Turn	60	58	96.9%	64.1	11.0	E
	Through	120	112	93.7%	40.5	5.5	D
	Right Turn	321	317	98.6%	29.6	12.5	C
	Subtotal	501	487	97.2%	36.3	8.7	D
EB	Left Turn	448	398	88.9%	53.0	8.7	D
	Through	1,744	1,556	89.2%	23.8	2.7	C
	Right Turn	28	21	73.3%	17.1	7.3	B
	Subtotal	2,220	1,975	89.0%	29.7	3.8	C
WB	Left Turn	100	75	75.2%	59.8	11.0	E
	Through	1,419	1,086	76.5%	33.3	6.4	C
	Right Turn	99	64	64.5%	14.9	3.3	B
	Subtotal	1,618	1,225	75.7%	34.0	5.5	C
Total		4,639	3,976	85.7%	32.9	2.5	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
AM Peak Hour

Intersection 3 **Cirby Way/Melody Ln** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	370	288	78.0%	107.6	58.6	F
	Subtotal	370	288	78.0%	107.6	58.6	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	2,054	1,765	85.9%	47.1	14.0	D
	Right Turn	10	8	83.6%	41.6	14.1	D
	Subtotal	2,064	1,773	85.9%	47.0	13.9	D
WB	Left Turn	330	230	69.7%	28.4	10.3	C
	Through	1,689	1,250	74.0%	3.1	0.3	A
	Right Turn						
	Subtotal	2,019	1,480	73.3%	7.1	2.1	A
Total		4,453	3,542	79.5%	34.9	10.1	C

Intersection 4 **Cirby Way/Riverside Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	792	640	80.8%	197.4	27.1	F
	Through	638	612	95.9%	60.4	11.0	E
	Right Turn	159	143	89.6%	39.5	10.4	D
	Subtotal	1,589	1,394	87.7%	121.4	19.3	F
SB	Left Turn	240	234	97.4%	57.0	10.2	E
	Through	490	457	93.3%	110.8	41.0	F
	Right Turn	90	81	89.5%	56.7	41.4	E
	Subtotal	820	771	94.1%	90.0	32.3	F
EB	Left Turn	271	222	81.9%	86.6	9.3	F
	Through	1,139	892	78.3%	48.4	6.2	D
	Right Turn	1,014	844	83.2%	22.3	4.2	C
	Subtotal	2,424	1,957	80.8%	41.5	5.8	D
WB	Left Turn	522	338	64.7%	141.5	50.0	F
	Through	1,107	766	69.2%	87.3	26.3	F
	Right Turn	317	230	72.4%	86.1	26.1	F
	Subtotal	1,946	1,334	68.5%	100.3	12.3	F
Total		6,779	5,457	80.5%	83.1	7.4	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
AM Peak Hour

Intersection 5 Cirby Way/Cirby Hills Dr-Kaiser North Driveway Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	80	73	90.7%	46.1	3.9	D
	Through						
	Right Turn	50	57	114.0%	13.0	3.1	B
	Subtotal	130	130	99.7%	31.5	4.8	C
SB	Left Turn	30	31	103.9%	62.4	16.3	E
	Through						
	Right Turn	70	58	82.5%	31.8	10.3	C
	Subtotal	100	89	88.9%	43.2	6.4	D
EB	Left Turn	90	75	83.2%	50.0	4.9	D
	Through	1,238	1,074	86.7%	11.7	1.5	B
	Right Turn	180	156	86.8%	9.1	1.5	A
	Subtotal	1,508	1,305	86.5%	13.6	1.3	B
WB	Left Turn	120	80	66.5%	148.7	56.5	F
	Through	1,796	1,160	64.6%	131.9	31.8	F
	Right Turn	30	20	65.9%	111.7	40.4	F
	Subtotal	1,946	1,260	64.7%	132.5	32.8	F
Total		3,684	2,783	75.5%	68.7	13.1	E

Intersection 6 Cirby Way/Orlando Ave Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	28	27	95.0%	48.4	17.0	D
	Through						
	Right Turn	451	450	99.8%	29.9	3.3	C
	Subtotal	479	477	99.5%	31.1	2.9	C
SB	Left Turn	10	6	60.8%	59.9	23.7	E
	Through						
	Right Turn	8	8	99.8%	24.3	21.0	C
	Subtotal	18	14	78.1%	42.6	12.5	D
EB	Left Turn	10	9	87.4%	68.7	46.1	E
	Through	1,238	1,114	90.0%	15.1	2.2	B
	Right Turn	70	58	83.1%	13.1	5.2	B
	Subtotal	1,318	1,181	89.6%	15.3	2.3	B
WB	Left Turn	91	76	83.5%	66.0	33.3	E
	Through	1,910	1,428	74.8%	29.9	38.2	C
	Right Turn	10	9	87.4%	36.9	54.7	D
	Subtotal	2,011	1,513	75.2%	31.8	38.3	C
Total		3,826	3,184	83.2%	24.5	16.7	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
AM Peak Hour

Intersection 7 **Cirby Way/Sunrise Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	762	564	74.0%	232.0	18.4	F
	Through	1,441	1,005	69.7%	189.1	10.0	F
	Right Turn	244	183	75.1%	174.3	12.3	F
	Subtotal	2,447	1,751	71.6%	201.9	6.9	F
SB	Left Turn	110	105	95.0%	77.4	19.7	E
	Through	888	769	86.6%	66.3	25.9	E
	Right Turn	190	166	87.4%	31.9	19.6	C
	Subtotal	1,188	1,039	87.5%	62.0	24.5	E
EB	Left Turn	308	291	94.4%	94.8	21.3	F
	Through	859	855	99.6%	52.0	4.6	D
	Right Turn	698	625	89.6%	31.6	3.8	C
	Subtotal	1,865	1,772	95.0%	52.0	6.7	D
WB	Left Turn	149	122	82.1%	155.5	44.4	F
	Through	862	797	92.5%	150.9	41.4	F
	Right Turn	31	30	96.8%	148.6	46.2	F
	Subtotal	1,042	950	91.1%	151.6	41.7	F
Total		6,542	5,512	84.3%	118.9	6.9	F

Intersection 8 **Riverside Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,391	1,210	87.0%	50.1	24.7	D
	Right Turn	220	180	81.7%	17.3	8.5	B
	Subtotal	1,611	1,390	86.3%	45.9	22.6	D
SB	Left Turn						
	Through	756	608	80.4%	11.0	1.4	B
	Right Turn						
	Subtotal	756	608	80.4%	11.0	1.4	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	500	454	90.9%	55.3	81.4	E
	Through						
	Right Turn	448	373	83.2%	77.2	98.6	E
	Subtotal	948	827	87.3%	65.3	89.5	E
Total		3,315	2,825	85.2%	42.4	31.3	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
AM Peak Hour

Intersection 9 Riverside Blvd/I-80 EB Ramps-Orlando Ave Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,609	1,298	80.7%	164.4	32.7	F
	Right Turn	88	63	71.7%	195.1	45.4	F
	Subtotal	1,697	1,361	80.2%	166.1	32.5	F
SB	Left Turn	70	57	80.9%	57.8	12.1	E
	Through	911	791	86.8%	14.6	2.1	B
	Right Turn						
	Subtotal	981	847	86.4%	17.6	2.4	B
EB	Left Turn						
	Through	401	395	98.5%	38.2	2.2	D
	Right Turn	131	121	92.5%	10.9	1.7	B
	Subtotal	532	516	97.0%	31.8	2.0	C
WB	Left Turn	60	57	94.4%	42.5	8.0	D
	Through						
	Right Turn	149	139	93.6%	17.9	10.0	B
	Subtotal	209	196	93.8%	25.5	7.1	C
Total		3,419	2,920	85.4%	89.4	13.2	F

Intersection 106 Riverside Ave/Kaiser Drwy Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,579	1,322	83.7%	20.4	10.1	C
	Right Turn	260	233	89.4%	2.5	0.3	A
	Subtotal	1,839	1,554	84.5%	17.6	8.4	C
SB	Left Turn						
	Through	756	605	80.0%	1.8	0.1	A
	Right Turn	910	744	81.8%	3.9	0.9	A
	Subtotal	1,666	1,349	81.0%	3.0	0.4	A
EB	Left Turn						
	Through						
	Right Turn	360	289	80.3%	5.6	0.3	A
	Subtotal	360	289	80.3%	5.6	0.3	A
WB	Left Turn						
	Through						
	Right Turn	10	7	68.4%	9.6	7.1	A
	Subtotal	10	7	68.4%	9.6	7.1	A
Total		3,875	3,199	82.6%	10.3	3.9	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
AM Peak Hour

Intersection 102 Lindsay Dr-Northridge Dr/Cirby Way Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	10	95.0%	41.9	17.7	D
	Through						
	Right Turn	40	39	97.9%	26.9	13.3	C
	Subtotal	50	49	97.3%	29.8	10.8	C
SB	Left Turn	60	62	102.6%	39.1	5.8	D
	Through						
	Right Turn	30	32	107.7%	10.8	4.5	B
	Subtotal	90	94	104.3%	29.4	4.9	C
EB	Left Turn	10	8	83.6%	50.3	29.1	D
	Through	1,944	1,695	87.2%	17.7	11.8	B
	Right Turn						
	Subtotal	1,954	1,703	87.2%	17.9	11.8	B
WB	Left Turn	10	8	76.0%	62.6	30.8	E
	Through	1,619	1,199	74.0%	9.8	2.8	A
	Right Turn	10	8	79.8%	3.2	3.3	A
	Subtotal	1,639	1,214	74.1%	10.1	2.8	B
Total		3,733	3,060	82.0%	15.4	6.9	B

Intersection 104 San Simeon Dr/Cirby Way Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	208	195	93.9%	72.2	31.3	E
	Through						
	Right Turn	196	223	113.8%	41.7	20.1	D
	Subtotal	404	418	103.6%	55.7	11.4	E
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,669	1,526	91.4%	13.3	2.3	B
	Right Turn	30	26	87.4%	12.7	5.2	B
	Subtotal	1,699	1,552	91.3%	13.3	2.3	B
WB	Left Turn	10	5	49.4%	58.2	61.7	E
	Through	1,803	1,358	75.3%	14.8	19.7	B
	Right Turn						
	Subtotal	1,813	1,363	75.2%	15.0	19.8	B
Total		3,916	3,333	85.1%	19.0	8.6	B

HCM 2010 Signalized Intersection Summary

1: Blue Oaks Blvd & Grasscreek Drive

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	74	425	698	98	37	28		
Future Volume (veh/h)	74	425	698	98	37	28		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	78	447	735	103	39	29		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	98	2157	1458	452	730	651		
Arrive On Green	0.06	0.42	0.29	0.29	0.41	0.41		
Sat Flow, veh/h	1774	5253	5253	1578	1774	1583		
Grp Volume(v), veh/h	78	447	735	103	39	29		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1578	1774	1583		
Q Serve(g_s), s	2.1	2.7	5.9	2.4	0.6	0.5		
Cycle Q Clear(g_c), s	2.1	2.7	5.9	2.4	0.6	0.5		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	98	2157	1458	452	730	651		
V/C Ratio(X)	0.80	0.21	0.50	0.23	0.05	0.04		
Avail Cap(c_a), veh/h	146	2510	2092	649	730	651		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.7	8.8	14.5	13.2	8.6	8.6		
Incr Delay (d2), s/veh	16.6	0.0	0.3	0.3	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.5	1.3	2.8	1.1	0.3	0.6		
LnGrp Delay(d),s/veh	39.3	8.9	14.7	13.5	8.8	8.7		
LnGrp LOS	D	A	B	B	A	A		
Approach Vol, veh/h		525	838		68			
Approach Delay, s/veh		13.4	14.6		8.7			
Approach LOS		B	B		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				24.6		24.0	6.7	17.9
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				24.0		20.0	4.0	20.0
Max Q Clear Time (g_c+l1), s				4.7		2.6	4.1	7.9
Green Ext Time (p_c), s				7.7		0.1	0.0	6.0
Intersection Summary								
HCM 2010 Ctrl Delay			13.9					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

2: Westbrook Blvd & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	210	17	480	576	709	62	1008	305	319	686	258
Future Volume (veh/h)	236	210	17	480	576	709	62	1008	305	319	686	258
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	248	221	18	505	606	746	65	1061	321	336	722	272
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	1563	472	613	1964	806	141	1478	446	454	1940	590
Arrive On Green	0.10	0.31	0.30	0.18	0.39	0.38	0.04	0.29	0.28	0.13	0.38	0.37
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	248	221	18	505	606	746	65	1061	321	336	722	272
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	7.6	3.4	0.9	15.4	9.0	41.0	2.0	20.3	19.9	10.2	11.1	14.2
Cycle Q Clear(g_c), s	7.6	3.4	0.9	15.4	9.0	41.0	2.0	20.3	19.9	10.2	11.1	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	1563	472	613	1964	806	141	1478	446	454	1940	590
V/C Ratio(X)	0.73	0.14	0.04	0.82	0.31	0.93	0.46	0.72	0.72	0.74	0.37	0.46
Avail Cap(c_a), veh/h	411	1563	472	760	1964	806	190	1496	451	1044	2759	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	27.3	27.1	43.1	23.3	24.8	51.0	34.6	35.2	45.4	24.2	25.9
Incr Delay (d2), s/veh	5.0	0.0	0.0	6.1	0.1	16.5	2.3	1.7	5.5	2.4	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	1.6	0.4	7.8	4.2	24.3	1.0	9.8	9.3	5.0	5.2	6.2
LnGrp Delay(d),s/veh	52.6	27.3	27.1	49.1	23.3	41.3	53.3	36.2	40.7	47.8	24.4	26.4
LnGrp LOS	D	C	C	D	C	D	D	D	D	D	C	C
Approach Vol, veh/h	487			1857			1447			1330		
Approach Delay, s/veh	40.2			37.6			38.0			30.7		
Approach LOS	D			D			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.3	33.6	22.4	35.4	7.5	43.5	13.8	44.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	32.0	30.0	23.0	29.0	5.0	57.0	12.0	40.0				
Max Q Clear Time (g_c+I1), s	12.2	22.3	17.4	5.4	4.0	16.2	9.6	43.0				
Green Ext Time (p_c), s	1.1	6.5	1.0	10.1	0.0	23.3	0.2	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	36.2											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary

3: Blue Oaks Blvd & Creekview Plaza

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	23	844	1609	30	143	71		
Future Volume (veh/h)	23	844	1609	30	143	71		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	24	888	1694	32	151	75		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	40	2386	1886	586	673	600		
Arrive On Green	0.02	0.47	0.37	0.37	0.38	0.38		
Sat Flow, veh/h	1774	5253	5253	1579	1774	1583		
Grp Volume(v), veh/h	24	888	1694	32	151	75		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1579	1774	1583		
Q Serve(g_s), s	0.7	5.9	16.6	0.7	3.0	1.6		
Cycle Q Clear(g_c), s	0.7	5.9	16.6	0.7	3.0	1.6		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	40	2386	1886	586	673	600		
V/C Ratio(X)	0.60	0.37	0.90	0.05	0.22	0.12		
Avail Cap(c_a), veh/h	135	2386	1928	599	673	600		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.5	9.0	15.7	10.7	11.1	10.7		
Incr Delay (d2), s/veh	13.7	0.1	6.0	0.0	0.8	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	2.7	8.7	0.3	1.6	1.8		
LnGrp Delay(d),s/veh	39.2	9.1	21.7	10.7	11.9	11.1		
LnGrp LOS	D	A	C	B	B	B		
Approach Vol, veh/h		912	1726		226			
Approach Delay, s/veh		9.9	21.5		11.6			
Approach LOS		A	C		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				28.7		24.0	5.2	23.6
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				24.0		20.0	4.0	20.0
Max Q Clear Time (g_c+I1), s				7.9		5.0	2.7	18.6
Green Ext Time (p_c), s				13.4		0.6	0.0	1.0
Intersection Summary								
HCM 2010 Ctrl Delay			17.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: West Park Drive & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	977	10	1	1651	13	1		
Future Volume (veh/h)	977	10	1	1651	13	1		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1028	11	1	1738	14	1		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1913	594	3	2314	690	616		
Arrive On Green	0.38	0.38	0.00	0.46	0.39	0.39		
Sat Flow, veh/h	5253	1579	1774	5253	1774	1583		
Grp Volume(v), veh/h	1028	11	1	1738	14	1		
Grp Sat Flow(s),veh/h/ln	1695	1579	1774	1695	1774	1583		
Q Serve(g_s), s	8.1	0.2	0.0	14.5	0.2	0.0		
Cycle Q Clear(g_c), s	8.1	0.2	0.0	14.5	0.2	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1913	594	3	2314	690	616		
V/C Ratio(X)	0.54	0.02	0.29	0.75	0.02	0.00		
Avail Cap(c_a), veh/h	1979	615	138	2375	690	616		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	12.5	10.1	25.6	11.6	9.7	9.6		
Incr Delay (d2), s/veh	0.3	0.0	40.7	1.3	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.8	0.1	0.1	7.0	0.1	0.0		
LnGrp Delay(d),s/veh	12.8	10.1	66.4	12.9	9.7	9.6		
LnGrp LOS	B	B	E	B	A	A		
Approach Vol, veh/h	1039			1739	15			
Approach Delay, s/veh	12.8			13.0	9.7			
Approach LOS	B			B	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		24.0	4.1	23.3				27.4
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		20.0	4.0	20.0				24.0
Max Q Clear Time (g_c+l1), s		2.2	2.0	10.1				16.5
Green Ext Time (p_c), s		0.0	0.0	8.9				6.8
Intersection Summary								
HCM 2010 Ctrl Delay			12.9					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

5: Hayden Pkwy & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	797	44	107	1487	251	96	113	67	169	43	70
Future Volume (veh/h)	138	797	44	107	1487	251	96	113	67	169	43	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	145	839	46	113	1565	264	101	119	71	178	45	74
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	2352	710	169	2251	679	153	250	191	199	298	231
Arrive On Green	0.12	0.46	0.45	0.10	0.44	0.43	0.09	0.13	0.12	0.11	0.16	0.15
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	145	839	46	113	1565	264	101	119	71	178	45	74
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.6	7.6	1.2	4.4	17.7	8.2	3.9	4.2	3.0	7.1	1.5	3.0
Cycle Q Clear(g_c), s	5.6	7.6	1.2	4.4	17.7	8.2	3.9	4.2	3.0	7.1	1.5	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	2352	710	169	2251	679	153	250	191	199	298	231
V/C Ratio(X)	0.71	0.36	0.06	0.67	0.70	0.39	0.66	0.48	0.37	0.90	0.15	0.32
Avail Cap(c_a), veh/h	248	2352	710	323	2419	731	199	886	731	199	886	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	12.4	11.2	31.2	16.0	14.0	31.6	28.6	29.0	31.3	25.8	27.3
Incr Delay (d2), s/veh	7.1	0.1	0.0	4.5	0.8	0.4	5.1	1.4	1.2	36.8	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.5	0.5	2.4	8.4	3.6	2.2	2.3	1.3	5.5	0.8	1.3
LnGrp Delay(d),s/veh	37.5	12.5	11.2	35.7	16.9	14.4	36.7	30.0	30.2	68.1	26.1	28.1
LnGrp LOS	D	B	B	D	B	B	D	C	C	E	C	C
Approach Vol, veh/h	1030				1942				291		297	
Approach Delay, s/veh	15.9				17.6				32.4		51.8	
Approach LOS	B				B				C		D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	12.6	10.8	36.1	10.2	14.4	12.2	34.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	32.0	12.0	29.0	7.0	32.0	9.0	32.0				
Max Q Clear Time (g_c+I1), s	9.1	6.2	6.4	9.6	5.9	5.0	7.6	19.7				
Green Ext Time (p_c), s	0.0	1.4	0.1	16.3	0.0	1.4	0.0	9.9				
Intersection Summary												
HCM 2010 Ctrl Delay	21.2											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

6: Fiddymment Rd & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	776	86	496	1616	343	46	993	360	174	825	113
Future Volume (veh/h)	146	776	86	496	1616	343	46	993	360	174	825	113
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	154	817	91	522	1701	361	48	1045	379	183	868	119
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	296	1083	304	795	1820	534	357	1230	511	331	1135	469
Arrive On Green	0.09	0.21	0.19	0.23	0.36	0.34	0.10	0.35	0.32	0.10	0.32	0.30
Sat Flow, veh/h	3442	5085	1571	3442	5085	1576	3442	3539	1576	3442	3539	1575
Grp Volume(v), veh/h	154	817	91	522	1701	361	48	1045	379	183	868	119
Grp Sat Flow(s),veh/h/ln	1721	1695	1571	1721	1695	1576	1721	1770	1576	1721	1770	1575
Q Serve(g_s), s	4.4	15.6	5.1	14.2	33.4	14.4	1.3	28.3	11.4	5.2	22.8	5.9
Cycle Q Clear(g_c), s	4.4	15.6	5.1	14.2	33.4	14.4	1.3	28.3	11.4	5.2	22.8	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	1083	304	795	1820	534	357	1230	511	331	1135	469
V/C Ratio(X)	0.52	0.75	0.30	0.66	0.93	0.68	0.13	0.85	0.74	0.55	0.76	0.25
Avail Cap(c_a), veh/h	499	1131	319	965	1820	534	357	1246	518	333	1246	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	38.2	35.7	36.0	32.0	14.7	42.1	31.2	8.2	44.6	31.6	27.6
Incr Delay (d2), s/veh	0.5	3.1	0.8	0.7	9.7	3.8	0.1	6.2	6.6	1.1	3.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.6	2.3	6.8	17.2	7.3	0.6	14.8	8.1	2.5	11.6	2.6
LnGrp Delay(d),s/veh	45.7	41.3	36.5	36.7	41.7	18.6	42.2	37.4	14.8	45.7	34.9	28.2
LnGrp LOS	D	D	D	D	D	B	D	D	B	D	C	C
Approach Vol, veh/h	1062				2584				1472			
Approach Delay, s/veh	41.5				37.5				31.7			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	38.5	26.9	25.0	15.7	35.8	11.9	40.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	6.0	* 6	4.0	6.0				
Max Green Setting (Gmax), s	9.0	33.0	28.0	20.0	9.0	* 33	14.0	34.0				
Max Q Clear Time (g_c+I1), s	7.2	30.3	16.2	17.6	3.3	24.8	6.4	35.4				
Green Ext Time (p_c), s	0.1	2.2	1.5	1.4	4.5	4.7	1.2	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

7: Blue Oaks Blvd & Orchard View Rd

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	5	1302	2420	277	147	4		
Future Volume (veh/h)	5	1302	2420	277	147	4		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	5	1371	2547	292	155	4		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	41	3727	3373	1050	310	277		
Arrive On Green	0.02	0.73	0.66	0.66	0.17	0.17		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	5	1371	2547	292	155	4		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.2	6.4	22.0	5.0	5.1	0.1		
Cycle Q Clear(g_c), s	0.2	6.4	22.0	5.0	5.1	0.1		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	41	3727	3373	1050	310	277		
V/C Ratio(X)	0.12	0.37	0.76	0.28	0.50	0.01		
Avail Cap(c_a), veh/h	355	4378	3373	1050	764	682		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	31.1	3.2	7.4	4.5	24.3	22.2		
Incr Delay (d2), s/veh	0.5	0.1	1.1	0.2	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	3.0	10.2	2.2	2.5	0.0		
LnGrp Delay(d),s/veh	31.6	3.3	8.5	4.7	24.7	22.2		
LnGrp LOS	C	A	A	A	C	C		
Approach Vol, veh/h		1376	2839		159			
Approach Delay, s/veh		3.4	8.1		24.7			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				50.7		14.4	4.5	46.1
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				53.0		27.0	12.0	37.0
Max Q Clear Time (g_c+I1), s				8.4		7.1	2.2	24.0
Green Ext Time (p_c), s				36.2		0.3	0.0	12.9
Intersection Summary								
HCM 2010 Ctrl Delay			7.2					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

8: Del Webb Blvd & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	1446	37	195	2697	16	119		
Future Volume (veh/h)	1446	37	195	2697	16	119		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1522	39	205	2839	17	125		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2670	831	277	3706	287	256		
Arrive On Green	0.52	0.52	0.16	0.73	0.16	0.16		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	1522	39	205	2839	17	125		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	12.8	0.8	6.9	21.6	0.5	4.5		
Cycle Q Clear(g_c), s	12.8	0.8	6.9	21.6	0.5	4.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2670	831	277	3706	287	256		
V/C Ratio(X)	0.57	0.05	0.74	0.77	0.06	0.49		
Avail Cap(c_a), veh/h	2670	831	367	3800	877	783		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.1	7.3	25.3	5.2	22.3	24.0		
Incr Delay (d2), s/veh	0.4	0.0	3.4	1.0	0.0	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.0	0.3	3.6	10.1	0.3	2.0		
LnGrp Delay(d),s/veh	10.5	7.3	28.7	6.3	22.4	24.5		
LnGrp LOS	B	A	C	A	C	C		
Approach Vol, veh/h	1561			3044	142			
Approach Delay, s/veh	10.4			7.8	24.3			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.1	12.8	36.0				48.8
Change Period (Y+Rc), s		4.9	4.0	6.0				6.0
Max Green Setting (Gmax), s		30.1	12.0	28.0				44.0
Max Q Clear Time (g_c+I1), s		6.5	8.9	14.8				23.6
Green Ext Time (p_c), s		0.3	0.1	13.2				19.3
Intersection Summary								
HCM 2010 Ctrl Delay			9.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
9: Blue Oaks Blvd & Crocker Ranch Rd

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	27	1520	2880	405	284	11		
Future Volume (veh/h)	27	1520	2880	405	284	11		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	28	1600	3032	426	299	12		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	77	3697	3315	1028	355	317		
Arrive On Green	0.04	0.73	0.65	0.65	0.20	0.20		
Sat Flow, veh/h	1774	5253	5253	1577	1774	1583		
Grp Volume(v), veh/h	28	1600	3032	426	299	12		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1577	1774	1583		
Q Serve(g_s), s	1.5	11.9	48.7	12.2	15.4	0.6		
Cycle Q Clear(g_c), s	1.5	11.9	48.7	12.2	15.4	0.6		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	77	3697	3315	1028	355	317		
V/C Ratio(X)	0.36	0.43	0.91	0.41	0.84	0.04		
Avail Cap(c_a), veh/h	131	3815	3315	1028	599	535		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	44.0	5.2	14.2	7.9	36.5	30.5		
Incr Delay (d2), s/veh	1.1	0.1	4.6	0.4	2.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	5.5	23.9	5.3	7.8	0.6		
LnGrp Delay(d),s/veh	45.1	5.3	18.8	8.3	38.6	30.6		
LnGrp LOS	D	A	B	A	D	C		
Approach Vol, veh/h		1628	3458		311			
Approach Delay, s/veh		6.0	17.5		38.3			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				71.9		22.9	7.1	64.8
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				68.1		31.0	6.0	58.1
Max Q Clear Time (g_c+I1), s				13.9		17.4	3.5	50.7
Green Ext Time (p_c), s				52.0		0.6	0.0	7.4
Intersection Summary								
HCM 2010 Ctrl Delay			15.2					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

10: Diamond Creek Blvd & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1656	32	25	2830	42	272	121	30	239	25	158
Future Volume (veh/h)	105	1656	32	25	2830	42	272	121	30	239	25	158
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	111	1743	34	26	2979	44	206	238	32	222	68	166
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	3047	949	67	2933	913	235	247	210	250	68	165
Arrive On Green	0.06	0.60	0.60	0.08	1.00	1.00	0.13	0.13	0.13	0.14	0.14	0.14
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	481	1174
Grp Volume(v), veh/h	111	1743	34	26	2979	44	206	238	32	222	0	234
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	0	1655
Q Serve(g_s), s	9.0	31.4	1.3	2.1	0.0	0.0	17.1	19.1	2.7	18.4	0.0	21.1
Cycle Q Clear(g_c), s	9.0	31.4	1.3	2.1	0.0	0.0	17.1	19.1	2.7	18.4	0.0	21.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	106	3047	949	67	2933	913	235	247	210	250	0	233
V/C Ratio(X)	1.04	0.57	0.04	0.39	1.02	0.05	0.88	0.96	0.15	0.89	0.00	1.00
Avail Cap(c_a), veh/h	106	3047	949	95	2933	913	235	247	210	250	0	233
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.40	0.40	0.40	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.5	18.3	12.3	67.7	0.0	0.0	63.8	64.7	57.6	63.3	0.0	64.5
Incr Delay (d2), s/veh	99.2	0.5	0.0	0.6	14.7	0.0	29.6	47.2	0.6	30.0	0.0	60.2
Initial Q Delay(d3),s/veh	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	14.8	0.6	1.0	4.0	0.0	10.3	13.1	1.2	11.1	0.0	13.5
LnGrp Delay(d),s/veh	170.4	18.9	12.4	68.3	14.7	0.0	93.4	111.9	58.2	93.3	0.0	124.7
LnGrp LOS	F	B	B	E	F	A	F	F	E	F		F
Approach Vol, veh/h	1888			3049			476			456		
Approach Delay, s/veh	27.7			15.0			100.3			109.4		
Approach LOS	C			B			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	23.5		8.6	92.9	25.0		12.0	89.5				
Change Period (Y+Rc), s	4.6		4.0	6.0	4.9		4.0	6.0				
Max Green Setting (Gmax), s	18.9		7.0	84.5	20.1		8.0	83.5				
Max Q Clear Time (g_c+I1), s	21.1		4.1	33.4	23.1		11.0	2.0				
Green Ext Time (p_c), s	0.0		0.0	51.0	0.0		0.0	81.0				
Intersection Summary												
HCM 2010 Ctrl Delay	33.3											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

11: Woodcreek Oaks Blvd & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	1517	225	689	2682	278	70	227	419	257	181	44
Future Volume (veh/h)	100	1517	225	689	2682	278	70	227	419	257	181	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	105	1597	237	725	2823	293	74	239	441	271	191	46
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	2235	696	802	3051	950	371	405	160	298	330	148
Arrive On Green	0.07	0.44	0.44	0.23	0.60	0.60	0.11	0.11	0.10	0.09	0.09	0.09
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	105	1597	237	725	2823	293	74	239	441	271	191	46
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	4.4	38.5	8.6	30.7	74.9	6.3	2.9	9.6	9.3	11.7	7.8	3.2
Cycle Q Clear(g_c), s	4.4	38.5	8.6	30.7	74.9	6.3	2.9	9.6	9.3	11.7	7.8	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	2235	696	802	3051	950	371	405	160	298	330	148
V/C Ratio(X)	0.42	0.71	0.34	0.90	0.93	0.31	0.20	0.59	2.75	0.91	0.58	0.31
Avail Cap(c_a), veh/h	298	2235	696	918	3051	950	371	526	214	298	526	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.49	0.49	0.49	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	34.3	9.3	55.9	27.0	3.2	61.0	63.1	25.5	67.9	65.2	38.7
Incr Delay (d2), s/veh	0.3	1.2	0.6	5.6	3.2	0.4	0.1	1.8	805.4	29.2	2.1	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	18.3	3.9	15.2	35.7	2.9	1.4	4.8	40.0	6.8	3.9	1.5
LnGrp Delay(d),s/veh	66.9	35.6	9.9	61.5	30.2	3.6	61.1	64.9	830.9	97.1	67.3	40.3
LnGrp LOS	E	D	A	E	C	A	E	E	F	F	E	D
Approach Vol, veh/h	1939			3841			754			508		
Approach Delay, s/veh	34.1			34.1			512.6			80.7		
Approach LOS	C			C			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	19.9	37.9	68.9	19.2	16.7	13.9	93.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	4.0	5.7	4.0	6.0				
Max Green Setting (Gmax), s	12.0	19.3	39.0	60.0	12.0	19.3	12.0	87.0				
Max Q Clear Time (g_c+I1), s	13.7	11.6	32.7	40.5	4.9	9.8	6.4	76.9				
Green Ext Time (p_c), s	0.0	2.6	1.2	19.5	0.5	0.8	0.1	10.1				
Intersection Summary												
HCM 2010 Ctrl Delay	88.7											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary
12: Wood Meadow Dwy & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1972	0	71	3732	25	0	1	172	71	1	0
Future Volume (veh/h)	0	1972	0	71	3732	25	0	1	172	71	1	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2076	0	75	3928	26	0	1	181	75	1	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	4170	1030	94	4724	1167	1	241	205	59	365	311
Arrive On Green	0.00	0.65	0.00	0.05	0.74	0.74	0.00	0.13	0.13	0.03	0.20	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	2076	0	75	3928	26	0	1	181	75	1	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	25.1	0.0	6.3	62.4	0.7	0.0	0.1	16.9	5.0	0.1	0.0
Cycle Q Clear(g_c), s	0.0	25.1	0.0	6.3	62.4	0.7	0.0	0.1	16.9	5.0	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1	4170	1030	94	4724	1167	1	241	205	59	365	311
V/C Ratio(X)	0.00	0.50	0.00	0.80	0.83	0.02	0.00	0.00	0.88	1.27	0.00	0.00
Avail Cap(c_a), veh/h	47	4170	1030	166	4724	1167	47	522	443	59	534	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.59	0.00	0.55	0.55	0.55	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	13.5	0.0	70.2	13.4	5.3	0.0	56.9	64.2	72.5	48.5	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	8.2	0.8	0.0	0.0	0.0	11.7	205.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.2	0.0	3.3	27.5	0.3	0.0	0.0	8.0	5.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	13.8	0.0	78.4	14.1	5.3	0.0	56.9	75.9	277.8	48.5	0.0
LnGrp LOS		B		E	B	A		E	E	F	D	
Approach Vol, veh/h		2076			4029			182			76	
Approach Delay, s/veh		13.8			15.3			75.8			274.8	
Approach LOS		B			B			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	24.4	13.0	102.6	0.0	34.4	0.0	115.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	42.0	14.0	69.0	4.0	43.0	4.0	79.0				
Max Q Clear Time (g_c+I1), s	7.0	18.9	8.3	27.1	0.0	2.1	0.0	64.4				
Green Ext Time (p_c), s	0.0	0.6	0.1	41.7	0.0	0.6	0.0	14.5				
Intersection Summary												
HCM 2010 Ctrl Delay				19.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary

13: Blue Oaks Blvd & New Meadow Dr

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	36	2479	0	3733	832	105	22	
Future Volume (veh/h)	36	2479	0	3733	832	105	22	
Number	7	4		8	18	1	16	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	38	2609		3929	876	111	23	
Adj No. of Lanes	1	4		4	1	2	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	68	5575		5200	1285	298	137	
Arrive On Green	0.08	1.00		0.81	0.81	0.09	0.09	
Sat Flow, veh/h	1774	6669		6669	1583	3442	1583	
Grp Volume(v), veh/h	38	2609		3929	876	111	23	
Grp Sat Flow(s),veh/h/ln	1774	1602		1602	1583	1721	1583	
Q Serve(g_s), s	3.1	0.0		44.8	35.0	4.6	2.0	
Cycle Q Clear(g_c), s	3.1	0.0		44.8	35.0	4.6	2.0	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	68	5575		5200	1285	298	137	
V/C Ratio(X)	0.56	0.47		0.76	0.68	0.37	0.17	
Avail Cap(c_a), veh/h	154	5575		5200	1285	484	223	
HCM Platoon Ratio	2.00	2.00		1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.83	0.83		0.09	0.09	1.00	1.00	
Uniform Delay (d), s/veh	68.0	0.0		6.9	6.0	64.6	63.5	
Incr Delay (d2), s/veh	2.2	0.2		0.1	0.2	0.3	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.6	0.1		19.4	15.1	2.2	1.8	
LnGrp Delay(d),s/veh	70.2	0.2		7.0	6.1	64.9	63.7	
LnGrp LOS	E	A		A	A	E	E	
Approach Vol, veh/h		2647		4805		134		
Approach Delay, s/veh		1.2		6.8		64.7		
Approach LOS		A		A		E		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				133.1		16.9	8.8	124.3
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				119.0		20.1	12.0	103.0
Max Q Clear Time (g_c+I1), s				2.0		6.6	5.1	46.8
Green Ext Time (p_c), s				115.6		0.3	0.0	55.9
Intersection Summary								
HCM 2010 Ctrl Delay			5.9					
HCM 2010 LOS			A					
Notes								
User approved ignoring U-Turning movement.								

HCM 2010 Signalized Intersection Summary 14: Collector C & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2306	0	0	4720	0	0	0	0	0	0	0
Future Volume (veh/h)	0	2306	0	0	4720	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	2427	0	0	4968	0	0	0	0	0	0	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	5950	1470	2	5950	1470	2	2	0	0	2	0
Arrive On Green	0.00	0.93	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	0	1863	0
Grp Volume(v), veh/h	0	2427	0	0	4968	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	0	1863	0
Q Serve(g_s), s	0.0	3.7	0.0	0.0	20.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.7	0.0	0.0	20.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	2	5950	1470	2	5950	1470	2	2	-83	0	2	0
V/C Ratio(X)	0.00	0.41	0.00	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	211	5950	1470	211	5950	1470	338	355	217	0	355	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.3	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.6	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A				A							
Approach Vol, veh/h	2427				4968				0			
Approach Delay, s/veh	0.6				2.5				0.0			
Approach LOS	A				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	0.0		0.0	84.0	0.0		0.0	84.0				
Change Period (Y+Rc), s	4.5		4.5	6.0	4.5		4.5	6.0				
Max Green Setting (Gmax), s	16.0		10.0	23.0	16.0		10.0	16.0				
Max Q Clear Time (g_c+I1), s	0.0		0.0	5.7	0.0		0.0	22.7				
Green Ext Time (p_c), s	0.0		0.0	17.3	0.0		0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	1.8											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

15: Foothills Blvd & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	1784	379	259	3052	170	742	753	199	533	806	742
Future Volume (veh/h)	380	1784	379	259	3052	170	742	753	199	533	806	742
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	400	1878	399	273	3213	179	781	793	0	561	848	781
Adj No. of Lanes	2	4	1	2	4	1	3	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	2433	601	1163	4042	999	634	898	376	574	1561	486
Arrive On Green	0.03	0.13	0.13	0.34	0.63	0.63	0.13	0.25	0.00	0.17	0.31	0.31
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	5003	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	400	1878	399	273	3213	179	781	793	0	561	848	781
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1668	1770	1583	1721	1695	1583
Q Serve(g_s), s	15.0	42.6	37.5	8.6	55.7	6.6	19.0	32.3	0.0	24.3	20.8	46.0
Cycle Q Clear(g_c), s	15.0	42.6	37.5	8.6	55.7	6.6	19.0	32.3	0.0	24.3	20.8	46.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	2433	601	1163	4042	999	634	898	376	574	1561	486
V/C Ratio(X)	1.16	0.77	0.66	0.23	0.79	0.18	1.23	0.88	0.00	0.98	0.54	1.61
Avail Cap(c_a), veh/h	344	2452	606	1163	4042	999	634	906	380	574	1561	486
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	0.84	0.84	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.5	59.3	61.1	35.7	20.5	10.1	65.5	53.8	0.0	62.2	43.2	52.0
Incr Delay (d2), s/veh	97.7	1.8	3.8	0.0	1.7	0.4	116.0	8.9	0.0	31.8	1.1	282.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	19.2	17.1	4.1	25.0	3.0	15.6	17.0	0.0	14.1	9.9	58.3
LnGrp Delay(d),s/veh	170.2	61.1	64.9	35.8	22.2	10.5	181.5	62.8	0.0	94.0	44.3	334.6
LnGrp LOS	F	E	E	D	C	B	F	E		F	D	F
Approach Vol, veh/h	2677				3665				1574			
Approach Delay, s/veh	78.0				22.6				121.7			
Approach LOS	E				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	47.9	18.0	98.3	29.3	40.6	56.7	59.6				
Change Period (Y+Rc), s	4.0	5.3	4.0	6.0	5.3	* 6	6.0	* 6				
Max Green Setting (Gmax), s	18.0	41.7	14.0	57.0	24.0	* 35	17.0	* 54				
Max Q Clear Time (g_c+I1), s	21.0	48.0	17.0	57.7	26.3	34.3	10.6	44.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.3	5.0	9.0				

Intersection Summary

HCM 2010 Ctrl Delay 82.6
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
16: Fidelity Way & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↑	↗	↘	↑↑↑↑		↗		
Traffic Volume (veh/h)	2764	18	37	3159	0	118		
Future Volume (veh/h)	2764	18	37	3159	0	118		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	0	1863		
Adj Flow Rate, veh/h	2909	19	39	3325	0	124		
Adj No. of Lanes	4	1	1	3	0	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	0	2		
Cap, veh/h	3832	947	54	3571	0	0		
Arrive On Green	0.60	0.60	0.03	0.70	0.00	0.00		
Sat Flow, veh/h	6669	1583	1774	5253	0			
Grp Volume(v), veh/h	2909	19	39	3325	0.0			
Grp Sat Flow(s),veh/h/ln	1602	1583	1774	1695				
Q Serve(g_s), s	22.7	0.3	1.5	38.3				
Cycle Q Clear(g_c), s	22.7	0.3	1.5	38.3				
Prop In Lane		1.00	1.00					
Lane Grp Cap(c), veh/h	3832	947	54	3571				
V/C Ratio(X)	0.76	0.02	0.72	0.93				
Avail Cap(c_a), veh/h	3832	947	470	4038				
HCM Platoon Ratio	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	10.1	5.6	32.7	8.7				
Incr Delay (d2), s/veh	0.9	0.0	16.1	4.3				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	10.1	0.1	1.0	18.7				
LnGrp Delay(d),s/veh	11.0	5.6	48.7	13.0				
LnGrp LOS	B	A	D	B				
Approach Vol, veh/h	2928			3364				
Approach Delay, s/veh	10.9			13.5				
Approach LOS	B			B				
Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4				8
Phs Duration (G+Y+Rc), s			7.1	45.7				52.7
Change Period (Y+Rc), s			5.0	5.0				5.0
Max Green Setting (Gmax), s			18.0	31.0				54.0
Max Q Clear Time (g_c+I1), s			3.5	24.7				40.3
Green Ext Time (p_c), s			0.0	6.3				7.5
Intersection Summary								
HCM 2010 Ctrl Delay			12.3					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

17: Washington Blvd & Blue Oaks Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑↑	↑↑↑	↑	↑↑		↑↑	↑	↑↑	↑
Traffic Volume (veh/h)	0	2784	411	562	1116	376	518	0	1236	24	553	347
Future Volume (veh/h)	0	2784	411	562	1116	376	518	0	1236	24	553	347
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	1863	1863	0	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2931	433	592	1175	0	545	0	1301	25	582	0
Adj No. of Lanes	0	4	1	2	3	1	2	0	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	2	2	0	2	2	2	2
Cap, veh/h	0	1825	430	672	2509	781	0	0	0	317	679	304
Arrive On Green	0.00	0.28	0.27	0.20	0.49	0.00	0.01	0.00	0.01	0.18	0.19	0.00
Sat Flow, veh/h	0	6669	1583	3442	5085	1583		0		1774	3539	1583
Grp Volume(v), veh/h	0	2931	433	592	1175	0		0.0		25	582	0
Grp Sat Flow(s),veh/h/ln	0	1602	1583	1721	1695	1583				1774	1770	1583
Q Serve(g_s), s	0.0	42.7	40.7	25.1	22.8	0.0				1.8	23.9	0.0
Cycle Q Clear(g_c), s	0.0	42.7	40.7	25.1	22.8	0.0				1.8	23.9	0.0
Prop In Lane	0.00		1.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1825	430	672	2509	781				317	679	304
V/C Ratio(X)	0.00	1.61	1.01	0.88	0.47	0.00				0.08	0.86	0.00
Avail Cap(c_a), veh/h	0	1825	430	688	2509	781				331	708	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	53.6	54.6	58.7	25.0	0.0				51.3	58.6	0.0
Incr Delay (d2), s/veh	0.0	275.4	45.3	12.0	0.6	0.0				0.2	10.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	53.8	23.2	13.0	10.8	0.0				0.9	12.6	0.0
LnGrp Delay(d),s/veh	0.0	329.0	100.0	70.7	25.7	0.0				51.5	69.3	0.0
LnGrp LOS		F	F	E	C					D	E	
Approach Vol, veh/h		3364			1767						607	
Approach Delay, s/veh		299.6			40.8						68.6	
Approach LOS		F			D						E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			31.3	46.7		32.8		78.0				
Change Period (Y+Rc), s			4.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s			28.0	40.0		28.0		72.0				
Max Q Clear Time (g_c+l1), s			27.1	44.7		25.9		24.8				
Green Ext Time (p_c), s			0.2	0.0		0.9		46.8				
Intersection Summary												
HCM 2010 Ctrl Delay			195.4									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary
18: Santucci Blvd & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	287	448	5	424	26	778	241	8	57	135	5
Future Volume (veh/h)	5	287	448	5	424	26	778	241	8	57	135	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	5	302	472	5	446	27	819	254	8	60	142	5
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	1345	580	34	1345	580	964	1241	533	100	450	179
Arrive On Green	0.02	0.38	0.37	0.02	0.38	0.37	0.28	0.35	0.34	0.06	0.13	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	5	302	472	5	446	27	819	254	8	60	142	5
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.2	4.2	19.5	0.2	6.5	0.8	16.2	3.6	0.2	2.4	2.6	0.2
Cycle Q Clear(g_c), s	0.2	4.2	19.5	0.2	6.5	0.8	16.2	3.6	0.2	2.4	2.6	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	34	1345	580	34	1345	580	964	1241	533	100	450	179
V/C Ratio(X)	0.15	0.22	0.81	0.15	0.33	0.05	0.85	0.20	0.01	0.60	0.32	0.03
Avail Cap(c_a), veh/h	123	1518	657	123	1518	657	1048	2057	898	196	1371	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.9	15.2	20.7	34.9	15.9	14.8	24.6	16.4	16.0	33.3	28.7	28.5
Incr Delay (d2), s/veh	2.0	0.1	7.0	2.0	0.1	0.0	6.3	0.1	0.0	5.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.0	9.6	0.1	3.2	0.3	8.6	1.8	0.1	1.3	1.3	0.1
LnGrp Delay(d),s/veh	36.8	15.3	27.7	36.8	16.0	14.8	30.9	16.5	16.0	38.9	29.1	28.6
LnGrp LOS	D	B	C	D	B	B	C	B	B	D	C	C
Approach Vol, veh/h	779			478			1081			207		
Approach Delay, s/veh	22.9			16.2			27.4			31.9		
Approach LOS	C			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	28.3	5.4	30.5	24.3	12.2	5.4	30.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	40.0	4.0	29.0	21.0	26.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	4.4	5.6	2.2	21.5	18.2	4.6	2.2	8.5				
Green Ext Time (p_c), s	0.0	2.8	0.0	4.0	1.0	2.5	0.0	7.1				
Intersection Summary												
HCM 2010 Ctrl Delay			24.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
19: Silver Spruce Dr & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗		
Traffic Volume (veh/h)	397	6	57	451	5	5		
Future Volume (veh/h)	397	6	57	451	5	5		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	418	6	60	475	5	5		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1113	498	93	1888	236	211		
Arrive On Green	0.31	0.31	0.05	0.53	0.13	0.13		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	418	6	60	475	5	5		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	2.8	0.1	1.0	2.2	0.1	0.1		
Cycle Q Clear(g_c), s	2.8	0.1	1.0	2.2	0.1	0.1		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1113	498	93	1888	236	211		
V/C Ratio(X)	0.38	0.01	0.64	0.25	0.02	0.02		
Avail Cap(c_a), veh/h	2122	950	414	3537	1182	1055		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.0	7.1	13.9	3.8	11.3	11.3		
Incr Delay (d2), s/veh	0.2	0.0	7.3	0.1	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.7	1.1	0.0	0.0		
LnGrp Delay(d),s/veh	8.2	7.1	21.2	3.8	11.3	11.4		
LnGrp LOS	A	A	C	A	B	B		
Approach Vol, veh/h	424			535	10			
Approach Delay, s/veh	8.2			5.8	11.3			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		3	4				8
Phs Duration (G+Y+Rc), s	9.0		6.6	14.4				21.0
Change Period (Y+Rc), s	5.0		5.0	5.0				5.0
Max Green Setting (Gmax), s	20.0		7.0	18.0				30.0
Max Q Clear Time (g_c+I1), s	2.1		3.0	4.8				4.2
Green Ext Time (p_c), s	0.0		0.0	5.0				6.6
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
20: Westbrook Blvd & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	335	10	79	503	464	9	974	49	294	945	128
Future Volume (veh/h)	137	335	10	79	503	464	9	974	49	294	945	128
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	144	353	11	83	529	488	9	1025	52	309	995	135
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1840	556	174	1268	550	68	1233	534	299	2113	641
Arrive On Green	0.05	0.36	0.35	0.05	0.36	0.35	0.02	0.35	0.34	0.09	0.42	0.40
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	144	353	11	83	529	488	9	1025	52	309	995	135
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	3.8	4.4	0.4	2.2	10.4	26.8	0.2	24.4	2.1	8.0	13.1	5.1
Cycle Q Clear(g_c), s	3.8	4.4	0.4	2.2	10.4	26.8	0.2	24.4	2.1	8.0	13.1	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	1840	556	174	1268	550	68	1233	534	299	2113	641
V/C Ratio(X)	0.77	0.19	0.02	0.48	0.42	0.89	0.13	0.83	0.10	1.03	0.47	0.21
Avail Cap(c_a), veh/h	187	1879	568	187	1308	568	187	1308	568	299	2113	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	20.1	19.5	42.5	22.3	28.3	44.3	27.5	20.9	42.0	19.5	17.8
Incr Delay (d2), s/veh	17.6	0.1	0.0	2.0	0.2	15.4	0.9	4.5	0.1	60.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.1	0.2	1.1	5.1	14.0	0.1	12.7	0.9	6.3	6.1	2.3
LnGrp Delay(d),s/veh	60.5	20.2	19.5	44.5	22.5	43.8	45.2	32.0	21.0	102.7	19.7	18.0
LnGrp LOS	E	C	B	D	C	D	D	C	C	F	B	B
Approach Vol, veh/h	508		1100				1086			1439		
Approach Delay, s/veh	31.6		33.6				31.6			37.4		
Approach LOS	C		C				C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	35.1	8.7	36.3	5.8	41.2	9.0	36.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	32.0	4.0	32.0	4.0	35.0	4.0	32.0				
Max Q Clear Time (g_c+I1), s	10.0	26.4	4.2	6.4	2.2	15.1	5.8	28.8				
Green Ext Time (p_c), s	0.0	3.6	0.0	9.0	0.0	14.6	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			34.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
21: Sierra Trail Dr & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	670	8	93	1043	37	4	0	34	16	0	0
Future Volume (veh/h)	0	670	8	93	1043	37	4	0	34	16	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	705	8	98	1098	39	4	0	36	17	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	1595	713	124	2218	992	189	0	58	31	5	0
Arrive On Green	0.00	0.45	0.45	0.07	0.63	0.63	0.11	0.00	0.04	0.02	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	0	1583	1774	1863	0
Grp Volume(v), veh/h	0	705	8	98	1098	39	4	0	36	17	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	0
Q Serve(g_s), s	0.0	5.1	0.1	2.0	6.3	0.4	0.1	0.0	0.8	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.1	0.1	2.0	6.3	0.4	0.1	0.0	0.8	0.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	5	1595	713	124	2218	992	189	0	58	31	5	0
V/C Ratio(X)	0.00	0.44	0.01	0.79	0.49	0.04	0.02	0.00	0.63	0.55	0.00	0.00
Avail Cap(c_a), veh/h	189	2073	928	331	2356	1054	189	0	1307	189	1538	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.1	5.7	17.2	3.8	2.7	15.0	0.0	17.8	18.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	10.7	0.2	0.0	0.2	0.0	10.6	14.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	1.3	3.0	0.2	0.0	0.0	0.5	0.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.3	5.7	27.9	4.0	2.7	15.2	0.0	28.5	33.0	0.0	0.0
LnGrp LOS		A	A	C	A	A	B		C	C		
Approach Vol, veh/h		713			1235			40			17	
Approach Delay, s/veh		7.3			5.8			27.1			32.9	
Approach LOS		A			A			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.7	5.4	6.6	20.9	8.0	2.0	0.0	27.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	7.0	22.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s	2.4	2.8	4.0	7.1	2.1	0.0	0.0	8.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	9.8	0.0	0.0	0.0	10.6				
Intersection Summary												
HCM 2010 Ctrl Delay			7.0									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

22: Market St & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	651	14	244	1255	82	13	147	189	11	233	117
Future Volume (veh/h)	52	651	14	244	1255	82	13	147	189	11	233	117
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	685	15	257	1321	86	14	155	199	12	245	123
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1131	506	327	1492	667	94	411	350	85	366	311
Arrive On Green	0.08	0.32	0.32	0.18	0.42	0.42	0.05	0.22	0.22	0.05	0.20	0.20
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	55	685	15	257	1321	86	14	155	199	12	245	123
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.9	10.8	0.4	9.1	22.7	2.2	0.5	4.7	7.4	0.4	8.0	4.5
Cycle Q Clear(g_c), s	1.9	10.8	0.4	9.1	22.7	2.2	0.5	4.7	7.4	0.4	8.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	1131	506	327	1492	667	94	411	350	85	366	311
V/C Ratio(X)	0.38	0.61	0.03	0.79	0.89	0.13	0.15	0.38	0.57	0.14	0.67	0.40
Avail Cap(c_a), veh/h	215	1131	506	430	1517	679	564	781	664	564	781	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	19.0	15.4	25.7	17.6	11.7	29.9	21.9	22.9	30.1	24.6	23.1
Incr Delay (d2), s/veh	0.6	1.2	0.0	5.0	6.9	0.1	0.3	0.2	0.5	0.3	0.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	0.2	4.9	12.4	1.0	0.3	2.4	3.3	0.2	4.2	2.0
LnGrp Delay(d),s/veh	29.3	20.2	15.5	30.7	24.5	11.8	30.1	22.1	23.5	30.4	25.4	23.4
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h	755				1664		368				380	
Approach Delay, s/veh	20.7				24.8		23.1				24.9	
Approach LOS	C				C		C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	18.9	15.2	25.8	7.8	17.3	8.4	32.5				
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	5.3	* 5.3	4.0	5.7				
Max Green Setting (Gmax), s	20.0	26.7	15.0	19.3	20.0	* 27	7.0	27.3				
Max Q Clear Time (g_c+I1), s	2.4	9.4	11.1	12.8	2.5	10.0	3.9	24.7				
Green Ext Time (p_c), s	0.0	2.0	0.2	6.2	0.0	1.9	0.0	2.1				

Intersection Summary

HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

23: Monument Dr & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	927	13	96	1435	67	20	18	16	33	31	30
Future Volume (veh/h)	16	927	13	96	1435	67	20	18	16	33	31	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	976	14	101	1511	71	21	19	17	35	33	32
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	1893	821	130	2094	937	72	75	64	123	99	109
Arrive On Green	0.03	0.53	0.52	0.07	0.59	0.59	0.04	0.04	0.04	0.07	0.05	0.07
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	17	976	14	101	1511	71	21	19	17	35	33	32
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.6	11.0	0.3	3.5	18.8	1.2	0.7	0.6	0.6	1.2	1.1	1.2
Cycle Q Clear(g_c), s	0.6	11.0	0.3	3.5	18.8	1.2	0.7	0.6	0.6	1.2	1.1	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	1893	821	130	2094	937	72	75	64	123	99	109
V/C Ratio(X)	0.29	0.52	0.02	0.78	0.72	0.08	0.29	0.25	0.27	0.29	0.33	0.29
Avail Cap(c_a), veh/h	143	1902	825	229	2131	953	578	607	516	601	601	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	9.2	7.2	28.2	9.0	5.4	28.9	28.8	28.8	27.4	28.3	27.4
Incr Delay (d2), s/veh	1.0	0.4	0.0	3.8	1.4	0.1	0.8	0.6	0.8	0.5	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.4	0.1	1.8	9.4	0.5	0.4	0.3	0.3	0.6	0.6	0.5
LnGrp Delay(d),s/veh	30.3	9.6	7.3	32.0	10.4	5.5	29.7	29.5	29.7	27.9	29.0	27.9
LnGrp LOS	C	A	A	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h	1007				1683				57			
Approach Delay, s/veh	10.0				11.5				29.6			
Approach LOS	A				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	7.4		8.5	37.8	8.2		5.0	41.4				
Change Period (Y+Rc), s	4.9		4.0	5.7	4.9		4.0	5.7				
Max Green Setting (Gmax), s	20.2		8.0	32.3	20.0		4.0	36.3				
Max Q Clear Time (g_c+I1), s	2.7		5.5	13.0	3.2		2.6	20.8				
Green Ext Time (p_c), s	0.1		0.0	18.4	0.1		0.0	14.8				
Intersection Summary												
HCM 2010 Ctrl Delay	11.9											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
24: Upland Dr & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↵	↑↑	↵	↑		
Traffic Volume (veh/h)	840	89	153	1477	112	142		
Future Volume (veh/h)	840	89	153	1477	112	142		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	884	94	161	1555	118	149		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1664	744	209	2406	242	216		
Arrive On Green	0.47	0.47	0.12	0.68	0.14	0.14		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	884	94	161	1555	118	149		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	9.6	1.8	4.8	13.7	3.4	4.9		
Cycle Q Clear(g_c), s	9.6	1.8	4.8	13.7	3.4	4.9		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1664	744	209	2406	242	216		
V/C Ratio(X)	0.53	0.13	0.77	0.65	0.49	0.69		
Avail Cap(c_a), veh/h	1664	744	488	2858	521	465		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.2	8.1	23.3	5.0	21.8	22.4		
Incr Delay (d2), s/veh	0.3	0.1	5.9	0.4	1.5	3.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.7	0.8	2.7	6.6	1.7	2.3		
LnGrp Delay(d),s/veh	10.5	8.2	29.2	5.4	23.3	26.3		
LnGrp LOS	B	A	C	A	C	C		
Approach Vol, veh/h	978			1716	267			
Approach Delay, s/veh	10.3			7.6	25.0			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		12.4	11.4	30.6				42.0
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		16.0	15.0	24.0				44.0
Max Q Clear Time (g_c+I1), s		6.9	6.8	11.6				15.7
Green Ext Time (p_c), s		0.6	0.2	10.9				21.4
Intersection Summary								
HCM 2010 Ctrl Delay			10.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

25: Fiddymment Rd & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	631	415	1038	945	58	658	1136	491	62	913	53
Future Volume (veh/h)	106	631	415	1038	945	58	658	1136	491	62	913	53
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	112	664	437	1093	995	61	693	1196	517	65	961	56
Adj No. of Lanes	2	2	1	3	2	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	705	315	1047	1079	66	766	2149	669	233	1361	424
Arrive On Green	0.09	0.20	0.20	0.21	0.32	0.32	0.22	0.42	0.42	0.07	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	5003	3388	208	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	112	664	437	1093	520	536	693	1196	517	65	961	56
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1668	1770	1826	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	3.7	22.1	23.8	25.0	33.8	33.9	23.4	21.2	33.4	2.1	20.4	3.2
Cycle Q Clear(g_c), s	3.7	22.1	23.8	25.0	33.8	33.9	23.4	21.2	33.4	2.1	20.4	3.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	705	315	1047	564	582	766	2149	669	233	1361	424
V/C Ratio(X)	0.36	0.94	1.39	1.04	0.92	0.92	0.91	0.56	0.77	0.28	0.71	0.13
Avail Cap(c_a), veh/h	317	705	315	1047	564	582	778	2149	669	259	1379	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	47.1	47.8	47.2	39.3	39.3	45.2	26.0	29.6	52.9	39.5	33.2
Incr Delay (d2), s/veh	0.3	21.1	191.9	40.0	21.1	20.6	13.6	0.5	6.3	0.2	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	12.9	27.2	15.3	19.8	20.3	12.6	10.0	15.7	1.0	9.8	1.4
LnGrp Delay(d),s/veh	51.4	68.3	239.7	87.2	60.4	59.9	58.8	26.5	35.9	53.2	41.5	33.5
LnGrp LOS	D	E	F	F	E	E	E	C	D	D	D	C
Approach Vol, veh/h	1213				2149				2406			
Approach Delay, s/veh	128.5				73.9				37.9			
Approach LOS	F				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	53.1	28.0	27.3	29.6	34.6	13.8	41.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	8.0	47.0	24.0	* 21	26.0	29.0	10.0	35.0				
Max Q Clear Time (g_c+I1), s	4.1	35.4	27.0	25.8	25.4	22.4	5.7	35.9				
Green Ext Time (p_c), s	0.0	10.8	0.0	0.0	0.2	6.2	0.1	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 65.8
HCM 2010 LOS E

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
26: Pleasant Grove Blvd & Sun City Blvd

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	14	1163	1781	284	118	8		
Future Volume (veh/h)	14	1163	1781	284	118	8		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	15	1224	1875	0	124	0		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	78	2741	2427	1038	254	215		
Arrive On Green	0.04	0.77	0.69	0.00	0.14	0.00		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	15	1224	1875	0	124	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.5	8.0	23.7	0.0	4.3	0.0		
Cycle Q Clear(g_c), s	0.5	8.0	23.7	0.0	4.3	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	78	2741	2427	1038	254	215		
V/C Ratio(X)	0.19	0.45	0.77	0.00	0.49	0.00		
Avail Cap(c_a), veh/h	238	3013	2427	1038	729	638		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	30.9	2.6	7.0	0.0	26.4	0.0		
Incr Delay (d2), s/veh	0.4	0.2	1.8	0.0	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	3.8	11.8	0.0	2.1	0.0		
LnGrp Delay(d),s/veh	31.3	2.8	8.8	0.0	27.0	0.0		
LnGrp LOS	C	A	A		C			
Approach Vol, veh/h		1239	1875		124			
Approach Delay, s/veh		3.1	8.8		27.0			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				54.9		12.1	5.9	48.9
Change Period (Y+Rc), s				6.0		4.0	4.0	* 6
Max Green Setting (Gmax), s				54.0		26.0	8.0	* 42
Max Q Clear Time (g_c+I1), s				10.0		6.3	2.5	25.7
Green Ext Time (p_c), s				38.9		0.2	0.0	15.9
Intersection Summary								
HCM 2010 Ctrl Delay			7.3					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

27: Pleasant Grove Blvd & Rose Creek Rd

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	16	1223	2093	30	49	7		
Future Volume (veh/h)	16	1223	2093	30	49	7		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900		
Adj Flow Rate, veh/h	17	1287	2203	32	52	7		
Adj No. of Lanes	1	2	2	0	0	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	0	0		
Cap, veh/h	74	2888	2617	38	153	21		
Arrive On Green	0.04	0.82	0.73	0.71	0.10	0.10		
Sat Flow, veh/h	1774	3632	3665	52	1517	204		
Grp Volume(v), veh/h	17	1287	1089	1146	60	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1854	1751	0		
Q Serve(g_s), s	0.7	7.6	30.9	31.3	2.3	0.0		
Cycle Q Clear(g_c), s	0.7	7.6	30.9	31.3	2.3	0.0		
Prop In Lane	1.00			0.03	0.87	0.12		
Lane Grp Cap(c), veh/h	74	2888	1296	1358	177	0		
V/C Ratio(X)	0.23	0.45	0.84	0.84	0.34	0.00		
Avail Cap(c_a), veh/h	196	3085	1296	1358	509	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	33.5	1.9	6.7	6.8	30.2	0.0		
Incr Delay (d2), s/veh	0.6	0.2	5.4	5.4	0.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	3.6	16.5	17.6	1.1	0.0		
LnGrp Delay(d),s/veh	34.1	2.1	12.1	12.1	30.7	0.0		
LnGrp LOS	C	A	B	B	C			
Approach Vol, veh/h		1304	2235		60			
Approach Delay, s/veh		2.5	12.1		30.7			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				62.0		10.3	6.0	56.0
Change Period (Y+Rc), s				5.7		4.0	4.0	5.7
Max Green Setting (Gmax), s				60.3		20.0	7.0	49.3
Max Q Clear Time (g_c+I1), s				9.6		4.3	2.7	33.3
Green Ext Time (p_c), s				46.7		0.1	0.0	15.7
Intersection Summary								
HCM 2010 Ctrl Delay			9.0					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
28: Pleasant Grove Blvd & Michener Dr

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	51	1313	2131	1	34	37		
Future Volume (veh/h)	51	1313	2131	1	34	37		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	54	1382	2243	1	36	39		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	125	2901	2527	1091	175	157		
Arrive On Green	0.07	0.82	0.71	0.69	0.10	0.10		
Sat Flow, veh/h	1774	3632	3632	1572	1774	1583		
Grp Volume(v), veh/h	54	1382	2243	1	36	39		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1572	1774	1583		
Q Serve(g_s), s	2.5	9.9	42.5	0.0	1.6	2.0		
Cycle Q Clear(g_c), s	2.5	9.9	42.5	0.0	1.6	2.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	125	2901	2527	1091	175	157		
V/C Ratio(X)	0.43	0.48	0.89	0.00	0.21	0.25		
Avail Cap(c_a), veh/h	165	2965	2527	1091	434	387		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	38.3	2.3	9.6	4.0	35.6	35.8		
Incr Delay (d2), s/veh	0.9	0.2	4.4	0.0	0.2	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	4.7	21.8	0.0	0.8	1.8		
LnGrp Delay(d),s/veh	39.1	2.5	14.0	4.0	35.8	36.1		
LnGrp LOS	D	A	B	A	D	D		
Approach Vol, veh/h		1436	2244		75			
Approach Delay, s/veh		3.9	14.0		36.0			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				74.4		11.5	9.1	65.4
Change Period (Y+Rc), s				6.7		4.0	4.0	6.7
Max Green Setting (Gmax), s				69.3		20.0	7.0	58.3
Max Q Clear Time (g_c+l1), s				11.9		4.0	4.5	44.5
Green Ext Time (p_c), s				55.8		0.1	0.0	13.7
Intersection Summary								
HCM 2010 Ctrl Delay			10.6					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
29: Woodcreek Oaks Blvd & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	1037	150	738	1684	307	275	659	601	368	628	241
Future Volume (veh/h)	65	1037	150	738	1684	307	275	659	601	368	628	241
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	68	1092	0	777	1773	0	289	694	0	387	661	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	1232	360	1640	3525	1074	336	751	312	413	876	368
Arrive On Green	0.04	0.27	0.00	0.53	0.77	0.00	0.11	0.24	0.00	0.13	0.28	0.00
Sat Flow, veh/h	3097	4577	1425	3097	4577	1425	3097	3185	1425	3097	3185	1425
Grp Volume(v), veh/h	68	1092	0	777	1773	0	289	694	0	387	661	0
Grp Sat Flow(s),veh/h/ln	1549	1526	1425	1549	1526	1425	1549	1593	1425	1549	1593	1425
Q Serve(g_s), s	2.6	27.5	0.0	18.9	17.4	0.0	11.0	25.5	0.0	14.8	22.8	0.0
Cycle Q Clear(g_c), s	2.6	27.5	0.0	18.9	17.4	0.0	11.0	25.5	0.0	14.8	22.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	132	1232	360	1640	3525	1074	336	751	312	413	876	368
V/C Ratio(X)	0.52	0.89	0.00	0.47	0.50	0.00	0.86	0.92	0.00	0.94	0.75	0.00
Avail Cap(c_a), veh/h	181	1232	360	1640	3525	1074	336	751	312	413	876	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.2	42.1	0.0	17.7	5.2	0.0	52.6	44.8	0.0	51.5	39.8	0.0
Incr Delay (d2), s/veh	1.2	9.6	0.0	0.1	0.2	0.0	19.0	17.4	0.0	28.6	4.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	12.6	0.0	8.1	7.3	0.0	5.6	13.0	0.0	8.0	10.5	0.0
LnGrp Delay(d),s/veh	57.4	51.7	0.0	17.8	5.4	0.0	71.6	62.2	0.0	80.1	44.0	0.0
LnGrp LOS	E	D		B	A		E	E		F	D	
Approach Vol, veh/h	1160				2550				983			
Approach Delay, s/veh	52.0				9.2				65.0			
Approach LOS	D				A				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	31.0	68.8	35.0	16.0	35.7	8.1	95.7				
Change Period (Y+Rc), s	5.7	* 5.7	5.7	* 5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	15.0	* 25	31.0	* 29	12.0	28.3	6.0	54.3				
Max Q Clear Time (g_c+I1), s	16.8	27.5	20.9	29.5	13.0	24.8	4.6	19.4				
Green Ext Time (p_c), s	0.0	0.0	7.3	0.0	0.0	2.1	0.0	26.2				

Intersection Summary

HCM 2010 Ctrl Delay	36.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
30: Country Club Dr & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↱		↱	↑↑↑	↱	↱		
Traffic Volume (veh/h)	1793	216	161	2954	6	180		
Future Volume (veh/h)	1793	216	161	2954	6	180		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1887	227	169	3109	6	189		
Adj No. of Lanes	3	0	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2646	316	197	3657	257	230		
Arrive On Green	0.58	0.56	0.11	0.72	0.14	0.14		
Sat Flow, veh/h	4769	549	1774	5253	1774	1583		
Grp Volume(v), veh/h	1386	728	169	3109	6	189		
Grp Sat Flow(s),veh/h/ln	1695	1760	1774	1695	1774	1583		
Q Serve(g_s), s	35.3	36.2	11.2	53.0	0.3	13.9		
Cycle Q Clear(g_c), s	35.3	36.2	11.2	53.0	0.3	13.9		
Prop In Lane		0.31	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1949	1012	197	3657	257	230		
V/C Ratio(X)	0.71	0.72	0.86	0.85	0.02	0.82		
Avail Cap(c_a), veh/h	1949	1012	296	3657	404	360		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	18.3	18.7	52.4	12.2	44.0	49.8		
Incr Delay (d2), s/veh	2.2	4.4	10.2	2.7	0.0	4.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	17.0	18.7	6.1	25.4	0.2	6.3		
LnGrp Delay(d),s/veh	20.6	23.1	62.7	14.9	44.0	54.2		
LnGrp LOS	C	C	E	B	D	D		
Approach Vol, veh/h	2114			3278	195			
Approach Delay, s/veh	21.5			17.3	53.8			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.1	17.3	72.7				90.0
Change Period (Y+Rc), s		4.0	4.0	5.7				5.7
Max Green Setting (Gmax), s		26.0	20.0	60.3				84.3
Max Q Clear Time (g_c+I1), s		15.9	13.2	38.2				55.0
Green Ext Time (p_c), s		0.2	0.1	22.1				29.2
Intersection Summary								
HCM 2010 Ctrl Delay			20.2					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

31: Foothills Blvd & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	391	1477	98	862	1966	91	278	649	523	140	1456	714
Future Volume (veh/h)	391	1477	98	862	1966	91	278	649	523	140	1456	714
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	412	1555	0	907	2069	0	293	683	0	147	1533	0
Adj No. of Lanes	2	3	1	3	3	1	2	3	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	1793	558	792	2047	637	258	1253	390	202	1367	338
Arrive On Green	0.11	0.35	0.00	0.21	0.54	0.00	0.08	0.25	0.00	0.06	0.21	0.00
Sat Flow, veh/h	3442	5085	1583	5003	5085	1583	3442	5085	1583	3442	6408	1583
Grp Volume(v), veh/h	412	1555	0	907	2069	0	293	683	0	147	1533	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1668	1695	1583	1721	1695	1583	1721	1602	1583
Q Serve(g_s), s	13.3	34.2	0.0	19.0	48.3	0.0	9.0	14.0	0.0	5.0	25.6	0.0
Cycle Q Clear(g_c), s	13.3	34.2	0.0	19.0	48.3	0.0	9.0	14.0	0.0	5.0	25.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1793	558	792	2047	637	258	1253	390	202	1367	338
V/C Ratio(X)	1.08	0.87	0.00	1.15	1.01	0.00	1.14	0.55	0.00	0.73	1.12	0.00
Avail Cap(c_a), veh/h	381	1793	558	792	2047	637	258	1253	390	258	1367	338
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.3	36.2	0.0	47.4	27.9	0.0	55.5	39.4	0.0	55.5	47.2	0.0
Incr Delay (d2), s/veh	69.2	5.0	0.0	79.9	22.6	0.0	97.4	0.7	0.0	4.8	64.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	16.8	0.0	14.6	26.5	0.0	7.8	6.7	0.0	2.5	17.5	0.0
LnGrp Delay(d),s/veh	122.5	41.3	0.0	127.3	50.5	0.0	152.9	40.0	0.0	60.4	112.1	0.0
LnGrp LOS	F	D		F	F		F	D		E	F	
Approach Vol, veh/h	1967				2976				976			
Approach Delay, s/veh	58.3				73.9				73.9			
Approach LOS	E				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	36.0	25.0	48.0	15.0	32.0	19.0	54.0				
Change Period (Y+Rc), s	4.0	* 6.4	6.0	5.7	6.0	6.4	5.7	5.7				
Max Green Setting (Gmax), s	9.0	* 28	19.0	42.3	9.0	25.6	13.3	48.3				
Max Q Clear Time (g_c+I1), s	7.0	16.0	21.0	36.2	11.0	27.6	15.3	50.3				
Green Ext Time (p_c), s	0.0	10.4	0.0	5.3	0.0	0.0	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 77.3
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

32: Washington Blvd & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	1739	124	532	2129	76	291	613	292	210	1196	325
Future Volume (veh/h)	189	1739	124	532	2129	76	291	613	292	210	1196	325
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	199	1831	131	560	2241	0	306	645	0	221	1259	342
Adj No. of Lanes	2	3	1	2	4	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	1949	607	556	2971	702	315	1044	435	287	1339	417
Arrive On Green	0.08	0.38	0.38	0.16	0.46	0.00	0.09	0.30	0.00	0.08	0.26	0.26
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	199	1831	131	560	2241	0	306	645	0	221	1259	342
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	6.8	41.6	6.7	19.4	34.6	0.0	10.6	18.9	0.0	7.5	29.1	18.9
Cycle Q Clear(g_c), s	6.8	41.6	6.7	19.4	34.6	0.0	10.6	18.9	0.0	7.5	29.1	18.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	1949	607	556	2971	702	315	1044	435	287	1339	417
V/C Ratio(X)	0.71	0.94	0.22	1.01	0.75	0.00	0.97	0.62	0.00	0.77	0.94	0.82
Avail Cap(c_a), veh/h	287	1949	607	556	2971	702	315	1044	435	287	1339	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.53	0.53	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	35.7	24.9	50.3	26.5	0.0	54.3	36.5	0.0	53.9	43.3	25.0
Incr Delay (d2), s/veh	6.6	10.4	0.8	29.3	1.0	0.0	42.2	1.4	0.0	11.0	13.1	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	21.4	3.0	11.5	15.5	0.0	6.9	9.4	0.0	4.0	15.3	9.7
LnGrp Delay(d),s/veh	60.3	46.0	25.7	79.7	27.5	0.0	96.5	37.8	0.0	64.9	56.4	38.0
LnGrp LOS	E	D	C	F	C		F	D		E	E	D
Approach Vol, veh/h	2161				2801				951			
Approach Delay, s/veh	46.1				37.9				56.7			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	38.4	22.0	49.0	16.4	35.0	12.8	58.2				
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0				
Max Green Setting (Gmax), s	9.0	29.6	16.0	43.0	10.0	* 29	9.0	52.0				
Max Q Clear Time (g_c+I1), s	9.5	20.9	21.4	43.6	12.6	31.1	8.8	36.6				
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	0.0	0.0	13.5				

Intersection Summary

HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

33: Pleasant Grove Blvd & Hallissy Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	2170	31	94	2377	97	356	59	25	107	11	12
Future Volume (veh/h)	7	2170	31	94	2377	97	356	59	25	107	11	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	2284	0	99	2502	0	375	62	0	113	12	0
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	2485	774	258	3257	1014	390	288	245	135	20	17
Arrive On Green	0.01	0.49	0.00	0.15	0.64	0.00	0.22	0.15	0.00	0.08	0.01	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	7	2284	0	99	2502	0	375	62	0	113	12	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.6	62.5	0.0	7.6	52.2	0.0	31.4	4.4	0.0	9.4	1.0	0.0
Cycle Q Clear(g_c), s	0.6	62.5	0.0	7.6	52.2	0.0	31.4	4.4	0.0	9.4	1.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	9	2485	774	258	3257	1014	390	288	245	135	20	17
V/C Ratio(X)	0.78	0.92	0.00	0.38	0.77	0.00	0.96	0.22	0.00	0.84	0.61	0.00
Avail Cap(c_a), veh/h	35	2485	774	258	3257	1014	390	397	338	201	188	159
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.45	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	74.5	35.6	0.0	58.0	19.1	0.0	57.9	55.4	0.0	68.4	73.9	0.0
Incr Delay (d2), s/veh	21.2	3.4	0.0	0.3	1.3	0.0	35.1	0.3	0.0	11.7	28.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	30.0	0.0	3.7	24.7	0.0	19.2	2.3	0.0	5.1	0.7	0.0
LnGrp Delay(d),s/veh	95.8	39.0	0.0	58.3	20.4	0.0	93.0	55.7	0.0	80.1	102.3	0.0
LnGrp LOS	F	D		E	C		F	E		F	F	
Approach Vol, veh/h	2291				2601				437			
Approach Delay, s/veh	39.2				21.8				87.7			
Approach LOS	D				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	28.1	27.5	79.0	37.0	6.5	4.8	101.8				
Change Period (Y+Rc), s	4.0	* 4.9	5.7	* 5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	17.0	* 32	10.0	* 73	33.0	15.1	3.0	80.3				
Max Q Clear Time (g_c+I1), s	11.4	6.4	9.6	64.5	33.4	3.0	2.6	54.2				
Green Ext Time (p_c), s	0.1	0.3	0.0	8.4	0.0	0.2	0.0	24.4				

Intersection Summary

HCM 2010 Ctrl Delay 35.8
HCM 2010 LOS D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

34: Roseville Pkwy & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1331	791	928	1759	305	958	1330	1160	282	1155	24
Future Volume (veh/h)	63	1331	791	928	1759	305	958	1330	1160	282	1155	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	66	1401	0	977	1852	0	1008	1400	0	297	1216	0
Adj No. of Lanes	3	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	934	1274	549	252	1197	351	918	2014	602	351	1268	369
Arrive On Green	0.19	0.36	0.00	0.07	0.24	0.00	0.09	0.13	0.00	0.10	0.25	0.00
Sat Flow, veh/h	5003	3539	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	66	1401	0	977	1852	0	1008	1400	0	297	1216	0
Grp Sat Flow(s),veh/h/ln	1668	1770	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	1.6	54.0	0.0	11.0	35.3	0.0	40.0	39.5	0.0	12.7	35.4	0.0
Cycle Q Clear(g_c), s	1.6	54.0	0.0	11.0	35.3	0.0	40.0	39.5	0.0	12.7	35.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	934	1274	549	252	1197	351	918	2014	602	351	1268	369
V/C Ratio(X)	0.07	1.10	0.00	3.87	1.55	0.00	1.10	0.70	0.00	0.85	0.96	0.00
Avail Cap(c_a), veh/h	1001	1274	549	252	1197	351	918	2014	602	351	1268	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.19	0.19	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.3	48.0	0.0	69.5	57.3	0.0	68.4	56.5	0.0	66.2	55.5	0.0
Incr Delay (d2), s/veh	0.0	57.1	0.0	1293.8	247.2	0.0	60.3	1.2	0.0	17.7	16.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	36.5	0.0	50.6	43.9	0.0	26.8	18.8	0.0	6.9	18.5	0.0
LnGrp Delay(d),s/veh	50.3	105.1	0.0	1363.3	304.5	0.0	128.7	57.7	0.0	83.9	72.1	0.0
LnGrp LOS	D	F		F	F		F	E		F	E	
Approach Vol, veh/h	1467				2829				2408			
Approach Delay, s/veh	102.6				670.2				87.4			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	64.0	14.0	57.0	42.0	42.0	33.0	38.0				
Change Period (Y+Rc), s	5.7	8.0	4.0	6.0	3.0	* 8	6.0	* 5.7				
Max Green Setting (Gmax), s	14.3	51.0	10.0	51.0	39.0	* 34	29.0	* 32				
Max Q Clear Time (g_c+I1), s	14.7	41.5	13.0	56.0	42.0	37.4	3.6	37.3				
Green Ext Time (p_c), s	0.0	9.0	0.0	0.0	0.0	0.0	15.2	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 288.4
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
35: Pleasant Grove Blvd & Highland Pointe Dr/Wal-Mart

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	602	6	482	268	25	270	388	2354	38	176	2172	301
Future Volume (veh/h)	602	6	482	268	25	270	388	2354	38	176	2172	301
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	634	6	507	282	26	284	408	2478	40	185	2286	317
Adj No. of Lanes	2	1	1	2	1	1	2	4	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	660	373	317	516	279	237	402	2858	46	439	2318	722
Arrive On Green	0.19	0.20	0.20	0.15	0.15	0.15	0.12	0.44	0.44	0.13	0.46	0.46
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	6544	106	3442	5085	1583
Grp Volume(v), veh/h	634	6	507	282	26	284	408	1819	699	185	2286	317
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1602	1844	1721	1695	1583
Q Serve(g_s), s	21.9	0.3	24.0	9.1	1.4	18.0	14.0	41.2	41.2	5.9	53.3	16.3
Cycle Q Clear(g_c), s	21.9	0.3	24.0	9.1	1.4	18.0	14.0	41.2	41.2	5.9	53.3	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	660	373	317	516	279	237	402	2099	805	439	2318	722
V/C Ratio(X)	0.96	0.02	1.60	0.55	0.09	1.20	1.02	0.87	0.87	0.42	0.99	0.44
Avail Cap(c_a), veh/h	660	373	317	516	279	237	402	2099	805	439	2318	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.24	0.24	0.24	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	38.5	48.0	47.2	44.0	51.0	53.0	30.6	30.7	48.3	32.3	22.2
Incr Delay (d2), s/veh	25.7	0.0	284.9	1.2	0.1	121.6	25.9	1.3	3.3	0.6	15.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	0.2	35.5	4.4	0.8	15.9	8.1	18.4	21.7	2.9	28.1	7.2
LnGrp Delay(d),s/veh	73.7	38.5	332.9	48.4	44.1	172.6	79.0	31.9	33.9	48.9	47.8	22.6
LnGrp LOS	E	D	F	D	D	F	F	C	C	D	D	C
Approach Vol, veh/h	1147				592				2926			
Approach Delay, s/veh	188.1				107.8				39.0			
Approach LOS	F				F				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.3	55.0		26.0	17.0	57.3		21.0				
Change Period (Y+Rc), s	6.0	* 6		4.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	13.0	* 49		22.0	13.0	50.0		16.0				
Max Q Clear Time (g_c+I1), s	7.9	43.2		26.0	16.0	55.3		20.0				
Green Ext Time (p_c), s	4.1	5.2		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 2010 Ctrl Delay 69.6
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
36: Pleasant Grove Blvd & Hwy-65 SB Ramps

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑				↑↑		↑↑
Traffic Volume (veh/h)	0	2685	891	0	2284	581	0	0	0	87	0	487
Future Volume (veh/h)	0	2685	891	0	2284	581	0	0	0	87	0	487
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1909	1909	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	2826	938	0	2404	0				92	0	513
Adj No. of Lanes	0	3	1	0	3	1				2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	3698	1138	0	3608	1123				742	0	601
Arrive On Green	0.00	0.71	0.70	0.00	1.00	0.00				0.22	0.00	0.22
Sat Flow, veh/h	0	5384	1623	0	5253	1583				3442	0	2787
Grp Volume(v), veh/h	0	2826	938	0	2404	0				92	0	513
Grp Sat Flow(s),veh/h/ln	0	1737	1623	0	1695	1583				1721	0	1393
Q Serve(g_s), s	0.0	41.3	49.1	0.0	0.0	0.0				2.6	0.0	21.2
Cycle Q Clear(g_c), s	0.0	41.3	49.1	0.0	0.0	0.0				2.6	0.0	21.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3698	1138	0	3608	1123				742	0	601
V/C Ratio(X)	0.00	0.76	0.82	0.00	0.67	0.00				0.12	0.00	0.85
Avail Cap(c_a), veh/h	0	3698	1138	0	3608	1123				1024	0	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.68	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.1	12.7	0.0	0.0	0.0				37.9	0.0	45.3
Incr Delay (d2), s/veh	0.0	1.6	6.8	0.0	0.4	0.0				0.0	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.2	23.8	0.0	0.1	0.0				1.2	0.0	8.6
LnGrp Delay(d),s/veh	0.0	12.6	19.5	0.0	0.4	0.0				38.0	0.0	50.1
LnGrp LOS		B	B		A					D		D
Approach Vol, veh/h		3764			2404						605	
Approach Delay, s/veh		14.3			0.4						48.3	
Approach LOS		B			A						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		89.8		30.2		89.8						
Change Period (Y+Rc), s		5.7		5.3		5.7						
Max Green Setting (Gmax), s		74.3		34.7		74.3						
Max Q Clear Time (g_c+I1), s		51.1		23.2		2.0						
Green Ext Time (p_c), s		23.1		1.6		71.8						
Intersection Summary												
HCM 2010 Ctrl Delay			12.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
37: Hwy-65 NB Ramps & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗		↑↑↑	↖↖↖	↗↗		
Traffic Volume (veh/h)	1940	563	0	2100	789	617		
Future Volume (veh/h)	1940	563	0	2100	789	617		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1909	1909	0	1863	1863	1863		
Adj Flow Rate, veh/h	2042	0	0	2211	831	649		
Adj No. of Lanes	3	1	0	3	3	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	0	2	2	2		
Cap, veh/h	3705	1154	0	3615	988	550		
Arrive On Green	1.00	0.00	0.00	0.71	0.20	0.20		
Sat Flow, veh/h	5384	1623	0	5421	5003	2787		
Grp Volume(v), veh/h	2042	0	0	2211	831	649		
Grp Sat Flow(s),veh/h/ln	1737	1623	0	1695	1668	1393		
Q Serve(g_s), s	0.0	0.0	0.0	26.7	19.2	23.7		
Cycle Q Clear(g_c), s	0.0	0.0	0.0	26.7	19.2	23.7		
Prop In Lane		1.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3705	1154	0	3615	988	550		
V/C Ratio(X)	0.55	0.00	0.00	0.61	0.84	1.18		
Avail Cap(c_a), veh/h	3705	1154	0	3615	988	550		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.58	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	0.0	0.0	8.9	46.3	48.2		
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.8	6.3	98.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	12.5	9.4	16.6		
LnGrp Delay(d),s/veh	0.1	0.0	0.0	9.7	52.6	146.5		
LnGrp LOS	A			A	D	F		
Approach Vol, veh/h	2042			2211	1480			
Approach Delay, s/veh	0.1			9.7	93.8			
Approach LOS	A			A	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		90.0				90.0		30.0
Change Period (Y+Rc), s		5.7				5.7		7.3
Max Green Setting (Gmax), s		84.3				84.3		22.7
Max Q Clear Time (g_c+I1), s		2.0				28.7		25.7
Green Ext Time (p_c), s		77.1				53.2		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			28.0					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

38: Pleasant Grove Blvd & Fairway Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	531	514	666	490	203	590	1325	571	127	989	169
Future Volume (veh/h)	291	531	514	666	490	203	590	1325	571	127	989	169
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1909	1909	1909	1863	1863	1863
Adj Flow Rate, veh/h	306	559	541	701	516	214	621	1395	601	134	1041	178
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	364	647	290	717	1010	452	656	1987	957	188	1199	373
Arrive On Green	0.11	0.18	0.18	0.21	0.29	0.29	0.19	0.38	0.38	0.05	0.24	0.24
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3528	5212	1623	3442	5085	1583
Grp Volume(v), veh/h	306	559	541	701	516	214	621	1395	601	134	1041	178
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1764	1737	1623	1721	1695	1583
Q Serve(g_s), s	10.5	18.4	14.1	24.3	14.6	13.4	20.9	27.1	29.0	4.6	23.6	8.6
Cycle Q Clear(g_c), s	10.5	18.4	14.1	24.3	14.6	13.4	20.9	27.1	29.0	4.6	23.6	8.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	647	290	717	1010	452	656	1987	957	188	1199	373
V/C Ratio(X)	0.84	0.86	1.87	0.98	0.51	0.47	0.95	0.70	0.63	0.71	0.87	0.48
Avail Cap(c_a), veh/h	459	687	307	717	1010	452	656	1987	957	258	1199	373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	47.6	20.2	47.2	35.9	35.4	48.3	31.4	16.1	55.8	44.1	21.7
Incr Delay (d2), s/veh	9.0	11.0	403.5	27.9	0.7	1.2	22.7	1.3	1.7	2.7	8.6	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	10.0	38.6	14.4	7.3	6.0	12.2	13.3	13.3	2.3	12.0	4.2
LnGrp Delay(d),s/veh	61.6	58.5	423.7	75.1	36.5	36.6	71.0	32.7	17.7	58.5	52.7	26.0
LnGrp LOS	E	E	F	E	D	D	E	C	B	E	D	C
Approach Vol, veh/h	1406				1431				2617			
Approach Delay, s/veh	199.7				55.5				38.4			
Approach LOS	F				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	51.4	29.0	27.7	28.0	34.0	16.7	40.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	5.7	4.0	* 5.7				
Max Green Setting (Gmax), s	9.0	43.3	25.0	23.3	22.3	28.3	16.0	* 33				
Max Q Clear Time (g_c+I1), s	6.6	31.0	26.3	20.4	22.9	25.6	12.5	16.6				
Green Ext Time (p_c), s	0.0	11.0	0.0	1.6	0.0	2.1	0.2	11.7				

Intersection Summary

HCM 2010 Ctrl Delay	77.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

39: Pleasant Grove Blvd & Highland Park Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	12	35	281	26	73	88	1417	201	98	1001	1
Future Volume (veh/h)	6	12	35	281	26	73	88	1417	201	98	1001	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1710	1676	1676	1710	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	6	13	37	296	27	77	93	1492	212	103	1054	1
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	22	64	319	94	267	112	2549	794	96	1742	780
Arrive On Green	0.01	0.06	0.05	0.20	0.24	0.24	0.07	0.56	0.56	0.06	0.55	0.55
Sat Flow, veh/h	1597	386	1097	1597	385	1098	1597	4577	1425	1597	3185	1425
Grp Volume(v), veh/h	6	0	50	296	0	104	93	1492	212	103	1054	1
Grp Sat Flow(s),veh/h/ln	1597	0	1483	1597	0	1483	1597	1526	1425	1597	1593	1425
Q Serve(g_s), s	0.4	0.0	3.3	18.2	0.0	5.7	5.8	21.4	7.7	6.0	22.4	0.0
Cycle Q Clear(g_c), s	0.4	0.0	3.3	18.2	0.0	5.7	5.8	21.4	7.7	6.0	22.4	0.0
Prop In Lane	1.00		0.74	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	0	86	319	0	361	112	2549	794	96	1742	780
V/C Ratio(X)	0.26	0.00	0.58	0.93	0.00	0.29	0.83	0.59	0.27	1.08	0.60	0.00
Avail Cap(c_a), veh/h	64	0	348	319	0	586	112	2549	794	96	1742	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	0.0	46.1	39.3	0.0	30.9	45.9	14.6	11.5	47.0	15.3	10.3
Incr Delay (d2), s/veh	2.1	0.0	5.2	31.6	0.0	0.4	37.0	1.0	0.8	113.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.5	10.8	0.0	2.4	3.7	9.2	3.2	5.7	10.0	0.0
LnGrp Delay(d),s/veh	50.9	0.0	51.3	70.9	0.0	31.3	82.9	15.5	12.4	161.1	16.1	10.3
LnGrp LOS	D		D	E		C	F	B	B	F	B	B
Approach Vol, veh/h	56				400		1797				1158	
Approach Delay, s/veh	51.3				60.6		18.7				29.0	
Approach LOS	D				E		B				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	58.7	23.0	9.3	10.0	57.7	4.5	27.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	5.0	35.0	19.0	22.0	6.0	34.0	3.0	38.0				
Max Q Clear Time (g_c+I1), s	8.0	23.4	20.2	5.3	7.8	24.4	2.4	7.7				
Green Ext Time (p_c), s	0.0	10.9	0.0	0.4	0.0	9.1	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay			27.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
40: Vista Grande Blvd & Santucci Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	3	9	107	9	57	23	1439	67	48	980	7
Future Volume (veh/h)	4	3	9	107	9	57	23	1439	67	48	980	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	4	3	9	113	9	60	24	1515	71	51	1032	7
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	43	19	146	319	143	40	2417	753	71	2507	781
Arrive On Green	0.00	0.01	0.01	0.08	0.09	0.09	0.02	0.48	0.48	0.04	0.49	0.49
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	4	3	9	113	9	60	24	1515	71	51	1032	7
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.1	0.0	0.3	3.2	0.1	1.8	0.7	11.4	1.3	1.5	6.6	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.3	3.2	0.1	1.8	0.7	11.4	1.3	1.5	6.6	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	8	43	19	146	319	143	40	2417	753	71	2507	781
V/C Ratio(X)	0.52	0.07	0.46	0.78	0.03	0.42	0.60	0.63	0.09	0.71	0.41	0.01
Avail Cap(c_a), veh/h	138	2209	988	277	2485	1112	173	2578	803	138	2507	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	25.0	25.2	23.1	21.3	22.1	24.8	10.1	7.4	24.3	8.3	6.6
Incr Delay (d2), s/veh	45.7	0.7	16.2	8.5	0.0	2.0	13.5	0.4	0.1	12.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	1.9	0.1	0.9	0.5	5.4	0.6	1.0	3.1	0.1
LnGrp Delay(d),s/veh	71.2	25.7	41.4	31.6	21.3	24.0	38.3	10.5	7.4	36.7	8.4	6.6
LnGrp LOS	E	C	D	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h	16				182				1610			
Approach Delay, s/veh	45.9				28.6				10.8		9.7	
Approach LOS	D				C				B		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	29.4	9.2	5.6	6.2	30.3	5.2	9.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	26.0	8.0	32.0	5.0	25.0	4.0	36.0				
Max Q Clear Time (g_c+I1), s	3.5	13.4	5.2	2.3	2.7	8.6	2.1	3.8				
Green Ext Time (p_c), s	0.0	11.0	0.1	0.3	0.0	14.1	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			11.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

41: Silver Spruce Dr & Vista Grande Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	84	6	1	192	32	4	1	3	13	4	2
Future Volume (veh/h)	1	84	6	1	192	32	4	1	3	13	4	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	88	6	1	202	34	4	1	3	14	4	2
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	528	236	6	528	236	8	252	214	65	313	266
Arrive On Green	0.00	0.15	0.15	0.00	0.15	0.15	0.00	0.14	0.14	0.04	0.17	0.17
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	1	88	6	1	202	34	4	1	3	14	4	2
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	0.6	0.1	0.0	1.5	0.6	0.1	0.0	0.0	0.2	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.6	0.1	0.0	1.5	0.6	0.1	0.0	0.0	0.2	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	528	236	6	528	236	8	252	214	65	313	266
V/C Ratio(X)	0.17	0.17	0.03	0.17	0.38	0.14	0.52	0.00	0.01	0.21	0.01	0.01
Avail Cap(c_a), veh/h	240	2158	965	240	2158	965	240	1766	1501	601	2145	1823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	11.0	10.7	14.7	11.3	10.9	14.7	11.0	11.1	13.8	10.2	10.2
Incr Delay (d2), s/veh	12.5	0.1	0.0	12.5	0.5	0.3	44.4	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	0.8	0.3	0.1	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	27.2	11.1	10.8	27.2	11.8	11.2	59.0	11.0	11.1	15.4	10.3	10.2
LnGrp LOS	C	B	B	C	B	B	E	B	B	B	B	B
Approach Vol, veh/h	95			237			8			20		
Approach Delay, s/veh	11.3			11.8			35.0			13.9		
Approach LOS	B			B			D			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	9.0	5.0	9.4	5.1	10.0	5.0	9.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	28.0	4.0	18.0	4.0	34.0	4.0	18.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0	2.0	2.6	2.1	2.1	2.0	3.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			12.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

42: Westbrook Blvd & Vista Grande Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	68	9	575	179	33	39	1412	243	57	847	39
Future Volume (veh/h)	18	68	9	575	179	33	39	1412	243	57	847	39
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	19	72	9	605	188	35	41	1486	256	60	892	41
Adj No. of Lanes	1	2	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	258	115	762	487	414	83	2146	645	101	2199	661
Arrive On Green	0.03	0.07	0.07	0.22	0.26	0.26	0.05	0.42	0.41	0.06	0.43	0.42
Sat Flow, veh/h	1774	3539	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	19	72	9	605	188	35	41	1486	256	60	892	41
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.7	1.3	0.4	11.2	5.6	1.1	1.5	16.1	7.7	2.2	8.1	1.0
Cycle Q Clear(g_c), s	0.7	1.3	0.4	11.2	5.6	1.1	1.5	16.1	7.7	2.2	8.1	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	258	115	762	487	414	83	2146	645	101	2199	661
V/C Ratio(X)	0.33	0.28	0.08	0.79	0.39	0.08	0.50	0.69	0.40	0.59	0.41	0.06
Avail Cap(c_a), veh/h	131	1731	774	867	1242	1056	158	2238	673	131	2199	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	29.6	29.2	24.8	20.5	18.8	31.4	15.9	14.1	31.0	13.2	11.7
Incr Delay (d2), s/veh	3.3	0.6	0.3	4.6	0.5	0.1	4.5	0.9	0.4	5.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.7	0.2	5.8	2.9	0.5	0.8	7.6	3.4	1.2	3.8	0.5
LnGrp Delay(d),s/veh	35.2	30.2	29.5	29.4	21.0	18.9	35.9	16.8	14.5	36.5	13.3	11.8
LnGrp LOS	D	C	C	C	C	B	D	B	B	D	B	B
Approach Vol, veh/h	100			828				1783			993	
Approach Delay, s/veh	31.1			27.0				16.9			14.6	
Approach LOS	C			C				B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	31.8	18.9	8.9	7.1	32.5	6.2	21.7				
Change Period (Y+Rc), s	5.0	5.3	5.0	5.0	5.0	5.3	5.0	5.0				
Max Green Setting (Gmax), s	4.0	27.7	16.0	32.0	5.0	26.7	4.0	44.0				
Max Q Clear Time (g_c+I1), s	4.2	18.1	13.2	3.3	3.5	10.1	2.7	7.6				
Green Ext Time (p_c), s	0.0	8.4	0.7	1.7	0.0	14.1	0.0	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay	19.0											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

43: Market St & Vista Grande Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	371	0	27	786	0	20	0	1	0	2	0
Future Volume (veh/h)	2	371	0	27	786	0	20	0	1	0	2	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	391	0	28	827	0	21	0	1	0	2	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1401	627	47	1487	665	37	428	363	4	173	147
Arrive On Green	0.00	0.40	0.00	0.03	0.42	0.00	0.02	0.00	0.23	0.00	0.09	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	2	391	0	28	827	0	21	0	1	0	2	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	3.2	0.0	0.7	7.6	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.2	0.0	0.7	7.6	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1401	627	47	1487	665	37	428	363	4	173	147
V/C Ratio(X)	0.49	0.28	0.00	0.60	0.56	0.00	0.57	0.00	0.00	0.00	0.01	0.00
Avail Cap(c_a), veh/h	165	2300	1029	206	2383	1066	165	1211	1029	165	1211	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	21.5	8.8	0.0	20.7	9.5	0.0	20.9	0.0	12.8	0.0	17.7	0.0
Incr Delay (d2), s/veh	68.7	0.1	0.0	11.6	0.3	0.0	13.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.6	0.0	0.5	3.7	0.0	0.4	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	90.2	8.9	0.0	32.3	9.8	0.0	34.3	0.0	12.8	0.0	17.8	0.0
LnGrp LOS	F	A		C	A		C		B		B	
Approach Vol, veh/h	393		855				22		2			
Approach Delay, s/veh	9.4		10.5				33.3		17.8			
Approach LOS	A		B				C		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	14.9	6.1	22.0	5.9	9.0	5.1	23.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	28.0	5.0	28.0	4.0	28.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	0.0	2.0	2.7	5.2	2.5	2.0	2.0	9.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.2	0.0	0.0	0.0	8.5				
Intersection Summary												
HCM 2010 Ctrl Delay			10.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

44: Market St & Vista Grande Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	261	48	50	867	9	72	78	12	3	51	41
Future Volume (veh/h)	72	261	48	50	867	9	72	78	12	3	51	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	76	275	51	53	913	9	76	82	13	3	54	43
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	1386	584	118	1344	565	139	356	266	47	259	183
Arrive On Green	0.08	0.39	0.37	0.07	0.38	0.36	0.08	0.19	0.17	0.03	0.14	0.12
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	76	275	51	53	913	9	76	82	13	3	54	43
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.8	2.2	0.9	1.2	9.3	0.2	1.8	1.6	0.3	0.1	1.1	1.1
Cycle Q Clear(g_c), s	1.8	2.2	0.9	1.2	9.3	0.2	1.8	1.6	0.3	0.1	1.1	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	1386	584	118	1344	565	139	356	266	47	259	183
V/C Ratio(X)	0.55	0.20	0.09	0.45	0.68	0.02	0.55	0.23	0.05	0.06	0.21	0.23
Avail Cap(c_a), veh/h	205	1475	623	205	1475	623	205	1208	990	205	1208	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	8.7	8.9	19.4	11.2	9.0	19.2	14.8	15.1	20.5	16.5	17.4
Incr Delay (d2), s/veh	3.3	0.1	0.1	2.6	1.1	0.0	3.3	0.3	0.1	0.6	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1	0.4	0.7	4.6	0.1	1.0	0.9	0.1	0.0	0.6	0.5
LnGrp Delay(d),s/veh	22.5	8.7	9.0	22.0	12.3	9.0	22.5	15.1	15.2	21.1	16.9	18.0
LnGrp LOS	C	A	A	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h	402				975				171			
Approach Delay, s/veh	11.4				12.8				18.4			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	11.3	6.9	19.9	7.4	9.0	7.4	19.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	26.0	4.0	16.0	4.0	26.0	4.0	16.0				
Max Q Clear Time (g_c+I1), s	2.1	3.6	3.2	4.2	3.8	3.1	3.8	11.3				
Green Ext Time (p_c), s	0.0	0.9	0.0	6.4	0.0	0.9	0.0	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay	13.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
45: Monarch Grove St & Vista Grande Blvd /Vista Grande Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	2	282	18	54	991	0	13	0	37	0	0	5
Future Volume (veh/h)	2	282	18	54	991	0	13	0	37	0	0	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	297	19	57	1043	0	14	0	39	0	0	5
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1546	692	79	1696	759	25	379	322	4	157	133
Arrive On Green	0.00	0.44	0.44	0.04	0.48	0.00	0.01	0.00	0.20	0.00	0.00	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	2	297	19	57	1043	0	14	0	39	0	0	5
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.1	2.5	0.3	1.5	10.4	0.0	0.4	0.0	1.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	2.5	0.3	1.5	10.4	0.0	0.4	0.0	1.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1546	692	79	1696	759	25	379	322	4	157	133
V/C Ratio(X)	0.51	0.19	0.03	0.72	0.61	0.00	0.56	0.00	0.12	0.00	0.00	0.04
Avail Cap(c_a), veh/h	149	2380	1065	261	2603	1165	149	1057	898	149	1057	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	8.2	7.6	22.4	9.1	0.0	23.3	0.0	15.5	0.0	0.0	20.0
Incr Delay (d2), s/veh	77.9	0.1	0.0	11.7	0.4	0.0	17.7	0.0	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	0.1	1.0	5.0	0.0	0.3	0.0	0.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	101.7	8.3	7.7	34.2	9.5	0.0	41.0	0.0	15.6	0.0	0.0	20.1
LnGrp LOS	F	A	A	C	A		D		B			C
Approach Vol, veh/h		318			1100			53			5	
Approach Delay, s/veh		8.8			10.8			22.4			20.1	
Approach LOS		A			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	14.7	7.1	25.8	5.7	9.0	5.1	27.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	27.0	7.0	32.0	4.0	27.0	4.0	35.0				
Max Q Clear Time (g_c+I1), s	0.0	3.0	3.5	4.5	2.4	2.1	2.1	12.4				
Green Ext Time (p_c), s	0.0	0.1	0.0	11.5	0.0	0.1	0.0	10.4				
Intersection Summary												
HCM 2010 Ctrl Delay				10.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary

46: Upland Dr & Vista Grande Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	189	48	78	921	1	80	163	79	5	79	44
Future Volume (veh/h)	82	189	48	78	921	1	80	163	79	5	79	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	86	199	51	82	969	1	84	172	83	5	83	46
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	1509	644	137	1498	640	140	374	287	44	273	201
Arrive On Green	0.08	0.43	0.41	0.08	0.42	0.40	0.08	0.20	0.18	0.02	0.15	0.13
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	86	199	51	82	969	1	84	172	83	5	83	46
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.4	1.8	1.0	2.3	11.2	0.0	2.4	4.2	2.3	0.1	2.1	1.3
Cycle Q Clear(g_c), s	2.4	1.8	1.0	2.3	11.2	0.0	2.4	4.2	2.3	0.1	2.1	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	1509	644	137	1498	640	140	374	287	44	273	201
V/C Ratio(X)	0.60	0.13	0.08	0.60	0.65	0.00	0.60	0.46	0.29	0.11	0.30	0.23
Avail Cap(c_a), veh/h	240	1918	828	240	1918	828	240	757	613	172	685	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	9.0	9.4	23.1	11.8	9.2	23.0	18.2	18.3	24.6	19.7	20.3
Incr Delay (d2), s/veh	4.1	0.0	0.1	4.1	0.5	0.0	4.1	0.9	0.6	1.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.9	0.4	1.3	5.5	0.0	1.3	2.2	1.1	0.1	1.1	0.6
LnGrp Delay(d),s/veh	27.0	9.0	9.4	27.2	12.3	9.2	27.1	19.1	18.8	25.8	20.3	20.8
LnGrp LOS	C	A	A	C	B	A	C	B	B	C	C	C
Approach Vol, veh/h	336		1052				339		134			
Approach Delay, s/veh	13.7		13.5				21.0		20.7			
Approach LOS	B		B				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	13.4	8.0	25.0	8.1	10.6	8.2	24.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	19.0	6.0	26.0	6.0	17.0	6.0	26.0				
Max Q Clear Time (g_c+I1), s	2.1	6.2	4.3	3.8	4.4	4.1	4.4	13.2				
Green Ext Time (p_c), s	0.0	1.5	0.0	9.0	0.0	1.5	0.0	6.6				
Intersection Summary												
HCM 2010 Ctrl Delay	15.4											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

47: Westhills Dr & Fiddymment Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	0	16	29	0	667	55	1627	25	240	1204	1034
Future Volume (veh/h)	275	0	16	29	0	667	55	1627	25	240	1204	1034
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	289	0	17	31	0	702	58	1713	26	253	1267	1088
Adj No. of Lanes	2	0	1	1	0	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	363	0	0	39	0	0	75	3101	965	287	3711	1155
Arrive On Green	0.11	0.00	0.00	0.02	0.00	0.00	0.04	0.61	0.61	0.16	0.73	0.73
Sat Flow, veh/h	3442	289		1774	31		1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	289	57.4		31	94.6		58	1713	26	253	1267	1088
Grp Sat Flow(s),veh/h/ln	1721	E		1774	F		1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	10.0			2.1			4.0	24.2	0.8	17.0	11.0	72.6
Cycle Q Clear(g_c), s	10.0			2.1			4.0	24.2	0.8	17.0	11.0	72.6
Prop In Lane	1.00			1.00			1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363			39			75	3101	965	287	3711	1155
V/C Ratio(X)	0.80			0.80			0.78	0.55	0.03	0.88	0.34	0.94
Avail Cap(c_a), veh/h	788			58			102	3101	965	841	4159	1295
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4			59.5			58.0	14.0	9.5	50.1	5.9	14.3
Incr Delay (d2), s/veh	4.0			35.0			22.7	0.2	0.0	8.6	0.1	12.7
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0			1.4			2.4	11.3	0.3	9.0	5.1	35.2
LnGrp Delay(d),s/veh	57.4			94.6			80.7	14.3	9.5	58.7	6.0	27.0
LnGrp LOS	E			F			F	B	A	E	A	C
Approach Vol, veh/h								1797			2608	
Approach Delay, s/veh								16.3			19.9	
Approach LOS								B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3		5	6	7					
Phs Duration (G+Y+Rc), s	24.8	79.6	7.7		10.1	94.2	17.9					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	58.0	49.0	4.0		7.0	100.0	28.0					
Max Q Clear Time (g_c+I1), s	19.0	26.2	4.1		6.0	74.6	12.0					
Green Ext Time (p_c), s	0.8	21.9	0.0		0.0	14.7	0.9					
Intersection Summary												
HCM 2010 Ctrl Delay			21.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

48: Regional Park Access & Baseline Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1461	27	70	1293	43	0	26	17	142	11	7
Future Volume (veh/h)	15	1461	27	70	1293	43	0	26	17	142	11	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	16	1538	28	74	1361	45	0	27	18	149	12	7
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	2434	703	123	2620	761	3	161	137	218	519	441
Arrive On Green	0.03	0.48	0.44	0.07	0.52	0.48	0.00	0.09	0.09	0.12	0.28	0.28
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	16	1538	28	74	1361	45	0	27	18	149	12	7
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	13.0	0.6	2.3	10.2	0.9	0.0	0.8	0.6	4.6	0.3	0.2
Cycle Q Clear(g_c), s	0.5	13.0	0.6	2.3	10.2	0.9	0.0	0.8	0.6	4.6	0.3	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	2434	703	123	2620	761	3	161	137	218	519	441
V/C Ratio(X)	0.27	0.63	0.04	0.60	0.52	0.06	0.00	0.17	0.13	0.68	0.02	0.02
Avail Cap(c_a), veh/h	154	2555	741	154	2620	761	154	1065	905	277	1194	1015
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	11.2	9.1	26.1	9.3	8.0	0.0	24.4	24.3	24.2	15.1	15.1
Incr Delay (d2), s/veh	2.5	0.5	0.0	4.6	0.2	0.0	0.0	0.5	0.4	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.1	0.3	1.3	4.7	0.4	0.0	0.4	0.3	2.6	0.1	0.1
LnGrp Delay(d),s/veh	29.7	11.7	9.1	30.7	9.4	8.0	0.0	24.9	24.8	29.1	15.1	15.1
LnGrp LOS	C	B	A	C	A	A		C	C	C	B	B
Approach Vol, veh/h	1582				1480				45		168	
Approach Delay, s/veh	11.9				10.5				24.9		27.5	
Approach LOS	B				B				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	9.0	8.0	29.6	0.0	20.1	5.9	31.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	32.0	4.0	26.0	4.0	36.0	4.0	26.0				
Max Q Clear Time (g_c+I1), s	6.6	2.8	4.3	15.0	0.0	2.3	2.5	12.2				
Green Ext Time (p_c), s	0.0	0.2	0.0	9.6	0.0	0.2	0.0	12.7				
Intersection Summary												
HCM 2010 Ctrl Delay	12.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
49: Watt Ave/Santucci Blvd & Baseline Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	536	1033	2	598	1002	67	58	1036	444	56	677	356
Future Volume (veh/h)	536	1033	2	598	1002	67	58	1036	444	56	677	356
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	564	1087	2	629	1055	71	61	1091	467	59	713	375
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	618	1657	488	618	1657	488	136	1769	536	135	1721	536
Arrive On Green	0.18	0.33	0.31	0.18	0.33	0.31	0.04	0.35	0.34	0.04	0.34	0.34
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	564	1087	2	629	1055	71	61	1091	467	59	713	375
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	17.9	20.4	0.1	20.0	19.7	3.6	1.9	19.9	30.8	1.9	12.0	22.9
Cycle Q Clear(g_c), s	17.9	20.4	0.1	20.0	19.7	3.6	1.9	19.9	30.8	1.9	12.0	22.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	618	1657	488	618	1657	488	136	1769	536	135	1721	536
V/C Ratio(X)	0.91	0.66	0.00	1.02	0.64	0.15	0.45	0.62	0.87	0.44	0.41	0.70
Avail Cap(c_a), veh/h	618	1780	526	618	1780	526	154	1780	540	154	1734	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	32.2	26.7	45.7	31.9	27.9	52.3	30.2	34.5	52.3	28.4	31.9
Incr Delay (d2), s/veh	18.1	0.8	0.0	40.9	0.7	0.1	2.3	0.6	14.3	2.2	0.2	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	9.7	0.0	12.9	9.3	1.6	1.0	9.4	15.6	0.9	5.6	10.6
LnGrp Delay(d),s/veh	62.9	33.0	26.7	86.6	32.6	28.1	54.7	30.8	48.8	54.6	28.5	35.9
LnGrp LOS	E	C	C	F	C	C	D	C	D	D	C	D
Approach Vol, veh/h	1653		1755				1619		1147			
Approach Delay, s/veh	43.2		51.8				36.9		32.3			
Approach LOS	D		D				D		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	40.8	24.0	38.3	8.4	40.7	24.0	38.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	36.0	19.0	36.0	4.0	36.0	19.0	36.0				
Max Q Clear Time (g_c+I1), s	3.9	32.8	22.0	22.4	3.9	24.9	19.9	21.7				
Green Ext Time (p_c), s	0.0	2.9	0.0	10.9	0.0	9.4	0.0	11.4				
Intersection Summary												
HCM 2010 Ctrl Delay			42.0									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
50: Baseline Rd & W Shopping Center Access

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	217	1316	1297	85	122	371		
Future Volume (veh/h)	217	1316	1297	85	122	371		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	228	1385	1365	89	128	391		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	274	2980	1857	578	498	445		
Arrive On Green	0.15	0.59	0.37	0.37	0.28	0.28		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	228	1385	1365	89	128	391		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	9.4	11.6	17.5	2.8	4.2	17.7		
Cycle Q Clear(g_c), s	9.4	11.6	17.5	2.8	4.2	17.7		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	274	2980	1857	578	498	445		
V/C Ratio(X)	0.83	0.46	0.74	0.15	0.26	0.88		
Avail Cap(c_a), veh/h	402	3386	1896	590	709	633		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	30.8	8.8	20.7	16.0	20.9	25.8		
Incr Delay (d2), s/veh	9.4	0.1	1.5	0.1	0.3	10.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.3	5.4	8.3	1.3	2.1	15.2		
LnGrp Delay(d),s/veh	40.3	9.0	22.2	16.2	21.2	35.8		
LnGrp LOS	D	A	C	B	C	D		
Approach Vol, veh/h		1613	1454		519			
Approach Delay, s/veh		13.4	21.8		32.2			
Approach LOS		B	C		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				49.0		26.1	16.6	32.4
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				50.0		30.0	17.0	28.0
Max Q Clear Time (g_c+I1), s				13.6		19.7	11.4	19.5
Green Ext Time (p_c), s				29.1		1.4	0.3	7.9
Intersection Summary								
HCM 2010 Ctrl Delay			19.5					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

51: Baseline Rd & Westbrook Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	505	903	29	416	968	259	14	861	243	194	783	400
Future Volume (veh/h)	505	903	29	416	968	259	14	861	243	194	783	400
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	532	951	31	438	1019	273	15	906	256	204	824	421
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	640	1750	517	540	1603	471	76	1525	447	292	1844	546
Arrive On Green	0.19	0.34	0.33	0.16	0.32	0.30	0.02	0.30	0.28	0.08	0.36	0.35
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	532	951	31	438	1019	273	15	906	256	204	824	421
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	16.9	17.2	1.5	14.0	19.5	16.7	0.5	17.3	15.8	6.6	14.0	27.0
Cycle Q Clear(g_c), s	16.9	17.2	1.5	14.0	19.5	16.7	0.5	17.3	15.8	6.6	14.0	27.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	640	1750	517	540	1603	471	76	1525	447	292	1844	546
V/C Ratio(X)	0.83	0.54	0.06	0.81	0.64	0.58	0.20	0.59	0.57	0.70	0.45	0.77
Avail Cap(c_a), veh/h	816	1921	570	695	1742	515	333	1787	529	333	1844	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	30.1	26.3	46.4	33.4	33.9	54.7	33.9	35.0	50.7	27.6	33.3
Incr Delay (d2), s/veh	5.8	0.3	0.0	5.6	0.7	1.4	1.3	0.4	1.2	5.4	0.2	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	8.1	0.7	7.1	9.3	7.5	0.2	8.1	7.0	3.3	6.6	12.8
LnGrp Delay(d),s/veh	50.4	30.4	26.4	52.0	34.1	35.3	55.9	34.3	36.1	56.1	27.8	39.9
LnGrp LOS	D	C	C	D	C	D	E	C	D	E	C	D
Approach Vol, veh/h	1514		1730				1177		1449			
Approach Delay, s/veh	37.3		38.8				35.0		35.3			
Approach LOS	D		D				D		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	36.1	21.9	42.2	6.5	43.3	25.2	38.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	6.0	5.0	5.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	37.0	22.0	40.0	10.0	37.0	26.0	36.0				
Max Q Clear Time (g_c+I1), s	8.6	19.3	16.0	19.2	2.5	29.0	18.9	21.5				
Green Ext Time (p_c), s	0.1	11.9	0.9	15.1	0.0	6.8	1.2	11.3				
Intersection Summary												
HCM 2010 Ctrl Delay	36.8											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
52: Baseline Rd & C Shopping Center Access

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	1340	1486	89	0	157		
Future Volume (veh/h)	0	1340	1486	89	0	157		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	1411	1564	94	0	165		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	4	3060	3060	953	280	250		
Arrive On Green	0.00	0.60	0.60	0.60	0.00	0.16		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	0	1411	1564	94	0	165		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.0	6.4	7.4	1.0	0.0	4.1		
Cycle Q Clear(g_c), s	0.0	6.4	7.4	1.0	0.0	4.1		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	4	3060	3060	953	280	250		
V/C Ratio(X)	0.00	0.46	0.51	0.10	0.00	0.66		
Avail Cap(c_a), veh/h	171	3788	3060	953	1236	1103		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	0.0	4.6	4.8	3.5	0.0	16.5		
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.0	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.9	3.4	0.5	0.0	0.2		
LnGrp Delay(d),s/veh	0.0	4.7	4.9	3.6	0.0	19.4		
LnGrp LOS		A	A	A		B		
Approach Vol, veh/h		1411	1658		165			
Approach Delay, s/veh		4.7	4.8		19.4			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				30.0		11.6	0.0	30.0
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				31.0		29.0	4.0	22.0
Max Q Clear Time (g_c+I1), s				8.4		6.1	0.0	9.4
Green Ext Time (p_c), s				16.7		0.5	0.0	11.8
Intersection Summary								
HCM 2010 Ctrl Delay			5.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

53: Market St & Baseline Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	1171	145	21	1421	202	127	116	10	104	78	26
Future Volume (veh/h)	24	1171	145	21	1421	202	127	116	10	104	78	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	25	1233	153	22	1496	213	134	122	11	109	82	27
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	2443	734	67	2431	730	198	278	209	168	246	182
Arrive On Green	0.04	0.48	0.46	0.04	0.48	0.46	0.11	0.15	0.13	0.09	0.13	0.12
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	25	1233	153	22	1496	213	134	122	11	109	82	27
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.8	9.8	3.4	0.7	12.8	4.9	4.3	3.5	0.4	3.5	2.3	0.9
Cycle Q Clear(g_c), s	0.8	9.8	3.4	0.7	12.8	4.9	4.3	3.5	0.4	3.5	2.3	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	2443	734	67	2431	730	198	278	209	168	246	182
V/C Ratio(X)	0.35	0.50	0.21	0.33	0.62	0.29	0.68	0.44	0.05	0.65	0.33	0.15
Avail Cap(c_a), veh/h	151	2509	754	151	2509	754	211	1109	916	211	1109	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	10.5	9.4	27.6	11.3	9.9	25.1	22.8	22.3	25.7	23.1	23.4
Incr Delay (d2), s/veh	3.0	0.2	0.1	2.9	0.4	0.2	7.7	1.1	0.1	4.6	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.6	1.5	0.4	6.1	2.2	2.5	1.9	0.2	1.9	1.3	0.4
LnGrp Delay(d),s/veh	30.5	10.6	9.5	30.4	11.8	10.1	32.8	23.9	22.4	30.3	23.9	23.8
LnGrp LOS	C	B	A	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1411			1731				267			218	
Approach Delay, s/veh	10.9			11.8				28.3			27.1	
Approach LOS	B			B				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	11.8	6.2	31.2	10.6	10.8	6.3	31.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	6.0	33.0	4.0	27.0	6.0	33.0	4.0	27.0				
Max Q Clear Time (g_c+I1), s	5.5	5.5	2.7	11.8	6.3	4.3	2.8	14.8				
Green Ext Time (p_c), s	0.0	1.3	0.0	13.9	0.0	1.3	0.0	11.3				
Intersection Summary												
HCM 2010 Ctrl Delay	13.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
54: Baseline Rd & E Shopping Center Access

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	154	1130	1381	127	209	263		
Future Volume (veh/h)	154	1130	1381	127	209	263		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	162	1189	1454	134	220	277		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	208	2967	1895	590	407	363		
Arrive On Green	0.12	0.58	0.37	0.37	0.23	0.23		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	162	1189	1454	134	220	277		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	4.7	6.8	13.4	3.1	5.8	8.7		
Cycle Q Clear(g_c), s	4.7	6.8	13.4	3.1	5.8	8.7		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	208	2967	1895	590	407	363		
V/C Ratio(X)	0.78	0.40	0.77	0.23	0.54	0.76		
Avail Cap(c_a), veh/h	365	3423	1901	592	962	858		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.9	6.1	14.7	11.5	18.1	19.2		
Incr Delay (d2), s/veh	6.2	0.1	1.9	0.2	1.1	3.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.7	3.1	6.5	1.4	3.0	7.6		
LnGrp Delay(d),s/veh	29.1	6.1	16.7	11.7	19.2	22.6		
LnGrp LOS	C	A	B	B	B	C		
Approach Vol, veh/h		1351	1588		497			
Approach Delay, s/veh		8.9	16.3		21.1			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				36.2		17.3	11.3	24.9
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				36.0		29.0	11.0	20.0
Max Q Clear Time (g_c+I1), s				8.8		10.7	6.7	15.4
Green Ext Time (p_c), s				22.4		1.5	0.2	4.3
Intersection Summary								
HCM 2010 Ctrl Delay			14.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

55: Baseline Rd & Upland Dr

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	82	1258	1499	81	42	9		
Future Volume (veh/h)	82	1258	1499	81	42	9		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	86	1324	1578	85	44	9		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	108	3531	2665	830	155	138		
Arrive On Green	0.06	0.69	0.52	0.52	0.09	0.09		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	86	1324	1578	85	44	9		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	2.2	4.9	9.8	1.2	1.1	0.2		
Cycle Q Clear(g_c), s	2.2	4.9	9.8	1.2	1.1	0.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	108	3531	2665	830	155	138		
V/C Ratio(X)	0.79	0.37	0.59	0.10	0.28	0.07		
Avail Cap(c_a), veh/h	194	3886	2776	864	1162	1037		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	21.2	2.9	7.5	5.5	19.6	19.2		
Incr Delay (d2), s/veh	12.2	0.1	0.3	0.1	1.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.4	2.2	4.6	0.5	0.6	0.2		
LnGrp Delay(d),s/veh	33.5	3.0	7.8	5.5	20.6	19.4		
LnGrp LOS	C	A	A	A	C	B		
Approach Vol, veh/h		1410	1663		53			
Approach Delay, s/veh		4.8	7.7		20.4			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				36.8		9.0	7.8	29.0
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				35.0		30.0	5.0	25.0
Max Q Clear Time (g_c+I1), s				6.9		3.1	4.2	11.8
Green Ext Time (p_c), s				24.2		0.1	0.0	12.2
Intersection Summary								
HCM 2010 Ctrl Delay			6.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

56: Fiddymment Rd & Baseline Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	1044	123	726	1429	306	167	857	458	369	813	37
Future Volume (veh/h)	209	1044	123	726	1429	306	167	857	458	369	813	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1863	1827	1827	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	220	1099	129	764	1504	322	176	902	482	388	856	39
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	2	2	4	4	2	2	2	2	2	2
Cap, veh/h	298	1426	428	801	2090	651	278	1263	393	427	1523	474
Arrive On Green	0.09	0.29	0.27	0.23	0.42	0.42	0.08	0.25	0.25	0.12	0.30	0.30
Sat Flow, veh/h	3442	4988	1583	3442	4988	1553	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	220	1099	129	764	1504	322	176	902	482	388	856	39
Grp Sat Flow(s),veh/h/ln	1721	1663	1583	1721	1663	1553	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	8.0	26.0	8.3	28.2	32.3	19.6	6.4	20.9	32.0	14.3	18.3	2.3
Cycle Q Clear(g_c), s	8.0	26.0	8.3	28.2	32.3	19.6	6.4	20.9	32.0	14.3	18.3	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	298	1426	428	801	2090	651	278	1263	393	427	1523	474
V/C Ratio(X)	0.74	0.77	0.30	0.95	0.72	0.49	0.63	0.71	1.23	0.91	0.56	0.08
Avail Cap(c_a), veh/h	347	1471	442	801	2090	651	294	1263	393	427	1523	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.4	42.1	37.3	48.7	31.1	27.4	57.4	44.2	48.4	55.7	38.0	32.4
Incr Delay (d2), s/veh	6.8	2.9	0.7	21.2	1.5	1.1	4.1	2.3	122.2	22.9	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	12.3	3.7	15.7	15.0	8.6	3.2	10.0	27.3	8.2	8.7	1.0
LnGrp Delay(d),s/veh	64.2	45.0	38.1	69.9	32.6	28.6	61.4	46.6	170.7	78.6	38.7	32.5
LnGrp LOS	E	D	D	E	C	C	E	D	F	E	D	C
Approach Vol, veh/h	1448		2590				1560		1283			
Approach Delay, s/veh	47.3		43.1				86.6		50.6			
Approach LOS	D		D				F		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	36.0	33.0	39.8	13.4	42.6	15.2	57.7				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	15.0	30.0	28.0	35.0	9.0	36.0	12.0	51.0				
Max Q Clear Time (g_c+I1), s	16.3	34.0	30.2	28.0	8.4	20.3	10.0	34.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	5.8	0.0	14.2	0.1	16.2				
Intersection Summary												
HCM 2010 Ctrl Delay	55.3											
HCM 2010 LOS	E											

HCM 2010 Signalized Intersection Summary

57: Baseline Rd & Junction Blvd

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	379	1419	1460	131	54	726		
Future Volume (veh/h)	379	1419	1460	131	54	726		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	399	1494	1537	138	57	764		
Adj No. of Lanes	2	2	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	477	2287	1633	731	464	1115		
Arrive On Green	0.14	0.65	0.46	0.46	0.26	0.26		
Sat Flow, veh/h	3442	3632	3632	1583	1774	2787		
Grp Volume(v), veh/h	399	1494	1537	138	57	764		
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1393		
Q Serve(g_s), s	7.3	16.8	26.9	3.3	1.6	14.7		
Cycle Q Clear(g_c), s	7.3	16.8	26.9	3.3	1.6	14.7		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	477	2287	1633	731	464	1115		
V/C Ratio(X)	0.84	0.65	0.94	0.19	0.12	0.69		
Avail Cap(c_a), veh/h	477	2287	1633	731	464	1115		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	27.3	7.0	16.7	10.3	18.3	16.1		
Incr Delay (d2), s/veh	11.7	0.8	11.3	0.2	0.0	1.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.3	8.3	15.6	1.5	0.8	11.2		
LnGrp Delay(d),s/veh	39.0	7.8	28.0	10.5	18.4	17.6		
LnGrp LOS	D	A	C	B	B	B		
Approach Vol, veh/h		1893	1675		821			
Approach Delay, s/veh		14.4	26.5		17.6			
Approach LOS		B	C		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				45.0		20.0	12.0	33.0
Change Period (Y+Rc), s				* 6		4.0	4.0	6.0
Max Green Setting (Gmax), s				* 24		16.0	8.0	27.0
Max Q Clear Time (g_c+I1), s				18.8		16.7	9.3	28.9
Green Ext Time (p_c), s				5.1		0.0	0.0	0.0
Intersection Summary								
HCM 2010 Ctrl Delay			19.6					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

58: Woodcreek Oaks Blvd & Baseline Rd

Cumulative No Project
PM Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	537	844	81	545	989	233	64	5	177	164	5	660		
Future Volume (veh/h)	537	844	81	545	989	233	64	5	177	164	5	660		
Number	7	4	14	3	8	18	5	2	12	1	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	565	888	85	574	1041	0	67	5	186	173	5	0		
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	539	1105	477	569	1105	481	248	19	223	169	5	169		
Arrive On Green	0.30	0.31	0.30	0.32	0.31	0.00	0.15	0.15	0.14	0.11	0.10	0.00		
Sat Flow, veh/h	1774	3539	1570	1774	3539	1583	1656	124	1583	1727	50	1583		
Grp Volume(v), veh/h	565	888	85	574	1041	0	72	0	186	178	0	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1570	1774	1770	1583	1780	0	1583	1776	0	1583		
Q Serve(g_s), s	35.0	26.5	4.6	37.0	33.0	0.0	4.1	0.0	13.2	11.3	0.0	0.0		
Cycle Q Clear(g_c), s	35.0	26.5	4.6	37.0	33.0	0.0	4.1	0.0	13.2	11.3	0.0	0.0		
Prop In Lane	1.00		1.00	1.00		1.00	0.93		1.00	0.97		1.00		
Lane Grp Cap(c), veh/h	539	1105	477	569	1105	481	267	0	223	174	0	169		
V/C Ratio(X)	1.05	0.80	0.18	1.01	0.94	0.00	0.27	0.00	0.83	1.02	0.00	0.00		
Avail Cap(c_a), veh/h	539	1105	477	569	1105	481	278	0	234	174	0	169		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00		
Uniform Delay (d), s/veh	40.1	36.4	29.5	39.1	38.6	0.0	43.4	0.0	48.2	51.5	0.0	0.0		
Incr Delay (d2), s/veh	52.2	4.9	0.3	39.7	15.4	0.0	0.5	0.0	21.3	74.1	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0		
%ile BackOfQ(50%),veh/ln	24.9	13.7	2.0	24.3	18.4	0.0	2.1	0.0	7.1	9.1	0.0	0.0		
LnGrp Delay(d),s/veh	92.3	41.2	29.9	78.8	54.1	0.0	44.0	0.0	69.5	125.8	0.0	0.0		
LnGrp LOS	F	D	C	F	D		D		E	F				
Approach Vol, veh/h	1538				1615				258		178			
Approach Delay, s/veh	59.4				62.9				62.3		125.8			
Approach LOS	E				E				E		F			
Timer	1	2	3	4	5	6	7	8						
Assigned Phs	2		3	4	5		6	7	8					
Phs Duration (G+Y+Rc), s	20.3		39.0	40.0			16.0	39.0	40.0					
Change Period (Y+Rc), s	5.0		4.0	6.0			5.7	6.0	* 6					
Max Green Setting (Gmax), s	16.0		35.0	32.0			10.3	33.0	* 34					
Max Q Clear Time (g_c+I1), s	15.2		39.0	28.5			13.3	37.0	35.0					
Green Ext Time (p_c), s	0.1		0.0	2.7			0.0	0.0	0.0					

Intersection Summary

HCM 2010 Ctrl Delay 64.5
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

59: Foothills Blvd & Baseline Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	336	457	91	630	160	839	1427	90	149	1644	280
Future Volume (veh/h)	247	336	457	91	630	160	839	1427	90	149	1644	280
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	260	354	481	96	663	168	883	1502	95	157	1731	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	1	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	689	308	133	848	264	968	2638	821	198	2236	526
Arrive On Green	0.10	0.19	0.19	0.08	0.17	0.17	0.28	0.52	0.52	0.11	0.35	0.00
Sat Flow, veh/h	3442	3539	1583	1774	5085	1583	3442	5085	1583	1774	6408	1583
Grp Volume(v), veh/h	260	354	481	96	663	168	883	1502	95	157	1731	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1695	1583	1721	1695	1583	1774	1602	1583
Q Serve(g_s), s	8.8	10.7	23.4	6.4	15.0	11.9	29.8	24.2	3.7	10.4	28.9	0.0
Cycle Q Clear(g_c), s	8.8	10.7	23.4	6.4	15.0	11.9	29.8	24.2	3.7	10.4	28.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	689	308	133	848	264	968	2638	821	198	2236	526
V/C Ratio(X)	0.77	0.51	1.56	0.72	0.78	0.64	0.91	0.57	0.12	0.79	0.77	0.00
Avail Cap(c_a), veh/h	344	689	308	133	869	270	1004	2638	821	266	2236	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.7	43.2	48.3	54.3	47.9	46.6	41.7	19.7	14.8	52.0	34.8	0.0
Incr Delay (d2), s/veh	8.8	1.1	267.7	15.2	5.4	6.8	12.0	0.9	0.3	7.9	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	5.4	33.2	3.7	7.4	5.7	15.7	11.5	1.7	5.5	13.0	0.0
LnGrp Delay(d),s/veh	61.5	44.3	316.0	69.5	53.3	53.4	53.7	20.6	15.1	59.9	36.7	0.0
LnGrp LOS	E	D	F	E	D	D	D	C	B	E	D	
Approach Vol, veh/h	1095				927				2480			
Approach Delay, s/veh	167.7				55.0				32.2			
Approach LOS	F				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	65.3	12.0	26.4	36.8	44.9	14.8	23.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	17.0	55.0	8.0	20.0	34.0	38.0	11.0	* 18				
Max Q Clear Time (g_c+I1), s	12.4	26.2	8.4	25.4	31.8	30.9	10.8	17.0				
Green Ext Time (p_c), s	0.1	25.0	0.0	0.0	1.0	5.3	0.0	0.5				

Intersection Summary

HCM 2010 Ctrl Delay 60.6
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

60: Foothills Blvd & HP-Main Dwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	391	187	676	144	600	58	718	390	517	1208	5
Future Volume (veh/h)	52	391	187	676	144	600	58	718	390	517	1208	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	412	0	712	152	632	61	756	411	544	1272	0
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	405	358	748	703	824	98	925	707	498	1307	550
Arrive On Green	0.08	0.22	0.00	0.22	0.38	0.38	0.06	0.26	0.23	0.14	0.37	0.00
Sat Flow, veh/h	1774	1863	1583	3442	1863	1577	1774	3539	1573	3442	3539	1583
Grp Volume(v), veh/h	55	412	0	712	152	632	61	756	411	544	1272	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1577	1774	1770	1573	1721	1770	1583
Q Serve(g_s), s	3.3	24.0	0.0	22.6	6.1	35.3	3.7	22.2	21.6	16.0	39.1	0.0
Cycle Q Clear(g_c), s	3.3	24.0	0.0	22.6	6.1	35.3	3.7	22.2	21.6	16.0	39.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	405	358	748	703	824	98	925	707	498	1307	550
V/C Ratio(X)	0.41	1.02	0.00	0.95	0.22	0.77	0.63	0.82	0.58	1.09	0.97	0.00
Avail Cap(c_a), veh/h	209	405	358	748	703	824	112	942	714	498	1307	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.7	43.2	0.0	42.7	23.3	21.1	51.1	38.3	22.8	47.2	34.3	0.0
Incr Delay (d2), s/veh	0.8	49.4	0.0	22.0	0.2	4.4	4.7	5.9	1.4	67.4	18.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	17.8	0.0	13.0	3.2	16.2	2.0	11.6	9.6	12.2	22.5	0.0
LnGrp Delay(d),s/veh	49.5	92.7	0.0	64.6	23.5	25.4	55.8	44.2	24.2	114.7	53.1	0.0
LnGrp LOS	D	F		E	C	C	E	D	C	F	D	
Approach Vol, veh/h		467			1496			1228			1816	
Approach Delay, s/veh		87.6			43.9			38.1			71.5	
Approach LOS		F			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	31.5	29.0	29.0	9.1	43.4	11.3	46.7				
Change Period (Y+Rc), s	5.0	6.0	5.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	16.0	26.0	24.0	* 24	6.0	37.0	12.0	36.0				
Max Q Clear Time (g_c+I1), s	18.0	24.2	24.6	26.0	5.7	41.1	5.3	37.3				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 56.6
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

61: Washington Blvd & Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	764	14	44	716	711	1	627	40	465	1187	86
Future Volume (veh/h)	45	764	14	44	716	711	1	627	40	465	1187	86
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	804	15	46	754	0	1	660	0	489	1249	91
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	960	427	280	929	416	47	1067	478	593	1628	726
Arrive On Green	0.09	0.27	0.27	0.08	0.26	0.00	0.01	0.30	0.00	0.17	0.46	0.46
Sat Flow, veh/h	3442	3539	1575	3442	3539	1583	3442	3539	1583	3442	3539	1578
Grp Volume(v), veh/h	47	804	15	46	754	0	1	660	0	489	1249	91
Grp Sat Flow(s),veh/h/ln	1721	1770	1575	1721	1770	1583	1721	1770	1583	1721	1770	1578
Q Serve(g_s), s	1.1	18.5	0.6	1.1	17.2	0.0	0.0	13.8	0.0	11.8	25.4	2.9
Cycle Q Clear(g_c), s	1.1	18.5	0.6	1.1	17.2	0.0	0.0	13.8	0.0	11.8	25.4	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	309	960	427	280	929	416	47	1067	478	593	1628	726
V/C Ratio(X)	0.15	0.84	0.04	0.16	0.81	0.00	0.02	0.62	0.00	0.83	0.77	0.13
Avail Cap(c_a), veh/h	439	960	427	837	1312	587	359	1312	587	598	1628	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	29.7	23.1	36.9	29.8	0.0	42.0	25.9	0.0	34.5	19.4	13.4
Incr Delay (d2), s/veh	0.1	6.3	0.0	0.1	2.7	0.0	0.1	1.2	0.0	8.6	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	9.9	0.3	0.5	8.7	0.0	0.0	6.9	0.0	6.3	12.9	1.3
LnGrp Delay(d),s/veh	36.3	35.9	23.2	37.0	32.5	0.0	42.1	27.0	0.0	43.1	22.0	13.5
LnGrp LOS	D	D	C	D	C		D	C		D	C	B
Approach Vol, veh/h	866				800				661			
Approach Delay, s/veh	35.7				32.8				27.1			
Approach LOS	D				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.9	31.0	10.0	27.4	4.2	44.7	10.8	26.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	14.0	31.0	20.0	* 20	8.0	37.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	13.8	15.8	3.1	20.5	2.0	27.4	3.1	19.2				
Green Ext Time (p_c), s	0.0	9.1	0.1	0.0	0.0	8.4	0.0	2.4				

Intersection Summary

HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

62: Roseville Pkwy & Trestle Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	4	96	32	7	2	143	1412	22	0	1236	0
Future Volume (veh/h)	9	4	96	32	7	2	143	1412	22	0	1236	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	9	4	101	34	7	2	151	1486	23	0	1301	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	68	193	109	22	6	152	2275	1018	4	1746	781
Arrive On Green	0.12	0.12	0.12	0.08	0.08	0.06	0.09	0.64	0.64	0.00	0.49	0.00
Sat Flow, veh/h	1246	554	1583	1406	289	83	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	13	0	101	43	0	0	151	1486	23	0	1301	0
Grp Sat Flow(s),veh/h/ln	1800	0	1583	1778	0	0	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.3	0.0	2.8	1.1	0.0	0.0	4.0	12.1	0.2	0.0	13.8	0.0
Cycle Q Clear(g_c), s	0.3	0.0	2.8	1.1	0.0	0.0	4.0	12.1	0.2	0.0	13.8	0.0
Prop In Lane	0.69		1.00	0.79		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	0	193	137	0	0	152	2275	1018	4	1746	781
V/C Ratio(X)	0.06	0.00	0.52	0.31	0.00	0.00	1.00	0.65	0.02	0.00	0.75	0.00
Avail Cap(c_a), veh/h	681	0	599	224	0	0	152	2275	1018	152	2042	913
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	18.2	0.0	19.3	20.4	0.0	0.0	21.4	5.1	3.0	0.0	9.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.8	0.5	0.0	0.0	71.8	0.8	0.0	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.3	0.5	0.0	0.0	4.9	6.0	0.1	0.0	7.1	0.0
LnGrp Delay(d),s/veh	18.2	0.0	20.1	20.9	0.0	0.0	93.2	5.9	3.0	0.0	11.0	0.0
LnGrp LOS	B		C	C			F	A	A		B	
Approach Vol, veh/h	114			43			1660			1301		
Approach Delay, s/veh	19.9			20.9			13.8			11.0		
Approach LOS	B			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	33.1		8.0	7.0	26.1		5.7				
Change Period (Y+Rc), s	4.0	6.0		* 4.2	4.0	6.0		4.0				
Max Green Setting (Gmax), s	3.0	24.0		* 16	3.0	24.0		4.0				
Max Q Clear Time (g_c+I1), s	0.0	14.1		4.8	6.0	15.8		3.1				
Green Ext Time (p_c), s	0.0	9.5		0.1	0.0	4.3		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
63: Roseville Pkwy & Gibson Dr (w)

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	388	2131	0	2268	98	68	938	
Future Volume (veh/h)	388	2131	0	2268	98	68	938	
Number	5	2		6	16	7	14	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	408	2243		2387	0	72	0	
Adj No. of Lanes	1	3		3	1	1	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	428	4483		3088	961	92	82	
Arrive On Green	0.24	0.88		0.61	0.00	0.05	0.00	
Sat Flow, veh/h	1774	5253		5253	1583	1774	1583	
Grp Volume(v), veh/h	408	2243		2387	0	72	0	
Grp Sat Flow(s),veh/h/ln	1774	1695		1695	1583	1774	1583	
Q Serve(g_s), s	34.0	14.0		52.1	0.0	6.0	0.0	
Cycle Q Clear(g_c), s	34.0	14.0		52.1	0.0	6.0	0.0	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	428	4483		3088	961	92	82	
V/C Ratio(X)	0.95	0.50		0.77	0.00	0.78	0.00	
Avail Cap(c_a), veh/h	438	4483		3088	961	378	338	
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00	
Upstream Filter(l)	1.00	1.00		0.80	0.00	1.00	0.00	
Uniform Delay (d), s/veh	56.1	1.9		21.8	0.0	70.3	0.0	
Incr Delay (d2), s/veh	31.1	0.4		1.6	0.0	13.5	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	20.4	6.6		24.8	0.0	3.3	0.0	
LnGrp Delay(d),s/veh	87.2	2.3		23.4	0.0	83.8	0.0	
LnGrp LOS	F	A		C		F		
Approach Vol, veh/h		2651		2387		72		
Approach Delay, s/veh		15.4		23.4		83.8		
Approach LOS		B		C		F		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		137.2		12.8	41.2	96.1		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		99.0		32.0	37.0	66.0		
Max Q Clear Time (g_c+l1), s		16.0		8.0	36.0	54.1		
Green Ext Time (p_c), s		80.4		0.2	0.2	11.8		
Intersection Summary								
HCM 2010 Ctrl Delay			20.1					
HCM 2010 LOS			C					
Notes								
User approved ignoring U-Turning movement.								

HCM 2010 Signalized Intersection Summary

64: Chase Dr & Roseville Pkwy

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	2353	154	445	2299	81	74		
Future Volume (veh/h)	2353	154	445	2299	81	74		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2477	0	468	2420	85	0		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2288	712	444	3687	154	137		
Arrive On Green	0.45	0.00	0.25	0.73	0.09	0.00		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	2477	0	468	2420	85	0		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	54.0	0.0	30.0	30.0	5.5	0.0		
Cycle Q Clear(g_c), s	54.0	0.0	30.0	30.0	5.5	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2288	712	444	3687	154	137		
V/C Ratio(X)	1.08	0.00	1.06	0.66	0.55	0.00		
Avail Cap(c_a), veh/h	2288	712	444	3687	390	348		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.84	0.00	0.50	0.50	1.00	0.00		
Uniform Delay (d), s/veh	33.0	0.0	45.0	8.7	52.6	0.0		
Incr Delay (d2), s/veh	44.3	0.0	45.8	0.5	1.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	34.6	0.0	20.3	14.1	2.8	0.0		
LnGrp Delay(d),s/veh	77.3	0.0	90.8	9.1	53.7	0.0		
LnGrp LOS	F		F	A	D			
Approach Vol, veh/h	2477			2888	85			
Approach Delay, s/veh	77.3			22.4	53.7			
Approach LOS	E			C	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.0	33.0	57.0				90.0
Change Period (Y+Rc), s		4.6	4.0	6.0				6.0
Max Green Setting (Gmax), s		25.4	29.0	51.0				84.0
Max Q Clear Time (g_c+l1), s		7.5	32.0	56.0				32.0
Green Ext Time (p_c), s		0.1	0.0	0.0				51.3
Intersection Summary								
HCM 2010 Ctrl Delay			47.8					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary

65: Gibson Dr & Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	2202	0	61	2385	601	2	5	44	1063	6	320
Future Volume (veh/h)	223	2202	0	61	2385	601	2	5	44	1063	6	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	235	2318	0	64	2511	0	2	5	46	1123	0	0
Adj No. of Lanes	1	3	1	1	3	1	0	1	1	3	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	3244	1010	96	2800	840	25	61	72	798	0	220
Arrive On Green	0.14	0.64	0.00	0.05	0.55	0.00	0.05	0.05	0.05	0.15	0.00	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	525	1312	1533	5322	0	1583
Grp Volume(v), veh/h	235	2318	0	64	2511	0	7	0	46	1123	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1837	0	1533	1774	0	1583
Q Serve(g_s), s	15.7	36.4	0.0	4.2	52.6	0.0	0.4	0.0	3.5	18.0	0.0	0.0
Cycle Q Clear(g_c), s	15.7	36.4	0.0	4.2	52.6	0.0	0.4	0.0	3.5	18.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	3244	1010	96	2800	840	86	0	72	798	0	220
V/C Ratio(X)	0.94	0.71	0.00	0.66	0.90	0.00	0.08	0.00	0.64	1.41	0.00	0.00
Avail Cap(c_a), veh/h	251	3244	1010	192	2800	840	199	0	166	798	0	220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	0.00	0.74	0.74	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.0	14.5	0.0	55.7	23.9	0.0	54.7	0.0	56.2	51.0	0.0	0.0
Incr Delay (d2), s/veh	23.2	0.6	0.0	2.1	3.3	0.0	0.1	0.0	3.5	190.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	17.1	0.0	2.1	25.3	0.0	0.2	0.0	1.6	22.9	0.0	0.0
LnGrp Delay(d),s/veh	74.1	15.1	0.0	57.8	27.3	0.0	54.9	0.0	59.7	241.5	0.0	0.0
LnGrp LOS	E	B		E	C		D		E	F		
Approach Vol, veh/h	2553			2575			53			1123		
Approach Delay, s/veh	20.5			28.0			59.1			241.5		
Approach LOS	C			C			E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	8.6		9.5	78.9	23.0		20.0	68.4				
Change Period (Y+Rc), s	4.0		4.0	5.7	7.3		4.0	5.7				
Max Green Setting (Gmax), s	12.0		12.0	59.3	15.7		16.0	54.3				
Max Q Clear Time (g_c+I1), s	5.5		6.2	38.4	20.0		17.7	54.6				
Green Ext Time (p_c), s	0.0		0.0	20.9	0.0		0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	63.3											
HCM 2010 LOS	E											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

66: Roseville Pkwy & West Mall

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	3	23	128	2	322	32	2700	97	309	2986	34
Future Volume (veh/h)	21	3	23	128	2	322	32	2700	97	309	2986	34
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	3	24	136	0	0	34	2842	102	325	3143	36
Adj No. of Lanes	0	1	1	2	0	1	1	4	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	8	53	228	0	102	58	4386	1081	400	4922	1214
Arrive On Green	0.04	0.04	0.04	0.06	0.00	0.00	0.03	0.68	0.68	0.23	1.00	1.00
Sat Flow, veh/h	1570	214	1516	3548	0	1583	1774	6408	1580	3442	6408	1580
Grp Volume(v), veh/h	25	0	24	136	0	0	34	2842	102	325	3143	36
Grp Sat Flow(s),veh/h/ln	1784	0	1516	1774	0	1583	1774	1602	1580	1721	1602	1580
Q Serve(g_s), s	1.6	0.0	1.9	4.5	0.0	0.0	2.3	30.2	2.6	10.7	0.0	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.9	4.5	0.0	0.0	2.3	30.2	2.6	10.7	0.0	0.0
Prop In Lane	0.88		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	0	53	228	0	102	58	4386	1081	400	4922	1214
V/C Ratio(X)	0.40	0.00	0.45	0.60	0.00	0.00	0.59	0.65	0.09	0.81	0.64	0.03
Avail Cap(c_a), veh/h	74	0	63	650	0	290	89	4386	1081	488	4922	1214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.44	0.44	0.44	0.29	0.29	0.29
Uniform Delay (d), s/veh	56.6	0.0	56.8	54.6	0.0	0.0	57.3	10.7	6.4	44.8	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	2.2	2.3	0.0	0.0	1.6	0.2	0.0	2.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8	2.3	0.0	0.0	1.1	13.3	1.1	5.2	0.1	0.0
LnGrp Delay(d),s/veh	58.2	0.0	59.0	56.9	0.0	0.0	58.9	10.9	6.4	47.0	0.2	0.0
LnGrp LOS	E		E	E			E	B	A	D	A	A
Approach Vol, veh/h	49		136				2978				3504	
Approach Delay, s/veh	58.6		56.9				11.3				4.5	
Approach LOS	E		E				B				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	10.7		6.9	95.2	7.2		16.9	85.1				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	21.0		5.0	71.6	4.0		16.0	60.6				
Max Q Clear Time (g_c+I1), s	6.5		4.3	2.0	3.9		12.7	32.2				
Green Ext Time (p_c), s	0.3		0.0	69.2	0.0		0.2	28.3				
Intersection Summary												
HCM 2010 Ctrl Delay	9.0											
HCM 2010 LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

67: Reserve Dr & Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2925	214	348	2515	254	348	88	443	301	201	80
Future Volume (veh/h)	31	2925	214	348	2515	254	348	88	443	301	201	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	3079	225	366	2647	0	230	284	466	264	285	0
Adj No. of Lanes	2	4	1	2	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	574	2510	584	574	2510	588	310	326	277	296	310	264
Arrive On Green	0.17	0.39	0.37	0.17	0.39	0.00	0.17	0.17	0.17	0.17	0.17	0.00
Sat Flow, veh/h	3442	6408	1571	3442	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	33	3079	225	366	2647	0	230	284	466	264	285	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1571	1721	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	47.0	12.6	11.9	47.0	0.0	14.7	17.8	21.0	17.5	18.1	0.0
Cycle Q Clear(g_c), s	1.0	47.0	12.6	11.9	47.0	0.0	14.7	17.8	21.0	17.5	18.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	574	2510	584	574	2510	588	310	326	277	296	310	264
V/C Ratio(X)	0.06	1.23	0.39	0.64	1.05	0.00	0.74	0.87	1.68	0.89	0.92	0.00
Avail Cap(c_a), veh/h	574	2510	584	574	2510	588	310	326	277	296	310	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.09	0.09	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.1	36.5	27.6	46.6	36.5	0.0	46.9	48.2	49.5	49.0	49.2	0.0
Incr Delay (d2), s/veh	0.0	104.9	1.4	0.2	25.8	0.0	8.7	21.4	322.1	27.0	30.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	39.0	5.7	5.7	25.2	0.0	8.0	11.1	33.9	10.8	11.9	0.0
LnGrp Delay(d),s/veh	42.1	141.4	29.1	46.8	62.3	0.0	55.6	69.6	371.6	76.0	80.0	0.0
LnGrp LOS	D	F	C	D	F		E	E	F	E	F	
Approach Vol, veh/h	3337				3013				980			
Approach Delay, s/veh	132.8				60.4				209.9			
Approach LOS	F				E				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	24.0		23.0	50.0	23.0		23.0	50.0				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	20.0		19.0	43.6	19.0		19.0	43.6				
Max Q Clear Time (g_c+I1), s	23.0		13.9	49.0	20.1		3.0	49.0				
Green Ext Time (p_c), s	0.0		0.4	0.0	0.0		0.6	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	110.9											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

68: Galleria Blvd & Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	689	1851	1050	345	1904	650	663	871	78	793	982	465
Future Volume (veh/h)	689	1851	1050	345	1904	650	663	871	78	793	982	465
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	725	1948	0	363	2004	0	698	917	0	835	1034	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	505	1989	491	412	1687	417	574	1031	321	976	1146	357
Arrive On Green	0.29	0.62	0.00	0.24	0.53	0.00	0.17	0.20	0.00	0.06	0.07	0.00
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	3442	5085	1583	5003	5085	1583
Grp Volume(v), veh/h	725	1948	0	363	2004	0	698	917	0	835	1034	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1721	1695	1583	1668	1695	1583
Q Serve(g_s), s	17.6	35.3	0.0	12.2	31.6	0.0	20.0	21.0	0.0	19.8	24.2	0.0
Cycle Q Clear(g_c), s	17.6	35.3	0.0	12.2	31.6	0.0	20.0	21.0	0.0	19.8	24.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	1989	491	412	1687	417	574	1031	321	976	1146	357
V/C Ratio(X)	1.44	0.98	0.00	0.88	1.19	0.00	1.22	0.89	0.00	0.86	0.90	0.00
Avail Cap(c_a), veh/h	505	1989	491	459	1687	417	574	1059	330	976	1157	360
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.09	0.09	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.31	0.31	0.00
Uniform Delay (d), s/veh	42.4	22.4	0.0	44.8	28.4	0.0	50.0	46.5	0.0	54.5	54.2	0.0
Incr Delay (d2), s/veh	197.4	2.9	0.0	15.5	90.7	0.0	112.8	9.6	0.0	2.5	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.1	15.5	0.0	6.6	24.2	0.0	18.5	10.8	0.0	9.4	11.8	0.0
LnGrp Delay(d),s/veh	239.8	25.3	0.0	60.4	119.1	0.0	162.8	56.1	0.0	57.0	57.8	0.0
LnGrp LOS	F	C		E	F		F	E		E	E	
Approach Vol, veh/h	2673				2367				1615			
Approach Delay, s/veh	83.4				110.1				102.2			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.1	30.3	18.4	43.6	27.7	33.7	24.0	38.0				
Change Period (Y+Rc), s	7.7	6.0	4.0	6.4	7.7	* 6.7	6.4	6.4				
Max Green Setting (Gmax), s	19.3	25.0	16.0	35.6	20.0	* 27	17.6	31.6				
Max Q Clear Time (g_c+I1), s	21.8	23.0	14.2	37.3	22.0	26.2	19.6	33.6				
Green Ext Time (p_c), s	0.0	1.3	0.2	0.0	0.0	0.8	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 88.7
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

69: Creekside Ridge Dr & Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	2605	10	40	2666	223	58	1	68	283	4	292
Future Volume (veh/h)	95	2605	10	40	2666	223	58	1	68	283	4	292
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	2742	11	42	2806	235	62	0	72	301	0	307
Adj No. of Lanes	1	3	1	1	3	1	2	0	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	2278	705	54	2076	643	223	0	97	603	0	269
Arrive On Green	0.07	0.45	0.45	0.03	0.41	0.41	0.06	0.00	0.06	0.17	0.00	0.17
Sat Flow, veh/h	1774	5085	1574	1774	5085	1574	3548	0	1546	3548	0	1583
Grp Volume(v), veh/h	100	2742	11	42	2806	235	62	0	72	301	0	307
Grp Sat Flow(s),veh/h/ln	1774	1695	1574	1774	1695	1574	1774	0	1546	1774	0	1583
Q Serve(g_s), s	6.7	53.8	0.5	2.8	49.0	12.5	2.0	0.0	5.5	9.2	0.0	20.4
Cycle Q Clear(g_c), s	6.7	53.8	0.5	2.8	49.0	12.5	2.0	0.0	5.5	9.2	0.0	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	124	2278	705	54	2076	643	223	0	97	603	0	269
V/C Ratio(X)	0.80	1.20	0.02	0.78	1.35	0.37	0.28	0.00	0.74	0.50	0.00	1.14
Avail Cap(c_a), veh/h	237	2278	705	237	2076	643	473	0	206	603	0	269
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.0	33.1	18.4	57.8	35.5	24.7	53.6	0.0	55.3	45.2	0.0	49.8
Incr Delay (d2), s/veh	4.5	96.0	0.0	0.8	158.4	0.1	0.2	0.0	4.1	0.8	0.0	98.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	45.4	0.2	1.4	53.3	5.4	1.0	0.0	2.5	4.6	0.0	16.3
LnGrp Delay(d),s/veh	59.5	129.2	18.4	58.6	193.9	24.8	53.9	0.0	59.4	46.0	0.0	148.0
LnGrp LOS	E	F	B	E	F	C	D		E	D		F
Approach Vol, veh/h	2853			3083			134			608		
Approach Delay, s/veh	126.3			179.2			56.9			97.5		
Approach LOS	F			F			E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.5	7.6	59.8		25.0	12.4	55.0				
Change Period (Y+Rc), s		4.0	4.0	6.0		4.6	4.0	6.0				
Max Green Setting (Gmax), s		16.0	16.0	49.0		20.4	16.0	49.0				
Max Q Clear Time (g_c+I1), s		7.5	4.8	55.8		22.4	8.7	51.0				
Green Ext Time (p_c), s		0.1	0.0	0.0		0.0	0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	146.7											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

70: Taylor Rd & E. Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	2496	128	189	2434	989	353	393	225	431	261	194
Future Volume (veh/h)	273	2496	128	189	2434	989	353	393	225	431	261	194
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1891	1891	1891	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	287	2627	94	199	2562	826	372	414	119	454	275	102
Adj No. of Lanes	2	4	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	2710	924	489	2418	750	550	558	171	509	414	127
Arrive On Green	0.10	0.42	0.42	0.14	0.48	0.48	0.16	0.11	0.11	0.15	0.08	0.08
Sat Flow, veh/h	3493	6504	1601	3442	5085	1578	3442	5085	1562	3442	5085	1554
Grp Volume(v), veh/h	287	2627	94	199	2562	826	372	414	119	454	275	102
Grp Sat Flow(s),veh/h/ln	1747	1626	1601	1721	1695	1578	1721	1695	1562	1721	1695	1554
Q Serve(g_s), s	9.7	47.4	0.0	6.3	57.0	57.0	12.2	9.5	6.4	15.5	6.3	6.2
Cycle Q Clear(g_c), s	9.7	47.4	0.0	6.3	57.0	57.0	12.2	9.5	6.4	15.5	6.3	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	350	2710	924	489	2418	750	550	558	171	509	414	127
V/C Ratio(X)	0.82	0.97	0.10	0.41	1.06	1.10	0.68	0.74	0.69	0.89	0.66	0.81
Avail Cap(c_a), veh/h	466	2710	924	489	2418	750	574	636	195	545	593	181
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.40	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	34.3	11.4	46.9	31.5	31.5	47.5	51.8	27.3	50.2	53.5	34.7
Incr Delay (d2), s/veh	3.5	5.9	0.1	0.0	28.0	47.6	2.8	4.3	9.3	15.7	2.1	17.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	22.3	1.4	3.0	32.9	34.7	6.0	4.7	3.2	8.5	3.0	3.3
LnGrp Delay(d),s/veh	56.4	40.2	11.5	46.9	59.5	79.1	50.3	56.0	36.6	65.9	55.7	51.8
LnGrp LOS	E	D	B	D	F	F	D	E	D	E	E	D
Approach Vol, veh/h	3008				3587				905			
Approach Delay, s/veh	40.8				63.3				51.1			
Approach LOS	D				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.8	19.2	23.1	56.0	25.2	15.8	16.0	63.0				
Change Period (Y+Rc), s	4.0	6.0	6.0	* 6	6.0	* 6	4.0	6.0				
Max Green Setting (Gmax), s	19.0	15.0	16.0	* 50	20.0	* 14	16.0	50.0				
Max Q Clear Time (g_c+I1), s	17.5	11.5	8.3	49.4	14.2	8.3	11.7	59.0				
Green Ext Time (p_c), s	0.2	1.5	2.0	0.6	2.3	1.1	0.3	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
71: N. Sunrise Ave & E. Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	2435	680	266	2574	23	668	63	272	8	199	355
Future Volume (veh/h)	95	2435	680	266	2574	23	668	63	272	8	199	355
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	2563	0	280	2709	24	703	66	0	8	209	374
Adj No. of Lanes	2	3	1	2	3	1	3	1	1	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	2256	702	333	2524	783	721	524	445	10	257	384
Arrive On Green	0.06	0.59	0.00	0.19	0.99	0.99	0.14	0.28	0.00	0.01	0.14	0.14
Sat Flow, veh/h	3442	5085	1583	3442	5085	1579	5003	1863	1583	1774	1863	2787
Grp Volume(v), veh/h	100	2563	0	280	2709	24	703	66	0	8	209	374
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1579	1668	1863	1583	1774	1863	1393
Q Serve(g_s), s	3.4	53.2	0.0	9.4	59.6	0.0	16.8	3.2	0.0	0.5	13.1	13.9
Cycle Q Clear(g_c), s	3.4	53.2	0.0	9.4	59.6	0.0	16.8	3.2	0.0	0.5	13.1	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	2256	702	333	2524	783	721	524	445	10	257	384
V/C Ratio(X)	0.66	1.14	0.00	0.84	1.07	0.03	0.97	0.13	0.00	0.77	0.81	0.97
Avail Cap(c_a), veh/h	459	2256	702	459	2524	783	721	524	445	237	301	451
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.29	0.29	0.00	0.44	0.44	0.44	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	24.6	0.0	47.5	0.4	0.2	51.1	32.1	0.0	59.6	50.2	38.6
Incr Delay (d2), s/veh	0.5	63.1	0.0	3.4	37.1	0.0	27.1	0.2	0.0	34.9	11.8	32.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	37.7	0.0	4.6	8.9	0.0	9.6	1.7	0.0	0.4	7.6	7.0
LnGrp Delay(d),s/veh	56.1	87.7	0.0	50.9	37.6	0.2	78.2	32.3	0.0	94.5	62.0	70.7
LnGrp LOS	E	F		D	F	A	E	C		F	E	E
Approach Vol, veh/h	2663				3013				769			
Approach Delay, s/veh	86.5				38.5				74.3			
Approach LOS	F				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.7	40.4	15.6	59.2	24.0	21.1	9.3	65.6				
Change Period (Y+Rc), s	4.0	* 6.7	4.0	6.0	6.7	4.6	4.0	6.0				
Max Green Setting (Gmax), s	16.0	* 22	16.0	46.0	17.3	19.4	16.0	46.0				
Max Q Clear Time (g_c+I1), s	2.5	5.2	11.4	55.2	18.8	15.9	5.4	61.6				
Green Ext Time (p_c), s	0.0	1.9	0.2	0.0	0.0	0.7	0.1	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	63.1
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
72: Secret Ravine Pkwy & E. Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	630	1922	4	14	2214	145	0	0	0	154	0	502
Future Volume (veh/h)	630	1922	4	14	2214	145	0	0	0	154	0	502
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	663	2023	4	15	2331	153	0	0	0	162	0	528
Adj No. of Lanes	2	3	0	1	3	1	1	1	1	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	709	3081	6	18	1890	586	1	2	1	409	0	369
Arrive On Green	0.41	1.00	1.00	0.01	0.37	0.37	0.00	0.00	0.00	0.12	0.00	0.12
Sat Flow, veh/h	3442	5241	10	1774	5085	1577	1774	1863	1583	3502	0	3167
Grp Volume(v), veh/h	663	1309	718	15	2331	153	0	0	0	162	0	528
Grp Sat Flow(s),veh/h/ln	1721	1695	1861	1774	1695	1577	1774	1863	1583	1751	0	1583
Q Serve(g_s), s	22.1	0.0	0.0	1.0	44.6	8.1	0.0	0.0	0.0	5.1	0.0	14.0
Cycle Q Clear(g_c), s	22.1	0.0	0.0	1.0	44.6	8.1	0.0	0.0	0.0	5.1	0.0	14.0
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	709	1993	1094	18	1890	586	1	2	1	409	0	369
V/C Ratio(X)	0.93	0.66	0.66	0.85	1.23	0.26	0.00	0.00	0.00	0.40	0.00	1.43
Avail Cap(c_a), veh/h	774	1993	1094	177	1890	586	207	217	185	409	0	369
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.77	0.77	0.77	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.5	0.0	0.0	59.3	37.7	26.2	0.0	0.0	0.0	49.1	0.0	53.0
Incr Delay (d2), s/veh	2.2	0.1	0.1	26.5	108.7	0.8	0.0	0.0	0.0	0.2	0.0	208.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	0.0	0.0	0.6	39.9	3.7	0.0	0.0	0.0	2.5	0.0	16.8
LnGrp Delay(d),s/veh	36.7	0.1	0.1	85.8	146.4	27.1	0.0	0.0	0.0	49.3	0.0	261.2
LnGrp LOS	D	A	A	F	F	C				D		F
Approach Vol, veh/h	2690				2499				0		690	
Approach Delay, s/veh	9.1				138.7				0.0		211.4	
Approach LOS	A				F						F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	0.0		5.2	76.9	20.0		31.1	51.0				
Change Period (Y+Rc), s	4.0		4.0	6.4	6.0		6.4	* 6.4				
Max Green Setting (Gmax), s	14.0		12.0	59.6	14.0		27.0	* 45				
Max Q Clear Time (g_c+I1), s	0.0		3.0	2.0	16.0		24.1	46.6				
Green Ext Time (p_c), s	0.0		0.0	35.4	0.0		0.6	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	88.0											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
73: E. Roseville Pkwy & Alexandra Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	65	77	2081	162	81	1923		
Future Volume (veh/h)	65	77	2081	162	81	1923		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	68	81	2191	171	85	2024		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	122	109	3747	1167	107	4224		
Arrive On Green	0.07	0.07	1.00	1.00	0.06	0.83		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	68	81	2191	171	85	2024		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	4.5	6.0	0.0	0.0	5.7	13.4		
Cycle Q Clear(g_c), s	4.5	6.0	0.0	0.0	5.7	13.4		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	122	109	3747	1167	107	4224		
V/C Ratio(X)	0.56	0.75	0.58	0.15	0.79	0.48		
Avail Cap(c_a), veh/h	359	321	3747	1167	177	4224		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.81	0.81	0.83	0.83		
Uniform Delay (d), s/veh	54.1	54.9	0.0	0.0	55.6	2.9		
Incr Delay (d2), s/veh	3.0	7.3	0.2	0.1	4.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.3	5.4	0.1	0.0	2.9	6.3		
LnGrp Delay(d),s/veh	57.1	62.2	0.2	0.1	59.7	3.2		
LnGrp LOS	E	E	A	A	E	A		
Approach Vol, veh/h	149		2362			2109		
Approach Delay, s/veh	59.9		0.2			5.5		
Approach LOS	E		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				106.1		13.9	11.2	94.8
Change Period (Y+Rc), s				6.4		5.7	4.0	6.4
Max Green Setting (Gmax), s				83.6		24.3	12.0	67.6
Max Q Clear Time (g_c+l1), s				15.4		8.0	7.7	2.0
Green Ext Time (p_c), s				66.0		0.3	0.0	63.6
Intersection Summary								
HCM 2010 Ctrl Delay			4.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
 74: Roseville Pkwy/E. Roseville Pkwy & Rocky Ridge Dr

Cumulative No Project
 PM Peak Hour

							
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Traffic Volume (veh/h)	311	258	107	1973	1791	238	
Future Volume (veh/h)	311	258	107	1973	1791	238	
Number	5	12	3	8	4	14	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	
Adj Flow Rate, veh/h	327	272	113	2077	1885	251	
Adj No. of Lanes	2	1	2	3	3	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	657	302	167	3373	2957	921	
Arrive On Green	0.19	0.19	0.10	1.00	1.00	1.00	
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583	
Grp Volume(v), veh/h	327	272	113	2077	1885	251	
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583	
Q Serve(g_s), s	10.2	20.1	3.8	0.0	0.0	0.0	
Cycle Q Clear(g_c), s	10.2	20.1	3.8	0.0	0.0	0.0	
Prop In Lane	1.00	1.00	1.00			1.00	
Lane Grp Cap(c), veh/h	657	302	167	3373	2957	921	
V/C Ratio(X)	0.50	0.90	0.68	0.62	0.64	0.27	
Avail Cap(c_a), veh/h	832	383	832	3373	2957	921	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	0.80	0.80	0.86	0.86	
Uniform Delay (d), s/veh	43.4	47.4	53.3	0.0	0.0	0.0	
Incr Delay (d2), s/veh	0.2	17.9	1.4	0.7	0.9	0.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.9	10.3	1.8	0.2	0.3	0.2	
LnGrp Delay(d),s/veh	43.6	65.3	54.7	0.7	0.9	0.6	
LnGrp LOS	D	E	D	A	A	A	
Approach Vol, veh/h	599			2190	2136		
Approach Delay, s/veh	53.4			3.5	0.9		
Approach LOS	D			A	A		
Timer	1	2	3	4	5	6	7 8
Assigned Phs		2	3	4			8
Phs Duration (G+Y+Rc), s		28.6	9.8	75.8			85.6
Change Period (Y+Rc), s		5.7	4.0	6.0			* 6
Max Green Setting (Gmax), s		29.0	29.0	46.3			* 80
Max Q Clear Time (g_c+I1), s		22.1	5.8	2.0			2.0
Green Ext Time (p_c), s		0.8	0.2	43.6			75.6
Intersection Summary							
HCM 2010 Ctrl Delay			8.4				
HCM 2010 LOS			A				
Notes							
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.							

HCM 2010 Signalized Intersection Summary

75: Roseville Pkwy & Orvietto Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	31	225	7	20	14	189	1832	8	15	1987	68
Future Volume (veh/h)	257	31	225	7	20	14	189	1832	8	15	1987	68
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	295	0	237	7	21	15	199	1928	8	16	2092	72
Adj No. of Lanes	2	0	1	1	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	0	172	51	29	21	225	2867	893	24	2292	714
Arrive On Green	0.11	0.00	0.11	0.03	0.03	0.03	0.13	0.56	0.56	0.01	0.45	0.45
Sat Flow, veh/h	3548	0	1583	1774	1012	723	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	295	0	237	7	0	36	199	1928	8	16	2092	72
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1735	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	9.7	0.0	13.0	0.5	0.0	2.5	13.2	32.0	0.3	1.1	46.1	3.1
Cycle Q Clear(g_c), s	9.7	0.0	13.0	0.5	0.0	2.5	13.2	32.0	0.3	1.1	46.1	3.1
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	384	0	172	51	0	50	225	2867	893	24	2292	714
V/C Ratio(X)	0.77	0.00	1.38	0.14	0.00	0.72	0.88	0.67	0.01	0.65	0.91	0.10
Avail Cap(c_a), veh/h	384	0	172	237	0	231	237	2867	893	74	2343	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.77	0.77	0.77	0.78	0.78	0.78
Uniform Delay (d), s/veh	52.0	0.0	53.5	56.8	0.0	57.8	51.5	18.4	11.5	58.9	30.8	19.0
Incr Delay (d2), s/veh	9.5	0.0	203.8	0.9	0.0	13.5	22.9	1.0	0.0	8.2	4.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	15.4	0.2	0.0	1.4	7.9	15.1	0.1	0.6	22.5	1.4
LnGrp Delay(d),s/veh	61.5	0.0	257.3	57.7	0.0	71.3	74.4	19.4	11.5	67.1	35.7	19.1
LnGrp LOS	E		F	E		E	E	B	B	E	D	B
Approach Vol, veh/h	532			43			2135			2180		
Approach Delay, s/veh	148.7			69.1			24.5			35.4		
Approach LOS	F			E			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	5		6	7	8			
Phs Duration (G+Y+Rc), s	19.0		19.2	59.8	7.5		5.7	73.4				
Change Period (Y+Rc), s	6.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	13.0		16.0	55.3	16.0		5.0	66.3				
Max Q Clear Time (g_c+I1), s	15.0		15.2	48.1	4.5		3.1	34.0				
Green Ext Time (p_c), s	0.0		0.0	6.0	0.1		0.0	32.1				
Intersection Summary												
HCM 2010 Ctrl Delay	43.2											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

76: Roseville Pkwy & Olympus Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	194	94	37	98	201	19	1662	133	341	1835	35
Future Volume (veh/h)	69	194	94	37	98	201	19	1662	133	341	1835	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	204	99	39	103	0	20	1749	0	359	1932	37
Adj No. of Lanes	1	1	1	1	2	1	1	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	263	223	50	413	185	29	2785	867	419	3355	64
Arrive On Green	0.05	0.14	0.14	0.03	0.12	0.00	0.02	0.55	0.00	0.12	0.65	0.65
Sat Flow, veh/h	1774	1863	1583	1774	3539	1583	1774	5085	1583	3442	5137	98
Grp Volume(v), veh/h	73	204	99	39	103	0	20	1749	0	359	1274	695
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1721	1695	1845
Q Serve(g_s), s	4.9	12.7	6.9	2.6	3.2	0.0	1.3	28.5	0.0	12.3	25.1	25.1
Cycle Q Clear(g_c), s	4.9	12.7	6.9	2.6	3.2	0.0	1.3	28.5	0.0	12.3	25.1	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	93	263	223	50	413	185	29	2785	867	419	2214	1205
V/C Ratio(X)	0.78	0.78	0.44	0.78	0.25	0.00	0.70	0.63	0.00	0.86	0.58	0.58
Avail Cap(c_a), veh/h	148	343	292	89	510	228	74	2785	867	545	2214	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.70	0.70	0.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	56.2	49.7	47.2	58.0	48.2	0.0	58.7	18.7	0.0	51.7	11.6	11.6
Incr Delay (d2), s/veh	5.4	14.5	4.0	9.6	0.5	0.0	7.6	0.4	0.0	5.6	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	7.6	3.2	1.4	1.6	0.0	0.7	13.4	0.0	6.2	11.9	13.2
LnGrp Delay(d),s/veh	61.5	64.2	51.2	67.6	48.7	0.0	66.4	19.1	0.0	57.3	12.3	12.9
LnGrp LOS	E	E	D	E	D		E	B		E	B	B
Approach Vol, veh/h	376				142				1769			
Approach Delay, s/veh	60.3				53.9				19.6			
Approach LOS	E				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	22.6	5.9	84.1	10.3	19.7	18.6	71.4				
Change Period (Y+Rc), s	4.0	* 5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	6.0	* 22	5.0	68.3	10.0	17.3	19.0	54.3				
Max Q Clear Time (g_c+I1), s	4.6	14.7	3.3	27.1	6.9	5.2	14.3	30.5				
Green Ext Time (p_c), s	0.0	2.3	0.0	40.1	0.0	3.2	0.3	23.5				

Intersection Summary

HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

77: Douglas Blvd & Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	1737	424	119	1602	905	263	699	54	826	1055	136
Future Volume (veh/h)	208	1737	424	119	1602	905	263	699	54	826	1055	136
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	219	1828	446	125	1686	0	277	736	57	869	1111	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	2128	660	177	1989	619	330	985	304	853	1432	446
Arrive On Green	0.08	0.42	0.42	0.05	0.39	0.00	0.10	0.19	0.19	0.17	0.28	0.00
Sat Flow, veh/h	3442	5085	1578	3442	5085	1583	3442	5085	1571	5003	5085	1583
Grp Volume(v), veh/h	219	1828	446	125	1686	0	277	736	57	869	1111	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1578	1721	1695	1583	1721	1695	1571	1668	1695	1583
Q Serve(g_s), s	8.1	42.1	29.6	4.6	39.0	0.0	10.2	17.6	3.3	22.0	25.9	0.0
Cycle Q Clear(g_c), s	8.1	42.1	29.6	4.6	39.0	0.0	10.2	17.6	3.3	22.0	25.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	2128	660	177	1989	619	330	985	304	853	1432	446
V/C Ratio(X)	0.81	0.86	0.68	0.71	0.85	0.00	0.84	0.75	0.19	1.02	0.78	0.00
Avail Cap(c_a), veh/h	320	2128	660	320	1989	619	400	1194	369	853	1470	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	58.5	34.1	30.4	60.2	35.8	0.0	57.3	49.0	30.9	53.5	42.6	0.0
Incr Delay (d2), s/veh	10.5	4.8	5.5	1.9	3.8	0.0	10.8	2.6	0.5	32.3	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	20.6	13.9	2.2	19.0	0.0	5.3	8.5	1.5	12.7	12.4	0.0
LnGrp Delay(d),s/veh	68.9	38.8	35.9	62.2	39.5	0.0	68.2	51.6	31.4	85.8	44.9	0.0
LnGrp LOS	E	D	D	E	D		E	D	C	F	D	
Approach Vol, veh/h	2493			1811			1070			1980		
Approach Delay, s/veh	41.0			41.1			54.8			62.8		
Approach LOS	D			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	60.0	16.4	42.0	14.2	56.5	27.7	30.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	6.0	5.7	* 5.7				
Max Green Setting (Gmax), s	12.0	45.0	15.0	37.3	12.0	45.0	22.0	* 30				
Max Q Clear Time (g_c+I1), s	6.6	44.1	12.2	27.9	10.1	41.0	24.0	19.6				
Green Ext Time (p_c), s	0.1	0.9	0.2	6.9	0.1	2.0	0.0	4.9				

Intersection Summary

HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
78: E. Roseville Pkwy & Village Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	3	7	24	3	178	97	924	12	91	1148	7
Future Volume (veh/h)	24	3	7	24	3	178	97	924	12	91	1148	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	25	3	7	25	3	187	102	973	13	96	1208	7
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	16	133	263	32	262	175	1752	23	173	1761	10
Arrive On Green	0.08	0.08	0.08	0.17	0.17	0.17	0.10	0.49	0.46	0.10	0.49	0.46
Sat Flow, veh/h	1592	191	1583	1592	191	1583	1774	3576	48	1774	3608	21
Grp Volume(v), veh/h	28	0	7	28	0	187	102	481	505	96	592	623
Grp Sat Flow(s),veh/h/ln	1783	0	1583	1783	0	1583	1774	1770	1854	1774	1770	1859
Q Serve(g_s), s	1.0	0.0	0.3	1.0	0.0	8.0	3.9	13.7	13.7	3.7	18.4	18.5
Cycle Q Clear(g_c), s	1.0	0.0	0.3	1.0	0.0	8.0	3.9	13.7	13.7	3.7	18.4	18.5
Prop In Lane	0.89		1.00	0.89		1.00	1.00		0.03	1.00		0.01
Lane Grp Cap(c), veh/h	150	0	133	295	0	262	175	867	908	173	864	908
V/C Ratio(X)	0.19	0.00	0.05	0.09	0.00	0.71	0.58	0.56	0.56	0.56	0.69	0.69
Avail Cap(c_a), veh/h	274	0	243	1046	0	929	198	897	940	223	922	969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	30.2	25.3	0.0	28.3	30.8	12.8	12.8	30.8	14.1	14.1
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	1.4	1.5	1.1	1.0	1.0	2.5	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.1	0.5	0.0	3.6	2.0	6.8	7.1	1.9	9.5	9.9
LnGrp Delay(d),s/veh	30.7	0.0	30.2	25.4	0.0	29.6	32.4	13.9	13.8	31.9	16.6	16.5
LnGrp LOS	C		C	C		C	C	B	B	C	B	B
Approach Vol, veh/h	35		215			1088			1311			
Approach Delay, s/veh	30.6		29.1			15.6			17.6			
Approach LOS	C		C			B			B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	9.0		10.1	37.7	14.8		10.0	37.8				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	10.0		7.0	34.3	41.0		8.0	33.3				
Max Q Clear Time (g_c+I1), s	3.0		5.9	20.5	10.0		5.7	15.7				
Green Ext Time (p_c), s	0.0		0.0	11.5	0.6		0.0	14.1				
Intersection Summary												
HCM 2010 Ctrl Delay	17.9											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

79: E. Roseville Pkwy & Eureka Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	557	584	159	513	111	311	586	89	566	800	29
Future Volume (veh/h)	33	557	584	159	513	111	311	586	89	566	800	29
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1966	1891	1891	1966	1891	1891	1966	1891	1891	1947	1872	1872
Adj Flow Rate, veh/h	35	586	615	167	540	117	327	617	94	596	842	31
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	137	829	531	218	986	439	442	1225	546	703	2118	657
Arrive On Green	0.07	0.23	0.21	0.12	0.27	0.27	0.12	0.34	0.34	0.20	0.41	0.41
Sat Flow, veh/h	1873	3592	1596	1873	3592	1598	3633	3592	1600	3597	5110	1585
Grp Volume(v), veh/h	35	586	615	167	540	117	327	617	94	596	842	31
Grp Sat Flow(s),veh/h/ln	1873	1796	1596	1873	1796	1598	1816	1796	1600	1798	1703	1585
Q Serve(g_s), s	1.7	14.7	20.6	8.5	12.6	5.6	8.5	13.4	4.0	15.7	11.3	1.1
Cycle Q Clear(g_c), s	1.7	14.7	20.6	8.5	12.6	5.6	8.5	13.4	4.0	15.7	11.3	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	137	829	531	218	986	439	442	1225	546	703	2118	657
V/C Ratio(X)	0.26	0.71	1.16	0.77	0.55	0.27	0.74	0.50	0.17	0.85	0.40	0.05
Avail Cap(c_a), veh/h	210	829	531	268	986	439	779	1467	654	808	2139	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	34.6	32.7	42.0	30.3	27.8	41.5	25.7	22.6	38.0	20.1	17.1
Incr Delay (d2), s/veh	0.4	3.2	90.4	7.7	0.9	0.6	0.9	0.6	0.3	6.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	7.6	27.7	4.8	6.4	2.5	4.3	6.7	1.8	8.4	5.3	0.5
LnGrp Delay(d),s/veh	43.3	37.8	123.2	49.7	31.3	28.4	42.4	26.2	22.8	44.7	20.3	17.2
LnGrp LOS	D	D	F	D	C	C	D	C	C	D	C	B
Approach Vol, veh/h	1236				824				1038			
Approach Delay, s/veh	80.4				34.6				31.0			
Approach LOS	F				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.4	25.3	14.9	43.3	10.1	29.6	22.1	36.1				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	13.0	19.6	20.0	38.0	10.0	22.6	21.0	37.0				
Max Q Clear Time (g_c+I1), s	10.5	22.6	10.5	13.3	3.7	14.6	17.7	15.4				
Green Ext Time (p_c), s	0.1	0.0	0.4	16.0	0.0	6.8	0.5	14.5				

Intersection Summary

HCM 2010 Ctrl Delay 44.8
HCM 2010 LOS D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

80: N. Cirby Way & E. Roseville Pkwy

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	1284	83	106	885	63	33		
Future Volume (veh/h)	1284	83	106	885	63	33		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1352	87	112	932	66	35		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1894	800	238	2557	305	272		
Arrive On Green	0.54	0.51	0.13	0.72	0.17	0.17		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	1352	87	112	932	66	35		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	16.3	1.6	3.3	5.6	1.8	1.1		
Cycle Q Clear(g_c), s	16.3	1.6	3.3	5.6	1.8	1.1		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1894	800	238	2557	305	272		
V/C Ratio(X)	0.71	0.11	0.47	0.36	0.22	0.13		
Avail Cap(c_a), veh/h	1932	817	281	2785	656	585		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	9.9	7.4	22.7	3.0	20.2	19.9		
Incr Delay (d2), s/veh	1.5	0.1	0.5	0.1	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.3	0.7	1.7	2.8	0.9	0.5		
LnGrp Delay(d),s/veh	11.4	7.5	23.3	3.1	20.4	20.0		
LnGrp LOS	B	A	C	A	C	B		
Approach Vol, veh/h	1439			1044	101			
Approach Delay, s/veh	11.1			5.3	20.2			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		12.8	10.6	33.4				44.0
Change Period (Y+Rc), s		4.0	4.0	5.7				* 5.7
Max Green Setting (Gmax), s		20.0	8.0	28.3				* 42
Max Q Clear Time (g_c+I1), s		3.8	5.3	18.3				7.6
Green Ext Time (p_c), s		0.1	0.0	9.4				29.2
Intersection Summary								
HCM 2010 Ctrl Delay			9.1					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

81: Sierra College Blvd & E. Roseville Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	512	664	59	204	85	656	1093	58	156	1791	88
Future Volume (veh/h)	127	512	664	59	204	85	656	1093	58	156	1791	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	134	539	0	62	215	0	691	1151	0	164	1885	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	766	343	279	761	340	631	2000	623	663	2132	664
Arrive On Green	0.08	0.22	0.00	0.08	0.21	0.00	0.18	0.39	0.00	0.19	0.42	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	134	539	0	62	215	0	691	1151	0	164	1885	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.5	16.9	0.0	2.0	6.1	0.0	22.0	21.3	0.0	4.8	41.0	0.0
Cycle Q Clear(g_c), s	4.5	16.9	0.0	2.0	6.1	0.0	22.0	21.3	0.0	4.8	41.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	766	343	279	761	340	631	2000	623	663	2132	664
V/C Ratio(X)	0.47	0.70	0.00	0.22	0.28	0.00	1.10	0.58	0.00	0.25	0.88	0.00
Avail Cap(c_a), veh/h	287	997	446	315	1038	464	631	2000	623	663	2132	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.6	43.5	0.0	51.6	39.4	0.0	49.0	28.5	0.0	41.1	32.2	0.0
Incr Delay (d2), s/veh	0.5	2.3	0.0	0.1	0.3	0.0	64.6	1.2	0.0	0.1	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	8.5	0.0	1.0	3.0	0.0	16.1	10.1	0.0	2.3	20.2	0.0
LnGrp Delay(d),s/veh	53.0	45.8	0.0	51.7	39.7	0.0	113.6	29.8	0.0	41.1	37.1	0.0
LnGrp LOS	D	D		D	D		F	C		D	D	
Approach Vol, veh/h	673				277				1842			
Approach Delay, s/veh	47.2				42.4				61.2			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.1	50.2	12.7	29.0	25.0	53.3	12.9	28.8				
Change Period (Y+Rc), s	6.0	* 6	4.0	5.7	4.0	6.0	4.0	* 5.7				
Max Green Setting (Gmax), s	15.0	* 44	10.0	31.1	21.0	38.2	9.0	* 33				
Max Q Clear Time (g_c+I1), s	6.8	23.3	4.0	18.9	24.0	43.0	6.5	8.1				
Green Ext Time (p_c), s	6.2	8.2	0.0	4.4	0.0	0.0	0.1	6.0				

Intersection Summary

HCM 2010 Ctrl Delay 48.1
HCM 2010 LOS D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

82: Atlantic St & Yosemite St

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	58	707	1040	484	314	144		
Future Volume (veh/h)	58	707	1040	484	314	144		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827		
Adj Flow Rate, veh/h	61	744	1095	509	331	152		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	4	4	4	4	4	4		
Cap, veh/h	109	2074	1641	730	510	617		
Arrive On Green	0.06	0.60	0.47	0.47	0.29	0.29		
Sat Flow, veh/h	1740	3563	3563	1545	1740	1553		
Grp Volume(v), veh/h	61	744	1095	509	331	152		
Grp Sat Flow(s),veh/h/ln	1740	1736	1736	1545	1740	1553		
Q Serve(g_s), s	1.7	5.3	11.8	12.6	8.0	3.2		
Cycle Q Clear(g_c), s	1.7	5.3	11.8	12.6	8.0	3.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	109	2074	1641	730	510	617		
V/C Ratio(X)	0.56	0.36	0.67	0.70	0.65	0.25		
Avail Cap(c_a), veh/h	144	2074	1912	851	1113	1155		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.1	5.0	9.8	10.0	15.0	9.8		
Incr Delay (d2), s/veh	1.7	0.1	0.7	2.1	0.5	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	2.5	5.6	5.7	3.9	3.3		
LnGrp Delay(d),s/veh	23.7	5.1	10.6	12.1	15.5	9.8		
LnGrp LOS	C	A	B	B	B	A		
Approach Vol, veh/h		805	1604		483			
Approach Delay, s/veh		6.5	11.1		13.7			
Approach LOS		A	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.7		15.8	6.0	26.6		
Change Period (Y+Rc), s		5.7		4.6	4.0	5.7		
Max Green Setting (Gmax), s		24.7		28.0	3.0	24.7		
Max Q Clear Time (g_c+l1), s		7.3		10.0	3.7	14.6		
Green Ext Time (p_c), s		10.8		1.2	0.0	6.3		
Intersection Summary								
HCM 2010 Ctrl Delay			10.2					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

83: Center St/Tiger Way & Atlantic St

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	653	16	126	1233	364	25	1	10	88	4	298
Future Volume (veh/h)	123	653	16	126	1233	364	25	1	10	88	4	298
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1881	1810	1810	1881	1881	1900	1862	1776	1773
Adj Flow Rate, veh/h	129	687	17	133	1298	383	26	1	11	93	4	314
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	1	5	5	1	1	1	1	1	5
Cap, veh/h	159	1694	42	95	1561	691	76	6	63	396	17	363
Arrive On Green	0.09	0.49	0.48	0.05	0.45	0.45	0.04	0.04	0.04	0.24	0.24	0.24
Sat Flow, veh/h	1723	3432	85	1792	3438	1521	1792	135	1484	1625	70	1489
Grp Volume(v), veh/h	129	344	360	133	1298	383	26	0	12	97	0	314
Grp Sat Flow(s),veh/h/ln	1723	1721	1796	1792	1719	1521	1792	0	1619	1695	0	1489
Q Serve(g_s), s	5.6	9.6	9.6	4.0	25.1	13.9	1.1	0.0	0.5	3.5	0.0	15.3
Cycle Q Clear(g_c), s	5.6	9.6	9.6	4.0	25.1	13.9	1.1	0.0	0.5	3.5	0.0	15.3
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.92	0.96		1.00
Lane Grp Cap(c), veh/h	159	849	887	95	1561	691	76	0	68	413	0	363
V/C Ratio(X)	0.81	0.41	0.41	1.41	0.83	0.55	0.34	0.00	0.18	0.23	0.00	0.87
Avail Cap(c_a), veh/h	159	870	908	95	1602	709	378	0	342	425	0	373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.7	12.1	12.2	35.9	18.1	15.1	35.3	0.0	35.0	23.0	0.0	27.5
Incr Delay (d2), s/veh	24.4	0.3	0.3	234.1	3.8	0.9	1.0	0.0	0.4	0.3	0.0	18.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.6	4.8	8.1	12.5	5.9	0.5	0.0	0.3	1.6	0.0	8.2
LnGrp Delay(d),s/veh	58.1	12.5	12.5	270.0	21.9	16.0	36.2	0.0	35.5	23.3	0.0	45.9
LnGrp LOS	E	B	B	F	C	B	D		D	C		D
Approach Vol, veh/h	833		1814				38		411			
Approach Delay, s/veh	19.5		38.9				36.0		40.6			
Approach LOS	B		D				D		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.0	41.1	21.5		10.0	38.1	6.2					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	36.3	18.0		6.0	33.3	15.0					
Max Q Clear Time (g_c+I1), s	6.0	11.6	17.3		7.6	27.1	3.1					
Green Ext Time (p_c), s	0.0	16.4	0.1		0.0	5.3	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			33.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

84: Wills Rd & Atlantic St

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	749	263	274	1547	101	678		
Future Volume (veh/h)	749	263	274	1547	101	678		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	788	277	288	1628	106	714		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	944	418	444	2125	503	844		
Arrive On Green	0.27	0.25	0.25	0.60	0.28	0.28		
Sat Flow, veh/h	3632	1568	1774	3632	1774	1583		
Grp Volume(v), veh/h	788	277	288	1628	106	714		
Grp Sat Flow(s),veh/h/ln	1770	1568	1774	1770	1774	1583		
Q Serve(g_s), s	12.6	9.4	8.7	20.4	2.7	17.0		
Cycle Q Clear(g_c), s	12.6	9.4	8.7	20.4	2.7	17.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	944	418	444	2125	503	844		
V/C Ratio(X)	0.83	0.66	0.65	0.77	0.21	0.85		
Avail Cap(c_a), veh/h	944	418	503	2125	503	844		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.33	0.33	1.00	1.00		
Uniform Delay (d), s/veh	20.8	19.6	20.1	8.9	16.4	10.5		
Incr Delay (d2), s/veh	6.6	3.9	0.5	0.9	0.1	7.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.0	4.6	4.3	10.0	1.3	13.5		
LnGrp Delay(d),s/veh	27.3	23.5	20.7	9.8	16.5	18.0		
LnGrp LOS	C	C	C	A	B	B		
Approach Vol, veh/h	1065			1916	820			
Approach Delay, s/veh	26.3			11.4	17.8			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	20.0	20.0		20.0		40.0		
Change Period (Y+Rc), s	6.0	* 6		4.0		6.0		
Max Green Setting (Gmax), s	16.0	* 14		16.0		34.0		
Max Q Clear Time (g_c+I1), s	10.7	14.6		19.0		22.4		
Green Ext Time (p_c), s	3.4	0.0		0.0		6.3		
Intersection Summary								
HCM 2010 Ctrl Delay			17.0					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

85: I-80 WB Ramps & Atlantic St/Eureka Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑↑	↑↑				↑			↑
Traffic Volume (veh/h)	0	844	705	954	1262	0	0	0	1051	0	0	687
Future Volume (veh/h)	0	844	705	954	1262	0	0	0	1051	0	0	687
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	0	888	742	1004	1328	0	0	0	0	0	0	0
Adj No. of Lanes	0	3	1	2	2	0	0	0	1	0	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	0	0	2	0	0	2
Cap, veh/h	0	3706	1150	516	3287	0	0	0	0	0	0	0
Arrive On Green	0.00	0.73	0.73	0.15	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	5253	1578	3442	3632	0		0			0	
Grp Volume(v), veh/h	0	888	742	1004	1328	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	0	1695	1578	1721	1770	0						
Q Serve(g_s), s	0.0	4.6	19.3	12.0	3.4	0.0						
Cycle Q Clear(g_c), s	0.0	4.6	19.3	12.0	3.4	0.0						
Prop In Lane	0.00		1.00	1.00		0.00						
Lane Grp Cap(c), veh/h	0	3706	1150	516	3287	0						
V/C Ratio(X)	0.00	0.24	0.65	1.94	0.40	0.00						
Avail Cap(c_a), veh/h	0	3706	1150	516	3287	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	0.54	0.54	0.09	0.09	0.00						
Uniform Delay (d), s/veh	0.0	3.6	5.6	34.0	0.3	0.0						
Incr Delay (d2), s/veh	0.0	0.1	1.5	425.8	0.0	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	2.2	8.7	36.2	1.5	0.0						
LnGrp Delay(d),s/veh	0.0	3.6	7.1	459.8	0.3	0.0						
LnGrp LOS		A	A	F	A							
Approach Vol, veh/h		1630			2332							
Approach Delay, s/veh		5.2			198.2							
Approach LOS		A			F							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	16.0	64.0				80.0						
Change Period (Y+Rc), s	4.0	5.7				* 5.7						
Max Green Setting (Gmax), s	12.0	18.3				* 16						
Max Q Clear Time (g_c+I1), s	14.0	21.3				5.4						
Green Ext Time (p_c), s	0.0	0.0				9.7						
Intersection Summary												
HCM 2010 Ctrl Delay			118.8									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
86: I-80 EB Ramps/Taylor Rd & Eureka Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	1372	0	0	3198	68	0	466	553	382	0	348
Future Volume (veh/h)	217	1372	0	0	3198	68	0	466	553	382	0	348
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1863	1863	1863	1863	1863	0	1863
Adj Flow Rate, veh/h	228	1444	0	0	3366	72	0	491	0	402	0	366
Adj No. of Lanes	2	2	1	0	3	1	1	2	1	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	287	2017	902	0	2304	717	620	604	270	463	0	0
Arrive On Green	0.08	0.57	0.00	0.00	0.45	0.45	0.00	0.17	0.00	0.13	0.00	0.00
Sat Flow, veh/h	3442	3539	1583	0	5253	1583	1774	3539	1583	3442	402	
Grp Volume(v), veh/h	228	1444	0	0	3366	72	0	491	0	402	59.6	
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	0	1695	1583	1774	1770	1583	1721	E	
Q Serve(g_s), s	7.8	35.6	0.0	0.0	54.4	3.1	0.0	16.0	0.0	13.7		
Cycle Q Clear(g_c), s	7.8	35.6	0.0	0.0	54.4	3.1	0.0	16.0	0.0	13.7		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	287	2017	902	0	2304	717	620	604	270	463		
V/C Ratio(X)	0.79	0.72	0.00	0.00	1.46	0.10	0.00	0.81	0.00	0.87		
Avail Cap(c_a), veh/h	459	2017	902	0	2304	717	620	728	326	602		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.12	0.12	0.00	0.00	0.38	0.38	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	54.0	18.8	0.0	0.0	32.8	18.8	0.0	47.9	0.0	50.9		
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	208.3	0.0	0.0	6.6	0.0	8.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.7	17.3	0.0	0.0	69.8	1.4	0.0	8.4	0.0	7.1		
LnGrp Delay(d),s/veh	54.2	19.0	0.0	0.0	241.1	18.8	0.0	54.5	0.0	59.6		
LnGrp LOS	D	B			F	B		D		E		
Approach Vol, veh/h		1672			3438			491				
Approach Delay, s/veh		23.8			236.5			54.5				
Approach LOS		C			F			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3		5	6	7	8				
Phs Duration (G+Y+Rc), s		74.1	45.9		14.0	60.1	20.1	25.8				
Change Period (Y+Rc), s		5.7	4.0		4.0	5.7	4.0	5.3				
Max Green Setting (Gmax), s		59.3	21.0		16.0	39.3	21.0	24.7				
Max Q Clear Time (g_c+I1), s		37.6	0.0		9.8	56.4	15.7	18.0				
Green Ext Time (p_c), s		21.7	0.0		0.2	0.0	0.4	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay			150.5									
HCM 2010 LOS			F									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 2010 Signalized Intersection Summary

87: N. Sunrise Ave & Eureka Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	1575	375	177	2457	91	537	528	207	161	481	254
Future Volume (veh/h)	217	1575	375	177	2457	91	537	528	207	161	481	254
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	228	1658	0	186	2586	0	565	556	0	169	506	267
Adj No. of Lanes	2	3	1	2	4	1	3	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	2128	663	258	2526	624	704	971	302	286	606	186
Arrive On Green	0.17	0.84	0.00	0.07	0.39	0.00	0.14	0.19	0.00	0.08	0.12	0.12
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	5003	5085	1583	3442	5085	1563
Grp Volume(v), veh/h	228	1658	0	186	2586	0	565	556	0	169	506	267
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1668	1695	1583	1721	1695	1563
Q Serve(g_s), s	7.6	18.3	0.0	6.3	47.3	0.0	13.1	11.9	0.0	5.7	11.7	14.3
Cycle Q Clear(g_c), s	7.6	18.3	0.0	6.3	47.3	0.0	13.1	11.9	0.0	5.7	11.7	14.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	293	2128	663	258	2526	624	704	971	302	286	606	186
V/C Ratio(X)	0.78	0.78	0.00	0.72	1.02	0.00	0.80	0.57	0.00	0.59	0.83	1.43
Avail Cap(c_a), veh/h	459	2128	663	459	2526	624	959	971	302	459	606	186
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	7.2	0.0	54.3	36.3	0.0	49.9	44.1	0.0	53.1	51.7	52.9
Incr Delay (d2), s/veh	1.2	1.4	0.0	1.4	24.3	0.0	2.5	1.0	0.0	0.7	10.0	222.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	8.2	0.0	3.1	25.1	0.0	6.2	5.6	0.0	2.7	6.0	17.7
LnGrp Delay(d),s/veh	49.9	8.5	0.0	55.7	60.6	0.0	52.4	45.1	0.0	53.8	61.7	275.7
LnGrp LOS	D	A		E	F		D	D		D	E	F
Approach Vol, veh/h	1886				2772				1121			
Approach Delay, s/veh	13.5				60.3				48.8			
Approach LOS	B				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	28.2	13.0	55.9	22.2	20.0	15.9	53.0				
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	5.3	* 5.7	5.7	* 5.7				
Max Green Setting (Gmax), s	16.0	20.7	16.0	47.3	23.0	* 14	16.0	* 47				
Max Q Clear Time (g_c+I1), s	7.7	13.9	8.3	20.3	15.1	16.3	9.6	49.3				
Green Ext Time (p_c), s	0.2	3.1	0.2	16.5	1.8	0.0	0.6	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 53.8
HCM 2010 LOS D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

88: Eureka Rd & Rocky Ridge Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	465	305	18	124	318	95	1	1538	11	101	1397	327
Future Volume (veh/h)	465	305	18	124	318	95	1	1538	11	101	1397	327
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	489	321	0	131	335	0	1	1619	0	106	1471	0
Adj No. of Lanes	2	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	580	734	309	171	479	195	4	2246	679	145	2577	782
Arrive On Green	0.17	0.21	0.00	0.10	0.14	0.00	0.00	0.44	0.00	0.08	0.51	0.00
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	489	321	0	131	335	0	1	1619	0	106	1471	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	16.5	9.5	0.0	8.6	10.8	0.0	0.1	31.3	0.0	7.0	24.1	0.0
Cycle Q Clear(g_c), s	16.5	9.5	0.0	8.6	10.8	0.0	0.1	31.3	0.0	7.0	24.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	580	734	309	171	479	195	4	2246	679	145	2577	782
V/C Ratio(X)	0.84	0.44	0.00	0.76	0.70	0.00	0.24	0.72	0.00	0.73	0.57	0.00
Avail Cap(c_a), veh/h	717	790	334	237	516	211	59	2246	679	207	2577	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.3	41.5	0.0	52.9	49.5	0.0	59.7	27.4	0.0	53.8	20.5	0.0
Incr Delay (d2), s/veh	6.3	0.7	0.0	5.8	4.3	0.0	10.3	2.0	0.0	3.4	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	4.7	0.0	4.5	5.6	0.0	0.0	15.0	0.0	3.6	11.4	0.0
LnGrp Delay(d),s/veh	54.7	42.1	0.0	58.7	53.8	0.0	70.0	29.5	0.0	57.2	21.5	0.0
LnGrp LOS	D	D		E	D		E	C		E	C	
Approach Vol, veh/h	810				466				1620			
Approach Delay, s/veh	49.7				55.2				29.5			
Approach LOS	D				E				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	28.4	5.0	64.0	23.2	19.7	12.8	56.2				
Change Period (Y+Rc), s	4.0	* 6	5.7	* 5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	15.0	* 24	3.0	* 58	24.0	15.0	13.0	48.3				
Max Q Clear Time (g_c+I1), s	10.6	11.5	2.1	26.1	18.5	12.8	9.0	33.3				
Green Ext Time (p_c), s	0.1	3.5	0.0	14.8	0.7	0.9	0.1	10.3				

Intersection Summary

HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

89: Eureka Rd & Lead Hill Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	267	259	50	190	128	241	1439	87	107	1486	71
Future Volume (veh/h)	62	267	259	50	190	128	241	1439	87	107	1486	71
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	65	281	0	53	200	0	254	1515	0	113	1564	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	442	178	83	412	165	295	2661	809	154	2327	705
Arrive On Green	0.05	0.12	0.00	0.05	0.12	0.00	0.17	0.52	0.00	0.09	0.46	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	65	281	0	53	200	0	254	1515	0	113	1564	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	4.3	9.1	0.0	3.5	6.4	0.0	16.7	24.3	0.0	7.5	28.9	0.0
Cycle Q Clear(g_c), s	4.3	9.1	0.0	3.5	6.4	0.0	16.7	24.3	0.0	7.5	28.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	442	178	83	412	165	295	2661	809	154	2327	705
V/C Ratio(X)	0.67	0.64	0.00	0.64	0.49	0.00	0.86	0.57	0.00	0.74	0.67	0.00
Avail Cap(c_a), veh/h	133	593	245	133	593	245	384	2661	809	222	2327	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.6	49.9	0.0	56.2	49.6	0.0	48.6	19.4	0.0	53.5	25.5	0.0
Incr Delay (d2), s/veh	2.9	1.8	0.0	3.1	1.2	0.0	11.8	0.9	0.0	3.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.6	0.0	1.8	3.2	0.0	9.2	11.6	0.0	3.8	13.7	0.0
LnGrp Delay(d),s/veh	58.5	51.7	0.0	59.3	50.9	0.0	60.5	20.3	0.0	56.6	26.4	0.0
LnGrp LOS	E	D		E	D		E	C		E	C	
Approach Vol, veh/h	346				253				1769			
Approach Delay, s/veh	53.0				52.6				26.1			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	18.9	23.0	58.1	9.6	17.9	15.1	66.0				
Change Period (Y+Rc), s	4.0	6.4	4.0	5.7	4.0	6.4	5.7	* 5.7				
Max Green Setting (Gmax), s	8.0	17.6	25.0	49.3	8.0	17.6	14.0	* 60				
Max Q Clear Time (g_c+I1), s	5.5	11.1	18.7	30.9	6.3	8.4	9.5	26.3				
Green Ext Time (p_c), s	0.0	1.4	0.3	11.7	0.0	1.8	0.2	15.9				

Intersection Summary

HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

90: Eureka Road & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	1319	424	63	1611	580	552	620	21	883	804	1
Future Volume (veh/h)	154	1319	424	63	1611	580	552	620	21	883	804	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	162	1388	446	66	1696	0	581	653	22	929	846	1
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	3	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	1952	608	110	1695	528	667	856	29	998	831	1
Arrive On Green	0.13	0.77	0.77	0.03	0.33	0.00	0.19	0.17	0.17	0.20	0.16	0.16
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5053	170	5003	5246	6
Grp Volume(v), veh/h	162	1388	446	66	1696	0	581	437	238	929	547	300
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1833	1668	1695	1862
Q Serve(g_s), s	5.4	16.8	8.0	2.3	40.0	0.0	19.6	14.8	14.8	21.9	19.0	19.0
Cycle Q Clear(g_c), s	5.4	16.8	8.0	2.3	40.0	0.0	19.6	14.8	14.8	21.9	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	227	1952	608	110	1695	528	667	574	310	998	537	295
V/C Ratio(X)	0.71	0.71	0.73	0.60	1.00	0.00	0.87	0.76	0.77	0.93	1.02	1.02
Avail Cap(c_a), veh/h	459	1952	608	459	1695	528	717	574	310	1001	537	295
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	10.5	2.1	57.3	40.0	0.0	46.9	47.5	47.6	47.2	50.5	50.5
Incr Delay (d2), s/veh	1.3	1.2	4.3	1.9	22.0	0.0	10.1	6.3	11.5	14.4	43.6	57.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
%ile BackOfQ(50%),veh/ln	2.6	7.7	3.7	1.1	22.1	0.0	10.3	7.4	8.5	11.4	12.1	14.4
LnGrp Delay(d),s/veh	52.3	11.7	6.4	59.2	62.0	0.0	57.0	53.9	59.0	61.6	94.1	107.9
LnGrp LOS	D	B	A	E	F		E	D	E	E	F	F
Approach Vol, veh/h	1996				1762				1256			
Approach Delay, s/veh	13.8				61.9				56.3			
Approach LOS	B				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	52.1	29.3	25.0	13.9	46.0	27.9	26.3				
Change Period (Y+Rc), s	4.0	6.0	6.0	* 6	6.0	* 6	4.0	6.0				
Max Green Setting (Gmax), s	16.0	40.0	25.0	* 19	16.0	* 40	24.0	20.0				
Max Q Clear Time (g_c+I1), s	4.3	18.8	21.6	21.0	7.4	42.0	23.9	16.8				
Green Ext Time (p_c), s	0.1	15.9	1.6	0.0	0.6	0.0	0.0	1.9				

Intersection Summary

HCM 2010 Ctrl Delay	51.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
91: Eureka Rd & Deer Valley Apts Dwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	0	0	14	2	45	7	842	11	51	1193	11
Future Volume (veh/h)	17	0	0	14	2	45	7	842	11	51	1193	11
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	18	0	0	15	2	47	7	886	12	54	1256	12
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	111	0	196	26	198	52	1810	25	151	2020	19
Arrive On Green	0.06	0.00	0.00	0.12	0.12	0.12	0.03	0.51	0.51	0.09	0.56	0.56
Sat Flow, veh/h	1774	1863	0	1574	210	1583	1774	3575	48	1774	3592	34
Grp Volume(v), veh/h	18	0	0	17	0	47	7	439	459	54	619	649
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1784	0	1583	1774	1770	1854	1774	1770	1857
Q Serve(g_s), s	0.6	0.0	0.0	0.5	0.0	1.6	0.2	9.9	9.9	1.8	14.4	14.4
Cycle Q Clear(g_c), s	0.6	0.0	0.0	0.5	0.0	1.6	0.2	9.9	9.9	1.8	14.4	14.4
Prop In Lane	1.00		0.00	0.88		1.00	1.00		0.03	1.00		0.02
Lane Grp Cap(c), veh/h	105	111	0	223	0	198	52	896	939	151	995	1044
V/C Ratio(X)	0.17	0.00	0.00	0.08	0.00	0.24	0.14	0.49	0.49	0.36	0.62	0.62
Avail Cap(c_a), veh/h	319	335	0	613	0	544	232	1052	1102	232	1052	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	23.6	0.0	24.1	28.9	9.9	9.9	26.4	9.0	9.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.2	0.4	0.7	0.7	0.5	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.7	0.1	4.9	5.2	0.9	7.3	7.6
LnGrp Delay(d),s/veh	27.6	0.0	0.0	23.7	0.0	24.3	29.3	10.6	10.6	26.9	10.4	10.4
LnGrp LOS	C			C		C	C	B	B	C	B	B
Approach Vol, veh/h	18		64				905			1322		
Approach Delay, s/veh	27.6		24.2				10.7			11.1		
Approach LOS	C		C				B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.8	39.0	10.6		8.2	35.6	6.6					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	7.0	35.3	20.0		7.0	35.3	10.0					
Max Q Clear Time (g_c+I1), s	2.2	16.4	3.6		3.8	11.9	2.6					
Green Ext Time (p_c), s	0.0	15.2	0.1		0.0	18.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			11.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
92: Ashland Dr & Eureka Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	1117	52	50	730	8	41	2	27	13	8	3
Future Volume (veh/h)	43	1117	52	50	730	8	41	2	27	13	8	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	45	1176	55	53	768	8	43	2	28	14	8	3
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1735	81	119	1770	737	254	12	237	86	49	118
Arrive On Green	0.07	0.50	0.47	0.07	0.50	0.47	0.15	0.15	0.15	0.07	0.07	0.07
Sat Flow, veh/h	1774	3443	161	1774	3539	1583	1699	79	1583	1149	656	1583
Grp Volume(v), veh/h	45	604	627	53	768	8	45	0	28	22	0	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1834	1774	1770	1583	1778	0	1583	1805	0	1583
Q Serve(g_s), s	1.4	14.7	14.8	1.6	7.9	0.2	1.3	0.0	0.9	0.7	0.0	0.1
Cycle Q Clear(g_c), s	1.4	14.7	14.8	1.6	7.9	0.2	1.3	0.0	0.9	0.7	0.0	0.1
Prop In Lane	1.00		0.09	1.00		1.00	0.96		1.00	0.64		1.00
Lane Grp Cap(c), veh/h	126	892	924	119	1770	737	266	0	237	135	0	118
V/C Ratio(X)	0.36	0.68	0.68	0.44	0.43	0.01	0.17	0.00	0.12	0.16	0.00	0.03
Avail Cap(c_a), veh/h	217	906	940	186	1770	737	373	0	332	663	0	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	10.7	10.8	25.7	9.1	8.2	21.2	0.0	21.1	24.8	0.0	24.5
Incr Delay (d2), s/veh	0.6	4.1	4.0	1.0	0.8	0.0	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.1	8.3	0.8	4.0	0.1	0.6	0.0	0.4	0.3	0.0	0.0
LnGrp Delay(d),s/veh	26.0	14.8	14.7	26.6	9.9	8.2	21.3	0.0	21.1	25.0	0.0	24.6
LnGrp LOS	C	B	B	C	A	A	C		C	C		C
Approach Vol, veh/h	1276				829				73		25	
Approach Delay, s/veh	15.1				10.9				21.3		24.9	
Approach LOS	B				B				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	11.6		6.8	31.5	7.3		7.1	31.3				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	11.0		5.0	26.3	20.0		6.0	25.3				
Max Q Clear Time (g_c+I1), s	3.3		3.6	16.8	2.7		3.4	9.9				
Green Ext Time (p_c), s	0.1		0.0	9.1	0.0		0.0	14.7				
Intersection Summary												
HCM 2010 Ctrl Delay	13.9											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

93: Sierra College Blvd & Eureka Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	607	478	79	461	239	138	1165	37	321	1412	191
Future Volume (veh/h)	131	607	478	79	461	239	138	1165	37	321	1412	191
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	138	639	0	83	485	0	145	1226	0	338	1486	0
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	825	349	297	772	325	250	2058	614	435	2259	677
Arrive On Green	0.10	0.23	0.00	0.09	0.22	0.00	0.07	0.40	0.00	0.13	0.44	0.00
Sat Flow, veh/h	1774	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	138	639	0	83	485	0	145	1226	0	338	1486	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	9.1	20.3	0.0	2.7	14.9	0.0	4.9	22.7	0.0	11.4	27.5	0.0
Cycle Q Clear(g_c), s	9.1	20.3	0.0	2.7	14.9	0.0	4.9	22.7	0.0	11.4	27.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	825	349	297	772	325	250	2058	614	435	2259	677
V/C Ratio(X)	0.77	0.77	0.00	0.28	0.63	0.00	0.58	0.60	0.00	0.78	0.66	0.00
Avail Cap(c_a), veh/h	281	997	426	315	772	325	287	2058	614	602	2259	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.5	43.0	0.0	51.3	42.5	0.0	53.9	28.0	0.0	50.8	26.2	0.0
Incr Delay (d2), s/veh	6.6	3.2	0.0	0.5	1.6	0.0	2.2	0.5	0.0	4.3	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.3	0.0	1.3	7.4	0.0	2.4	10.6	0.0	5.7	13.1	0.0
LnGrp Delay(d),s/veh	59.1	46.2	0.0	51.8	44.1	0.0	56.1	28.5	0.0	55.1	27.7	0.0
LnGrp LOS	E	D		D	D		E	C		E	C	
Approach Vol, veh/h	777				568		1371				1824	
Approach Delay, s/veh	48.5				45.3		31.4				32.8	
Approach LOS	D				D		C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.2	51.3	13.4	31.2	13.4	56.0	15.2	29.4				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7				
Max Green Setting (Gmax), s	20.0	39.3	10.0	31.3	9.0	* 50	18.0	23.3				
Max Q Clear Time (g_c+I1), s	13.4	24.7	4.7	22.3	6.9	29.5	11.1	16.9				
Green Ext Time (p_c), s	0.8	5.6	0.1	3.2	0.1	7.3	0.2	2.8				

Intersection Summary

HCM 2010 Ctrl Delay	36.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

94: Banjo Alley/Judah St & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑	↑		↑		↑	↑↑	
Traffic Volume (veh/h)	1	483	0	0	661	423	2	2	0	514	0	23
Future Volume (veh/h)	1	483	0	0	661	423	2	2	0	514	0	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	0	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	508	0	0	696	445	2	2	0	563	0	0
Adj No. of Lanes	0	2	0	0	1	1	0	1	0	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	31	2488	0	0	1335	1433	11	11	0	667	350	0
Arrive On Green	0.72	0.72	0.00	0.00	0.95	0.95	0.01	0.01	0.00	0.19	0.00	0.00
Sat Flow, veh/h	1	3555	0	0	1863	1583	909	909	0	3548	1863	0
Grp Volume(v), veh/h	273	236	0	0	696	445	4	0	0	563	0	0
Grp Sat Flow(s),veh/h/ln	1861	1610	0	0	1863	1583	1817	0	0	1774	1863	0
Q Serve(g_s), s	0.0	5.8	0.0	0.0	4.1	0.8	0.3	0.0	0.0	18.4	0.0	0.0
Cycle Q Clear(g_c), s	5.8	5.8	0.0	0.0	4.1	0.8	0.3	0.0	0.0	18.4	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.50		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	1364	1155	0	0	1335	1433	23	0	0	667	350	0
V/C Ratio(X)	0.20	0.20	0.00	0.00	0.52	0.31	0.18	0.00	0.00	0.84	0.00	0.00
Avail Cap(c_a), veh/h	1364	1155	0	0	1335	1433	76	0	0	946	497	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.92	0.92	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.6	5.6	0.0	0.0	0.9	0.1	58.6	0.0	0.0	47.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.0	0.0	0.3	0.1	1.4	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	2.7	0.0	0.0	2.0	0.9	0.1	0.0	0.0	9.3	0.0	0.0
LnGrp Delay(d),s/veh	6.0	6.0	0.0	0.0	1.2	0.2	60.0	0.0	0.0	50.6	0.0	0.0
LnGrp LOS	A	A			A	A	E			D		
Approach Vol, veh/h		509			1141			4			563	
Approach Delay, s/veh		6.0			0.8			60.0			50.6	
Approach LOS		A			A			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		89.9		25.6		89.9		4.5				
Change Period (Y+Rc), s		4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s		72.1		31.0		65.1		4.0				
Max Q Clear Time (g_c+I1), s		7.8		20.4		6.1		2.3				
Green Ext Time (p_c), s		18.0		1.2		17.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				14.8								
HCM 2010 LOS				B								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

95: Park Dr & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑			↔		↵	↑↑	
Traffic Volume (veh/h)	0	994	24	18	1044	0	45	0	45	68	11	30
Future Volume (veh/h)	0	994	24	18	1044	0	45	0	45	68	11	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	1046	0	19	1099	0	47	0	47	72	12	32
Adj No. of Lanes	0	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2075	0	70	2303	0	65	0	65	131	33	88
Arrive On Green	0.00	0.78	0.00	0.08	1.00	0.00	0.09	0.00	0.09	0.07	0.07	0.07
Sat Flow, veh/h	0	3725	0	1774	3632	0	837	0	837	1774	450	1201
Grp Volume(v), veh/h	0	1046	0	19	1099	0	94	0	0	72	0	44
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1673	0	0	1774	0	1651
Q Serve(g_s), s	0.0	12.9	0.0	1.2	0.0	0.0	6.6	0.0	0.0	4.7	0.0	3.0
Cycle Q Clear(g_c), s	0.0	12.9	0.0	1.2	0.0	0.0	6.6	0.0	0.0	4.7	0.0	3.0
Prop In Lane	0.00		0.00	1.00		0.00	0.50		0.50	1.00		0.73
Lane Grp Cap(c), veh/h	0	2075	0	70	2303	0	130	0	0	131	0	122
V/C Ratio(X)	0.00	0.50	0.00	0.27	0.48	0.00	0.72	0.00	0.00	0.55	0.00	0.36
Avail Cap(c_a), veh/h	0	2075	0	133	2303	0	209	0	0	251	0	234
HCM Platoon Ratio	1.00	1.33	1.33	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	0.0	53.6	0.0	0.0	53.6	0.0	0.0	53.7	0.0	52.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.8	0.7	0.0	2.9	0.0	0.0	1.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	0.0	0.6	0.2	0.0	3.1	0.0	0.0	2.3	0.0	1.4
LnGrp Delay(d),s/veh	0.0	7.1	0.0	54.4	0.7	0.0	56.4	0.0	0.0	55.0	0.0	53.6
LnGrp LOS		A		D	A		E			E		D
Approach Vol, veh/h	1046			1118			94			116		
Approach Delay, s/veh	7.1			1.6			56.4			54.5		
Approach LOS	A			A			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	7.8	74.2		11.8		82.0		12.3				
Change Period (Y+Rc), s	4.0	4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s	8.0	65.1		16.0		77.1		14.0				
Max Q Clear Time (g_c+I1), s	3.2	14.9		6.7		2.0		8.6				
Green Ext Time (p_c), s	0.0	26.2		0.1		30.8		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				8.8								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
96: Keehner Ave & Douglas Blvd

Cumulative No Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↖	↑↑	↖	↗		
Traffic Volume (veh/h)	1072	47	181	625	34	168		
Future Volume (veh/h)	1072	47	181	625	34	168		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1128	49	191	658	36	177		
Adj No. of Lanes	2	0	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1797	78	263	2542	271	242		
Arrive On Green	0.52	0.52	0.15	0.72	0.15	0.15		
Sat Flow, veh/h	3549	150	1774	3632	1774	1583		
Grp Volume(v), veh/h	577	600	191	658	36	177		
Grp Sat Flow(s),veh/h/ln	1770	1836	1774	1770	1774	1583		
Q Serve(g_s), s	13.9	14.0	6.2	3.9	1.1	6.4		
Cycle Q Clear(g_c), s	13.9	14.0	6.2	3.9	1.1	6.4		
Prop In Lane		0.08	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	920	955	263	2542	271	242		
V/C Ratio(X)	0.63	0.63	0.73	0.26	0.13	0.73		
Avail Cap(c_a), veh/h	920	955	325	2542	296	264		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.3	10.3	24.4	2.9	22.0	24.2		
Incr Delay (d2), s/veh	1.4	1.3	4.2	0.2	0.1	7.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.1	7.3	3.3	1.9	0.5	3.3		
LnGrp Delay(d),s/veh	11.6	11.6	28.6	3.2	22.0	31.7		
LnGrp LOS	B	B	C	A	C	C		
Approach Vol, veh/h	1177			849	213			
Approach Delay, s/veh	11.6			8.9	30.1			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.9	35.1		12.2		47.0		
Change Period (Y+Rc), s	4.0	4.9		4.0		4.9		
Max Green Setting (Gmax), s	10.0	28.1		9.0		42.1		
Max Q Clear Time (g_c+I1), s	8.2	16.0		8.4		5.9		
Green Ext Time (p_c), s	0.1	10.3		0.0		25.1		
Intersection Summary								
HCM 2010 Ctrl Delay			12.3					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
97: Folsom Rd & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1152	4	13	1426	75	5	2	12	514	4	81
Future Volume (veh/h)	98	1152	4	13	1426	75	5	2	12	514	4	81
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	103	1213	4	14	1501	79	5	2	13	544	0	85
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	2114	7	158	2056	108	10	4	26	647	0	289
Arrive On Green	0.08	0.58	0.58	0.09	0.60	0.60	0.02	0.02	0.02	0.18	0.00	0.18
Sat Flow, veh/h	1774	3618	12	1774	3421	179	413	165	1074	3548	0	1583
Grp Volume(v), veh/h	103	593	624	14	774	806	20	0	0	544	0	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1861	1774	1770	1831	1653	0	0	1774	0	1583
Q Serve(g_s), s	6.8	25.2	25.2	0.9	37.2	37.6	1.4	0.0	0.0	17.8	0.0	5.6
Cycle Q Clear(g_c), s	6.8	25.2	25.2	0.9	37.2	37.6	1.4	0.0	0.0	17.8	0.0	5.6
Prop In Lane	1.00		0.01	1.00		0.10	0.25		0.65	1.00		1.00
Lane Grp Cap(c), veh/h	141	1034	1087	158	1064	1101	41	0	0	647	0	289
V/C Ratio(X)	0.73	0.57	0.57	0.09	0.73	0.73	0.49	0.00	0.00	0.84	0.00	0.29
Avail Cap(c_a), veh/h	163	1034	1087	158	1064	1101	69	0	0	810	0	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.0	15.6	15.6	50.2	17.0	17.1	57.8	0.0	0.0	47.4	0.0	42.4
Incr Delay (d2), s/veh	10.4	2.3	2.2	0.1	2.6	2.6	3.4	0.0	0.0	6.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	12.9	13.5	0.4	18.8	19.6	0.7	0.0	0.0	9.2	0.0	2.5
LnGrp Delay(d),s/veh	64.4	17.9	17.8	50.3	19.6	19.7	61.2	0.0	0.0	53.4	0.0	42.8
LnGrp LOS	E	B	B	D	B	B	E			D		D
Approach Vol, veh/h	1320				1594		20				629	
Approach Delay, s/veh	21.5				19.9		61.2				52.0	
Approach LOS	C				B		E				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	14.6	74.0			25.5	12.5	76.0	5.9				
Change Period (Y+Rc), s	4.9	* 4.9			4.6	4.0	4.9	4.0				
Max Green Setting (Gmax), s	3.0	* 69			26.4	10.0	62.1	4.0				
Max Q Clear Time (g_c+I1), s	2.9	27.2			19.8	8.8	39.6	3.4				
Green Ext Time (p_c), s	0.0	12.6			1.1	0.0	13.7	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	26.4											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

98: Douglas Blvd & Harding Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	1323	18	111	1177	587	48	61	114	990	12	308
Future Volume (veh/h)	369	1323	18	111	1177	587	48	61	114	990	12	308
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	388	1393	19	117	1239	618	51	64	120	1051	0	324
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	1642	22	118	1124	503	59	62	53	1038	0	463
Arrive On Green	0.42	0.92	0.92	0.07	0.32	0.32	0.03	0.03	0.03	0.29	0.00	0.29
Sat Flow, veh/h	1774	3575	49	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	388	689	723	117	1239	618	51	64	120	1051	0	324
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	25.0	17.3	17.3	7.9	38.1	38.1	3.4	4.0	4.0	35.1	0.0	21.8
Cycle Q Clear(g_c), s	25.0	17.3	17.3	7.9	38.1	38.1	3.4	4.0	4.0	35.1	0.0	21.8
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	813	851	118	1124	503	59	62	53	1038	0	463
V/C Ratio(X)	1.05	0.85	0.85	0.99	1.10	1.23	0.86	1.03	2.27	1.01	0.00	0.70
Avail Cap(c_a), veh/h	370	813	851	118	1124	503	59	62	53	1038	0	463
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.00	0.71
Uniform Delay (d), s/veh	35.0	3.4	3.4	56.0	41.0	41.0	57.7	58.0	58.0	42.5	0.0	37.8
Incr Delay (d2), s/veh	60.5	10.7	10.3	79.1	59.5	119.7	68.0	123.1	628.7	26.7	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	9.3	9.7	6.5	27.9	33.3	2.8	4.2	11.0	21.0	0.0	9.9
LnGrp Delay(d),s/veh	95.5	14.1	13.7	135.1	100.5	160.7	125.7	181.6	686.7	69.1	0.0	40.8
LnGrp LOS	F	B	B	F	F	F	F	F	F	F		D
Approach Vol, veh/h	1800			1974			235			1375		
Approach Delay, s/veh	31.5			121.4			427.4			62.4		
Approach LOS	C			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	60.0		40.0	29.0	43.0		8.0				
Change Period (Y+Rc), s	4.0	4.9		4.9	4.0	4.9		4.0				
Max Green Setting (Gmax), s	8.0	55.1		35.1	25.0	38.1		4.0				
Max Q Clear Time (g_c+I1), s	9.9	19.3		37.1	27.0	40.1		6.0				
Green Ext Time (p_c), s	0.0	30.9		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	89.6											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

99: Douglas Blvd & I-80 WB Ramps

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑				↑	↑	↑
Traffic Volume (veh/h)	0	1094	759	0	1645	1403	0	0	0	1027	0	221
Future Volume (veh/h)	0	1094	759	0	1645	1403	0	0	0	1027	0	221
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	0	1152	799	0	1732	0				1081	0	233
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2134	947	0	2258	947				1202	0	536
Arrive On Green	0.00	0.20	0.20	0.00	0.61	0.00				0.34	0.00	0.34
Sat Flow, veh/h	0	3632	1583	0	3725	1583				3548	0	1583
Grp Volume(v), veh/h	0	1152	799	0	1732	0				1081	0	233
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1863	1583				1774	0	1583
Q Serve(g_s), s	0.0	35.1	58.3	0.0	41.1	0.0				34.8	0.0	13.7
Cycle Q Clear(g_c), s	0.0	35.1	58.3	0.0	41.1	0.0				34.8	0.0	13.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2134	947	0	2258	947				1202	0	536
V/C Ratio(X)	0.00	0.54	0.84	0.00	0.77	0.00				0.90	0.00	0.43
Avail Cap(c_a), veh/h	0	2134	947	0	2258	947				1399	0	624
HCM Platoon Ratio	1.00	0.33	0.33	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.27	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	33.1	42.8	0.0	17.4	0.0				37.7	0.0	30.8
Incr Delay (d2), s/veh	0.0	1.0	9.1	0.0	0.5	0.0				6.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.5	28.0	0.0	21.1	0.0				18.1	0.0	6.0
LnGrp Delay(d),s/veh	0.0	34.1	51.9	0.0	17.9	0.0				44.5	0.0	31.0
LnGrp LOS		C	D		B					D		C
Approach Vol, veh/h		1951			1732						1314	
Approach Delay, s/veh		41.4			17.9						42.1	
Approach LOS		D			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		75.6		44.4		75.6						
Change Period (Y+Rc), s		4.9		5.3		4.9						
Max Green Setting (Gmax), s		64.1		45.7		64.1						
Max Q Clear Time (g_c+I1), s		60.3		36.8		43.1						
Green Ext Time (p_c), s		3.8		2.3		20.5						
Intersection Summary												
HCM 2010 Ctrl Delay			33.4									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
100: I-80 EB Ramps & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	1106	0	0	2548	524	0	0	1193	0	0	500
Future Volume (veh/h)	288	1106	0	0	2548	524	0	0	1193	0	0	500
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	303	1164	0	0	2682	0	0	0	0	0	0	526
Adj No. of Lanes	1	4	0	0	3	1	0	0	1	0	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	0	2	2	0	0	2	0	0	2
Cap, veh/h	307	4517	0	0	2836	803	0	0	0	0	0	0
Arrive On Green	0.17	0.70	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sat Flow, veh/h	1774	6669	0	0	5588	1583		0			0	
Grp Volume(v), veh/h	303	1164	0	0	2682	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	1774	1602	0	0	1863	1583						
Q Serve(g_s), s	13.8	5.3	0.0	0.0	36.8	0.0						
Cycle Q Clear(g_c), s	13.8	5.3	0.0	0.0	36.8	0.0						
Prop In Lane	1.00		0.00	0.00		1.00						
Lane Grp Cap(c), veh/h	307	4517	0	0	2836	803						
V/C Ratio(X)	0.99	0.26	0.00	0.00	0.95	0.00						
Avail Cap(c_a), veh/h	307	4517	0	0	2836	803						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.70	0.70	0.00	0.00	0.26	0.00						
Uniform Delay (d), s/veh	33.4	4.3	0.0	0.0	18.9	0.0						
Incr Delay (d2), s/veh	39.6	0.0	0.0	0.0	2.6	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	10.1	2.4	0.0	0.0	19.3	0.0						
LnGrp Delay(d),s/veh	73.0	4.3	0.0	0.0	21.5	0.0						
LnGrp LOS	E	A			C							
Approach Vol, veh/h		1467			2682							
Approach Delay, s/veh		18.5			21.5							
Approach LOS		B			C							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		60.0			16.0	44.0						
Change Period (Y+Rc), s		4.9			4.0	4.9						
Max Green Setting (Gmax), s		55.1			12.0	39.1						
Max Q Clear Time (g_c+I1), s		7.3			15.8	38.8						
Green Ext Time (p_c), s		44.5			0.0	0.3						
Intersection Summary												
HCM 2010 Ctrl Delay				20.5								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

101: Douglas Blvd & North Sunrise Ave

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	428	1612	192	218	2216	145	389	513	168	186	786	467
Future Volume (veh/h)	428	1612	192	218	2216	145	389	513	168	186	786	467
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	451	1697	202	229	2333	153	409	540	177	196	827	492
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	942	3126	1169	285	2578	169	430	795	353	251	877	704
Arrive On Green	0.27	0.61	0.61	0.08	0.42	0.42	0.13	0.22	0.22	0.07	0.17	0.17
Sat Flow, veh/h	3442	5085	1579	3442	6190	405	3442	3539	1573	3442	5085	1570
Grp Volume(v), veh/h	451	1697	202	229	1810	676	409	540	177	196	827	492
Grp Sat Flow(s),veh/h/ln	1721	1695	1579	1721	1602	1790	1721	1770	1573	1721	1695	1570
Q Serve(g_s), s	13.1	23.2	4.6	7.8	42.3	42.5	14.2	16.8	11.8	6.7	19.3	8.7
Cycle Q Clear(g_c), s	13.1	23.2	4.6	7.8	42.3	42.5	14.2	16.8	11.8	6.7	19.3	8.7
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	942	3126	1169	285	2001	745	430	795	353	251	877	704
V/C Ratio(X)	0.48	0.54	0.17	0.80	0.90	0.91	0.95	0.68	0.50	0.78	0.94	0.70
Avail Cap(c_a), veh/h	942	3126	1169	344	2006	747	430	795	353	287	877	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.29	0.29	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	13.4	4.7	54.1	32.8	32.8	52.1	42.6	40.7	54.7	49.1	20.4
Incr Delay (d2), s/veh	0.1	0.6	0.3	2.8	2.1	5.4	30.8	2.8	1.9	9.7	18.5	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	10.9	2.1	3.8	19.0	22.1	8.6	8.5	5.3	3.5	10.5	11.4
LnGrp Delay(d),s/veh	36.6	13.9	4.9	56.9	34.9	38.2	82.9	45.4	42.5	64.4	67.6	24.4
LnGrp LOS	D	B	A	E	C	D	F	D	D	E	E	C
Approach Vol, veh/h	2350				2715				1126			
Approach Delay, s/veh	17.5				37.6				58.6			
Approach LOS	B				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	78.7	19.0	26.0	37.8	54.9	12.8	32.2				
Change Period (Y+Rc), s	4.0	4.9	4.0	5.3	4.9	* 4.9	4.0	* 5.3				
Max Green Setting (Gmax), s	12.0	54.1	15.0	20.7	16.0	* 50	10.0	* 26				
Max Q Clear Time (g_c+I1), s	9.8	25.2	16.2	21.3	15.1	44.5	8.7	18.8				
Green Ext Time (p_c), s	0.1	23.4	0.0	0.0	0.2	5.5	0.0	6.7				

Intersection Summary

HCM 2010 Ctrl Delay	37.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

102: Santa Clara Dr & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1657	40	163	2358	41	83	34	114	168	94	129
Future Volume (veh/h)	140	1657	40	163	2358	41	83	34	114	168	94	129
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	147	1744	42	172	2482	43	87	36	120	138	154	136
Adj No. of Lanes	1	3	0	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	1707	41	539	2777	861	166	174	148	214	224	188
Arrive On Green	0.03	0.11	0.11	0.61	1.00	1.00	0.09	0.09	0.09	0.12	0.12	0.12
Sat Flow, veh/h	1774	5107	123	1774	5085	1576	1774	1863	1583	1774	1863	1564
Grp Volume(v), veh/h	147	1157	629	172	2482	43	87	36	120	138	154	136
Grp Sat Flow(s),veh/h/ln	1774	1695	1840	1774	1695	1576	1774	1863	1583	1774	1863	1564
Q Serve(g_s), s	9.9	40.1	40.1	5.7	0.0	0.0	5.6	2.1	8.9	8.9	9.5	10.1
Cycle Q Clear(g_c), s	9.9	40.1	40.1	5.7	0.0	0.0	5.6	2.1	8.9	8.9	9.5	10.1
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	1133	615	539	2777	861	166	174	148	214	224	188
V/C Ratio(X)	0.83	1.02	1.02	0.32	0.89	0.05	0.53	0.21	0.81	0.65	0.69	0.72
Avail Cap(c_a), veh/h	310	1133	615	539	2777	861	237	248	211	458	481	404
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.65	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	53.4	53.4	17.5	0.0	0.0	51.9	50.3	53.4	50.3	50.6	50.8
Incr Delay (d2), s/veh	2.6	27.3	35.1	0.0	0.4	0.0	1.9	0.4	12.6	1.2	1.4	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	23.1	26.4	2.8	0.1	0.0	2.8	1.1	4.4	4.4	5.0	4.4
LnGrp Delay(d),s/veh	59.7	80.7	88.5	17.5	0.4	0.0	53.8	50.7	66.0	51.6	52.0	52.8
LnGrp LOS	E	F	F	B	A	A	D	D	E	D	D	D
Approach Vol, veh/h	1933				2697		243				428	
Approach Delay, s/veh	81.6				1.5		59.4				52.1	
Approach LOS	F				A		E				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	41.4	45.0			18.4	15.9	70.4	15.2				
Change Period (Y+Rc), s	4.9	* 4.9			4.0	4.0	4.9	4.0				
Max Green Setting (Gmax), s	16.0	* 40			31.0	21.0	35.1	16.0				
Max Q Clear Time (g_c+I1), s	7.7	42.1			12.1	11.9	2.0	10.9				
Green Ext Time (p_c), s	0.5	0.0			0.9	0.1	32.2	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	37.5											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

103: Sierra Gardens Dr & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1704	39	27	2486	47	168	39	32	229	50	39
Future Volume (veh/h)	45	1704	39	27	2486	47	168	39	32	229	50	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	47	1794	41	28	2617	49	126	112	34	168	156	41
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1667	503	35	1657	500	177	137	42	295	235	62
Arrive On Green	0.03	0.66	0.66	0.02	0.33	0.33	0.10	0.10	0.10	0.17	0.17	0.17
Sat Flow, veh/h	1774	5085	1535	1774	5085	1535	1774	1373	417	1774	1410	371
Grp Volume(v), veh/h	47	1794	41	28	2617	49	126	0	146	168	0	197
Grp Sat Flow(s),veh/h/ln	1774	1695	1535	1774	1695	1535	1774	0	1789	1774	0	1781
Q Serve(g_s), s	1.7	39.3	1.2	1.9	39.1	2.7	8.3	0.0	9.6	10.5	0.0	12.4
Cycle Q Clear(g_c), s	1.7	39.3	1.2	1.9	39.1	2.7	8.3	0.0	9.6	10.5	0.0	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.21
Lane Grp Cap(c), veh/h	25	1667	503	35	1657	500	177	0	178	295	0	296
V/C Ratio(X)	1.86	1.08	0.08	0.80	1.58	0.10	0.71	0.00	0.82	0.57	0.00	0.67
Avail Cap(c_a), veh/h	237	1667	503	237	1657	500	237	0	239	464	0	466
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	0.32	0.32	0.32	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.3	20.7	14.1	58.6	40.5	28.2	52.3	0.0	52.9	46.1	0.0	46.9
Incr Delay (d2), s/veh	395.1	42.5	0.1	5.0	261.7	0.1	5.2	0.0	13.6	0.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	24.5	0.5	1.0	58.4	1.1	4.3	0.0	5.4	5.2	0.0	6.2
LnGrp Delay(d),s/veh	453.3	63.1	14.2	63.6	302.1	28.3	57.6	0.0	66.5	46.7	0.0	47.9
LnGrp LOS	F	F	B	E	F	C	E		E	D		D
Approach Vol, veh/h	1882			2694			272			365		
Approach Delay, s/veh	71.8			294.7			62.4			47.3		
Approach LOS	E			F			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.4	44.2	24.6		6.6	44.0	16.0					
Change Period (Y+Rc), s	4.0	4.9	4.6		4.9	* 4.9	4.0					
Max Green Setting (Gmax), s	16.0	39.1	31.4		16.0	* 39	16.0					
Max Q Clear Time (g_c+I1), s	3.9	41.3	14.4		3.7	41.1	11.6					
Green Ext Time (p_c), s	0.0	0.0	0.9		1.2	0.0	0.4					

Intersection Summary

HCM 2010 Ctrl Delay 184.8
HCM 2010 LOS F

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

104: Target Dwy & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1585	60	70	2372	14	136	24	53	108	12	128
Future Volume (veh/h)	159	1585	60	70	2372	14	136	24	53	108	12	128
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	1668	63	74	2497	15	143	25	56	114	13	135
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	2309	87	329	2828	17	171	34	77	247	15	160
Arrive On Green	0.11	0.46	0.46	0.19	0.54	0.54	0.10	0.07	0.07	0.14	0.11	0.11
Sat Flow, veh/h	1774	5028	190	1774	5216	31	1774	504	1129	1774	139	1445
Grp Volume(v), veh/h	167	1124	607	74	1622	890	143	0	81	114	0	148
Grp Sat Flow(s),veh/h/ln	1774	1695	1828	1774	1695	1857	1774	0	1634	1774	0	1584
Q Serve(g_s), s	11.1	32.2	32.2	4.3	50.4	50.6	9.5	0.0	5.8	7.1	0.0	11.0
Cycle Q Clear(g_c), s	11.1	32.2	32.2	4.3	50.4	50.6	9.5	0.0	5.8	7.1	0.0	11.0
Prop In Lane	1.00		0.10	1.00		0.02	1.00		0.69	1.00		0.91
Lane Grp Cap(c), veh/h	195	1557	839	329	1838	1007	171	0	111	247	0	176
V/C Ratio(X)	0.86	0.72	0.72	0.23	0.88	0.88	0.84	0.00	0.73	0.46	0.00	0.84
Avail Cap(c_a), veh/h	310	1557	839	329	1838	1007	237	0	218	247	0	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.13	0.13	0.13	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.5	26.3	26.3	41.6	24.1	24.2	53.3	0.0	54.8	47.5	0.0	52.3
Incr Delay (d2), s/veh	5.4	2.1	3.8	0.0	0.9	1.6	16.8	0.0	8.7	1.3	0.0	22.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	15.4	17.1	2.1	23.7	26.2	5.4	0.0	2.9	3.6	0.0	5.9
LnGrp Delay(d),s/veh	57.9	28.3	30.1	41.6	25.0	25.8	70.1	0.0	63.5	48.9	0.0	74.4
LnGrp LOS	E	C	C	D	C	C	E		E	D		E
Approach Vol, veh/h	1898			2586			224			262		
Approach Delay, s/veh	31.5			25.7			67.7			63.3		
Approach LOS	C			C			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.1	60.0	15.5	17.3	17.2	70.0	20.7	12.2				
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.0	4.0	4.9	4.0	4.0				
Max Green Setting (Gmax), s	16.0	* 55	16.0	16.0	21.0	50.1	16.0	16.0				
Max Q Clear Time (g_c+I1), s	6.3	34.2	11.5	13.0	13.1	52.6	9.1	7.8				
Green Ext Time (p_c), s	2.6	18.6	0.1	0.2	0.1	0.0	0.7	0.2				

Intersection Summary

HCM 2010 Ctrl Delay	31.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
105: Rocky Ridge Drive & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	899	599	563	731	60	709	1229	179	221	1431	276
Future Volume (veh/h)	410	899	599	563	731	60	709	1229	179	221	1431	276
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	432	946	0	593	769	0	746	1294	188	233	1506	291
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	834	1699	529	516	1230	383	488	1030	318	488	1047	324
Arrive On Green	0.40	0.56	0.00	0.05	0.08	0.00	0.14	0.20	0.20	0.14	0.21	0.21
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1572	3442	5085	1572
Grp Volume(v), veh/h	432	946	0	593	769	0	746	1294	188	233	1506	291
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1572	1721	1695	1572
Q Serve(g_s), s	11.3	14.3	0.0	18.0	17.6	0.0	17.0	24.3	13.0	7.5	24.7	21.7
Cycle Q Clear(g_c), s	11.3	14.3	0.0	18.0	17.6	0.0	17.0	24.3	13.0	7.5	24.7	21.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	834	1699	529	516	1230	383	488	1030	318	488	1047	324
V/C Ratio(X)	0.52	0.56	0.00	1.15	0.63	0.00	1.53	1.26	0.59	0.48	1.44	0.90
Avail Cap(c_a), veh/h	834	1699	529	516	1699	529	488	1030	318	488	1047	324
HCM Platoon Ratio	1.67	1.67	1.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.00	0.23	0.23	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	20.8	0.0	57.0	49.9	0.0	51.5	47.8	43.3	47.4	47.6	46.4
Incr Delay (d2), s/veh	0.2	1.0	0.0	72.6	0.4	0.0	248.7	123.5	2.7	0.3	202.9	26.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	6.7	0.0	13.8	8.3	0.0	24.9	23.1	5.9	3.6	31.2	11.8
LnGrp Delay(d),s/veh	30.7	21.8	0.0	129.7	50.3	0.0	300.2	171.3	46.0	47.7	250.6	72.9
LnGrp LOS	C	C		F	D		F	F	D	D	F	E
Approach Vol, veh/h	1378			1362			2228			2030		
Approach Delay, s/veh	24.6			84.9			203.9			201.8		
Approach LOS	C			F			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	45.0	22.0	31.0	33.1	33.9	22.0	31.0				
Change Period (Y+Rc), s	4.0	4.9	5.0	6.3	4.0	4.9	5.0	6.7				
Max Green Setting (Gmax), s	18.0	40.1	17.0	24.7	18.0	40.1	17.0	24.3				
Max Q Clear Time (g_c+I1), s	20.0	16.3	19.0	26.7	13.3	19.6	9.5	26.3				
Green Ext Time (p_c), s	0.0	13.1	0.0	0.0	1.1	9.5	1.4	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	144.8											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary
106: Sierra College Blvd & Douglas Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	1767	431	420	1773	209	327	941	257	214	927	63
Future Volume (veh/h)	340	1767	431	420	1773	209	327	941	257	214	927	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	358	1860	0	442	1866	0	344	991	0	225	976	66
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	2076	620	516	2278	683	402	1200	347	315	1072	303
Arrive On Green	0.13	0.41	0.00	0.15	0.45	0.00	0.12	0.24	0.00	0.09	0.21	0.19
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1559
Grp Volume(v), veh/h	358	1860	0	442	1866	0	344	991	0	225	976	66
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1559
Q Serve(g_s), s	12.2	40.9	0.0	15.0	38.4	0.0	11.8	22.2	0.0	7.6	22.5	4.3
Cycle Q Clear(g_c), s	12.2	40.9	0.0	15.0	38.4	0.0	11.8	22.2	0.0	7.6	22.5	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	437	2076	620	516	2278	683	402	1200	347	315	1072	303
V/C Ratio(X)	0.82	0.90	0.00	0.86	0.82	0.00	0.86	0.83	0.00	0.71	0.91	0.22
Avail Cap(c_a), veh/h	459	2076	620	516	2278	683	402	1200	347	315	1072	303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	33.1	0.0	49.7	28.9	0.0	52.0	43.5	0.0	53.0	46.2	40.7
Incr Delay (d2), s/veh	9.9	6.5	0.0	12.8	2.5	0.0	15.8	5.1	0.0	6.4	11.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	20.4	0.0	8.0	18.5	0.0	6.5	10.9	0.0	3.9	11.6	1.9
LnGrp Delay(d),s/veh	60.9	39.7	0.0	62.5	31.4	0.0	67.9	48.6	0.0	59.4	58.0	41.3
LnGrp LOS	E	D		E	C		E	D		E	E	D
Approach Vol, veh/h	2218		2308				1335		1267			
Approach Delay, s/veh	43.1		37.3				53.6		57.3			
Approach LOS	D		D				D		E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	52.0	17.0	28.0	18.2	56.8	14.0	31.0				
Change Period (Y+Rc), s	6.0	6.0	4.0	5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	17.0	46.0	13.0	22.3	15.0	50.0	10.0	25.3				
Max Q Clear Time (g_c+I1), s	17.0	42.9	13.8	24.5	14.2	40.4	9.6	24.2				
Green Ext Time (p_c), s	0.0	2.8	0.0	0.0	0.1	7.9	0.0	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay	45.7											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
115: Oakridge Dr & Cirby Way

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1098	17	173	1117	2	10	13	39	14	211	276
Future Volume (veh/h)	50	1098	17	173	1117	2	10	13	39	14	211	276
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	53	1156	18	182	1176	2	11	14	41	15	222	291
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	1838	29	177	2070	4	47	60	91	22	329	299
Arrive On Green	0.04	0.52	0.50	0.10	0.57	0.56	0.06	0.06	0.06	0.19	0.19	0.19
Sat Flow, veh/h	1774	3567	56	1774	3625	6	802	1021	1543	118	1739	1583
Grp Volume(v), veh/h	53	573	601	182	574	604	25	0	41	237	0	291
Grp Sat Flow(s),veh/h/ln	1774	1770	1853	1774	1770	1862	1823	0	1543	1857	0	1583
Q Serve(g_s), s	2.6	20.9	20.9	9.0	18.5	18.5	1.2	0.0	2.3	10.7	0.0	16.4
Cycle Q Clear(g_c), s	2.6	20.9	20.9	9.0	18.5	18.5	1.2	0.0	2.3	10.7	0.0	16.4
Prop In Lane	1.00		0.03	1.00		0.00	0.44		1.00	0.06		1.00
Lane Grp Cap(c), veh/h	79	912	955	177	1010	1063	108	0	91	351	0	299
V/C Ratio(X)	0.67	0.63	0.63	1.03	0.57	0.57	0.23	0.00	0.45	0.68	0.00	0.97
Avail Cap(c_a), veh/h	79	912	955	177	1010	1063	344	0	291	351	0	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	15.6	15.7	40.5	12.3	12.3	40.4	0.0	40.9	33.9	0.0	36.3
Incr Delay (d2), s/veh	16.7	3.3	3.1	74.5	1.2	1.1	0.4	0.0	1.3	4.2	0.0	44.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	11.0	11.5	8.1	9.3	9.7	0.6	0.0	1.0	5.9	0.0	10.9
LnGrp Delay(d),s/veh	59.0	18.9	18.8	115.3	13.5	13.4	40.8	0.0	42.2	38.1	0.0	80.6
LnGrp LOS	E	B	B	F	B	B	D		D	D		F
Approach Vol, veh/h	1227			1360			66			528		
Approach Delay, s/veh	20.6			27.1			41.7			61.5		
Approach LOS	C			C			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	49.7		20.0	7.0	54.7		8.3				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	8.0	32.7		16.0	3.0	37.7		16.0				
Max Q Clear Time (g_c+I1), s	11.0	22.9		18.4	4.6	20.5		4.3				
Green Ext Time (p_c), s	0.0	8.9		0.0	0.0	15.0		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			30.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

116: Parkview Dr & Cirby Way

Cumulative No Project
PM Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	28	1089	0	15	1331	13	12	0	5	31	0	25		
Future Volume (veh/h)	28	1089	0	15	1331	13	12	0	5	31	0	25		
Number	1	6	16	5	2	12	7	4	14	3	8	18		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863		
Adj Flow Rate, veh/h	29	1146	0	16	1401	14	13	0	5	33	0	26		
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	55	2954	0	39	2965	30	97	0	11	155	0	72		
Arrive On Green	0.03	0.83	0.00	0.02	0.83	0.81	0.05	0.00	0.05	0.05	0.00	0.05		
Sat Flow, veh/h	1774	3632	0	1774	3590	36	621	6	241	1651	0	1583		
Grp Volume(v), veh/h	29	1146	0	16	690	725	18	0	0	33	0	26		
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1856	868	0	0	1651	0	1583		
Q Serve(g_s), s	1.4	7.1	0.0	0.8	10.0	10.0	1.1	0.0	0.0	0.0	0.0	1.4		
Cycle Q Clear(g_c), s	1.4	7.1	0.0	0.8	10.0	10.0	2.7	0.0	0.0	1.6	0.0	1.4		
Prop In Lane	1.00		0.00	1.00		0.02	0.72		0.28	1.00		1.00		
Lane Grp Cap(c), veh/h	55	2954	0	39	1462	1533	108	0	0	155	0	72		
V/C Ratio(X)	0.53	0.39	0.00	0.41	0.47	0.47	0.17	0.00	0.00	0.21	0.00	0.36		
Avail Cap(c_a), veh/h	79	2954	0	79	1462	1533	393	0	0	435	0	387		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	43.0	1.8	0.0	43.4	2.2	2.2	43.1	0.0	0.0	41.8	0.0	41.7		
Incr Delay (d2), s/veh	2.9	0.4	0.0	2.5	1.1	1.0	0.5	0.0	0.0	0.5	0.0	2.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	3.5	0.0	0.4	5.2	5.5	0.5	0.0	0.0	0.8	0.0	0.7		
LnGrp Delay(d),s/veh	45.9	2.2	0.0	45.9	3.3	3.3	43.6	0.0	0.0	42.3	0.0	44.0		
LnGrp LOS	D	A		D	A	A	D			D		D		
Approach Vol, veh/h	1175				1431		18				59			
Approach Delay, s/veh	3.3				3.8		43.6				43.0			
Approach LOS	A				A		D				D			
Timer	1	2	3	4	5	6	7	8						
Assigned Phs	1	2			4	5	6	8						
Phs Duration (G+Y+Rc), s	5.8	77.1			7.1	5.0	77.9	7.1						
Change Period (Y+Rc), s	4.0	5.3			4.0	4.0	5.3	4.0						
Max Green Setting (Gmax), s	3.0	52.7			21.0	3.0	52.7	21.0						
Max Q Clear Time (g_c+I1), s	3.4	12.0			4.7	2.8	9.1	3.6						
Green Ext Time (p_c), s	0.0	30.4			0.2	0.0	32.0	0.2						
Intersection Summary														
HCM 2010 Ctrl Delay					4.7									
HCM 2010 LOS					A									

HCM 2010 Signalized Intersection Summary
117: Cirby Way & Rocky Ridge Dr

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	592	403	692	218	789	618		
Future Volume (veh/h)	592	403	692	218	789	618		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	623	424	728	229	831	651		
Adj No. of Lanes	2	1	2	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1112	584	831	261	1005	985		
Arrive On Green	0.31	0.31	0.31	0.30	0.29	0.31		
Sat Flow, veh/h	3548	1863	2744	834	3442	1583		
Grp Volume(v), veh/h	623	424	486	471	831	651		
Grp Sat Flow(s),veh/h/ln	1774	1863	1770	1716	1721	1583		
Q Serve(g_s), s	13.2	18.2	23.4	23.4	20.3	23.7		
Cycle Q Clear(g_c), s	13.2	18.2	23.4	23.4	20.3	23.7		
Prop In Lane	1.00			0.49	1.00	1.00		
Lane Grp Cap(c), veh/h	1112	584	555	538	1005	985		
V/C Ratio(X)	0.56	0.73	0.88	0.88	0.83	0.66		
Avail Cap(c_a), veh/h	1112	584	560	543	1005	985		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.7	27.5	29.2	29.6	29.7	10.9		
Incr Delay (d2), s/veh	2.0	7.7	13.9	14.2	7.8	3.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.7	10.6	13.5	13.1	10.7	17.0		
LnGrp Delay(d),s/veh	27.8	35.2	43.1	43.8	37.5	14.4		
LnGrp LOS	C	D	D	D	D	B		
Approach Vol, veh/h		1047	957		1482			
Approach Delay, s/veh		30.8	43.5		27.3			
Approach LOS		C	D		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		29.3		29.7
Change Period (Y+Rc), s				5.3		4.0		4.0
Max Green Setting (Gmax), s				25.7		25.0		26.0
Max Q Clear Time (g_c+I1), s				20.2		25.7		25.4
Green Ext Time (p_c), s				3.3		0.0		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			32.8					
HCM 2010 LOS			C					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
118: Champion Oaks Dr & Cirby Way

Cumulative No Project
PM Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	25	796	178	40	619	8	52	3	2	13	6	306		
Future Volume (veh/h)	25	796	178	40	619	8	52	3	2	13	6	306		
Number	5	2	12	1	6	16	3	8	18	7	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863		
Adj Flow Rate, veh/h	26	838	187	42	652	8	55	3	2	14	6	322		
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	104	1320	294	134	1704	21	404	21	10	399	149	420		
Arrive On Green	0.06	0.46	0.44	0.08	0.48	0.45	0.26	0.26	0.26	0.26	0.26	0.26		
Sat Flow, veh/h	1774	2877	642	1774	3581	44	963	79	36	1007	562	1583		
Grp Volume(v), veh/h	26	515	510	42	322	338	60	0	0	20	0	322		
Grp Sat Flow(s),veh/h/ln	1774	1770	1749	1774	1770	1855	1078	0	0	1569	0	1583		
Q Serve(g_s), s	0.6	10.3	10.4	1.0	5.4	5.4	1.7	0.0	0.0	0.0	0.0	8.7		
Cycle Q Clear(g_c), s	0.6	10.3	10.4	1.0	5.4	5.4	2.1	0.0	0.0	0.4	0.0	8.7		
Prop In Lane	1.00		0.37	1.00		0.02	0.92		0.03	0.70		1.00		
Lane Grp Cap(c), veh/h	104	812	802	134	842	883	435	0	0	548	0	420		
V/C Ratio(X)	0.25	0.63	0.64	0.31	0.38	0.38	0.14	0.00	0.00	0.04	0.00	0.77		
Avail Cap(c_a), veh/h	268	867	857	268	867	909	639	0	0	833	0	718		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	20.8	9.6	9.7	20.3	7.8	7.8	13.3	0.0	0.0	12.7	0.0	15.7		
Incr Delay (d2), s/veh	0.5	1.8	1.8	0.5	0.5	0.4	0.1	0.0	0.0	0.0	0.0	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	5.4	5.4	0.5	2.7	2.8	0.6	0.0	0.0	0.2	0.0	3.9		
LnGrp Delay(d),s/veh	21.3	11.4	11.5	20.8	8.2	8.2	13.3	0.0	0.0	12.7	0.0	16.8		
LnGrp LOS	C	B	B	C	A	A	B			B		B		
Approach Vol, veh/h	1051				702				60					
Approach Delay, s/veh	11.7				9.0				13.3					
Approach LOS	B				A				B					
Timer	1	2	3	4	5	6	7	8						
Assigned Phs	1	2			4	5	6	8						
Phs Duration (G+Y+Rc), s	6.5	24.6			15.3	5.7	25.4	15.3						
Change Period (Y+Rc), s	4.0	5.3			4.0	4.0	5.3	4.0						
Max Green Setting (Gmax), s	6.0	20.7			20.0	6.0	20.7	20.0						
Max Q Clear Time (g_c+I1), s	3.0	12.4			10.7	2.6	7.4	4.1						
Green Ext Time (p_c), s	0.0	6.9			0.7	0.0	10.3	0.9						
Intersection Summary														
HCM 2010 Ctrl Delay					11.6									
HCM 2010 LOS					B									

HCM 2010 Signalized Intersection Summary

119: Cirby Way & Old Auburn Rd

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	468	360	275	309	261	569		
Future Volume (veh/h)	468	360	275	309	261	569		
Number	3	18	6	16	5	2		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	436	440	289	325	275	599		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	602	534	677	589	274	1061		
Arrive On Green	0.34	0.33	0.36	0.35	0.15	0.57		
Sat Flow, veh/h	1774	1615	1863	1583	1774	1863		
Grp Volume(v), veh/h	436	440	289	325	275	599		
Grp Sat Flow(s),veh/h/ln	1774	1615	1863	1583	1774	1863		
Q Serve(g_s), s	12.5	14.6	6.8	9.4	9.0	11.9		
Cycle Q Clear(g_c), s	12.5	14.6	6.8	9.4	9.0	11.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	602	534	677	589	274	1061		
V/C Ratio(X)	0.72	0.82	0.43	0.55	1.00	0.56		
Avail Cap(c_a), veh/h	778	694	871	754	274	1255		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.8	17.9	14.0	14.4	24.6	7.9		
Incr Delay (d2), s/veh	1.5	4.8	0.7	1.3	54.8	0.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.3	7.2	3.6	4.5	8.5	6.2		
LnGrp Delay(d),s/veh	18.3	22.7	14.6	15.7	79.4	8.7		
LnGrp LOS	B	C	B	B	F	A		
Approach Vol, veh/h	876		614			874		
Approach Delay, s/veh	20.5		15.2			30.9		
Approach LOS	C		B			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.9			12.0	23.9		22.2
Change Period (Y+Rc), s		5.3			4.0	5.3		4.0
Max Green Setting (Gmax), s		36.7			8.0	24.7		24.0
Max Q Clear Time (g_c+l1), s		13.9			11.0	11.4		16.6
Green Ext Time (p_c), s		9.9			0.0	7.2		1.7
Intersection Summary								
HCM 2010 Ctrl Delay			23.0					
HCM 2010 LOS			C					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
120: Westbrook Blvd & Parkway One

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	7	47	102	10	66	128	1412	149	79	1143	40
Future Volume (veh/h)	18	7	47	102	10	66	128	1412	149	79	1143	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	19	7	49	107	11	69	135	1486	157	83	1203	42
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	80	68	137	190	161	176	2199	685	106	1997	622
Arrive On Green	0.02	0.04	0.04	0.08	0.10	0.10	0.10	0.43	0.43	0.06	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	19	7	49	107	11	69	135	1486	157	83	1203	42
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.5	0.2	1.6	3.1	0.3	2.1	3.8	12.1	3.2	2.4	9.7	0.9
Cycle Q Clear(g_c), s	0.5	0.2	1.6	3.1	0.3	2.1	3.8	12.1	3.2	2.4	9.7	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	80	68	137	190	161	176	2199	685	106	1997	622
V/C Ratio(X)	0.58	0.09	0.72	0.78	0.06	0.43	0.77	0.68	0.23	0.79	0.60	0.07
Avail Cap(c_a), veh/h	138	1155	982	241	1264	1074	413	2365	736	241	1997	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	23.7	24.4	23.4	20.9	21.8	22.7	11.7	9.2	23.9	12.5	9.8
Incr Delay (d2), s/veh	15.1	0.5	13.3	9.1	0.1	1.8	6.8	0.7	0.2	12.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	0.9	1.8	0.1	1.0	2.2	5.6	1.4	1.5	4.6	0.4
LnGrp Delay(d),s/veh	40.3	24.2	37.7	32.5	21.1	23.5	29.5	12.5	9.4	35.9	13.0	9.8
LnGrp LOS	D	C	D	C	C	C	C	B	A	D	B	A
Approach Vol, veh/h	75				187				1778			
Approach Delay, s/veh	37.1				28.5				13.5			
Approach LOS	D				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	27.3	9.0	7.2	10.1	25.3	6.0	10.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	24.0	7.0	32.0	12.0	19.0	4.0	35.0				
Max Q Clear Time (g_c+I1), s	4.4	14.1	5.1	3.6	5.8	11.7	2.5	4.1				
Green Ext Time (p_c), s	0.0	8.2	0.0	0.4	0.2	6.8	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	15.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

121: Westbrook Blvd & Nobo Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	2	24	11	1	25	74	1852	29	47	1215	21
Future Volume (veh/h)	11	2	24	11	1	25	74	1852	29	47	1215	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	2	25	12	1	26	78	1949	31	49	1279	22
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	122	72	58	122	72	134	2842	853	106	2762	828
Arrive On Green	0.03	0.07	0.05	0.03	0.07	0.05	0.08	0.56	0.54	0.06	0.54	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	12	2	25	12	1	26	78	1949	31	49	1279	22
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.3	0.0	0.8	0.3	0.0	0.8	2.1	13.6	0.5	1.3	7.6	0.3
Cycle Q Clear(g_c), s	0.3	0.0	0.8	0.3	0.0	0.8	2.1	13.6	0.5	1.3	7.6	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	122	72	58	122	72	134	2842	853	106	2762	828
V/C Ratio(X)	0.21	0.02	0.35	0.21	0.01	0.36	0.58	0.69	0.04	0.46	0.46	0.03
Avail Cap(c_a), veh/h	179	1281	1057	215	1319	1089	431	3086	929	215	2762	828
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	21.6	22.9	23.3	21.6	22.9	22.1	7.8	5.4	22.5	6.9	5.7
Incr Delay (d2), s/veh	1.8	0.1	2.9	1.8	0.0	3.1	3.9	0.6	0.0	3.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.4	0.2	0.0	0.4	1.2	6.3	0.2	0.7	3.5	0.1
LnGrp Delay(d),s/veh	25.1	21.7	25.8	25.1	21.6	26.0	26.0	8.4	5.4	25.6	7.0	5.7
LnGrp LOS	C	C	C	C	C	C	C	A	A	C	A	A
Approach Vol, veh/h	39				39				2058			
Approach Delay, s/veh	25.3				25.6				9.0			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	30.6	5.6	6.2	7.7	29.8	5.6	6.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	28.0	5.0	32.0	11.0	22.0	4.0	33.0				
Max Q Clear Time (g_c+I1), s	3.3	15.6	2.3	2.8	4.1	9.6	2.3	2.8				
Green Ext Time (p_c), s	0.0	10.1	0.0	0.1	0.1	11.8	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	8.9											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
122: Westbrook Blvd & N Brookstone Drive

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	73	51	118	1354	1110	163		
Future Volume (veh/h)	73	51	118	1354	1110	163		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	77	54	124	1425	1168	172		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	141	126	159	3590	2588	804		
Arrive On Green	0.08	0.08	0.09	0.71	0.51	0.51		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1580		
Grp Volume(v), veh/h	77	54	124	1425	1168	172		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1580		
Q Serve(g_s), s	1.6	1.2	2.6	4.3	5.5	2.2		
Cycle Q Clear(g_c), s	1.6	1.2	2.6	4.3	5.5	2.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	141	126	159	3590	2588	804		
V/C Ratio(X)	0.55	0.43	0.78	0.40	0.45	0.21		
Avail Cap(c_a), veh/h	951	849	380	4361	2726	847		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.5	16.4	16.6	2.2	5.8	5.0		
Incr Delay (d2), s/veh	3.2	2.3	7.9	0.1	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	1.2	1.6	1.9	2.5	1.0		
LnGrp Delay(d),s/veh	19.8	18.7	24.5	2.3	6.0	5.2		
LnGrp LOS	B	B	C	A	A	A		
Approach Vol, veh/h	131			1549	1340			
Approach Delay, s/veh	19.3			4.1	5.9			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.3		7.0	7.4	23.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	8.0	20.0		
Max Q Clear Time (g_c+I1), s		6.3		3.6	4.6	7.5		
Green Ext Time (p_c), s		20.1		0.3	0.1	10.9		
Intersection Summary								
HCM 2010 Ctrl Delay			5.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
123: Westbrook Blvd & S Brookstone Dr

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	18	22	54	1455	1118	43		
Future Volume (veh/h)	18	22	54	1455	1118	43		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	19	23	57	1532	1177	45		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	68	60	86	3759	2947	916		
Arrive On Green	0.04	0.04	0.05	0.74	0.58	0.58		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1581		
Grp Volume(v), veh/h	19	23	57	1532	1177	45		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1581		
Q Serve(g_s), s	0.4	0.5	1.1	4.0	4.5	0.4		
Cycle Q Clear(g_c), s	0.4	0.5	1.1	4.0	4.5	0.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	68	60	86	3759	2947	916		
V/C Ratio(X)	0.28	0.38	0.67	0.41	0.40	0.05		
Avail Cap(c_a), veh/h	988	882	296	4531	3115	968		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.8	16.9	16.8	1.7	4.1	3.3		
Incr Delay (d2), s/veh	2.2	3.9	8.5	0.1	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.8	1.9	2.1	0.2		
LnGrp Delay(d),s/veh	19.0	20.8	25.3	1.8	4.2	3.3		
LnGrp LOS	B	C	C	A	A	A		
Approach Vol, veh/h	42			1589	1222			
Approach Delay, s/veh	20.0			2.7	4.2			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.5		5.4	5.7	24.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	6.0	22.0		
Max Q Clear Time (g_c+I1), s		6.0		2.5	3.1	6.5		
Green Ext Time (p_c), s		20.5		0.1	0.0	13.2		
Intersection Summary								
HCM 2010 Ctrl Delay			3.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
124: Westbrook Blvd & Octave Avenue/Payson Avenue

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (veh/h)	27	0	42	13	0	5	105	1439	31	9	1311	78
Future Volume (veh/h)	27	0	42	13	0	5	105	1439	31	9	1311	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	28	0	44	14	0	5	111	1515	33	9	1380	82
Adj No. of Lanes	0	1	0	0	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	0	68	36	0	13	143	3138	975	17	2776	863
Arrive On Green	0.07	0.00	0.07	0.03	0.00	0.03	0.08	0.62	0.62	0.01	0.55	0.55
Sat Flow, veh/h	639	0	1004	1264	0	451	1774	5085	1581	1774	5085	1580
Grp Volume(v), veh/h	72	0	0	19	0	0	111	1515	33	9	1380	82
Grp Sat Flow(s),veh/h/ln	1643	0	0	1715	0	0	1774	1695	1581	1774	1695	1580
Q Serve(g_s), s	2.5	0.0	0.0	0.6	0.0	0.0	3.5	9.4	0.5	0.3	9.7	1.4
Cycle Q Clear(g_c), s	2.5	0.0	0.0	0.6	0.0	0.0	3.5	9.4	0.5	0.3	9.7	1.4
Prop In Lane	0.39		0.61	0.74		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	0	0	49	0	0	143	3138	975	17	2776	863
V/C Ratio(X)	0.65	0.00	0.00	0.39	0.00	0.00	0.78	0.48	0.03	0.54	0.50	0.10
Avail Cap(c_a), veh/h	1084	0	0	1131	0	0	246	3442	1070	123	3089	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	0.0	27.5	0.0	0.0	26.0	6.0	4.3	28.4	8.2	6.3
Incr Delay (d2), s/veh	6.3	0.0	0.0	4.9	0.0	0.0	8.7	0.1	0.0	25.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.4	0.0	0.0	2.1	4.4	0.2	0.3	4.5	0.6
LnGrp Delay(d),s/veh	32.5	0.0	0.0	32.4	0.0	0.0	34.7	6.1	4.3	53.5	8.3	6.3
LnGrp LOS	C			C			C	A	A	D	A	A
Approach Vol, veh/h	72		19			1659			1471			
Approach Delay, s/veh	32.5		32.4			8.0			8.5			
Approach LOS	C		C			A			A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.5	39.6	7.9		8.6	35.5	5.6					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	4.0	39.0	38.0		8.0	35.0	38.0					
Max Q Clear Time (g_c+I1), s	2.3	11.4	4.5		5.5	11.7	2.6					
Green Ext Time (p_c), s	0.0	22.8	0.4		0.1	19.7	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			8.9									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

125: Wal*Mart & Lead Hill Blvd

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	824	131	133	670	139	74		
Future Volume (veh/h)	824	131	133	670	139	74		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	867	138	140	705	146	78		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1738	778	211	2370	339	303		
Arrive On Green	0.49	0.49	0.12	0.67	0.19	0.19		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	867	138	140	705	146	78		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	8.3	2.4	3.8	4.1	3.6	2.1		
Cycle Q Clear(g_c), s	8.3	2.4	3.8	4.1	3.6	2.1		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1738	778	211	2370	339	303		
V/C Ratio(X)	0.50	0.18	0.66	0.30	0.43	0.26		
Avail Cap(c_a), veh/h	1901	850	247	2724	741	661		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.6	7.1	21.2	3.4	17.9	17.3		
Incr Delay (d2), s/veh	0.4	0.2	3.3	0.1	0.3	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.1	1.1	2.1	2.0	1.8	0.9		
LnGrp Delay(d),s/veh	9.0	7.3	24.5	3.5	18.2	17.5		
LnGrp LOS	A	A	C	A	B	B		
Approach Vol, veh/h	1005			845	224			
Approach Delay, s/veh	8.8			7.0	18.0			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	27.0				36.0		14.3
Change Period (Y+Rc), s	4.0	5.7				* 5.7		5.7
Max Green Setting (Gmax), s	6.0	23.6				* 35		20.0
Max Q Clear Time (g_c+I1), s	5.8	10.3				6.1		5.6
Green Ext Time (p_c), s	0.0	11.0				20.8		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			9.1					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
126: Westbrook Blvd & Solaire Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	19	26	21	13	33	54	949	49	60	837	137
Future Volume (veh/h)	50	19	26	21	13	33	54	949	49	60	837	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	53	20	27	22	14	35	57	999	52	63	881	144
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	194	131	76	154	98	117	2468	735	123	2483	739
Arrive On Green	0.06	0.10	0.08	0.04	0.08	0.06	0.07	0.49	0.46	0.07	0.49	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	53	20	27	22	14	35	57	999	52	63	881	144
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.4	0.5	0.7	0.6	0.3	1.0	1.5	5.9	0.9	1.6	5.0	2.5
Cycle Q Clear(g_c), s	1.4	0.5	0.7	0.6	0.3	1.0	1.5	5.9	0.9	1.6	5.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	194	131	76	154	98	117	2468	735	123	2483	739
V/C Ratio(X)	0.47	0.10	0.21	0.29	0.09	0.36	0.49	0.40	0.07	0.51	0.35	0.19
Avail Cap(c_a), veh/h	227	1272	1047	189	1232	1014	265	3039	912	227	2930	879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	19.0	20.0	21.7	19.9	21.1	21.1	7.7	7.0	21.1	7.4	7.3
Incr Delay (d2), s/veh	3.0	0.2	0.8	2.1	0.3	2.2	3.1	0.1	0.0	3.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.2	0.4	0.3	0.2	0.5	0.8	2.7	0.4	0.9	2.3	1.1
LnGrp Delay(d),s/veh	24.1	19.2	20.8	23.8	20.1	23.3	24.2	7.8	7.0	24.4	7.5	7.4
LnGrp LOS	C	B	C	C	C	C	C	A	A	C	A	A
Approach Vol, veh/h	100				71				1108			
Approach Delay, s/veh	22.3				22.8				8.6			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	25.7	6.0	7.9	7.1	25.9	7.0	6.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	26.0	4.0	30.0	6.0	25.0	5.0	29.0				
Max Q Clear Time (g_c+I1), s	3.6	7.9	2.6	2.7	3.5	7.0	3.4	3.0				
Green Ext Time (p_c), s	0.0	12.8	0.0	0.3	0.0	12.8	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	9.6											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

127: Westbrook Blvd & Federico Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	50	42	116	176	0	89	1019	262	2	752	130
Future Volume (veh/h)	33	50	42	116	176	0	89	1019	262	2	752	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	53	44	122	185	0	94	1073	276	2	792	137
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	213	181	195	321	273	156	2241	665	41	1912	562
Arrive On Green	0.05	0.11	0.11	0.11	0.17	0.00	0.09	0.44	0.42	0.02	0.38	0.36
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	35	53	44	122	185	0	94	1073	276	2	792	137
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.9	1.2	1.2	3.2	4.4	0.0	2.5	7.2	5.9	0.1	5.5	2.9
Cycle Q Clear(g_c), s	0.9	1.2	1.2	3.2	4.4	0.0	2.5	7.2	5.9	0.1	5.5	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	213	181	195	321	273	156	2241	665	41	1912	562
V/C Ratio(X)	0.38	0.25	0.24	0.63	0.58	0.00	0.60	0.48	0.42	0.05	0.41	0.24
Avail Cap(c_a), veh/h	295	1280	1088	517	1512	1286	295	2435	725	185	2117	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	19.4	19.4	20.4	18.3	0.0	21.1	9.5	9.8	22.9	11.1	10.9
Incr Delay (d2), s/veh	2.6	0.6	0.7	3.3	1.6	0.0	3.7	0.2	0.4	0.5	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.6	1.7	2.4	0.0	1.4	3.3	2.6	0.0	2.6	1.3
LnGrp Delay(d),s/veh	24.6	20.0	20.1	23.7	19.9	0.0	24.8	9.7	10.2	23.4	11.2	11.2
LnGrp LOS	C	C	C	C	B		C	A	B	C	B	B
Approach Vol, veh/h	132				307				1443			
Approach Delay, s/veh	21.2				21.4				10.8			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	24.2	9.3	9.5	8.2	21.1	6.5	12.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	21.0	13.0	32.0	7.0	18.0	7.0	38.0				
Max Q Clear Time (g_c+I1), s	2.1	9.2	5.2	3.2	4.5	7.5	2.9	6.4				
Green Ext Time (p_c), s	0.0	9.5	0.2	1.5	0.0	8.5	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	12.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
128: Westbrook Blvd & SV EW Coll

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	39	14	1350	84	0	910		
Future Volume (veh/h)	39	14	1350	84	0	910		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	41	15	1421	88	0	958		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	83	74	3547	1104	5	3547		
Arrive On Green	0.05	0.05	0.70	0.70	0.00	0.70		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	41	15	1421	88	0	958		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	0.9	0.4	4.6	0.7	0.0	2.7		
Cycle Q Clear(g_c), s	0.9	0.4	4.6	0.7	0.0	2.7		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	83	74	3547	1104	5	3547		
V/C Ratio(X)	0.50	0.20	0.40	0.08	0.00	0.27		
Avail Cap(c_a), veh/h	1316	1175	3547	1104	182	4683		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	18.2	17.9	2.5	1.9	0.0	2.2		
Incr Delay (d2), s/veh	4.5	1.3	0.1	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.2	2.1	0.3	0.0	1.3		
LnGrp Delay(d),s/veh	22.7	19.3	2.6	1.9	0.0	2.2		
LnGrp LOS	C	B	A	A		A		
Approach Vol, veh/h	56		1509			958		
Approach Delay, s/veh	21.8		2.5			2.2		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	0.0	32.3				32.3		6.8
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	4.0	27.0				36.0		29.0
Max Q Clear Time (g_c+l1), s	0.0	6.6				4.7		2.9
Green Ext Time (p_c), s	0.0	16.4				22.5		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			2.8					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
129: Westbrook Blvd & Sierra Village Dr

Cumulative No Project
PM Peak Hour

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Traffic Volume (veh/h)	219	30	17	53	14	10	69	1465	197	9	1308	115			
Future Volume (veh/h)	219	30	17	53	14	10	69	1465	197	9	1308	115			
Number	7	4	14	3	8	18	5	2	12	1	6	16			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	231	32	18	56	15	11	73	1542	207	9	1377	121			
Adj No. of Lanes	1	1	1	1	1	1	0	3	1	1	3	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2			
Cap, veh/h	269	248	211	72	41	34	125	2447	910	16	3277	1020			
Arrive On Green	0.15	0.13	0.13	0.04	0.02	0.02	0.57	0.57	0.57	0.01	0.64	0.64			
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	129	4258	1583	1774	5085	1583			
Grp Volume(v), veh/h	231	32	18	56	15	11	488	1127	207	9	1377	121			
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1302	1543	1583	1774	1695	1583			
Q Serve(g_s), s	10.5	1.2	0.8	2.6	0.7	0.6	2.8	20.2	5.3	0.4	10.9	2.4			
Cycle Q Clear(g_c), s	10.5	1.2	0.8	2.6	0.7	0.6	14.0	20.2	5.3	0.4	10.9	2.4			
Prop In Lane	1.00		1.00	1.00		1.00	0.15		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	269	248	211	72	41	34	799	1773	910	16	3277	1020			
V/C Ratio(X)	0.86	0.13	0.09	0.78	0.37	0.32	0.61	0.64	0.23	0.56	0.42	0.12			
Avail Cap(c_a), veh/h	301	859	730	172	723	615	835	1872	961	86	3641	1134			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	34.1	31.5	31.3	39.2	39.8	39.7	10.1	11.7	8.6	40.7	7.1	5.6			
Incr Delay (d2), s/veh	19.6	0.2	0.2	16.7	5.5	5.2	1.2	0.7	0.1	27.3	0.1	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.6	0.7	0.4	1.6	0.4	0.3	6.8	8.6	2.3	0.3	5.0	1.1			
LnGrp Delay(d),s/veh	53.7	31.7	31.5	55.9	45.3	44.9	11.4	12.4	8.7	67.9	7.2	5.7			
LnGrp LOS	D	C	C	E	D	D	B	B	A	E	A	A			
Approach Vol, veh/h	281				82		1822				1507				
Approach Delay, s/veh	49.8				52.5		11.7				7.5				
Approach LOS	D				D		B				A				
Timer	1	2	3	4	5	6	7	8							
Assigned Phs	1	2	3	4			6	7	8						
Phs Duration (G+Y+Rc), s	5.7	52.4	8.3	16.0			58.1	17.5	6.8						
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0			5.0	5.0	5.0						
Max Green Setting (Gmax), s	4.0	50.0	8.0	38.0			59.0	14.0	32.0						
Max Q Clear Time (g_c+I1), s	2.4	22.2	4.6	3.2			12.9	12.5	2.7						
Green Ext Time (p_c), s	0.0	25.2	0.0	0.3			39.4	0.1	0.3						
Intersection Summary															
HCM 2010 Ctrl Delay			13.8												
HCM 2010 LOS			B												

HCM 2010 Signalized Intersection Summary

130: Fiddymment Road & Angus Road

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	58	64	251	107	404	44	680	39	185	764	41
Future Volume (veh/h)	23	58	64	251	107	404	44	680	39	185	764	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	24	61	67	264	113	425	46	716	41	195	804	43
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	418	354	202	580	492	135	1083	483	227	1268	566
Arrive On Green	0.03	0.22	0.22	0.11	0.31	0.31	0.08	0.31	0.31	0.13	0.36	0.36
Sat Flow, veh/h	1774	1863	1579	1774	1863	1580	1774	3539	1578	1774	3539	1579
Grp Volume(v), veh/h	24	61	67	264	113	425	46	716	41	195	804	43
Grp Sat Flow(s),veh/h/ln	1774	1863	1579	1774	1863	1580	1774	1770	1578	1774	1770	1579
Q Serve(g_s), s	0.9	1.8	2.4	8.0	3.1	17.8	1.7	12.4	1.3	7.6	13.3	1.3
Cycle Q Clear(g_c), s	0.9	1.8	2.4	8.0	3.1	17.8	1.7	12.4	1.3	7.6	13.3	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	418	354	202	580	492	135	1083	483	227	1268	566
V/C Ratio(X)	0.51	0.15	0.19	1.31	0.19	0.86	0.34	0.66	0.08	0.86	0.63	0.08
Avail Cap(c_a), veh/h	126	689	584	202	769	652	227	1310	584	227	1310	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	21.9	22.1	31.1	17.7	22.8	30.8	21.2	17.4	30.0	18.7	14.9
Incr Delay (d2), s/veh	8.2	0.2	0.3	169.2	0.2	9.1	1.5	0.9	0.1	26.4	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.0	1.1	13.4	1.6	9.0	0.9	6.1	0.6	5.3	6.6	0.6
LnGrp Delay(d),s/veh	42.0	22.0	22.3	200.3	17.9	31.9	32.3	22.1	17.4	56.4	19.7	14.9
LnGrp LOS	D	C	C	F	B	C	C	C	B	E	B	B
Approach Vol, veh/h	152				802				803			
Approach Delay, s/veh	25.3				85.4				22.5			
Approach LOS	C				F				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	25.5	12.0	19.8	9.3	29.2	5.9	25.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	26.0	8.0	26.0	9.0	26.0	5.0	29.0				
Max Q Clear Time (g_c+I1), s	9.6	14.4	10.0	4.4	3.7	15.3	2.9	19.8				
Green Ext Time (p_c), s	0.0	7.1	0.0	2.6	0.0	6.7	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay	42.1											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
131: Fiddymment Rd & Hayden Pkwy (North)

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	18	61	121	8	0	150	736	107	0	923	90
Future Volume (veh/h)	43	18	61	121	8	0	150	736	107	0	923	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	45	19	64	127	8	0	158	775	113	0	972	95
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	400	355	230	218	186	186	2123	935	76	1652	739
Arrive On Green	0.08	0.24	0.25	0.13	0.13	0.00	0.12	0.67	0.66	0.00	0.52	0.52
Sat Flow, veh/h	1597	1676	1425	1179	1676	1425	1597	3185	1425	561	3185	1425
Grp Volume(v), veh/h	45	19	64	127	8	0	158	775	113	0	972	95
Grp Sat Flow(s),veh/h/ln	1597	1676	1425	1179	1676	1425	1597	1593	1425	561	1593	1425
Q Serve(g_s), s	2.5	0.8	3.3	9.9	0.4	0.0	9.2	10.2	2.8	0.0	20.0	3.3
Cycle Q Clear(g_c), s	2.5	0.8	3.3	9.9	0.4	0.0	9.2	10.2	2.8	0.0	20.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	400	355	230	218	186	186	2123	935	76	1652	739
V/C Ratio(X)	0.37	0.05	0.18	0.55	0.04	0.00	0.85	0.37	0.12	0.00	0.59	0.13
Avail Cap(c_a), veh/h	169	903	783	549	673	572	186	2356	1039	117	1884	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	27.8	27.9	40.1	36.0	0.0	41.0	7.0	6.1	0.0	15.8	11.8
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.8	0.0	0.0	28.4	0.2	0.1	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	1.3	3.3	0.2	0.0	5.5	4.5	1.1	0.0	8.9	1.3
LnGrp Delay(d),s/veh	42.2	27.8	28.0	40.9	36.0	0.0	69.4	7.2	6.2	0.0	16.4	11.9
LnGrp LOS	D	C	C	D	D		E	A	A		B	B
Approach Vol, veh/h	128				135			1046			1067	
Approach Delay, s/veh	33.0				40.6			16.5			16.0	
Approach LOS	C				D			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4	5	6	7	8				
Phs Duration (G+Y+Rc), s	68.1			26.6	14.0	54.1	10.2	16.3				
Change Period (Y+Rc), s	6.0			4.0	4.0	6.0	4.0	4.0				
Max Green Setting (Gmax), s	69.0			51.0	10.0	55.0	9.0	38.0				
Max Q Clear Time (g_c+I1), s	12.2			5.3	11.2	22.0	4.5	11.9				
Green Ext Time (p_c), s	39.2			0.5	0.0	26.1	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	18.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
132: Fiddymment Ranch EW Rd & Fiddymment Rd

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	29	121	379	885	924	52		
Future Volume (veh/h)	29	121	379	885	924	52		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	31	127	399	932	973	55		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	188	168	442	2666	1535	687		
Arrive On Green	0.11	0.11	0.25	0.75	0.43	0.43		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	31	127	399	932	973	55		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	1.1	5.5	15.5	6.3	15.2	1.4		
Cycle Q Clear(g_c), s	1.1	5.5	15.5	6.3	15.2	1.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	188	168	442	2666	1535	687		
V/C Ratio(X)	0.17	0.76	0.90	0.35	0.63	0.08		
Avail Cap(c_a), veh/h	475	424	475	3041	1844	825		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.9	30.9	25.8	2.9	15.7	11.8		
Incr Delay (d2), s/veh	0.4	6.8	19.6	0.1	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	0.3	9.9	3.0	7.5	0.6		
LnGrp Delay(d),s/veh	29.3	37.7	45.4	3.0	16.2	11.8		
LnGrp LOS	C	D	D	A	B	B		
Approach Vol, veh/h	158			1331	1028			
Approach Delay, s/veh	36.0			15.7	16.0			
Approach LOS	D			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		58.5		12.5	22.7	35.8		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		61.0		19.0	19.0	37.0		
Max Q Clear Time (g_c+l1), s		8.3		7.5	17.5	17.2		
Green Ext Time (p_c), s		23.8		0.3	0.2	13.5		
Intersection Summary								
HCM 2010 Ctrl Delay			17.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
133: Fiddymment Rd & Hayden Pkwy (South)

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	114	76	223	1293	1178	175		
Future Volume (veh/h)	114	76	223	1293	1178	175		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	120	80	235	1361	1240	184		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	283	252	309	2650	1858	831		
Arrive On Green	0.16	0.16	0.17	0.75	0.52	0.52		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	120	80	235	1361	1240	184		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	3.7	2.7	7.7	9.6	15.6	3.8		
Cycle Q Clear(g_c), s	3.7	2.7	7.7	9.6	15.6	3.8		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	283	252	309	2650	1858	831		
V/C Ratio(X)	0.42	0.32	0.76	0.51	0.67	0.22		
Avail Cap(c_a), veh/h	612	546	379	2815	1884	843		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.1	22.7	23.9	3.1	10.6	7.8		
Incr Delay (d2), s/veh	0.4	0.3	5.3	0.3	1.2	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	2.5	4.2	4.6	7.9	1.7		
LnGrp Delay(d),s/veh	23.4	22.9	29.2	3.4	11.7	8.0		
LnGrp LOS	C	C	C	A	B	A		
Approach Vol, veh/h	200			1596	1424			
Approach Delay, s/veh	23.2			7.2	11.3			
Approach LOS	C			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.2		12.7	13.6	34.5		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		45.0		20.0	12.0	29.0		
Max Q Clear Time (g_c+I1), s		11.6		5.7	9.7	17.6		
Green Ext Time (p_c), s		30.3		0.4	0.1	11.0		
Intersection Summary								
HCM 2010 Ctrl Delay			10.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
134: Fiddymment Rd & Village Green Dr/Del Webb Blvd

Cumulative No Project
PM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	114	35	12	71	148	162	26	1252	39	39	924	268								
Future Volume (veh/h)	114	35	12	71	148	162	26	1252	39	39	924	268								
Number	7	4	14	3	8	18	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	120	37	13	75	156	171	27	1318	41	41	973	282								
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	246	258	207	228	240	204	105	1731	775	133	1786	799								
Arrive On Green	0.14	0.14	0.13	0.13	0.13	0.13	0.06	0.49	0.49	0.07	0.50	0.50								
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583								
Grp Volume(v), veh/h	120	37	13	75	156	171	27	1318	41	41	973	282								
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583								
Q Serve(g_s), s	4.7	1.3	0.5	2.9	5.9	7.9	1.1	22.6	1.0	1.6	14.0	8.0								
Cycle Q Clear(g_c), s	4.7	1.3	0.5	2.9	5.9	7.9	1.1	22.6	1.0	1.6	14.0	8.0								
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	246	258	207	228	240	204	105	1731	775	133	1786	799								
V/C Ratio(X)	0.49	0.14	0.06	0.33	0.65	0.84	0.26	0.76	0.05	0.31	0.54	0.35								
Avail Cap(c_a), veh/h	514	539	446	228	240	204	214	1765	789	214	1786	799								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	29.7	28.2	28.4	29.6	30.9	31.8	33.5	15.5	10.0	32.7	12.6	11.1								
Incr Delay (d2), s/veh	1.6	0.3	0.1	0.3	4.9	24.3	0.5	2.3	0.1	0.5	0.6	0.5								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	2.4	0.7	0.2	1.4	3.4	4.8	0.5	11.5	0.5	0.8	6.9	3.6								
LnGrp Delay(d),s/veh	31.3	28.5	28.6	29.9	35.8	56.1	34.0	17.8	10.0	33.2	13.2	11.7								
LnGrp LOS	C	C	C	C	D	E	C	B	B	C	B	B								
Approach Vol, veh/h	170				402				1386											
Approach Delay, s/veh	30.5				43.3				17.9											
Approach LOS	C				D				B											
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	8.6	39.1	13.6		7.4	40.3	13.3													
Change Period (Y+Rc), s	4.0	6.0	4.9		4.0	6.0	5.3													
Max Green Setting (Gmax), s	8.0	33.8	20.0		8.0	33.8	8.0													
Max Q Clear Time (g_c+I1), s	3.6	24.6	6.7		3.1	16.0	9.9													
Green Ext Time (p_c), s	0.0	8.5	0.4		0.0	16.8	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay	19.9																			
HCM 2010 LOS	B																			

HCM 2010 Signalized Intersection Summary

135: Fiddymment Rd & Westlake Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	32	26	1681	63	37	1211		
Future Volume (veh/h)	32	26	1681	63	37	1211		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	34	27	1769	66	39	1275		
Adj No. of Lanes	0	0	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	0	2	2	2	2		
Cap, veh/h	42	33	3250	1012	58	3897		
Arrive On Green	0.05	0.05	0.64	0.64	0.03	0.77		
Sat Flow, veh/h	925	735	5253	1583	1774	5253		
Grp Volume(v), veh/h	62	0	1769	66	39	1275		
Grp Sat Flow(s),veh/h/ln	1687	0	1695	1583	1774	1695		
Q Serve(g_s), s	1.9	0.0	10.2	0.8	1.2	4.2		
Cycle Q Clear(g_c), s	1.9	0.0	10.2	0.8	1.2	4.2		
Prop In Lane	0.55	0.44		1.00	1.00			
Lane Grp Cap(c), veh/h	77	0	3250	1012	58	3897		
V/C Ratio(X)	0.81	0.00	0.54	0.07	0.67	0.33		
Avail Cap(c_a), veh/h	508	0	3250	1012	368	4693		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.1	0.0	5.3	3.6	25.4	1.9		
Incr Delay (d2), s/veh	17.9	0.0	0.2	0.0	12.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.0	4.6	0.4	0.8	1.9		
LnGrp Delay(d),s/veh	43.0	0.0	5.5	3.6	37.7	2.0		
LnGrp LOS	D		A	A	D	A		
Approach Vol, veh/h	62		1835			1314		
Approach Delay, s/veh	43.0		5.4			3.0		
Approach LOS	D		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.7	38.9				45.7		7.4
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	33.0				49.0		16.0
Max Q Clear Time (g_c+l1), s	3.2	12.2				6.2		3.9
Green Ext Time (p_c), s	0.0	18.9				34.5		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			5.2					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

136: Fiddymment Road & San Fernando Drive

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	4	243	18	2	15	28	1593	44	37	1108	98
Future Volume (veh/h)	136	4	243	18	2	15	28	1593	44	37	1108	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	143	4	256	19	2	16	29	1677	46	39	1166	103
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	5	342	32	24	194	45	2452	762	55	2483	772
Arrive On Green	0.10	0.22	0.22	0.02	0.14	0.14	0.03	0.48	0.48	0.03	0.49	0.49
Sat Flow, veh/h	1774	24	1558	1774	178	1426	1774	5085	1580	1774	5085	1580
Grp Volume(v), veh/h	143	0	260	19	0	18	29	1677	46	39	1166	103
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1604	1774	1695	1580	1774	1695	1580
Q Serve(g_s), s	5.1	0.0	9.9	0.7	0.0	0.6	1.0	16.4	1.0	1.4	9.8	2.3
Cycle Q Clear(g_c), s	5.1	0.0	9.9	0.7	0.0	0.6	1.0	16.4	1.0	1.4	9.8	2.3
Prop In Lane	1.00		0.98	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	0	348	32	0	218	45	2452	762	55	2483	772
V/C Ratio(X)	0.79	0.00	0.75	0.60	0.00	0.08	0.65	0.68	0.06	0.70	0.47	0.13
Avail Cap(c_a), veh/h	221	0	862	110	0	773	138	2452	762	110	2483	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	23.4	31.3	0.0	24.3	31.1	12.9	8.9	30.8	10.9	9.0
Incr Delay (d2), s/veh	14.7	0.0	3.2	16.7	0.0	0.2	14.8	1.6	0.2	15.0	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	4.6	0.5	0.0	0.3	0.7	8.0	0.5	0.9	4.7	1.1
LnGrp Delay(d),s/veh	42.9	0.0	26.6	48.0	0.0	24.4	45.8	14.4	9.0	45.9	11.6	9.4
LnGrp LOS	D		C	D		C	D	B	A	D	B	A
Approach Vol, veh/h	403					37		1752		1308		
Approach Delay, s/veh	32.4					36.5		14.8		12.4		
Approach LOS	C					D		B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	35.0	5.2	18.1	5.6	35.4	10.5	12.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	35.0	5.0	30.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	3.4	18.4	2.7	11.9	3.0	11.8	7.1	2.6				
Green Ext Time (p_c), s	0.0	11.4	0.0	1.7	0.0	15.9	0.0	1.7				
Intersection Summary												
HCM 2010 Ctrl Delay			16.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
137: Woodcreek Oaks Blvd & Northpark Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	11	80	67	10	0	463	0	168	0	0	0
Future Volume (veh/h)	0	11	80	67	10	0	463	0	168	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	12	84	71	11	0	487	0	177	0	0	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	137	117	102	16	105	630	1257	562	6	12	5
Arrive On Green	0.00	0.07	0.07	0.07	0.07	0.00	0.36	0.00	0.36	0.00	0.00	0.00
Sat Flow, veh/h	0	1863	1583	1546	240	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	12	84	82	0	0	487	0	177	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1785	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.2	1.5	1.3	0.0	0.0	7.2	0.0	2.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.2	1.5	1.3	0.0	0.0	7.2	0.0	2.4	0.0	0.0	0.0
Prop In Lane	0.00		1.00	0.87		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	137	117	118	0	105	630	1257	562	6	12	5
V/C Ratio(X)	0.00	0.09	0.72	0.69	0.00	0.00	0.77	0.00	0.31	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1630	1386	1563	0	1386	1612	3812	1706	657	1906	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	12.8	13.5	13.6	0.0	0.0	8.5	0.0	7.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	8.1	7.1	0.0	0.0	2.1	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.9	0.9	0.0	0.0	3.9	0.0	1.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	13.1	21.5	20.7	0.0	0.0	10.6	0.0	7.3	0.0	0.0	0.0
LnGrp LOS		B	C	C			B		A			
Approach Vol, veh/h	96			82			664			0		
Approach Delay, s/veh	20.5			20.7			9.7			0.0		
Approach LOS	C			C			A					
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	15.6		7.2	15.6	0.0		7.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	32.0		26.0	27.0	16.0		26.0				
Max Q Clear Time (g_c+I1), s	0.0	4.4		3.5	9.2	0.0		3.3				
Green Ext Time (p_c), s	0.0	0.6		0.3	1.5	0.0		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				12.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
138: Woodcreek Oaks Blvd & Parkside Way

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	16	162	17	330	321	144	302	49	2	132	13
Future Volume (veh/h)	7	16	162	17	330	321	144	302	49	2	132	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	17	171	18	347	338	152	318	52	2	139	14
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	587	499	0	587	499	199	957	428	5	567	254
Arrive On Green	0.00	0.32	0.32	0.00	0.32	0.32	0.11	0.27	0.27	0.00	0.16	0.16
Sat Flow, veh/h	0	1863	1583	0	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	17	171	0	347	338	152	318	52	2	139	14
Grp Sat Flow(s),veh/h/ln	0	1863	1583	0	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.2	3.0	0.0	5.7	6.8	3.0	2.6	0.9	0.0	1.2	0.3
Cycle Q Clear(g_c), s	0.0	0.2	3.0	0.0	5.7	6.8	3.0	2.6	0.9	0.0	1.2	0.3
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	587	499	0	587	499	199	957	428	5	567	254
V/C Ratio(X)	0.00	0.03	0.34	0.00	0.59	0.68	0.76	0.33	0.12	0.41	0.25	0.06
Avail Cap(c_a), veh/h	0	871	740	0	871	740	537	1557	697	537	1557	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.6	9.6	0.0	10.5	10.8	15.7	10.6	10.0	18.1	13.4	12.9
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.0	1.0	1.6	5.9	0.2	0.1	47.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	1.3	0.0	3.0	3.1	1.8	1.3	0.4	0.1	0.6	0.1
LnGrp Delay(d),s/veh	0.0	8.6	10.0	0.0	11.4	12.5	21.6	10.8	10.1	65.2	13.6	13.0
LnGrp LOS		A	A		B	B	C	B	B	E	B	B
Approach Vol, veh/h		188			685			522			155	
Approach Delay, s/veh		9.8			11.9			13.9			14.2	
Approach LOS		A			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	14.8	0.0	16.5	9.1	10.8	0.0	16.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	11.0	17.0	11.0	16.0	11.0	17.0				
Max Q Clear Time (g_c+I1), s	2.0	4.6	0.0	5.0	5.0	3.2	0.0	8.8				
Green Ext Time (p_c), s	0.0	2.4	0.0	3.3	0.2	2.6	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			12.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

139: Woodcreek Oaks Blvd & Painted Desert Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	2	185	0	103	20	390	697	0	31	781	123
Future Volume (veh/h)	87	2	185	0	103	20	390	697	0	31	781	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	92	2	195	0	108	21	411	734	0	33	822	129
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	4	370	3	203	173	465	1969	881	49	1139	509
Arrive On Green	0.07	0.24	0.24	0.00	0.11	0.11	0.26	0.56	0.00	0.03	0.32	0.32
Sat Flow, veh/h	1774	16	1570	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	92	0	197	0	108	21	411	734	0	33	822	129
Grp Sat Flow(s),veh/h/ln	1774	0	1586	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.4	0.0	7.2	0.0	3.6	0.8	14.8	7.7	0.0	1.2	13.6	4.0
Cycle Q Clear(g_c), s	3.4	0.0	7.2	0.0	3.6	0.8	14.8	7.7	0.0	1.2	13.6	4.0
Prop In Lane	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	0	374	3	203	173	465	1969	881	49	1139	509
V/C Ratio(X)	0.78	0.00	0.53	0.00	0.53	0.12	0.88	0.37	0.00	0.68	0.72	0.25
Avail Cap(c_a), veh/h	134	0	573	107	645	548	588	2185	978	134	1279	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	0.0	22.2	0.0	28.0	26.7	23.5	8.2	0.0	32.0	19.9	16.6
Incr Delay (d2), s/veh	22.8	0.0	1.2	0.0	2.2	0.3	12.6	0.1	0.0	15.2	1.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	3.2	0.0	2.0	0.4	8.8	3.7	0.0	0.8	6.9	1.8
LnGrp Delay(d),s/veh	53.3	0.0	23.3	0.0	30.1	27.0	36.1	8.4	0.0	47.2	21.7	16.9
LnGrp LOS	D		C		C	C	D	A		D	C	B
Approach Vol, veh/h	289				129		1145				984	
Approach Delay, s/veh	32.9				29.6		18.3				21.9	
Approach LOS	C				C		B				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	40.9	0.0	19.6	21.4	25.4	8.4	11.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	41.0	4.0	24.0	22.0	24.0	5.0	23.0				
Max Q Clear Time (g_c+I1), s	3.2	9.7	0.0	9.2	16.8	15.6	5.4	5.6				
Green Ext Time (p_c), s	0.0	13.1	0.0	1.5	0.6	5.7	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			21.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 140: Woodcreek Oaks Blvd & Crimson Drige Dr/Crimson Ridge Dr

Cumulative No Project
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1	11	256	5	258	23	428	64	34	704	60
Future Volume (veh/h)	22	1	11	256	5	258	23	428	64	34	704	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	23	1	12	269	5	272	24	451	67	36	741	63
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	3	63	432	453	384	41	1212	541	57	1244	555
Arrive On Green	0.04	0.04	0.04	0.24	0.24	0.24	0.02	0.34	0.34	0.03	0.35	0.35
Sat Flow, veh/h	1703	74	1572	1774	1863	1579	1774	3539	1579	1774	3539	1579
Grp Volume(v), veh/h	24	0	12	269	5	272	24	451	67	36	741	63
Grp Sat Flow(s),veh/h/ln	1778	0	1572	1774	1863	1579	1774	1770	1579	1774	1770	1579
Q Serve(g_s), s	0.6	0.0	0.3	6.3	0.1	7.4	0.6	4.5	1.4	0.9	8.0	1.3
Cycle Q Clear(g_c), s	0.6	0.0	0.3	6.3	0.1	7.4	0.6	4.5	1.4	0.9	8.0	1.3
Prop In Lane	0.96		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	0	63	432	453	384	41	1212	541	57	1244	555
V/C Ratio(X)	0.34	0.00	0.19	0.62	0.01	0.71	0.59	0.37	0.12	0.64	0.60	0.11
Avail Cap(c_a), veh/h	1178	0	1042	1175	1234	1047	152	1589	709	228	1740	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	21.7	15.8	13.4	16.2	22.6	11.6	10.6	22.4	12.4	10.2
Incr Delay (d2), s/veh	2.7	0.0	1.4	1.5	0.0	2.4	12.9	0.2	0.1	11.2	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2	3.2	0.0	3.5	0.4	2.2	0.6	0.6	4.0	0.6
LnGrp Delay(d),s/veh	24.6	0.0	23.1	17.3	13.4	18.6	35.5	11.8	10.7	33.6	12.9	10.3
LnGrp LOS	C		C	B	B	B	D	B	B	C	B	B
Approach Vol, veh/h	36		546				542		840			
Approach Delay, s/veh	24.1		17.9				12.7		13.6			
Approach LOS	C		B				B		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.5	20.0	5.9		5.1	20.4	15.4					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	6.0	21.0	31.0		4.0	23.0	31.0					
Max Q Clear Time (g_c+I1), s	2.9	6.5	2.6		2.6	10.0	9.4					
Green Ext Time (p_c), s	0.0	6.7	0.1		0.0	6.3	1.8					
Intersection Summary												
HCM 2010 Ctrl Delay			14.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
141: Woodcreek Oaks Blvd & Horncastle Ave

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	0	35	9	3	22	33	592	15	34	1061	92
Future Volume (veh/h)	65	0	35	9	3	22	33	592	15	34	1061	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	68	0	37	9	3	23	35	623	16	36	1117	97
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	0	220	111	37	131	94	1863	48	82	1719	149
Arrive On Green	0.14	0.00	0.14	0.08	0.08	0.08	0.05	0.53	0.53	0.05	0.52	0.52
Sat Flow, veh/h	1774	0	1583	1347	449	1583	1774	3526	91	1774	3296	286
Grp Volume(v), veh/h	68	0	37	12	0	23	35	313	326	36	599	615
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1795	0	1583	1774	1770	1847	1774	1770	1812
Q Serve(g_s), s	2.1	0.0	1.3	0.4	0.0	0.8	1.2	6.2	6.2	1.2	14.9	15.0
Cycle Q Clear(g_c), s	2.1	0.0	1.3	0.4	0.0	0.8	1.2	6.2	6.2	1.2	14.9	15.0
Prop In Lane	1.00		1.00	0.75		1.00	1.00		0.05	1.00		0.16
Lane Grp Cap(c), veh/h	247	0	220	148	0	131	94	935	976	82	923	945
V/C Ratio(X)	0.28	0.00	0.17	0.08	0.00	0.18	0.37	0.33	0.33	0.44	0.65	0.65
Avail Cap(c_a), veh/h	1020	0	910	383	0	338	379	1064	1110	379	1064	1089
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	23.1	25.8	0.0	26.0	27.8	8.2	8.2	28.3	10.5	10.5
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	0.2	0.9	0.3	0.3	1.4	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.6	0.2	0.0	0.4	0.6	3.0	3.2	0.6	7.5	7.7
LnGrp Delay(d),s/veh	23.7	0.0	23.2	25.9	0.0	26.2	28.7	8.5	8.5	29.6	11.9	11.9
LnGrp LOS	C		C	C		C	C	A	A	C	B	B
Approach Vol, veh/h	105		35			674			1250			
Approach Delay, s/veh	23.5		26.1			9.6			12.4			
Approach LOS	C		C			A			B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.8	35.6	11.5		6.2	35.2	8.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	12.0	34.3	34.0		12.0	34.3	12.0					
Max Q Clear Time (g_c+I1), s	3.2	8.2	4.1		3.2	17.0	2.8					
Green Ext Time (p_c), s	0.0	16.8	0.3		0.0	12.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			12.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
142: Woodcreek Oaks Blvd & Camino Capistrano/Zinnia Way

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	16	35	23	4	18	45	632	25	15	1035	54
Future Volume (veh/h)	61	16	35	23	4	18	45	632	25	15	1035	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	64	17	37	24	4	19	47	665	26	16	1089	57
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	43	179	70	12	56	80	1714	67	41	1615	85
Arrive On Green	0.11	0.11	0.11	0.08	0.08	0.08	0.04	0.49	0.49	0.02	0.47	0.47
Sat Flow, veh/h	1416	376	1583	867	145	687	1774	3473	136	1774	3422	179
Grp Volume(v), veh/h	81	0	37	47	0	0	47	339	352	16	563	583
Grp Sat Flow(s),veh/h/ln	1792	0	1583	1698	0	0	1774	1770	1839	1774	1770	1831
Q Serve(g_s), s	2.6	0.0	1.3	1.6	0.0	0.0	1.6	7.3	7.3	0.5	15.1	15.1
Cycle Q Clear(g_c), s	2.6	0.0	1.3	1.6	0.0	0.0	1.6	7.3	7.3	0.5	15.1	15.1
Prop In Lane	0.79		1.00	0.51		0.40	1.00		0.07	1.00		0.10
Lane Grp Cap(c), veh/h	203	0	179	137	0	0	80	873	908	41	835	864
V/C Ratio(X)	0.40	0.00	0.21	0.34	0.00	0.00	0.59	0.39	0.39	0.39	0.67	0.67
Avail Cap(c_a), veh/h	732	0	647	250	0	0	145	934	970	174	962	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	24.7	26.6	0.0	0.0	28.7	9.7	9.7	29.5	12.5	12.5
Incr Delay (d2), s/veh	0.5	0.0	0.2	0.5	0.0	0.0	2.6	0.3	0.3	2.2	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.6	0.8	0.0	0.0	0.8	3.7	3.8	0.3	7.7	8.0
LnGrp Delay(d),s/veh	25.7	0.0	24.9	27.1	0.0	0.0	31.2	10.1	10.0	31.6	14.2	14.2
LnGrp LOS	C		C	C			C	B	B	C	B	B
Approach Vol, veh/h	118			47			738			1162		
Approach Delay, s/veh	25.4			27.1			11.4			14.4		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	35.9		10.9	6.8	34.6		9.0				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	6.0	32.3		25.0	5.0	33.3		9.0				
Max Q Clear Time (g_c+I1), s	2.5	9.3		4.6	3.6	17.1		3.6				
Green Ext Time (p_c), s	0.0	15.3		0.3	0.0	11.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			14.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
143: Woodcreek Oaks Blvd & Canevari Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	5	111	13	11	7	304	739	22	13	1047	40
Future Volume (veh/h)	25	5	111	13	11	7	304	739	22	13	1047	40
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	26	5	117	14	12	7	320	778	23	14	1102	42
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	39	215	74	63	119	384	2055	61	56	1391	53
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.22	0.59	0.56	0.03	0.40	0.38
Sat Flow, veh/h	1499	288	1583	977	837	1583	1774	3510	104	1774	3477	132
Grp Volume(v), veh/h	31	0	117	26	0	7	320	392	409	14	561	583
Grp Sat Flow(s),veh/h/ln	1788	0	1583	1814	0	1583	1774	1770	1844	1774	1770	1839
Q Serve(g_s), s	1.1	0.0	4.8	0.9	0.0	0.3	12.0	8.2	8.3	0.5	19.4	19.5
Cycle Q Clear(g_c), s	1.1	0.0	4.8	0.9	0.0	0.3	12.0	8.2	8.3	0.5	19.4	19.5
Prop In Lane	0.84		1.00	0.54		1.00	1.00		0.06	1.00		0.07
Lane Grp Cap(c), veh/h	243	0	215	137	0	119	384	1036	1080	56	708	736
V/C Ratio(X)	0.13	0.00	0.54	0.19	0.00	0.06	0.83	0.38	0.38	0.25	0.79	0.79
Avail Cap(c_a), veh/h	256	0	227	312	0	272	432	1036	1080	153	735	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	28.1	30.3	0.0	30.0	26.1	7.7	7.7	33.0	18.4	18.4
Incr Delay (d2), s/veh	0.2	0.0	2.4	0.7	0.0	0.2	10.6	0.3	0.3	0.9	6.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.2	0.5	0.0	0.1	7.0	4.0	4.2	0.3	10.5	10.9
LnGrp Delay(d),s/veh	26.7	0.0	30.5	30.9	0.0	30.2	36.8	8.0	8.0	33.9	24.4	24.3
LnGrp LOS	C		C	C		C	D	A	A	C	C	C
Approach Vol, veh/h	148					33	1121			1158		
Approach Delay, s/veh	29.7					30.8	16.2			24.5		
Approach LOS	C					C	B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	18.1	30.9	8.3		5.2	43.8	12.5					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	16.0	26.3	11.0		5.0	37.3	9.0					
Max Q Clear Time (g_c+I1), s	14.0	21.5	2.9		2.5	10.3	6.8					
Green Ext Time (p_c), s	0.1	3.8	0.0		0.0	19.2	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			21.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

144: Woodcreek Oaks Blvd & McAnally Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	13	28	58	16	477	47	1127	17	119	1483	92
Future Volume (veh/h)	31	13	28	58	16	477	47	1127	17	119	1483	92
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	14	29	39	48	502	49	1186	18	125	1561	97
Adj No. of Lanes	0	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	68	190	307	323	274	107	1712	26	182	1766	109
Arrive On Green	0.13	0.13	0.13	0.17	0.17	0.17	0.06	0.48	0.47	0.10	0.52	0.51
Sat Flow, veh/h	1264	536	1508	1774	1863	1583	1774	3567	54	1774	3382	209
Grp Volume(v), veh/h	47	0	29	39	48	502	49	588	616	125	813	845
Grp Sat Flow(s),veh/h/ln	1800	0	1508	1774	1863	1583	1774	1770	1852	1774	1770	1821
Q Serve(g_s), s	2.6	0.0	1.9	2.0	2.4	19.1	2.9	28.5	28.6	7.5	44.7	45.7
Cycle Q Clear(g_c), s	2.6	0.0	1.9	2.0	2.4	19.1	2.9	28.5	28.6	7.5	44.7	45.7
Prop In Lane	0.70		1.00	1.00		1.00	1.00		0.03	1.00		0.11
Lane Grp Cap(c), veh/h	227	0	190	307	323	274	107	849	889	182	924	951
V/C Ratio(X)	0.21	0.00	0.15	0.13	0.15	1.83	0.46	0.69	0.69	0.69	0.88	0.89
Avail Cap(c_a), veh/h	441	0	369	307	323	274	129	849	889	209	929	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	0.0	42.9	38.5	38.7	45.6	50.0	22.3	22.3	47.7	23.3	23.6
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.1	0.2	387.4	1.1	2.6	2.5	5.4	9.9	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.8	1.0	1.3	37.8	1.5	14.5	15.2	4.0	24.2	25.6
LnGrp Delay(d),s/veh	43.5	0.0	43.2	38.7	38.8	432.9	51.2	25.0	24.9	53.2	33.1	34.0
LnGrp LOS	D		D	D	D	F	D	C	C	D	C	C
Approach Vol, veh/h	76		589				1253				1783	
Approach Delay, s/veh	43.4		374.7				25.9				35.0	
Approach LOS	D		F				C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	13.3	56.6	23.4		8.7	61.3	16.9					
Change Period (Y+Rc), s	4.0	5.7	5.3		4.0	5.7	4.0					
Max Green Setting (Gmax), s	11.0	50.9	18.1		6.0	55.9	26.0					
Max Q Clear Time (g_c+I1), s	9.5	30.6	21.1		4.9	47.7	4.6					
Green Ext Time (p_c), s	0.0	18.7	0.0		0.0	7.9	0.2					
Intersection Summary												
HCM 2010 Ctrl Delay	86.2											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
145: Woodcreek Oaks Blvd & Trailee Ln

Cumulative No Project
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	34	0	43	13	0	22	50	1098	33	37	1462	5	
Future Volume (veh/h)	34	0	43	13	0	22	50	1098	33	37	1462	5	
Number	3	8	18	7	4	14	5	2	12	1	6	16	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1863	
Adj Flow Rate, veh/h	36	0	45	14	0	23	53	1156	35	39	1539	5	
Adj No. of Lanes	1	0	1	1	0	1	1	2	0	1	2	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2	
Cap, veh/h	117	0	0	81	0	0	100	2472	75	95	2432	1064	
Arrive On Green	0.07	0.00	0.00	0.05	0.00	0.02	0.06	0.70	0.70	0.05	0.69	0.67	
Sat Flow, veh/h	1774	36		1774	14		1774	3507	106	1774	3539	1583	
Grp Volume(v), veh/h	36	30.2		14	30.9		53	583	608	39	1539	5	
Grp Sat Flow(s),veh/h/ln	1774	C		1774	C		1774	1770	1844	1774	1770	1583	
Q Serve(g_s), s	1.3			0.5			1.9	9.7	9.7	1.4	16.0	0.1	
Cycle Q Clear(g_c), s	1.3			0.5			1.9	9.7	9.7	1.4	16.0	0.1	
Prop In Lane	1.00			1.00			1.00		0.06	1.00		1.00	
Lane Grp Cap(c), veh/h	117			81			100	1247	1300	95	2432	1064	
V/C Ratio(X)	0.31			0.17			0.53	0.47	0.47	0.41	0.63	0.00	
Avail Cap(c_a), veh/h	533			347			320	1311	1366	347	2623	1149	
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	29.6			30.5			30.5	4.3	4.3	30.5	5.8	3.6	
Incr Delay (d2), s/veh	0.6			0.4			1.6	0.5	0.5	1.1	0.6	0.0	
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.6			0.3			1.0	4.7	4.9	0.7	7.9	0.0	
LnGrp Delay(d),s/veh	30.2			30.9			32.2	4.8	4.8	31.5	6.4	3.6	
LnGrp LOS	C			C			C	A	A	C	A	A	
Approach Vol, veh/h									1244				1583
Approach Delay, s/veh									6.0				7.0
Approach LOS									A				A
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	5		6	7						
Phs Duration (G+Y+Rc), s	6.6	51.6	8.4	7.7		50.4	6.1						
Change Period (Y+Rc), s	4.0	5.7	4.0	4.0		5.7	4.0						
Max Green Setting (Gmax), s	12.0	48.3	20.0	12.0		48.3	12.0						
Max Q Clear Time (g_c+I1), s	3.4	11.7	3.3	3.9		18.0	2.5						
Green Ext Time (p_c), s	0.0	31.6	0.0	0.0		26.7	0.0						
Intersection Summary													
HCM 2010 Ctrl Delay			6.9										
HCM 2010 LOS			A										

HCM 2010 Signalized Intersection Summary

146: Foothills Blvd & Albertsons Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	526	6	312	181	6	100	100	1051	54	39	1189	173
Future Volume (veh/h)	526	6	312	181	6	100	100	1051	54	39	1189	173
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	558	0	0	191	6	0	105	1106	0	41	1252	182
Adj No. of Lanes	2	0	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	744	0	332	254	267	227	149	2113	605	122	2034	633
Arrive On Green	0.21	0.00	0.00	0.14	0.14	0.00	0.08	0.42	0.00	0.07	0.40	0.40
Sat Flow, veh/h	3548	0	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	558	0	0	191	6	0	105	1106	0	41	1252	182
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	10.5	0.0	0.0	7.4	0.2	0.0	4.1	11.6	0.0	1.6	14.0	5.6
Cycle Q Clear(g_c), s	10.5	0.0	0.0	7.4	0.2	0.0	4.1	11.6	0.0	1.6	14.0	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	744	0	332	254	267	227	149	2113	605	122	2034	633
V/C Ratio(X)	0.75	0.00	0.00	0.75	0.02	0.00	0.70	0.52	0.00	0.34	0.62	0.29
Avail Cap(c_a), veh/h	1045	0	466	274	287	244	149	2113	605	199	2168	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	29.3	26.2	0.0	31.8	15.6	0.0	31.7	17.0	14.5
Incr Delay (d2), s/veh	1.6	0.0	0.0	10.3	0.0	0.0	11.9	0.4	0.0	1.6	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	4.3	0.1	0.0	2.5	5.5	0.0	0.8	6.6	2.5
LnGrp Delay(d),s/veh	28.0	0.0	0.0	39.6	26.3	0.0	43.7	15.9	0.0	33.3	17.7	14.9
LnGrp LOS	C			D	C		D	B		C	B	B
Approach Vol, veh/h	558				197				1211			
Approach Delay, s/veh	28.0				39.2				18.4			
Approach LOS	C				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	32.2		18.0	9.0	31.1		13.2				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	7.0	25.0		20.0	5.0	27.0		10.0				
Max Q Clear Time (g_c+I1), s	3.6	13.6		12.5	6.1	16.0		9.4				
Green Ext Time (p_c), s	0.0	10.4		1.4	0.0	9.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	20.9											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

147: Foothills Blvd & HP-South Dwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	3	1	134	3	194	5	841	37	68	2023	1
Future Volume (veh/h)	164	3	1	134	3	194	5	841	37	68	2023	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	175	0	1	141	3	204	5	885	39	72	2129	1
Adj No. of Lanes	2	0	1	1	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	0	153	300	4	265	37	2123	865	362	2792	1
Arrive On Green	0.10	0.00	0.10	0.17	0.17	0.17	0.02	0.60	0.55	0.48	0.53	0.53
Sat Flow, veh/h	3548	0	1583	1774	23	1564	1774	3539	1583	603	5250	2
Grp Volume(v), veh/h	175	0	1	141	0	207	5	885	39	72	1375	755
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1587	1774	1770	1583	603	1695	1862
Q Serve(g_s), s	3.0	0.0	0.0	4.6	0.0	8.0	0.2	8.5	0.7	5.1	20.4	20.4
Cycle Q Clear(g_c), s	3.0	0.0	0.0	4.6	0.0	8.0	0.2	8.5	0.7	9.3	20.4	20.4
Prop In Lane	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	342	0	153	300	0	268	37	2123	865	362	1803	990
V/C Ratio(X)	0.51	0.00	0.01	0.47	0.00	0.77	0.13	0.42	0.05	0.20	0.76	0.76
Avail Cap(c_a), veh/h	944	0	421	444	0	397	361	2681	1115	362	1803	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	26.1	24.0	0.0	25.4	30.7	6.8	6.7	12.5	11.8	11.8
Incr Delay (d2), s/veh	1.2	0.0	0.0	1.1	0.0	5.3	1.6	0.1	0.0	0.3	2.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	2.3	0.0	3.8	0.1	4.1	0.3	0.9	9.9	11.3
LnGrp Delay(d),s/veh	28.6	0.0	26.1	25.1	0.0	30.7	32.3	7.0	6.8	12.8	13.8	15.3
LnGrp LOS	C		C	C		C	C	A	A	B	B	B
Approach Vol, veh/h	176			348			929			2202		
Approach Delay, s/veh	28.6			28.4			7.1			14.3		
Approach LOS	C			C			A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	38.9			9.2	4.3	34.6	15.8					
Change Period (Y+Rc), s	4.0			4.0	4.0	4.0	5.0					
Max Green Setting (Gmax), s	45.0			16.0	12.0	29.0	16.0					
Max Q Clear Time (g_c+I1), s	10.5			5.0	2.2	22.4	10.0					
Green Ext Time (p_c), s	24.4			0.4	0.0	6.3	0.9					
Intersection Summary												
HCM 2010 Ctrl Delay				14.5								
HCM 2010 LOS				B								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

148: Foothills Blvd & NEC

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	9	454	0	4	102	40	749	0	285	1783	69
Future Volume (veh/h)	49	9	454	0	4	102	40	749	0	285	1783	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	52	0	484	0	4	107	42	788	0	300	1877	73
Adj No. of Lanes	1	0	2	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	256	0	619	0	11	300	53	1542	0	346	2126	951
Arrive On Green	0.20	0.00	0.20	0.00	0.20	0.20	0.03	0.44	0.00	0.19	0.60	0.60
Sat Flow, veh/h	1277	0	3167	0	57	1535	1774	3632	0	1774	3539	1583
Grp Volume(v), veh/h	52	0	484	0	0	111	42	788	0	300	1877	73
Grp Sat Flow(s),veh/h/ln	1277	0	1583	0	0	1592	1774	1770	0	1774	1770	1583
Q Serve(g_s), s	3.2	0.0	12.5	0.0	0.0	5.2	2.0	13.9	0.0	14.1	38.8	1.7
Cycle Q Clear(g_c), s	8.4	0.0	12.5	0.0	0.0	5.2	2.0	13.9	0.0	14.1	38.8	1.7
Prop In Lane	1.00		1.00	0.00		0.96	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	0	619	0	0	311	53	1542	0	346	2126	951
V/C Ratio(X)	0.20	0.00	0.78	0.00	0.00	0.36	0.80	0.51	0.00	0.87	0.88	0.08
Avail Cap(c_a), veh/h	392	0	956	0	0	481	82	1542	0	556	2261	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	32.9	0.0	0.0	30.0	41.5	17.6	0.0	33.6	14.6	7.2
Incr Delay (d2), s/veh	0.4	0.0	2.3	0.0	0.0	0.7	24.7	0.3	0.0	8.3	4.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	10.6	0.0	0.0	2.3	1.4	6.8	0.0	7.7	20.0	0.7
LnGrp Delay(d),s/veh	34.0	0.0	35.2	0.0	0.0	30.7	66.2	17.9	0.0	41.9	18.9	7.2
LnGrp LOS	C		D			C	E	B		D	B	A
Approach Vol, veh/h	536			111			830			2250		
Approach Delay, s/veh	35.1			30.7			20.4			21.6		
Approach LOS	D			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.8	42.5		21.8	7.6	56.7		21.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	27.0	32.0		26.0	4.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	16.1	15.9		14.5	4.0	40.8		7.2				
Green Ext Time (p_c), s	0.7	14.5		2.3	0.0	10.9		2.8				
Intersection Summary												
HCM 2010 Ctrl Delay	23.5											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

149: Foothills Blvd & Mistywood Dr

Cumulative No Project
PM Peak Hour

																														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																		
Lane Configurations																														
Traffic Volume (veh/h)	30	8	60	128	3	18	17	711	343	14	2023	36																		
Future Volume (veh/h)	30	8	60	128	3	18	17	711	343	14	2023	36																		
Number	3	8	18	7	4	14	5	2	12	1	6	16																		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0																		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900																		
Adj Flow Rate, veh/h	32	8	63	137	0	19	18	748	361	15	2129	38																		
Adj No. of Lanes	0	1	1	2	0	1	1	3	0	1	3	0																		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95																		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2																		
Cap, veh/h	191	48	212	467	0	208	69	1858	868	50	2764	49																		
Arrive On Green	0.13	0.13	0.13	0.13	0.00	0.13	0.04	0.55	0.55	0.03	0.54	0.54																		
Sat Flow, veh/h	1433	358	1583	3548	0	1583	1774	3390	1583	1774	5145	92																		
Grp Volume(v), veh/h	40	0	63	137	0	19	18	748	361	15	1402	765																		
Grp Sat Flow(s),veh/h/ln	1791	0	1583	1774	0	1583	1774	1695	1583	1774	1695	1847																		
Q Serve(g_s), s	1.4	0.0	2.6	2.5	0.0	0.8	0.7	9.4	9.8	0.6	23.8	23.9																		
Cycle Q Clear(g_c), s	1.4	0.0	2.6	2.5	0.0	0.8	0.7	9.4	9.8	0.6	23.8	23.9																		
Prop In Lane	0.80		1.00	1.00		1.00	1.00		1.00	1.00		0.05																		
Lane Grp Cap(c), veh/h	239	0	212	467	0	208	69	1858	868	50	1821	992																		
V/C Ratio(X)	0.17	0.00	0.30	0.29	0.00	0.09	0.26	0.40	0.42	0.30	0.77	0.77																		
Avail Cap(c_a), veh/h	270	0	238	1019	0	455	170	1920	897	121	1828	995																		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
Uniform Delay (d), s/veh	28.1	0.0	28.6	28.7	0.0	27.9	34.1	9.6	9.7	34.8	13.3	13.4																		
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.1	0.0	0.1	0.7	0.2	0.4	1.2	2.2	4.0																		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																		
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.2	1.3	0.0	0.3	0.4	4.4	4.3	0.3	11.6	13.2																		
LnGrp Delay(d),s/veh	28.2	0.0	28.9	28.8	0.0	28.0	34.9	9.8	10.1	36.1	15.5	17.3																		
LnGrp LOS	C		C	C		C	C	A	B	D	B	B																		
Approach Vol, veh/h	103				156		1127				2182																			
Approach Delay, s/veh	28.6				28.7		10.3				16.3																			
Approach LOS	C				C		B				B																			
Timer	1	2	3	4	5	6	7	8																						
Assigned Phs	1	2	4		5	6	8																							
Phs Duration (G+Y+Rc), s	5.1	42.7	12.6		5.8	41.9	12.8																							
Change Period (Y+Rc), s	4.0	6.0	4.0		4.0	6.0	4.0																							
Max Green Setting (Gmax), s	4.0	38.0	20.0		6.0	36.0	10.0																							
Max Q Clear Time (g_c+I1), s	2.6	11.8	4.5		2.7	25.9	4.6																							
Green Ext Time (p_c), s	0.0	24.9	0.0		0.0	9.8	0.0																							
Intersection Summary																														
HCM 2010 Ctrl Delay			15.3																											
HCM 2010 LOS			B																											
Notes																														
User approved volume balancing among the lanes for turning movement.																														

HCM 2010 Signalized Intersection Summary

150: Foothills Blvd & McAnally Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	22	195	71	14	33	322	1314	12	10	2170	105
Future Volume (veh/h)	155	22	195	71	14	33	322	1314	12	10	2170	105
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	23	205	75	15	35	339	1383	13	11	2284	111
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	31	220	91	18	96	370	3597	34	28	2484	120
Arrive On Green	0.14	0.14	0.14	0.06	0.06	0.06	0.21	0.69	0.68	0.02	0.50	0.48
Sat Flow, veh/h	1564	221	1550	1490	298	1583	1774	5195	49	1774	4968	240
Grp Volume(v), veh/h	186	0	205	90	0	35	339	903	493	11	1554	841
Grp Sat Flow(s),veh/h/ln	1785	0	1550	1788	0	1583	1774	1695	1854	1774	1695	1817
Q Serve(g_s), s	12.0	0.0	15.7	6.0	0.0	2.5	22.4	13.4	13.4	0.7	50.8	51.7
Cycle Q Clear(g_c), s	12.0	0.0	15.7	6.0	0.0	2.5	22.4	13.4	13.4	0.7	50.8	51.7
Prop In Lane	0.88		1.00	0.83		1.00	1.00		0.03	1.00		0.13
Lane Grp Cap(c), veh/h	253	0	220	109	0	96	370	2347	1283	28	1695	909
V/C Ratio(X)	0.74	0.00	0.93	0.83	0.00	0.36	0.92	0.38	0.38	0.39	0.92	0.93
Avail Cap(c_a), veh/h	253	0	220	109	0	96	370	2347	1283	59	1695	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	50.9	55.7	0.0	54.1	46.5	7.7	7.8	58.5	27.7	28.1
Incr Delay (d2), s/veh	9.4	0.0	42.1	36.7	0.0	0.9	26.7	0.2	0.4	3.2	9.3	16.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	9.3	4.1	0.0	1.1	13.8	6.3	7.0	0.4	25.7	29.9
LnGrp Delay(d),s/veh	58.8	0.0	93.0	92.5	0.0	55.0	73.2	8.0	8.2	61.6	37.0	44.6
LnGrp LOS	E		F	F		D	E	A	A	E	D	D
Approach Vol, veh/h	391		125				1735		2406			
Approach Delay, s/veh	76.7		82.0				20.8		39.8			
Approach LOS	E		F				C		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	28.0	63.0	20.0		4.9	86.1	9.0					
Change Period (Y+Rc), s	4.0	6.0	5.3		4.0	6.0	4.0					
Max Green Setting (Gmax), s	24.0	57.0	14.7		3.0	78.0	5.0					
Max Q Clear Time (g_c+I1), s	24.4	53.7	17.7		2.7	15.4	8.0					
Green Ext Time (p_c), s	0.0	3.3	0.0		0.0	61.6	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	36.9											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary

151: Foothills Blvd & Junction Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	396	116	400	1107	181	180	1473	181	266	1581	472
Future Volume (veh/h)	153	396	116	400	1107	181	180	1473	181	266	1581	472
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	161	417	122	421	1165	191	189	1551	0	280	1664	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	591	259	459	1784	551	258	1918	571	344	2045	610
Arrive On Green	0.07	0.17	0.17	0.26	0.35	0.35	0.08	0.38	0.00	0.10	0.40	0.00
Sat Flow, veh/h	3442	3539	1555	1774	5085	1570	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	161	417	122	421	1165	191	189	1551	0	280	1664	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1555	1774	1695	1570	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	5.4	13.4	8.5	27.7	23.2	10.8	6.4	32.8	0.0	9.6	34.9	0.0
Cycle Q Clear(g_c), s	5.4	13.4	8.5	27.7	23.2	10.8	6.4	32.8	0.0	9.6	34.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	591	259	459	1784	551	258	1918	571	344	2045	610
V/C Ratio(X)	0.63	0.71	0.47	0.92	0.65	0.35	0.73	0.81	0.00	0.81	0.81	0.00
Avail Cap(c_a), veh/h	287	599	263	503	1877	580	258	1918	571	344	2045	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.9	47.2	45.2	43.3	32.8	28.8	54.3	33.5	0.0	52.9	31.9	0.0
Incr Delay (d2), s/veh	2.2	4.0	1.6	20.0	0.8	0.5	9.0	3.8	0.0	13.0	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.9	3.8	16.1	10.9	4.7	3.4	16.0	0.0	5.2	17.0	0.0
LnGrp Delay(d),s/veh	56.1	51.2	46.8	63.2	33.7	29.3	63.3	37.3	0.0	65.9	35.6	0.0
LnGrp LOS	E	D	D	E	C	C	E	D		E	D	
Approach Vol, veh/h	700			1777			1740			1944		
Approach Delay, s/veh	51.6			40.2			40.1			39.9		
Approach LOS	D			D			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	51.2	12.0	44.8	15.0	48.2	34.0	22.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	* 6	4.0	5.7				
Max Green Setting (Gmax), s	8.0	42.0	9.0	41.3	11.0	* 39	33.0	17.3				
Max Q Clear Time (g_c+I1), s	8.4	36.9	7.4	25.2	11.6	34.8	29.7	15.4				
Green Ext Time (p_c), s	0.0	5.0	0.1	9.8	0.0	4.4	0.3	1.6				

Intersection Summary

HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

152: Foothills Blvd & Pilgrim Dr/Rand Way

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1	25	28	1	19	30	1839	41	34	2048	17
Future Volume (veh/h)	25	1	25	28	1	19	30	1839	41	34	2048	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	26	1	26	29	1	20	32	1936	43	36	2156	18
Adj No. of Lanes	0	1	0	0	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	2	45	148	2	37	67	2666	1148	72	3934	33
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.75	0.73	0.04	0.76	0.73
Sat Flow, veh/h	806	31	806	951	33	656	1774	3539	1583	1774	5202	43
Grp Volume(v), veh/h	53	0	0	50	0	0	32	1936	43	36	1405	769
Grp Sat Flow(s),veh/h/ln	1643	0	0	1639	0	0	1774	1770	1583	1774	1695	1855
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	1.1	17.9	0.5	1.2	10.4	10.4
Cycle Q Clear(g_c), s	1.7	0.0	0.0	1.6	0.0	0.0	1.1	17.9	0.5	1.2	10.4	10.4
Prop In Lane	0.49		0.49	0.58		0.40	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	182	0	0	187	0	0	67	2666	1148	72	2564	1403
V/C Ratio(X)	0.29	0.00	0.00	0.27	0.00	0.00	0.48	0.73	0.04	0.50	0.55	0.55
Avail Cap(c_a), veh/h	493	0	0	494	0	0	148	2710	1168	118	2564	1403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	0.0	27.5	0.0	0.0	28.3	4.0	2.3	28.2	3.0	3.1
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.8	0.0	0.0	2.0	1.1	0.0	2.0	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.8	0.0	0.0	0.6	8.7	0.2	0.6	4.8	5.4
LnGrp Delay(d),s/veh	28.4	0.0	0.0	28.3	0.0	0.0	30.3	5.1	2.4	30.2	3.4	3.6
LnGrp LOS	C			C			C	A	A	C	A	A
Approach Vol, veh/h	53		50				2011			2210		
Approach Delay, s/veh	28.4		28.3				5.4			3.9		
Approach LOS	C		C				A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.4	48.3	6.4		5.3	48.4	6.4					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	43.3	15.0		4.0	42.3	15.0					
Max Q Clear Time (g_c+I1), s	3.2	19.9	3.7		3.1	12.4	3.6					
Green Ext Time (p_c), s	0.0	22.7	0.3		0.0	29.5	0.3					
Intersection Summary												
HCM 2010 Ctrl Delay			5.2									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

153: Foothills Blvd & Vineyard Rd

Cumulative No Project
PM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	88	76	153	137	365	112	384	2132	85	96	1949	40				
Future Volume (veh/h)	88	76	153	137	365	112	384	2132	85	96	1949	40				
Number	1	6	16	5	2	12	7	4	14	3	8	18				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900				
Adj Flow Rate, veh/h	93	80	161	144	384	0	404	2244	0	101	2052	42				
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	0				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	130	537	238	226	510	202	487	3218	976	180	2787	57				
Arrive On Green	0.07	0.15	0.15	0.07	0.14	0.00	0.14	0.63	0.00	0.05	0.54	0.53				
Sat Flow, veh/h	1774	3539	1568	3442	3539	1583	3442	5085	1583	3442	5129	105				
Grp Volume(v), veh/h	93	80	161	144	384	0	404	2244	0	101	1355	739				
Grp Sat Flow(s),veh/h/ln	1774	1770	1568	1721	1770	1583	1721	1695	1583	1721	1695	1844				
Q Serve(g_s), s	6.2	2.4	11.6	4.9	12.5	0.0	13.7	34.8	0.0	3.4	36.5	36.6				
Cycle Q Clear(g_c), s	6.2	2.4	11.6	4.9	12.5	0.0	13.7	34.8	0.0	3.4	36.5	36.6				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06				
Lane Grp Cap(c), veh/h	130	537	238	226	510	202	487	3218	976	180	1842	1002				
V/C Ratio(X)	0.72	0.15	0.68	0.64	0.75	0.00	0.83	0.70	0.00	0.56	0.74	0.74				
Avail Cap(c_a), veh/h	148	540	239	258	510	202	545	3218	976	201	1842	1002				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	54.4	44.2	48.1	54.7	49.3	0.0	50.1	14.5	0.0	55.5	20.8	20.9				
Incr Delay (d2), s/veh	10.2	0.2	8.0	2.6	6.6	0.0	8.5	1.3	0.0	1.1	1.6	3.0				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	3.4	1.2	5.6	2.4	6.6	0.0	7.1	16.6	0.0	1.7	17.4	19.3				
LnGrp Delay(d),s/veh	64.6	44.3	56.1	57.2	55.9	0.0	58.5	15.8	0.0	56.6	22.5	23.9				
LnGrp LOS	E	D	E	E	E		E	B		E	C	C				
Approach Vol, veh/h	334				528				2648							
Approach Delay, s/veh	55.7				56.2				22.3							
Approach LOS	E				E				C							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	11.8	20.0	9.3	78.9	10.9	20.9	20.0	68.2								
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	4.0	5.7	4.0	6.0								
Max Green Setting (Gmax), s	9.0	14.3	6.0	71.0	8.0	15.3	18.0	59.0								
Max Q Clear Time (g_c+I1), s	8.2	14.5	5.4	36.8	6.9	13.6	15.7	38.6								
Green Ext Time (p_c), s	0.0	0.0	0.0	32.1	0.0	0.7	0.3	19.6								
Intersection Summary																
HCM 2010 Ctrl Delay	28.2															
HCM 2010 LOS	C															

HCM 2010 Signalized Intersection Summary
154: Foothills Blvd & Denio Loop

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	8	300	2335	155	327	1853		
Future Volume (veh/h)	8	300	2335	155	327	1853		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	8	0	2458	163	344	1951		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	35	32	3229	1005	359	4439		
Arrive On Green	0.02	0.00	0.64	0.64	0.20	0.87		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	8	0	2458	163	344	1951		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	0.4	0.0	28.7	3.5	16.1	6.6		
Cycle Q Clear(g_c), s	0.4	0.0	28.7	3.5	16.1	6.6		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	35	32	3229	1005	359	4439		
V/C Ratio(X)	0.23	0.00	0.76	0.16	0.96	0.44		
Avail Cap(c_a), veh/h	570	509	3267	1017	359	4598		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	40.5	0.0	10.8	6.2	33.2	1.1		
Incr Delay (d2), s/veh	3.2	0.0	1.1	0.1	36.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	0.0	13.5	1.6	11.6	2.9		
LnGrp Delay(d),s/veh	43.7	0.0	11.9	6.3	69.6	1.2		
LnGrp LOS	D		B	A	E	A		
Approach Vol, veh/h	8		2621			2295		
Approach Delay, s/veh	43.7		11.6			11.4		
Approach LOS	D		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.0	57.4				77.4		6.7
Change Period (Y+Rc), s	4.0	6.0				* 6		6.0
Max Green Setting (Gmax), s	16.0	52.0				* 74		26.0
Max Q Clear Time (g_c+I1), s	18.1	30.7				8.6		2.4
Green Ext Time (p_c), s	0.0	20.7				60.1		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			11.6					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

155: Washington Blvd & Freedom Way

Cumulative No Project
PM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	0	26	47	451	118	719	185	1285	241	370	1336	0				
Future Volume (veh/h)	0	26	47	451	118	719	185	1285	241	370	1336	0				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863				
Adj Flow Rate, veh/h	0	27	49	475	0	840	195	1353	254	389	1406	0				
Adj No. of Lanes	2	1	1	2	0	2	1	2	1	2	2	1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	4	106	90	561	0	828	187	1638	733	464	1742	779				
Arrive On Green	0.00	0.06	0.06	0.16	0.00	0.26	0.11	0.46	0.46	0.13	0.49	0.00				
Sat Flow, veh/h	3442	1863	1583	3548	0	3167	1774	3539	1583	3442	3539	1583				
Grp Volume(v), veh/h	0	27	49	475	0	840	195	1353	254	389	1406	0				
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	0	1583	1774	1770	1583	1721	1770	1583				
Q Serve(g_s), s	0.0	1.2	2.6	11.1	0.0	22.3	9.0	28.4	8.8	9.4	28.6	0.0				
Cycle Q Clear(g_c), s	0.0	1.2	2.6	11.1	0.0	22.3	9.0	28.4	8.8	9.4	28.6	0.0				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Lane Grp Cap(c), veh/h	4	106	90	561	0	828	187	1638	733	464	1742	779				
V/C Ratio(X)	0.00	0.26	0.55	0.85	0.00	1.01	1.04	0.83	0.35	0.84	0.81	0.00				
Avail Cap(c_a), veh/h	605	393	334	624	0	828	187	1638	733	484	1742	779				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00				
Uniform Delay (d), s/veh	0.0	38.5	39.2	34.9	0.0	31.5	38.2	19.9	14.7	36.0	18.2	0.0				
Incr Delay (d2), s/veh	0.0	1.3	5.1	9.8	0.0	34.8	77.3	4.9	1.3	12.0	4.1	0.0				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.0	0.6	1.2	6.2	0.0	13.7	8.4	14.8	4.1	5.3	14.9	0.0				
LnGrp Delay(d),s/veh	0.0	39.8	44.3	44.7	0.0	66.3	115.5	24.8	16.0	48.0	22.4	0.0				
LnGrp LOS		D	D	D		F	F	C	B	D	C					
Approach Vol, veh/h	76				1315				1802							
Approach Delay, s/veh	42.7				58.5				33.4							
Approach LOS	D				E				C							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	15.5	43.5	17.5	8.8	13.0	46.0	0.0	26.3								
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0								
Max Green Setting (Gmax), s	12.0	39.0	15.0	18.0	9.0	42.0	15.0	18.0								
Max Q Clear Time (g_c+I1), s	11.4	30.4	13.1	4.6	11.0	30.6	0.0	24.3								
Green Ext Time (p_c), s	0.1	8.0	0.4	0.3	0.0	10.4	0.0	0.0								
Intersection Summary																
HCM 2010 Ctrl Delay	38.2															
HCM 2010 LOS	D															
Notes																
User approved volume balancing among the lanes for turning movement.																

HCM 2010 Signalized Intersection Summary
156: Washington Blvd & Hallissy Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	123	38	575	136	65	1208		
Future Volume (veh/h)	123	38	575	136	65	1208		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	129	40	605	143	68	1272		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	371	331	1782	797	175	2367		
Arrive On Green	0.21	0.21	0.50	0.50	0.10	0.67		
Sat Flow, veh/h	1774	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	129	40	605	143	68	1272		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	1774	1770		
Q Serve(g_s), s	2.8	0.9	4.6	2.2	1.6	8.4		
Cycle Q Clear(g_c), s	2.8	0.9	4.6	2.2	1.6	8.4		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	371	331	1782	797	175	2367		
V/C Ratio(X)	0.35	0.12	0.34	0.18	0.39	0.54		
Avail Cap(c_a), veh/h	1005	897	1887	844	276	2673		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.2	14.4	6.7	6.1	19.0	3.9		
Incr Delay (d2), s/veh	0.6	0.2	0.2	0.2	0.5	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.4	0.4	2.2	1.0	0.8	4.0		
LnGrp Delay(d),s/veh	15.7	14.6	6.9	6.3	19.5	4.2		
LnGrp LOS	B	B	A	A	B	A		
Approach Vol, veh/h	169		748			1340		
Approach Delay, s/veh	15.5		6.8			5.0		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.4	25.7				33.1		11.9
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	6.0	21.0				31.0		24.0
Max Q Clear Time (g_c+l1), s	3.6	6.6				10.4		4.8
Green Ext Time (p_c), s	0.0	12.3				16.7		0.6
Intersection Summary								
HCM 2010 Ctrl Delay			6.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
157: Washington Blvd & Industrial Blvd

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	23	399	188	745	1535	4		
Future Volume (veh/h)	23	399	188	745	1535	4		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	24	420	198	784	1616	4		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	340	304	232	2541	1878	805		
Arrive On Green	0.19	0.19	0.13	0.72	0.53	0.51		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	24	420	198	784	1616	4		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	1.0	17.0	9.7	7.1	35.0	0.1		
Cycle Q Clear(g_c), s	1.0	17.0	9.7	7.1	35.0	0.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	340	304	232	2541	1878	805		
V/C Ratio(X)	0.07	1.38	0.85	0.31	0.86	0.00		
Avail Cap(c_a), veh/h	340	304	240	2594	1916	821		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	29.4	35.8	37.7	4.5	18.0	10.8		
Incr Delay (d2), s/veh	0.1	191.9	23.9	0.1	4.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	29.6	6.3	3.4	17.9	0.0		
LnGrp Delay(d),s/veh	29.4	227.7	61.6	4.6	22.1	10.8		
LnGrp LOS	C	F	E	A	C	B		
Approach Vol, veh/h	444			982	1620			
Approach Delay, s/veh	217.0			16.1	22.1			
Approach LOS	F			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		66.7		22.0	16.6	50.1		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		63.0		17.0	12.0	46.0		
Max Q Clear Time (g_c+I1), s		9.1		19.0	11.7	37.0		
Green Ext Time (p_c), s		34.5		0.0	0.0	8.1		
Intersection Summary								
HCM 2010 Ctrl Delay			48.6					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary
158: Washington Blvd & Diamond Oaks Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	8	269	7	311	8	875	70	225	1611	32
Future Volume (veh/h)	5	2	8	269	7	311	8	875	70	225	1611	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	5	2	8	283	7	327	8	921	74	237	1696	34
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	42	47	283	5	439	49	1454	117	297	2053	41
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.44	0.44	0.17	0.58	0.58
Sat Flow, veh/h	0	149	171	679	17	1575	1774	3317	267	1774	3548	71
Grp Volume(v), veh/h	15	0	0	290	0	327	8	491	504	237	844	886
Grp Sat Flow(s),veh/h/ln	320	0	0	696	0	1575	1774	1770	1814	1774	1770	1850
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	14.3	0.3	16.3	16.3	9.7	29.0	29.2
Cycle Q Clear(g_c), s	21.0	0.0	0.0	21.0	0.0	14.3	0.3	16.3	16.3	9.7	29.0	29.2
Prop In Lane	0.33		0.53	0.98		1.00	1.00		0.15	1.00		0.04
Lane Grp Cap(c), veh/h	153	0	0	288	0	439	49	776	795	297	1024	1070
V/C Ratio(X)	0.10	0.00	0.00	1.01	0.00	0.75	0.16	0.63	0.63	0.80	0.82	0.83
Avail Cap(c_a), veh/h	153	0	0	288	0	439	188	852	873	329	1024	1070
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	0.0	30.6	0.0	24.8	35.8	16.5	16.5	30.1	12.8	12.9
Incr Delay (d2), s/veh	0.1	0.0	0.0	54.6	0.0	6.1	0.6	1.9	1.8	10.3	6.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	10.3	0.0	6.9	0.2	8.3	8.5	5.6	15.5	16.5
LnGrp Delay(d),s/veh	21.8	0.0	0.0	85.3	0.0	30.8	36.4	18.3	18.3	40.5	18.8	18.7
LnGrp LOS	C			F		C	D	B	B	D	B	B
Approach Vol, veh/h	15		617				1003			1967		
Approach Delay, s/veh	21.8		56.4				18.4			21.4		
Approach LOS	C		E				B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	15.6	35.8	24.0		5.1	46.3	24.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	13.0	33.3	20.0		7.0	39.3	20.0					
Max Q Clear Time (g_c+I1), s	11.7	18.3	23.0		2.3	31.2	23.0					
Green Ext Time (p_c), s	0.0	11.8	0.0		0.0	7.9	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			26.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
159: Washington Blvd & Sawtell Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	0	31	64	4	19	43	907	7	20	1743	37
Future Volume (veh/h)	54	0	31	64	4	19	43	907	7	20	1743	37
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	57	0	33	67	4	20	45	955	7	21	1835	39
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	0	96	93	6	86	76	2581	1118	44	2520	53
Arrive On Green	0.06	0.00	0.06	0.06	0.06	0.06	0.04	0.73	0.71	0.02	0.71	0.69
Sat Flow, veh/h	1774	0	1583	1679	100	1549	1774	3539	1581	1774	3544	75
Grp Volume(v), veh/h	57	0	33	71	0	20	45	955	7	21	913	961
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1779	0	1549	1774	1770	1581	1774	1770	1849
Q Serve(g_s), s	2.8	0.0	1.8	3.5	0.0	1.1	2.2	9.0	0.1	1.1	27.7	28.1
Cycle Q Clear(g_c), s	2.8	0.0	1.8	3.5	0.0	1.1	2.2	9.0	0.1	1.1	27.7	28.1
Prop In Lane	1.00		1.00	0.94		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	107	0	96	99	0	86	76	2581	1118	44	1258	1315
V/C Ratio(X)	0.53	0.00	0.35	0.72	0.00	0.23	0.59	0.37	0.01	0.47	0.73	0.73
Avail Cap(c_a), veh/h	335	0	299	99	0	86	79	2581	1118	99	1258	1315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	0.0	40.6	41.8	0.0	40.7	42.3	4.5	3.9	43.3	7.8	7.8
Incr Delay (d2), s/veh	1.5	0.0	0.8	19.4	0.0	0.5	6.9	0.2	0.0	2.9	3.7	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.8	2.3	0.0	0.5	1.2	4.5	0.1	0.5	14.5	15.5
LnGrp Delay(d),s/veh	42.6	0.0	41.4	61.2	0.0	41.2	49.2	4.7	3.9	46.2	11.4	11.4
LnGrp LOS	D		D	E		D	D	A	A	D	B	B
Approach Vol, veh/h	90			91			1007			1895		
Approach Delay, s/veh	42.1			56.8			6.7			11.8		
Approach LOS	D			E			A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.9	66.7	8.0		5.2	68.3	8.4					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	49.3	4.0		4.0	48.3	16.0					
Max Q Clear Time (g_c+I1), s	4.2	30.1	5.5		3.1	11.0	4.8					
Green Ext Time (p_c), s	0.0	18.8	0.0		0.0	36.0	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay	12.4											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

160: Washington Blvd & Junction Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	0	473	12	4	2	908	662	0	4	993	826
Future Volume (veh/h)	257	0	473	12	4	2	908	662	0	4	993	826
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	271	0	0	13	4	2	956	697	0	4	1045	869
Adj No. of Lanes	2	0	1	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	473	0	193	107	70	35	956	2369	0	53	1530	684
Arrive On Green	0.13	0.00	0.00	0.06	0.06	0.05	0.28	0.67	0.00	0.03	0.43	0.43
Sat Flow, veh/h	3548	0	1583	1774	1173	586	3442	3632	0	1774	3539	1583
Grp Volume(v), veh/h	271	0	0	13	0	6	956	697	0	4	1045	869
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1759	1721	1770	0	1774	1770	1583
Q Serve(g_s), s	6.5	0.0	0.0	0.6	0.0	0.3	25.0	7.3	0.0	0.2	21.4	38.9
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.6	0.0	0.3	25.0	7.3	0.0	0.2	21.4	38.9
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	473	0	193	107	0	106	956	2369	0	53	1530	684
V/C Ratio(X)	0.57	0.00	0.00	0.12	0.00	0.06	1.00	0.29	0.00	0.08	0.68	1.27
Avail Cap(c_a), veh/h	473	0	194	276	0	274	956	2369	0	177	1530	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	40.1	0.0	40.1	32.5	6.1	0.0	42.5	20.6	25.5
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.5	0.0	0.2	29.1	0.3	0.0	0.6	1.3	132.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.3	0.0	0.1	15.7	3.6	0.0	0.1	10.7	42.1
LnGrp Delay(d),s/veh	38.3	0.0	0.0	40.6	0.0	40.3	61.6	6.4	0.0	43.1	21.8	158.2
LnGrp LOS	D			D		D	E	A		D	C	F
Approach Vol, veh/h	271		19				1653				1918	
Approach Delay, s/veh	38.3		40.5				38.3				83.7	
Approach LOS	D		D				D				F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.7	63.9	14.0		26.0	42.6	7.4					
Change Period (Y+Rc), s	4.0	5.7	4.0		3.0	* 5.7	4.0					
Max Green Setting (Gmax), s	7.0	43.3	10.0		23.0	* 29	12.0					
Max Q Clear Time (g_c+I1), s	2.2	9.3	8.5		27.0	40.9	2.6					
Green Ext Time (p_c), s	0.0	18.7	0.2		0.0	0.0	0.0					

Intersection Summary

HCM 2010 Ctrl Delay 60.9
HCM 2010 LOS E

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
161: Washington Blvd & All American City Blvd

Cumulative No Project
PM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	59	1	30	0	4	29	45	1219	0	34	918	98				
Future Volume (veh/h)	59	1	30	0	4	29	45	1219	0	34	918	98				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900				
Adj Flow Rate, veh/h	62	1	32	0	4	31	47	1283	0	36	966	103				
Adj No. of Lanes	1	1	0	0	1	1	1	2	1	1	2	0				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	103	3	89	0	57	48	67	1750	783	55	1574	168				
Arrive On Green	0.06	0.06	0.06	0.00	0.03	0.03	0.04	0.49	0.00	0.03	0.49	0.49				
Sat Flow, veh/h	1774	48	1542	0	1863	1583	1774	3539	1583	1774	3228	344				
Grp Volume(v), veh/h	62	0	33	0	4	31	47	1283	0	36	530	539				
Grp Sat Flow(s),veh/h/ln	1774	0	1591	0	1863	1583	1774	1770	1583	1774	1770	1802				
Q Serve(g_s), s	1.8	0.0	1.0	0.0	0.1	1.0	1.4	14.9	0.0	1.0	11.3	11.3				
Cycle Q Clear(g_c), s	1.8	0.0	1.0	0.0	0.1	1.0	1.4	14.9	0.0	1.0	11.3	11.3				
Prop In Lane	1.00		0.97	0.00		1.00	1.00		1.00	1.00		0.19				
Lane Grp Cap(c), veh/h	103	0	92	0	57	48	67	1750	783	55	863	879				
V/C Ratio(X)	0.60	0.00	0.36	0.00	0.07	0.64	0.70	0.73	0.00	0.65	0.61	0.61				
Avail Cap(c_a), veh/h	753	0	675	0	791	672	137	1843	825	137	922	939				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	23.8	0.0	23.5	0.0	24.4	24.8	24.6	10.4	0.0	24.8	9.7	9.7				
Incr Delay (d2), s/veh	5.6	0.0	2.3	0.0	0.5	13.3	12.3	1.5	0.0	12.1	1.1	1.1				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.5	0.0	0.1	0.6	0.9	7.5	0.0	0.7	5.7	5.8				
LnGrp Delay(d),s/veh	29.4	0.0	25.8	0.0	24.9	38.1	36.9	11.9	0.0	36.9	10.8	10.8				
LnGrp LOS	C		C		C	D	D	B		D	B	B				
Approach Vol, veh/h	95				35		1330				1105					
Approach Delay, s/veh	28.2				36.6		12.7				11.6					
Approach LOS	C				D		B				B					
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2			4	5	6	8								
Phs Duration (G+Y+Rc), s	6.6	30.6			8.0	7.0	30.3	6.6								
Change Period (Y+Rc), s	5.0	5.0			5.0	5.0	5.0	5.0								
Max Green Setting (Gmax), s	4.0	27.0			22.0	4.0	27.0	22.0								
Max Q Clear Time (g_c+I1), s	3.0	16.9			3.8	3.4	13.3	3.0								
Green Ext Time (p_c), s	0.0	8.7			0.3	0.0	11.4	0.1								
Intersection Summary																
HCM 2010 Ctrl Delay				13.2												
HCM 2010 LOS				B												

HCM 2010 Signalized Intersection Summary

162: Fairway Dr & Cortina Cir

Cumulative No Project
PM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	179	2	105	22	1	27	83	824	25	72	1008	110								
Future Volume (veh/h)	179	2	105	22	1	27	83	824	25	72	1008	110								
Number	7	4	14	3	8	18	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	189	0	111	23	1	28	87	867	26	76	1061	116								
Adj No. of Lanes	2	0	1	1	1	0	1	2	1	1	2	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	462	0	206	146	5	127	146	1662	744	118	1607	719								
Arrive On Green	0.13	0.00	0.13	0.08	0.08	0.08	0.08	0.47	0.47	0.07	0.45	0.45								
Sat Flow, veh/h	3548	0	1583	1774	55	1537	1774	3539	1583	1774	3539	1583								
Grp Volume(v), veh/h	189	0	111	23	0	29	87	867	26	76	1061	116								
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1592	1774	1770	1583	1774	1770	1583								
Q Serve(g_s), s	3.4	0.0	4.5	0.8	0.0	1.2	3.3	11.9	0.6	2.9	16.1	3.0								
Cycle Q Clear(g_c), s	3.4	0.0	4.5	0.8	0.0	1.2	3.3	11.9	0.6	2.9	16.1	3.0								
Prop In Lane	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	462	0	206	146	0	131	146	1662	744	118	1607	719								
V/C Ratio(X)	0.41	0.00	0.54	0.16	0.00	0.22	0.60	0.52	0.03	0.64	0.66	0.16								
Avail Cap(c_a), veh/h	1030	0	460	309	0	277	309	1731	774	309	1731	774								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	27.5	0.0	28.0	29.4	0.0	29.6	30.5	12.8	9.9	31.4	14.7	11.1								
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.2	0.0	0.3	1.4	0.4	0.0	2.2	1.0	0.1								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.0	0.4	0.0	0.5	1.7	5.9	0.3	1.5	8.0	1.3								
LnGrp Delay(d),s/veh	27.8	0.0	28.8	29.6	0.0	29.9	32.0	13.2	9.9	33.5	15.7	11.2								
LnGrp LOS	C		C	C		C	C	B	A	C	B	B								
Approach Vol, veh/h	300				52				980		1253									
Approach Delay, s/veh	28.2				29.7				14.8		16.3									
Approach LOS	C				C				B		B									
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	8.6	37.7	13.0		9.7	36.6	9.7													
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0													
Max Green Setting (Gmax), s	12.0	33.7	20.0		12.0	33.7	12.0													
Max Q Clear Time (g_c+I1), s	4.9	13.9	6.5		5.3	18.1	3.2													
Green Ext Time (p_c), s	0.0	16.2	0.5		0.0	13.2	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay	17.4																			
HCM 2010 LOS	B																			
Notes																				
User approved volume balancing among the lanes for turning movement.																				

HCM 2010 Signalized Intersection Summary
163: Westbrook Blvd & High School Road

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	3	30	5	6	13	5		
Future Volume (veh/h)	3	30	5	6	13	5		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	3	32	5	6	14	5		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	111	99	64	54	40	653		
Arrive On Green	0.06	0.06	0.03	0.03	0.02	0.35		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	3	32	5	6	14	5		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	0.0	0.3	0.0	0.1	0.1	0.0		
Cycle Q Clear(g_c), s	0.0	0.3	0.0	0.1	0.1	0.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	111	99	64	54	40	653		
V/C Ratio(X)	0.03	0.32	0.08	0.11	0.35	0.01		
Avail Cap(c_a), veh/h	2187	1952	2405	2045	729	3718		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	7.5	7.6	8.0	8.0	8.2	3.6		
Incr Delay (d2), s/veh	0.1	1.9	0.5	0.9	5.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.1	0.0		
LnGrp Delay(d),s/veh	7.6	9.5	8.5	8.9	13.3	3.6		
LnGrp LOS	A	A	A	A	B	A		
Approach Vol, veh/h	35		11			19		
Approach Delay, s/veh	9.3		8.7			10.8		
Approach LOS	A		A			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.4	5.6				11.0		6.1
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	7.0	22.0				34.0		21.0
Max Q Clear Time (g_c+l1), s	2.1	2.1				2.0		2.3
Green Ext Time (p_c), s	0.0	0.0				0.0		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			9.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

164: Target Dwy & Fairway Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1083	65	95	870	29	134	32	20	3	34	13
Future Volume (veh/h)	54	1083	65	95	870	29	134	32	20	3	34	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	57	1140	68	100	916	31	88	109	21	3	36	14
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	1748	782	160	1863	833	203	214	181	8	95	37
Arrive On Green	0.08	0.49	0.49	0.09	0.53	0.53	0.11	0.11	0.11	0.08	0.08	0.06
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	100	1206	469
Grp Volume(v), veh/h	57	1140	68	100	916	31	88	109	21	53	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1775	0	0
Q Serve(g_s), s	1.6	12.7	1.2	2.9	8.7	0.5	2.4	2.9	0.6	1.5	0.0	0.0
Cycle Q Clear(g_c), s	1.6	12.7	1.2	2.9	8.7	0.5	2.4	2.9	0.6	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.06		0.26
Lane Grp Cap(c), veh/h	136	1748	782	160	1863	833	203	214	181	140	0	0
V/C Ratio(X)	0.42	0.65	0.09	0.63	0.49	0.04	0.43	0.51	0.12	0.38	0.00	0.00
Avail Cap(c_a), veh/h	202	1902	851	236	2037	911	573	601	511	202	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.2	9.9	7.0	23.1	8.0	6.0	21.7	21.9	20.9	23.1	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.9	0.1	1.5	0.3	0.0	0.5	0.7	0.1	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.2	0.5	1.5	4.3	0.2	1.2	1.5	0.3	0.7	0.0	0.0
LnGrp Delay(d),s/veh	23.9	10.8	7.1	24.6	8.3	6.0	22.3	22.6	21.0	23.8	0.0	0.0
LnGrp LOS	C	B	A	C	A	A	C	C	C	C		
Approach Vol, veh/h	1265				1047				218		53	
Approach Delay, s/veh	11.2				9.7				22.3		23.8	
Approach LOS	B				A				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	9.0		7.7	29.7	6.2		6.0	31.4				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	16.0		6.0	26.3	4.0		4.0	28.3				
Max Q Clear Time (g_c+I1), s	4.9		4.9	14.7	3.5		3.6	10.7				
Green Ext Time (p_c), s	0.4		0.0	9.4	0.0		0.0	13.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.8											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
165: Lowes Dwy/Central Park Dr & Fairway Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	859	223	176	913	38	226	45	113	19	37	66
Future Volume (veh/h)	77	859	223	176	913	38	226	45	113	19	37	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	904	235	185	961	40	272	0	119	20	39	69
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	1405	628	257	1474	659	367	0	164	166	209	178
Arrive On Green	0.09	0.40	0.40	0.14	0.42	0.42	0.10	0.00	0.10	0.09	0.11	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	1774	1863	1583
Grp Volume(v), veh/h	81	904	235	185	961	40	272	0	119	20	39	69
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	1583
Q Serve(g_s), s	2.1	10.0	5.1	4.8	10.5	0.7	3.6	0.0	3.5	0.5	0.9	2.0
Cycle Q Clear(g_c), s	2.1	10.0	5.1	4.8	10.5	0.7	3.6	0.0	3.5	0.5	0.9	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	1405	628	257	1474	659	367	0	164	166	209	178
V/C Ratio(X)	0.51	0.64	0.37	0.72	0.65	0.06	0.74	0.00	0.73	0.12	0.19	0.39
Avail Cap(c_a), veh/h	184	1590	711	257	1737	777	367	0	164	503	563	479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	11.8	10.3	19.7	11.3	8.4	21.0	0.0	21.0	20.1	19.4	19.9
Incr Delay (d2), s/veh	0.9	0.9	0.5	8.2	0.9	0.1	6.9	0.0	13.0	0.5	0.6	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.0	2.3	2.9	5.2	0.3	2.1	0.0	2.1	0.3	0.5	0.9
LnGrp Delay(d),s/veh	21.9	12.7	10.8	27.9	12.2	8.5	27.9	0.0	34.0	20.5	20.0	21.9
LnGrp LOS	C	B	B	C	B	A	C		C	C	C	C
Approach Vol, veh/h	1220				1186				391			
Approach Delay, s/veh	13.0				14.5				29.8			
Approach LOS	B				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.0	10.0	22.2		8.1	9.1	23.1				
Change Period (Y+Rc), s		4.0	4.0	5.7		4.6	5.7	* 5.7				
Max Green Setting (Gmax), s		4.0	6.0	19.0		12.7	4.0	* 21				
Max Q Clear Time (g_c+I1), s		5.6	6.8	12.0		4.0	4.1	12.5				
Green Ext Time (p_c), s		0.0	0.0	4.5		0.3	0.0	4.9				
Intersection Summary												
HCM 2010 Ctrl Delay	16.2											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
166: Home Depot Dwy & Fairway Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	915	84	65	830	2	142	40	10	3	17	92
Future Volume (veh/h)	84	915	84	65	830	2	142	40	10	3	17	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	88	963	88	68	874	2	149	42	11	3	18	97
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	1294	579	145	1359	608	463	130	524	21	123	123
Arrive On Green	0.07	0.37	0.37	0.08	0.38	0.38	0.33	0.33	0.33	0.08	0.08	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1399	394	1583	264	1585	1583
Grp Volume(v), veh/h	88	963	88	68	874	2	191	0	11	21	0	97
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1793	0	1583	1850	0	1583
Q Serve(g_s), s	4.3	21.3	3.4	3.3	18.2	0.1	7.2	0.0	0.4	1.0	0.0	5.4
Cycle Q Clear(g_c), s	4.3	21.3	3.4	3.3	18.2	0.1	7.2	0.0	0.4	1.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	0.78		1.00	0.14		1.00
Lane Grp Cap(c), veh/h	131	1294	579	145	1359	608	593	0	524	144	0	123
V/C Ratio(X)	0.67	0.74	0.15	0.47	0.64	0.00	0.32	0.00	0.02	0.15	0.00	0.79
Avail Cap(c_a), veh/h	217	1534	686	197	1494	669	593	0	524	144	0	123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.6	24.9	19.2	39.5	22.7	17.1	22.6	0.0	20.3	38.7	0.0	40.8
Incr Delay (d2), s/veh	2.2	2.0	0.2	0.9	1.1	0.0	1.4	0.0	0.1	0.2	0.0	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	10.8	1.5	1.6	9.1	0.0	3.8	0.0	0.2	0.5	0.0	3.3
LnGrp Delay(d),s/veh	42.8	26.9	19.4	40.4	23.8	17.1	24.0	0.0	20.4	38.9	0.0	66.7
LnGrp LOS	D	C	B	D	C	B	C		C	D		E
Approach Vol, veh/h	1139				944				202			
Approach Delay, s/veh	27.6				24.9				23.8			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	32.8		11.3	35.9	10.0		9.7	37.6				
Change Period (Y+Rc), s	4.0		5.0	* 5	4.0		4.0	5.0				
Max Green Setting (Gmax), s	21.0		9.0	* 37	6.0		10.0	36.0				
Max Q Clear Time (g_c+I1), s	9.2		5.3	23.3	7.4		6.3	20.2				
Green Ext Time (p_c), s	1.0		2.5	7.5	0.0		0.0	7.8				
Intersection Summary												
HCM 2010 Ctrl Delay	27.9											
HCM 2010 LOS	C											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

167: Five Star Blvd & Fairway Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	545	380	57	461	64	422	70	49	59	45	18
Future Volume (veh/h)	40	545	380	57	461	64	422	70	49	59	45	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	42	574	400	60	485	67	497	0	52	62	47	19
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1242	845	96	1258	563	688	0	307	92	70	142
Arrive On Green	0.04	0.35	0.34	0.05	0.36	0.36	0.19	0.00	0.19	0.09	0.09	0.09
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	1030	781	1583
Grp Volume(v), veh/h	42	574	400	60	485	67	497	0	52	109	0	19
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1811	0	1583
Q Serve(g_s), s	2.1	11.3	14.2	3.0	9.2	2.6	11.8	0.0	2.5	5.2	0.0	1.0
Cycle Q Clear(g_c), s	2.1	11.3	14.2	3.0	9.2	2.6	11.8	0.0	2.5	5.2	0.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.57		1.00
Lane Grp Cap(c), veh/h	69	1242	845	96	1258	563	688	0	307	162	0	142
V/C Ratio(X)	0.61	0.46	0.47	0.62	0.39	0.12	0.72	0.00	0.17	0.67	0.00	0.13
Avail Cap(c_a), veh/h	118	1242	845	197	1258	563	1064	0	475	262	0	229
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.6	22.6	13.1	41.7	21.7	19.5	34.0	0.0	30.2	39.7	0.0	37.8
Incr Delay (d2), s/veh	3.3	0.4	0.7	2.4	0.9	0.4	1.8	0.0	0.3	1.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.6	8.9	1.5	4.7	1.2	6.0	0.0	1.1	2.7	0.0	0.4
LnGrp Delay(d),s/veh	45.9	23.0	13.7	44.1	22.6	19.9	35.8	0.0	30.5	41.5	0.0	37.9
LnGrp LOS	D	C	B	D	C	B	D		C	D		D
Approach Vol, veh/h	1016				612				549			
Approach Delay, s/veh	20.3				24.4				35.3			
Approach LOS	C				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	20.5		7.9	34.6	11.0		7.5	35.0				
Change Period (Y+Rc), s	4.0		4.0	5.0	4.0		5.0	* 5				
Max Green Setting (Gmax), s	26.0		9.0	26.0	12.0		5.0	* 30				
Max Q Clear Time (g_c+I1), s	13.8		5.0	16.2	7.2		4.1	11.2				
Green Ext Time (p_c), s	2.6		0.0	4.9	0.1		0.0	3.8				
Intersection Summary												
HCM 2010 Ctrl Delay	26.1											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
168: Stanford Ranch Rd & Highland Park

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	14	36	24	12	4	37	1369	6	7	961	188
Future Volume (veh/h)	193	14	36	24	12	4	37	1369	6	7	961	188
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1853	1890	1863	1863	1900	1825	1825	1825	1900	1900	1900
Adj Flow Rate, veh/h	203	15	38	25	13	4	39	1441	6	7	1012	198
Adj No. of Lanes	1	1	0	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	73	186	279	92	28	102	2508	779	49	2448	760
Arrive On Green	0.17	0.16	0.16	0.08	0.07	0.07	0.06	0.50	0.50	0.03	0.47	0.47
Sat Flow, veh/h	1765	464	1176	3442	1367	420	1739	4984	1549	1810	5187	1612
Grp Volume(v), veh/h	203	0	53	25	0	17	39	1441	6	7	1012	198
Grp Sat Flow(s),veh/h/ln	1765	0	1641	1721	0	1787	1739	1661	1549	1810	1729	1612
Q Serve(g_s), s	6.0	0.0	1.6	0.4	0.0	0.5	1.2	11.3	0.1	0.2	7.2	0.9
Cycle Q Clear(g_c), s	6.0	0.0	1.6	0.4	0.0	0.5	1.2	11.3	0.1	0.2	7.2	0.9
Prop In Lane	1.00		0.72	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	0	259	279	0	120	102	2508	779	49	2448	760
V/C Ratio(X)	0.67	0.00	0.20	0.09	0.00	0.14	0.38	0.57	0.01	0.14	0.41	0.26
Avail Cap(c_a), veh/h	410	0	490	738	0	543	186	2508	779	194	2540	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	20.5	23.8	0.0	24.6	25.4	9.7	6.9	26.6	9.7	0.4
Incr Delay (d2), s/veh	1.0	0.0	0.3	0.1	0.0	0.2	0.9	0.5	0.0	0.5	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.7	0.2	0.0	0.3	0.6	5.2	0.0	0.1	3.4	0.4
LnGrp Delay(d),s/veh	22.6	0.0	20.8	23.8	0.0	24.8	26.3	10.2	6.9	27.1	9.9	0.7
LnGrp LOS	C		C	C		C	C	B	A	C	A	A
Approach Vol, veh/h	256		42			1486			1217			
Approach Delay, s/veh	22.3		24.2			10.6			8.5			
Approach LOS	C		C			B			A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.5	30.8	7.5	13.1	6.3	29.0	13.9	6.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.3	4.0	6.0	5.3	* 4				
Max Green Setting (Gmax), s	5.0	24.0	11.0	15.7	5.0	24.0	12.0	* 16				
Max Q Clear Time (g_c+I1), s	2.2	13.3	2.4	3.6	3.2	9.2	8.0	2.5				
Green Ext Time (p_c), s	0.0	10.7	0.0	0.6	0.0	13.8	0.3	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
169: Stanford Ranch Rd & Fairway Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	380	259	195	225	13	251	1339	217	70	928	81
Future Volume (veh/h)	88	380	259	195	225	13	251	1339	217	70	928	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	93	400	273	205	237	14	264	1409	228	74	977	85
Adj No. of Lanes	1	2	1	2	1	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	581	260	266	306	18	321	2843	885	121	2548	793
Arrive On Green	0.07	0.16	0.16	0.08	0.18	0.18	0.19	1.00	1.00	0.04	0.50	0.50
Sat Flow, veh/h	1774	3539	1583	3442	1742	103	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	93	400	273	205	0	251	264	1409	228	74	977	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	0	1845	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	6.2	12.8	19.7	7.0	0.0	15.6	8.8	0.0	0.0	2.5	14.2	3.4
Cycle Q Clear(g_c), s	6.2	12.8	19.7	7.0	0.0	15.6	8.8	0.0	0.0	2.5	14.2	3.4
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	117	581	260	266	0	324	321	2843	885	121	2548	793
V/C Ratio(X)	0.80	0.69	1.05	0.77	0.00	0.77	0.82	0.50	0.26	0.61	0.38	0.11
Avail Cap(c_a), veh/h	310	581	260	602	0	324	602	2843	885	602	2548	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.2	47.3	50.2	54.3	0.0	47.2	47.9	0.0	0.0	57.1	18.5	15.8
Incr Delay (d2), s/veh	4.6	3.7	69.6	1.8	0.0	11.6	2.0	0.6	0.7	1.8	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	6.5	13.6	3.4	0.0	9.0	4.3	0.2	0.2	1.2	6.6	1.5
LnGrp Delay(d),s/veh	59.8	51.0	119.8	56.1	0.0	58.8	49.9	0.6	0.7	58.9	18.6	15.9
LnGrp LOS	E	D	F	E		E	D	A	A	E	B	B
Approach Vol, veh/h	766				456				1901			
Approach Delay, s/veh	76.6				57.6				7.5			
Approach LOS	E				E				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	73.5	13.3	25.0	15.2	66.5	11.9	26.4				
Change Period (Y+Rc), s	4.0	* 6.4	4.0	5.3	4.0	6.4	4.0	5.3				
Max Green Setting (Gmax), s	21.0	* 40	21.0	19.7	21.0	38.6	21.0	19.7				
Max Q Clear Time (g_c+I1), s	4.5	2.0	9.0	21.7	10.8	16.2	8.2	17.6				
Green Ext Time (p_c), s	0.1	35.0	0.3	0.0	0.3	18.4	0.1	1.3				

Intersection Summary

HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

170: Stanford Ranch Rd & 5 Star Blvd

Cumulative No Project
PM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	101	106	278	348	79	42	613	1673	217	111	1240	130								
Future Volume (veh/h)	101	106	278	348	79	42	613	1673	217	111	1240	130								
Number	3	8	18	7	4	14	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	106	112	293	366	83	44	645	1761	228	117	1305	137								
Adj No. of Lanes	1	1	1	2	1	0	2	3	1	2	3	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	291	306	260	448	145	77	753	1894	850	590	1709	532								
Arrive On Green	0.16	0.16	0.16	0.13	0.13	0.13	0.22	0.37	0.37	0.17	0.34	0.34								
Sat Flow, veh/h	1774	1863	1583	3548	1147	608	3442	5085	1583	3442	5085	1583								
Grp Volume(v), veh/h	106	112	293	366	0	127	645	1761	228	117	1305	137								
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1755	1721	1695	1583	1721	1695	1583								
Q Serve(g_s), s	6.4	6.4	19.7	12.1	0.0	8.2	21.6	39.9	9.4	3.5	27.5	7.5								
Cycle Q Clear(g_c), s	6.4	6.4	19.7	12.1	0.0	8.2	21.6	39.9	9.4	3.5	27.5	7.5								
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	291	306	260	448	0	221	753	1894	850	590	1709	532								
V/C Ratio(X)	0.36	0.37	1.13	0.82	0.00	0.57	0.86	0.93	0.27	0.20	0.76	0.26								
Avail Cap(c_a), veh/h	291	306	260	582	0	288	918	1894	850	590	1709	532								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	44.6	44.6	50.2	51.1	0.0	49.4	45.1	36.1	15.0	42.6	35.6	29.0								
Incr Delay (d2), s/veh	0.8	0.7	94.4	6.9	0.0	2.3	7.8	9.6	0.8	0.2	2.3	0.4								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	3.2	3.4	15.4	6.3	0.0	4.1	11.1	20.3	5.7	1.7	13.2	3.4								
LnGrp Delay(d),s/veh	45.3	45.3	144.6	58.0	0.0	51.7	52.9	45.8	15.8	42.8	37.9	29.4								
LnGrp LOS	D	D	F	E		D	D	D	B	D	D	C								
Approach Vol, veh/h	511				493				2634											
Approach Delay, s/veh	102.2				56.4				44.9											
Approach LOS	F				E				D											
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	24.6	50.0	20.4		30.2	44.3	25.0													
Change Period (Y+Rc), s	4.0	5.3	5.3		4.0	4.0	5.3													
Max Green Setting (Gmax), s	16.0	44.7	19.7		32.0	30.0	19.7													
Max Q Clear Time (g_c+I1), s	5.5	41.9	14.1		23.6	29.5	21.7													
Green Ext Time (p_c), s	5.2	2.4	1.1		2.6	0.4	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay	49.4																			
HCM 2010 LOS	D																			
Notes																				
User approved pedestrian interval to be less than phase max green.																				

HCM 2010 Signalized Intersection Summary
171: Galleria Blvd/Stanford Ranch & Hwy-65 NB Ramps

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations							 	 			  	
Traffic Volume (veh/h)	0	0	427	0	0	846	803	1675	0	0	1804	352
Future Volume (veh/h)	0	0	427	0	0	846	803	1675	0	0	1804	352
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h	0	0	0	0	0	0	845	1763	0	0	1899	371
Adj No. of Lanes	0	0	1	0	0	1	2	3	0	0	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	0	0	0	991	3779	0	0	2196	684
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.74	0.00	0.00	0.43	0.43
Sat Flow, veh/h		0			0		3442	5253	0	0	5253	1583
Grp Volume(v), veh/h		0.0			0.0		845	1763	0	0	1899	371
Grp Sat Flow(s),veh/h/ln							1721	1695	0	0	1695	1583
Q Serve(g_s), s							29.9	17.6	0.0	0.0	43.7	22.4
Cycle Q Clear(g_c), s							29.9	17.6	0.0	0.0	43.7	22.4
Prop In Lane							1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h							991	3779	0	0	2196	684
V/C Ratio(X)							0.85	0.47	0.00	0.00	0.86	0.54
Avail Cap(c_a), veh/h							1521	4561	0	0	2196	684
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)							0.61	0.61	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh							43.3	6.5	0.0	0.0	33.2	27.2
Incr Delay (d2), s/veh							1.9	0.1	0.0	0.0	4.9	3.1
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							14.5	8.2	0.0	0.0	21.4	10.4
LnGrp Delay(d),s/veh							45.2	6.6	0.0	0.0	38.1	30.3
LnGrp LOS							D	A			D	C
Approach Vol, veh/h								2608			2270	
Approach Delay, s/veh								19.1			36.8	
Approach LOS								B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		100.2			40.2	60.0						
Change Period (Y+Rc), s		5.3			4.0	5.3						
Max Green Setting (Gmax), s		114.7			56.0	54.7						
Max Q Clear Time (g_c+l1), s		19.6			31.9	45.7						
Green Ext Time (p_c), s		64.7			4.3	8.6						
Intersection Summary												
HCM 2010 Ctrl Delay			27.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
172: Galleria Blvd & Hwy-65 SB Ramps

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  		 	  	
Traffic Volume (veh/h)	0	0	867	0	0	168	0	2309	587	548	1752	0
Future Volume (veh/h)	0	0	867	0	0	168	0	2309	587	548	1752	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	0	0	913	0	0	0	0	2431	618	577	1844	0
Adj No. of Lanes	0	0	1	0	0	1	0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	0	2	2	2	2	0
Cap, veh/h	0	0	0	0	0	0	0	3165	986	654	4317	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.62	0.38	1.00	0.00
Sat Flow, veh/h		0			0		0	5253	1583	3442	5253	0
Grp Volume(v), veh/h		0.0			0.0		0	2431	618	577	1844	0
Grp Sat Flow(s),veh/h/ln							0	1695	1583	1721	1695	0
Q Serve(g_s), s							0.0	44.6	31.2	20.2	0.0	0.0
Cycle Q Clear(g_c), s							0.0	44.6	31.2	20.2	0.0	0.0
Prop In Lane							0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h							0	3165	986	654	4317	0
V/C Ratio(X)							0.00	0.77	0.63	0.88	0.43	0.00
Avail Cap(c_a), veh/h							0	3165	986	808	4317	0
HCM Platoon Ratio							1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(l)							0.00	0.49	0.49	0.67	0.67	0.00
Uniform Delay (d), s/veh							0.0	17.6	15.1	38.7	0.0	0.0
Incr Delay (d2), s/veh							0.0	0.9	1.5	6.8	0.2	0.0
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.0	21.0	14.0	10.2	0.1	0.0
LnGrp Delay(d),s/veh							0.0	18.5	16.6	45.5	0.2	0.0
LnGrp LOS								B	B	D	A	
Approach Vol, veh/h								3049			2421	
Approach Delay, s/veh								18.1			11.0	
Approach LOS								B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	29.2	85.0				114.2						
Change Period (Y+Rc), s	5.7	5.7				5.7						
Max Green Setting (Gmax), s	29.3	79.3				69.3						
Max Q Clear Time (g_c+I1), s	22.2	46.6				2.0						
Green Ext Time (p_c), s	1.3	23.9				22.7						
Intersection Summary												
HCM 2010 Ctrl Delay			15.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
173: JC Penny & Galleria Circle

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	21	23	11	14	11	104	139	0	28	159	160
Future Volume (veh/h)	23	21	23	11	14	11	104	139	0	28	159	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	24	22	24	12	15	12	109	146	0	29	167	168
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	25	27	232	33	26	133	1437	0	39	301	303
Arrive On Green	0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.41	0.00	0.02	0.35	0.35
Sat Flow, veh/h	579	531	579	554	693	554	1774	3632	0	1774	853	858
Grp Volume(v), veh/h	70	0	0	39	0	0	109	146	0	29	0	335
Grp Sat Flow(s),veh/h/ln	1689	0	0	1802	0	0	1774	1770	0	1774	0	1711
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	1.4	0.6	0.0	0.4	0.0	3.6
Cycle Q Clear(g_c), s	0.9	0.0	0.0	0.5	0.0	0.0	1.4	0.6	0.0	0.4	0.0	3.6
Prop In Lane	0.34		0.34	0.31		0.31	1.00		0.00	1.00		0.50
Lane Grp Cap(c), veh/h	291	0	0	291	0	0	133	1437	0	39	0	605
V/C Ratio(X)	0.24	0.00	0.00	0.13	0.00	0.00	0.82	0.10	0.00	0.74	0.00	0.55
Avail Cap(c_a), veh/h	562	0	0	425	0	0	543	3251	0	388	0	1422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.8	0.0	0.0	10.6	0.0	0.0	10.4	4.2	0.0	11.1	0.0	5.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0	4.7	0.0	0.0	9.7	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.2	0.0	0.0	0.8	0.3	0.0	0.3	0.0	1.8
LnGrp Delay(d),s/veh	11.0	0.0	0.0	10.7	0.0	0.0	15.2	4.2	0.0	20.8	0.0	6.7
LnGrp LOS	B			B			B	A		C		A
Approach Vol, veh/h	70				39		255				364	
Approach Delay, s/veh	11.0				10.7		8.9				7.8	
Approach LOS	B				B		A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.5	13.3	5.1		5.7	12.1	5.1					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	5.0	21.0	5.0		7.0	19.0	3.0					
Max Q Clear Time (g_c+I1), s	2.4	2.6	2.9		3.4	5.6	2.5					
Green Ext Time (p_c), s	0.0	2.8	0.1		0.0	2.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			8.7									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
174: Galleria Blvd & Antelope Creek Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	507	69	99	463	93	325	103	1888	190	271	1773	163
Future Volume (veh/h)	507	69	99	463	93	325	103	1888	190	271	1773	163
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	534	73	0	487	98	0	108	1987	0	285	1866	172
Adj No. of Lanes	3	1	1	3	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	736	257	212	712	249	205	347	1737	522	383	1721	531
Arrive On Green	0.14	0.14	0.00	0.13	0.13	0.00	0.10	0.35	0.00	0.11	0.35	0.35
Sat Flow, veh/h	5322	1863	1583	5322	1863	1583	3343	4940	1538	3343	4940	1525
Grp Volume(v), veh/h	534	73	0	487	98	0	108	1987	0	285	1866	172
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1672	1647	1538	1672	1647	1525
Q Serve(g_s), s	11.5	4.2	0.0	10.5	5.8	0.0	3.6	42.2	0.0	9.9	41.8	9.9
Cycle Q Clear(g_c), s	11.5	4.2	0.0	10.5	5.8	0.0	3.6	42.2	0.0	9.9	41.8	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	736	257	212	712	249	205	347	1737	522	383	1721	531
V/C Ratio(X)	0.73	0.28	0.00	0.68	0.39	0.00	0.31	1.14	0.00	0.74	1.08	0.32
Avail Cap(c_a), veh/h	998	349	290	958	335	278	627	1737	522	627	1721	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.28	0.28	0.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	49.5	46.4	0.0	49.6	47.5	0.0	49.8	38.9	0.0	51.4	39.1	28.7
Incr Delay (d2), s/veh	1.7	0.6	0.0	1.7	1.4	0.0	0.1	67.0	0.0	0.1	39.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	2.2	0.0	5.3	3.1	0.0	1.7	29.9	0.0	4.6	25.2	4.2
LnGrp Delay(d),s/veh	51.3	47.0	0.0	51.2	48.9	0.0	49.9	105.9	0.0	51.5	78.3	28.9
LnGrp LOS	D	D		D	D		D	F		D	F	C
Approach Vol, veh/h	607			585			2095			2323		
Approach Delay, s/veh	50.7			50.8			103.0			71.3		
Approach LOS	D			D			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	45.4		19.5	16.7	45.0		19.1				
Change Period (Y+Rc), s	4.0	5.7		4.9	5.7	* 5.7		4.0				
Max Green Setting (Gmax), s	21.0	39.3		20.1	21.0	* 39		21.0				
Max Q Clear Time (g_c+I1), s	11.9	44.2		12.5	5.6	43.8		13.5				
Green Ext Time (p_c), s	0.4	0.0		2.1	5.9	0.0		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	78.8											
HCM 2010 LOS	E											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
175: Galleria Blvd & Berry St

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	0	97	5	1	6	192	1591	5	54	2079	277
Future Volume (veh/h)	122	0	97	5	1	6	192	1591	5	54	2079	277
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	128	0	102	5	1	6	202	1675	5	57	2188	292
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	0	152	48	10	51	193	2588	8	87	2401	1074
Arrive On Green	0.10	0.00	0.10	0.03	0.03	0.03	0.11	0.71	0.71	0.05	0.68	0.68
Sat Flow, veh/h	1774	0	1583	1490	298	1583	1774	3620	11	1774	3539	1583
Grp Volume(v), veh/h	128	0	102	6	0	6	202	819	861	57	2188	292
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1788	0	1583	1774	1770	1861	1774	1770	1583
Q Serve(g_s), s	9.1	0.0	8.0	0.4	0.0	0.5	14.0	31.6	31.7	4.1	67.1	9.4
Cycle Q Clear(g_c), s	9.1	0.0	8.0	0.4	0.0	0.5	14.0	31.6	31.7	4.1	67.1	9.4
Prop In Lane	1.00		1.00	0.83		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	171	0	152	57	0	51	193	1265	1330	87	2401	1074
V/C Ratio(X)	0.75	0.00	0.67	0.10	0.00	0.12	1.05	0.65	0.65	0.66	0.91	0.27
Avail Cap(c_a), veh/h	289	0	258	139	0	123	193	1265	1330	138	2446	1094
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	0.0	56.3	60.6	0.0	60.6	57.5	9.7	9.8	60.3	17.5	8.2
Incr Delay (d2), s/veh	2.5	0.0	1.9	0.3	0.0	0.4	78.2	1.3	1.3	3.1	5.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	3.6	0.2	0.0	0.2	11.0	15.7	16.5	2.1	34.4	4.1
LnGrp Delay(d),s/veh	59.2	0.0	58.2	60.9	0.0	61.0	135.7	11.1	11.0	63.4	23.2	8.4
LnGrp LOS	E		E	E		E	F	B	B	E	C	A
Approach Vol, veh/h	230				12		1882				2537	
Approach Delay, s/veh	58.8				60.9		24.4				22.4	
Approach LOS	E				E		C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.3	96.2	16.3		15.0	90.5	7.1					
Change Period (Y+Rc), s	4.0	6.0	4.9		4.0	6.0	4.0					
Max Green Setting (Gmax), s	9.0	88.1	20.0		11.0	86.1	9.0					
Max Q Clear Time (g_c+I1), s	6.1	33.7	11.1		16.0	69.1	2.5					
Green Ext Time (p_c), s	0.0	52.7	0.3		0.0	15.4	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			25.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
176: Harding Blvd & Wills Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	7	199	14	16	40	237	1451	5	5	1551	607
Future Volume (veh/h)	323	7	199	14	16	40	237	1451	5	5	1551	607
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	340	7	209	15	17	42	249	1527	5	5	1633	639
Adj No. of Lanes	2	1	0	1	1	1	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	662	10	296	84	89	75	287	2176	7	28	1890	845
Arrive On Green	0.19	0.19	0.19	0.05	0.05	0.05	0.08	0.60	0.58	0.02	0.53	0.53
Sat Flow, veh/h	3442	52	1540	1774	1863	1583	3442	3618	12	1774	3539	1583
Grp Volume(v), veh/h	340	0	216	15	17	42	249	747	785	5	1633	639
Grp Sat Flow(s),veh/h/ln	1721	0	1591	1774	1863	1583	1721	1770	1861	1774	1770	1583
Q Serve(g_s), s	7.4	0.0	10.7	0.7	0.7	2.2	6.0	24.5	24.5	0.2	33.6	26.5
Cycle Q Clear(g_c), s	7.4	0.0	10.7	0.7	0.7	2.2	6.0	24.5	24.5	0.2	33.6	26.5
Prop In Lane	1.00		0.97	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	662	0	306	84	89	75	287	1064	1119	28	1890	845
V/C Ratio(X)	0.51	0.00	0.71	0.18	0.19	0.56	0.87	0.70	0.70	0.18	0.86	0.76
Avail Cap(c_a), veh/h	1269	0	587	84	89	75	287	1064	1119	84	1937	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	31.7	38.4	38.5	39.2	38.1	11.6	11.6	40.8	16.9	15.3
Incr Delay (d2), s/veh	0.6	0.0	3.0	0.4	0.4	5.4	22.7	2.7	2.6	1.1	4.7	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	4.9	0.3	0.4	1.1	3.8	12.6	13.2	0.1	17.3	12.6
LnGrp Delay(d),s/veh	31.0	0.0	34.7	38.8	38.9	44.6	60.8	14.3	14.1	41.9	21.7	19.9
LnGrp LOS	C		C	D	D	D	E	B	B	D	C	B
Approach Vol, veh/h	556				74		1781				2277	
Approach Delay, s/veh	32.5				42.1		20.7				21.2	
Approach LOS	C				D		C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.3	53.5	19.2		10.0	47.9	7.0					
Change Period (Y+Rc), s	4.0	5.5	4.0		4.0	5.5	4.0					
Max Green Setting (Gmax), s	3.0	46.5	30.0		6.0	43.5	3.0					
Max Q Clear Time (g_c+I1), s	2.2	26.5	12.7		8.0	35.6	4.2					
Green Ext Time (p_c), s	0.0	19.8	2.5		0.0	6.8	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			22.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
177: Harding Blvd & Lead Hill Blvd

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	770	778	833	459	1012	828		
Future Volume (veh/h)	770	778	833	459	1012	828		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	811	819	877	483	1065	872		
Adj No. of Lanes	2	1	2	1	2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	956	961	2879	1288	1082	4007		
Arrive On Green	0.28	0.29	0.81	0.81	0.31	1.00		
Sat Flow, veh/h	3442	1583	3632	1583	3442	3632		
Grp Volume(v), veh/h	811	819	877	483	1065	872		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1721	1770		
Q Serve(g_s), s	20.0	26.3	5.5	7.4	27.6	0.0		
Cycle Q Clear(g_c), s	20.0	26.3	5.5	7.4	27.6	0.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	956	961	2879	1288	1082	4007		
V/C Ratio(X)	0.85	0.85	0.30	0.38	0.98	0.22		
Avail Cap(c_a), veh/h	956	961	2879	1288	1082	4007		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	30.7	14.4	2.1	2.3	30.6	0.0		
Incr Delay (d2), s/veh	6.9	7.1	0.1	0.2	23.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.4	30.2	2.7	3.2	16.5	0.1		
LnGrp Delay(d),s/veh	37.6	21.6	2.2	2.5	54.0	0.1		
LnGrp LOS	D	C	A	A	D	A		
Approach Vol, veh/h	1630		1360			1937		
Approach Delay, s/veh	29.5		2.3			29.8		
Approach LOS	C		A			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				107.5		28.0	30.0	77.5
Change Period (Y+Rc), s				* 5.3		4.0	4.0	5.3
Max Green Setting (Gmax), s				* 58		24.0	26.0	26.7
Max Q Clear Time (g_c+I1), s				2.0		28.3	29.6	9.4
Green Ext Time (p_c), s				27.4		0.0	0.0	13.0
Intersection Summary								
HCM 2010 Ctrl Delay			22.1					
HCM 2010 LOS			C					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

178: Harding Blvd & Estates Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	307	15	28	25	15	55	43	920	0	70	1304	217
Future Volume (veh/h)	307	15	28	25	15	55	43	920	0	70	1304	217
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	361	0	0	26	16	58	45	968	0	74	1373	228
Adj No. of Lanes	2	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	223	0	29	18	65	252	2193	0	94	1582	260
Arrive On Green	0.12	0.00	0.00	0.07	0.07	0.07	0.28	1.00	0.00	0.05	0.52	0.52
Sat Flow, veh/h	3548	1863	0	434	267	969	1774	3632	0	1774	3044	500
Grp Volume(v), veh/h	361	0	0	100	0	0	45	968	0	74	791	810
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1670	0	0	1774	1770	0	1774	1770	1775
Q Serve(g_s), s	12.0	0.0	0.0	7.1	0.0	0.0	2.3	0.0	0.0	4.9	46.6	48.4
Cycle Q Clear(g_c), s	12.0	0.0	0.0	7.1	0.0	0.0	2.3	0.0	0.0	4.9	46.6	48.4
Prop In Lane	1.00		0.00	0.26		0.58	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	425	223	0	111	0	0	252	2193	0	94	920	922
V/C Ratio(X)	0.85	0.00	0.00	0.90	0.00	0.00	0.18	0.44	0.00	0.78	0.86	0.88
Avail Cap(c_a), veh/h	591	310	0	111	0	0	252	2193	0	163	1013	1016
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	0.0	55.6	0.0	0.0	37.7	0.0	0.0	56.1	25.0	25.4
Incr Delay (d2), s/veh	6.2	0.0	0.0	53.5	0.0	0.0	0.1	0.6	0.0	5.3	7.2	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.0	5.0	0.0	0.0	1.1	0.2	0.0	2.6	24.5	25.8
LnGrp Delay(d),s/veh	58.0	0.0	0.0	109.1	0.0	0.0	37.8	0.6	0.0	61.4	32.2	33.8
LnGrp LOS	E			F			D	A		E	C	C
Approach Vol, veh/h	361			100			1013			1675		
Approach Delay, s/veh	58.0			109.1			2.3			34.3		
Approach LOS	E			F			A			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	79.3		18.4	22.0	67.7		12.0				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.9	* 5.3		4.0				
Max Green Setting (Gmax), s	11.0	64.1		20.0	6.0	* 69		8.0				
Max Q Clear Time (g_c+I1), s	6.9	2.0		14.0	4.3	50.4		9.1				
Green Ext Time (p_c), s	0.0	14.7		0.4	1.3	12.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	29.1											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

179: Harding Blvd & Roseville Square

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	20	134	126	7	48	130	787	20	25	1130	38
Future Volume (veh/h)	159	20	134	126	7	48	130	787	20	25	1130	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	21	141	133	7	51	137	828	21	26	1189	40
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	25	196	161	8	151	164	1825	46	204	1914	64
Arrive On Green	0.12	0.12	0.12	0.10	0.10	0.10	0.09	0.52	0.52	0.11	0.55	0.55
Sat Flow, veh/h	1584	199	1583	1689	89	1583	1774	3527	89	1774	3494	118
Grp Volume(v), veh/h	188	0	141	140	0	51	137	415	434	26	602	627
Grp Sat Flow(s),veh/h/ln	1784	0	1583	1778	0	1583	1774	1770	1847	1774	1770	1842
Q Serve(g_s), s	12.4	0.0	10.3	9.3	0.0	3.6	9.1	17.8	17.8	1.6	28.0	28.0
Cycle Q Clear(g_c), s	12.4	0.0	10.3	9.3	0.0	3.6	9.1	17.8	17.8	1.6	28.0	28.0
Prop In Lane	0.89		1.00	0.95		1.00	1.00		0.05	1.00		0.06
Lane Grp Cap(c), veh/h	221	0	196	170	0	151	164	916	956	204	969	1009
V/C Ratio(X)	0.85	0.00	0.72	0.83	0.00	0.34	0.84	0.45	0.45	0.13	0.62	0.62
Avail Cap(c_a), veh/h	297	0	264	222	0	198	222	916	956	204	969	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.20	0.20	0.20	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	0.0	50.5	53.3	0.0	50.7	53.6	18.3	18.3	47.7	18.6	18.6
Incr Delay (d2), s/veh	12.6	0.0	3.3	13.6	0.0	0.5	3.2	0.3	0.3	0.1	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	4.7	5.2	0.0	1.6	4.6	8.7	9.1	0.8	13.9	14.5
LnGrp Delay(d),s/veh	64.1	0.0	53.8	66.9	0.0	51.2	56.8	18.6	18.6	47.8	20.1	20.0
LnGrp LOS	E		D	E		D	E	B	B	D	C	C
Approach Vol, veh/h	329		191				986				1255	
Approach Delay, s/veh	59.7		62.7				23.9				20.6	
Approach LOS	E		E				C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.7	67.0		18.9	15.1	70.6		15.4				
Change Period (Y+Rc), s	4.9	* 4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	6.0	* 62		20.0	15.0	53.1		15.0				
Max Q Clear Time (g_c+I1), s	3.6	19.8		14.4	11.1	30.0		11.3				
Green Ext Time (p_c), s	0.0	10.4		0.5	0.1	13.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	29.4											
HCM 2010 LOS	C											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
180: N. Sunrise Ave & Stone Point Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	73	279	700	48	372	748		
Future Volume (veh/h)	73	279	700	48	372	748		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	77	294	737	51	392	787		
Adj No. of Lanes	2	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	822	378	1982	617	474	3492		
Arrive On Green	0.24	0.24	0.39	0.39	0.27	0.69		
Sat Flow, veh/h	3442	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	77	294	737	51	392	787		
Grp Sat Flow(s),veh/h/ln	1721	1583	1695	1583	1774	1695		
Q Serve(g_s), s	1.2	11.7	6.9	1.4	14.0	3.9		
Cycle Q Clear(g_c), s	1.2	11.7	6.9	1.4	14.0	3.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	822	378	1982	617	474	3492		
V/C Ratio(X)	0.09	0.78	0.37	0.08	0.83	0.23		
Avail Cap(c_a), veh/h	1128	519	2499	778	476	4014		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.9	23.9	14.6	12.9	23.1	3.9		
Incr Delay (d2), s/veh	0.0	3.3	0.2	0.1	10.8	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	5.4	3.2	0.6	8.2	1.8		
LnGrp Delay(d),s/veh	19.9	27.2	14.8	13.0	33.9	4.0		
LnGrp LOS	B	C	B	B	C	A		
Approach Vol, veh/h	371		788			1179		
Approach Delay, s/veh	25.7		14.7			13.9		
Approach LOS	C		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	19.9	29.2				49.1		18.0
Change Period (Y+Rc), s	4.0	5.7				5.7		4.0
Max Green Setting (Gmax), s	16.0	30.3				50.3		20.0
Max Q Clear Time (g_c+I1), s	16.0	8.9				5.9		13.7
Green Ext Time (p_c), s	0.0	14.5				22.9		0.4
Intersection Summary								
HCM 2010 Ctrl Delay			16.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

181: Automall Dr & N. Sunrise Ave

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	741	25	145	754	122	107	17	484	252	6	83
Future Volume (veh/h)	70	741	25	145	754	122	107	17	484	252	6	83
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	780	26	153	794	128	113	18	509	269	0	87
Adj No. of Lanes	1	3	0	1	3	1	0	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1760	59	186	1851	576	430	69	442	454	0	203
Arrive On Green	0.09	0.35	0.33	0.10	0.36	0.36	0.28	0.28	0.28	0.13	0.00	0.13
Sat Flow, veh/h	1774	5055	168	1774	5085	1583	1540	245	1583	3548	0	1583
Grp Volume(v), veh/h	74	523	283	153	794	128	131	0	509	269	0	87
Grp Sat Flow(s),veh/h/ln	1774	1695	1833	1774	1695	1583	1786	0	1583	1774	0	1583
Q Serve(g_s), s	3.4	10.2	10.3	7.3	10.1	4.8	4.9	0.0	24.0	6.1	0.0	4.4
Cycle Q Clear(g_c), s	3.4	10.2	10.3	7.3	10.1	4.8	4.9	0.0	24.0	6.1	0.0	4.4
Prop In Lane	1.00		0.09	1.00		1.00	0.86		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	1180	638	186	1851	576	499	0	442	454	0	203
V/C Ratio(X)	0.47	0.44	0.44	0.82	0.43	0.22	0.26	0.00	1.15	0.59	0.00	0.43
Avail Cap(c_a), veh/h	186	1342	726	186	2013	627	499	0	442	867	0	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	21.6	21.6	37.7	20.6	18.9	24.1	0.0	31.0	35.3	0.0	34.6
Incr Delay (d2), s/veh	0.8	0.5	1.0	23.5	0.3	0.4	0.1	0.0	91.0	0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.9	5.4	4.8	4.8	2.2	2.4	0.0	21.6	3.1	0.0	1.9
LnGrp Delay(d),s/veh	38.0	22.1	22.6	61.2	20.9	19.3	24.2	0.0	121.9	35.8	0.0	35.1
LnGrp LOS	D	C	C	E	C	B	C		F	D		D
Approach Vol, veh/h	880			1075			640			356		
Approach Delay, s/veh	23.6			26.4			101.9			35.6		
Approach LOS	C			C			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	32.9		27.0	10.6	34.3		14.0				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	8.0	31.7		23.0	8.0	31.7		20.0				
Max Q Clear Time (g_c+I1), s	9.3	12.3		26.0	5.4	12.1		8.1				
Green Ext Time (p_c), s	0.0	15.4		0.0	0.0	15.4		0.6				

Intersection Summary

HCM 2010 Ctrl Delay	43.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

182: N. Sunrise Ave & Lead Hill Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	643	546	78	622	182	501	696	56	161	662	292
Future Volume (veh/h)	197	643	546	78	622	182	501	696	56	161	662	292
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1928	1928	1928
Adj Flow Rate, veh/h	207	677	575	82	655	192	527	733	59	169	697	307
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	996	445	164	977	437	445	1922	574	370	1857	578
Arrive On Green	0.11	0.28	0.28	0.09	0.28	0.28	0.13	0.38	0.36	0.10	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	5085	1583	3562	5263	1639
Grp Volume(v), veh/h	207	677	575	82	655	192	527	733	59	169	697	307
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1695	1583	1781	1754	1639
Q Serve(g_s), s	9.0	14.5	23.9	3.7	14.0	8.5	11.0	8.9	2.1	3.8	8.4	12.7
Cycle Q Clear(g_c), s	9.0	14.5	23.9	3.7	14.0	8.5	11.0	8.9	2.1	3.8	8.4	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	996	445	164	977	437	445	1922	574	370	1857	578
V/C Ratio(X)	1.10	0.68	1.29	0.50	0.67	0.44	1.18	0.38	0.10	0.46	0.38	0.53
Avail Cap(c_a), veh/h	188	996	445	188	1002	448	445	2169	651	377	2121	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	27.2	30.6	36.8	27.4	25.4	37.1	19.2	18.0	35.9	20.6	21.9
Incr Delay (d2), s/veh	96.2	2.4	146.8	0.9	2.0	1.1	104.0	0.2	0.1	0.3	0.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	7.4	28.6	1.9	7.1	3.8	11.6	4.2	0.9	1.9	4.1	5.9
LnGrp Delay(d),s/veh	134.2	29.6	177.4	37.7	29.4	26.5	141.1	19.4	18.1	36.2	20.8	23.1
LnGrp LOS	F	C	F	D	C	C	F	B	B	D	C	C
Approach Vol, veh/h	1459				929				1319			
Approach Delay, s/veh	102.7				29.5				68.0			
Approach LOS	F				C				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	27.2	14.0	33.0	12.0	26.1	11.9	35.2				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.3	4.0	5.3	4.0	5.3				
Max Green Setting (Gmax), s	8.0	* 22	10.0	32.0	8.0	21.4	8.0	34.0				
Max Q Clear Time (g_c+I1), s	5.7	25.9	13.0	14.7	11.0	16.0	5.8	10.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	13.0	0.0	4.8	0.1	16.3				

Intersection Summary

HCM 2010 Ctrl Delay 60.4
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
183: N. Sunrise Ave & Sierra Gardens Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	23	96	154	13	393	95	800	47	292	929	72
Future Volume (veh/h)	79	23	96	154	13	393	95	800	47	292	929	72
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1928	1891	1891	1863	1934	1900	1928	2005	1928
Adj Flow Rate, veh/h	83	24	101	162	14	414	100	842	49	307	978	76
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	47	185	392	34	675	128	1028	60	314	2066	569
Arrive On Green	0.12	0.12	0.12	0.25	0.24	0.25	0.07	0.29	0.27	0.17	0.38	0.35
Sat Flow, veh/h	1391	402	1583	1664	144	1605	1774	3527	205	1836	5474	1639
Grp Volume(v), veh/h	107	0	101	176	0	414	100	439	452	307	978	76
Grp Sat Flow(s),veh/h/ln	1793	0	1583	1808	0	1605	1774	1837	1894	1836	1825	1639
Q Serve(g_s), s	4.3	0.0	4.6	6.2	0.0	15.3	4.2	16.9	16.9	12.6	10.3	2.4
Cycle Q Clear(g_c), s	4.3	0.0	4.6	6.2	0.0	15.3	4.2	16.9	16.9	12.6	10.3	2.4
Prop In Lane	0.78		1.00	0.92		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	210	0	185	426	0	675	128	536	552	314	2066	569
V/C Ratio(X)	0.51	0.00	0.55	0.41	0.00	0.61	0.78	0.82	0.82	0.98	0.47	0.13
Avail Cap(c_a), veh/h	212	0	188	493	0	734	234	564	581	314	2066	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	31.6	24.2	0.0	17.2	34.6	25.0	25.1	31.3	17.9	17.0
Incr Delay (d2), s/veh	0.8	0.0	1.7	0.2	0.0	0.8	3.9	10.4	10.1	44.2	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.1	3.1	0.0	6.8	2.2	10.1	10.4	10.3	5.2	1.1
LnGrp Delay(d),s/veh	32.3	0.0	33.4	24.4	0.0	18.0	38.5	35.4	35.2	75.5	18.3	17.2
LnGrp LOS	C		C	C		B	D	D	D	E	B	B
Approach Vol, veh/h	208				590				991		1361	
Approach Delay, s/veh	32.8				19.9				35.6		31.1	
Approach LOS	C				B				D		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	12.9		9.5	31.7	21.9		16.0	25.1				
Change Period (Y+Rc), s	4.0		4.0	5.3	4.0		4.0	5.3				
Max Green Setting (Gmax), s	9.0		10.0	23.0	20.7		12.0	21.0				
Max Q Clear Time (g_c+I1), s	6.6		6.2	12.3	17.3		14.6	18.9				
Green Ext Time (p_c), s	0.1		0.0	9.7	0.6		0.0	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			30.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
184: Sunrise Ave/Sunrise & Oak Ridge Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	4	68	872	4	230	913		
Future Volume (veh/h)	4	68	872	4	230	913		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	4	72	918	4	242	961		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	248	221	1612	7	339	2524		
Arrive On Green	0.14	0.14	0.45	0.45	0.19	0.71		
Sat Flow, veh/h	1774	1583	3707	16	1774	3632		
Grp Volume(v), veh/h	4	72	450	472	242	961		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1860	1774	1770		
Q Serve(g_s), s	0.1	1.6	7.4	7.4	5.0	4.2		
Cycle Q Clear(g_c), s	0.1	1.6	7.4	7.4	5.0	4.2		
Prop In Lane	1.00	1.00		0.01	1.00			
Lane Grp Cap(c), veh/h	248	221	789	830	339	2524		
V/C Ratio(X)	0.02	0.33	0.57	0.57	0.71	0.38		
Avail Cap(c_a), veh/h	952	850	986	1036	359	3029		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.6	15.3	8.1	8.1	15.0	2.2		
Incr Delay (d2), s/veh	0.0	0.8	0.6	0.6	6.2	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	1.5	3.8	3.9	3.0	2.0		
LnGrp Delay(d),s/veh	14.7	16.1	8.8	8.7	21.1	2.3		
LnGrp LOS	B	B	A	A	C	A		
Approach Vol, veh/h	76		922			1203		
Approach Delay, s/veh	16.1		8.8			6.1		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				31.0		8.5	10.6	20.4
Change Period (Y+Rc), s				* 4.8		4.0	4.0	* 4.8
Max Green Setting (Gmax), s				* 32		20.2	7.0	* 20
Max Q Clear Time (g_c+I1), s				6.2		3.6	7.0	9.4
Green Ext Time (p_c), s				9.9		0.2	0.0	6.2
Intersection Summary								
HCM 2010 Ctrl Delay			7.6					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
185: Sunrise Ave & Frances Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	24	0	23	0	1395	28	32	1627	0
Future Volume (veh/h)	0	0	0	24	0	23	0	1395	28	32	1627	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	0	0	0	25	0	24	0	1468	29	34	1713	0
Adj No. of Lanes	0	1	1	1	0	1	0	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	0	4	3	79	0	0	0	2576	51	78	2945	0
Arrive On Green	0.00	0.00	0.00	0.04	0.00	0.02	0.00	0.73	0.70	0.04	0.83	0.00
Sat Flow, veh/h	0	-74510	1583	1774	25		0	3643	70	1774	3632	0
Grp Volume(v), veh/h	0	0	0	25	23.0		0	731	766	34	1713	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	C		0	1770	1850	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	0.7			0.0	9.2	9.3	0.9	7.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.7			0.0	9.2	9.3	0.9	7.5	0.0
Prop In Lane	0.00		1.00	1.00			0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	0	4	3	79			0	1284	1343	78	2945	0
V/C Ratio(X)	0.00	0.00	0.00	0.32			0.00	0.57	0.57	0.44	0.58	0.00
Avail Cap(c_a), veh/h	0	935	795	185			0	1284	1343	148	3042	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00			0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	22.1			0.0	3.1	3.1	22.3	1.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8			0.0	1.2	1.2	1.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.3			0.0	4.7	4.9	0.5	3.5	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	23.0			0.0	4.3	4.2	23.7	1.8	0.0
LnGrp LOS				C				A	A	C	A	
Approach Vol, veh/h		0						1497			1747	
Approach Delay, s/veh		0.0						4.3			2.2	
Approach LOS								A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6						
Phs Duration (G+Y+Rc), s	5.1	37.6	5.1	0.0		42.7						
Change Period (Y+Rc), s	4.0	4.9	4.0	4.0		4.9						
Max Green Setting (Gmax), s	3.0	32.1	4.0	24.0		39.1						
Max Q Clear Time (g_c+I1), s	2.9	11.3	2.7	0.0		9.5						
Green Ext Time (p_c), s	0.0	20.4	0.0	0.0		28.3						
Intersection Summary												
HCM 2010 Ctrl Delay			3.3									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

186: Sunrise Ave & Coloma Way

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	9	54	62	18	64	34	1653	42	27	1796	36
Future Volume (veh/h)	63	9	54	62	18	64	34	1653	42	27	1796	36
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	66	9	57	65	19	67	36	1740	44	28	1891	38
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	181	154	194	39	136	102	2136	54	89	2124	43
Arrive On Green	0.10	0.10	0.10	0.11	0.11	0.11	0.06	0.61	0.59	0.05	0.60	0.59
Sat Flow, veh/h	1774	1863	1583	1774	354	1247	1774	3527	89	1774	3548	71
Grp Volume(v), veh/h	66	9	57	65	0	86	36	870	914	28	940	989
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1601	1774	1770	1846	1774	1770	1849
Q Serve(g_s), s	3.1	0.4	3.0	3.0	0.0	4.5	1.7	34.2	34.6	1.4	40.7	41.3
Cycle Q Clear(g_c), s	3.1	0.4	3.0	3.0	0.0	4.5	1.7	34.2	34.6	1.4	40.7	41.3
Prop In Lane	1.00		1.00	1.00		0.78	1.00		0.05	1.00		0.04
Lane Grp Cap(c), veh/h	172	181	154	194	0	175	102	1072	1118	89	1059	1107
V/C Ratio(X)	0.38	0.05	0.37	0.34	0.00	0.49	0.35	0.81	0.82	0.31	0.89	0.89
Avail Cap(c_a), veh/h	178	187	159	337	0	304	159	1072	1118	159	1069	1118
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	36.7	37.8	36.9	0.0	37.5	40.6	13.7	13.8	41.0	15.4	15.5
Incr Delay (d2), s/veh	1.2	0.1	1.3	0.9	0.0	1.8	0.8	5.1	5.1	0.7	9.4	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.2	1.4	1.5	0.0	2.1	0.9	18.0	18.9	0.7	22.3	23.8
LnGrp Delay(d),s/veh	39.1	36.8	39.1	37.7	0.0	39.3	41.4	18.8	18.9	41.7	24.7	25.0
LnGrp LOS	D	D	D	D		D	D	B	B	D	C	C
Approach Vol, veh/h	132				151				1820			
Approach Delay, s/veh	38.9				38.6				19.3			
Approach LOS	D				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	56.9		12.8	7.5	57.5		11.7				
Change Period (Y+Rc), s	4.0	* 5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	7.0	* 52		16.0	7.0	51.7		8.0				
Max Q Clear Time (g_c+I1), s	3.7	43.3		6.5	3.4	36.6		5.1				
Green Ext Time (p_c), s	0.0	8.3		0.4	0.0	15.0		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

187: Sunrise Ave & Sun Tree Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	26	10	105	31	58	5	2169	9	36	2491	73
Future Volume (veh/h)	55	26	10	105	31	58	5	2169	9	36	2491	73
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1937	1900	1900	1937	1900	1863	1827	1900	1863	1828	1900
Adj Flow Rate, veh/h	58	27	11	111	33	61	5	2283	9	38	2622	77
Adj No. of Lanes	0	1	0	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	4	2	4	4
Cap, veh/h	78	36	15	133	39	73	37	2861	11	61	2791	81
Arrive On Green	0.07	0.07	0.07	0.14	0.14	0.14	0.02	0.56	0.55	0.03	0.56	0.56
Sat Flow, veh/h	1113	518	211	970	288	533	1774	5128	20	1774	4983	145
Grp Volume(v), veh/h	96	0	0	205	0	0	5	1480	812	38	1744	955
Grp Sat Flow(s),veh/h/ln	1842	0	0	1792	0	0	1774	1663	1823	1774	1663	1802
Q Serve(g_s), s	7.7	0.0	0.0	16.7	0.0	0.0	0.4	53.2	53.2	3.2	72.8	74.4
Cycle Q Clear(g_c), s	7.7	0.0	0.0	16.7	0.0	0.0	0.4	53.2	53.2	3.2	72.8	74.4
Prop In Lane	0.60		0.11	0.54		0.30	1.00		0.01	1.00		0.08
Lane Grp Cap(c), veh/h	129	0	0	245	0	0	37	1855	1017	61	1863	1009
V/C Ratio(X)	0.74	0.00	0.00	0.84	0.00	0.00	0.14	0.80	0.80	0.63	0.94	0.95
Avail Cap(c_a), veh/h	160	0	0	334	0	0	154	1862	1021	154	1863	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.58	0.58	0.58	0.43	0.43	0.43
Uniform Delay (d), s/veh	68.4	0.0	0.0	63.1	0.0	0.0	72.1	26.4	26.4	71.5	30.5	30.9
Incr Delay (d2), s/veh	9.8	0.0	0.0	9.5	0.0	0.0	0.4	1.5	2.8	1.7	5.2	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	9.0	0.0	0.0	0.2	24.7	27.4	1.6	34.5	39.6
LnGrp Delay(d),s/veh	78.2	0.0	0.0	72.6	0.0	0.0	72.5	28.0	29.2	73.2	35.7	40.6
LnGrp LOS	E			E			E	C	C	E	D	D
Approach Vol, veh/h	96			205			2297			2737		
Approach Delay, s/veh	78.2			72.6			28.5			37.9		
Approach LOS	E			E			C			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	23.5		8.1	86.7	13.5		7.8	87.0				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		5.7	* 5.7				
Max Green Setting (Gmax), s	27.0		12.0	81.3	12.0		12.0	* 81				
Max Q Clear Time (g_c+I1), s	18.7		5.2	55.2	9.7		2.4	76.4				
Green Ext Time (p_c), s	0.5		0.0	21.8	0.1		8.8	4.8				
Intersection Summary												
HCM 2010 Ctrl Delay	35.9											
HCM 2010 LOS	D											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
188: Sunrise Ave & Kensington Dr/Sandringham Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations									  		  	
Traffic Volume (veh/h)	36	0	178	383	0	8	46	2181	43	1	2463	160
Future Volume (veh/h)	36	0	178	383	0	8	46	2181	43	1	2463	160
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	38	0	187	403	0	8	48	2296	45	1	2593	168
Adj No. of Lanes	1	0	1	1	0	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	382	0	0	382	0	0	70	3715	73	21	3369	214
Arrive On Green	0.22	0.00	0.01	0.22	0.00	0.01	0.04	0.72	0.72	0.01	0.69	0.69
Sat Flow, veh/h	1774	38		1774	403		1774	5132	100	1774	4879	310
Grp Volume(v), veh/h	38	58.6		403	134.7		48	1515	826	1	1786	975
Grp Sat Flow(s),veh/h/ln	1774	E		1774	F		1774	1695	1842	1774	1695	1799
Q Serve(g_s), s	3.2			40.0			5.0	41.5	41.8	0.1	64.1	68.1
Cycle Q Clear(g_c), s	3.2			40.0			5.0	41.5	41.8	0.1	64.1	68.1
Prop In Lane	1.00			1.00			1.00		0.05	1.00		0.17
Lane Grp Cap(c), veh/h	382			382			70	2454	1334	21	2341	1242
V/C Ratio(X)	0.10			1.06			0.68	0.62	0.62	0.05	0.76	0.78
Avail Cap(c_a), veh/h	382			382			76	2454	1334	48	2341	1242
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	58.6			73.0			88.1	12.8	12.9	90.9	18.8	19.5
Incr Delay (d2), s/veh	0.0			61.7			15.7	1.2	2.2	0.2	0.9	2.0
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6			26.1			2.7	19.8	21.9	0.1	30.1	34.3
LnGrp Delay(d),s/veh	58.6			134.7			103.8	14.0	15.0	91.1	19.7	21.5
LnGrp LOS	E			F			F	B	B	F	B	C
Approach Vol, veh/h									2389			
Approach Delay, s/veh									16.2			
Approach LOS									B	C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1		3	4	5		7	8				
Phs Duration (G+Y+Rc), s	43.0		4.2	138.8	43.0		10.4	132.6				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	39.0		3.0	87.3	39.0		7.0	83.3				
Max Q Clear Time (g_c+I1), s	5.2		2.1	43.8	42.0		7.0	70.1				
Green Ext Time (p_c), s	0.1		0.0	42.8	0.0		0.0	12.2				
Intersection Summary												
HCM 2010 Ctrl Delay	27.1											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
189: Rocky Ridge Dr & Stone Point Dr

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	2	312	343	52	210	30		
Future Volume (veh/h)	2	312	343	52	210	30		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2	328	361	55	221	32		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	62	1785	1304	583	367	328		
Arrive On Green	0.04	0.50	0.37	0.37	0.21	0.21		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	2	328	361	55	221	32		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.0	1.5	2.1	0.7	3.4	0.5		
Cycle Q Clear(g_c), s	0.0	1.5	2.1	0.7	3.4	0.5		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	62	1785	1304	583	367	328		
V/C Ratio(X)	0.03	0.18	0.28	0.09	0.60	0.10		
Avail Cap(c_a), veh/h	1012	5381	3005	1345	1554	1387		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.9	4.0	6.6	6.2	10.7	9.6		
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.1	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.7	1.0	0.3	1.7	0.5		
LnGrp Delay(d),s/veh	14.0	4.1	6.8	6.3	11.3	9.6		
LnGrp LOS	B	A	A	A	B	A		
Approach Vol, veh/h		330	416		253			
Approach Delay, s/veh		4.2	6.7		11.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				19.7		10.1	4.0	15.7
Change Period (Y+Rc), s				5.7		4.9	4.0	5.7
Max Green Setting (Gmax), s				44.3		25.1	16.0	24.3
Max Q Clear Time (g_c+I1), s				3.5		5.4	2.0	4.1
Green Ext Time (p_c), s				7.1		0.5	0.0	5.8
Intersection Summary								
HCM 2010 Ctrl Delay			7.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

190: Rocky Ridge Dr & Lead Hill Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	386	495	163	331	129	403	523	172	40	500	74
Future Volume (veh/h)	45	386	495	163	331	129	403	523	172	40	500	74
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	47	406	0	172	348	0	424	551	0	42	526	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	764	307	206	956	393	477	1578	679	118	1240	0
Arrive On Green	0.06	0.22	0.00	0.12	0.27	0.00	0.27	0.45	0.00	0.07	0.24	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	5253	0
Grp Volume(v), veh/h	47	406	0	172	348	0	424	551	0	42	526	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1695	0
Q Serve(g_s), s	2.0	7.9	0.0	7.3	6.2	0.0	17.8	7.9	0.0	1.8	6.8	0.0
Cycle Q Clear(g_c), s	2.0	7.9	0.0	7.3	6.2	0.0	17.8	7.9	0.0	1.8	6.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	110	764	307	206	956	393	477	1578	679	118	1240	0
V/C Ratio(X)	0.43	0.53	0.00	0.83	0.36	0.00	0.89	0.35	0.00	0.35	0.42	0.00
Avail Cap(c_a), veh/h	160	1038	430	206	1148	479	481	1752	757	183	1663	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.0	26.9	0.0	33.5	22.9	0.0	27.2	14.1	0.0	34.5	24.7	0.0
Incr Delay (d2), s/veh	1.0	0.9	0.0	23.2	0.5	0.0	17.5	0.3	0.0	0.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.9	0.0	4.9	3.1	0.0	11.0	3.9	0.0	0.9	3.2	0.0
LnGrp Delay(d),s/veh	35.9	27.8	0.0	56.6	23.3	0.0	44.7	14.3	0.0	35.2	25.1	0.0
LnGrp LOS	D	C		E	C		D	B		D	C	
Approach Vol, veh/h		453			520			975			568	
Approach Delay, s/veh		28.6			34.3			27.5			25.9	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	19.7	23.8	21.9	7.8	23.9	8.2	37.5				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.3	4.0	* 5.7	4.0	5.3				
Max Green Setting (Gmax), s	8.0	20.0	20.0	23.0	6.0	* 22	7.0	36.0				
Max Q Clear Time (g_c+I1), s	9.3	9.9	19.8	8.8	4.0	8.2	3.8	9.9				
Green Ext Time (p_c), s	0.0	4.2	0.0	7.8	0.0	5.1	0.0	11.1				

Intersection Summary

HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

191: Rocky Ridge Dr & Professional Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	26	102	162	33	128	46	855	25	68	1375	34
Future Volume (veh/h)	7	26	102	162	33	128	46	855	25	68	1375	34
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	7	27	107	171	35	0	48	900	26	72	1447	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	355	346	334	46	346	115	1963	57	120	1888	0
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.00	0.06	0.56	0.53	0.07	0.53	0.00
Sat Flow, veh/h	200	1624	1583	1026	210	1583	1774	3513	101	1774	3632	0
Grp Volume(v), veh/h	34	0	107	206	0	0	48	453	473	72	1447	0
Grp Sat Flow(s),veh/h/ln	1824	0	1583	1236	0	1583	1774	1770	1845	1774	1770	0
Q Serve(g_s), s	0.0	0.0	3.4	8.8	0.0	0.0	1.6	9.1	9.1	2.4	19.4	0.0
Cycle Q Clear(g_c), s	0.9	0.0	3.4	9.7	0.0	0.0	1.6	9.1	9.1	2.4	19.4	0.0
Prop In Lane	0.21		1.00	0.83		1.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	471	0	346	380	0	346	115	989	1031	120	1888	0
V/C Ratio(X)	0.07	0.00	0.31	0.54	0.00	0.00	0.42	0.46	0.46	0.60	0.77	0.00
Avail Cap(c_a), veh/h	517	0	388	415	0	388	118	989	1031	177	1888	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.7	0.0	19.6	22.5	0.0	0.0	27.0	7.8	7.9	27.2	11.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.9	0.0	0.0	0.9	0.4	0.4	1.8	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.5	3.3	0.0	0.0	0.8	4.5	4.7	1.2	10.0	0.0
LnGrp Delay(d),s/veh	18.7	0.0	20.0	23.4	0.0	0.0	27.9	8.3	8.3	29.0	14.1	0.0
LnGrp LOS	B		C	C			C	A	A	C	B	
Approach Vol, veh/h	141				206				974			
Approach Delay, s/veh	19.7				23.4				9.3			
Approach LOS	B				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.4	8.6	35.0		16.4	7.1	36.5				
Change Period (Y+Rc), s		4.9	5.7	* 5.7		4.9	4.0	5.7				
Max Green Setting (Gmax), s		13.1	3.0	* 29		13.1	5.0	27.3				
Max Q Clear Time (g_c+I1), s		5.4	3.6	21.4		11.7	4.4	11.1				
Green Ext Time (p_c), s		0.9	0.0	6.0		0.2	0.0	6.4				
Intersection Summary												
HCM 2010 Ctrl Delay	13.8											
HCM 2010 LOS	B											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
192: Rocky Ridge Dr & Meadowlark Way/Maidu Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	2	1	53	5	55	1	915	27	95	1558	6
Future Volume (veh/h)	7	2	1	53	5	55	1	915	27	95	1558	6
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	7	2	1	56	5	58	1	963	28	100	1640	6
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	12	405	77	4	405	45	1986	58	146	2182	8
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.03	0.57	0.54	0.08	0.60	0.58
Sat Flow, veh/h	0	46	1583	0	14	1583	1774	3512	102	1774	3617	13
Grp Volume(v), veh/h	9	0	1	61	0	58	1	485	506	100	802	844
Grp Sat Flow(s),veh/h/ln	46	0	1583	15	0	1583	1774	1770	1845	1774	1770	1860
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.5	0.0	14.8	14.8	4.9	29.6	29.6
Cycle Q Clear(g_c), s	23.0	0.0	0.0	23.0	0.0	2.5	0.0	14.8	14.8	4.9	29.6	29.6
Prop In Lane	0.78		1.00	0.92		1.00	1.00		0.06	1.00		0.01
Lane Grp Cap(c), veh/h	83	0	405	80	0	405	45	1001	1043	146	1068	1122
V/C Ratio(X)	0.11	0.00	0.00	0.76	0.00	0.14	0.02	0.48	0.48	0.68	0.75	0.75
Avail Cap(c_a), veh/h	83	0	405	80	0	405	79	1001	1043	217	1068	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	25.0	43.6	0.0	25.9	42.8	11.7	11.7	40.2	13.0	13.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	33.4	0.0	0.2	0.1	0.5	0.5	5.6	4.9	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.3	0.0	1.1	0.0	7.3	7.6	2.6	15.7	16.5
LnGrp Delay(d),s/veh	28.4	0.0	25.0	77.0	0.0	26.0	42.8	12.2	12.2	45.7	17.8	17.6
LnGrp LOS	C		C	E		C	D	B	B	D	B	B
Approach Vol, veh/h	10			119			992			1746		
Approach Delay, s/veh	28.1			52.2			12.3			19.3		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.0	57.0	26.0		10.4	53.6	26.0					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	* 51	22.0		10.0	44.3	22.0					
Max Q Clear Time (g_c+I1), s	2.0	31.6	25.0		6.9	16.8	25.0					
Green Ext Time (p_c), s	0.0	15.2	0.0		0.1	10.6	0.0					

Intersection Summary

HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
193: Rocky Ridge Dr & McLaren Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	4	101	881	49	126	1489		
Future Volume (veh/h)	4	101	881	49	126	1489		
Number	7	14	6	16	5	2		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	4	106	927	52	133	1567		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	168	150	1214	68	769	2980		
Arrive On Green	0.09	0.09	0.36	0.33	0.87	1.00		
Sat Flow, veh/h	1774	1583	3501	191	1774	3632		
Grp Volume(v), veh/h	4	106	481	498	133	1567		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1829	1774	1770		
Q Serve(g_s), s	0.2	5.8	21.6	21.7	1.1	0.0		
Cycle Q Clear(g_c), s	0.2	5.8	21.6	21.7	1.1	0.0		
Prop In Lane	1.00	1.00		0.10	1.00			
Lane Grp Cap(c), veh/h	168	150	631	652	769	2980		
V/C Ratio(X)	0.02	0.71	0.76	0.76	0.17	0.53		
Avail Cap(c_a), veh/h	434	387	871	900	769	2980		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.78	0.78		
Uniform Delay (d), s/veh	37.0	39.5	25.6	25.7	3.5	0.0		
Incr Delay (d2), s/veh	0.0	2.3	3.1	3.0	0.0	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	5.1	11.1	11.5	0.4	0.2		
LnGrp Delay(d),s/veh	37.0	41.8	28.7	28.7	3.5	0.5		
LnGrp LOS	D	D	C	C	A	A		
Approach Vol, veh/h	110		979			1700		
Approach Delay, s/veh	41.6		28.7			0.8		
Approach LOS	D		C			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		78.5		11.5	43.7	34.8		
Change Period (Y+Rc), s		5.7		4.0	5.7	* 5.7		
Max Green Setting (Gmax), s		59.3		21.0	14.0	* 41		
Max Q Clear Time (g_c+l1), s		2.0		7.8	3.1	23.7		
Green Ext Time (p_c), s		17.9		0.2	7.5	5.4		
Intersection Summary								
HCM 2010 Ctrl Delay			12.2					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
194: Sierra College & Secret Ravine Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	0	228	2	0	2	248	756	4	0	911	140
Future Volume (veh/h)	275	0	228	2	0	2	248	756	4	0	911	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1900	1863	1900	1748	1799	1816	1909	1837	1891
Adj Flow Rate, veh/h	289	0	240	2	0	2	261	796	4	0	959	147
Adj No. of Lanes	2	1	0	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	6	3	2	2	6	3
Cap, veh/h	839	0	379	21	0	21	233	1987	897	3	1379	635
Arrive On Green	0.25	0.00	0.25	0.03	0.00	0.03	0.14	0.58	0.58	0.00	0.40	0.40
Sat Flow, veh/h	3408	0	1542	837	0	837	1664	3417	1544	1818	3491	1607
Grp Volume(v), veh/h	289	0	240	4	0	0	261	796	4	0	959	147
Grp Sat Flow(s),veh/h/ln	1704	0	1542	1673	0	0	1664	1709	1544	1818	1745	1607
Q Serve(g_s), s	4.5	0.0	9.0	0.2	0.0	0.0	9.0	8.2	0.1	0.0	14.8	3.9
Cycle Q Clear(g_c), s	4.5	0.0	9.0	0.2	0.0	0.0	9.0	8.2	0.1	0.0	14.8	3.9
Prop In Lane	1.00		1.00	0.50		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	839	0	379	42	0	0	233	1987	897	3	1379	635
V/C Ratio(X)	0.34	0.00	0.63	0.09	0.00	0.00	1.12	0.40	0.00	0.00	0.70	0.23
Avail Cap(c_a), veh/h	1190	0	539	260	0	0	233	1987	897	254	1680	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	21.7	30.7	0.0	0.0	27.7	7.4	5.7	0.0	16.3	13.0
Incr Delay (d2), s/veh	0.4	0.0	2.6	0.4	0.0	0.0	95.9	0.2	0.0	0.0	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	4.1	0.1	0.0	0.0	10.3	3.8	0.0	0.0	7.3	1.8
LnGrp Delay(d),s/veh	20.4	0.0	24.2	31.0	0.0	0.0	123.6	7.6	5.7	0.0	17.5	13.3
LnGrp LOS	C		C	C			F	A	A		B	B
Approach Vol, veh/h	529				4			1061			1106	
Approach Delay, s/veh	22.1				31.0			36.1			17.0	
Approach LOS	C				C			D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	40.4		19.3	12.0	28.4		4.6				
Change Period (Y+Rc), s	4.0	6.4		6.0	4.0	6.4		4.0				
Max Green Setting (Gmax), s	8.0	27.6		20.0	8.0	27.6		9.0				
Max Q Clear Time (g_c+I1), s	0.0	10.2		11.0	11.0	16.8		2.2				
Green Ext Time (p_c), s	0.0	13.6		2.4	0.0	5.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			25.5									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
195: Sierra College Blvd & Miners Ravine Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	0	53	1	0	6	119	996	1	1	1081	59
Future Volume (veh/h)	26	0	53	1	0	6	119	996	1	1	1081	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	0	56	1	0	6	125	1048	1	1	1138	62
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	0	232	33	0	29	192	1919	830	3	1605	718
Arrive On Green	0.15	0.00	0.15	0.02	0.00	0.02	0.11	0.54	0.52	0.00	0.45	0.45
Sat Flow, veh/h	1774	0	1583	1774	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	27	0	56	1	0	6	125	1048	1	1	1138	62
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	1.8	0.0	0.0	0.2	3.8	10.8	0.0	0.0	14.6	1.3
Cycle Q Clear(g_c), s	0.7	0.0	1.8	0.0	0.0	0.2	3.8	10.8	0.0	0.0	14.6	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	0	232	33	0	29	192	1919	830	3	1605	718
V/C Ratio(X)	0.12	0.00	0.24	0.03	0.00	0.21	0.65	0.55	0.00	0.32	0.71	0.09
Avail Cap(c_a), veh/h	378	0	365	945	0	843	409	1919	830	378	1797	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	21.3	27.2	0.0	27.2	24.1	8.4	6.4	28.1	12.4	8.8
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.1	0.0	1.3	1.4	0.5	0.0	20.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.8	0.0	0.0	0.1	1.9	5.4	0.0	0.0	7.3	0.6
LnGrp Delay(d),s/veh	21.3	0.0	21.5	27.3	0.0	28.5	25.5	8.8	6.4	48.1	13.8	8.8
LnGrp LOS	C		C	C		C	C	A	A	D	B	A
Approach Vol, veh/h	83				7		1174				1201	
Approach Delay, s/veh	21.4				28.3		10.6				13.6	
Approach LOS	C				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4			6	7	8			
Phs Duration (G+Y+Rc), s	11.3		9.1	30.9			5.0	4.1	35.9			
Change Period (Y+Rc), s	4.0		4.0	6.4			4.0	4.0	6.4			
Max Green Setting (Gmax), s	12.0		12.0	27.6			30.0	12.0	27.6			
Max Q Clear Time (g_c+I1), s	3.8		5.8	16.6			2.2	2.0	12.8			
Green Ext Time (p_c), s	0.1		0.1	7.9			0.0	0.0	12.5			
Intersection Summary												
HCM 2010 Ctrl Delay			12.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
196: Sierra College Blvd & Olympus Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	1	486	7	1	5	296	1008	10	4	1047	75
Future Volume (veh/h)	108	1	486	7	1	5	296	1008	10	4	1047	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	115	0	512	8	0	5	312	1061	11	4	1102	79
Adj No. of Lanes	2	0	1	2	1	0	1	2	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1005	0	448	144	0	64	243	1721	770	33	1871	583
Arrive On Green	0.28	0.00	0.28	0.04	0.00	0.04	0.14	0.49	0.49	0.02	0.37	0.37
Sat Flow, veh/h	3548	0	1583	3548	0	1583	1774	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	115	0	512	8	0	5	312	1061	11	4	1102	79
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	1.9	0.0	22.7	0.2	0.0	0.2	11.0	17.6	0.3	0.2	14.0	2.7
Cycle Q Clear(g_c), s	1.9	0.0	22.7	0.2	0.0	0.2	11.0	17.6	0.3	0.2	14.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1005	0	448	144	0	64	243	1721	770	33	1871	583
V/C Ratio(X)	0.11	0.00	1.14	0.06	0.00	0.08	1.28	0.62	0.01	0.12	0.59	0.14
Avail Cap(c_a), veh/h	1005	0	448	443	0	198	243	1721	770	155	2068	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	28.7	37.0	0.0	37.0	34.6	15.1	10.6	38.7	20.4	16.9
Incr Delay (d2), s/veh	0.1	0.0	87.4	0.3	0.0	0.8	154.3	0.9	0.0	0.6	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	20.8	0.1	0.0	0.1	15.8	8.8	0.1	0.1	6.6	1.2
LnGrp Delay(d),s/veh	21.4	0.0	116.1	37.2	0.0	37.8	188.9	16.0	10.7	39.3	21.0	17.0
LnGrp LOS	C		F	D		D	F	B	B	D	C	B
Approach Vol, veh/h	627					13		1384		1185		
Approach Delay, s/veh	98.7					37.4		55.0		20.8		
Approach LOS	F					D		D		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.5	42.0	25.7		14.0	32.5	8.0					
Change Period (Y+Rc), s	4.0	* 6.4	5.7		4.0	6.4	5.7					
Max Green Setting (Gmax), s	6.0	* 34	20.0		10.0	29.2	9.0					
Max Q Clear Time (g_c+I1), s	2.2	19.6	24.7		13.0	16.0	2.2					
Green Ext Time (p_c), s	0.0	12.6	0.0		0.0	10.1	0.0					

Intersection Summary

HCM 2010 Ctrl Delay 50.8
HCM 2010 LOS D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
197: Sierra College Glvd/Sierra College Blvd & Indigo Creek Apts Dwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	4	282	110	5	65	146	1368	44	95	1539	182
Future Volume (veh/h)	256	4	282	110	5	65	146	1368	44	95	1539	182
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	272	0	297	116	5	68	154	1440	46	100	1620	192
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	650	0	290	170	7	158	195	2417	77	237	2377	281
Arrive On Green	0.18	0.00	0.18	0.10	0.10	0.10	0.11	0.48	0.46	0.13	0.52	0.52
Sat Flow, veh/h	3548	0	1583	1704	73	1583	1774	5063	162	1774	4611	545
Grp Volume(v), veh/h	272	0	297	121	0	68	154	964	522	100	1190	622
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1778	0	1583	1774	1695	1834	1774	1695	1767
Q Serve(g_s), s	8.1	0.0	22.0	7.9	0.0	4.8	10.2	24.9	25.0	6.2	31.4	31.6
Cycle Q Clear(g_c), s	8.1	0.0	22.0	7.9	0.0	4.8	10.2	24.9	25.0	6.2	31.4	31.6
Prop In Lane	1.00		1.00	0.96		1.00	1.00		0.09	1.00		0.31
Lane Grp Cap(c), veh/h	650	0	290	177	0	158	195	1619	876	237	1748	911
V/C Ratio(X)	0.42	0.00	1.02	0.68	0.00	0.43	0.79	0.60	0.60	0.42	0.68	0.68
Avail Cap(c_a), veh/h	650	0	290	237	0	211	266	1619	876	237	1748	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	49.0	52.2	0.0	50.8	52.1	22.9	23.0	47.7	21.7	21.7
Incr Delay (d2), s/veh	0.2	0.0	58.9	2.1	0.0	0.7	7.3	1.6	3.0	0.4	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	14.3	4.0	0.0	2.1	5.4	12.0	13.3	3.1	15.1	16.1
LnGrp Delay(d),s/veh	43.5	0.0	108.0	54.3	0.0	51.5	59.4	24.5	25.9	48.2	23.2	24.7
LnGrp LOS	D		F	D		D	E	C	C	D	C	C
Approach Vol, veh/h	569				189				1640			
Approach Delay, s/veh	77.1				53.3				28.2			
Approach LOS	E				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	60.0		25.0	16.2	63.9		15.0				
Change Period (Y+Rc), s	5.0	* 5.7		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	12.0	* 54		21.0	17.0	50.0		15.0				
Max Q Clear Time (g_c+I1), s	8.2	27.0		24.0	12.2	33.6		9.9				
Green Ext Time (p_c), s	0.2	19.6		0.0	0.1	14.5		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	34.4											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
198: Sierra College Blvd & Old Auburn Rd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	105	84	24	91	37	254	1429	23	61	2051	393
Future Volume (veh/h)	331	105	84	24	91	37	254	1429	23	61	2051	393
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	348	111	88	25	96	39	267	1504	24	64	2159	414
Adj No. of Lanes	2	1	0	0	2	0	2	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	444	260	206	0	262	101	348	2627	818	217	2820	878
Arrive On Green	0.13	0.27	0.27	0.00	0.10	0.10	0.10	0.52	0.52	0.12	0.55	0.55
Sat Flow, veh/h	3548	964	764	0	2497	965	3442	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	348	0	199	0	67	68	267	1504	24	64	2159	414
Grp Sat Flow(s),veh/h/ln	1774	0	1728	0	1770	1692	1721	1695	1583	1774	1695	1583
Q Serve(g_s), s	11.4	0.0	11.4	0.0	4.2	4.5	9.1	24.4	0.8	3.9	39.4	8.8
Cycle Q Clear(g_c), s	11.4	0.0	11.4	0.0	4.2	4.5	9.1	24.4	0.8	3.9	39.4	8.8
Prop In Lane	1.00		0.44	0.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	444	0	465	0	186	178	348	2627	818	217	2820	878
V/C Ratio(X)	0.78	0.00	0.43	0.00	0.36	0.39	0.77	0.57	0.03	0.29	0.77	0.47
Avail Cap(c_a), veh/h	562	0	465	0	251	240	373	2627	818	217	2820	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	36.2	0.0	50.0	50.1	52.6	19.9	10.2	47.9	20.7	3.4
Incr Delay (d2), s/veh	4.2	0.0	1.0	0.0	1.8	2.2	7.6	0.9	0.1	0.3	1.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	5.5	0.0	2.1	2.2	4.7	11.5	0.3	2.0	18.8	3.9
LnGrp Delay(d),s/veh	55.1	0.0	37.2	0.0	51.8	52.3	60.1	20.8	10.2	48.2	22.2	4.2
LnGrp LOS	E		D		D	D	E	C	B	D	C	A
Approach Vol, veh/h	547					135		1795			2637	
Approach Delay, s/veh	48.6					52.0		26.5			20.0	
Approach LOS	D					D		C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.7	65.0	0.0	35.3	15.1	69.5	19.7	15.6				
Change Period (Y+Rc), s	6.0	* 6	4.0	5.7	4.0	6.0	5.7	* 5.7				
Max Green Setting (Gmax), s	9.0	* 59	10.0	22.3	12.0	56.0	18.0	* 14				
Max Q Clear Time (g_c+I1), s	5.9	26.4	0.0	13.4	11.1	41.4	13.4	6.5				
Green Ext Time (p_c), s	1.2	16.8	0.0	1.5	0.1	13.4	0.6	0.4				

Intersection Summary

HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
199: Europa St & Olympus Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	543	17	14	260	8	14	2	15	7	0	5
Future Volume (veh/h)	6	543	17	14	260	8	14	2	15	7	0	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	572	18	15	274	8	15	2	16	7	0	5
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	1553	49	94	1594	46	71	9	75	57	0	41
Arrive On Green	0.04	0.44	0.39	0.05	0.45	0.40	0.09	0.09	0.09	0.06	0.00	0.06
Sat Flow, veh/h	1774	3503	110	1774	3512	102	764	102	815	985	0	704
Grp Volume(v), veh/h	6	289	301	15	138	144	33	0	0	12	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1843	1774	1770	1845	1681	0	0	1689	0	0
Q Serve(g_s), s	0.1	3.7	3.7	0.3	1.6	1.6	0.6	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.1	3.7	3.7	0.3	1.6	1.6	0.6	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.06	0.45		0.48	0.58		0.42
Lane Grp Cap(c), veh/h	75	785	817	94	803	837	155	0	0	98	0	0
V/C Ratio(X)	0.08	0.37	0.37	0.16	0.17	0.17	0.21	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	470	1251	1303	366	1147	1195	1337	0	0	498	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.6	6.3	6.3	15.4	5.5	5.5	14.3	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.3	0.2	0.2	0.3	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.9	2.0	0.1	0.8	0.8	0.3	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	15.8	6.8	6.8	15.7	5.7	5.7	14.5	0.0	0.0	15.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h	596					297		33			12	
Approach Delay, s/veh	6.9					6.2		14.5			15.4	
Approach LOS	A					A		B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	5		6	7	8			
Phs Duration (G+Y+Rc), s	6.1		4.8	18.1	5.0		4.4	18.4				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	26.0		6.0	21.3	9.0		8.0	19.3				
Max Q Clear Time (g_c+I1), s	2.6		2.3	5.7	2.2		2.1	3.6				
Green Ext Time (p_c), s	0.1		0.0	6.7	0.0		0.0	6.7				
Intersection Summary												
HCM 2010 Ctrl Delay			7.0									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
200: Scarborough Dr & Secret Ravine Pkwy

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	534	12	39	323	34	4	0	13	12	0	123
Future Volume (veh/h)	156	534	12	39	323	34	4	0	13	12	0	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	164	562	13	41	340	36	4	0	14	13	0	129
Adj No. of Lanes	1	2	1	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	1336	598	121	1073	480	23	0	80	350	0	313
Arrive On Green	0.14	0.38	0.38	0.07	0.30	0.30	0.06	0.00	0.06	0.20	0.00	0.20
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	360	0	1262	1774	0	1583
Grp Volume(v), veh/h	164	562	13	41	340	36	18	0	0	13	0	129
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1622	0	0	1774	0	1583
Q Serve(g_s), s	3.8	5.1	0.2	1.0	3.2	0.7	0.5	0.0	0.0	0.3	0.0	3.1
Cycle Q Clear(g_c), s	3.8	5.1	0.2	1.0	3.2	0.7	0.5	0.0	0.0	0.3	0.0	3.1
Prop In Lane	1.00		1.00	1.00		1.00	0.22		0.78	1.00		1.00
Lane Grp Cap(c), veh/h	253	1336	598	121	1073	480	103	0	0	350	0	313
V/C Ratio(X)	0.65	0.42	0.02	0.34	0.32	0.07	0.17	0.00	0.00	0.04	0.00	0.41
Avail Cap(c_a), veh/h	615	1799	805	533	1635	731	487	0	0	1201	0	1072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	10.0	8.5	19.2	11.6	10.8	19.2	0.0	0.0	14.0	0.0	15.2
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.6	0.2	0.1	0.3	0.0	0.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.5	0.1	0.5	1.6	0.3	0.2	0.0	0.0	0.1	0.0	1.3
LnGrp Delay(d),s/veh	18.6	10.2	8.5	19.9	11.8	10.8	19.5	0.0	0.0	14.1	0.0	15.5
LnGrp LOS	B	B	A	B	B	B	B			B		B
Approach Vol, veh/h	739				417				18		142	
Approach Delay, s/veh	12.0				12.5				19.5		15.4	
Approach LOS	B				B				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.8		5.9	19.3	12.2		9.2	16.1				
Change Period (Y+Rc), s	4.0		4.0	6.0	5.7		4.0	6.0				
Max Green Setting (Gmax), s	12.0		12.0	19.0	27.3		14.0	17.0				
Max Q Clear Time (g_c+I1), s	2.5		3.0	7.1	5.1		5.8	5.2				
Green Ext Time (p_c), s	0.0		0.0	4.9	0.2		0.1	4.9				
Intersection Summary												
HCM 2010 Ctrl Delay	12.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
201: Alexandra Dr & Secret Ravine Pkwy

Cumulative No Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	342	2	50	239	5	53		
Future Volume (veh/h)	342	2	50	239	5	53		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	360	2	53	252	5	56		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	901	403	86	1722	260	232		
Arrive On Green	0.25	0.25	0.05	0.49	0.15	0.15		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	360	2	53	252	5	56		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	2.3	0.0	0.8	1.1	0.1	0.9		
Cycle Q Clear(g_c), s	2.3	0.0	0.8	1.1	0.1	0.9		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	901	403	86	1722	260	232		
V/C Ratio(X)	0.40	0.00	0.62	0.15	0.02	0.24		
Avail Cap(c_a), veh/h	2077	929	716	4154	1171	1045		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.4	7.6	12.7	3.9	10.0	10.3		
Incr Delay (d2), s/veh	0.3	0.0	7.0	0.0	0.0	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.5	0.5	0.0	0.4		
LnGrp Delay(d),s/veh	8.7	7.6	19.7	3.9	10.0	10.8		
LnGrp LOS	A	A	B	A	A	B		
Approach Vol, veh/h	362			305	61			
Approach Delay, s/veh	8.7			6.7	10.8			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	6.3	11.9				18.3
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		18.0	11.0	16.0				32.0
Max Q Clear Time (g_c+I1), s		2.9	2.8	4.3				3.1
Green Ext Time (p_c), s		0.1	0.0	3.1				4.4
Intersection Summary								
HCM 2010 Ctrl Delay			8.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
202: Gibson Dr & Convention Center Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	1100	459	253	588	49	328		
Future Volume (veh/h)	1100	459	253	588	49	328		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1158	220	266	356	52	345		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1443	664	1060	474	68	1482		
Arrive On Green	0.42	0.42	0.30	0.30	0.04	0.42		
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	1158	220	266	356	52	345		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770		
Q Serve(g_s), s	18.2	5.8	3.5	12.5	1.8	3.9		
Cycle Q Clear(g_c), s	18.2	5.8	3.5	12.5	1.8	3.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	1443	664	1060	474	68	1482		
V/C Ratio(X)	0.80	0.33	0.25	0.75	0.77	0.23		
Avail Cap(c_a), veh/h	2175	1001	1434	641	316	2351		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.7	12.1	16.4	19.5	29.4	11.6		
Incr Delay (d2), s/veh	1.3	0.3	0.1	3.4	16.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.8	2.5	1.7	5.9	1.2	1.9		
LnGrp Delay(d),s/veh	17.0	12.4	16.5	22.9	45.7	11.6		
LnGrp LOS	B	B	B	C	D	B		
Approach Vol, veh/h	1378		622			397		
Approach Delay, s/veh	16.3		20.2			16.1		
Approach LOS	B		C			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.4	23.5				30.8		30.9
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	25.0				41.0		39.0
Max Q Clear Time (g_c+I1), s	3.8	14.5				5.9		20.2
Green Ext Time (p_c), s	0.0	3.9				6.1		5.7
Intersection Summary								
HCM 2010 Ctrl Delay			17.3					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
205: Stonecrest Dr & Junction Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	368	6	6	757	686	2	13	5	220	10	56
Future Volume (veh/h)	96	368	6	6	757	686	2	13	5	220	10	56
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	101	387	6	6	797	722	2	14	5	232	11	59
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1789	800	43	1557	697	16	109	106	326	15	304
Arrive On Green	0.09	0.51	0.51	0.02	0.44	0.44	0.07	0.07	0.07	0.19	0.19	0.19
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	231	1620	1583	1697	80	1583
Grp Volume(v), veh/h	101	387	6	6	797	722	16	0	5	243	0	59
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1851	0	1583	1778	0	1583
Q Serve(g_s), s	3.1	3.4	0.1	0.2	9.2	25.0	0.5	0.0	0.2	7.3	0.0	1.8
Cycle Q Clear(g_c), s	3.1	3.4	0.1	0.2	9.2	25.0	0.5	0.0	0.2	7.3	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	0.12		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	159	1789	800	43	1557	697	124	0	106	342	0	304
V/C Ratio(X)	0.64	0.22	0.01	0.14	0.51	1.04	0.13	0.00	0.05	0.71	0.00	0.19
Avail Cap(c_a), veh/h	187	1789	800	156	1557	697	358	0	307	657	0	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	7.8	7.0	27.2	11.5	15.9	24.9	0.0	24.8	21.5	0.0	19.3
Incr Delay (d2), s/veh	3.0	0.1	0.0	0.6	0.3	43.8	0.2	0.0	0.1	1.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.7	0.0	0.1	4.5	19.1	0.2	0.0	0.1	3.7	0.0	0.8
LnGrp Delay(d),s/veh	27.9	7.9	7.0	27.7	11.8	59.8	25.1	0.0	24.9	22.5	0.0	19.4
LnGrp LOS	C	A	A	C	B	F	C		C	C		B
Approach Vol, veh/h	494		1525				21		302			
Approach Delay, s/veh	12.0		34.6				25.0		21.9			
Approach LOS	B		C				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.4	31.7	13.9		8.1	28.0	6.8					
Change Period (Y+Rc), s	4.0	6.0	4.0		4.0	6.0	4.0					
Max Green Setting (Gmax), s	4.0	23.0	20.0		5.0	22.0	10.0					
Max Q Clear Time (g_c+I1), s	2.2	5.4	9.3		5.1	27.0	2.5					
Green Ext Time (p_c), s	0.0	11.2	0.7		0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			28.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

206: Park Regency & Junction Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	562	10	88	1429	61	7	5	43	44	4	20
Future Volume (veh/h)	32	562	10	88	1429	61	7	5	43	44	4	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	34	592	11	93	1504	64	7	5	45	46	4	21
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	1716	768	121	1854	829	13	128	109	64	181	154
Arrive On Green	0.03	0.48	0.48	0.07	0.52	0.52	0.01	0.07	0.07	0.04	0.10	0.10
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	34	592	11	93	1504	64	7	5	45	46	4	21
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	6.0	0.2	3.0	20.5	1.2	0.2	0.1	1.6	1.5	0.1	0.7
Cycle Q Clear(g_c), s	1.1	6.0	0.2	3.0	20.5	1.2	0.2	0.1	1.6	1.5	0.1	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	52	1716	768	121	1854	829	13	128	109	64	181	154
V/C Ratio(X)	0.66	0.35	0.01	0.77	0.81	0.08	0.54	0.04	0.41	0.72	0.02	0.14
Avail Cap(c_a), veh/h	334	1940	868	334	1940	868	334	543	461	334	511	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	9.3	7.8	26.8	11.5	6.9	28.9	25.4	26.1	27.8	23.8	24.1
Incr Delay (d2), s/veh	13.5	0.1	0.0	9.9	2.6	0.0	30.2	0.1	2.5	14.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.9	0.1	1.8	10.5	0.5	0.2	0.1	0.8	1.0	0.1	0.3
LnGrp Delay(d),s/veh	41.5	9.4	7.8	36.7	14.1	6.9	59.0	25.5	28.6	41.9	23.9	24.5
LnGrp LOS	D	A	A	D	B	A	E	C	C	D	C	C
Approach Vol, veh/h	637				1661				57			
Approach Delay, s/veh	11.1				15.1				32.1			
Approach LOS	B				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	9.0	9.0	33.3	5.4	10.7	6.7	35.6				
Change Period (Y+Rc), s	5.0	* 5	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	* 17	11.0	32.0	11.0	16.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	3.5	3.6	5.0	8.0	2.2	2.7	3.1	22.5				
Green Ext Time (p_c), s	0.0	0.1	0.1	17.4	0.0	0.1	0.0	8.0				

Intersection Summary

HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
207: Woodcreek Oaks Blvd & Junction Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	314	27	178	1084	149	36	644	152	186	712	616
Future Volume (veh/h)	393	314	27	178	1084	149	36	644	152	186	712	616
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	331	0	187	1141	0	38	678	0	196	749	0
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	1381	579	369	1291	539	235	887	364	370	1025	426
Arrive On Green	0.13	0.39	0.00	0.11	0.36	0.00	0.07	0.25	0.00	0.11	0.29	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	414	331	0	187	1141	0	38	678	0	196	749	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	9.8	5.2	0.0	4.3	25.1	0.0	0.9	14.7	0.0	4.5	15.8	0.0
Cycle Q Clear(g_c), s	9.8	5.2	0.0	4.3	25.1	0.0	0.9	14.7	0.0	4.5	15.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	456	1381	579	369	1291	539	235	887	364	370	1025	426
V/C Ratio(X)	0.91	0.24	0.00	0.51	0.88	0.00	0.16	0.76	0.00	0.53	0.73	0.00
Avail Cap(c_a), veh/h	456	1381	579	373	1293	540	373	969	401	373	1025	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.5	17.0	0.0	35.0	24.7	0.0	36.4	28.8	0.0	35.0	26.5	0.0
Incr Delay (d2), s/veh	21.2	0.2	0.0	0.4	7.9	0.0	0.1	3.8	0.0	0.7	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	2.6	0.0	2.0	13.6	0.0	0.4	7.6	0.0	2.2	8.1	0.0
LnGrp Delay(d),s/veh	56.7	17.2	0.0	35.4	32.6	0.0	36.5	32.6	0.0	35.7	29.6	0.0
LnGrp LOS	E	B		D	C		D	C		D	C	
Approach Vol, veh/h	745			1328			716			945		
Approach Delay, s/veh	39.1			33.0			32.8			30.9		
Approach LOS	D			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	35.1	8.7	27.3	14.0	33.0	11.9	24.1				
Change Period (Y+Rc), s	4.0	5.7	4.0	* 6	4.0	5.7	4.0	6.0				
Max Green Setting (Gmax), s	8.0	29.3	8.0	* 20	10.0	27.3	8.0	20.0				
Max Q Clear Time (g_c+I1), s	6.3	7.2	2.9	17.8	11.8	27.1	6.5	16.7				
Green Ext Time (p_c), s	0.1	12.3	0.0	1.9	0.0	0.2	0.1	1.4				

Intersection Summary

HCM 2010 Ctrl Delay	33.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
208: Country Club Dr & Junction Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	522	100	236	1184	50	241	213	19	60	105	51
Future Volume (veh/h)	38	522	100	236	1184	50	241	213	19	60	105	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	40	549	105	248	1246	53	254	224	20	63	111	54
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	993	189	310	1559	66	307	414	37	162	194	94
Arrive On Green	0.06	0.33	0.31	0.17	0.45	0.43	0.17	0.25	0.23	0.09	0.16	0.15
Sat Flow, veh/h	1774	2967	566	1774	3459	147	1774	1686	151	1774	1185	576
Grp Volume(v), veh/h	40	327	327	248	637	662	254	0	244	63	0	165
Grp Sat Flow(s),veh/h/ln	1774	1770	1763	1774	1770	1837	1774	0	1836	1774	0	1761
Q Serve(g_s), s	1.6	11.3	11.5	10.1	23.2	23.3	10.4	0.0	8.7	2.5	0.0	6.5
Cycle Q Clear(g_c), s	1.6	11.3	11.5	10.1	23.2	23.3	10.4	0.0	8.7	2.5	0.0	6.5
Prop In Lane	1.00		0.32	1.00		0.08	1.00		0.08	1.00		0.33
Lane Grp Cap(c), veh/h	104	592	590	310	798	828	307	0	451	162	0	288
V/C Ratio(X)	0.39	0.55	0.55	0.80	0.80	0.80	0.83	0.00	0.54	0.39	0.00	0.57
Avail Cap(c_a), veh/h	165	652	649	354	840	872	307	0	652	212	0	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.1	20.4	20.7	29.8	17.7	17.8	30.0	0.0	24.7	32.2	0.0	29.2
Incr Delay (d2), s/veh	0.9	1.1	1.1	9.5	5.5	5.4	16.0	0.0	1.4	0.6	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.7	5.8	5.8	12.5	13.0	6.4	0.0	4.6	1.3	0.0	3.4
LnGrp Delay(d),s/veh	35.0	21.5	21.8	39.3	23.2	23.2	46.1	0.0	26.1	32.8	0.0	31.7
LnGrp LOS	C	C	C	D	C	C	D		C	C		C
Approach Vol, veh/h	694			1547				498		228		
Approach Delay, s/veh	22.4			25.8				36.3		32.0		
Approach LOS	C			C				D		C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	21.1	16.1	28.2	16.0	14.9	7.4	36.9				
Change Period (Y+Rc), s	4.0	4.9	4.0	5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	8.0	24.4	14.0	25.0	12.0	20.4	6.0	33.0				
Max Q Clear Time (g_c+I1), s	4.5	10.7	12.1	13.5	12.4	8.5	3.6	25.3				
Green Ext Time (p_c), s	0.0	1.9	0.1	8.2	0.0	1.8	0.0	5.9				
Intersection Summary												
HCM 2010 Ctrl Delay	27.2											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
209: Junction Blvd & Revere Dr

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	12	583	1592	33	83	7		
Future Volume (veh/h)	12	583	1592	33	83	7		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	13	614	1676	35	87	7		
Adj No. of Lanes	1	2	2	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	69	2659	2321	48	237	211		
Arrive On Green	0.04	0.75	0.65	0.62	0.13	0.13		
Sat Flow, veh/h	1774	3632	3639	74	1774	1583		
Grp Volume(v), veh/h	13	614	835	876	87	7		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1850	1774	1583		
Q Serve(g_s), s	0.4	2.7	16.1	16.2	2.3	0.2		
Cycle Q Clear(g_c), s	0.4	2.7	16.1	16.2	2.3	0.2		
Prop In Lane	1.00			0.04	1.00	1.00		
Lane Grp Cap(c), veh/h	69	2659	1159	1211	237	211		
V/C Ratio(X)	0.19	0.23	0.72	0.72	0.37	0.03		
Avail Cap(c_a), veh/h	239	3264	1292	1351	716	639		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.2	1.9	5.9	5.9	20.5	19.6		
Incr Delay (d2), s/veh	0.5	0.1	2.0	1.9	0.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	1.3	8.3	8.7	1.2	0.0		
LnGrp Delay(d),s/veh	24.7	2.0	7.8	7.8	20.9	19.7		
LnGrp LOS	C	A	A	A	C	B		
Approach Vol, veh/h		627	1711		94			
Approach Delay, s/veh		2.5	7.8		20.8			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.1		9.9	5.0	37.1		
Change Period (Y+Rc), s		5.7		4.0	4.0	5.7		
Max Green Setting (Gmax), s		45.3		20.0	6.0	35.3		
Max Q Clear Time (g_c+I1), s		4.7		4.3	2.4	18.2		
Green Ext Time (p_c), s		24.2		0.1	0.0	13.2		
Intersection Summary								
HCM 2010 Ctrl Delay			7.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
210: Americana Dr & Junction Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	595	55	178	1625	0	68	0	59	0	0	0
Future Volume (veh/h)	0	595	55	178	1625	0	68	0	59	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	626	58	187	1711	0	72	0	62	0	0	0
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	1869	778	297	2593	0	321	0	286	0	3	0
Arrive On Green	0.00	0.53	0.49	0.17	0.73	0.00	0.18	0.00	0.18	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3632	0	1774	0	1583	0	1863	0
Grp Volume(v), veh/h	0	626	58	187	1711	0	72	0	62	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	0	1774	0	1583	0	1863	0
Q Serve(g_s), s	0.0	5.5	1.0	5.3	13.6	0.0	1.9	0.0	1.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.5	1.0	5.3	13.6	0.0	1.9	0.0	1.8	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	1869	778	297	2593	0	321	0	286	0	3	0
V/C Ratio(X)	0.00	0.33	0.07	0.63	0.66	0.00	0.22	0.00	0.22	0.00	0.00	0.00
Avail Cap(c_a), veh/h	229	2237	942	490	2759	0	719	0	642	0	343	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.3	7.3	21.0	3.8	0.0	19.0	0.0	19.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	2.2	0.5	0.0	0.4	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	0.5	2.8	6.6	0.0	1.0	0.0	0.8	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.4	7.3	23.2	4.3	0.0	19.3	0.0	19.3	0.0	0.0	0.0
LnGrp LOS		A	A	C	A		B		B			
Approach Vol, veh/h	684				1898				134			
Approach Delay, s/veh	7.4				6.2				19.3			
Approach LOS	A				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	31.4		0.0	0.0	42.5		11.8				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	13.0	31.3		8.0	5.0	39.3		20.0				
Max Q Clear Time (g_c+I1), s	7.3	7.5		0.0	0.0	15.6		3.9				
Green Ext Time (p_c), s	0.2	18.2		0.0	0.0	18.1		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	7.1											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
211: Porter Dr/Sawtell Rd & Junction Blvd

Cumulative No Project
PM Peak Hour

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	35	683	35	101	1653	10	11	15	105	26	15	23						
Future Volume (veh/h)	35	683	35	101	1653	10	11	15	105	26	15	23						
Number	5	2	12	1	6	16	3	8	18	7	4	14						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863						
Adj Flow Rate, veh/h	37	719	37	106	1740	11	12	16	111	27	16	24						
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	112	2065	106	164	2281	14	163	180	242	218	108	242						
Arrive On Green	0.06	0.60	0.57	0.09	0.63	0.60	0.15	0.15	0.15	0.15	0.15	0.15						
Sat Flow, veh/h	1774	3425	176	1774	3606	23	503	1174	1583	783	704	1583						
Grp Volume(v), veh/h	37	371	385	106	853	898	28	0	111	43	0	24						
Grp Sat Flow(s),veh/h/ln	1774	1770	1832	1774	1770	1859	1678	0	1583	1487	0	1583						
Q Serve(g_s), s	1.2	6.3	6.3	3.4	20.3	20.4	0.0	0.0	3.8	0.0	0.0	0.8						
Cycle Q Clear(g_c), s	1.2	6.3	6.3	3.4	20.3	20.4	0.8	0.0	3.8	1.2	0.0	0.8						
Prop In Lane	1.00		0.10	1.00		0.01	0.43		1.00	0.63		1.00						
Lane Grp Cap(c), veh/h	112	1067	1105	164	1120	1176	343	0	242	326	0	242						
V/C Ratio(X)	0.33	0.35	0.35	0.64	0.76	0.76	0.08	0.00	0.46	0.13	0.00	0.10						
Avail Cap(c_a), veh/h	209	1071	1109	298	1161	1219	773	0	666	709	0	666						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00						
Uniform Delay (d), s/veh	26.7	5.9	6.0	26.0	7.7	7.8	21.7	0.0	22.9	21.8	0.0	21.7						
Incr Delay (d2), s/veh	0.6	0.3	0.3	1.6	3.1	3.0	0.0	0.0	0.5	0.1	0.0	0.1						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.6	3.1	3.2	1.8	10.7	11.2	0.4	0.0	1.7	0.6	0.0	0.3						
LnGrp Delay(d),s/veh	27.3	6.2	6.2	27.6	10.9	10.8	21.7	0.0	23.4	21.9	0.0	21.7						
LnGrp LOS	C	A	A	C	B	B	C		C	C		C						
Approach Vol, veh/h	793				1857				139		67							
Approach Delay, s/veh	7.2				11.8				23.1		21.8							
Approach LOS	A				B				C		C							
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2	4		5	6	8											
Phs Duration (G+Y+Rc), s	8.5	38.9	12.1		6.7	40.6	12.1											
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0											
Max Green Setting (Gmax), s	9.0	33.3	24.0		6.0	36.3	24.0											
Max Q Clear Time (g_c+I1), s	5.4	8.3	3.2		3.2	22.4	5.8											
Green Ext Time (p_c), s	0.0	21.2	0.5		0.0	12.5	0.4											
Intersection Summary																		
HCM 2010 Ctrl Delay			11.3															
HCM 2010 LOS			B															

HCM 2010 Signalized Intersection Summary
212: Del Rd/Hilltop Cir & PFE Rd

Cumulative No Project
PM Peak Hour

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	103	436	6	2	690	76	2	0	2	114	0	238						
Future Volume (veh/h)	103	436	6	2	690	76	2	0	2	114	0	238						
Number	5	2	12	1	6	16	3	8	18	7	4	14						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900						
Adj Flow Rate, veh/h	108	459	6	2	726	80	2	0	2	120	0	251						
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	244	1818	24	40	1264	139	23	0	23	389	0	347						
Arrive On Green	0.14	0.51	0.48	0.02	0.39	0.36	0.03	0.00	0.03	0.22	0.00	0.22						
Sat Flow, veh/h	1774	3577	47	1774	3216	354	837	0	837	1774	0	1583						
Grp Volume(v), veh/h	108	227	238	2	399	407	4	0	0	120	0	251						
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1800	1673	0	0	1774	0	1583						
Q Serve(g_s), s	3.0	3.9	3.9	0.1	9.5	9.6	0.1	0.0	0.0	3.0	0.0	7.9						
Cycle Q Clear(g_c), s	3.0	3.9	3.9	0.1	9.5	9.6	0.1	0.0	0.0	3.0	0.0	7.9						
Prop In Lane	1.00		0.03	1.00		0.20	0.50		0.50	1.00		1.00						
Lane Grp Cap(c), veh/h	244	899	943	40	696	708	46	0	0	389	0	347						
V/C Ratio(X)	0.44	0.25	0.25	0.05	0.57	0.57	0.09	0.00	0.00	0.31	0.00	0.72						
Avail Cap(c_a), veh/h	429	899	943	429	888	903	404	0	0	659	0	589						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00						
Uniform Delay (d), s/veh	21.3	7.5	7.5	25.7	12.8	13.0	25.5	0.0	0.0	17.6	0.0	19.5						
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.2	1.0	1.0	0.6	0.0	0.0	0.2	0.0	1.1						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.5	1.9	2.0	0.0	4.7	5.0	0.1	0.0	0.0	1.5	0.0	3.5						
LnGrp Delay(d),s/veh	21.8	7.7	7.7	25.9	13.8	13.9	26.1	0.0	0.0	17.8	0.0	20.6						
LnGrp LOS	C	A	A	C	B	B	C			B		C						
Approach Vol, veh/h	573				808		4		371									
Approach Delay, s/veh	10.3				13.9		26.1		19.7									
Approach LOS	B				B		C		B									
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2	4		5	6	8											
Phs Duration (G+Y+Rc), s	4.2	30.3	14.8		10.4	24.1	4.5											
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0											
Max Green Setting (Gmax), s	12.0	24.3	19.0		12.0	24.3	12.0											
Max Q Clear Time (g_c+I1), s	2.1	5.9	9.9		5.0	11.6	2.1											
Green Ext Time (p_c), s	0.0	8.9	0.9		0.1	6.9	0.0											
Intersection Summary																		
HCM 2010 Ctrl Delay			14.0															
HCM 2010 LOS			B															

HCM 2010 Signalized Intersection Summary
213: Santucci Blvd & Solaire Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	6	33	152	4	50	21	952	151	6	567	16
Future Volume (veh/h)	26	6	33	152	4	50	21	952	151	6	567	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	6	35	160	4	53	22	1002	159	6	597	17
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	67	57	211	241	205	38	1937	603	11	1861	579
Arrive On Green	0.03	0.04	0.04	0.12	0.13	0.13	0.02	0.38	0.38	0.01	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	27	6	35	160	4	53	22	1002	159	6	597	17
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.7	0.1	1.0	3.8	0.1	1.3	0.5	6.6	3.0	0.1	3.7	0.3
Cycle Q Clear(g_c), s	0.7	0.1	1.0	3.8	0.1	1.3	0.5	6.6	3.0	0.1	3.7	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	45	67	57	211	241	205	38	1937	603	11	1861	579
V/C Ratio(X)	0.59	0.09	0.62	0.76	0.02	0.26	0.58	0.52	0.26	0.53	0.32	0.03
Avail Cap(c_a), veh/h	203	1365	1160	569	1749	1486	203	2329	725	162	2212	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	20.4	20.8	18.6	16.6	17.1	21.2	10.4	9.3	21.6	9.9	8.9
Incr Delay (d2), s/veh	11.8	0.6	10.4	5.5	0.0	0.7	13.1	0.2	0.2	32.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.6	2.2	0.0	0.6	0.4	3.1	1.3	0.2	1.7	0.1
LnGrp Delay(d),s/veh	32.9	20.9	31.1	24.2	16.6	17.8	34.3	10.6	9.5	54.4	10.0	8.9
LnGrp LOS	C	C	C	C	B	B	C	B	A	D	B	A
Approach Vol, veh/h	68				217				1183			
Approach Delay, s/veh	30.9				22.5				10.9			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	21.6	10.2	6.6	5.9	21.0	6.1	10.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	20.0	14.0	32.0	5.0	19.0	5.0	41.0				
Max Q Clear Time (g_c+I1), s	2.1	8.6	5.8	3.0	2.5	5.7	2.7	3.3				
Green Ext Time (p_c), s	0.0	8.0	0.2	0.3	0.0	9.0	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	12.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
214: Santucci Rd & Federico Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	12	26	288	39	17	64	1096	312	28	709	14
Future Volume (veh/h)	11	12	26	288	39	17	64	1096	312	28	709	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	13	27	303	41	18	67	1154	328	29	746	15
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	138	86	403	501	394	122	1885	555	83	1774	520
Arrive On Green	0.03	0.07	0.05	0.23	0.27	0.25	0.07	0.37	0.35	0.05	0.35	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	12	13	27	303	41	18	67	1154	328	29	746	15
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.3	0.3	0.8	7.9	0.8	0.4	1.8	9.2	8.4	0.8	5.6	0.3
Cycle Q Clear(g_c), s	0.3	0.3	0.8	7.9	0.8	0.4	1.8	9.2	8.4	0.8	5.6	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	138	86	403	501	394	122	1885	555	83	1774	520
V/C Ratio(X)	0.21	0.09	0.31	0.75	0.08	0.05	0.55	0.61	0.59	0.35	0.42	0.03
Avail Cap(c_a), veh/h	178	1272	1049	641	1758	1463	178	1941	572	178	1941	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	21.5	22.7	17.9	13.6	14.2	22.4	12.7	13.2	23.0	12.4	11.3
Incr Delay (d2), s/veh	1.8	0.3	2.1	2.9	0.1	0.0	3.8	0.5	1.5	2.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	4.2	0.4	0.2	1.0	4.4	3.9	0.4	2.6	0.1
LnGrp Delay(d),s/veh	25.2	21.8	24.7	20.8	13.7	14.3	26.3	13.3	14.8	25.5	12.5	11.3
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h	52				362				1549			
Approach Delay, s/veh	24.1				19.7				14.2			
Approach LOS	C				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	21.5	15.3	6.7	7.4	20.4	5.6	16.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	17.0	17.0	32.0	4.0	17.0	4.0	45.0				
Max Q Clear Time (g_c+I1), s	2.8	11.2	9.9	2.8	3.8	7.6	2.3	2.8				
Green Ext Time (p_c), s	0.0	5.0	0.5	0.4	0.0	7.8	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	14.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
215: Santucci Blvd & Sierra Village Dr

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	7	40	49	16	77	100	1429	110	44	1001	51
Future Volume (veh/h)	23	7	40	49	16	77	100	1429	110	44	1001	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	24	7	42	52	17	81	105	1504	116	46	1054	54
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	105	89	71	138	117	136	2556	796	65	2354	733
Arrive On Green	0.02	0.06	0.06	0.04	0.07	0.07	0.08	0.50	0.50	0.04	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	24	7	42	52	17	81	105	1504	116	46	1054	54
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.7	0.2	1.4	1.6	0.5	2.7	3.2	11.5	2.2	1.4	7.7	1.0
Cycle Q Clear(g_c), s	0.7	0.2	1.4	1.6	0.5	2.7	3.2	11.5	2.2	1.4	7.7	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	105	89	71	138	117	136	2556	796	65	2354	733
V/C Ratio(X)	0.61	0.07	0.47	0.73	0.12	0.69	0.77	0.59	0.15	0.71	0.45	0.07
Avail Cap(c_a), veh/h	129	1086	923	129	1086	923	291	2780	866	129	2354	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	24.5	25.1	26.1	23.8	24.8	24.9	9.6	7.3	26.1	10.0	8.2
Incr Delay (d2), s/veh	14.0	0.3	3.8	13.7	0.4	7.1	9.0	0.3	0.1	13.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.7	1.0	0.3	1.4	1.9	5.4	1.0	0.9	3.5	0.5
LnGrp Delay(d),s/veh	40.6	24.8	28.9	39.7	24.1	31.9	33.9	9.9	7.4	39.2	10.1	8.2
LnGrp LOS	D	C	C	D	C	C	C	A	A	D	B	A
Approach Vol, veh/h	73				150				1725			
Approach Delay, s/veh	32.4				33.7				11.2			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	32.6	7.2	8.1	9.2	30.4	6.2	9.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	30.0	4.0	32.0	9.0	25.0	4.0	32.0				
Max Q Clear Time (g_c+I1), s	3.4	13.5	3.6	3.4	5.2	9.7	2.7	4.7				
Green Ext Time (p_c), s	0.0	14.1	0.0	0.5	0.1	13.4	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	12.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

216: Hayden Parkway & Holt Parkway

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	67	58	19	61	3	53	115	15	2	43	45
Future Volume (veh/h)	95	67	58	19	61	3	53	115	15	2	43	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	100	71	61	20	64	3	56	121	16	2	45	47
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	332	280	36	216	10	89	301	40	6	116	121
Arrive On Green	0.08	0.18	0.18	0.02	0.12	0.12	0.05	0.19	0.19	0.00	0.14	0.14
Sat Flow, veh/h	1774	1863	1574	1774	1765	83	1774	1611	213	1774	832	869
Grp Volume(v), veh/h	100	71	61	20	0	67	56	0	137	2	0	92
Grp Sat Flow(s),veh/h/ln	1774	1863	1574	1774	0	1847	1774	0	1824	1774	0	1702
Q Serve(g_s), s	1.6	1.0	1.0	0.3	0.0	1.0	0.9	0.0	1.9	0.0	0.0	1.4
Cycle Q Clear(g_c), s	1.6	1.0	1.0	0.3	0.0	1.0	0.9	0.0	1.9	0.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.12	1.00		0.51
Lane Grp Cap(c), veh/h	135	332	280	36	0	227	89	0	341	6	0	237
V/C Ratio(X)	0.74	0.21	0.22	0.55	0.00	0.30	0.63	0.00	0.40	0.33	0.00	0.39
Avail Cap(c_a), veh/h	271	1267	1071	271	0	1256	271	0	1240	271	0	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	10.3	10.3	14.3	0.0	11.7	13.7	0.0	10.5	14.6	0.0	11.5
Incr Delay (d2), s/veh	7.8	0.3	0.4	12.3	0.0	0.7	7.2	0.0	0.8	29.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.5	0.4	0.3	0.0	0.5	0.6	0.0	1.0	0.1	0.0	0.7
LnGrp Delay(d),s/veh	21.1	10.6	10.7	26.6	0.0	12.5	20.9	0.0	11.3	43.8	0.0	12.5
LnGrp LOS	C	B	B	C		B	C		B	D		B
Approach Vol, veh/h	232		87				193		94			
Approach Delay, s/veh	15.2		15.7				14.1		13.2			
Approach LOS	B		B				B		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.6	10.0	5.1	9.7	6.0	8.6	6.7	8.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.5	20.0	4.5	20.0	4.5	20.0	4.5	20.0				
Max Q Clear Time (g_c+I1), s	2.0	3.9	2.3	3.0	2.9	3.4	3.6	3.0				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.8	0.0	1.1	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	14.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
217: Industrial Dr/Industrial Ave & Alantown Dr

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	31	302	438	0	478	773		
Future Volume (veh/h)	31	302	438	0	478	773		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	33	318	461	0	503	814		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	390	348	582	494	464	1197		
Arrive On Green	0.22	0.22	0.31	0.00	0.26	0.64		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	33	318	461	0	503	814		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	1.1	14.3	16.4	0.0	19.0	20.2		
Cycle Q Clear(g_c), s	1.1	14.3	16.4	0.0	19.0	20.2		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	390	348	582	494	464	1197		
V/C Ratio(X)	0.08	0.91	0.79	0.00	1.08	0.68		
Avail Cap(c_a), veh/h	390	348	640	544	464	1255		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	22.5	27.7	22.8	0.0	26.9	8.3		
Incr Delay (d2), s/veh	0.1	27.4	6.2	0.0	66.7	1.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	8.9	9.5	0.0	17.7	10.6		
LnGrp Delay(d),s/veh	22.6	55.1	29.1	0.0	93.5	9.7		
LnGrp LOS	C	E	C		F	A		
Approach Vol, veh/h	351		461			1317		
Approach Delay, s/veh	52.1		29.1			41.7		
Approach LOS	D		C			D		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	24.0	27.7				51.7		21.0
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	19.0	25.0				49.0		16.0
Max Q Clear Time (g_c+I1), s	21.0	18.4				22.2		16.3
Green Ext Time (p_c), s	0.0	4.3				10.6		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			40.7					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary

218: Industrial Avenue & Freedom Way

Cumulative No Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	46	32	541	12	32	797		
Future Volume (veh/h)	46	32	541	12	32	797		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	48	34	569	13	34	839		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	114	102	1229	1044	644	1229		
Arrive On Green	0.06	0.06	0.66	0.66	0.66	0.66		
Sat Flow, veh/h	1774	1583	1863	1583	829	1863		
Grp Volume(v), veh/h	48	34	569	13	34	839		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	829	1863		
Q Serve(g_s), s	0.8	0.7	4.9	0.1	0.7	9.1		
Cycle Q Clear(g_c), s	0.8	0.7	4.9	0.1	5.6	9.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	114	102	1229	1044	644	1229		
V/C Ratio(X)	0.42	0.33	0.46	0.01	0.05	0.68		
Avail Cap(c_a), veh/h	871	777	2001	1700	987	2001		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.7	14.6	2.7	1.9	4.1	3.4		
Incr Delay (d2), s/veh	2.5	1.9	0.3	0.0	0.0	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.3	2.5	0.0	0.2	4.7		
LnGrp Delay(d),s/veh	17.1	16.5	3.0	1.9	4.1	4.1		
LnGrp LOS	B	B	A	A	A	A		
Approach Vol, veh/h	82		582			873		
Approach Delay, s/veh	16.9		3.0			4.1		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		26.5				26.5		6.1
Change Period (Y+Rc), s		5.0				5.0		4.0
Max Green Setting (Gmax), s		35.0				35.0		16.0
Max Q Clear Time (g_c+l1), s		6.9				11.1		2.8
Green Ext Time (p_c), s		11.1				10.4		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			4.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
219: La Sierra Drive & Pleasant Grove Blvd

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	397	6	57	451	0	5	0	0	0	0	0
Future Volume (veh/h)	0	397	6	57	451	0	5	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	418	6	60	475	0	5	0	0	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	1410	629	99	2245	1004	10	10	0	8	8	0
Arrive On Green	0.00	0.40	0.40	0.06	0.63	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1579	1774	3539	1583	1774	1863	0	1774	1863	0
Grp Volume(v), veh/h	0	418	6	60	475	0	5	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1579	1774	1770	1583	1774	1863	0	1774	1863	0
Q Serve(g_s), s	0.0	1.8	0.1	0.7	1.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.8	0.1	0.7	1.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	8	1410	629	99	2245	1004	10	10	0	8	8	0
V/C Ratio(X)	0.00	0.30	0.01	0.61	0.21	0.00	0.52	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	320	3188	1423	320	3188	1426	320	2601	0	320	2601	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.6	4.0	10.2	1.7	0.0	11.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	5.9	0.0	0.0	36.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.7	4.0	16.1	1.8	0.0	47.5	0.0	0.0	0.0	0.0	0.0
LnGrp LOS		A	A	B	A		D					
Approach Vol, veh/h		424			535			5			0	
Approach Delay, s/veh		4.7			3.4			47.5			0.0	
Approach LOS		A			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	4.1	5.2	12.8	4.1	0.0	0.0	18.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	20.0	4.0	31.0	4.0	20.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0	2.7	3.8	2.1	0.0	0.0	3.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	4.9	0.0	0.0	0.0	5.0				
Intersection Summary												
HCM 2010 Ctrl Delay			4.2									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
220: Westbrook Blvd & Road D

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	6	0	1	12	16	855	0	40	970	2
Future Volume (veh/h)	2	1	6	0	1	12	16	855	0	40	970	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	1	6	0	1	13	17	900	0	42	1021	2
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	295	251	9	39	33	60	2026	631	130	2130	663
Arrive On Green	0.00	0.16	0.16	0.00	0.02	0.02	0.02	0.40	0.00	0.04	0.42	0.42
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	2	1	6	0	1	13	17	900	0	42	1021	2
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.3	0.2	4.8	0.0	0.4	5.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.1	0.0	0.0	0.3	0.2	4.8	0.0	0.4	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	9	295	251	9	39	33	60	2026	631	130	2130	663
V/C Ratio(X)	0.22	0.00	0.02	0.00	0.03	0.39	0.29	0.44	0.00	0.32	0.48	0.00
Avail Cap(c_a), veh/h	1023	806	685	1023	806	685	1023	2337	728	1023	2337	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	13.1	13.2	0.0	17.7	17.9	18.0	8.1	0.0	17.3	7.8	6.3
Incr Delay (d2), s/veh	11.1	0.0	0.0	0.0	0.3	7.3	2.6	0.2	0.0	1.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	0.0	0.0	0.2	0.1	2.2	0.0	0.2	2.5	0.0
LnGrp Delay(d),s/veh	29.5	13.1	13.2	0.0	18.0	25.2	20.5	8.3	0.0	18.7	8.0	6.3
LnGrp LOS	C	B	B		B	C	C	A		B	A	A
Approach Vol, veh/h	9			14			917			1065		
Approach Delay, s/veh	16.8			24.7			8.5			8.4		
Approach LOS	B			C			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.4	19.7	0.0	10.9	5.6	20.5	5.1	5.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	2.4	6.8	0.0	2.1	2.2	7.4	2.0	2.3				
Green Ext Time (p_c), s	0.0	8.0	0.0	0.0	0.0	7.5	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	8.6											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
222: Westbrook Blvd/Westbrook Blvd & Road B

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	52	0	12	0	966	124	29	918	0
Future Volume (veh/h)	0	0	0	52	0	12	0	966	124	29	918	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	0	0	55	0	13	0	1017	131	31	966	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	6	5	86	107	91	6	2169	675	54	3147	980
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.06	0.00	0.43	0.43	0.03	0.62	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	0	0	55	0	13	0	1017	131	31	966	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	0.0	0.0	0.9	0.0	0.2	0.0	4.4	1.6	0.5	2.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.9	0.0	0.2	0.0	4.4	1.6	0.5	2.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	6	5	86	107	91	6	2169	675	54	3147	980
V/C Ratio(X)	0.00	0.00	0.00	0.64	0.00	0.14	0.00	0.47	0.19	0.58	0.31	0.00
Avail Cap(c_a), veh/h	632	966	821	632	966	821	632	2801	872	632	3147	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	14.4	0.0	13.8	0.0	6.3	5.5	14.8	2.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	7.5	0.0	0.7	0.0	0.2	0.1	9.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.6	0.0	0.1	0.0	2.0	0.7	0.4	1.3	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	21.9	0.0	14.5	0.0	6.5	5.7	24.2	2.8	0.0
LnGrp LOS				C		B		A	A	C	A	
Approach Vol, veh/h		0			68			1148			997	
Approach Delay, s/veh		0.0			20.5			6.4			3.5	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	18.2	6.5	0.3	0.0	24.1	0.0	6.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	2.5	6.4	2.9	0.0	0.0	4.8	0.0	2.2				
Green Ext Time (p_c), s	0.0	6.7	0.0	0.0	0.0	9.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			5.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
224: Westbrook Blvd & Road A

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	103	32	1	0	263	1159	75	0	1127	1
Future Volume (veh/h)	1	1	103	32	1	0	263	1159	75	0	1127	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	1	108	34	1	0	277	1220	79	0	1186	1
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	162	138	106	217	185	438	2786	867	8	1572	489
Arrive On Green	0.00	0.09	0.09	0.03	0.12	0.00	0.13	0.55	0.55	0.00	0.31	0.31
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	1	1	108	34	1	0	277	1220	79	0	1186	1
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	0.0	3.0	0.4	0.0	0.0	3.4	6.4	1.1	0.0	9.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.0	0.4	0.0	0.0	3.4	6.4	1.1	0.0	9.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	8	162	138	106	217	185	438	2786	867	8	1572	489
V/C Ratio(X)	0.13	0.01	0.79	0.32	0.00	0.00	0.63	0.44	0.09	0.00	0.75	0.00
Avail Cap(c_a), veh/h	844	665	565	844	665	565	844	2786	867	844	1928	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	18.7	20.1	21.3	17.5	0.0	18.6	6.0	4.8	0.0	14.0	10.7
Incr Delay (d2), s/veh	7.4	0.0	9.4	1.7	0.0	0.0	1.5	0.1	0.0	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.6	0.2	0.0	0.0	1.7	3.0	0.5	0.0	4.6	0.0
LnGrp Delay(d),s/veh	29.8	18.7	29.5	23.0	17.5	0.0	20.1	6.1	4.9	0.0	15.3	10.7
LnGrp LOS	C	B	C	C	B		C	A	A		B	B
Approach Vol, veh/h	110				35				1576			
Approach Delay, s/veh	29.4				22.8				8.5			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	29.6	6.4	8.9	10.7	18.9	5.0	10.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	0.0	8.4	2.4	5.0	5.4	11.4	2.0	2.0				
Green Ext Time (p_c), s	0.0	7.7	0.0	0.2	0.5	2.4	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	12.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 225: Falcon Pointe Lane/Medical Plaza Drive & Secret Ravine Pkwy

Cumulative No Project
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	842	0	9	344	7	0	1	17	21	1	25
Future Volume (veh/h)	23	842	0	9	344	7	0	1	17	21	1	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	24	886	0	9	362	7	0	1	18	22	1	26
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	1480	0	17	1434	28	0	2	38	88	3	76
Arrive On Green	0.02	0.42	0.00	0.01	0.40	0.40	0.00	0.03	0.03	0.05	0.05	0.05
Sat Flow, veh/h	1774	3632	0	1774	3551	69	0	84	1505	1774	59	1526
Grp Volume(v), veh/h	24	886	0	9	180	189	0	0	19	22	0	27
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1850	0	0	1589	1774	0	1585
Q Serve(g_s), s	0.4	6.2	0.0	0.2	2.2	2.2	0.0	0.0	0.4	0.4	0.0	0.5
Cycle Q Clear(g_c), s	0.4	6.2	0.0	0.2	2.2	2.2	0.0	0.0	0.4	0.4	0.0	0.5
Prop In Lane	1.00		0.00	1.00		0.04	0.00		0.95	1.00		0.96
Lane Grp Cap(c), veh/h	43	1480	0	17	715	747	0	0	40	88	0	79
V/C Ratio(X)	0.56	0.60	0.00	0.53	0.25	0.25	0.00	0.00	0.48	0.25	0.00	0.34
Avail Cap(c_a), veh/h	221	1980	0	221	990	1035	0	0	1037	1158	0	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.5	7.3	0.0	15.9	6.4	6.4	0.0	0.0	15.5	14.7	0.0	14.8
Incr Delay (d2), s/veh	11.2	0.4	0.0	23.0	0.2	0.2	0.0	0.0	8.5	1.5	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	0.0	0.2	1.1	1.1	0.0	0.0	0.3	0.2	0.0	0.3
LnGrp Delay(d),s/veh	26.7	7.7	0.0	38.9	6.5	6.5	0.0	0.0	24.0	16.2	0.0	17.3
LnGrp LOS	C	A		D	A	A			C	B		B
Approach Vol, veh/h	910			378			19			49		
Approach Delay, s/veh	8.2			7.3			24.0			16.8		
Approach LOS	A			A			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	4.8		4.3	17.5	5.6		4.8	17.0				
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s	21.0		4.0	18.0	21.0		4.0	18.0				
Max Q Clear Time (g_c+I1), s	2.4		2.2	8.2	2.5		2.4	4.2				
Green Ext Time (p_c), s	0.0		0.0	5.1	0.1		0.0	6.4				
Intersection Summary												
HCM 2010 Ctrl Delay	8.5											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
226: Hayden Pkwy & High School Road

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1	17	20	0	28	10	207	55	61	91	10
Future Volume (veh/h)	16	1	17	20	0	28	10	207	55	61	91	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	1	18	21	0	29	11	218	58	64	96	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	129	109	38	136	115	21	447	378	101	531	450
Arrive On Green	0.02	0.07	0.07	0.02	0.00	0.07	0.01	0.24	0.24	0.06	0.29	0.29
Sat Flow, veh/h	1774	1863	1573	1774	1863	1573	1774	1863	1577	1774	1863	1578
Grp Volume(v), veh/h	17	1	18	21	0	29	11	218	58	64	96	11
Grp Sat Flow(s),veh/h/ln	1774	1863	1573	1774	1863	1573	1774	1863	1577	1774	1863	1578
Q Serve(g_s), s	0.2	0.0	0.3	0.3	0.0	0.5	0.2	2.6	0.8	0.9	1.0	0.1
Cycle Q Clear(g_c), s	0.2	0.0	0.3	0.3	0.0	0.5	0.2	2.6	0.8	0.9	1.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	32	129	109	38	136	115	21	447	378	101	531	450
V/C Ratio(X)	0.54	0.01	0.17	0.55	0.00	0.25	0.53	0.49	0.15	0.63	0.18	0.02
Avail Cap(c_a), veh/h	272	1568	1324	272	1568	1324	272	1568	1328	407	1711	1449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	11.3	11.5	12.7	0.0	11.4	12.8	8.5	7.8	12.1	7.0	6.7
Incr Delay (d2), s/veh	13.6	0.0	0.7	11.6	0.0	1.1	19.1	0.8	0.2	6.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.3	0.0	0.2	0.2	1.4	0.3	0.6	0.5	0.1
LnGrp Delay(d),s/veh	26.3	11.4	12.2	24.2	0.0	12.6	32.0	9.4	8.0	18.5	7.2	6.7
LnGrp LOS	C	B	B	C		B	C	A	A	B	A	A
Approach Vol, veh/h	36				50				287			
Approach Delay, s/veh	18.8				17.5				10.0			
Approach LOS	B				B				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	10.3	4.6	5.8	4.3	11.5	4.5	5.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	22.0	4.0	22.0	4.0	24.0	4.0	22.0				
Max Q Clear Time (g_c+I1), s	2.9	4.6	2.3	2.3	2.2	3.0	2.2	2.5				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.1	0.0	1.9	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

1001: Riverside & Darling

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	55	73	186	72	16	65	630	195	6	726	45
Future Volume (veh/h)	48	55	73	186	72	16	65	630	195	6	726	45
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	51	58	77	196	76	17	68	663	205	6	764	47
Adj No. of Lanes	0	1	1	0	1	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	126	205	254	99	22	121	818	695	43	1339	82
Arrive On Green	0.13	0.13	0.13	0.21	0.21	0.21	0.07	0.44	0.44	0.02	0.40	0.40
Sat Flow, veh/h	852	969	1583	1210	469	105	1774	1863	1583	1774	3387	208
Grp Volume(v), veh/h	109	0	77	289	0	0	68	663	205	6	399	412
Grp Sat Flow(s),veh/h/ln	1820	0	1583	1784	0	0	1774	1863	1583	1774	1770	1826
Q Serve(g_s), s	3.7	0.0	3.0	10.3	0.0	0.0	2.5	20.9	5.6	0.2	11.9	11.9
Cycle Q Clear(g_c), s	3.7	0.0	3.0	10.3	0.0	0.0	2.5	20.9	5.6	0.2	11.9	11.9
Prop In Lane	0.47		1.00	0.68		0.06	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	236	0	205	375	0	0	121	818	695	43	699	722
V/C Ratio(X)	0.46	0.00	0.38	0.77	0.00	0.00	0.56	0.81	0.29	0.14	0.57	0.57
Avail Cap(c_a), veh/h	242	0	211	713	0	0	210	929	790	184	885	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	26.9	25.2	0.0	0.0	30.5	16.5	12.2	32.3	15.9	16.0
Incr Delay (d2), s/veh	0.5	0.0	0.4	1.3	0.0	0.0	1.5	4.2	0.1	0.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	1.3	5.2	0.0	0.0	1.3	11.6	2.5	0.1	5.9	6.1
LnGrp Delay(d),s/veh	27.7	0.0	27.3	26.4	0.0	0.0	32.0	20.7	12.3	32.8	16.7	16.6
LnGrp LOS	C		C	C			C	C	B	C	B	B
Approach Vol, veh/h	186		289			936			817			
Approach Delay, s/veh	27.6		26.4			19.7			16.8			
Approach LOS	C		C			B			B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.6	34.0	17.2		7.6	31.0	11.8					
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	* 5.3	4.0					
Max Green Setting (Gmax), s	6.0	32.7	26.0		7.0	* 33	8.0					
Max Q Clear Time (g_c+I1), s	2.2	22.9	12.3		4.5	13.9	5.7					
Green Ext Time (p_c), s	0.0	5.7	0.9		0.0	8.5	0.1					

Intersection Summary

HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
1002: Riverside & Vernon & Douglas

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	207	183	0	372	441	5	0	405	376	0	385	353
Future Volume (veh/h)	207	183	0	372	441	5	0	405	376	0	385	353
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	206	210	0	392	464	5	0	426	396	0	405	0
Adj No. of Lanes	1	1	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	0	2	2
Cap, veh/h	306	321	0	579	1170	13	0	603	513	0	603	513
Arrive On Green	0.17	0.17	0.00	0.33	0.33	0.33	0.00	0.32	0.32	0.00	0.32	0.00
Sat Flow, veh/h	1774	1863	0	1774	3587	39	0	1863	1583	0	1863	1583
Grp Volume(v), veh/h	206	210	0	392	229	240	0	426	396	0	405	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	1770	1856	0	1863	1583	0	1863	1583
Q Serve(g_s), s	7.0	6.8	0.0	12.3	6.4	6.4	0.0	12.9	14.5	0.0	12.1	0.0
Cycle Q Clear(g_c), s	7.0	6.8	0.0	12.3	6.4	6.4	0.0	12.9	14.5	0.0	12.1	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	306	321	0	579	577	606	0	603	513	0	603	513
V/C Ratio(X)	0.67	0.65	0.00	0.68	0.40	0.40	0.00	0.71	0.77	0.00	0.67	0.00
Avail Cap(c_a), veh/h	580	609	0	749	747	783	0	690	587	0	682	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	24.8	0.0	18.7	16.7	16.7	0.0	19.0	19.6	0.0	18.8	0.0
Incr Delay (d2), s/veh	1.9	1.7	0.0	3.1	0.9	0.9	0.0	2.8	5.5	0.0	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.6	0.0	6.5	3.3	3.4	0.0	7.1	7.1	0.0	6.5	0.0
LnGrp Delay(d),s/veh	26.8	26.5	0.0	21.8	17.7	17.6	0.0	21.8	25.1	0.0	20.7	0.0
LnGrp LOS	C	C		C	B	B		C	C		C	
Approach Vol, veh/h	416			861			822			405		
Approach Delay, s/veh	26.6			19.6			23.4			20.7		
Approach LOS	C			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	24.0			15.4			24.0			24.9		
Change Period (Y+Rc), s	* 4.2			5.3			* 4.2			4.9		
Max Green Setting (Gmax), s	* 23			20.0			* 23			26.1		
Max Q Clear Time (g_c+I1), s	16.5			9.0			14.1			14.3		
Green Ext Time (p_c), s	3.3			1.1			4.1			5.7		
Intersection Summary												
HCM 2010 Ctrl Delay				22.2								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

1003: Grant & Vernon

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	575	189	54	459	21	144	54	63	8	40	17
Future Volume (veh/h)	21	575	189	54	459	21	144	54	63	8	40	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	22	605	199	57	483	22	152	57	66	8	42	18
Adj No. of Lanes	0	1	1	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1120	980	139	940	41	317	95	407	93	265	100
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	25	1810	1583	96	1519	66	747	371	1583	50	1029	388
Grp Volume(v), veh/h	627	0	199	562	0	0	209	0	66	68	0	0
Grp Sat Flow(s),veh/h/ln	1835	0	1583	1682	0	0	1119	0	1583	1467	0	0
Q Serve(g_s), s	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	1.6	0.1	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	2.7	8.3	0.0	0.0	9.6	0.0	1.6	9.7	0.0	0.0
Prop In Lane	0.04		1.00	0.10		0.04	0.73		1.00	0.12		0.26
Lane Grp Cap(c), veh/h	1210	0	980	1120	0	0	412	0	407	458	0	0
V/C Ratio(X)	0.52	0.00	0.20	0.50	0.00	0.00	0.51	0.00	0.16	0.15	0.00	0.00
Avail Cap(c_a), veh/h	1210	0	980	1120	0	0	532	0	538	598	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.5	0.0	4.2	5.2	0.0	0.0	17.1	0.0	14.4	14.4	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.5	1.5	0.0	0.0	0.4	0.0	0.1	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	1.3	4.5	0.0	0.0	2.7	0.0	0.7	0.7	0.0	0.0
LnGrp Delay(d),s/veh	7.1	0.0	4.6	6.7	0.0	0.0	17.5	0.0	14.5	14.4	0.0	0.0
LnGrp LOS	A		A	A			B		B	B		
Approach Vol, veh/h	826				562				275		68	
Approach Delay, s/veh	6.5				6.7				16.8		14.4	
Approach LOS	A				A				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	34.1		15.9		34.1		15.9					
Change Period (Y+Rc), s	* 4.2		4.0		* 4.2		4.0					
Max Green Setting (Gmax), s	* 26		16.0		* 26		16.0					
Max Q Clear Time (g_c+I1), s	11.7		11.7		10.3		11.6					
Green Ext Time (p_c), s	6.8		0.5		7.2		0.5					
Intersection Summary												
HCM 2010 Ctrl Delay			8.5									
HCM 2010 LOS			A									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1004: Judah & Vernon

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	595	23	34	640	62	12	43	29	116	77	92
Future Volume (veh/h)	45	595	23	34	640	62	12	43	29	116	77	92
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	47	626	24	36	674	65	13	45	31	122	81	97
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	1176	45	514	1104	106	230	223	153	277	134	343
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	717	1782	68	778	1673	161	1201	1029	709	748	619	1583
Grp Volume(v), veh/h	47	0	650	36	0	739	13	0	76	203	0	97
Grp Sat Flow(s),veh/h/ln	717	0	1851	778	0	1834	1201	0	1738	1367	0	1583
Q Serve(g_s), s	2.0	0.0	9.2	1.3	0.0	11.5	0.5	0.0	1.8	5.4	0.0	2.6
Cycle Q Clear(g_c), s	13.5	0.0	9.2	10.5	0.0	11.5	7.7	0.0	1.8	7.2	0.0	2.6
Prop In Lane	1.00		0.04	1.00		0.09	1.00		0.41	0.60		1.00
Lane Grp Cap(c), veh/h	452	0	1221	514	0	1210	230	0	376	411	0	343
V/C Ratio(X)	0.10	0.00	0.53	0.07	0.00	0.61	0.06	0.00	0.20	0.49	0.00	0.28
Avail Cap(c_a), veh/h	452	0	1221	514	0	1210	379	0	591	596	0	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.7	0.0	4.5	7.2	0.0	4.8	21.8	0.0	16.1	18.5	0.0	16.4
Incr Delay (d2), s/veh	0.5	0.0	1.7	0.3	0.0	2.3	0.0	0.0	0.1	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.1	0.3	0.0	6.3	0.2	0.0	0.9	2.6	0.0	1.1
LnGrp Delay(d),s/veh	9.2	0.0	6.1	7.5	0.0	7.2	21.8	0.0	16.2	18.8	0.0	16.5
LnGrp LOS	A		A	A		A	C		B	B		B
Approach Vol, veh/h	697				775		89				300	
Approach Delay, s/veh	6.3				7.2		17.0				18.1	
Approach LOS	A				A		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	36.2		13.8		36.2		13.8					
Change Period (Y+Rc), s	* 4.2		4.0		* 4.2		4.0					
Max Green Setting (Gmax), s	* 26		16.0		* 26		16.0					
Max Q Clear Time (g_c+I1), s	15.5		9.2		13.5		9.7					
Green Ext Time (p_c), s	6.0		0.8		6.8		0.7					
Intersection Summary												
HCM 2010 Ctrl Delay			9.1									
HCM 2010 LOS			A									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1005: Lincoln & Vernon

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	560	33	503	480	21	47	31	327	69	99	50
Future Volume (veh/h)	41	560	33	503	480	21	47	31	327	69	99	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	43	589	35	529	505	22	49	33	344	73	104	53
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	656	39	568	1163	51	152	89	285	100	108	48
Arrive On Green	0.04	0.38	0.38	0.32	0.66	0.66	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1741	103	1774	1772	77	525	493	1583	292	603	268
Grp Volume(v), veh/h	43	0	624	529	0	527	82	0	344	230	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1844	1774	0	1849	1017	0	1583	1162	0	0
Q Serve(g_s), s	2.4	0.0	31.9	28.9	0.0	13.7	0.0	0.0	18.0	11.7	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	31.9	28.9	0.0	13.7	6.3	0.0	18.0	18.0	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.04	0.60		1.00	0.32		0.23
Lane Grp Cap(c), veh/h	72	0	695	568	0	1214	241	0	285	257	0	0
V/C Ratio(X)	0.60	0.00	0.90	0.93	0.00	0.43	0.34	0.00	1.21	0.90	0.00	0.00
Avail Cap(c_a), veh/h	106	0	734	585	0	1235	241	0	285	257	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.00	0.88	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.2	0.0	29.4	32.9	0.0	8.3	35.8	0.0	41.0	42.6	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	12.0	21.0	0.0	1.1	0.3	0.0	121.4	29.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	18.4	17.4	0.0	7.3	2.0	0.0	17.4	8.5	0.0	0.0
LnGrp Delay(d),s/veh	49.8	0.0	41.3	53.9	0.0	9.4	36.2	0.0	162.4	72.6	0.0	0.0
LnGrp LOS	D		D	D		A	D		F	E		
Approach Vol, veh/h	667		1056				426				230	
Approach Delay, s/veh	41.9		31.7				138.1				72.6	
Approach LOS	D		C				F				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	35.0	40.9	21.0		7.1	68.8	21.0					
Change Period (Y+Rc), s	4.0	* 4.2	4.0		4.0	* 4.2	4.0					
Max Green Setting (Gmax), s	32.0	* 39	17.0		5.0	* 66	17.0					
Max Q Clear Time (g_c+I1), s	30.9	33.9	20.0		4.4	15.7	20.0					
Green Ext Time (p_c), s	0.2	2.8	0.0		0.0	8.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			57.5									
HCM 2010 LOS			E									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1006: Washington & Main

Cumulative No Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	114	266	197	71	3	663	1085	45	30	1163	2
Future Volume (veh/h)	70	114	266	197	71	3	663	1085	45	30	1163	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	120	280	207	75	3	698	1142	47	32	1224	0
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	310	264	295	310	263	688	1384	596	261	1273	547
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.20	0.39	0.38	0.15	0.36	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	74	120	280	207	75	3	698	1142	47	32	1224	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.3	5.2	15.0	9.9	3.2	0.1	18.0	26.1	1.7	1.4	30.5	0.0
Cycle Q Clear(g_c), s	3.3	5.2	15.0	9.9	3.2	0.1	18.0	26.1	1.7	1.4	30.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	310	264	295	310	263	688	1384	596	261	1273	547
V/C Ratio(X)	0.25	0.39	1.06	0.70	0.24	0.01	1.02	0.83	0.08	0.12	0.96	0.00
Avail Cap(c_a), veh/h	295	310	264	295	310	264	688	1469	634	261	1273	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	33.4	37.5	35.4	32.6	31.4	36.0	24.7	18.0	33.3	28.2	0.0
Incr Delay (d2), s/veh	0.2	0.3	72.8	6.2	0.1	0.0	38.1	4.0	0.1	0.1	16.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.7	11.9	5.3	1.6	0.1	12.1	13.5	0.8	0.7	17.8	0.0
LnGrp Delay(d),s/veh	32.8	33.7	110.3	41.6	32.8	31.4	74.2	28.7	18.1	33.4	45.2	0.0
LnGrp LOS	C	C	F	D	C	C	F	C	B	C	D	
Approach Vol, veh/h	474				285				1887			
Approach Delay, s/veh	78.8				39.2				45.2			
Approach LOS	E				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	16.3	37.8			18.0	20.0	34.1	18.0				
Change Period (Y+Rc), s	4.0	4.9			4.0	3.0	* 4	4.0				
Max Green Setting (Gmax), s	10.0	35.1			14.0	17.0	* 30	14.0				
Max Q Clear Time (g_c+I1), s	3.4	28.1			17.0	20.0	32.5	11.9				
Green Ext Time (p_c), s	4.7	4.8			0.0	0.0	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	48.8											
HCM 2010 LOS	D											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
1007: Oak Street & S Grant Street

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	39	518	479	242	321	23		
Future Volume (veh/h)	39	518	479	242	321	23		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	41	545	504	255	360	0		
Adj No. of Lanes	1	2	1	1	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	0		
Cap, veh/h	67	2111	830	702	628	286		
Arrive On Green	0.04	0.60	0.45	0.45	0.18	0.00		
Sat Flow, veh/h	1774	3632	1863	1576	3548	1615		
Grp Volume(v), veh/h	41	545	504	255	360	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1863	1576	1774	1615		
Q Serve(g_s), s	0.8	2.6	7.3	3.8	3.3	0.0		
Cycle Q Clear(g_c), s	0.8	2.6	7.3	3.8	3.3	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	67	2111	830	702	628	286		
V/C Ratio(X)	0.62	0.26	0.61	0.36	0.57	0.00		
Avail Cap(c_a), veh/h	201	3007	1160	982	2210	1006		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	16.7	3.4	7.4	6.5	13.3	0.0		
Incr Delay (d2), s/veh	8.9	0.1	0.7	0.3	0.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	1.2	3.8	1.7	1.7	0.0		
LnGrp Delay(d),s/veh	25.7	3.5	8.2	6.8	14.1	0.0		
LnGrp LOS	C	A	A	A	B			
Approach Vol, veh/h		586	759		360			
Approach Delay, s/veh		5.0	7.7		14.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				25.1		10.3	5.3	19.7
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				30.0		22.0	4.0	22.0
Max Q Clear Time (g_c+I1), s				4.6		5.3	2.8	9.3
Green Ext Time (p_c), s				9.0		1.2	0.0	6.3
Intersection Summary								
HCM 2010 Ctrl Delay			8.1					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
1008: Oak Street & Lincoln Street

Cumulative No Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	290	592	815	6	6	551		
Future Volume (veh/h)	290	592	815	6	6	551		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	305	623	862	0	6	580		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	473	422	946	1118	497	421		
Arrive On Green	0.27	0.27	0.27	0.00	0.27	0.27		
Sat Flow, veh/h	1774	1583	3548	1863	1863	1577		
Grp Volume(v), veh/h	305	623	862	0	6	580		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1577		
Q Serve(g_s), s	9.1	16.0	14.1	0.0	0.1	16.0		
Cycle Q Clear(g_c), s	9.1	16.0	14.1	0.0	0.1	16.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	473	422	946	1118	497	421		
V/C Ratio(X)	0.64	1.48	0.91	0.00	0.01	1.38		
Avail Cap(c_a), veh/h	473	422	946	1118	497	421		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	19.5	22.0	21.3	0.0	16.2	22.0		
Incr Delay (d2), s/veh	3.0	226.5	12.7	0.0	0.0	184.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.8	38.6	8.5	0.0	0.1	28.5		
LnGrp Delay(d),s/veh	22.5	248.5	34.0	0.0	16.2	206.8		
LnGrp LOS	C	F	C		B	F		
Approach Vol, veh/h	928			862	586			
Approach Delay, s/veh	174.2			34.0	204.9			
Approach LOS	F			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		40.0		20.0	20.0	20.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		36.0		16.0	16.0	16.0		
Max Q Clear Time (g_c+l1), s		0.0		18.0	16.1	18.0		
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			130.9					
HCM 2010 LOS			F					
Notes								
User approved volume balancing among the lanes for turning movement.								

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
PM Peak Hour

Intersection 1 **Cirby Way/Foothills Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	830	665	80.1%	188.7	56.4	F
	Right Turn	461	345	74.8%	210.4	65.7	F
	Subtotal	1,291	1,010	78.2%	196.1	59.1	F
SB	Left Turn	1,479	1,333	90.1%	59.1	10.5	E
	Through	760	847	111.5%	32.7	9.3	C
	Right Turn						
	Subtotal	2,239	2,180	97.4%	48.9	9.4	D
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	555	363	65.4%	58.8	8.6	E
	Through						
	Right Turn	1,967	1,379	70.1%	25.4	5.5	C
	Subtotal	2,522	1,742	69.1%	32.3	3.7	C
Total		6,052	4,932	81.5%	72.9	14.6	E

Intersection 2 **Cirby Way/Vernon St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	29	97.5%	123.0	75.4	F
	Through	59	56	95.3%	61.3	19.2	E
	Right Turn	130	136	104.4%	28.3	7.2	C
	Subtotal	219	221	101.0%	50.3	13.0	D
SB	Left Turn	79	77	97.2%	62.6	20.0	E
	Through	168	160	95.5%	53.9	11.9	D
	Right Turn	621	453	73.0%	154.9	51.0	F
	Subtotal	868	690	79.5%	120.5	35.8	F
EB	Left Turn	371	300	80.8%	158.4	40.8	F
	Through	1,539	1,221	79.3%	54.6	19.4	D
	Right Turn	30	24	79.8%	52.1	25.4	D
	Subtotal	1,940	1,544	79.6%	74.9	24.1	E
WB	Left Turn	100	78	77.9%	96.5	20.6	F
	Through	1,871	1,341	71.7%	58.1	16.9	E
	Right Turn	60	40	66.5%	37.0	21.9	D
	Subtotal	2,031	1,459	71.8%	59.7	17.1	E
Total		5,058	3,915	77.4%	75.9	15.8	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
PM Peak Hour

Intersection 3 Cirby Way/Melody Ln Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	261	242	92.9%	50.8	19.6	D
	Subtotal	261	242	92.9%	50.8	19.6	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,918	1,529	79.7%	16.1	4.4	B
	Right Turn	10	10	95.0%	9.2	5.6	A
	Subtotal	1,928	1,538	79.8%	16.1	4.4	B
WB	Left Turn	361	281	77.8%	29.9	9.2	C
	Through	2,243	1,737	77.4%	4.8	1.2	A
	Right Turn						
	Subtotal	2,604	2,018	77.5%	8.2	1.4	A
Total		4,793	3,798	79.3%	14.2	3.1	B

Intersection 4 Cirby Way/Riverside Ave Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	1,133	1,030	90.9%	47.5	3.8	D
	Through	723	670	92.6%	43.3	4.8	D
	Right Turn	249	238	95.5%	23.1	3.9	C
	Subtotal	2,105	1,938	92.0%	43.2	1.9	D
SB	Left Turn	371	319	86.0%	110.1	36.6	F
	Through	699	537	76.8%	162.6	41.1	F
	Right Turn	160	120	75.3%	139.8	52.9	F
	Subtotal	1,230	977	79.4%	142.9	41.3	F
EB	Left Turn	160	102	63.9%	165.1	25.1	F
	Through	967	744	76.9%	59.7	9.2	E
	Right Turn	1,052	862	82.0%	17.7	3.8	B
	Subtotal	2,179	1,708	78.4%	44.9	7.3	D
WB	Left Turn	480	315	65.6%	142.1	35.7	F
	Through	1,281	866	67.6%	90.2	11.9	F
	Right Turn	192	135	70.1%	91.8	14.5	F
	Subtotal	1,953	1,316	67.4%	103.0	11.6	F
Total		7,467	5,938	79.5%	72.8	6.9	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
PM Peak Hour

Intersection 5 **Cirby Way/Cirby Hills Dr-Kaiser North Driveway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	180	157	87.0%	117.3	42.8	F
	Through						
	Right Turn	330	296	89.7%	15.7	2.7	B
	Subtotal	510	453	88.7%	51.3	16.0	D
SB	Left Turn	30	33	111.5%	62.8	14.2	E
	Through						
	Right Turn	70	68	97.2%	34.8	10.9	C
	Subtotal	100	101	101.5%	44.4	6.8	D
EB	Left Turn	60	48	80.4%	65.2	14.8	E
	Through	1,437	1,170	81.4%	15.7	1.7	B
	Right Turn	80	62	77.4%	15.1	5.0	B
	Subtotal	1,577	1,280	81.2%	17.6	1.6	B
WB	Left Turn	50	40	79.8%	79.0	25.2	E
	Through	1,703	1,199	70.4%	40.5	23.7	D
	Right Turn	20	12	58.9%	28.3	34.1	C
	Subtotal	1,773	1,251	70.6%	41.6	23.5	D
Total		3,960	3,085	77.9%	33.0	10.4	C

Intersection 6 **Cirby Way/Orlando Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	61	60	99.0%	60.9	6.1	E
	Through						
	Right Turn	520	470	90.4%	58.2	26.9	E
	Subtotal	581	530	91.3%	58.9	24.5	E
SB	Left Turn	10	10	98.8%	53.3	28.4	D
	Through						
	Right Turn	30	35	117.8%	13.4	5.2	B
	Subtotal	40	45	113.1%	24.8	10.3	C
EB	Left Turn	40	29	71.3%	67.2	19.3	E
	Through	1,556	1,265	81.3%	35.5	7.7	D
	Right Turn	201	163	80.9%	37.8	10.7	D
	Subtotal	1,797	1,457	81.1%	36.5	7.7	D
WB	Left Turn	200	145	72.6%	32.4	6.4	C
	Through	1,682	1,263	75.1%	3.8	0.7	A
	Right Turn						
	Subtotal	1,882	1,408	74.8%	6.7	1.3	A
Total		4,300	3,441	80.0%	27.7	5.4	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
PM Peak Hour

Intersection 7 **Cirby Way/Sunrise Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	709	464	65.4%	194.9	5.8	F
	Through	1,229	843	68.6%	54.0	10.2	D
	Right Turn	179	119	66.4%	30.8	9.6	C
	Subtotal	2,117	1,426	67.3%	98.1	5.2	F
SB	Left Turn	221	165	74.5%	208.6	35.3	F
	Through	1,431	1,038	72.5%	185.1	27.1	F
	Right Turn	276	196	71.0%	163.8	28.8	F
	Subtotal	1,928	1,398	72.5%	184.9	28.3	F
EB	Left Turn	410	284	69.3%	139.4	29.4	F
	Through	899	621	69.1%	114.4	30.8	F
	Right Turn	599	417	69.7%	83.9	27.7	F
	Subtotal	1,908	1,323	69.3%	110.3	29.8	F
WB	Left Turn	563	421	74.9%	190.8	20.3	F
	Through	731	577	78.9%	120.5	14.2	F
	Right Turn	60	50	83.0%	100.4	13.7	F
	Subtotal	1,354	1,048	77.4%	148.1	10.4	F
Total		7,307	5,195	71.1%	134.4	9.2	F

Intersection 8 **Riverside Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,688	1,535	90.9%	42.3	12.9	D
	Right Turn	340	297	87.4%	17.6	3.9	B
	Subtotal	2,028	1,832	90.4%	38.4	11.6	D
SB	Left Turn						
	Through	921	711	77.2%	16.7	2.7	B
	Right Turn						
	Subtotal	921	711	77.2%	16.7	2.7	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	939	880	93.7%	43.5	10.9	D
	Through						
	Right Turn	333	320	96.2%	26.2	4.0	C
	Subtotal	1,272	1,200	94.4%	39.1	8.6	D
Total		4,221	3,744	88.7%	34.5	7.4	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
PM Peak Hour

Intersection 9 **Riverside Blvd/I-80 EB Ramps-Orlando Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,408	1,208	85.8%	99.9	21.2	F
	Right Turn	99	85	85.6%	104.1	25.4	F
	Subtotal	1,507	1,293	85.8%	100.2	21.4	F
SB	Left Turn	99	79	79.5%	63.0	13.0	E
	Through	1,510	1,276	84.5%	26.1	6.4	C
	Right Turn						
	Subtotal	1,609	1,355	84.2%	28.2	6.7	C
EB	Left Turn						
	Through	480	447	93.1%	35.0	2.5	D
	Right Turn	178	168	94.1%	25.6	3.4	C
	Subtotal	658	614	93.4%	32.5	1.7	C
WB	Left Turn	181	185	102.5%	38.2	4.0	D
	Through						
	Right Turn	371	320	86.3%	118.0	54.9	F
	Subtotal	552	506	91.6%	89.6	35.1	F
Total		4,326	3,768	87.1%	61.8	9.5	E

Intersection 106 **Riverside Ave/Kaiser Drwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,921	1,767	92.0%	3.5	0.2	A
	Right Turn	100	90	89.7%	1.7	0.2	A
	Subtotal	2,021	1,856	91.9%	3.4	0.2	A
SB	Left Turn						
	Through	921	714	77.5%	3.3	0.2	A
	Right Turn	711	516	72.6%	4.0	0.4	A
	Subtotal	1,632	1,230	75.4%	3.6	0.2	A
EB	Left Turn						
	Through						
	Right Turn	599	474	79.2%	6.7	0.3	A
	Subtotal	599	474	79.2%	6.7	0.3	A
WB	Left Turn						
	Through						
	Right Turn	184	188	102.0%	13.8	3.6	B
	Subtotal	184	188	102.0%	13.8	3.6	B
Total		4,436	3,749	84.5%	4.4	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative No Project
PM Peak Hour

Intersection 102 Lindsay Dr-Northridge Dr/Cirby Way Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	50	52	103.4%	20.6	5.6	C
	Subtotal	50	52	103.4%	20.6	5.6	C
SB	Left Turn	50	48	96.5%	57.7	11.6	E
	Through						
	Right Turn	20	20	100.7%	11.0	4.0	B
	Subtotal	70	68	97.7%	43.4	6.3	D
EB	Left Turn	19	14	76.0%	65.9	36.6	E
	Through	1,778	1,433	80.6%	3.2	0.7	A
	Right Turn	30	24	81.1%	1.9	0.9	A
	Subtotal	1,827	1,471	80.5%	3.8	0.8	A
WB	Left Turn	10	9	87.4%	81.0	29.0	F
	Through	2,151	1,671	77.7%	5.2	3.9	A
	Right Turn	10	7	72.2%	2.4	3.6	A
	Subtotal	2,171	1,687	77.7%	5.5	3.9	A
Total		4,118	3,279	79.6%	5.8	2.2	A

Intersection 104 San Simeon Dr/Cirby Way Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	154	143	92.8%	111.2	36.9	F
	Through						
	Right Turn	259	244	94.3%	36.6	19.2	D
	Subtotal	413	387	93.8%	65.5	19.3	E
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,649	1,371	83.1%	14.3	2.2	B
	Right Turn	437	337	77.1%	16.4	2.4	B
	Subtotal	2,086	1,708	81.9%	14.7	2.2	B
WB	Left Turn	67	47	69.8%	58.7	15.2	E
	Through	1,718	1,258	73.2%	4.0	0.7	A
	Right Turn						
	Subtotal	1,785	1,305	73.1%	6.1	1.1	A
Total		4,284	3,400	79.4%	17.2	3.2	B

HCM 2010 Signalized Intersection Summary

1: Blue Oaks Blvd & Grasscreek Drive

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	23	545	305	20	92	76		
Future Volume (veh/h)	23	545	305	20	92	76		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	24	574	321	21	97	80		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	41	1603	1051	326	911	813		
Arrive On Green	0.02	0.32	0.21	0.21	0.51	0.51		
Sat Flow, veh/h	1774	5253	5253	1576	1774	1583		
Grp Volume(v), veh/h	24	574	321	21	97	80		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1576	1774	1583		
Q Serve(g_s), s	0.6	4.1	2.5	0.5	1.3	1.2		
Cycle Q Clear(g_c), s	0.6	4.1	2.5	0.5	1.3	1.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	41	1603	1051	326	911	813		
V/C Ratio(X)	0.59	0.36	0.31	0.06	0.11	0.10		
Avail Cap(c_a), veh/h	152	3047	2177	674	911	813		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.6	12.4	15.7	14.9	5.8	5.8		
Incr Delay (d2), s/veh	12.9	0.1	0.2	0.1	0.2	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.4	1.9	1.2	0.2	0.7	1.6		
LnGrp Delay(d),s/veh	35.5	12.5	15.9	15.0	6.1	6.1		
LnGrp LOS	D	B	B	B	A	A		
Approach Vol, veh/h		598	342		177			
Approach Delay, s/veh		13.4	15.8		6.1			
Approach LOS		B	B		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				18.7		28.0	5.1	13.7
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				28.0		24.0	4.0	20.0
Max Q Clear Time (g_c+I1), s				6.1		3.3	2.6	4.5
Green Ext Time (p_c), s				5.8		0.5	0.0	5.0
Intersection Summary								
HCM 2010 Ctrl Delay			13.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

2: Westbrook Blvd & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	418	33	243	142	201	23	643	373	663	872	156
Future Volume (veh/h)	186	418	33	243	142	201	23	643	373	663	872	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	196	440	35	256	149	212	24	677	393	698	918	164
Adj No. of Lanes	1	3	1	2	3	1	1	3	2	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	1095	322	373	1112	328	57	1541	812	455	2684	817
Arrive On Green	0.10	0.22	0.20	0.11	0.22	0.21	0.03	0.30	0.29	0.26	0.53	0.52
Sat Flow, veh/h	1774	5085	1583	3442	5085	1583	1774	5085	2787	1774	5085	1583
Grp Volume(v), veh/h	196	440	35	256	149	212	24	677	393	698	918	164
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1583	1774	1695	1393	1774	1695	1583
Q Serve(g_s), s	9.0	6.4	1.5	6.1	2.0	10.5	1.1	9.2	10.0	22.0	8.9	4.8
Cycle Q Clear(g_c), s	9.0	6.4	1.5	6.1	2.0	10.5	1.1	9.2	10.0	22.0	8.9	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	1095	322	373	1112	328	57	1541	812	455	2684	817
V/C Ratio(X)	1.05	0.40	0.11	0.69	0.13	0.65	0.42	0.44	0.48	1.53	0.34	0.20
Avail Cap(c_a), veh/h	186	1839	554	442	1958	591	124	1839	975	455	2788	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	28.9	27.8	36.8	27.0	31.1	40.7	24.0	25.1	31.9	11.7	11.2
Incr Delay (d2), s/veh	80.4	0.2	0.1	3.5	0.1	2.1	4.9	0.2	0.4	250.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	3.0	0.7	3.1	0.9	4.8	0.6	4.3	3.9	42.3	4.2	2.1
LnGrp Delay(d),s/veh	118.8	29.1	27.9	40.3	27.0	33.3	45.6	24.2	25.5	282.6	11.7	11.3
LnGrp LOS	F	C	C	D	C	C	D	C	C	F	B	B
Approach Vol, veh/h	671				617				1094			
Approach Delay, s/veh	55.2				34.7				25.1			
Approach LOS	E				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	28.0	12.3	20.5	5.7	47.2	12.0	20.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	21.0	29.0	10.0	29.0	5.0	45.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	24.0	12.0	8.1	8.4	3.1	10.9	11.0	12.5				
Green Ext Time (p_c), s	0.0	12.0	0.2	4.4	0.0	18.9	0.0	4.2				
Intersection Summary												
HCM 2010 Ctrl Delay	71.1											
HCM 2010 LOS	E											

HCM 2010 Signalized Intersection Summary

3: Blue Oaks Blvd & Creekview Plaza

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	57	1380	622	6	60	11		
Future Volume (veh/h)	57	1380	622	6	60	11		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	60	1453	655	6	63	12		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	77	2341	1755	545	702	627		
Arrive On Green	0.04	0.46	0.35	0.35	0.40	0.40		
Sat Flow, veh/h	1774	5253	5253	1579	1774	1583		
Grp Volume(v), veh/h	60	1453	655	6	63	12		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1579	1774	1583		
Q Serve(g_s), s	1.9	12.0	5.4	0.1	1.2	0.3		
Cycle Q Clear(g_c), s	1.9	12.0	5.4	0.1	1.2	0.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	77	2341	1755	545	702	627		
V/C Ratio(X)	0.78	0.62	0.37	0.01	0.09	0.02		
Avail Cap(c_a), veh/h	191	2744	1829	568	702	627		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	26.3	11.3	13.7	12.0	10.5	10.2		
Incr Delay (d2), s/veh	15.3	0.3	0.1	0.0	0.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	5.6	2.5	0.1	0.6	0.3		
LnGrp Delay(d),s/veh	41.7	11.7	13.8	12.0	10.8	10.3		
LnGrp LOS	D	B	B	B	B	B		
Approach Vol, veh/h		1513	661		75			
Approach Delay, s/veh		12.9	13.8		10.7			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				29.6		26.0	6.4	23.2
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				30.0		22.0	6.0	20.0
Max Q Clear Time (g_c+I1), s				14.0		3.2	3.9	7.4
Green Ext Time (p_c), s				11.6		0.1	0.0	9.6
Intersection Summary								
HCM 2010 Ctrl Delay			13.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: West Park Drive & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	1362	79	1	649	59	1		
Future Volume (veh/h)	1362	79	1	649	59	1		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1434	83	1	683	62	1		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2009	624	3	2387	682	608		
Arrive On Green	0.40	0.40	0.00	0.47	0.38	0.38		
Sat Flow, veh/h	5253	1579	1774	5253	1774	1583		
Grp Volume(v), veh/h	1434	83	1	683	62	1		
Grp Sat Flow(s),veh/h/ln	1695	1579	1774	1695	1774	1583		
Q Serve(g_s), s	13.0	1.8	0.0	4.5	1.2	0.0		
Cycle Q Clear(g_c), s	13.0	1.8	0.0	4.5	1.2	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2009	624	3	2387	682	608		
V/C Ratio(X)	0.71	0.13	0.31	0.29	0.09	0.00		
Avail Cap(c_a), veh/h	2140	665	130	2884	682	608		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.9	10.6	27.3	8.9	10.7	10.4		
Incr Delay (d2), s/veh	1.1	0.1	46.4	0.1	0.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.2	0.8	0.1	2.1	0.6	0.0		
LnGrp Delay(d),s/veh	15.0	10.6	73.7	9.0	11.0	10.4		
LnGrp LOS	B	B	E	A	B	B		
Approach Vol, veh/h	1517			684	63			
Approach Delay, s/veh	14.8			9.0	11.0			
Approach LOS	B			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		25.0	4.1	25.6				29.7
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		21.0	4.0	23.0				31.0
Max Q Clear Time (g_c+I1), s		3.2	2.0	15.0				6.5
Green Ext Time (p_c), s		0.1	0.0	6.6				16.1
Intersection Summary								
HCM 2010 Ctrl Delay			12.9					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

5: Hayden Pkwy & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1286	24	89	505	79	34	68	126	364	87	111
Future Volume (veh/h)	54	1286	24	89	505	79	34	68	126	364	87	111
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	57	1354	25	94	532	83	36	72	133	383	92	117
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	1874	565	139	2006	606	68	249	212	437	637	542
Arrive On Green	0.05	0.37	0.36	0.08	0.39	0.38	0.04	0.13	0.13	0.25	0.34	0.34
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	57	1354	25	94	532	83	36	72	133	383	92	117
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.7	19.9	0.9	4.5	6.1	3.0	1.7	3.0	6.9	18.0	3.0	4.6
Cycle Q Clear(g_c), s	2.7	19.9	0.9	4.5	6.1	3.0	1.7	3.0	6.9	18.0	3.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	1874	565	139	2006	606	68	249	212	437	637	542
V/C Ratio(X)	0.61	0.72	0.04	0.68	0.27	0.14	0.53	0.29	0.63	0.88	0.14	0.22
Avail Cap(c_a), veh/h	184	2050	620	163	2006	606	204	708	602	490	1008	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	23.6	18.2	38.9	17.8	17.4	41.0	33.9	35.6	31.4	19.8	20.3
Incr Delay (d2), s/veh	6.4	1.2	0.0	8.5	0.1	0.1	6.3	0.6	3.0	15.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.5	0.4	2.5	2.9	1.3	1.0	1.6	3.2	10.7	1.6	2.0
LnGrp Delay(d),s/veh	46.7	24.8	18.3	47.4	17.8	17.5	47.3	34.5	38.6	46.5	19.9	20.5
LnGrp LOS	D	C	B	D	B	B	D	C	D	D	B	C
Approach Vol, veh/h	1436				709				241			
Approach Delay, s/veh	25.5				21.7				38.7			
Approach LOS	C				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	15.6	10.8	35.0	7.3	33.7	8.6	37.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	23.0	32.0	7.0	33.0	9.0	46.0	8.0	32.0				
Max Q Clear Time (g_c+I1), s	20.0	8.9	6.5	21.9	3.7	6.6	4.7	8.1				
Green Ext Time (p_c), s	0.4	1.7	0.0	8.1	0.0	1.8	0.0	14.2				
Intersection Summary												
HCM 2010 Ctrl Delay	28.0											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

6: Fiddymment Rd & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	1468	113	302	483	90	78	764	514	366	965	142
Future Volume (veh/h)	101	1468	113	302	483	90	78	764	514	366	965	142
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	106	1545	119	318	508	95	82	804	541	385	1016	149
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	671	1499	431	362	935	255	345	1319	548	362	1262	522
Arrive On Green	0.20	0.29	0.27	0.11	0.18	0.16	0.10	0.37	0.35	0.11	0.36	0.33
Sat Flow, veh/h	3442	5085	1575	3442	5085	1569	3442	3539	1576	3442	3539	1576
Grp Volume(v), veh/h	106	1545	119	318	508	95	82	804	541	385	1016	149
Grp Sat Flow(s),veh/h/ln	1721	1695	1575	1721	1695	1569	1721	1770	1576	1721	1770	1576
Q Serve(g_s), s	2.4	28.0	3.9	8.7	8.6	3.8	2.1	17.5	32.4	10.0	24.6	6.6
Cycle Q Clear(g_c), s	2.4	28.0	3.9	8.7	8.6	3.8	2.1	17.5	32.4	10.0	24.6	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	671	1499	431	362	935	255	345	1319	548	362	1262	522
V/C Ratio(X)	0.16	1.03	0.28	0.88	0.54	0.37	0.24	0.61	0.99	1.06	0.80	0.29
Avail Cap(c_a), veh/h	671	1499	431	362	1445	413	362	1319	548	362	1319	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	33.5	12.8	41.9	35.1	19.9	39.4	24.2	30.8	42.5	27.6	23.5
Incr Delay (d2), s/veh	0.0	31.5	0.5	20.2	0.7	1.3	0.1	1.2	35.3	64.9	4.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	17.4	1.7	5.1	4.1	1.7	1.0	8.7	19.4	8.0	12.7	3.0
LnGrp Delay(d),s/veh	31.8	65.0	13.3	62.1	35.9	21.2	39.5	25.4	66.1	107.4	31.7	24.0
LnGrp LOS	C	F	B	E	D	C	D	C	E	F	C	C
Approach Vol, veh/h	1770				921				1427			
Approach Delay, s/veh	59.6				43.4				41.6			
Approach LOS	E				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	38.0	13.0	31.0	14.5	36.5	23.5	20.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	6.0	* 6	6.0	* 6				
Max Green Setting (Gmax), s	9.0	32.0	9.0	25.0	9.0	* 32	10.0	* 24				
Max Q Clear Time (g_c+I1), s	12.0	34.4	10.7	30.0	4.1	26.6	4.4	10.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	3.8	3.8	4.4	3.3				

Intersection Summary

HCM 2010 Ctrl Delay 49.7
HCM 2010 LOS D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
7: Blue Oaks Blvd & Orchard View Rd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	7	2336	860	96	244	8		
Future Volume (veh/h)	7	2336	860	96	244	8		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	7	2459	905	101	257	8		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	49	3574	3182	991	351	314		
Arrive On Green	0.03	0.70	0.63	0.63	0.20	0.20		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	7	2459	905	101	257	8		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.2	16.8	4.9	1.5	8.2	0.2		
Cycle Q Clear(g_c), s	0.2	16.8	4.9	1.5	8.2	0.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	49	3574	3182	991	351	314		
V/C Ratio(X)	0.14	0.69	0.28	0.10	0.73	0.03		
Avail Cap(c_a), veh/h	381	3865	3182	991	821	732		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.7	5.2	5.2	4.5	22.8	19.6		
Incr Delay (d2), s/veh	0.5	0.6	0.1	0.1	1.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	7.7	2.3	0.7	4.1	0.2		
LnGrp Delay(d),s/veh	29.2	5.7	5.2	4.6	23.9	19.6		
LnGrp LOS	C	A	A	A	C	B		
Approach Vol, veh/h		2466	1006		265			
Approach Delay, s/veh		5.8	5.2		23.7			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				45.5		15.0	4.7	40.9
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				43.0		27.0	12.0	27.0
Max Q Clear Time (g_c+l1), s				18.8		10.2	2.2	6.9
Green Ext Time (p_c), s				20.7		0.9	0.0	19.7
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

8: Del Webb Blvd & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↘	↑↑↑	↘	↗		
Traffic Volume (veh/h)	2604	13	64	937	18	92		
Future Volume (veh/h)	2604	13	64	937	18	92		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2741	14	67	986	19	97		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3332	1037	174	4018	223	199		
Arrive On Green	0.66	0.66	0.10	0.79	0.13	0.13		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	2741	14	67	986	19	97		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	33.0	0.3	2.9	4.1	0.8	4.7		
Cycle Q Clear(g_c), s	33.0	0.3	2.9	4.1	0.8	4.7		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3332	1037	174	4018	223	199		
V/C Ratio(X)	0.82	0.01	0.38	0.25	0.09	0.49		
Avail Cap(c_a), veh/h	3355	1045	217	4163	674	602		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.6	4.9	34.6	2.2	31.6	33.3		
Incr Delay (d2), s/veh	1.8	0.0	0.5	0.0	0.1	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	15.8	0.1	1.4	1.9	0.4	2.1		
LnGrp Delay(d),s/veh	12.4	4.9	35.1	2.3	31.7	34.0		
LnGrp LOS	B	A	D	A	C	C		
Approach Vol, veh/h	2755			1053	116			
Approach Delay, s/veh	12.4			4.4	33.6			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.2	11.0	56.6				67.7
Change Period (Y+Rc), s		4.9	4.0	6.0				6.0
Max Green Setting (Gmax), s		30.1	9.0	51.0				64.0
Max Q Clear Time (g_c+I1), s		6.7	4.9	35.0				6.1
Green Ext Time (p_c), s		0.2	0.0	15.6				53.6
Intersection Summary								
HCM 2010 Ctrl Delay			10.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
9: Blue Oaks Blvd & Crocker Ranch Rd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	10	2655	914	169	395	47		
Future Volume (veh/h)	10	2655	914	169	395	47		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	11	2795	962	178	416	49		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	52	3246	2902	900	485	433		
Arrive On Green	0.03	0.64	0.57	0.57	0.27	0.27		
Sat Flow, veh/h	1774	5253	5253	1576	1774	1583		
Grp Volume(v), veh/h	11	2795	962	178	416	49		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1576	1774	1583		
Q Serve(g_s), s	0.5	34.4	7.8	4.3	17.4	1.8		
Cycle Q Clear(g_c), s	0.5	34.4	7.8	4.3	17.4	1.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	52	3246	2902	900	485	433		
V/C Ratio(X)	0.21	0.86	0.33	0.20	0.86	0.11		
Avail Cap(c_a), veh/h	159	3334	2902	900	728	650		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.0	11.3	8.9	8.1	26.9	21.2		
Incr Delay (d2), s/veh	0.8	2.6	0.1	0.2	4.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	16.6	3.7	1.9	9.0	1.8		
LnGrp Delay(d),s/veh	37.7	13.9	9.0	8.3	31.3	21.3		
LnGrp LOS	D	B	A	A	C	C		
Approach Vol, veh/h		2806	1140		465			
Approach Delay, s/veh		14.0	8.8		30.3			
Approach LOS		B	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				52.7		25.2	5.3	47.5
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				48.1		31.0	6.0	38.1
Max Q Clear Time (g_c+I1), s				36.4		19.4	2.5	9.8
Green Ext Time (p_c), s				10.3		0.9	0.0	27.5
Intersection Summary								
HCM 2010 Ctrl Delay			14.4					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

10: Diamond Creek Blvd & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	2679	251	28	970	179	40	5	1	110	96	33
Future Volume (veh/h)	116	2679	251	28	970	179	40	5	1	110	96	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	122	2820	264	29	1021	188	46	0	1	116	101	35
Adj No. of Lanes	1	3	1	1	3	1	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	3505	1091	71	3261	1015	274	0	122	178	133	46
Arrive On Green	0.09	0.69	0.69	0.04	0.64	0.64	0.08	0.00	0.08	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3548	0	1583	1774	1323	459
Grp Volume(v), veh/h	122	2820	264	29	1021	188	46	0	1	116	0	136
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	0	1583	1774	0	1782
Q Serve(g_s), s	9.8	56.1	9.0	2.3	13.1	7.0	1.8	0.0	0.1	9.1	0.0	10.8
Cycle Q Clear(g_c), s	9.8	56.1	9.0	2.3	13.1	7.0	1.8	0.0	0.1	9.1	0.0	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	156	3505	1091	71	3261	1015	274	0	122	178	0	179
V/C Ratio(X)	0.78	0.80	0.24	0.41	0.31	0.19	0.17	0.00	0.01	0.65	0.00	0.76
Avail Cap(c_a), veh/h	232	3505	1091	159	3261	1015	318	0	142	319	0	321
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.7	15.7	8.4	67.9	11.7	10.6	62.6	0.0	61.8	62.8	0.0	63.5
Incr Delay (d2), s/veh	4.9	2.1	0.5	1.4	0.3	0.4	0.5	0.0	0.0	4.2	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	26.5	4.0	1.2	6.1	3.1	0.9	0.0	0.0	4.7	0.0	5.7
LnGrp Delay(d),s/veh	69.7	17.8	8.9	69.3	11.9	11.0	63.0	0.0	61.8	66.9	0.0	70.3
LnGrp LOS	E	B	A	E	B	B	E		E	E		E
Approach Vol, veh/h	3206		1238				47		252			
Approach Delay, s/veh	19.0		13.1				63.0		68.8			
Approach LOS	B		B				E		E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	14.8		8.8	102.9	18.5		15.8	96.0				
Change Period (Y+Rc), s	4.6		4.0	6.0	4.9		4.0	6.0				
Max Green Setting (Gmax), s	12.0		12.0	76.4	25.1		18.0	70.4				
Max Q Clear Time (g_c+I1), s	3.8		4.3	58.1	12.8		11.8	15.1				
Green Ext Time (p_c), s	0.1		0.0	18.3	0.8		0.1	55.1				
Intersection Summary												
HCM 2010 Ctrl Delay	20.6											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

11: Woodcreek Oaks Blvd & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	2526	113	266	981	125	168	135	470	161	147	46
Future Volume (veh/h)	42	2526	113	266	981	125	168	135	470	161	147	46
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	44	2659	119	280	1033	132	177	142	495	169	155	48
Adj No. of Lanes	2	3	1	2	4	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	2771	863	309	3138	775	607	715	298	285	342	153
Arrive On Green	0.26	1.00	1.00	0.09	0.49	0.49	0.18	0.20	0.19	0.08	0.10	0.10
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	44	2659	119	280	1033	132	177	142	495	169	155	48
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.4	0.0	0.0	11.7	14.2	4.5	6.5	4.8	27.3	6.9	6.0	4.1
Cycle Q Clear(g_c), s	1.4	0.0	0.0	11.7	14.2	4.5	6.5	4.8	27.3	6.9	6.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	451	2771	863	309	3138	775	607	715	298	285	342	153
V/C Ratio(X)	0.10	0.96	0.14	0.91	0.33	0.17	0.29	0.20	1.66	0.59	0.45	0.31
Avail Cap(c_a), veh/h	475	2771	863	309	3138	775	607	715	298	309	715	320
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	0.0	0.0	65.4	22.5	9.4	51.8	48.1	58.9	64.2	61.9	61.0
Incr Delay (d2), s/veh	0.0	10.0	0.3	28.3	0.3	0.5	0.1	0.2	311.7	1.5	1.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.6	0.1	6.8	6.4	2.1	3.1	2.4	37.8	3.3	3.0	1.9
LnGrp Delay(d),s/veh	47.0	10.0	0.3	93.7	22.8	9.9	51.9	48.3	370.5	65.7	63.1	62.6
LnGrp LOS	D	A	A	F	C	A	D	D	F	E	E	E
Approach Vol, veh/h	2822				1445				814			
Approach Delay, s/veh	10.1				35.3				245.0			
Approach LOS	B				D				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	32.0	16.0	82.0	30.3	16.7	24.0	74.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	5.7	* 5.7	6.0	* 6				
Max Green Setting (Gmax), s	12.0	26.3	12.0	75.0	12.0	* 26	19.0	* 68				
Max Q Clear Time (g_c+I1), s	8.9	29.3	13.7	2.0	8.5	8.0	3.4	16.2				
Green Ext Time (p_c), s	0.1	0.0	0.0	67.5	1.5	1.0	15.3	19.1				

Intersection Summary

HCM 2010 Ctrl Delay	55.6
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
12: Blue Oaks Blvd & Wood Meadow Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	3490	0	187	1133	76	0	0	58	14	0	0
Future Volume (veh/h)	0	3490	0	187	1133	76	0	0	58	14	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	3674	0	197	1193	80	0	0	61	15	0	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	4665	1131	171	5460	1327	1	111	94	34	198	169
Arrive On Green	0.00	0.49	0.00	0.10	0.85	0.84	0.00	0.00	0.06	0.02	0.00	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	3674	0	197	1193	80	0	0	61	15	0	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	69.2	0.0	14.0	4.9	1.2	0.0	0.0	5.5	1.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	69.2	0.0	14.0	4.9	1.2	0.0	0.0	5.5	1.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1	4665	1131	171	5460	1327	1	111	94	34	198	169
V/C Ratio(X)	0.00	0.79	0.00	1.15	0.22	0.06	0.00	0.00	0.65	0.44	0.00	0.00
Avail Cap(c_a), veh/h	147	4665	1131	171	5460	1327	147	552	470	147	552	470
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.93	0.93	0.93	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	27.8	0.0	65.5	1.9	2.0	0.0	0.0	66.7	70.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	0.0	112.7	0.0	0.0	0.0	0.0	7.2	8.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	31.1	0.0	12.2	2.2	0.5	0.0	0.0	2.6	0.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	29.2	0.0	178.2	2.0	2.0	0.0	0.0	73.9	78.7	0.0	0.0
LnGrp LOS	C			F			A			E		
Approach Vol, veh/h	3674			1470			61			15		
Approach Delay, s/veh	29.2			25.6			73.9			78.7		
Approach LOS	C			C			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	12.6	18.0	107.6	0.0	19.4	0.0	125.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	42.0	13.0	59.0	11.0	42.0	11.0	61.0				
Max Q Clear Time (g_c+I1), s	3.2	7.5	16.0	71.2	0.0	0.0	0.0	6.9				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.0	0.0	53.5				
Intersection Summary												
HCM 2010 Ctrl Delay			28.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

13: Blue Oaks Blvd & New Meadow Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	18	3125	0	1620	33	602	30	
Future Volume (veh/h)	18	3125	0	1620	33	602	30	
Number	7	4		8	18	1	16	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	19	3289		1705	35	634	32	
Adj No. of Lanes	1	4		4	1	2	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	51	4805		4486	1108	707	325	
Arrive On Green	0.06	1.00		0.70	0.70	0.21	0.21	
Sat Flow, veh/h	1774	6669		6669	1583	3442	1583	
Grp Volume(v), veh/h	19	3289		1705	35	634	32	
Grp Sat Flow(s),veh/h/ln	1774	1602		1602	1583	1721	1583	
Q Serve(g_s), s	1.5	0.0		15.8	1.0	26.0	2.4	
Cycle Q Clear(g_c), s	1.5	0.0		15.8	1.0	26.0	2.4	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	51	4805		4486	1108	707	325	
V/C Ratio(X)	0.37	0.68		0.38	0.03	0.90	0.10	
Avail Cap(c_a), veh/h	159	4805		4486	1108	762	351	
HCM Platoon Ratio	2.00	2.00		1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.50	0.50		1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	67.0	0.0		8.9	6.7	56.1	46.7	
Incr Delay (d2), s/veh	0.8	0.4		0.1	0.0	12.1	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.7	0.1		6.9	0.4	13.6	2.3	
LnGrp Delay(d),s/veh	67.8	0.4		9.0	6.7	68.3	46.8	
LnGrp LOS	E	A		A	A	E	D	
Approach Vol, veh/h		3308		1740		666		
Approach Delay, s/veh		0.8		8.9		67.2		
Approach LOS		A		A		E		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				111.3		33.7	7.2	104.1
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				87.0		31.1	12.0	87.0
Max Q Clear Time (g_c+I1), s				2.0		28.0	3.5	17.8
Green Ext Time (p_c), s				80.7		0.8	0.0	31.0
Intersection Summary								
HCM 2010 Ctrl Delay			11.0					
HCM 2010 LOS			B					
Notes								
User approved ignoring U-Turning movement.								

HCM 2010 Signalized Intersection Summary
14: Collector C & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	4280	0	0	1434	0	0	0	0	0	0	0
Future Volume (veh/h)	0	4280	0	0	1434	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	4505	0	0	1509	0	0	0	0	0	0	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	6143	1518	1	6143	1518	1	1	0	0	1	0
Arrive On Green	0.00	0.96	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	0	1863	0
Grp Volume(v), veh/h	0	4505	0	0	1509	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	0	1863	0
Q Serve(g_s), s	0.0	14.2	0.0	0.0	1.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.2	0.0	0.0	1.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	1	6143	1518	1	6143	1518	1	1	-48	0	1	0
V/C Ratio(X)	0.00	0.73	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	126	6143	1518	122	6143	1518	196	206	126	0	206	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	1.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A				A							
Approach Vol, veh/h	4505				1509				0			
Approach Delay, s/veh	1.2				0.3				0.0			
Approach LOS	A				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	0.0		0.0	145.0	0.0		0.0	145.0				
Change Period (Y+Rc), s	4.5		4.5	6.0	4.5		4.5	6.0				
Max Green Setting (Gmax), s	16.0		10.0	83.5	16.0		10.3	83.2				
Max Q Clear Time (g_c+I1), s	0.0		0.0	16.2	0.0		0.0	3.8				
Green Ext Time (p_c), s	0.0		0.0	66.9	0.0		0.0	78.8				
Intersection Summary												
HCM 2010 Ctrl Delay	1.0											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

15: Foothills Blvd & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	684	2378	836	165	1307	432	267	499	248	184	526	207
Future Volume (veh/h)	684	2378	836	165	1307	432	267	499	248	184	526	207
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	720	2503	880	174	1376	455	281	525	0	194	554	218
Adj No. of Lanes	2	4	1	2	4	1	3	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	926	3630	897	244	2271	561	407	640	260	308	916	285
Arrive On Green	0.54	1.00	1.00	0.07	0.35	0.35	0.08	0.18	0.00	0.09	0.18	0.18
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	5003	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	720	2503	880	174	1376	455	281	525	0	194	554	218
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1668	1770	1583	1721	1695	1583
Q Serve(g_s), s	24.1	0.0	0.0	7.2	25.6	26.6	7.9	20.7	0.0	7.9	14.5	19.0
Cycle Q Clear(g_c), s	24.1	0.0	0.0	7.2	25.6	26.6	7.9	20.7	0.0	7.9	14.5	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	926	3630	897	244	2271	561	407	640	260	308	916	285
V/C Ratio(X)	0.78	0.69	0.98	0.71	0.61	0.81	0.69	0.82	0.00	0.63	0.61	0.76
Avail Cap(c_a), veh/h	1021	3630	897	309	2271	561	449	644	262	309	950	296
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	0.0	65.9	38.5	21.1	64.8	57.1	0.0	63.7	54.7	56.5
Incr Delay (d2), s/veh	3.0	1.1	25.8	3.5	1.2	12.0	2.9	8.1	0.0	3.1	2.4	15.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	0.3	6.4	3.5	11.5	13.5	3.8	10.9	0.0	3.9	7.0	9.5
LnGrp Delay(d),s/veh	33.1	1.1	25.8	69.5	39.7	33.1	67.7	65.2	0.0	66.8	57.1	72.4
LnGrp LOS	C	A	C	E	D	C	E	E		E	E	E
Approach Vol, veh/h	4103				2005				806			
Approach Delay, s/veh	12.0				40.8				66.1			
Approach LOS	B				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	28.0	44.0	54.0	16.0	28.8	13.3	84.7				
Change Period (Y+Rc), s	6.0	* 5.3	6.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	12.0	* 24	42.0	* 48	12.0	23.0	12.0	78.0				
Max Q Clear Time (g_c+I1), s	9.9	21.0	26.1	28.6	9.9	22.7	9.2	2.0				
Green Ext Time (p_c), s	0.8	1.7	11.9	16.1	0.1	0.1	0.1	74.7				

Intersection Summary

HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
16: Fidelity Way & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↑	↗	↙	↑↑↑↑		↗		
Traffic Volume (veh/h)	2546	52	118	2440	9	16		
Future Volume (veh/h)	2546	52	118	2440	9	16		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1900	1863		
Adj Flow Rate, veh/h	2680	55	124	2568	9	17		
Adj No. of Lanes	4	1	1	3	0	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3132	774	158	3503	0	0		
Arrive On Green	0.49	0.49	0.09	0.69	0.09	0.09		
Sat Flow, veh/h	6669	1583	1774	5253	0	0		
Grp Volume(v), veh/h	2680	55	124	2568	0	0		
Grp Sat Flow(s),veh/h/ln	1602	1583	1774	1695	0	0		
Q Serve(g_s), s	16.5	0.8	3.1	14.3	0.0	0.0		
Cycle Q Clear(g_c), s	16.5	0.8	3.1	14.3	0.0	0.0		
Prop In Lane		1.00	1.00		0.00	0.00		
Lane Grp Cap(c), veh/h	3132	774	158	3503	0	0		
V/C Ratio(X)	0.86	0.07	0.79	0.73	0.00	0.00		
Avail Cap(c_a), veh/h	3133	774	158	3503	0	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00		
Uniform Delay (d), s/veh	10.1	6.1	20.1	4.4	0.0	0.0		
Incr Delay (d2), s/veh	2.5	0.0	22.6	0.8	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.6	0.4	2.5	6.7	0.0	0.0		
LnGrp Delay(d),s/veh	12.6	6.1	42.7	5.2	0.0	0.0		
LnGrp LOS	B	A	D	A				
Approach Vol, veh/h	2735			2692	0			
Approach Delay, s/veh	12.5			6.9	0.0			
Approach LOS	B			A				
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	9.0	27.0				36.0
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		4.0	4.0	22.0				31.0
Max Q Clear Time (g_c+I1), s		0.0	5.1	18.5				16.3
Green Ext Time (p_c), s		0.0	0.0	3.5				14.7
Intersection Summary								
HCM 2010 Ctrl Delay			9.7					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
17: Washington Blvd & Blue Oaks Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↗↗	↑↑↑	↗	↗↗		↗↗	↗	↑↑	↗
Traffic Volume (veh/h)	0	2288	502	527	989	401	322	0	720	3	622	136
Future Volume (veh/h)	0	2288	502	527	989	401	322	0	720	3	622	136
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	1863	1863	0	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2408	528	555	1041	0	339	0	758	3	655	0
Adj No. of Lanes	0	4	1	2	3	1	2	0	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	2	2	0	2	2	2	2
Cap, veh/h	0	2107	499	649	2700	841	0	0	0	366	780	349
Arrive On Green	0.00	0.33	0.31	0.19	0.53	0.00	0.01	0.00	0.01	0.21	0.22	0.00
Sat Flow, veh/h	0	6669	1583	3442	5085	1583		0		1774	3539	1583
Grp Volume(v), veh/h	0	2408	528	555	1041	0		0.0		3	655	0
Grp Sat Flow(s),veh/h/ln	0	1602	1583	1721	1695	1583				1774	1770	1583
Q Serve(g_s), s	0.0	47.7	45.7	22.6	17.5	0.0				0.2	25.7	0.0
Cycle Q Clear(g_c), s	0.0	47.7	45.7	22.6	17.5	0.0				0.2	25.7	0.0
Prop In Lane	0.00		1.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2107	499	649	2700	841				366	780	349
V/C Ratio(X)	0.00	1.14	1.06	0.86	0.39	0.00				0.01	0.84	0.00
Avail Cap(c_a), veh/h	0	2107	499	736	2700	841				404	854	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	48.7	49.7	56.9	20.0	0.0				45.7	54.1	0.0
Incr Delay (d2), s/veh	0.0	70.6	56.8	8.0	0.4	0.0				0.0	7.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	31.4	27.8	11.5	8.3	0.0				0.1	13.4	0.0
LnGrp Delay(d),s/veh	0.0	119.3	106.4	64.9	20.5	0.0				45.7	62.0	0.0
LnGrp LOS		F	F	E	C					D	E	
Approach Vol, veh/h		2936			1596						658	
Approach Delay, s/veh		117.0			35.9						61.9	
Approach LOS		F			D						E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			29.3	51.7		35.9		81.0				
Change Period (Y+Rc), s			4.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s			29.0	42.0		33.0		75.0				
Max Q Clear Time (g_c+I1), s			24.6	49.7		27.7		19.5				
Green Ext Time (p_c), s			0.7	0.0		2.3		53.9				
Intersection Summary												
HCM 2010 Ctrl Delay			85.1									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary
18: Santucci Blvd & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	462	604	5	199	21	360	42	2	71	127	0
Future Volume (veh/h)	0	462	604	5	199	21	360	42	2	71	127	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	486	636	5	209	22	379	44	2	75	134	0
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	1716	743	37	2012	875	563	728	301	123	395	152
Arrive On Green	0.00	0.48	0.47	0.02	0.57	0.55	0.16	0.21	0.19	0.07	0.11	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	486	636	5	209	22	379	44	2	75	134	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	5.2	22.8	0.2	1.7	0.4	6.6	0.6	0.1	2.6	2.2	0.0
Cycle Q Clear(g_c), s	0.0	5.2	22.8	0.2	1.7	0.4	6.6	0.6	0.1	2.6	2.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	3	1716	743	37	2012	875	563	728	301	123	395	152
V/C Ratio(X)	0.00	0.28	0.86	0.13	0.10	0.03	0.67	0.06	0.01	0.61	0.34	0.00
Avail Cap(c_a), veh/h	139	1937	842	139	2012	875	969	1992	866	277	1549	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.8	15.1	30.7	6.3	6.5	25.1	20.4	21.0	28.9	26.2	0.0
Incr Delay (d2), s/veh	0.0	0.1	7.9	1.6	0.0	0.0	1.4	0.0	0.0	4.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	11.5	0.1	0.8	0.2	3.2	0.3	0.0	1.5	1.1	0.0
LnGrp Delay(d),s/veh	0.0	9.9	23.0	32.4	6.4	6.5	26.5	20.5	21.0	33.7	26.7	0.0
LnGrp LOS		A	C	C	A	A	C	C	C	C	C	
Approach Vol, veh/h	1122				236				425			
Approach Delay, s/veh	17.3				6.9				25.9			
Approach LOS	B				A				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	16.2	5.3	34.0	14.5	10.1	0.0	39.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	9.0	34.0	4.0	33.0	17.0	26.0	4.0	33.0				
Max Q Clear Time (g_c+I1), s	4.6	2.6	2.2	24.8	8.6	4.2	0.0	3.7				
Green Ext Time (p_c), s	0.0	1.0	0.0	4.2	0.9	0.9	0.0	8.6				
Intersection Summary												
HCM 2010 Ctrl Delay	19.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
19: Silver Spruce Dr & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗		
Traffic Volume (veh/h)	528	12	40	213	12	0		
Future Volume (veh/h)	528	12	40	213	12	0		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	556	13	42	224	13	0		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1265	566	69	1965	225	201		
Arrive On Green	0.36	0.36	0.04	0.56	0.13	0.00		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	556	13	42	224	13	0		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	3.8	0.2	0.7	0.9	0.2	0.0		
Cycle Q Clear(g_c), s	3.8	0.2	0.7	0.9	0.2	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1265	566	69	1965	225	201		
V/C Ratio(X)	0.44	0.02	0.61	0.11	0.06	0.00		
Avail Cap(c_a), veh/h	3260	1458	845	5508	1183	1056		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	7.7	6.6	14.9	3.3	12.1	0.0		
Incr Delay (d2), s/veh	0.2	0.0	8.3	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	0.1	0.5	0.4	0.1	0.0		
LnGrp Delay(d),s/veh	8.0	6.6	23.1	3.3	12.2	0.0		
LnGrp LOS	A	A	C	A	B			
Approach Vol, veh/h	569			266	13			
Approach Delay, s/veh	7.9			6.5	12.2			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	6.2	16.3				22.5
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		21.0	15.0	29.0				49.0
Max Q Clear Time (g_c+I1), s		2.2	2.7	5.8				2.9
Green Ext Time (p_c), s		0.0	0.0	5.6				6.3
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
20: Westbrook Blvd & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	520	8	35	220	201	17	823	79	393	831	88
Future Volume (veh/h)	145	520	8	35	220	201	17	823	79	393	831	88
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	153	547	8	37	232	212	18	866	83	414	875	93
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	1397	417	133	833	354	95	1311	568	534	2533	770
Arrive On Green	0.08	0.27	0.26	0.04	0.24	0.22	0.03	0.37	0.36	0.16	0.50	0.49
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	153	547	8	37	232	212	18	866	83	414	875	93
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	3.7	7.6	0.3	0.9	4.7	10.4	0.4	17.7	3.1	10.0	9.1	2.8
Cycle Q Clear(g_c), s	3.7	7.6	0.3	0.9	4.7	10.4	0.4	17.7	3.1	10.0	9.1	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	1397	417	133	833	354	95	1311	568	534	2533	770
V/C Ratio(X)	0.57	0.39	0.02	0.28	0.28	0.60	0.19	0.66	0.15	0.77	0.35	0.12
Avail Cap(c_a), veh/h	475	1988	601	475	1383	601	475	1587	692	633	2533	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	25.6	23.7	40.6	27.2	30.3	41.3	22.8	18.9	35.3	13.2	12.2
Incr Delay (d2), s/veh	1.9	0.2	0.0	1.1	0.2	1.6	0.9	0.8	0.1	5.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.6	0.1	0.5	2.3	4.7	0.2	8.8	1.4	5.1	4.2	1.2
LnGrp Delay(d),s/veh	40.6	25.8	23.8	41.8	27.4	31.9	42.3	23.6	19.0	40.3	13.3	12.3
LnGrp LOS	D	C	C	D	C	C	D	C	B	D	B	B
Approach Vol, veh/h	708				481				967			
Approach Delay, s/veh	29.0				30.5				23.5			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.5	35.2	7.4	26.9	6.4	46.3	10.8	23.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	37.0	11.0	32.0	11.0	41.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	12.0	19.7	2.9	9.6	2.4	11.1	5.7	12.4				
Green Ext Time (p_c), s	0.5	10.5	0.0	6.3	0.0	15.0	0.2	6.0				
Intersection Summary												
HCM 2010 Ctrl Delay	24.7											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
21: Sierra Trail Dr & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	988	4	19	447	9	8	0	94	39	0	0
Future Volume (veh/h)	0	988	4	19	447	9	8	0	94	39	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	1040	4	20	471	9	8	0	99	41	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1650	738	35	2067	925	174	0	136	65	45	0
Arrive On Green	0.00	0.47	0.47	0.02	0.58	0.58	0.10	0.00	0.09	0.04	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	0	1583	1774	1863	0
Grp Volume(v), veh/h	0	1040	4	20	471	9	8	0	99	41	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	0
Q Serve(g_s), s	0.0	9.1	0.1	0.5	2.6	0.1	0.2	0.0	2.5	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.1	0.1	0.5	2.6	0.1	0.2	0.0	2.5	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	4	1650	738	35	2067	925	174	0	136	65	45	0
V/C Ratio(X)	0.00	0.63	0.01	0.57	0.23	0.01	0.05	0.00	0.73	0.63	0.00	0.00
Avail Cap(c_a), veh/h	174	2166	969	174	2166	969	174	0	1202	174	1414	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.2	5.8	19.8	4.1	3.6	16.7	0.0	18.2	19.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	13.5	0.1	0.0	0.5	0.0	7.2	9.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	0.0	0.3	1.3	0.0	0.1	0.0	1.3	0.6	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.6	5.8	33.3	4.1	3.6	17.2	0.0	25.4	29.3	0.0	0.0
LnGrp LOS		A	A	C	A	A	B		C	C		
Approach Vol, veh/h	1044				500				107			
Approach Delay, s/veh	8.6				5.3				24.8			
Approach LOS	A				A				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	7.5	4.8	23.0	8.0	5.0	0.0	27.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	25.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s	2.9	4.5	2.5	11.1	2.2	0.0	0.0	4.6				
Green Ext Time (p_c), s	0.0	0.5	0.0	8.0	0.0	0.0	0.0	10.0				
Intersection Summary												
HCM 2010 Ctrl Delay	9.2											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
22: Market St & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1059	12	104	513	151	26	159	206	22	224	124
Future Volume (veh/h)	99	1059	12	104	513	151	26	159	206	22	224	124
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	104	1115	13	109	540	159	27	167	217	23	236	131
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	1399	626	188	1404	628	142	375	319	128	361	307
Arrive On Green	0.10	0.40	0.40	0.11	0.40	0.40	0.08	0.20	0.20	0.07	0.19	0.19
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	104	1115	13	109	540	159	27	167	217	23	236	131
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	3.7	18.5	0.3	3.9	7.2	4.5	0.9	5.2	8.5	0.8	7.8	4.8
Cycle Q Clear(g_c), s	3.7	18.5	0.3	3.9	7.2	4.5	0.9	5.2	8.5	0.8	7.8	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	1399	626	188	1404	628	142	375	319	128	361	307
V/C Ratio(X)	0.56	0.80	0.02	0.58	0.38	0.25	0.19	0.44	0.68	0.18	0.65	0.43
Avail Cap(c_a), veh/h	319	1502	672	213	1404	628	559	774	658	559	810	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	17.8	12.3	28.4	14.3	13.5	28.7	23.4	24.6	29.1	24.8	23.6
Incr Delay (d2), s/veh	1.0	3.3	0.0	1.3	0.3	0.4	0.2	0.3	1.0	0.2	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	9.6	0.1	2.0	3.6	2.0	0.5	2.7	3.8	0.4	4.1	2.1
LnGrp Delay(d),s/veh	29.4	21.1	12.3	29.7	14.6	13.9	28.9	23.7	25.6	29.3	25.6	24.0
LnGrp LOS	C	C	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1232				808				411			
Approach Delay, s/veh	21.7				16.5				25.0			
Approach LOS	C				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	17.2	10.1	31.1	7.8	17.7	10.0	31.2				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.7	4.0	5.3	4.0	5.7				
Max Green Setting (Gmax), s	20.0	* 28	7.0	27.3	20.0	26.7	11.0	23.3				
Max Q Clear Time (g_c+I1), s	2.9	9.8	5.9	20.5	2.8	10.5	5.7	9.2				
Green Ext Time (p_c), s	0.0	2.0	0.0	4.8	0.0	2.0	0.0	12.0				

Intersection Summary

HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
23: Monument Dr & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	1401	12	92	682	36	25	25	19	50	7	12
Future Volume (veh/h)	26	1401	12	92	682	36	25	25	19	50	7	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	1475	13	97	718	38	26	26	20	53	7	13
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1993	868	125	2159	966	78	82	70	106	83	94
Arrive On Green	0.04	0.56	0.55	0.07	0.61	0.61	0.04	0.04	0.04	0.06	0.04	0.06
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	27	1475	13	97	718	38	26	26	20	53	7	13
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	20.8	0.2	3.6	6.6	0.6	0.9	0.9	0.8	1.9	0.2	0.5
Cycle Q Clear(g_c), s	1.0	20.8	0.2	3.6	6.6	0.6	0.9	0.9	0.8	1.9	0.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1993	868	125	2159	966	78	82	70	106	83	94
V/C Ratio(X)	0.39	0.74	0.01	0.78	0.33	0.04	0.33	0.32	0.29	0.50	0.08	0.14
Avail Cap(c_a), veh/h	346	2087	910	319	2159	966	538	565	480	559	559	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	10.9	6.9	30.5	6.4	5.2	30.9	30.9	30.8	30.4	30.5	29.7
Incr Delay (d2), s/veh	1.4	1.6	0.0	3.8	0.2	0.0	0.9	0.8	0.8	1.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.5	0.1	1.9	3.2	0.3	0.5	0.5	0.4	1.0	0.1	0.2
LnGrp Delay(d),s/veh	32.6	12.5	6.9	34.3	6.5	5.2	31.8	31.7	31.7	31.8	30.7	30.0
LnGrp LOS	C	B	A	C	A	A	C	C	C	C	C	C
Approach Vol, veh/h	1515		853				72				73	
Approach Delay, s/veh	12.8		9.6				31.7				31.3	
Approach LOS	B		A				C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	7.8		8.7	42.2	7.9		5.6	45.4				
Change Period (Y+Rc), s	4.9		4.0	5.7	4.9		4.0	5.7				
Max Green Setting (Gmax), s	20.2		12.0	38.3	20.0		12.0	38.3				
Max Q Clear Time (g_c+I1), s	2.9		5.6	22.8	3.9		3.0	8.6				
Green Ext Time (p_c), s	0.1		0.1	13.7	0.1		0.0	26.2				
Intersection Summary												
HCM 2010 Ctrl Delay	12.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
24: Upland Dr & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗		
Traffic Volume (veh/h)	1448	97	39	529	40	121		
Future Volume (veh/h)	1448	97	39	529	40	121		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1524	102	41	557	42	127		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2040	913	60	2479	211	188		
Arrive On Green	0.58	0.58	0.03	0.70	0.12	0.12		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	1524	102	41	557	42	127		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	17.7	1.6	1.3	3.1	1.2	4.3		
Cycle Q Clear(g_c), s	17.7	1.6	1.3	3.1	1.2	4.3		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2040	913	60	2479	211	188		
V/C Ratio(X)	0.75	0.11	0.68	0.22	0.20	0.68		
Avail Cap(c_a), veh/h	2237	1001	128	2813	513	458		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.7	5.3	26.5	2.9	22.0	23.4		
Incr Delay (d2), s/veh	1.3	0.1	12.9	0.0	0.5	4.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.8	0.7	0.8	1.5	0.6	2.1		
LnGrp Delay(d),s/veh	10.0	5.4	39.3	3.0	22.5	27.5		
LnGrp LOS	B	A	D	A	C	C		
Approach Vol, veh/h	1626			598	169			
Approach Delay, s/veh	9.7			5.5	26.3			
Approach LOS	A			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		11.6	6.9	36.9				43.8
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		16.0	4.0	35.0				44.0
Max Q Clear Time (g_c+I1), s		6.3	3.3	19.7				5.1
Green Ext Time (p_c), s		0.3	0.0	12.2				24.4
Intersection Summary								
HCM 2010 Ctrl Delay			9.8					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

25: Fiddymment Rd & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	753	751	429	406	31	326	917	1022	39	1184	33
Future Volume (veh/h)	67	753	751	429	406	31	326	917	1022	39	1184	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	71	793	791	452	427	33	343	965	1076	41	1246	35
Adj No. of Lanes	2	2	1	3	2	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	1010	452	510	987	76	436	2233	695	212	1902	592
Arrive On Green	0.09	0.29	0.29	0.10	0.30	0.30	0.13	0.44	0.44	0.06	0.37	0.37
Sat Flow, veh/h	3442	3539	1583	5003	3331	256	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	71	793	791	452	226	234	343	965	1076	41	1246	35
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1668	1770	1817	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	2.1	22.3	30.8	9.6	11.1	11.2	10.4	14.2	47.4	1.2	21.9	1.5
Cycle Q Clear(g_c), s	2.1	22.3	30.8	9.6	11.1	11.2	10.4	14.2	47.4	1.2	21.9	1.5
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	1010	452	510	524	539	436	2233	695	212	1902	592
V/C Ratio(X)	0.23	0.79	1.75	0.89	0.43	0.43	0.79	0.43	1.55	0.19	0.65	0.06
Avail Cap(c_a), veh/h	351	1010	452	510	524	539	510	2233	695	287	1903	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	35.5	38.6	47.9	30.6	30.7	45.7	21.0	30.3	48.1	28.0	21.6
Incr Delay (d2), s/veh	0.1	4.5	347.1	16.5	0.8	0.8	5.7	0.3	253.6	0.2	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.5	57.0	5.2	5.5	5.8	5.3	6.7	69.6	0.6	10.5	0.7
LnGrp Delay(d),s/veh	45.7	40.1	385.6	64.4	31.5	31.5	51.5	21.2	283.9	48.3	29.1	21.7
LnGrp LOS	D	D	F	E	C	C	D	C	F	D	C	C
Approach Vol, veh/h	1655				912				2384			
Approach Delay, s/veh	205.5				47.8				144.1			
Approach LOS	F				D				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	50.0	14.0	34.3	16.7	43.0	12.8	35.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	8.0	44.0	10.0	* 28	15.0	37.0	10.0	28.0				
Max Q Clear Time (g_c+I1), s	3.2	49.4	11.6	32.8	12.4	23.9	4.1	13.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	12.8	0.0	11.8				

Intersection Summary

HCM 2010 Ctrl Delay 122.2
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
26: Pleasant Grove Blvd & Sun City Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	7	1769	771	69	207	18		
Future Volume (veh/h)	7	1769	771	69	207	18		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	7	1862	812	0	218	0		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	62	2433	2096	874	358	304		
Arrive On Green	0.03	0.69	0.59	0.00	0.20	0.00		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	7	1862	812	0	218	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.2	17.3	6.0	0.0	5.6	0.0		
Cycle Q Clear(g_c), s	0.2	17.3	6.0	0.0	5.6	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	62	2433	2096	874	358	304		
V/C Ratio(X)	0.11	0.77	0.39	0.00	0.61	0.00		
Avail Cap(c_a), veh/h	321	2631	2096	874	980	859		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	23.3	5.1	5.4	0.0	18.1	0.0		
Incr Delay (d2), s/veh	0.3	1.4	0.2	0.0	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	8.5	3.0	0.0	2.8	0.0		
LnGrp Delay(d),s/veh	23.6	6.6	5.6	0.0	18.7	0.0		
LnGrp LOS	C	A	A		B			
Approach Vol, veh/h		1869	812		218			
Approach Delay, s/veh		6.6	5.6		18.7			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				37.2		12.6	4.7	32.5
Change Period (Y+Rc), s				6.0		4.0	4.0	* 6
Max Green Setting (Gmax), s				34.0		26.0	8.0	* 22
Max Q Clear Time (g_c+I1), s				19.3		7.6	2.2	8.0
Green Ext Time (p_c), s				11.9		0.4	0.0	13.2
Intersection Summary								
HCM 2010 Ctrl Delay			7.2					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
27: Pleasant Grove Blvd & Rose Creek Rd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	7	1928	814	10	47	13		
Future Volume (veh/h)	7	1928	814	10	47	13		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900		
Adj Flow Rate, veh/h	7	2029	857	11	49	14		
Adj No. of Lanes	1	2	2	0	0	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	0	0		
Cap, veh/h	61	2617	2290	29	173	49		
Arrive On Green	0.03	0.74	0.64	0.60	0.13	0.13		
Sat Flow, veh/h	1774	3632	3671	46	1324	378		
Grp Volume(v), veh/h	7	2029	424	444	64	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1855	1730	0		
Q Serve(g_s), s	0.2	16.2	5.2	5.3	1.5	0.0		
Cycle Q Clear(g_c), s	0.2	16.2	5.2	5.3	1.5	0.0		
Prop In Lane	1.00			0.02	0.77	0.22		
Lane Grp Cap(c), veh/h	61	2617	1133	1187	226	0		
V/C Ratio(X)	0.11	0.78	0.37	0.37	0.28	0.00		
Avail Cap(c_a), veh/h	499	2908	1133	1187	785	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	21.6	3.7	3.9	4.0	18.1	0.0		
Incr Delay (d2), s/veh	0.3	1.4	0.4	0.3	0.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	8.1	2.6	2.7	0.7	0.0		
LnGrp Delay(d),s/veh	21.9	5.1	4.3	4.3	18.4	0.0		
LnGrp LOS	C	A	A	A	B			
Approach Vol, veh/h		2036	868		64			
Approach Delay, s/veh		5.2	4.3		18.4			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				37.2		9.0	4.6	32.6
Change Period (Y+Rc), s				5.7		4.0	4.0	5.7
Max Green Setting (Gmax), s				35.3		20.0	12.0	19.3
Max Q Clear Time (g_c+I1), s				18.2		3.5	2.2	7.3
Green Ext Time (p_c), s				13.3		0.1	0.0	11.6
Intersection Summary								
HCM 2010 Ctrl Delay			5.2					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
28: Pleasant Grove Blvd & Michener Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	37	2001	815	14	2	41		
Future Volume (veh/h)	37	2001	815	14	2	41		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	39	2106	858	15	2	43		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	136	2714	2243	945	179	160		
Arrive On Green	0.08	0.77	0.63	0.60	0.10	0.10		
Sat Flow, veh/h	1774	3632	3632	1570	1774	1583		
Grp Volume(v), veh/h	39	2106	858	15	2	43		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1570	1774	1583		
Q Serve(g_s), s	1.1	18.2	6.2	0.2	0.1	1.3		
Cycle Q Clear(g_c), s	1.1	18.2	6.2	0.2	0.1	1.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	136	2714	2243	945	179	160		
V/C Ratio(X)	0.29	0.78	0.38	0.02	0.01	0.27		
Avail Cap(c_a), veh/h	268	2804	2243	945	703	627		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.1	3.6	4.7	4.2	21.4	22.0		
Incr Delay (d2), s/veh	0.4	1.5	0.2	0.0	0.0	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	9.1	3.0	0.1	0.0	0.0		
LnGrp Delay(d),s/veh	23.5	5.1	4.9	4.3	21.4	22.3		
LnGrp LOS	C	A	A	A	C	C		
Approach Vol, veh/h		2145	873		45			
Approach Delay, s/veh		5.4	4.9		22.3			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.7		8.4	7.1	37.6
Change Period (Y+Rc), s				6.7		4.0	4.0	6.7
Max Green Setting (Gmax), s				39.3		20.0	7.0	28.3
Max Q Clear Time (g_c+I1), s				20.2		3.3	3.1	8.2
Green Ext Time (p_c), s				17.8		0.0	0.0	19.6
Intersection Summary								
HCM 2010 Ctrl Delay			5.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
29: Woodcreek Oaks Blvd & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	1528	157	258	699	208	124	442	748	193	554	139
Future Volume (veh/h)	141	1528	157	258	699	208	124	442	748	193	554	139
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	148	1608	0	272	736	0	131	465	0	203	583	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	2109	633	411	2454	740	204	615	251	279	738	306
Arrive On Green	0.07	0.46	0.00	0.13	0.54	0.00	0.07	0.19	0.00	0.09	0.23	0.00
Sat Flow, veh/h	3097	4577	1425	3097	4577	1425	3097	3185	1425	3097	3185	1425
Grp Volume(v), veh/h	148	1608	0	272	736	0	131	465	0	203	583	0
Grp Sat Flow(s),veh/h/ln	1549	1526	1425	1549	1526	1425	1549	1593	1425	1549	1593	1425
Q Serve(g_s), s	5.6	35.0	0.0	10.0	10.7	0.0	5.0	16.6	0.0	7.7	20.7	0.0
Cycle Q Clear(g_c), s	5.6	35.0	0.0	10.0	10.7	0.0	5.0	16.6	0.0	7.7	20.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	2109	633	411	2454	740	204	615	251	279	738	306
V/C Ratio(X)	0.67	0.76	0.00	0.66	0.30	0.00	0.64	0.76	0.00	0.73	0.79	0.00
Avail Cap(c_a), veh/h	258	2109	633	411	2454	740	232	725	300	284	778	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.3	26.9	0.0	49.5	15.4	0.0	54.7	45.8	0.0	53.1	43.4	0.0
Incr Delay (d2), s/veh	3.4	2.7	0.0	3.2	0.1	0.0	3.1	4.8	0.0	7.7	5.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	15.3	0.0	4.5	4.5	0.0	2.2	7.7	0.0	3.6	9.7	0.0
LnGrp Delay(d),s/veh	57.8	29.6	0.0	52.7	15.5	0.0	57.8	50.5	0.0	60.8	49.3	0.0
LnGrp LOS	E	C		D	B		E	D		E	D	
Approach Vol, veh/h	1756			1008			596			786		
Approach Delay, s/veh	31.9			25.5			52.1			52.3		
Approach LOS	C			C			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	25.9	20.6	58.0	10.9	30.5	11.6	67.0				
Change Period (Y+Rc), s	5.7	* 5.7	5.7	* 5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	10.0	* 24	14.0	* 52	8.0	26.3	9.0	57.3				
Max Q Clear Time (g_c+I1), s	9.7	18.6	12.0	37.0	7.0	22.7	7.6	12.7				
Green Ext Time (p_c), s	0.2	1.6	0.3	10.5	0.0	1.6	0.0	7.4				

Intersection Summary

HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
30: Country Club Dr & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↘		↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	2624	11	105	948	190	213		
Future Volume (veh/h)	2624	11	105	948	190	213		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2762	12	111	998	200	224		
Adj No. of Lanes	3	0	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3184	14	136	3657	298	266		
Arrive On Green	0.61	0.59	0.08	0.72	0.17	0.17		
Sat Flow, veh/h	5394	23	1774	5253	1774	1583		
Grp Volume(v), veh/h	1791	983	111	998	200	224		
Grp Sat Flow(s),veh/h/ln	1695	1859	1774	1695	1774	1583		
Q Serve(g_s), s	52.5	52.7	7.4	8.2	12.7	16.4		
Cycle Q Clear(g_c), s	52.5	52.7	7.4	8.2	12.7	16.4		
Prop In Lane		0.01	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2066	1132	136	3657	298	266		
V/C Ratio(X)	0.87	0.87	0.82	0.27	0.67	0.84		
Avail Cap(c_a), veh/h	2066	1132	163	3657	390	348		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.4	19.5	54.6	5.9	46.8	48.4		
Incr Delay (d2), s/veh	5.2	9.1	19.9	0.2	1.3	10.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	25.9	29.6	4.4	3.9	6.3	8.0		
LnGrp Delay(d),s/veh	24.6	28.6	74.5	6.1	48.0	59.1		
LnGrp LOS	C	C	E	A	D	E		
Approach Vol, veh/h	2774			1109	424			
Approach Delay, s/veh	26.0			12.9	53.9			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.8	13.2	76.8				90.0
Change Period (Y+Rc), s		4.9	4.0	5.7				5.7
Max Green Setting (Gmax), s		25.1	11.0	69.3				84.3
Max Q Clear Time (g_c+l1), s		18.4	9.4	54.7				10.2
Green Ext Time (p_c), s		0.4	0.0	14.5				72.1
Intersection Summary								
HCM 2010 Ctrl Delay			25.4					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
31: Foothills Blvd & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	730	1948	69	554	833	96	80	1304	567	81	275	121
Future Volume (veh/h)	730	1948	69	554	833	96	80	1304	567	81	275	121
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	768	2051	0	583	877	0	84	1373	0	85	289	0
Adj No. of Lanes	2	3	1	3	3	1	2	3	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1242	2615	814	567	1366	425	125	1423	443	115	1774	438
Arrive On Green	0.36	0.51	0.00	0.11	0.27	0.00	0.04	0.28	0.00	0.03	0.28	0.00
Sat Flow, veh/h	3442	5085	1583	5003	5085	1583	3442	5085	1583	3442	6408	1583
Grp Volume(v), veh/h	768	2051	0	583	877	0	84	1373	0	85	289	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1668	1695	1583	1721	1695	1583	1721	1602	1583
Q Serve(g_s), s	27.5	49.3	0.0	17.0	22.9	0.0	3.6	39.9	0.0	3.7	5.1	0.0
Cycle Q Clear(g_c), s	27.5	49.3	0.0	17.0	22.9	0.0	3.6	39.9	0.0	3.7	5.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1242	2615	814	567	1366	425	125	1423	443	115	1774	438
V/C Ratio(X)	0.62	0.78	0.00	1.03	0.64	0.00	0.67	0.96	0.00	0.74	0.16	0.00
Avail Cap(c_a), veh/h	1242	2615	814	567	1366	425	184	1424	443	115	1774	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.4	29.7	0.0	66.5	48.5	0.0	71.4	53.3	0.0	71.9	41.1	0.0
Incr Delay (d2), s/veh	0.7	2.4	0.0	45.2	2.3	0.0	2.3	16.2	0.0	20.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	23.6	0.0	10.2	11.0	0.0	1.8	20.8	0.0	2.1	2.3	0.0
LnGrp Delay(d),s/veh	40.1	32.1	0.0	111.7	50.8	0.0	73.7	69.5	0.0	91.9	41.1	0.0
LnGrp LOS	D	C		F	D		E	E		F	D	
Approach Vol, veh/h	2819				1460				1457			
Approach Delay, s/veh	34.3				75.1				69.7			
Approach LOS	C				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	48.4	23.0	83.2	9.5	47.9	60.2	46.0				
Change Period (Y+Rc), s	4.0	* 6.4	6.0	5.7	4.0	6.4	5.7	5.7				
Max Green Setting (Gmax), s	5.0	* 42	17.0	64.3	8.0	38.6	41.3	40.3				
Max Q Clear Time (g_c+I1), s	5.7	41.9	19.0	51.3	5.6	7.1	29.5	24.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	12.1	0.0	19.0	11.0	7.3				

Intersection Summary

HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
32: Washington Blvd & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	1997	85	155	1061	124	138	913	434	77	420	325
Future Volume (veh/h)	256	1997	85	155	1061	124	138	913	434	77	420	325
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	269	2102	89	163	1117	0	145	961	0	81	442	342
Adj No. of Lanes	2	3	1	2	4	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	2339	728	330	2939	701	400	1115	474	178	1179	367
Arrive On Green	0.13	0.61	0.61	0.10	0.46	0.00	0.12	0.32	0.00	0.05	0.23	0.23
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	269	2102	89	163	1117	0	145	961	0	81	442	342
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	11.4	53.5	3.5	6.7	17.1	0.0	5.8	38.3	0.0	3.4	11.0	24.3
Cycle Q Clear(g_c), s	11.4	53.5	3.5	6.7	17.1	0.0	5.8	38.3	0.0	3.4	11.0	24.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	2339	728	330	2939	701	400	1115	474	178	1179	367
V/C Ratio(X)	0.80	0.90	0.12	0.49	0.38	0.00	0.36	0.86	0.00	0.45	0.37	0.93
Avail Cap(c_a), veh/h	390	2339	728	330	2939	701	400	1203	513	184	1614	502
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.9	26.1	16.4	64.4	26.6	0.0	61.1	48.3	0.0	69.1	48.5	33.1
Incr Delay (d2), s/veh	8.7	6.0	0.3	0.4	0.1	0.0	0.2	6.7	0.0	0.7	0.3	22.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	26.1	1.6	3.2	7.6	0.0	2.8	19.7	0.0	1.6	5.2	13.0
LnGrp Delay(d),s/veh	72.6	32.1	16.8	64.8	26.7	0.0	61.4	55.0	0.0	69.7	48.8	55.5
LnGrp LOS	E	C	B	E	C		E	D		E	D	E
Approach Vol, veh/h	2460				1280				1106			
Approach Delay, s/veh	36.0				31.6				55.8			
Approach LOS	D				C				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	50.3	17.0	72.0	22.8	38.2	17.6	71.4				
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0				
Max Green Setting (Gmax), s	7.0	47.6	7.0	66.0	10.0	* 45	16.0	59.0				
Max Q Clear Time (g_c+I1), s	5.4	40.3	8.7	55.5	7.8	26.3	13.4	19.1				
Green Ext Time (p_c), s	0.0	3.6	0.0	9.0	1.4	5.5	0.2	10.7				

Intersection Summary

HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

33: Pleasant Grove Blvd & Hallissy Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (veh/h)	28	2416	20	40	1220	78	45	39	35	106	3	27
Future Volume (veh/h)	28	2416	20	40	1220	78	45	39	35	106	3	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	29	2543	0	42	1284	0	47	41	0	112	3	0
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	2892	900	340	3818	1189	61	55	46	134	131	112
Arrive On Green	0.04	1.00	0.00	0.19	0.75	0.00	0.03	0.03	0.00	0.08	0.07	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	29	2543	0	42	1284	0	47	41	0	112	3	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.4	0.0	0.0	2.9	12.6	0.0	3.9	3.3	0.0	9.3	0.2	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	2.9	12.6	0.0	3.9	3.3	0.0	9.3	0.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	37	2892	900	340	3818	1189	61	55	46	134	131	112
V/C Ratio(X)	0.79	0.88	0.00	0.12	0.34	0.00	0.78	0.75	0.00	0.84	0.02	0.00
Avail Cap(c_a), veh/h	142	2892	900	340	3818	1189	142	236	201	189	274	233
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	71.6	0.0	0.0	50.2	6.2	0.0	71.9	72.3	0.0	68.5	64.9	0.0
Incr Delay (d2), s/veh	12.8	4.2	0.0	0.1	0.1	0.0	7.7	14.2	0.0	14.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.1	0.0	1.5	5.9	0.0	2.1	1.9	0.0	5.1	0.1	0.0
LnGrp Delay(d),s/veh	84.4	4.2	0.0	50.3	6.3	0.0	79.6	86.5	0.0	83.0	65.0	0.0
LnGrp LOS	F	A		D	A		E	F		F	E	
Approach Vol, veh/h	2572				1326				88			
Approach Delay, s/veh	5.1				7.7				82.8			
Approach LOS	A				A				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	9.3	34.4	91.0	9.1	15.5	7.1	118.3				
Change Period (Y+Rc), s	4.0	* 4.9	5.7	* 5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	16.0	* 19	12.0	* 85	12.0	22.1	12.0	85.3				
Max Q Clear Time (g_c+I1), s	11.3	5.3	4.9	2.0	5.9	2.2	4.4	14.6				
Green Ext Time (p_c), s	0.1	0.1	0.2	69.8	0.0	0.1	0.0	22.4				

Intersection Summary

HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

34: Roseville Pkwy & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1407	1088	1052	831	187	567	1051	493	160	1017	36
Future Volume (veh/h)	29	1407	1088	1052	831	187	567	1051	493	160	1017	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	31	1481	0	1107	875	0	597	1106	0	168	1071	0
Adj No. of Lanes	3	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1203	517	849	2655	805	597	1392	408	244	963	274
Arrive On Green	0.05	0.34	0.00	0.25	0.52	0.00	0.06	0.09	0.00	0.07	0.19	0.00
Sat Flow, veh/h	5003	3539	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	31	1481	0	1107	875	0	597	1106	0	168	1071	0
Grp Sat Flow(s),veh/h/ln	1668	1770	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.9	51.0	0.0	37.0	14.9	0.0	26.0	32.0	0.0	7.2	28.4	0.0
Cycle Q Clear(g_c), s	0.9	51.0	0.0	37.0	14.9	0.0	26.0	32.0	0.0	7.2	28.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	1203	517	849	2655	805	597	1392	408	244	963	274
V/C Ratio(X)	0.12	1.23	0.00	1.30	0.33	0.00	1.00	0.79	0.00	0.69	1.11	0.00
Avail Cap(c_a), veh/h	334	1203	517	849	2655	805	597	1392	408	443	963	274
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	67.6	49.5	0.0	56.5	20.7	0.0	70.7	64.1	0.0	68.1	60.8	0.0
Incr Delay (d2), s/veh	0.1	111.3	0.0	145.4	0.3	0.0	37.0	3.5	0.0	5.0	65.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	43.5	0.0	34.7	7.0	0.0	15.5	15.5	0.0	3.6	19.1	0.0
LnGrp Delay(d),s/veh	67.7	160.8	0.0	201.9	21.0	0.0	107.7	67.6	0.0	73.1	125.8	0.0
LnGrp LOS	E	F		F	C		F	E		E	F	
Approach Vol, veh/h	1512				1982				1703			
Approach Delay, s/veh	158.9				122.0				81.6			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	45.7	40.0	54.0	28.0	33.0	13.0	81.0				
Change Period (Y+Rc), s	5.7	8.0	4.0	6.0	3.0	* 8	6.0	* 5.7				
Max Green Setting (Gmax), s	18.3	24.0	36.0	48.0	25.0	* 25	9.0	* 75				
Max Q Clear Time (g_c+I1), s	9.2	34.0	39.0	53.0	28.0	30.4	2.9	16.9				
Green Ext Time (p_c), s	0.5	0.0	0.0	0.0	0.0	0.0	5.0	12.1				

Intersection Summary

HCM 2010 Ctrl Delay 119.3
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
35: Pleasant Grove Blvd & Highland Pointe Dr/Wal-Mart

Cumulative Plus Project
AM PEAK HOUR

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	214	4	162	58	15	47	212	1682	114	318	1801	186				
Future Volume (veh/h)	214	4	162	58	15	47	212	1682	114	318	1801	186				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863				
Adj Flow Rate, veh/h	225	4	171	61	16	49	223	1771	120	335	1896	196				
Adj No. of Lanes	2	1	1	2	1	1	2	4	0	2	3	1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	413	236	201	200	108	92	294	2940	199	901	3351	1043				
Arrive On Green	0.12	0.13	0.13	0.06	0.06	0.06	0.09	0.48	0.48	0.26	0.66	0.66				
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	6176	418	3442	5085	1583				
Grp Volume(v), veh/h	225	4	171	61	16	49	223	1378	513	335	1896	196				
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1602	1789	1721	1695	1583				
Q Serve(g_s), s	9.2	0.3	15.9	2.5	1.2	4.5	9.5	31.6	31.6	11.9	30.4	7.2				
Cycle Q Clear(g_c), s	9.2	0.3	15.9	2.5	1.2	4.5	9.5	31.6	31.6	11.9	30.4	7.2				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00				
Lane Grp Cap(c), veh/h	413	236	201	200	108	92	294	2288	852	901	3351	1043				
V/C Ratio(X)	0.54	0.02	0.85	0.31	0.15	0.53	0.76	0.60	0.60	0.37	0.57	0.19				
Avail Cap(c_a), veh/h	413	236	201	413	224	190	413	2288	852	901	3351	1043				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	62.1	57.3	64.1	67.7	67.1	68.7	67.1	28.9	28.9	45.3	13.9	10.0				
Incr Delay (d2), s/veh	1.5	0.0	28.1	0.9	0.6	4.7	5.1	1.2	3.1	0.3	0.2	0.1				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	4.5	0.1	8.5	1.2	0.6	2.1	4.7	14.2	16.3	5.7	14.3	3.2				
LnGrp Delay(d),s/veh	63.6	57.4	92.2	68.6	67.7	73.4	72.2	30.1	32.0	45.5	14.1	10.0				
LnGrp LOS	E	E	F	E	E	E	E	C	C	D	B	B				
Approach Vol, veh/h	400				126				2114							
Approach Delay, s/veh	75.8				70.3				35.0							
Approach LOS	E				E				C							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2		4	5	6		8								
Phs Duration (G+Y+Rc), s	43.3	74.0		21.0	15.8	101.5		11.7								
Change Period (Y+Rc), s	6.0	* 6		4.0	4.0	6.0		5.0								
Max Green Setting (Gmax), s	29.0	* 68		17.0	17.0	81.0		16.0								
Max Q Clear Time (g_c+I1), s	13.9	33.6		17.9	11.5	32.4		6.5								
Green Ext Time (p_c), s	9.3	16.8		0.0	0.3	26.1		0.2								
Intersection Summary																
HCM 2010 Ctrl Delay	31.0															
HCM 2010 LOS	C															
Notes																
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.																

HCM 2010 Signalized Intersection Summary
36: Pleasant Grove Blvd & Hwy-65 SB Ramps

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗		↑↑↑	↗				↖		↖
Traffic Volume (veh/h)	0	1197	827	0	1779	558	0	0	0	124	0	550
Future Volume (veh/h)	0	1197	827	0	1779	558	0	0	0	124	0	550
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1909	1909	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	1260	871	0	1873	0				131	0	579
Adj No. of Lanes	0	3	1	0	3	1				2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	3255	992	0	3176	989				880	0	712
Arrive On Green	0.00	0.62	0.61	0.00	1.00	0.00				0.26	0.00	0.26
Sat Flow, veh/h	0	5384	1623	0	5253	1583				3442	0	2787
Grp Volume(v), veh/h	0	1260	871	0	1873	0				131	0	579
Grp Sat Flow(s),veh/h/ln	0	1737	1623	0	1695	1583				1721	0	1393
Q Serve(g_s), s	0.0	9.0	33.8	0.0	0.0	0.0				2.2	0.0	14.6
Cycle Q Clear(g_c), s	0.0	9.0	33.8	0.0	0.0	0.0				2.2	0.0	14.6
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3255	992	0	3176	989				880	0	712
V/C Ratio(X)	0.00	0.39	0.88	0.00	0.59	0.00				0.15	0.00	0.81
Avail Cap(c_a), veh/h	0	3255	992	0	3176	989				1133	0	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.78	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.0	12.2	0.0	0.0	0.0				21.6	0.0	26.2
Incr Delay (d2), s/veh	0.0	0.3	10.9	0.0	0.3	0.0				0.0	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	17.8	0.0	0.1	0.0				1.1	0.0	6.0
LnGrp Delay(d),s/veh	0.0	7.3	23.2	0.0	0.3	0.0				21.6	0.0	29.6
LnGrp LOS		A	C		A					C		C
Approach Vol, veh/h	2131				1873						710	
Approach Delay, s/veh	13.8				0.3						28.2	
Approach LOS	B				A						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	51.5		23.5		51.5							
Change Period (Y+Rc), s	5.7		5.3		5.7							
Max Green Setting (Gmax), s	40.3		23.7		40.3							
Max Q Clear Time (g_c+I1), s	35.8		16.6		2.0							
Green Ext Time (p_c), s	4.5		1.5		36.4							
Intersection Summary												
HCM 2010 Ctrl Delay			10.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
37: Hwy-65 NB Ramps & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗		↑↑↑	↖↖↖	↗↗		
Traffic Volume (veh/h)	938	245	0	1818	586	431		
Future Volume (veh/h)	938	245	0	1818	586	431		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1909	1909	0	1863	1863	1863		
Adj Flow Rate, veh/h	987	0	0	1914	617	454		
Adj No. of Lanes	3	1	0	3	3	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	0	2	2	2		
Cap, veh/h	3218	1002	0	3139	1055	588		
Arrive On Green	1.00	0.00	0.00	0.62	0.21	0.21		
Sat Flow, veh/h	5384	1623	0	5421	5003	2787		
Grp Volume(v), veh/h	987	0	0	1914	617	454		
Grp Sat Flow(s),veh/h/ln	1737	1623	0	1695	1668	1393		
Q Serve(g_s), s	0.0	0.0	0.0	17.3	8.3	11.5		
Cycle Q Clear(g_c), s	0.0	0.0	0.0	17.3	8.3	11.5		
Prop In Lane		1.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3218	1002	0	3139	1055	588		
V/C Ratio(X)	0.31	0.00	0.00	0.61	0.58	0.77		
Avail Cap(c_a), veh/h	3218	1002	0	3139	1181	658		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.94	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	0.0	0.0	8.8	26.6	27.9		
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.9	0.3	4.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	8.2	3.9	4.8		
LnGrp Delay(d),s/veh	0.1	0.0	0.0	9.7	26.9	32.2		
LnGrp LOS	A			A	C	C		
Approach Vol, veh/h	987			1914	1071			
Approach Delay, s/veh	0.1			9.7	29.2			
Approach LOS	A			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		51.0				51.0		22.1
Change Period (Y+Rc), s		5.7				5.7		7.3
Max Green Setting (Gmax), s		29.3				45.3		16.7
Max Q Clear Time (g_c+I1), s		2.0				19.3		13.5
Green Ext Time (p_c), s		23.6				22.6		1.3
Intersection Summary								
HCM 2010 Ctrl Delay			12.6					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

38: Pleasant Grove Blvd & Fairway Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	130	277	358	216	36	346	659	310	98	1263	94
Future Volume (veh/h)	62	130	277	358	216	36	346	659	310	98	1263	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1909	1909	1909	1863	1863	1863
Adj Flow Rate, veh/h	65	137	292	377	227	38	364	694	326	103	1329	99
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	393	176	428	726	325	428	2390	946	147	1875	584
Arrive On Green	0.03	0.11	0.11	0.12	0.21	0.21	0.12	0.46	0.46	0.04	0.37	0.37
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3528	5212	1623	3442	5085	1583
Grp Volume(v), veh/h	65	137	292	377	227	38	364	694	326	103	1329	99
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1764	1737	1623	1721	1695	1583
Q Serve(g_s), s	2.8	5.4	10.4	16.2	8.2	2.9	15.2	12.5	15.7	4.4	33.5	4.0
Cycle Q Clear(g_c), s	2.8	5.4	10.4	16.2	8.2	2.9	15.2	12.5	15.7	4.4	33.5	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	393	176	428	726	325	428	2390	946	147	1875	584
V/C Ratio(X)	0.63	0.35	1.66	0.88	0.31	0.12	0.85	0.29	0.34	0.70	0.71	0.17
Avail Cap(c_a), veh/h	275	621	278	597	960	430	541	2390	946	275	1875	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.9	61.7	26.2	64.6	50.6	48.5	64.6	25.4	16.3	70.9	40.5	13.0
Incr Delay (d2), s/veh	2.3	0.7	322.1	8.6	0.4	0.3	8.5	0.3	1.0	2.3	2.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.7	20.3	8.2	4.0	1.3	7.9	6.0	7.3	2.1	16.0	1.8
LnGrp Delay(d),s/veh	74.2	62.4	348.3	73.2	51.0	48.8	73.1	25.7	17.3	73.1	42.8	13.6
LnGrp LOS	E	E	F	E	D	D	E	C	B	E	D	B
Approach Vol, veh/h	494				642				1384			
Approach Delay, s/veh	232.9				63.9				36.2			
Approach LOS	F				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	74.5	22.7	22.3	23.9	61.0	8.5	36.5				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	* 5.7				
Max Green Setting (Gmax), s	12.0	66.3	26.0	26.3	23.0	* 55	12.0	* 41				
Max Q Clear Time (g_c+I1), s	6.4	17.7	18.2	12.4	17.2	35.5	4.8	10.2				
Green Ext Time (p_c), s	0.1	12.8	0.5	4.2	1.0	13.2	0.0	5.6				

Intersection Summary

HCM 2010 Ctrl Delay	67.1
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
39: Pleasant Grove Blvd & Highland Park Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	18	50	139	12	35	13	510	149	80	1328	3
Future Volume (veh/h)	9	18	50	139	12	35	13	510	149	80	1328	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1710	1676	1676	1710	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	9	19	53	146	13	37	14	537	157	84	1398	3
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	28	79	182	66	189	28	2913	907	116	2202	985
Arrive On Green	0.01	0.07	0.07	0.11	0.17	0.17	0.02	0.64	0.64	0.07	0.69	0.69
Sat Flow, veh/h	1597	392	1092	1597	386	1097	1597	4577	1425	1597	3185	1425
Grp Volume(v), veh/h	9	0	72	146	0	50	14	537	157	84	1398	3
Grp Sat Flow(s),veh/h/ln	1597	0	1484	1597	0	1483	1597	1526	1425	1597	1593	1425
Q Serve(g_s), s	0.7	0.0	5.7	10.7	0.0	3.5	1.0	5.8	5.4	6.2	29.0	0.1
Cycle Q Clear(g_c), s	0.7	0.0	5.7	10.7	0.0	3.5	1.0	5.8	5.4	6.2	29.0	0.1
Prop In Lane	1.00		0.74	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	24	0	108	182	0	255	28	2913	907	116	2202	985
V/C Ratio(X)	0.38	0.00	0.67	0.80	0.00	0.20	0.49	0.18	0.17	0.72	0.63	0.00
Avail Cap(c_a), veh/h	53	0	241	239	0	414	53	2913	907	173	2202	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	0.0	54.4	51.8	0.0	42.7	58.4	9.0	8.9	54.5	10.2	5.7
Incr Delay (d2), s/veh	3.7	0.0	6.0	10.1	0.0	0.3	4.8	0.1	0.4	3.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.5	5.2	0.0	1.4	0.5	2.5	2.2	2.8	12.9	0.0
LnGrp Delay(d),s/veh	62.3	0.0	60.4	61.9	0.0	43.1	63.2	9.1	9.3	57.6	11.0	5.7
LnGrp LOS	E		E	E		D	E	A	A	E	B	A
Approach Vol, veh/h	81		196				708			1485		
Approach Delay, s/veh	60.6		57.1				10.2			13.6		
Approach LOS	E		E				B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	79.4	16.7	12.2	5.1	86.0	4.8	24.1				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	12.0	54.0	17.0	18.0	3.0	63.0	3.0	32.0				
Max Q Clear Time (g_c+I1), s	8.2	7.8	12.7	7.7	3.0	31.0	2.7	5.5				
Green Ext Time (p_c), s	0.0	30.3	0.1	0.2	0.0	23.5	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			17.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
40: Vista Grande Blvd & Santucci Blvd

Cumulative Plus Project
AM PEAK HOUR

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	6	10	24	62	3	60	6	591	54	42	1135	3				
Future Volume (veh/h)	6	10	24	62	3	60	6	591	54	42	1135	3				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863				
Adj Flow Rate, veh/h	6	11	25	65	3	63	6	622	57	44	1195	3				
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	11	118	53	93	280	125	11	1771	552	69	1938	603				
Arrive On Green	0.01	0.03	0.03	0.05	0.08	0.08	0.01	0.35	0.35	0.04	0.38	0.38				
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583				
Grp Volume(v), veh/h	6	11	25	65	3	63	6	622	57	44	1195	3				
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583				
Q Serve(g_s), s	0.1	0.1	0.6	1.4	0.0	1.4	0.1	3.4	0.9	0.9	7.2	0.0				
Cycle Q Clear(g_c), s	0.1	0.1	0.6	1.4	0.0	1.4	0.1	3.4	0.9	0.9	7.2	0.0				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Lane Grp Cap(c), veh/h	11	118	53	93	280	125	11	1771	552	69	1938	603				
V/C Ratio(X)	0.52	0.09	0.47	0.70	0.01	0.50	0.52	0.35	0.10	0.63	0.62	0.00				
Avail Cap(c_a), veh/h	514	2984	1335	514	2984	1335	514	2144	667	514	2144	667				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	18.8	17.8	18.0	17.7	16.1	16.8	18.8	9.2	8.4	18.0	9.5	7.3				
Incr Delay (d2), s/veh	32.4	0.3	6.5	9.2	0.0	3.1	32.4	0.1	0.1	9.2	0.5	0.0				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.3	0.9	0.0	0.7	0.2	1.6	0.4	0.6	3.4	0.0				
LnGrp Delay(d),s/veh	51.2	18.1	24.5	26.9	16.1	19.9	51.2	9.3	8.4	27.2	10.0	7.3				
LnGrp LOS	D	B	C	C	B	B	D	A	A	C	A	A				
Approach Vol, veh/h	42				131				685							
Approach Delay, s/veh	26.6				23.3				9.6							
Approach LOS	C				C				A							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	6.5	18.2	7.0	6.3	5.2	19.5	5.2	8.0								
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0								
Max Green Setting (Gmax), s	11.0	16.0	11.0	32.0	11.0	16.0	11.0	32.0								
Max Q Clear Time (g_c+I1), s	2.9	5.4	3.4	2.6	2.1	9.2	2.1	3.4								
Green Ext Time (p_c), s	0.0	7.6	0.1	0.3	0.0	5.2	0.0	0.3								
Intersection Summary																
HCM 2010 Ctrl Delay	11.4															
HCM 2010 LOS	B															

HCM 2010 Signalized Intersection Summary
41: Silver Spruce Dr & Vista Grande Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	136	3	2	84	8	6	1	0	38	5	1
Future Volume (veh/h)	0	136	3	2	84	8	6	1	0	38	5	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	143	3	2	88	8	6	1	0	40	5	1
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	449	201	5	970	434	11	5	5	514	530	451
Arrive On Green	0.00	0.13	0.13	0.00	0.27	0.27	0.01	0.00	0.00	0.29	0.28	0.28
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	143	3	2	88	8	6	1	0	40	5	1
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	1.3	0.1	0.0	0.6	0.1	0.1	0.0	0.0	0.6	0.1	0.0
Cycle Q Clear(g_c), s	0.0	1.3	0.1	0.0	0.6	0.1	0.1	0.0	0.0	0.6	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	5	449	201	5	970	434	11	5	5	514	530	451
V/C Ratio(X)	0.00	0.32	0.01	0.39	0.09	0.02	0.52	0.19	0.00	0.08	0.01	0.00
Avail Cap(c_a), veh/h	206	1662	744	206	1714	767	206	1555	1322	566	1933	1643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.7	13.2	17.2	9.3	9.1	17.1	17.2	0.0	8.9	8.9	8.8
Incr Delay (d2), s/veh	0.0	0.4	0.0	41.8	0.0	0.0	32.2	15.7	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	0.1	0.3	0.1	0.2	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.1	13.2	58.9	9.4	9.2	49.2	32.9	0.0	9.0	8.9	8.8
LnGrp LOS		B	B	E	A	A	D	C		A	A	A
Approach Vol, veh/h		146			98			7			46	
Approach Delay, s/veh		14.1			10.4			46.9			8.9	
Approach LOS		B			B			D			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	5.0	5.1	9.4	5.2	14.8	0.0	14.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	* 5				
Max Green Setting (Gmax), s	11.0	28.8	4.0	16.2	4.0	35.8	4.0	* 17				
Max Q Clear Time (g_c+I1), s	2.6	2.0	2.0	3.3	2.1	2.1	0.0	2.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.2				

Intersection Summary

HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
42: Westbrook Blvd & Vista Grande Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	153	20	189	54	85	11	749	415	63	1210	9
Future Volume (veh/h)	28	153	20	189	54	85	11	749	415	63	1210	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	29	161	21	199	57	89	12	788	437	66	1274	9
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	373	167	233	689	308	50	2288	686	111	2463	741
Arrive On Green	0.04	0.11	0.11	0.13	0.19	0.19	0.03	0.45	0.43	0.06	0.48	0.47
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	29	161	21	199	57	89	12	788	437	66	1274	9
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.0	2.6	0.7	6.7	0.8	2.9	0.4	6.2	13.2	2.2	10.5	0.2
Cycle Q Clear(g_c), s	1.0	2.6	0.7	6.7	0.8	2.9	0.4	6.2	13.2	2.2	10.5	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	74	373	167	233	689	308	50	2288	686	111	2463	741
V/C Ratio(X)	0.39	0.43	0.13	0.86	0.08	0.29	0.24	0.34	0.64	0.59	0.52	0.01
Avail Cap(c_a), veh/h	145	1914	856	233	2089	934	145	2392	719	145	2463	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	25.6	24.7	25.9	20.1	21.0	29.0	10.9	13.5	27.8	10.8	8.7
Incr Delay (d2), s/veh	1.2	0.3	0.1	24.4	0.0	0.2	0.9	0.2	3.1	1.9	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	0.3	4.8	0.4	1.3	0.2	2.9	6.2	1.1	4.9	0.1
LnGrp Delay(d),s/veh	29.7	25.9	24.9	50.4	20.1	21.2	29.9	11.2	16.6	29.7	11.3	8.7
LnGrp LOS	C	C	C	D	C	C	C	B	B	C	B	A
Approach Vol, veh/h	211				345		1237				1349	
Approach Delay, s/veh	26.3				37.8		13.3				12.2	
Approach LOS	C				D		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	30.7	12.0	10.4	5.7	32.8	6.6	15.9				
Change Period (Y+Rc), s	5.0	5.3	5.0	5.0	5.0	5.3	5.0	5.0				
Max Green Setting (Gmax), s	4.0	26.7	7.0	32.0	4.0	26.7	4.0	35.0				
Max Q Clear Time (g_c+I1), s	4.2	15.2	8.7	4.6	2.4	12.5	3.0	4.9				
Green Ext Time (p_c), s	0.0	10.3	0.0	1.1	0.0	13.7	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			16.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
43: Vista Park Dr & Vista Grande Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	651	0	3	298	0	40	1	15	0	0	1
Future Volume (veh/h)	1	651	0	3	298	0	40	1	15	0	0	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	685	0	3	314	0	42	1	16	0	0	1
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1290	577	6	1298	581	66	485	412	4	185	157
Arrive On Green	0.00	0.36	0.00	0.00	0.37	0.00	0.04	0.26	0.26	0.00	0.00	0.10
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	1	685	0	3	314	0	42	1	16	0	0	1
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	6.2	0.0	0.1	2.5	0.0	0.9	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.2	0.0	0.1	2.5	0.0	0.9	0.0	0.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1290	577	6	1298	581	66	485	412	4	185	157
V/C Ratio(X)	0.23	0.53	0.00	0.52	0.24	0.00	0.64	0.00	0.04	0.00	0.00	0.01
Avail Cap(c_a), veh/h	176	2281	1021	176	2281	1021	264	1432	1217	176	1339	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	10.1	0.0	20.1	8.9	0.0	19.1	11.0	11.1	0.0	0.0	16.4
Incr Delay (d2), s/veh	24.3	0.3	0.0	56.6	0.1	0.0	9.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	0.0	0.1	1.2	0.0	0.6	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	44.4	10.4	0.0	76.6	9.0	0.0	28.9	11.0	11.2	0.0	0.0	16.4
LnGrp LOS	D	B		E	A		C	B	B			B
Approach Vol, veh/h		686			317			59			1	
Approach Delay, s/veh		10.5			9.6			23.8			16.4	
Approach LOS		B			A			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	15.5	5.1	19.7	6.5	9.0	5.0	19.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	26.0	6.0	29.0	4.0	26.0				
Max Q Clear Time (g_c+I1), s	0.0	2.3	2.1	8.2	2.9	2.0	2.0	4.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	6.6	0.0	0.0	0.0	7.1				
Intersection Summary												
HCM 2010 Ctrl Delay			11.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
44: Market St & Vista Grande Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	703	72	8	190	4	83	33	31	7	107	61
Future Volume (veh/h)	34	703	72	8	190	4	83	33	31	7	107	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	36	740	76	8	200	4	87	35	33	7	113	64
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	1331	554	62	1243	515	159	449	340	60	346	252
Arrive On Green	0.06	0.38	0.35	0.03	0.35	0.32	0.09	0.24	0.21	0.03	0.19	0.16
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	36	740	76	8	200	4	87	35	33	7	113	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.7	6.3	1.3	0.2	1.5	0.1	1.8	0.6	0.6	0.1	2.0	1.4
Cycle Q Clear(g_c), s	0.7	6.3	1.3	0.2	1.5	0.1	1.8	0.6	0.6	0.1	2.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	1331	554	62	1243	515	159	449	340	60	346	252
V/C Ratio(X)	0.34	0.56	0.14	0.13	0.16	0.01	0.55	0.08	0.10	0.12	0.33	0.25
Avail Cap(c_a), veh/h	256	1716	726	256	1716	726	256	1391	1141	256	1391	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	9.4	8.5	17.9	8.5	8.7	16.6	11.2	12.0	17.9	13.5	14.1
Incr Delay (d2), s/veh	1.9	0.4	0.1	0.9	0.1	0.0	2.9	0.1	0.1	0.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.0	0.6	0.1	0.7	0.0	1.0	0.3	0.3	0.1	1.1	0.6
LnGrp Delay(d),s/veh	19.1	9.8	8.6	18.8	8.6	8.7	19.6	11.3	12.1	18.7	14.0	14.6
LnGrp LOS	B	A	A	B	A	A	B	B	B	B	B	B
Approach Vol, veh/h	852				212				155			
Approach Delay, s/veh	10.1				9.0				16.1			
Approach LOS	B				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.8	11.7	4.8	16.8	6.9	9.6	5.8	15.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.5	26.5	4.5	16.5	4.5	26.5	4.5	16.5				
Max Q Clear Time (g_c+I1), s	2.1	2.6	2.2	8.3	3.8	4.0	2.7	3.5				
Green Ext Time (p_c), s	0.0	1.1	0.0	4.1	0.0	1.1	0.0	5.5				
Intersection Summary												
HCM 2010 Ctrl Delay	11.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
45: Monarch Grove St & Vista Grande Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	843	7	13	201	0	19	3	86	0	2	17
Future Volume (veh/h)	14	843	7	13	201	0	19	3	86	0	2	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	887	7	14	212	0	20	3	91	0	2	18
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	1501	672	25	1498	670	35	415	353	4	168	143
Arrive On Green	0.02	0.42	0.42	0.01	0.42	0.00	0.02	0.22	0.22	0.00	0.09	0.09
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	15	887	7	14	212	0	20	3	91	0	2	18
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.4	8.5	0.1	0.3	1.6	0.0	0.5	0.1	2.1	0.0	0.0	0.5
Cycle Q Clear(g_c), s	0.4	8.5	0.1	0.3	1.6	0.0	0.5	0.1	2.1	0.0	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	27	1501	672	25	1498	670	35	415	353	4	168	143
V/C Ratio(X)	0.56	0.59	0.01	0.55	0.14	0.00	0.57	0.01	0.26	0.00	0.01	0.13
Avail Cap(c_a), veh/h	160	2636	1179	160	2636	1179	200	1219	1037	160	1177	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	9.8	7.4	21.7	7.8	0.0	21.5	13.4	14.2	0.0	18.3	18.5
Incr Delay (d2), s/veh	16.6	0.4	0.0	17.4	0.0	0.0	13.9	0.0	0.4	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.1	0.1	0.3	0.8	0.0	0.4	0.0	1.0	0.0	0.0	0.2
LnGrp Delay(d),s/veh	38.3	10.2	7.4	39.1	7.9	0.0	35.4	13.4	14.6	0.0	18.4	18.9
LnGrp LOS	D	B	A	D	A		D	B	B		B	B
Approach Vol, veh/h	909				226				114			
Approach Delay, s/veh	10.6				9.8				18.2			
Approach LOS	B				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	14.9	5.6	23.8	5.9	9.0	5.7	23.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	29.0	4.0	33.0	5.0	28.0	4.0	33.0				
Max Q Clear Time (g_c+I1), s	0.0	4.1	2.3	10.5	2.5	2.5	2.4	3.6				
Green Ext Time (p_c), s	0.0	0.3	0.0	8.3	0.0	0.3	0.0	9.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
46: Upland Dr & Vista Grande Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	786	106	87	177	3	20	30	45	18	99	18
Future Volume (veh/h)	37	786	106	87	177	3	20	30	45	18	99	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	39	827	112	92	186	3	21	32	47	19	104	19
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	1649	705	154	1764	757	72	276	202	69	272	199
Arrive On Green	0.05	0.47	0.45	0.09	0.50	0.48	0.04	0.15	0.13	0.04	0.15	0.13
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	39	827	112	92	186	3	21	32	47	19	104	19
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	7.9	2.1	2.4	1.4	0.0	0.6	0.7	1.3	0.5	2.5	0.5
Cycle Q Clear(g_c), s	1.0	7.9	2.1	2.4	1.4	0.0	0.6	0.7	1.3	0.5	2.5	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	1649	705	154	1764	757	72	276	202	69	272	199
V/C Ratio(X)	0.41	0.50	0.16	0.60	0.11	0.00	0.29	0.12	0.23	0.27	0.38	0.10
Avail Cap(c_a), veh/h	455	2089	902	455	2089	902	455	706	568	455	706	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	9.1	8.1	21.5	6.5	6.7	22.7	18.0	19.1	22.8	18.8	18.9
Incr Delay (d2), s/veh	2.7	0.5	0.2	3.7	0.1	0.0	2.2	0.2	0.6	2.1	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.9	0.9	1.3	0.7	0.0	0.3	0.4	0.6	0.3	1.3	0.2
LnGrp Delay(d),s/veh	25.1	9.6	8.3	25.1	6.5	6.7	24.9	18.2	19.7	24.9	19.7	19.1
LnGrp LOS	C	A	A	C	A	A	C	B	B	C	B	B
Approach Vol, veh/h	978				281				100			
Approach Delay, s/veh	10.1				12.6				20.3			
Approach LOS	B				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	9.7	7.7	25.9	5.5	9.6	6.1	27.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	5.2	4.5	4.5	4.5	5.2				
Max Green Setting (Gmax), s	11.5	16.5	11.5	26.8	11.5	16.5	11.5	26.8				
Max Q Clear Time (g_c+I1), s	2.5	3.3	4.4	9.9	2.6	4.5	3.0	3.4				
Green Ext Time (p_c), s	0.0	0.7	0.1	10.8	0.0	0.7	0.0	13.6				
Intersection Summary												
HCM 2010 Ctrl Delay	12.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
47: Westhills Dr & Fiddymment Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	855	0	48	0	0	96	28	1336	17	556	1525	226
Future Volume (veh/h)	855	0	48	0	0	96	28	1336	17	556	1525	226
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	900	0	51	0	0	101	29	1406	18	585	1605	238
Adj No. of Lanes	2	0	1	1	0	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	988	0	0	1	0	0	36	1466	456	540	2910	906
Arrive On Green	0.29	0.00	0.00	0.00	0.00	0.00	0.02	0.29	0.29	0.30	0.57	0.57
Sat Flow, veh/h	3442	900		1774	0		1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	900	53.0		0	0.0		29	1406	18	585	1605	238
Grp Sat Flow(s),veh/h/ln	1721	D		1774			1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	31.5			0.0			2.0	33.9	1.0	38.0	24.6	9.4
Cycle Q Clear(g_c), s	31.5			0.0			2.0	33.9	1.0	38.0	24.6	9.4
Prop In Lane	1.00			1.00			1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	988			1			36	1466	456	540	2910	906
V/C Ratio(X)	0.91			0.00			0.80	0.96	0.04	1.08	0.55	0.26
Avail Cap(c_a), veh/h	1131			57			85	1467	457	540	2910	906
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			0.00			1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9			0.0			60.9	43.7	32.0	43.4	16.7	13.4
Incr Delay (d2), s/veh	10.1			0.0			31.3	14.9	0.0	63.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4			0.0			1.3	17.9	0.5	28.1	11.5	4.2
LnGrp Delay(d),s/veh	53.0			0.0			92.2	58.6	32.0	106.5	16.9	13.6
LnGrp LOS	D						F	E	C	F	B	B
Approach Vol, veh/h								1453			2428	
Approach Delay, s/veh								59.0			38.2	
Approach LOS								E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3		5	6	7					
Phs Duration (G+Y+Rc), s	43.0	41.0	0.0		7.6	76.4	40.8					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	38.0	36.0	4.0		6.0	68.0	41.0					
Max Q Clear Time (g_c+I1), s	40.0	35.9	0.0		4.0	26.6	33.5					
Green Ext Time (p_c), s	0.0	0.0	0.0		0.0	32.2	2.3					
Intersection Summary												
HCM 2010 Ctrl Delay			47.3									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
48: Regional Park Access & Baseline Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1136	65	29	1225	12	0	8	2	102	21	20
Future Volume (veh/h)	8	1136	65	29	1225	12	0	8	2	102	21	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	8	1196	68	31	1289	13	0	8	2	107	22	21
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	2446	699	85	2545	730	4	184	156	171	511	434
Arrive On Green	0.03	0.48	0.44	0.05	0.50	0.46	0.00	0.10	0.10	0.10	0.27	0.27
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	8	1196	68	31	1289	13	0	8	2	107	22	21
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.2	8.1	1.3	0.9	8.6	0.2	0.0	0.2	0.1	2.9	0.4	0.5
Cycle Q Clear(g_c), s	0.2	8.1	1.3	0.9	8.6	0.2	0.0	0.2	0.1	2.9	0.4	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	50	2446	699	85	2545	730	4	184	156	171	511	434
V/C Ratio(X)	0.16	0.49	0.10	0.37	0.51	0.02	0.00	0.04	0.01	0.62	0.04	0.05
Avail Cap(c_a), veh/h	175	2709	781	175	2709	781	175	1287	1094	315	1434	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	8.9	8.3	23.4	8.5	7.4	0.0	20.7	20.6	22.0	13.5	13.5
Incr Delay (d2), s/veh	1.5	0.2	0.1	2.6	0.2	0.0	0.0	0.1	0.0	3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.8	0.6	0.5	4.0	0.1	0.0	0.1	0.0	1.6	0.2	0.2
LnGrp Delay(d),s/veh	25.5	9.1	8.3	26.0	8.6	7.4	0.0	20.8	20.6	25.7	13.5	13.6
LnGrp LOS	C	A	A	C	A	A		C	C	C	B	B
Approach Vol, veh/h	1272			1333			10			150		
Approach Delay, s/veh	9.1			9.0			20.7			22.2		
Approach LOS	A			A			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	9.0	6.4	26.4	0.0	17.9	5.4	27.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	34.0	4.0	24.0	4.0	38.0	4.0	24.0				
Max Q Clear Time (g_c+I1), s	4.9	2.2	2.9	10.1	0.0	2.5	2.2	10.6				
Green Ext Time (p_c), s	0.1	0.2	0.0	11.3	0.0	0.2	0.0	10.9				
Intersection Summary												
HCM 2010 Ctrl Delay	9.8											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
49: Watt Ave/Santucci Blvd & Baseline Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	1049	1	211	886	34	53	468	400	103	859	413
Future Volume (veh/h)	148	1049	1	211	886	34	53	468	400	103	859	413
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	156	1104	1	222	933	36	56	493	421	108	904	435
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	1615	503	294	1724	537	107	1796	559	167	1884	586
Arrive On Green	0.06	0.32	0.32	0.09	0.34	0.34	0.03	0.35	0.35	0.05	0.37	0.37
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	156	1104	1	222	933	36	56	493	421	108	904	435
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.6	19.4	0.0	6.5	15.2	1.6	1.6	7.1	24.0	3.2	13.9	24.4
Cycle Q Clear(g_c), s	4.6	19.4	0.0	6.5	15.2	1.6	1.6	7.1	24.0	3.2	13.9	24.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	1615	503	294	1724	537	107	1796	559	167	1884	586
V/C Ratio(X)	0.71	0.68	0.00	0.75	0.54	0.07	0.52	0.27	0.75	0.65	0.48	0.74
Avail Cap(c_a), veh/h	302	1887	588	470	2135	665	168	2036	634	235	2135	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	30.5	23.9	45.8	27.4	22.9	48.9	23.7	29.2	47.9	24.7	28.0
Incr Delay (d2), s/veh	4.6	0.8	0.0	3.9	0.3	0.1	3.9	0.1	4.5	4.2	0.2	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	9.2	0.0	3.2	7.1	0.7	0.8	3.3	11.1	1.6	6.6	11.3
LnGrp Delay(d),s/veh	51.5	31.3	23.9	49.7	27.7	22.9	52.8	23.8	33.7	52.1	24.9	31.9
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h	1261		1191				970		1447			
Approach Delay, s/veh	33.8		31.6				29.8		29.0			
Approach LOS	C		C				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	41.2	13.8	37.5	8.2	42.9	11.6	39.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	41.0	14.0	38.0	5.0	43.0	9.0	43.0				
Max Q Clear Time (g_c+I1), s	5.2	26.0	8.5	21.4	3.6	26.4	6.6	17.2				
Green Ext Time (p_c), s	0.0	10.2	0.3	11.2	0.0	10.9	0.1	14.9				
Intersection Summary												
HCM 2010 Ctrl Delay			31.0									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
50: Baseline Rd & W Shopping Center Access

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	250	1303	1048	97	50	83		
Future Volume (veh/h)	250	1303	1048	97	50	83		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	263	1372	1103	102	53	87		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	332	3585	2135	665	176	157		
Arrive On Green	0.19	0.70	0.42	0.42	0.10	0.10		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	263	1372	1103	102	53	87		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	7.2	5.6	8.2	2.0	1.4	2.7		
Cycle Q Clear(g_c), s	7.2	5.6	8.2	2.0	1.4	2.7		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	332	3585	2135	665	176	157		
V/C Ratio(X)	0.79	0.38	0.52	0.15	0.30	0.55		
Avail Cap(c_a), veh/h	765	5083	2392	745	1008	900		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.8	3.0	11.0	9.2	21.3	21.9		
Incr Delay (d2), s/veh	4.3	0.1	0.2	0.1	1.0	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.9	2.6	3.8	0.9	0.7	0.1		
LnGrp Delay(d),s/veh	24.1	3.1	11.2	9.3	22.3	24.9		
LnGrp LOS	C	A	B	A	C	C		
Approach Vol, veh/h		1635	1205		140			
Approach Delay, s/veh		6.5	11.0		23.9			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				41.0		10.1	14.5	26.4
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				51.0		29.0	22.0	24.0
Max Q Clear Time (g_c+I1), s				7.6		4.7	9.2	10.2
Green Ext Time (p_c), s				25.9		0.4	0.6	11.2
Intersection Summary								
HCM 2010 Ctrl Delay			9.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
51: Baseline Rd & Westbrook Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	519	824	9	166	654	162	27	580	361	274	733	464
Future Volume (veh/h)	519	824	9	166	654	162	27	580	361	274	733	464
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	546	867	9	175	688	171	28	611	380	288	772	488
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	630	1862	550	269	1328	384	105	1734	525	289	2007	610
Arrive On Green	0.18	0.37	0.35	0.08	0.26	0.24	0.03	0.34	0.33	0.08	0.39	0.39
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	546	867	9	175	688	171	28	611	380	288	772	488
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	16.5	14.0	0.4	5.3	12.4	9.8	0.9	9.6	22.6	9.0	11.6	29.3
Cycle Q Clear(g_c), s	16.5	14.0	0.4	5.3	12.4	9.8	0.9	9.6	22.6	9.0	11.6	29.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	630	1862	550	269	1328	384	105	1734	525	289	2007	610
V/C Ratio(X)	0.87	0.47	0.02	0.65	0.52	0.45	0.27	0.35	0.72	1.00	0.38	0.80
Avail Cap(c_a), veh/h	642	2278	680	353	1851	547	161	1803	547	289	2007	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	26.0	22.9	48.0	33.8	34.5	50.8	26.4	31.5	49.1	23.2	29.3
Incr Delay (d2), s/veh	11.8	0.2	0.0	2.6	0.3	0.8	1.3	0.2	5.6	51.9	0.2	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	6.5	0.2	2.6	5.8	4.4	0.4	4.6	10.7	6.3	5.5	14.1
LnGrp Delay(d),s/veh	54.3	26.1	23.0	50.6	34.1	35.3	52.1	26.7	37.0	101.0	23.4	37.6
LnGrp LOS	D	C	C	D	C	D	D	C	D	F	C	D
Approach Vol, veh/h	1422			1034				1019			1548	
Approach Delay, s/veh	36.9			37.1				31.2			42.3	
Approach LOS	D			D				C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	39.6	12.4	42.2	7.3	45.3	23.6	31.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	6.0	5.0	5.0	5.0	6.0				
Max Green Setting (Gmax), s	8.0	36.0	10.0	45.0	4.0	40.0	19.0	36.0				
Max Q Clear Time (g_c+I1), s	11.0	24.6	7.3	16.0	2.9	31.3	18.5	14.4				
Green Ext Time (p_c), s	0.0	9.9	0.1	12.1	0.0	8.0	0.1	10.6				
Intersection Summary												
HCM 2010 Ctrl Delay	37.5											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
52: Baseline Rd & C Shopping Center Access

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	1459	949	145	0	33		
Future Volume (veh/h)	0	1459	949	145	0	33		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	1536	999	153	0	35		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	4	3623	3623	1128	146	130		
Arrive On Green	0.00	0.71	0.71	0.71	0.00	0.08		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	0	1536	999	153	0	35		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.0	6.1	3.4	1.5	0.0	1.0		
Cycle Q Clear(g_c), s	0.0	6.1	3.4	1.5	0.0	1.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	4	3623	3623	1128	146	130		
V/C Ratio(X)	0.00	0.42	0.28	0.14	0.00	0.27		
Avail Cap(c_a), veh/h	146	5221	4281	1333	1093	975		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	0.0	2.9	2.5	2.2	0.0	21.0		
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.7	1.6	0.7	0.0	0.9		
LnGrp Delay(d),s/veh	0.0	3.0	2.5	2.3	0.0	22.1		
LnGrp LOS		A	A	A		C		
Approach Vol, veh/h		1536	1152		35			
Approach Delay, s/veh		3.0	2.5		22.1			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				39.7		9.0	0.0	39.7
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				50.0		30.0	4.0	41.0
Max Q Clear Time (g_c+I1), s				8.1		3.0	0.0	5.4
Green Ext Time (p_c), s				26.6		0.1	0.0	24.0
Intersection Summary								
HCM 2010 Ctrl Delay			3.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
53: Market St & Baseline Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1330	122	4	890	64	168	66	15	192	115	36
Future Volume (veh/h)	7	1330	122	4	890	64	168	66	15	192	115	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	1400	128	4	937	67	177	69	16	202	121	38
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	2315	691	41	2299	687	254	262	193	282	290	218
Arrive On Green	0.03	0.46	0.44	0.02	0.45	0.43	0.14	0.14	0.12	0.16	0.16	0.14
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	7	1400	128	4	937	67	177	69	16	202	121	38
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.2	11.2	2.7	0.1	6.7	1.3	5.1	1.8	0.5	5.8	3.2	1.1
Cycle Q Clear(g_c), s	0.2	11.2	2.7	0.1	6.7	1.3	5.1	1.8	0.5	5.8	3.2	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	46	2315	691	41	2299	687	254	262	193	282	290	218
V/C Ratio(X)	0.15	0.60	0.19	0.10	0.41	0.10	0.70	0.26	0.08	0.72	0.42	0.17
Avail Cap(c_a), veh/h	197	2358	705	197	2358	705	362	1244	1028	362	1244	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	11.0	9.3	25.8	9.9	9.0	22.0	20.7	21.0	21.5	20.5	20.6
Incr Delay (d2), s/veh	1.5	0.6	0.2	1.0	0.2	0.1	3.4	0.5	0.2	4.8	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.3	1.2	0.1	3.2	0.6	2.7	1.0	0.2	3.2	1.7	0.5
LnGrp Delay(d),s/veh	27.2	11.7	9.6	26.8	10.1	9.1	25.4	21.2	21.2	26.3	21.5	20.9
LnGrp LOS	C	B	A	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h	1535			1008				262			361	
Approach Delay, s/veh	11.6			10.1				24.0			24.1	
Approach LOS	B			B				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	9.6	4.2	28.5	10.7	10.4	4.4	28.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	6.0	4.0	4.0	4.0	6.0				
Max Green Setting (Gmax), s	10.0	34.0	5.0	23.0	10.0	34.0	5.0	23.0				
Max Q Clear Time (g_c+I1), s	7.8	3.8	2.1	13.2	7.1	5.2	2.2	8.7				
Green Ext Time (p_c), s	0.1	1.3	0.0	9.4	0.1	1.2	0.0	13.5				
Intersection Summary												
HCM 2010 Ctrl Delay	13.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
54: Baseline Road & E Shopping Access Center

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		  	  					
Traffic Volume (veh/h)	174	1363	900	160	57	58		
Future Volume (veh/h)	174	1363	900	160	57	58		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	183	1435	947	168	60	61		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	238	3365	2067	643	171	153		
Arrive On Green	0.13	0.66	0.41	0.41	0.10	0.10		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	183	1435	947	168	60	61		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	4.1	5.5	5.6	2.9	1.3	1.5		
Cycle Q Clear(g_c), s	4.1	5.5	5.6	2.9	1.3	1.5		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	238	3365	2067	643	171	153		
V/C Ratio(X)	0.77	0.43	0.46	0.26	0.35	0.40		
Avail Cap(c_a), veh/h	514	4301	2212	689	1286	1148		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.3	3.3	9.0	8.2	17.5	17.6		
Incr Delay (d2), s/veh	5.1	0.1	0.2	0.2	1.2	1.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.3	2.6	2.7	1.3	0.7	1.4		
LnGrp Delay(d),s/veh	22.4	3.4	9.1	8.4	18.7	19.2		
LnGrp LOS	C	A	A	A	B	B		
Approach Vol, veh/h		1618	1115		121			
Approach Delay, s/veh		5.5	9.0		19.0			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				32.4		9.0	10.6	21.8
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				35.0		30.0	12.0	18.0
Max Q Clear Time (g_c+I1), s				7.5		3.5	6.1	7.6
Green Ext Time (p_c), s				19.9		0.3	0.2	8.9
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
55: Baseline Rd & Upland Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	69	1351	1026	36	128	34		
Future Volume (veh/h)	69	1351	1026	36	128	34		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	73	1422	1080	38	135	36		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	141	3437	2601	771	273	206		
Arrive On Green	0.08	0.68	0.51	0.49	0.15	0.13		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	73	1422	1080	38	135	36		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	1.6	5.2	5.4	0.5	2.9	0.8		
Cycle Q Clear(g_c), s	1.6	5.2	5.4	0.5	2.9	0.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	141	3437	2601	771	273	206		
V/C Ratio(X)	0.52	0.41	0.42	0.05	0.49	0.18		
Avail Cap(c_a), veh/h	366	4386	2903	865	1401	1212		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	18.2	3.0	6.2	5.5	15.9	15.9		
Incr Delay (d2), s/veh	2.9	0.1	0.1	0.0	1.4	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	2.4	2.5	0.2	1.5	0.8		
LnGrp Delay(d),s/veh	21.1	3.1	6.3	5.6	17.3	16.3		
LnGrp LOS	C	A	A	A	B	B		
Approach Vol, veh/h		1495	1118		171			
Approach Delay, s/veh		4.0	6.3		17.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				31.3		9.8	6.8	24.6
Change Period (Y+Rc), s				5.5		4.5	4.5	5.5
Max Green Setting (Gmax), s				33.5		31.5	7.5	21.5
Max Q Clear Time (g_c+I1), s				7.2		4.9	3.6	7.4
Green Ext Time (p_c), s				18.6		0.5	0.0	11.4
Intersection Summary								
HCM 2010 Ctrl Delay			5.7					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

56: Fiddymment Rd & Baseline Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1325	73	270	823	269	220	929	511	432	874	270
Future Volume (veh/h)	69	1325	73	270	823	269	220	929	511	432	874	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1863	1827	1827	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	73	1395	77	284	866	283	232	978	538	455	920	284
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	2	2	4	4	2	2	2	2	2	2
Cap, veh/h	150	1635	492	351	1856	578	346	1644	512	439	1825	568
Arrive On Green	0.04	0.33	0.31	0.10	0.37	0.37	0.10	0.32	0.32	0.13	0.36	0.36
Sat Flow, veh/h	3442	4988	1583	3442	4988	1553	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	73	1395	77	284	866	283	232	978	538	455	920	284
Grp Sat Flow(s),veh/h/ln	1721	1663	1583	1721	1663	1553	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	2.4	30.7	4.1	9.5	15.5	16.4	7.6	18.9	38.0	15.0	16.6	16.5
Cycle Q Clear(g_c), s	2.4	30.7	4.1	9.5	15.5	16.4	7.6	18.9	38.0	15.0	16.6	16.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	1635	492	351	1856	578	346	1644	512	439	1825	568
V/C Ratio(X)	0.49	0.85	0.16	0.81	0.47	0.49	0.67	0.59	1.05	1.04	0.50	0.50
Avail Cap(c_a), veh/h	410	1740	525	351	1856	578	410	1644	512	439	1825	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	36.9	29.3	51.6	28.0	28.3	51.0	33.3	39.8	51.3	29.5	29.4
Incr Delay (d2), s/veh	2.5	4.6	0.3	13.1	0.2	0.6	3.3	0.8	53.8	52.5	0.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	14.8	1.9	5.2	7.2	7.2	3.8	9.0	24.2	10.3	7.8	7.4
LnGrp Delay(d),s/veh	57.4	41.4	29.6	64.8	28.2	29.0	54.3	34.2	93.6	103.8	29.9	30.7
LnGrp LOS	E	D	C	E	C	C	D	C	F	F	C	C
Approach Vol, veh/h	1545				1433				1748			
Approach Delay, s/veh	41.6				35.6				55.1			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	42.0	15.0	41.5	14.8	46.2	9.1	47.4				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	* 6				
Max Green Setting (Gmax), s	14.0	36.0	10.0	38.0	12.0	38.0	13.0	* 36				
Max Q Clear Time (g_c+I1), s	17.0	40.0	11.5	32.7	9.6	18.6	4.4	18.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.9	0.2	18.1	0.1	15.5				

Intersection Summary

HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
57: Baseline Rd & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	 	 	 			 		
Traffic Volume (veh/h)	578	1518	1078	79	131	248		
Future Volume (veh/h)	578	1518	1078	79	131	248		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	608	1598	1135	83	138	261		
Adj No. of Lanes	2	2	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	539	2555	1816	812	308	920		
Arrive On Green	0.16	0.72	0.51	0.51	0.17	0.17		
Sat Flow, veh/h	3442	3632	3632	1583	1774	2787		
Grp Volume(v), veh/h	608	1598	1135	83	138	261		
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1393		
Q Serve(g_s), s	9.0	13.2	13.2	1.5	4.0	4.0		
Cycle Q Clear(g_c), s	9.0	13.2	13.2	1.5	4.0	4.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	539	2555	1816	812	308	920		
V/C Ratio(X)	1.13	0.63	0.63	0.10	0.45	0.28		
Avail Cap(c_a), veh/h	539	2586	1847	826	309	921		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.2	4.1	10.0	7.2	21.3	14.2		
Incr Delay (d2), s/veh	79.1	0.6	0.8	0.1	0.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.1	6.4	6.5	0.7	2.0	3.5		
LnGrp Delay(d),s/veh	103.3	4.6	10.8	7.3	21.7	14.3		
LnGrp LOS	F	A	B	A	C	B		
Approach Vol, veh/h		2206	1218		399			
Approach Delay, s/veh		31.8	10.6		16.8			
Approach LOS		C	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				44.5		13.0	12.0	32.5
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				39.0		9.0	8.0	27.0
Max Q Clear Time (g_c+l1), s				15.2		6.0	11.0	15.2
Green Ext Time (p_c), s				22.1		0.3	0.0	11.3
Intersection Summary								
HCM 2010 Ctrl Delay			23.5					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
58: Woodcreek Oaks Blvd & Baseline Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	539	1150	30	74	742	100	131	0	424	275	0	290
Future Volume (veh/h)	539	1150	30	74	742	100	131	0	424	275	0	290
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	567	1211	32	78	781	0	138	0	446	289	0	0
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	545	1728	755	130	900	388	289	0	243	269	0	255
Arrive On Green	0.31	0.49	0.48	0.07	0.25	0.00	0.16	0.00	0.15	0.16	0.00	0.00
Sat Flow, veh/h	1774	3539	1575	1774	3539	1583	1774	0	1583	1774	0	1583
Grp Volume(v), veh/h	567	1211	32	78	781	0	138	0	446	289	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1575	1774	1770	1583	1774	0	1583	1774	0	1583
Q Serve(g_s), s	34.0	29.4	1.2	4.7	23.4	0.0	7.8	0.0	17.0	16.8	0.0	0.0
Cycle Q Clear(g_c), s	34.0	29.4	1.2	4.7	23.4	0.0	7.8	0.0	17.0	16.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	545	1728	755	130	900	388	289	0	243	269	0	255
V/C Ratio(X)	1.04	0.70	0.04	0.60	0.87	0.00	0.48	0.00	1.83	1.07	0.00	0.00
Avail Cap(c_a), veh/h	545	1728	755	176	944	408	289	0	243	269	0	255
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.3	22.0	15.3	49.7	39.5	0.0	42.1	0.0	46.8	46.4	0.0	0.0
Incr Delay (d2), s/veh	49.3	1.6	0.0	1.6	9.1	0.0	1.2	0.0	390.6	75.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.0	14.7	0.5	2.4	12.5	0.0	3.9	0.0	33.8	13.8	0.0	0.0
LnGrp Delay(d),s/veh	87.7	23.6	15.4	51.3	48.6	0.0	43.3	0.0	437.4	121.9	0.0	0.0
LnGrp LOS	F	C	B	D	D		D		F	F		
Approach Vol, veh/h	1810				859				584		289	
Approach Delay, s/veh	43.5				48.8				344.3		121.9	
Approach LOS	D				D				F		F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	21.0		10.1	58.0	21.5		36.0	32.1				
Change Period (Y+Rc), s	5.0		4.0	6.0	5.7		4.0	6.0				
Max Green Setting (Gmax), s	16.0		9.0	50.5	15.8		32.0	27.5				
Max Q Clear Time (g_c+I1), s	19.0		6.7	31.4	18.8		36.0	25.4				
Green Ext Time (p_c), s	0.0		0.0	17.1	0.0		0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	100.8											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary

59: Foothills Blvd & Baseline Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	477	1061	67	187	46	295	1423	72	55	1068	171
Future Volume (veh/h)	175	477	1061	67	187	46	295	1423	72	55	1068	171
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	184	502	1117	71	197	48	311	1498	76	58	1124	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	1	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1858	831	74	2466	768	344	1526	475	59	1495	343
Arrive On Green	0.08	0.52	0.52	0.04	0.48	0.48	0.10	0.30	0.30	0.03	0.23	0.00
Sat Flow, veh/h	3442	3539	1583	1774	5085	1583	3442	5085	1583	1774	6408	1583
Grp Volume(v), veh/h	184	502	1117	71	197	48	311	1498	76	58	1124	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1695	1583	1721	1695	1583	1774	1602	1583
Q Serve(g_s), s	6.3	9.4	63.0	4.8	2.5	1.9	10.7	35.1	4.2	3.9	19.6	0.0
Cycle Q Clear(g_c), s	6.3	9.4	63.0	4.8	2.5	1.9	10.7	35.1	4.2	3.9	19.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	1858	831	74	2466	768	344	1526	475	59	1495	343
V/C Ratio(X)	0.69	0.27	1.34	0.96	0.08	0.06	0.90	0.98	0.16	0.98	0.75	0.00
Avail Cap(c_a), veh/h	315	1858	831	74	2466	768	344	1526	475	59	1495	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.9	15.8	28.5	57.4	16.6	16.4	53.4	41.7	30.9	58.0	42.8	0.0
Incr Delay (d2), s/veh	3.4	0.1	162.7	90.3	0.0	0.1	26.0	19.1	0.7	109.6	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	4.6	64.8	4.2	1.2	0.9	6.3	19.1	2.0	3.7	8.9	0.0
LnGrp Delay(d),s/veh	57.4	15.9	191.2	147.7	16.6	16.5	79.4	60.8	31.6	167.6	45.1	0.0
LnGrp LOS	E	B	F	F	B	B	E	E	C	F	D	
Approach Vol, veh/h	1803			316			1885			1182		
Approach Delay, s/veh	128.8			46.0			62.7			51.1		
Approach LOS	F			D			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	39.0	8.0	66.0	15.0	31.0	12.3	61.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	3.0	33.0	4.0	60.0	11.0	25.0	10.0	* 55				
Max Q Clear Time (g_c+I1), s	5.9	37.1	6.8	65.0	12.7	21.6	8.3	4.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.2	0.1	31.5				

Intersection Summary

HCM 2010 Ctrl Delay 82.0
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
60: Foothills Blvd & HP-Main Dwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	65	23	372	373	469	183	930	618	565	510	57
Future Volume (veh/h)	5	65	23	372	373	469	183	930	618	565	510	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	5	68	0	392	393	494	193	979	651	595	537	0
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	213	201	508	489	731	251	1124	667	689	1421	588
Arrive On Green	0.02	0.11	0.00	0.15	0.26	0.26	0.14	0.32	0.28	0.20	0.40	0.00
Sat Flow, veh/h	1774	1863	1583	3442	1863	1574	1774	3539	1575	3442	3539	1583
Grp Volume(v), veh/h	5	68	0	392	393	494	193	979	651	595	537	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1574	1774	1770	1575	1721	1770	1583
Q Serve(g_s), s	0.2	2.7	0.0	8.8	15.8	19.6	8.4	20.9	22.0	13.4	8.6	0.0
Cycle Q Clear(g_c), s	0.2	2.7	0.0	8.8	15.8	19.6	8.4	20.9	22.0	13.4	8.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	213	201	508	489	731	251	1124	667	689	1421	588
V/C Ratio(X)	0.12	0.32	0.00	0.77	0.80	0.68	0.77	0.87	0.98	0.86	0.38	0.00
Avail Cap(c_a), veh/h	222	213	201	904	489	731	311	1124	667	775	1421	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.2	32.6	0.0	32.8	27.6	16.8	33.1	25.7	22.7	30.9	16.9	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.0	2.5	9.4	2.5	6.8	7.8	28.9	9.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	0.0	4.3	9.4	9.0	4.5	11.4	19.3	7.2	4.2	0.0
LnGrp Delay(d),s/veh	38.6	32.9	0.0	35.3	36.9	19.3	39.9	33.5	51.6	40.0	17.1	0.0
LnGrp LOS	D	C		D	D	B	D	C	D	D	B	
Approach Vol, veh/h	73			1279			1823			1132		
Approach Delay, s/veh	33.3			29.6			40.6			29.2		
Approach LOS	C			C			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	28.0	16.8	14.1	14.3	34.7	4.9	26.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	18.0	22.0	21.0	* 9	13.0	28.0	9.0	21.0				
Max Q Clear Time (g_c+I1), s	15.4	24.0	10.8	4.7	10.4	10.6	2.2	21.6				
Green Ext Time (p_c), s	0.6	0.0	1.0	1.9	0.1	13.8	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	34.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
61: Washington Blvd & Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	534	2	27	850	445	2	782	27	383	706	13
Future Volume (veh/h)	41	534	2	27	850	445	2	782	27	383	706	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	562	2	28	895	0	2	823	0	403	743	14
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1116	497	213	1035	463	54	1086	486	505	1550	691
Arrive On Green	0.08	0.32	0.32	0.06	0.29	0.00	0.02	0.31	0.00	0.15	0.44	0.44
Sat Flow, veh/h	3442	3539	1576	3442	3539	1583	3442	3539	1583	3442	3539	1578
Grp Volume(v), veh/h	43	562	2	28	895	0	2	823	0	403	743	14
Grp Sat Flow(s),veh/h/ln	1721	1770	1576	1721	1770	1583	1721	1770	1583	1721	1770	1578
Q Serve(g_s), s	1.0	11.5	0.1	0.7	21.2	0.0	0.1	18.6	0.0	10.0	13.2	0.4
Cycle Q Clear(g_c), s	1.0	11.5	0.1	0.7	21.2	0.0	0.1	18.6	0.0	10.0	13.2	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	292	1116	497	213	1035	463	54	1086	486	505	1550	691
V/C Ratio(X)	0.15	0.50	0.00	0.13	0.87	0.00	0.04	0.76	0.00	0.80	0.48	0.02
Avail Cap(c_a), veh/h	427	1116	497	777	1158	518	350	1278	572	505	1550	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	24.7	20.8	39.3	29.7	0.0	43.0	27.7	0.0	36.5	17.7	14.1
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.1	6.5	0.0	0.1	3.0	0.0	8.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.6	0.0	0.3	11.2	0.0	0.0	9.5	0.0	5.3	6.5	0.2
LnGrp Delay(d),s/veh	37.7	24.8	20.8	39.4	36.2	0.0	43.1	30.7	0.0	44.7	18.2	14.2
LnGrp LOS	D	C	C	D	D		D	C		D	B	B
Approach Vol, veh/h	607				923				825			
Approach Delay, s/veh	25.7				36.3				30.7			
Approach LOS	C				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	32.2	8.5	32.0	4.4	43.8	10.5	29.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	12.0	31.0	19.0	* 19	8.0	35.0	10.0	28.0				
Max Q Clear Time (g_c+I1), s	12.0	20.6	2.7	13.5	2.1	15.2	3.0	23.2				
Green Ext Time (p_c), s	0.0	5.5	0.0	3.0	0.0	13.4	0.0	1.7				

Intersection Summary

HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
62: Roseville Pkwy & Trestle Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	10	154	20	3	1	56	1112	7	1	994	10
Future Volume (veh/h)	28	10	154	20	3	1	56	1112	7	1	994	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	29	11	162	21	3	1	59	1171	7	1	1046	11
Adj No. of Lanes	0	1	1	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	83	267	91	13	4	107	1922	860	37	1781	797
Arrive On Green	0.17	0.17	0.17	0.06	0.06	0.04	0.06	0.54	0.54	0.02	0.50	0.50
Sat Flow, veh/h	1303	494	1583	1492	213	71	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	40	0	162	25	0	0	59	1171	7	1	1046	11
Grp Sat Flow(s),veh/h/ln	1798	0	1583	1776	0	0	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.0	0.0	4.8	0.7	0.0	0.0	1.6	11.4	0.1	0.0	10.5	0.2
Cycle Q Clear(g_c), s	1.0	0.0	4.8	0.7	0.0	0.0	1.6	11.4	0.1	0.0	10.5	0.2
Prop In Lane	0.72		1.00	0.84		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	0	267	109	0	0	107	1922	860	37	1781	797
V/C Ratio(X)	0.13	0.00	0.61	0.23	0.00	0.00	0.55	0.61	0.01	0.03	0.59	0.01
Avail Cap(c_a), veh/h	631	0	556	208	0	0	141	1922	860	141	1896	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	19.4	22.6	0.0	0.0	23.0	7.9	5.3	24.2	8.8	6.3
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.4	0.0	0.0	1.6	0.7	0.0	0.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.1	0.3	0.0	0.0	0.8	5.7	0.0	0.0	5.2	0.1
LnGrp Delay(d),s/veh	17.9	0.0	20.2	23.0	0.0	0.0	24.7	8.5	5.3	24.3	9.4	6.3
LnGrp LOS	B		C	C			C	A	A	C	A	A
Approach Vol, veh/h	202				25		1237				1058	
Approach Delay, s/veh	19.8				23.0		9.3				9.4	
Approach LOS	B				C		A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.0	30.4	10.8		6.0	28.4	5.2					
Change Period (Y+Rc), s	4.0	6.0	* 4.2		4.0	6.0	4.0					
Max Green Setting (Gmax), s	3.0	24.0	* 16		3.0	24.0	4.0					
Max Q Clear Time (g_c+I1), s	2.0	13.4	6.8		3.6	12.5	2.7					
Green Ext Time (p_c), s	0.0	9.6	0.3		0.0	9.9	0.0					

Intersection Summary

HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
63: Roseville Pkwy & Gibson Drive (w)

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	853	2001	0	1824	56	88	209	
Future Volume (veh/h)	853	2001	0	1824	56	88	209	
Number	5	2		6	16	7	14	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	898	2106		1920	0	93	0	
Adj No. of Lanes	1	3		3	1	1	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	721	4238		2000	623	177	158	
Arrive On Green	0.41	0.83		0.79	0.00	0.10	0.00	
Sat Flow, veh/h	1774	5253		5253	1583	1774	1583	
Grp Volume(v), veh/h	898	2106		1920	0	93	0	
Grp Sat Flow(s),veh/h/ln	1774	1695		1695	1583	1774	1583	
Q Serve(g_s), s	61.0	17.7		49.3	0.0	7.5	0.0	
Cycle Q Clear(g_c), s	61.0	17.7		49.3	0.0	7.5	0.0	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	721	4238		2000	623	177	158	
V/C Ratio(X)	1.24	0.50		0.96	0.00	0.52	0.00	
Avail Cap(c_a), veh/h	721	4238		2000	623	177	158	
HCM Platoon Ratio	1.00	1.00		2.00	2.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00		0.91	0.00	1.00	0.00	
Uniform Delay (d), s/veh	44.5	3.6		15.0	0.0	64.1	0.0	
Incr Delay (d2), s/veh	121.6	0.4		11.8	0.0	10.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	54.2	8.2		24.2	0.0	4.2	0.0	
LnGrp Delay(d),s/veh	166.1	4.0		26.8	0.0	74.8	0.0	
LnGrp LOS	F	A		C		E		
Approach Vol, veh/h		3004		1920		93		
Approach Delay, s/veh		52.4		26.8		74.8		
Approach LOS		D		C		E		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		130.0		20.0	66.0	64.0		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		116.0		15.0	61.0	59.0		
Max Q Clear Time (g_c+I1), s		19.7		9.5	63.0	51.3		
Green Ext Time (p_c), s		83.2		0.1	0.0	7.5		
Intersection Summary								
HCM 2010 Ctrl Delay			43.0					
HCM 2010 LOS			D					
Notes								
User approved pedestrian interval to be less than phase max green.								

HCM 2010 Signalized Intersection Summary

64: Chase Dr & Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	2257	107	100	1633	119	146		
Future Volume (veh/h)	2257	107	100	1633	119	146		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2376	0	105	1719	125	0		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3402	1059	138	3899	160	142		
Arrive On Green	1.00	0.00	0.08	0.77	0.09	0.00		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	2376	0	105	1719	125	0		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	0.0	0.0	8.7	17.9	10.3	0.0		
Cycle Q Clear(g_c), s	0.0	0.0	8.7	17.9	10.3	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3402	1059	138	3899	160	142		
V/C Ratio(X)	0.70	0.00	0.76	0.44	0.78	0.00		
Avail Cap(c_a), veh/h	3402	1059	213	3899	336	300		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.86	0.00	0.83	0.83	1.00	0.00		
Uniform Delay (d), s/veh	0.0	0.0	67.8	6.2	66.8	0.0		
Incr Delay (d2), s/veh	1.0	0.0	2.7	0.3	3.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	0.0	4.4	8.4	5.2	0.0		
LnGrp Delay(d),s/veh	1.0	0.0	70.5	6.5	70.0	0.0		
LnGrp LOS	A		E	A	E			
Approach Vol, veh/h	2376			1824	125			
Approach Delay, s/veh	1.0			10.2	70.0			
Approach LOS	A			B	E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		17.1	14.6	103.4				118.0
Change Period (Y+Rc), s		4.6	4.0	6.0				6.0
Max Green Setting (Gmax), s		27.4	17.0	91.0				112.0
Max Q Clear Time (g_c+I1), s		12.3	10.7	2.0				19.9
Green Ext Time (p_c), s		0.2	0.1	82.0				84.6
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
65: Gibson Dr & Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	2139	1	44	1533	948	3	5	32	414	3	184
Future Volume (veh/h)	256	2139	1	44	1533	948	3	5	32	414	3	184
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	269	2252	1	46	1614	0	3	5	34	438	0	0
Adj No. of Lanes	1	3	1	1	3	1	0	1	1	3	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	3659	1135	71	2989	905	25	41	55	615	0	169
Arrive On Green	0.17	0.72	0.72	0.04	0.59	0.00	0.04	0.04	0.04	0.12	0.00	0.00
Sat Flow, veh/h	1774	5085	1578	1774	5085	1583	686	1143	1518	5322	0	1583
Grp Volume(v), veh/h	269	2252	1	46	1614	0	8	0	34	438	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1578	1774	1695	1583	1828	0	1518	1774	0	1583
Q Serve(g_s), s	22.2	33.4	0.0	3.8	28.7	0.0	0.6	0.0	3.3	11.9	0.0	0.0
Cycle Q Clear(g_c), s	22.2	33.4	0.0	3.8	28.7	0.0	0.6	0.0	3.3	11.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.37		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	3659	1135	71	2989	905	66	0	55	615	0	169
V/C Ratio(X)	0.88	0.62	0.00	0.65	0.54	0.00	0.12	0.00	0.62	0.71	0.00	0.00
Avail Cap(c_a), veh/h	426	3659	1135	154	2989	905	158	0	132	887	0	250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.84	0.84	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	60.6	10.6	5.9	71.0	18.7	0.0	70.0	0.0	71.3	63.9	0.0	0.0
Incr Delay (d2), s/veh	11.7	0.6	0.0	8.1	0.2	0.0	0.8	0.0	10.9	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	15.6	0.0	2.0	13.5	0.0	0.3	0.0	1.6	5.9	0.0	0.0
LnGrp Delay(d),s/veh	72.4	11.2	5.9	79.1	18.8	0.0	70.8	0.0	82.1	65.5	0.0	0.0
LnGrp LOS	E	B	A	E	B		E		F	E		
Approach Vol, veh/h	2522				1660				42		438	
Approach Delay, s/veh	17.7				20.5				80.0		65.5	
Approach LOS	B				C				E		E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	8.4		9.0	110.2	22.3		28.8	90.5				
Change Period (Y+Rc), s	4.0		4.0	5.7	7.3		4.0	5.7				
Max Green Setting (Gmax), s	12.0		12.0	82.3	22.7		35.0	59.3				
Max Q Clear Time (g_c+I1), s	5.3		5.8	35.4	13.9		24.2	30.7				
Green Ext Time (p_c), s	0.0		0.0	42.8	1.1		0.6	27.0				
Intersection Summary												
HCM 2010 Ctrl Delay	23.8											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

66: Roseville Pkwy & West Mall

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	2	36	14	1	66	15	2460	43	105	2469	3
Future Volume (veh/h)	57	2	36	14	1	66	15	2460	43	105	2469	3
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	60	2	38	16	0	0	16	2589	45	111	2599	3
Adj No. of Lanes	0	1	1	2	0	1	1	4	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	3	83	70	0	31	35	5090	1255	179	5297	1306
Arrive On Green	0.05	0.05	0.05	0.02	0.00	0.00	0.02	0.79	0.79	0.05	0.83	0.83
Sat Flow, veh/h	1719	57	1539	3548	0	1583	1774	6408	1580	3442	6408	1580
Grp Volume(v), veh/h	62	0	38	16	0	0	16	2589	45	111	2599	3
Grp Sat Flow(s),veh/h/ln	1777	0	1539	1774	0	1583	1774	1602	1580	1721	1602	1580
Q Serve(g_s), s	5.1	0.0	3.6	0.7	0.0	0.0	1.3	20.9	0.9	4.7	17.7	0.0
Cycle Q Clear(g_c), s	5.1	0.0	3.6	0.7	0.0	0.0	1.3	20.9	0.9	4.7	17.7	0.0
Prop In Lane	0.97		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	0	83	70	0	31	35	5090	1255	179	5297	1306
V/C Ratio(X)	0.65	0.00	0.46	0.23	0.00	0.00	0.46	0.51	0.04	0.62	0.49	0.00
Avail Cap(c_a), veh/h	178	0	154	402	0	179	154	5090	1255	344	5297	1306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.81	0.81	0.81	0.72	0.72	0.72
Uniform Delay (d), s/veh	69.5	0.0	68.8	72.4	0.0	0.0	72.7	5.3	3.3	69.7	3.8	2.3
Incr Delay (d2), s/veh	2.7	0.0	1.4	1.5	0.0	0.0	2.8	0.1	0.0	0.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.6	0.3	0.0	0.0	0.7	9.2	0.4	2.3	7.8	0.0
LnGrp Delay(d),s/veh	72.2	0.0	70.3	73.9	0.0	0.0	75.5	5.4	3.3	70.6	4.0	2.3
LnGrp LOS	E		E	E			E	A	A	E	A	A
Approach Vol, veh/h	100			16			2650			2713		
Approach Delay, s/veh	71.5			73.9			5.8			6.8		
Approach LOS	E			E			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.9		5.9	127.0	11.1		10.8	122.2				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	16.0		12.0	89.6	14.0		14.0	87.6				
Max Q Clear Time (g_c+I1), s	2.7		3.3	19.7	7.1		6.7	22.9				
Green Ext Time (p_c), s	0.0		0.0	68.5	0.1		0.1	62.7				
Intersection Summary												
HCM 2010 Ctrl Delay	7.7											
HCM 2010 LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

67: Reserve Dr & Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2271	180	365	2334	132	206	76	327	62	15	7
Future Volume (veh/h)	14	2271	180	365	2334	132	206	76	327	62	15	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	2391	189	384	2457	0	148	176	344	40	50	0
Adj No. of Lanes	2	4	1	2	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	797	2990	709	738	2879	686	319	335	285	105	110	93
Arrive On Green	0.23	0.47	0.45	0.43	0.90	0.00	0.18	0.18	0.18	0.06	0.06	0.00
Sat Flow, veh/h	3442	6408	1573	3442	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	15	2391	189	384	2457	0	148	176	344	40	50	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1573	1721	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	47.6	11.3	12.3	25.0	0.0	11.2	12.8	27.0	3.3	3.9	0.0
Cycle Q Clear(g_c), s	0.5	47.6	11.3	12.3	25.0	0.0	11.2	12.8	27.0	3.3	3.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	797	2990	709	738	2879	686	319	335	285	105	110	93
V/C Ratio(X)	0.02	0.80	0.27	0.52	0.85	0.00	0.46	0.52	1.21	0.38	0.46	0.00
Avail Cap(c_a), veh/h	797	2990	709	738	3289	787	319	335	285	201	211	179
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.32	0.32	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.5	34.0	25.7	37.2	5.5	0.0	55.0	55.7	61.5	67.9	68.2	0.0
Incr Delay (d2), s/veh	0.0	2.0	0.8	0.1	0.7	0.0	0.8	1.2	121.4	2.3	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	21.5	5.0	5.8	10.0	0.0	5.6	6.7	21.4	1.7	2.1	0.0
LnGrp Delay(d),s/veh	44.5	36.1	26.5	37.3	6.2	0.0	55.8	56.9	182.9	70.2	71.2	0.0
LnGrp LOS	D	D	C	D	A		E	E	F	E	E	
Approach Vol, veh/h	2595				2841				668			
Approach Delay, s/veh	35.4				10.4				121.5			
Approach LOS	D				B				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	30.0		35.2	73.0	11.8		37.8	70.4				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	26.0		23.0	66.6	16.0		16.0	73.6				
Max Q Clear Time (g_c+I1), s	29.0		14.3	49.6	5.9		2.5	27.0				
Green Ext Time (p_c), s	0.0		0.5	15.5	0.2		0.6	37.0				
Intersection Summary												
HCM 2010 Ctrl Delay	33.7											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
68: Galleria Blvd & Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	1479	794	82	1589	387	919	522	44	928	794	286
Future Volume (veh/h)	311	1479	794	82	1589	387	919	522	44	928	794	286
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	327	1557	0	86	1673	0	967	549	0	977	836	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	2238	553	127	1730	427	964	721	224	1530	920	286
Arrive On Green	0.20	0.70	0.00	0.07	0.54	0.00	0.28	0.14	0.00	0.41	0.24	0.00
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	3442	5085	1583	5003	5085	1583
Grp Volume(v), veh/h	327	1557	0	86	1673	0	967	549	0	977	836	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1721	1695	1583	1668	1695	1583
Q Serve(g_s), s	14.1	21.4	0.0	3.7	37.7	0.0	42.0	15.6	0.0	23.5	24.0	0.0
Cycle Q Clear(g_c), s	14.1	21.4	0.0	3.7	37.7	0.0	42.0	15.6	0.0	23.5	24.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	2238	553	127	1730	427	964	721	224	1530	920	286
V/C Ratio(X)	0.95	0.70	0.00	0.68	0.97	0.00	1.00	0.76	0.00	0.64	0.91	0.00
Avail Cap(c_a), veh/h	344	2238	553	184	1730	428	964	1020	318	1530	983	306
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.71	0.71	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	59.6	17.9	0.0	68.6	33.9	0.0	54.0	61.9	0.0	37.9	55.8	0.0
Incr Delay (d2), s/veh	28.3	0.7	0.0	2.4	15.1	0.0	29.8	2.9	0.0	0.9	12.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	9.4	0.0	1.8	18.3	0.0	23.9	7.5	0.0	10.9	12.2	0.0
LnGrp Delay(d),s/veh	88.0	18.7	0.0	71.0	49.0	0.0	83.8	64.8	0.0	38.7	68.0	0.0
LnGrp LOS	F	B		E	D		F	E		D	E	
Approach Vol, veh/h	1884				1759				1516			
Approach Delay, s/veh	30.7				50.0				77.0			
Approach LOS	C				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.6	27.3	9.5	58.8	46.0	34.8	21.4	46.9				
Change Period (Y+Rc), s	7.7	6.0	4.0	6.4	4.0	* 7.7	6.4	6.4				
Max Green Setting (Gmax), s	37.9	30.1	8.0	49.9	42.0	* 29	15.0	40.5				
Max Q Clear Time (g_c+I1), s	25.5	17.6	5.7	23.4	44.0	26.0	16.1	39.7				
Green Ext Time (p_c), s	8.6	3.7	0.0	15.9	0.0	1.2	0.0	0.7				

Intersection Summary

HCM 2010 Ctrl Delay	51.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
69: Creekside Ridge Dr & Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	2395	4	13	2104	245	67	0	141	104	1	31
Future Volume (veh/h)	48	2395	4	13	2104	245	67	0	141	104	1	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	51	2521	4	14	2215	258	71	0	148	110	0	33
Adj No. of Lanes	1	3	1	1	3	1	2	0	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	3213	996	17	3017	935	380	0	167	163	0	73
Arrive On Green	0.03	0.63	0.63	0.01	0.59	0.59	0.11	0.00	0.11	0.05	0.00	0.05
Sat Flow, veh/h	1774	5085	1577	1774	5085	1577	3548	0	1561	3548	0	1583
Grp Volume(v), veh/h	51	2521	4	14	2215	258	71	0	148	110	0	33
Grp Sat Flow(s),veh/h/ln	1774	1695	1577	1774	1695	1577	1774	0	1561	1774	0	1583
Q Serve(g_s), s	4.3	54.3	0.1	1.2	47.1	11.9	2.7	0.0	14.0	4.6	0.0	3.0
Cycle Q Clear(g_c), s	4.3	54.3	0.1	1.2	47.1	11.9	2.7	0.0	14.0	4.6	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	3213	996	17	3017	935	380	0	167	163	0	73
V/C Ratio(X)	0.83	0.78	0.00	0.84	0.73	0.28	0.19	0.00	0.89	0.67	0.00	0.45
Avail Cap(c_a), veh/h	118	3213	996	59	3017	935	402	0	177	364	0	163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.51	0.51	0.51	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.0	20.2	10.2	74.2	22.0	14.8	61.0	0.0	66.1	70.4	0.0	69.7
Incr Delay (d2), s/veh	10.5	1.4	0.0	18.5	0.8	0.4	0.1	0.0	34.7	5.9	0.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	25.6	0.1	0.7	22.2	5.3	1.3	0.0	7.7	2.4	0.0	1.4
LnGrp Delay(d),s/veh	82.5	21.6	10.2	92.7	22.8	15.2	61.1	0.0	100.7	76.4	0.0	75.1
LnGrp LOS	F	C	B	F	C	B	E		F	E		E
Approach Vol, veh/h	2576				2487		219				143	
Approach Delay, s/veh	22.8				22.4		87.9				76.1	
Approach LOS	C				C		F				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	20.1		5.4		100.8		11.5		11.2		95.0	
Change Period (Y+Rc), s	4.0		4.0		6.0		4.6		6.0		* 6	
Max Green Setting (Gmax), s	17.0		5.0		94.0		15.4		10.0		* 89	
Max Q Clear Time (g_c+I1), s	16.0		3.2		56.3		6.6		6.3		49.1	
Green Ext Time (p_c), s	0.0		0.0		33.4		0.3		0.1		33.2	
Intersection Summary												
HCM 2010 Ctrl Delay	26.6											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
70: Taylor Rd & E. Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	2385	67	288	1950	214	302	228	325	705	103	120
Future Volume (veh/h)	170	2385	67	288	1950	214	302	228	325	705	103	120
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1891	1891	1891	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	179	2511	71	303	2053	225	318	240	342	742	108	126
Adj No. of Lanes	2	4	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2688	1064	1077	3489	1084	862	712	219	757	557	171
Arrive On Green	0.05	0.41	0.41	0.31	0.69	0.69	0.25	0.14	0.14	0.22	0.11	0.11
Sat Flow, veh/h	3493	6504	1601	3442	5085	1580	3442	5085	1566	3442	5085	1562
Grp Volume(v), veh/h	179	2511	71	303	2053	225	318	240	342	742	108	126
Grp Sat Flow(s),veh/h/ln	1747	1626	1601	1721	1695	1580	1721	1695	1566	1721	1695	1562
Q Serve(g_s), s	7.7	55.3	0.0	10.0	31.9	6.5	11.4	6.4	21.0	32.2	2.9	13.2
Cycle Q Clear(g_c), s	7.7	55.3	0.0	10.0	31.9	6.5	11.4	6.4	21.0	32.2	2.9	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	2688	1064	1077	3489	1084	862	712	219	757	557	171
V/C Ratio(X)	0.96	0.93	0.07	0.28	0.59	0.21	0.37	0.34	1.56	0.98	0.19	0.74
Avail Cap(c_a), veh/h	186	2688	1064	1077	3489	1084	862	712	219	757	1119	344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.63	0.63	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.8	42.0	8.9	38.8	12.4	5.9	46.4	58.2	64.5	58.2	60.8	82.1
Incr Delay (d2), s/veh	44.8	5.7	0.1	0.1	0.2	0.1	0.2	0.3	272.9	27.6	0.2	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	25.8	1.1	4.7	14.9	2.8	5.5	3.0	25.7	18.2	1.4	6.1
LnGrp Delay(d),s/veh	115.6	47.7	9.0	38.9	12.6	6.0	46.6	58.5	337.4	85.8	61.0	89.2
LnGrp LOS	F	D	A	D	B	A	D	E	F	F	E	F
Approach Vol, veh/h	2761				2581				900			
Approach Delay, s/veh	51.1				15.1				160.3			
Approach LOS	D				B				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	37.0	27.0	53.1	68.0	41.6	22.4	12.0	109.1				
Change Period (Y+Rc), s	4.0	6.0	6.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	33.0	21.0	14.0	* 62	21.0	33.0	8.0	68.0				
Max Q Clear Time (g_c+I1), s	34.2	23.0	12.0	57.3	13.4	15.2	9.7	33.9				
Green Ext Time (p_c), s	0.0	0.0	0.3	4.6	2.1	1.1	0.0	30.4				

Intersection Summary

HCM 2010 Ctrl Delay 56.3
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
71: N. Sunrise Ave & E. Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	359	2423	706	216	2133	3	190	178	152	13	46	131
Future Volume (veh/h)	359	2423	706	216	2133	3	190	178	152	13	46	131
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	378	2551	0	227	2245	3	200	187	0	14	48	138
Adj No. of Lanes	2	3	1	2	3	1	3	1	1	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	3312	1031	269	3084	958	372	229	195	17	100	150
Arrive On Green	0.16	0.87	0.00	0.16	1.00	1.00	0.07	0.12	0.00	0.01	0.05	0.05
Sat Flow, veh/h	3442	5085	1583	3442	5085	1579	5003	1863	1583	1774	1863	2787
Grp Volume(v), veh/h	378	2551	0	227	2245	3	200	187	0	14	48	138
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1579	1668	1863	1583	1774	1863	1393
Q Serve(g_s), s	16.1	30.2	0.0	9.6	0.0	0.0	5.8	14.7	0.0	1.2	3.8	6.0
Cycle Q Clear(g_c), s	16.1	30.2	0.0	9.6	0.0	0.0	5.8	14.7	0.0	1.2	3.8	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	424	3312	1031	269	3084	958	372	229	195	17	100	150
V/C Ratio(X)	0.89	0.77	0.00	0.84	0.73	0.00	0.54	0.82	0.00	0.84	0.48	0.92
Avail Cap(c_a), veh/h	528	3312	1031	344	3084	958	534	302	256	47	133	199
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.23	0.23	0.00	0.75	0.75	0.75	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.7	5.5	0.0	62.4	0.0	0.0	66.9	64.1	0.0	74.2	68.9	46.2
Incr Delay (d2), s/veh	3.5	0.4	0.0	8.9	0.7	0.0	0.4	14.8	0.0	31.9	1.3	31.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	13.6	0.0	4.9	0.2	0.0	2.7	8.5	0.0	0.7	2.0	3.0
LnGrp Delay(d),s/veh	65.2	5.9	0.0	71.3	0.7	0.0	67.4	78.9	0.0	106.1	70.2	77.9
LnGrp LOS	E	A		E	A	A	E	E		F	E	E
Approach Vol, veh/h	2929				2475				387			
Approach Delay, s/veh	13.6				7.2				73.0			
Approach LOS	B				A				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	25.1	15.7	103.7	17.9	12.7	22.5	97.0				
Change Period (Y+Rc), s	4.0	* 6.7	4.0	6.0	6.7	4.6	4.0	6.0				
Max Green Setting (Gmax), s	4.0	* 24	15.0	87.0	16.0	10.7	23.0	79.0				
Max Q Clear Time (g_c+I1), s	3.2	16.7	11.6	32.2	7.8	8.0	18.1	2.0				
Green Ext Time (p_c), s	0.0	1.1	0.1	54.5	1.2	0.1	0.4	76.5				

Intersection Summary

HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
72: Secret Ravine Pkwy & E. Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	354	2036	4	10	1705	111	0	0	0	110	0	658								
Future Volume (veh/h)	354	2036	4	10	1705	111	0	0	0	110	0	658								
Number	7	4	14	3	8	18	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	373	2143	4	11	1795	117	0	0	0	116	0	693								
Adj No. of Lanes	2	3	0	1	3	1	1	1	1	2	0	2								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	464	3078	6	13	2258	701	1	1	1	586	0	528								
Arrive On Green	0.27	1.00	1.00	0.01	0.44	0.44	0.00	0.00	0.00	0.17	0.00	0.17								
Sat Flow, veh/h	3442	5241	10	1774	5085	1578	1774	1863	1583	3516	0	3167								
Grp Volume(v), veh/h	373	1386	761	11	1795	117	0	0	0	116	0	693								
Grp Sat Flow(s),veh/h/ln	1721	1695	1861	1774	1695	1578	1774	1863	1583	1758	0	1583								
Q Serve(g_s), s	15.2	0.0	0.0	0.9	45.5	6.7	0.0	0.0	0.0	4.3	0.0	25.0								
Cycle Q Clear(g_c), s	15.2	0.0	0.0	0.9	45.5	6.7	0.0	0.0	0.0	4.3	0.0	25.0								
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	464	1991	1093	13	2258	701	1	1	1	586	0	528								
V/C Ratio(X)	0.80	0.70	0.70	0.84	0.79	0.17	0.00	0.00	0.00	0.20	0.00	1.31								
Avail Cap(c_a), veh/h	551	1991	1093	35	2258	701	166	174	148	586	0	528								
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	0.58	0.58	0.58	0.88	0.88	0.88	0.00	0.00	0.00	1.00	0.00	1.00								
Uniform Delay (d), s/veh	53.0	0.0	0.0	74.4	35.8	25.0	0.0	0.0	0.0	53.9	0.0	62.5								
Incr Delay (d2), s/veh	3.6	0.7	1.2	35.1	2.6	0.5	0.0	0.0	0.0	0.1	0.0	154.0								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	7.4	0.2	0.4	0.6	21.8	3.0	0.0	0.0	0.0	2.1	0.0	22.2								
LnGrp Delay(d),s/veh	56.6	0.7	1.2	109.4	38.5	25.5	0.0	0.0	0.0	53.9	0.0	216.5								
LnGrp LOS	E	A	A	F	D	C				D		F								
Approach Vol, veh/h	2520				1923				0		809									
Approach Delay, s/veh	9.1				38.1				0.0		193.2									
Approach LOS	A				D						F									
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	2		3	4	6		7	8												
Phs Duration (G+Y+Rc), s	0.0		5.1	94.5	31.0		26.6	73.0												
Change Period (Y+Rc), s	4.0		4.0	6.4	6.0		6.4	* 6.4												
Max Green Setting (Gmax), s	14.0		3.0	87.6	25.0		24.0	* 67												
Max Q Clear Time (g_c+I1), s	0.0		2.9	2.0	27.0		17.2	47.5												
Green Ext Time (p_c), s	0.0		0.0	45.5	0.0		3.0	14.3												
Intersection Summary																				
HCM 2010 Ctrl Delay	48.1																			
HCM 2010 LOS	D																			
Notes																				
User approved volume balancing among the lanes for turning movement.																				

HCM 2010 Signalized Intersection Summary
73: E. Roseville Pkwy & Alexandra Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	124	103	1662	47	64	1940		
Future Volume (veh/h)	124	103	1662	47	64	1940		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	131	108	1749	49	67	2042		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	158	141	3843	1197	85	4222		
Arrive On Green	0.09	0.09	1.00	1.00	0.05	0.83		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	131	108	1749	49	67	2042		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	10.9	10.0	0.0	0.0	5.6	17.1		
Cycle Q Clear(g_c), s	10.9	10.0	0.0	0.0	5.6	17.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	158	141	3843	1197	85	4222		
V/C Ratio(X)	0.83	0.77	0.46	0.04	0.79	0.48		
Avail Cap(c_a), veh/h	358	320	3843	1197	189	4222		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.92	0.92	0.84	0.84		
Uniform Delay (d), s/veh	67.2	66.8	0.0	0.0	70.7	3.6		
Incr Delay (d2), s/veh	8.0	6.3	0.4	0.1	5.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.7	8.8	0.1	0.0	2.9	7.9		
LnGrp Delay(d),s/veh	75.2	73.1	0.4	0.1	75.8	3.9		
LnGrp LOS	E	E	A	A	E	A		
Approach Vol, veh/h	239		1798			2109		
Approach Delay, s/veh	74.2		0.4			6.2		
Approach LOS	E		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				130.9		19.1	11.2	119.8
Change Period (Y+Rc), s				6.4		5.7	4.0	6.4
Max Green Setting (Gmax), s				107.6		30.3	16.0	87.6
Max Q Clear Time (g_c+I1), s				19.1		12.9	7.6	2.0
Green Ext Time (p_c), s				80.9		0.5	0.0	78.5
Intersection Summary								
HCM 2010 Ctrl Delay			7.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
74: Roseville Pkwy/E. Roseville Pkwy & Rocky Ridge Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	118	66	139	1603	1900	187		
Future Volume (veh/h)	118	66	139	1603	1900	187		
Number	5	12	3	8	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	124	69	146	1687	2000	197		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	200	92	192	3841	3422	1065		
Arrive On Green	0.06	0.06	0.11	1.00	1.00	1.00		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	124	69	146	1687	2000	197		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	5.3	6.4	6.2	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	5.3	6.4	6.2	0.0	0.0	0.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	200	92	192	3841	3422	1065		
V/C Ratio(X)	0.62	0.75	0.76	0.44	0.58	0.18		
Avail Cap(c_a), veh/h	580	267	619	3841	3422	1065		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00		
Upstream Filter(l)	1.00	1.00	0.86	0.86	0.85	0.85		
Uniform Delay (d), s/veh	69.0	69.6	65.7	0.0	0.0	0.0		
Incr Delay (d2), s/veh	1.2	4.5	2.0	0.3	0.6	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	2.9	3.0	0.1	0.2	0.1		
LnGrp Delay(d),s/veh	70.2	74.1	67.7	0.3	0.6	0.3		
LnGrp LOS	E	E	E	A	A	A		
Approach Vol, veh/h	193			1833	2197			
Approach Delay, s/veh	71.6			5.7	0.6			
Approach LOS	E			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.4	12.4	106.9				119.3
Change Period (Y+Rc), s		5.7	4.0	6.0				* 6
Max Green Setting (Gmax), s		25.3	27.0	82.0				* 1.1E2
Max Q Clear Time (g_c+l1), s		8.4	8.2	2.0				2.0
Green Ext Time (p_c), s		0.3	0.2	76.3				104.3
Intersection Summary								
HCM 2010 Ctrl Delay			6.1					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
75: Roseville Pkwy & Orvieto Dr

Cumulative Plus Project
AM PEAK HOUR

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	45	11	185	3	39	15	224	1700	8	9	1844	158		
Future Volume (veh/h)	45	11	185	3	39	15	224	1700	8	9	1844	158		
Number	5	2	12	1	6	16	3	8	18	7	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	30	36	195	3	41	16	236	1789	8	9	1941	166		
Adj No. of Lanes	1	1	1	1	1	0	1	3	1	1	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	38	260	221	6	155	60	259	3231	1006	15	2532	788		
Arrive On Green	0.02	0.14	0.14	0.00	0.12	0.12	0.15	0.64	0.64	0.01	0.50	0.50		
Sat Flow, veh/h	1774	1863	1583	1774	1277	498	1774	5085	1583	1774	5085	1583		
Grp Volume(v), veh/h	30	36	195	3	0	57	236	1789	8	9	1941	166		
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1775	1774	1695	1583	1774	1695	1583		
Q Serve(g_s), s	2.5	2.5	18.1	0.3	0.0	4.4	19.7	29.7	0.3	0.8	46.5	8.8		
Cycle Q Clear(g_c), s	2.5	2.5	18.1	0.3	0.0	4.4	19.7	29.7	0.3	0.8	46.5	8.8		
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00		
Lane Grp Cap(c), veh/h	38	260	221	6	0	215	259	3231	1006	15	2532	788		
V/C Ratio(X)	0.79	0.14	0.88	0.54	0.00	0.27	0.91	0.55	0.01	0.61	0.77	0.21		
Avail Cap(c_a), veh/h	83	335	285	47	0	308	367	3231	1006	47	2532	788		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	0.83	0.83	0.83		
Uniform Delay (d), s/veh	73.0	56.6	63.3	74.7	0.0	59.9	63.1	15.4	10.0	74.1	30.6	21.1		
Incr Delay (d2), s/veh	12.3	0.3	23.5	27.0	0.0	0.5	15.8	0.6	0.0	11.8	1.4	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.4	1.3	9.4	0.2	0.0	2.2	10.8	13.9	0.1	0.4	22.1	3.9		
LnGrp Delay(d),s/veh	85.3	57.0	86.8	101.6	0.0	60.4	79.0	16.0	10.0	85.9	31.9	21.3		
LnGrp LOS	F	E	F	F		E	E	B	B	F	C	C		
Approach Vol, veh/h	261				60		2033				2116			
Approach Delay, s/veh	82.5				62.4		23.3				31.3			
Approach LOS	F				E		C				C			
Timer	1	2	3	4	5	6	7	8						
Assigned Phs	1	2	3	4	5	6	7	8						
Phs Duration (G+Y+Rc), s	4.5	26.9	25.9	80.4	7.2	24.2	5.3	101.0						
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	* 6	4.0	5.7						
Max Green Setting (Gmax), s	4.0	27.0	31.0	68.3	7.0	* 26	4.0	95.3						
Max Q Clear Time (g_c+I1), s	2.3	20.1	21.7	48.5	4.5	6.4	2.8	31.7						
Green Ext Time (p_c), s	0.0	0.8	0.2	19.6	0.0	1.4	0.0	62.2						

Intersection Summary

HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
76: Roseville Pkwy & Olympus Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	9	5	147	251	299	32	1560	118	125	1628	37
Future Volume (veh/h)	2	9	5	147	251	299	32	1560	118	125	1628	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	9	5	155	264	0	34	1642	0	132	1714	39
Adj No. of Lanes	1	1	1	1	2	1	1	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	28	24	178	400	179	44	3580	1115	178	3740	85
Arrive On Green	0.00	0.01	0.01	0.10	0.11	0.00	0.02	0.70	0.00	0.05	0.73	0.73
Sat Flow, veh/h	1774	1863	1583	1774	3539	1583	1774	5085	1583	3442	5116	116
Grp Volume(v), veh/h	2	9	5	155	264	0	34	1642	0	132	1136	617
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1721	1695	1842
Q Serve(g_s), s	0.2	0.7	0.5	12.9	10.7	0.0	2.9	21.2	0.0	5.7	20.3	20.3
Cycle Q Clear(g_c), s	0.2	0.7	0.5	12.9	10.7	0.0	2.9	21.2	0.0	5.7	20.3	20.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	4	28	24	178	400	179	44	3580	1115	178	2478	1347
V/C Ratio(X)	0.53	0.32	0.21	0.87	0.66	0.00	0.78	0.46	0.00	0.74	0.46	0.46
Avail Cap(c_a), veh/h	142	250	212	296	762	341	142	3580	1115	321	2478	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.64	0.64	0.00	0.68	0.68	0.68
Uniform Delay (d), s/veh	74.8	73.1	73.0	66.5	63.8	0.0	72.8	9.7	0.0	70.2	8.2	8.2
Incr Delay (d2), s/veh	36.5	18.5	12.5	7.6	2.9	0.0	7.0	0.1	0.0	1.6	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.3	6.7	5.4	0.0	1.5	9.9	0.0	2.7	9.6	10.6
LnGrp Delay(d),s/veh	111.3	91.7	85.5	74.1	66.7	0.0	79.7	9.8	0.0	71.7	8.6	8.9
LnGrp LOS	F	F	F	E	E		E	A		E	A	A
Approach Vol, veh/h	16				419				1676			
Approach Delay, s/veh	92.2				69.4				11.2			
Approach LOS	F				E				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	7.9	7.7	115.3	4.3	22.6	11.7	111.3				
Change Period (Y+Rc), s	4.0	* 5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	25.0	* 20	12.0	74.3	12.0	32.3	14.0	72.3				
Max Q Clear Time (g_c+I1), s	14.9	2.7	4.9	22.3	2.2	12.7	7.7	23.2				
Green Ext Time (p_c), s	0.1	2.3	0.0	49.1	0.0	2.5	0.1	46.6				

Intersection Summary

HCM 2010 Ctrl Delay	18.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
77: Douglas Blvd & Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1150	101	44	1705	633	284	1015	62	1043	494	172
Future Volume (veh/h)	95	1150	101	44	1705	633	284	1015	62	1043	494	172
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	1211	106	46	1795	0	299	1068	65	1098	520	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	1905	591	78	1851	576	346	1196	370	1423	2190	682
Arrive On Green	0.03	0.37	0.37	0.02	0.36	0.00	0.10	0.24	0.24	0.09	0.14	0.00
Sat Flow, veh/h	3442	5085	1577	3442	5085	1583	3442	5085	1573	5003	5085	1583
Grp Volume(v), veh/h	100	1211	106	46	1795	0	299	1068	65	1098	520	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1577	1721	1695	1583	1721	1695	1573	1668	1695	1583
Q Serve(g_s), s	4.3	29.3	6.8	2.0	52.0	0.0	12.8	30.5	4.8	32.2	13.6	0.0
Cycle Q Clear(g_c), s	4.3	29.3	6.8	2.0	52.0	0.0	12.8	30.5	4.8	32.2	13.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	1905	591	78	1851	576	346	1196	370	1423	2190	682
V/C Ratio(X)	0.87	0.64	0.18	0.59	0.97	0.00	0.86	0.89	0.18	0.77	0.24	0.00
Avail Cap(c_a), veh/h	115	1905	591	115	1865	581	436	1231	381	1423	2190	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.84	0.84	0.00
Uniform Delay (d), s/veh	72.2	38.5	31.4	72.6	46.9	0.0	66.5	55.5	42.5	63.2	42.5	0.0
Incr Delay (d2), s/veh	45.5	1.6	0.7	2.6	14.4	0.0	11.8	8.8	0.4	2.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	14.0	3.0	1.0	26.7	0.0	6.7	15.3	2.1	15.2	6.5	0.0
LnGrp Delay(d),s/veh	117.7	40.1	32.1	75.2	61.2	0.0	78.3	64.3	42.9	65.2	42.7	0.0
LnGrp LOS	F	D	C	E	E		E	E	D	E	D	
Approach Vol, veh/h	1417				1841				1432			
Approach Delay, s/veh	45.0				61.6				66.3			
Approach LOS	D				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	62.2	19.1	70.6	9.0	60.6	48.7	41.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	6.0	5.7	* 5.7				
Max Green Setting (Gmax), s	5.0	55.0	19.0	51.3	5.0	55.0	34.0	* 36				
Max Q Clear Time (g_c+I1), s	4.0	31.3	14.8	15.6	6.3	54.0	34.2	32.5				
Green Ext Time (p_c), s	0.0	22.6	0.2	8.0	0.0	0.6	0.0	2.8				

Intersection Summary

HCM 2010 Ctrl Delay	58.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
78: E. Roseville Pkwy & Village Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	2	22	33	2	141	35	1089	28	71	544	2
Future Volume (veh/h)	44	2	22	33	2	141	35	1089	28	71	544	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	46	2	23	35	2	148	37	1146	29	75	573	2
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	9	189	275	16	258	115	1640	42	159	1772	6
Arrive On Green	0.12	0.12	0.12	0.16	0.16	0.16	0.06	0.47	0.44	0.09	0.49	0.46
Sat Flow, veh/h	1704	74	1583	1682	96	1583	1774	3527	89	1774	3617	13
Grp Volume(v), veh/h	48	0	23	37	0	148	37	575	600	75	280	295
Grp Sat Flow(s),veh/h/ln	1778	0	1583	1779	0	1583	1774	1770	1847	1774	1770	1861
Q Serve(g_s), s	1.8	0.0	0.9	1.3	0.0	6.2	1.4	18.5	18.5	2.9	6.9	6.9
Cycle Q Clear(g_c), s	1.8	0.0	0.9	1.3	0.0	6.2	1.4	18.5	18.5	2.9	6.9	6.9
Prop In Lane	0.96		1.00	0.95		1.00	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	212	0	189	290	0	258	115	823	859	159	867	911
V/C Ratio(X)	0.23	0.00	0.12	0.13	0.00	0.57	0.32	0.70	0.70	0.47	0.32	0.32
Avail Cap(c_a), veh/h	272	0	242	1040	0	926	198	919	959	198	919	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	0.0	28.3	25.7	0.0	27.7	32.1	15.2	15.3	31.1	11.1	11.1
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	0.7	0.6	2.6	2.5	0.8	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.4	0.6	0.0	2.8	0.7	9.5	9.9	1.5	3.4	3.6
LnGrp Delay(d),s/veh	28.8	0.0	28.4	25.8	0.0	28.5	32.7	17.9	17.8	31.9	11.5	11.5
LnGrp LOS	C		C	C		C	C	B	B	C	B	B
Approach Vol, veh/h		71			185			1212			650	
Approach Delay, s/veh		28.7			27.9			18.3			13.8	
Approach LOS		C			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.6	7.7	37.9		14.7	9.4	36.1				
Change Period (Y+Rc), s		4.0	4.0	5.7		4.0	4.0	5.7				
Max Green Setting (Gmax), s		10.0	7.0	34.3		41.0	7.0	34.3				
Max Q Clear Time (g_c+I1), s		3.8	3.4	8.9		8.2	4.9	20.5				
Green Ext Time (p_c), s		0.1	0.0	15.3		0.5	0.0	9.9				
Intersection Summary												
HCM 2010 Ctrl Delay			18.1									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
79: E. Roseville Pkwy & Eureka Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	194	357	71	671	452	415	746	180	110	388	21
Future Volume (veh/h)	14	194	357	71	671	452	415	746	180	110	388	21
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1966	1891	1891	1966	1891	1891	1966	1891	1891	1947	1872	1872
Adj Flow Rate, veh/h	15	204	376	75	706	476	437	785	189	116	408	22
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	83	1233	758	184	1427	636	547	1205	537	386	1493	462
Arrive On Green	0.04	0.34	0.32	0.10	0.40	0.40	0.15	0.34	0.34	0.11	0.29	0.29
Sat Flow, veh/h	1873	3592	1600	1873	3592	1601	3633	3592	1600	3597	5110	1583
Grp Volume(v), veh/h	15	204	376	75	706	476	437	785	189	116	408	22
Grp Sat Flow(s),veh/h/ln	1873	1796	1600	1873	1796	1601	1816	1796	1600	1798	1703	1583
Q Serve(g_s), s	0.8	3.9	16.0	3.7	14.5	25.2	11.5	18.3	8.8	2.9	6.1	1.0
Cycle Q Clear(g_c), s	0.8	3.9	16.0	3.7	14.5	25.2	11.5	18.3	8.8	2.9	6.1	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	1233	758	184	1427	636	547	1205	537	386	1493	462
V/C Ratio(X)	0.18	0.17	0.50	0.41	0.49	0.75	0.80	0.65	0.35	0.30	0.27	0.05
Avail Cap(c_a), veh/h	209	1431	847	209	1431	638	700	1358	605	401	1518	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	22.6	17.9	41.8	22.3	25.5	40.5	27.9	24.7	40.6	26.9	25.1
Incr Delay (d2), s/veh	0.4	0.1	0.9	0.5	0.5	5.5	3.9	1.3	0.7	0.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.9	7.2	1.9	7.2	12.0	6.1	9.3	4.0	1.5	2.9	0.4
LnGrp Delay(d),s/veh	45.8	22.7	18.7	42.3	22.8	31.0	44.3	29.2	25.4	40.8	27.0	25.1
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h	595			1257				1411				
Approach Delay, s/veh	20.8			27.0				33.4				
Approach LOS	C			C				C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	36.6	17.9	31.5	7.4	41.9	13.6	35.8				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	10.0	36.3	18.0	26.3	10.0	36.3	10.0	34.3				
Max Q Clear Time (g_c+I1), s	5.7	18.0	13.5	8.1	2.8	27.2	4.9	20.3				
Green Ext Time (p_c), s	0.0	12.9	0.4	11.5	0.0	7.3	0.1	9.5				
Intersection Summary												
HCM 2010 Ctrl Delay	28.8											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

80: N. Cirby Way & E. Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑		
Traffic Volume (veh/h)	736	24	13	1007	77	131		
Future Volume (veh/h)	736	24	13	1007	77	131		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	775	25	14	1060	81	138		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1987	837	84	2356	390	348		
Arrive On Green	0.56	0.53	0.05	0.67	0.22	0.22		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	775	25	14	1060	81	138		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	6.5	0.4	0.4	7.5	2.0	3.9		
Cycle Q Clear(g_c), s	6.5	0.4	0.4	7.5	2.0	3.9		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1987	837	84	2356	390	348		
V/C Ratio(X)	0.39	0.03	0.17	0.45	0.21	0.40		
Avail Cap(c_a), veh/h	2023	854	304	2947	913	814		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	6.5	5.9	24.0	4.2	16.7	17.5		
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.2	0.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.2	0.2	0.2	3.6	1.0	1.7		
LnGrp Delay(d),s/veh	6.7	5.9	24.4	4.4	16.8	17.8		
LnGrp LOS	A	A	C	A	B	B		
Approach Vol, veh/h	800			1074	219			
Approach Delay, s/veh	6.7			4.7	17.4			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.5	5.5	32.5				37.9
Change Period (Y+Rc), s		4.0	4.0	5.7				* 5.7
Max Green Setting (Gmax), s		26.0	8.0	27.3				* 41
Max Q Clear Time (g_c+I1), s		5.9	2.4	8.5				9.5
Green Ext Time (p_c), s		0.3	0.0	15.1				22.7
Intersection Summary								
HCM 2010 Ctrl Delay			6.8					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
81: Sierra College Blvd & E. Roseville Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	171	576	62	360	248	628	1486	39	83	658	16
Future Volume (veh/h)	110	171	576	62	360	248	628	1486	39	83	658	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	116	180	0	65	379	0	661	1564	0	87	693	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	581	260	283	582	260	762	2627	818	414	2198	684
Arrive On Green	0.08	0.16	0.00	0.08	0.16	0.00	0.22	0.52	0.00	0.12	0.43	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	116	180	0	65	379	0	661	1564	0	87	693	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	3.8	5.4	0.0	2.1	12.0	0.0	22.2	25.8	0.0	2.7	10.7	0.0
Cycle Q Clear(g_c), s	3.8	5.4	0.0	2.1	12.0	0.0	22.2	25.8	0.0	2.7	10.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	581	260	283	582	260	762	2627	818	414	2198	684
V/C Ratio(X)	0.41	0.31	0.00	0.23	0.65	0.00	0.87	0.60	0.00	0.21	0.32	0.00
Avail Cap(c_a), veh/h	315	767	343	315	779	348	1032	2627	818	414	2198	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.4	44.2	0.0	51.5	46.9	0.0	45.0	20.2	0.0	47.6	22.4	0.0
Incr Delay (d2), s/veh	0.4	0.5	0.0	0.2	2.1	0.0	4.8	1.0	0.0	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.7	0.0	1.0	6.1	0.0	11.1	12.3	0.0	1.3	5.0	0.0
LnGrp Delay(d),s/veh	52.7	44.7	0.0	51.7	49.0	0.0	49.8	21.2	0.0	47.7	22.5	0.0
LnGrp LOS	D	D		D	D		D	C		D	C	
Approach Vol, veh/h	296				444		2225				780	
Approach Delay, s/veh	47.8				49.4		29.7				25.3	
Approach LOS	D				D		C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.4	65.0	12.9	22.7	29.6	54.9	12.8	22.7				
Change Period (Y+Rc), s	6.0	* 6	4.0	5.7	4.0	6.0	4.0	* 5.7				
Max Green Setting (Gmax), s	8.0	* 59	10.0	23.3	35.0	32.0	10.0	* 24				
Max Q Clear Time (g_c+I1), s	4.7	27.8	4.1	7.4	24.2	12.7	5.8	14.0				
Green Ext Time (p_c), s	0.2	14.3	0.0	3.7	1.4	4.7	0.1	2.8				

Intersection Summary

HCM 2010 Ctrl Delay	32.6
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
82: Atlantic St & Yosemite St

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	123	842	621	407	407	139		
Future Volume (veh/h)	123	842	621	407	407	139		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827		
Adj Flow Rate, veh/h	129	886	654	428	428	146		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	4	4	4	4	4	4		
Cap, veh/h	169	1934	1392	619	591	739		
Arrive On Green	0.10	0.56	0.40	0.40	0.34	0.34		
Sat Flow, veh/h	1740	3563	3563	1543	1740	1553		
Grp Volume(v), veh/h	129	886	654	428	428	146		
Grp Sat Flow(s),veh/h/ln	1740	1736	1736	1543	1740	1553		
Q Serve(g_s), s	3.7	7.8	7.1	11.8	11.1	2.8		
Cycle Q Clear(g_c), s	3.7	7.8	7.1	11.8	11.1	2.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	169	1934	1392	619	591	739		
V/C Ratio(X)	0.76	0.46	0.47	0.69	0.72	0.20		
Avail Cap(c_a), veh/h	169	1934	1738	773	1051	1150		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.6	6.8	11.3	12.7	14.8	7.8		
Incr Delay (d2), s/veh	16.4	0.2	0.2	1.9	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.6	3.7	3.4	5.3	5.3	3.2		
LnGrp Delay(d),s/veh	39.0	6.9	11.6	14.7	15.5	7.8		
LnGrp LOS	D	A	B	B	B	A		
Approach Vol, veh/h		1015	1082		574			
Approach Delay, s/veh		11.0	12.8		13.5			
Approach LOS		B	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.3		19.0	8.0	24.3		
Change Period (Y+Rc), s		5.7		4.6	4.0	5.7		
Max Green Setting (Gmax), s		24.7		28.0	4.0	23.7		
Max Q Clear Time (g_c+I1), s		9.8		13.1	5.7	13.8		
Green Ext Time (p_c), s		8.2		1.4	0.0	4.7		
Intersection Summary								
HCM 2010 Ctrl Delay			12.3					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

83: Center St/Tiger Way & Atlantic St

Cumulative Plus Project
AM PEAK HOUR

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	183	777	11	63	1009	122	31	3	30	125	5	27		
Future Volume (veh/h)	183	777	11	63	1009	122	31	3	30	125	5	27		
Number	5	2	12	1	6	16	3	8	18	7	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.97		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1810	1811	1900	1881	1810	1810	1881	1881	1900	1862	1776	1773		
Adj Flow Rate, veh/h	193	818	12	66	1062	128	33	3	32	132	5	28		
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	5	5	5	1	5	5	1	1	1	1	1	5		
Cap, veh/h	265	1842	27	115	1516	671	117	9	97	178	7	160		
Arrive On Green	0.15	0.53	0.51	0.06	0.44	0.44	0.07	0.07	0.07	0.11	0.11	0.11		
Sat Flow, veh/h	1723	3470	51	1792	3438	1521	1792	139	1481	1632	62	1466		
Grp Volume(v), veh/h	193	405	425	66	1062	128	33	0	35	137	0	28		
Grp Sat Flow(s),veh/h/ln	1723	1720	1801	1792	1719	1521	1792	0	1620	1694	0	1466		
Q Serve(g_s), s	5.9	8.0	8.0	2.0	13.7	2.8	1.0	0.0	1.1	4.3	0.0	1.0		
Cycle Q Clear(g_c), s	5.9	8.0	8.0	2.0	13.7	2.8	1.0	0.0	1.1	4.3	0.0	1.0		
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.91	0.96		1.00		
Lane Grp Cap(c), veh/h	265	913	956	115	1516	671	117	0	106	185	0	160		
V/C Ratio(X)	0.73	0.44	0.44	0.57	0.70	0.19	0.28	0.00	0.33	0.74	0.00	0.18		
Avail Cap(c_a), veh/h	282	916	960	195	1644	727	521	0	471	185	0	160		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	22.2	7.9	7.9	25.0	12.4	9.4	24.5	0.0	24.6	23.8	0.0	22.3		
Incr Delay (d2), s/veh	7.2	0.3	0.3	1.7	1.2	0.1	0.5	0.0	0.7	14.7	0.0	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.3	3.8	4.0	1.0	6.7	1.2	0.5	0.0	0.5	2.8	0.0	0.4		
LnGrp Delay(d),s/veh	29.4	8.3	8.3	26.7	13.7	9.5	25.0	0.0	25.2	38.5	0.0	22.8		
LnGrp LOS	C	A	A	C	B	A	C		C	D		C		
Approach Vol, veh/h	1023			1256				68		165				
Approach Delay, s/veh	12.2			13.9				25.1		35.8				
Approach LOS	B			B				C		D				
Timer	1	2	3	4	5	6	7	8						
Assigned Phs	1	2			4	5	6	8						
Phs Duration (G+Y+Rc), s	6.5	32.9			9.0	11.5	28.0	6.6						
Change Period (Y+Rc), s	4.0	5.7			4.0	4.0	5.7	4.0						
Max Green Setting (Gmax), s	5.0	27.3			5.0	8.0	24.3	15.0						
Max Q Clear Time (g_c+I1), s	4.0	10.0			6.3	7.9	15.7	3.1						
Green Ext Time (p_c), s	0.0	11.3			0.0	0.0	6.5	0.1						
Intersection Summary														
HCM 2010 Ctrl Delay					15.0									
HCM 2010 LOS					B									

HCM 2010 Signalized Intersection Summary

84: Wills Rd & Atlantic St

Cumulative Plus Project
AM PEAK HOUR

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	973	279	349	873	136	218		
Future Volume (veh/h)	973	279	349	873	136	218		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1024	294	367	919	143	229		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1121	497	414	2242	271	717		
Arrive On Green	0.32	0.30	0.23	0.63	0.15	0.15		
Sat Flow, veh/h	3632	1570	1774	3632	1774	1583		
Grp Volume(v), veh/h	1024	294	367	919	143	229		
Grp Sat Flow(s),veh/h/ln	1770	1570	1774	1770	1774	1583		
Q Serve(g_s), s	16.7	9.4	12.0	7.7	4.5	5.5		
Cycle Q Clear(g_c), s	16.7	9.4	12.0	7.7	4.5	5.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1121	497	414	2242	271	717		
V/C Ratio(X)	0.91	0.59	0.89	0.41	0.53	0.32		
Avail Cap(c_a), veh/h	1121	497	414	2242	503	924		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.78	0.78	1.00	1.00		
Uniform Delay (d), s/veh	19.7	17.2	22.2	5.4	23.4	10.5		
Incr Delay (d2), s/veh	11.4	1.9	15.9	0.4	0.6	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	9.9	4.4	7.6	3.8	2.2	3.8		
LnGrp Delay(d),s/veh	31.1	19.1	38.1	5.9	24.0	10.6		
LnGrp LOS	C	B	D	A	C	B		
Approach Vol, veh/h	1318			1286	372			
Approach Delay, s/veh	28.4			15.1	15.7			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	19.0	23.0		12.2		42.0		
Change Period (Y+Rc), s	6.0	* 6		4.0		6.0		
Max Green Setting (Gmax), s	13.0	* 17		16.0		34.0		
Max Q Clear Time (g_c+I1), s	14.0	18.7		7.5		9.7		
Green Ext Time (p_c), s	0.0	0.0		0.6		4.6		
Intersection Summary								
HCM 2010 Ctrl Delay			21.1					
HCM 2010 LOS			C					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

85: I-80 WB Ramps & Atlantic St/Eureka Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑↑	↑↑				↑			↑
Traffic Volume (veh/h)	0	963	249	590	623	0	0	0	1140	0	0	618
Future Volume (veh/h)	0	963	249	590	623	0	0	0	1140	0	0	618
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	0	1014	262	621	656	0	0	0	0	0	0	0
Adj No. of Lanes	0	3	1	2	2	0	0	0	1	0	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	0	0	2	0	0	2
Cap, veh/h	0	1115	343	2380	3392	0	0	0	0	0	0	0
Arrive On Green	0.00	0.22	0.22	0.69	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	5253	1565	3442	3632	0		0			0	
Grp Volume(v), veh/h	0	1014	262	621	656	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	0	1695	1565	1721	1770	0						
Q Serve(g_s), s	0.0	23.3	18.8	8.1	1.1	0.0						
Cycle Q Clear(g_c), s	0.0	23.3	18.8	8.1	1.1	0.0						
Prop In Lane	0.00		1.00	1.00		0.00						
Lane Grp Cap(c), veh/h	0	1115	343	2380	3392	0						
V/C Ratio(X)	0.00	0.91	0.76	0.26	0.19	0.00						
Avail Cap(c_a), veh/h	0	1115	343	2380	3392	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	0.74	0.74	0.53	0.53	0.00						
Uniform Delay (d), s/veh	0.0	45.7	43.9	7.0	0.1	0.0						
Incr Delay (d2), s/veh	0.0	9.7	11.3	0.0	0.0	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	11.9	9.2	3.8	0.5	0.0						
LnGrp Delay(d),s/veh	0.0	55.4	55.3	7.0	0.1	0.0						
LnGrp LOS		E	E	A	A							
Approach Vol, veh/h		1276			1277							
Approach Delay, s/veh		55.4			3.5							
Approach LOS		E			A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	88.0	32.0				120.0						
Change Period (Y+Rc), s	5.0	* 5.7				5.0						
Max Green Setting (Gmax), s	24.0	* 26				16.0						
Max Q Clear Time (g_c+I1), s	10.1	25.3				3.1						
Green Ext Time (p_c), s	2.2	0.7				4.5						
Intersection Summary												
HCM 2010 Ctrl Delay				29.4								
HCM 2010 LOS				C								
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
86: I-80 EB Ramps/Taylor Rd & Eureka Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	1681	0	0	1793	285	152	385	721	93	0	375
Future Volume (veh/h)	198	1681	0	0	1793	285	152	385	721	93	0	375
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1863	1863	1863	1863	1863	0	1863
Adj Flow Rate, veh/h	208	1769	0	0	1887	300	160	405	0	98	0	395
Adj No. of Lanes	2	2	1	0	3	1	1	2	1	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	265	2245	1004	0	2665	830	506	575	257	269	0	0
Arrive On Green	0.10	0.84	0.00	0.00	0.52	0.52	0.28	0.16	0.00	0.08	0.00	0.00
Sat Flow, veh/h	3442	3539	1583	0	5253	1583	1774	3539	1583	3442	98	
Grp Volume(v), veh/h	208	1769	0	0	1887	300	160	405	0	98	52.8	
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	0	1695	1583	1774	1770	1583	1721	D	
Q Serve(g_s), s	7.1	28.0	0.0	0.0	33.7	8.9	8.5	13.0	0.0	3.2		
Cycle Q Clear(g_c), s	7.1	28.0	0.0	0.0	33.7	8.9	8.5	13.0	0.0	3.2		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	265	2245	1004	0	2665	830	506	575	257	269		
V/C Ratio(X)	0.79	0.79	0.00	0.00	0.71	0.36	0.32	0.70	0.00	0.36		
Avail Cap(c_a), veh/h	402	2245	1004	0	2665	830	506	1023	458	287		
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.84	0.84	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	52.9	5.6	0.0	0.0	21.6	7.4	33.7	47.5	0.0	52.5		
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.0	0.8	0.3	0.5	2.3	0.0	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.4	12.9	0.0	0.0	15.9	3.9	4.2	6.5	0.0	1.5		
LnGrp Delay(d),s/veh	53.2	5.9	0.0	0.0	22.4	7.7	34.2	49.8	0.0	52.8		
LnGrp LOS	D	A			C	A	C	D		D		
Approach Vol, veh/h	1977				2187				565			
Approach Delay, s/veh	10.9				20.4				45.4			
Approach LOS	B				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3		5	6	7	8				
Phs Duration (G+Y+Rc), s		81.8	38.2		13.2	68.6	13.4	24.8				
Change Period (Y+Rc), s		5.7	4.0		4.0	5.7	4.0	5.3				
Max Green Setting (Gmax), s		60.3	20.0		14.0	42.3	10.0	34.7				
Max Q Clear Time (g_c+I1), s		30.0	10.5		9.1	35.7	5.2	15.0				
Green Ext Time (p_c), s		29.3	0.6		0.2	6.5	0.1	3.2				
Intersection Summary												
HCM 2010 Ctrl Delay	20.1											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

87: N. Sunrise Ave & Eureka Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	1976	336	68	1750	33	158	262	142	178	281	162
Future Volume (veh/h)	198	1976	336	68	1750	33	158	262	142	178	281	162
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	208	2080	0	72	1842	0	166	276	0	187	296	171
Adj No. of Lanes	2	3	1	2	4	1	3	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	2563	798	235	3060	756	415	770	240	286	698	215
Arrive On Green	0.16	1.00	0.00	0.07	0.48	0.00	0.08	0.15	0.00	0.08	0.14	0.14
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	5003	5085	1583	3442	5085	1566
Grp Volume(v), veh/h	208	2080	0	72	1842	0	166	276	0	187	296	171
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1668	1695	1583	1721	1695	1566
Q Serve(g_s), s	6.9	0.0	0.0	2.4	25.3	0.0	3.8	5.8	0.0	6.3	6.4	12.7
Cycle Q Clear(g_c), s	6.9	0.0	0.0	2.4	25.3	0.0	3.8	5.8	0.0	6.3	6.4	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	2563	798	235	3060	756	415	770	240	286	698	215
V/C Ratio(X)	0.75	0.81	0.00	0.31	0.60	0.00	0.40	0.36	0.00	0.65	0.42	0.80
Avail Cap(c_a), veh/h	344	2563	798	258	3060	756	417	835	260	344	903	278
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	0.0	0.0	53.2	23.0	0.0	52.2	45.7	0.0	53.3	47.4	50.1
Incr Delay (d2), s/veh	3.3	1.4	0.0	0.3	0.9	0.0	0.2	0.4	0.0	1.9	0.5	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.3	0.0	1.1	11.3	0.0	1.7	2.8	0.0	3.1	3.0	6.2
LnGrp Delay(d),s/veh	52.5	1.4	0.0	53.5	23.9	0.0	52.4	46.1	0.0	55.2	47.9	62.5
LnGrp LOS	D	A		D	C		D	D		E	D	E
Approach Vol, veh/h	2288				1914				442			
Approach Delay, s/veh	6.0				25.0				48.5			
Approach LOS	A				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	23.5	12.2	66.2	15.3	22.2	15.4	63.0				
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	5.3	* 5.7	5.7	* 5.7				
Max Green Setting (Gmax), s	12.0	19.7	9.0	60.3	10.0	* 21	12.0	* 57				
Max Q Clear Time (g_c+I1), s	8.3	7.8	4.4	2.0	5.8	14.7	8.9	27.3				
Green Ext Time (p_c), s	0.1	1.9	0.0	35.0	1.0	1.5	0.8	19.3				

Intersection Summary

HCM 2010 Ctrl Delay	22.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
88: Eureka Rd & Rocky Ridge Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	204	4	42	140	69	6	1258	82	54	1444	255
Future Volume (veh/h)	393	204	4	42	140	69	6	1258	82	54	1444	255
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	215	0	44	147	0	6	1324	0	57	1520	0
Adj No. of Lanes	2	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	509	705	295	71	323	125	312	3080	939	88	2365	716
Arrive On Green	0.15	0.20	0.00	0.04	0.09	0.00	0.18	0.61	0.00	0.05	0.47	0.00
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	414	215	0	44	147	0	6	1324	0	57	1520	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	14.0	6.2	0.0	2.9	4.7	0.0	0.3	16.7	0.0	3.8	27.4	0.0
Cycle Q Clear(g_c), s	14.0	6.2	0.0	2.9	4.7	0.0	0.3	16.7	0.0	3.8	27.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	509	705	295	71	323	125	312	3080	939	88	2365	716
V/C Ratio(X)	0.81	0.31	0.00	0.62	0.46	0.00	0.02	0.43	0.00	0.65	0.64	0.00
Avail Cap(c_a), veh/h	746	1203	519	103	634	264	312	3080	939	148	2365	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.5	41.0	0.0	56.7	51.7	0.0	40.9	12.6	0.0	56.0	24.5	0.0
Incr Delay (d2), s/veh	2.7	0.4	0.0	3.3	1.4	0.0	0.0	0.2	0.0	3.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	3.1	0.0	1.5	2.4	0.0	0.2	7.8	0.0	1.9	13.1	0.0
LnGrp Delay(d),s/veh	52.2	41.4	0.0	60.0	53.1	0.0	40.9	12.8	0.0	59.0	25.9	0.0
LnGrp LOS	D	D		E	D		D	B		E	C	
Approach Vol, veh/h		629			191			1330			1577	
Approach Delay, s/veh		48.5			54.7			12.9			27.1	
Approach LOS		D			D			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	27.4	25.8	59.0	20.7	14.4	8.9	75.9				
Change Period (Y+Rc), s	4.0	* 6	5.7	* 5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	6.0	* 38	3.0	* 53	25.0	19.0	9.0	47.3				
Max Q Clear Time (g_c+I1), s	4.9	8.2	2.3	29.4	16.0	6.7	5.8	18.7				
Green Ext Time (p_c), s	0.0	2.5	0.0	13.2	0.8	1.8	0.0	12.4				

Intersection Summary

HCM 2010 Ctrl Delay	27.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

89: Eureka Rd & Lead Hill Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	126	134	63	184	95	132	1237	52	172	1147	9
Future Volume (veh/h)	56	126	134	63	184	95	132	1237	52	172	1147	9
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	59	133	0	66	194	0	139	1302	0	181	1207	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	342	133	99	359	141	180	2068	624	251	2344	710
Arrive On Green	0.05	0.10	0.00	0.06	0.10	0.00	0.10	0.41	0.00	0.14	0.46	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	59	133	0	66	194	0	139	1302	0	181	1207	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	3.9	4.2	0.0	4.4	6.3	0.0	9.2	24.5	0.0	11.7	20.1	0.0
Cycle Q Clear(g_c), s	3.9	4.2	0.0	4.4	6.3	0.0	9.2	24.5	0.0	11.7	20.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	342	133	99	359	141	180	2068	624	251	2344	710
V/C Ratio(X)	0.65	0.39	0.00	0.67	0.54	0.00	0.77	0.63	0.00	0.72	0.51	0.00
Avail Cap(c_a), veh/h	148	652	272	177	711	298	266	2068	624	355	2344	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.9	50.9	0.0	55.6	51.3	0.0	52.6	28.4	0.0	49.2	22.9	0.0
Incr Delay (d2), s/veh	3.0	0.9	0.0	2.9	1.7	0.0	4.0	1.5	0.0	1.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.1	0.0	2.2	3.2	0.0	4.7	11.7	0.0	5.9	9.5	0.0
LnGrp Delay(d),s/veh	58.9	51.8	0.0	58.4	53.0	0.0	56.5	29.9	0.0	51.0	23.2	0.0
LnGrp LOS	E	D		E	D		E	C		D	C	
Approach Vol, veh/h	192				260				1441			
Approach Delay, s/veh	53.9				54.4				32.4			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	15.5	15.2	58.5	9.1	16.1	21.7	52.0				
Change Period (Y+Rc), s	4.0	6.4	4.0	5.7	4.0	6.4	5.7	* 5.7				
Max Green Setting (Gmax), s	11.0	19.6	17.0	52.3	9.0	21.6	23.0	* 46				
Max Q Clear Time (g_c+I1), s	6.4	6.2	11.2	22.1	5.9	8.3	13.7	26.5				
Green Ext Time (p_c), s	0.0	1.4	0.1	11.7	0.0	1.4	2.3	10.0				

Intersection Summary

HCM 2010 Ctrl Delay	33.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
90: Eureka Road & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	1256	445	60	1300	591	617	485	18	464	453	25
Future Volume (veh/h)	178	1256	445	60	1300	591	617	485	18	464	453	25
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	187	1322	468	63	1368	0	649	511	19	488	477	26
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	3	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	1899	591	136	1822	567	714	1095	41	579	621	34
Arrive On Green	0.02	0.12	0.12	0.04	0.36	0.00	0.21	0.22	0.22	0.12	0.13	0.13
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5034	186	5003	4939	267
Grp Volume(v), veh/h	187	1322	468	63	1368	0	649	343	187	488	326	177
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1830	1668	1695	1816
Q Serve(g_s), s	6.5	29.9	14.6	2.1	28.3	0.0	22.1	10.6	10.7	11.5	11.2	11.3
Cycle Q Clear(g_c), s	6.5	29.9	14.6	2.1	28.3	0.0	22.1	10.6	10.7	11.5	11.2	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.15
Lane Grp Cap(c), veh/h	245	1899	591	136	1822	567	714	737	398	579	426	228
V/C Ratio(X)	0.76	0.70	0.79	0.46	0.75	0.00	0.91	0.47	0.47	0.84	0.77	0.77
Avail Cap(c_a), veh/h	315	2076	647	143	1822	567	860	819	442	709	452	242
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.6	46.1	8.6	56.4	33.8	0.0	46.4	40.9	40.9	52.0	50.7	50.8
Incr Delay (d2), s/veh	5.6	1.1	6.9	0.9	2.9	0.0	10.9	0.6	1.2	6.5	7.8	14.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	14.3	7.5	1.0	13.7	0.0	11.5	5.0	5.5	5.6	5.7	6.6
LnGrp Delay(d),s/veh	63.2	47.2	15.5	57.3	36.7	0.0	57.3	41.5	42.1	58.5	58.6	65.4
LnGrp LOS	E	D	B	E	D		E	D	D	E	E	E
Approach Vol, veh/h	1977				1431				1179			
Approach Delay, s/veh	41.2				37.6				50.3			
Approach LOS	D				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	50.8	28.9	21.1	12.5	49.0	17.9	32.1				
Change Period (Y+Rc), s	6.0	* 6	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	5.0	* 49	30.0	16.0	11.0	43.0	17.0	29.0				
Max Q Clear Time (g_c+I1), s	4.1	31.9	24.1	13.3	8.5	30.3	13.5	12.7				
Green Ext Time (p_c), s	0.7	12.9	0.8	1.8	0.1	9.0	0.4	7.4				

Intersection Summary

HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
91: Eureka Rd & Deer Valley Apts Dwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	0	0	32	6	61	14	1107	13	35	515	4
Future Volume (veh/h)	33	0	0	32	6	61	14	1107	13	35	515	4
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	0	0	34	6	64	15	1165	14	37	542	4
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	164	0	223	39	233	73	1729	21	121	1836	14
Arrive On Green	0.09	0.00	0.00	0.15	0.15	0.15	0.04	0.48	0.48	0.07	0.51	0.51
Sat Flow, veh/h	1774	1863	0	1519	268	1583	1774	3582	43	1774	3601	27
Grp Volume(v), veh/h	35	0	0	40	0	64	15	576	603	37	266	280
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1787	0	1583	1774	1770	1855	1774	1770	1858
Q Serve(g_s), s	1.2	0.0	0.0	1.3	0.0	2.3	0.5	16.0	16.0	1.3	5.6	5.6
Cycle Q Clear(g_c), s	1.2	0.0	0.0	1.3	0.0	2.3	0.5	16.0	16.0	1.3	5.6	5.6
Prop In Lane	1.00		0.00	0.85		1.00	1.00		0.02	1.00		0.01
Lane Grp Cap(c), veh/h	156	164	0	263	0	233	73	854	896	121	902	947
V/C Ratio(X)	0.22	0.00	0.00	0.15	0.00	0.27	0.21	0.67	0.67	0.31	0.30	0.30
Avail Cap(c_a), veh/h	305	320	0	586	0	519	221	1002	1051	221	1002	1052
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	0.0	23.8	0.0	24.3	29.7	12.7	12.7	28.4	9.1	9.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.2	0.5	2.0	1.9	0.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.6	0.0	1.0	0.3	8.1	8.5	0.6	2.7	2.9
LnGrp Delay(d),s/veh	27.5	0.0	0.0	23.9	0.0	24.5	30.2	14.7	14.6	28.9	9.4	9.4
LnGrp LOS	C			C		C	C	B	B	C	A	A
Approach Vol, veh/h	35		104				1194				583	
Approach Delay, s/veh	27.5		24.3				14.8				10.6	
Approach LOS	C		C				B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.6	37.4	12.4		7.4	35.6	8.6					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	7.0	35.3	20.0		7.0	35.3	10.0					
Max Q Clear Time (g_c+I1), s	2.5	7.6	4.3		3.3	18.0	3.2					
Green Ext Time (p_c), s	0.0	16.5	0.2		0.0	12.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			14.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
92: Ashland Dr & Eureka Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	395	29	34	1116	70	43	5	17	22	17	8
Future Volume (veh/h)	58	395	29	34	1116	70	43	5	17	22	17	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	61	416	31	36	1175	74	45	5	18	23	18	8
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	1634	121	98	1637	678	230	26	227	113	88	176
Arrive On Green	0.08	0.49	0.45	0.06	0.46	0.43	0.14	0.14	0.14	0.11	0.11	0.11
Sat Flow, veh/h	1774	3341	248	1774	3539	1583	1604	178	1583	1016	795	1583
Grp Volume(v), veh/h	61	220	227	36	1175	74	50	0	18	41	0	8
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1770	1583	1783	0	1583	1812	0	1583
Q Serve(g_s), s	1.9	4.2	4.3	1.1	15.5	1.6	1.4	0.0	0.6	1.2	0.0	0.3
Cycle Q Clear(g_c), s	1.9	4.2	4.3	1.1	15.5	1.6	1.4	0.0	0.6	1.2	0.0	0.3
Prop In Lane	1.00		0.14	1.00		1.00	0.90		1.00	0.56		1.00
Lane Grp Cap(c), veh/h	145	866	890	98	1637	678	255	0	227	202	0	176
V/C Ratio(X)	0.42	0.25	0.26	0.37	0.72	0.11	0.20	0.00	0.08	0.20	0.00	0.05
Avail Cap(c_a), veh/h	214	866	890	183	1661	689	368	0	327	685	0	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	8.7	8.8	26.5	12.6	10.0	22.0	0.0	21.6	23.5	0.0	23.1
Incr Delay (d2), s/veh	0.7	0.7	0.7	0.9	2.7	0.3	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.2	2.3	0.6	8.1	0.8	0.7	0.0	0.3	0.6	0.0	0.1
LnGrp Delay(d),s/veh	26.1	9.4	9.4	27.4	15.3	10.3	22.1	0.0	21.6	23.7	0.0	23.1
LnGrp LOS	C	A	A	C	B	B	C		C	C		C
Approach Vol, veh/h	508				1285				68		49	
Approach Delay, s/veh	11.4				15.3				22.0		23.6	
Approach LOS	B				B				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	11.3		6.2	31.2	9.5		7.8	29.6				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	11.0		5.0	25.3	21.0		6.0	24.3				
Max Q Clear Time (g_c+I1), s	3.4		3.1	6.3	3.2		3.9	17.5				
Green Ext Time (p_c), s	0.1		0.0	17.2	0.1		0.0	6.4				
Intersection Summary												
HCM 2010 Ctrl Delay			14.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
93: Sierra College Blvd & Eureka Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	257	68	28	605	294	442	1282	34	203	711	164
Future Volume (veh/h)	161	257	68	28	605	294	442	1282	34	203	711	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	169	271	0	29	637	0	465	1349	0	214	748	0
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1007	431	206	800	338	665	1983	591	298	1369	400
Arrive On Green	0.12	0.28	0.00	0.06	0.23	0.00	0.19	0.39	0.00	0.09	0.27	0.00
Sat Flow, veh/h	1774	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	169	271	0	29	637	0	465	1349	0	214	748	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	11.1	7.1	0.0	1.0	20.4	0.0	15.1	26.4	0.0	7.3	15.1	0.0
Cycle Q Clear(g_c), s	11.1	7.1	0.0	1.0	20.4	0.0	15.1	26.4	0.0	7.3	15.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	1007	431	206	800	338	665	1983	591	298	1369	400
V/C Ratio(X)	0.80	0.27	0.00	0.14	0.80	0.00	0.70	0.68	0.00	0.72	0.55	0.00
Avail Cap(c_a), veh/h	296	1115	479	315	849	360	774	1983	591	373	1369	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	33.3	0.0	53.5	43.8	0.0	45.2	30.4	0.0	53.4	37.6	0.0
Incr Delay (d2), s/veh	6.9	0.2	0.0	0.1	5.7	0.0	1.7	1.1	0.0	3.2	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	3.5	0.0	0.5	10.6	0.0	7.3	12.6	0.0	3.6	7.3	0.0
LnGrp Delay(d),s/veh	58.4	33.5	0.0	53.6	49.5	0.0	46.8	31.5	0.0	56.6	39.1	0.0
LnGrp LOS	E	C		D	D		D	C		E	D	
Approach Vol, veh/h	440				666				1814			
Approach Delay, s/veh	43.1				49.7				35.5			
Approach LOS	D				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.4	49.5	10.2	37.4	27.9	35.0	17.2	30.3				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7				
Max Green Setting (Gmax), s	12.0	43.3	10.0	35.3	26.0	* 29	19.0	26.3				
Max Q Clear Time (g_c+I1), s	9.3	28.4	3.0	9.1	17.1	17.1	13.1	22.4				
Green Ext Time (p_c), s	0.1	9.7	0.0	7.7	5.1	4.4	0.1	2.2				

Intersection Summary

HCM 2010 Ctrl Delay	40.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
94: Banjo Alley/Judah St & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	461	0	0	256	268	2	2	0	458	0	8
Future Volume (veh/h)	0	461	0	0	256	268	2	2	0	458	0	8
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	0	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	485	0	0	269	282	2	2	0	489	0	0
Adj No. of Lanes	0	2	0	0	1	1	0	1	0	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	0	1267	0	0	667	976	36	36	0	918	482	0
Arrive On Green	0.00	0.36	0.00	0.00	0.36	0.36	0.04	0.04	0.00	0.26	0.00	0.00
Sat Flow, veh/h	0	3725	0	0	1863	1583	909	909	0	3548	1863	0
Grp Volume(v), veh/h	0	485	0	0	269	282	4	0	0	489	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1863	1583	1817	0	0	1774	1863	0
Q Serve(g_s), s	0.0	2.9	0.0	0.0	3.1	2.4	0.1	0.0	0.0	3.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.9	0.0	0.0	3.1	2.4	0.1	0.0	0.0	3.4	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.50		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	1267	0	0	667	976	71	0	0	918	482	0
V/C Ratio(X)	0.00	0.38	0.00	0.00	0.40	0.29	0.06	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	0	2105	0	0	667	976	316	0	0	2838	1490	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.9	0.0	0.0	6.9	2.6	13.3	0.0	0.0	9.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.4	0.2	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	0.0	0.0	1.6	1.8	0.0	0.0	0.0	1.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.1	0.0	0.0	7.3	2.7	13.4	0.0	0.0	9.3	0.0	0.0
LnGrp LOS		A			A	A	B			A		
Approach Vol, veh/h		485			551			4			489	
Approach Delay, s/veh		7.1			5.0			13.4			9.3	
Approach LOS		A			A			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.2		10.4		14.2		4.1				
Change Period (Y+Rc), s		4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s		16.1		22.0		9.1		4.0				
Max Q Clear Time (g_c+I1), s		4.9		5.4		5.1		2.1				
Green Ext Time (p_c), s		4.4		1.2		2.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				7.1								
HCM 2010 LOS				A								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
95: Park Dr & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑			↔		↵	↑↑	
Traffic Volume (veh/h)	0	926	5	3	540	0	11	0	11	115	0	4
Future Volume (veh/h)	0	926	5	3	540	0	11	0	11	115	0	4
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	975	0	3	568	0	12	0	12	121	0	4
Adj No. of Lanes	0	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	1618	0	51	1953	0	57	0	57	287	0	256
Arrive On Green	0.00	0.46	0.00	0.03	0.55	0.00	0.09	0.00	0.09	0.16	0.00	0.16
Sat Flow, veh/h	0	3725	0	1774	3632	0	837	0	837	1774	0	1583
Grp Volume(v), veh/h	0	975	0	3	568	0	24	0	0	121	0	4
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1673	0	0	1774	0	1583
Q Serve(g_s), s	0.0	9.4	0.0	0.1	3.9	0.0	0.6	0.0	0.0	2.8	0.0	0.1
Cycle Q Clear(g_c), s	0.0	9.4	0.0	0.1	3.9	0.0	0.6	0.0	0.0	2.8	0.0	0.1
Prop In Lane	0.00		0.00	1.00		0.00	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	0	1618	0	51	1953	0	114	0	0	287	0	256
V/C Ratio(X)	0.00	0.60	0.00	0.06	0.29	0.00	0.21	0.00	0.00	0.42	0.00	0.02
Avail Cap(c_a), veh/h	0	1802	0	352	2739	0	332	0	0	821	0	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.2	0.0	21.4	5.4	0.0	19.5	0.0	0.0	17.1	0.0	16.0
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.2	0.1	0.0	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	0.0	0.0	1.9	0.0	0.3	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.7	0.0	21.6	5.5	0.0	19.8	0.0	0.0	17.5	0.0	16.0
LnGrp LOS		A		C	A		B			B		B
Approach Vol, veh/h		975			571			24			125	
Approach Delay, s/veh		9.7			5.6			19.8			17.4	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	4.3	24.6		10.3		28.9		6.1				
Change Period (Y+Rc), s	4.0	4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s	8.0	22.1		20.0		34.1		8.0				
Max Q Clear Time (g_c+I1), s	2.1	11.4		4.8		5.9		2.6				
Green Ext Time (p_c), s	0.0	8.4		0.2		17.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				9.0								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
96: Keehner Ave & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↑	↑↑	↑	↑		
Traffic Volume (veh/h)	1047	16	88	598	49	226		
Future Volume (veh/h)	1047	16	88	598	49	226		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1102	17	93	629	52	238		
Adj No. of Lanes	2	0	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1744	27	155	2271	369	329		
Arrive On Green	0.49	0.49	0.09	0.64	0.21	0.21		
Sat Flow, veh/h	3661	55	1774	3632	1774	1583		
Grp Volume(v), veh/h	547	572	93	629	52	238		
Grp Sat Flow(s),veh/h/ln	1770	1853	1774	1770	1774	1583		
Q Serve(g_s), s	10.5	10.5	2.3	3.5	1.1	6.4		
Cycle Q Clear(g_c), s	10.5	10.5	2.3	3.5	1.1	6.4		
Prop In Lane		0.03	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	865	906	155	2271	369	329		
V/C Ratio(X)	0.63	0.63	0.60	0.28	0.14	0.72		
Avail Cap(c_a), veh/h	931	975	194	2480	620	553		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.7	8.7	20.1	3.6	14.8	16.9		
Incr Delay (d2), s/veh	1.3	1.2	1.4	0.1	0.1	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.3	5.6	1.2	1.7	0.5	2.9		
LnGrp Delay(d),s/veh	9.9	9.9	21.5	3.6	14.9	18.1		
LnGrp LOS	A	A	C	A	B	B		
Approach Vol, veh/h	1119			722	290			
Approach Delay, s/veh	9.9			6.0	17.5			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	7.0	26.3		12.5		33.3		
Change Period (Y+Rc), s	4.0	4.9		4.0		4.9		
Max Green Setting (Gmax), s	4.0	23.1		15.0		31.1		
Max Q Clear Time (g_c+I1), s	4.3	12.5		8.4		5.5		
Green Ext Time (p_c), s	0.0	8.9		0.3		18.6		
Intersection Summary								
HCM 2010 Ctrl Delay			9.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
97: Folsom Rd & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1185	4	34	800	92	4	6	12	390	4	36
Future Volume (veh/h)	48	1185	4	34	800	92	4	6	12	390	4	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	1247	4	36	842	97	4	6	13	414	0	38
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	2457	8	60	2136	246	8	11	25	526	0	235
Arrive On Green	0.05	0.68	0.68	0.03	0.67	0.67	0.03	0.03	0.03	0.15	0.00	0.15
Sat Flow, veh/h	1774	3619	12	1774	3199	369	292	438	950	3548	0	1583
Grp Volume(v), veh/h	51	610	641	36	466	473	23	0	0	414	0	38
Grp Sat Flow(s),veh/h/ln	1774	1770	1861	1774	1770	1798	1681	0	0	1774	0	1583
Q Serve(g_s), s	3.4	20.2	20.2	2.4	14.2	14.2	1.6	0.0	0.0	13.5	0.0	2.5
Cycle Q Clear(g_c), s	3.4	20.2	20.2	2.4	14.2	14.2	1.6	0.0	0.0	13.5	0.0	2.5
Prop In Lane	1.00		0.01	1.00		0.20	0.17		0.57	1.00		1.00
Lane Grp Cap(c), veh/h	80	1202	1264	60	1182	1200	44	0	0	526	0	235
V/C Ratio(X)	0.63	0.51	0.51	0.60	0.39	0.39	0.52	0.00	0.00	0.79	0.00	0.16
Avail Cap(c_a), veh/h	163	1202	1264	89	1182	1200	70	0	0	840	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.3	9.4	9.4	57.2	9.0	9.0	57.7	0.0	0.0	49.3	0.0	44.6
Incr Delay (d2), s/veh	3.1	1.5	1.5	3.5	0.2	0.2	3.5	0.0	0.0	2.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	10.3	10.8	1.2	6.9	7.0	0.8	0.0	0.0	6.8	0.0	1.1
LnGrp Delay(d),s/veh	59.4	11.0	10.9	60.6	9.2	9.2	61.2	0.0	0.0	51.3	0.0	44.8
LnGrp LOS	E	B	B	E	A	A	E			D		D
Approach Vol, veh/h	1302				975				23		452	
Approach Delay, s/veh	12.8				11.1				61.2		50.7	
Approach LOS	B				B				E		D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	85.4		21.4	8.4	84.0		6.1				
Change Period (Y+Rc), s	4.0	4.9		4.6	4.0	4.9		4.0				
Max Green Setting (Gmax), s	5.0	66.1		27.4	10.0	61.1		4.0				
Max Q Clear Time (g_c+I1), s	4.4	22.2		15.5	5.4	16.2		3.6				
Green Ext Time (p_c), s	0.0	41.7		1.3	0.0	42.6		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	18.8											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
98: Douglas Blvd & Harding Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	1354	16	70	746	870	19	8	29	685	11	192
Future Volume (veh/h)	227	1354	16	70	746	870	19	8	29	685	11	192
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	239	1425	17	74	785	916	20	8	31	730	0	202
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1811	22	74	1614	722	55	58	49	820	0	366
Arrive On Green	0.27	1.00	1.00	0.04	0.46	0.46	0.03	0.03	0.03	0.23	0.00	0.23
Sat Flow, veh/h	1774	3307	39	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	239	642	800	74	785	916	20	8	31	730	0	202
Grp Sat Flow(s),veh/h/ln	1774	1490	1856	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	16.0	0.0	0.0	5.0	18.6	54.7	1.3	0.5	2.3	23.9	0.0	13.5
Cycle Q Clear(g_c), s	16.0	0.0	0.0	5.0	18.6	54.7	1.3	0.5	2.3	23.9	0.0	13.5
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	816	1017	74	1614	722	55	58	49	820	0	366
V/C Ratio(X)	1.01	0.79	0.79	1.00	0.49	1.27	0.36	0.14	0.63	0.89	0.00	0.55
Avail Cap(c_a), veh/h	237	816	1017	74	1614	722	59	62	53	1038	0	463
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.0	0.0	0.0	57.5	22.8	32.6	57.0	56.6	57.5	44.6	0.0	40.6
Incr Delay (d2), s/veh	61.2	7.5	6.1	105.0	0.3	131.6	1.5	0.4	14.0	7.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	1.7	1.7	4.6	9.1	50.3	0.7	0.3	1.2	12.5	0.0	6.0
LnGrp Delay(d),s/veh	105.3	7.5	6.1	162.5	23.1	164.2	58.5	57.0	71.5	52.1	0.0	41.4
LnGrp LOS	F	A	A	F	C	F	E	E	E	D		D
Approach Vol, veh/h	1681			1775			59			932		
Approach Delay, s/veh	20.8			101.7			65.1			49.8		
Approach LOS	C			F			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	70.6		32.6	20.0	59.6		7.7				
Change Period (Y+Rc), s	4.0	4.9		4.9	4.0	4.9		4.0				
Max Green Setting (Gmax), s	5.0	58.1		35.1	16.0	47.1		4.0				
Max Q Clear Time (g_c+I1), s	7.0	2.0		25.9	18.0	56.7		4.3				
Green Ext Time (p_c), s	0.0	42.7		1.9	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	59.8											
HCM 2010 LOS	E											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
99: Douglas Blvd & I-80 WB Ramps

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↗	↗	↗
Traffic Volume (veh/h)	0	1003	338	0	1522	1018	0	0	0	828	0	154
Future Volume (veh/h)	0	1003	338	0	1522	1018	0	0	0	828	0	154
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	0	1056	356	0	1602	0				872	0	162
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2337	1037	0	2472	1037				999	0	446
Arrive On Green	0.00	1.00	1.00	0.00	0.66	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3632	1583	0	3725	1583				3548	0	1583
Grp Volume(v), veh/h	0	1056	356	0	1602	0				872	0	162
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1863	1583				1774	0	1583
Q Serve(g_s), s	0.0	0.0	0.0	0.0	30.5	0.0				28.1	0.0	9.8
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	30.5	0.0				28.1	0.0	9.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2337	1037	0	2472	1037				999	0	446
V/C Ratio(X)	0.00	0.45	0.34	0.00	0.65	0.00				0.87	0.00	0.36
Avail Cap(c_a), veh/h	0	2337	1037	0	2472	1037				1458	0	650
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.56	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	11.9	0.0				41.1	0.0	34.5
Incr Delay (d2), s/veh	0.0	0.6	0.9	0.0	0.4	0.0				3.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.3	0.0	15.7	0.0				14.2	0.0	4.3
LnGrp Delay(d),s/veh	0.0	0.6	0.9	0.0	12.3	0.0				44.1	0.0	34.7
LnGrp LOS		A	A		B					D		C
Approach Vol, veh/h		1412			1602						1034	
Approach Delay, s/veh		0.7			12.3						42.7	
Approach LOS		A			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		82.5		37.5		82.5						
Change Period (Y+Rc), s		4.9		5.3		4.9						
Max Green Setting (Gmax), s		62.1		47.7		62.1						
Max Q Clear Time (g_c+I1), s		2.0		30.1		32.5						
Green Ext Time (p_c), s		51.2		2.1		27.2						
Intersection Summary												
HCM 2010 Ctrl Delay			16.0									
HCM 2010 LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

100: I-80 EB Ramps & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	1131	0	0	1550	263	0	0	1397	0	0	1006
Future Volume (veh/h)	205	1131	0	0	1550	263	0	0	1397	0	0	1006
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	216	1191	0	0	1632	0	0	0	0	0	0	1059
Adj No. of Lanes	1	4	0	0	3	1	0	0	1	0	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	0	2	2	0	0	2	0	0	2
Cap, veh/h	291	3258	0	0	1799	510	0	0	0	0	0	0
Arrive On Green	0.16	0.51	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sat Flow, veh/h	1774	6669	0	0	5588	1583		0			0	
Grp Volume(v), veh/h	216	1191	0	0	1632	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	1774	1602	0	0	1863	1583						
Q Serve(g_s), s	10.3	10.0	0.0	0.0	24.9	0.0						
Cycle Q Clear(g_c), s	10.3	10.0	0.0	0.0	24.9	0.0						
Prop In Lane	1.00		0.00	0.00		1.00						
Lane Grp Cap(c), veh/h	291	3258	0	0	1799	510						
V/C Ratio(X)	0.74	0.37	0.00	0.00	0.91	0.00						
Avail Cap(c_a), veh/h	538	4111	0	0	1799	510						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(l)	0.79	0.79	0.00	0.00	0.83	0.00						
Uniform Delay (d), s/veh	35.4	13.2	0.0	0.0	28.9	0.0						
Incr Delay (d2), s/veh	1.1	0.1	0.0	0.0	6.9	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	5.1	4.4	0.0	0.0	13.8	0.0						
LnGrp Delay(d),s/veh	36.5	13.3	0.0	0.0	35.8	0.0						
LnGrp LOS	D	B			D							
Approach Vol, veh/h		1407			1632							
Approach Delay, s/veh		16.9			35.8							
Approach LOS		B			D							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		48.1			16.6	31.5						
Change Period (Y+Rc), s		4.9			4.0	4.9						
Max Green Setting (Gmax), s		55.1			25.0	26.1						
Max Q Clear Time (g_c+I1), s		12.0			12.3	26.9						
Green Ext Time (p_c), s		31.3			0.3	0.0						
Intersection Summary												
HCM 2010 Ctrl Delay				27.0								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
101: Douglas Blvd & North Sunrise Ave

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	1808	220	109	1341	62	312	558	86	54	170	160
Future Volume (veh/h)	390	1808	220	109	1341	62	312	558	86	54	170	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	411	1903	232	115	1412	65	328	587	91	57	179	168
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	2310	926	494	2957	136	456	773	343	97	563	391
Arrive On Green	0.14	0.45	0.45	0.14	0.47	0.47	0.13	0.22	0.22	0.03	0.11	0.11
Sat Flow, veh/h	3442	5085	1578	3442	6325	291	3442	3539	1572	3442	5085	1562
Grp Volume(v), veh/h	411	1903	232	115	1072	405	328	587	91	57	179	168
Grp Sat Flow(s),veh/h/ln	1721	1695	1578	1721	1602	1810	1721	1770	1572	1721	1695	1562
Q Serve(g_s), s	14.0	39.2	0.0	3.6	18.4	18.4	11.0	18.7	5.8	2.0	3.9	7.4
Cycle Q Clear(g_c), s	14.0	39.2	0.0	3.6	18.4	18.4	11.0	18.7	5.8	2.0	3.9	7.4
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	474	2310	926	494	2246	846	456	773	343	97	563	391
V/C Ratio(X)	0.87	0.82	0.25	0.23	0.48	0.48	0.72	0.76	0.27	0.59	0.32	0.43
Avail Cap(c_a), veh/h	660	2310	926	494	2246	846	456	1053	468	143	1072	548
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	28.6	12.0	45.5	21.9	21.9	49.9	43.9	38.9	57.6	49.2	19.2
Incr Delay (d2), s/veh	5.1	2.6	0.5	0.1	0.3	0.7	4.7	3.2	0.7	2.1	0.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	18.9	3.8	1.7	8.2	9.4	5.5	9.5	2.6	1.0	1.9	3.4
LnGrp Delay(d),s/veh	55.8	31.2	12.5	45.6	22.2	22.6	54.7	47.1	39.6	59.8	49.9	20.9
LnGrp LOS	E	C	B	D	C	C	D	D	D	E	D	C
Approach Vol, veh/h	2546				1592				1006			
Approach Delay, s/veh	33.4				24.0				48.9			
Approach LOS	C				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.1	59.4	19.9	18.6	20.5	61.0	7.4	31.1				
Change Period (Y+Rc), s	4.9	* 4.9	4.0	5.3	4.0	4.9	4.0	4.9				
Max Green Setting (Gmax), s	7.0	* 55	15.0	25.3	23.0	38.5	5.0	35.7				
Max Q Clear Time (g_c+I1), s	5.6	41.2	13.0	9.4	16.0	20.4	4.0	20.7				
Green Ext Time (p_c), s	0.1	12.2	0.2	2.9	0.5	13.3	0.0	5.5				

Intersection Summary

HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
102: Santa Clara Dr & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	1953	45	43	1437	28	37	17	63	32	16	38
Future Volume (veh/h)	89	1953	45	43	1437	28	37	17	63	32	16	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	94	2056	47	45	1513	29	39	18	66	26	29	40
Adj No. of Lanes	1	3	0	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	575	3633	83	58	2092	647	102	107	91	105	110	91
Arrive On Green	0.65	1.00	1.00	0.02	0.28	0.28	0.06	0.06	0.06	0.06	0.06	0.06
Sat Flow, veh/h	1774	5115	117	1774	5085	1574	1774	1863	1583	1774	1863	1543
Grp Volume(v), veh/h	94	1362	741	45	1513	29	39	18	66	26	29	40
Grp Sat Flow(s),veh/h/ln	1774	1695	1842	1774	1695	1574	1774	1863	1583	1774	1863	1543
Q Serve(g_s), s	2.5	0.0	0.0	3.0	32.3	1.6	2.5	1.1	4.9	1.7	1.8	3.0
Cycle Q Clear(g_c), s	2.5	0.0	0.0	3.0	32.3	1.6	2.5	1.1	4.9	1.7	1.8	3.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	575	2408	1308	58	2092	647	102	107	91	105	110	91
V/C Ratio(X)	0.16	0.57	0.57	0.78	0.72	0.04	0.38	0.17	0.73	0.25	0.26	0.44
Avail Cap(c_a), veh/h	575	2408	1308	89	2208	683	103	109	92	458	481	399
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	0.0	58.3	37.3	26.2	54.5	53.8	55.6	53.9	54.0	54.5
Incr Delay (d2), s/veh	0.0	1.0	1.8	9.4	1.7	0.1	1.8	0.5	23.1	0.5	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.6	1.6	15.5	0.7	1.3	0.6	2.7	0.8	0.9	1.3
LnGrp Delay(d),s/veh	14.8	1.0	1.8	67.6	39.0	26.3	56.3	54.4	78.7	54.4	54.4	55.8
LnGrp LOS	B	A	A	E	D	C	E	D	E	D	D	E
Approach Vol, veh/h	2197		1587				123		95			
Approach Delay, s/veh	1.8		39.6				68.0		55.0			
Approach LOS	A		D				E		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.9	90.1	11.1		43.8	54.3	10.9					
Change Period (Y+Rc), s	4.0	4.9	4.0		4.9	* 4.9	4.0					
Max Green Setting (Gmax), s	6.0	59.1	31.0		13.0	* 52	7.0					
Max Q Clear Time (g_c+I1), s	5.0	2.0	5.0		4.5	34.3	6.9					
Green Ext Time (p_c), s	0.0	44.9	0.2		8.1	15.1	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	20.1											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
103: Sierra Gardens Dr & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1924	37	15	1447	26	118	47	25	56	5	11
Future Volume (veh/h)	11	1924	37	15	1447	26	118	47	25	56	5	11
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	2025	39	16	1523	27	100	83	26	38	34	12
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	15	2403	732	20	2420	738	138	106	33	180	131	46
Arrive On Green	0.01	0.32	0.32	0.01	0.48	0.48	0.08	0.08	0.08	0.10	0.10	0.10
Sat Flow, veh/h	1774	5085	1550	1774	5085	1550	1774	1361	426	1774	1292	456
Grp Volume(v), veh/h	12	2025	39	16	1523	27	100	0	109	38	0	46
Grp Sat Flow(s),veh/h/ln	1774	1695	1550	1774	1695	1550	1774	0	1788	1774	0	1748
Q Serve(g_s), s	0.8	44.5	2.1	1.1	26.9	1.1	6.6	0.0	7.2	2.4	0.0	2.9
Cycle Q Clear(g_c), s	0.8	44.5	2.1	1.1	26.9	1.1	6.6	0.0	7.2	2.4	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.26
Lane Grp Cap(c), veh/h	15	2403	732	20	2420	738	138	0	139	180	0	177
V/C Ratio(X)	0.82	0.84	0.05	0.79	0.63	0.04	0.72	0.00	0.78	0.21	0.00	0.26
Avail Cap(c_a), veh/h	44	2420	737	44	2420	738	177	0	179	449	0	443
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.6	36.8	22.3	59.2	23.5	16.8	54.1	0.0	54.3	49.5	0.0	49.8
Incr Delay (d2), s/veh	32.3	3.4	0.1	21.4	1.3	0.1	8.5	0.0	14.0	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	21.6	0.9	0.6	12.8	0.5	3.6	0.0	4.1	1.2	0.0	1.4
LnGrp Delay(d),s/veh	91.9	40.2	22.4	80.6	24.8	16.9	62.6	0.0	68.3	49.7	0.0	50.0
LnGrp LOS	F	D	C	F	C	B	E		E	D		D
Approach Vol, veh/h	2076				1566		209				84	
Approach Delay, s/veh	40.2				25.2		65.6				49.9	
Approach LOS	D				C		E				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	5.4	61.6			16.8	5.0	62.0	13.4				
Change Period (Y+Rc), s	4.0	4.9			4.6	4.0	4.9	4.0				
Max Green Setting (Gmax), s	3.0	57.1			30.4	3.0	57.1	12.0				
Max Q Clear Time (g_c+I1), s	3.1	46.5			4.9	2.8	28.9	9.2				
Green Ext Time (p_c), s	0.0	10.2			0.2	0.0	22.4	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	35.8											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

104: Target Dwy & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1793	61	11	1472	0	14	4	11	27	1	18
Future Volume (veh/h)	58	1793	61	11	1472	0	14	4	11	27	1	18
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	61	1887	64	12	1549	0	15	4	12	28	1	19
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	564	4080	138	15	2494	0	18	9	28	35	3	48
Arrive On Green	0.32	0.81	0.81	0.01	0.49	0.00	0.01	0.02	0.02	0.02	0.03	0.03
Sat Flow, veh/h	1774	5051	171	1774	5253	0	1774	397	1190	1774	76	1450
Grp Volume(v), veh/h	61	1266	685	12	1549	0	15	0	16	28	0	20
Grp Sat Flow(s),veh/h/ln	1774	1695	1832	1774	1695	0	1774	0	1587	1774	0	1526
Q Serve(g_s), s	2.9	13.7	13.8	0.8	26.8	0.0	1.0	0.0	1.2	1.9	0.0	1.5
Cycle Q Clear(g_c), s	2.9	13.7	13.8	0.8	26.8	0.0	1.0	0.0	1.2	1.9	0.0	1.5
Prop In Lane	1.00		0.09	1.00		0.00	1.00		0.75	1.00		0.95
Lane Grp Cap(c), veh/h	564	2738	1480	15	2494	0	18	0	37	35	0	51
V/C Ratio(X)	0.11	0.46	0.46	0.82	0.62	0.00	0.85	0.00	0.43	0.80	0.00	0.39
Avail Cap(c_a), veh/h	564	2738	1480	44	2886	0	103	0	212	118	0	216
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.9	3.5	3.5	59.4	22.4	0.0	59.3	0.0	57.8	58.6	0.0	56.8
Incr Delay (d2), s/veh	0.0	0.6	1.0	32.3	0.9	0.0	65.3	0.0	7.6	32.8	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	6.5	7.3	0.5	12.7	0.0	0.8	0.0	0.6	1.2	0.0	0.7
LnGrp Delay(d),s/veh	28.9	4.1	4.6	91.7	23.3	0.0	124.6	0.0	65.4	91.4	0.0	61.7
LnGrp LOS	C	A	A	F	C		F		E	F		E
Approach Vol, veh/h	2012				1561				31			
Approach Delay, s/veh	5.0				23.8				94.1			
Approach LOS	A				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	101.8	5.2	8.0	43.1	63.8	6.4	6.8				
Change Period (Y+Rc), s	4.0	4.9	4.0	4.0	4.9	* 4.9	4.0	4.0				
Max Green Setting (Gmax), s	3.0	76.1	7.0	17.0	11.0	* 68	8.0	16.0				
Max Q Clear Time (g_c+I1), s	2.8	15.8	3.0	3.5	4.9	28.8	3.9	3.2				
Green Ext Time (p_c), s	0.0	50.7	0.0	0.1	5.9	30.1	0.0	0.1				

Intersection Summary

HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
105: Rocky Ridge Drive & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	1580	51	42	1282	121	161	721	374	93	317	70
Future Volume (veh/h)	152	1580	51	42	1282	121	161	721	374	93	317	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	160	1663	0	44	1349	0	169	759	394	98	334	74
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	691	2250	701	434	1871	583	469	1108	343	143	572	176
Arrive On Green	0.07	0.15	0.00	0.04	0.12	0.00	0.14	0.22	0.22	0.04	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1572	3442	5085	1562
Grp Volume(v), veh/h	160	1663	0	44	1349	0	169	759	394	98	334	74
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1572	1721	1695	1562
Q Serve(g_s), s	5.3	37.6	0.0	1.5	30.7	0.0	5.4	16.5	18.9	3.4	7.5	5.3
Cycle Q Clear(g_c), s	5.3	37.6	0.0	1.5	30.7	0.0	5.4	16.5	18.9	3.4	7.5	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	691	2250	701	434	1871	583	469	1108	343	143	572	176
V/C Ratio(X)	0.23	0.74	0.00	0.10	0.72	0.00	0.36	0.68	1.15	0.68	0.58	0.42
Avail Cap(c_a), veh/h	691	2250	701	434	1996	621	469	1623	502	143	1386	426
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	44.6	0.0	50.9	46.8	0.0	47.1	43.1	24.6	56.7	50.6	49.6
Incr Delay (d2), s/veh	0.1	2.2	0.0	0.0	1.9	0.0	0.2	0.6	87.5	10.5	1.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	18.1	0.0	0.7	14.7	0.0	2.6	7.8	16.5	1.8	3.5	2.4
LnGrp Delay(d),s/veh	47.3	46.8	0.0	51.0	48.6	0.0	47.3	43.8	112.2	67.3	51.6	51.3
LnGrp LOS	D	D		D	D		D	D	F	E	D	D
Approach Vol, veh/h	1823				1393				1322			
Approach Delay, s/veh	46.9				48.7				64.6			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	58.0	23.0	19.8	28.1	49.1	10.0	32.8				
Change Period (Y+Rc), s	4.0	4.9	6.7	* 6.3	4.0	4.9	5.0	6.7				
Max Green Setting (Gmax), s	3.0	53.1	11.0	* 33	9.0	47.1	5.0	38.3				
Max Q Clear Time (g_c+I1), s	3.5	39.6	7.4	9.5	7.3	32.7	5.4	20.9				
Green Ext Time (p_c), s	0.0	12.2	2.1	2.4	0.1	11.5	0.0	5.0				

Intersection Summary

HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
106: Sierra College Blvd & Douglas Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1470	207	266	1850	191	423	812	238	191	633	148
Future Volume (veh/h)	220	1470	207	266	1850	191	423	812	238	191	633	148
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	232	1547	0	280	1947	0	445	855	0	201	666	156
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1992	594	433	2255	676	522	1408	412	315	1102	312
Arrive On Green	0.09	0.39	0.00	0.13	0.44	0.00	0.15	0.28	0.00	0.09	0.22	0.20
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1560
Grp Volume(v), veh/h	232	1547	0	280	1947	0	445	855	0	201	666	156
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1560
Q Serve(g_s), s	7.9	31.9	0.0	9.3	41.4	0.0	15.1	17.5	0.0	6.8	14.2	10.7
Cycle Q Clear(g_c), s	7.9	31.9	0.0	9.3	41.4	0.0	15.1	17.5	0.0	6.8	14.2	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	1992	594	433	2255	676	522	1408	412	315	1102	312
V/C Ratio(X)	0.74	0.78	0.00	0.65	0.86	0.00	0.85	0.61	0.00	0.64	0.60	0.50
Avail Cap(c_a), veh/h	315	1992	594	433	2255	676	545	1411	413	373	1157	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	31.9	0.0	49.9	30.1	0.0	49.6	37.7	0.0	52.6	42.4	42.7
Incr Delay (d2), s/veh	8.0	3.1	0.0	2.6	3.8	0.0	11.2	0.9	0.0	1.5	1.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	15.5	0.0	4.6	20.1	0.0	8.0	8.4	0.0	3.3	6.8	4.8
LnGrp Delay(d),s/veh	61.2	35.0	0.0	52.6	33.9	0.0	60.8	38.6	0.0	54.1	43.5	44.8
LnGrp LOS	E	C		D	C		E	D		D	D	D
Approach Vol, veh/h	1779				2227				1300			
Approach Delay, s/veh	38.4				36.2				46.2			
Approach LOS	D				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.1	50.0	21.2	28.7	13.9	56.2	14.0	35.9				
Change Period (Y+Rc), s	6.0	6.0	4.0	5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	12.0	44.0	18.0	24.3	10.0	48.0	12.0	30.3				
Max Q Clear Time (g_c+I1), s	11.3	33.9	17.1	16.2	9.9	43.4	8.8	19.5				
Green Ext Time (p_c), s	0.6	7.9	0.1	6.6	0.0	4.0	0.1	8.4				
Intersection Summary												
HCM 2010 Ctrl Delay	40.4											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
115: Oakridge Dr & Cirby Way

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	1184	2	19	667	85	42	62	75	5	8	6
Future Volume (veh/h)	181	1184	2	19	667	85	42	62	75	5	8	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	191	1246	2	20	702	89	44	65	79	5	8	6
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	2197	4	39	1335	169	68	101	144	14	23	32
Arrive On Green	0.19	0.61	0.60	0.02	0.42	0.41	0.09	0.09	0.09	0.02	0.02	0.02
Sat Flow, veh/h	1774	3625	6	1774	3159	400	737	1089	1558	703	1125	1583
Grp Volume(v), veh/h	191	608	640	20	393	398	109	0	79	13	0	6
Grp Sat Flow(s),veh/h/ln	1774	1770	1862	1774	1770	1789	1826	0	1558	1828	0	1583
Q Serve(g_s), s	11.7	24.8	24.8	1.3	19.8	19.9	6.9	0.0	5.8	0.8	0.0	0.4
Cycle Q Clear(g_c), s	11.7	24.8	24.8	1.3	19.8	19.9	6.9	0.0	5.8	0.8	0.0	0.4
Prop In Lane	1.00		0.00	1.00		0.22	0.40		1.00	0.38		1.00
Lane Grp Cap(c), veh/h	345	1072	1128	39	748	756	169	0	144	37	0	32
V/C Ratio(X)	0.55	0.57	0.57	0.52	0.53	0.53	0.64	0.00	0.55	0.35	0.00	0.19
Avail Cap(c_a), veh/h	429	1072	1128	103	748	756	365	0	312	61	0	53
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	14.2	14.2	58.1	25.7	25.8	52.5	0.0	52.0	58.0	0.0	57.8
Incr Delay (d2), s/veh	0.5	1.1	1.0	3.9	2.6	2.6	1.5	0.0	1.2	2.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	12.3	12.9	0.7	10.2	10.3	3.6	0.0	2.5	0.4	0.0	0.2
LnGrp Delay(d),s/veh	44.1	15.3	15.2	61.9	28.4	28.4	54.1	0.0	53.2	60.2	0.0	58.9
LnGrp LOS	D	B	B	E	C	C	D		D	E		E
Approach Vol, veh/h	1439				811				188			
Approach Delay, s/veh	19.1				29.2				53.7			
Approach LOS	B				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	76.0		5.4	27.7	54.0		14.1				
Change Period (Y+Rc), s	4.0	5.3		4.0	5.3	* 5.3		4.0				
Max Green Setting (Gmax), s	6.0	70.7		3.0	28.0	* 49		23.0				
Max Q Clear Time (g_c+I1), s	3.3	26.8		2.8	13.7	21.9		8.9				
Green Ext Time (p_c), s	0.0	16.2		0.0	8.7	7.4		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	25.4											
HCM 2010 LOS	C											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
116: Parkview Dr & Cirby Way

Cumulative Plus Project
AM PEAK HOUR

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	21	1224	0	25	657	14	68	2	26	43	0	65						
Future Volume (veh/h)	21	1224	0	25	657	14	68	2	26	43	0	65						
Number	1	6	16	5	2	12	7	4	14	3	8	18						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863						
Adj Flow Rate, veh/h	22	1288	0	26	692	15	72	2	27	45	0	68						
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	75	2098	0	80	2109	46	271	3	41	407	0	212						
Arrive On Green	0.04	0.59	0.00	0.04	0.60	0.56	0.13	0.13	0.13	0.13	0.00	0.13						
Sat Flow, veh/h	1774	3632	0	1774	3542	77	827	23	310	1650	0	1583						
Grp Volume(v), veh/h	22	1288	0	26	346	361	101	0	0	45	0	68						
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1849	1160	0	0	1650	0	1583						
Q Serve(g_s), s	0.5	9.0	0.0	0.5	3.8	3.8	2.7	0.0	0.0	0.0	0.0	1.5						
Cycle Q Clear(g_c), s	0.5	9.0	0.0	0.5	3.8	3.8	3.5	0.0	0.0	0.9	0.0	1.5						
Prop In Lane	1.00		0.00	1.00		0.04	0.71		0.27	1.00		1.00						
Lane Grp Cap(c), veh/h	75	2098	0	80	1054	1101	315	0	0	407	0	212						
V/C Ratio(X)	0.29	0.61	0.00	0.33	0.33	0.33	0.32	0.00	0.00	0.11	0.00	0.32						
Avail Cap(c_a), veh/h	184	2318	0	184	1159	1211	927	0	0	1010	0	905						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00						
Uniform Delay (d), s/veh	17.9	5.0	0.0	17.8	3.9	3.9	16.4	0.0	0.0	14.8	0.0	15.1						
Incr Delay (d2), s/veh	0.8	0.5	0.0	0.9	0.2	0.2	0.4	0.0	0.0	0.1	0.0	0.6						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.2	4.4	0.0	0.3	1.9	2.0	1.0	0.0	0.0	0.4	0.0	0.7						
LnGrp Delay(d),s/veh	18.7	5.5	0.0	18.7	4.1	4.1	16.8	0.0	0.0	14.9	0.0	15.7						
LnGrp LOS	B	A		B	A	A	B			B		B						
Approach Vol, veh/h	1310			733				101		113								
Approach Delay, s/veh	5.7			4.6				16.8		15.4								
Approach LOS	A			A				B		B								
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2			4	5	6	8										
Phs Duration (G+Y+Rc), s	4.6	25.7			8.1	4.7	25.6	8.1										
Change Period (Y+Rc), s	4.0	5.3			4.0	4.0	5.3	4.0										
Max Green Setting (Gmax), s	3.0	22.7			21.0	3.0	22.7	21.0										
Max Q Clear Time (g_c+I1), s	2.5	5.8			5.5	2.5	11.0	3.5										
Green Ext Time (p_c), s	0.0	12.6			0.7	0.0	9.3	0.8										
Intersection Summary																		
HCM 2010 Ctrl Delay	6.3																	
HCM 2010 LOS	A																	

HCM 2010 Signalized Intersection Summary
117: Cirby Way & Rocky Ridge Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	650	537	600	360	146	201		
Future Volume (veh/h)	650	537	600	360	146	201		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	695	550	632	379	154	212		
Adj No. of Lanes	2	1	2	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1302	684	793	476	471	838		
Arrive On Green	0.37	0.37	0.37	0.35	0.14	0.16		
Sat Flow, veh/h	3548	1863	2223	1277	3442	1583		
Grp Volume(v), veh/h	695	550	525	486	154	212		
Grp Sat Flow(s),veh/h/ln	1774	1863	1770	1637	1721	1583		
Q Serve(g_s), s	9.1	15.7	15.6	15.8	2.4	4.3		
Cycle Q Clear(g_c), s	9.1	15.7	15.6	15.8	2.4	4.3		
Prop In Lane	1.00			0.78	1.00	1.00		
Lane Grp Cap(c), veh/h	1302	684	659	610	471	838		
V/C Ratio(X)	0.53	0.80	0.80	0.80	0.33	0.25		
Avail Cap(c_a), veh/h	1334	700	824	763	1341	1238		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.7	16.8	16.5	17.1	23.0	7.6		
Incr Delay (d2), s/veh	0.6	7.2	3.4	3.7	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.5	9.3	8.2	7.7	1.1	3.3		
LnGrp Delay(d),s/veh	15.3	24.0	20.0	20.8	23.2	7.6		
LnGrp LOS	B	C	B	C	C	A		
Approach Vol, veh/h		1245	1011		366			
Approach Delay, s/veh		19.1	20.4		14.2			
Approach LOS		B	C		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				24.5		11.1		23.5
Change Period (Y+Rc), s				5.3		4.0		4.0
Max Green Setting (Gmax), s				19.7		22.0		25.0
Max Q Clear Time (g_c+I1), s				17.7		6.3		17.8
Green Ext Time (p_c), s				1.5		0.8		1.7
Intersection Summary								
HCM 2010 Ctrl Delay			18.9					
HCM 2010 LOS			B					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
118: Champion Oaks Dr & Cirby Way

Cumulative Plus Project
AM PEAK HOUR

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	183	402	29	19	854	15	95	7	4	4	2	140								
Future Volume (veh/h)	183	402	29	19	854	15	95	7	4	4	2	140								
Number	5	2	12	1	6	16	3	8	18	7	4	14								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863								
Adj Flow Rate, veh/h	193	423	31	20	899	16	100	7	4	4	2	147								
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	285	1782	130	96	1517	27	374	24	9	320	132	294								
Arrive On Green	0.16	0.53	0.51	0.05	0.43	0.40	0.19	0.19	0.19	0.19	0.19	0.19								
Sat Flow, veh/h	1774	3345	244	1774	3558	63	1112	130	46	936	709	1583								
Grp Volume(v), veh/h	193	223	231	20	447	468	111	0	0	6	0	147								
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1852	1288	0	0	1645	0	1583								
Q Serve(g_s), s	4.2	2.8	2.8	0.4	7.9	7.9	2.9	0.0	0.0	0.0	0.0	3.4								
Cycle Q Clear(g_c), s	4.2	2.8	2.8	0.4	7.9	7.9	3.1	0.0	0.0	0.1	0.0	3.4								
Prop In Lane	1.00		0.13	1.00		0.03	0.90		0.04	0.67		1.00								
Lane Grp Cap(c), veh/h	285	943	969	96	755	790	406	0	0	452	0	294								
V/C Ratio(X)	0.68	0.24	0.24	0.21	0.59	0.59	0.27	0.00	0.00	0.01	0.00	0.50								
Avail Cap(c_a), veh/h	390	982	1010	304	896	937	823	0	0	952	0	813								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00								
Uniform Delay (d), s/veh	16.2	5.1	5.2	18.5	9.0	9.0	14.8	0.0	0.0	13.6	0.0	14.9								
Incr Delay (d2), s/veh	1.1	0.2	0.2	0.4	1.2	1.1	0.1	0.0	0.0	0.0	0.0	0.5								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	2.1	1.4	1.4	0.2	4.1	4.3	1.1	0.0	0.0	0.1	0.0	1.5								
LnGrp Delay(d),s/veh	17.2	5.3	5.4	18.9	10.2	10.1	14.9	0.0	0.0	13.6	0.0	15.4								
LnGrp LOS	B	A	A	B	B	B	B			B		B								
Approach Vol, veh/h	647				935				111		153									
Approach Delay, s/veh	8.9				10.3				14.9		15.4									
Approach LOS	A				B				B		B									
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	5.2	25.1	10.6		9.6	20.7	10.6													
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0													
Max Green Setting (Gmax), s	6.0	20.7	20.0		8.0	18.7	20.0													
Max Q Clear Time (g_c+I1), s	2.4	4.8	5.4		6.2	9.9	5.1													
Green Ext Time (p_c), s	0.0	8.4	0.6		0.1	5.5	0.6													
Intersection Summary																				
HCM 2010 Ctrl Delay	10.5																			
HCM 2010 LOS	B																			

HCM 2010 Signalized Intersection Summary
119: Cirby Way & Old Auburn Rd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	228	305	552	406	334	136		
Future Volume (veh/h)	228	305	552	406	334	136		
Number	3	18	6	16	5	2		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	240	321	581	427	352	143		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	449	397	732	633	415	1248		
Arrive On Green	0.25	0.25	0.39	0.38	0.23	0.67		
Sat Flow, veh/h	1774	1615	1863	1583	1774	1863		
Grp Volume(v), veh/h	240	321	581	427	352	143		
Grp Sat Flow(s),veh/h/ln	1774	1615	1863	1583	1774	1863		
Q Serve(g_s), s	8.1	12.9	19.1	15.3	13.1	1.9		
Cycle Q Clear(g_c), s	8.1	12.9	19.1	15.3	13.1	1.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	449	397	732	633	415	1248		
V/C Ratio(X)	0.53	0.81	0.79	0.67	0.85	0.11		
Avail Cap(c_a), veh/h	653	583	786	679	436	1324		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.3	24.6	18.6	17.1	25.3	4.1		
Incr Delay (d2), s/veh	0.4	3.2	5.9	3.0	13.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.0	6.1	10.9	7.4	7.9	1.0		
LnGrp Delay(d),s/veh	22.7	27.7	24.4	20.0	38.4	4.1		
LnGrp LOS	C	C	C	C	D	A		
Approach Vol, veh/h	561		1008			495		
Approach Delay, s/veh	25.6		22.6			28.5		
Approach LOS	C		C			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		49.2			19.2	30.0		20.0
Change Period (Y+Rc), s		5.3			4.0	5.3		4.0
Max Green Setting (Gmax), s		46.7			16.0	26.7		24.0
Max Q Clear Time (g_c+I1), s		3.9			15.1	21.1		14.9
Green Ext Time (p_c), s		11.8			0.1	3.6		1.1
Intersection Summary								
HCM 2010 Ctrl Delay			24.8					
HCM 2010 LOS			C					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
120: Westbrook Blvd & Holt Parkway

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	11	138	228	7	69	38	852	56	51	1166	11
Future Volume (veh/h)	37	11	138	228	7	69	38	852	56	51	1166	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	39	12	145	240	7	73	40	897	59	54	1227	12
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	233	198	289	476	405	58	1723	537	70	1759	548
Arrive On Green	0.03	0.12	0.12	0.16	0.26	0.26	0.03	0.34	0.34	0.04	0.35	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	39	12	145	240	7	73	40	897	59	54	1227	12
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.3	0.3	5.3	7.8	0.2	2.2	1.3	8.5	1.5	1.8	12.5	0.3
Cycle Q Clear(g_c), s	1.3	0.3	5.3	7.8	0.2	2.2	1.3	8.5	1.5	1.8	12.5	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	233	198	289	476	405	58	1723	537	70	1759	548
V/C Ratio(X)	0.69	0.05	0.73	0.83	0.01	0.18	0.69	0.52	0.11	0.77	0.70	0.02
Avail Cap(c_a), veh/h	118	995	846	326	1213	1031	118	1723	537	237	1953	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	23.1	25.2	24.3	16.7	17.4	28.7	15.9	13.6	28.5	16.9	12.9
Incr Delay (d2), s/veh	13.9	0.1	5.2	15.0	0.0	0.2	14.0	0.3	0.1	16.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.2	2.6	5.0	0.1	1.0	0.9	3.9	0.7	1.2	6.0	0.1
LnGrp Delay(d),s/veh	42.6	23.2	30.4	39.3	16.7	17.6	42.6	16.2	13.7	44.5	17.9	12.9
LnGrp LOS	D	C	C	D	B	B	D	B	B	D	B	B
Approach Vol, veh/h	196			320				996			1293	
Approach Delay, s/veh	32.4			33.9				17.1			18.9	
Approach LOS	C			C				B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	25.3	14.7	12.5	6.9	25.7	6.9	20.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	19.0	11.0	32.0	4.0	23.0	4.0	39.0				
Max Q Clear Time (g_c+I1), s	3.8	10.5	9.8	7.3	3.3	14.5	3.3	4.2				
Green Ext Time (p_c), s	0.0	7.2	0.1	0.8	0.0	6.3	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	20.9											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
121: Westbrook Blvd & Nobo Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	3	71	30	0	11	19	946	12	60	1499	8
Future Volume (veh/h)	21	3	71	30	0	11	19	946	12	60	1499	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	3	75	32	0	12	20	996	13	63	1578	8
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	186	127	86	201	139	70	2564	767	118	2703	810
Arrive On Green	0.04	0.10	0.08	0.05	0.00	0.09	0.04	0.50	0.48	0.07	0.53	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	22	3	75	32	0	12	20	996	13	63	1578	8
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.6	0.1	2.3	0.9	0.0	0.3	0.5	6.0	0.2	1.7	10.5	0.1
Cycle Q Clear(g_c), s	0.6	0.1	2.3	0.9	0.0	0.3	0.5	6.0	0.2	1.7	10.5	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	186	127	86	201	139	70	2564	767	118	2703	810
V/C Ratio(X)	0.30	0.02	0.59	0.37	0.00	0.09	0.29	0.39	0.02	0.53	0.58	0.01
Avail Cap(c_a), veh/h	178	1268	1046	284	1380	1141	284	2952	887	178	2703	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	20.3	22.2	23.0	0.0	20.9	23.3	7.6	6.7	22.6	7.9	6.0
Incr Delay (d2), s/veh	2.3	0.0	4.3	2.6	0.0	0.3	2.2	0.1	0.0	3.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.2	0.5	0.0	0.2	0.3	2.8	0.1	1.0	4.9	0.1
LnGrp Delay(d),s/veh	25.5	20.3	26.5	25.6	0.0	21.2	25.5	7.7	6.7	26.2	8.3	6.0
LnGrp LOS	C	C	C	C		C	C	A	A	C	A	A
Approach Vol, veh/h	100				44				1029			
Approach Delay, s/veh	26.1				24.4				8.1			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	28.2	6.4	8.0	6.0	29.6	6.1	8.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	27.0	7.0	32.0	7.0	24.0	4.0	35.0				
Max Q Clear Time (g_c+I1), s	3.7	8.0	2.9	4.3	2.5	12.5	2.6	2.3				
Green Ext Time (p_c), s	0.0	15.2	0.0	0.3	0.0	10.2	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	9.5											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
122: Westbrook Blvd & N Brookstone Drive

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	192	127	54	910	1079	91		
Future Volume (veh/h)	192	127	54	910	1079	91		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	202	134	57	958	1136	96		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	310	277	84	3158	2399	745		
Arrive On Green	0.17	0.17	0.05	0.62	0.47	0.47		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1580		
Grp Volume(v), veh/h	202	134	57	958	1136	96		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1580		
Q Serve(g_s), s	4.2	3.0	1.2	3.4	6.0	1.3		
Cycle Q Clear(g_c), s	4.2	3.0	1.2	3.4	6.0	1.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	310	277	84	3158	2399	745		
V/C Ratio(X)	0.65	0.48	0.68	0.30	0.47	0.13		
Avail Cap(c_a), veh/h	905	808	272	4152	2855	887		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.1	14.6	18.4	3.5	7.0	5.8		
Incr Delay (d2), s/veh	2.3	1.3	9.3	0.1	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.2	2.8	0.8	1.6	2.8	0.6		
LnGrp Delay(d),s/veh	17.4	15.9	27.7	3.5	7.2	5.9		
LnGrp LOS	B	B	C	A	A	A		
Approach Vol, veh/h	336			1015	1232			
Approach Delay, s/veh	16.8			4.9	7.1			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.3		10.9	5.8	22.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	6.0	22.0		
Max Q Clear Time (g_c+I1), s		5.4		6.2	3.2	8.0		
Green Ext Time (p_c), s		16.7		0.9	0.0	10.5		
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
123: Westbrook Blvd & S Brookstone Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	45	56	18	919	1194	12		
Future Volume (veh/h)	45	56	18	919	1194	12		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	47	59	19	967	1257	13		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	131	117	34	3542	2860	889		
Arrive On Green	0.07	0.07	0.02	0.70	0.56	0.56		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1581		
Grp Volume(v), veh/h	47	59	19	967	1257	13		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1581		
Q Serve(g_s), s	0.9	1.2	0.4	2.5	5.0	0.1		
Cycle Q Clear(g_c), s	0.9	1.2	0.4	2.5	5.0	0.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	131	117	34	3542	2860	889		
V/C Ratio(X)	0.36	0.51	0.56	0.27	0.44	0.01		
Avail Cap(c_a), veh/h	1019	909	204	4673	3505	1089		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.3	15.5	16.9	2.0	4.4	3.4		
Incr Delay (d2), s/veh	1.7	3.4	13.3	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	1.2	0.3	1.1	2.2	0.1		
LnGrp Delay(d),s/veh	17.0	18.9	30.2	2.0	4.5	3.4		
LnGrp LOS	B	B	C	A	A	A		
Approach Vol, veh/h	106			986	1270			
Approach Delay, s/veh	18.1			2.6	4.5			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.3		6.6	4.7	23.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	4.0	24.0		
Max Q Clear Time (g_c+l1), s		4.5		3.2	2.4	7.0		
Green Ext Time (p_c), s		17.8		0.2	0.0	12.6		
Intersection Summary								
HCM 2010 Ctrl Delay			4.3					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
124: Westbrook Blvd & Octave Avenue/Payson Avenue

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	0	109	32	0	8	29	1129	11	3	1173	14
Future Volume (veh/h)	69	0	109	32	0	8	29	1129	11	3	1173	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	73	0	115	34	0	8	31	1188	12	3	1235	15
Adj No. of Lanes	0	1	0	0	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	0	166	63	0	15	49	2492	774	6	2369	736
Arrive On Green	0.17	0.00	0.17	0.04	0.00	0.04	0.03	0.49	0.49	0.00	0.47	0.47
Sat Flow, veh/h	640	0	1008	1402	0	330	1774	5085	1580	1774	5085	1580
Grp Volume(v), veh/h	188	0	0	42	0	0	31	1188	12	3	1235	15
Grp Sat Flow(s),veh/h/ln	1648	0	0	1731	0	0	1774	1695	1580	1774	1695	1580
Q Serve(g_s), s	5.8	0.0	0.0	1.3	0.0	0.0	0.9	8.4	0.2	0.1	9.2	0.3
Cycle Q Clear(g_c), s	5.8	0.0	0.0	1.3	0.0	0.0	0.9	8.4	0.2	0.1	9.2	0.3
Prop In Lane	0.39		0.61	0.81		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	0	0	78	0	0	49	2492	774	6	2369	736
V/C Ratio(X)	0.69	0.00	0.00	0.54	0.00	0.00	0.63	0.48	0.02	0.52	0.52	0.02
Avail Cap(c_a), veh/h	1162	0	0	1220	0	0	132	2735	850	132	2735	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	0.0	25.2	0.0	0.0	25.9	9.1	7.1	26.8	10.2	7.8
Incr Delay (d2), s/veh	3.1	0.0	0.0	5.8	0.0	0.0	12.8	0.1	0.0	57.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	0.7	0.0	0.0	0.6	3.9	0.1	0.1	4.3	0.1
LnGrp Delay(d),s/veh	24.3	0.0	0.0	31.0	0.0	0.0	38.7	9.3	7.1	84.2	10.3	7.8
LnGrp LOS	C			C			D	A	A	F	B	A
Approach Vol, veh/h	188					42	1231			1253		
Approach Delay, s/veh	24.3					31.0	10.0			10.5		
Approach LOS	C					C	B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.2	30.4	12.9		5.5	29.1	6.4					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	4.0	29.0	38.0		4.0	29.0	38.0					
Max Q Clear Time (g_c+I1), s	2.1	10.4	7.8		2.9	11.2	3.3					
Green Ext Time (p_c), s	0.0	14.4	1.2		0.0	13.9	0.2					
Intersection Summary												
HCM 2010 Ctrl Delay			11.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

125: Wal*Mart & Lead Hill Blvd

Cumulative Plus Project
AM PEAK HOUR

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑		
Traffic Volume (veh/h)	686	76	37	461	30	15		
Future Volume (veh/h)	686	76	37	461	30	15		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	722	80	39	485	32	16		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1959	877	124	2480	212	189		
Arrive On Green	0.55	0.55	0.07	0.70	0.12	0.12		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	722	80	39	485	32	16		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	4.4	0.9	0.8	1.8	0.6	0.3		
Cycle Q Clear(g_c), s	4.4	0.9	0.8	1.8	0.6	0.3		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1959	877	124	2480	212	189		
V/C Ratio(X)	0.37	0.09	0.31	0.20	0.15	0.08		
Avail Cap(c_a), veh/h	2548	1140	274	3521	958	855		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	4.9	4.1	17.2	2.0	15.4	15.2		
Incr Delay (d2), s/veh	0.2	0.1	0.5	0.1	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.2	0.4	0.4	0.9	0.3	0.2		
LnGrp Delay(d),s/veh	5.1	4.2	17.7	2.1	15.5	15.3		
LnGrp LOS	A	A	B	A	B	B		
Approach Vol, veh/h	802			524	48			
Approach Delay, s/veh	5.0			3.2	15.4			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.7	23.8				29.6		9.3
Change Period (Y+Rc), s	4.0	5.7				* 5.7		5.7
Max Green Setting (Gmax), s	5.0	24.6				* 35		20.0
Max Q Clear Time (g_c+I1), s	2.8	6.4				3.8		2.6
Green Ext Time (p_c), s	0.0	11.7				16.6		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			4.7					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
126: Westbrook Blvd & Solaire Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	10	33	50	18	57	35	729	17	24	824	26
Future Volume (veh/h)	134	10	33	50	18	57	35	729	17	24	824	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	141	11	35	53	19	60	37	767	18	25	867	27
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	301	221	117	189	125	99	2088	614	82	2041	600
Arrive On Green	0.13	0.16	0.14	0.07	0.10	0.08	0.06	0.41	0.39	0.05	0.40	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	141	11	35	53	19	60	37	767	18	25	867	27
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	3.3	0.2	0.9	1.3	0.4	1.6	0.9	4.6	0.3	0.6	5.5	0.5
Cycle Q Clear(g_c), s	3.3	0.2	0.9	1.3	0.4	1.6	0.9	4.6	0.3	0.6	5.5	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	301	221	117	189	125	99	2088	614	82	2041	600
V/C Ratio(X)	0.63	0.04	0.16	0.45	0.10	0.48	0.38	0.37	0.03	0.30	0.42	0.05
Avail Cap(c_a), veh/h	640	1679	1391	280	1301	1070	240	2750	820	200	2635	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	15.7	16.8	20.0	18.1	19.6	20.2	9.1	8.4	20.5	9.6	8.7
Incr Delay (d2), s/veh	2.9	0.0	0.3	2.7	0.2	2.8	2.4	0.1	0.0	2.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.1	0.4	0.7	0.2	0.8	0.5	2.2	0.1	0.3	2.5	0.2
LnGrp Delay(d),s/veh	21.3	15.7	17.1	22.7	18.3	22.4	22.6	9.2	8.4	22.5	9.7	8.7
LnGrp LOS	C	B	B	C	B	C	C	A	A	C	A	A
Approach Vol, veh/h	187				132				822			
Approach Delay, s/veh	20.2				21.9				9.8			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	21.2	6.9	10.2	6.5	20.8	9.6	7.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	22.0	6.0	38.0	5.0	21.0	15.0	29.0				
Max Q Clear Time (g_c+I1), s	2.6	6.6	3.3	2.9	2.9	7.5	5.3	3.6				
Green Ext Time (p_c), s	0.0	9.1	0.0	0.5	0.0	8.4	0.2	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	11.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
127: Westbrook Blvd & Federico Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	120	120	206	29	0	38	707	94	2	888	17
Future Volume (veh/h)	75	120	120	206	29	0	38	707	94	2	888	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	79	126	126	217	31	0	40	744	99	2	935	18
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	291	247	313	477	405	97	2028	599	40	1865	548
Arrive On Green	0.08	0.16	0.16	0.18	0.26	0.00	0.05	0.40	0.38	0.02	0.37	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	79	126	126	217	31	0	40	744	99	2	935	18
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	2.1	3.0	3.6	5.6	0.6	0.0	1.1	5.0	2.0	0.1	7.0	0.4
Cycle Q Clear(g_c), s	2.1	3.0	3.6	5.6	0.6	0.0	1.1	5.0	2.0	0.1	7.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	291	247	313	477	405	97	2028	599	40	1865	548
V/C Ratio(X)	0.58	0.43	0.51	0.69	0.07	0.00	0.41	0.37	0.17	0.05	0.50	0.03
Avail Cap(c_a), veh/h	436	1297	1102	690	1564	1329	218	2028	599	218	1979	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	18.6	18.9	18.9	13.7	0.0	22.3	10.3	10.1	23.3	12.0	10.6
Incr Delay (d2), s/veh	3.9	1.0	1.6	2.8	0.1	0.0	2.8	0.3	0.4	0.5	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.6	1.7	3.0	0.3	0.0	0.6	2.4	0.9	0.0	3.3	0.2
LnGrp Delay(d),s/veh	25.7	19.7	20.5	21.6	13.8	0.0	25.1	10.6	10.4	23.9	12.6	10.6
LnGrp LOS	C	B	C	C	B		C	B	B	C	B	B
Approach Vol, veh/h	331				248			883			955	
Approach Delay, s/veh	21.4				20.6			11.3			12.6	
Approach LOS	C				C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.1	22.5	11.6	10.6	5.7	20.9	6.7	15.5				
Change Period (Y+Rc), s	4.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	17.0	18.0	33.0	5.0	17.0	11.0	40.0				
Max Q Clear Time (g_c+I1), s	2.1	7.0	7.6	5.6	3.1	9.0	4.1	2.6				
Green Ext Time (p_c), s	0.0	9.0	0.4	1.3	0.0	6.9	0.1	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay	14.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
128: Westbrook Blvd & Sierra Glen Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	67	0	844	32	36	1177		
Future Volume (veh/h)	67	0	844	32	36	1177		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	71	0	888	34	38	1239		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	100	89	2500	778	62	3385		
Arrive On Green	0.06	0.00	0.49	0.49	0.04	0.67		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	71	0	888	34	38	1239		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	1.4	0.0	3.9	0.4	0.8	3.9		
Cycle Q Clear(g_c), s	1.4	0.0	3.9	0.4	0.8	3.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	100	89	2500	778	62	3385		
V/C Ratio(X)	0.71	0.00	0.36	0.04	0.61	0.37		
Avail Cap(c_a), veh/h	1429	1276	2826	880	542	5086		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.7	0.0	5.6	4.8	17.1	2.7		
Incr Delay (d2), s/veh	8.8	0.0	0.1	0.0	9.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.7	0.2	0.5	1.7		
LnGrp Delay(d),s/veh	25.5	0.0	5.7	4.8	26.4	2.7		
LnGrp LOS	C		A	A	C	A		
Approach Vol, veh/h	71		922			1277		
Approach Delay, s/veh	25.5		5.7			3.4		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.3	22.7				29.0		7.0
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	20.0				36.0		29.0
Max Q Clear Time (g_c+I1), s	2.8	5.9				5.9		3.4
Green Ext Time (p_c), s	0.0	10.6				18.1		0.2
Intersection Summary								
HCM 2010 Ctrl Delay			5.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
129: Westbrook Blvd & Sierra Village Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	6	56	146	17	18	15	1107	58	5	1269	145
Future Volume (veh/h)	50	6	56	146	17	18	15	1107	58	5	1269	145
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	53	6	59	154	18	19	16	1165	61	5	1336	153
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	93	79	204	227	193	29	1881	586	10	1826	569
Arrive On Green	0.04	0.05	0.05	0.12	0.12	0.12	0.02	0.37	0.37	0.01	0.36	0.36
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	53	6	59	154	18	19	16	1165	61	5	1336	153
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.3	0.1	1.6	3.7	0.4	0.5	0.4	8.1	1.1	0.1	9.9	3.0
Cycle Q Clear(g_c), s	1.3	0.1	1.6	3.7	0.4	0.5	0.4	8.1	1.1	0.1	9.9	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	77	93	79	204	227	193	29	1881	586	10	1826	569
V/C Ratio(X)	0.69	0.06	0.74	0.75	0.08	0.10	0.56	0.62	0.10	0.52	0.73	0.27
Avail Cap(c_a), veh/h	448	1370	1164	652	1584	1346	448	1881	586	448	1870	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	19.7	20.4	18.7	16.9	17.0	21.3	11.2	9.0	21.6	12.1	9.9
Incr Delay (d2), s/veh	10.3	0.3	12.9	5.6	0.1	0.2	15.9	0.6	0.1	37.9	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.1	1.0	2.1	0.2	0.2	0.3	3.9	0.5	0.2	4.8	1.3
LnGrp Delay(d),s/veh	30.8	20.0	33.3	24.2	17.1	17.2	37.1	11.8	9.1	59.5	13.6	10.1
LnGrp LOS	C	B	C	C	B	B	D	B	A	E	B	B
Approach Vol, veh/h	118				191				1242			
Approach Delay, s/veh	31.5				22.8				12.0			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	21.1	10.0	7.2	5.7	20.6	6.9	10.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	16.0	32.0	11.0	16.0	11.0	37.0				
Max Q Clear Time (g_c+I1), s	2.1	10.1	5.7	3.6	2.4	11.9	3.3	2.5				
Green Ext Time (p_c), s	0.0	5.3	0.3	0.3	0.0	3.7	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	14.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
130: Fiddymment Road & Angus Road

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	130	64	89	46	151	44	786	130	272	564	24
Future Volume (veh/h)	45	130	64	89	46	151	44	786	130	272	564	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	137	67	94	48	159	46	827	137	286	594	25
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	258	218	120	300	254	141	1223	546	333	1606	717
Arrive On Green	0.04	0.14	0.14	0.07	0.16	0.16	0.08	0.35	0.35	0.19	0.45	0.45
Sat Flow, veh/h	1774	1863	1576	1774	1863	1577	1774	3539	1579	1774	3539	1580
Grp Volume(v), veh/h	47	137	67	94	48	159	46	827	137	286	594	25
Grp Sat Flow(s),veh/h/ln	1774	1863	1576	1774	1863	1577	1774	1770	1579	1774	1770	1580
Q Serve(g_s), s	1.6	4.2	2.3	3.2	1.4	5.8	1.5	12.3	3.8	9.6	6.8	0.5
Cycle Q Clear(g_c), s	1.6	4.2	2.3	3.2	1.4	5.8	1.5	12.3	3.8	9.6	6.8	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	258	218	120	300	254	141	1223	546	333	1606	717
V/C Ratio(X)	0.59	0.53	0.31	0.78	0.16	0.63	0.33	0.68	0.25	0.86	0.37	0.03
Avail Cap(c_a), veh/h	144	788	667	144	788	667	260	1498	668	346	1670	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	24.6	23.8	28.2	22.2	24.0	26.7	17.2	14.4	24.2	11.0	9.3
Incr Delay (d2), s/veh	6.8	1.7	0.8	20.3	0.2	2.5	1.3	0.9	0.2	18.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.3	1.1	2.2	0.7	2.7	0.8	6.1	1.7	6.4	3.3	0.2
LnGrp Delay(d),s/veh	35.6	26.3	24.6	48.5	22.4	26.6	28.0	18.1	14.6	42.6	11.2	9.3
LnGrp LOS	D	C	C	D	C	C	C	B	B	D	B	A
Approach Vol, veh/h	251			301				1010			905	
Approach Delay, s/veh	27.6			32.7				18.1			21.0	
Approach LOS	C			C				B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	25.2	8.2	12.5	8.9	31.9	6.8	13.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	26.0	5.0	26.0	9.0	29.0	5.0	26.0				
Max Q Clear Time (g_c+I1), s	11.6	14.3	5.2	6.2	3.5	8.8	3.6	7.8				
Green Ext Time (p_c), s	0.0	7.0	0.0	1.6	0.0	9.8	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	21.9											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
131: Fiddymment Rd & Hayden Pkwy (North)

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	18	115	84	4	0	94	736	72	0	668	8
Future Volume (veh/h)	170	18	115	84	4	0	94	736	72	0	668	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	179	19	121	88	4	0	99	775	76	0	703	8
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	558	496	265	230	195	145	1682	731	111	1244	557
Arrive On Green	0.15	0.33	0.35	0.14	0.14	0.00	0.09	0.53	0.51	0.00	0.39	0.39
Sat Flow, veh/h	1597	1676	1425	1119	1676	1425	1597	3185	1425	581	3185	1425
Grp Volume(v), veh/h	179	19	121	88	4	0	99	775	76	0	703	8
Grp Sat Flow(s),veh/h/ln	1597	1676	1425	1119	1676	1425	1597	1593	1425	581	1593	1425
Q Serve(g_s), s	6.9	0.5	3.9	4.8	0.1	0.0	3.9	9.8	1.8	0.0	11.2	0.2
Cycle Q Clear(g_c), s	6.9	0.5	3.9	4.8	0.1	0.0	3.9	9.8	1.8	0.0	11.2	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	558	496	265	230	195	145	1682	731	111	1244	557
V/C Ratio(X)	0.75	0.03	0.24	0.33	0.02	0.00	0.68	0.46	0.10	0.00	0.57	0.01
Avail Cap(c_a), veh/h	321	700	617	302	285	242	173	1921	837	145	1428	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	14.6	15.0	26.1	24.1	0.0	28.5	9.5	8.1	0.0	15.4	12.1
Incr Delay (d2), s/veh	4.1	0.0	0.1	0.3	0.0	0.0	5.4	0.4	0.1	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.2	1.5	1.5	0.1	0.0	1.9	4.4	0.7	0.0	5.0	0.1
LnGrp Delay(d),s/veh	30.4	14.6	15.1	26.4	24.2	0.0	33.9	9.9	8.2	0.0	16.2	12.1
LnGrp LOS	C	B	B	C	C		C	A	A		B	B
Approach Vol, veh/h	319				92				950			
Approach Delay, s/veh	23.7				26.3				12.3			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4	5	6	7	8				
Phs Duration (G+Y+Rc), s	39.2			25.5	8.9	30.3	12.7	12.9				
Change Period (Y+Rc), s	6.0			4.0	4.0	6.0	4.0	4.0				
Max Green Setting (Gmax), s	38.0			27.0	6.0	28.0	12.0	11.0				
Max Q Clear Time (g_c+I1), s	11.8			5.9	5.9	13.2	8.9	6.8				
Green Ext Time (p_c), s	17.0			0.4	0.0	11.1	0.1	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	16.0											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
132: Fiddymment Ranch EW Rd & Fiddymment Rd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	80	387	72	781	882	12		
Future Volume (veh/h)	80	387	72	781	882	12		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	84	407	76	822	928	13		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	511	456	98	1920	1425	638		
Arrive On Green	0.29	0.29	0.06	0.54	0.40	0.40		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	84	407	76	822	928	13		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	2.1	14.5	2.5	8.2	12.5	0.3		
Cycle Q Clear(g_c), s	2.1	14.5	2.5	8.2	12.5	0.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	511	456	98	1920	1425	638		
V/C Ratio(X)	0.16	0.89	0.78	0.43	0.65	0.02		
Avail Cap(c_a), veh/h	571	509	330	2756	1797	804		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.7	20.1	27.6	8.1	14.3	10.6		
Incr Delay (d2), s/veh	0.1	16.6	12.4	0.2	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.0	13.5	1.6	3.9	6.2	0.1		
LnGrp Delay(d),s/veh	15.9	36.7	40.0	8.2	14.8	10.6		
LnGrp LOS	B	D	D	A	B	B		
Approach Vol, veh/h	491			898	941			
Approach Delay, s/veh	33.2			10.9	14.8			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		37.0		22.0	8.3	28.8		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		46.0		19.0	11.0	30.0		
Max Q Clear Time (g_c+I1), s		10.2		16.5	4.5	14.5		
Green Ext Time (p_c), s		14.3		0.5	0.1	9.3		
Intersection Summary								
HCM 2010 Ctrl Delay			17.2					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
133: Fiddymment Rd & Hayden Pkwy (South)

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	209	124	70	1093	1265	156		
Future Volume (veh/h)	209	124	70	1093	1265	156		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	220	131	74	1151	1332	164		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	318	284	138	2561	2103	941		
Arrive On Green	0.18	0.18	0.08	0.72	0.59	0.59		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	220	131	74	1151	1332	164		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	6.7	4.3	2.3	7.7	14.1	2.7		
Cycle Q Clear(g_c), s	6.7	4.3	2.3	7.7	14.1	2.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	318	284	138	2561	2103	941		
V/C Ratio(X)	0.69	0.46	0.54	0.45	0.63	0.17		
Avail Cap(c_a), veh/h	646	577	400	2971	2103	941		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.2	21.2	25.6	3.3	7.6	5.3		
Incr Delay (d2), s/veh	1.0	0.4	1.2	0.2	0.8	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.3	3.8	1.2	3.8	7.1	1.2		
LnGrp Delay(d),s/veh	23.2	21.6	26.8	3.5	8.5	5.5		
LnGrp LOS	C	C	C	A	A	A		
Approach Vol, veh/h	351			1225	1496			
Approach Delay, s/veh	22.6			4.9	8.1			
Approach LOS	C			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		44.3		13.3	7.5	36.9		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		45.0		20.0	12.0	29.0		
Max Q Clear Time (g_c+I1), s		9.7		8.7	4.3	16.1		
Green Ext Time (p_c), s		28.7		0.7	0.1	12.2		
Intersection Summary								
HCM 2010 Ctrl Delay			8.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
134: Fiddymment Rd & Village Green Dr/Del Webb Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	87	31	49	25	38	12	899	54	87	1194	86
Future Volume (veh/h)	216	87	31	49	25	38	12	899	54	87	1194	86
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	227	92	33	52	26	40	13	946	57	92	1257	91
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	322	338	274	211	222	188	69	1512	676	185	1744	780
Arrive On Green	0.18	0.18	0.17	0.12	0.12	0.12	0.04	0.43	0.43	0.10	0.49	0.49
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	227	92	33	52	26	40	13	946	57	92	1257	91
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	9.0	3.2	1.3	2.0	0.9	1.7	0.5	15.7	1.6	3.7	20.9	2.3
Cycle Q Clear(g_c), s	9.0	3.2	1.3	2.0	0.9	1.7	0.5	15.7	1.6	3.7	20.9	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	338	274	211	222	188	69	1512	676	185	1744	780
V/C Ratio(X)	0.71	0.27	0.12	0.25	0.12	0.21	0.19	0.63	0.08	0.50	0.72	0.12
Avail Cap(c_a), veh/h	512	537	444	291	306	260	308	1677	750	308	1744	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	26.4	26.1	29.9	29.5	29.8	34.9	16.8	12.8	31.7	14.9	10.2
Incr Delay (d2), s/veh	3.0	0.4	0.2	0.2	0.1	0.2	0.5	1.0	0.1	0.8	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	1.7	0.6	1.0	0.5	0.8	0.3	7.8	0.7	1.8	10.6	1.0
LnGrp Delay(d),s/veh	31.8	26.9	26.3	30.2	29.6	30.0	35.4	17.8	12.9	32.5	16.7	10.3
LnGrp LOS	C	C	C	C	C	C	D	B	B	C	B	B
Approach Vol, veh/h	352				118				1016			
Approach Delay, s/veh	30.0				30.0				17.7			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	34.6		16.9	5.9	39.5		12.6				
Change Period (Y+Rc), s	4.0	6.0		4.9	4.0	6.0		5.3				
Max Green Setting (Gmax), s	12.0	32.1		20.0	12.0	32.1		10.7				
Max Q Clear Time (g_c+I1), s	5.7	17.7		11.0	2.5	22.9		4.0				
Green Ext Time (p_c), s	0.1	10.9		1.0	0.0	8.5		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	19.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
135: Fiddymment Rd & Westlake Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	75	66	1315	40	64	1509		
Future Volume (veh/h)	75	66	1315	40	64	1509		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	79	69	1384	42	67	1588		
Adj No. of Lanes	0	0	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	0	2	2	2	2		
Cap, veh/h	105	92	2554	795	89	3369		
Arrive On Green	0.12	0.12	0.50	0.50	0.05	0.66		
Sat Flow, veh/h	891	778	5253	1583	1774	5253		
Grp Volume(v), veh/h	149	0	1384	42	67	1588		
Grp Sat Flow(s),veh/h/ln	1681	0	1695	1583	1774	1695		
Q Serve(g_s), s	3.9	0.0	8.5	0.6	1.7	7.0		
Cycle Q Clear(g_c), s	3.9	0.0	8.5	0.6	1.7	7.0		
Prop In Lane	0.53	0.46		1.00	1.00			
Lane Grp Cap(c), veh/h	198	0	2554	795	89	3369		
V/C Ratio(X)	0.75	0.00	0.54	0.05	0.75	0.47		
Avail Cap(c_a), veh/h	1072	0	2554	795	429	4026		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.4	0.0	7.7	5.8	21.3	3.8		
Incr Delay (d2), s/veh	5.7	0.0	0.2	0.0	11.9	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.1	0.0	3.9	0.3	1.1	3.1		
LnGrp Delay(d),s/veh	25.1	0.0	8.0	5.8	33.3	3.9		
LnGrp LOS	C		A	A	C	A		
Approach Vol, veh/h	149		1426			1655		
Approach Delay, s/veh	25.1		7.9			5.1		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.3	27.8				35.1		10.3
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	20.0				36.0		29.0
Max Q Clear Time (g_c+I1), s	3.7	10.5				9.0		5.9
Green Ext Time (p_c), s	0.1	9.0				21.1		0.4
Intersection Summary								
HCM 2010 Ctrl Delay			7.2					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
136: Fiddymment Road & San Fernando Drive

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	1	90	49	2	36	11	1243	16	10	1489	86
Future Volume (veh/h)	77	1	90	49	2	36	11	1243	16	10	1489	86
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	81	1	95	52	2	38	12	1308	17	11	1567	91
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	2	188	73	8	157	22	2566	797	20	2561	796
Arrive On Green	0.06	0.12	0.12	0.04	0.10	0.10	0.01	0.50	0.50	0.01	0.50	0.50
Sat Flow, veh/h	1774	16	1562	1774	79	1507	1774	5085	1580	1774	5085	1580
Grp Volume(v), veh/h	81	0	96	52	0	40	12	1308	17	11	1567	91
Grp Sat Flow(s),veh/h/ln	1774	0	1578	1774	0	1587	1774	1695	1580	1774	1695	1580
Q Serve(g_s), s	2.2	0.0	2.8	1.4	0.0	1.1	0.3	8.5	0.3	0.3	11.0	1.5
Cycle Q Clear(g_c), s	2.2	0.0	2.8	1.4	0.0	1.1	0.3	8.5	0.3	0.3	11.0	1.5
Prop In Lane	1.00		0.99	1.00		0.95	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	0	190	73	0	166	22	2566	797	20	2561	796
V/C Ratio(X)	0.79	0.00	0.50	0.71	0.00	0.24	0.55	0.51	0.02	0.55	0.61	0.11
Avail Cap(c_a), veh/h	143	0	985	143	0	991	143	2566	797	143	2561	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	20.4	23.5	0.0	20.4	24.4	8.2	6.2	24.4	8.8	6.5
Incr Delay (d2), s/veh	18.3	0.0	2.1	12.0	0.0	0.7	19.9	0.7	0.0	21.1	1.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.3	0.9	0.0	0.5	0.3	4.0	0.1	0.3	5.3	0.7
LnGrp Delay(d),s/veh	41.4	0.0	22.5	35.5	0.0	21.2	44.3	8.9	6.2	45.5	9.9	6.8
LnGrp LOS	D		C	D		C	D	A	A	D	A	A
Approach Vol, veh/h	177				92		1337				1669	
Approach Delay, s/veh	31.2				29.3		9.2				10.0	
Approach LOS	C				C		A				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.6	29.0	6.0	10.0	4.6	29.0	6.9	9.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	25.0	4.0	31.0	4.0	25.0	4.0	31.0				
Max Q Clear Time (g_c+I1), s	2.3	10.5	3.4	4.8	2.3	13.0	4.2	3.1				
Green Ext Time (p_c), s	0.0	12.9	0.0	0.7	0.0	10.9	0.0	0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			11.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
137: Woodcreek Oaks Blvd & Northpark Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	13	339	171	15	0	70	0	45	0	0	0
Future Volume (veh/h)	0	13	339	171	15	0	70	0	45	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	14	357	180	16	0	74	0	47	0	0	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	542	460	265	24	257	104	408	182	5	10	5
Arrive On Green	0.00	0.29	0.29	0.16	0.16	0.00	0.06	0.00	0.12	0.00	0.00	0.00
Sat Flow, veh/h	0	1863	1583	1636	145	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	14	357	196	0	0	74	0	47	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1781	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.2	7.2	3.6	0.0	0.0	1.4	0.0	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.2	7.2	3.6	0.0	0.0	1.4	0.0	0.9	0.0	0.0	0.0
Prop In Lane	0.00		1.00	0.92		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	542	460	289	0	257	104	408	182	5	10	5
V/C Ratio(X)	0.00	0.03	0.78	0.68	0.00	0.00	0.71	0.00	0.26	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1394	1185	1333	0	1185	562	1732	775	562	1732	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.8	11.3	13.7	0.0	0.0	16.1	0.0	14.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.8	2.8	0.0	0.0	8.6	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	3.4	2.0	0.0	0.0	0.9	0.0	0.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.8	14.1	16.5	0.0	0.0	24.6	0.0	14.8	0.0	0.0	0.0
LnGrp LOS		A	B	B			C		B			
Approach Vol, veh/h		371			196			121			0	
Approach Delay, s/veh		13.9			16.5			20.8			0.0	
Approach LOS		B			B			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	9.0		15.1	7.0	2.0		10.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	17.0		26.0	11.0	17.0		26.0				
Max Q Clear Time (g_c+I1), s	0.0	2.9		9.2	3.4	0.0		5.6				
Green Ext Time (p_c), s	0.0	0.1		1.2	0.1	0.0		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			15.9									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
138: Woodcreek Oaks Blvd & Parkside Way

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	240	93	61	11	6	59	98	20	249	255	5
Future Volume (veh/h)	11	240	93	61	11	6	59	98	20	249	255	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	253	98	64	12	6	62	103	21	262	268	5
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	372	332	91	17	95	84	396	177	333	893	399
Arrive On Green	0.21	0.21	0.21	0.06	0.06	0.06	0.05	0.11	0.11	0.19	0.25	0.25
Sat Flow, veh/h	84	1774	1583	1505	282	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	265	0	98	76	0	6	62	103	21	262	268	5
Grp Sat Flow(s),veh/h/ln	1859	0	1583	1787	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	6.1	0.0	2.4	1.9	0.0	0.2	1.6	1.2	0.6	6.5	2.8	0.1
Cycle Q Clear(g_c), s	6.1	0.0	2.4	1.9	0.0	0.2	1.6	1.2	0.6	6.5	2.8	0.1
Prop In Lane	0.05		1.00	0.84		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	0	332	108	0	95	84	396	177	333	893	399
V/C Ratio(X)	0.68	0.00	0.30	0.71	0.00	0.06	0.74	0.26	0.12	0.79	0.30	0.01
Avail Cap(c_a), veh/h	1040	0	886	1000	0	886	344	1219	545	649	1829	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	15.5	21.4	0.0	20.6	21.8	18.9	18.6	18.0	14.1	13.0
Incr Delay (d2), s/veh	2.1	0.0	0.5	8.2	0.0	0.3	11.8	0.3	0.3	4.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	1.1	1.2	0.0	0.1	1.1	0.6	0.3	3.6	1.4	0.0
LnGrp Delay(d),s/veh	19.0	0.0	16.0	29.6	0.0	20.9	33.6	19.2	18.9	22.1	14.2	13.0
LnGrp LOS	B		B	C		C	C	B	B	C	B	B
Approach Vol, veh/h	363				82		186		535			
Approach Delay, s/veh	18.2				29.0		24.0		18.1			
Approach LOS	B				C		C		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	13.7	10.2	14.7		7.2	16.7	7.8					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	17.0	16.0	26.0		9.0	24.0	26.0					
Max Q Clear Time (g_c+I1), s	8.5	3.2	8.1		3.6	4.8	3.9					
Green Ext Time (p_c), s	0.5	2.0	1.7		0.0	2.3	0.3					
Intersection Summary												
HCM 2010 Ctrl Delay			19.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
139: Woodcreek Oaks Blvd & Painted Desert Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	103	346	0	2	40	127	667	0	46	561	102
Future Volume (veh/h)	129	103	346	0	2	40	127	667	0	46	561	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	136	108	364	0	2	42	134	702	0	48	591	107
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	132	445	4	318	270	171	1270	568	70	1068	478
Arrive On Green	0.10	0.35	0.35	0.00	0.17	0.17	0.10	0.36	0.00	0.04	0.30	0.30
Sat Flow, veh/h	1774	375	1264	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	136	0	472	0	2	42	134	702	0	48	591	107
Grp Sat Flow(s),veh/h/ln	1774	0	1640	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.6	0.0	12.6	0.0	0.0	1.1	3.5	7.6	0.0	1.3	6.7	2.4
Cycle Q Clear(g_c), s	3.6	0.0	12.6	0.0	0.0	1.1	3.5	7.6	0.0	1.3	6.7	2.4
Prop In Lane	1.00		0.77	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	0	577	4	318	270	171	1270	568	70	1068	478
V/C Ratio(X)	0.78	0.00	0.82	0.00	0.01	0.16	0.78	0.55	0.00	0.69	0.55	0.22
Avail Cap(c_a), veh/h	222	0	854	148	893	759	222	1549	693	148	1401	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	14.2	0.0	16.5	17.0	21.2	12.3	0.0	22.8	14.0	12.5
Incr Delay (d2), s/veh	13.1	0.0	4.0	0.0	0.0	0.3	12.8	0.4	0.0	11.3	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	6.3	0.0	0.0	0.5	2.3	3.8	0.0	0.8	3.4	1.1
LnGrp Delay(d),s/veh	34.2	0.0	18.2	0.0	16.5	17.2	34.0	12.7	0.0	34.1	14.5	12.8
LnGrp LOS	C		B		B	B	C	B		C	B	B
Approach Vol, veh/h	608			44			836			746		
Approach Delay, s/veh	21.7			17.2			16.1			15.5		
Approach LOS	C			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	21.2	0.0	20.9	8.6	18.5	8.7	12.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	21.0	4.0	25.0	6.0	19.0	6.0	23.0				
Max Q Clear Time (g_c+I1), s	3.3	9.6	0.0	14.6	5.5	8.7	5.6	3.1				
Green Ext Time (p_c), s	0.0	6.2	0.0	2.3	0.0	5.8	0.0	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
140: Woodcreek Oaks Blvd & Crimson Drige Dr/Crimson Ridge Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	7	27	41	2	15	11	561	256	242	317	10
Future Volume (veh/h)	57	7	27	41	2	15	11	561	256	242	317	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	60	7	28	43	2	16	12	591	269	255	334	11
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	13	113	101	106	89	22	1125	502	299	1677	749
Arrive On Green	0.07	0.07	0.07	0.06	0.06	0.06	0.01	0.32	0.32	0.17	0.47	0.47
Sat Flow, veh/h	1597	186	1573	1774	1863	1573	1774	3539	1578	1774	3539	1580
Grp Volume(v), veh/h	67	0	28	43	2	16	12	591	269	255	334	11
Grp Sat Flow(s),veh/h/ln	1783	0	1573	1774	1863	1573	1774	1770	1578	1774	1770	1580
Q Serve(g_s), s	1.5	0.0	0.7	1.0	0.0	0.4	0.3	5.7	5.8	5.8	2.3	0.2
Cycle Q Clear(g_c), s	1.5	0.0	0.7	1.0	0.0	0.4	0.3	5.7	5.8	5.8	2.3	0.2
Prop In Lane	0.90		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	0	113	101	106	89	22	1125	502	299	1677	749
V/C Ratio(X)	0.52	0.00	0.25	0.43	0.02	0.18	0.54	0.53	0.54	0.85	0.20	0.01
Avail Cap(c_a), veh/h	1329	0	1173	1323	1389	1173	171	1702	759	299	1958	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	0.0	18.2	19.0	18.5	18.7	20.4	11.6	11.7	16.8	6.4	5.8
Incr Delay (d2), s/veh	3.2	0.0	1.1	2.8	0.1	0.9	19.2	0.4	0.9	20.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	0.6	0.0	0.2	0.3	2.8	2.7	4.5	1.1	0.1
LnGrp Delay(d),s/veh	21.8	0.0	19.3	21.8	18.6	19.6	39.6	12.0	12.5	37.4	6.4	5.8
LnGrp LOS	C		B	C	B	B	D	B	B	D	A	A
Approach Vol, veh/h	95				61				872		600	
Approach Delay, s/veh	21.1				21.1				12.5		19.6	
Approach LOS	C				C				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	11.0	17.2			7.0	4.5	23.7	6.4				
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	7.0	20.0			31.0	4.0	23.0	31.0				
Max Q Clear Time (g_c+I1), s	7.8	7.8			3.5	2.3	4.3	3.0				
Green Ext Time (p_c), s	0.0	5.2			0.4	0.0	6.5	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			16.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
141: Woodcreek Oaks Blvd & Horncastle Ave

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	3	38	25	9	32	38	709	3	18	359	168
Future Volume (veh/h)	124	3	38	25	9	32	38	709	3	18	359	168
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	131	3	40	26	9	34	40	746	3	19	378	177
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	320	7	292	175	61	208	111	1437	6	68	879	406
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.06	0.40	0.40	0.04	0.37	0.37
Sat Flow, veh/h	1736	40	1583	1334	462	1583	1774	3615	15	1774	2354	1087
Grp Volume(v), veh/h	134	0	40	35	0	34	40	365	384	19	283	272
Grp Sat Flow(s),veh/h/ln	1776	0	1583	1796	0	1583	1774	1770	1860	1774	1770	1671
Q Serve(g_s), s	3.3	0.0	1.1	0.9	0.0	1.0	1.1	7.8	7.8	0.5	5.9	6.1
Cycle Q Clear(g_c), s	3.3	0.0	1.1	0.9	0.0	1.0	1.1	7.8	7.8	0.5	5.9	6.1
Prop In Lane	0.98		1.00	0.74		1.00	1.00		0.01	1.00		0.65
Lane Grp Cap(c), veh/h	327	0	292	235	0	208	111	704	740	68	661	624
V/C Ratio(X)	0.41	0.00	0.14	0.15	0.00	0.16	0.36	0.52	0.52	0.28	0.43	0.44
Avail Cap(c_a), veh/h	747	0	666	468	0	412	462	908	954	462	908	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	17.0	19.2	0.0	19.3	22.4	11.4	11.4	23.3	11.7	11.7
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.1	0.0	0.1	0.7	0.8	0.8	0.8	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.5	0.4	0.0	0.4	0.5	3.9	4.1	0.3	3.0	2.9
LnGrp Delay(d),s/veh	18.3	0.0	17.1	19.3	0.0	19.4	23.2	12.2	12.2	24.1	12.2	12.3
LnGrp LOS	B		B	B		B	C	B	B	C	B	B
Approach Vol, veh/h	174					69		789		574		
Approach Delay, s/veh	18.0					19.4		12.7		12.7		
Approach LOS	B					B		B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.9	23.2	12.2		6.1	22.0	9.5					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	12.0	23.3	20.0		12.0	23.3	12.0					
Max Q Clear Time (g_c+I1), s	2.5	9.8	5.3		3.1	8.1	3.0					
Green Ext Time (p_c), s	0.0	7.6	0.5		0.0	8.3	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			13.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
142: Woodcreek Oaks Blvd & Camino Capistrano/Zinnia Way

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	24	41	29	5	21	20	689	17	4	415	30
Future Volume (veh/h)	90	24	41	29	5	21	20	689	17	4	415	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	95	25	43	31	5	22	21	725	18	4	437	32
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	54	229	91	15	65	45	1381	34	12	1246	91
Arrive On Green	0.14	0.14	0.14	0.10	0.10	0.10	0.03	0.39	0.39	0.01	0.37	0.37
Sat Flow, veh/h	1419	373	1583	910	147	646	1774	3529	88	1774	3345	244
Grp Volume(v), veh/h	120	0	43	58	0	0	21	363	380	4	231	238
Grp Sat Flow(s),veh/h/ln	1792	0	1583	1703	0	0	1774	1770	1847	1774	1770	1820
Q Serve(g_s), s	3.0	0.0	1.2	1.6	0.0	0.0	0.6	7.8	7.8	0.1	4.6	4.7
Cycle Q Clear(g_c), s	3.0	0.0	1.2	1.6	0.0	0.0	0.6	7.8	7.8	0.1	4.6	4.7
Prop In Lane	0.79		1.00	0.53		0.38	1.00		0.05	1.00		0.13
Lane Grp Cap(c), veh/h	259	0	229	170	0	0	45	693	723	12	659	678
V/C Ratio(X)	0.46	0.00	0.19	0.34	0.00	0.00	0.47	0.52	0.53	0.35	0.35	0.35
Avail Cap(c_a), veh/h	905	0	800	310	0	0	179	1155	1206	215	1191	1225
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	18.6	20.7	0.0	0.0	23.8	11.5	11.5	24.5	11.2	11.2
Incr Delay (d2), s/veh	0.5	0.0	0.1	0.4	0.0	0.0	2.8	0.7	0.7	6.5	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.5	0.8	0.0	0.0	0.3	3.9	4.0	0.1	2.3	2.4
LnGrp Delay(d),s/veh	19.9	0.0	18.8	21.2	0.0	0.0	26.6	12.3	12.2	31.0	11.6	11.6
LnGrp LOS	B		B	C			C	B	B	C	B	B
Approach Vol, veh/h	163				58				764		473	
Approach Delay, s/veh	19.6				21.2				12.7		11.7	
Approach LOS	B				C				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	4.3	25.1			11.1	5.3	24.1	8.9				
Change Period (Y+Rc), s	4.0	5.7			4.0	4.0	5.7	4.0				
Max Green Setting (Gmax), s	6.0	32.3			25.0	5.0	33.3	9.0				
Max Q Clear Time (g_c+I1), s	2.1	9.8			5.0	2.6	6.7	3.6				
Green Ext Time (p_c), s	0.0	9.6			0.4	0.0	10.3	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			13.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
143: Woodcreek Oaks Blvd & Canevari Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	6	296	13	11	13	97	674	12	2	518	13
Future Volume (veh/h)	41	6	296	13	11	13	97	674	12	2	518	13
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	6	312	14	12	14	102	709	13	2	545	14
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	333	46	336	93	80	151	192	1559	29	39	1241	32
Arrive On Green	0.21	0.21	0.21	0.10	0.10	0.10	0.11	0.44	0.41	0.02	0.35	0.32
Sat Flow, veh/h	1566	219	1583	977	837	1583	1774	3556	65	1774	3526	91
Grp Volume(v), veh/h	49	0	312	26	0	14	102	353	369	2	273	286
Grp Sat Flow(s),veh/h/ln	1784	0	1583	1814	0	1583	1774	1770	1851	1774	1770	1847
Q Serve(g_s), s	1.2	0.0	10.0	0.7	0.0	0.4	2.8	7.2	7.3	0.1	6.1	6.2
Cycle Q Clear(g_c), s	1.2	0.0	10.0	0.7	0.0	0.4	2.8	7.2	7.3	0.1	6.1	6.2
Prop In Lane	0.88		1.00	0.54		1.00	1.00		0.04	1.00		0.05
Lane Grp Cap(c), veh/h	379	0	336	173	0	151	192	776	812	39	623	650
V/C Ratio(X)	0.13	0.00	0.93	0.15	0.00	0.09	0.53	0.45	0.45	0.05	0.44	0.44
Avail Cap(c_a), veh/h	379	0	336	736	0	642	240	1025	1073	206	991	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	0.0	20.0	21.5	0.0	21.4	21.8	10.2	10.2	24.8	12.9	12.9
Incr Delay (d2), s/veh	0.2	0.0	31.1	0.4	0.0	0.3	0.8	0.6	0.5	0.2	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	7.2	0.4	0.0	0.2	1.4	3.6	3.8	0.0	3.1	3.2
LnGrp Delay(d),s/veh	16.7	0.0	51.1	21.9	0.0	21.6	22.7	10.8	10.8	25.0	13.5	13.5
LnGrp LOS	B		D	C		C	C	B	B	C	B	B
Approach Vol, veh/h	361				40		824				561	
Approach Delay, s/veh	46.4				21.8		12.2				13.6	
Approach LOS	D				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	8.6	21.2	7.9		4.1	25.7	14.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	6.0	26.3	20.0		5.0	27.3	10.0					
Max Q Clear Time (g_c+I1), s	4.8	8.2	2.7		2.1	9.3	12.0					
Green Ext Time (p_c), s	0.0	7.4	0.1		0.0	7.4	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			19.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
144: Woodcreek Oaks Blvd & McAnally Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	24	35	100	51	90	35	1207	20	411	515	43
Future Volume (veh/h)	58	24	35	100	51	90	35	1207	20	411	515	43
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	61	25	37	80	90	95	37	1271	21	433	542	45
Adj No. of Lanes	0	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	62	179	143	150	128	96	1474	24	481	2085	173
Arrive On Green	0.12	0.12	0.12	0.08	0.08	0.08	0.05	0.41	0.40	0.27	0.63	0.62
Sat Flow, veh/h	1276	523	1503	1774	1863	1583	1774	3561	59	1774	3305	274
Grp Volume(v), veh/h	86	0	37	80	90	95	37	631	661	433	290	297
Grp Sat Flow(s),veh/h/ln	1799	0	1503	1774	1863	1583	1774	1770	1851	1774	1770	1809
Q Serve(g_s), s	5.0	0.0	2.5	4.9	5.3	6.6	2.3	36.7	36.7	26.5	8.1	8.2
Cycle Q Clear(g_c), s	5.0	0.0	2.5	4.9	5.3	6.6	2.3	36.7	36.7	26.5	8.1	8.2
Prop In Lane	0.71		1.00	1.00		1.00	1.00		0.03	1.00		0.15
Lane Grp Cap(c), veh/h	214	0	179	143	150	128	96	732	766	481	1116	1141
V/C Ratio(X)	0.40	0.00	0.21	0.56	0.60	0.74	0.38	0.86	0.86	0.90	0.26	0.26
Avail Cap(c_a), veh/h	367	0	307	143	150	128	126	767	802	488	1128	1153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	0.0	44.9	49.9	50.1	50.7	51.5	30.1	30.2	39.6	9.2	9.2
Incr Delay (d2), s/veh	0.9	0.0	0.4	4.1	5.7	19.9	0.9	9.9	9.6	18.8	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	1.1	2.6	2.9	3.6	1.1	19.9	20.8	15.5	4.0	4.1
LnGrp Delay(d),s/veh	46.9	0.0	45.3	54.0	55.7	70.6	52.5	40.0	39.7	58.4	9.4	9.4
LnGrp LOS	D		D	D	E	E	D	D	D	E	A	A
Approach Vol, veh/h	123			265			1329			1020		
Approach Delay, s/veh	46.4			60.5			40.2			30.2		
Approach LOS	D			E			D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	32.6	50.4	13.4		8.1	74.9	16.4					
Change Period (Y+Rc), s	4.0	5.7	5.3		4.0	5.7	4.0					
Max Green Setting (Gmax), s	29.0	46.9	8.1		6.0	69.9	22.0					
Max Q Clear Time (g_c+I1), s	28.5	38.7	8.6		4.3	10.2	7.0					
Green Ext Time (p_c), s	0.1	6.0	0.0		0.0	17.7	0.3					
Intersection Summary												
HCM 2010 Ctrl Delay	38.7											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
145: Woodcreek Oaks Blvd & Trailee Ln

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	0	108	42	0	72	81	1157	35	44	538	22
Future Volume (veh/h)	58	0	108	42	0	72	81	1157	35	44	538	22
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	61	0	114	44	0	76	85	1218	37	46	566	23
Adj No. of Lanes	1	0	1	1	0	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	182	0	0	181	0	0	147	2094	64	119	1986	857
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.02	0.08	0.60	0.60	0.07	0.56	0.54
Sat Flow, veh/h	1774	61		1774	44		1774	3507	106	1774	3539	1583
Grp Volume(v), veh/h	61	21.3		44	21.0		85	614	641	46	566	23
Grp Sat Flow(s),veh/h/ln	1774	C		1774	C		1774	1770	1844	1774	1770	1583
Q Serve(g_s), s	1.6			1.1			2.3	10.8	10.8	1.2	4.2	0.3
Cycle Q Clear(g_c), s	1.6			1.1			2.3	10.8	10.8	1.2	4.2	0.3
Prop In Lane	1.00			1.00			1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	182			181			147	1056	1101	119	1986	857
V/C Ratio(X)	0.33			0.24			0.58	0.58	0.58	0.39	0.28	0.03
Avail Cap(c_a), veh/h	424			460			424	1315	1371	460	2631	1145
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9			20.7			22.2	6.2	6.2	22.4	5.8	5.4
Incr Delay (d2), s/veh	0.4			0.3			1.3	0.9	0.8	0.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8			0.6			1.2	5.4	5.6	0.6	2.1	0.2
LnGrp Delay(d),s/veh	21.3			21.0			23.5	7.1	7.1	23.2	5.9	5.4
LnGrp LOS	C			C			C	A	A	C	A	A
Approach Vol, veh/h									1340			
Approach Delay, s/veh									8.1			
Approach LOS									A	A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	5			6	7				
Phs Duration (G+Y+Rc), s	6.4	34.7	9.2	8.2			32.9	8.1				
Change Period (Y+Rc), s	4.0	5.7	4.0	4.0			5.7	4.0				
Max Green Setting (Gmax), s	12.0	36.3	12.0	12.0			36.3	12.0				
Max Q Clear Time (g_c+I1), s	3.2	12.8	3.6	4.3			6.2	3.1				
Green Ext Time (p_c), s	0.0	16.2	0.0	0.0			19.2	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	8.5											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

146: Foothills Blvd & Albertsons Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	4	51	63	4	15	294	906	138	97	890	522
Future Volume (veh/h)	86	4	51	63	4	15	294	906	138	97	890	522
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	94	0	0	66	4	0	309	954	0	102	937	549
Adj No. of Lanes	2	0	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	420	0	187	190	199	169	371	2642	771	172	2072	645
Arrive On Green	0.12	0.00	0.00	0.11	0.11	0.00	0.21	0.52	0.00	0.10	0.41	0.41
Sat Flow, veh/h	3548	0	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	94	0	0	66	4	0	309	954	0	102	937	549
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.8	0.0	0.0	2.5	0.1	0.0	12.2	8.1	0.0	4.0	9.8	23.1
Cycle Q Clear(g_c), s	1.8	0.0	0.0	2.5	0.1	0.0	12.2	8.1	0.0	4.0	9.8	23.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	420	0	187	190	199	169	371	2642	771	172	2072	645
V/C Ratio(X)	0.22	0.00	0.00	0.35	0.02	0.00	0.83	0.36	0.00	0.59	0.45	0.85
Avail Cap(c_a), veh/h	1016	0	453	242	254	216	411	2642	771	242	2108	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	0.0	0.0	30.4	29.3	0.0	27.8	10.4	0.0	31.7	15.8	19.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.0	0.0	11.4	0.1	0.0	3.2	0.3	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.3	0.1	0.0	7.2	3.8	0.0	2.1	4.7	12.0
LnGrp Delay(d),s/veh	29.5	0.0	0.0	31.5	29.4	0.0	39.2	10.6	0.0	34.9	16.1	30.6
LnGrp LOS	C			C	C		D	B		C	B	C
Approach Vol, veh/h	94			70			1263			1588		
Approach Delay, s/veh	29.5			31.3			17.6			22.3		
Approach LOS	C			C			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	40.7		11.7	18.3	32.5		10.8				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	9.0	34.0		20.0	16.0	27.0		9.0				
Max Q Clear Time (g_c+I1), s	6.0	10.1		3.8	14.2	25.1		4.5				
Green Ext Time (p_c), s	0.1	19.9		0.2	0.1	1.4		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	20.8											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
147: Foothills Blvd & HP-South Dwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	18	2	34	1	1618	124	183	605	201
Future Volume (veh/h)	3	2	1	18	2	34	1	1618	124	183	605	201
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	2	3	1	19	2	36	1	1703	131	193	637	212
Adj No. of Lanes	1	1	1	1	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	11	24	63	3	53	18	3086	1332	247	3167	1035
Arrive On Green	0.02	0.01	0.02	0.04	0.04	0.04	0.01	0.87	0.84	0.80	0.83	0.83
Sat Flow, veh/h	1774	1863	1583	1774	84	1512	1774	3539	1583	252	3795	1240
Grp Volume(v), veh/h	2	3	1	19	0	38	1	1703	131	193	568	281
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1596	1774	1770	1583	252	1695	1644
Q Serve(g_s), s	0.1	0.2	0.1	1.2	0.0	2.6	0.1	13.1	1.6	80.0	3.7	3.8
Cycle Q Clear(g_c), s	0.1	0.2	0.1	1.2	0.0	2.6	0.1	13.1	1.6	89.0	3.7	3.8
Prop In Lane	1.00		1.00	1.00		0.95	1.00		1.00	1.00		0.75
Lane Grp Cap(c), veh/h	27	11	24	63	0	56	18	3086	1332	247	2830	1372
V/C Ratio(X)	0.07	0.26	0.04	0.30	0.00	0.68	0.06	0.55	0.10	0.78	0.20	0.20
Avail Cap(c_a), veh/h	272	269	243	256	0	231	208	3466	1502	247	2830	1372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	54.8	53.7	52.1	0.0	52.8	54.3	1.8	1.5	17.6	1.8	1.8
Incr Delay (d2), s/veh	1.2	11.9	0.7	2.7	0.0	13.2	1.3	0.2	0.0	14.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.0	0.6	0.0	1.4	0.0	6.2	0.7	6.9	1.7	1.7
LnGrp Delay(d),s/veh	54.9	66.7	54.4	54.8	0.0	65.9	55.5	1.9	1.6	32.4	1.9	1.9
LnGrp LOS	D	E	D	D		E	E	A	A	C	A	A
Approach Vol, veh/h	6			57			1835			1042		
Approach Delay, s/veh	60.7			62.2			1.9			7.5		
Approach LOS	E			E			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	97.1			4.7	4.1	93.0	8.9					
Change Period (Y+Rc), s	4.0			4.0	4.0	4.0	5.0					
Max Green Setting (Gmax), s	105.0			16.0	12.0	89.0	16.0					
Max Q Clear Time (g_c+I1), s	15.1			2.2	2.1	91.0	4.6					
Green Ext Time (p_c), s	63.4			0.0	0.0	0.0	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay				5.2								
HCM 2010 LOS				A								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

148: Foothills Blvd & NEC

Cumulative Plus Project
AM PEAK HOUR

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	39	2	21	0	6	59	408	1640	0	292	321	45						
Future Volume (veh/h)	39	2	21	0	6	59	408	1640	0	292	321	45						
Number	7	4	14	3	8	18	5	2	12	1	6	16						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	1863	1863	1900	1863	1863	1863						
Adj Flow Rate, veh/h	41	0	23	0	6	62	429	1726	0	307	338	47						
Adj No. of Lanes	1	0	2	0	1	0	1	2	0	1	2	1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2						
Cap, veh/h	134	0	249	0	11	115	481	1953	0	344	1680	752						
Arrive On Green	0.08	0.00	0.08	0.00	0.08	0.08	0.27	0.55	0.00	0.19	0.47	0.47						
Sat Flow, veh/h	1328	0	3167	0	142	1463	1774	3632	0	1774	3539	1583						
Grp Volume(v), veh/h	41	0	23	0	0	68	429	1726	0	307	338	47						
Grp Sat Flow(s),veh/h/ln	1328	0	1583	0	0	1605	1774	1770	0	1774	1770	1583						
Q Serve(g_s), s	2.6	0.0	0.6	0.0	0.0	3.5	19.8	36.4	0.0	14.4	4.7	1.4						
Cycle Q Clear(g_c), s	6.1	0.0	0.6	0.0	0.0	3.5	19.8	36.4	0.0	14.4	4.7	1.4						
Prop In Lane	1.00		1.00	0.00		0.91	1.00		0.00	1.00		1.00						
Lane Grp Cap(c), veh/h	134	0	249	0	0	126	481	1953	0	344	1680	752						
V/C Ratio(X)	0.31	0.00	0.09	0.00	0.00	0.54	0.89	0.88	0.00	0.89	0.20	0.06						
Avail Cap(c_a), veh/h	435	0	965	0	0	489	831	2115	0	374	1680	752						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00						
Uniform Delay (d), s/veh	40.8	0.0	36.5	0.0	0.0	37.8	29.9	16.7	0.0	33.5	13.0	12.1						
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	3.6	6.6	4.6	0.0	21.6	0.1	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.0	0.0	1.7	10.5	18.7	0.0	9.1	2.3	0.6						
LnGrp Delay(d),s/veh	42.0	0.0	36.7	0.0	0.0	41.4	36.5	21.3	0.0	55.1	13.1	12.2						
LnGrp LOS	D		D			D	D	C		E	B	B						
Approach Vol, veh/h	64			68			2155			692								
Approach Delay, s/veh	40.1			41.4			24.3			31.6								
Approach LOS	D			D			C			C								
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2			4	5	6	8										
Phs Duration (G+Y+Rc), s	21.6	52.1			11.7	28.1	45.5	11.7										
Change Period (Y+Rc), s	5.0	5.0			5.0	5.0	5.0	5.0										
Max Green Setting (Gmax), s	18.0	51.0			26.0	40.0	29.0	26.0										
Max Q Clear Time (g_c+I1), s	16.4	38.4			8.1	21.8	6.7	5.5										
Green Ext Time (p_c), s	0.2	8.7			0.5	1.3	16.6	0.5										
Intersection Summary																		
HCM 2010 Ctrl Delay	26.8																	
HCM 2010 LOS	C																	
Notes																		
User approved volume balancing among the lanes for turning movement.																		

HCM 2010 Signalized Intersection Summary
149: Foothills Blvd & Mistywood Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	9	18	41	1	2	8	1742	329	33	356	6
Future Volume (veh/h)	50	9	18	41	1	2	8	1742	329	33	356	6
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	53	9	19	44	0	2	8	1834	346	35	375	6
Adj No. of Lanes	0	1	1	2	0	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	37	224	346	0	154	52	2237	416	82	2763	44
Arrive On Green	0.14	0.14	0.14	0.10	0.00	0.10	0.03	0.52	0.52	0.05	0.54	0.54
Sat Flow, veh/h	1527	259	1583	3548	0	1583	1774	4310	801	1774	5156	82
Grp Volume(v), veh/h	62	0	19	44	0	2	8	1437	743	35	246	135
Grp Sat Flow(s),veh/h/ln	1786	0	1583	1774	0	1583	1774	1695	1721	1774	1695	1848
Q Serve(g_s), s	1.8	0.0	0.6	0.7	0.0	0.1	0.3	21.0	21.6	1.1	2.2	2.2
Cycle Q Clear(g_c), s	1.8	0.0	0.6	0.7	0.0	0.1	0.3	21.0	21.6	1.1	2.2	2.2
Prop In Lane	0.85		1.00	1.00		1.00	1.00		0.47	1.00		0.04
Lane Grp Cap(c), veh/h	252	0	224	346	0	154	52	1759	893	82	1817	991
V/C Ratio(X)	0.25	0.00	0.08	0.13	0.00	0.01	0.15	0.82	0.83	0.42	0.14	0.14
Avail Cap(c_a), veh/h	332	0	294	1258	0	562	210	1798	913	150	1817	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	22.1	24.4	0.0	24.1	28.0	11.9	12.1	27.5	6.9	6.9
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	0.0	0.5	3.2	6.8	1.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	0.3	0.0	0.0	0.1	10.3	11.8	0.6	1.0	1.1
LnGrp Delay(d),s/veh	22.8	0.0	22.2	24.5	0.0	24.2	28.5	15.0	18.8	28.7	6.9	7.0
LnGrp LOS	C		C	C		C	C	B	B	C	A	A
Approach Vol, veh/h		81			46			2188			416	
Approach Delay, s/veh		22.7			24.5			16.4			8.8	
Approach LOS		C			C			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	33.3		8.8	4.7	34.3		11.4				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	4.0	28.0		20.0	6.0	26.0		10.0				
Max Q Clear Time (g_c+I1), s	3.1	23.6		2.7	2.3	4.2		3.8				
Green Ext Time (p_c), s	0.0	3.7		0.0	0.0	17.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			15.5									
HCM 2010 LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
150: Foothills Blvd & McAnally Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	10	308	73	19	48	148	1663	17	8	883	22
Future Volume (veh/h)	140	10	308	73	19	48	148	1663	17	8	883	22
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	147	11	324	77	20	51	156	1751	18	8	929	23
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	459	34	434	143	37	160	222	2223	23	39	1660	41
Arrive On Green	0.28	0.28	0.28	0.10	0.10	0.10	0.13	0.43	0.40	0.02	0.33	0.29
Sat Flow, veh/h	1656	124	1566	1422	369	1583	1774	5189	53	1774	5102	126
Grp Volume(v), veh/h	158	0	324	97	0	51	156	1144	625	8	617	335
Grp Sat Flow(s),veh/h/ln	1780	0	1566	1792	0	1583	1774	1695	1853	1774	1695	1838
Q Serve(g_s), s	4.4	0.0	11.8	3.2	0.0	1.9	5.3	18.2	18.2	0.3	9.4	9.4
Cycle Q Clear(g_c), s	4.4	0.0	11.8	3.2	0.0	1.9	5.3	18.2	18.2	0.3	9.4	9.4
Prop In Lane	0.93		1.00	0.79		1.00	1.00		0.03	1.00		0.07
Lane Grp Cap(c), veh/h	494	0	434	181	0	160	222	1452	794	39	1103	598
V/C Ratio(X)	0.32	0.00	0.75	0.54	0.00	0.32	0.70	0.79	0.79	0.20	0.56	0.56
Avail Cap(c_a), veh/h	635	0	559	181	0	160	284	1452	794	114	1123	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	20.6	26.7	0.0	26.1	26.2	15.4	15.4	30.0	17.4	17.5
Incr Delay (d2), s/veh	0.1	0.0	2.7	1.7	0.0	0.4	3.2	3.5	6.2	0.9	1.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.4	1.7	0.0	0.8	2.8	9.1	10.6	0.1	4.5	5.1
LnGrp Delay(d),s/veh	18.0	0.0	23.3	28.4	0.0	26.5	29.4	18.9	21.6	30.9	18.5	19.5
LnGrp LOS	B		C	C		C	C	B	C	C	B	B
Approach Vol, veh/h	482				148				1925		960	
Approach Delay, s/veh	21.6				27.8				20.6		18.9	
Approach LOS	C				C				C		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	10.8	23.3			20.3	4.4	29.8	8.0				
Change Period (Y+Rc), s	4.0	6.0			5.3	4.0	6.0	4.0				
Max Green Setting (Gmax), s	9.0	17.7			20.0	3.0	23.7	4.0				
Max Q Clear Time (g_c+I1), s	7.3	11.4			13.8	2.3	20.2	5.2				
Green Ext Time (p_c), s	0.0	5.9			0.8	0.0	3.4	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			20.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

151: Foothills Blvd & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	439	827	90	172	210	126	89	1349	253	170	881	141
Future Volume (veh/h)	439	827	90	172	210	126	89	1349	253	170	881	141
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	462	871	95	181	221	133	94	1420	0	179	927	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	550	1018	451	222	1287	396	221	2108	630	258	2163	647
Arrive On Green	0.16	0.29	0.29	0.13	0.25	0.25	0.06	0.41	0.00	0.08	0.43	0.00
Sat Flow, veh/h	3442	3539	1567	1774	5085	1565	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	462	871	95	181	221	133	94	1420	0	179	927	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1567	1774	1695	1565	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	15.6	27.9	5.5	11.9	4.1	8.3	3.2	27.2	0.0	6.1	15.4	0.0
Cycle Q Clear(g_c), s	15.6	27.9	5.5	11.9	4.1	8.3	3.2	27.2	0.0	6.1	15.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	550	1018	451	222	1287	396	221	2108	630	258	2163	647
V/C Ratio(X)	0.84	0.86	0.21	0.81	0.17	0.34	0.43	0.67	0.00	0.69	0.43	0.00
Avail Cap(c_a), veh/h	660	1041	461	296	1369	421	229	2108	630	258	2163	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.9	40.4	32.4	51.1	35.0	36.6	54.0	28.5	0.0	54.2	24.2	0.0
Incr Delay (d2), s/veh	7.0	7.2	0.3	9.2	0.1	0.6	0.5	1.0	0.0	6.6	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	14.7	2.4	6.4	1.9	3.7	1.5	13.0	0.0	3.1	7.3	0.0
LnGrp Delay(d),s/veh	55.9	47.6	32.7	60.3	35.1	37.2	54.5	29.6	0.0	60.7	24.8	0.0
LnGrp LOS	E	D	C	E	D	D	D	C		E	C	
Approach Vol, veh/h	1428				535				1514			
Approach Delay, s/veh	49.3				44.1				31.1			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	54.1	22.2	33.1	12.0	52.7	18.0	37.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	* 6	4.0	5.7				
Max Green Setting (Gmax), s	7.0	42.0	22.0	29.3	8.0	* 41	19.0	32.3				
Max Q Clear Time (g_c+I1), s	5.2	17.4	17.6	10.3	8.1	29.2	13.9	29.9				
Green Ext Time (p_c), s	0.0	19.2	0.5	7.5	0.0	10.5	0.1	1.6				

Intersection Summary

HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
152: Foothills Blvd & Pilgrim Dr/Rand Way

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	0	39	44	2	21	23	1652	20	10	1171	9
Future Volume (veh/h)	49	0	39	44	2	21	23	1652	20	10	1171	9
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	52	0	41	46	2	22	24	1739	21	11	1233	9
Adj No. of Lanes	0	1	0	0	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	4	56	122	11	38	893	2936	1291	28	1710	12
Arrive On Green	0.08	0.00	0.08	0.08	0.08	0.08	0.50	0.83	0.82	0.02	0.33	0.31
Sat Flow, veh/h	846	54	709	914	137	482	1774	3539	1583	1774	5208	38
Grp Volume(v), veh/h	93	0	0	70	0	0	24	1739	21	11	803	439
Grp Sat Flow(s),veh/h/ln	1609	0	0	1533	0	0	1774	1770	1583	1774	1695	1856
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	0.0	0.8	19.8	0.3	0.7	25.0	25.0
Cycle Q Clear(g_c), s	6.5	0.0	0.0	5.1	0.0	0.0	0.8	19.8	0.3	0.7	25.0	25.0
Prop In Lane	0.56		0.44	0.66		0.31	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	175	0	0	171	0	0	893	2936	1291	28	1113	609
V/C Ratio(X)	0.53	0.00	0.00	0.41	0.00	0.00	0.03	0.59	0.02	0.39	0.72	0.72
Avail Cap(c_a), veh/h	327	0	0	321	0	0	893	2936	1291	59	2373	1299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	53.2	0.0	0.0	15.0	3.4	2.1	58.5	35.5	35.5
Incr Delay (d2), s/veh	2.5	0.0	0.0	1.6	0.0	0.0	0.0	0.9	0.0	3.2	1.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	2.3	0.0	0.0	0.4	9.8	0.1	0.4	11.9	13.2
LnGrp Delay(d),s/veh	56.3	0.0	0.0	54.7	0.0	0.0	15.0	4.3	2.1	61.6	36.7	37.7
LnGrp LOS	E			D			B	A	A	E	D	D
Approach Vol, veh/h	93		70				1784				1253	
Approach Delay, s/veh	56.3		54.7				4.4				37.2	
Approach LOS	E		D				A				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.9	102.6	12.5		65.1	42.4	12.5					
Change Period (Y+Rc), s	4.0	5.7	4.0		5.7	* 5.7	4.0					
Max Green Setting (Gmax), s	3.0	82.3	21.0		4.0	* 81	21.0					
Max Q Clear Time (g_c+I1), s	2.7	21.8	8.5		2.8	27.0	7.1					
Green Ext Time (p_c), s	0.0	21.5	0.4		1.0	9.7	0.5					

Intersection Summary

HCM 2010 Ctrl Delay	19.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
153: Foothills Blvd & Vineyard Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	330	233	109	47	51	122	1593	48	139	2009	39
Future Volume (veh/h)	109	330	233	109	47	51	122	1593	48	139	2009	39
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	115	347	245	115	49	0	128	1677	0	146	2115	41
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	690	306	195	583	234	209	2812	849	228	2867	56
Arrive On Green	0.09	0.20	0.20	0.06	0.16	0.00	0.06	0.55	0.00	0.07	0.56	0.54
Sat Flow, veh/h	1774	3539	1571	3442	3539	1583	3442	5085	1583	3442	5136	99
Grp Volume(v), veh/h	115	347	245	115	49	0	128	1677	0	146	1395	761
Grp Sat Flow(s),veh/h/ln	1774	1770	1571	1721	1770	1583	1721	1695	1583	1721	1695	1845
Q Serve(g_s), s	7.6	10.5	17.8	3.9	1.4	0.0	4.4	26.4	0.0	5.0	37.1	37.2
Cycle Q Clear(g_c), s	7.6	10.5	17.8	3.9	1.4	0.0	4.4	26.4	0.0	5.0	37.1	37.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	155	690	306	195	583	234	209	2812	849	228	1893	1030
V/C Ratio(X)	0.74	0.50	0.80	0.59	0.08	0.00	0.61	0.60	0.00	0.64	0.74	0.74
Avail Cap(c_a), veh/h	222	717	318	229	583	234	258	2839	858	258	1893	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	43.1	46.1	55.2	42.5	0.0	55.0	17.9	0.0	54.6	19.9	20.0
Incr Delay (d2), s/veh	3.7	0.8	13.7	1.1	0.1	0.0	1.1	0.4	0.0	2.8	2.6	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	5.2	8.9	1.9	0.7	0.0	2.1	12.4	0.0	2.5	17.9	20.2
LnGrp Delay(d),s/veh	57.2	43.9	59.7	56.3	42.5	0.0	56.0	18.3	0.0	57.4	22.5	24.7
LnGrp LOS	E	D	E	E	D		E	B		E	C	C
Approach Vol, veh/h	707				164				1805			
Approach Delay, s/veh	51.5				52.2				20.9			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	22.5	10.9	69.4	9.8	26.1	10.3	70.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	4.0	5.7	4.0	6.0				
Max Green Setting (Gmax), s	14.0	14.3	8.0	64.0	7.0	21.3	8.0	64.0				
Max Q Clear Time (g_c+I1), s	9.6	3.4	7.0	28.4	5.9	19.8	6.4	39.2				
Green Ext Time (p_c), s	0.1	3.0	0.0	31.4	0.0	0.6	0.0	22.6				
Intersection Summary												
HCM 2010 Ctrl Delay	28.4											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
154: Foothills Blvd & Denio Loop

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	161	334	1511	72	218	2180		
Future Volume (veh/h)	161	334	1511	72	218	2180		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	169	0	1591	76	229	2295		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	251	224	2511	782	300	3620		
Arrive On Green	0.14	0.00	0.49	0.49	0.17	0.71		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	169	0	1591	76	229	2295		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	5.5	0.0	14.1	1.6	7.6	14.5		
Cycle Q Clear(g_c), s	5.5	0.0	14.1	1.6	7.6	14.5		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	251	224	2511	782	300	3620		
V/C Ratio(X)	0.67	0.00	0.63	0.10	0.76	0.63		
Avail Cap(c_a), veh/h	781	697	2511	782	318	3814		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.0	0.0	11.4	8.3	24.3	4.6		
Incr Delay (d2), s/veh	3.1	0.0	0.6	0.1	8.6	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.9	0.0	6.6	0.7	4.4	6.7		
LnGrp Delay(d),s/veh	28.1	0.0	12.0	8.3	32.9	5.0		
LnGrp LOS	C		B	A	C	A		
Approach Vol, veh/h	169		1667			2524		
Approach Delay, s/veh	28.1		11.8			7.5		
Approach LOS	C		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.4	34.3				47.7		13.7
Change Period (Y+Rc), s	4.0	6.0				* 6		6.0
Max Green Setting (Gmax), s	10.0	28.0				* 44		26.0
Max Q Clear Time (g_c+I1), s	9.6	16.1				16.5		7.5
Green Ext Time (p_c), s	0.0	11.4				25.1		0.6
Intersection Summary								
HCM 2010 Ctrl Delay			10.0					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

155: Washington Blvd & Freedom Way

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	17	15	98	2	179	41	1172	360	623	1321	0
Future Volume (veh/h)	0	17	15	98	2	179	41	1172	360	623	1321	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	18	16	103	0	189	43	1234	379	656	1391	0
Adj No. of Lanes	2	1	1	2	0	2	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	88	47	40	311	0	278	54	1920	859	574	2402	1074
Arrive On Green	0.00	0.03	0.03	0.09	0.00	0.09	0.03	0.54	0.54	0.17	0.68	0.00
Sat Flow, veh/h	3442	1863	1583	3548	0	3167	1774	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	0	18	16	103	0	189	43	1234	379	656	1391	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	0	1583	1774	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.0	0.9	0.9	2.5	0.0	5.2	2.2	22.0	13.0	15.0	18.7	0.0
Cycle Q Clear(g_c), s	0.0	0.9	0.9	2.5	0.0	5.2	2.2	22.0	13.0	15.0	18.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	88	47	40	311	0	278	54	1920	859	574	2402	1074
V/C Ratio(X)	0.00	0.38	0.40	0.33	0.00	0.68	0.79	0.64	0.44	1.14	0.58	0.00
Avail Cap(c_a), veh/h	612	331	281	631	0	563	79	1920	859	574	2402	1074
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	43.2	43.2	38.6	0.0	39.8	43.3	14.5	12.4	37.5	7.7	0.0
Incr Delay (d2), s/veh	0.0	4.9	6.2	0.6	0.0	2.9	28.3	1.7	1.6	83.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.5	0.5	1.2	0.0	2.4	1.5	11.1	6.0	13.8	9.4	0.0
LnGrp Delay(d),s/veh	0.0	48.1	49.4	39.2	0.0	42.8	71.7	16.1	14.0	121.4	8.7	0.0
LnGrp LOS		D	D	D		D	E	B	B	F	A	
Approach Vol, veh/h		34			292			1656			2047	
Approach Delay, s/veh		48.7			41.5			17.1			44.8	
Approach LOS		D			D			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	52.8		6.3	6.7	65.1		11.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	15.0	27.0		16.0	4.0	38.0		16.0				
Max Q Clear Time (g_c+I1), s	17.0	24.0		2.9	4.2	20.7		7.2				
Green Ext Time (p_c), s	0.0	2.8		0.0	0.0	15.1		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay				33.2								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
156: Washington Blvd & Hallissy Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	112	14	753	171	44	607		
Future Volume (veh/h)	112	14	753	171	44	607		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	118	15	793	180	46	639		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	367	328	1780	796	149	2334		
Arrive On Green	0.21	0.21	0.50	0.50	0.08	0.66		
Sat Flow, veh/h	1774	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	118	15	793	180	46	639		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	1774	1770		
Q Serve(g_s), s	2.3	0.3	5.9	2.6	1.0	3.1		
Cycle Q Clear(g_c), s	2.3	0.3	5.9	2.6	1.0	3.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	367	328	1780	796	149	2334		
V/C Ratio(X)	0.32	0.05	0.45	0.23	0.31	0.27		
Avail Cap(c_a), veh/h	1097	979	2060	922	301	2918		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.9	13.1	6.6	5.7	17.8	2.9		
Incr Delay (d2), s/veh	0.5	0.1	0.3	0.3	0.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	0.1	2.9	1.2	0.5	1.5		
LnGrp Delay(d),s/veh	14.4	13.1	6.9	6.0	18.2	3.0		
LnGrp LOS	B	B	A	A	B	A		
Approach Vol, veh/h	133		973			685		
Approach Delay, s/veh	14.2		6.7			4.1		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.5	23.7				30.2		11.0
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	6.0	21.0				31.0		24.0
Max Q Clear Time (g_c+l1), s	3.0	7.9				5.1		4.3
Green Ext Time (p_c), s	0.0	9.8				16.4		0.4
Intersection Summary								
HCM 2010 Ctrl Delay			6.3					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
157: Washington Blvd & Industrial Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	105	351	1377	787	32		
Future Volume (veh/h)	0	105	351	1377	787	32		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	111	369	1449	828	34		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	157	140	439	2643	1403	562		
Arrive On Green	0.00	0.09	0.25	0.75	0.40	0.36		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	0	111	369	1449	828	34		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	0.0	3.3	9.6	8.5	9.0	0.7		
Cycle Q Clear(g_c), s	0.0	3.3	9.6	8.5	9.0	0.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	157	140	439	2643	1403	562		
V/C Ratio(X)	0.00	0.79	0.84	0.55	0.59	0.06		
Avail Cap(c_a), veh/h	584	522	584	2988	1458	587		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	21.7	17.4	2.6	11.6	10.3		
Incr Delay (d2), s/veh	0.0	9.6	8.2	0.2	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.2	5.6	4.1	4.5	0.3		
LnGrp Delay(d),s/veh	0.0	31.3	25.5	2.8	12.1	10.4		
LnGrp LOS		C	C	A	B	B		
Approach Vol, veh/h	111			1818	862			
Approach Delay, s/veh	31.3			7.4	12.1			
Approach LOS	C			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		39.3		9.3	17.0	22.2		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		39.0		16.0	16.0	18.0		
Max Q Clear Time (g_c+I1), s		10.5		5.3	11.6	11.0		
Green Ext Time (p_c), s		20.9		0.2	0.5	6.3		
Intersection Summary								
HCM 2010 Ctrl Delay			9.8					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
158: Washington Blvd & Diamond Oaks Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	9	10	53	1	178	6	1298	129	90	555	27
Future Volume (veh/h)	7	9	10	53	1	178	6	1298	129	90	555	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	7	9	11	56	1	187	6	1366	136	95	584	28
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	135	121	382	6	288	52	1866	185	154	2172	104
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.03	0.57	0.57	0.09	0.63	0.63
Sat Flow, veh/h	222	737	660	1389	31	1570	1774	3252	322	1774	3438	165
Grp Volume(v), veh/h	27	0	0	57	0	187	6	740	762	95	300	312
Grp Sat Flow(s),veh/h/ln	1619	0	0	1420	0	1570	1774	1770	1804	1774	1770	1833
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	6.2	0.2	17.1	17.4	2.9	4.2	4.2
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.7	0.0	6.2	0.2	17.1	17.4	2.9	4.2	4.2
Prop In Lane	0.26		0.41	0.98		1.00	1.00		0.18	1.00		0.09
Lane Grp Cap(c), veh/h	378	0	0	388	0	288	52	1015	1035	154	1118	1158
V/C Ratio(X)	0.07	0.00	0.00	0.15	0.00	0.65	0.12	0.73	0.74	0.62	0.27	0.27
Avail Cap(c_a), veh/h	673	0	0	657	0	591	254	1088	1109	191	1118	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	0.0	19.3	0.0	21.1	26.4	8.7	8.8	24.6	4.6	4.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.9	0.4	2.8	2.9	1.5	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.0	2.8	0.1	9.0	9.3	1.5	2.1	2.1
LnGrp Delay(d),s/veh	18.9	0.0	0.0	19.3	0.0	22.1	26.8	11.5	11.6	26.1	4.8	4.8
LnGrp LOS	B			B		C	C	B	B	C	A	A
Approach Vol, veh/h	27				244		1508				707	
Approach Delay, s/veh	18.9				21.4		11.6				7.6	
Approach LOS	B				C		B				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.9	34.7	13.2		4.6	38.0	13.2					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	5.0	31.3	20.0		7.0	29.3	20.0					
Max Q Clear Time (g_c+I1), s	4.9	19.4	2.7		2.2	6.2	8.2					
Green Ext Time (p_c), s	0.0	9.6	0.6		0.0	19.3	0.5					
Intersection Summary												
HCM 2010 Ctrl Delay			11.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
159: Washington Blvd & Sawtell Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	1	47	14	1	15	32	1294	70	21	567	20
Future Volume (veh/h)	80	1	47	14	1	15	32	1294	70	21	567	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	84	1	49	15	1	16	34	1362	74	22	597	21
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	2	126	59	4	55	314	2580	1117	46	1949	69
Arrive On Green	0.08	0.08	0.08	0.04	0.04	0.04	0.18	0.73	0.71	0.03	0.56	0.54
Sat Flow, veh/h	1754	21	1583	1668	111	1541	1774	3539	1581	1774	3488	123
Grp Volume(v), veh/h	85	0	49	16	0	16	34	1362	74	22	303	315
Grp Sat Flow(s),veh/h/ln	1775	0	1583	1779	0	1541	1774	1770	1581	1774	1770	1841
Q Serve(g_s), s	4.2	0.0	2.6	0.8	0.0	0.9	1.4	15.3	1.3	1.1	8.2	8.2
Cycle Q Clear(g_c), s	4.2	0.0	2.6	0.8	0.0	0.9	1.4	15.3	1.3	1.1	8.2	8.2
Prop In Lane	0.99		1.00	0.94		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	142	0	126	63	0	55	314	2580	1117	46	989	1029
V/C Ratio(X)	0.60	0.00	0.39	0.25	0.00	0.29	0.11	0.53	0.07	0.48	0.31	0.31
Avail Cap(c_a), veh/h	335	0	299	99	0	86	314	2580	1117	99	989	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	39.3	42.2	0.0	42.3	31.1	5.4	4.1	43.3	10.6	10.6
Incr Delay (d2), s/veh	1.5	0.0	0.7	0.8	0.0	1.1	0.1	0.4	0.1	2.9	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.2	0.4	0.0	0.4	0.7	7.5	0.6	0.6	4.2	4.3
LnGrp Delay(d),s/veh	41.6	0.0	40.1	43.0	0.0	43.4	31.1	5.8	4.1	46.2	11.4	11.4
LnGrp LOS	D		D	D		D	C	A	A	D	B	B
Approach Vol, veh/h	134					32	1470			640		
Approach Delay, s/veh	41.0					43.2	6.3			12.6		
Approach LOS	D					D	A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	20.6	53.0	6.2		5.3	68.3	10.2					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	5.0	* 47	4.0		4.0	48.3	16.0					
Max Q Clear Time (g_c+I1), s	3.4	10.2	2.9		3.1	17.3	6.2					
Green Ext Time (p_c), s	0.0	8.0	0.0		0.0	21.2	0.2					

Intersection Summary

HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
160: Washington Blvd & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	654	0	793	11	3	1	298	737	0	1	481	142
Future Volume (veh/h)	654	0	793	11	3	1	298	737	0	1	481	142
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	688	0	0	12	3	1	314	776	0	1	506	149
Adj No. of Lanes	2	0	1	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	861	0	366	98	74	25	457	2019	0	43	1673	749
Arrive On Green	0.24	0.00	0.00	0.06	0.06	0.04	0.13	0.57	0.00	0.02	0.47	0.47
Sat Flow, veh/h	3548	0	1583	1774	1338	446	3442	3632	0	1774	3539	1583
Grp Volume(v), veh/h	688	0	0	12	0	4	314	776	0	1	506	149
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1784	1721	1770	0	1774	1770	1583
Q Serve(g_s), s	16.4	0.0	0.0	0.6	0.0	0.2	7.8	10.9	0.0	0.0	7.9	4.9
Cycle Q Clear(g_c), s	16.4	0.0	0.0	0.6	0.0	0.2	7.8	10.9	0.0	0.0	7.9	4.9
Prop In Lane	1.00		1.00	1.00		0.25	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	861	0	366	98	0	98	457	2019	0	43	1673	749
V/C Ratio(X)	0.80	0.00	0.00	0.12	0.00	0.04	0.69	0.38	0.00	0.02	0.30	0.20
Avail Cap(c_a), veh/h	1104	0	475	276	0	278	497	2019	0	177	1673	749
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	0.0	40.4	0.0	40.4	37.2	10.6	0.0	42.9	14.6	13.8
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.2	0.0	0.1	2.7	0.6	0.0	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	0.0	0.3	0.0	0.1	3.9	5.4	0.0	0.0	3.9	2.2
LnGrp Delay(d),s/veh	34.5	0.0	0.0	40.6	0.0	40.4	40.0	11.2	0.0	43.0	14.8	14.0
LnGrp LOS	C			D		D	D	B		D	B	B
Approach Vol, veh/h	688			16			1090			656		
Approach Delay, s/veh	34.5			40.6			19.5			14.6		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.2	55.0	23.8		13.0	46.3	7.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		3.0	* 5.7	4.0					
Max Green Setting (Gmax), s	7.0	27.3	26.0		11.0	* 25	12.0					
Max Q Clear Time (g_c+I1), s	2.0	12.9	18.4		9.8	9.9	2.6					
Green Ext Time (p_c), s	0.0	8.2	1.4		0.1	8.6	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	22.5											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
161: Washington Blvd & All American City Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	1	14	0	1	25	30	672	0	22	745	60
Future Volume (veh/h)	94	1	14	0	1	25	30	672	0	22	745	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	99	1	15	0	1	26	32	707	0	23	784	63
Adj No. of Lanes	1	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	8	120	0	48	41	53	1413	632	40	1301	104
Arrive On Green	0.08	0.08	0.08	0.00	0.03	0.03	0.03	0.40	0.00	0.02	0.39	0.39
Sat Flow, veh/h	1774	100	1498	0	1863	1583	1774	3539	1583	1774	3319	267
Grp Volume(v), veh/h	99	0	16	0	1	26	32	707	0	23	418	429
Grp Sat Flow(s),veh/h/ln	1774	0	1598	0	1863	1583	1774	1770	1583	1774	1770	1816
Q Serve(g_s), s	2.3	0.0	0.4	0.0	0.0	0.7	0.8	6.3	0.0	0.5	8.0	8.0
Cycle Q Clear(g_c), s	2.3	0.0	0.4	0.0	0.0	0.7	0.8	6.3	0.0	0.5	8.0	8.0
Prop In Lane	1.00		0.94	0.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	142	0	128	0	48	41	53	1413	632	40	694	712
V/C Ratio(X)	0.70	0.00	0.12	0.00	0.02	0.64	0.61	0.50	0.00	0.58	0.60	0.60
Avail Cap(c_a), veh/h	922	0	831	0	968	823	461	1672	748	461	836	858
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	18.1	0.0	20.1	20.4	20.3	9.5	0.0	20.5	10.2	10.2
Incr Delay (d2), s/veh	6.0	0.0	0.4	0.0	0.2	15.4	10.8	0.3	0.0	12.6	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.2	0.0	0.0	0.5	0.5	3.1	0.0	0.4	4.0	4.1
LnGrp Delay(d),s/veh	24.9	0.0	18.5	0.0	20.3	35.9	31.1	9.8	0.0	33.1	11.1	11.1
LnGrp LOS	C		B		C	D	C	A		C	B	B
Approach Vol, veh/h	115					27		739		870		
Approach Delay, s/veh	24.0					35.3		10.7		11.7		
Approach LOS	C					D		B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.9	21.9	8.4		6.3	21.6	6.1					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	11.0	20.0	22.0		11.0	20.0	22.0					
Max Q Clear Time (g_c+I1), s	2.5	8.3	4.3		2.8	10.0	2.7					
Green Ext Time (p_c), s	0.0	7.4	0.3		0.0	6.6	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			12.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

162: Fairway Dr & Cortina Cir

Cumulative Plus Project
AM PEAK HOUR

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	68	0	37	41	1	48	65	461	5	25	388	94								
Future Volume (veh/h)	68	0	37	41	1	48	65	461	5	25	388	94								
Number	7	4	14	3	8	18	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	72	0	39	43	1	51	68	485	5	26	408	99								
Adj No. of Lanes	2	0	1	1	1	0	1	2	1	1	2	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	491	0	219	230	4	202	150	1282	574	64	1112	497								
Arrive On Green	0.14	0.00	0.14	0.13	0.13	0.13	0.08	0.36	0.36	0.04	0.31	0.31								
Sat Flow, veh/h	3548	0	1583	1774	31	1557	1774	3539	1583	1774	3539	1583								
Grp Volume(v), veh/h	72	0	39	43	0	52	68	485	5	26	408	99								
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1588	1774	1770	1583	1774	1770	1583								
Q Serve(g_s), s	0.9	0.0	1.1	1.1	0.0	1.5	1.9	5.3	0.1	0.7	4.6	2.4								
Cycle Q Clear(g_c), s	0.9	0.0	1.1	1.1	0.0	1.5	1.9	5.3	0.1	0.7	4.6	2.4								
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	491	0	219	230	0	205	150	1282	574	64	1112	497								
V/C Ratio(X)	0.15	0.00	0.18	0.19	0.00	0.25	0.45	0.38	0.01	0.41	0.37	0.20								
Avail Cap(c_a), veh/h	1369	0	611	411	0	368	411	2301	1029	411	2301	1029								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	19.6	0.0	19.7	20.1	0.0	20.3	22.6	12.2	10.6	24.4	13.8	13.0								
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.0	0.2	0.8	0.3	0.0	1.5	0.3	0.3								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	0.6	0.0	0.7	1.0	2.6	0.0	0.4	2.3	1.1								
LnGrp Delay(d),s/veh	19.7	0.0	19.9	20.3	0.0	20.5	23.4	12.5	10.6	26.0	14.1	13.3								
LnGrp LOS	B		B	C		C	C	B	B	C	B	B								
Approach Vol, veh/h	111		95				558				533									
Approach Delay, s/veh	19.8		20.4				13.8				14.5									
Approach LOS	B		C				B				B									
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	5.9	24.1	11.2		8.4	21.6	10.7													
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0													
Max Green Setting (Gmax), s	12.0	33.7	20.0		12.0	33.7	12.0													
Max Q Clear Time (g_c+I1), s	2.7	7.3	3.1		3.9	6.6	3.5													
Green Ext Time (p_c), s	0.0	9.6	0.1		0.0	9.6	0.1													
Intersection Summary																				
HCM 2010 Ctrl Delay	15.1																			
HCM 2010 LOS	B																			
Notes																				
User approved volume balancing among the lanes for turning movement.																				

HCM 2010 Signalized Intersection Summary
163: Westbrook Blvd & High School Road

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	5	26	10	7	41	12		
Future Volume (veh/h)	5	26	10	7	41	12		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	5	27	11	7	43	13		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	102	91	119	101	114	744		
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.40		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	5	27	11	7	43	13		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	0.0	0.3	0.1	0.1	0.4	0.1		
Cycle Q Clear(g_c), s	0.0	0.3	0.1	0.1	0.4	0.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	102	91	119	101	114	744		
V/C Ratio(X)	0.05	0.30	0.09	0.07	0.38	0.02		
Avail Cap(c_a), veh/h	2023	1806	2225	1892	674	3439		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.2	8.3	8.1	8.1	8.3	3.3		
Incr Delay (d2), s/veh	0.2	1.8	0.3	0.3	2.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.1	0.0	0.3	0.0		
LnGrp Delay(d),s/veh	8.4	10.1	8.5	8.4	10.3	3.4		
LnGrp LOS	A	B	A	A	B	A		
Approach Vol, veh/h	32		18			56		
Approach Delay, s/veh	9.9		8.4			8.7		
Approach LOS	A		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.2	6.2				12.4		6.1
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	7.0	22.0				34.0		21.0
Max Q Clear Time (g_c+I1), s	2.4	2.1				2.1		2.3
Green Ext Time (p_c), s	0.0	0.1				0.1		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			9.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
164: Target Dwy & Fairway Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	370	36	45	473	11	38	8	37	6	46	10
Future Volume (veh/h)	3	370	36	45	473	11	38	8	37	6	46	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	3	389	38	47	498	12	46	0	39	6	48	11
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	1341	600	127	1481	663	334	0	149	19	150	34
Arrive On Green	0.06	0.38	0.38	0.07	0.42	0.42	0.09	0.00	0.09	0.11	0.11	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	166	1330	305
Grp Volume(v), veh/h	3	389	38	47	498	12	46	0	39	65	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1801	0	0
Q Serve(g_s), s	0.1	2.6	0.5	0.9	3.2	0.2	0.4	0.0	0.8	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	2.6	0.5	0.9	3.2	0.2	0.4	0.0	0.8	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.09		0.17
Lane Grp Cap(c), veh/h	108	1341	600	127	1481	663	334	0	149	203	0	0
V/C Ratio(X)	0.03	0.29	0.06	0.37	0.34	0.02	0.14	0.00	0.26	0.32	0.00	0.00
Avail Cap(c_a), veh/h	728	3040	1360	676	3040	1360	1768	0	789	739	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.1	7.4	6.7	15.1	6.7	5.8	14.2	0.0	14.4	14.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.7	0.2	0.0	0.1	0.0	0.3	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	0.2	0.4	1.6	0.1	0.2	0.0	0.3	0.6	0.0	0.0
LnGrp Delay(d),s/veh	15.1	7.6	6.8	15.8	6.9	5.8	14.2	0.0	14.7	14.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B		B	B		
Approach Vol, veh/h		430			557			85			65	
Approach Delay, s/veh		7.5			7.6			14.5			14.4	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		6.2	5.4	16.6		5.8	4.1	18.0				
Change Period (Y+Rc), s		4.0	4.0	5.7		4.0	4.0	5.7				
Max Green Setting (Gmax), s		16.0	12.0	27.3		12.0	12.0	27.3				
Max Q Clear Time (g_c+I1), s		2.8	2.9	4.6		3.1	2.1	5.2				
Green Ext Time (p_c), s		0.1	0.0	6.3		0.1	0.0	6.2				
Intersection Summary												
HCM 2010 Ctrl Delay			8.5									
HCM 2010 LOS			A									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
165: Lowes Dwy/Central Park Dr & Fairway Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	355	121	68	370	7	70	9	30	15	36	79
Future Volume (veh/h)	23	355	121	68	370	7	70	9	30	15	36	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	24	374	127	72	389	7	80	0	32	16	38	83
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	1286	575	135	1396	624	361	0	161	202	258	219
Arrive On Green	0.05	0.36	0.36	0.08	0.39	0.39	0.10	0.00	0.10	0.11	0.14	0.14
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	1774	1863	1583
Grp Volume(v), veh/h	24	374	127	72	389	7	80	0	32	16	38	83
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	1583
Q Serve(g_s), s	0.5	2.7	2.0	1.4	2.7	0.1	0.8	0.0	0.7	0.3	0.7	1.7
Cycle Q Clear(g_c), s	0.5	2.7	2.0	1.4	2.7	0.1	0.8	0.0	0.7	0.3	0.7	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	1286	575	135	1396	624	361	0	161	202	258	219
V/C Ratio(X)	0.30	0.29	0.22	0.53	0.28	0.01	0.22	0.00	0.20	0.08	0.15	0.38
Avail Cap(c_a), veh/h	194	2102	941	194	2102	941	486	0	217	811	897	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	8.3	8.0	16.3	7.5	6.7	15.1	0.0	15.0	14.5	13.8	14.3
Incr Delay (d2), s/veh	0.8	0.2	0.3	1.2	0.2	0.0	0.1	0.0	0.2	0.2	0.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.3	0.9	0.7	1.3	0.0	0.4	0.0	0.3	0.2	0.4	0.8
LnGrp Delay(d),s/veh	17.7	8.5	8.3	17.5	7.7	6.7	15.2	0.0	15.3	14.7	14.2	15.8
LnGrp LOS	B	A	A	B	A	A	B		B	B	B	B
Approach Vol, veh/h	525				468				112			
Approach Delay, s/veh	8.8				9.2				15.2			
Approach LOS	A				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	6.7		5.8	16.3	7.8		4.6	17.4				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.6		4.0	5.7				
Max Green Setting (Gmax), s	4.0		3.0	19.0	15.7		3.0	19.0				
Max Q Clear Time (g_c+I1), s	2.8		3.4	4.7	3.7		2.5	4.7				
Green Ext Time (p_c), s	0.0		0.0	5.8	0.5		0.0	5.8				
Intersection Summary												
HCM 2010 Ctrl Delay	10.2											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
166: Home Depot Dwy & Fairway Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	299	58	30	361	3	52	15	4	0	7	27
Future Volume (veh/h)	60	299	58	30	361	3	52	15	4	0	7	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	63	315	61	32	380	3	55	16	4	0	7	28
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	1395	624	99	1331	596	131	38	149	0	123	105
Arrive On Green	0.07	0.39	0.39	0.06	0.38	0.38	0.09	0.09	0.09	0.00	0.07	0.07
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1389	404	1583	0	1863	1583
Grp Volume(v), veh/h	63	315	61	32	380	3	71	0	4	0	7	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1793	0	1583	0	1863	1583
Q Serve(g_s), s	1.0	1.8	0.7	0.5	2.3	0.0	1.1	0.0	0.1	0.0	0.1	0.5
Cycle Q Clear(g_c), s	1.0	1.8	0.7	0.5	2.3	0.0	1.1	0.0	0.1	0.0	0.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	0.77		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	131	1395	624	99	1331	596	169	0	149	0	123	105
V/C Ratio(X)	0.48	0.23	0.10	0.32	0.29	0.01	0.42	0.00	0.03	0.00	0.06	0.27
Avail Cap(c_a), veh/h	346	2300	1029	288	2185	977	1340	0	1183	0	303	257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	6.2	5.9	14.0	6.7	6.0	13.2	0.0	12.7	0.0	13.5	13.7
Incr Delay (d2), s/veh	1.0	0.1	0.1	0.7	0.2	0.0	2.0	0.0	0.1	0.0	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.9	0.3	0.3	1.1	0.0	0.7	0.0	0.0	0.0	0.1	0.2
LnGrp Delay(d),s/veh	14.7	6.3	6.0	14.7	6.9	6.0	15.2	0.0	12.8	0.0	13.5	14.2
LnGrp LOS	B	A	A	B	A	A	B		B		B	B
Approach Vol, veh/h	439				415				75		35	
Approach Delay, s/veh	7.5				7.5				15.0		14.0	
Approach LOS	A				A				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.9		4.7	15.1	5.0		5.3	14.6				
Change Period (Y+Rc), s	4.0		4.0	5.0	4.0		4.0	5.0				
Max Green Setting (Gmax), s	22.0		4.0	18.0	4.0		5.0	17.0				
Max Q Clear Time (g_c+I1), s	3.1		2.5	3.8	2.5		3.0	4.3				
Green Ext Time (p_c), s	0.3		0.0	5.6	0.0		0.0	5.3				
Intersection Summary												
HCM 2010 Ctrl Delay	8.3											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
167: Five Star Blvd & Fairway Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	170	137	7	296	110	83	12	4	28	63	8
Future Volume (veh/h)	27	170	137	7	296	110	83	12	4	28	63	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	28	179	144	7	312	116	96	0	4	29	66	8
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	1182	649	70	1009	451	389	0	174	62	142	176
Arrive On Green	0.05	0.33	0.30	0.04	0.29	0.29	0.11	0.00	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	560	1275	1583
Grp Volume(v), veh/h	28	179	144	7	312	116	96	0	4	95	0	8
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1835	0	1583
Q Serve(g_s), s	0.4	1.0	1.7	0.1	2.0	1.7	0.7	0.0	0.1	1.4	0.0	0.1
Cycle Q Clear(g_c), s	0.4	1.0	1.7	0.1	2.0	1.7	0.7	0.0	0.1	1.4	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.31		1.00
Lane Grp Cap(c), veh/h	97	1182	649	70	1009	451	389	0	174	204	0	176
V/C Ratio(X)	0.29	0.15	0.22	0.10	0.31	0.26	0.25	0.00	0.02	0.47	0.00	0.05
Avail Cap(c_a), veh/h	300	2394	1191	240	2274	1017	3000	0	1339	558	0	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	6.9	5.7	13.7	8.3	8.2	12.0	0.0	11.8	12.3	0.0	11.7
Incr Delay (d2), s/veh	0.6	0.1	0.3	0.2	0.3	0.5	0.4	0.0	0.1	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.9	0.1	1.0	0.8	0.4	0.0	0.0	0.7	0.0	0.1
LnGrp Delay(d),s/veh	14.0	7.0	5.9	13.9	8.6	8.6	12.4	0.0	11.8	12.9	0.0	11.8
LnGrp LOS	B	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h	351				435				100			
Approach Delay, s/veh	7.1				8.7				12.4			
Approach LOS	A				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	6.2		4.2	12.9	6.3		5.6	11.4				
Change Period (Y+Rc), s	4.0		4.0	5.0	4.0		5.0	* 5				
Max Green Setting (Gmax), s	24.0		3.0	18.0	8.0		4.0	* 17				
Max Q Clear Time (g_c+I1), s	2.7		2.1	3.7	3.4		2.4	4.0				
Green Ext Time (p_c), s	0.4		0.0	1.9	0.1		0.3	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay	8.9											
HCM 2010 LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
168: Stanford Ranch Rd & Highland Park

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	36	84	43	12	5	23	735	71	39	1153	101
Future Volume (veh/h)	113	36	84	43	12	5	23	735	71	39	1153	101
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1853	1890	1863	1863	1900	1825	1825	1825	1900	1900	1900
Adj Flow Rate, veh/h	119	38	88	45	13	5	24	774	75	41	1214	106
Adj No. of Lanes	1	1	0	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	73	169	392	89	34	77	2309	717	105	2476	769
Arrive On Green	0.19	0.15	0.15	0.11	0.07	0.07	0.04	0.46	0.46	0.06	0.48	0.48
Sat Flow, veh/h	1765	496	1149	3442	1281	493	1739	4984	1548	1810	5187	1612
Grp Volume(v), veh/h	119	0	126	45	0	18	24	774	75	41	1214	106
Grp Sat Flow(s),veh/h/ln	1765	0	1645	1721	0	1774	1739	1661	1548	1810	1729	1612
Q Serve(g_s), s	3.5	0.0	4.2	0.7	0.0	0.6	0.8	5.9	1.6	1.3	9.5	0.4
Cycle Q Clear(g_c), s	3.5	0.0	4.2	0.7	0.0	0.6	0.8	5.9	1.6	1.3	9.5	0.4
Prop In Lane	1.00		0.70	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	0	242	392	0	123	77	2309	717	105	2476	769
V/C Ratio(X)	0.35	0.00	0.52	0.11	0.00	0.15	0.31	0.34	0.10	0.39	0.49	0.14
Avail Cap(c_a), veh/h	338	0	582	696	0	697	176	2360	733	183	2476	769
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	23.4	23.6	0.0	26.0	27.5	10.1	9.0	26.9	10.6	0.3
Incr Delay (d2), s/veh	0.2	0.0	1.5	0.0	0.0	0.2	0.8	0.2	0.1	0.9	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.0	0.3	0.0	0.3	0.4	2.7	0.7	0.7	4.6	0.9
LnGrp Delay(d),s/veh	21.0	0.0	24.9	23.6	0.0	26.2	28.3	10.3	9.1	27.8	10.9	0.5
LnGrp LOS	C		C	C		C	C	B	A	C	B	A
Approach Vol, veh/h	245				63		873				1361	
Approach Delay, s/veh	23.0				24.4		10.7				10.6	
Approach LOS	C				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	30.1	9.8	13.0	5.6	30.9	15.7	7.1				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.3	4.0	6.0	5.3	* 4				
Max Green Setting (Gmax), s	5.0	24.7	11.0	20.0	5.0	24.7	10.0	* 22				
Max Q Clear Time (g_c+I1), s	3.3	7.9	2.7	6.2	2.8	11.5	5.5	2.6				
Green Ext Time (p_c), s	0.0	16.2	0.0	0.5	0.0	13.1	0.4	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
169: Stanford Ranch Rd & Fairway Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	107	98	171	250	11	112	794	85	27	1212	60
Future Volume (veh/h)	29	107	98	171	250	11	112	794	85	27	1212	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	31	113	103	180	263	12	118	836	89	28	1276	63
Adj No. of Lanes	1	2	1	2	1	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	481	215	226	317	14	162	3317	1033	51	3153	982
Arrive On Green	0.02	0.14	0.14	0.07	0.18	0.18	0.09	1.00	1.00	0.01	0.62	0.62
Sat Flow, veh/h	1774	3539	1583	3442	1768	81	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	31	113	103	180	0	275	118	836	89	28	1276	63
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	0	1849	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	2.6	4.3	9.0	7.7	0.0	21.5	5.0	0.0	0.0	1.2	19.1	2.4
Cycle Q Clear(g_c), s	2.6	4.3	9.0	7.7	0.0	21.5	5.0	0.0	0.0	1.2	19.1	2.4
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	481	215	226	0	331	162	3317	1033	51	3153	982
V/C Ratio(X)	0.78	0.24	0.48	0.79	0.00	0.83	0.73	0.25	0.09	0.55	0.40	0.06
Avail Cap(c_a), veh/h	154	937	419	344	0	514	321	3317	1033	275	3153	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	57.9	59.9	69.1	0.0	59.3	67.0	0.0	0.0	73.4	14.4	11.3
Incr Delay (d2), s/veh	11.7	0.3	2.2	3.6	0.0	8.1	2.3	0.2	0.2	3.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.1	4.1	3.8	0.0	11.7	2.4	0.1	0.0	0.6	8.9	1.0
LnGrp Delay(d),s/veh	84.7	58.2	62.1	72.7	0.0	67.4	69.3	0.2	0.2	76.8	14.6	11.3
LnGrp LOS	F	E	E	E		E	E	A	A	E	B	B
Approach Vol, veh/h	247				455				1043			
Approach Delay, s/veh	63.1				69.5				8.0			
Approach LOS	E				E				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	104.2	13.9	25.7	11.0	99.4	7.3	32.2				
Change Period (Y+Rc), s	4.0	* 6.4	4.0	5.3	4.0	6.4	4.0	5.3				
Max Green Setting (Gmax), s	12.0	* 65	15.0	39.7	14.0	61.6	13.0	41.7				
Max Q Clear Time (g_c+I1), s	3.2	2.0	9.7	11.0	7.0	21.1	4.6	23.5				
Green Ext Time (p_c), s	0.0	48.0	0.1	3.9	0.1	33.7	0.0	3.4				

Intersection Summary

HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
170: Stanford Ranch Rd & 5 Star Blvd

Cumulative Plus Project
AM PEAK HOUR

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	24	31	130	180	48	59	105	956	270	110	1393	53								
Future Volume (veh/h)	24	31	130	180	48	59	105	956	270	110	1393	53								
Number	3	8	18	7	4	14	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	25	33	137	189	51	62	111	1006	284	116	1466	56								
Adj No. of Lanes	1	1	1	2	1	0	2	3	1	2	3	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	179	188	160	304	66	80	157	2441	920	698	3240	1009								
Arrive On Green	0.10	0.10	0.10	0.09	0.09	0.09	0.05	0.48	0.48	0.20	0.64	0.64								
Sat Flow, veh/h	1774	1863	1583	3548	766	932	3442	5085	1583	3442	5085	1583								
Grp Volume(v), veh/h	25	33	137	189	0	113	111	1006	284	116	1466	56								
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1698	1721	1695	1583	1721	1695	1583								
Q Serve(g_s), s	1.9	2.4	12.8	7.7	0.0	9.8	4.8	19.2	13.7	4.2	22.0	2.0								
Cycle Q Clear(g_c), s	1.9	2.4	12.8	7.7	0.0	9.8	4.8	19.2	13.7	4.2	22.0	2.0								
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	179	188	160	304	0	146	157	2441	920	698	3240	1009								
V/C Ratio(X)	0.14	0.18	0.86	0.62	0.00	0.78	0.71	0.41	0.31	0.17	0.45	0.06								
Avail Cap(c_a), veh/h	257	269	229	608	0	291	298	2441	920	698	3240	1009								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.95	0.95	0.95	0.90	0.90	0.90								
Uniform Delay (d), s/veh	61.5	61.7	66.4	66.2	0.0	67.2	70.6	25.3	16.1	49.3	13.9	10.2								
Incr Delay (d2), s/veh	0.4	0.4	19.4	2.1	0.0	8.5	5.4	0.5	0.8	0.1	0.1	0.0								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	1.0	1.3	6.4	3.9	0.0	4.9	2.4	9.1	7.6	2.0	10.4	0.9								
LnGrp Delay(d),s/veh	61.9	62.2	85.8	68.3	0.0	75.7	76.0	25.8	16.9	49.4	14.0	10.3								
LnGrp LOS	E	E	F	E		E	E	C	B	D	B	B								
Approach Vol, veh/h	195				302				1401											
Approach Delay, s/veh	78.7				71.1				28.0											
Approach LOS	E				E				C											
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	34.4	77.0	18.2		11.8	99.6	20.4													
Change Period (Y+Rc), s	4.0	5.0	5.3		5.0	4.0	5.3													
Max Green Setting (Gmax), s	11.0	72.0	25.7		13.0	70.0	21.7													
Max Q Clear Time (g_c+I1), s	6.2	21.2	11.8		6.8	24.0	14.8													
Green Ext Time (p_c), s	0.3	10.9	1.1		0.1	24.3	0.3													
Intersection Summary																				
HCM 2010 Ctrl Delay	29.1																			
HCM 2010 LOS	C																			
Notes																				
User approved volume balancing among the lanes for turning movement.																				

HCM 2010 Signalized Intersection Summary
171: Galleria Blvd/Stanford Ranch & Hwy-65 NB Ramps

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations							 	  			  	
Traffic Volume (veh/h)	0	0	284	0	0	274	364	784	0	0	1571	175
Future Volume (veh/h)	0	0	284	0	0	274	364	784	0	0	1571	175
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h	0	0	0	0	0	0	383	825	0	0	1654	184
Adj No. of Lanes	0	0	1	0	0	1	2	3	0	0	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	0	0	0	531	4843	0	0	3876	1207
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.95	0.00	0.00	0.76	0.76
Sat Flow, veh/h		0			0		3442	5253	0	0	5253	1583
Grp Volume(v), veh/h		0.0			0.0		383	825	0	0	1654	184
Grp Sat Flow(s),veh/h/ln							1721	1695	0	0	1695	1583
Q Serve(g_s), s							8.9	0.8	0.0	0.0	9.6	2.6
Cycle Q Clear(g_c), s							8.9	0.8	0.0	0.0	9.6	2.6
Prop In Lane							1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h							531	4843	0	0	3876	1207
V/C Ratio(X)							0.72	0.17	0.00	0.00	0.43	0.15
Avail Cap(c_a), veh/h							819	4843	0	0	3876	1207
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)							0.95	0.95	0.00	0.00	0.88	0.88
Uniform Delay (d), s/veh							33.8	0.1	0.0	0.0	3.5	2.7
Incr Delay (d2), s/veh							1.8	0.1	0.0	0.0	0.3	0.2
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							4.3	0.3	0.0	0.0	4.5	1.2
LnGrp Delay(d),s/veh							35.6	0.2	0.0	0.0	3.8	2.9
LnGrp LOS							D	A			A	A
Approach Vol, veh/h								1208			1838	
Approach Delay, s/veh								11.4			3.7	
Approach LOS								B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		84.0			16.0	68.0						
Change Period (Y+Rc), s		5.0			4.0	5.0						
Max Green Setting (Gmax), s		70.0			19.0	47.0						
Max Q Clear Time (g_c+l1), s		2.8			10.9	11.6						
Green Ext Time (p_c), s		27.2			1.1	20.5						
Intersection Summary												
HCM 2010 Ctrl Delay			6.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
172: Galleria Blvd & Hwy-65 SB Ramps

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  		  	  	
Traffic Volume (veh/h)	0	0	1186	0	0	212	0	955	184	541	1339	0
Future Volume (veh/h)	0	0	1186	0	0	212	0	955	184	541	1339	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	0	0	1248	0	0	0	0	1005	194	569	1409	0
Adj No. of Lanes	0	0	1	0	0	1	0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	0	2	2	2	2	0
Cap, veh/h	0	0	0	0	0	0	0	3185	992	630	4256	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.18	0.84	0.00
Sat Flow, veh/h		0			0		0	5253	1583	3442	5253	0
Grp Volume(v), veh/h		0.0			0.0		0	1005	194	569	1409	0
Grp Sat Flow(s),veh/h/ln							0	1695	1583	1721	1695	0
Q Serve(g_s), s							0.0	15.7	8.9	27.7	10.7	0.0
Cycle Q Clear(g_c), s							0.0	15.7	8.9	27.7	10.7	0.0
Prop In Lane							0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h							0	3185	992	630	4256	0
V/C Ratio(X)							0.00	0.32	0.20	0.90	0.33	0.00
Avail Cap(c_a), veh/h							0	3185	992	674	4256	0
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)							0.00	1.00	1.00	0.81	0.81	0.00
Uniform Delay (d), s/veh							0.0	14.9	13.6	68.4	3.1	0.0
Incr Delay (d2), s/veh							0.0	0.3	0.4	12.7	0.2	0.0
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.0	7.4	4.0	14.3	5.0	0.0
LnGrp Delay(d),s/veh							0.0	15.1	14.0	81.0	3.3	0.0
LnGrp LOS								B	B	F	A	
Approach Vol, veh/h								1199			1978	
Approach Delay, s/veh								15.0			25.7	
Approach LOS								B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	36.0	111.8				147.8						
Change Period (Y+Rc), s	5.7	5.7				5.7						
Max Green Setting (Gmax), s	32.5	106.1				37.3						
Max Q Clear Time (g_c+l1), s	29.7	17.7				12.7						
Green Ext Time (p_c), s	0.6	6.8				11.4						
Intersection Summary												
HCM 2010 Ctrl Delay			21.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
173: JC Penny & Galleria Circle

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	1	7	6	7	13	32	0	3	10	12
Future Volume (veh/h)	1	1	1	7	6	7	13	32	0	3	10	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	1	1	7	6	7	14	34	0	3	11	13
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	9	9	304	8	9	20	892	0	11	190	224
Arrive On Green	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.25	0.00	0.00	0.24	0.24
Sat Flow, veh/h	593	593	593	564	483	564	1774	3632	0	1774	779	921
Grp Volume(v), veh/h	3	0	0	20	0	0	14	34	0	3	0	24
Grp Sat Flow(s),veh/h/ln	1778	0	0	1611	0	0	1774	1770	0	1774	0	1700
Q Serve(g_s), s	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Prop In Lane	0.33		0.33	0.35		0.35	1.00		0.00	1.00		0.54
Lane Grp Cap(c), veh/h	320	0	0	321	0	0	20	892	0	11	0	413
V/C Ratio(X)	0.01	0.00	0.00	0.06	0.00	0.00	0.70	0.04	0.00	0.28	0.00	0.06
Avail Cap(c_a), veh/h	779	0	0	778	0	0	539	1937	0	539	0	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.0	0.0	0.0	8.1	0.0	0.0	8.1	4.6	0.0	8.2	0.0	4.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	5.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1
LnGrp Delay(d),s/veh	8.0	0.0	0.0	8.1	0.0	0.0	23.1	4.7	0.0	13.2	0.0	4.8
LnGrp LOS	A			A			C	A		B		A
Approach Vol, veh/h	3		20				48				27	
Approach Delay, s/veh	8.0		8.1				10.0				5.8	
Approach LOS	A		A				B				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.0	8.1	4.3		4.2	8.0	4.3					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	5.0	9.0	5.0		5.0	9.0	5.0					
Max Q Clear Time (g_c+I1), s	2.0	2.1	2.0		2.1	2.2	2.2					
Green Ext Time (p_c), s	0.0	0.1	0.0		0.0	0.1	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			8.4									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
174: Galleria Blvd & Antelope Creek Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	9	8	60	10	64	20	985	91	295	1953	53
Future Volume (veh/h)	75	9	8	60	10	64	20	985	91	295	1953	53
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	79	9	0	63	11	0	21	1037	0	311	2056	56
Adj No. of Lanes	3	1	1	3	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	202	71	55	189	66	51	85	2771	847	390	3221	998
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.00	0.03	0.56	0.00	0.12	0.65	0.65
Sat Flow, veh/h	5322	1863	1583	5322	1863	1583	3343	4940	1538	3343	4940	1531
Grp Volume(v), veh/h	79	9	0	63	11	0	21	1037	0	311	2056	56
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1672	1647	1538	1672	1647	1531
Q Serve(g_s), s	2.2	0.7	0.0	1.7	0.9	0.0	0.9	17.5	0.0	13.6	37.2	2.0
Cycle Q Clear(g_c), s	2.2	0.7	0.0	1.7	0.9	0.0	0.9	17.5	0.0	13.6	37.2	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	71	55	189	66	51	85	2771	847	390	3221	998
V/C Ratio(X)	0.39	0.13	0.00	0.33	0.17	0.00	0.25	0.37	0.00	0.80	0.64	0.06
Avail Cap(c_a), veh/h	479	168	137	483	169	138	301	2793	854	591	3221	998
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	69.8	0.0	70.6	70.2	0.0	71.7	18.3	0.0	64.5	15.6	9.4
Incr Delay (d2), s/veh	1.2	0.8	0.0	1.4	1.6	0.0	0.6	0.1	0.0	2.3	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	0.0	0.9	0.5	0.0	0.4	8.0	0.0	6.4	17.0	0.9
LnGrp Delay(d),s/veh	71.7	70.6	0.0	72.0	71.8	0.0	72.2	18.4	0.0	66.8	16.5	9.5
LnGrp LOS	E	E		E	E		E	B		E	B	A
Approach Vol, veh/h	88			74			1058			2423		
Approach Delay, s/veh	71.6			72.0			19.5			22.8		
Approach LOS	E			E			B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	87.3		8.7	6.3	101.0		8.2				
Change Period (Y+Rc), s	4.0	5.7		4.9	4.0	5.7		4.0				
Max Green Setting (Gmax), s	25.0	82.3		12.1	12.0	95.3		12.0				
Max Q Clear Time (g_c+I1), s	15.6	19.5		3.7	2.9	39.2		4.2				
Green Ext Time (p_c), s	0.4	58.7		0.2	0.0	52.8		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
175: Galleria Blvd & Berry St

Cumulative Plus Project
AM PEAK HOUR

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	172	1	118	5	2	4	42	1459	1	5	1556	157						
Future Volume (veh/h)	172	1	118	5	2	4	42	1459	1	5	1556	157						
Number	7	4	14	3	8	18	5	2	12	1	6	16						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863						
Adj Flow Rate, veh/h	181	1	124	5	2	4	44	1536	1	5	1638	165						
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	301	2	270	52	21	64	158	1995	1	39	1874	839						
Arrive On Green	0.17	0.17	0.17	0.04	0.04	0.04	0.09	0.55	0.53	0.02	0.53	0.53						
Sat Flow, veh/h	1765	10	1583	1285	514	1583	1774	3630	2	1774	3539	1583						
Grp Volume(v), veh/h	182	0	124	7	0	4	44	749	788	5	1638	165						
Grp Sat Flow(s),veh/h/ln	1775	0	1583	1799	0	1583	1774	1770	1862	1774	1770	1583						
Q Serve(g_s), s	6.1	0.0	4.5	0.2	0.0	0.2	1.5	21.2	21.2	0.2	26.0	3.5						
Cycle Q Clear(g_c), s	6.1	0.0	4.5	0.2	0.0	0.2	1.5	21.2	21.2	0.2	26.0	3.5						
Prop In Lane	0.99		1.00	0.71		1.00	1.00		0.00	1.00		1.00						
Lane Grp Cap(c), veh/h	303	0	270	73	0	64	158	973	1024	39	1874	839						
V/C Ratio(X)	0.60	0.00	0.46	0.10	0.00	0.06	0.28	0.77	0.77	0.13	0.87	0.20						
Avail Cap(c_a), veh/h	581	0	518	280	0	247	221	973	1024	166	1936	866						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Uniform Delay (d), s/veh	24.6	0.0	23.9	29.6	0.0	29.6	27.3	11.3	11.3	30.8	13.2	7.9						
Incr Delay (d2), s/veh	0.7	0.0	0.5	0.2	0.0	0.1	0.4	4.1	3.9	0.5	4.8	0.2						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	3.0	0.0	2.0	0.1	0.0	0.1	0.7	11.3	11.8	0.1	13.8	1.6						
LnGrp Delay(d),s/veh	25.3	0.0	24.4	29.9	0.0	29.8	27.6	15.4	15.2	31.3	18.1	8.1						
LnGrp LOS	C		C	C		C	C	B	B	C	B	A						
Approach Vol, veh/h	306				11		1581				1808							
Approach Delay, s/veh	24.9				29.8		15.6				17.2							
Approach LOS	C				C		B				B							
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	1	2	4		5	6	8											
Phs Duration (G+Y+Rc), s	4.4	39.3	14.9		6.7	37.0	5.6											
Change Period (Y+Rc), s	4.0	6.0	4.9		4.0	6.0	4.0											
Max Green Setting (Gmax), s	5.0	32.1	20.0		5.0	32.1	9.0											
Max Q Clear Time (g_c+I1), s	2.2	23.2	8.1		3.5	28.0	2.2											
Green Ext Time (p_c), s	0.0	8.7	0.6		0.0	3.0	0.0											
Intersection Summary																		
HCM 2010 Ctrl Delay			17.2															
HCM 2010 LOS			B															

HCM 2010 Signalized Intersection Summary
176: Harding Blvd & Wills Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	303	14	357	3	6	18	78	1198	8	7	1385	318
Future Volume (veh/h)	303	14	357	3	6	18	78	1198	8	7	1385	318
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	319	15	376	3	6	19	82	1261	8	7	1458	335
Adj No. of Lanes	2	1	0	1	1	1	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1025	18	456	53	56	47	172	1819	12	32	1673	748
Arrive On Green	0.30	0.30	0.30	0.03	0.03	0.03	0.05	0.50	0.49	0.02	0.47	0.47
Sat Flow, veh/h	3442	61	1531	1774	1863	1583	3442	3605	23	1774	3539	1583
Grp Volume(v), veh/h	319	0	391	3	6	19	82	619	650	7	1458	335
Grp Sat Flow(s),veh/h/ln	1721	0	1592	1774	1863	1583	1721	1770	1859	1774	1770	1583
Q Serve(g_s), s	5.7	0.0	18.3	0.1	0.3	0.9	1.9	21.4	21.4	0.3	29.6	11.3
Cycle Q Clear(g_c), s	5.7	0.0	18.3	0.1	0.3	0.9	1.9	21.4	21.4	0.3	29.6	11.3
Prop In Lane	1.00		0.96	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	1025	0	474	53	56	47	172	893	938	32	1673	748
V/C Ratio(X)	0.31	0.00	0.82	0.06	0.11	0.40	0.48	0.69	0.69	0.22	0.87	0.45
Avail Cap(c_a), veh/h	1331	0	616	89	93	79	172	893	938	89	1722	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	26.2	37.8	37.8	38.2	37.1	15.1	15.1	38.8	19.0	14.1
Incr Delay (d2), s/veh	0.2	0.0	7.0	0.2	0.3	2.0	0.8	3.0	2.9	1.3	5.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	9.0	0.1	0.1	0.4	0.9	11.1	11.6	0.2	15.7	5.1
LnGrp Delay(d),s/veh	21.9	0.0	33.2	37.9	38.2	40.2	37.8	18.2	18.0	40.1	24.6	15.1
LnGrp LOS	C		C	D	D	D	D	B	B	D	C	B
Approach Vol, veh/h	710				28		1351				1800	
Approach Delay, s/veh	28.1				39.5		19.3				22.9	
Approach LOS	C				D		B				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.4	43.4	26.9		7.0	40.9	5.4					
Change Period (Y+Rc), s	4.0	5.5	4.0		4.0	5.5	4.0					
Max Green Setting (Gmax), s	3.0	36.5	30.0		3.0	36.5	3.0					
Max Q Clear Time (g_c+I1), s	2.3	23.4	20.3		3.9	31.6	2.9					
Green Ext Time (p_c), s	0.0	12.8	2.6		0.0	3.8	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			22.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
177: Harding Blvd & Lead Hill Blvd

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	156	462	865	437	916	837		
Future Volume (veh/h)	156	462	865	437	916	837		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	164	486	911	460	964	881		
Adj No. of Lanes	2	1	2	1	2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	433	699	1513	677	1011	2655		
Arrive On Green	0.13	0.15	0.43	0.43	0.29	0.75		
Sat Flow, veh/h	3442	1583	3632	1583	3442	3632		
Grp Volume(v), veh/h	164	486	911	460	964	881		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1721	1770		
Q Serve(g_s), s	2.6	0.0	11.7	13.8	16.2	4.9		
Cycle Q Clear(g_c), s	2.6	0.0	11.7	13.8	16.2	4.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	433	699	1513	677	1011	2655		
V/C Ratio(X)	0.38	0.69	0.60	0.68	0.95	0.33		
Avail Cap(c_a), veh/h	1461	1172	1803	807	1011	2867		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.6	13.2	13.0	13.6	20.4	2.4		
Incr Delay (d2), s/veh	0.2	0.5	0.5	2.2	17.9	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	7.9	5.8	6.4	10.1	2.4		
LnGrp Delay(d),s/veh	23.8	13.7	13.5	15.8	38.3	2.5		
LnGrp LOS	C	B	B	B	D	A		
Approach Vol, veh/h	650		1371			1845		
Approach Delay, s/veh	16.3		14.3			21.2		
Approach LOS	B		B			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				48.5		10.4	20.3	28.2
Change Period (Y+Rc), s				5.3		4.0	5.3	* 5.3
Max Green Setting (Gmax), s				46.7		24.0	15.0	* 28
Max Q Clear Time (g_c+I1), s				6.9		4.6	18.2	15.8
Green Ext Time (p_c), s				11.2		1.8	0.0	7.1
Intersection Summary								
HCM 2010 Ctrl Delay			17.9					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
178: Harding Blvd & Estates Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	13	18	36	20	45	13	1051	0	52	800	93
Future Volume (veh/h)	314	13	18	36	20	45	13	1051	0	52	800	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	359	0	0	38	21	47	14	1106	0	55	842	98
Adj No. of Lanes	2	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	515	270	0	47	26	58	19	1433	0	67	1381	161
Arrive On Green	0.15	0.00	0.00	0.08	0.08	0.08	0.01	0.40	0.00	0.04	0.43	0.43
Sat Flow, veh/h	3548	1863	0	609	337	753	1774	3632	0	1774	3195	372
Grp Volume(v), veh/h	359	0	0	106	0	0	14	1106	0	55	466	474
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1699	0	0	1774	1770	0	1774	1770	1797
Q Serve(g_s), s	5.0	0.0	0.0	3.2	0.0	0.0	0.4	14.0	0.0	1.6	10.5	10.5
Cycle Q Clear(g_c), s	5.0	0.0	0.0	3.2	0.0	0.0	0.4	14.0	0.0	1.6	10.5	10.5
Prop In Lane	1.00		0.00	0.36		0.44	1.00		0.00	1.00		0.21
Lane Grp Cap(c), veh/h	515	270	0	131	0	0	19	1433	0	67	765	777
V/C Ratio(X)	0.70	0.00	0.00	0.81	0.00	0.00	0.75	0.77	0.00	0.82	0.61	0.61
Avail Cap(c_a), veh/h	1304	685	0	131	0	0	103	1513	0	103	765	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	23.5	0.0	0.0	25.5	13.3	0.0	24.7	11.3	11.3
Incr Delay (d2), s/veh	0.6	0.0	0.0	27.8	0.0	0.0	19.4	2.6	0.0	14.6	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	2.5	0.0	0.0	0.3	7.3	0.0	1.0	5.4	5.4
LnGrp Delay(d),s/veh	21.7	0.0	0.0	51.3	0.0	0.0	44.9	16.0	0.0	39.3	12.8	12.8
LnGrp LOS	C			D			D	B		D	B	B
Approach Vol, veh/h	359			106			1120			995		
Approach Delay, s/veh	21.7			51.3			16.3			14.2		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	26.2		11.5	4.5	27.7		8.0				
Change Period (Y+Rc), s	4.0	* 5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	3.0	* 22		19.0	3.0	21.7		4.0				
Max Q Clear Time (g_c+I1), s	3.6	16.0		7.0	2.4	12.5		5.2				
Green Ext Time (p_c), s	0.0	5.0		0.6	0.0	8.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	17.7											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

179: Harding Blvd & Roseville Square

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	10	27	25	1	7	41	1063	14	8	825	27
Future Volume (veh/h)	76	10	27	25	1	7	41	1063	14	8	825	27
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	80	11	28	26	1	7	43	1119	15	8	868	28
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	17	123	53	2	49	264	1770	24	11	1161	37
Arrive On Green	0.08	0.08	0.08	0.03	0.03	0.03	0.15	0.49	0.49	0.01	0.33	0.33
Sat Flow, veh/h	1569	216	1583	1711	66	1583	1774	3576	48	1774	3500	113
Grp Volume(v), veh/h	91	0	28	27	0	7	43	554	580	8	439	457
Grp Sat Flow(s),veh/h/ln	1784	0	1583	1777	0	1583	1774	1770	1854	1774	1770	1843
Q Serve(g_s), s	2.1	0.0	0.7	0.6	0.0	0.2	0.9	10.0	10.0	0.2	9.5	9.5
Cycle Q Clear(g_c), s	2.1	0.0	0.7	0.6	0.0	0.2	0.9	10.0	10.0	0.2	9.5	9.5
Prop In Lane	0.88		1.00	0.96		1.00	1.00		0.03	1.00		0.06
Lane Grp Cap(c), veh/h	139	0	123	55	0	49	264	876	918	11	587	611
V/C Ratio(X)	0.66	0.00	0.23	0.49	0.00	0.14	0.16	0.63	0.63	0.71	0.75	0.75
Avail Cap(c_a), veh/h	824	0	731	656	0	585	655	1148	1203	164	658	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	18.8	20.7	0.0	20.4	16.1	8.0	8.0	21.5	12.9	12.9
Incr Delay (d2), s/veh	2.0	0.0	0.3	2.5	0.0	0.5	0.1	1.2	1.1	26.1	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.3	0.4	0.0	0.1	0.4	5.1	5.3	0.2	5.4	5.6
LnGrp Delay(d),s/veh	21.4	0.0	19.1	23.1	0.0	20.9	16.2	9.2	9.2	47.6	17.7	17.5
LnGrp LOS	C		B	C		C	B	A	A	D	B	B
Approach Vol, veh/h	119					34		1177		904		
Approach Delay, s/veh	20.9					22.7		9.4		17.9		
Approach LOS	C					C		A		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.3	26.3	7.4		11.3	19.3	5.3					
Change Period (Y+Rc), s	4.0	4.9	4.0		4.9	* 4.9	4.0					
Max Green Setting (Gmax), s	4.0	28.1	20.0		16.0	* 16	16.0					
Max Q Clear Time (g_c+I1), s	2.2	12.0	4.1		2.9	11.5	2.6					
Green Ext Time (p_c), s	0.0	9.5	0.3		8.2	2.8	0.0					

Intersection Summary

HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
180: N. Sunrise Ave & Stone Point Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	54	146	326	9	367	589		
Future Volume (veh/h)	54	146	326	9	367	589		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	57	154	343	9	386	620		
Adj No. of Lanes	2	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	790	364	1764	549	503	3408		
Arrive On Green	0.23	0.23	0.35	0.35	0.28	0.67		
Sat Flow, veh/h	3442	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	57	154	343	9	386	620		
Grp Sat Flow(s),veh/h/ln	1721	1583	1695	1583	1774	1695		
Q Serve(g_s), s	0.6	4.1	2.4	0.2	9.9	2.3		
Cycle Q Clear(g_c), s	0.6	4.1	2.4	0.2	9.9	2.3		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	790	364	1764	549	503	3408		
V/C Ratio(X)	0.07	0.42	0.19	0.02	0.77	0.18		
Avail Cap(c_a), veh/h	1517	698	3362	1047	640	5399		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.1	16.4	11.4	10.7	16.4	3.1		
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	3.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	1.8	1.1	0.1	5.3	1.0		
LnGrp Delay(d),s/veh	15.1	16.7	11.5	10.7	19.5	3.1		
LnGrp LOS	B	B	B	B	B	A		
Approach Vol, veh/h	211		352			1006		
Approach Delay, s/veh	16.3		11.5			9.4		
Approach LOS	B		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	16.1	20.3				36.5		13.5
Change Period (Y+Rc), s	4.0	5.7				5.7		4.0
Max Green Setting (Gmax), s	16.0	30.3				50.3		20.0
Max Q Clear Time (g_c+l1), s	11.9	4.4				4.3		6.1
Green Ext Time (p_c), s	0.3	10.3				12.5		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			10.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
181: Automall Dr & N. Sunrise Ave

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	451	55	204	371	93	22	3	156	91	3	15
Future Volume (veh/h)	34	451	55	204	371	93	22	3	156	91	3	15
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	36	475	58	215	391	98	23	3	164	98	0	16
Adj No. of Lanes	1	3	0	1	3	1	0	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	1421	171	293	2022	630	274	36	275	555	0	248
Arrive On Green	0.08	0.31	0.29	0.17	0.40	0.40	0.17	0.17	0.17	0.16	0.00	0.16
Sat Flow, veh/h	1774	4602	553	1774	5085	1583	1578	206	1583	3548	0	1583
Grp Volume(v), veh/h	36	348	185	215	391	98	26	0	164	98	0	16
Grp Sat Flow(s),veh/h/ln	1774	1695	1765	1774	1695	1583	1784	0	1583	1774	0	1583
Q Serve(g_s), s	1.2	4.8	5.0	7.0	3.1	2.4	0.7	0.0	5.8	1.5	0.0	0.5
Cycle Q Clear(g_c), s	1.2	4.8	5.0	7.0	3.1	2.4	0.7	0.0	5.8	1.5	0.0	0.5
Prop In Lane	1.00		0.31	1.00		1.00	0.88		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	1047	545	293	2022	630	309	0	275	555	0	248
V/C Ratio(X)	0.27	0.33	0.34	0.73	0.19	0.16	0.08	0.00	0.60	0.18	0.00	0.06
Avail Cap(c_a), veh/h	610	1886	982	581	2746	855	379	0	337	1219	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	16.3	16.5	24.2	12.0	11.8	21.2	0.0	23.3	22.4	0.0	22.0
Incr Delay (d2), s/veh	0.4	0.4	0.7	1.3	0.1	0.2	0.0	0.0	0.8	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.3	2.5	3.6	1.4	1.1	0.4	0.0	2.6	0.7	0.0	0.2
LnGrp Delay(d),s/veh	27.0	16.7	17.2	25.6	12.1	12.1	21.2	0.0	24.1	22.4	0.0	22.0
LnGrp LOS	C	B	B	C	B	B	C		C	C		C
Approach Vol, veh/h	569			704			190			114		
Approach Delay, s/veh	17.5			16.2			23.7			22.4		
Approach LOS	B			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	13.1	21.9	13.6		7.7	27.3	12.6					
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0					
Max Green Setting (Gmax), s	19.0	31.7	12.0		20.0	30.7	20.0					
Max Q Clear Time (g_c+I1), s	9.0	7.0	7.8		3.2	5.1	3.5					
Green Ext Time (p_c), s	0.3	9.6	0.2		0.0	9.7	0.2					
Intersection Summary												
HCM 2010 Ctrl Delay	18.0											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
182: N. Sunrise Ave & Lead Hill Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	752	290	65	219	76	368	433	35	80	334	54
Future Volume (veh/h)	221	752	290	65	219	76	368	433	35	80	334	54
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1928	1928	1928
Adj Flow Rate, veh/h	233	792	305	68	231	80	387	456	37	84	352	57
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1185	530	175	1009	452	495	1440	419	380	1295	403
Arrive On Green	0.16	0.33	0.33	0.10	0.29	0.29	0.14	0.28	0.26	0.11	0.25	0.25
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	5085	1583	3562	5263	1639
Grp Volume(v), veh/h	233	792	305	68	231	80	387	456	37	84	352	57
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1695	1583	1781	1754	1639
Q Serve(g_s), s	8.9	13.3	11.0	2.5	3.5	2.6	7.5	4.9	1.2	1.5	3.8	1.9
Cycle Q Clear(g_c), s	8.9	13.3	11.0	2.5	3.5	2.6	7.5	4.9	1.2	1.5	3.8	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	1185	530	175	1009	452	495	1440	419	380	1295	403
V/C Ratio(X)	0.83	0.67	0.58	0.39	0.23	0.18	0.78	0.32	0.09	0.22	0.27	0.14
Avail Cap(c_a), veh/h	281	1262	564	230	1175	526	495	2581	774	461	2595	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	19.8	19.1	29.4	19.0	18.7	28.7	19.6	19.3	28.4	21.2	20.5
Incr Delay (d2), s/veh	17.6	1.8	2.2	0.5	0.2	0.3	7.3	0.2	0.1	0.1	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	6.8	5.1	1.3	1.7	1.2	4.1	2.3	0.6	0.7	1.8	0.9
LnGrp Delay(d),s/veh	46.0	21.6	21.3	29.9	19.2	19.0	36.0	19.8	19.4	28.5	21.4	20.7
LnGrp LOS	D	C	C	C	B	B	D	B	B	C	C	C
Approach Vol, veh/h	1330				379				880			
Approach Delay, s/veh	25.8				21.1				26.9			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	26.6	13.0	20.1	14.0	22.4	10.4	22.7				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.3	4.0	5.3	4.0	5.3				
Max Green Setting (Gmax), s	8.0	* 23	9.0	32.0	10.0	20.4	8.0	33.0				
Max Q Clear Time (g_c+I1), s	4.5	15.3	9.5	5.8	10.9	5.5	3.5	6.9				
Green Ext Time (p_c), s	0.0	6.0	0.0	9.1	0.0	10.7	0.0	9.0				

Intersection Summary

HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
183: N. Sunrise Ave & Sierra Gardens Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	2	14	25	2	135	49	787	41	138	464	21
Future Volume (veh/h)	11	2	14	25	2	135	49	787	41	138	464	21
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1928	1891	1891	1863	1934	1900	1928	2005	1928
Adj Flow Rate, veh/h	12	2	15	26	2	142	52	828	43	145	488	22
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	15	94	238	18	451	108	1460	76	219	2465	666
Arrive On Green	0.06	0.06	0.06	0.16	0.14	0.16	0.06	0.41	0.39	0.12	0.45	0.41
Sat Flow, veh/h	1531	255	1583	1678	129	1604	1774	3553	184	1836	5474	1639
Grp Volume(v), veh/h	14	0	15	28	0	142	52	428	443	145	488	22
Grp Sat Flow(s),veh/h/ln	1786	0	1583	1807	0	1604	1774	1838	1900	1836	1825	1639
Q Serve(g_s), s	0.4	0.0	0.5	0.7	0.0	3.6	1.5	9.3	9.4	3.9	2.8	0.4
Cycle Q Clear(g_c), s	0.4	0.0	0.5	0.7	0.0	3.6	1.5	9.3	9.4	3.9	2.8	0.4
Prop In Lane	0.86		1.00	0.93		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	106	0	94	257	0	451	108	755	781	219	2465	666
V/C Ratio(X)	0.13	0.00	0.16	0.11	0.00	0.32	0.48	0.57	0.57	0.66	0.20	0.03
Avail Cap(c_a), veh/h	308	0	273	717	0	859	204	821	848	282	2550	691
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	23.3	19.1	0.0	14.8	23.7	11.8	11.9	22.0	8.7	9.3
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.1	0.0	0.1	1.2	1.6	1.5	1.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	0.3	0.0	1.6	0.8	5.0	5.1	2.1	1.4	0.2
LnGrp Delay(d),s/veh	23.5	0.0	23.6	19.2	0.0	15.0	24.9	13.4	13.4	23.7	8.7	9.4
LnGrp LOS	C		C	B		B	C	B	B	C	A	A
Approach Vol, veh/h	29		170				923			655		
Approach Delay, s/veh	23.5		15.6				14.0			12.1		
Approach LOS	C		B				B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	7.1		7.2	26.5	11.4		9.2	24.4				
Change Period (Y+Rc), s	4.0		4.0	5.3	4.0		4.0	5.3				
Max Green Setting (Gmax), s	9.0		6.0	22.0	20.7		7.0	21.0				
Max Q Clear Time (g_c+I1), s	2.5		3.5	4.8	5.6		5.9	11.4				
Green Ext Time (p_c), s	0.0		0.0	12.4	0.3		0.0	7.7				
Intersection Summary												
HCM 2010 Ctrl Delay			13.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
184: Sunrise Ave/Sunrise & Oak Ridge Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	2	183	796	1	18	449		
Future Volume (veh/h)	2	183	796	1	18	449		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	2	193	838	1	19	473		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	403	359	1628	2	112	2123		
Arrive On Green	0.23	0.23	0.45	0.45	0.06	0.60		
Sat Flow, veh/h	1774	1583	3720	4	1774	3632		
Grp Volume(v), veh/h	2	193	409	430	19	473		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1862	1774	1770		
Q Serve(g_s), s	0.0	3.7	5.6	5.6	0.3	2.1		
Cycle Q Clear(g_c), s	0.0	3.7	5.6	5.6	0.3	2.1		
Prop In Lane	1.00	1.00		0.00	1.00			
Lane Grp Cap(c), veh/h	403	359	794	836	112	2123		
V/C Ratio(X)	0.00	0.54	0.51	0.51	0.17	0.22		
Avail Cap(c_a), veh/h	1103	985	1142	1202	416	3415		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.2	11.6	6.7	6.7	15.1	3.1		
Incr Delay (d2), s/veh	0.0	0.5	0.7	0.7	0.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.3	2.9	3.0	0.2	1.0		
LnGrp Delay(d),s/veh	10.2	12.1	7.4	7.4	15.4	3.2		
LnGrp LOS	B	B	A	A	B	A		
Approach Vol, veh/h	195		839			492		
Approach Delay, s/veh	12.0		7.4			3.7		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				23.4		10.7	5.2	18.2
Change Period (Y+Rc), s				4.9		4.0	4.0	* 4.9
Max Green Setting (Gmax), s				30.9		20.2	7.0	* 20
Max Q Clear Time (g_c+I1), s				4.1		5.7	2.3	7.6
Green Ext Time (p_c), s				8.0		0.4	0.0	5.7
Intersection Summary								
HCM 2010 Ctrl Delay			6.8					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
185: Sunrise Ave & Frances Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	5	0	10	0	1468	27	24	1235	0
Future Volume (veh/h)	0	0	0	5	0	10	0	1468	27	24	1235	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	0	0	0	5	0	11	0	1545	28	25	1300	0
Adj No. of Lanes	0	1	1	1	0	1	0	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	0	3	3	41	0	0	0	2777	50	63	3080	0
Arrive On Green	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.78	0.76	0.04	0.87	0.00
Sat Flow, veh/h	0	-74510	1583	1774	5		0	3650	64	1774	3632	0
Grp Volume(v), veh/h	0	0	0	5	27.0		0	768	805	25	1300	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	C		0	1770	1851	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	0.2			0.0	9.3	9.4	0.8	4.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.2			0.0	9.3	9.4	0.8	4.2	0.0
Prop In Lane	0.00		1.00	1.00			0.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	0	3	3	41			0	1382	1445	63	3080	0
V/C Ratio(X)	0.00	0.00	0.00	0.12			0.00	0.56	0.56	0.40	0.42	0.00
Avail Cap(c_a), veh/h	0	806	685	160			0	1408	1473	128	3262	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	0.00	0.00	1.00			0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	26.5			0.0	2.4	2.4	26.2	0.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5			0.0	1.0	1.0	1.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1			0.0	4.7	4.9	0.4	1.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	27.0			0.0	3.4	3.4	27.7	1.0	0.0
LnGrp LOS				C				A	A	C	A	
Approach Vol, veh/h		0						1573			1325	
Approach Delay, s/veh		0.0						3.4			1.5	
Approach LOS								A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6						
Phs Duration (G+Y+Rc), s	5.0	46.2	4.3	0.0		51.1						
Change Period (Y+Rc), s	4.0	4.9	4.0	4.0		4.9						
Max Green Setting (Gmax), s	3.0	42.1	4.0	24.0		49.1						
Max Q Clear Time (g_c+I1), s	2.8	11.4	2.2	0.0		6.2						
Green Ext Time (p_c), s	0.0	29.2	0.0	0.0		40.1						
Intersection Summary												
HCM 2010 Ctrl Delay			2.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
186: Sunrise Ave & Coloma Way

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	24	30	60	27	54	29	1669	41	85	1173	35
Future Volume (veh/h)	47	24	30	60	27	54	29	1669	41	85	1173	35
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	49	25	32	63	28	57	31	1757	43	89	1235	37
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	192	163	213	65	132	99	1890	46	156	1990	60
Arrive On Green	0.10	0.10	0.10	0.12	0.12	0.12	0.06	0.54	0.52	0.09	0.57	0.55
Sat Flow, veh/h	1774	1863	1583	1774	539	1097	1774	3530	86	1774	3508	105
Grp Volume(v), veh/h	49	25	32	63	0	85	31	878	922	89	623	649
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1636	1774	1770	1847	1774	1770	1843
Q Serve(g_s), s	2.0	1.0	1.5	2.6	0.0	3.9	1.3	36.6	37.1	3.9	18.8	18.8
Cycle Q Clear(g_c), s	2.0	1.0	1.5	2.6	0.0	3.9	1.3	36.6	37.1	3.9	18.8	18.8
Prop In Lane	1.00		1.00	1.00		0.67	1.00		0.05	1.00		0.06
Lane Grp Cap(c), veh/h	183	192	163	213	0	196	99	948	989	156	1004	1046
V/C Ratio(X)	0.27	0.13	0.20	0.30	0.00	0.43	0.31	0.93	0.93	0.57	0.62	0.62
Avail Cap(c_a), veh/h	200	210	178	377	0	348	177	967	1009	177	1004	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	32.6	32.9	32.1	0.0	32.7	36.3	17.1	17.3	35.0	11.6	11.6
Incr Delay (d2), s/veh	0.7	0.3	0.5	0.7	0.0	1.3	0.7	14.6	14.9	1.3	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.5	0.7	1.3	0.0	1.8	0.7	21.4	22.8	1.9	9.4	9.9
LnGrp Delay(d),s/veh	33.8	32.9	33.3	32.8	0.0	34.0	36.9	31.7	32.2	36.3	12.9	12.9
LnGrp LOS	C	C	C	C		C	D	C	C	D	B	B
Approach Vol, veh/h	106				148				1831			
Approach Delay, s/veh	33.4				33.5				32.1			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.5	48.7	12.6		10.0	46.1	11.2					
Change Period (Y+Rc), s	4.0	* 5.3	4.0		4.0	5.3	4.0					
Max Green Setting (Gmax), s	7.0	* 42	16.0		7.0	41.7	8.0					
Max Q Clear Time (g_c+I1), s	3.3	20.8	5.9		5.9	39.1	4.0					
Green Ext Time (p_c), s	0.0	20.4	0.4		0.0	1.8	0.1					

Intersection Summary

HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
187: Sunrise Ave & Sun Tree Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	23	5	59	18	22	11	2506	16	12	1614	55
Future Volume (veh/h)	49	23	5	59	18	22	11	2506	16	12	1614	55
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1937	1900	1900	1937	1900	1863	1827	1900	1863	1828	1900
Adj Flow Rate, veh/h	52	24	5	62	19	23	12	2638	17	13	1699	58
Adj No. of Lanes	0	1	0	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	4	2	4	4
Cap, veh/h	87	40	8	99	30	37	46	3115	20	47	3022	103
Arrive On Green	0.07	0.07	0.07	0.09	0.09	0.09	0.03	0.61	0.58	0.03	0.61	0.61
Sat Flow, veh/h	1192	550	115	1079	331	400	1774	5114	33	1774	4956	169
Grp Volume(v), veh/h	81	0	0	104	0	0	12	1714	941	13	1140	617
Grp Sat Flow(s),veh/h/ln	1856	0	0	1810	0	0	1774	1663	1821	1774	1664	1798
Q Serve(g_s), s	2.5	0.0	0.0	3.3	0.0	0.0	0.4	24.9	25.1	0.4	12.2	12.2
Cycle Q Clear(g_c), s	2.5	0.0	0.0	3.3	0.0	0.0	0.4	24.9	25.1	0.4	12.2	12.2
Prop In Lane	0.64		0.06	0.60		0.22	1.00		0.02	1.00		0.09
Lane Grp Cap(c), veh/h	135	0	0	166	0	0	46	2026	1110	47	2029	1097
V/C Ratio(X)	0.60	0.00	0.00	0.63	0.00	0.00	0.26	0.85	0.85	0.28	0.56	0.56
Avail Cap(c_a), veh/h	155	0	0	271	0	0	118	2026	1110	118	2029	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	0.0	26.3	0.0	0.0	28.7	9.5	9.5	28.6	6.9	6.9
Incr Delay (d2), s/veh	2.4	0.0	0.0	1.4	0.0	0.0	0.8	3.2	5.7	1.2	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	1.7	0.0	0.0	0.2	12.1	14.0	0.2	5.7	6.2
LnGrp Delay(d),s/veh	29.4	0.0	0.0	27.7	0.0	0.0	29.4	12.6	15.2	29.8	7.4	7.7
LnGrp LOS	C			C			C	B	B	C	A	A
Approach Vol, veh/h	81				104				2667		1770	
Approach Delay, s/veh	29.4				27.7				13.6		7.7	
Approach LOS	C				C				B		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	8.5		4.6	39.6	7.4		4.5	39.6				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	8.0		3.0	27.3	4.0		3.0	27.3				
Max Q Clear Time (g_c+I1), s	5.3		2.4	27.1	4.5		2.4	14.2				
Green Ext Time (p_c), s	0.1		0.0	0.2	0.0		0.0	13.0				
Intersection Summary												
HCM 2010 Ctrl Delay			11.9									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
188: Sunrise Ave & Kensington Dr/Sandringham Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations									  		  	
Traffic Volume (veh/h)	41	0	17	65	0	18	9	2498	73	4	1633	4
Future Volume (veh/h)	41	0	17	65	0	18	9	2498	73	4	1633	4
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	0	18	68	0	19	9	2629	77	4	1719	4
Adj No. of Lanes	1	0	1	1	0	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	114	0	0	114	0	0	41	3801	110	64	3903	9
Arrive On Green	0.06	0.00	0.02	0.06	0.00	0.02	0.02	0.75	0.74	0.04	0.75	0.74
Sat Flow, veh/h	1774	43		1774	68		1774	5075	147	1774	5238	12
Grp Volume(v), veh/h	43	28.1		68	29.6		9	1749	957	4	1113	610
Grp Sat Flow(s),veh/h/ln	1774	C		1774	C		1774	1695	1833	1774	1695	1860
Q Serve(g_s), s	1.4			2.3			0.3	16.3	16.8	0.1	7.6	7.6
Cycle Q Clear(g_c), s	1.4			2.3			0.3	16.3	16.8	0.1	7.6	7.6
Prop In Lane	1.00			1.00			1.00		0.08	1.00		0.01
Lane Grp Cap(c), veh/h	114			114			41	2539	1372	64	2526	1386
V/C Ratio(X)	0.38			0.60			0.22	0.69	0.70	0.06	0.44	0.44
Avail Cap(c_a), veh/h	145			145			116	2539	1372	145	2526	1386
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	27.4			27.8			29.2	4.0	4.0	28.4	2.9	3.0
Incr Delay (d2), s/veh	0.8			1.8			1.0	1.6	3.0	0.1	0.1	0.2
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7			1.2			0.2	7.8	9.4	0.1	3.4	3.8
LnGrp Delay(d),s/veh	28.1			29.6			30.2	5.5	7.0	28.5	3.1	3.2
LnGrp LOS	C			C			C	A	A	C	A	A
Approach Vol, veh/h									2715			
Approach Delay, s/veh									6.1			
Approach LOS									A	A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1		3	4	5		7	8				
Phs Duration (G+Y+Rc), s	6.9		4.2	49.9	6.9		4.4	49.7				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	4.0		3.0	32.3	4.0		3.0	32.3				
Max Q Clear Time (g_c+I1), s	3.4		2.1	18.8	4.3		2.3	9.6				
Green Ext Time (p_c), s	0.0		0.0	13.3	0.0		0.0	22.2				
Intersection Summary												
HCM 2010 Ctrl Delay					5.6							
HCM 2010 LOS					A							

HCM 2010 Signalized Intersection Summary
189: Rocky Ridge Dr & Stone Point Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	9	164	245	56	27	4		
Future Volume (veh/h)	9	164	245	56	27	4		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	9	173	258	59	28	4		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	93	1927	1265	566	123	109		
Arrive On Green	0.05	0.54	0.36	0.36	0.07	0.07		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	9	173	258	59	28	4		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.1	0.5	1.1	0.6	0.3	0.1		
Cycle Q Clear(g_c), s	0.1	0.5	1.1	0.6	0.3	0.1		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	93	1927	1265	566	123	109		
V/C Ratio(X)	0.10	0.09	0.20	0.10	0.23	0.04		
Avail Cap(c_a), veh/h	1355	7365	4183	1871	2001	1786		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.0	2.4	5.0	4.8	9.8	9.7		
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.6	0.3	0.2	0.0		
LnGrp Delay(d),s/veh	10.2	2.5	5.1	4.9	10.1	9.7		
LnGrp LOS	B	A	A	A	B	A		
Approach Vol, veh/h		182	317		32			
Approach Delay, s/veh		2.8	5.1		10.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				16.8		5.4	4.2	12.6
Change Period (Y+Rc), s				5.7		4.9	4.0	5.7
Max Green Setting (Gmax), s				45.3		24.1	16.0	25.3
Max Q Clear Time (g_c+I1), s				2.5		2.3	2.1	3.1
Green Ext Time (p_c), s				4.4		0.0	0.0	3.8
Intersection Summary								
HCM 2010 Ctrl Delay			4.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
190: Rocky Ridge Dr & Lead Hill Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	355	298	80	195	39	249	552	84	57	222	51
Future Volume (veh/h)	47	355	298	80	195	39	249	552	84	57	222	51
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	49	374	0	84	205	0	262	581	0	60	234	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	848	331	194	969	385	341	1206	502	167	1233	0
Arrive On Green	0.08	0.24	0.00	0.11	0.27	0.00	0.19	0.34	0.00	0.09	0.24	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	5253	0
Grp Volume(v), veh/h	49	374	0	84	205	0	262	581	0	60	234	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1695	0
Q Serve(g_s), s	1.5	5.0	0.0	2.5	2.5	0.0	7.8	7.2	0.0	1.8	2.0	0.0
Cycle Q Clear(g_c), s	1.5	5.0	0.0	2.5	2.5	0.0	7.8	7.2	0.0	1.8	2.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	134	848	331	194	969	385	341	1206	502	167	1233	0
V/C Ratio(X)	0.37	0.44	0.00	0.43	0.21	0.00	0.77	0.48	0.00	0.36	0.19	0.00
Avail Cap(c_a), veh/h	224	1447	599	256	1536	639	383	1867	798	256	2317	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.4	18.0	0.0	23.1	15.5	0.0	21.3	14.4	0.0	23.6	16.7	0.0
Incr Delay (d2), s/veh	0.6	0.6	0.0	0.6	0.2	0.0	6.8	0.6	0.0	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.5	0.0	1.2	1.2	0.0	4.4	3.6	0.0	0.9	1.0	0.0
LnGrp Delay(d),s/veh	25.0	18.5	0.0	23.7	15.8	0.0	28.1	15.1	0.0	24.1	16.9	0.0
LnGrp LOS	C	B		C	B		C	B		C	B	
Approach Vol, veh/h	423				289				843			
Approach Delay, s/veh	19.3				18.1				19.1			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	16.3	13.7	16.5	7.2	18.2	8.2	21.9				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.3	4.0	* 5.7	4.0	5.3				
Max Green Setting (Gmax), s	7.0	20.0	11.0	23.0	6.0	* 21	7.0	27.0				
Max Q Clear Time (g_c+I1), s	4.5	7.0	9.8	4.0	3.5	4.5	3.8	9.2				
Green Ext Time (p_c), s	0.0	3.6	0.1	7.1	0.0	4.2	0.0	6.9				

Intersection Summary

HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
191: Rocky Ridge Dr & Professional Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	41	32	47	11	38	19	1282	62	50	337	8
Future Volume (veh/h)	10	41	32	47	11	38	19	1282	62	50	337	8
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	11	43	34	49	12	0	20	1349	65	53	355	0
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	144	149	183	18	149	277	2398	115	95	2006	0
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.00	0.16	0.70	0.67	0.05	0.57	0.00
Sat Flow, veh/h	296	1526	1583	799	196	1583	1774	3438	165	1774	3632	0
Grp Volume(v), veh/h	54	0	34	61	0	0	20	693	721	53	355	0
Grp Sat Flow(s),veh/h/ln	1822	0	1583	995	0	1583	1774	1770	1834	1774	1770	0
Q Serve(g_s), s	0.0	0.0	1.2	2.6	0.0	0.0	0.6	11.7	11.8	1.7	2.9	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.2	4.2	0.0	0.0	0.6	11.7	11.8	1.7	2.9	0.0
Prop In Lane	0.20		1.00	0.80		1.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	244	0	149	202	0	149	277	1234	1279	95	2006	0
V/C Ratio(X)	0.22	0.00	0.23	0.30	0.00	0.00	0.07	0.56	0.56	0.56	0.18	0.00
Avail Cap(c_a), veh/h	449	0	335	366	0	335	277	1234	1279	148	2006	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.4	0.0	25.2	27.3	0.0	0.0	21.6	4.5	4.6	27.7	6.3	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.6	0.6	0.0	0.0	0.0	0.7	0.7	1.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.5	1.0	0.0	0.0	0.3	5.8	6.1	0.9	1.4	0.0
LnGrp Delay(d),s/veh	25.7	0.0	25.7	27.9	0.0	0.0	21.7	5.2	5.3	29.6	6.5	0.0
LnGrp LOS	C		C	C			C	A	A	C	A	
Approach Vol, veh/h	88			61			1434			408		
Approach Delay, s/veh	25.7			27.9			5.5			9.5		
Approach LOS	C			C			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	5		6	7	8			
Phs Duration (G+Y+Rc), s	8.9		14.1	37.0			8.9	6.2	44.9			
Change Period (Y+Rc), s	4.9		5.7	* 5.7			4.9	4.0	5.7			
Max Green Setting (Gmax), s	11.1		3.0	* 31			11.1	4.0	30.3			
Max Q Clear Time (g_c+I1), s	3.6		2.6	4.9			6.2	3.7	13.8			
Green Ext Time (p_c), s	0.2		0.0	2.1			0.2	0.0	8.3			
Intersection Summary												
HCM 2010 Ctrl Delay				7.9								
HCM 2010 LOS				A								
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
192: Rocky Ridge Dr & Meadowlark Way/Maidu Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	4	3	21	1	22	6	1233	31	20	339	5
Future Volume (veh/h)	8	4	3	21	1	22	6	1233	31	20	339	5
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	4	3	22	1	23	6	1298	33	21	357	5
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	20	133	79	2	133	349	2801	71	44	2156	30
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.20	0.79	0.77	0.02	0.60	0.58
Sat Flow, veh/h	2	243	1583	3	22	1583	1774	3527	90	1774	3574	50
Grp Volume(v), veh/h	12	0	3	23	0	23	6	651	680	21	177	185
Grp Sat Flow(s),veh/h/ln	245	0	1583	26	0	1583	1774	1770	1847	1774	1770	1854
Q Serve(g_s), s	0.0	0.0	0.2	0.0	0.0	1.2	0.2	10.8	10.8	1.1	4.0	4.0
Cycle Q Clear(g_c), s	7.6	0.0	0.2	7.6	0.0	1.2	0.2	10.8	10.8	1.1	4.0	4.0
Prop In Lane	0.67		1.00	0.96		1.00	1.00		0.05	1.00		0.03
Lane Grp Cap(c), veh/h	87	0	133	80	0	133	349	1405	1467	44	1068	1119
V/C Ratio(X)	0.14	0.00	0.02	0.29	0.00	0.17	0.02	0.46	0.46	0.47	0.17	0.17
Avail Cap(c_a), veh/h	346	0	405	323	0	405	349	1405	1467	99	1068	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	0.0	37.8	44.4	0.0	38.3	29.1	3.0	3.0	43.3	7.9	7.9
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.7	0.0	0.2	0.0	0.3	0.3	2.9	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.6	0.0	0.5	0.1	5.2	5.4	0.5	2.0	2.1
LnGrp Delay(d),s/veh	38.5	0.0	37.8	45.1	0.0	38.5	29.1	3.4	3.4	46.2	8.2	8.2
LnGrp LOS	D		D	D		D	C	A	A	D	A	A
Approach Vol, veh/h	15				46		1337				383	
Approach Delay, s/veh	38.4				41.8		3.5				10.3	
Approach LOS	D				D		A				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	22.4	57.0	10.6		5.2	74.2	10.6					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	* 51	22.0		4.0	50.3	22.0					
Max Q Clear Time (g_c+I1), s	2.2	6.0	9.6		3.1	12.8	9.6					
Green Ext Time (p_c), s	0.0	3.5	0.1		0.0	18.3	0.1					

Intersection Summary

HCM 2010 Ctrl Delay	6.2
HCM 2010 LOS	A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
193: Rocky Ridge Dr & McLaren Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	27	105	1155	44	34	327		
Future Volume (veh/h)	27	105	1155	44	34	327		
Number	7	14	6	16	5	2		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	28	111	1216	46	36	344		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	179	160	2665	101	64	2958		
Arrive On Green	0.10	0.10	0.77	0.74	0.07	1.00		
Sat Flow, veh/h	1774	1583	3571	131	1774	3632		
Grp Volume(v), veh/h	28	111	618	644	36	344		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1840	1774	1770		
Q Serve(g_s), s	1.3	6.1	11.3	11.4	1.8	0.0		
Cycle Q Clear(g_c), s	1.3	6.1	11.3	11.4	1.8	0.0		
Prop In Lane	1.00	1.00		0.07	1.00			
Lane Grp Cap(c), veh/h	179	160	1356	1410	64	2958		
V/C Ratio(X)	0.16	0.69	0.46	0.46	0.56	0.12		
Avail Cap(c_a), veh/h	434	387	1356	1410	118	2958		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.0	39.1	3.8	3.8	41.1	0.0		
Incr Delay (d2), s/veh	0.1	2.0	0.3	0.3	2.9	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	5.3	5.4	5.7	0.9	0.0		
LnGrp Delay(d),s/veh	37.1	41.1	4.1	4.1	44.0	0.1		
LnGrp LOS	D	D	A	A	D	A		
Approach Vol, veh/h	139		1262			380		
Approach Delay, s/veh	40.3		4.1			4.2		
Approach LOS	D		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		77.9		12.1	6.2	71.7		
Change Period (Y+Rc), s		5.7		4.0	4.0	5.7		
Max Green Setting (Gmax), s		59.3		21.0	5.0	50.3		
Max Q Clear Time (g_c+I1), s		2.0		8.1	3.8	13.4		
Green Ext Time (p_c), s		14.4		0.2	0.0	13.1		
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
194: Sierra College & Secret Ravine Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	0	199	0	1	0	201	693	1	0	511	206
Future Volume (veh/h)	129	0	199	0	1	0	201	693	1	0	511	206
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1900	1863	1900	1748	1799	1816	1909	1837	1891
Adj Flow Rate, veh/h	136	0	209	0	1	0	212	729	1	0	538	217
Adj No. of Lanes	2	1	0	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	6	3	2	2	6	3
Cap, veh/h	784	0	354	0	37	0	262	1995	901	3	1305	601
Arrive On Green	0.23	0.00	0.23	0.00	0.02	0.00	0.16	0.58	0.58	0.00	0.37	0.37
Sat Flow, veh/h	3408	0	1542	0	1863	0	1664	3417	1544	1818	3491	1607
Grp Volume(v), veh/h	136	0	209	0	1	0	212	729	1	0	538	217
Grp Sat Flow(s),veh/h/ln	1704	0	1542	0	1863	0	1664	1709	1544	1818	1745	1607
Q Serve(g_s), s	1.8	0.0	6.9	0.0	0.0	0.0	7.0	6.4	0.0	0.0	6.5	5.6
Cycle Q Clear(g_c), s	1.8	0.0	6.9	0.0	0.0	0.0	7.0	6.4	0.0	0.0	6.5	5.6
Prop In Lane	1.00		1.00	0.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	784	0	354	0	37	0	262	1995	901	3	1305	601
V/C Ratio(X)	0.17	0.00	0.59	0.00	0.03	0.00	0.81	0.37	0.00	0.00	0.41	0.36
Avail Cap(c_a), veh/h	1342	0	607	0	326	0	262	1995	901	286	1894	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	19.6	0.0	27.5	0.0	23.2	6.3	5.0	0.0	13.2	13.0
Incr Delay (d2), s/veh	0.2	0.0	2.3	0.0	0.1	0.0	15.9	0.2	0.0	0.0	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.1	0.0	0.0	0.0	4.4	3.0	0.0	0.0	3.2	2.6
LnGrp Delay(d),s/veh	17.8	0.0	21.9	0.0	27.6	0.0	39.1	6.5	5.0	0.0	13.6	13.5
LnGrp LOS	B		C		C		D	A	A		B	B
Approach Vol, veh/h	345			1			942			755		
Approach Delay, s/veh	20.3			27.6			13.8			13.6		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	36.4		16.6	12.0	24.4		4.1				
Change Period (Y+Rc), s	4.0	6.4		6.0	4.0	6.4		4.0				
Max Green Setting (Gmax), s	8.0	27.6		20.0	8.0	27.6		9.0				
Max Q Clear Time (g_c+I1), s	0.0	8.4		8.9	9.0	8.5		2.0				
Green Ext Time (p_c), s	0.0	11.8		1.8	0.0	9.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			14.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
195: Sierra College Blvd & Miners Ravine Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	0	131	2	0	2	47	844	0	7	682	15
Future Volume (veh/h)	57	0	131	2	0	2	47	844	0	7	682	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	60	0	138	2	0	2	49	888	0	7	718	16
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	0	354	19	0	17	111	1404	593	17	1293	579
Arrive On Green	0.22	0.00	0.22	0.01	0.00	0.01	0.06	0.40	0.00	0.01	0.37	0.37
Sat Flow, veh/h	1774	0	1583	1774	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	60	0	138	2	0	2	49	888	0	7	718	16
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	1.2	0.0	3.4	0.1	0.0	0.1	1.2	9.2	0.0	0.2	7.4	0.3
Cycle Q Clear(g_c), s	1.2	0.0	3.4	0.1	0.0	0.1	1.2	9.2	0.0	0.2	7.4	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	0	354	19	0	17	111	1404	593	17	1293	579
V/C Ratio(X)	0.17	0.00	0.39	0.10	0.00	0.12	0.44	0.63	0.00	0.42	0.56	0.03
Avail Cap(c_a), veh/h	467	0	452	778	0	695	506	1444	611	467	1444	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	0.0	15.1	22.3	0.0	22.3	20.6	11.1	0.0	22.5	11.5	9.3
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.9	0.0	1.1	1.0	1.1	0.0	6.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.5	0.0	0.0	0.0	0.6	4.7	0.0	0.1	3.7	0.1
LnGrp Delay(d),s/veh	14.7	0.0	15.3	23.2	0.0	23.4	21.6	12.2	0.0	28.8	12.1	9.3
LnGrp LOS	B		B	C		C	C	B		C	B	A
Approach Vol, veh/h	198		4				937				741	
Approach Delay, s/veh	15.1		23.3				12.7				12.2	
Approach LOS	B		C				B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	13.2		5.8	22.1	4.5		4.4	23.5				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	12.0		12.0	17.6	20.0		12.0	17.6				
Max Q Clear Time (g_c+I1), s	5.4		3.2	9.4	2.1		2.2	11.2				
Green Ext Time (p_c), s	0.3		0.0	6.3	0.0		0.0	5.0				
Intersection Summary												
HCM 2010 Ctrl Delay			12.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
196: Sierra College Blvd & Olympus Dr

Cumulative Plus Project
AM PEAK HOUR

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	74	1	276	13	1	7	454	825	32	21	680	96								
Future Volume (veh/h)	74	1	276	13	1	7	454	825	32	21	680	96								
Number	7	4	14	3	8	18	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	79	0	291	14	1	7	478	868	34	22	716	101								
Adj No. of Lanes	2	0	1	2	1	0	1	2	1	1	3	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	824	0	368	191	11	76	421	1838	822	70	1635	509								
Arrive On Green	0.23	0.00	0.23	0.05	0.05	0.05	0.24	0.52	0.52	0.04	0.32	0.32								
Sat Flow, veh/h	3548	0	1583	3548	202	1412	1774	3539	1583	1774	5085	1583								
Grp Volume(v), veh/h	79	0	291	14	0	8	478	868	34	22	716	101								
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1614	1774	1770	1583	1774	1695	1583								
Q Serve(g_s), s	1.5	0.0	15.3	0.3	0.0	0.4	21.0	13.8	0.9	1.1	9.8	4.1								
Cycle Q Clear(g_c), s	1.5	0.0	15.3	0.3	0.0	0.4	21.0	13.8	0.9	1.1	9.8	4.1								
Prop In Lane	1.00		1.00	1.00		0.88	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	824	0	368	191	0	87	421	1838	822	70	1635	509								
V/C Ratio(X)	0.10	0.00	0.79	0.07	0.00	0.09	1.13	0.47	0.04	0.31	0.44	0.20								
Avail Cap(c_a), veh/h	911	0	406	401	0	182	421	1881	841	140	1874	584								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	26.7	0.0	31.9	39.7	0.0	39.8	33.7	13.5	10.4	41.3	23.7	21.7								
Incr Delay (d2), s/veh	0.1	0.0	10.4	0.3	0.0	0.7	86.0	0.4	0.0	0.9	0.3	0.3								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.8	0.2	0.0	0.2	20.2	6.8	0.4	0.5	4.6	1.8								
LnGrp Delay(d),s/veh	26.7	0.0	42.4	40.0	0.0	40.5	119.7	13.9	10.5	42.2	24.0	22.0								
LnGrp LOS	C		D	D		D	F	B	B	D	C	C								
Approach Vol, veh/h	370				22		1380				839									
Approach Delay, s/veh	39.0				40.2		50.5				24.2									
Approach LOS	D				D		D				C									
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	6.5	48.9	23.6		24.0	31.4	9.5													
Change Period (Y+Rc), s	4.0	* 6.4	5.7		4.0	6.4	5.7													
Max Green Setting (Gmax), s	6.0	* 44	20.0		20.0	29.2	9.0													
Max Q Clear Time (g_c+I1), s	3.1	15.8	17.3		23.0	11.8	2.4													
Green Ext Time (p_c), s	0.0	18.9	0.6		0.0	13.2	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay	40.3																			
HCM 2010 LOS	D																			
Notes																				
User approved volume balancing among the lanes for turning movement.																				

HCM 2010 Signalized Intersection Summary
 197: Sierra College Glvd/Sierra College Blvd & Indigo Creek Apts Dwy

Cumulative Plus Project
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	2	132	45	3	22	152	1431	91	74	906	96
Future Volume (veh/h)	132	2	132	45	3	22	152	1431	91	74	906	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	140	0	139	47	3	23	160	1506	96	78	954	101
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	406	0	181	154	10	146	201	2170	138	422	2722	287
Arrive On Green	0.11	0.00	0.11	0.09	0.09	0.09	0.11	0.44	0.43	0.24	0.58	0.58
Sat Flow, veh/h	3548	0	1583	1672	107	1583	1774	4887	311	1774	4672	493
Grp Volume(v), veh/h	140	0	139	50	0	23	160	1045	557	78	692	363
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1779	0	1583	1774	1695	1808	1774	1695	1776
Q Serve(g_s), s	4.4	0.0	10.2	3.2	0.0	1.6	10.5	29.7	29.8	4.2	12.8	12.9
Cycle Q Clear(g_c), s	4.4	0.0	10.2	3.2	0.0	1.6	10.5	29.7	29.8	4.2	12.8	12.9
Prop In Lane	1.00		1.00	0.94		1.00	1.00		0.17	1.00		0.28
Lane Grp Cap(c), veh/h	406	0	181	164	0	146	201	1506	803	422	1975	1035
V/C Ratio(X)	0.34	0.00	0.77	0.31	0.00	0.16	0.80	0.69	0.69	0.18	0.35	0.35
Avail Cap(c_a), veh/h	650	0	290	326	0	290	281	1506	803	422	1975	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	0.0	51.6	50.9	0.0	50.2	51.8	26.8	27.0	36.5	13.1	13.1
Incr Delay (d2), s/veh	0.2	0.0	2.6	0.4	0.0	0.2	6.7	2.7	4.9	0.1	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	4.6	1.6	0.0	0.7	5.5	14.3	16.0	2.1	6.0	6.4
LnGrp Delay(d),s/veh	49.2	0.0	54.1	51.3	0.0	50.4	58.6	29.5	31.9	36.5	13.4	13.6
LnGrp LOS	D		D	D		D	E	C	C	D	B	B
Approach Vol, veh/h	279				73		1762				1133	
Approach Delay, s/veh	51.6				51.0		32.9				15.1	
Approach LOS	D				D		C				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	33.2	56.0	16.7		16.6	72.6	14.0					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	10.0	* 50	21.0		18.0	42.3	21.0					
Max Q Clear Time (g_c+I1), s	6.2	31.8	12.2		12.5	14.9	5.2					
Green Ext Time (p_c), s	0.2	13.7	0.5		0.1	11.8	0.1					

Intersection Summary

HCM 2010 Ctrl Delay 28.7
 HCM 2010 LOS C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
198: Sierra College Blvd & Old Auburn Rd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	344	63	298	51	125	90	117	1670	19	29	1046	173
Future Volume (veh/h)	344	63	298	51	125	90	117	1670	19	29	1046	173
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	227	314	54	132	95	123	1758	20	31	1101	182
Adj No. of Lanes	1	2	0	0	2	0	2	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	564	480	0	233	156	254	2876	895	100	2788	868
Arrive On Green	0.16	0.30	0.30	0.00	0.11	0.11	0.07	0.57	0.57	0.06	0.55	0.55
Sat Flow, veh/h	1774	1863	1583	0	2029	1363	3442	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	247	227	314	0	114	113	123	1758	20	31	1101	182
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	0	1770	1622	1721	1695	1583	1774	1695	1583
Q Serve(g_s), s	16.2	11.6	20.7	0.0	7.3	8.0	4.1	27.5	0.7	2.0	15.0	7.0
Cycle Q Clear(g_c), s	16.2	11.6	20.7	0.0	7.3	8.0	4.1	27.5	0.7	2.0	15.0	7.0
Prop In Lane	1.00		1.00	0.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	564	480	0	203	186	254	2876	895	100	2788	868
V/C Ratio(X)	0.85	0.40	0.65	0.00	0.56	0.61	0.48	0.61	0.02	0.31	0.39	0.21
Avail Cap(c_a), veh/h	444	564	480	0	251	230	258	2876	895	148	2788	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	33.2	36.4	0.0	50.3	50.6	53.4	17.3	11.5	54.3	15.6	13.8
Incr Delay (d2), s/veh	6.1	0.7	3.8	0.0	3.8	5.0	0.5	1.0	0.0	0.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	6.1	9.6	0.0	3.8	3.8	2.0	13.1	0.3	1.0	7.1	3.1
LnGrp Delay(d),s/veh	54.9	33.9	40.2	0.0	54.1	55.6	53.9	18.3	11.5	55.0	15.8	14.0
LnGrp LOS	D	C	D		D	E	D	B	B	D	B	B
Approach Vol, veh/h	788				227			1901			1314	
Approach Delay, s/veh	43.0				54.8			20.5			16.5	
Approach LOS	D				D			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	70.9	0.0	39.3	11.9	68.8	22.6	16.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	9.0	48.0	10.0	33.3	8.0	49.0	29.0	14.3				
Max Q Clear Time (g_c+I1), s	4.0	29.5	0.0	22.7	6.1	17.0	18.2	10.0				
Green Ext Time (p_c), s	0.0	17.3	0.0	3.7	0.0	28.9	0.4	1.1				

Intersection Summary

HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
199: Europa St & Olympus Dr

Cumulative Plus Project
AM PEAK HOUR

																	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR					
Lane Configurations																	
Traffic Volume (veh/h)	1	207	14	27	350	7	27	3	28	6	2	8					
Future Volume (veh/h)	1	207	14	27	350	7	27	3	28	6	2	8					
Number	7	4	14	3	8	18	5	2	12	1	6	16					
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0					
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00					
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900					
Adj Flow Rate, veh/h	1	218	15	28	368	7	28	3	29	6	2	8					
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95					
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2					
Cap, veh/h	60	1144	78	130	1348	26	106	11	110	44	15	58					
Arrive On Green	0.03	0.34	0.29	0.07	0.38	0.33	0.14	0.14	0.14	0.07	0.07	0.07					
Sat Flow, veh/h	1774	3362	230	1774	3553	68	784	84	812	631	210	841					
Grp Volume(v), veh/h	1	114	119	28	183	192	60	0	0	16	0	0					
Grp Sat Flow(s),veh/h/ln	1774	1770	1822	1774	1770	1851	1680	0	0	1683	0	0					
Q Serve(g_s), s	0.0	1.4	1.5	0.5	2.3	2.3	1.0	0.0	0.0	0.3	0.0	0.0					
Cycle Q Clear(g_c), s	0.0	1.4	1.5	0.5	2.3	2.3	1.0	0.0	0.0	0.3	0.0	0.0					
Prop In Lane	1.00		0.13	1.00		0.04	0.47		0.48	0.37		0.50					
Lane Grp Cap(c), veh/h	60	602	620	130	672	702	228	0	0	116	0	0					
V/C Ratio(X)	0.02	0.19	0.19	0.22	0.27	0.27	0.26	0.00	0.00	0.14	0.00	0.00					
Avail Cap(c_a), veh/h	734	1182	1217	734	1182	1236	1390	0	0	696	0	0					
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00					
Uniform Delay (d), s/veh	14.7	7.3	7.4	13.7	6.7	6.8	12.2	0.0	0.0	13.8	0.0	0.0					
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.3	0.4	0.4	0.2	0.0	0.0	0.2	0.0	0.0					
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.8	0.2	1.1	1.2	0.5	0.0	0.0	0.1	0.0	0.0					
LnGrp Delay(d),s/veh	14.7	7.6	7.7	14.0	7.1	7.1	12.4	0.0	0.0	13.9	0.0	0.0					
LnGrp LOS	B	A	A	B	A	A	B			B							
Approach Vol, veh/h	234				403		60				16						
Approach Delay, s/veh	7.6				7.6		12.4				13.9						
Approach LOS	A				A		B				B						
Timer	1	2	3	4	5	6	7	8									
Assigned Phs	2		3	4			6	7	8								
Phs Duration (G+Y+Rc), s	7.3		5.3	13.7			5.2	4.1	14.9								
Change Period (Y+Rc), s	4.0		4.0	5.7			4.0	4.0	5.7								
Max Green Setting (Gmax), s	25.0		12.0	18.3			12.0	12.0	18.3								
Max Q Clear Time (g_c+I1), s	3.0		2.5	3.5			2.3	2.0	4.3								
Green Ext Time (p_c), s	0.2		0.0	4.4			0.0	0.0	4.3								
Intersection Summary																	
HCM 2010 Ctrl Delay			8.2														
HCM 2010 LOS			A														

HCM 2010 Signalized Intersection Summary
200: Scarborough Dr & Secret Ravine Pkwy

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	229	6	20	490	18	9	2	9	43	0	164
Future Volume (veh/h)	92	229	6	20	490	18	9	2	9	43	0	164
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	97	241	6	21	516	19	9	2	9	45	0	173
Adj No. of Lanes	1	2	1	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1331	595	86	1085	485	51	11	51	384	0	343
Arrive On Green	0.12	0.38	0.38	0.05	0.31	0.31	0.07	0.07	0.07	0.22	0.00	0.22
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	761	169	761	1774	0	1583
Grp Volume(v), veh/h	97	241	6	21	516	19	20	0	0	45	0	173
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1690	0	0	1774	0	1583
Q Serve(g_s), s	2.2	2.0	0.1	0.5	5.2	0.4	0.5	0.0	0.0	0.9	0.0	4.2
Cycle Q Clear(g_c), s	2.2	2.0	0.1	0.5	5.2	0.4	0.5	0.0	0.0	0.9	0.0	4.2
Prop In Lane	1.00		1.00	1.00		1.00	0.45		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	210	1331	595	86	1085	485	114	0	0	384	0	343
V/C Ratio(X)	0.46	0.18	0.01	0.24	0.48	0.04	0.18	0.00	0.00	0.12	0.00	0.50
Avail Cap(c_a), veh/h	529	1787	800	529	1787	800	505	0	0	1193	0	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	9.1	8.5	19.9	12.3	10.6	19.2	0.0	0.0	13.7	0.0	15.0
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.5	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.0	0.0	0.3	2.6	0.2	0.2	0.0	0.0	0.4	0.0	1.9
LnGrp Delay(d),s/veh	18.5	9.2	8.5	20.5	12.6	10.6	19.4	0.0	0.0	13.8	0.0	15.4
LnGrp LOS	B	A	A	C	B	B	B			B		B
Approach Vol, veh/h	344				556				20		218	
Approach Delay, s/veh	11.8				12.9				19.4		15.1	
Approach LOS	B				B				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.9		5.1	19.4	13.1		8.1	16.4				
Change Period (Y+Rc), s	4.0		4.0	6.0	5.7		4.0	6.0				
Max Green Setting (Gmax), s	12.0		12.0	19.0	27.3		12.0	19.0				
Max Q Clear Time (g_c+I1), s	2.5		2.5	4.0	6.2		4.2	7.2				
Green Ext Time (p_c), s	0.0		0.0	3.6	0.5		0.1	3.2				
Intersection Summary												
HCM 2010 Ctrl Delay	13.1											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
201: Alexandra Dr & Secret Ravine Pkwy

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓		
Traffic Volume (veh/h)	185	12	52	315	6	55		
Future Volume (veh/h)	185	12	52	315	6	55		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	195	13	55	332	6	58		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	652	292	90	1544	286	255		
Arrive On Green	0.18	0.18	0.05	0.44	0.16	0.16		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	195	13	55	332	6	58		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	1.2	0.2	0.8	1.4	0.1	0.8		
Cycle Q Clear(g_c), s	1.2	0.2	0.8	1.4	0.1	0.8		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	652	292	90	1544	286	255		
V/C Ratio(X)	0.30	0.04	0.61	0.21	0.02	0.23		
Avail Cap(c_a), veh/h	2280	1020	786	4560	1286	1147		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.7	8.3	11.5	4.4	8.8	9.1		
Incr Delay (d2), s/veh	0.3	0.1	6.5	0.1	0.0	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.5	0.7	0.0	0.4		
LnGrp Delay(d),s/veh	9.0	8.4	18.0	4.4	8.8	9.5		
LnGrp LOS	A	A	B	A	A	A		
Approach Vol, veh/h	208			387	64			
Approach Delay, s/veh	9.0			6.4	9.5			
Approach LOS	A			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		3	4				8
Phs Duration (G+Y+Rc), s	9.0		6.3	9.6				15.8
Change Period (Y+Rc), s	5.0		5.0	5.0				5.0
Max Green Setting (Gmax), s	18.0		11.0	16.0				32.0
Max Q Clear Time (g_c+I1), s	2.8		2.8	3.2				3.4
Green Ext Time (p_c), s	0.1		0.1	2.8				3.7
Intersection Summary								
HCM 2010 Ctrl Delay			7.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
202: Gibson Dr & Convention Center Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	325	11	276	991	437	258		
Future Volume (veh/h)	325	11	276	991	437	258		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	342	12	291	780	460	272		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	413	190	1767	790	450	2815		
Arrive On Green	0.12	0.12	0.50	0.50	0.25	0.80		
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	342	12	291	780	460	272		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770		
Q Serve(g_s), s	11.5	0.8	5.3	57.5	30.0	2.0		
Cycle Q Clear(g_c), s	11.5	0.8	5.3	57.5	30.0	2.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	413	190	1767	790	450	2815		
V/C Ratio(X)	0.83	0.06	0.16	0.99	1.02	0.10		
Avail Cap(c_a), veh/h	582	268	1767	790	450	2815		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	50.8	46.1	16.1	29.2	44.1	2.7		
Incr Delay (d2), s/veh	6.8	0.1	0.0	28.6	48.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.9	0.4	2.6	31.2	20.6	1.0		
LnGrp Delay(d),s/veh	57.6	46.2	16.2	57.8	92.1	2.7		
LnGrp LOS	E	D	B	E	F	A		
Approach Vol, veh/h	354		1071			732		
Approach Delay, s/veh	57.2		46.5			58.8		
Approach LOS	E		D			E		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	35.0	64.0				99.0		19.2
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	30.0	59.0				94.0		20.0
Max Q Clear Time (g_c+l1), s	32.0	59.5				4.0		13.5
Green Ext Time (p_c), s	0.0	0.0				9.3		0.7
Intersection Summary								
HCM 2010 Ctrl Delay			52.5					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary
205: Stonecrest Dr & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	597	3	2	178	188	8	64	1	704	14	109
Future Volume (veh/h)	62	597	3	2	178	188	8	64	1	704	14	109
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	65	628	3	2	187	198	8	67	1	741	15	115
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	950	425	26	793	355	22	188	179	794	16	722
Arrive On Green	0.06	0.27	0.27	0.01	0.22	0.22	0.11	0.11	0.11	0.46	0.46	0.46
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	198	1655	1583	1740	35	1583
Grp Volume(v), veh/h	65	628	3	2	187	198	75	0	1	756	0	115
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1853	0	1583	1776	0	1583
Q Serve(g_s), s	2.9	12.8	0.1	0.1	3.5	9.0	3.0	0.0	0.0	32.7	0.0	3.5
Cycle Q Clear(g_c), s	2.9	12.8	0.1	0.1	3.5	9.0	3.0	0.0	0.0	32.7	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	0.11		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	104	950	425	26	793	355	210	0	179	810	0	722
V/C Ratio(X)	0.62	0.66	0.01	0.08	0.24	0.56	0.36	0.00	0.01	0.93	0.00	0.16
Avail Cap(c_a), veh/h	109	1002	448	109	1002	448	251	0	214	853	0	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	26.4	21.8	39.5	25.8	27.9	33.3	0.0	31.9	20.9	0.0	13.0
Incr Delay (d2), s/veh	7.0	1.6	0.0	0.5	0.2	1.6	0.4	0.0	0.0	16.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.5	0.1	0.0	1.7	4.1	1.6	0.0	0.0	19.6	0.0	1.5
LnGrp Delay(d),s/veh	44.3	28.0	21.8	40.0	26.0	29.5	33.7	0.0	32.0	37.0	0.0	13.0
LnGrp LOS	D	C	C	D	C	C	C		C	D		B
Approach Vol, veh/h	696				387				76		871	
Approach Delay, s/veh	29.5				27.9				33.6		33.8	
Approach LOS	C				C				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.2	24.8	40.0		7.8	21.2	12.2					
Change Period (Y+Rc), s	4.0	6.0	4.0		4.0	6.0	4.0					
Max Green Setting (Gmax), s	4.0	20.0	38.0		4.0	20.0	10.0					
Max Q Clear Time (g_c+I1), s	2.1	14.8	34.7		4.9	11.0	5.0					
Green Ext Time (p_c), s	0.0	2.8	1.3		0.0	4.2	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			31.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
206: Park Regency & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	1292	13	74	354	52	12	92	92	114	49	17
Future Volume (veh/h)	44	1292	13	74	354	52	12	92	92	114	49	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	46	1360	14	78	373	55	13	97	97	120	52	18
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1615	722	101	1694	758	23	187	159	155	326	277
Arrive On Green	0.03	0.46	0.46	0.06	0.48	0.48	0.01	0.10	0.10	0.09	0.17	0.17
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	46	1360	14	78	373	55	13	97	97	120	52	18
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.7	22.7	0.3	2.9	4.1	1.3	0.5	3.3	3.9	4.4	1.6	0.6
Cycle Q Clear(g_c), s	1.7	22.7	0.3	2.9	4.1	1.3	0.5	3.3	3.9	4.4	1.6	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	61	1615	722	101	1694	758	23	187	159	155	326	277
V/C Ratio(X)	0.75	0.84	0.02	0.77	0.22	0.07	0.57	0.52	0.61	0.78	0.16	0.06
Avail Cap(c_a), veh/h	292	1694	758	292	1694	758	292	446	379	292	446	379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	16.1	10.0	31.1	10.2	9.4	32.8	28.5	28.8	29.9	23.4	23.0
Incr Delay (d2), s/veh	17.0	3.9	0.0	11.8	0.1	0.0	20.6	2.2	3.7	8.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	11.8	0.1	1.7	2.0	0.6	0.4	1.8	1.9	2.5	0.8	0.3
LnGrp Delay(d),s/veh	49.0	20.0	10.0	42.9	10.2	9.5	53.4	30.7	32.5	37.9	23.6	23.1
LnGrp LOS	D	B	A	D	B	A	D	C	C	D	C	C
Approach Vol, veh/h	1420				506				207			
Approach Delay, s/veh	20.8				15.2				33.0			
Approach LOS	C				B				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	11.7	8.8	35.5	5.9	16.7	7.3	37.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	11.0	32.0	11.0	16.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	6.4	5.9	4.9	24.7	2.5	3.6	3.7	6.1				
Green Ext Time (p_c), s	0.1	0.8	0.1	5.8	0.0	0.9	0.0	15.4				
Intersection Summary												
HCM 2010 Ctrl Delay	21.6											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
207: Woodcreek Oaks Blvd & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	623	852	73	101	159	110	46	509	173	129	389	165
Future Volume (veh/h)	623	852	73	101	159	110	46	509	173	129	389	165
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	656	897	0	106	167	0	48	536	0	136	409	0
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1043	1269	522	355	562	206	289	775	308	418	1009	413
Arrive On Green	0.30	0.36	0.00	0.10	0.16	0.00	0.08	0.22	0.00	0.12	0.29	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	656	897	0	106	167	0	48	536	0	136	409	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	11.4	15.1	0.0	2.0	2.9	0.0	0.9	9.7	0.0	2.5	6.5	0.0
Cycle Q Clear(g_c), s	11.4	15.1	0.0	2.0	2.9	0.0	0.9	9.7	0.0	2.5	6.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1043	1269	522	355	562	206	289	775	308	418	1009	413
V/C Ratio(X)	0.63	0.71	0.00	0.30	0.30	0.00	0.17	0.69	0.00	0.33	0.41	0.00
Avail Cap(c_a), veh/h	1043	1548	647	447	1394	578	447	853	343	844	1277	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.8	19.1	0.0	28.7	25.7	0.0	29.5	24.9	0.0	27.8	20.0	0.0
Incr Delay (d2), s/veh	0.9	1.6	0.0	0.2	0.5	0.0	0.1	2.5	0.0	0.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	7.6	0.0	1.0	1.5	0.0	0.4	5.0	0.0	1.2	3.2	0.0
LnGrp Delay(d),s/veh	21.7	20.7	0.0	28.9	26.2	0.0	29.6	27.4	0.0	28.0	20.5	0.0
LnGrp LOS	C	C		C	C		C	C		C	C	
Approach Vol, veh/h	1553				273				584			
Approach Delay, s/veh	21.1				27.3				27.6			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	27.6	8.8	22.8	24.0	13.7	13.1	18.5				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	5.7	* 6				
Max Green Setting (Gmax), s	8.0	27.3	8.0	22.3	11.0	24.3	16.0	* 14				
Max Q Clear Time (g_c+I1), s	4.0	17.1	2.9	8.5	13.4	4.9	4.5	11.7				
Green Ext Time (p_c), s	0.1	4.8	0.0	2.8	0.0	1.0	2.5	0.8				

Intersection Summary

HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
208: Country Club Dr & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	908	200	99	242	19	27	151	226	182	114	85
Future Volume (veh/h)	115	908	200	99	242	19	27	151	226	182	114	85
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	121	956	211	104	255	20	28	159	238	192	120	89
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	1005	221	153	1122	87	104	200	300	221	361	267
Arrive On Green	0.10	0.35	0.33	0.09	0.34	0.32	0.06	0.30	0.28	0.12	0.36	0.35
Sat Flow, veh/h	1774	2884	636	1774	3327	259	1774	675	1010	1774	995	738
Grp Volume(v), veh/h	121	586	581	104	135	140	28	0	397	192	0	209
Grp Sat Flow(s),veh/h/ln	1774	1770	1751	1774	1770	1817	1774	0	1685	1774	0	1733
Q Serve(g_s), s	5.3	25.9	26.1	4.6	4.4	4.5	1.2	0.0	17.5	8.5	0.0	7.1
Cycle Q Clear(g_c), s	5.3	25.9	26.1	4.6	4.4	4.5	1.2	0.0	17.5	8.5	0.0	7.1
Prop In Lane	1.00		0.36	1.00		0.14	1.00		0.60	1.00		0.43
Lane Grp Cap(c), veh/h	173	616	610	153	597	613	104	0	500	221	0	628
V/C Ratio(X)	0.70	0.95	0.95	0.68	0.23	0.23	0.27	0.00	0.79	0.87	0.00	0.33
Avail Cap(c_a), veh/h	177	616	610	154	597	613	199	0	595	221	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.2	25.5	25.9	35.7	19.1	19.2	36.2	0.0	26.4	34.6	0.0	18.8
Incr Delay (d2), s/veh	9.6	24.8	25.4	9.4	0.3	0.3	0.5	0.0	6.9	28.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	16.8	16.7	2.7	2.2	2.3	0.6	0.0	9.0	5.9	0.0	3.5
LnGrp Delay(d),s/veh	44.8	50.3	51.2	45.0	19.4	19.5	36.7	0.0	33.3	62.6	0.0	19.2
LnGrp LOS	D	D	D	D	B	B	D		C	E		B
Approach Vol, veh/h	1288				379				425			
Approach Delay, s/veh	50.2				26.4				33.5			
Approach LOS	D				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	26.5	9.9	31.0	7.7	31.7	10.8	30.1				
Change Period (Y+Rc), s	4.0	4.9	4.0	5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	9.0	26.1	6.0	25.3	8.0	27.1	7.0	24.3				
Max Q Clear Time (g_c+I1), s	10.5	19.5	6.6	28.1	3.2	9.1	7.3	6.5				
Green Ext Time (p_c), s	0.0	2.1	0.0	0.0	0.0	3.6	0.0	8.5				
Intersection Summary												
HCM 2010 Ctrl Delay	42.1											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
209: Junction Blvd & Revere Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	8	1325	363	18	80	13		
Future Volume (veh/h)	8	1325	363	18	80	13		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	8	1395	382	19	84	14		
Adj No. of Lanes	1	2	2	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	441	2398	990	49	307	274		
Arrive On Green	0.25	0.68	0.29	0.24	0.17	0.17		
Sat Flow, veh/h	1774	3632	3525	170	1774	1583		
Grp Volume(v), veh/h	8	1395	196	205	84	14		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1833	1774	1583		
Q Serve(g_s), s	0.1	7.0	3.0	3.0	1.4	0.2		
Cycle Q Clear(g_c), s	0.1	7.0	3.0	3.0	1.4	0.2		
Prop In Lane	1.00			0.09	1.00	1.00		
Lane Grp Cap(c), veh/h	441	2398	510	529	307	274		
V/C Ratio(X)	0.02	0.58	0.38	0.39	0.27	0.05		
Avail Cap(c_a), veh/h	441	3915	1428	1479	1485	1325		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	9.5	2.9	9.5	9.6	12.0	11.5		
Incr Delay (d2), s/veh	0.0	0.3	0.6	0.6	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	3.4	1.5	1.6	0.7	0.2		
LnGrp Delay(d),s/veh	9.5	3.2	10.2	10.2	12.2	11.6		
LnGrp LOS	A	A	B	B	B	B		
Approach Vol, veh/h		1403	401		98			
Approach Delay, s/veh		3.2	10.2		12.1			
Approach LOS		A	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		25.7		7.8	13.0	12.6		
Change Period (Y+Rc), s		5.7		3.0	5.7	* 5.7		
Max Green Setting (Gmax), s		34.3		27.0	6.0	* 24		
Max Q Clear Time (g_c+I1), s		9.0		3.4	2.1	5.0		
Green Ext Time (p_c), s		11.0		0.2	2.8	1.9		
Intersection Summary								
HCM 2010 Ctrl Delay			5.1					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
210: Americana Dr & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1371	54	128	323	0	114	0	115	0	0	0
Future Volume (veh/h)	0	1371	54	128	323	0	114	0	115	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	1443	57	135	340	0	120	0	121	0	0	0
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	1928	804	231	2521	0	355	0	317	0	3	0
Arrive On Green	0.00	0.54	0.51	0.13	0.71	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3632	0	1774	0	1583	0	1863	0
Grp Volume(v), veh/h	0	1443	57	135	340	0	120	0	121	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	0	1774	0	1583	0	1863	0
Q Serve(g_s), s	0.0	16.8	1.0	3.8	1.6	0.0	3.1	0.0	3.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.8	1.0	3.8	1.6	0.0	3.1	0.0	3.6	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	1928	804	231	2521	0	355	0	317	0	3	0
V/C Ratio(X)	0.00	0.75	0.07	0.58	0.13	0.00	0.34	0.00	0.38	0.00	0.00	0.00
Avail Cap(c_a), veh/h	231	2128	893	231	2521	0	727	0	649	0	347	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	9.4	6.8	22.0	2.5	0.0	18.4	0.0	18.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.0	2.5	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.4	0.4	2.0	0.8	0.0	1.6	0.0	1.6	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	10.9	6.8	24.5	2.5	0.0	18.6	0.0	18.9	0.0	0.0	0.0
LnGrp LOS		B	A	C	A		B		B			
Approach Vol, veh/h	1500				475				241			
Approach Delay, s/veh	10.7				8.7				18.8			
Approach LOS	B				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	32.0		0.0	0.0	41.0		12.8				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	5.0	29.3		8.0	5.0	29.3		20.0				
Max Q Clear Time (g_c+I1), s	5.8	18.8		0.0	0.0	3.6		5.6				
Green Ext Time (p_c), s	0.0	7.4		0.0	0.0	18.0		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	11.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
211: Porter Dr/Sawtell Rd & Junction Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1272	12	65	398	4	35	9	123	49	15	13
Future Volume (veh/h)	10	1272	12	65	398	4	35	9	123	49	15	13
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	11	1339	13	68	419	4	37	9	129	52	16	14
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	1412	14	167	1636	16	119	18	587	115	23	587
Arrive On Green	0.03	0.39	0.37	0.09	0.46	0.43	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1774	3591	35	1774	3592	34	46	50	1583	41	61	1583
Grp Volume(v), veh/h	11	660	692	68	206	217	46	0	129	68	0	14
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	1774	1770	1857	95	0	1583	102	0	1583
Q Serve(g_s), s	0.4	22.9	22.9	2.3	4.6	4.6	0.9	0.0	3.5	0.9	0.0	0.4
Cycle Q Clear(g_c), s	0.4	22.9	22.9	2.3	4.6	4.6	23.6	0.0	3.5	23.6	0.0	0.4
Prop In Lane	1.00		0.02	1.00		0.02	0.80		1.00	0.76		1.00
Lane Grp Cap(c), veh/h	57	696	730	167	806	846	138	0	587	138	0	587
V/C Ratio(X)	0.19	0.95	0.95	0.41	0.26	0.26	0.33	0.00	0.22	0.49	0.00	0.02
Avail Cap(c_a), veh/h	195	696	730	167	806	846	170	0	623	168	0	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.0	18.7	18.7	27.1	10.7	10.7	24.3	0.0	13.7	25.5	0.0	12.7
Incr Delay (d2), s/veh	0.6	22.4	21.8	0.6	0.2	0.2	0.5	0.0	0.1	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.3	16.0	1.1	2.3	2.4	0.8	0.0	1.6	1.2	0.0	0.2
LnGrp Delay(d),s/veh	30.6	41.1	40.5	27.7	10.9	10.9	24.9	0.0	13.8	26.5	0.0	12.7
LnGrp LOS	C	D	D	C	B	B	C		B	C		B
Approach Vol, veh/h	1363				491				175			
Approach Delay, s/veh	40.7				13.2				16.7			
Approach LOS	D				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	28.0		27.3	5.0	31.9		27.3				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	5.0	22.3		24.0	6.0	21.3		24.0				
Max Q Clear Time (g_c+I1), s	4.3	24.9		25.6	2.4	6.6		25.6				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	31.7											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
212: Del Rd/Hilltop Cir & PFE Rd

Cumulative Plus Project
AM PEAK HOUR

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	197	800	8	15	298	116	9	0	20	69	0	36								
Future Volume (veh/h)	197	800	8	15	298	116	9	0	20	69	0	36								
Number	5	2	12	1	6	16	3	8	18	7	4	14								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900								
Adj Flow Rate, veh/h	207	842	8	16	314	122	9	0	21	73	0	38								
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	318	1626	15	87	809	308	37	0	87	297	0	265								
Arrive On Green	0.18	0.45	0.42	0.05	0.32	0.29	0.08	0.00	0.08	0.17	0.00	0.17								
Sat Flow, veh/h	1774	3592	34	1774	2508	956	491	0	1145	1774	0	1583								
Grp Volume(v), veh/h	207	415	435	16	220	216	30	0	0	73	0	38								
Grp Sat Flow(s),veh/h/ln	1774	1770	1857	1774	1770	1694	1636	0	0	1774	0	1583								
Q Serve(g_s), s	5.1	7.9	7.9	0.4	4.5	4.8	0.8	0.0	0.0	1.7	0.0	1.0								
Cycle Q Clear(g_c), s	5.1	7.9	7.9	0.4	4.5	4.8	0.8	0.0	0.0	1.7	0.0	1.0								
Prop In Lane	1.00		0.02	1.00		0.56	0.30		0.70	1.00		1.00								
Lane Grp Cap(c), veh/h	318	801	840	87	570	546	125	0	0	297	0	265								
V/C Ratio(X)	0.65	0.52	0.52	0.18	0.39	0.40	0.24	0.00	0.00	0.25	0.00	0.14								
Avail Cap(c_a), veh/h	677	1013	1063	489	825	790	451	0	0	752	0	671								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00								
Uniform Delay (d), s/veh	18.0	9.2	9.2	21.5	12.4	12.8	20.5	0.0	0.0	17.1	0.0	16.8								
Incr Delay (d2), s/veh	0.8	0.7	0.7	0.4	0.6	0.6	0.7	0.0	0.0	0.2	0.0	0.1								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	2.5	4.0	4.1	0.2	2.3	2.3	0.4	0.0	0.0	0.8	0.0	0.4								
LnGrp Delay(d),s/veh	18.8	9.9	9.9	21.9	12.9	13.4	21.2	0.0	0.0	17.2	0.0	16.8								
LnGrp LOS	B	A	A	C	B	B	C			B		B								
Approach Vol, veh/h	1057			452				30		111										
Approach Delay, s/veh	11.7			13.5				21.2		17.1										
Approach LOS	B			B				C		B										
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	5.3	24.4	10.9		11.5	18.2	6.6													
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0													
Max Green Setting (Gmax), s	12.0	24.3	19.0		17.0	19.3	12.0													
Max Q Clear Time (g_c+I1), s	2.4	9.9	3.7		7.1	6.8	2.8													
Green Ext Time (p_c), s	0.0	6.2	0.2		0.3	5.7	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay																				
HCM 2010 LOS																				

HCM 2010 Signalized Intersection Summary
213: Santucci Blvd & Solaire Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	9	111	3	24	22	375	117	5	715	16
Future Volume (veh/h)	6	1	9	111	3	24	22	375	117	5	715	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	6	1	9	117	3	25	23	395	123	5	753	17
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	11	20	17	152	167	142	40	1846	575	10	1758	547
Arrive On Green	0.01	0.01	0.01	0.09	0.09	0.09	0.02	0.36	0.36	0.01	0.35	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	6	1	9	117	3	25	23	395	123	5	753	17
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.1	0.0	0.2	2.4	0.1	0.5	0.5	2.0	2.0	0.1	4.2	0.3
Cycle Q Clear(g_c), s	0.1	0.0	0.2	2.4	0.1	0.5	0.5	2.0	2.0	0.1	4.2	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	11	20	17	152	167	142	40	1846	575	10	1758	547
V/C Ratio(X)	0.52	0.05	0.54	0.77	0.02	0.18	0.57	0.21	0.21	0.52	0.43	0.03
Avail Cap(c_a), veh/h	190	1595	1356	570	1994	1695	237	2994	932	190	2858	890
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	18.3	18.4	16.7	15.5	15.7	18.1	8.2	8.2	18.5	9.4	8.1
Incr Delay (d2), s/veh	32.4	1.1	24.3	7.9	0.0	0.6	12.0	0.1	0.2	37.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	1.5	0.0	0.3	0.4	0.9	0.9	0.1	2.0	0.1
LnGrp Delay(d),s/veh	50.9	19.4	42.7	24.6	15.5	16.3	30.1	8.3	8.4	56.0	9.6	8.1
LnGrp LOS	D	B	D	C	B	B	C	A	A	E	A	A
Approach Vol, veh/h	16			145				541			775	
Approach Delay, s/veh	44.3			23.0				9.2			9.8	
Approach LOS	D			C				A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	18.6	8.2	5.4	5.8	17.9	5.2	8.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	22.0	12.0	32.0	5.0	21.0	4.0	40.0				
Max Q Clear Time (g_c+I1), s	2.1	4.0	4.4	2.2	2.5	6.2	2.1	2.5				
Green Ext Time (p_c), s	0.0	7.4	0.1	0.1	0.0	6.7	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
214: Santucci Rd & Federico Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	39	70	271	8	22	22	481	144	15	813	6
Future Volume (veh/h)	11	39	70	271	8	22	22	481	144	15	813	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	41	74	285	8	23	23	506	152	16	856	6
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	214	151	387	560	445	73	1823	537	63	1793	527
Arrive On Green	0.03	0.11	0.10	0.22	0.30	0.28	0.04	0.36	0.34	0.04	0.35	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	12	41	74	285	8	23	23	506	152	16	856	6
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.3	1.0	2.3	7.7	0.2	0.5	0.6	3.6	3.6	0.4	6.7	0.1
Cycle Q Clear(g_c), s	0.3	1.0	2.3	7.7	0.2	0.5	0.6	3.6	3.6	0.4	6.7	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	214	151	387	560	445	73	1823	537	63	1793	527
V/C Ratio(X)	0.21	0.19	0.49	0.74	0.01	0.05	0.31	0.28	0.28	0.25	0.48	0.01
Avail Cap(c_a), veh/h	173	1237	1020	797	1892	1577	173	2384	711	173	2384	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	20.5	22.0	18.7	12.6	13.4	23.8	11.7	12.4	24.0	12.9	11.4
Incr Delay (d2), s/veh	1.9	0.4	2.5	2.8	0.0	0.0	2.4	0.1	0.3	2.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	1.1	4.0	0.1	0.2	0.4	1.7	1.6	0.3	3.1	0.1
LnGrp Delay(d),s/veh	26.0	20.9	24.4	21.4	12.6	13.5	26.2	11.8	12.7	26.1	13.1	11.4
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h	127				316				681			
Approach Delay, s/veh	23.5				20.6				12.5			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	21.4	15.2	8.9	6.1	21.1	5.6	18.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	22.0	22.0	32.0	4.0	22.0	4.0	50.0				
Max Q Clear Time (g_c+I1), s	2.4	5.6	9.7	4.3	2.6	8.7	2.3	2.5				
Green Ext Time (p_c), s	0.0	8.4	0.7	0.5	0.0	7.3	0.0	0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	14.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
215: Santucci Blvd & Sierra Village Dr

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	9	104	115	4	16	28	584	38	50	1155	15
Future Volume (veh/h)	52	9	104	115	4	16	28	584	38	50	1155	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	9	109	121	4	17	29	615	40	53	1216	16
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	174	148	157	259	220	47	1958	610	73	2033	633
Arrive On Green	0.04	0.09	0.09	0.09	0.14	0.14	0.03	0.38	0.38	0.04	0.40	0.40
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	55	9	109	121	4	17	29	615	40	53	1216	16
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.6	0.2	3.5	3.5	0.1	0.5	0.8	4.4	0.8	1.5	9.8	0.3
Cycle Q Clear(g_c), s	1.6	0.2	3.5	3.5	0.1	0.5	0.8	4.4	0.8	1.5	9.8	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	174	148	157	259	220	47	1958	610	73	2033	633
V/C Ratio(X)	0.73	0.05	0.74	0.77	0.02	0.08	0.62	0.31	0.07	0.72	0.60	0.03
Avail Cap(c_a), veh/h	240	1152	979	309	1224	1041	137	2133	664	240	2428	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	21.4	22.8	23.1	19.2	19.4	24.9	11.1	10.0	24.5	12.2	9.4
Incr Delay (d2), s/veh	12.9	0.1	7.0	7.9	0.0	0.1	12.7	0.1	0.0	12.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	1.8	2.0	0.1	0.2	0.6	2.1	0.4	1.0	4.6	0.1
LnGrp Delay(d),s/veh	37.4	21.5	29.9	30.9	19.2	19.5	37.6	11.2	10.1	37.2	12.5	9.4
LnGrp LOS	D	C	C	C	B	B	D	B	B	D	B	A
Approach Vol, veh/h	173				142				684			
Approach Delay, s/veh	31.8				29.2				12.3			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	25.2	9.6	9.8	6.4	26.0	7.2	12.2				
Change Period (Y+Rc), s	5.0	5.3	5.0	5.0	5.0	5.3	5.0	5.0				
Max Green Setting (Gmax), s	7.0	21.7	9.0	32.0	4.0	24.7	7.0	34.0				
Max Q Clear Time (g_c+I1), s	3.5	6.4	5.5	5.5	2.8	11.8	3.6	2.5				
Green Ext Time (p_c), s	0.0	10.1	0.1	0.4	0.0	8.9	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	15.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
216: Hayden Parkway & Holt Parkway

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	49	107	18	70	6	21	45	12	8	114	84
Future Volume (veh/h)	62	49	107	18	70	6	21	45	12	8	114	84
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	65	52	113	19	74	6	22	47	13	8	120	88
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	309	261	35	220	18	40	305	84	15	203	149
Arrive On Green	0.06	0.17	0.17	0.02	0.13	0.13	0.02	0.22	0.22	0.01	0.20	0.20
Sat Flow, veh/h	1774	1863	1574	1774	1699	138	1774	1404	388	1774	998	732
Grp Volume(v), veh/h	65	52	113	19	0	80	22	0	60	8	0	208
Grp Sat Flow(s),veh/h/ln	1774	1863	1574	1774	0	1837	1774	0	1792	1774	0	1729
Q Serve(g_s), s	1.1	0.7	2.0	0.3	0.0	1.2	0.4	0.0	0.8	0.1	0.0	3.3
Cycle Q Clear(g_c), s	1.1	0.7	2.0	0.3	0.0	1.2	0.4	0.0	0.8	0.1	0.0	3.3
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.22	1.00		0.42
Lane Grp Cap(c), veh/h	98	309	261	35	0	238	40	0	390	15	0	353
V/C Ratio(X)	0.66	0.17	0.43	0.55	0.00	0.34	0.56	0.00	0.15	0.52	0.00	0.59
Avail Cap(c_a), veh/h	395	1389	1174	232	0	1202	232	0	1243	232	0	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	10.9	11.5	14.9	0.0	12.1	14.8	0.0	9.7	15.1	0.0	11.0
Incr Delay (d2), s/veh	7.3	0.3	1.1	12.9	0.0	0.8	11.6	0.0	0.2	25.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	0.9	0.3	0.0	0.7	0.3	0.0	0.4	0.2	0.0	1.7
LnGrp Delay(d),s/veh	21.5	11.2	12.6	27.7	0.0	12.9	26.4	0.0	9.9	40.3	0.0	12.6
LnGrp LOS	C	B	B	C		B	C		A	D		B
Approach Vol, veh/h	230				99				82			
Approach Delay, s/veh	14.8				15.8				14.3			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.8	11.2	5.1	9.6	5.2	10.7	6.2	8.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.0	21.2	4.0	22.8	4.0	21.2	6.8	20.0				
Max Q Clear Time (g_c+I1), s	2.1	2.8	2.3	4.0	2.4	5.3	3.1	3.2				
Green Ext Time (p_c), s	0.0	1.4	0.0	0.9	0.0	1.3	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay	14.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
217: Industrial Ave & Alantown Dr

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	0	459	750	12	155	240		
Future Volume (veh/h)	0	459	750	12	155	240		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	483	789	13	163	253		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	451	403	889	756	100	1126		
Arrive On Green	0.00	0.25	0.48	0.48	0.06	0.60		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	0	483	789	13	163	253		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	0.0	18.0	27.2	0.3	4.0	4.4		
Cycle Q Clear(g_c), s	0.0	18.0	27.2	0.3	4.0	4.4		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	451	403	889	756	100	1126		
V/C Ratio(X)	0.00	1.20	0.89	0.02	1.63	0.22		
Avail Cap(c_a), veh/h	451	403	1000	850	100	1237		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	26.4	16.8	9.8	33.4	6.4		
Incr Delay (d2), s/veh	0.0	111.5	9.1	0.0	322.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	20.3	16.0	0.1	10.9	2.3		
LnGrp Delay(d),s/veh	0.0	137.8	25.8	9.8	355.8	6.5		
LnGrp LOS		F	C	A	F	A		
Approach Vol, veh/h	483		802			416		
Approach Delay, s/veh	137.8		25.6			143.4		
Approach LOS	F		C			F		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	38.8				47.8		23.0
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	4.0	38.0				47.0		18.0
Max Q Clear Time (g_c+I1), s	6.0	29.2				6.4		20.0
Green Ext Time (p_c), s	0.0	4.6				9.4		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			86.3					
HCM 2010 LOS			F					

HCM 2010 Signalized Intersection Summary
218: Industrial Avenue & Freedom Way

Cumulative Plus Project
AM PEAK HOUR

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	5	2	721	33	14	446		
Future Volume (veh/h)	5	2	721	33	14	446		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	5	2	759	35	15	469		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	13	12	1224	1040	555	1224		
Arrive On Green	0.01	0.01	0.66	0.66	0.66	0.66		
Sat Flow, veh/h	1774	1583	1863	1583	681	1863		
Grp Volume(v), veh/h	5	2	759	35	15	469		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	681	1863		
Q Serve(g_s), s	0.1	0.0	6.3	0.2	0.3	3.1		
Cycle Q Clear(g_c), s	0.1	0.0	6.3	0.2	6.7	3.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	13	12	1224	1040	555	1224		
V/C Ratio(X)	0.37	0.17	0.62	0.03	0.03	0.38		
Avail Cap(c_a), veh/h	1058	945	2431	2066	996	2431		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.2	13.2	2.7	1.6	4.6	2.1		
Incr Delay (d2), s/veh	16.2	6.4	0.5	0.0	0.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.3	0.1	0.1	1.6		
LnGrp Delay(d),s/veh	29.4	19.6	3.2	1.6	4.6	2.3		
LnGrp LOS	C	B	A	A	A	A		
Approach Vol, veh/h	7		794			484		
Approach Delay, s/veh	26.6		3.1			2.4		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		22.6				22.6		4.2
Change Period (Y+Rc), s		5.0				5.0		4.0
Max Green Setting (Gmax), s		35.0				35.0		16.0
Max Q Clear Time (g_c+l1), s		8.3				8.7		2.1
Green Ext Time (p_c), s		9.0				8.9		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			3.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
219: La Sierra Drive & Pleasant Grove Blvd

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	528	12	40	213	0	12	0	0	0	0	0
Future Volume (veh/h)	0	528	12	40	213	0	12	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	556	13	42	224	0	13	0	0	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	1525	681	72	2277	1019	25	26	0	8	8	0
Arrive On Green	0.00	0.43	0.43	0.04	0.64	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1580	1774	3539	1583	1774	1863	0	1774	1863	0
Grp Volume(v), veh/h	0	556	13	42	224	0	13	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1580	1774	1770	1583	1774	1863	0	1774	1863	0
Q Serve(g_s), s	0.0	2.5	0.1	0.5	0.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.5	0.1	0.5	0.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	8	1525	681	72	2277	1019	25	26	0	8	8	0
V/C Ratio(X)	0.00	0.36	0.02	0.58	0.10	0.00	0.53	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	760	10163	4536	1597	11832	5293	988	2874	0	760	2635	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.5	3.8	11.0	1.6	0.0	11.4	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	7.1	0.0	0.0	16.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.1	0.4	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.6	3.8	18.1	1.6	0.0	27.9	0.0	0.0	0.0	0.0	0.0
LnGrp LOS		A	A	B	A		C					
Approach Vol, veh/h		569			266			13			0	
Approach Delay, s/veh		4.6			4.2			27.9			0.0	
Approach LOS		A			A			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	4.3	5.0	14.1	4.3	0.0	0.0	19.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	36.0	21.0	67.0	13.0	33.0	10.0	78.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0	2.5	4.5	2.2	0.0	0.0	2.6				
Green Ext Time (p_c), s	0.0	0.0	0.1	5.5	0.0	0.0	0.0	5.5				
Intersection Summary												
HCM 2010 Ctrl Delay			4.8									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
220: Westbrook Blvd & Road D

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	18	0	6	33	5	717	0	7	539	8
Future Volume (veh/h)	5	5	18	0	6	33	5	717	0	7	539	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	5	5	19	0	6	35	5	755	0	7	567	8
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	379	322	10	100	85	19	1815	565	26	1826	568
Arrive On Green	0.01	0.20	0.20	0.00	0.05	0.05	0.01	0.36	0.00	0.01	0.36	0.36
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	5	5	19	0	6	35	5	755	0	7	567	8
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.1	0.1	0.3	0.0	0.1	0.7	0.1	3.9	0.0	0.1	2.8	0.1
Cycle Q Clear(g_c), s	0.1	0.1	0.3	0.0	0.1	0.7	0.1	3.9	0.0	0.1	2.8	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	19	379	322	10	100	85	19	1815	565	26	1826	568
V/C Ratio(X)	0.27	0.01	0.06	0.00	0.06	0.41	0.27	0.42	0.00	0.27	0.31	0.01
Avail Cap(c_a), veh/h	1091	859	730	1091	859	730	1091	2492	776	1091	2492	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	11.0	11.1	0.0	15.6	15.9	17.2	8.4	0.0	17.1	8.0	7.2
Incr Delay (d2), s/veh	7.5	0.0	0.1	0.0	0.2	3.2	7.5	0.2	0.0	5.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.2	0.0	0.1	0.4	0.0	1.8	0.0	0.1	1.3	0.1
LnGrp Delay(d),s/veh	24.6	11.1	11.2	0.0	15.8	19.1	24.6	8.6	0.0	22.6	8.1	7.2
LnGrp LOS	C	B	B		B	B	C	A		C	A	A
Approach Vol, veh/h	29		41				760		582			
Approach Delay, s/veh	13.5		18.6				8.7		8.3			
Approach LOS	B		B				A		A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	17.4	0.0	12.1	5.2	17.5	5.2	6.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	2.1	5.9	0.0	2.3	2.1	4.8	2.1	2.7				
Green Ext Time (p_c), s	0.0	6.5	0.0	0.1	0.0	6.9	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			8.9									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
222: Westbrook Blvd/Westbrook Blvd & Road B

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	133	0	24	0	688	39	7	697	0
Future Volume (veh/h)	0	0	0	133	0	24	0	688	39	7	697	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	0	0	140	0	25	0	724	41	7	734	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	6	5	183	192	164	6	1955	609	13	2849	887
Arrive On Green	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.38	0.38	0.01	0.56	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	0	0	140	0	25	0	724	41	7	734	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	0.0	0.0	2.3	0.0	0.4	0.0	3.0	0.5	0.1	2.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.3	0.0	0.4	0.0	3.0	0.5	0.1	2.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	6	5	183	192	164	6	1955	609	13	2849	887
V/C Ratio(X)	0.00	0.00	0.00	0.76	0.00	0.15	0.00	0.37	0.07	0.52	0.26	0.00
Avail Cap(c_a), veh/h	657	1003	852	716	1065	906	657	2737	852	657	2849	887
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	13.0	0.0	12.1	0.0	6.6	5.8	14.7	3.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	6.5	0.0	0.4	0.0	0.1	0.0	28.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.4	0.0	0.2	0.0	1.4	0.2	0.2	1.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	19.5	0.0	12.6	0.0	6.7	5.8	42.7	3.4	0.0
LnGrp LOS				B		B		A	A	D	A	
Approach Vol, veh/h		0			165			765			741	
Approach Delay, s/veh		0.0			18.4			6.6			3.8	
Approach LOS					B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	16.4	8.1	0.0	0.0	21.7	0.0	8.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	12.0	16.0	11.0	16.0	11.0	17.0				
Max Q Clear Time (g_c+I1), s	2.1	5.0	4.3	0.0	0.0	4.2	0.0	2.4				
Green Ext Time (p_c), s	0.0	6.4	0.2	0.0	0.0	7.4	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			6.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
224: Westbrook Blvd & Road A

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	293	78	1	0	84	853	22	0	857	3
Future Volume (veh/h)	1	1	293	78	1	0	84	853	22	0	857	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	1	308	82	1	0	88	898	23	0	902	3
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	432	367	187	531	452	195	2099	653	7	1301	405
Arrive On Green	0.00	0.23	0.23	0.05	0.29	0.00	0.06	0.41	0.41	0.00	0.26	0.26
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	1	1	308	82	1	0	88	898	23	0	902	3
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	0.0	9.2	1.2	0.0	0.0	1.2	6.3	0.4	0.0	8.0	0.1
Cycle Q Clear(g_c), s	0.0	0.0	9.2	1.2	0.0	0.0	1.2	6.3	0.4	0.0	8.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	7	432	367	187	531	452	195	2099	653	7	1301	405
V/C Ratio(X)	0.14	0.00	0.84	0.44	0.00	0.00	0.45	0.43	0.04	0.00	0.69	0.01
Avail Cap(c_a), veh/h	759	598	508	759	598	508	759	2099	653	759	1734	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	14.7	18.3	22.8	12.7	0.0	22.8	10.4	8.7	0.0	16.8	13.8
Incr Delay (d2), s/veh	9.3	0.0	8.7	1.6	0.0	0.0	1.6	0.1	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.9	0.6	0.0	0.0	0.6	2.9	0.2	0.0	3.8	0.0
LnGrp Delay(d),s/veh	34.2	14.7	27.0	24.4	12.7	0.0	24.4	10.6	8.7	0.0	17.5	13.8
LnGrp LOS	C	B	C	C	B		C	B	A		B	B
Approach Vol, veh/h	310				83				1009			
Approach Delay, s/veh	26.9				24.3				11.7			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	25.6	7.7	16.6	7.8	17.8	5.1	19.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	0.0	8.3	3.2	11.2	3.2	10.0	2.0	2.0				
Green Ext Time (p_c), s	0.0	6.7	0.1	0.5	0.1	2.8	0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay	16.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 225: Falcon Pointe Lane/Medical Plaza Drive & Secret Ravine Pkwy

Cumulative Plus Project
 AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	213	0	11	804	9	0	0	3	2	0	10
Future Volume (veh/h)	20	213	0	11	804	9	0	0	3	2	0	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	21	224	0	12	846	9	0	0	3	2	0	11
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	38	1473	0	23	1462	16	0	0	14	35	0	31
Arrive On Green	0.02	0.42	0.00	0.01	0.41	0.41	0.00	0.00	0.01	0.02	0.00	0.02
Sat Flow, veh/h	1774	3632	0	1774	3587	38	0	0	1576	1774	0	1576
Grp Volume(v), veh/h	21	224	0	12	417	438	0	0	3	2	0	11
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1856	0	0	1576	1774	0	1576
Q Serve(g_s), s	0.3	1.2	0.0	0.2	5.4	5.4	0.0	0.0	0.1	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	1.2	0.0	0.2	5.4	5.4	0.0	0.0	0.1	0.0	0.0	0.2
Prop In Lane	1.00		0.00	1.00		0.02	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	38	1473	0	23	721	756	0	0	14	35	0	31
V/C Ratio(X)	0.55	0.15	0.00	0.53	0.58	0.58	0.00	0.00	0.21	0.06	0.00	0.36
Avail Cap(c_a), veh/h	241	2160	0	241	1080	1133	0	0	1122	1263	0	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	5.4	0.0	14.5	6.8	6.8	0.0	0.0	14.5	14.2	0.0	14.3
Incr Delay (d2), s/veh	11.9	0.0	0.0	18.1	0.7	0.7	0.0	0.0	6.9	0.7	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	0.0	0.2	2.7	2.8	0.0	0.0	0.1	0.0	0.0	0.1
LnGrp Delay(d),s/veh	26.2	5.4	0.0	32.6	7.5	7.5	0.0	0.0	21.4	14.9	0.0	21.2
LnGrp LOS	C	A		C	A	A			C	B		C
Approach Vol, veh/h	245				867				3			
Approach Delay, s/veh	7.2				7.8				21.4		20.2	
Approach LOS	A				A				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	4.3		4.4	16.3	4.6		4.6	16.0				
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s	21.0		4.0	18.0	21.0		4.0	18.0				
Max Q Clear Time (g_c+I1), s	2.1		2.2	3.2	2.2		2.3	7.4				
Green Ext Time (p_c), s	0.0		0.0	5.5	0.0		0.0	4.5				
Intersection Summary												
HCM 2010 Ctrl Delay			7.9									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
226: Hayden Pkwy & High School Road

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	5	45	53	7	61	65	75	16	16	78	94
Future Volume (veh/h)	68	5	45	53	7	61	65	75	16	16	78	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	72	5	47	56	7	64	68	79	17	17	82	99
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	245	207	90	224	189	105	381	323	31	304	257
Arrive On Green	0.06	0.13	0.13	0.05	0.12	0.12	0.06	0.20	0.20	0.02	0.16	0.16
Sat Flow, veh/h	1774	1863	1573	1774	1863	1573	1774	1863	1576	1774	1863	1574
Grp Volume(v), veh/h	72	5	47	56	7	64	68	79	17	17	82	99
Grp Sat Flow(s),veh/h/ln	1774	1863	1573	1774	1863	1573	1774	1863	1576	1774	1863	1574
Q Serve(g_s), s	1.1	0.1	0.7	0.8	0.1	1.0	1.0	0.9	0.2	0.3	1.0	1.5
Cycle Q Clear(g_c), s	1.1	0.1	0.7	0.8	0.1	1.0	1.0	0.9	0.2	0.3	1.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	245	207	90	224	189	105	381	323	31	304	257
V/C Ratio(X)	0.66	0.02	0.23	0.62	0.03	0.34	0.65	0.21	0.05	0.54	0.27	0.39
Avail Cap(c_a), veh/h	330	1525	1287	330	1525	1287	264	1594	1348	264	1594	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	10.2	10.5	12.5	10.4	10.8	12.4	8.9	8.6	13.1	9.8	10.0
Incr Delay (d2), s/veh	6.5	0.0	0.6	6.8	0.1	1.0	6.5	0.3	0.1	13.6	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.3	0.6	0.0	0.5	0.7	0.5	0.1	0.2	0.6	0.7
LnGrp Delay(d),s/veh	18.8	10.2	11.0	19.3	10.5	11.9	18.9	9.1	8.7	26.7	10.3	11.0
LnGrp LOS	B	B	B	B	B	B	B	A	A	C	B	B
Approach Vol, veh/h	124				127				164			
Approach Delay, s/veh	15.5				15.1				13.1			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.5	9.5	5.4	7.5	5.6	8.4	5.7	7.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	23.0	5.0	22.0	4.0	23.0	5.0	22.0				
Max Q Clear Time (g_c+I1), s	2.3	2.9	2.8	2.7	3.0	3.5	3.1	3.0				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.3	0.0	1.1	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	13.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

1001: Riverside & Darling

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	67	31	169	36	16	54	649	231	28	235	6
Future Volume (veh/h)	42	67	31	169	36	16	54	649	231	28	235	6
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	44	71	33	178	38	17	57	683	243	29	247	6
Adj No. of Lanes	0	1	1	0	1	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	151	212	239	51	23	117	790	672	96	1455	35
Arrive On Green	0.13	0.13	0.13	0.18	0.18	0.18	0.07	0.42	0.42	0.05	0.41	0.41
Sat Flow, veh/h	699	1128	1583	1354	289	129	1774	1863	1583	1774	3532	86
Grp Volume(v), veh/h	115	0	33	233	0	0	57	683	243	29	123	130
Grp Sat Flow(s),veh/h/ln	1828	0	1583	1772	0	0	1774	1863	1583	1774	1770	1848
Q Serve(g_s), s	3.7	0.0	1.2	7.8	0.0	0.0	1.9	20.9	6.6	1.0	2.8	2.8
Cycle Q Clear(g_c), s	3.7	0.0	1.2	7.8	0.0	0.0	1.9	20.9	6.6	1.0	2.8	2.8
Prop In Lane	0.38		1.00	0.76		0.07	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	244	0	212	313	0	0	117	790	672	96	729	761
V/C Ratio(X)	0.47	0.00	0.16	0.74	0.00	0.00	0.49	0.86	0.36	0.30	0.17	0.17
Avail Cap(c_a), veh/h	262	0	227	761	0	0	198	999	849	198	980	1023
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	24.1	24.5	0.0	0.0	28.3	16.4	12.3	28.6	11.7	11.7
Incr Delay (d2), s/veh	0.5	0.0	0.1	1.3	0.0	0.0	1.2	5.6	0.1	0.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.5	3.9	0.0	0.0	1.0	11.8	2.9	0.5	1.4	1.4
LnGrp Delay(d),s/veh	25.7	0.0	24.2	25.8	0.0	0.0	29.5	22.0	12.4	29.3	11.8	11.8
LnGrp LOS	C		C	C			C	C	B	C	B	B
Approach Vol, veh/h	148					233	983			282		
Approach Delay, s/veh	25.4					25.8	20.1			13.6		
Approach LOS	C					C	C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.4	31.0	14.1		7.2	30.2	11.4					
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	* 5.3	4.0					
Max Green Setting (Gmax), s	6.0	32.7	26.0		6.0	* 34	8.0					
Max Q Clear Time (g_c+I1), s	3.0	22.9	9.8		3.9	4.8	5.7					
Green Ext Time (p_c), s	0.0	2.7	0.5		0.0	3.5	0.1					

Intersection Summary

HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
1002: Riverside & Vernon & Douglas

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	285	292	24	51	118	3	0	345	327	0	242	245
Future Volume (veh/h)	285	292	24	51	118	3	0	345	327	0	242	245
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	300	307	25	54	124	3	0	363	344	0	255	0
Adj No. of Lanes	1	1	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	0	2	2
Cap, veh/h	456	437	36	302	601	14	0	633	538	0	633	538
Arrive On Green	0.26	0.26	0.26	0.17	0.17	0.17	0.00	0.34	0.34	0.00	0.34	0.00
Sat Flow, veh/h	1774	1700	138	1774	3532	85	0	1863	1583	0	1863	1583
Grp Volume(v), veh/h	300	0	332	54	62	65	0	363	344	0	255	0
Grp Sat Flow(s),veh/h/ln	1774	0	1838	1774	1770	1848	0	1863	1583	0	1863	1583
Q Serve(g_s), s	7.4	0.0	8.0	1.3	1.5	1.5	0.0	7.8	9.0	0.0	5.1	0.0
Cycle Q Clear(g_c), s	7.4	0.0	8.0	1.3	1.5	1.5	0.0	7.8	9.0	0.0	5.1	0.0
Prop In Lane	1.00		0.08	1.00		0.05	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	456	0	473	302	301	314	0	633	538	0	633	538
V/C Ratio(X)	0.66	0.00	0.70	0.18	0.21	0.21	0.00	0.57	0.64	0.00	0.40	0.00
Avail Cap(c_a), veh/h	762	0	789	327	326	340	0	762	648	0	762	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.2	0.0	16.5	17.4	17.5	17.5	0.0	13.2	13.6	0.0	12.4	0.0
Incr Delay (d2), s/veh	1.2	0.0	1.4	0.2	0.2	0.2	0.0	1.8	2.9	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	4.2	0.6	0.7	0.8	0.0	4.2	4.3	0.0	2.8	0.0
LnGrp Delay(d),s/veh	17.4	0.0	17.9	17.6	17.7	17.7	0.0	15.0	16.5	0.0	13.2	0.0
LnGrp LOS	B		B	B	B	B		B	B		B	
Approach Vol, veh/h	632				181				707		255	
Approach Delay, s/veh	17.7				17.7				15.7		13.2	
Approach LOS	B				B				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	19.8		16.9		19.8		12.2					
Change Period (Y+Rc), s	* 4.2		5.3		* 4.2		4.9					
Max Green Setting (Gmax), s	* 19		20.0		* 19		8.0					
Max Q Clear Time (g_c+I1), s	11.0		10.0		7.1		3.5					
Green Ext Time (p_c), s	4.6		1.6		6.2		0.2					
Intersection Summary												
HCM 2010 Ctrl Delay			16.3									
HCM 2010 LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

1003: Grant & Vernon

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	442	167	38	306	33	190	12	38	3	15	7
Future Volume (veh/h)	12	442	167	38	306	33	190	12	38	3	15	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	13	465	176	40	322	35	200	13	40	3	16	7
Adj No. of Lanes	0	1	1	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	902	782	227	728	75	650	21	349	208	211	86
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	20	1827	1583	89	1473	151	1489	97	1583	102	959	391
Grp Volume(v), veh/h	478	0	176	397	0	0	213	0	40	26	0	0
Grp Sat Flow(s),veh/h/ln	1846	0	1583	1714	0	0	1586	0	1583	1451	0	0
Q Serve(g_s), s	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	1.4	3.0	0.0	0.0	2.3	0.0	0.4	2.3	0.0	0.0
Prop In Lane	0.03		1.00	0.10		0.09	0.94		1.00	0.12		0.27
Lane Grp Cap(c), veh/h	1083	0	782	1029	0	0	671	0	349	505	0	0
V/C Ratio(X)	0.44	0.00	0.23	0.39	0.00	0.00	0.32	0.00	0.11	0.05	0.00	0.00
Avail Cap(c_a), veh/h	2434	0	1956	2226	0	0	1787	0	1606	1860	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.7	0.0	3.1	3.5	0.0	0.0	7.5	0.0	6.8	6.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.6	1.5	0.0	0.0	1.1	0.0	0.2	0.1	0.0	0.0
LnGrp Delay(d),s/veh	4.0	0.0	3.2	3.7	0.0	0.0	7.6	0.0	6.8	6.7	0.0	0.0
LnGrp LOS	A		A	A			A		A	A		
Approach Vol, veh/h	654		397				253				26	
Approach Delay, s/veh	3.8		3.7				7.5				6.7	
Approach LOS	A		A				A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4				6				8	
Phs Duration (G+Y+Rc), s	13.9		7.8				13.9				7.8	
Change Period (Y+Rc), s	* 4.2		4.0				* 4.2				4.0	
Max Green Setting (Gmax), s	* 26		21.0				* 26				21.0	
Max Q Clear Time (g_c+I1), s	5.8		4.3				5.0				4.3	
Green Ext Time (p_c), s	3.9		0.5				4.0				0.5	
Intersection Summary												
HCM 2010 Ctrl Delay	4.5											
HCM 2010 LOS	A											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
1004: Judah & Vernon

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	524	11	37	463	120	14	36	46	39	26	28
Future Volume (veh/h)	96	524	11	37	463	120	14	36	46	39	26	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	101	552	12	39	487	126	15	38	48	41	27	29
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	621	1143	25	663	899	232	336	104	132	299	55	221
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	806	1816	39	843	1428	369	1342	749	946	599	394	1583
Grp Volume(v), veh/h	101	0	564	39	0	613	15	0	86	68	0	29
Grp Sat Flow(s),veh/h/ln	806	0	1856	843	0	1798	1342	0	1696	993	0	1583
Q Serve(g_s), s	2.2	0.0	4.3	0.7	0.0	5.1	0.3	0.0	1.2	1.2	0.0	0.4
Cycle Q Clear(g_c), s	7.3	0.0	4.3	5.0	0.0	5.1	2.7	0.0	1.2	2.4	0.0	0.4
Prop In Lane	1.00		0.02	1.00		0.21	1.00		0.56	0.60		1.00
Lane Grp Cap(c), veh/h	621	0	1168	663	0	1131	336	0	236	354	0	221
V/C Ratio(X)	0.16	0.00	0.48	0.06	0.00	0.54	0.04	0.00	0.36	0.19	0.00	0.13
Avail Cap(c_a), veh/h	859	0	1717	912	0	1663	1100	0	1202	1198	0	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.9	0.0	2.6	4.0	0.0	2.8	12.2	0.0	10.5	11.5	0.0	10.1
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.3	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.1	0.2	0.0	2.5	0.1	0.0	0.6	0.5	0.0	0.2
LnGrp Delay(d),s/veh	4.9	0.0	2.9	4.0	0.0	3.1	12.3	0.0	10.8	11.6	0.0	10.2
LnGrp LOS	A		A	A		A	B		B	B		B
Approach Vol, veh/h	665				652				101		97	
Approach Delay, s/veh	3.2				3.2				11.0		11.2	
Approach LOS	A				A				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	20.1		6.7		20.1		6.7					
Change Period (Y+Rc), s	* 4.2		4.0		* 4.2		4.0					
Max Green Setting (Gmax), s	* 24		18.0		* 24		18.0					
Max Q Clear Time (g_c+I1), s	9.3		4.4		7.1		4.7					
Green Ext Time (p_c), s	6.6		0.5		7.1		0.5					
Intersection Summary												
HCM 2010 Ctrl Delay	4.2											
HCM 2010 LOS	A											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
1005: Lincoln & Vernon

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	343	26	181	345	3	44	57	484	11	22	26
Future Volume (veh/h)	77	343	26	181	345	3	44	57	484	11	22	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	81	361	27	191	363	3	46	60	509	12	23	27
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	528	40	274	711	6	308	361	540	145	245	230
Arrive On Green	0.08	0.31	0.31	0.15	0.39	0.39	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1774	1712	128	1774	1845	15	582	1059	1583	157	719	676
Grp Volume(v), veh/h	81	0	388	191	0	366	106	0	509	62	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1840	1774	0	1860	1641	0	1583	1552	0	0
Q Serve(g_s), s	2.1	0.0	8.7	4.8	0.0	7.1	0.0	0.0	14.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	0.0	8.7	4.8	0.0	7.1	1.9	0.0	14.7	1.2	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.01	0.43		1.00	0.19		0.44
Lane Grp Cap(c), veh/h	138	0	568	274	0	716	670	0	540	621	0	0
V/C Ratio(X)	0.59	0.00	0.68	0.70	0.00	0.51	0.16	0.00	0.94	0.10	0.00	0.00
Avail Cap(c_a), veh/h	227	0	815	340	0	943	670	0	540	621	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.9	0.0	14.2	18.8	0.0	11.0	10.8	0.0	15.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	1.2	2.8	0.0	0.5	0.0	0.0	25.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	4.5	2.6	0.0	3.6	0.9	0.0	10.1	0.6	0.0	0.0
LnGrp Delay(d),s/veh	22.4	0.0	15.4	21.6	0.0	11.5	10.9	0.0	40.0	10.6	0.0	0.0
LnGrp LOS	C		B	C		B	B		D	B		
Approach Vol, veh/h	469				557				615		62	
Approach Delay, s/veh	16.6				15.0				35.0		10.6	
Approach LOS	B				B				D		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	10.3	17.7			19.0	6.7	21.3	19.0				
Change Period (Y+Rc), s	4.0	* 4.2			4.0	4.0	* 4.2	4.0				
Max Green Setting (Gmax), s	8.0	* 20			15.0	5.0	* 23	15.0				
Max Q Clear Time (g_c+I1), s	6.8	10.7			3.2	4.1	9.1	16.7				
Green Ext Time (p_c), s	0.0	2.8			1.4	0.0	3.5	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			22.5									
HCM 2010 LOS			C									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1006: Washington & Main

Cumulative Plus Project
AM PEAK HOUR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	81	476	97	62	4	258	672	19	29	903	28
Future Volume (veh/h)	88	81	476	97	62	4	258	672	19	29	903	28
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	93	85	501	102	65	4	272	707	20	31	951	0
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	452	384	303	318	270	404	1007	427	298	1264	542
Arrive On Green	0.24	0.24	0.24	0.17	0.17	0.17	0.12	0.28	0.27	0.17	0.36	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	93	85	501	102	65	4	272	707	20	31	951	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.6	3.1	21.0	4.4	2.6	0.2	6.6	15.4	0.8	1.3	20.4	0.0
Cycle Q Clear(g_c), s	3.6	3.1	21.0	4.4	2.6	0.2	6.6	15.4	0.8	1.3	20.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	431	452	384	303	318	270	404	1007	427	298	1264	542
V/C Ratio(X)	0.22	0.19	1.30	0.34	0.20	0.01	0.67	0.70	0.05	0.10	0.75	0.00
Avail Cap(c_a), veh/h	431	452	384	431	452	384	1034	1730	750	431	1730	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.2	26.0	32.8	31.6	30.8	29.8	36.6	27.7	23.4	30.5	24.4	0.0
Incr Delay (d2), s/veh	0.1	0.1	154.4	0.2	0.1	0.0	0.7	1.2	0.1	0.1	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.6	25.6	2.2	1.3	0.1	3.1	7.7	0.4	0.6	10.2	0.0
LnGrp Delay(d),s/veh	26.3	26.1	187.2	31.8	30.9	29.8	37.3	28.9	23.4	30.5	26.0	0.0
LnGrp LOS	C	C	F	C	C	C	D	C	C	C	C	
Approach Vol, veh/h	679				171				999			
Approach Delay, s/veh	145.0				31.4				31.1			
Approach LOS	F				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	27.2		24.0	12.1	32.6		17.8				
Change Period (Y+Rc), s	4.0	4.9		4.0	3.0	* 4		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	25.0	* 40		20.0				
Max Q Clear Time (g_c+I1), s	3.3	17.4		23.0	8.6	22.4		6.4				
Green Ext Time (p_c), s	6.0	4.9		0.0	0.6	6.2		0.3				

Intersection Summary

HCM 2010 Ctrl Delay 56.7
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
1007: Oak Street & S Grant Street

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	327	459	355	187	1		
Future Volume (veh/h)	0	327	459	355	187	1		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	0	344	483	374	198	0		
Adj No. of Lanes	1	2	1	1	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	0		
Cap, veh/h	8	1875	987	836	442	201		
Arrive On Green	0.00	0.53	0.53	0.53	0.12	0.00		
Sat Flow, veh/h	1774	3632	1863	1577	3548	1615		
Grp Volume(v), veh/h	0	344	483	374	198	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1863	1577	1774	1615		
Q Serve(g_s), s	0.0	1.2	3.8	3.4	1.2	0.0		
Cycle Q Clear(g_c), s	0.0	1.2	3.8	3.4	1.2	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	8	1875	987	836	442	201		
V/C Ratio(X)	0.00	0.18	0.49	0.45	0.45	0.00		
Avail Cap(c_a), veh/h	307	4590	1771	1500	3374	1536		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	2.8	3.5	3.4	9.4	0.0		
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.4	0.7	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.5	2.0	1.4	0.6	0.0		
LnGrp Delay(d),s/veh	0.0	2.9	3.8	3.7	10.1	0.0		
LnGrp LOS		A	A	A	B			
Approach Vol, veh/h		344	857		198			
Approach Delay, s/veh		2.9	3.8		10.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				16.3		6.9	0.0	16.3
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				30.0		22.0	4.0	22.0
Max Q Clear Time (g_c+I1), s				3.2		3.2	0.0	5.8
Green Ext Time (p_c), s				7.7		0.6	0.0	6.3
Intersection Summary								
HCM 2010 Ctrl Delay			4.5					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
1008: Oak Street & Lincoln Street

Cumulative Plus Project
AM PEAK HOUR

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	462	665	332	23	1	21		
Future Volume (veh/h)	462	665	332	23	1	21		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.99		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	486	700	366	0	1	22		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	893	797	558	537	50	42		
Arrive On Green	0.50	0.50	0.16	0.00	0.03	0.03		
Sat Flow, veh/h	1774	1583	3548	1863	1863	1568		
Grp Volume(v), veh/h	486	700	366	0	1	22		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1568		
Q Serve(g_s), s	7.2	15.1	3.7	0.0	0.0	0.5		
Cycle Q Clear(g_c), s	7.2	15.1	3.7	0.0	0.0	0.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	893	797	558	537	50	42		
V/C Ratio(X)	0.54	0.88	0.66	0.00	0.02	0.52		
Avail Cap(c_a), veh/h	1016	907	831	1455	824	694		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	6.5	8.5	15.2	0.0	18.2	18.4		
Incr Delay (d2), s/veh	0.5	9.0	1.3	0.0	0.2	9.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.5	13.1	1.9	0.0	0.0	0.3		
LnGrp Delay(d),s/veh	7.0	17.5	16.5	0.0	18.4	28.0		
LnGrp LOS	A	B	B		B	C		
Approach Vol, veh/h	1186			366	23			
Approach Delay, s/veh	13.2			16.5	27.6			
Approach LOS	B			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		15.1		23.3	10.0	5.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		30.0		22.0	9.0	17.0		
Max Q Clear Time (g_c+I1), s		0.0		17.1	5.7	2.5		
Green Ext Time (p_c), s		0.0		2.2	0.4	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			14.2					
HCM 2010 LOS			B					
Notes								
User approved volume balancing among the lanes for turning movement.								

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
AM Peak Hour

Intersection 1 **Cirby Way/Foothills Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	570	563	98.7%	80.1	32.3	F
	Right Turn	470	405	86.3%	223.8	74.1	F
	Subtotal	1,040	968	93.1%	139.6	40.0	F
SB	Left Turn	1,750	1,585	90.6%	82.8	21.7	F
	Through	830	819	98.7%	55.7	20.7	E
	Right Turn						
	Subtotal	2,580	2,404	93.2%	73.6	21.0	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	460	312	67.9%	52.7	18.3	D
	Through						
	Right Turn	660	518	78.4%	5.1	0.9	A
	Subtotal	1,120	830	74.1%	23.2	7.8	C
Total		4,740	4,202	88.7%	78.9	16.8	E

Intersection 2 **Cirby Way/Vernon St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	19	95.0%	69.3	17.7	E
	Through	150	146	97.5%	44.8	5.6	D
	Right Turn	130	123	94.4%	35.6	9.9	D
	Subtotal	300	288	96.0%	42.7	5.0	D
SB	Left Turn	60	56	93.7%	59.1	11.6	E
	Through	120	106	88.7%	38.6	9.7	D
	Right Turn	320	296	92.5%	25.1	6.3	C
	Subtotal	500	459	91.7%	32.5	4.3	C
EB	Left Turn	450	375	83.3%	55.0	6.1	E
	Through	1,740	1,597	91.8%	27.1	2.2	C
	Right Turn	30	26	86.1%	24.0	10.3	C
	Subtotal	2,220	1,998	90.0%	32.3	2.4	C
WB	Left Turn	100	69	68.8%	67.2	8.2	E
	Through	1,420	1,081	76.1%	32.7	10.7	C
	Right Turn	100	74	73.7%	15.9	6.9	B
	Subtotal	1,620	1,223	75.5%	33.6	10.2	C
Total		4,640	3,968	85.5%	33.5	3.6	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
AM Peak Hour

Intersection 3 **Cirby Way/Melody Ln** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	370	318	85.9%	109.6	71.4	F
	Subtotal	370	318	85.9%	109.6	71.4	F
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	2,050	1,762	85.9%	42.2	16.0	D
	Right Turn	10	8	83.6%	34.8	18.8	C
	Subtotal	2,060	1,770	85.9%	42.2	16.0	D
WB	Left Turn	330	238	72.1%	22.6	11.3	C
	Through	1,690	1,266	74.9%	3.2	0.4	A
	Right Turn						
	Subtotal	2,020	1,504	74.5%	6.3	2.3	A
Total		4,450	3,592	80.7%	32.9	13.1	C

Intersection 4 **Cirby Way/Riverside Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	790	638	80.8%	202.9	20.6	F
	Through	640	602	94.1%	62.9	10.1	E
	Right Turn	160	155	96.7%	41.3	8.0	D
	Subtotal	1,590	1,395	87.8%	124.7	15.3	F
SB	Left Turn	240	213	88.7%	51.6	6.4	D
	Through	490	436	89.0%	74.5	17.2	E
	Right Turn	90	79	88.2%	24.4	9.6	C
	Subtotal	820	728	88.8%	62.6	12.3	E
EB	Left Turn	270	208	77.0%	87.5	8.1	F
	Through	1,130	893	79.0%	47.5	4.4	D
	Right Turn	660	557	84.4%	32.1	4.4	C
	Subtotal	2,060	1,658	80.5%	47.3	4.7	D
WB	Left Turn	520	361	69.4%	132.6	46.8	F
	Through	1,110	787	70.9%	90.3	19.4	F
	Right Turn	320	244	76.1%	91.6	21.6	F
	Subtotal	1,950	1,391	71.3%	101.0	7.8	F
Total		6,420	5,173	80.6%	84.7	6.0	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
AM Peak Hour

Intersection 5 **Cirby Way/Cirby Hills Dr-Kaiser North Driveway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	80	84	105.5%	40.0	8.5	D
	Through						
	Right Turn	50	61	121.6%	12.6	2.8	B
	Subtotal	130	145	111.7%	28.6	5.3	C
SB	Left Turn	30	30	100.1%	64.5	17.0	E
	Through						
	Right Turn	70	78	111.3%	30.2	8.4	C
	Subtotal	100	108	107.9%	39.9	9.5	D
EB	Left Turn	90	76	84.9%	46.7	6.8	D
	Through	1,230	1,073	87.2%	11.8	1.7	B
	Right Turn	180	146	81.3%	11.2	2.2	B
	Subtotal	1,500	1,296	86.4%	13.8	2.0	B
WB	Left Turn	120	82	68.4%	146.0	47.1	F
	Through	1,800	1,177	65.4%	134.9	33.9	F
	Right Turn	30	19	62.1%	108.3	59.9	F
	Subtotal	1,950	1,278	65.5%	135.4	34.2	F
Total		3,680	2,827	76.8%	70.2	14.2	E

Intersection 6 **Cirby Way/Orlando Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	35	117.8%	51.0	14.7	D
	Through						
	Right Turn	450	423	94.1%	27.7	5.2	C
	Subtotal	480	459	95.6%	29.4	4.5	C
SB	Left Turn	10	9	91.2%	59.1	31.1	E
	Through						
	Right Turn	10	10	98.8%	24.3	20.1	C
	Subtotal	20	19	95.0%	41.0	17.1	D
EB	Left Turn	10	12	117.8%	64.6	40.3	E
	Through	1,230	1,108	90.1%	15.5	3.2	B
	Right Turn	70	72	102.6%	15.9	6.0	B
	Subtotal	1,310	1,192	91.0%	15.9	3.2	B
WB	Left Turn	90	67	74.7%	58.5	13.2	E
	Through	1,910	1,449	75.8%	21.5	19.7	C
	Right Turn	10	9	87.4%	11.4	21.6	B
	Subtotal	2,010	1,525	75.8%	23.1	19.2	C
Total		3,820	3,194	83.6%	21.1	9.7	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
AM Peak Hour

Intersection 7 **Cirby Way/Sunrise Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	760	567	74.6%	225.5	16.2	F
	Through	1,440	1,018	70.7%	184.3	10.4	F
	Right Turn	240	200	83.1%	169.8	9.4	F
	Subtotal	2,440	1,784	73.1%	196.1	6.8	F
SB	Left Turn	110	116	105.0%	83.0	21.8	F
	Through	890	783	88.0%	70.6	25.7	E
	Right Turn	190	189	99.4%	35.0	22.3	C
	Subtotal	1,190	1,087	91.4%	66.0	23.2	E
EB	Left Turn	310	287	92.7%	88.4	17.1	F
	Through	860	834	97.0%	53.1	7.4	D
	Right Turn	690	632	91.6%	33.5	5.5	C
	Subtotal	1,860	1,754	94.3%	52.0	7.4	D
WB	Left Turn	150	134	89.4%	135.4	35.7	F
	Through	860	784	91.2%	131.2	34.9	F
	Right Turn	30	29	96.3%	119.8	40.2	F
	Subtotal	1,040	947	91.1%	131.5	34.6	F
Total		6,530	5,572	85.3%	114.4	9.3	F

Intersection 8 **Riverside Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,390	1,196	86.1%	50.3	22.9	D
	Right Turn	220	188	85.3%	14.7	6.1	B
	Subtotal	1,610	1,384	86.0%	45.3	19.8	D
SB	Left Turn						
	Through	760	620	81.6%	11.7	1.9	B
	Right Turn						
	Subtotal	760	620	81.6%	11.7	1.9	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	500	478	95.7%	48.8	30.8	D
	Through						
	Right Turn	450	366	81.4%	77.5	51.0	E
	Subtotal	950	845	88.9%	60.7	38.2	E
Total		3,320	2,849	85.8%	42.4	18.7	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
AM Peak Hour

Intersection 9 **Riverside Blvd/I-80 EB Ramps-Orlando Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,610	1,300	80.7%	167.4	27.6	F
	Right Turn	90	70	78.1%	211.3	42.5	F
	Subtotal	1,700	1,370	80.6%	169.9	28.1	F
SB	Left Turn	70	61	87.4%	62.0	16.3	E
	Through	920	805	87.5%	13.7	3.0	B
	Right Turn						
	Subtotal	990	866	87.5%	17.2	3.4	B
EB	Left Turn						
	Through	400	374	93.4%	38.6	3.3	D
	Right Turn	130	135	103.8%	11.6	1.8	B
	Subtotal	530	508	95.9%	31.5	2.8	C
WB	Left Turn	60	55	91.2%	41.1	7.4	D
	Through						
	Right Turn	150	146	97.0%	19.6	17.8	B
	Subtotal	210	200	95.4%	25.2	12.7	C
Total		3,430	2,945	85.8%	90.8	10.6	F

Intersection 106 **Riverside Ave/Kaiser Drwy** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,580	1,308	82.8%	22.1	9.2	C
	Right Turn	260	222	85.2%	2.5	0.3	A
	Subtotal	1,840	1,530	83.1%	19.2	7.9	B
SB	Left Turn						
	Through	760	621	81.7%	1.9	0.2	A
	Right Turn	910	738	81.1%	3.3	0.3	A
	Subtotal	1,670	1,359	81.3%	2.7	0.2	A
EB	Left Turn						
	Through						
	Right Turn	360	316	87.8%	5.6	0.2	A
	Subtotal	360	316	87.8%	5.6	0.2	A
WB	Left Turn						
	Through						
	Right Turn	10	10	102.6%	8.7	6.3	A
	Subtotal	10	10	102.6%	8.7	6.3	A
Total		3,880	3,215	82.9%	10.8	3.7	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
AM Peak Hour

Intersection 102 **Lindsay Dr-Northridge Dr/Cirby Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	11	106.4%	44.4	19.7	D
	Through						
	Right Turn	40	33	83.6%	31.3	8.2	C
	Subtotal	50	44	88.2%	34.0	7.8	C
SB	Left Turn	60	48	79.2%	36.0	6.8	D
	Through						
	Right Turn	30	33	108.9%	11.5	3.6	B
	Subtotal	90	80	89.1%	26.3	6.4	C
EB	Left Turn	10	11	110.2%	49.8	29.0	D
	Through	1,940	1,715	88.4%	13.6	10.6	B
	Right Turn						
	Subtotal	1,950	1,726	88.5%	13.9	10.5	B
WB	Left Turn	10	8	76.0%	53.7	28.5	D
	Through	1,620	1,203	74.3%	10.7	5.0	B
	Right Turn	10	8	79.8%	7.8	11.5	A
	Subtotal	1,640	1,219	74.3%	11.0	4.9	B
Total		3,730	3,069	82.3%	13.2	5.3	B

Intersection 104 **San Simeon Dr/Cirby Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	210	205	97.5%	74.9	23.0	E
	Through						
	Right Turn	200	213	106.4%	30.2	3.7	C
	Subtotal	410	418	101.9%	52.7	12.9	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,660	1,510	91.0%	15.1	2.3	B
	Right Turn	30	26	87.4%	14.4	4.9	B
	Subtotal	1,690	1,536	90.9%	15.1	2.3	B
WB	Left Turn	10	8	79.8%	40.2	24.2	D
	Through	1,800	1,411	78.4%	7.3	4.1	A
	Right Turn						
	Subtotal	1,810	1,419	78.4%	7.5	4.1	A
Total		3,910	3,373	86.3%	16.6	2.1	B

HCM 2010 Signalized Intersection Summary

1: Blue Oaks Blvd & Grasscreek Drive

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	74	424	701	98	37	28		
Future Volume (veh/h)	74	424	701	98	37	28		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	78	446	738	103	39	29		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	98	2158	1460	453	729	651		
Arrive On Green	0.06	0.42	0.29	0.29	0.41	0.41		
Sat Flow, veh/h	1774	5253	5253	1578	1774	1583		
Grp Volume(v), veh/h	78	446	738	103	39	29		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1578	1774	1583		
Q Serve(g_s), s	2.1	2.7	5.9	2.4	0.6	0.5		
Cycle Q Clear(g_c), s	2.1	2.7	5.9	2.4	0.6	0.5		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	98	2158	1460	453	729	651		
V/C Ratio(X)	0.80	0.21	0.51	0.23	0.05	0.04		
Avail Cap(c_a), veh/h	146	2509	2091	649	729	651		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.7	8.8	14.5	13.2	8.6	8.6		
Incr Delay (d2), s/veh	16.6	0.0	0.3	0.3	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.5	1.2	2.8	1.1	0.3	0.6		
LnGrp Delay(d),s/veh	39.4	8.9	14.7	13.5	8.8	8.7		
LnGrp LOS	D	A	B	B	A	A		
Approach Vol, veh/h		524	841		68			
Approach Delay, s/veh		13.4	14.6		8.7			
Approach LOS		B	B		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				24.6		24.0	6.7	18.0
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				24.0		20.0	4.0	20.0
Max Q Clear Time (g_c+l1), s				4.7		2.6	4.1	7.9
Green Ext Time (p_c), s				7.7		0.1	0.0	6.0
Intersection Summary								
HCM 2010 Ctrl Delay			13.9					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

2: Westbrook Blvd & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	234	211	17	478	579	708	61	1007	308	320	689	256
Future Volume (veh/h)	234	211	17	478	579	708	61	1007	308	320	689	256
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	246	222	18	503	609	745	64	1060	324	337	725	269
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	1567	473	611	1968	808	140	1474	444	455	1939	589
Arrive On Green	0.10	0.31	0.30	0.18	0.39	0.38	0.04	0.29	0.28	0.13	0.38	0.37
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	246	222	18	503	609	745	64	1060	324	337	725	269
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	7.5	3.4	0.9	15.3	9.1	41.0	2.0	20.3	20.1	10.2	11.2	13.9
Cycle Q Clear(g_c), s	7.5	3.4	0.9	15.3	9.1	41.0	2.0	20.3	20.1	10.2	11.2	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	1567	473	611	1968	808	140	1474	444	455	1939	589
V/C Ratio(X)	0.72	0.14	0.04	0.82	0.31	0.92	0.46	0.72	0.73	0.74	0.37	0.46
Avail Cap(c_a), veh/h	412	1567	473	761	1968	808	190	1499	452	1047	2765	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	27.2	27.0	43.0	23.2	24.6	50.9	34.6	35.3	45.3	24.2	25.8
Incr Delay (d2), s/veh	4.9	0.0	0.0	6.0	0.1	16.0	2.3	1.7	5.8	2.4	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	1.6	0.4	7.8	4.2	24.1	1.0	9.7	9.5	5.0	5.3	6.2
LnGrp Delay(d),s/veh	52.4	27.2	27.0	48.9	23.3	40.6	53.2	36.2	41.1	47.7	24.3	26.3
LnGrp LOS	D	C	C	D	C	D	D	D	D	D	C	C
Approach Vol, veh/h	486				1857				1448		1331	
Approach Delay, s/veh	39.9				37.2				38.1		30.7	
Approach LOS	D				D				D		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.3	33.5	22.3	35.4	7.4	43.4	13.7	44.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	32.0	30.0	23.0	29.0	5.0	57.0	12.0	40.0				
Max Q Clear Time (g_c+I1), s	12.2	22.3	17.3	5.4	4.0	15.9	9.5	43.0				
Green Ext Time (p_c), s	1.1	6.5	1.0	10.1	0.0	23.4	0.2	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			36.0									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary

3: Blue Oaks Blvd & Creekview Plaza

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	23	848	1609	30	143	71		
Future Volume (veh/h)	23	848	1609	30	143	71		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	24	893	1694	32	151	75		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	40	2386	1886	586	673	600		
Arrive On Green	0.02	0.47	0.37	0.37	0.38	0.38		
Sat Flow, veh/h	1774	5253	5253	1579	1774	1583		
Grp Volume(v), veh/h	24	893	1694	32	151	75		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1579	1774	1583		
Q Serve(g_s), s	0.7	6.0	16.6	0.7	3.0	1.6		
Cycle Q Clear(g_c), s	0.7	6.0	16.6	0.7	3.0	1.6		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	40	2386	1886	586	673	600		
V/C Ratio(X)	0.60	0.37	0.90	0.05	0.22	0.12		
Avail Cap(c_a), veh/h	135	2386	1928	599	673	600		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.5	9.0	15.7	10.7	11.1	10.7		
Incr Delay (d2), s/veh	13.7	0.1	6.0	0.0	0.8	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	2.8	8.7	0.3	1.6	1.8		
LnGrp Delay(d),s/veh	39.2	9.1	21.7	10.7	11.9	11.1		
LnGrp LOS	D	A	C	B	B	B		
Approach Vol, veh/h		917	1726		226			
Approach Delay, s/veh		9.9	21.5		11.6			
Approach LOS		A	C		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				28.7		24.0	5.2	23.6
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				24.0		20.0	4.0	20.0
Max Q Clear Time (g_c+I1), s				8.0		5.0	2.7	18.6
Green Ext Time (p_c), s				13.4		0.6	0.0	1.0
Intersection Summary								
HCM 2010 Ctrl Delay			17.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: West Park Drive & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↘	↙	↑↑↑	↙	↘		
Traffic Volume (veh/h)	982	10	1	1651	13	1		
Future Volume (veh/h)	982	10	1	1651	13	1		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1034	11	1	1738	14	1		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1913	594	3	2315	690	616		
Arrive On Green	0.38	0.38	0.00	0.46	0.39	0.39		
Sat Flow, veh/h	5253	1579	1774	5253	1774	1583		
Grp Volume(v), veh/h	1034	11	1	1738	14	1		
Grp Sat Flow(s),veh/h/ln	1695	1579	1774	1695	1774	1583		
Q Serve(g_s), s	8.2	0.2	0.0	14.5	0.2	0.0		
Cycle Q Clear(g_c), s	8.2	0.2	0.0	14.5	0.2	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1913	594	3	2315	690	616		
V/C Ratio(X)	0.54	0.02	0.29	0.75	0.02	0.00		
Avail Cap(c_a), veh/h	1979	615	138	2375	690	616		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	12.6	10.1	25.6	11.6	9.7	9.6		
Incr Delay (d2), s/veh	0.3	0.0	40.7	1.3	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.9	0.1	0.1	7.0	0.1	0.0		
LnGrp Delay(d),s/veh	12.8	10.1	66.4	12.9	9.7	9.6		
LnGrp LOS	B	B	E	B	A	A		
Approach Vol, veh/h	1045			1739	15			
Approach Delay, s/veh	12.8			13.0	9.7			
Approach LOS	B			B	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		24.0	4.1	23.3				27.4
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		20.0	4.0	20.0				24.0
Max Q Clear Time (g_c+I1), s		2.2	2.0	10.2				16.5
Green Ext Time (p_c), s		0.0	0.0	8.9				6.9
Intersection Summary								
HCM 2010 Ctrl Delay			12.9					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

5: Hayden Pkwy & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	800	44	107	1489	251	94	114	67	169	43	70
Future Volume (veh/h)	139	800	44	107	1489	251	94	114	67	169	43	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	146	842	46	113	1567	264	99	120	71	178	45	74
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	2352	710	169	2248	678	150	251	191	198	301	234
Arrive On Green	0.12	0.46	0.45	0.10	0.44	0.43	0.08	0.13	0.12	0.11	0.16	0.15
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	146	842	46	113	1567	264	99	120	71	178	45	74
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	5.7	7.6	1.2	4.4	17.8	8.2	3.9	4.3	3.0	7.1	1.5	3.0
Cycle Q Clear(g_c), s	5.7	7.6	1.2	4.4	17.8	8.2	3.9	4.3	3.0	7.1	1.5	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	2352	710	169	2248	678	150	251	191	198	301	234
V/C Ratio(X)	0.71	0.36	0.06	0.67	0.70	0.39	0.66	0.48	0.37	0.90	0.15	0.32
Avail Cap(c_a), veh/h	248	2352	710	322	2415	730	198	885	730	198	885	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	12.4	11.2	31.3	16.1	14.1	31.8	28.6	29.0	31.4	25.8	27.3
Incr Delay (d2), s/veh	7.2	0.1	0.0	4.5	0.8	0.4	4.8	1.4	1.2	37.1	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.5	0.5	2.4	8.4	3.6	2.1	2.3	1.3	5.5	0.8	1.3
LnGrp Delay(d),s/veh	37.7	12.5	11.2	35.8	16.9	14.4	36.6	30.1	30.2	68.5	26.0	28.0
LnGrp LOS	D	B	B	D	B	B	D	C	C	E	C	C
Approach Vol, veh/h	1034			1944				290			297	
Approach Delay, s/veh	16.0			17.7				32.3			52.0	
Approach LOS	B			B				C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	12.6	10.8	36.1	10.1	14.6	12.3	34.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	32.0	12.0	29.0	7.0	32.0	9.0	32.0				
Max Q Clear Time (g_c+I1), s	9.1	6.3	6.4	9.6	5.9	5.0	7.7	19.8				
Green Ext Time (p_c), s	0.0	1.4	0.1	16.3	0.0	1.4	0.0	9.8				
Intersection Summary												
HCM 2010 Ctrl Delay	21.2											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary

6: Fiddymment Rd & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	779	85	498	1617	346	48	991	360	174	827	113
Future Volume (veh/h)	147	779	85	498	1617	346	48	991	360	174	827	113
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	155	820	89	524	1702	364	51	1043	379	183	871	119
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	296	1084	305	794	1820	534	355	1230	511	331	1137	469
Arrive On Green	0.09	0.21	0.19	0.23	0.36	0.34	0.10	0.35	0.32	0.10	0.32	0.30
Sat Flow, veh/h	3442	5085	1571	3442	5085	1576	3442	3539	1576	3442	3539	1575
Grp Volume(v), veh/h	155	820	89	524	1702	364	51	1043	379	183	871	119
Grp Sat Flow(s),veh/h/ln	1721	1695	1571	1721	1695	1576	1721	1770	1576	1721	1770	1575
Q Serve(g_s), s	4.5	15.6	5.0	14.3	33.4	14.5	1.4	28.2	11.4	5.2	22.9	5.9
Cycle Q Clear(g_c), s	4.5	15.6	5.0	14.3	33.4	14.5	1.4	28.2	11.4	5.2	22.9	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	1084	305	794	1820	534	355	1230	511	331	1137	469
V/C Ratio(X)	0.52	0.76	0.29	0.66	0.94	0.68	0.14	0.85	0.74	0.55	0.77	0.25
Avail Cap(c_a), veh/h	499	1131	319	965	1820	534	355	1246	518	333	1246	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	38.2	35.6	36.1	32.0	14.8	42.2	31.2	8.3	44.6	31.6	27.6
Incr Delay (d2), s/veh	0.5	3.1	0.8	0.7	9.8	4.0	0.1	6.1	6.6	1.1	3.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.6	2.2	6.8	17.2	7.4	0.7	14.8	8.1	2.5	11.6	2.6
LnGrp Delay(d),s/veh	45.7	41.3	36.4	36.8	41.8	18.7	42.3	37.3	14.8	45.7	34.9	28.1
LnGrp LOS	D	D	D	D	D	B	D	D	B	D	C	C
Approach Vol, veh/h	1064				2590				1473			
Approach Delay, s/veh	41.5				37.5				31.7			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	38.5	26.9	25.0	15.7	35.8	11.9	40.0				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	6.0	* 6	4.0	6.0				
Max Green Setting (Gmax), s	9.0	33.0	28.0	20.0	9.0	* 33	14.0	34.0				
Max Q Clear Time (g_c+I1), s	7.2	30.2	16.3	17.6	3.4	24.9	6.5	35.4				
Green Ext Time (p_c), s	0.1	2.3	1.5	1.3	4.4	4.7	1.2	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	36.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

7: Blue Oaks Blvd & Orchard View Rd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	5	1305	2425	277	147	4		
Future Volume (veh/h)	5	1305	2425	277	147	4		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	5	1374	2553	292	155	4		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	41	3727	3373	1050	310	277		
Arrive On Green	0.02	0.73	0.66	0.66	0.17	0.17		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	5	1374	2553	292	155	4		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.2	6.4	22.1	5.0	5.1	0.1		
Cycle Q Clear(g_c), s	0.2	6.4	22.1	5.0	5.1	0.1		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	41	3727	3373	1050	310	277		
V/C Ratio(X)	0.12	0.37	0.76	0.28	0.50	0.01		
Avail Cap(c_a), veh/h	355	4378	3373	1050	764	682		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	31.1	3.2	7.4	4.5	24.3	22.2		
Incr Delay (d2), s/veh	0.5	0.1	1.1	0.2	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	3.0	10.3	2.2	2.5	0.0		
LnGrp Delay(d),s/veh	31.6	3.3	8.5	4.7	24.7	22.2		
LnGrp LOS	C	A	A	A	C	C		
Approach Vol, veh/h		1379	2845		159			
Approach Delay, s/veh		3.4	8.1		24.7			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				50.7		14.4	4.5	46.1
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				53.0		27.0	12.0	37.0
Max Q Clear Time (g_c+I1), s				8.4		7.1	2.2	24.1
Green Ext Time (p_c), s				36.2		0.3	0.0	12.8
Intersection Summary								
HCM 2010 Ctrl Delay			7.2					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

8: Del Webb Blvd & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	1449	37	192	2702	16	118		
Future Volume (veh/h)	1449	37	192	2702	16	118		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1525	39	202	2844	17	124		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2676	833	275	3706	286	256		
Arrive On Green	0.53	0.53	0.15	0.73	0.16	0.16		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	1525	39	202	2844	17	124		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	12.8	0.8	6.8	21.6	0.5	4.5		
Cycle Q Clear(g_c), s	12.8	0.8	6.8	21.6	0.5	4.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2676	833	275	3706	286	256		
V/C Ratio(X)	0.57	0.05	0.74	0.77	0.06	0.49		
Avail Cap(c_a), veh/h	2676	833	367	3802	878	783		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.1	7.2	25.3	5.2	22.3	24.0		
Incr Delay (d2), s/veh	0.4	0.0	3.1	1.0	0.0	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.0	0.3	3.5	10.1	0.3	2.0		
LnGrp Delay(d),s/veh	10.4	7.3	28.4	6.3	22.3	24.5		
LnGrp LOS	B	A	C	A	C	C		
Approach Vol, veh/h	1564			3046	141			
Approach Delay, s/veh	10.4			7.8	24.3			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.0	12.7	36.1				48.8
Change Period (Y+Rc), s		4.9	4.0	6.0				6.0
Max Green Setting (Gmax), s		30.1	12.0	28.0				44.0
Max Q Clear Time (g_c+I1), s		6.5	8.8	14.8				23.6
Green Ext Time (p_c), s		0.3	0.1	13.2				19.2
Intersection Summary								
HCM 2010 Ctrl Delay			9.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
9: Blue Oaks Blvd & Crocker Ranch Rd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	26	1523	2882	404	284	11		
Future Volume (veh/h)	26	1523	2882	404	284	11		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	27	1603	3034	425	299	12		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	76	3697	3318	1029	355	317		
Arrive On Green	0.04	0.73	0.65	0.65	0.20	0.20		
Sat Flow, veh/h	1774	5253	5253	1577	1774	1583		
Grp Volume(v), veh/h	27	1603	3034	425	299	12		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1577	1774	1583		
Q Serve(g_s), s	1.4	11.9	48.7	12.1	15.4	0.6		
Cycle Q Clear(g_c), s	1.4	11.9	48.7	12.1	15.4	0.6		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	76	3697	3318	1029	355	317		
V/C Ratio(X)	0.36	0.43	0.91	0.41	0.84	0.04		
Avail Cap(c_a), veh/h	131	3818	3318	1029	599	535		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	44.1	5.2	14.2	7.8	36.4	30.5		
Incr Delay (d2), s/veh	1.0	0.1	4.6	0.4	2.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.7	5.5	23.9	5.3	7.7	0.6		
LnGrp Delay(d),s/veh	45.1	5.3	18.7	8.2	38.5	30.5		
LnGrp LOS	D	A	B	A	D	C		
Approach Vol, veh/h		1630	3459		311			
Approach Delay, s/veh		5.9	17.5		38.2			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				71.8		22.9	7.1	64.8
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				68.1		31.0	6.0	58.1
Max Q Clear Time (g_c+I1), s				13.9		17.4	3.4	50.7
Green Ext Time (p_c), s				51.9		0.6	0.0	7.4
Intersection Summary								
HCM 2010 Ctrl Delay			15.2					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

10: Diamond Creek Blvd & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1657	32	25	2830	42	275	116	30	239	25	156
Future Volume (veh/h)	107	1657	32	25	2830	42	275	116	30	239	25	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	113	1744	34	26	2979	44	206	239	32	221	69	164
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	3047	949	67	2933	913	235	247	210	250	69	164
Arrive On Green	0.06	0.60	0.60	0.08	1.00	1.00	0.13	0.13	0.13	0.14	0.14	0.14
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	491	1166
Grp Volume(v), veh/h	113	1744	34	26	2979	44	206	239	32	221	0	233
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	0	1657
Q Serve(g_s), s	9.0	31.4	1.3	2.1	0.0	0.0	17.1	19.1	2.7	18.3	0.0	21.1
Cycle Q Clear(g_c), s	9.0	31.4	1.3	2.1	0.0	0.0	17.1	19.1	2.7	18.3	0.0	21.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	106	3047	949	67	2933	913	235	247	210	250	0	233
V/C Ratio(X)	1.06	0.57	0.04	0.39	1.02	0.05	0.88	0.97	0.15	0.89	0.00	1.00
Avail Cap(c_a), veh/h	106	3047	949	95	2933	913	235	247	210	250	0	233
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.40	0.40	0.40	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.5	18.3	12.3	67.7	0.0	0.0	63.8	64.7	57.6	63.3	0.0	64.4
Incr Delay (d2), s/veh	104.8	0.5	0.0	0.6	14.8	0.0	29.6	48.2	0.6	29.3	0.0	58.9
Initial Q Delay(d3),s/veh	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	14.8	0.6	1.0	4.0	0.0	10.3	13.2	1.2	11.1	0.0	13.5
LnGrp Delay(d),s/veh	175.7	18.9	12.4	68.3	14.8	0.0	93.4	112.9	58.2	92.5	0.0	123.3
LnGrp LOS	F	B	B	E	F	A	F	F	E	F		F
Approach Vol, veh/h	1891			3049			477			454		
Approach Delay, s/veh	28.1			15.0			100.9			108.3		
Approach LOS	C			B			F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	23.5		8.6	92.9	25.0		12.0	89.5				
Change Period (Y+Rc), s	4.6		4.0	6.0	4.9		4.0	6.0				
Max Green Setting (Gmax), s	18.9		7.0	84.5	20.1		8.0	83.5				
Max Q Clear Time (g_c+I1), s	21.1		4.1	33.4	23.1		11.0	2.0				
Green Ext Time (p_c), s	0.0		0.0	50.9	0.0		0.0	81.0				
Intersection Summary												
HCM 2010 Ctrl Delay	33.4											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

11: Woodcreek Oaks Blvd & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1520	226	692	2680	300	71	227	419	257	181	45
Future Volume (veh/h)	97	1520	226	692	2680	300	71	227	419	257	181	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	102	1600	238	728	2821	316	75	239	441	271	191	47
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	2231	694	804	3051	950	371	405	160	298	330	148
Arrive On Green	0.07	0.44	0.44	0.23	0.60	0.60	0.11	0.11	0.10	0.09	0.09	0.09
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	102	1600	238	728	2821	316	75	239	441	271	191	47
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	4.2	38.7	8.6	30.8	74.8	6.9	3.0	9.6	9.3	11.7	7.8	3.2
Cycle Q Clear(g_c), s	4.2	38.7	8.6	30.8	74.8	6.9	3.0	9.6	9.3	11.7	7.8	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	2231	694	804	3051	950	371	405	160	298	330	148
V/C Ratio(X)	0.41	0.72	0.34	0.90	0.92	0.33	0.20	0.59	2.75	0.91	0.58	0.32
Avail Cap(c_a), veh/h	298	2231	694	918	3051	950	371	526	214	298	526	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.48	0.48	0.48	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	34.5	9.3	55.8	27.0	3.2	61.0	63.1	25.4	67.9	65.2	38.7
Incr Delay (d2), s/veh	0.3	1.2	0.7	5.6	3.2	0.4	0.1	1.8	805.4	29.2	2.1	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	18.3	3.9	15.3	35.6	3.1	1.4	4.8	39.9	6.8	3.9	1.5
LnGrp Delay(d),s/veh	66.8	35.7	10.0	61.4	30.1	3.7	61.1	64.9	830.9	97.1	67.3	40.4
LnGrp LOS	E	D	A	E	C	A	E	E	F	F	E	D
Approach Vol, veh/h	1940		3865				755			509		
Approach Delay, s/veh	34.2		33.8				511.9			80.7		
Approach LOS	C		C				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	19.9	38.1	68.8	19.2	16.7	13.9	93.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	4.0	5.7	4.0	6.0				
Max Green Setting (Gmax), s	12.0	19.3	39.0	60.0	12.0	19.3	12.0	87.0				
Max Q Clear Time (g_c+I1), s	13.7	11.6	32.8	40.7	5.0	9.8	6.2	76.8				
Green Ext Time (p_c), s	0.0	2.6	1.2	19.3	0.5	0.8	0.1	10.2				
Intersection Summary												
HCM 2010 Ctrl Delay	88.4											
HCM 2010 LOS	F											

HCM 2010 Signalized Intersection Summary

12: Wood Meadow Dwy & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1975	0	71	3755	25	0	1	172	71	1	0
Future Volume (veh/h)	0	1975	0	71	3755	25	0	1	172	71	1	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2079	0	75	3953	26	0	1	181	75	1	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1	4170	1030	94	4724	1167	1	241	205	59	365	311
Arrive On Green	0.00	0.65	0.00	0.05	0.74	0.74	0.00	0.13	0.13	0.03	0.20	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	0	2079	0	75	3953	26	0	1	181	75	1	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	25.2	0.0	6.3	63.5	0.7	0.0	0.1	16.9	5.0	0.1	0.0
Cycle Q Clear(g_c), s	0.0	25.2	0.0	6.3	63.5	0.7	0.0	0.1	16.9	5.0	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1	4170	1030	94	4724	1167	1	241	205	59	365	311
V/C Ratio(X)	0.00	0.50	0.00	0.80	0.84	0.02	0.00	0.00	0.88	1.27	0.00	0.00
Avail Cap(c_a), veh/h	47	4170	1030	166	4724	1167	47	522	443	59	534	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.59	0.00	0.54	0.54	0.54	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	13.5	0.0	70.2	13.5	5.3	0.0	56.9	64.2	72.5	48.5	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	8.1	0.8	0.0	0.0	0.0	11.7	205.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.2	0.0	3.3	28.0	0.3	0.0	0.0	8.0	5.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	13.8	0.0	78.3	14.3	5.3	0.0	56.9	75.9	277.8	48.5	0.0
LnGrp LOS		B		E	B	A		E	E	F	D	
Approach Vol, veh/h		2079			4054			182			76	
Approach Delay, s/veh		13.8			15.4			75.8			274.8	
Approach LOS		B			B			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	24.4	13.0	102.6	0.0	34.4	0.0	115.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	42.0	14.0	69.0	4.0	43.0	4.0	79.0				
Max Q Clear Time (g_c+I1), s	7.0	18.9	8.3	27.2	0.0	2.1	0.0	65.5				
Green Ext Time (p_c), s	0.0	0.6	0.1	41.7	0.0	0.6	0.0	13.5				
Intersection Summary												
HCM 2010 Ctrl Delay				19.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary

13: Blue Oaks Blvd & New Meadow Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	36	2483	0	3756	817	105	22	
Future Volume (veh/h)	36	2483	0	3756	817	105	22	
Number	7	4		8	18	1	16	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	38	2614		3954	860	111	23	
Adj No. of Lanes	1	4		4	1	2	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	68	5575		5200	1285	298	137	
Arrive On Green	0.08	1.00		0.81	0.81	0.09	0.09	
Sat Flow, veh/h	1774	6669		6669	1583	3442	1583	
Grp Volume(v), veh/h	38	2614		3954	860	111	23	
Grp Sat Flow(s),veh/h/ln	1774	1602		1602	1583	1721	1583	
Q Serve(g_s), s	3.1	0.0		45.6	33.6	4.6	2.0	
Cycle Q Clear(g_c), s	3.1	0.0		45.6	33.6	4.6	2.0	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	68	5575		5200	1285	298	137	
V/C Ratio(X)	0.56	0.47		0.76	0.67	0.37	0.17	
Avail Cap(c_a), veh/h	154	5575		5200	1285	484	223	
HCM Platoon Ratio	2.00	2.00		1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.83	0.83		0.09	0.09	1.00	1.00	
Uniform Delay (d), s/veh	68.0	0.0		7.0	5.8	64.6	63.5	
Incr Delay (d2), s/veh	2.2	0.2		0.1	0.2	0.3	0.2	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.6	0.1		19.8	14.4	2.2	1.8	
LnGrp Delay(d),s/veh	70.2	0.2		7.0	6.0	64.9	63.7	
LnGrp LOS	E	A		A	A	E	E	
Approach Vol, veh/h		2652		4814		134		
Approach Delay, s/veh		1.2		6.8		64.7		
Approach LOS		A		A		E		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				133.1		16.9	8.8	124.3
Change Period (Y+Rc), s				6.0		4.9	4.0	6.0
Max Green Setting (Gmax), s				119.0		20.1	12.0	103.0
Max Q Clear Time (g_c+I1), s				2.0		6.6	5.1	47.6
Green Ext Time (p_c), s				115.6		0.3	0.0	55.1
Intersection Summary								
HCM 2010 Ctrl Delay			5.9					
HCM 2010 LOS			A					
Notes								
User approved ignoring U-Turning movement.								

HCM 2010 Signalized Intersection Summary
14: Collector C & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2310	0	0	4727	0	0	0	0	0	0	0
Future Volume (veh/h)	0	2310	0	0	4727	0	0	0	0	0	0	0
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	2432	0	0	4976	0	0	0	0	0	0	0
Adj No. of Lanes	1	4	1	1	4	1	1	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	5950	1470	2	5950	1470	2	2	0	0	2	0
Arrive On Green	0.00	0.93	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	6408	1583	1774	6408	1583	1774	1863	1583	0	1863	0
Grp Volume(v), veh/h	0	2432	0	0	4976	0	0	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1774	1602	1583	1774	1863	1583	0	1863	0
Q Serve(g_s), s	0.0	3.7	0.0	0.0	20.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.7	0.0	0.0	20.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	2	5950	1470	2	5950	1470	2	2	-83	0	2	0
V/C Ratio(X)	0.00	0.41	0.00	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	211	5950	1470	211	5950	1470	338	355	217	0	355	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.3	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.6	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A				A							
Approach Vol, veh/h	2432				4976				0			
Approach Delay, s/veh	0.6				2.5				0.0			
Approach LOS	A				A							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	0.0		0.0	84.0	0.0		0.0	84.0				
Change Period (Y+Rc), s	4.5		4.5	6.0	4.5		4.5	6.0				
Max Green Setting (Gmax), s	16.0		10.0	23.0	16.0		10.0	16.0				
Max Q Clear Time (g_c+I1), s	0.0		0.0	5.7	0.0		0.0	22.9				
Green Ext Time (p_c), s	0.0		0.0	17.3	0.0		0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	1.8											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary

15: Foothills Blvd & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	1785	381	261	3048	172	740	756	201	529	797	755
Future Volume (veh/h)	380	1785	381	261	3048	172	740	756	201	529	797	755
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	400	1879	401	275	3208	181	779	796	0	557	839	795
Adj No. of Lanes	2	4	1	2	4	1	3	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	2433	601	1221	4151	1026	634	899	377	574	1563	487
Arrive On Green	0.03	0.13	0.13	0.35	0.65	0.65	0.13	0.25	0.00	0.17	0.31	0.31
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	5003	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	400	1879	401	275	3208	181	779	796	0	557	839	795
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1668	1770	1583	1721	1695	1583
Q Serve(g_s), s	15.0	42.6	38.7	8.4	53.0	6.7	19.0	32.5	0.0	24.1	20.5	46.1
Cycle Q Clear(g_c), s	15.0	42.6	38.7	8.4	53.0	6.7	19.0	32.5	0.0	24.1	20.5	46.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	2433	601	1221	4151	1026	634	899	377	574	1563	487
V/C Ratio(X)	1.16	0.77	0.67	0.23	0.77	0.18	1.23	0.89	0.00	0.97	0.54	1.63
Avail Cap(c_a), veh/h	344	2452	606	1221	4151	1026	634	906	380	574	1563	487
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	0.84	0.84	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.5	59.3	64.6	33.9	18.6	10.1	65.5	53.8	0.0	62.1	43.1	51.9
Incr Delay (d2), s/veh	97.7	1.8	3.9	0.0	1.5	0.4	114.7	9.0	0.0	30.1	1.1	294.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	19.2	17.7	4.0	23.6	3.0	15.5	17.0	0.0	13.8	9.8	59.9
LnGrp Delay(d),s/veh	170.2	61.1	68.4	34.0	20.1	10.5	180.2	62.9	0.0	92.2	44.1	346.1
LnGrp LOS	F	E	E	C	C	B	F	E		F	D	F
Approach Vol, veh/h	2680				3664				1575			
Approach Delay, s/veh	78.5				20.7				120.9			
Approach LOS	E				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	48.0	18.0	100.9	29.3	40.7	59.3	59.6				
Change Period (Y+Rc), s	4.0	5.3	4.0	6.0	5.3	* 6	6.0	* 6				
Max Green Setting (Gmax), s	18.0	41.7	14.0	57.0	24.0	* 35	17.0	* 54				
Max Q Clear Time (g_c+I1), s	21.0	48.1	17.0	55.0	26.1	34.5	10.4	44.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.0	0.0	0.3	5.1	9.0				

Intersection Summary

HCM 2010 Ctrl Delay 83.1
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
16: Fidelity Way & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↑	↗	↙	↑↑↑↑		↗		
Traffic Volume (veh/h)	2762	18	37	3158	306	118		
Future Volume (veh/h)	2762	18	37	3158	306	118		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1900	1863		
Adj Flow Rate, veh/h	2907	19	39	3324	322	124		
Adj No. of Lanes	4	1	1	3	0	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3831	947	54	3570	0	0		
Arrive On Green	0.60	0.60	0.03	0.70	0.15	0.15		
Sat Flow, veh/h	6669	1583	1774	5253	0	0		
Grp Volume(v), veh/h	2907	19	39	3324	0	0		
Grp Sat Flow(s),veh/h/ln	1602	1583	1774	1695	0	0		
Q Serve(g_s), s	22.7	0.3	1.5	38.2	0.0	0.0		
Cycle Q Clear(g_c), s	22.7	0.3	1.5	38.2	0.0	0.0		
Prop In Lane		1.00	1.00		0.00	0.00		
Lane Grp Cap(c), veh/h	3831	947	54	3570	0	0		
V/C Ratio(X)	0.76	0.02	0.72	0.93	0.00	0.00		
Avail Cap(c_a), veh/h	3831	947	470	4038	0	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00		
Uniform Delay (d), s/veh	10.1	5.6	32.7	8.7	0.0	0.0		
Incr Delay (d2), s/veh	0.9	0.0	16.1	4.3	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.1	0.1	1.0	18.7	0.0	0.0		
LnGrp Delay(d),s/veh	11.0	5.6	48.7	13.0	0.0	0.0		
LnGrp LOS	B	A	D	B				
Approach Vol, veh/h	2926			3363	0			
Approach Delay, s/veh	10.9			13.4	0.0			
Approach LOS	B			B				
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		15.3	7.1	45.7				52.7
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		4.0	18.0	31.0				54.0
Max Q Clear Time (g_c+I1), s		0.0	3.5	24.7				40.2
Green Ext Time (p_c), s		0.0	0.0	6.3				7.5
Intersection Summary								
HCM 2010 Ctrl Delay			12.3					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

17: Washington Blvd & Blue Oaks Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↗↗	↑↑↑	↗	↗↗		↗↗	↗	↑↑	↗
Traffic Volume (veh/h)	0	2783	411	567	1113	376	521	0	1240	24	555	345
Future Volume (veh/h)	0	2783	411	567	1113	376	521	0	1240	24	555	345
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	1863	1863	0	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	2929	433	597	1172	0	548	0	1305	25	584	0
Adj No. of Lanes	0	4	1	2	3	1	2	0	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	2	2	0	2	2	2	2
Cap, veh/h	0	1817	428	676	2509	781	0	0	0	318	681	305
Arrive On Green	0.00	0.28	0.27	0.20	0.49	0.00	0.01	0.00	0.01	0.18	0.19	0.00
Sat Flow, veh/h	0	6669	1583	3442	5085	1583		0		1774	3539	1583
Grp Volume(v), veh/h	0	2929	433	597	1172	0		0.0		25	584	0
Grp Sat Flow(s),veh/h/ln	0	1602	1583	1721	1695	1583				1774	1770	1583
Q Serve(g_s), s	0.0	42.5	40.5	25.3	22.8	0.0				1.8	23.9	0.0
Cycle Q Clear(g_c), s	0.0	42.5	40.5	25.3	22.8	0.0				1.8	23.9	0.0
Prop In Lane	0.00		1.00	1.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1817	428	676	2509	781				318	681	305
V/C Ratio(X)	0.00	1.61	1.01	0.88	0.47	0.00				0.08	0.86	0.00
Avail Cap(c_a), veh/h	0	1817	428	688	2509	781				331	708	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	53.7	54.7	58.6	25.0	0.0				51.3	58.6	0.0
Incr Delay (d2), s/veh	0.0	277.9	46.5	12.3	0.6	0.0				0.2	10.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	53.9	23.2	13.2	10.8	0.0				0.9	12.7	0.0
LnGrp Delay(d),s/veh	0.0	331.6	101.3	70.9	25.6	0.0				51.5	69.4	0.0
LnGrp LOS		F	F	E	C					D	E	
Approach Vol, veh/h		3362			1769						609	
Approach Delay, s/veh		301.9			40.9						68.7	
Approach LOS		F			D						E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			31.5	46.5		32.9		78.0				
Change Period (Y+Rc), s			4.0	6.0		6.0		6.0				
Max Green Setting (Gmax), s			28.0	40.0		28.0		72.0				
Max Q Clear Time (g_c+I1), s			27.3	44.5		25.9		24.8				
Green Ext Time (p_c), s			0.2	0.0		0.9		46.9				
Intersection Summary												
HCM 2010 Ctrl Delay			196.7									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary

18: Santucci Blvd & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 			 	
Traffic Volume (veh/h)	0	286	448	5	424	26	777	239	8	57	137	0
Future Volume (veh/h)	0	286	448	5	424	26	777	239	8	57	137	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	301	472	5	446	27	818	252	8	60	144	0
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	1326	571	34	1593	690	968	1250	537	101	455	181
Arrive On Green	0.00	0.37	0.36	0.02	0.45	0.44	0.28	0.35	0.34	0.06	0.13	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	301	472	5	446	27	818	252	8	60	144	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	4.1	19.4	0.2	5.7	0.7	16.0	3.5	0.2	2.4	2.6	0.0
Cycle Q Clear(g_c), s	0.0	4.1	19.4	0.2	5.7	0.7	16.0	3.5	0.2	2.4	2.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	2	1326	571	34	1593	690	968	1250	537	101	455	181
V/C Ratio(X)	0.00	0.23	0.83	0.15	0.28	0.04	0.84	0.20	0.01	0.60	0.32	0.00
Avail Cap(c_a), veh/h	124	1538	666	124	1593	690	1061	2083	910	199	1389	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	15.2	20.8	34.4	12.3	11.5	24.2	16.1	15.7	32.9	28.3	0.0
Incr Delay (d2), s/veh	0.0	0.1	7.4	1.9	0.1	0.0	6.0	0.1	0.0	5.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	9.5	0.1	2.7	0.3	8.3	1.7	0.1	1.3	1.3	0.0
LnGrp Delay(d),s/veh	0.0	15.3	28.2	36.3	12.4	11.6	30.2	16.2	15.7	38.4	28.6	0.0
LnGrp LOS		B	C	D	B	B	C	B	B	D	C	
Approach Vol, veh/h		773			478			1078			204	
Approach Delay, s/veh		23.2			12.6			26.8			31.5	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	28.2	5.4	29.7	24.1	12.2	0.0	35.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	40.0	4.0	29.0	21.0	26.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	4.4	5.5	2.2	21.4	18.0	4.6	0.0	7.7				
Green Ext Time (p_c), s	0.0	2.8	0.0	3.4	1.1	2.5	0.0	7.2				
Intersection Summary												
HCM 2010 Ctrl Delay			23.4									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
19: Silver Spruce Dr & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	396	6	56	450	5	0		
Future Volume (veh/h)	396	6	56	450	5	0		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	417	6	59	474	5	0		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1112	498	92	1886	237	211		
Arrive On Green	0.31	0.31	0.05	0.53	0.13	0.00		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	417	6	59	474	5	0		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	2.7	0.1	1.0	2.2	0.1	0.0		
Cycle Q Clear(g_c), s	2.7	0.1	1.0	2.2	0.1	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1112	498	92	1886	237	211		
V/C Ratio(X)	0.37	0.01	0.64	0.25	0.02	0.00		
Avail Cap(c_a), veh/h	2126	951	414	3543	1184	1057		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	8.0	7.1	13.9	3.8	11.3	0.0		
Incr Delay (d2), s/veh	0.2	0.0	7.3	0.1	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.7	1.1	0.0	0.0		
LnGrp Delay(d),s/veh	8.2	7.1	21.2	3.8	11.3	0.0		
LnGrp LOS	A	A	C	A	B			
Approach Vol, veh/h	423			533	5			
Approach Delay, s/veh	8.2			5.8	11.3			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	6.6	14.4				21.0
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		20.0	7.0	18.0				30.0
Max Q Clear Time (g_c+I1), s		2.1	3.0	4.7				4.2
Green Ext Time (p_c), s		0.0	0.0	5.0				6.6
Intersection Summary								
HCM 2010 Ctrl Delay			6.9					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
20: Westbrook Blvd & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	334	10	80	503	463	9	974	49	294	944	127
Future Volume (veh/h)	137	334	10	80	503	463	9	974	49	294	944	127
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	144	352	11	84	529	487	9	1025	52	309	994	134
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1837	555	176	1267	550	68	1234	535	299	2114	641
Arrive On Green	0.05	0.36	0.35	0.05	0.36	0.35	0.02	0.35	0.34	0.09	0.42	0.40
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	144	352	11	84	529	487	9	1025	52	309	994	134
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	3.8	4.4	0.4	2.2	10.4	26.7	0.2	24.4	2.1	8.0	13.1	5.1
Cycle Q Clear(g_c), s	3.8	4.4	0.4	2.2	10.4	26.7	0.2	24.4	2.1	8.0	13.1	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	1837	555	176	1267	550	68	1234	535	299	2114	641
V/C Ratio(X)	0.77	0.19	0.02	0.48	0.42	0.89	0.13	0.83	0.10	1.03	0.47	0.21
Avail Cap(c_a), veh/h	187	1880	568	187	1308	568	187	1308	568	299	2114	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	20.2	19.5	42.5	22.3	28.3	44.3	27.5	20.9	42.0	19.5	17.8
Incr Delay (d2), s/veh	17.6	0.1	0.0	2.0	0.2	15.3	0.9	4.5	0.1	60.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.1	0.2	1.1	5.1	14.0	0.1	12.7	0.9	6.3	6.1	2.2
LnGrp Delay(d),s/veh	60.5	20.2	19.6	44.5	22.5	43.6	45.2	32.0	20.9	102.6	19.7	18.0
LnGrp LOS	E	C	B	D	C	D	D	C	C	F	B	B
Approach Vol, veh/h	507				1100				1086			
Approach Delay, s/veh	31.6				33.5				31.5			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	35.1	8.7	36.2	5.8	41.2	9.0	35.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	32.0	4.0	32.0	4.0	35.0	4.0	32.0				
Max Q Clear Time (g_c+I1), s	10.0	26.4	4.2	6.4	2.2	15.1	5.8	28.7				
Green Ext Time (p_c), s	0.0	3.6	0.0	9.0	0.0	14.6	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay	34.1											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
21: Sierra Trail Dr & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	669	8	93	1042	37	4	0	34	16	0	0
Future Volume (veh/h)	0	669	8	93	1042	37	4	0	34	16	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	704	8	98	1097	39	4	0	36	17	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	1594	713	124	2218	992	189	0	58	31	5	0
Arrive On Green	0.00	0.45	0.45	0.07	0.63	0.63	0.11	0.00	0.04	0.02	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	0	1583	1774	1863	0
Grp Volume(v), veh/h	0	704	8	98	1097	39	4	0	36	17	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	0
Q Serve(g_s), s	0.0	5.1	0.1	2.0	6.3	0.4	0.1	0.0	0.8	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.1	0.1	2.0	6.3	0.4	0.1	0.0	0.8	0.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	5	1594	713	124	2218	992	189	0	58	31	5	0
V/C Ratio(X)	0.00	0.44	0.01	0.79	0.49	0.04	0.02	0.00	0.63	0.55	0.00	0.00
Avail Cap(c_a), veh/h	189	2074	928	331	2357	1054	189	0	1308	189	1538	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.1	5.7	17.2	3.8	2.7	15.0	0.0	17.8	18.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	10.7	0.2	0.0	0.2	0.0	10.6	14.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	1.3	2.9	0.2	0.0	0.0	0.5	0.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.3	5.7	27.9	4.0	2.7	15.2	0.0	28.5	32.9	0.0	0.0
LnGrp LOS		A	A	C	A	A	B		C	C		
Approach Vol, veh/h		712			1234			40			17	
Approach Delay, s/veh		7.3			5.8			27.1			32.9	
Approach LOS		A			A			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.6	5.4	6.6	20.9	8.0	2.0	0.0	27.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	7.0	22.0	4.0	31.0	4.0	25.0				
Max Q Clear Time (g_c+I1), s	2.4	2.8	4.0	7.1	2.1	0.0	0.0	8.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	9.8	0.0	0.0	0.0	10.6				
Intersection Summary												
HCM 2010 Ctrl Delay			7.0									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

22: Market St & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	650	14	243	1254	81	13	149	189	11	235	116
Future Volume (veh/h)	52	650	14	243	1254	81	13	149	189	11	235	116
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	684	15	256	1320	85	14	157	199	12	247	122
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1131	506	326	1489	666	94	413	351	85	368	313
Arrive On Green	0.08	0.32	0.32	0.18	0.42	0.42	0.05	0.22	0.22	0.05	0.20	0.20
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	55	684	15	256	1320	85	14	157	199	12	247	122
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.9	10.8	0.4	9.1	22.8	2.2	0.5	4.7	7.4	0.4	8.1	4.4
Cycle Q Clear(g_c), s	1.9	10.8	0.4	9.1	22.8	2.2	0.5	4.7	7.4	0.4	8.1	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	1131	506	326	1489	666	94	413	351	85	368	313
V/C Ratio(X)	0.38	0.60	0.03	0.79	0.89	0.13	0.15	0.38	0.57	0.14	0.67	0.39
Avail Cap(c_a), veh/h	215	1131	506	429	1515	678	563	780	663	563	780	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	19.0	15.5	25.7	17.7	11.7	29.9	21.9	22.9	30.2	24.6	23.1
Incr Delay (d2), s/veh	0.6	1.2	0.0	4.9	7.0	0.1	0.3	0.2	0.5	0.3	0.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.4	0.2	4.9	12.4	1.0	0.3	2.5	3.3	0.2	4.3	2.0
LnGrp Delay(d),s/veh	29.3	20.2	15.5	30.7	24.6	11.9	30.2	22.1	23.4	30.4	25.3	23.4
LnGrp LOS	C	C	B	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h	754				1661				370			
Approach Delay, s/veh	20.8				24.9				23.1			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	19.0	15.1	25.8	7.8	17.4	8.5	32.5				
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	5.3	* 5.3	4.0	5.7				
Max Green Setting (Gmax), s	20.0	26.7	15.0	19.3	20.0	* 27	7.0	27.3				
Max Q Clear Time (g_c+I1), s	2.4	9.4	11.1	12.8	2.5	10.1	3.9	24.8				
Green Ext Time (p_c), s	0.0	2.0	0.2	6.2	0.0	2.0	0.0	2.0				

Intersection Summary

HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
23: Monument Dr & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	926	13	96	1433	68	20	18	16	33	31	30
Future Volume (veh/h)	16	926	13	96	1433	68	20	18	16	33	31	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	975	14	101	1508	72	21	19	17	35	33	32
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	1893	821	130	2094	937	72	75	64	123	99	110
Arrive On Green	0.03	0.53	0.52	0.07	0.59	0.59	0.04	0.04	0.04	0.07	0.05	0.07
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	17	975	14	101	1508	72	21	19	17	35	33	32
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.6	11.0	0.3	3.5	18.8	1.2	0.7	0.6	0.6	1.2	1.1	1.2
Cycle Q Clear(g_c), s	0.6	11.0	0.3	3.5	18.8	1.2	0.7	0.6	0.6	1.2	1.1	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	1893	821	130	2094	937	72	75	64	123	99	110
V/C Ratio(X)	0.29	0.52	0.02	0.78	0.72	0.08	0.29	0.25	0.27	0.29	0.33	0.29
Avail Cap(c_a), veh/h	143	1903	826	229	2131	953	579	607	516	601	601	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	9.2	7.2	28.2	9.0	5.4	28.9	28.8	28.8	27.4	28.3	27.4
Incr Delay (d2), s/veh	1.0	0.4	0.0	3.8	1.4	0.1	0.8	0.6	0.8	0.5	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.4	0.1	1.8	9.4	0.5	0.4	0.3	0.3	0.6	0.6	0.5
LnGrp Delay(d),s/veh	30.3	9.6	7.3	32.0	10.4	5.5	29.7	29.5	29.7	27.8	29.0	27.9
LnGrp LOS	C	A	A	C	B	A	C	C	C	C	C	C
Approach Vol, veh/h	1006				1681		57				100	
Approach Delay, s/veh	10.0				11.5		29.6				28.3	
Approach LOS	A				B		C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	7.4		8.5	37.8	8.2		5.0	41.3				
Change Period (Y+Rc), s	4.9		4.0	5.7	4.9		4.0	5.7				
Max Green Setting (Gmax), s	20.2		8.0	32.3	20.0		4.0	36.3				
Max Q Clear Time (g_c+I1), s	2.7		5.5	13.0	3.2		2.6	20.8				
Green Ext Time (p_c), s	0.1		0.0	18.4	0.1		0.0	14.9				
Intersection Summary												
HCM 2010 Ctrl Delay	11.9											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
24: Upland Dr & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗		
Traffic Volume (veh/h)	840	89	154	1477	112	144		
Future Volume (veh/h)	840	89	154	1477	112	144		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	884	94	162	1555	118	152		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1658	742	211	2402	245	219		
Arrive On Green	0.47	0.47	0.12	0.68	0.14	0.14		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	884	94	162	1555	118	152		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	9.7	1.8	4.8	13.8	3.4	5.0		
Cycle Q Clear(g_c), s	9.7	1.8	4.8	13.8	3.4	5.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1658	742	211	2402	245	219		
V/C Ratio(X)	0.53	0.13	0.77	0.65	0.48	0.69		
Avail Cap(c_a), veh/h	1658	742	487	2850	519	464		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.3	8.2	23.4	5.0	21.7	22.4		
Incr Delay (d2), s/veh	0.3	0.1	5.8	0.4	1.5	3.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.7	0.8	2.7	6.6	1.7	2.4		
LnGrp Delay(d),s/veh	10.6	8.3	29.2	5.4	23.2	26.4		
LnGrp LOS	B	A	C	A	C	C		
Approach Vol, veh/h	978			1717	270			
Approach Delay, s/veh	10.4			7.7	25.0			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		12.6	11.5	30.6				42.1
Change Period (Y+Rc), s		5.0	5.0	5.0				5.0
Max Green Setting (Gmax), s		16.0	15.0	24.0				44.0
Max Q Clear Time (g_c+I1), s		7.0	6.8	11.7				15.8
Green Ext Time (p_c), s		0.6	0.3	10.9				21.3
Intersection Summary								
HCM 2010 Ctrl Delay			10.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

25: Fiddymment Rd & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	631	417	1028	947	58	658	1134	495	62	916	51
Future Volume (veh/h)	106	631	417	1028	947	58	658	1134	495	62	916	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	112	664	439	1082	997	61	693	1194	521	65	964	54
Adj No. of Lanes	2	2	1	3	2	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	705	315	1047	1079	66	766	2149	669	233	1361	424
Arrive On Green	0.09	0.20	0.20	0.21	0.32	0.32	0.22	0.42	0.42	0.07	0.27	0.27
Sat Flow, veh/h	3442	3539	1583	5003	3388	207	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	112	664	439	1082	521	537	693	1194	521	65	964	54
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1668	1770	1826	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	3.7	22.1	23.8	25.0	33.9	33.9	23.4	21.2	33.8	2.1	20.5	3.1
Cycle Q Clear(g_c), s	3.7	22.1	23.8	25.0	33.9	33.9	23.4	21.2	33.8	2.1	20.5	3.1
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	705	315	1047	564	582	766	2149	669	233	1361	424
V/C Ratio(X)	0.36	0.94	1.39	1.03	0.92	0.92	0.91	0.56	0.78	0.28	0.71	0.13
Avail Cap(c_a), veh/h	317	705	315	1047	564	582	778	2149	669	259	1379	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	47.1	47.8	47.2	39.3	39.3	45.2	26.0	29.7	52.9	39.5	33.2
Incr Delay (d2), s/veh	0.3	21.1	194.6	36.8	21.4	20.9	13.6	0.5	6.6	0.2	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	12.9	27.4	15.0	20.0	20.5	12.6	9.9	16.0	1.0	9.8	1.4
LnGrp Delay(d),s/veh	51.4	68.3	242.4	84.0	60.7	60.2	58.8	26.5	36.3	53.2	41.6	33.4
LnGrp LOS	D	E	F	F	E	E	E	C	D	D	D	C
Approach Vol, veh/h	1215				2140				2408			
Approach Delay, s/veh	129.6				72.4				37.9			
Approach LOS	F				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	53.1	28.0	27.3	29.6	34.6	13.8	41.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	8.0	47.0	24.0	* 21	26.0	29.0	10.0	35.0				
Max Q Clear Time (g_c+I1), s	4.1	35.8	27.0	25.8	25.4	22.5	5.7	35.9				
Green Ext Time (p_c), s	0.0	10.5	0.0	0.0	0.2	6.1	0.1	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 65.6
HCM 2010 LOS E

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
26: Pleasant Grove Blvd & Sun City Blvd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	14	1167	1774	283	118	8		
Future Volume (veh/h)	14	1167	1774	283	118	8		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	15	1228	1867	0	124	0		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	78	2741	2426	1038	254	215		
Arrive On Green	0.04	0.77	0.69	0.00	0.14	0.00		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	15	1228	1867	0	124	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.5	8.0	23.5	0.0	4.3	0.0		
Cycle Q Clear(g_c), s	0.5	8.0	23.5	0.0	4.3	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	78	2741	2426	1038	254	215		
V/C Ratio(X)	0.19	0.45	0.77	0.00	0.49	0.00		
Avail Cap(c_a), veh/h	238	3013	2426	1038	729	638		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	30.9	2.6	7.0	0.0	26.4	0.0		
Incr Delay (d2), s/veh	0.4	0.2	1.7	0.0	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	3.8	11.7	0.0	2.1	0.0		
LnGrp Delay(d),s/veh	31.3	2.8	8.7	0.0	26.9	0.0		
LnGrp LOS	C	A	A		C			
Approach Vol, veh/h		1243	1867		124			
Approach Delay, s/veh		3.1	8.7		26.9			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				54.9		12.1	5.9	48.9
Change Period (Y+Rc), s				6.0		4.0	4.0	* 6
Max Green Setting (Gmax), s				54.0		26.0	8.0	* 42
Max Q Clear Time (g_c+I1), s				10.0		6.3	2.5	25.5
Green Ext Time (p_c), s				38.8		0.2	0.0	16.1
Intersection Summary								
HCM 2010 Ctrl Delay			7.3					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
27: Pleasant Grove Blvd & Rose Creek Rd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	16	1226	2084	30	49	7		
Future Volume (veh/h)	16	1226	2084	30	49	7		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900		
Adj Flow Rate, veh/h	17	1291	2194	32	52	7		
Adj No. of Lanes	1	2	2	0	0	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	0	0		
Cap, veh/h	74	2888	2616	38	153	21		
Arrive On Green	0.04	0.82	0.73	0.71	0.10	0.10		
Sat Flow, veh/h	1774	3632	3664	52	1517	204		
Grp Volume(v), veh/h	17	1291	1084	1142	60	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1854	1751	0		
Q Serve(g_s), s	0.7	7.6	30.6	31.0	2.3	0.0		
Cycle Q Clear(g_c), s	0.7	7.6	30.6	31.0	2.3	0.0		
Prop In Lane	1.00			0.03	0.87	0.12		
Lane Grp Cap(c), veh/h	74	2888	1296	1358	177	0		
V/C Ratio(X)	0.23	0.45	0.84	0.84	0.34	0.00		
Avail Cap(c_a), veh/h	196	3085	1296	1358	509	0		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	33.5	1.9	6.7	6.7	30.2	0.0		
Incr Delay (d2), s/veh	0.6	0.2	5.3	5.2	0.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	3.7	16.4	17.2	1.1	0.0		
LnGrp Delay(d),s/veh	34.1	2.1	11.9	12.0	30.7	0.0		
LnGrp LOS	C	A	B	B	C			
Approach Vol, veh/h		1308	2226		60			
Approach Delay, s/veh		2.5	11.9		30.7			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				62.0		10.3	6.0	56.0
Change Period (Y+Rc), s				5.7		4.0	4.0	5.7
Max Green Setting (Gmax), s				60.3		20.0	7.0	49.3
Max Q Clear Time (g_c+I1), s				9.6		4.3	2.7	33.0
Green Ext Time (p_c), s				46.6		0.1	0.0	16.1
Intersection Summary								
HCM 2010 Ctrl Delay			8.8					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
28: Pleasant Grove Blvd & Michener Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	52	1315	2122	1	34	37		
Future Volume (veh/h)	52	1315	2122	1	34	37		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	55	1384	2234	1	36	39		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	126	2901	2526	1091	175	157		
Arrive On Green	0.07	0.82	0.71	0.69	0.10	0.10		
Sat Flow, veh/h	1774	3632	3632	1572	1774	1583		
Grp Volume(v), veh/h	55	1384	2234	1	36	39		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1572	1774	1583		
Q Serve(g_s), s	2.6	10.0	42.1	0.0	1.6	2.0		
Cycle Q Clear(g_c), s	2.6	10.0	42.1	0.0	1.6	2.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	126	2901	2526	1091	175	157		
V/C Ratio(X)	0.44	0.48	0.88	0.00	0.21	0.25		
Avail Cap(c_a), veh/h	165	2965	2526	1091	433	387		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	38.3	2.3	9.6	4.0	35.6	35.8		
Incr Delay (d2), s/veh	0.9	0.2	4.3	0.0	0.2	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	4.7	21.7	0.0	0.8	1.8		
LnGrp Delay(d),s/veh	39.1	2.5	13.8	4.0	35.8	36.1		
LnGrp LOS	D	A	B	A	D	D		
Approach Vol, veh/h		1439	2235		75			
Approach Delay, s/veh		3.9	13.8		36.0			
Approach LOS		A	B		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				74.5		11.5	9.1	65.3
Change Period (Y+Rc), s				6.7		4.0	4.0	6.7
Max Green Setting (Gmax), s				69.3		20.0	7.0	58.3
Max Q Clear Time (g_c+I1), s				12.0		4.0	4.6	44.1
Green Ext Time (p_c), s				55.8		0.1	0.0	14.1
Intersection Summary								
HCM 2010 Ctrl Delay			10.5					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
29: Woodcreek Oaks Blvd & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1039	149	775	1658	306	276	660	600	370	615	257
Future Volume (veh/h)	66	1039	149	775	1658	306	276	660	600	370	615	257
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	69	1094	0	816	1745	0	291	695	0	389	647	0
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	1232	360	1783	3734	1139	336	751	312	413	876	368
Arrive On Green	0.04	0.27	0.00	0.58	0.82	0.00	0.11	0.24	0.00	0.13	0.28	0.00
Sat Flow, veh/h	3097	4577	1425	3097	4577	1425	3097	3185	1425	3097	3185	1425
Grp Volume(v), veh/h	69	1094	0	816	1745	0	291	695	0	389	647	0
Grp Sat Flow(s),veh/h/ln	1549	1526	1425	1549	1526	1425	1549	1593	1425	1549	1593	1425
Q Serve(g_s), s	2.6	27.5	0.0	18.2	13.6	0.0	11.1	25.6	0.0	14.9	22.2	0.0
Cycle Q Clear(g_c), s	2.6	27.5	0.0	18.2	13.6	0.0	11.1	25.6	0.0	14.9	22.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1232	360	1783	3734	1139	336	751	312	413	876	368
V/C Ratio(X)	0.52	0.89	0.00	0.46	0.47	0.00	0.87	0.93	0.00	0.94	0.74	0.00
Avail Cap(c_a), veh/h	181	1232	360	1783	3734	1139	336	751	312	413	876	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.2	42.1	0.0	14.7	3.3	0.0	52.7	44.8	0.0	51.5	39.6	0.0
Incr Delay (d2), s/veh	1.2	9.7	0.0	0.1	0.2	0.0	19.9	17.6	0.0	29.6	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	12.7	0.0	7.7	5.7	0.0	5.7	13.1	0.0	8.1	10.2	0.0
LnGrp Delay(d),s/veh	57.4	51.8	0.0	14.7	3.4	0.0	72.5	62.4	0.0	81.1	43.4	0.0
LnGrp LOS	E	D		B	A		E	E		F	D	
Approach Vol, veh/h	1163				2561				986			
Approach Delay, s/veh	52.2				7.0				65.4			
Approach LOS	D				A				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.7	31.0	74.4	35.0	16.0	35.7	8.2	101.2				
Change Period (Y+Rc), s	5.7	* 5.7	5.7	* 5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	15.0	* 25	31.0	* 29	12.0	28.3	6.0	54.3				
Max Q Clear Time (g_c+I1), s	16.9	27.6	20.2	29.5	13.1	24.2	4.6	15.6				
Green Ext Time (p_c), s	0.0	0.0	8.0	0.0	0.0	2.3	0.0	28.0				

Intersection Summary

HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

30: Country Club Dr & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑↱		↱	↑↑↑	↱	↱		
Traffic Volume (veh/h)	1792	221	148	2966	6	182		
Future Volume (veh/h)	1792	221	148	2966	6	182		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1886	233	156	3122	6	192		
Adj No. of Lanes	3	0	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2671	327	183	3657	261	233		
Arrive On Green	0.58	0.57	0.10	0.72	0.15	0.15		
Sat Flow, veh/h	4754	562	1774	5253	1774	1583		
Grp Volume(v), veh/h	1390	729	156	3122	6	192		
Grp Sat Flow(s),veh/h/ln	1695	1758	1774	1695	1774	1583		
Q Serve(g_s), s	34.8	35.7	10.4	53.6	0.3	14.1		
Cycle Q Clear(g_c), s	34.8	35.7	10.4	53.6	0.3	14.1		
Prop In Lane		0.32	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1974	1024	183	3657	261	233		
V/C Ratio(X)	0.70	0.71	0.85	0.85	0.02	0.83		
Avail Cap(c_a), veh/h	1974	1024	296	3657	404	360		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.7	18.2	52.9	12.3	43.8	49.7		
Incr Delay (d2), s/veh	2.1	4.2	6.6	2.8	0.0	4.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	16.8	18.5	5.4	25.5	0.2	6.5		
LnGrp Delay(d),s/veh	19.9	22.4	59.5	15.0	43.8	54.6		
LnGrp LOS	B	C	E	B	D	D		
Approach Vol, veh/h	2119			3278	198			
Approach Delay, s/veh	20.7			17.1	54.2			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.3	16.4	73.6				90.0
Change Period (Y+Rc), s		4.0	4.0	5.7				5.7
Max Green Setting (Gmax), s		26.0	20.0	60.3				84.3
Max Q Clear Time (g_c+I1), s		16.1	12.4	37.7				55.6
Green Ext Time (p_c), s		0.2	0.1	22.5				28.6
Intersection Summary								
HCM 2010 Ctrl Delay			19.8					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

31: Foothills Blvd & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	392	1478	98	866	1967	88	278	650	522	141	1451	711
Future Volume (veh/h)	392	1478	98	866	1967	88	278	650	522	141	1451	711
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	413	1556	0	912	2071	0	293	684	0	148	1527	0
Adj No. of Lanes	2	3	1	3	3	1	2	3	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	1793	558	792	2047	637	258	1252	390	203	1367	338
Arrive On Green	0.11	0.35	0.00	0.21	0.54	0.00	0.08	0.25	0.00	0.06	0.21	0.00
Sat Flow, veh/h	3442	5085	1583	5003	5085	1583	3442	5085	1583	3442	6408	1583
Grp Volume(v), veh/h	413	1556	0	912	2071	0	293	684	0	148	1527	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1668	1695	1583	1721	1695	1583	1721	1602	1583
Q Serve(g_s), s	13.3	34.3	0.0	19.0	48.3	0.0	9.0	14.1	0.0	5.1	25.6	0.0
Cycle Q Clear(g_c), s	13.3	34.3	0.0	19.0	48.3	0.0	9.0	14.1	0.0	5.1	25.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1793	558	792	2047	637	258	1252	390	203	1367	338
V/C Ratio(X)	1.08	0.87	0.00	1.15	1.01	0.00	1.14	0.55	0.00	0.73	1.12	0.00
Avail Cap(c_a), veh/h	381	1793	558	792	2047	637	258	1252	390	258	1367	338
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.3	36.2	0.0	47.4	27.9	0.0	55.5	39.4	0.0	55.5	47.2	0.0
Incr Delay (d2), s/veh	70.0	5.1	0.0	82.4	22.8	0.0	97.4	0.7	0.0	5.0	63.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	16.8	0.0	14.7	26.6	0.0	7.8	6.7	0.0	2.6	17.3	0.0
LnGrp Delay(d),s/veh	123.4	41.3	0.0	129.8	50.7	0.0	152.9	40.1	0.0	60.5	110.3	0.0
LnGrp LOS	F	D		F	F		F	D		E	F	
Approach Vol, veh/h	1969				2983				977			
Approach Delay, s/veh	58.5				74.9				73.9			
Approach LOS	E				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	35.9	25.0	48.0	15.0	32.0	19.0	54.0				
Change Period (Y+Rc), s	4.0	* 6.4	6.0	5.7	6.0	6.4	5.7	5.7				
Max Green Setting (Gmax), s	9.0	* 28	19.0	42.3	9.0	25.6	13.3	48.3				
Max Q Clear Time (g_c+I1), s	7.1	16.1	21.0	36.3	11.0	27.6	15.3	50.3				
Green Ext Time (p_c), s	0.0	10.4	0.0	5.3	0.0	0.0	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 77.4
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

32: Washington Blvd & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	1741	125	527	2136	76	294	614	293	209	1205	315
Future Volume (veh/h)	187	1741	125	527	2136	76	294	614	293	209	1205	315
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	197	1833	132	555	2248	0	309	646	0	220	1268	332
Adj No. of Lanes	2	3	1	2	4	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	1949	607	556	2974	703	315	1044	435	287	1339	417
Arrive On Green	0.08	0.38	0.38	0.16	0.46	0.00	0.09	0.30	0.00	0.08	0.26	0.26
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	3442	3539	1583	3442	5085	1583
Grp Volume(v), veh/h	197	1833	132	555	2248	0	309	646	0	220	1268	332
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1721	1770	1583	1721	1695	1583
Q Serve(g_s), s	6.7	41.7	6.7	19.3	34.7	0.0	10.8	18.9	0.0	7.5	29.4	18.2
Cycle Q Clear(g_c), s	6.7	41.7	6.7	19.3	34.7	0.0	10.8	18.9	0.0	7.5	29.4	18.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	1949	607	556	2974	703	315	1044	435	287	1339	417
V/C Ratio(X)	0.71	0.94	0.22	1.00	0.76	0.00	0.98	0.62	0.00	0.77	0.95	0.80
Avail Cap(c_a), veh/h	287	1949	607	556	2974	703	315	1044	435	287	1339	417
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.52	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	35.7	24.9	50.3	26.5	0.0	54.4	36.5	0.0	53.9	43.4	24.9
Incr Delay (d2), s/veh	6.3	10.5	0.8	26.9	1.0	0.0	44.8	1.4	0.0	10.7	14.0	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	21.4	3.1	11.3	15.5	0.0	7.1	9.4	0.0	4.0	15.5	9.2
LnGrp Delay(d),s/veh	60.1	46.1	25.7	77.2	27.5	0.0	99.2	37.9	0.0	64.6	57.4	35.9
LnGrp LOS	E	D	C	E	C		F	D		E	E	D
Approach Vol, veh/h	2162				2803				955			
Approach Delay, s/veh	46.2				37.3				57.7			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	38.4	22.0	49.0	16.4	35.0	12.7	58.3				
Change Period (Y+Rc), s	4.0	6.4	6.0	6.0	6.4	* 6.4	4.0	6.0				
Max Green Setting (Gmax), s	9.0	29.6	16.0	43.0	10.0	* 29	9.0	52.0				
Max Q Clear Time (g_c+I1), s	9.5	20.9	21.3	43.7	12.8	31.4	8.7	36.7				
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	0.0	0.0	13.4				

Intersection Summary

HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

33: Pleasant Grove Blvd & Hallissy Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	2174	31	94	2361	96	374	60	25	107	11	13
Future Volume (veh/h)	7	2174	31	94	2361	96	374	60	25	107	11	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	2288	0	99	2485	0	394	63	0	113	12	0
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	2485	774	258	3257	1014	390	288	245	135	20	17
Arrive On Green	0.01	0.49	0.00	0.15	0.64	0.00	0.22	0.15	0.00	0.08	0.01	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	7	2288	0	99	2485	0	394	63	0	113	12	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.6	62.7	0.0	7.6	51.5	0.0	33.0	4.4	0.0	9.4	1.0	0.0
Cycle Q Clear(g_c), s	0.6	62.7	0.0	7.6	51.5	0.0	33.0	4.4	0.0	9.4	1.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	9	2485	774	258	3257	1014	390	288	245	135	20	17
V/C Ratio(X)	0.78	0.92	0.00	0.38	0.76	0.00	1.01	0.22	0.00	0.84	0.61	0.00
Avail Cap(c_a), veh/h	35	2485	774	258	3257	1014	390	397	338	201	188	159
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.45	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	74.5	35.6	0.0	58.0	19.0	0.0	58.5	55.5	0.0	68.4	73.9	0.0
Incr Delay (d2), s/veh	21.2	3.5	0.0	0.3	1.2	0.0	48.0	0.3	0.0	11.7	28.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	30.0	0.0	3.7	24.3	0.0	21.4	2.3	0.0	5.1	0.7	0.0
LnGrp Delay(d),s/veh	95.7	39.1	0.0	58.3	20.2	0.0	106.5	55.8	0.0	80.1	102.3	0.0
LnGrp LOS	F	D		E	C		F	E		F	F	
Approach Vol, veh/h	2295				2584				457			
Approach Delay, s/veh	39.3				21.7				99.5			
Approach LOS	D				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	28.1	27.5	79.0	37.0	6.5	4.8	101.8				
Change Period (Y+Rc), s	4.0	* 4.9	5.7	* 5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	17.0	* 32	10.0	* 73	33.0	15.1	3.0	80.3				
Max Q Clear Time (g_c+I1), s	11.4	6.4	9.6	64.7	35.0	3.0	2.6	53.5				
Green Ext Time (p_c), s	0.1	0.3	0.0	8.2	0.0	0.2	0.0	24.9				

Intersection Summary

HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

34: Roseville Pkwy & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1329	797	942	1755	301	944	1338	1173	279	1156	24
Future Volume (veh/h)	63	1329	797	942	1755	301	944	1338	1173	279	1156	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	66	1399	0	992	1847	0	994	1408	0	294	1217	0
Adj No. of Lanes	3	2	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	934	1274	549	252	1197	351	918	2014	602	351	1268	369
Arrive On Green	0.19	0.36	0.00	0.07	0.24	0.00	0.09	0.13	0.00	0.10	0.25	0.00
Sat Flow, veh/h	5003	3539	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	66	1399	0	992	1847	0	994	1408	0	294	1217	0
Grp Sat Flow(s),veh/h/ln	1668	1770	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	1.6	54.0	0.0	11.0	35.3	0.0	40.0	39.7	0.0	12.6	35.4	0.0
Cycle Q Clear(g_c), s	1.6	54.0	0.0	11.0	35.3	0.0	40.0	39.7	0.0	12.6	35.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	934	1274	549	252	1197	351	918	2014	602	351	1268	369
V/C Ratio(X)	0.07	1.10	0.00	3.93	1.54	0.00	1.08	0.70	0.00	0.84	0.96	0.00
Avail Cap(c_a), veh/h	1001	1274	549	252	1197	351	918	2014	602	351	1268	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.18	0.18	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.3	48.0	0.0	69.5	57.3	0.0	68.4	56.7	0.0	66.1	55.6	0.0
Incr Delay (d2), s/veh	0.0	56.5	0.0	1320.4	245.3	0.0	54.8	1.2	0.0	16.7	16.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	36.4	0.0	51.5	43.7	0.0	26.1	18.9	0.0	6.8	18.5	0.0
LnGrp Delay(d),s/veh	50.3	104.5	0.0	1389.9	302.6	0.0	123.2	57.9	0.0	82.9	72.2	0.0
LnGrp LOS	D	F		F	F		F	E		F	E	
Approach Vol, veh/h	1465				2839				2402			
Approach Delay, s/veh	102.0				682.6				84.9			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	64.0	14.0	57.0	42.0	42.0	33.0	38.0				
Change Period (Y+Rc), s	5.7	8.0	4.0	6.0	3.0	* 8	6.0	* 5.7				
Max Green Setting (Gmax), s	14.3	51.0	10.0	51.0	39.0	* 34	29.0	* 32				
Max Q Clear Time (g_c+I1), s	14.6	41.7	13.0	56.0	42.0	37.4	3.6	37.3				
Green Ext Time (p_c), s	0.0	8.8	0.0	0.0	0.0	0.0	15.2	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 292.5
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

35: Pleasant Grove Blvd & Highland Pointe Dr/Wal-Mart

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	602	6	482	267	24	271	388	2360	38	176	2179	300
Future Volume (veh/h)	602	6	482	267	24	271	388	2360	38	176	2179	300
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	634	6	507	281	25	285	408	2484	40	185	2294	316
Adj No. of Lanes	2	1	1	2	1	1	2	4	0	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	660	373	317	516	279	237	402	2858	46	439	2318	722
Arrive On Green	0.19	0.20	0.20	0.15	0.15	0.15	0.12	0.44	0.44	0.13	0.46	0.46
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	6545	105	3442	5085	1583
Grp Volume(v), veh/h	634	6	507	281	25	285	408	1824	700	185	2294	316
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1602	1844	1721	1695	1583
Q Serve(g_s), s	21.9	0.3	24.0	9.1	1.4	18.0	14.0	41.3	41.4	5.9	53.7	16.3
Cycle Q Clear(g_c), s	21.9	0.3	24.0	9.1	1.4	18.0	14.0	41.3	41.4	5.9	53.7	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	660	373	317	516	279	237	402	2099	805	439	2318	722
V/C Ratio(X)	0.96	0.02	1.60	0.54	0.09	1.20	1.02	0.87	0.87	0.42	0.99	0.44
Avail Cap(c_a), veh/h	660	373	317	516	279	237	402	2099	805	439	2318	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.23	0.23	0.23	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	38.5	48.0	47.2	43.9	51.0	53.0	30.7	30.7	48.3	32.4	22.2
Incr Delay (d2), s/veh	25.7	0.0	284.9	1.2	0.1	123.2	25.8	1.3	3.3	0.6	16.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	0.2	35.5	4.4	0.7	16.0	8.1	18.5	21.7	2.9	28.5	7.2
LnGrp Delay(d),s/veh	73.7	38.5	332.9	48.4	44.1	174.2	78.8	32.0	34.0	48.9	48.6	22.6
LnGrp LOS	E	D	F	D	D	F	F	C	C	D	D	C
Approach Vol, veh/h	1147				591				2932			
Approach Delay, s/veh	188.1				108.9				39.0			
Approach LOS	F				F				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.3	55.0		26.0	17.0	57.3		21.0				
Change Period (Y+Rc), s	6.0	* 6		4.0	4.0	6.0		5.0				
Max Green Setting (Gmax), s	13.0	* 49		22.0	13.0	50.0		16.0				
Max Q Clear Time (g_c+I1), s	7.9	43.4		26.0	16.0	55.7		20.0				
Green Ext Time (p_c), s	4.1	5.1		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 2010 Ctrl Delay 69.9
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

36: Pleasant Grove Blvd & Hwy-65 SB Ramps

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑		↑↑↑	↑				↑↑		↑↑
Traffic Volume (veh/h)	0	2692	891	0	2283	583	0	0	0	85	0	494
Future Volume (veh/h)	0	2692	891	0	2283	583	0	0	0	85	0	494
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1909	1909	0	1863	1863				1863	0	1863
Adj Flow Rate, veh/h	0	2834	938	0	2403	0				89	0	520
Adj No. of Lanes	0	3	1	0	3	1				2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	0	2
Cap, veh/h	0	3685	1134	0	3596	1120				750	0	607
Arrive On Green	0.00	0.71	0.70	0.00	1.00	0.00				0.22	0.00	0.22
Sat Flow, veh/h	0	5384	1623	0	5253	1583				3442	0	2787
Grp Volume(v), veh/h	0	2834	938	0	2403	0				89	0	520
Grp Sat Flow(s),veh/h/ln	0	1737	1623	0	1695	1583				1721	0	1393
Q Serve(g_s), s	0.0	41.9	49.5	0.0	0.0	0.0				2.5	0.0	21.5
Cycle Q Clear(g_c), s	0.0	41.9	49.5	0.0	0.0	0.0				2.5	0.0	21.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3685	1134	0	3596	1120				750	0	607
V/C Ratio(X)	0.00	0.77	0.83	0.00	0.67	0.00				0.12	0.00	0.86
Avail Cap(c_a), veh/h	0	3685	1134	0	3596	1120				1024	0	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.68	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.3	12.9	0.0	0.0	0.0				37.7	0.0	45.1
Incr Delay (d2), s/veh	0.0	1.6	7.0	0.0	0.4	0.0				0.0	0.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.2	24.1	0.0	0.1	0.0				1.2	0.0	8.7
LnGrp Delay(d),s/veh	0.0	12.9	19.9	0.0	0.4	0.0				37.7	0.0	50.3
LnGrp LOS		B	B		A					D		D
Approach Vol, veh/h		3772			2403						609	
Approach Delay, s/veh		14.6			0.4						48.4	
Approach LOS		B			A						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		89.5		30.5		89.5						
Change Period (Y+Rc), s		5.7		5.3		5.7						
Max Green Setting (Gmax), s		74.3		34.7		74.3						
Max Q Clear Time (g_c+I1), s		51.5		23.5		2.0						
Green Ext Time (p_c), s		22.7		1.6		71.8						
Intersection Summary												
HCM 2010 Ctrl Delay			12.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
37: Hwy-65 NB Ramps & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↑		↑↑↑	↑↑↑	↑↑		
Traffic Volume (veh/h)	1937	571	0	2101	790	620		
Future Volume (veh/h)	1937	571	0	2101	790	620		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1909	1909	0	1863	1863	1863		
Adj Flow Rate, veh/h	2039	0	0	2212	832	653		
Adj No. of Lanes	3	1	0	3	3	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	0	2	2	2		
Cap, veh/h	3705	1154	0	3615	988	550		
Arrive On Green	1.00	0.00	0.00	0.71	0.20	0.20		
Sat Flow, veh/h	5384	1623	0	5421	5003	2787		
Grp Volume(v), veh/h	2039	0	0	2212	832	653		
Grp Sat Flow(s),veh/h/ln	1737	1623	0	1695	1668	1393		
Q Serve(g_s), s	0.0	0.0	0.0	26.7	19.2	23.7		
Cycle Q Clear(g_c), s	0.0	0.0	0.0	26.7	19.2	23.7		
Prop In Lane		1.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3705	1154	0	3615	988	550		
V/C Ratio(X)	0.55	0.00	0.00	0.61	0.84	1.19		
Avail Cap(c_a), veh/h	3705	1154	0	3615	988	550		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.57	0.00	0.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	0.0	0.0	0.0	8.9	46.3	48.2		
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.8	6.3	101.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	12.6	9.4	16.8		
LnGrp Delay(d),s/veh	0.1	0.0	0.0	9.7	52.7	149.3		
LnGrp LOS	A			A	D	F		
Approach Vol, veh/h	2039			2212	1485			
Approach Delay, s/veh	0.1			9.7	95.2			
Approach LOS	A			A	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		90.0				90.0		30.0
Change Period (Y+Rc), s		5.7				5.7		7.3
Max Green Setting (Gmax), s		84.3				84.3		22.7
Max Q Clear Time (g_c+I1), s		2.0				28.7		25.7
Green Ext Time (p_c), s		77.1				53.1		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			28.4					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

38: Pleasant Grove Blvd & Fairway Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	540	513	666	491	202	586	1333	566	127	993	170
Future Volume (veh/h)	287	540	513	666	491	202	586	1333	566	127	993	170
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1909	1909	1909	1863	1863	1863
Adj Flow Rate, veh/h	302	568	540	701	517	213	617	1403	596	134	1045	179
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	360	652	292	717	1019	456	656	1987	957	188	1199	373
Arrive On Green	0.10	0.18	0.18	0.21	0.29	0.29	0.19	0.38	0.38	0.05	0.24	0.24
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3528	5212	1623	3442	5085	1583
Grp Volume(v), veh/h	302	568	540	701	517	213	617	1403	596	134	1045	179
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1764	1737	1623	1721	1695	1583
Q Serve(g_s), s	10.3	18.7	14.2	24.3	14.6	13.3	20.7	27.4	28.6	4.6	23.7	8.7
Cycle Q Clear(g_c), s	10.3	18.7	14.2	24.3	14.6	13.3	20.7	27.4	28.6	4.6	23.7	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	652	292	717	1019	456	656	1987	957	188	1199	373
V/C Ratio(X)	0.84	0.87	1.85	0.98	0.51	0.47	0.94	0.71	0.62	0.71	0.87	0.48
Avail Cap(c_a), veh/h	459	687	307	717	1019	456	656	1987	957	258	1199	373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	47.6	20.3	47.2	35.6	35.2	48.2	31.4	16.0	55.8	44.1	21.9
Incr Delay (d2), s/veh	8.6	11.7	395.8	27.9	0.6	1.2	21.6	1.4	1.6	2.7	8.8	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	10.2	38.3	14.4	7.2	6.0	12.1	13.4	13.2	2.3	12.1	4.2
LnGrp Delay(d),s/veh	61.3	59.2	416.1	75.1	36.3	36.3	69.8	32.8	17.6	58.5	52.9	26.2
LnGrp LOS	E	E	F	E	D	D	E	C	B	E	D	C
Approach Vol, veh/h	1410				1431				2616			
Approach Delay, s/veh	196.4				55.3				38.1			
Approach LOS	F				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	51.4	29.0	27.8	28.0	34.0	16.6	40.3				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	5.7	4.0	* 5.7				
Max Green Setting (Gmax), s	9.0	43.3	25.0	23.3	22.3	28.3	16.0	* 33				
Max Q Clear Time (g_c+I1), s	6.6	30.6	26.3	20.7	22.7	25.7	12.3	16.6				
Green Ext Time (p_c), s	0.0	11.3	0.0	1.4	0.0	2.0	0.2	11.7				

Intersection Summary

HCM 2010 Ctrl Delay 76.8
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

39: Pleasant Grove Blvd & Highland Park Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	12	35	283	26	72	88	1422	198	98	1002	1
Future Volume (veh/h)	6	12	35	283	26	72	88	1422	198	98	1002	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1710	1676	1676	1710	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	6	13	37	298	27	76	93	1497	208	103	1055	1
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	22	64	319	95	266	112	2549	794	96	1743	780
Arrive On Green	0.01	0.06	0.05	0.20	0.24	0.24	0.07	0.56	0.56	0.06	0.55	0.55
Sat Flow, veh/h	1597	386	1097	1597	389	1094	1597	4577	1425	1597	3185	1425
Grp Volume(v), veh/h	6	0	50	298	0	103	93	1497	208	103	1055	1
Grp Sat Flow(s),veh/h/ln	1597	0	1483	1597	0	1483	1597	1526	1425	1597	1593	1425
Q Serve(g_s), s	0.4	0.0	3.3	18.4	0.0	5.7	5.8	21.5	7.6	6.0	22.4	0.0
Cycle Q Clear(g_c), s	0.4	0.0	3.3	18.4	0.0	5.7	5.8	21.5	7.6	6.0	22.4	0.0
Prop In Lane	1.00		0.74	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	23	0	86	319	0	361	112	2549	794	96	1743	780
V/C Ratio(X)	0.26	0.00	0.58	0.93	0.00	0.29	0.83	0.59	0.26	1.08	0.61	0.00
Avail Cap(c_a), veh/h	64	0	348	319	0	586	112	2549	794	96	1743	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	0.0	46.1	39.3	0.0	30.9	45.9	14.6	11.5	47.0	15.3	10.3
Incr Delay (d2), s/veh	2.1	0.0	5.2	33.0	0.0	0.4	37.0	1.0	0.8	113.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.5	11.0	0.0	2.4	3.7	9.2	3.1	5.7	10.0	0.0
LnGrp Delay(d),s/veh	50.9	0.0	51.3	72.3	0.0	31.3	82.9	15.6	12.3	161.1	16.1	10.3
LnGrp LOS	D		D	E		C	F	B	B	F	B	B
Approach Vol, veh/h	56		401				1798				1159	
Approach Delay, s/veh	51.3		61.8				18.7				29.0	
Approach LOS	D		E				B				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	58.7	23.0	9.3	10.0	57.7	4.5	27.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.0	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	5.0	35.0	19.0	22.0	6.0	34.0	3.0	38.0				
Max Q Clear Time (g_c+I1), s	8.0	23.5	20.4	5.3	7.8	24.4	2.4	7.7				
Green Ext Time (p_c), s	0.0	10.8	0.0	0.4	0.0	9.1	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	27.8											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
40: Vista Grande Blvd & Santucci Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	3	9	114	9	57	23	1437	67	48	985	7
Future Volume (veh/h)	4	3	9	114	9	57	23	1437	67	48	985	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	4	3	9	120	9	60	24	1513	71	51	1037	7
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	43	19	155	337	151	40	2404	748	71	2494	776
Arrive On Green	0.00	0.01	0.01	0.09	0.10	0.10	0.02	0.47	0.47	0.04	0.49	0.49
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	4	3	9	120	9	60	24	1513	71	51	1037	7
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.1	0.0	0.3	3.4	0.1	1.8	0.7	11.5	1.3	1.5	6.7	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.3	3.4	0.1	1.8	0.7	11.5	1.3	1.5	6.7	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	8	43	19	155	337	151	40	2404	748	71	2494	776
V/C Ratio(X)	0.52	0.07	0.46	0.78	0.03	0.40	0.60	0.63	0.09	0.72	0.42	0.01
Avail Cap(c_a), veh/h	138	2195	982	275	2470	1105	172	2563	798	138	2494	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	25.2	25.3	23.1	21.2	22.0	25.0	10.2	7.5	24.5	8.4	6.7
Incr Delay (d2), s/veh	45.7	0.7	16.3	8.1	0.0	1.7	13.5	0.5	0.1	12.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	2.0	0.1	0.9	0.5	5.4	0.6	1.0	3.1	0.1
LnGrp Delay(d),s/veh	71.3	25.9	41.6	31.1	21.2	23.7	38.5	10.7	7.6	36.9	8.5	6.7
LnGrp LOS	E	C	D	C	C	C	D	B	A	D	A	A
Approach Vol, veh/h	16		189				1608		1095			
Approach Delay, s/veh	46.1		28.3				10.9		9.8			
Approach LOS	D		C				B		A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	29.4	9.5	5.6	6.2	30.3	5.2	9.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	26.0	8.0	32.0	5.0	25.0	4.0	36.0				
Max Q Clear Time (g_c+I1), s	3.5	13.5	5.4	2.3	2.7	8.7	2.1	3.8				
Green Ext Time (p_c), s	0.0	10.9	0.1	0.3	0.0	14.0	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			11.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
41: Silver Spruce Dr & Vista Grande Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	84	6	1	200	32	4	1	3	13	4	2
Future Volume (veh/h)	1	84	6	1	200	32	4	1	3	13	4	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	88	6	1	211	34	4	1	3	14	4	2
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	545	244	6	545	244	8	251	213	65	311	264
Arrive On Green	0.00	0.15	0.15	0.00	0.15	0.15	0.00	0.13	0.13	0.04	0.17	0.17
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	1	88	6	1	211	34	4	1	3	14	4	2
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	0.6	0.1	0.0	1.6	0.6	0.1	0.0	0.0	0.2	0.1	0.0
Cycle Q Clear(g_c), s	0.0	0.6	0.1	0.0	1.6	0.6	0.1	0.0	0.0	0.2	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	545	244	6	545	244	8	251	213	65	311	264
V/C Ratio(X)	0.17	0.16	0.02	0.17	0.39	0.14	0.52	0.00	0.01	0.21	0.01	0.01
Avail Cap(c_a), veh/h	239	2145	960	239	2145	960	239	1756	1493	597	2132	1813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	10.9	10.7	14.8	11.3	10.9	14.8	11.1	11.1	13.9	10.3	10.3
Incr Delay (d2), s/veh	12.7	0.1	0.0	12.7	0.4	0.3	44.4	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	0.0	0.8	0.3	0.1	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	27.5	11.0	10.7	27.5	11.7	11.1	59.1	11.1	11.2	15.5	10.3	10.3
LnGrp LOS	C	B	B	C	B	B	E	B	B	B	B	B
Approach Vol, veh/h	95				246				8			
Approach Delay, s/veh	11.2				11.7				35.1			
Approach LOS	B				B				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	9.0	5.0	9.6	5.1	10.0	5.0	9.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	28.0	4.0	18.0	4.0	34.0	4.0	18.0				
Max Q Clear Time (g_c+I1), s	2.2	2.0	2.0	2.6	2.1	2.1	2.0	3.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.7				
Intersection Summary												
HCM 2010 Ctrl Delay	12.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
42: Westbrook Blvd & Vista Grande Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	68	9	564	185	33	39	1413	244	57	843	42
Future Volume (veh/h)	18	68	9	564	185	33	39	1413	244	57	843	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	19	72	9	594	195	35	41	1487	257	60	887	44
Adj No. of Lanes	1	2	1	2	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	260	116	753	484	411	83	2152	646	101	2205	663
Arrive On Green	0.03	0.07	0.07	0.22	0.26	0.26	0.05	0.42	0.41	0.06	0.43	0.42
Sat Flow, veh/h	1774	3539	1583	3442	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	19	72	9	594	195	35	41	1487	257	60	887	44
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.7	1.3	0.4	11.0	5.8	1.1	1.5	16.0	7.7	2.2	8.1	1.1
Cycle Q Clear(g_c), s	0.7	1.3	0.4	11.0	5.8	1.1	1.5	16.0	7.7	2.2	8.1	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	260	116	753	484	411	83	2152	646	101	2205	663
V/C Ratio(X)	0.33	0.28	0.08	0.79	0.40	0.09	0.50	0.69	0.40	0.59	0.40	0.07
Avail Cap(c_a), veh/h	132	1736	777	870	1246	1059	158	2245	675	132	2205	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	29.5	29.0	24.8	20.6	18.9	31.3	15.8	14.1	31.0	13.1	11.7
Incr Delay (d2), s/veh	3.2	0.6	0.3	4.3	0.5	0.1	4.5	0.9	0.4	5.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.7	0.2	5.6	3.1	0.5	0.8	7.6	3.4	1.2	3.8	0.5
LnGrp Delay(d),s/veh	35.1	30.0	29.3	29.1	21.1	18.9	35.8	16.7	14.5	36.4	13.2	11.7
LnGrp LOS	D	C	C	C	C	B	D	B	B	D	B	B
Approach Vol, veh/h	100				824				1785			
Approach Delay, s/veh	30.9				26.8				16.8			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	31.8	18.7	8.9	7.1	32.5	6.2	21.5				
Change Period (Y+Rc), s	5.0	5.3	5.0	5.0	5.0	5.3	5.0	5.0				
Max Green Setting (Gmax), s	4.0	27.7	16.0	32.0	5.0	26.7	4.0	44.0				
Max Q Clear Time (g_c+I1), s	4.2	18.0	13.0	3.3	3.5	10.1	2.7	7.8				
Green Ext Time (p_c), s	0.0	8.4	0.8	1.8	0.0	14.2	0.0	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay	18.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
43: Market St & Vista Grande Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	2	372	0	27	779	0	20	0	1	0	2	0
Future Volume (veh/h)	2	372	0	27	779	0	20	0	1	0	2	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	392	0	28	820	0	21	0	1	0	2	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1395	624	47	1481	663	37	429	364	4	173	147
Arrive On Green	0.00	0.39	0.00	0.03	0.42	0.00	0.02	0.00	0.23	0.00	0.09	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	2	392	0	28	820	0	21	0	1	0	2	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.0	3.2	0.0	0.7	7.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.2	0.0	0.7	7.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1395	624	47	1481	663	37	429	364	4	173	147
V/C Ratio(X)	0.48	0.28	0.00	0.60	0.55	0.00	0.57	0.00	0.00	0.00	0.01	0.00
Avail Cap(c_a), veh/h	165	2307	1032	206	2389	1069	165	1214	1032	165	1214	1032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	21.4	8.9	0.0	20.7	9.5	0.0	20.8	0.0	12.7	0.0	17.7	0.0
Incr Delay (d2), s/veh	68.3	0.1	0.0	11.5	0.3	0.0	13.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.6	0.0	0.5	3.7	0.0	0.4	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	89.7	9.0	0.0	32.2	9.8	0.0	34.2	0.0	12.7	0.0	17.7	0.0
LnGrp LOS	F	A		C	A		C		B		B	
Approach Vol, veh/h		394			848			22			2	
Approach Delay, s/veh		9.4			10.5			33.2			17.7	
Approach LOS		A			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	14.9	6.1	21.9	5.9	9.0	5.1	23.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	28.0	5.0	28.0	4.0	28.0	4.0	29.0				
Max Q Clear Time (g_c+I1), s	0.0	2.0	2.7	5.2	2.5	2.0	2.0	9.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.1	0.0	0.0	0.0	8.4				
Intersection Summary												
HCM 2010 Ctrl Delay			10.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

44: Market St & Vista Grande Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	262	48	49	862	8	72	79	12	3	50	41
Future Volume (veh/h)	72	262	48	49	862	8	72	79	12	3	50	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	76	276	51	52	907	8	76	83	13	3	53	43
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	1386	583	117	1342	564	139	356	266	47	259	183
Arrive On Green	0.08	0.39	0.37	0.07	0.38	0.36	0.08	0.19	0.17	0.03	0.14	0.12
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	76	276	51	52	907	8	76	83	13	3	53	43
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.8	2.2	0.9	1.2	9.2	0.1	1.8	1.6	0.3	0.1	1.1	1.1
Cycle Q Clear(g_c), s	1.8	2.2	0.9	1.2	9.2	0.1	1.8	1.6	0.3	0.1	1.1	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	1386	583	117	1342	564	139	356	266	47	259	183
V/C Ratio(X)	0.55	0.20	0.09	0.44	0.68	0.01	0.55	0.23	0.05	0.06	0.20	0.23
Avail Cap(c_a), veh/h	206	1477	624	206	1477	624	206	1209	991	206	1209	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	8.7	8.9	19.4	11.2	9.0	19.1	14.8	15.1	20.5	16.5	17.3
Incr Delay (d2), s/veh	3.3	0.1	0.1	2.6	1.1	0.0	3.3	0.3	0.1	0.6	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1	0.4	0.7	4.6	0.1	1.0	0.9	0.1	0.0	0.6	0.5
LnGrp Delay(d),s/veh	22.4	8.7	9.0	22.0	12.3	9.0	22.4	15.1	15.1	21.0	16.8	18.0
LnGrp LOS	C	A	A	C	B	A	C	B	B	C	B	B
Approach Vol, veh/h	403				967				172			
Approach Delay, s/veh	11.3				12.8				18.3			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	11.2	6.9	19.9	7.4	9.0	7.4	19.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	26.0	4.0	16.0	4.0	26.0	4.0	16.0				
Max Q Clear Time (g_c+I1), s	2.1	3.6	3.2	4.2	3.8	3.1	3.8	11.2				
Green Ext Time (p_c), s	0.0	0.9	0.0	6.3	0.0	0.9	0.0	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay	13.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
45: Monarch Grove St & Vista Grande Blvd /Vista Grande Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	2	283	18	54	984	0	13	0	37	0	0	5
Future Volume (veh/h)	2	283	18	54	984	0	13	0	37	0	0	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	298	19	57	1036	0	14	0	39	0	0	5
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	1541	689	79	1691	756	25	380	323	4	157	133
Arrive On Green	0.00	0.44	0.44	0.04	0.48	0.00	0.01	0.00	0.20	0.00	0.00	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	2	298	19	57	1036	0	14	0	39	0	0	5
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.1	2.5	0.3	1.5	10.3	0.0	0.4	0.0	1.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	2.5	0.3	1.5	10.3	0.0	0.4	0.0	1.0	0.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	1541	689	79	1691	756	25	380	323	4	157	133
V/C Ratio(X)	0.51	0.19	0.03	0.72	0.61	0.00	0.56	0.00	0.12	0.00	0.00	0.04
Avail Cap(c_a), veh/h	150	2387	1068	262	2611	1168	150	1060	901	150	1060	901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	8.3	7.7	22.4	9.1	0.0	23.2	0.0	15.4	0.0	0.0	20.0
Incr Delay (d2), s/veh	77.9	0.1	0.0	11.7	0.4	0.0	17.7	0.0	0.2	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	0.1	1.0	5.0	0.0	0.3	0.0	0.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	101.6	8.3	7.7	34.0	9.5	0.0	41.0	0.0	15.6	0.0	0.0	20.1
LnGrp LOS	F	A	A	C	A		D		B			C
Approach Vol, veh/h		319			1093			53			5	
Approach Delay, s/veh		8.9			10.8			22.3			20.1	
Approach LOS		A			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	14.7	7.1	25.7	5.7	9.0	5.1	27.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	27.0	7.0	32.0	4.0	27.0	4.0	35.0				
Max Q Clear Time (g_c+I1), s	0.0	3.0	3.5	4.5	2.4	2.1	2.1	12.3				
Green Ext Time (p_c), s	0.0	0.1	0.0	11.4	0.0	0.1	0.0	10.4				
Intersection Summary												
HCM 2010 Ctrl Delay				10.8								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary

46: Upland Dr & Vista Grande Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	189	48	78	915	1	79	164	79	5	78	44
Future Volume (veh/h)	83	189	48	78	915	1	79	164	79	5	78	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	87	199	51	82	963	1	83	173	83	5	82	46
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1508	644	137	1495	638	139	372	286	44	273	201
Arrive On Green	0.08	0.43	0.41	0.08	0.42	0.40	0.08	0.20	0.18	0.02	0.15	0.13
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	87	199	51	82	963	1	83	173	83	5	82	46
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	2.4	1.8	1.0	2.3	11.1	0.0	2.3	4.2	2.3	0.1	2.0	1.3
Cycle Q Clear(g_c), s	2.4	1.8	1.0	2.3	11.1	0.0	2.3	4.2	2.3	0.1	2.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1508	644	137	1495	638	139	372	286	44	273	201
V/C Ratio(X)	0.60	0.13	0.08	0.60	0.64	0.00	0.60	0.46	0.29	0.11	0.30	0.23
Avail Cap(c_a), veh/h	241	1924	830	241	1924	830	241	760	615	172	687	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	9.0	9.4	23.0	11.8	9.2	23.0	18.2	18.3	24.6	19.6	20.2
Incr Delay (d2), s/veh	4.0	0.0	0.1	4.1	0.5	0.0	4.1	0.9	0.6	1.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.9	0.4	1.3	5.4	0.0	1.3	2.3	1.1	0.1	1.1	0.6
LnGrp Delay(d),s/veh	26.9	9.0	9.4	27.1	12.3	9.2	27.0	19.1	18.8	25.7	20.2	20.8
LnGrp LOS	C	A	A	C	B	A	C	B	B	C	C	C
Approach Vol, veh/h	337		1046				339		133			
Approach Delay, s/veh	13.7		13.4				21.0		20.6			
Approach LOS	B		B				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	13.3	8.0	24.9	8.0	10.5	8.2	24.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	19.0	6.0	26.0	6.0	17.0	6.0	26.0				
Max Q Clear Time (g_c+I1), s	2.1	6.2	4.3	3.8	4.3	4.0	4.4	13.1				
Green Ext Time (p_c), s	0.0	1.5	0.0	9.0	0.0	1.5	0.0	6.6				
Intersection Summary												
HCM 2010 Ctrl Delay	15.4											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

47: Westhills Dr & Fiddymment Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	0	16	30	0	665	53	1632	25	240	1203	1030
Future Volume (veh/h)	275	0	16	30	0	665	53	1632	25	240	1203	1030
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	289	0	17	32	0	700	56	1718	26	253	1266	1084
Adj No. of Lanes	2	0	1	1	0	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2
Cap, veh/h	364	0	0	40	0	0	72	3094	963	288	3712	1156
Arrive On Green	0.11	0.00	0.00	0.02	0.00	0.00	0.04	0.61	0.61	0.16	0.73	0.73
Sat Flow, veh/h	3442	289		1774	32		1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	289	56.9		32	94.9		56	1718	26	253	1266	1084
Grp Sat Flow(s),veh/h/ln	1721	E		1774	F		1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	9.9			2.2			3.8	24.2	0.8	16.9	10.9	71.1
Cycle Q Clear(g_c), s	9.9			2.2			3.8	24.2	0.8	16.9	10.9	71.1
Prop In Lane	1.00			1.00			1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	364			40			72	3094	963	288	3712	1156
V/C Ratio(X)	0.79			0.79			0.78	0.56	0.03	0.88	0.34	0.94
Avail Cap(c_a), veh/h	795			59			102	3094	963	848	4193	1306
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9			59.0			57.6	14.0	9.5	49.6	5.9	14.0
Incr Delay (d2), s/veh	4.0			35.9			21.0	0.2	0.0	8.5	0.1	12.1
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9			1.5			2.3	11.4	0.3	9.0	5.1	34.2
LnGrp Delay(d),s/veh	56.9			94.9			78.6	14.3	9.5	58.2	5.9	26.1
LnGrp LOS	E			F			E	B	A	E	A	C
Approach Vol, veh/h									1800			
Approach Delay, s/veh									16.2			
Approach LOS									B	B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3		5	6	7					
Phs Duration (G+Y+Rc), s	24.7	78.8	7.8		9.9	93.5	17.8					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	58.0	49.0	4.0		7.0	100.0	28.0					
Max Q Clear Time (g_c+I1), s	18.9	26.2	4.2		5.8	73.1	11.9					
Green Ext Time (p_c), s	0.8	21.9	0.0		0.0	15.4	0.9					
Intersection Summary												
HCM 2010 Ctrl Delay	21.0											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
48: Regional Park Access & Baseline Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1460	27	70	1294	43	0	26	17	142	11	7
Future Volume (veh/h)	15	1460	27	70	1294	43	0	26	17	142	11	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	16	1537	28	74	1362	45	0	27	18	149	12	7
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	2434	703	123	2620	761	3	161	137	218	519	441
Arrive On Green	0.03	0.48	0.44	0.07	0.52	0.48	0.00	0.09	0.09	0.12	0.28	0.28
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	16	1537	28	74	1362	45	0	27	18	149	12	7
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.5	13.0	0.6	2.3	10.2	0.9	0.0	0.8	0.6	4.6	0.3	0.2
Cycle Q Clear(g_c), s	0.5	13.0	0.6	2.3	10.2	0.9	0.0	0.8	0.6	4.6	0.3	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	2434	703	123	2620	761	3	161	137	218	519	441
V/C Ratio(X)	0.27	0.63	0.04	0.60	0.52	0.06	0.00	0.17	0.13	0.68	0.02	0.02
Avail Cap(c_a), veh/h	154	2555	741	154	2620	761	154	1065	905	277	1194	1015
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	11.2	9.1	26.1	9.3	8.0	0.0	24.4	24.3	24.2	15.1	15.1
Incr Delay (d2), s/veh	2.5	0.5	0.0	4.6	0.2	0.0	0.0	0.5	0.4	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.1	0.3	1.3	4.7	0.4	0.0	0.4	0.3	2.6	0.1	0.1
LnGrp Delay(d),s/veh	29.7	11.7	9.1	30.7	9.4	8.0	0.0	24.9	24.8	29.1	15.1	15.1
LnGrp LOS	C	B	A	C	A	A		C	C	C	B	B
Approach Vol, veh/h	1581			1481			45			168		
Approach Delay, s/veh	11.9			10.5			24.9			27.5		
Approach LOS	B			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	9.0	8.0	29.6	0.0	20.1	5.9	31.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	8.0	32.0	4.0	26.0	4.0	36.0	4.0	26.0				
Max Q Clear Time (g_c+I1), s	6.6	2.8	4.3	15.0	0.0	2.3	2.5	12.2				
Green Ext Time (p_c), s	0.0	0.2	0.0	9.6	0.0	0.2	0.0	12.7				
Intersection Summary												
HCM 2010 Ctrl Delay	12.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
49: Watt Ave/Santucci Blvd & Baseline Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	1038	2	594	996	68	58	1040	444	54	683	364
Future Volume (veh/h)	530	1038	2	594	996	68	58	1040	444	54	683	364
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	558	1093	2	625	1048	72	61	1095	467	57	719	383
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	618	1659	488	618	1659	488	136	1769	537	133	1720	535
Arrive On Green	0.18	0.33	0.31	0.18	0.33	0.31	0.04	0.35	0.34	0.04	0.34	0.34
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	558	1093	2	625	1048	72	61	1095	467	57	719	383
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	17.7	20.6	0.1	20.0	19.5	3.7	1.9	19.9	30.8	1.8	12.1	23.5
Cycle Q Clear(g_c), s	17.7	20.6	0.1	20.0	19.5	3.7	1.9	19.9	30.8	1.8	12.1	23.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	618	1659	488	618	1659	488	136	1769	537	133	1720	535
V/C Ratio(X)	0.90	0.66	0.00	1.01	0.63	0.15	0.45	0.62	0.87	0.43	0.42	0.72
Avail Cap(c_a), veh/h	618	1780	526	618	1780	526	154	1780	540	154	1734	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	32.2	26.7	45.7	31.9	27.9	52.3	30.2	34.5	52.4	28.4	32.2
Incr Delay (d2), s/veh	16.7	0.8	0.0	39.2	0.7	0.1	2.3	0.7	14.3	2.2	0.2	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	9.7	0.0	12.8	9.2	1.6	1.0	9.4	15.6	0.9	5.7	11.0
LnGrp Delay(d),s/veh	61.5	33.0	26.7	84.9	32.5	28.1	54.7	30.9	48.8	54.5	28.6	36.6
LnGrp LOS	E	C	C	F	C	C	D	C	D	D	C	D
Approach Vol, veh/h	1653		1745				1623		1159			
Approach Delay, s/veh	42.6		51.1				36.9		32.5			
Approach LOS	D		D				D		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	40.8	24.0	38.4	8.4	40.7	24.0	38.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	36.0	19.0	36.0	4.0	36.0	19.0	36.0				
Max Q Clear Time (g_c+I1), s	3.8	32.8	22.0	22.6	3.9	25.5	19.7	21.5				
Green Ext Time (p_c), s	0.0	2.9	0.0	10.8	0.0	9.0	0.0	11.5				
Intersection Summary												
HCM 2010 Ctrl Delay	41.6											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
50: Baseline Rd & W Shopping Center Access

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	219	1318	1287	83	122	371		
Future Volume (veh/h)	219	1318	1287	83	122	371		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	231	1387	1355	87	128	391		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	276	2982	1851	576	498	445		
Arrive On Green	0.16	0.59	0.36	0.36	0.28	0.28		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	231	1387	1355	87	128	391		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	9.5	11.7	17.4	2.8	4.2	17.8		
Cycle Q Clear(g_c), s	9.5	11.7	17.4	2.8	4.2	17.8		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	276	2982	1851	576	498	445		
V/C Ratio(X)	0.84	0.47	0.73	0.15	0.26	0.88		
Avail Cap(c_a), veh/h	401	3378	1892	589	707	631		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	30.8	8.9	20.7	16.1	21.0	25.8		
Incr Delay (d2), s/veh	9.8	0.1	1.5	0.1	0.3	10.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.4	5.4	8.3	1.2	2.1	15.3		
LnGrp Delay(d),s/veh	40.6	9.0	22.2	16.2	21.2	35.9		
LnGrp LOS	D	A	C	B	C	D		
Approach Vol, veh/h		1618	1442		519			
Approach Delay, s/veh		13.5	21.8		32.3			
Approach LOS		B	C		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				49.1		26.1	16.7	32.4
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				50.0		30.0	17.0	28.0
Max Q Clear Time (g_c+I1), s				13.7		19.8	11.5	19.4
Green Ext Time (p_c), s				29.0		1.4	0.3	8.0
Intersection Summary								
HCM 2010 Ctrl Delay			19.6					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

51: Baseline Rd & Westbrook Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	507	905	28	399	978	262	14	859	235	194	790	377
Future Volume (veh/h)	507	905	28	399	978	262	14	859	235	194	790	377
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	534	953	29	420	1029	276	15	904	247	204	832	397
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	642	1781	527	523	1606	472	76	1521	446	291	1840	545
Arrive On Green	0.19	0.35	0.33	0.15	0.32	0.30	0.02	0.30	0.28	0.08	0.36	0.34
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	534	953	29	420	1029	276	15	904	247	204	832	397
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	17.0	17.1	1.4	13.4	19.8	16.9	0.5	17.3	15.1	6.6	14.2	25.0
Cycle Q Clear(g_c), s	17.0	17.1	1.4	13.4	19.8	16.9	0.5	17.3	15.1	6.6	14.2	25.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	642	1781	527	523	1606	472	76	1521	446	291	1840	545
V/C Ratio(X)	0.83	0.53	0.06	0.80	0.64	0.58	0.20	0.59	0.55	0.70	0.45	0.73
Avail Cap(c_a), veh/h	815	1917	569	694	1739	514	332	1784	528	332	1840	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	29.6	25.9	46.7	33.5	34.0	54.8	34.1	34.9	50.8	27.8	32.7
Incr Delay (d2), s/veh	5.9	0.3	0.0	5.1	0.7	1.5	1.3	0.4	1.1	5.5	0.2	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	8.0	0.6	6.8	9.3	7.6	0.2	8.2	6.7	3.3	6.7	11.6
LnGrp Delay(d),s/veh	50.6	29.9	25.9	51.8	34.2	35.5	56.0	34.5	35.9	56.3	27.9	37.6
LnGrp LOS	D	C	C	D	C	D	E	C	D	E	C	D
Approach Vol, veh/h	1516		1725				1166		1433			
Approach Delay, s/veh	37.1		38.7				35.1		34.7			
Approach LOS	D		D				D		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	36.1	21.3	43.0	6.5	43.3	25.3	39.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	6.0	5.0	5.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	37.0	22.0	40.0	10.0	37.0	26.0	36.0				
Max Q Clear Time (g_c+I1), s	8.6	19.3	15.4	19.1	2.5	27.0	19.0	21.8				
Green Ext Time (p_c), s	0.1	11.8	0.9	15.3	0.0	8.2	1.2	11.2				
Intersection Summary												
HCM 2010 Ctrl Delay	36.6											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
52: Baseline Rd & C Shopping Center Access

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		  	  					
Traffic Volume (veh/h)	0	1333	1482	88	0	157		
Future Volume (veh/h)	0	1333	1482	88	0	157		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	0	1403	1560	93	0	165		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	4	3059	3059	952	280	250		
Arrive On Green	0.00	0.60	0.60	0.60	0.00	0.16		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	0	1403	1560	93	0	165		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.0	6.3	7.3	1.0	0.0	4.1		
Cycle Q Clear(g_c), s	0.0	6.3	7.3	1.0	0.0	4.1		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	4	3059	3059	952	280	250		
V/C Ratio(X)	0.00	0.46	0.51	0.10	0.00	0.66		
Avail Cap(c_a), veh/h	171	3791	3059	952	1237	1104		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	0.0	4.6	4.8	3.5	0.0	16.5		
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.0	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.9	3.4	0.5	0.0	3.7		
LnGrp Delay(d),s/veh	0.0	4.7	4.9	3.6	0.0	19.4		
LnGrp LOS		A	A	A		B		
Approach Vol, veh/h		1403	1653		165			
Approach Delay, s/veh		4.7	4.8		19.4			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				30.0		11.6	0.0	30.0
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				31.0		29.0	4.0	22.0
Max Q Clear Time (g_c+I1), s				8.3		6.1	0.0	9.3
Green Ext Time (p_c), s				16.7		0.5	0.0	11.8
Intersection Summary								
HCM 2010 Ctrl Delay			5.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

53: Market St & Baseline Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1164	144	22	1416	200	128	115	10	104	78	26
Future Volume (veh/h)	25	1164	144	22	1416	200	128	115	10	104	78	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	26	1225	152	23	1491	211	135	121	11	109	82	27
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	2441	733	68	2430	730	199	277	208	168	244	181
Arrive On Green	0.04	0.48	0.46	0.04	0.48	0.46	0.11	0.15	0.13	0.09	0.13	0.11
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	26	1225	152	23	1491	211	135	121	11	109	82	27
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	0.8	9.7	3.4	0.7	12.7	4.9	4.3	3.5	0.4	3.5	2.4	0.9
Cycle Q Clear(g_c), s	0.8	9.7	3.4	0.7	12.7	4.9	4.3	3.5	0.4	3.5	2.4	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	2441	733	68	2430	730	199	277	208	168	244	181
V/C Ratio(X)	0.36	0.50	0.21	0.34	0.61	0.29	0.68	0.44	0.05	0.65	0.34	0.15
Avail Cap(c_a), veh/h	151	2510	755	151	2510	755	211	1110	916	211	1110	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	10.5	9.4	27.5	11.3	9.9	25.1	22.8	22.3	25.7	23.2	23.5
Incr Delay (d2), s/veh	3.0	0.2	0.1	2.9	0.4	0.2	7.8	1.1	0.1	4.6	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.5	1.5	0.4	6.0	2.1	2.5	1.9	0.2	1.9	1.3	0.4
LnGrp Delay(d),s/veh	30.5	10.6	9.5	30.4	11.8	10.1	32.9	23.9	22.4	30.3	24.0	23.8
LnGrp LOS	C	B	A	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1403				1725				267		218	
Approach Delay, s/veh	10.9				11.8				28.4		27.1	
Approach LOS	B				B				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	11.7	6.3	31.2	10.6	10.7	6.4	31.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	6.0	33.0	4.0	27.0	6.0	33.0	4.0	27.0				
Max Q Clear Time (g_c+I1), s	5.5	5.5	2.7	11.7	6.3	4.4	2.8	14.7				
Green Ext Time (p_c), s	0.0	1.3	0.0	13.9	0.0	1.3	0.0	11.3				
Intersection Summary												
HCM 2010 Ctrl Delay	13.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
54: Baseline Rd & E Shopping Center Access

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	154	1124	1375	127	209	263		
Future Volume (veh/h)	154	1124	1375	127	209	263		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	162	1183	1447	134	220	277		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	208	2965	1892	589	407	364		
Arrive On Green	0.12	0.58	0.37	0.37	0.23	0.23		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	162	1183	1447	134	220	277		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	4.7	6.7	13.3	3.1	5.8	8.7		
Cycle Q Clear(g_c), s	4.7	6.7	13.3	3.1	5.8	8.7		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	208	2965	1892	589	407	364		
V/C Ratio(X)	0.78	0.40	0.76	0.23	0.54	0.76		
Avail Cap(c_a), veh/h	366	3429	1905	593	964	860		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.9	6.0	14.7	11.5	18.1	19.2		
Incr Delay (d2), s/veh	6.2	0.1	1.9	0.2	1.1	3.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.7	3.1	6.5	1.4	2.9	7.6		
LnGrp Delay(d),s/veh	29.1	6.1	16.6	11.7	19.2	22.5		
LnGrp LOS	C	A	B	B	B	C		
Approach Vol, veh/h		1345	1581		497			
Approach Delay, s/veh		8.9	16.2		21.0			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				36.1		17.3	11.3	24.9
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				36.0		29.0	11.0	20.0
Max Q Clear Time (g_c+I1), s				8.7		10.7	6.7	15.3
Green Ext Time (p_c), s				22.4		1.5	0.2	4.4
Intersection Summary								
HCM 2010 Ctrl Delay			14.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
55: Baseline Rd & Upland Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	81	1251	1493	81	42	9		
Future Volume (veh/h)	81	1251	1493	81	42	9		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	85	1317	1572	85	44	9		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	107	3529	2666	830	155	138		
Arrive On Green	0.06	0.69	0.52	0.52	0.09	0.09		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	85	1317	1572	85	44	9		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	2.2	4.9	9.7	1.2	1.1	0.2		
Cycle Q Clear(g_c), s	2.2	4.9	9.7	1.2	1.1	0.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	107	3529	2666	830	155	138		
V/C Ratio(X)	0.79	0.37	0.59	0.10	0.28	0.06		
Avail Cap(c_a), veh/h	194	3892	2780	866	1164	1039		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	21.2	2.9	7.5	5.5	19.5	19.1		
Incr Delay (d2), s/veh	12.4	0.1	0.3	0.1	1.0	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.4	2.2	4.6	0.5	0.6	0.2		
LnGrp Delay(d),s/veh	33.6	3.0	7.8	5.5	20.5	19.3		
LnGrp LOS	C	A	A	A	C	B		
Approach Vol, veh/h		1402	1657		53			
Approach Delay, s/veh		4.8	7.7		20.3			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				36.7		9.0	7.8	29.0
Change Period (Y+Rc), s				5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s				35.0		30.0	5.0	25.0
Max Q Clear Time (g_c+l1), s				6.9		3.1	4.2	11.7
Green Ext Time (p_c), s				24.2		0.1	0.0	12.2
Intersection Summary								
HCM 2010 Ctrl Delay			6.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
56: Fiddymment Rd & Baseline Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	1044	123	748	1416	308	168	864	456	369	806	40
Future Volume (veh/h)	202	1044	123	748	1416	308	168	864	456	369	806	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1863	1827	1827	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	213	1099	129	787	1491	324	177	909	480	388	848	42
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	4	2	2	4	4	2	2	2	2	2	2
Cap, veh/h	292	1422	427	802	2096	653	279	1264	394	428	1524	475
Arrive On Green	0.08	0.29	0.27	0.23	0.42	0.42	0.08	0.25	0.25	0.12	0.30	0.30
Sat Flow, veh/h	3442	4988	1583	3442	4988	1553	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	213	1099	129	787	1491	324	177	909	480	388	848	42
Grp Sat Flow(s),veh/h/ln	1721	1663	1583	1721	1663	1553	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	7.8	26.0	8.3	29.3	31.8	19.7	6.4	21.0	32.0	14.3	18.0	2.5
Cycle Q Clear(g_c), s	7.8	26.0	8.3	29.3	31.8	19.7	6.4	21.0	32.0	14.3	18.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	292	1422	427	802	2096	653	279	1264	394	428	1524	475
V/C Ratio(X)	0.73	0.77	0.30	0.98	0.71	0.50	0.63	0.72	1.22	0.91	0.56	0.09
Avail Cap(c_a), veh/h	348	1473	443	802	2096	653	294	1264	394	428	1524	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	42.2	37.4	49.1	30.8	27.3	57.3	44.2	48.3	55.6	37.9	32.4
Incr Delay (d2), s/veh	6.2	2.9	0.7	27.0	1.4	1.1	4.1	2.4	119.6	22.7	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	12.3	3.7	16.9	14.9	8.6	3.2	10.1	27.0	8.1	8.6	1.1
LnGrp Delay(d),s/veh	63.7	45.1	38.1	76.1	32.2	28.5	61.4	46.6	168.0	78.3	38.6	32.6
LnGrp LOS	E	D	D	E	C	C	E	D	F	E	D	C
Approach Vol, veh/h	1441		2602				1566		1278			
Approach Delay, s/veh	47.2		45.0				85.5		50.4			
Approach LOS	D		D				F		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	36.0	33.0	39.7	13.4	42.6	14.9	57.8				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	15.0	30.0	28.0	35.0	9.0	36.0	12.0	51.0				
Max Q Clear Time (g_c+I1), s	16.3	34.0	31.3	28.0	8.4	20.0	9.8	33.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	5.7	0.0	14.4	0.1	16.6				
Intersection Summary												
HCM 2010 Ctrl Delay	55.7											
HCM 2010 LOS	E											

HCM 2010 Signalized Intersection Summary

57: Baseline Rd & Junction Blvd

Cumulative Plus Project
PM Peak Hour

															
Movement	EBL	EBT	WBT	WBR	SBL	SBR									
Lane Configurations															
Traffic Volume (veh/h)	376	1419	1511	107	54	681									
Future Volume (veh/h)	376	1419	1511	107	54	681									
Number	7	4	8	18	1	16									
Initial Q (Qb), veh	0	0	0	0	0	0									
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00									
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00									
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863									
Adj Flow Rate, veh/h	396	1494	1591	113	57	717									
Adj No. of Lanes	2	2	2	1	1	2									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95									
Percent Heavy Veh, %	2	2	2	2	2	2									
Cap, veh/h	479	2299	1642	735	457	1106									
Arrive On Green	0.14	0.65	0.46	0.46	0.26	0.26									
Sat Flow, veh/h	3442	3632	3632	1583	1774	2787									
Grp Volume(v), veh/h	396	1494	1591	113	57	717									
Grp Sat Flow(s),veh/h/ln	1721	1770	1770	1583	1774	1393									
Q Serve(g_s), s	7.2	16.5	28.3	2.7	1.6	13.5									
Cycle Q Clear(g_c), s	7.2	16.5	28.3	2.7	1.6	13.5									
Prop In Lane	1.00			1.00	1.00	1.00									
Lane Grp Cap(c), veh/h	479	2299	1642	735	457	1106									
V/C Ratio(X)	0.83	0.65	0.97	0.15	0.12	0.65									
Avail Cap(c_a), veh/h	479	2299	1642	735	467	1121									
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00									
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00									
Uniform Delay (d), s/veh	27.1	6.9	16.9	10.0	18.4	15.8									
Incr Delay (d2), s/veh	10.7	0.8	15.5	0.1	0.0	1.0									
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0									
%ile BackOfQ(50%),veh/ln	4.1	8.1	17.2	1.2	0.8	10.4									
LnGrp Delay(d),s/veh	37.8	7.6	32.3	10.1	18.5	16.8									
LnGrp LOS	D	A	C	B	B	B									
Approach Vol, veh/h	1890		1704	774											
Approach Delay, s/veh	13.9		30.9	17.0											
Approach LOS	B		C	B											
Timer	1	2	3	4	5	6	7	8							
Assigned Phs				4	6		7	8							
Phs Duration (G+Y+Rc), s				45.0	19.6		12.0	33.0							
Change Period (Y+Rc), s				* 6	4.0		4.0	6.0							
Max Green Setting (Gmax), s				* 24	16.0		8.0	27.0							
Max Q Clear Time (g_c+I1), s				18.5	15.5		9.2	30.3							
Green Ext Time (p_c), s				5.4	0.1		0.0	0.0							
Intersection Summary															
HCM 2010 Ctrl Delay				21.1											
HCM 2010 LOS				C											
Notes															
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.															

HCM 2010 Signalized Intersection Summary

58: Woodcreek Oaks Blvd & Baseline Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	536	846	80	550	971	233	65	0	179	164	0	702
Future Volume (veh/h)	536	846	80	550	971	233	65	0	179	164	0	702
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	564	891	84	579	1022	0	68	0	188	173	0	0
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	538	1104	476	569	1104	480	268	0	225	174	0	169
Arrive On Green	0.30	0.31	0.30	0.32	0.31	0.00	0.15	0.00	0.14	0.11	0.00	0.00
Sat Flow, veh/h	1774	3539	1570	1774	3539	1583	1774	0	1583	1774	0	1583
Grp Volume(v), veh/h	564	891	84	579	1022	0	68	0	188	173	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1570	1774	1770	1583	1774	0	1583	1774	0	1583
Q Serve(g_s), s	35.0	26.7	4.5	37.0	32.2	0.0	3.9	0.0	13.3	11.2	0.0	0.0
Cycle Q Clear(g_c), s	35.0	26.7	4.5	37.0	32.2	0.0	3.9	0.0	13.3	11.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	538	1104	476	569	1104	480	268	0	225	174	0	169
V/C Ratio(X)	1.05	0.81	0.18	1.02	0.93	0.00	0.25	0.00	0.84	1.00	0.00	0.00
Avail Cap(c_a), veh/h	538	1104	476	569	1104	480	277	0	233	174	0	169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.2	36.5	29.6	39.2	38.4	0.0	43.3	0.0	48.2	51.5	0.0	0.0
Incr Delay (d2), s/veh	52.0	5.0	0.3	42.3	13.3	0.0	0.5	0.0	21.8	67.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.8	13.8	2.0	24.7	17.8	0.0	1.9	0.0	7.2	8.7	0.0	0.0
LnGrp Delay(d),s/veh	92.2	41.5	29.9	81.5	51.7	0.0	43.8	0.0	70.0	118.5	0.0	0.0
LnGrp LOS	F	D	C	F	D		D		E	F		
Approach Vol, veh/h	1539				1601				256		173	
Approach Delay, s/veh	59.5				62.5				63.0		118.5	
Approach LOS	E				E				E		F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	20.4		39.0	40.0	16.0		39.0	40.0				
Change Period (Y+Rc), s	5.0		4.0	6.0	5.7		6.0	* 6				
Max Green Setting (Gmax), s	16.0		35.0	32.0	10.3		33.0	* 34				
Max Q Clear Time (g_c+I1), s	15.3		39.0	28.7	13.2		37.0	34.2				
Green Ext Time (p_c), s	0.1		0.0	2.6	0.0		0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 63.9
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

59: Foothills Blvd & Baseline Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	338	458	90	630	160	823	1439	90	149	1644	293
Future Volume (veh/h)	246	338	458	90	630	160	823	1439	90	149	1644	293
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	259	356	482	95	663	168	866	1515	95	157	1731	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	1	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	689	308	132	847	264	956	2640	822	198	2261	532
Arrive On Green	0.10	0.19	0.19	0.07	0.17	0.17	0.28	0.52	0.52	0.11	0.35	0.00
Sat Flow, veh/h	3442	3539	1583	1774	5085	1583	3442	5085	1583	1774	6408	1583
Grp Volume(v), veh/h	259	356	482	95	663	168	866	1515	95	157	1731	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1695	1583	1721	1695	1583	1774	1602	1583
Q Serve(g_s), s	8.8	10.8	23.4	6.3	15.0	11.9	29.1	24.5	3.7	10.4	28.7	0.0
Cycle Q Clear(g_c), s	8.8	10.8	23.4	6.3	15.0	11.9	29.1	24.5	3.7	10.4	28.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	689	308	132	847	264	956	2640	822	198	2261	532
V/C Ratio(X)	0.76	0.52	1.56	0.72	0.78	0.64	0.91	0.57	0.12	0.79	0.77	0.00
Avail Cap(c_a), veh/h	344	689	308	133	869	270	1004	2640	822	266	2261	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.7	43.3	48.3	54.3	47.9	46.6	41.8	19.8	14.8	52.0	34.4	0.0
Incr Delay (d2), s/veh	8.7	1.1	268.6	14.8	5.4	6.8	11.2	0.9	0.3	7.9	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	5.4	33.3	3.6	7.4	5.7	15.3	11.6	1.7	5.5	13.0	0.0
LnGrp Delay(d),s/veh	61.4	44.3	316.9	69.1	53.3	53.4	53.0	20.7	15.0	59.9	36.2	0.0
LnGrp LOS	E	D	F	E	D	D	D	C	B	E	D	
Approach Vol, veh/h	1097				926				2476			
Approach Delay, s/veh	168.1				55.0				31.8			
Approach LOS	F				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	65.3	11.9	26.4	36.3	45.3	14.8	23.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	* 6				
Max Green Setting (Gmax), s	17.0	55.0	8.0	20.0	34.0	38.0	11.0	* 18				
Max Q Clear Time (g_c+I1), s	12.4	26.5	8.3	25.4	31.1	30.7	10.8	17.0				
Green Ext Time (p_c), s	0.1	24.8	0.0	0.0	1.2	5.7	0.0	0.5				

Intersection Summary

HCM 2010 Ctrl Delay 60.4
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

60: Foothills Blvd & HP-Main Dwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	390	187	681	142	601	59	719	390	521	1198	5
Future Volume (veh/h)	52	390	187	681	142	601	59	719	390	521	1198	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	411	0	717	149	633	62	757	411	548	1261	0
Adj No. of Lanes	1	1	1	2	1	1	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	405	358	748	702	824	98	925	707	498	1306	550
Arrive On Green	0.08	0.22	0.00	0.22	0.38	0.38	0.06	0.26	0.23	0.14	0.37	0.00
Sat Flow, veh/h	1774	1863	1583	3442	1863	1577	1774	3539	1573	3442	3539	1583
Grp Volume(v), veh/h	55	411	0	717	149	633	62	757	411	548	1261	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1721	1863	1577	1774	1770	1573	1721	1770	1583
Q Serve(g_s), s	3.3	24.0	0.0	22.8	6.0	35.4	3.8	22.2	21.6	16.0	38.6	0.0
Cycle Q Clear(g_c), s	3.3	24.0	0.0	22.8	6.0	35.4	3.8	22.2	21.6	16.0	38.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	405	358	748	702	824	98	925	707	498	1306	550
V/C Ratio(X)	0.41	1.02	0.00	0.96	0.21	0.77	0.63	0.82	0.58	1.10	0.97	0.00
Avail Cap(c_a), veh/h	209	405	358	748	702	824	112	942	714	498	1306	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.7	43.2	0.0	42.8	23.3	21.1	51.1	38.3	22.8	47.2	34.2	0.0
Incr Delay (d2), s/veh	0.8	48.8	0.0	23.3	0.1	4.4	5.4	5.9	1.4	70.2	17.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	17.7	0.0	13.2	3.1	16.3	2.0	11.6	9.6	12.4	21.9	0.0
LnGrp Delay(d),s/veh	49.5	92.1	0.0	66.1	23.5	25.5	56.5	44.2	24.2	117.5	51.4	0.0
LnGrp LOS	D	F		E	C	C	E	D	C	F	D	
Approach Vol, veh/h	466		1499				1230				1809	
Approach Delay, s/veh	87.0		44.7				38.2				71.4	
Approach LOS	F		D				D				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	31.5	29.0	29.0	9.1	43.4	11.3	46.7				
Change Period (Y+Rc), s	5.0	6.0	5.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	16.0	26.0	24.0	* 24	6.0	37.0	12.0	36.0				
Max Q Clear Time (g_c+I1), s	18.0	24.2	24.8	26.0	5.8	40.6	5.3	37.4				
Green Ext Time (p_c), s	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 56.7
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
61: Washington Blvd & Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	765	14	44	716	715	1	628	40	462	1187	90
Future Volume (veh/h)	45	765	14	44	716	715	1	628	40	462	1187	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	47	805	15	46	754	0	1	661	0	486	1249	95
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	960	427	280	929	416	47	1070	478	590	1628	726
Arrive On Green	0.09	0.27	0.27	0.08	0.26	0.00	0.01	0.30	0.00	0.17	0.46	0.46
Sat Flow, veh/h	3442	3539	1575	3442	3539	1583	3442	3539	1583	3442	3539	1578
Grp Volume(v), veh/h	47	805	15	46	754	0	1	661	0	486	1249	95
Grp Sat Flow(s),veh/h/ln	1721	1770	1575	1721	1770	1583	1721	1770	1583	1721	1770	1578
Q Serve(g_s), s	1.1	18.5	0.6	1.1	17.2	0.0	0.0	13.8	0.0	11.8	25.4	3.0
Cycle Q Clear(g_c), s	1.1	18.5	0.6	1.1	17.2	0.0	0.0	13.8	0.0	11.8	25.4	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	309	960	427	280	929	416	47	1070	478	590	1628	726
V/C Ratio(X)	0.15	0.84	0.04	0.16	0.81	0.00	0.02	0.62	0.00	0.82	0.77	0.13
Avail Cap(c_a), veh/h	439	960	427	837	1312	587	359	1312	587	598	1628	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	29.7	23.1	36.9	29.8	0.0	42.0	25.8	0.0	34.5	19.5	13.4
Incr Delay (d2), s/veh	0.1	6.3	0.0	0.1	2.7	0.0	0.1	1.2	0.0	8.4	2.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	9.9	0.3	0.5	8.7	0.0	0.0	6.9	0.0	6.3	12.9	1.3
LnGrp Delay(d),s/veh	36.3	36.0	23.2	37.0	32.5	0.0	42.1	27.0	0.0	42.9	22.1	13.6
LnGrp LOS	D	D	C	D	C		D	C		D	C	B
Approach Vol, veh/h	867				800				662			
Approach Delay, s/veh	35.8				32.8				27.0			
Approach LOS	D				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.8	31.1	10.0	27.4	4.2	44.7	10.8	26.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 5	4.0	6.0	4.0	5.0				
Max Green Setting (Gmax), s	14.0	31.0	20.0	* 20	8.0	37.0	10.0	31.0				
Max Q Clear Time (g_c+I1), s	13.8	15.8	3.1	20.5	2.0	27.4	3.1	19.2				
Green Ext Time (p_c), s	0.0	9.2	0.1	0.0	0.0	8.5	0.0	2.4				

Intersection Summary

HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
62: Roseville Pkwy & Trestle Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	4	94	31	7	2	145	1414	22	0	1235	0
Future Volume (veh/h)	9	4	94	31	7	2	145	1414	22	0	1235	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	9	4	99	33	7	2	153	1488	23	0	1300	0
Adj No. of Lanes	0	1	1	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	67	191	107	23	6	152	2281	1020	4	1750	783
Arrive On Green	0.12	0.12	0.12	0.08	0.08	0.06	0.09	0.64	0.64	0.00	0.49	0.00
Sat Flow, veh/h	1246	554	1583	1397	296	85	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	13	0	99	42	0	0	153	1488	23	0	1300	0
Grp Sat Flow(s),veh/h/ln	1800	0	1583	1778	0	0	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.3	0.0	2.7	1.0	0.0	0.0	4.0	12.0	0.2	0.0	13.7	0.0
Cycle Q Clear(g_c), s	0.3	0.0	2.7	1.0	0.0	0.0	4.0	12.0	0.2	0.0	13.7	0.0
Prop In Lane	0.69		1.00	0.79		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	0	191	136	0	0	152	2281	1020	4	1750	783
V/C Ratio(X)	0.06	0.00	0.52	0.31	0.00	0.00	1.01	0.65	0.02	0.00	0.74	0.00
Avail Cap(c_a), veh/h	683	0	600	225	0	0	152	2281	1020	152	2047	916
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	18.2	0.0	19.3	20.4	0.0	0.0	21.3	5.1	3.0	0.0	9.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.8	0.5	0.0	0.0	74.7	0.8	0.0	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.2	0.5	0.0	0.0	5.1	6.0	0.1	0.0	6.9	0.0
LnGrp Delay(d),s/veh	18.2	0.0	20.1	20.9	0.0	0.0	96.1	5.9	3.0	0.0	10.9	0.0
LnGrp LOS	B		C	C			F	A	A		B	
Approach Vol, veh/h	112			42			1664			1300		
Approach Delay, s/veh	19.9			20.9			14.1			10.9		
Approach LOS	B			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	33.1		7.9	7.0	26.1		5.7				
Change Period (Y+Rc), s	4.0	6.0		* 4.2	4.0	6.0		4.0				
Max Green Setting (Gmax), s	3.0	24.0		* 16	3.0	24.0		4.0				
Max Q Clear Time (g_c+I1), s	0.0	14.0		4.7	6.0	15.7		3.0				
Green Ext Time (p_c), s	0.0	9.6		0.1	0.0	4.4		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	13.1											
HCM 2010 LOS	B											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
63: Roseville Pkwy & Gibson Dr (w)

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	442	2099	0	2256	98	71	957	
Future Volume (veh/h)	442	2099	0	2256	98	71	957	
Number	5	2		6	16	7	14	
Initial Q (Qb), veh	0	0		0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863		1863	1863	1863	1863	
Adj Flow Rate, veh/h	465	2209		2375	0	75	0	
Adj No. of Lanes	1	3		3	1	1	1	
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2		2	2	2	2	
Cap, veh/h	438	4473		3049	949	95	85	
Arrive On Green	0.25	0.88		0.60	0.00	0.05	0.00	
Sat Flow, veh/h	1774	5253		5253	1583	1774	1583	
Grp Volume(v), veh/h	465	2209		2375	0	75	0	
Grp Sat Flow(s),veh/h/ln	1774	1695		1695	1583	1774	1583	
Q Serve(g_s), s	37.0	13.9		52.6	0.0	6.3	0.0	
Cycle Q Clear(g_c), s	37.0	13.9		52.6	0.0	6.3	0.0	
Prop In Lane	1.00				1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	438	4473		3049	949	95	85	
V/C Ratio(X)	1.06	0.49		0.78	0.00	0.79	0.00	
Avail Cap(c_a), veh/h	438	4473		3049	949	378	338	
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00		0.80	0.00	1.00	0.00	
Uniform Delay (d), s/veh	56.5	1.9		22.6	0.0	70.1	0.0	
Incr Delay (d2), s/veh	60.6	0.4		1.6	0.0	13.3	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	25.5	6.5		24.9	0.0	3.4	0.0	
LnGrp Delay(d),s/veh	117.1	2.3		24.2	0.0	83.4	0.0	
LnGrp LOS	F	A		C		F		
Approach Vol, veh/h		2674		2375		75		
Approach Delay, s/veh		22.3		24.2		83.4		
Approach LOS		C		C		F		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		136.9		13.1	42.0	94.9		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		99.0		32.0	37.0	66.0		
Max Q Clear Time (g_c+I1), s		15.9		8.3	39.0	54.6		
Green Ext Time (p_c), s		80.4		0.2	0.0	11.3		
Intersection Summary								
HCM 2010 Ctrl Delay			24.1					
HCM 2010 LOS			C					
Notes								
User approved ignoring U-Turning movement.								

HCM 2010 Signalized Intersection Summary

64: Chase Dr & Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↙	↗		
Traffic Volume (veh/h)	2321	156	466	2288	80	75		
Future Volume (veh/h)	2321	156	466	2288	80	75		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2443	0	491	2408	84	0		
Adj No. of Lanes	3	1	1	3	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	2288	712	444	3687	154	137		
Arrive On Green	0.45	0.00	0.25	0.73	0.09	0.00		
Sat Flow, veh/h	5253	1583	1774	5253	1774	1583		
Grp Volume(v), veh/h	2443	0	491	2408	84	0		
Grp Sat Flow(s),veh/h/ln	1695	1583	1774	1695	1774	1583		
Q Serve(g_s), s	54.0	0.0	30.0	29.7	5.4	0.0		
Cycle Q Clear(g_c), s	54.0	0.0	30.0	29.7	5.4	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	2288	712	444	3687	154	137		
V/C Ratio(X)	1.07	0.00	1.11	0.65	0.55	0.00		
Avail Cap(c_a), veh/h	2288	712	444	3687	390	348		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.84	0.00	0.53	0.53	1.00	0.00		
Uniform Delay (d), s/veh	33.0	0.0	45.0	8.6	52.5	0.0		
Incr Delay (d2), s/veh	38.7	0.0	64.7	0.5	1.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	33.4	0.0	22.6	13.8	2.7	0.0		
LnGrp Delay(d),s/veh	71.7	0.0	109.7	9.1	53.7	0.0		
LnGrp LOS	F		F	A	D			
Approach Vol, veh/h	2443			2899	84			
Approach Delay, s/veh	71.7			26.1	53.7			
Approach LOS	E			C	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.0	33.0	57.0				90.0
Change Period (Y+Rc), s		4.6	4.0	6.0				6.0
Max Green Setting (Gmax), s		25.4	29.0	51.0				84.0
Max Q Clear Time (g_c+I1), s		7.4	32.0	56.0				31.7
Green Ext Time (p_c), s		0.1	0.0	0.0				51.6
Intersection Summary								
HCM 2010 Ctrl Delay			47.1					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary

65: Gibson Dr & Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	2186	0	61	2357	631	2	5	44	1115	6	358
Future Volume (veh/h)	208	2186	0	61	2357	631	2	5	44	1115	6	358
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	219	2301	0	64	2481	0	2	5	46	1178	0	0
Adj No. of Lanes	1	3	1	1	3	1	0	1	1	3	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	3244	1010	96	2800	840	25	61	72	798	0	220
Arrive On Green	0.14	0.64	0.00	0.05	0.55	0.00	0.05	0.05	0.05	0.15	0.00	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	525	1312	1533	5322	0	1583
Grp Volume(v), veh/h	219	2301	0	64	2481	0	7	0	46	1178	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1837	0	1533	1774	0	1583
Q Serve(g_s), s	14.5	35.9	0.0	4.2	51.4	0.0	0.4	0.0	3.5	18.0	0.0	0.0
Cycle Q Clear(g_c), s	14.5	35.9	0.0	4.2	51.4	0.0	0.4	0.0	3.5	18.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	3244	1010	96	2800	840	86	0	72	798	0	220
V/C Ratio(X)	0.87	0.71	0.00	0.66	0.89	0.00	0.08	0.00	0.64	1.48	0.00	0.00
Avail Cap(c_a), veh/h	251	3244	1010	192	2800	840	199	0	166	798	0	220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.00	0.74	0.74	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.4	14.4	0.0	55.7	23.7	0.0	54.7	0.0	56.2	51.0	0.0	0.0
Incr Delay (d2), s/veh	14.2	0.6	0.0	2.1	3.0	0.0	0.1	0.0	3.5	220.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	16.8	0.0	2.1	24.7	0.0	0.2	0.0	1.6	25.1	0.0	0.0
LnGrp Delay(d),s/veh	64.7	15.0	0.0	57.8	26.6	0.0	54.9	0.0	59.7	271.8	0.0	0.0
LnGrp LOS	E	B		E	C		D		E	F		
Approach Vol, veh/h	2520			2545			53			1178		
Approach Delay, s/veh	19.3			27.4			59.1			271.8		
Approach LOS	B			C			E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	8.6		9.5	78.9	23.0		20.0	68.4				
Change Period (Y+Rc), s	4.0		4.0	5.7	7.3		4.0	5.7				
Max Green Setting (Gmax), s	12.0		12.0	59.3	15.7		16.0	54.3				
Max Q Clear Time (g_c+I1), s	5.5		6.2	37.9	20.0		16.5	53.4				
Green Ext Time (p_c), s	0.0		0.0	21.4	0.0		0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	70.2											
HCM 2010 LOS	E											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

66: Roseville Pkwy & West Mall

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	3	23	128	2	315	32	2708	97	311	3020	34
Future Volume (veh/h)	21	3	23	128	2	315	32	2708	97	311	3020	34
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	3	24	136	0	0	34	2851	102	327	3179	36
Adj No. of Lanes	0	1	1	2	0	1	1	4	1	2	4	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	8	53	228	0	102	58	4382	1080	402	4922	1214
Arrive On Green	0.04	0.04	0.04	0.06	0.00	0.00	0.03	0.68	0.68	0.23	1.00	1.00
Sat Flow, veh/h	1570	214	1516	3548	0	1583	1774	6408	1580	3442	6408	1580
Grp Volume(v), veh/h	25	0	24	136	0	0	34	2851	102	327	3179	36
Grp Sat Flow(s),veh/h/ln	1784	0	1516	1774	0	1583	1774	1602	1580	1721	1602	1580
Q Serve(g_s), s	1.6	0.0	1.9	4.5	0.0	0.0	2.3	30.4	2.6	10.8	0.0	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.9	4.5	0.0	0.0	2.3	30.4	2.6	10.8	0.0	0.0
Prop In Lane	0.88		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	0	53	228	0	102	58	4382	1080	402	4922	1214
V/C Ratio(X)	0.40	0.00	0.45	0.60	0.00	0.00	0.59	0.65	0.09	0.81	0.65	0.03
Avail Cap(c_a), veh/h	74	0	63	650	0	290	89	4382	1080	488	4922	1214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.44	0.44	0.44	0.24	0.24	0.24
Uniform Delay (d), s/veh	56.6	0.0	56.8	54.6	0.0	0.0	57.3	10.8	6.4	44.8	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	2.2	2.3	0.0	0.0	1.6	0.2	0.0	1.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.8	2.3	0.0	0.0	1.1	13.3	1.1	5.2	0.1	0.0
LnGrp Delay(d),s/veh	58.2	0.0	59.0	56.9	0.0	0.0	58.8	11.0	6.4	46.6	0.2	0.0
LnGrp LOS	E		E	E			E	B	A	D	A	A
Approach Vol, veh/h	49				136				2987			
Approach Delay, s/veh	58.6				56.9				11.4			
Approach LOS	E				E				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	10.7		6.9	95.2	7.2		17.0	85.1				
Change Period (Y+Rc), s	4.0		4.0	6.4	4.0		4.0	6.4				
Max Green Setting (Gmax), s	21.0		5.0	71.6	4.0		16.0	60.6				
Max Q Clear Time (g_c+I1), s	6.5		4.3	2.0	3.9		12.8	32.4				
Green Ext Time (p_c), s	0.3		0.0	69.2	0.0		0.2	28.1				
Intersection Summary												
HCM 2010 Ctrl Delay	9.0											
HCM 2010 LOS	A											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

67: Reserve Dr & Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2957	215	349	2520	254	351	88	439	294	203	80
Future Volume (veh/h)	31	2957	215	349	2520	254	351	88	439	294	203	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	33	3113	226	367	2653	0	231	286	462	262	280	0
Adj No. of Lanes	2	4	1	2	4	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	574	2510	584	574	2510	588	310	326	277	296	310	264
Arrive On Green	0.17	0.39	0.37	0.17	0.39	0.00	0.17	0.17	0.17	0.17	0.17	0.00
Sat Flow, veh/h	3442	6408	1571	3442	6408	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	33	3113	226	367	2653	0	231	286	462	262	280	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1571	1721	1602	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.0	47.0	12.7	11.9	47.0	0.0	14.8	18.0	21.0	17.3	17.7	0.0
Cycle Q Clear(g_c), s	1.0	47.0	12.7	11.9	47.0	0.0	14.8	18.0	21.0	17.3	17.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	574	2510	584	574	2510	588	310	326	277	296	310	264
V/C Ratio(X)	0.06	1.24	0.39	0.64	1.06	0.00	0.74	0.88	1.67	0.89	0.90	0.00
Avail Cap(c_a), veh/h	574	2510	584	574	2510	588	310	326	277	296	310	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	0.09	0.09	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.1	36.5	27.7	46.6	36.5	0.0	47.0	48.2	49.5	48.9	49.0	0.0
Incr Delay (d2), s/veh	0.0	110.8	1.4	0.2	26.8	0.0	8.9	22.3	315.8	25.9	27.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	40.1	5.7	5.7	25.4	0.0	8.0	11.2	33.5	10.6	11.5	0.0
LnGrp Delay(d),s/veh	42.1	147.3	29.1	46.8	63.3	0.0	55.9	70.6	365.3	74.7	76.7	0.0
LnGrp LOS	D	F	C	D	F		E	E	F	E	E	
Approach Vol, veh/h	3372				3020				979			
Approach Delay, s/veh	138.3				61.3				206.2			
Approach LOS	F				E				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.0	23.0	50.0		23.0	23.0	50.0				
Change Period (Y+Rc), s		4.0	4.0	6.4		4.0	4.0	6.4				
Max Green Setting (Gmax), s		20.0	19.0	43.6		19.0	19.0	43.6				
Max Q Clear Time (g_c+I1), s		23.0	13.9	49.0		19.7	3.0	49.0				
Green Ext Time (p_c), s		0.0	0.4	0.0		0.0	0.6	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 113.1
HCM 2010 LOS F

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

68: Galleria Blvd & Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	699	1854	1059	338	1916	644	665	866	77	793	984	456
Future Volume (veh/h)	699	1854	1059	338	1916	644	665	866	77	793	984	456
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	736	1952	0	356	2017	0	700	912	0	835	1036	0
Adj No. of Lanes	2	4	1	2	4	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	505	2001	494	405	1687	417	574	1029	320	979	1147	357
Arrive On Green	0.29	0.62	0.00	0.24	0.53	0.00	0.17	0.20	0.00	0.06	0.07	0.00
Sat Flow, veh/h	3442	6408	1583	3442	6408	1583	3442	5085	1583	5003	5085	1583
Grp Volume(v), veh/h	736	1952	0	356	2017	0	700	912	0	835	1036	0
Grp Sat Flow(s),veh/h/ln	1721	1602	1583	1721	1602	1583	1721	1695	1583	1668	1695	1583
Q Serve(g_s), s	17.6	35.1	0.0	12.0	31.6	0.0	20.0	20.9	0.0	19.8	24.3	0.0
Cycle Q Clear(g_c), s	17.6	35.1	0.0	12.0	31.6	0.0	20.0	20.9	0.0	19.8	24.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	2001	494	405	1687	417	574	1029	320	979	1147	357
V/C Ratio(X)	1.46	0.98	0.00	0.88	1.20	0.00	1.22	0.89	0.00	0.85	0.90	0.00
Avail Cap(c_a), veh/h	505	2001	494	459	1687	417	574	1059	330	979	1157	360
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.09	0.09	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.32	0.32	0.00
Uniform Delay (d), s/veh	42.4	22.1	0.0	45.0	28.4	0.0	50.0	46.5	0.0	54.4	54.2	0.0
Incr Delay (d2), s/veh	207.2	2.5	0.0	14.8	94.0	0.0	114.2	9.4	0.0	2.6	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.8	15.5	0.0	6.5	24.6	0.0	18.6	10.7	0.0	9.4	11.8	0.0
LnGrp Delay(d),s/veh	249.6	24.6	0.0	59.9	122.4	0.0	164.2	55.9	0.0	57.0	58.0	0.0
LnGrp LOS	F	C		E	F		F	E		E	E	
Approach Vol, veh/h	2688				2373				1612			
Approach Delay, s/veh	86.2				113.0				102.9			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.2	30.3	18.1	43.9	27.7	33.8	24.0	38.0				
Change Period (Y+Rc), s	7.7	6.0	4.0	6.4	7.7	* 6.7	6.4	6.4				
Max Green Setting (Gmax), s	19.3	25.0	16.0	35.6	20.0	* 27	17.6	31.6				
Max Q Clear Time (g_c+I1), s	21.8	22.9	14.0	37.1	22.0	26.3	19.6	33.6				
Green Ext Time (p_c), s	0.0	1.4	0.2	0.0	0.0	0.8	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 90.5
HCM 2010 LOS F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
69: Creekside Ridge Dr & Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	2608	10	40	2661	226	58	1	68	282	4	296
Future Volume (veh/h)	94	2608	10	40	2661	226	58	1	68	282	4	296
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	99	2745	11	42	2801	238	62	0	72	300	0	312
Adj No. of Lanes	1	3	1	1	3	1	2	0	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	2275	704	54	2076	643	223	0	97	603	0	269
Arrive On Green	0.07	0.45	0.45	0.03	0.41	0.41	0.06	0.00	0.06	0.17	0.00	0.17
Sat Flow, veh/h	1774	5085	1574	1774	5085	1574	3548	0	1546	3548	0	1583
Grp Volume(v), veh/h	99	2745	11	42	2801	238	62	0	72	300	0	312
Grp Sat Flow(s),veh/h/ln	1774	1695	1574	1774	1695	1574	1774	0	1546	1774	0	1583
Q Serve(g_s), s	6.6	53.7	0.5	2.8	49.0	12.7	2.0	0.0	5.5	9.2	0.0	20.4
Cycle Q Clear(g_c), s	6.6	53.7	0.5	2.8	49.0	12.7	2.0	0.0	5.5	9.2	0.0	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	2275	704	54	2076	643	223	0	97	603	0	269
V/C Ratio(X)	0.80	1.21	0.02	0.78	1.35	0.37	0.28	0.00	0.74	0.50	0.00	1.16
Avail Cap(c_a), veh/h	237	2275	704	237	2076	643	473	0	206	603	0	269
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.0	33.2	18.5	57.8	35.5	24.7	53.6	0.0	55.3	45.2	0.0	49.8
Incr Delay (d2), s/veh	4.6	97.3	0.0	0.8	157.3	0.1	0.2	0.0	4.1	0.8	0.0	104.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	45.6	0.2	1.4	53.1	5.5	1.0	0.0	2.5	4.6	0.0	16.8
LnGrp Delay(d),s/veh	59.6	130.5	18.5	58.6	192.8	24.9	53.9	0.0	59.4	45.9	0.0	154.7
LnGrp LOS	E	F	B	E	F	C	D		E	D		F
Approach Vol, veh/h	2855			3081			134			612		
Approach Delay, s/veh	127.6			178.0			56.9			101.4		
Approach LOS	F			F			E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	11.5		7.6	59.7	25.0		12.3	55.0				
Change Period (Y+Rc), s	4.0		4.0	6.0	4.6		4.0	6.0				
Max Green Setting (Gmax), s	16.0		16.0	49.0	20.4		16.0	49.0				
Max Q Clear Time (g_c+I1), s	7.5		4.8	55.7	22.4		8.6	51.0				
Green Ext Time (p_c), s	0.1		0.0	0.0	0.0		0.1	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	147.0											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

70: Taylor Rd & E. Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	2499	130	176	2433	1006	353	387	224	428	269	194
Future Volume (veh/h)	270	2499	130	176	2433	1006	353	387	224	428	269	194
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1891	1891	1891	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	284	2631	92	185	2561	844	372	407	118	451	283	102
Adj No. of Lanes	2	4	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	2710	919	495	2430	754	539	554	170	507	421	129
Arrive On Green	0.10	0.42	0.42	0.14	0.48	0.48	0.16	0.11	0.11	0.15	0.08	0.08
Sat Flow, veh/h	3493	6504	1601	3442	5085	1578	3442	5085	1562	3442	5085	1555
Grp Volume(v), veh/h	284	2631	92	185	2561	844	372	407	118	451	283	102
Grp Sat Flow(s),veh/h/ln	1747	1626	1601	1721	1695	1578	1721	1695	1562	1721	1695	1555
Q Serve(g_s), s	9.6	47.6	0.0	5.8	57.4	57.4	12.3	9.3	6.3	15.4	6.5	6.2
Cycle Q Clear(g_c), s	9.6	47.6	0.0	5.8	57.4	57.4	12.3	9.3	6.3	15.4	6.5	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	2710	919	495	2430	754	539	554	170	507	421	129
V/C Ratio(X)	0.82	0.97	0.10	0.37	1.05	1.12	0.69	0.74	0.69	0.89	0.67	0.79
Avail Cap(c_a), veh/h	466	2710	919	495	2430	754	574	636	195	545	593	181
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.40	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	34.3	11.6	46.5	31.3	31.3	47.9	51.8	27.2	50.2	53.4	34.6
Incr Delay (d2), s/veh	3.4	6.1	0.1	0.0	25.4	55.4	3.0	4.0	9.2	15.5	2.2	15.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	22.3	1.4	2.8	32.5	36.5	6.1	4.6	3.2	8.4	3.1	3.2
LnGrp Delay(d),s/veh	56.4	40.4	11.7	46.5	56.7	86.8	50.8	55.8	36.4	65.7	55.6	50.4
LnGrp LOS	E	D	B	D	F	F	D	E	D	E	E	D
Approach Vol, veh/h	3007				3590				897			
Approach Delay, s/veh	41.0				63.3				51.2			
Approach LOS	D				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.7	19.1	23.3	56.0	24.8	15.9	15.9	63.4				
Change Period (Y+Rc), s	4.0	6.0	6.0	* 6	6.0	* 6	4.0	6.0				
Max Green Setting (Gmax), s	19.0	15.0	16.0	* 50	20.0	* 14	16.0	50.0				
Max Q Clear Time (g_c+I1), s	17.4	11.3	7.8	49.6	14.3	8.5	11.6	59.4				
Green Ext Time (p_c), s	0.2	1.6	2.4	0.4	2.2	1.1	0.4	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 53.7
HCM 2010 LOS D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
71: N. Sunrise Ave & E. Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	2447	667	267	2568	23	678	63	271	8	200	354
Future Volume (veh/h)	95	2447	667	267	2568	23	678	63	271	8	200	354
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	2576	0	281	2703	24	714	66	0	8	211	373
Adj No. of Lanes	2	3	1	2	3	1	3	1	1	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	2256	702	334	2525	784	721	523	445	10	256	383
Arrive On Green	0.06	0.59	0.00	0.19	0.99	0.99	0.14	0.28	0.00	0.01	0.14	0.14
Sat Flow, veh/h	3442	5085	1583	3442	5085	1579	5003	1863	1583	1774	1863	2787
Grp Volume(v), veh/h	100	2576	0	281	2703	24	714	66	0	8	211	373
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1579	1668	1863	1583	1774	1863	1393
Q Serve(g_s), s	3.4	53.2	0.0	9.4	59.6	0.0	17.1	3.2	0.0	0.5	13.2	13.8
Cycle Q Clear(g_c), s	3.4	53.2	0.0	9.4	59.6	0.0	17.1	3.2	0.0	0.5	13.2	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	2256	702	334	2525	784	721	523	445	10	256	383
V/C Ratio(X)	0.66	1.14	0.00	0.84	1.07	0.03	0.99	0.13	0.00	0.77	0.82	0.97
Avail Cap(c_a), veh/h	459	2256	702	459	2525	784	721	523	445	237	301	451
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.29	0.29	0.00	0.44	0.44	0.44	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	24.6	0.0	47.4	0.4	0.2	51.3	32.2	0.0	59.6	50.3	38.6
Incr Delay (d2), s/veh	0.5	65.7	0.0	3.4	36.0	0.0	30.9	0.2	0.0	34.9	12.7	31.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	38.2	0.0	4.6	8.6	0.0	9.9	1.7	0.0	0.4	7.7	7.0
LnGrp Delay(d),s/veh	56.1	90.3	0.0	50.9	36.4	0.2	82.1	32.3	0.0	94.5	63.0	70.5
LnGrp LOS	E	F		D	F	A	F	C		F	E	E
Approach Vol, veh/h	2676				3008				780			
Approach Delay, s/veh	89.0				37.4				77.9			
Approach LOS	F				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.7	40.4	15.7	59.2	24.0	21.1	9.3	65.6				
Change Period (Y+Rc), s	4.0	* 6.7	4.0	6.0	6.7	4.6	4.0	6.0				
Max Green Setting (Gmax), s	16.0	* 22	16.0	46.0	17.3	19.4	16.0	46.0				
Max Q Clear Time (g_c+I1), s	2.5	5.2	11.4	55.2	19.1	15.8	5.4	61.6				
Green Ext Time (p_c), s	0.0	1.9	0.2	0.0	0.0	0.7	0.1	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	64.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
72: Secret Ravine Pkwy & E. Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

																																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																				
Lane Configurations																																
Traffic Volume (veh/h)	634	1929	4	14	2208	145	0	0	0	155	0	503																				
Future Volume (veh/h)	634	1929	4	14	2208	145	0	0	0	155	0	503																				
Number	7	4	14	3	8	18	5	2	12	1	6	16																				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0																				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		1.00																				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																				
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863																				
Adj Flow Rate, veh/h	667	2031	4	15	2324	153	0	0	0	163	0	529																				
Adj No. of Lanes	2	3	0	1	3	1	1	1	1	2	0	2																				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95																				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2																				
Cap, veh/h	713	3086	6	18	1890	586	1	2	1	409	0	369																				
Arrive On Green	0.41	1.00	1.00	0.01	0.37	0.37	0.00	0.00	0.00	0.12	0.00	0.12																				
Sat Flow, veh/h	3442	5241	10	1774	5085	1577	1774	1863	1583	3502	0	3167																				
Grp Volume(v), veh/h	667	1314	721	15	2324	153	0	0	0	163	0	529																				
Grp Sat Flow(s),veh/h/ln	1721	1695	1861	1774	1695	1577	1774	1863	1583	1751	0	1583																				
Q Serve(g_s), s	22.2	0.0	0.0	1.0	44.6	8.1	0.0	0.0	0.0	5.2	0.0	14.0																				
Cycle Q Clear(g_c), s	22.2	0.0	0.0	1.0	44.6	8.1	0.0	0.0	0.0	5.2	0.0	14.0																				
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00																				
Lane Grp Cap(c), veh/h	713	1996	1096	18	1890	586	1	2	1	409	0	369																				
V/C Ratio(X)	0.94	0.66	0.66	0.85	1.23	0.26	0.00	0.00	0.00	0.40	0.00	1.43																				
Avail Cap(c_a), veh/h	774	1996	1096	177	1890	586	207	217	185	409	0	369																				
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																				
Upstream Filter(I)	0.09	0.09	0.09	0.77	0.77	0.77	0.00	0.00	0.00	1.00	0.00	1.00																				
Uniform Delay (d), s/veh	34.4	0.0	0.0	59.3	37.7	26.2	0.0	0.0	0.0	49.1	0.0	53.0																				
Incr Delay (d2), s/veh	2.3	0.1	0.1	26.5	107.1	0.8	0.0	0.0	0.0	0.2	0.0	209.3																				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																				
%ile BackOfQ(50%),veh/ln	10.6	0.0	0.0	0.6	39.6	3.7	0.0	0.0	0.0	2.5	0.0	16.8																				
LnGrp Delay(d),s/veh	36.7	0.1	0.1	85.8	144.8	27.1	0.0	0.0	0.0	49.3	0.0	262.3																				
LnGrp LOS	D	A	A	F	F	C				D		F																				
Approach Vol, veh/h	2702				2492				0		692																					
Approach Delay, s/veh	9.1				137.2				0.0		212.2																					
Approach LOS	A				F						F																					
Timer	1	2	3	4	5	6	7	8																								
Assigned Phs	2		3	4	6		7	8																								
Phs Duration (G+Y+Rc), s	0.0		5.2	77.1	20.0		31.3	51.0																								
Change Period (Y+Rc), s	4.0		4.0	6.4	6.0		6.4	* 6.4																								
Max Green Setting (Gmax), s	14.0		12.0	59.6	14.0		27.0	* 45																								
Max Q Clear Time (g_c+I1), s	0.0		3.0	2.0	16.0		24.2	46.6																								
Green Ext Time (p_c), s	0.0		0.0	35.6	0.0		0.6	0.0																								
Intersection Summary																																
HCM 2010 Ctrl Delay	87.2																															
HCM 2010 LOS	F																															
Notes																																
User approved volume balancing among the lanes for turning movement.																																

HCM 2010 Signalized Intersection Summary
73: E. Roseville Pkwy & Alexandra Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	65	77	2075	163	81	1931		
Future Volume (veh/h)	65	77	2075	163	81	1931		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	68	81	2184	172	85	2033		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	122	109	3747	1167	107	4224		
Arrive On Green	0.07	0.07	1.00	1.00	0.06	0.83		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	68	81	2184	172	85	2033		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	4.5	6.0	0.0	0.0	5.7	13.5		
Cycle Q Clear(g_c), s	4.5	6.0	0.0	0.0	5.7	13.5		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	122	109	3747	1167	107	4224		
V/C Ratio(X)	0.56	0.75	0.58	0.15	0.79	0.48		
Avail Cap(c_a), veh/h	359	321	3747	1167	177	4224		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	0.81	0.81	0.83	0.83		
Uniform Delay (d), s/veh	54.1	54.9	0.0	0.0	55.6	2.9		
Incr Delay (d2), s/veh	3.0	7.3	0.2	0.1	4.1	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.3	5.4	0.1	0.0	2.9	6.3		
LnGrp Delay(d),s/veh	57.1	62.2	0.2	0.1	59.7	3.2		
LnGrp LOS	E	E	A	A	E	A		
Approach Vol, veh/h	149		2356			2118		
Approach Delay, s/veh	59.9		0.2			5.5		
Approach LOS	E		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				106.1		13.9	11.2	94.8
Change Period (Y+Rc), s				6.4		5.7	4.0	6.4
Max Green Setting (Gmax), s				83.6		24.3	12.0	67.6
Max Q Clear Time (g_c+l1), s				15.5		8.0	7.7	2.0
Green Ext Time (p_c), s				65.9		0.3	0.0	63.6
Intersection Summary								
HCM 2010 Ctrl Delay			4.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
74: Roseville Pkwy/E. Roseville Pkwy & Rocky Ridge Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	311	236	107	1968	1798	238		
Future Volume (veh/h)	311	236	107	1968	1798	238		
Number	5	12	3	8	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	327	248	113	2072	1893	251		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	608	280	167	3373	2957	921		
Arrive On Green	0.18	0.18	0.10	1.00	1.00	1.00		
Sat Flow, veh/h	3442	1583	3442	5253	5253	1583		
Grp Volume(v), veh/h	327	248	113	2072	1893	251		
Grp Sat Flow(s),veh/h/ln	1721	1583	1721	1695	1695	1583		
Q Serve(g_s), s	10.4	18.4	3.8	0.0	0.0	0.0		
Cycle Q Clear(g_c), s	10.4	18.4	3.8	0.0	0.0	0.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	608	280	167	3373	2957	921		
V/C Ratio(X)	0.54	0.89	0.68	0.61	0.64	0.27		
Avail Cap(c_a), veh/h	832	383	832	3373	2957	921		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00		
Upstream Filter(I)	1.00	1.00	0.80	0.80	0.86	0.86		
Uniform Delay (d), s/veh	45.0	48.2	53.3	0.0	0.0	0.0		
Incr Delay (d2), s/veh	0.3	14.0	1.4	0.7	0.9	0.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.0	9.1	1.8	0.2	0.3	0.2		
LnGrp Delay(d),s/veh	45.2	62.2	54.7	0.7	0.9	0.6		
LnGrp LOS	D	E	D	A	A	A		
Approach Vol, veh/h	575			2185	2144			
Approach Delay, s/veh	52.6			3.5	0.9			
Approach LOS	D			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		26.9	9.8	75.8				85.6
Change Period (Y+Rc), s		5.7	4.0	6.0				* 6
Max Green Setting (Gmax), s		29.0	29.0	46.3				* 80
Max Q Clear Time (g_c+I1), s		20.4	5.8	2.0				2.0
Green Ext Time (p_c), s		0.8	0.2	43.6				75.6
Intersection Summary								
HCM 2010 Ctrl Delay			8.1					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

75: Roseville Pkwy & Orvieto Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	31	226	7	20	14	186	1826	8	15	1972	68
Future Volume (veh/h)	258	31	226	7	20	14	186	1826	8	15	1972	68
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	296	0	238	7	21	15	196	1922	8	16	2076	72
Adj No. of Lanes	2	0	1	1	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	0	172	51	29	21	222	2863	891	24	2295	715
Arrive On Green	0.11	0.00	0.11	0.03	0.03	0.03	0.13	0.56	0.56	0.01	0.45	0.45
Sat Flow, veh/h	3548	0	1583	1774	1012	723	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	296	0	238	7	0	36	196	1922	8	16	2076	72
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1735	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	9.7	0.0	13.0	0.5	0.0	2.5	13.0	31.9	0.3	1.1	45.4	3.1
Cycle Q Clear(g_c), s	9.7	0.0	13.0	0.5	0.0	2.5	13.0	31.9	0.3	1.1	45.4	3.1
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	384	0	172	51	0	50	222	2863	891	24	2295	715
V/C Ratio(X)	0.77	0.00	1.39	0.14	0.00	0.72	0.88	0.67	0.01	0.65	0.90	0.10
Avail Cap(c_a), veh/h	384	0	172	237	0	231	237	2863	891	74	2343	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.77	0.77	0.77	0.78	0.78	0.78
Uniform Delay (d), s/veh	52.0	0.0	53.5	56.8	0.0	57.8	51.6	18.4	11.5	58.9	30.5	18.9
Incr Delay (d2), s/veh	9.6	0.0	206.2	0.9	0.0	13.5	22.4	1.0	0.0	8.3	4.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	15.5	0.2	0.0	1.4	7.8	15.0	0.1	0.6	22.1	1.4
LnGrp Delay(d),s/veh	61.7	0.0	259.7	57.7	0.0	71.3	74.0	19.4	11.5	67.1	35.0	19.0
LnGrp LOS	E		F	E		E	E	B	B	E	C	B
Approach Vol, veh/h	534				43				2126			
Approach Delay, s/veh	149.9				69.1				24.4			
Approach LOS	F				E				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	19.0	59.9		7.5	5.7	73.3				
Change Period (Y+Rc), s		6.0	4.0	5.7		4.0	4.0	5.7				
Max Green Setting (Gmax), s		13.0	16.0	55.3		16.0	5.0	66.3				
Max Q Clear Time (g_c+I1), s		15.0	15.0	47.4		4.5	3.1	33.9				
Green Ext Time (p_c), s		0.0	0.0	6.7		0.1	0.0	32.2				
Intersection Summary												
HCM 2010 Ctrl Delay	43.2											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

76: Roseville Pkwy & Olympus Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	188	94	37	98	201	19	1654	134	341	1822	36
Future Volume (veh/h)	70	188	94	37	98	201	19	1654	134	341	1822	36
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	74	198	99	39	103	0	20	1741	0	359	1918	38
Adj No. of Lanes	1	1	1	1	2	1	1	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	258	219	50	401	179	29	2799	871	419	3366	67
Arrive On Green	0.05	0.14	0.14	0.03	0.11	0.00	0.02	0.55	0.00	0.12	0.66	0.66
Sat Flow, veh/h	1774	1863	1583	1774	3539	1583	1774	5085	1583	3442	5133	102
Grp Volume(v), veh/h	74	198	99	39	103	0	20	1741	0	359	1266	690
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1770	1583	1774	1695	1583	1721	1695	1845
Q Serve(g_s), s	4.9	12.3	6.9	2.6	3.2	0.0	1.3	28.1	0.0	12.3	24.6	24.7
Cycle Q Clear(g_c), s	4.9	12.3	6.9	2.6	3.2	0.0	1.3	28.1	0.0	12.3	24.6	24.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	94	258	219	50	401	179	29	2799	871	419	2223	1210
V/C Ratio(X)	0.79	0.77	0.45	0.78	0.26	0.00	0.70	0.62	0.00	0.86	0.57	0.57
Avail Cap(c_a), veh/h	148	343	292	89	510	228	74	2799	871	545	2223	1210
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	0.71	0.71	0.00	0.64	0.64	0.64
Uniform Delay (d), s/veh	56.1	49.8	47.5	58.0	48.6	0.0	58.7	18.4	0.0	51.7	11.3	11.4
Incr Delay (d2), s/veh	5.4	14.0	4.2	9.6	0.5	0.0	7.7	0.4	0.0	5.6	0.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	7.3	3.3	1.4	1.6	0.0	0.7	13.2	0.0	6.2	11.6	12.9
LnGrp Delay(d),s/veh	61.5	63.9	51.7	67.6	49.1	0.0	66.4	18.8	0.0	57.3	12.0	12.6
LnGrp LOS	E	E	D	E	D		E	B		E	B	B
Approach Vol, veh/h	371				142				1761			
Approach Delay, s/veh	60.2				54.2				19.4			
Approach LOS	E				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	22.3	5.9	84.4	10.4	19.3	18.6	71.7				
Change Period (Y+Rc), s	4.0	* 5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	6.0	* 22	5.0	68.3	10.0	17.3	19.0	54.3				
Max Q Clear Time (g_c+I1), s	4.6	14.3	3.3	26.7	6.9	5.2	14.3	30.1				
Green Ext Time (p_c), s	0.0	2.3	0.0	40.5	0.0	3.1	0.3	23.8				

Intersection Summary

HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
77: Douglas Blvd & Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	1790	396	119	1608	894	263	704	54	810	1060	138
Future Volume (veh/h)	209	1790	396	119	1608	894	263	704	54	810	1060	138
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	220	1884	417	125	1693	0	277	741	57	853	1116	0
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	3	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	2124	659	177	1983	618	330	989	306	853	1436	447
Arrive On Green	0.08	0.42	0.42	0.05	0.39	0.00	0.10	0.19	0.19	0.17	0.28	0.00
Sat Flow, veh/h	3442	5085	1578	3442	5085	1583	3442	5085	1571	5003	5085	1583
Grp Volume(v), veh/h	220	1884	417	125	1693	0	277	741	57	853	1116	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1578	1721	1695	1583	1721	1695	1571	1668	1695	1583
Q Serve(g_s), s	8.1	44.2	27.0	4.6	39.3	0.0	10.2	17.7	3.3	22.0	26.0	0.0
Cycle Q Clear(g_c), s	8.1	44.2	27.0	4.6	39.3	0.0	10.2	17.7	3.3	22.0	26.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	2124	659	177	1983	618	330	989	306	853	1436	447
V/C Ratio(X)	0.81	0.89	0.63	0.71	0.85	0.00	0.84	0.75	0.19	1.00	0.78	0.00
Avail Cap(c_a), veh/h	320	2124	659	320	1983	618	400	1194	369	853	1470	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	58.4	34.7	29.7	60.2	36.0	0.0	57.3	49.0	30.9	53.5	42.5	0.0
Incr Delay (d2), s/veh	10.6	6.0	4.6	1.9	4.0	0.0	10.8	2.7	0.5	27.6	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	21.8	12.6	2.2	19.1	0.0	5.3	8.5	1.5	12.3	12.5	0.0
LnGrp Delay(d),s/veh	69.1	40.7	34.3	62.2	39.9	0.0	68.2	51.6	31.3	81.1	44.9	0.0
LnGrp LOS	E	D	C	E	D		E	D	C	F	D	
Approach Vol, veh/h	2521				1818				1075			
Approach Delay, s/veh	42.1				41.5				54.8			
Approach LOS	D				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	59.9	16.4	42.1	14.2	56.3	27.7	30.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	6.0	5.7	* 5.7				
Max Green Setting (Gmax), s	12.0	45.0	15.0	37.3	12.0	45.0	22.0	* 30				
Max Q Clear Time (g_c+I1), s	6.6	46.2	12.2	28.0	10.1	41.3	24.0	19.7				
Green Ext Time (p_c), s	0.1	0.0	0.2	6.8	0.1	1.7	0.0	4.9				

Intersection Summary

HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
78: E. Roseville Pkwy & Village Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	3	7	23	3	178	97	930	12	92	1124	7
Future Volume (veh/h)	24	3	7	23	3	178	97	930	12	92	1124	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	25	3	7	24	3	187	102	979	13	97	1183	7
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	16	133	263	33	263	176	1746	23	173	1756	10
Arrive On Green	0.08	0.08	0.08	0.17	0.17	0.17	0.10	0.49	0.46	0.10	0.49	0.46
Sat Flow, veh/h	1592	191	1583	1585	198	1583	1774	3576	47	1774	3607	21
Grp Volume(v), veh/h	28	0	7	27	0	187	102	484	508	97	580	610
Grp Sat Flow(s),veh/h/ln	1783	0	1583	1783	0	1583	1774	1770	1854	1774	1770	1859
Q Serve(g_s), s	1.0	0.0	0.3	0.9	0.0	8.0	3.9	13.8	13.8	3.7	17.9	17.9
Cycle Q Clear(g_c), s	1.0	0.0	0.3	0.9	0.0	8.0	3.9	13.8	13.8	3.7	17.9	17.9
Prop In Lane	0.89		1.00	0.89		1.00	1.00		0.03	1.00		0.01
Lane Grp Cap(c), veh/h	150	0	133	296	0	263	176	864	905	173	861	905
V/C Ratio(X)	0.19	0.00	0.05	0.09	0.00	0.71	0.58	0.56	0.56	0.56	0.67	0.67
Avail Cap(c_a), veh/h	275	0	244	1050	0	932	199	900	944	224	925	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	30.1	25.2	0.0	28.1	30.7	12.9	12.9	30.7	14.0	14.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.0	1.3	1.5	1.1	1.1	1.1	2.3	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.1	0.5	0.0	3.6	2.0	7.0	7.3	1.9	9.2	9.7
LnGrp Delay(d),s/veh	30.6	0.0	30.1	25.2	0.0	29.5	32.2	14.0	13.9	31.8	16.2	16.1
LnGrp LOS	C		C	C		C	C	B	B	C	B	B
Approach Vol, veh/h	35		214			1094			1287			
Approach Delay, s/veh	30.5		28.9			15.7			17.4			
Approach LOS	C		C			B			B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	9.0		10.1	37.4	14.8		10.0	37.5				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	10.0		7.0	34.3	41.0		8.0	33.3				
Max Q Clear Time (g_c+I1), s	3.0		5.9	19.9	10.0		5.7	15.8				
Green Ext Time (p_c), s	0.0		0.0	11.8	0.6		0.0	14.0				
Intersection Summary												
HCM 2010 Ctrl Delay			17.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
79: E. Roseville Pkwy & Eureka Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	545	594	160	513	111	312	593	89	579	763	29
Future Volume (veh/h)	32	545	594	160	513	111	312	593	89	579	763	29
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1966	1891	1891	1966	1891	1891	1966	1891	1891	1947	1872	1872
Adj Flow Rate, veh/h	34	574	625	168	540	117	328	624	94	609	803	31
Adj No. of Lanes	1	2	1	1	2	1	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	134	826	530	219	988	440	443	1217	542	714	2122	658
Arrive On Green	0.07	0.23	0.21	0.12	0.28	0.28	0.12	0.34	0.34	0.20	0.42	0.42
Sat Flow, veh/h	1873	3592	1596	1873	3592	1598	3633	3592	1600	3597	5110	1585
Grp Volume(v), veh/h	34	574	625	168	540	117	328	624	94	609	803	31
Grp Sat Flow(s),veh/h/ln	1873	1796	1596	1873	1796	1598	1816	1796	1600	1798	1703	1585
Q Serve(g_s), s	1.7	14.4	20.6	8.6	12.6	5.6	8.6	13.7	4.1	16.1	10.7	1.1
Cycle Q Clear(g_c), s	1.7	14.4	20.6	8.6	12.6	5.6	8.6	13.7	4.1	16.1	10.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	826	530	219	988	440	443	1217	542	714	2122	658
V/C Ratio(X)	0.25	0.69	1.18	0.77	0.55	0.27	0.74	0.51	0.17	0.85	0.38	0.05
Avail Cap(c_a), veh/h	210	826	530	267	988	440	776	1462	651	805	2131	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	34.7	32.9	42.1	30.4	27.9	41.7	26.0	22.8	38.0	19.9	17.1
Incr Delay (d2), s/veh	0.4	3.0	98.6	8.0	0.9	0.5	0.9	0.6	0.3	7.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	7.4	28.9	4.9	6.4	2.5	4.3	6.9	1.8	8.7	5.1	0.5
LnGrp Delay(d),s/veh	43.5	37.7	131.5	50.1	31.3	28.4	42.6	26.6	23.1	45.3	20.1	17.2
LnGrp LOS	D	D	F	D	C	C	D	C	C	D	C	B
Approach Vol, veh/h	1233				825				1046			
Approach Delay, s/veh	85.4				34.7				31.3			
Approach LOS	F				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	25.3	15.0	43.5	10.0	29.7	22.5	36.0				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	4.0	5.7	4.0	5.7				
Max Green Setting (Gmax), s	13.0	19.6	20.0	38.0	10.0	22.6	21.0	37.0				
Max Q Clear Time (g_c+I1), s	10.6	22.6	10.6	12.7	3.7	14.6	18.1	15.7				
Green Ext Time (p_c), s	0.0	0.0	0.4	15.9	0.0	6.7	0.4	14.1				

Intersection Summary

HCM 2010 Ctrl Delay	46.4
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

80: N. Cirby Way & E. Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑		
Traffic Volume (veh/h)	1254	84	107	890	63	32		
Future Volume (veh/h)	1254	84	107	890	63	32		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1320	88	113	937	66	34		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1892	799	239	2558	304	272		
Arrive On Green	0.53	0.50	0.13	0.72	0.17	0.17		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	1320	88	113	937	66	34		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	15.7	1.7	3.3	5.7	1.8	1.0		
Cycle Q Clear(g_c), s	15.7	1.7	3.3	5.7	1.8	1.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1892	799	239	2558	304	272		
V/C Ratio(X)	0.70	0.11	0.47	0.37	0.22	0.13		
Avail Cap(c_a), veh/h	1936	819	282	2791	657	587		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	9.8	7.4	22.6	3.0	20.2	19.9		
Incr Delay (d2), s/veh	1.3	0.1	0.5	0.2	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.9	0.7	1.7	2.8	0.9	0.5		
LnGrp Delay(d),s/veh	11.1	7.5	23.2	3.1	20.3	20.0		
LnGrp LOS	B	A	C	A	C	B		
Approach Vol, veh/h	1408			1050	100			
Approach Delay, s/veh	10.9			5.3	20.2			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		12.7	10.6	33.3				44.0
Change Period (Y+Rc), s		4.0	4.0	5.7				* 5.7
Max Green Setting (Gmax), s		20.0	8.0	28.3				* 42
Max Q Clear Time (g_c+I1), s		3.8	5.3	17.7				7.7
Green Ext Time (p_c), s		0.1	0.0	9.9				29.0
Intersection Summary								
HCM 2010 Ctrl Delay			8.9					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

81: Sierra College Blvd & E. Roseville Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	470	675	59	203	86	661	1088	59	186	1783	89
Future Volume (veh/h)	127	470	675	59	203	86	661	1088	59	186	1783	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	134	495	0	62	214	0	696	1145	0	196	1877	0
Adj No. of Lanes	2	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	724	324	279	720	322	631	2000	623	703	2191	682
Arrive On Green	0.08	0.20	0.00	0.08	0.20	0.00	0.18	0.39	0.00	0.20	0.43	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	134	495	0	62	214	0	696	1145	0	196	1877	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	4.5	15.5	0.0	2.0	6.2	0.0	22.0	21.2	0.0	5.8	40.0	0.0
Cycle Q Clear(g_c), s	4.5	15.5	0.0	2.0	6.2	0.0	22.0	21.2	0.0	5.8	40.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	724	324	279	720	322	631	2000	623	703	2191	682
V/C Ratio(X)	0.47	0.68	0.00	0.22	0.30	0.00	1.10	0.57	0.00	0.28	0.86	0.00
Avail Cap(c_a), veh/h	287	997	446	315	1038	464	631	2000	623	703	2191	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.6	44.1	0.0	51.6	40.5	0.0	49.0	28.5	0.0	40.3	30.8	0.0
Incr Delay (d2), s/veh	0.5	2.0	0.0	0.1	0.4	0.0	67.4	1.2	0.0	0.1	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.8	0.0	1.0	3.0	0.0	16.3	10.1	0.0	2.8	19.4	0.0
LnGrp Delay(d),s/veh	53.0	46.1	0.0	51.7	40.9	0.0	116.4	29.7	0.0	40.4	34.5	0.0
LnGrp LOS	D	D		D	D		F	C		D	C	
Approach Vol, veh/h	629				276				1841			
Approach Delay, s/veh	47.6				43.4				62.5			
Approach LOS	D				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.5	50.2	12.7	27.6	25.0	54.7	12.9	27.4				
Change Period (Y+Rc), s	6.0	* 6	4.0	5.7	4.0	6.0	4.0	* 5.7				
Max Green Setting (Gmax), s	15.0	* 44	10.0	31.1	21.0	38.2	9.0	* 33				
Max Q Clear Time (g_c+I1), s	7.8	23.2	4.0	17.5	24.0	42.0	6.5	8.2				
Green Ext Time (p_c), s	5.3	8.2	0.0	4.3	0.0	0.0	0.1	5.6				

Intersection Summary

HCM 2010 Ctrl Delay 47.7
HCM 2010 LOS D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
82: Atlantic St & Yosemite St

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	58	709	1043	494	313	148		
Future Volume (veh/h)	58	709	1043	494	313	148		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827		
Adj Flow Rate, veh/h	61	746	1098	520	329	156		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	4	4	4	4	4	4		
Cap, veh/h	109	2079	1647	733	508	615		
Arrive On Green	0.06	0.60	0.47	0.47	0.29	0.29		
Sat Flow, veh/h	1740	3563	3563	1545	1740	1553		
Grp Volume(v), veh/h	61	746	1098	520	329	156		
Grp Sat Flow(s),veh/h/ln	1740	1736	1736	1545	1740	1553		
Q Serve(g_s), s	1.7	5.3	11.8	13.0	8.0	3.3		
Cycle Q Clear(g_c), s	1.7	5.3	11.8	13.0	8.0	3.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	109	2079	1647	733	508	615		
V/C Ratio(X)	0.56	0.36	0.67	0.71	0.65	0.25		
Avail Cap(c_a), veh/h	143	2079	1907	849	1110	1152		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	22.1	5.0	9.8	10.1	15.0	9.9		
Incr Delay (d2), s/veh	1.7	0.1	0.7	2.3	0.5	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	2.5	5.7	6.0	3.9	3.4		
LnGrp Delay(d),s/veh	23.8	5.1	10.5	12.4	15.5	9.9		
LnGrp LOS	C	A	B	B	B	A		
Approach Vol, veh/h		807	1618		485			
Approach Delay, s/veh		6.5	11.2		13.7			
Approach LOS		A	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		32.8		15.8	6.1	26.8		
Change Period (Y+Rc), s		5.7		4.6	4.0	5.7		
Max Green Setting (Gmax), s		24.7		28.0	3.0	24.7		
Max Q Clear Time (g_c+I1), s		7.3		10.0	3.7	15.0		
Green Ext Time (p_c), s		10.9		1.2	0.0	6.1		
Intersection Summary								
HCM 2010 Ctrl Delay			10.3					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

83: Center St/Tiger Way & Atlantic St

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	655	15	127	1241	354	25	1	10	88	4	303
Future Volume (veh/h)	121	655	15	127	1241	354	25	1	10	88	4	303
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1811	1900	1881	1810	1810	1881	1881	1900	1862	1776	1773
Adj Flow Rate, veh/h	127	689	16	134	1306	373	26	1	11	93	4	319
Adj No. of Lanes	1	2	0	1	2	1	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	1	5	5	1	1	1	1	1	5
Cap, veh/h	158	1693	39	94	1558	689	76	6	63	400	17	366
Arrive On Green	0.09	0.49	0.48	0.05	0.45	0.45	0.04	0.04	0.04	0.25	0.25	0.25
Sat Flow, veh/h	1723	3437	80	1792	3438	1521	1792	135	1484	1625	70	1489
Grp Volume(v), veh/h	127	345	360	134	1306	373	26	0	12	97	0	319
Grp Sat Flow(s),veh/h/ln	1723	1721	1797	1792	1719	1521	1792	0	1619	1695	0	1489
Q Serve(g_s), s	5.5	9.7	9.7	4.0	25.5	13.5	1.1	0.0	0.5	3.5	0.0	15.7
Cycle Q Clear(g_c), s	5.5	9.7	9.7	4.0	25.5	13.5	1.1	0.0	0.5	3.5	0.0	15.7
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.92	0.96		1.00
Lane Grp Cap(c), veh/h	158	847	885	94	1558	689	76	0	68	417	0	366
V/C Ratio(X)	0.80	0.41	0.41	1.42	0.84	0.54	0.34	0.00	0.18	0.23	0.00	0.87
Avail Cap(c_a), veh/h	158	866	904	94	1594	705	377	0	340	423	0	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	12.3	12.3	36.1	18.4	15.1	35.4	0.0	35.2	23.0	0.0	27.5
Incr Delay (d2), s/veh	23.1	0.3	0.3	241.3	4.1	0.8	1.0	0.0	0.5	0.3	0.0	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	4.7	4.9	8.3	12.9	5.7	0.6	0.0	0.3	1.6	0.0	8.4
LnGrp Delay(d),s/veh	57.0	12.6	12.6	277.3	22.4	15.9	36.4	0.0	35.6	23.2	0.0	46.9
LnGrp LOS	E	B	B	F	C	B	D		D	C		D
Approach Vol, veh/h	832				1813				38		416	
Approach Delay, s/veh	19.4				39.9				36.2		41.4	
Approach LOS	B				D				D		D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.0	41.2	21.7		10.0	38.2	6.2					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	36.3	18.0		6.0	33.3	15.0					
Max Q Clear Time (g_c+I1), s	6.0	11.7	17.7		7.5	27.5	3.1					
Green Ext Time (p_c), s	0.0	16.4	0.1		0.0	5.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			34.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

84: Wills Rd & Atlantic St

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↗	↙	↑↑	↙	↗		
Traffic Volume (veh/h)	748	267	274	1548	99	670		
Future Volume (veh/h)	748	267	274	1548	99	670		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.99	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	787	281	288	1629	104	705		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	944	418	444	2125	503	844		
Arrive On Green	0.27	0.25	0.25	0.60	0.28	0.28		
Sat Flow, veh/h	3632	1568	1774	3632	1774	1583		
Grp Volume(v), veh/h	787	281	288	1629	104	705		
Grp Sat Flow(s),veh/h/ln	1770	1568	1774	1770	1774	1583		
Q Serve(g_s), s	12.6	9.6	8.7	20.5	2.7	17.0		
Cycle Q Clear(g_c), s	12.6	9.6	8.7	20.5	2.7	17.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	944	418	444	2125	503	844		
V/C Ratio(X)	0.83	0.67	0.65	0.77	0.21	0.83		
Avail Cap(c_a), veh/h	944	418	503	2125	503	844		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.33	0.33	1.00	1.00		
Uniform Delay (d), s/veh	20.7	19.7	20.1	8.9	16.4	10.5		
Incr Delay (d2), s/veh	6.5	4.2	0.5	0.9	0.1	6.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.0	4.7	4.3	10.0	1.3	13.2		
LnGrp Delay(d),s/veh	27.3	23.8	20.7	9.8	16.4	17.4		
LnGrp LOS	C	C	C	A	B	B		
Approach Vol, veh/h	1068			1917	809			
Approach Delay, s/veh	26.4			11.4	17.2			
Approach LOS	C			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	20.0	20.0		20.0		40.0		
Change Period (Y+Rc), s	6.0	* 6		4.0		6.0		
Max Green Setting (Gmax), s	16.0	* 14		16.0		34.0		
Max Q Clear Time (g_c+I1), s	10.7	14.6		19.0		22.5		
Green Ext Time (p_c), s	3.4	0.0		0.0		6.3		
Intersection Summary								
HCM 2010 Ctrl Delay			16.9					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

85: I-80 WB Ramps & Atlantic St/Eureka Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↑↑	↑↑				↑			↑
Traffic Volume (veh/h)	0	844	696	950	1265	0	0	0	1059	0	0	684
Future Volume (veh/h)	0	844	696	950	1265	0	0	0	1059	0	0	684
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	0	888	733	1000	1332	0	0	0	0	0	0	0
Adj No. of Lanes	0	3	1	2	2	0	0	0	1	0	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	0	0	2	0	0	2
Cap, veh/h	0	3706	1150	516	3287	0	0	0	0	0	0	0
Arrive On Green	0.00	0.73	0.73	0.15	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	0	5253	1578	3442	3632	0		0			0	
Grp Volume(v), veh/h	0	888	733	1000	1332	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	0	1695	1578	1721	1770	0						
Q Serve(g_s), s	0.0	4.6	18.8	12.0	3.4	0.0						
Cycle Q Clear(g_c), s	0.0	4.6	18.8	12.0	3.4	0.0						
Prop In Lane	0.00		1.00	1.00		0.00						
Lane Grp Cap(c), veh/h	0	3706	1150	516	3287	0						
V/C Ratio(X)	0.00	0.24	0.64	1.94	0.41	0.00						
Avail Cap(c_a), veh/h	0	3706	1150	516	3287	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	0.55	0.55	0.09	0.09	0.00						
Uniform Delay (d), s/veh	0.0	3.6	5.5	34.0	0.3	0.0						
Incr Delay (d2), s/veh	0.0	0.1	1.5	422.3	0.0	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	2.2	8.4	35.9	1.5	0.0						
LnGrp Delay(d),s/veh	0.0	3.6	7.0	456.3	0.3	0.0						
LnGrp LOS		A	A	F	A							
Approach Vol, veh/h		1621			2332							
Approach Delay, s/veh		5.2			195.9							
Approach LOS		A			F							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	16.0	64.0				80.0						
Change Period (Y+Rc), s	4.0	5.7				* 5.7						
Max Green Setting (Gmax), s	12.0	18.3				* 16						
Max Q Clear Time (g_c+I1), s	14.0	20.8				5.4						
Green Ext Time (p_c), s	0.0	0.0				9.7						
Intersection Summary												
HCM 2010 Ctrl Delay			117.7									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
86: I-80 EB Ramps/Taylor Rd & Eureka Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	218	1375	0	0	3200	60	150	467	552	381	0	346
Future Volume (veh/h)	218	1375	0	0	3200	60	150	467	552	381	0	346
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1863	1863	1863	1863	1863	0	1863
Adj Flow Rate, veh/h	229	1447	0	0	3368	63	158	492	0	401	0	364
Adj No. of Lanes	2	2	1	0	3	1	1	2	1	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	0	2
Cap, veh/h	288	2017	902	0	2303	717	620	605	270	462	0	0
Arrive On Green	0.08	0.57	0.00	0.00	0.45	0.45	0.35	0.17	0.00	0.13	0.00	0.00
Sat Flow, veh/h	3442	3539	1583	0	5253	1583	1774	3539	1583	3442	401	
Grp Volume(v), veh/h	229	1447	0	0	3368	63	158	492	0	401	59.5	
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	0	1695	1583	1774	1770	1583	1721	E	
Q Serve(g_s), s	7.8	35.7	0.0	0.0	54.3	2.7	7.6	16.1	0.0	13.7		
Cycle Q Clear(g_c), s	7.8	35.7	0.0	0.0	54.3	2.7	7.6	16.1	0.0	13.7		
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	288	2017	902	0	2303	717	620	605	270	462		
V/C Ratio(X)	0.79	0.72	0.00	0.00	1.46	0.09	0.26	0.81	0.00	0.87		
Avail Cap(c_a), veh/h	459	2017	902	0	2303	717	620	728	326	602		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.11	0.11	0.00	0.00	0.38	0.38	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	54.0	18.8	0.0	0.0	32.8	18.7	27.9	47.9	0.0	50.9		
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	209.1	0.0	0.3	6.6	0.0	8.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.7	17.4	0.0	0.0	70.0	1.2	3.8	8.4	0.0	7.1		
LnGrp Delay(d),s/veh	54.2	19.0	0.0	0.0	241.9	18.7	28.2	54.5	0.0	59.5		
LnGrp LOS	D	B			F	B	C	D		E		
Approach Vol, veh/h	1676			3431			650					
Approach Delay, s/veh	23.8			237.8			48.1					
Approach LOS	C			F			D					
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3			5	6	7	8			
Phs Duration (G+Y+Rc), s	74.1		45.9			14.0	60.0	20.1	25.8			
Change Period (Y+Rc), s	5.7		4.0			4.0	5.7	4.0	5.3			
Max Green Setting (Gmax), s	59.3		21.0			16.0	39.3	21.0	24.7			
Max Q Clear Time (g_c+I1), s	37.7		9.6			9.8	56.3	15.7	18.1			
Green Ext Time (p_c), s	21.5		0.5			0.2	0.0	0.4	2.1			
Intersection Summary												
HCM 2010 Ctrl Delay	147.9											
HCM 2010 LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 2010 Signalized Intersection Summary

87: N. Sunrise Ave & Eureka Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	1587	368	182	2443	100	545	528	207	175	478	253
Future Volume (veh/h)	215	1587	368	182	2443	100	545	528	207	175	478	253
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	226	1671	0	192	2572	0	574	556	0	184	503	266
Adj No. of Lanes	2	3	1	2	4	1	3	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	2125	662	258	2526	624	712	979	305	286	606	186
Arrive On Green	0.17	0.84	0.00	0.07	0.39	0.00	0.14	0.19	0.00	0.08	0.12	0.12
Sat Flow, veh/h	3442	5085	1583	3442	6408	1583	5003	5085	1583	3442	5085	1563
Grp Volume(v), veh/h	226	1671	0	192	2572	0	574	556	0	184	503	266
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1583	1668	1695	1583	1721	1695	1563
Q Serve(g_s), s	7.5	18.9	0.0	6.6	47.3	0.0	13.3	11.9	0.0	6.2	11.6	14.3
Cycle Q Clear(g_c), s	7.5	18.9	0.0	6.6	47.3	0.0	13.3	11.9	0.0	6.2	11.6	14.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	2125	662	258	2526	624	712	979	305	286	606	186
V/C Ratio(X)	0.78	0.79	0.00	0.75	1.02	0.00	0.81	0.57	0.00	0.64	0.83	1.43
Avail Cap(c_a), veh/h	459	2125	662	459	2526	624	959	979	305	459	606	186
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	7.3	0.0	54.4	36.3	0.0	49.9	43.9	0.0	53.3	51.7	52.9
Incr Delay (d2), s/veh	1.2	1.4	0.0	1.6	22.7	0.0	2.7	0.9	0.0	0.9	9.6	220.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	8.3	0.0	3.2	24.8	0.0	6.3	5.6	0.0	3.0	6.0	17.6
LnGrp Delay(d),s/veh	50.0	8.7	0.0	56.0	59.0	0.0	52.5	44.9	0.0	54.2	61.3	273.5
LnGrp LOS	D	A		E	F		D	D		D	E	F
Approach Vol, veh/h	1897				2764				1130			
Approach Delay, s/veh	13.6				58.8				48.8			
Approach LOS	B				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	28.4	13.0	55.8	22.4	20.0	15.8	53.0				
Change Period (Y+Rc), s	4.0	5.3	4.0	5.7	5.3	* 5.7	5.7	* 5.7				
Max Green Setting (Gmax), s	16.0	20.7	16.0	47.3	23.0	* 14	16.0	* 47				
Max Q Clear Time (g_c+I1), s	8.2	13.9	8.6	20.9	15.3	16.3	9.5	49.3				
Green Ext Time (p_c), s	0.2	3.2	0.2	16.5	1.7	0.0	0.6	0.0				

Intersection Summary

HCM 2010 Ctrl Delay 52.9
HCM 2010 LOS D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

88: Eureka Rd & Rocky Ridge Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	464	306	18	126	319	95	1	1539	11	103	1405	339
Future Volume (veh/h)	464	306	18	126	319	95	1	1539	11	103	1405	339
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	488	322	0	133	336	0	1	1620	0	108	1479	0
Adj No. of Lanes	2	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	579	730	307	173	480	195	4	2240	678	147	2577	782
Arrive On Green	0.17	0.21	0.00	0.10	0.14	0.00	0.00	0.44	0.00	0.08	0.51	0.00
Sat Flow, veh/h	3442	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	488	322	0	133	336	0	1	1620	0	108	1479	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	16.5	9.5	0.0	8.8	10.9	0.0	0.1	31.4	0.0	7.1	24.3	0.0
Cycle Q Clear(g_c), s	16.5	9.5	0.0	8.8	10.9	0.0	0.1	31.4	0.0	7.1	24.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	579	730	307	173	480	195	4	2240	678	147	2577	782
V/C Ratio(X)	0.84	0.44	0.00	0.77	0.70	0.00	0.24	0.72	0.00	0.74	0.57	0.00
Avail Cap(c_a), veh/h	717	790	334	237	516	211	59	2240	678	207	2577	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.4	41.6	0.0	52.8	49.5	0.0	59.7	27.6	0.0	53.7	20.6	0.0
Incr Delay (d2), s/veh	6.3	0.7	0.0	6.3	4.3	0.0	10.3	2.1	0.0	4.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	4.7	0.0	4.6	5.6	0.0	0.0	15.1	0.0	3.7	11.6	0.0
LnGrp Delay(d),s/veh	54.7	42.3	0.0	59.1	53.9	0.0	70.0	29.6	0.0	57.7	21.5	0.0
LnGrp LOS	D	D		E	D		E	C		E	C	
Approach Vol, veh/h	810				469				1621			
Approach Delay, s/veh	49.7				55.3				29.7			
Approach LOS	D				E				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.7	28.2	5.0	64.0	23.2	19.8	12.9	56.0				
Change Period (Y+Rc), s	4.0	* 6	5.7	* 5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	15.0	* 24	3.0	* 58	24.0	15.0	13.0	48.3				
Max Q Clear Time (g_c+I1), s	10.8	11.5	2.1	26.3	18.5	12.9	9.1	33.4				
Green Ext Time (p_c), s	0.1	3.5	0.0	14.9	0.7	0.9	0.1	10.2				

Intersection Summary

HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

89: Eureka Rd & Lead Hill Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	268	268	50	190	125	240	1443	88	107	1493	73
Future Volume (veh/h)	63	268	268	50	190	125	240	1443	88	107	1493	73
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	66	282	0	53	200	0	253	1519	0	113	1572	0
Adj No. of Lanes	1	2	1	1	2	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	443	178	83	411	164	294	2661	809	154	2329	705
Arrive On Green	0.06	0.13	0.00	0.05	0.12	0.00	0.17	0.52	0.00	0.09	0.46	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	66	282	0	53	200	0	253	1519	0	113	1572	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	4.4	9.1	0.0	3.5	6.4	0.0	16.6	24.4	0.0	7.5	29.1	0.0
Cycle Q Clear(g_c), s	4.4	9.1	0.0	3.5	6.4	0.0	16.6	24.4	0.0	7.5	29.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	99	443	178	83	411	164	294	2661	809	154	2329	705
V/C Ratio(X)	0.67	0.64	0.00	0.64	0.49	0.00	0.86	0.57	0.00	0.74	0.67	0.00
Avail Cap(c_a), veh/h	133	593	245	133	593	245	384	2661	809	222	2329	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.6	49.9	0.0	56.2	49.7	0.0	48.7	19.4	0.0	53.5	25.5	0.0
Incr Delay (d2), s/veh	2.9	1.8	0.0	3.1	1.2	0.0	11.7	0.9	0.0	3.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	4.6	0.0	1.8	3.2	0.0	9.1	11.6	0.0	3.8	13.7	0.0
LnGrp Delay(d),s/veh	58.5	51.7	0.0	59.3	50.9	0.0	60.4	20.3	0.0	56.6	26.4	0.0
LnGrp LOS	E	D		E	D		E	C		E	C	
Approach Vol, veh/h	348				253				1772			
Approach Delay, s/veh	53.0				52.7				26.0			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	18.9	22.9	58.2	9.7	17.8	15.1	66.0				
Change Period (Y+Rc), s	4.0	6.4	4.0	5.7	4.0	6.4	5.7	* 5.7				
Max Green Setting (Gmax), s	8.0	17.6	25.0	49.3	8.0	17.6	14.0	* 60				
Max Q Clear Time (g_c+I1), s	5.5	11.1	18.6	31.1	6.4	8.4	9.5	26.4				
Green Ext Time (p_c), s	0.0	1.4	0.3	11.7	0.0	1.8	0.2	15.9				

Intersection Summary

HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

90: Eureka Road & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	1314	432	63	1620	578	546	624	20	907	794	1
Future Volume (veh/h)	155	1314	432	63	1620	578	546	624	20	907	794	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	1383	455	66	1705	0	575	657	21	955	836	1
Adj No. of Lanes	2	3	1	2	3	1	2	3	0	3	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	1954	608	110	1695	528	666	854	27	1001	831	1
Arrive On Green	0.13	0.77	0.77	0.03	0.33	0.00	0.19	0.17	0.17	0.20	0.16	0.16
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5063	161	5003	5246	6
Grp Volume(v), veh/h	163	1383	455	66	1705	0	575	439	239	955	540	297
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1834	1668	1695	1862
Q Serve(g_s), s	5.4	16.6	8.3	2.3	40.0	0.0	19.4	14.9	14.9	22.6	19.0	19.0
Cycle Q Clear(g_c), s	5.4	16.6	8.3	2.3	40.0	0.0	19.4	14.9	14.9	22.6	19.0	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	228	1954	608	110	1695	528	666	572	309	1001	537	295
V/C Ratio(X)	0.72	0.71	0.75	0.60	1.01	0.00	0.86	0.77	0.77	0.95	1.01	1.01
Avail Cap(c_a), veh/h	459	1954	608	459	1695	528	717	572	309	1001	537	295
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	10.5	2.1	57.3	40.0	0.0	46.8	47.6	47.7	47.5	50.5	50.5
Incr Delay (d2), s/veh	1.1	1.0	4.0	1.9	23.3	0.0	9.4	6.6	12.0	18.3	40.5	54.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	7.6	3.8	1.1	22.3	0.0	10.1	7.5	8.6	12.1	11.9	14.2
LnGrp Delay(d),s/veh	52.1	11.4	6.1	59.2	63.3	0.0	56.2	54.3	59.7	65.7	91.0	104.6
LnGrp LOS	D	B	A	E	F		E	D	E	E	F	F
Approach Vol, veh/h	2001				1771				1253			
Approach Delay, s/veh	13.6				63.1				56.2			
Approach LOS	B				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	52.1	29.2	25.0	13.9	46.0	28.0	26.2				
Change Period (Y+Rc), s	4.0	6.0	6.0	* 6	6.0	* 6	4.0	6.0				
Max Green Setting (Gmax), s	16.0	40.0	25.0	* 19	16.0	* 40	24.0	20.0				
Max Q Clear Time (g_c+I1), s	4.3	18.6	21.4	21.0	7.4	42.0	24.6	16.9				
Green Ext Time (p_c), s	0.1	16.0	1.8	0.0	0.6	0.0	0.0	1.8				

Intersection Summary

HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
91: Eureka Rd & Deer Valley Apts Dwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	0	0	14	2	45	7	842	11	51	1191	11
Future Volume (veh/h)	17	0	0	14	2	45	7	842	11	51	1191	11
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	18	0	0	15	2	47	7	886	12	54	1254	12
Adj No. of Lanes	1	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	111	0	197	26	198	52	1810	25	151	2019	19
Arrive On Green	0.06	0.00	0.00	0.12	0.12	0.12	0.03	0.51	0.51	0.09	0.56	0.56
Sat Flow, veh/h	1774	1863	0	1574	210	1583	1774	3575	48	1774	3592	34
Grp Volume(v), veh/h	18	0	0	17	0	47	7	439	459	54	618	648
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1784	0	1583	1774	1770	1854	1774	1770	1857
Q Serve(g_s), s	0.6	0.0	0.0	0.5	0.0	1.6	0.2	9.9	9.9	1.8	14.3	14.3
Cycle Q Clear(g_c), s	0.6	0.0	0.0	0.5	0.0	1.6	0.2	9.9	9.9	1.8	14.3	14.3
Prop In Lane	1.00		0.00	0.88		1.00	1.00		0.03	1.00		0.02
Lane Grp Cap(c), veh/h	105	111	0	223	0	198	52	896	939	151	995	1044
V/C Ratio(X)	0.17	0.00	0.00	0.08	0.00	0.24	0.14	0.49	0.49	0.36	0.62	0.62
Avail Cap(c_a), veh/h	320	336	0	613	0	544	232	1052	1102	232	1052	1104
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	23.6	0.0	24.1	28.9	9.9	9.9	26.4	9.0	9.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.2	0.4	0.7	0.7	0.5	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.7	0.1	4.9	5.2	0.9	7.3	7.6
LnGrp Delay(d),s/veh	27.6	0.0	0.0	23.7	0.0	24.3	29.3	10.6	10.6	26.9	10.4	10.3
LnGrp LOS	C			C		C	C	B	B	C	B	B
Approach Vol, veh/h	18			64			905			1320		
Approach Delay, s/veh	27.6			24.2			10.7			11.0		
Approach LOS	C			C			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.8	39.0	10.6		8.2	35.6	6.6					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	7.0	35.3	20.0		7.0	35.3	10.0					
Max Q Clear Time (g_c+I1), s	2.2	16.3	3.6		3.8	11.9	2.6					
Green Ext Time (p_c), s	0.0	15.2	0.1		0.0	18.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	11.4											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
92: Ashland Dr & Eureka Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	1117	52	50	731	8	41	2	27	13	8	3
Future Volume (veh/h)	43	1117	52	50	731	8	41	2	27	13	8	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	45	1176	55	53	769	8	43	2	28	14	8	3
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1735	81	119	1770	737	254	12	237	86	49	118
Arrive On Green	0.07	0.50	0.47	0.07	0.50	0.47	0.15	0.15	0.15	0.07	0.07	0.07
Sat Flow, veh/h	1774	3443	161	1774	3539	1583	1699	79	1583	1149	656	1583
Grp Volume(v), veh/h	45	604	627	53	769	8	45	0	28	22	0	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1834	1774	1770	1583	1778	0	1583	1805	0	1583
Q Serve(g_s), s	1.4	14.7	14.8	1.6	7.9	0.2	1.3	0.0	0.9	0.7	0.0	0.1
Cycle Q Clear(g_c), s	1.4	14.7	14.8	1.6	7.9	0.2	1.3	0.0	0.9	0.7	0.0	0.1
Prop In Lane	1.00		0.09	1.00		1.00	0.96		1.00	0.64		1.00
Lane Grp Cap(c), veh/h	126	892	924	119	1770	737	266	0	237	135	0	118
V/C Ratio(X)	0.36	0.68	0.68	0.44	0.43	0.01	0.17	0.00	0.12	0.16	0.00	0.03
Avail Cap(c_a), veh/h	217	906	940	186	1770	737	373	0	332	663	0	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	10.7	10.8	25.7	9.1	8.2	21.2	0.0	21.1	24.8	0.0	24.5
Incr Delay (d2), s/veh	0.6	4.1	4.0	1.0	0.8	0.0	0.1	0.0	0.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.1	8.3	0.8	4.0	0.1	0.6	0.0	0.4	0.3	0.0	0.0
LnGrp Delay(d),s/veh	26.0	14.8	14.7	26.6	9.9	8.2	21.3	0.0	21.1	25.0	0.0	24.6
LnGrp LOS	C	B	B	C	A	A	C		C	C		C
Approach Vol, veh/h	1276				830				73		25	
Approach Delay, s/veh	15.1				11.0				21.3		24.9	
Approach LOS	B				B				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	11.6		6.8	31.5	7.3		7.1	31.3				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	11.0		5.0	26.3	20.0		6.0	25.3				
Max Q Clear Time (g_c+I1), s	3.3		3.6	16.8	2.7		3.4	9.9				
Green Ext Time (p_c), s	0.1		0.0	9.1	0.0		0.0	14.7				
Intersection Summary												
HCM 2010 Ctrl Delay	13.9											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
93: Sierra College Blvd & Eureka Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	635	451	80	460	239	138	1160	37	294	1461	192
Future Volume (veh/h)	130	635	451	80	460	239	138	1160	37	294	1461	192
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	137	668	0	84	484	0	145	1221	0	309	1538	0
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	839	356	298	788	333	251	2100	627	407	2259	677
Arrive On Green	0.10	0.24	0.00	0.09	0.22	0.00	0.07	0.41	0.00	0.12	0.44	0.00
Sat Flow, veh/h	1774	3539	1583	3442	3539	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	137	668	0	84	484	0	145	1221	0	309	1538	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	9.0	21.3	0.0	2.7	14.8	0.0	4.9	22.3	0.0	10.4	28.9	0.0
Cycle Q Clear(g_c), s	9.0	21.3	0.0	2.7	14.8	0.0	4.9	22.3	0.0	10.4	28.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	839	356	298	788	333	251	2100	627	407	2259	677
V/C Ratio(X)	0.76	0.80	0.00	0.28	0.61	0.00	0.58	0.58	0.00	0.76	0.68	0.00
Avail Cap(c_a), veh/h	281	997	426	315	788	333	287	2100	627	602	2259	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.5	43.0	0.0	51.3	42.0	0.0	53.9	27.2	0.0	51.3	26.6	0.0
Incr Delay (d2), s/veh	6.6	3.9	0.0	0.5	1.4	0.0	2.2	0.4	0.0	3.2	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	10.8	0.0	1.3	7.3	0.0	2.4	10.5	0.0	5.2	13.9	0.0
LnGrp Delay(d),s/veh	59.2	46.9	0.0	51.8	43.4	0.0	56.0	27.6	0.0	54.5	28.3	0.0
LnGrp LOS	E	D		D	D		E	C		D	C	
Approach Vol, veh/h	805				568				1366			
Approach Delay, s/veh	49.0				44.7				30.6			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	52.3	13.4	31.7	13.4	56.0	15.1	29.9				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.7	5.7	* 5.7	4.0	5.7				
Max Green Setting (Gmax), s	20.0	39.3	10.0	31.3	9.0	* 50	18.0	23.3				
Max Q Clear Time (g_c+I1), s	12.4	24.3	4.7	23.3	6.9	30.9	11.0	16.8				
Green Ext Time (p_c), s	0.7	5.7	0.1	2.7	0.1	7.4	0.2	2.9				

Intersection Summary

HCM 2010 Ctrl Delay	36.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
94: Banjo Alley/Judah St & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑	↗		↗		↗	↕	
Traffic Volume (veh/h)	1	482	0	0	663	417	2	2	0	516	0	23
Future Volume (veh/h)	1	482	0	0	663	417	2	2	0	516	0	23
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	0	1863	1863	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	507	0	0	698	439	2	2	0	565	0	0
Adj No. of Lanes	0	2	0	0	1	1	0	1	0	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	31	2486	0	0	1334	1433	11	11	0	669	351	0
Arrive On Green	0.72	0.72	0.00	0.00	0.95	0.95	0.01	0.01	0.00	0.19	0.00	0.00
Sat Flow, veh/h	1	3555	0	0	1863	1583	909	909	0	3548	1863	0
Grp Volume(v), veh/h	272	236	0	0	698	439	4	0	0	565	0	0
Grp Sat Flow(s),veh/h/ln	1861	1610	0	0	1863	1583	1817	0	0	1774	1863	0
Q Serve(g_s), s	0.0	5.8	0.0	0.0	4.2	0.8	0.3	0.0	0.0	18.4	0.0	0.0
Cycle Q Clear(g_c), s	5.8	5.8	0.0	0.0	4.2	0.8	0.3	0.0	0.0	18.4	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.50		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	1363	1154	0	0	1334	1433	23	0	0	669	351	0
V/C Ratio(X)	0.20	0.20	0.00	0.00	0.52	0.31	0.18	0.00	0.00	0.84	0.00	0.00
Avail Cap(c_a), veh/h	1363	1154	0	0	1334	1433	76	0	0	946	497	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.92	0.92	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.7	5.7	0.0	0.0	0.9	0.1	58.6	0.0	0.0	47.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.0	0.0	0.4	0.1	1.4	0.0	0.0	3.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	2.7	0.0	0.0	2.0	1.0	0.1	0.0	0.0	9.4	0.0	0.0
LnGrp Delay(d),s/veh	6.0	6.1	0.0	0.0	1.3	0.2	60.0	0.0	0.0	50.6	0.0	0.0
LnGrp LOS	A	A			A	A	E			D		
Approach Vol, veh/h		508			1137			4			565	
Approach Delay, s/veh		6.0			0.9			60.0			50.6	
Approach LOS		A			A			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		89.9		25.6		89.9		4.5				
Change Period (Y+Rc), s		4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s		72.1		31.0		65.1		4.0				
Max Q Clear Time (g_c+I1), s		7.8		20.4		6.2		2.3				
Green Ext Time (p_c), s		18.0		1.2		17.7		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				14.8								
HCM 2010 LOS				B								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

95: Park Dr & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑			↕		↵	↑	
Traffic Volume (veh/h)	0	994	24	18	1039	0	45	0	45	68	11	30
Future Volume (veh/h)	0	994	24	18	1039	0	45	0	45	68	11	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	1046	0	19	1094	0	47	0	47	72	12	32
Adj No. of Lanes	0	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0	2	2	2	2	2	2
Cap, veh/h	0	2075	0	70	2303	0	65	0	65	131	33	88
Arrive On Green	0.00	0.78	0.00	0.08	1.00	0.00	0.09	0.00	0.09	0.07	0.07	0.07
Sat Flow, veh/h	0	3725	0	1774	3632	0	837	0	837	1774	450	1201
Grp Volume(v), veh/h	0	1046	0	19	1094	0	94	0	0	72	0	44
Grp Sat Flow(s),veh/h/ln	0	1770	0	1774	1770	0	1673	0	0	1774	0	1651
Q Serve(g_s), s	0.0	12.9	0.0	1.2	0.0	0.0	6.6	0.0	0.0	4.7	0.0	3.0
Cycle Q Clear(g_c), s	0.0	12.9	0.0	1.2	0.0	0.0	6.6	0.0	0.0	4.7	0.0	3.0
Prop In Lane	0.00		0.00	1.00		0.00	0.50		0.50	1.00		0.73
Lane Grp Cap(c), veh/h	0	2075	0	70	2303	0	130	0	0	131	0	122
V/C Ratio(X)	0.00	0.50	0.00	0.27	0.47	0.00	0.72	0.00	0.00	0.55	0.00	0.36
Avail Cap(c_a), veh/h	0	2075	0	133	2303	0	209	0	0	251	0	234
HCM Platoon Ratio	1.00	1.33	1.33	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	0.0	53.6	0.0	0.0	53.6	0.0	0.0	53.7	0.0	52.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.8	0.7	0.0	2.9	0.0	0.0	1.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	0.0	0.6	0.2	0.0	3.1	0.0	0.0	2.3	0.0	1.4
LnGrp Delay(d),s/veh	0.0	7.1	0.0	54.4	0.7	0.0	56.4	0.0	0.0	55.0	0.0	53.6
LnGrp LOS		A		D	A		E			E		D
Approach Vol, veh/h	1046			1113			94			116		
Approach Delay, s/veh	7.1			1.6			56.4			54.5		
Approach LOS	A			A			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	7.8	74.2		11.8		82.0		12.3				
Change Period (Y+Rc), s	4.0	4.9		4.0		4.9		4.0				
Max Green Setting (Gmax), s	8.0	65.1		16.0		77.1		14.0				
Max Q Clear Time (g_c+I1), s	3.2	14.9		6.7		2.0		8.6				
Green Ext Time (p_c), s	0.0	26.1		0.1		30.6		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay				8.8								
HCM 2010 LOS				A								

HCM 2010 Signalized Intersection Summary
96: Keehner Ave & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑		↖	↑↑	↖	↗		
Traffic Volume (veh/h)	1072	47	185	620	34	168		
Future Volume (veh/h)	1072	47	185	620	34	168		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1128	49	195	653	36	177		
Adj No. of Lanes	2	0	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1789	78	267	2542	271	242		
Arrive On Green	0.52	0.52	0.15	0.72	0.15	0.15		
Sat Flow, veh/h	3549	150	1774	3632	1774	1583		
Grp Volume(v), veh/h	577	600	195	653	36	177		
Grp Sat Flow(s),veh/h/ln	1770	1836	1774	1770	1774	1583		
Q Serve(g_s), s	14.0	14.0	6.3	3.8	1.1	6.4		
Cycle Q Clear(g_c), s	14.0	14.0	6.3	3.8	1.1	6.4		
Prop In Lane		0.08	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	916	951	267	2542	271	242		
V/C Ratio(X)	0.63	0.63	0.73	0.26	0.13	0.73		
Avail Cap(c_a), veh/h	916	951	325	2542	296	264		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.4	10.4	24.3	2.9	22.0	24.2		
Incr Delay (d2), s/veh	1.4	1.4	4.6	0.2	0.1	7.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.1	7.4	3.4	1.9	0.5	3.3		
LnGrp Delay(d),s/veh	11.8	11.7	28.9	3.2	22.0	31.7		
LnGrp LOS	B	B	C	A	C	C		
Approach Vol, veh/h	1177			848	213			
Approach Delay, s/veh	11.8			9.1	30.1			
Approach LOS	B			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.0	35.0		12.2		47.0		
Change Period (Y+Rc), s	4.0	4.9		4.0		4.9		
Max Green Setting (Gmax), s	10.0	28.1		9.0		42.1		
Max Q Clear Time (g_c+I1), s	8.3	16.0		8.4		5.8		
Green Ext Time (p_c), s	0.1	10.2		0.0		25.0		
Intersection Summary								
HCM 2010 Ctrl Delay			12.5					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

97: Folsom Rd & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	1152	4	13	1422	80	5	2	12	518	4	81
Future Volume (veh/h)	98	1152	4	13	1422	80	5	2	12	518	4	81
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	103	1213	4	14	1497	84	5	2	13	548	0	85
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	2114	7	156	2045	114	10	4	26	651	0	290
Arrive On Green	0.08	0.58	0.58	0.09	0.60	0.60	0.02	0.02	0.02	0.18	0.00	0.18
Sat Flow, veh/h	1774	3618	12	1774	3408	191	413	165	1074	3548	0	1583
Grp Volume(v), veh/h	103	593	624	14	775	806	20	0	0	548	0	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1861	1774	1770	1829	1653	0	0	1774	0	1583
Q Serve(g_s), s	6.8	25.2	25.2	0.9	37.4	37.8	1.4	0.0	0.0	17.9	0.0	5.6
Cycle Q Clear(g_c), s	6.8	25.2	25.2	0.9	37.4	37.8	1.4	0.0	0.0	17.9	0.0	5.6
Prop In Lane	1.00		0.01	1.00		0.10	0.25		0.65	1.00		1.00
Lane Grp Cap(c), veh/h	141	1034	1087	156	1062	1098	41	0	0	651	0	290
V/C Ratio(X)	0.73	0.57	0.57	0.09	0.73	0.73	0.49	0.00	0.00	0.84	0.00	0.29
Avail Cap(c_a), veh/h	163	1034	1087	156	1062	1098	69	0	0	810	0	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.0	15.6	15.6	50.3	17.1	17.2	57.8	0.0	0.0	47.3	0.0	42.3
Incr Delay (d2), s/veh	10.4	2.3	2.2	0.1	2.6	2.7	3.4	0.0	0.0	6.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	12.9	13.5	0.4	18.9	19.9	0.7	0.0	0.0	9.3	0.0	2.5
LnGrp Delay(d),s/veh	64.4	17.9	17.8	50.4	19.7	19.8	61.2	0.0	0.0	53.5	0.0	42.7
LnGrp LOS	E	B	B	D	B	B	E			D		D
Approach Vol, veh/h	1320				1595				20		633	
Approach Delay, s/veh	21.5				20.0				61.2		52.0	
Approach LOS	C				C				E		D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	14.4	74.0	25.6		12.5	75.9	5.9					
Change Period (Y+Rc), s	4.9	* 4.9	4.6		4.0	4.9	4.0					
Max Green Setting (Gmax), s	3.0	* 69	26.4		10.0	62.1	4.0					
Max Q Clear Time (g_c+I1), s	2.9	27.2	19.9		8.8	39.8	3.4					
Green Ext Time (p_c), s	0.0	12.6	1.1		0.0	13.6	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	26.5											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

98: Douglas Blvd & Harding Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	369	1326	18	111	1177	591	48	61	114	999	12	310
Future Volume (veh/h)	369	1326	18	111	1177	591	48	61	114	999	12	310
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	388	1396	19	117	1239	622	51	64	120	1061	0	326
Adj No. of Lanes	1	2	0	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	1642	22	118	1124	503	59	62	53	1038	0	463
Arrive On Green	0.42	0.92	0.92	0.07	0.32	0.32	0.03	0.03	0.03	0.29	0.00	0.29
Sat Flow, veh/h	1774	3575	49	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	388	691	724	117	1239	622	51	64	120	1061	0	326
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	25.0	17.4	17.5	7.9	38.1	38.1	3.4	4.0	4.0	35.1	0.0	22.0
Cycle Q Clear(g_c), s	25.0	17.4	17.5	7.9	38.1	38.1	3.4	4.0	4.0	35.1	0.0	22.0
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	813	851	118	1124	503	59	62	53	1038	0	463
V/C Ratio(X)	1.05	0.85	0.85	0.99	1.10	1.24	0.86	1.03	2.27	1.02	0.00	0.70
Avail Cap(c_a), veh/h	370	813	851	118	1124	503	59	62	53	1038	0	463
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.00	0.70
Uniform Delay (d), s/veh	35.0	3.4	3.4	56.0	41.0	41.0	57.7	58.0	58.0	42.5	0.0	37.8
Incr Delay (d2), s/veh	60.5	10.8	10.4	79.1	59.5	123.0	68.0	123.1	628.7	29.2	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.3	9.3	9.7	6.5	27.9	33.8	2.8	4.2	11.0	21.4	0.0	10.0
LnGrp Delay(d),s/veh	95.5	14.2	13.8	135.1	100.5	163.9	125.7	181.6	686.7	71.6	0.0	40.9
LnGrp LOS	F	B	B	F	F	F	F	F	F	F		D
Approach Vol, veh/h	1803			1978			235			1387		
Approach Delay, s/veh	31.5			122.5			427.4			64.4		
Approach LOS	C			F			F			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	60.0		40.0	29.0	43.0		8.0				
Change Period (Y+Rc), s	4.0	4.9		4.9	4.0	4.9		4.0				
Max Green Setting (Gmax), s	8.0	55.1		35.1	25.0	38.1		4.0				
Max Q Clear Time (g_c+I1), s	9.9	19.5		37.1	27.0	40.1		6.0				
Green Ext Time (p_c), s	0.0	30.8		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	90.5											
HCM 2010 LOS	F											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
99: Douglas Blvd & I-80 WB Ramps

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗				↗	↗	↗
Traffic Volume (veh/h)	0	1095	758	0	1642	1407	0	0	0	1024	0	227
Future Volume (veh/h)	0	1095	758	0	1642	1407	0	0	0	1024	0	227
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	0	1153	798	0	1728	0				1078	0	239
Adj No. of Lanes	0	2	1	0	2	1				2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2136	948	0	2261	948				1200	0	535
Arrive On Green	0.00	0.20	0.20	0.00	0.61	0.00				0.34	0.00	0.34
Sat Flow, veh/h	0	3632	1583	0	3725	1583				3548	0	1583
Grp Volume(v), veh/h	0	1153	798	0	1728	0				1078	0	239
Grp Sat Flow(s),veh/h/ln	0	1770	1583	0	1863	1583				1774	0	1583
Q Serve(g_s), s	0.0	35.1	58.2	0.0	40.8	0.0				34.7	0.0	14.1
Cycle Q Clear(g_c), s	0.0	35.1	58.2	0.0	40.8	0.0				34.7	0.0	14.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2136	948	0	2261	948				1200	0	535
V/C Ratio(X)	0.00	0.54	0.84	0.00	0.76	0.00				0.90	0.00	0.45
Avail Cap(c_a), veh/h	0	2136	948	0	2261	948				1399	0	624
HCM Platoon Ratio	1.00	0.33	0.33	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	0.27	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	33.1	42.7	0.0	17.3	0.0				37.8	0.0	31.0
Incr Delay (d2), s/veh	0.0	1.0	9.0	0.0	0.5	0.0				6.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	17.5	28.0	0.0	21.0	0.0				18.0	0.0	6.2
LnGrp Delay(d),s/veh	0.0	34.1	51.7	0.0	17.7	0.0				44.5	0.0	31.2
LnGrp LOS		C	D		B					D		C
Approach Vol, veh/h		1951			1728						1317	
Approach Delay, s/veh		41.3			17.7						42.1	
Approach LOS		D			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		75.7		44.3		75.7						
Change Period (Y+Rc), s		4.9		5.3		4.9						
Max Green Setting (Gmax), s		64.1		45.7		64.1						
Max Q Clear Time (g_c+I1), s		60.2		36.7		42.8						
Green Ext Time (p_c), s		3.9		2.3		20.8						
Intersection Summary												
HCM 2010 Ctrl Delay			33.3									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

100: I-80 EB Ramps & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	1106	0	0	2545	524	0	0	1192	0	0	504
Future Volume (veh/h)	288	1106	0	0	2545	524	0	0	1192	0	0	504
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	0	0	1863	0	0	1863
Adj Flow Rate, veh/h	303	1164	0	0	2679	0	0	0	0	0	0	531
Adj No. of Lanes	1	4	0	0	3	1	0	0	1	0	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	0	2	2	0	0	2	0	0	2
Cap, veh/h	307	4517	0	0	2836	803	0	0	0	0	0	0
Arrive On Green	0.17	0.70	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sat Flow, veh/h	1774	6669	0	0	5588	1583		0			0	
Grp Volume(v), veh/h	303	1164	0	0	2679	0		0.0			0.0	
Grp Sat Flow(s),veh/h/ln	1774	1602	0	0	1863	1583						
Q Serve(g_s), s	13.8	5.3	0.0	0.0	36.7	0.0						
Cycle Q Clear(g_c), s	13.8	5.3	0.0	0.0	36.7	0.0						
Prop In Lane	1.00		0.00	0.00		1.00						
Lane Grp Cap(c), veh/h	307	4517	0	0	2836	803						
V/C Ratio(X)	0.99	0.26	0.00	0.00	0.94	0.00						
Avail Cap(c_a), veh/h	307	4517	0	0	2836	803						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.70	0.70	0.00	0.00	0.26	0.00						
Uniform Delay (d), s/veh	33.4	4.3	0.0	0.0	18.9	0.0						
Incr Delay (d2), s/veh	39.6	0.0	0.0	0.0	2.6	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	10.1	2.4	0.0	0.0	19.3	0.0						
LnGrp Delay(d),s/veh	73.0	4.3	0.0	0.0	21.5	0.0						
LnGrp LOS	E	A			C							
Approach Vol, veh/h		1467			2679							
Approach Delay, s/veh		18.5			21.5							
Approach LOS		B			C							
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		60.0			16.0	44.0						
Change Period (Y+Rc), s		4.9			4.0	4.9						
Max Green Setting (Gmax), s		55.1			12.0	39.1						
Max Q Clear Time (g_c+I1), s		7.3			15.8	38.7						
Green Ext Time (p_c), s		44.5			0.0	0.4						
Intersection Summary												
HCM 2010 Ctrl Delay			20.4									
HCM 2010 LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

101: Douglas Blvd & North Sunrise Ave

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	428	1611	193	215	2213	145	389	515	168	183	793	467
Future Volume (veh/h)	428	1611	193	215	2213	145	389	515	168	183	793	467
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	451	1696	203	226	2329	153	409	542	177	193	835	492
Adj No. of Lanes	2	3	1	2	4	0	2	2	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	940	3128	1169	282	2577	169	430	798	355	248	877	703
Arrive On Green	0.27	0.62	0.62	0.08	0.42	0.42	0.13	0.23	0.23	0.07	0.17	0.17
Sat Flow, veh/h	3442	5085	1579	3442	6190	406	3442	3539	1573	3442	5085	1570
Grp Volume(v), veh/h	451	1696	203	226	1807	675	409	542	177	193	835	492
Grp Sat Flow(s),veh/h/ln	1721	1695	1579	1721	1602	1789	1721	1770	1573	1721	1695	1570
Q Serve(g_s), s	13.2	23.1	4.6	7.7	42.2	42.4	14.2	16.8	11.8	6.6	19.5	8.7
Cycle Q Clear(g_c), s	13.2	23.1	4.6	7.7	42.2	42.4	14.2	16.8	11.8	6.6	19.5	8.7
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	940	3128	1169	282	2001	745	430	798	355	248	877	703
V/C Ratio(X)	0.48	0.54	0.17	0.80	0.90	0.91	0.95	0.68	0.50	0.78	0.95	0.70
Avail Cap(c_a), veh/h	940	3128	1169	344	2006	747	430	798	355	287	877	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.30	0.30	0.30	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	13.3	4.7	54.1	32.8	32.8	52.1	42.5	40.6	54.7	49.2	20.4
Incr Delay (d2), s/veh	0.1	0.6	0.3	2.8	2.1	5.4	30.8	2.8	1.9	9.3	20.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	10.8	2.1	3.8	19.0	21.9	8.6	8.5	5.3	3.5	10.8	11.4
LnGrp Delay(d),s/veh	36.6	13.9	4.9	56.9	34.9	38.3	82.9	45.3	42.4	64.0	69.2	24.4
LnGrp LOS	D	B	A	E	C	D	F	D	D	E	E	C
Approach Vol, veh/h	2350				2708				1128			
Approach Delay, s/veh	17.5				37.5				58.5			
Approach LOS	B				D				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.8	78.8	19.0	26.0	37.8	54.9	12.7	32.3				
Change Period (Y+Rc), s	4.0	4.9	4.0	5.3	4.9	* 4.9	4.0	* 5.3				
Max Green Setting (Gmax), s	12.0	54.1	15.0	20.7	16.0	* 50	10.0	* 26				
Max Q Clear Time (g_c+I1), s	9.7	25.1	16.2	21.5	15.2	44.4	8.6	18.8				
Green Ext Time (p_c), s	0.1	23.4	0.0	0.0	0.2	5.6	0.0	6.7				

Intersection Summary

HCM 2010 Ctrl Delay	37.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

102: Santa Clara Dr & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1659	40	166	2348	41	83	34	114	168	94	129
Future Volume (veh/h)	140	1659	40	166	2348	41	83	34	114	168	94	129
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	147	1746	42	175	2472	43	87	36	120	138	154	136
Adj No. of Lanes	1	3	0	1	3	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	1707	41	539	2777	861	166	174	148	214	224	188
Arrive On Green	0.03	0.11	0.11	0.61	1.00	1.00	0.09	0.09	0.09	0.12	0.12	0.12
Sat Flow, veh/h	1774	5107	123	1774	5085	1576	1774	1863	1583	1774	1863	1564
Grp Volume(v), veh/h	147	1159	629	175	2472	43	87	36	120	138	154	136
Grp Sat Flow(s),veh/h/ln	1774	1695	1840	1774	1695	1576	1774	1863	1583	1774	1863	1564
Q Serve(g_s), s	9.9	40.1	40.1	5.8	0.0	0.0	5.6	2.1	8.9	8.9	9.5	10.1
Cycle Q Clear(g_c), s	9.9	40.1	40.1	5.8	0.0	0.0	5.6	2.1	8.9	8.9	9.5	10.1
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	1133	615	539	2777	861	166	174	148	214	224	188
V/C Ratio(X)	0.83	1.02	1.02	0.32	0.89	0.05	0.53	0.21	0.81	0.65	0.69	0.72
Avail Cap(c_a), veh/h	310	1133	615	539	2777	861	237	248	211	458	481	404
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	53.4	53.4	17.5	0.0	0.0	51.9	50.3	53.4	50.3	50.6	50.8
Incr Delay (d2), s/veh	2.6	27.6	35.5	0.0	0.4	0.0	1.9	0.4	12.6	1.2	1.4	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	23.2	26.5	2.8	0.1	0.0	2.8	1.1	4.4	4.4	5.0	4.4
LnGrp Delay(d),s/veh	59.7	81.0	88.9	17.5	0.4	0.0	53.8	50.7	66.0	51.6	52.0	52.8
LnGrp LOS	E	F	F	B	A	A	D	D	E	D	D	D
Approach Vol, veh/h	1935			2690				243		428		
Approach Delay, s/veh	82.0			1.5				59.4		52.1		
Approach LOS	F			A				E		D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	41.4	45.0	18.4		15.9	70.4	15.2					
Change Period (Y+Rc), s	4.9	* 4.9	4.0		4.0	4.9	4.0					
Max Green Setting (Gmax), s	16.0	* 40	31.0		21.0	35.1	16.0					
Max Q Clear Time (g_c+I1), s	7.8	42.1	12.1		11.9	2.0	10.9					
Green Ext Time (p_c), s	0.5	0.0	0.9		0.1	32.2	0.3					
Intersection Summary												
HCM 2010 Ctrl Delay	37.7											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

103: Sierra Gardens Dr & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1706	39	27	2482	47	168	39	32	229	50	39
Future Volume (veh/h)	45	1706	39	27	2482	47	168	39	32	229	50	39
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	47	1796	41	28	2613	49	126	112	34	168	156	41
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1667	503	35	1657	500	177	137	42	295	235	62
Arrive On Green	0.03	0.66	0.66	0.02	0.33	0.33	0.10	0.10	0.10	0.17	0.17	0.17
Sat Flow, veh/h	1774	5085	1535	1774	5085	1535	1774	1373	417	1774	1410	371
Grp Volume(v), veh/h	47	1796	41	28	2613	49	126	0	146	168	0	197
Grp Sat Flow(s),veh/h/ln	1774	1695	1535	1774	1695	1535	1774	0	1789	1774	0	1781
Q Serve(g_s), s	1.7	39.3	1.2	1.9	39.1	2.7	8.3	0.0	9.6	10.5	0.0	12.4
Cycle Q Clear(g_c), s	1.7	39.3	1.2	1.9	39.1	2.7	8.3	0.0	9.6	10.5	0.0	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.21
Lane Grp Cap(c), veh/h	25	1667	503	35	1657	500	177	0	178	295	0	296
V/C Ratio(X)	1.86	1.08	0.08	0.80	1.58	0.10	0.71	0.00	0.82	0.57	0.00	0.67
Avail Cap(c_a), veh/h	237	1667	503	237	1657	500	237	0	239	464	0	466
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	0.32	0.32	0.32	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.3	20.7	14.1	58.6	40.5	28.2	52.3	0.0	52.9	46.1	0.0	46.9
Incr Delay (d2), s/veh	395.2	42.9	0.1	5.0	260.6	0.1	5.2	0.0	13.6	0.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	24.5	0.5	1.0	58.2	1.1	4.3	0.0	5.4	5.2	0.0	6.2
LnGrp Delay(d),s/veh	453.4	63.6	14.2	63.6	301.0	28.3	57.6	0.0	66.5	46.7	0.0	47.9
LnGrp LOS	F	F	B	E	F	C	E		E	D		D
Approach Vol, veh/h	1884			2690			272			365		
Approach Delay, s/veh	72.2			293.6			62.4			47.3		
Approach LOS	E			F			E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.4	44.2	24.6		6.6	44.0	16.0					
Change Period (Y+Rc), s	4.0	4.9	4.6		4.9	* 4.9	4.0					
Max Green Setting (Gmax), s	16.0	39.1	31.4		16.0	* 39	16.0					
Max Q Clear Time (g_c+I1), s	3.9	41.3	14.4		3.7	41.1	11.6					
Green Ext Time (p_c), s	0.0	0.0	0.9		1.2	0.0	0.4					

Intersection Summary

HCM 2010 Ctrl Delay 184.2
HCM 2010 LOS F

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

104: Target Dwy & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1587	60	70	2367	14	136	24	54	108	12	128
Future Volume (veh/h)	159	1587	60	70	2367	14	136	24	54	108	12	128
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	1671	63	74	2492	15	143	25	57	114	13	135
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	2309	87	329	2828	17	171	34	78	245	15	160
Arrive On Green	0.11	0.46	0.46	0.19	0.54	0.54	0.10	0.07	0.07	0.14	0.11	0.11
Sat Flow, veh/h	1774	5029	190	1774	5216	31	1774	498	1135	1774	139	1445
Grp Volume(v), veh/h	167	1126	608	74	1619	888	143	0	82	114	0	148
Grp Sat Flow(s),veh/h/ln	1774	1695	1828	1774	1695	1857	1774	0	1633	1774	0	1584
Q Serve(g_s), s	11.1	32.3	32.3	4.3	50.2	50.4	9.5	0.0	5.9	7.1	0.0	11.0
Cycle Q Clear(g_c), s	11.1	32.3	32.3	4.3	50.2	50.4	9.5	0.0	5.9	7.1	0.0	11.0
Prop In Lane	1.00		0.10	1.00		0.02	1.00		0.70	1.00		0.91
Lane Grp Cap(c), veh/h	195	1557	839	329	1838	1007	171	0	112	245	0	176
V/C Ratio(X)	0.86	0.72	0.72	0.23	0.88	0.88	0.84	0.00	0.73	0.46	0.00	0.84
Avail Cap(c_a), veh/h	310	1557	839	329	1838	1007	237	0	218	245	0	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.35	0.35	0.35	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.5	26.3	26.3	41.6	24.1	24.1	53.3	0.0	54.8	47.6	0.0	52.3
Incr Delay (d2), s/veh	5.4	2.1	3.8	0.0	2.2	4.0	16.8	0.0	8.7	1.4	0.0	22.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	15.5	17.1	2.1	24.0	26.8	5.4	0.0	2.9	3.6	0.0	5.9
LnGrp Delay(d),s/veh	57.9	28.4	30.1	41.6	26.3	28.1	70.1	0.0	63.5	49.0	0.0	74.4
LnGrp LOS	E	C	C	D	C	C	E		E	D		E
Approach Vol, veh/h	1901				2581				225			
Approach Delay, s/veh	31.5				27.4				67.7			
Approach LOS	C				C				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.1	60.0	15.5	17.3	17.2	70.0	20.6	12.3				
Change Period (Y+Rc), s	4.9	* 4.9	4.0	4.0	4.0	4.9	4.0	4.0				
Max Green Setting (Gmax), s	16.0	* 55	16.0	16.0	21.0	50.1	16.0	16.0				
Max Q Clear Time (g_c+I1), s	6.3	34.3	11.5	13.0	13.1	52.4	9.1	7.9				
Green Ext Time (p_c), s	2.6	18.5	0.1	0.2	0.1	0.0	0.7	0.2				

Intersection Summary

HCM 2010 Ctrl Delay 32.7
HCM 2010 LOS C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
105: Rocky Ridge Drive & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1428	157	150	1821	173	292	502	271	246	1153	480
Future Volume (veh/h)	130	1428	157	150	1821	173	292	502	271	246	1153	480
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	137	1503	0	158	1917	0	307	528	285	259	1214	505
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	630	1699	529	630	1699	529	374	1009	312	388	1047	324
Arrive On Green	0.37	0.67	0.00	0.24	0.44	0.00	0.11	0.20	0.20	0.11	0.21	0.21
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1571	3442	5085	1572
Grp Volume(v), veh/h	137	1503	0	158	1917	0	307	528	285	259	1214	505
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1571	1721	1695	1572
Q Serve(g_s), s	3.3	28.8	0.0	4.4	40.1	0.0	10.5	11.1	21.3	8.7	24.7	24.7
Cycle Q Clear(g_c), s	3.3	28.8	0.0	4.4	40.1	0.0	10.5	11.1	21.3	8.7	24.7	24.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	630	1699	529	630	1699	529	374	1009	312	388	1047	324
V/C Ratio(X)	0.22	0.88	0.00	0.25	1.13	0.00	0.82	0.52	0.91	0.67	1.16	1.56
Avail Cap(c_a), veh/h	630	1699	529	630	1699	529	488	1030	318	488	1047	324
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.00	0.22	0.22	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	18.0	0.0	38.8	33.3	0.0	52.3	43.0	47.1	51.1	47.6	47.6
Incr Delay (d2), s/veh	0.0	5.7	0.0	0.0	59.6	0.0	6.5	0.4	29.2	1.3	82.8	267.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	14.0	0.0	2.1	28.1	0.0	5.3	5.3	11.8	4.2	19.6	34.7
LnGrp Delay(d),s/veh	32.2	23.7	0.0	38.8	92.9	0.0	58.9	43.4	76.3	52.3	130.4	314.7
LnGrp LOS	C	C		D	F		E	D	E	D	F	F
Approach Vol, veh/h	1640			2075			1120			1978		
Approach Delay, s/veh	24.4			88.8			56.0			167.2		
Approach LOS	C			F			E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	45.0	18.0	31.0	26.0	45.0	18.5	30.5				
Change Period (Y+Rc), s	4.0	4.9	5.0	6.3	4.0	4.9	5.0	6.7				
Max Green Setting (Gmax), s	18.0	40.1	17.0	24.7	18.0	40.1	17.0	24.3				
Max Q Clear Time (g_c+I1), s	6.4	30.8	12.5	26.7	5.3	42.1	10.7	23.3				
Green Ext Time (p_c), s	0.4	8.3	0.6	0.0	0.4	0.0	0.7	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				90.7								
HCM 2010 LOS				F								

HCM 2010 Signalized Intersection Summary
106: Sierra College Blvd & Douglas Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	1779	451	421	1772	209	324	940	255	215	928	63
Future Volume (veh/h)	347	1779	451	421	1772	209	324	940	255	215	928	63
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	365	1873	0	443	1865	0	341	989	0	226	977	66
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	443	2076	620	516	2269	680	402	1200	347	315	1072	303
Arrive On Green	0.13	0.41	0.00	0.15	0.45	0.00	0.12	0.24	0.00	0.09	0.21	0.19
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1559
Grp Volume(v), veh/h	365	1873	0	443	1865	0	341	989	0	226	977	66
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1559
Q Serve(g_s), s	12.4	41.4	0.0	15.1	38.5	0.0	11.7	22.1	0.0	7.7	22.5	4.3
Cycle Q Clear(g_c), s	12.4	41.4	0.0	15.1	38.5	0.0	11.7	22.1	0.0	7.7	22.5	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	443	2076	620	516	2269	680	402	1200	347	315	1072	303
V/C Ratio(X)	0.82	0.90	0.00	0.86	0.82	0.00	0.85	0.82	0.00	0.72	0.91	0.22
Avail Cap(c_a), veh/h	459	2076	620	516	2269	680	402	1200	347	315	1072	303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	33.3	0.0	49.8	29.1	0.0	52.0	43.5	0.0	53.0	46.3	40.7
Incr Delay (d2), s/veh	10.4	6.9	0.0	13.0	2.6	0.0	15.0	5.1	0.0	6.6	11.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	20.6	0.0	8.1	18.5	0.0	6.4	10.9	0.0	3.9	11.7	1.9
LnGrp Delay(d),s/veh	61.4	40.2	0.0	62.7	31.7	0.0	66.9	48.6	0.0	59.6	58.1	41.3
LnGrp LOS	E	D		E	C		E	D		E	E	D
Approach Vol, veh/h	2238		2308				1330				1269	
Approach Delay, s/veh	43.6		37.6				53.3				57.5	
Approach LOS	D		D				D				E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	52.0	17.0	28.0	18.5	56.5	14.0	31.0				
Change Period (Y+Rc), s	6.0	6.0	4.0	5.7	4.0	6.0	4.0	5.7				
Max Green Setting (Gmax), s	17.0	46.0	13.0	22.3	15.0	50.0	10.0	25.3				
Max Q Clear Time (g_c+I1), s	17.1	43.4	13.7	24.5	14.4	40.5	9.7	24.1				
Green Ext Time (p_c), s	0.0	2.4	0.0	0.0	0.1	7.9	0.0	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay	45.9											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
115: Oakridge Dr & Cirby Way

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1099	18	182	1104	3	10	13	39	14	183	295
Future Volume (veh/h)	50	1099	18	182	1104	3	10	13	39	14	183	295
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	53	1157	19	192	1162	3	11	14	41	15	193	311
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	1836	30	177	2068	5	47	60	91	25	325	299
Arrive On Green	0.04	0.52	0.50	0.10	0.57	0.56	0.06	0.06	0.06	0.19	0.19	0.19
Sat Flow, veh/h	1774	3563	59	1774	3621	9	802	1021	1543	134	1722	1583
Grp Volume(v), veh/h	53	575	601	192	568	597	25	0	41	208	0	311
Grp Sat Flow(s),veh/h/ln	1774	1770	1852	1774	1770	1861	1823	0	1543	1856	0	1583
Q Serve(g_s), s	2.6	21.0	21.0	9.0	18.2	18.2	1.2	0.0	2.3	9.2	0.0	17.0
Cycle Q Clear(g_c), s	2.6	21.0	21.0	9.0	18.2	18.2	1.2	0.0	2.3	9.2	0.0	17.0
Prop In Lane	1.00		0.03	1.00		0.01	0.44		1.00	0.07		1.00
Lane Grp Cap(c), veh/h	79	912	955	177	1010	1063	108	0	91	351	0	299
V/C Ratio(X)	0.67	0.63	0.63	1.08	0.56	0.56	0.23	0.00	0.45	0.59	0.00	1.04
Avail Cap(c_a), veh/h	79	912	955	177	1010	1063	344	0	291	351	0	299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	15.6	15.7	40.5	12.2	12.2	40.4	0.0	40.9	33.3	0.0	36.5
Incr Delay (d2), s/veh	16.7	3.3	3.2	91.2	1.2	1.1	0.4	0.0	1.3	1.9	0.0	62.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	11.0	11.5	8.9	9.2	9.6	0.6	0.0	1.0	4.9	0.0	12.6
LnGrp Delay(d),s/veh	59.0	18.9	18.8	131.7	13.4	13.3	40.8	0.0	42.2	35.2	0.0	99.3
LnGrp LOS	E	B	B	F	B	B	D		D	D		F
Approach Vol, veh/h	1229			1357			66			519		
Approach Delay, s/veh	20.6			30.1			41.7			73.6		
Approach LOS	C			C			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	49.7		20.0	7.0	54.7		8.3				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	8.0	32.7		16.0	3.0	37.7		16.0				
Max Q Clear Time (g_c+I1), s	11.0	23.0		19.0	4.6	20.2		4.3				
Green Ext Time (p_c), s	0.0	8.9		0.0	0.0	15.2		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	33.8											
HCM 2010 LOS	C											

HCM 2010 Signalized Intersection Summary
116: Parkview Dr & Cirby Way

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1092	0	15	1333	13	12	0	5	31	0	25
Future Volume (veh/h)	28	1092	0	15	1333	13	12	0	5	31	0	25
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	29	1149	0	16	1403	14	13	0	5	33	0	26
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	2954	0	39	2965	30	97	0	11	155	0	72
Arrive On Green	0.03	0.83	0.00	0.02	0.83	0.81	0.05	0.00	0.05	0.05	0.00	0.05
Sat Flow, veh/h	1774	3632	0	1774	3590	36	621	6	241	1651	0	1583
Grp Volume(v), veh/h	29	1149	0	16	691	726	18	0	0	33	0	26
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1856	868	0	0	1651	0	1583
Q Serve(g_s), s	1.4	7.2	0.0	0.8	10.0	10.1	1.1	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	1.4	7.2	0.0	0.8	10.0	10.1	2.7	0.0	0.0	1.6	0.0	1.4
Prop In Lane	1.00		0.00	1.00		0.02	0.72		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	55	2954	0	39	1462	1533	108	0	0	155	0	72
V/C Ratio(X)	0.53	0.39	0.00	0.41	0.47	0.47	0.17	0.00	0.00	0.21	0.00	0.36
Avail Cap(c_a), veh/h	79	2954	0	79	1462	1533	393	0	0	435	0	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.0	1.8	0.0	43.4	2.2	2.2	43.1	0.0	0.0	41.8	0.0	41.7
Incr Delay (d2), s/veh	2.9	0.4	0.0	2.5	1.1	1.1	0.5	0.0	0.0	0.5	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.5	0.0	0.4	5.2	5.5	0.5	0.0	0.0	0.8	0.0	0.7
LnGrp Delay(d),s/veh	45.9	2.2	0.0	45.9	3.3	3.3	43.6	0.0	0.0	42.3	0.0	44.0
LnGrp LOS	D	A		D	A	A	D			D		D
Approach Vol, veh/h	1178			1433			18			59		
Approach Delay, s/veh	3.3			3.8			43.6			43.0		
Approach LOS	A			A			D			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	77.1		7.1	5.0	77.9		7.1				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	3.0	52.7		21.0	3.0	52.7		21.0				
Max Q Clear Time (g_c+I1), s	3.4	12.1		4.7	2.8	9.2		3.6				
Green Ext Time (p_c), s	0.0	30.4		0.2	0.0	32.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			4.7									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

117: Cirby Way & Rocky Ridge Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	595	402	696	218	791	616		
Future Volume (veh/h)	595	402	696	218	791	616		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	626	423	733	229	833	648		
Adj No. of Lanes	2	1	2	0	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1112	584	835	261	1003	984		
Arrive On Green	0.31	0.31	0.31	0.30	0.29	0.31		
Sat Flow, veh/h	3548	1863	2749	830	3442	1583		
Grp Volume(v), veh/h	626	423	488	474	833	648		
Grp Sat Flow(s),veh/h/ln	1774	1863	1770	1716	1721	1583		
Q Serve(g_s), s	13.2	18.2	23.5	23.6	20.4	23.6		
Cycle Q Clear(g_c), s	13.2	18.2	23.5	23.6	20.4	23.6		
Prop In Lane	1.00			0.48	1.00	1.00		
Lane Grp Cap(c), veh/h	1112	584	556	539	1003	984		
V/C Ratio(X)	0.56	0.72	0.88	0.88	0.83	0.66		
Avail Cap(c_a), veh/h	1112	584	560	543	1003	984		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.8	27.5	29.2	29.6	29.8	10.9		
Incr Delay (d2), s/veh	2.1	7.6	14.2	14.5	8.0	3.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.8	10.5	13.6	13.4	10.7	17.0		
LnGrp Delay(d),s/veh	27.8	35.1	43.4	44.1	37.8	14.4		
LnGrp LOS	C	D	D	D	D	B		
Approach Vol, veh/h		1049	962		1481			
Approach Delay, s/veh		30.8	43.8		27.5			
Approach LOS		C	D		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		29.2		29.8
Change Period (Y+Rc), s				5.3		4.0		4.0
Max Green Setting (Gmax), s				25.7		25.0		26.0
Max Q Clear Time (g_c+I1), s				20.2		25.6		25.6
Green Ext Time (p_c), s				3.3		0.0		0.2
Intersection Summary								
HCM 2010 Ctrl Delay			33.0					
HCM 2010 LOS			C					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
118: Champion Oaks Dr & Cirby Way

Cumulative Plus Project
PM Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	24	792	185	40	617	8	52	3	2	13	6	312		
Future Volume (veh/h)	24	792	185	40	617	8	52	3	2	13	6	312		
Number	5	2	12	1	6	16	3	8	18	7	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863		
Adj Flow Rate, veh/h	25	834	195	42	649	8	55	3	2	14	6	328		
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	101	1301	304	134	1702	21	405	21	10	402	150	425		
Arrive On Green	0.06	0.46	0.44	0.08	0.48	0.45	0.27	0.27	0.27	0.27	0.27	0.27		
Sat Flow, veh/h	1774	2849	666	1774	3580	44	959	78	36	1009	560	1583		
Grp Volume(v), veh/h	25	518	511	42	321	336	60	0	0	20	0	328		
Grp Sat Flow(s),veh/h/ln	1774	1770	1745	1774	1770	1855	1073	0	0	1568	0	1583		
Q Serve(g_s), s	0.6	10.5	10.6	1.0	5.4	5.4	1.7	0.0	0.0	0.0	0.0	8.9		
Cycle Q Clear(g_c), s	0.6	10.5	10.6	1.0	5.4	5.4	2.1	0.0	0.0	0.4	0.0	8.9		
Prop In Lane	1.00		0.38	1.00		0.02	0.92		0.03	0.70		1.00		
Lane Grp Cap(c), veh/h	101	808	797	134	841	882	436	0	0	552	0	425		
V/C Ratio(X)	0.25	0.64	0.64	0.31	0.38	0.38	0.14	0.00	0.00	0.04	0.00	0.77		
Avail Cap(c_a), veh/h	266	861	849	266	861	903	632	0	0	828	0	713		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	21.0	9.7	9.9	20.4	7.8	7.9	13.2	0.0	0.0	12.6	0.0	15.7		
Incr Delay (d2), s/veh	0.5	1.9	1.9	0.5	0.5	0.4	0.1	0.0	0.0	0.0	0.0	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.3	5.5	5.4	0.5	2.7	2.8	0.6	0.0	0.0	0.2	0.0	4.0		
LnGrp Delay(d),s/veh	21.5	11.6	11.8	20.9	8.3	8.3	13.3	0.0	0.0	12.6	0.0	16.9		
LnGrp LOS	C	B	B	C	A	A	B			B		B		
Approach Vol, veh/h	1054			699				60			348			
Approach Delay, s/veh	11.9			9.0				13.3			16.6			
Approach LOS	B			A				B			B			
Timer	1	2	3	4	5	6	7	8						
Assigned Phs	1	2			4	5	6	8						
Phs Duration (G+Y+Rc), s	6.5	24.6			15.5	5.7	25.5	15.5						
Change Period (Y+Rc), s	4.0	5.3			4.0	4.0	5.3	4.0						
Max Green Setting (Gmax), s	6.0	20.7			20.0	6.0	20.7	20.0						
Max Q Clear Time (g_c+I1), s	3.0	12.6			10.9	2.6	7.4	4.1						
Green Ext Time (p_c), s	0.0	6.7			0.7	0.0	10.3	0.9						
Intersection Summary														
HCM 2010 Ctrl Delay					11.8									
HCM 2010 LOS					B									

HCM 2010 Signalized Intersection Summary
119: Cirby Way & Old Auburn Rd

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	467	359	274	310	260	569		
Future Volume (veh/h)	467	359	274	310	260	569		
Number	3	18	6	16	5	2		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	435	439	288	326	274	599		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	601	533	677	589	275	1062		
Arrive On Green	0.34	0.33	0.36	0.35	0.15	0.57		
Sat Flow, veh/h	1774	1615	1863	1583	1774	1863		
Grp Volume(v), veh/h	435	439	288	326	274	599		
Grp Sat Flow(s),veh/h/ln	1774	1615	1863	1583	1774	1863		
Q Serve(g_s), s	12.5	14.5	6.8	9.5	9.0	11.9		
Cycle Q Clear(g_c), s	12.5	14.5	6.8	9.5	9.0	11.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	601	533	677	589	275	1062		
V/C Ratio(X)	0.72	0.82	0.43	0.55	1.00	0.56		
Avail Cap(c_a), veh/h	778	694	871	754	275	1256		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.8	17.9	13.9	14.4	24.6	7.9		
Incr Delay (d2), s/veh	1.5	4.8	0.7	1.3	53.7	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.3	7.2	3.6	4.5	8.4	6.2		
LnGrp Delay(d),s/veh	18.3	22.7	14.6	15.7	78.3	8.7		
LnGrp LOS	B	C	B	B	E	A		
Approach Vol, veh/h	874		614			873		
Approach Delay, s/veh	20.5		15.2			30.5		
Approach LOS	C		B			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.9			12.0	23.9		22.2
Change Period (Y+Rc), s		5.3			4.0	5.3		4.0
Max Green Setting (Gmax), s		36.7			8.0	24.7		24.0
Max Q Clear Time (g_c+I1), s		13.9			11.0	11.5		16.5
Green Ext Time (p_c), s		9.9			0.0	7.2		1.7
Intersection Summary								
HCM 2010 Ctrl Delay			22.8					
HCM 2010 LOS			C					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

120: Westbrook Blvd & Parkway One

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	7	47	102	10	66	129	1406	149	79	1144	40
Future Volume (veh/h)	18	7	47	102	10	66	129	1406	149	79	1144	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	19	7	49	107	11	69	136	1480	157	83	1204	42
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	33	80	68	137	190	161	177	2199	685	106	1994	621
Arrive On Green	0.02	0.04	0.04	0.08	0.10	0.10	0.10	0.43	0.43	0.06	0.39	0.39
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	19	7	49	107	11	69	136	1480	157	83	1204	42
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.5	0.2	1.6	3.1	0.3	2.1	3.9	12.0	3.2	2.4	9.7	0.9
Cycle Q Clear(g_c), s	0.5	0.2	1.6	3.1	0.3	2.1	3.9	12.0	3.2	2.4	9.7	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	80	68	137	190	161	177	2199	685	106	1994	621
V/C Ratio(X)	0.58	0.09	0.72	0.78	0.06	0.43	0.77	0.67	0.23	0.79	0.60	0.07
Avail Cap(c_a), veh/h	138	1155	982	241	1263	1074	413	2365	736	241	1994	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	23.7	24.4	23.4	20.9	21.8	22.6	11.7	9.2	23.9	12.5	9.8
Incr Delay (d2), s/veh	15.1	0.5	13.3	9.1	0.1	1.8	6.8	0.7	0.2	12.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.1	0.9	1.8	0.1	1.0	2.2	5.6	1.4	1.5	4.6	0.4
LnGrp Delay(d),s/veh	40.3	24.2	37.7	32.5	21.1	23.5	29.4	12.4	9.4	35.9	13.0	9.8
LnGrp LOS	D	C	D	C	C	C	C	B	A	D	B	A
Approach Vol, veh/h	75				187				1773			
Approach Delay, s/veh	37.1				28.5				13.5			
Approach LOS	D				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	27.3	9.0	7.2	10.2	25.2	6.0	10.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	24.0	7.0	32.0	12.0	19.0	4.0	35.0				
Max Q Clear Time (g_c+I1), s	4.4	14.0	5.1	3.6	5.9	11.7	2.5	4.1				
Green Ext Time (p_c), s	0.0	8.3	0.0	0.4	0.2	6.8	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	15.2											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

121: Westbrook Blvd & Nobo Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	2	24	11	1	25	74	1846	29	46	1216	21
Future Volume (veh/h)	11	2	24	11	1	25	74	1846	29	46	1216	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	2	25	12	1	26	78	1943	31	48	1280	22
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	122	72	58	122	72	134	2844	853	105	2760	827
Arrive On Green	0.03	0.07	0.05	0.03	0.07	0.05	0.08	0.56	0.54	0.06	0.54	0.52
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	12	2	25	12	1	26	78	1943	31	48	1280	22
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.3	0.0	0.8	0.3	0.0	0.8	2.1	13.5	0.5	1.3	7.6	0.3
Cycle Q Clear(g_c), s	0.3	0.0	0.8	0.3	0.0	0.8	2.1	13.5	0.5	1.3	7.6	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	58	122	72	58	122	72	134	2844	853	105	2760	827
V/C Ratio(X)	0.21	0.02	0.35	0.21	0.01	0.36	0.58	0.68	0.04	0.46	0.46	0.03
Avail Cap(c_a), veh/h	180	1282	1057	215	1319	1090	431	3088	929	215	2760	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	21.6	22.9	23.3	21.6	22.9	22.1	7.8	5.4	22.5	6.9	5.7
Incr Delay (d2), s/veh	1.8	0.1	2.9	1.8	0.0	3.0	3.9	0.6	0.0	3.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.4	0.2	0.0	0.4	1.2	6.3	0.2	0.7	3.5	0.1
LnGrp Delay(d),s/veh	25.0	21.6	25.8	25.0	21.6	25.9	26.0	8.3	5.4	25.5	7.0	5.7
LnGrp LOS	C	C	C	C	C	C	C	A	A	C	A	A
Approach Vol, veh/h	39			39			2052			1350		
Approach Delay, s/veh	25.3			25.6			9.0			7.7		
Approach LOS	C			C			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	30.6	5.6	6.2	7.7	29.8	5.6	6.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	28.0	5.0	32.0	11.0	22.0	4.0	33.0				
Max Q Clear Time (g_c+I1), s	3.3	15.5	2.3	2.8	4.1	9.6	2.3	2.8				
Green Ext Time (p_c), s	0.0	10.2	0.0	0.1	0.1	11.8	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	8.8											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
122: Westbrook Blvd & N Brookstone Drive

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	73	51	117	1355	1109	164		
Future Volume (veh/h)	73	51	117	1355	1109	164		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	77	54	123	1426	1167	173		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	141	126	158	3590	2592	806		
Arrive On Green	0.08	0.08	0.09	0.71	0.51	0.51		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1580		
Grp Volume(v), veh/h	77	54	123	1426	1167	173		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1580		
Q Serve(g_s), s	1.6	1.2	2.5	4.3	5.4	2.2		
Cycle Q Clear(g_c), s	1.6	1.2	2.5	4.3	5.4	2.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	141	126	158	3590	2592	806		
V/C Ratio(X)	0.55	0.43	0.78	0.40	0.45	0.21		
Avail Cap(c_a), veh/h	951	849	380	4361	2725	847		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.5	16.4	16.6	2.2	5.8	5.0		
Incr Delay (d2), s/veh	3.2	2.3	8.0	0.1	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	1.2	1.6	1.9	2.5	1.0		
LnGrp Delay(d),s/veh	19.8	18.7	24.6	2.3	5.9	5.2		
LnGrp LOS	B	B	C	A	A	A		
Approach Vol, veh/h	131			1549	1340			
Approach Delay, s/veh	19.3			4.1	5.8			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.3		7.0	7.3	23.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	8.0	20.0		
Max Q Clear Time (g_c+I1), s		6.3		3.6	4.5	7.4		
Green Ext Time (p_c), s		20.1		0.3	0.1	10.9		
Intersection Summary								
HCM 2010 Ctrl Delay			5.5					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
123: Westbrook Blvd & S Brookstone Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	18	22	54	1454	1117	43		
Future Volume (veh/h)	18	22	54	1454	1117	43		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	19	23	57	1531	1176	45		
Adj No. of Lanes	1	1	1	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	68	60	86	3758	2946	916		
Arrive On Green	0.04	0.04	0.05	0.74	0.58	0.58		
Sat Flow, veh/h	1774	1583	1774	5253	5253	1581		
Grp Volume(v), veh/h	19	23	57	1531	1176	45		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1695	1695	1581		
Q Serve(g_s), s	0.4	0.5	1.1	4.0	4.5	0.4		
Cycle Q Clear(g_c), s	0.4	0.5	1.1	4.0	4.5	0.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	68	60	86	3758	2946	916		
V/C Ratio(X)	0.28	0.38	0.67	0.41	0.40	0.05		
Avail Cap(c_a), veh/h	988	882	296	4533	3116	969		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.8	16.9	16.8	1.7	4.1	3.3		
Incr Delay (d2), s/veh	2.2	3.9	8.5	0.1	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.7	1.9	2.1	0.2		
LnGrp Delay(d),s/veh	19.0	20.8	25.3	1.8	4.2	3.3		
LnGrp LOS	B	C	C	A	A	A		
Approach Vol, veh/h	42			1588	1221			
Approach Delay, s/veh	20.0			2.7	4.2			
Approach LOS	B			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.5		5.4	5.7	24.8		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		32.0		20.0	6.0	22.0		
Max Q Clear Time (g_c+I1), s		6.0		2.5	3.1	6.5		
Green Ext Time (p_c), s		20.5		0.1	0.0	13.2		
Intersection Summary								
HCM 2010 Ctrl Delay			3.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
124: Westbrook Blvd & Octave Avenue/Payson Avenue

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	27	0	43	13	0	5	104	1439	31	9	1310	79
Future Volume (veh/h)	27	0	43	13	0	5	104	1439	31	9	1310	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	28	0	45	14	0	5	109	1515	33	9	1379	83
Adj No. of Lanes	0	1	0	0	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	0	69	36	0	13	140	3132	974	17	2777	863
Arrive On Green	0.07	0.00	0.07	0.03	0.00	0.03	0.08	0.62	0.62	0.01	0.55	0.55
Sat Flow, veh/h	630	0	1012	1264	0	451	1774	5085	1581	1774	5085	1580
Grp Volume(v), veh/h	73	0	0	19	0	0	109	1515	33	9	1379	83
Grp Sat Flow(s),veh/h/ln	1642	0	0	1715	0	0	1774	1695	1581	1774	1695	1580
Q Serve(g_s), s	2.5	0.0	0.0	0.6	0.0	0.0	3.5	9.4	0.5	0.3	9.7	1.4
Cycle Q Clear(g_c), s	2.5	0.0	0.0	0.6	0.0	0.0	3.5	9.4	0.5	0.3	9.7	1.4
Prop In Lane	0.38		0.62	0.74		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	0	0	49	0	0	140	3132	974	17	2777	863
V/C Ratio(X)	0.65	0.00	0.00	0.39	0.00	0.00	0.78	0.48	0.03	0.54	0.50	0.10
Avail Cap(c_a), veh/h	1084	0	0	1132	0	0	246	3444	1071	123	3091	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	0.0	27.5	0.0	0.0	26.0	6.0	4.3	28.4	8.1	6.3
Incr Delay (d2), s/veh	6.2	0.0	0.0	4.9	0.0	0.0	8.9	0.1	0.0	25.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.4	0.0	0.0	2.0	4.4	0.2	0.3	4.5	0.6
LnGrp Delay(d),s/veh	32.4	0.0	0.0	32.4	0.0	0.0	34.9	6.2	4.4	53.5	8.3	6.3
LnGrp LOS	C			C			C	A	A	D	A	A
Approach Vol, veh/h	73					19		1657		1471		
Approach Delay, s/veh	32.4					32.4		8.0		8.4		
Approach LOS	C					C		A		A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.5	39.5	7.9		8.6	35.4	5.6					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	4.0	39.0	38.0		8.0	35.0	38.0					
Max Q Clear Time (g_c+I1), s	2.3	11.4	4.5		5.5	11.7	2.6					
Green Ext Time (p_c), s	0.0	22.8	0.4		0.1	19.7	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			8.9									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

125: Wal*Mart & Lead Hill Blvd

Cumulative Plus Project
PM Peak Hour

	→	↘	↙	←	↖	↗		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑		
Traffic Volume (veh/h)	818	131	133	678	139	75		
Future Volume (veh/h)	818	131	133	678	139	75		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	861	138	140	714	146	79		
Adj No. of Lanes	2	1	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1738	777	211	2370	339	303		
Arrive On Green	0.49	0.49	0.12	0.67	0.19	0.19		
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583		
Grp Volume(v), veh/h	861	138	140	714	146	79		
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583		
Q Serve(g_s), s	8.2	2.4	3.8	4.2	3.6	2.1		
Cycle Q Clear(g_c), s	8.2	2.4	3.8	4.2	3.6	2.1		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1738	777	211	2370	339	303		
V/C Ratio(X)	0.50	0.18	0.66	0.30	0.43	0.26		
Avail Cap(c_a), veh/h	1901	850	247	2725	741	661		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.6	7.1	21.2	3.4	17.9	17.3		
Incr Delay (d2), s/veh	0.4	0.2	3.3	0.1	0.3	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.0	1.1	2.1	2.0	1.8	1.0		
LnGrp Delay(d),s/veh	9.0	7.3	24.5	3.6	18.2	17.5		
LnGrp LOS	A	A	C	A	B	B		
Approach Vol, veh/h	999			854	225			
Approach Delay, s/veh	8.8			7.0	18.0			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	27.0				36.0		14.3
Change Period (Y+Rc), s	4.0	5.7				* 5.7		5.7
Max Green Setting (Gmax), s	6.0	23.6				* 35		20.0
Max Q Clear Time (g_c+I1), s	5.8	10.2				6.2		5.6
Green Ext Time (p_c), s	0.0	11.1				20.8		0.3
Intersection Summary								
HCM 2010 Ctrl Delay			9.0					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
126: Westbrook Blvd & Solaire Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	19	26	21	13	33	53	949	49	60	836	137
Future Volume (veh/h)	50	19	26	21	13	33	53	949	49	60	836	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	53	20	27	22	14	35	56	999	52	63	880	144
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	194	131	76	154	98	116	2468	735	123	2486	740
Arrive On Green	0.06	0.10	0.08	0.04	0.08	0.06	0.07	0.49	0.46	0.07	0.49	0.47
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	53	20	27	22	14	35	56	999	52	63	880	144
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	1.4	0.5	0.7	0.6	0.3	1.0	1.4	5.9	0.9	1.6	5.0	2.5
Cycle Q Clear(g_c), s	1.4	0.5	0.7	0.6	0.3	1.0	1.4	5.9	0.9	1.6	5.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	194	131	76	154	98	116	2468	735	123	2486	740
V/C Ratio(X)	0.47	0.10	0.21	0.29	0.09	0.36	0.48	0.40	0.07	0.51	0.35	0.19
Avail Cap(c_a), veh/h	227	1272	1048	189	1232	1014	265	3039	912	227	2930	879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	19.0	20.0	21.7	19.9	21.1	21.1	7.7	7.0	21.0	7.4	7.3
Incr Delay (d2), s/veh	3.0	0.2	0.8	2.1	0.3	2.2	3.1	0.1	0.0	3.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.2	0.4	0.3	0.2	0.5	0.8	2.7	0.4	0.9	2.3	1.1
LnGrp Delay(d),s/veh	24.1	19.2	20.8	23.8	20.1	23.3	24.2	7.8	7.0	24.4	7.5	7.4
LnGrp LOS	C	B	C	C	C	C	C	A	A	C	A	A
Approach Vol, veh/h	100				71				1107			
Approach Delay, s/veh	22.3				22.8				8.6			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	25.7	6.0	7.9	7.1	25.9	7.0	6.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	5.0	26.0	4.0	30.0	6.0	25.0	5.0	29.0				
Max Q Clear Time (g_c+I1), s	3.6	7.9	2.6	2.7	3.4	7.0	3.4	3.0				
Green Ext Time (p_c), s	0.0	12.8	0.0	0.3	0.0	12.8	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	9.5											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
127: Westbrook Blvd & Federico Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	50	42	121	174	0	89	1018	263	2	747	134
Future Volume (veh/h)	33	50	42	121	174	0	89	1018	263	2	747	134
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	53	44	127	183	0	94	1072	277	2	786	141
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	203	173	201	318	270	156	2243	665	41	1914	563
Arrive On Green	0.05	0.11	0.11	0.11	0.17	0.00	0.09	0.44	0.42	0.02	0.38	0.36
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	35	53	44	127	183	0	94	1072	277	2	786	141
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.9	1.2	1.2	3.3	4.3	0.0	2.4	7.2	5.9	0.1	5.5	3.0
Cycle Q Clear(g_c), s	0.9	1.2	1.2	3.3	4.3	0.0	2.4	7.2	5.9	0.1	5.5	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	203	173	201	318	270	156	2243	665	41	1914	563
V/C Ratio(X)	0.38	0.26	0.25	0.63	0.58	0.00	0.60	0.48	0.42	0.05	0.41	0.25
Avail Cap(c_a), veh/h	296	1283	1091	518	1516	1289	296	2442	727	185	2123	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	19.6	19.6	20.3	18.3	0.0	21.0	9.5	9.8	22.9	11.0	10.9
Incr Delay (d2), s/veh	2.6	0.7	0.8	3.2	1.6	0.0	3.7	0.2	0.4	0.5	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.6	1.8	2.4	0.0	1.4	3.3	2.6	0.0	2.6	1.3
LnGrp Delay(d),s/veh	24.5	20.2	20.3	23.5	19.9	0.0	24.8	9.6	10.2	23.4	11.2	11.2
LnGrp LOS	C	C	C	C	B		C	A	B	C	B	B
Approach Vol, veh/h	132				310				1443			
Approach Delay, s/veh	21.4				21.4				10.7			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	24.1	9.4	9.2	8.2	21.0	6.5	12.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	21.0	13.0	32.0	7.0	18.0	7.0	38.0				
Max Q Clear Time (g_c+I1), s	2.1	9.2	5.3	3.2	4.4	7.5	2.9	6.3				
Green Ext Time (p_c), s	0.0	9.5	0.2	1.5	0.0	8.6	0.0	1.5				
Intersection Summary												
HCM 2010 Ctrl Delay	12.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
128: Westbrook Blvd & SV EW Coll

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	39	14	1351	84	0	910		
Future Volume (veh/h)	39	14	1351	84	0	910		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	41	15	1422	88	0	958		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	83	74	3547	1104	5	3547		
Arrive On Green	0.05	0.05	0.70	0.70	0.00	0.70		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	41	15	1422	88	0	958		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	0.9	0.4	4.6	0.7	0.0	2.7		
Cycle Q Clear(g_c), s	0.9	0.4	4.6	0.7	0.0	2.7		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	83	74	3547	1104	5	3547		
V/C Ratio(X)	0.50	0.20	0.40	0.08	0.00	0.27		
Avail Cap(c_a), veh/h	1316	1175	3547	1104	182	4683		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	18.2	17.9	2.5	1.9	0.0	2.2		
Incr Delay (d2), s/veh	4.5	1.3	0.1	0.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.2	2.1	0.3	0.0	1.3		
LnGrp Delay(d),s/veh	22.7	19.3	2.6	1.9	0.0	2.2		
LnGrp LOS	C	B	A	A		A		
Approach Vol, veh/h	56		1510			958		
Approach Delay, s/veh	21.8		2.5			2.2		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	0.0	32.3				32.3		6.8
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	4.0	27.0				36.0		29.0
Max Q Clear Time (g_c+l1), s	0.0	6.6				4.7		2.9
Green Ext Time (p_c), s	0.0	16.4				22.5		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			2.8					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
129: Westbrook Blvd & Sierra Village Dr

Cumulative Plus Project
PM Peak Hour

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Traffic Volume (veh/h)	219	30	17	53	14	10	68	1468	198	9	1291	116			
Future Volume (veh/h)	219	30	17	53	14	10	68	1468	198	9	1291	116			
Number	7	4	14	3	8	18	5	2	12	1	6	16			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	231	32	18	56	15	11	72	1545	208	9	1359	122			
Adj No. of Lanes	1	1	1	1	1	1	0	3	1	1	3	1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2			
Cap, veh/h	269	248	211	72	41	34	123	2458	909	16	3276	1020			
Arrive On Green	0.15	0.13	0.13	0.04	0.02	0.02	0.57	0.57	0.57	0.01	0.64	0.64			
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	127	4280	1583	1774	5085	1583			
Grp Volume(v), veh/h	231	32	18	56	15	11	494	1123	208	9	1359	122			
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1322	1543	1583	1774	1695	1583			
Q Serve(g_s), s	10.5	1.2	0.8	2.6	0.7	0.6	2.6	20.1	5.3	0.4	10.7	2.4			
Cycle Q Clear(g_c), s	10.5	1.2	0.8	2.6	0.7	0.6	14.0	20.1	5.3	0.4	10.7	2.4			
Prop In Lane	1.00		1.00	1.00		1.00	0.15		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	269	248	211	72	41	34	809	1772	909	16	3276	1020			
V/C Ratio(X)	0.86	0.13	0.09	0.78	0.37	0.32	0.61	0.63	0.23	0.56	0.41	0.12			
Avail Cap(c_a), veh/h	302	860	731	172	724	616	847	1874	962	86	3645	1135			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	34.0	31.5	31.3	39.1	39.7	39.7	10.2	11.7	8.6	40.6	7.1	5.6			
Incr Delay (d2), s/veh	19.5	0.2	0.2	16.7	5.5	5.2	1.2	0.7	0.1	27.3	0.1	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.6	0.7	0.4	1.6	0.4	0.3	6.9	8.6	2.3	0.3	4.9	1.1			
LnGrp Delay(d),s/veh	53.6	31.7	31.4	55.8	45.2	44.9	11.4	12.4	8.7	67.9	7.2	5.7			
LnGrp LOS	D	C	C	E	D	D	B	B	A	E	A	A			
Approach Vol, veh/h	281				82		1825				1490				
Approach Delay, s/veh	49.7				52.4		11.7				7.4				
Approach LOS	D				D		B				A				
Timer	1	2	3	4	5	6	7	8							
Assigned Phs	1	2	3	4			6	7	8						
Phs Duration (G+Y+Rc), s	5.7	52.3	8.3	16.0			58.0	17.5	6.8						
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0			5.0	5.0	5.0						
Max Green Setting (Gmax), s	4.0	50.0	8.0	38.0			59.0	14.0	32.0						
Max Q Clear Time (g_c+I1), s	2.4	22.1	4.6	3.2			12.7	12.5	2.7						
Green Ext Time (p_c), s	0.0	25.2	0.0	0.3			39.4	0.1	0.3						
Intersection Summary															
HCM 2010 Ctrl Delay			13.8												
HCM 2010 LOS			B												

HCM 2010 Signalized Intersection Summary

130: Fiddymment Road & Angus Road

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	58	64	251	107	403	44	683	39	185	766	41
Future Volume (veh/h)	23	58	64	251	107	403	44	683	39	185	766	41
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	24	61	67	264	113	424	46	719	41	195	806	43
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	417	353	202	579	491	135	1086	484	227	1270	567
Arrive On Green	0.03	0.22	0.22	0.11	0.31	0.31	0.08	0.31	0.31	0.13	0.36	0.36
Sat Flow, veh/h	1774	1863	1579	1774	1863	1580	1774	3539	1578	1774	3539	1579
Grp Volume(v), veh/h	24	61	67	264	113	424	46	719	41	195	806	43
Grp Sat Flow(s),veh/h/ln	1774	1863	1579	1774	1863	1580	1774	1770	1578	1774	1770	1579
Q Serve(g_s), s	0.9	1.8	2.4	8.0	3.1	17.8	1.7	12.4	1.3	7.6	13.3	1.3
Cycle Q Clear(g_c), s	0.9	1.8	2.4	8.0	3.1	17.8	1.7	12.4	1.3	7.6	13.3	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	417	353	202	579	491	135	1086	484	227	1270	567
V/C Ratio(X)	0.51	0.15	0.19	1.31	0.20	0.86	0.34	0.66	0.08	0.86	0.63	0.08
Avail Cap(c_a), veh/h	126	689	584	202	769	652	227	1309	584	227	1309	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	21.9	22.1	31.1	17.8	22.8	30.8	21.2	17.3	30.0	18.7	14.8
Incr Delay (d2), s/veh	8.2	0.2	0.3	169.3	0.2	9.1	1.5	0.9	0.1	26.4	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.0	1.1	13.4	1.6	8.9	0.9	6.1	0.6	5.4	6.7	0.6
LnGrp Delay(d),s/veh	42.0	22.1	22.4	200.5	17.9	31.9	32.3	22.1	17.4	56.4	19.7	14.9
LnGrp LOS	D	C	C	F	B	C	C	C	B	E	B	B
Approach Vol, veh/h	152			801				806			1044	
Approach Delay, s/veh	25.3			85.5				22.5			26.3	
Approach LOS	C			F				C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	25.6	12.0	19.7	9.3	29.2	5.9	25.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	9.0	26.0	8.0	26.0	9.0	26.0	5.0	29.0				
Max Q Clear Time (g_c+I1), s	9.6	14.4	10.0	4.4	3.7	15.3	2.9	19.8				
Green Ext Time (p_c), s	0.0	7.1	0.0	2.6	0.0	6.7	0.0	1.9				
Intersection Summary												
HCM 2010 Ctrl Delay	42.1											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary
131: Fiddymment Rd & Hayden Pkwy (North)

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	18	61	121	8	0	150	739	107	0	924	89
Future Volume (veh/h)	43	18	61	121	8	0	150	739	107	0	924	89
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676	1676
Adj Flow Rate, veh/h	45	19	64	127	8	0	158	778	113	0	973	94
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	400	355	230	218	186	185	2123	935	76	1652	739
Arrive On Green	0.08	0.24	0.25	0.13	0.13	0.00	0.12	0.67	0.66	0.00	0.52	0.52
Sat Flow, veh/h	1597	1676	1425	1179	1676	1425	1597	3185	1425	559	3185	1425
Grp Volume(v), veh/h	45	19	64	127	8	0	158	778	113	0	973	94
Grp Sat Flow(s),veh/h/ln	1597	1676	1425	1179	1676	1425	1597	1593	1425	559	1593	1425
Q Serve(g_s), s	2.5	0.8	3.3	9.9	0.4	0.0	9.2	10.2	2.8	0.0	20.1	3.2
Cycle Q Clear(g_c), s	2.5	0.8	3.3	9.9	0.4	0.0	9.2	10.2	2.8	0.0	20.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	400	355	230	218	186	185	2123	935	76	1652	739
V/C Ratio(X)	0.37	0.05	0.18	0.55	0.04	0.00	0.85	0.37	0.12	0.00	0.59	0.13
Avail Cap(c_a), veh/h	169	903	782	549	673	572	185	2354	1038	117	1883	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	27.8	28.0	40.1	36.0	0.0	41.1	7.0	6.1	0.0	15.8	11.7
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.8	0.0	0.0	28.5	0.2	0.1	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	1.3	3.3	0.2	0.0	5.5	4.5	1.1	0.0	8.9	1.3
LnGrp Delay(d),s/veh	42.2	27.8	28.1	40.9	36.0	0.0	69.6	7.2	6.2	0.0	16.5	11.9
LnGrp LOS	D	C	C	D	D		E	A	A		B	B
Approach Vol, veh/h	128				135			1049			1067	
Approach Delay, s/veh	33.0				40.6			16.5			16.1	
Approach LOS	C				D			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4	5	6	7	8				
Phs Duration (G+Y+Rc), s	68.1			26.6	14.0	54.1	10.2	16.3				
Change Period (Y+Rc), s	6.0			4.0	4.0	6.0	4.0	4.0				
Max Green Setting (Gmax), s	69.0			51.0	10.0	55.0	9.0	38.0				
Max Q Clear Time (g_c+I1), s	12.2			5.3	11.2	22.1	4.5	11.9				
Green Ext Time (p_c), s	39.2			0.5	0.0	26.1	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	18.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
132: Fiddymment Ranch EW Rd & Fiddymment Rd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	29	121	378	888	926	52		
Future Volume (veh/h)	29	121	378	888	926	52		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	31	127	398	935	975	55		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	188	168	441	2666	1537	688		
Arrive On Green	0.11	0.11	0.25	0.75	0.43	0.43		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	31	127	398	935	975	55		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	1.1	5.5	15.4	6.3	15.3	1.4		
Cycle Q Clear(g_c), s	1.1	5.5	15.4	6.3	15.3	1.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	188	168	441	2666	1537	688		
V/C Ratio(X)	0.17	0.76	0.90	0.35	0.63	0.08		
Avail Cap(c_a), veh/h	475	424	475	3040	1844	825		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.9	30.9	25.8	2.9	15.7	11.8		
Incr Delay (d2), s/veh	0.4	6.8	19.5	0.1	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	0.3	9.9	3.0	7.6	0.6		
LnGrp Delay(d),s/veh	29.3	37.7	45.3	3.0	16.2	11.8		
LnGrp LOS	C	D	D	A	B	B		
Approach Vol, veh/h	158			1333	1030			
Approach Delay, s/veh	36.0			15.6	16.0			
Approach LOS	D			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		58.5		12.5	22.7	35.8		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		61.0		19.0	19.0	37.0		
Max Q Clear Time (g_c+I1), s		8.3		7.5	17.4	17.3		
Green Ext Time (p_c), s		23.9		0.3	0.2	13.6		
Intersection Summary								
HCM 2010 Ctrl Delay			17.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
133: Fiddymment Rd & Hayden Pkwy (South)

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	114	76	222	1293	1182	175		
Future Volume (veh/h)	114	76	222	1293	1182	175		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	120	80	234	1361	1244	184		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	283	252	308	2649	1859	832		
Arrive On Green	0.16	0.16	0.17	0.75	0.53	0.53		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	120	80	234	1361	1244	184		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	3.7	2.7	7.6	9.6	15.6	3.8		
Cycle Q Clear(g_c), s	3.7	2.7	7.6	9.6	15.6	3.8		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	283	252	308	2649	1859	832		
V/C Ratio(X)	0.42	0.32	0.76	0.51	0.67	0.22		
Avail Cap(c_a), veh/h	612	547	379	2816	1885	843		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.1	22.6	23.9	3.1	10.6	7.8		
Incr Delay (d2), s/veh	0.4	0.3	5.2	0.3	1.2	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.8	2.5	4.1	4.6	7.9	1.7		
LnGrp Delay(d),s/veh	23.4	22.9	29.1	3.4	11.7	8.0		
LnGrp LOS	C	C	C	A	B	A		
Approach Vol, veh/h	200			1595	1428			
Approach Delay, s/veh	23.2			7.2	11.3			
Approach LOS	C			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.1		12.7	13.6	34.6		
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0		
Max Green Setting (Gmax), s		45.0		20.0	12.0	29.0		
Max Q Clear Time (g_c+I1), s		11.6		5.7	9.6	17.6		
Green Ext Time (p_c), s		30.4		0.4	0.1	10.9		
Intersection Summary								
HCM 2010 Ctrl Delay			10.0					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
134: Fiddymment Rd & Village Green Dr/Del Webb Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	35	12	74	145	158	25	1252	38	39	922	274
Future Volume (veh/h)	115	35	12	74	145	158	25	1252	38	39	922	274
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	37	13	78	153	166	26	1318	40	41	971	288
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	258	207	228	240	204	103	1730	774	133	1789	800
Arrive On Green	0.14	0.14	0.13	0.13	0.13	0.13	0.06	0.49	0.49	0.07	0.51	0.51
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	121	37	13	78	153	166	26	1318	40	41	971	288
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.7	1.3	0.5	3.0	5.8	7.6	1.0	22.6	1.0	1.6	13.9	8.2
Cycle Q Clear(g_c), s	4.7	1.3	0.5	3.0	5.8	7.6	1.0	22.6	1.0	1.6	13.9	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	258	207	228	240	204	103	1730	774	133	1789	800
V/C Ratio(X)	0.49	0.14	0.06	0.34	0.64	0.81	0.25	0.76	0.05	0.31	0.54	0.36
Avail Cap(c_a), veh/h	514	540	446	228	240	204	214	1766	790	214	1789	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	28.2	28.4	29.6	30.8	31.6	33.6	15.5	10.0	32.7	12.6	11.1
Incr Delay (d2), s/veh	1.6	0.3	0.1	0.3	4.3	20.5	0.5	2.3	0.1	0.5	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.7	0.2	1.5	3.3	4.5	0.5	11.5	0.4	0.8	6.9	3.6
LnGrp Delay(d),s/veh	31.3	28.5	28.5	29.9	35.1	52.1	34.0	17.8	10.0	33.2	13.1	11.7
LnGrp LOS	C	C	C	C	D	D	C	B	B	C	B	B
Approach Vol, veh/h	171		397		1384		1300					
Approach Delay, s/veh	30.5		41.2		17.9		13.4					
Approach LOS	C		D		B		B					
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	8.6	39.1	13.6		7.3	40.3	13.3					
Change Period (Y+Rc), s	4.0	6.0	4.9		4.0	6.0	5.3					
Max Green Setting (Gmax), s	8.0	33.8	20.0		8.0	33.8	8.0					
Max Q Clear Time (g_c+I1), s	3.6	24.6	6.7		3.0	15.9	9.6					
Green Ext Time (p_c), s	0.0	8.4	0.4		0.0	16.9	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			19.6									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

135: Fiddymment Rd & Westlake Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	32	26	1685	63	37	1211		
Future Volume (veh/h)	32	26	1685	63	37	1211		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	34	27	1774	66	39	1275		
Adj No. of Lanes	0	0	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	0	2	2	2	2		
Cap, veh/h	42	33	3251	1012	58	3897		
Arrive On Green	0.05	0.05	0.64	0.64	0.03	0.77		
Sat Flow, veh/h	925	735	5253	1583	1774	5253		
Grp Volume(v), veh/h	62	0	1774	66	39	1275		
Grp Sat Flow(s),veh/h/ln	1687	0	1695	1583	1774	1695		
Q Serve(g_s), s	1.9	0.0	10.3	0.8	1.2	4.2		
Cycle Q Clear(g_c), s	1.9	0.0	10.3	0.8	1.2	4.2		
Prop In Lane	0.55	0.44		1.00	1.00			
Lane Grp Cap(c), veh/h	77	0	3251	1012	58	3897		
V/C Ratio(X)	0.81	0.00	0.55	0.07	0.67	0.33		
Avail Cap(c_a), veh/h	508	0	3251	1012	367	4692		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.1	0.0	5.3	3.6	25.4	1.9		
Incr Delay (d2), s/veh	17.9	0.0	0.2	0.0	12.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.0	4.7	0.4	0.8	1.9		
LnGrp Delay(d),s/veh	43.0	0.0	5.5	3.6	37.7	2.0		
LnGrp LOS	D		A	A	D	A		
Approach Vol, veh/h	62		1840			1314		
Approach Delay, s/veh	43.0		5.4			3.0		
Approach LOS	D		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.8	39.0				45.7		7.4
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	33.0				49.0		16.0
Max Q Clear Time (g_c+I1), s	3.2	12.3				6.2		3.9
Green Ext Time (p_c), s	0.0	18.9				34.5		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			5.2					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary
136: Fiddymment Road & San Fernando Drive

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	4	243	18	2	15	27	1597	44	37	1106	100
Future Volume (veh/h)	136	4	243	18	2	15	27	1597	44	37	1106	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	143	4	256	19	2	16	28	1681	46	39	1164	105
Adj No. of Lanes	1	1	0	1	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	5	342	32	24	194	43	2452	762	55	2486	773
Arrive On Green	0.10	0.22	0.22	0.02	0.14	0.14	0.02	0.48	0.48	0.03	0.49	0.49
Sat Flow, veh/h	1774	24	1558	1774	178	1426	1774	5085	1580	1774	5085	1580
Grp Volume(v), veh/h	143	0	260	19	0	18	28	1681	46	39	1164	105
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1604	1774	1695	1580	1774	1695	1580
Q Serve(g_s), s	5.1	0.0	9.9	0.7	0.0	0.6	1.0	16.4	1.0	1.4	9.8	2.3
Cycle Q Clear(g_c), s	5.1	0.0	9.9	0.7	0.0	0.6	1.0	16.4	1.0	1.4	9.8	2.3
Prop In Lane	1.00		0.98	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	0	348	32	0	218	43	2452	762	55	2486	773
V/C Ratio(X)	0.79	0.00	0.75	0.60	0.00	0.08	0.64	0.69	0.06	0.70	0.47	0.14
Avail Cap(c_a), veh/h	221	0	862	110	0	773	138	2452	762	110	2486	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	23.4	31.3	0.0	24.3	31.1	12.9	8.9	30.8	10.9	9.0
Incr Delay (d2), s/veh	14.7	0.0	3.2	16.7	0.0	0.2	14.9	1.6	0.2	15.0	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	4.6	0.5	0.0	0.3	0.7	8.0	0.5	0.9	4.7	1.1
LnGrp Delay(d),s/veh	42.9	0.0	26.6	48.0	0.0	24.4	45.9	14.5	9.0	45.9	11.5	9.4
LnGrp LOS	D		C	D		C	D	B	A	D	B	A
Approach Vol, veh/h	403					37		1755		1308		
Approach Delay, s/veh	32.4					36.5		14.8		12.4		
Approach LOS	C					D		B		B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	35.0	5.2	18.1	5.6	35.4	10.5	12.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	35.0	5.0	30.0	8.0	31.0				
Max Q Clear Time (g_c+I1), s	3.4	18.4	2.7	11.9	3.0	11.8	7.1	2.6				
Green Ext Time (p_c), s	0.0	11.3	0.0	1.7	0.0	15.9	0.0	1.7				
Intersection Summary												
HCM 2010 Ctrl Delay			16.2									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
137: Woodcreek Oaks Blvd & Northpark Dr

Cumulative Plus Project
PM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	0	11	80	67	10	0	472	0	168	0	0	0				
Future Volume (veh/h)	0	11	80	67	10	0	472	0	168	0	0	0				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863				
Adj Flow Rate, veh/h	0	12	84	71	11	0	497	0	177	0	0	0				
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	0	137	116	102	16	105	640	1277	571	6	12	5				
Arrive On Green	0.00	0.07	0.07	0.07	0.07	0.00	0.36	0.00	0.36	0.00	0.00	0.00				
Sat Flow, veh/h	0	1863	1583	1546	240	1583	1774	3539	1583	1774	3539	1583				
Grp Volume(v), veh/h	0	12	84	82	0	0	497	0	177	0	0	0				
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1785	0	1583	1774	1770	1583	1774	1770	1583				
Q Serve(g_s), s	0.0	0.2	1.6	1.3	0.0	0.0	7.5	0.0	2.4	0.0	0.0	0.0				
Cycle Q Clear(g_c), s	0.0	0.2	1.6	1.3	0.0	0.0	7.5	0.0	2.4	0.0	0.0	0.0				
Prop In Lane	0.00		1.00	0.87		1.00	1.00		1.00	1.00		1.00				
Lane Grp Cap(c), veh/h	0	137	116	118	0	105	640	1277	571	6	12	5				
V/C Ratio(X)	0.00	0.09	0.72	0.70	0.00	0.00	0.78	0.00	0.31	0.00	0.00	0.00				
Avail Cap(c_a), veh/h	0	1614	1372	1547	0	1372	1596	3774	1689	650	1887	844				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00				
Uniform Delay (d), s/veh	0.0	13.0	13.6	13.7	0.0	0.0	8.5	0.0	6.9	0.0	0.0	0.0				
Incr Delay (d2), s/veh	0.0	0.3	8.2	7.2	0.0	0.0	2.1	0.0	0.3	0.0	0.0	0.0				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.9	0.9	0.0	0.0	4.0	0.0	1.1	0.0	0.0	0.0				
LnGrp Delay(d),s/veh	0.0	13.2	21.8	20.9	0.0	0.0	10.6	0.0	7.2	0.0	0.0	0.0				
LnGrp LOS		B	C	C			B		A							
Approach Vol, veh/h	96					82		674		0						
Approach Delay, s/veh	20.7					20.9		9.7		0.0						
Approach LOS	C					C		A								
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	4		5	6	8									
Phs Duration (G+Y+Rc), s	0.0	15.8	7.2		15.8	0.0	7.0									
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0									
Max Green Setting (Gmax), s	11.0	32.0	26.0		27.0	16.0	26.0									
Max Q Clear Time (g_c+I1), s	0.0	4.4	3.6		9.5	0.0	3.3									
Green Ext Time (p_c), s	0.0	0.6	0.3		1.5	0.0	0.4									
Intersection Summary																
HCM 2010 Ctrl Delay			12.0													
HCM 2010 LOS			B													

HCM 2010 Signalized Intersection Summary
138: Woodcreek Oaks Blvd & Parkside Way

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	16	162	17	315	321	156	312	49	2	132	13
Future Volume (veh/h)	7	16	162	17	315	321	156	312	49	2	132	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	7	17	171	18	332	338	164	328	52	2	139	14
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	581	494	0	581	494	215	988	442	5	566	253
Arrive On Green	0.00	0.31	0.31	0.00	0.31	0.31	0.12	0.28	0.28	0.00	0.16	0.16
Sat Flow, veh/h	0	1863	1583	0	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	0	17	171	0	332	338	164	328	52	2	139	14
Grp Sat Flow(s),veh/h/ln	0	1863	1583	0	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.0	0.2	3.1	0.0	5.5	6.9	3.3	2.7	0.9	0.0	1.3	0.3
Cycle Q Clear(g_c), s	0.0	0.2	3.1	0.0	5.5	6.9	3.3	2.7	0.9	0.0	1.3	0.3
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	0	581	494	0	581	494	215	988	442	5	566	253
V/C Ratio(X)	0.00	0.03	0.35	0.00	0.57	0.68	0.76	0.33	0.12	0.42	0.25	0.06
Avail Cap(c_a), veh/h	0	859	730	0	859	730	529	1536	687	529	1536	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.8	9.8	0.0	10.6	11.1	15.7	10.6	9.9	18.4	13.5	13.1
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.0	0.9	1.7	5.5	0.2	0.1	48.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	1.4	0.0	2.9	3.2	1.9	1.3	0.4	0.1	0.6	0.1
LnGrp Delay(d),s/veh	0.0	8.8	10.2	0.0	11.5	12.8	21.2	10.8	10.0	66.9	13.8	13.2
LnGrp LOS		A	B		B	B	C	B	B	E	B	B
Approach Vol, veh/h	188			670			544			155		
Approach Delay, s/veh	10.1			12.2			13.8			14.4		
Approach LOS	B			B			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	15.3	0.0	16.5	9.5	10.9	0.0	16.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	16.0	11.0	17.0	11.0	16.0	11.0	17.0				
Max Q Clear Time (g_c+I1), s	2.0	4.7	0.0	5.1	5.3	3.3	0.0	8.9				
Green Ext Time (p_c), s	0.0	2.5	0.0	3.2	0.2	2.6	0.0	2.6				
Intersection Summary												
HCM 2010 Ctrl Delay	12.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
139: Woodcreek Oaks Blvd & Painted Desert Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	2	186	0	102	20	388	698	0	31	784	123
Future Volume (veh/h)	87	2	186	0	102	20	388	698	0	31	784	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	92	2	196	0	107	21	408	735	0	33	825	129
Adj No. of Lanes	1	1	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	4	369	3	202	172	462	1967	880	49	1143	511
Arrive On Green	0.07	0.24	0.24	0.00	0.11	0.11	0.26	0.56	0.00	0.03	0.32	0.32
Sat Flow, veh/h	1774	16	1570	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	92	0	198	0	107	21	408	735	0	33	825	129
Grp Sat Flow(s),veh/h/ln	1774	0	1586	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.4	0.0	7.2	0.0	3.6	0.8	14.6	7.7	0.0	1.2	13.6	4.0
Cycle Q Clear(g_c), s	3.4	0.0	7.2	0.0	3.6	0.8	14.6	7.7	0.0	1.2	13.6	4.0
Prop In Lane	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	0	373	3	202	172	462	1967	880	49	1143	511
V/C Ratio(X)	0.78	0.00	0.53	0.00	0.53	0.12	0.88	0.37	0.00	0.68	0.72	0.25
Avail Cap(c_a), veh/h	134	0	575	107	647	550	589	2192	980	134	1283	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	22.1	0.0	27.9	26.7	23.5	8.2	0.0	31.9	19.8	16.5
Incr Delay (d2), s/veh	22.7	0.0	1.2	0.0	2.1	0.3	12.3	0.1	0.0	15.1	1.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	3.3	0.0	2.0	0.4	8.7	3.7	0.0	0.8	6.9	1.8
LnGrp Delay(d),s/veh	53.1	0.0	23.3	0.0	30.0	27.0	35.8	8.4	0.0	47.0	21.6	16.8
LnGrp LOS	D		C		C	C	D	A		D	C	B
Approach Vol, veh/h	290				128				1143			
Approach Delay, s/veh	32.8				29.5				18.2			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	40.8	0.0	19.6	21.2	25.4	8.4	11.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.0	41.0	4.0	24.0	22.0	24.0	5.0	23.0				
Max Q Clear Time (g_c+I1), s	3.2	9.7	0.0	9.2	16.6	15.6	5.4	5.6				
Green Ext Time (p_c), s	0.0	13.1	0.0	1.5	0.6	5.8	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			21.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
140: Woodcreek Oaks Blvd & Crimson Drige Dr/Crimson Ridge Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1	11	257	5	257	23	428	64	34	708	61
Future Volume (veh/h)	22	1	11	257	5	257	23	428	64	34	708	61
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	23	1	12	271	5	271	24	451	67	36	745	64
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	3	63	431	452	384	41	1215	542	57	1247	556
Arrive On Green	0.04	0.04	0.04	0.24	0.24	0.24	0.02	0.34	0.34	0.03	0.35	0.35
Sat Flow, veh/h	1703	74	1572	1774	1863	1579	1774	3539	1579	1774	3539	1579
Grp Volume(v), veh/h	24	0	12	271	5	271	24	451	67	36	745	64
Grp Sat Flow(s),veh/h/ln	1778	0	1572	1774	1863	1579	1774	1770	1579	1774	1770	1579
Q Serve(g_s), s	0.6	0.0	0.3	6.4	0.1	7.3	0.6	4.5	1.4	0.9	8.1	1.3
Cycle Q Clear(g_c), s	0.6	0.0	0.3	6.4	0.1	7.3	0.6	4.5	1.4	0.9	8.1	1.3
Prop In Lane	0.96		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	72	0	63	431	452	384	41	1215	542	57	1247	556
V/C Ratio(X)	0.34	0.00	0.19	0.63	0.01	0.71	0.59	0.37	0.12	0.64	0.60	0.12
Avail Cap(c_a), veh/h	1177	0	1041	1174	1233	1046	152	1587	708	227	1738	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	21.7	15.8	13.5	16.2	22.7	11.6	10.5	22.4	12.4	10.2
Incr Delay (d2), s/veh	2.7	0.0	1.4	1.5	0.0	2.4	12.9	0.2	0.1	11.2	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2	3.3	0.0	3.5	0.4	2.2	0.6	0.6	4.0	0.6
LnGrp Delay(d),s/veh	24.6	0.0	23.2	17.4	13.5	18.6	35.6	11.8	10.6	33.6	12.9	10.3
LnGrp LOS	C		C	B	B	B	D	B	B	C	B	B
Approach Vol, veh/h	36		547				542			845		
Approach Delay, s/veh	24.1		17.9				12.7			13.6		
Approach LOS	C		B				B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.5	20.1	5.9		5.1	20.5	15.4					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	6.0	21.0	31.0		4.0	23.0	31.0					
Max Q Clear Time (g_c+I1), s	2.9	6.5	2.6		2.6	10.1	9.3					
Green Ext Time (p_c), s	0.0	6.8	0.1		0.0	6.3	1.8					
Intersection Summary												
HCM 2010 Ctrl Delay			14.7									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
141: Woodcreek Oaks Blvd & Horncastle Ave

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	0	35	9	3	22	34	592	15	33	1066	91
Future Volume (veh/h)	65	0	35	9	3	22	34	592	15	33	1066	91
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	68	0	37	9	3	23	36	623	16	35	1122	96
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	0	220	111	37	130	95	1868	48	81	1721	147
Arrive On Green	0.14	0.00	0.14	0.08	0.08	0.08	0.05	0.53	0.53	0.05	0.52	0.52
Sat Flow, veh/h	1774	0	1583	1347	449	1583	1774	3526	91	1774	3300	282
Grp Volume(v), veh/h	68	0	37	12	0	23	36	313	326	35	601	617
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1795	0	1583	1774	1770	1847	1774	1770	1813
Q Serve(g_s), s	2.1	0.0	1.3	0.4	0.0	0.8	1.2	6.2	6.2	1.2	15.0	15.1
Cycle Q Clear(g_c), s	2.1	0.0	1.3	0.4	0.0	0.8	1.2	6.2	6.2	1.2	15.0	15.1
Prop In Lane	1.00		1.00	0.75		1.00	1.00		0.05	1.00		0.16
Lane Grp Cap(c), veh/h	247	0	220	148	0	130	95	937	978	81	923	946
V/C Ratio(X)	0.28	0.00	0.17	0.08	0.00	0.18	0.38	0.33	0.33	0.43	0.65	0.65
Avail Cap(c_a), veh/h	1018	0	908	382	0	337	378	1061	1108	378	1061	1087
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	23.2	25.9	0.0	26.1	27.9	8.2	8.2	28.3	10.6	10.6
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.1	0.0	0.2	0.9	0.3	0.3	1.3	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.6	0.2	0.0	0.4	0.6	3.0	3.2	0.6	7.5	7.7
LnGrp Delay(d),s/veh	23.7	0.0	23.3	25.9	0.0	26.3	28.8	8.5	8.5	29.7	12.0	11.9
LnGrp LOS	C		C	C		C	C	A	A	C	B	B
Approach Vol, veh/h	105		35			675			1253			
Approach Delay, s/veh	23.6		26.2			9.6			12.4			
Approach LOS	C		C			A			B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.8	35.7	11.5		6.3	35.2	8.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	12.0	34.3	34.0		12.0	34.3	12.0					
Max Q Clear Time (g_c+I1), s	3.2	8.2	4.1		3.2	17.1	2.8					
Green Ext Time (p_c), s	0.0	16.8	0.3		0.0	12.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			12.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
142: Woodcreek Oaks Blvd & Camino Capistrano/Zinnia Way

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	16	35	23	4	18	44	633	25	15	1039	54
Future Volume (veh/h)	61	16	35	23	4	18	44	633	25	15	1039	54
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	64	17	37	24	4	19	46	666	26	16	1094	57
Adj No. of Lanes	0	1	1	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	43	179	70	12	56	79	1715	67	41	1618	84
Arrive On Green	0.11	0.11	0.11	0.08	0.08	0.08	0.04	0.49	0.49	0.02	0.47	0.47
Sat Flow, veh/h	1416	376	1583	867	145	687	1774	3473	136	1774	3423	178
Grp Volume(v), veh/h	81	0	37	47	0	0	46	339	353	16	565	586
Grp Sat Flow(s),veh/h/ln	1792	0	1583	1698	0	0	1774	1770	1839	1774	1770	1831
Q Serve(g_s), s	2.6	0.0	1.3	1.6	0.0	0.0	1.6	7.4	7.4	0.5	15.2	15.2
Cycle Q Clear(g_c), s	2.6	0.0	1.3	1.6	0.0	0.0	1.6	7.4	7.4	0.5	15.2	15.2
Prop In Lane	0.79		1.00	0.51		0.40	1.00		0.07	1.00		0.10
Lane Grp Cap(c), veh/h	203	0	179	137	0	0	79	874	908	41	837	866
V/C Ratio(X)	0.40	0.00	0.21	0.34	0.00	0.00	0.59	0.39	0.39	0.39	0.68	0.68
Avail Cap(c_a), veh/h	731	0	646	250	0	0	145	933	970	174	962	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	24.7	26.6	0.0	0.0	28.7	9.7	9.7	29.5	12.5	12.5
Incr Delay (d2), s/veh	0.5	0.0	0.2	0.5	0.0	0.0	2.6	0.3	0.3	2.2	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.6	0.8	0.0	0.0	0.8	3.7	3.8	0.3	7.6	8.0
LnGrp Delay(d),s/veh	25.7	0.0	24.9	27.2	0.0	0.0	31.3	10.1	10.0	31.7	14.2	14.2
LnGrp LOS	C		C	C			C	B	B	C	B	B
Approach Vol, veh/h	118					47	738			1167		
Approach Delay, s/veh	25.4					27.2	11.4			14.5		
Approach LOS	C					C	B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.4	35.9	10.9		6.7	34.7	9.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	6.0	32.3	25.0		5.0	33.3	9.0					
Max Q Clear Time (g_c+I1), s	2.5	9.4	4.6		3.6	17.2	3.6					
Green Ext Time (p_c), s	0.0	15.3	0.3		0.0	11.8	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			14.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
143: Woodcreek Oaks Blvd & Canevari Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	5	111	13	11	7	303	739	22	13	1052	40
Future Volume (veh/h)	25	5	111	13	11	7	303	739	22	13	1052	40
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	26	5	117	14	12	7	319	778	23	14	1107	42
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	39	215	74	63	119	383	2055	61	56	1393	53
Arrive On Green	0.14	0.14	0.14	0.08	0.08	0.08	0.22	0.59	0.56	0.03	0.40	0.38
Sat Flow, veh/h	1499	288	1583	977	837	1583	1774	3510	104	1774	3477	132
Grp Volume(v), veh/h	31	0	117	26	0	7	319	392	409	14	563	586
Grp Sat Flow(s),veh/h/ln	1788	0	1583	1814	0	1583	1774	1770	1844	1774	1770	1839
Q Serve(g_s), s	1.1	0.0	4.8	0.9	0.0	0.3	12.0	8.2	8.3	0.5	19.5	19.6
Cycle Q Clear(g_c), s	1.1	0.0	4.8	0.9	0.0	0.3	12.0	8.2	8.3	0.5	19.5	19.6
Prop In Lane	0.84		1.00	0.54		1.00	1.00		0.06	1.00		0.07
Lane Grp Cap(c), veh/h	243	0	215	137	0	119	383	1036	1080	56	709	737
V/C Ratio(X)	0.13	0.00	0.54	0.19	0.00	0.06	0.83	0.38	0.38	0.25	0.79	0.79
Avail Cap(c_a), veh/h	256	0	227	312	0	272	432	1036	1080	153	736	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	28.1	30.3	0.0	30.0	26.1	7.7	7.7	33.0	18.4	18.5
Incr Delay (d2), s/veh	0.2	0.0	2.4	0.7	0.0	0.2	10.6	0.3	0.3	0.9	6.1	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.2	0.5	0.0	0.1	7.0	4.0	4.2	0.3	10.6	11.1
LnGrp Delay(d),s/veh	26.7	0.0	30.5	30.9	0.0	30.2	36.7	8.0	8.0	33.9	24.5	24.4
LnGrp LOS	C		C	C		C	D	A	A	C	C	C
Approach Vol, veh/h	148					33	1120			1163		
Approach Delay, s/veh	29.7					30.8	16.2			24.6		
Approach LOS	C					C	B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	18.1	30.9	8.3		5.2	43.8	12.5					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	16.0	26.3	11.0		5.0	37.3	9.0					
Max Q Clear Time (g_c+I1), s	14.0	21.6	2.9		2.5	10.3	6.8					
Green Ext Time (p_c), s	0.1	3.7	0.0		0.0	19.3	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			21.1									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

144: Woodcreek Oaks Blvd & McAnally Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	13	28	58	16	482	47	1123	17	119	1506	92
Future Volume (veh/h)	31	13	28	58	16	482	47	1123	17	119	1506	92
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	14	29	39	48	507	49	1182	18	125	1585	97
Adj No. of Lanes	0	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	68	190	307	323	274	107	1713	26	182	1768	108
Arrive On Green	0.13	0.13	0.13	0.17	0.17	0.17	0.06	0.48	0.47	0.10	0.52	0.51
Sat Flow, veh/h	1264	536	1508	1774	1863	1583	1774	3567	54	1774	3385	206
Grp Volume(v), veh/h	47	0	29	39	48	507	49	586	614	125	824	858
Grp Sat Flow(s),veh/h/ln	1800	0	1508	1774	1863	1583	1774	1770	1852	1774	1770	1822
Q Serve(g_s), s	2.6	0.0	1.9	2.0	2.4	19.1	2.9	28.4	28.4	7.5	45.9	46.9
Cycle Q Clear(g_c), s	2.6	0.0	1.9	2.0	2.4	19.1	2.9	28.4	28.4	7.5	45.9	46.9
Prop In Lane	0.70		1.00	1.00		1.00	1.00		0.03	1.00		0.11
Lane Grp Cap(c), veh/h	227	0	190	307	323	274	107	850	889	182	924	951
V/C Ratio(X)	0.21	0.00	0.15	0.13	0.15	1.85	0.46	0.69	0.69	0.69	0.89	0.90
Avail Cap(c_a), veh/h	441	0	369	307	323	274	129	850	889	209	929	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	0.0	42.9	38.5	38.7	45.6	50.1	22.3	22.3	47.8	23.5	23.8
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.1	0.2	395.9	1.1	2.6	2.5	5.4	10.9	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.8	1.0	1.3	38.5	1.5	14.5	15.1	4.0	25.0	26.5
LnGrp Delay(d),s/veh	43.6	0.0	43.2	38.7	38.9	441.5	51.2	24.9	24.8	53.2	34.5	35.6
LnGrp LOS	D		D	D	D	F	D	C	C	D	C	D
Approach Vol, veh/h	76		594				1249				1807	
Approach Delay, s/veh	43.4		382.5				25.9				36.3	
Approach LOS	D		F				C				D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	13.3	56.7	23.4		8.7	61.3	16.9					
Change Period (Y+Rc), s	4.0	5.7	5.3		4.0	5.7	4.0					
Max Green Setting (Gmax), s	11.0	50.9	18.1		6.0	55.9	26.0					
Max Q Clear Time (g_c+I1), s	9.5	30.4	21.1		4.9	48.9	4.6					
Green Ext Time (p_c), s	0.0	18.8	0.0		0.0	6.7	0.2					

Intersection Summary

HCM 2010 Ctrl Delay 88.1
HCM 2010 LOS F

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
145: Woodcreek Oaks Blvd & Trailee Ln

Cumulative Plus Project
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	34	0	43	13	0	22	50	1094	33	37	1485	5	
Future Volume (veh/h)	34	0	43	13	0	22	50	1094	33	37	1485	5	
Number	3	8	18	7	4	14	5	2	12	1	6	16	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1863	
Adj Flow Rate, veh/h	36	0	45	14	0	23	53	1152	35	39	1563	5	
Adj No. of Lanes	1	0	1	1	0	1	1	2	0	1	2	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2	
Cap, veh/h	116	0	0	81	0	0	100	2474	75	95	2434	1065	
Arrive On Green	0.07	0.00	0.00	0.05	0.00	0.01	0.06	0.71	0.71	0.05	0.69	0.67	
Sat Flow, veh/h	1774	36		1774	14		1774	3507	107	1774	3539	1583	
Grp Volume(v), veh/h	36	30.3		14	31.0		53	581	606	39	1563	5	
Grp Sat Flow(s),veh/h/ln	1774	C		1774	C		1774	1770	1844	1774	1770	1583	
Q Serve(g_s), s	1.3			0.5			1.9	9.6	9.6	1.4	16.5	0.1	
Cycle Q Clear(g_c), s	1.3			0.5			1.9	9.6	9.6	1.4	16.5	0.1	
Prop In Lane	1.00			1.00			1.00		0.06	1.00		1.00	
Lane Grp Cap(c), veh/h	116			81			100	1249	1301	95	2434	1065	
V/C Ratio(X)	0.31			0.17			0.53	0.47	0.47	0.41	0.64	0.00	
Avail Cap(c_a), veh/h	531			345			319	1307	1362	345	2614	1146	
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(l)	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	29.7			30.6			30.6	4.3	4.3	30.6	5.8	3.6	
Incr Delay (d2), s/veh	0.6			0.4			1.6	0.5	0.4	1.1	0.7	0.0	
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.6			0.3			1.0	4.7	4.9	0.7	8.0	0.0	
LnGrp Delay(d),s/veh	30.3			31.0			32.3	4.8	4.8	31.6	6.5	3.6	
LnGrp LOS	C			C			C	A	A	C	A	A	
Approach Vol, veh/h									1240				1607
Approach Delay, s/veh									5.9				7.1
Approach LOS									A				A
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1	2	3	5		6	7						
Phs Duration (G+Y+Rc), s	6.6	51.8	8.4	7.8		50.6	6.1						
Change Period (Y+Rc), s	4.0	5.7	4.0	4.0		5.7	4.0						
Max Green Setting (Gmax), s	12.0	48.3	20.0	12.0		48.3	12.0						
Max Q Clear Time (g_c+I1), s	3.4	11.6	3.3	3.9		18.5	2.5						
Green Ext Time (p_c), s	0.0	31.8	0.0	0.0		26.4	0.0						
Intersection Summary													
HCM 2010 Ctrl Delay			7.0										
HCM 2010 LOS			A										

HCM 2010 Signalized Intersection Summary

146: Foothills Blvd & Albertsons Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	528	6	312	181	6	100	100	1053	54	39	1185	173
Future Volume (veh/h)	528	6	312	181	6	100	100	1053	54	39	1185	173
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	560	0	0	191	6	0	105	1108	0	41	1247	182
Adj No. of Lanes	2	0	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	746	0	333	254	267	227	149	2111	604	122	2033	633
Arrive On Green	0.21	0.00	0.00	0.14	0.14	0.00	0.08	0.42	0.00	0.07	0.40	0.40
Sat Flow, veh/h	3548	0	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	560	0	0	191	6	0	105	1108	0	41	1247	182
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	10.6	0.0	0.0	7.4	0.2	0.0	4.1	11.6	0.0	1.6	13.9	5.6
Cycle Q Clear(g_c), s	10.6	0.0	0.0	7.4	0.2	0.0	4.1	11.6	0.0	1.6	13.9	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	746	0	333	254	267	227	149	2111	604	122	2033	633
V/C Ratio(X)	0.75	0.00	0.00	0.75	0.02	0.00	0.70	0.52	0.00	0.34	0.61	0.29
Avail Cap(c_a), veh/h	1044	0	466	274	287	244	149	2111	604	199	2167	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	29.3	26.3	0.0	31.8	15.6	0.0	31.7	17.0	14.5
Incr Delay (d2), s/veh	1.6	0.0	0.0	10.3	0.0	0.0	12.0	0.4	0.0	1.6	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.0	4.3	0.1	0.0	2.5	5.5	0.0	0.8	6.6	2.5
LnGrp Delay(d),s/veh	28.0	0.0	0.0	39.6	26.3	0.0	43.8	16.0	0.0	33.3	17.7	15.0
LnGrp LOS	C			D	C		D	B		C	B	B
Approach Vol, veh/h	560				197				1213			
Approach Delay, s/veh	28.0				39.2				18.4			
Approach LOS	C				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	32.2		18.0	9.0	31.1		13.2				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	7.0	25.0		20.0	5.0	27.0		10.0				
Max Q Clear Time (g_c+I1), s	3.6	13.6		12.6	6.1	15.9		9.4				
Green Ext Time (p_c), s	0.0	10.4		1.4	0.0	9.2		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	20.9											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
147: Foothills Blvd & HP-South Dwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	3	1	134	3	194	5	844	37	68	2019	1
Future Volume (veh/h)	164	3	1	134	3	194	5	844	37	68	2019	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	175	0	1	141	3	204	5	888	39	72	2125	1
Adj No. of Lanes	2	0	1	1	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	0	153	300	4	265	37	2123	865	361	2792	1
Arrive On Green	0.10	0.00	0.10	0.17	0.17	0.17	0.02	0.60	0.55	0.48	0.53	0.53
Sat Flow, veh/h	3548	0	1583	1774	23	1564	1774	3539	1583	601	5250	2
Grp Volume(v), veh/h	175	0	1	141	0	207	5	888	39	72	1372	754
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1587	1774	1770	1583	601	1695	1862
Q Serve(g_s), s	3.0	0.0	0.0	4.6	0.0	8.0	0.2	8.6	0.7	5.1	20.3	20.3
Cycle Q Clear(g_c), s	3.0	0.0	0.0	4.6	0.0	8.0	0.2	8.6	0.7	9.3	20.3	20.3
Prop In Lane	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	342	0	153	300	0	268	37	2123	865	361	1803	990
V/C Ratio(X)	0.51	0.00	0.01	0.47	0.00	0.77	0.13	0.42	0.05	0.20	0.76	0.76
Avail Cap(c_a), veh/h	944	0	421	444	0	397	361	2681	1115	361	1803	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	26.1	24.0	0.0	25.4	30.7	6.8	6.7	12.5	11.8	11.8
Incr Delay (d2), s/veh	1.2	0.0	0.0	1.1	0.0	5.3	1.6	0.1	0.0	0.3	2.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	2.3	0.0	3.8	0.1	4.1	0.3	0.9	9.8	11.2
LnGrp Delay(d),s/veh	28.6	0.0	26.1	25.1	0.0	30.7	32.3	7.0	6.8	12.8	13.7	15.3
LnGrp LOS	C		C	C		C	C	A	A	B	B	B
Approach Vol, veh/h	176			348			932			2198		
Approach Delay, s/veh	28.6			28.4			7.1			14.2		
Approach LOS	C			C			A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	38.9			9.2	4.3	34.6	15.8					
Change Period (Y+Rc), s	4.0			4.0	4.0	4.0	5.0					
Max Green Setting (Gmax), s	45.0			16.0	12.0	29.0	16.0					
Max Q Clear Time (g_c+I1), s	10.6			5.0	2.2	22.3	10.0					
Green Ext Time (p_c), s	24.4			0.4	0.0	6.3	0.9					
Intersection Summary												
HCM 2010 Ctrl Delay				14.4								
HCM 2010 LOS				B								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

148: Foothills Blvd & NEC

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	9	455	0	4	102	40	752	0	289	1774	69
Future Volume (veh/h)	48	9	455	0	4	102	40	752	0	289	1774	69
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	51	0	485	0	4	107	42	792	0	304	1867	73
Adj No. of Lanes	1	0	2	0	1	0	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	2	2	2	2	2	2	2	2
Cap, veh/h	256	0	620	0	11	300	53	1533	0	350	2125	951
Arrive On Green	0.20	0.00	0.20	0.00	0.20	0.20	0.03	0.43	0.00	0.20	0.60	0.60
Sat Flow, veh/h	1277	0	3167	0	57	1535	1774	3632	0	1774	3539	1583
Grp Volume(v), veh/h	51	0	485	0	0	111	42	792	0	304	1867	73
Grp Sat Flow(s),veh/h/ln	1277	0	1583	0	0	1592	1774	1770	0	1774	1770	1583
Q Serve(g_s), s	3.1	0.0	12.5	0.0	0.0	5.2	2.0	14.1	0.0	14.3	38.4	1.7
Cycle Q Clear(g_c), s	8.3	0.0	12.5	0.0	0.0	5.2	2.0	14.1	0.0	14.3	38.4	1.7
Prop In Lane	1.00		1.00	0.00		0.96	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	0	620	0	0	311	53	1533	0	350	2125	951
V/C Ratio(X)	0.20	0.00	0.78	0.00	0.00	0.36	0.80	0.52	0.00	0.87	0.88	0.08
Avail Cap(c_a), veh/h	392	0	956	0	0	481	82	1533	0	556	2261	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	0.0	32.9	0.0	0.0	29.9	41.5	17.8	0.0	33.5	14.5	7.2
Incr Delay (d2), s/veh	0.4	0.0	2.3	0.0	0.0	0.7	24.7	0.3	0.0	8.6	4.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	10.7	0.0	0.0	2.3	1.4	6.9	0.0	7.8	19.6	0.7
LnGrp Delay(d),s/veh	33.9	0.0	35.2	0.0	0.0	30.6	66.2	18.1	0.0	42.1	18.7	7.2
LnGrp LOS	C		D			C	E	B		D	B	A
Approach Vol, veh/h	536			111			834			2244		
Approach Delay, s/veh	35.1			30.6			20.6			21.5		
Approach LOS	D			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	42.3		21.8	7.6	56.7		21.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	27.0	32.0		26.0	4.0	55.0		26.0				
Max Q Clear Time (g_c+I1), s	16.3	16.1		14.5	4.0	40.4		7.2				
Green Ext Time (p_c), s	0.7	14.4		2.3	0.0	11.3		2.8				
Intersection Summary												
HCM 2010 Ctrl Delay	23.5											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

149: Foothills Blvd & Mistywood Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	8	60	128	3	18	17	714	339	14	2016	36
Future Volume (veh/h)	30	8	60	128	3	18	17	714	339	14	2016	36
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	8	63	137	0	19	18	752	357	15	2122	38
Adj No. of Lanes	0	1	1	2	0	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	48	212	467	0	208	69	1857	867	50	2763	49
Arrive On Green	0.13	0.13	0.13	0.13	0.00	0.13	0.04	0.55	0.55	0.03	0.54	0.54
Sat Flow, veh/h	1433	358	1583	3548	0	1583	1774	3390	1583	1774	5145	92
Grp Volume(v), veh/h	40	0	63	137	0	19	18	752	357	15	1397	763
Grp Sat Flow(s),veh/h/ln	1791	0	1583	1774	0	1583	1774	1695	1583	1774	1695	1847
Q Serve(g_s), s	1.4	0.0	2.6	2.5	0.0	0.8	0.7	9.4	9.6	0.6	23.7	23.8
Cycle Q Clear(g_c), s	1.4	0.0	2.6	2.5	0.0	0.8	0.7	9.4	9.6	0.6	23.7	23.8
Prop In Lane	0.80		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	239	0	212	467	0	208	69	1857	867	50	1821	992
V/C Ratio(X)	0.17	0.00	0.30	0.29	0.00	0.09	0.26	0.40	0.41	0.30	0.77	0.77
Avail Cap(c_a), veh/h	270	0	238	1020	0	455	170	1921	897	121	1828	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	0.0	28.6	28.6	0.0	27.9	34.1	9.6	9.6	34.8	13.3	13.3
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.1	0.0	0.1	0.7	0.2	0.4	1.2	2.1	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.2	1.3	0.0	0.3	0.4	4.4	4.3	0.3	11.4	13.2
LnGrp Delay(d),s/veh	28.2	0.0	28.8	28.8	0.0	27.9	34.8	9.8	10.1	36.0	15.5	17.2
LnGrp LOS	C		C	C		C	C	A	B	D	B	B
Approach Vol, veh/h	103				156		1127				2175	
Approach Delay, s/veh	28.6				28.7		10.3				16.2	
Approach LOS	C				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.0	42.6	12.6		5.8	41.8	12.8					
Change Period (Y+Rc), s	4.0	6.0	4.0		4.0	6.0	4.0					
Max Green Setting (Gmax), s	4.0	38.0	20.0		6.0	36.0	10.0					
Max Q Clear Time (g_c+I1), s	2.6	11.6	4.5		2.7	25.8	4.6					
Green Ext Time (p_c), s	0.0	25.0	0.0		0.0	10.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			15.2									
HCM 2010 LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
150: Foothills Blvd & McAnally Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	22	194	71	14	32	322	1315	12	10	2169	104
Future Volume (veh/h)	155	22	194	71	14	32	322	1315	12	10	2169	104
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	23	204	75	15	34	339	1384	13	11	2283	109
Adj No. of Lanes	0	1	1	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	31	220	91	18	96	370	3597	34	28	2486	118
Arrive On Green	0.14	0.14	0.14	0.06	0.06	0.06	0.21	0.69	0.68	0.02	0.50	0.48
Sat Flow, veh/h	1564	221	1550	1490	298	1583	1774	5195	49	1774	4973	236
Grp Volume(v), veh/h	186	0	204	90	0	34	339	903	494	11	1552	840
Grp Sat Flow(s),veh/h/ln	1785	0	1550	1788	0	1583	1774	1695	1854	1774	1695	1818
Q Serve(g_s), s	12.0	0.0	15.6	6.0	0.0	2.5	22.4	13.4	13.4	0.7	50.6	51.6
Cycle Q Clear(g_c), s	12.0	0.0	15.6	6.0	0.0	2.5	22.4	13.4	13.4	0.7	50.6	51.6
Prop In Lane	0.88		1.00	0.83		1.00	1.00		0.03	1.00		0.13
Lane Grp Cap(c), veh/h	253	0	220	109	0	96	370	2347	1283	28	1695	909
V/C Ratio(X)	0.74	0.00	0.93	0.83	0.00	0.35	0.92	0.38	0.38	0.39	0.92	0.92
Avail Cap(c_a), veh/h	253	0	220	109	0	96	370	2347	1283	59	1695	909
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	50.9	55.7	0.0	54.1	46.5	7.7	7.8	58.5	27.7	28.0
Incr Delay (d2), s/veh	9.4	0.0	40.9	36.7	0.0	0.8	26.7	0.2	0.4	3.2	9.2	16.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	9.2	4.1	0.0	1.1	13.8	6.3	7.0	0.4	25.7	29.8
LnGrp Delay(d),s/veh	58.8	0.0	91.8	92.5	0.0	54.9	73.2	8.0	8.2	61.6	36.9	44.4
LnGrp LOS	E		F	F		D	E	A	A	E	D	D
Approach Vol, veh/h	390		124				1736		2403			
Approach Delay, s/veh	76.1		82.2				20.8		39.6			
Approach LOS	E		F				C		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	28.0	63.0	20.0		4.9	86.1	9.0					
Change Period (Y+Rc), s	4.0	6.0	5.3		4.0	6.0	4.0					
Max Green Setting (Gmax), s	24.0	57.0	14.7		3.0	78.0	5.0					
Max Q Clear Time (g_c+I1), s	24.4	53.6	17.6		2.7	15.4	8.0					
Green Ext Time (p_c), s	0.0	3.4	0.0		0.0	61.6	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	36.8											
HCM 2010 LOS	D											

HCM 2010 Signalized Intersection Summary

151: Foothills Blvd & Junction Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	396	117	408	1109	179	190	1477	180	267	1583	466
Future Volume (veh/h)	151	396	117	408	1109	179	190	1477	180	267	1583	466
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	159	417	123	429	1167	188	200	1555	0	281	1666	0
Adj No. of Lanes	2	2	1	1	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	591	259	466	1805	557	258	1896	564	344	2024	604
Arrive On Green	0.07	0.17	0.17	0.26	0.35	0.35	0.08	0.37	0.00	0.10	0.40	0.00
Sat Flow, veh/h	3442	3539	1555	1774	5085	1570	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	159	417	123	429	1167	188	200	1555	0	281	1666	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1555	1774	1695	1570	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	5.4	13.4	8.6	28.2	23.1	10.5	6.8	33.1	0.0	9.6	35.2	0.0
Cycle Q Clear(g_c), s	5.4	13.4	8.6	28.2	23.1	10.5	6.8	33.1	0.0	9.6	35.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	591	259	466	1805	557	258	1896	564	344	2024	604
V/C Ratio(X)	0.62	0.71	0.47	0.92	0.65	0.34	0.77	0.82	0.00	0.82	0.82	0.00
Avail Cap(c_a), veh/h	287	599	263	503	1877	580	258	1896	564	344	2024	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.9	47.2	45.2	43.0	32.4	28.4	54.5	34.0	0.0	52.9	32.3	0.0
Incr Delay (d2), s/veh	2.0	4.0	1.7	20.7	0.8	0.4	12.5	4.1	0.0	13.3	3.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.9	3.8	16.5	10.9	4.6	3.7	16.3	0.0	5.2	17.2	0.0
LnGrp Delay(d),s/veh	55.9	51.2	46.9	63.7	33.2	28.8	67.0	38.1	0.0	66.2	36.3	0.0
LnGrp LOS	E	D	D	E	C	C	E	D		E	D	
Approach Vol, veh/h	699				1784				1755			
Approach Delay, s/veh	51.5				40.1				41.4			
Approach LOS	D				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	50.8	12.0	45.3	15.0	47.8	34.5	22.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.7	4.0	* 6	4.0	5.7				
Max Green Setting (Gmax), s	8.0	42.0	9.0	41.3	11.0	* 39	33.0	17.3				
Max Q Clear Time (g_c+I1), s	8.8	37.2	7.4	25.1	11.6	35.1	30.2	15.4				
Green Ext Time (p_c), s	0.0	4.7	0.1	9.9	0.0	4.1	0.3	1.6				

Intersection Summary

HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

152: Foothills Blvd & Pilgrim Dr/Rand Way

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↕	↗	↗	↕↕↕	
Traffic Volume (veh/h)	25	1	25	28	1	19	31	1852	42	34	2061	15
Future Volume (veh/h)	25	1	25	28	1	19	31	1852	42	34	2061	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	26	1	26	29	1	20	33	1949	44	36	2169	16
Adj No. of Lanes	0	1	0	0	1	0	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	2	45	148	2	37	68	2667	1148	72	3935	29
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.04	0.75	0.73	0.04	0.76	0.73
Sat Flow, veh/h	806	31	806	951	33	656	1774	3539	1583	1774	5208	38
Grp Volume(v), veh/h	53	0	0	50	0	0	33	1949	44	36	1412	773
Grp Sat Flow(s),veh/h/ln	1643	0	0	1639	0	0	1774	1770	1583	1774	1695	1856
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	1.1	18.2	0.5	1.2	10.5	10.5
Cycle Q Clear(g_c), s	1.7	0.0	0.0	1.6	0.0	0.0	1.1	18.2	0.5	1.2	10.5	10.5
Prop In Lane	0.49		0.49	0.58		0.40	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	182	0	0	187	0	0	68	2667	1148	72	2562	1402
V/C Ratio(X)	0.29	0.00	0.00	0.27	0.00	0.00	0.48	0.73	0.04	0.50	0.55	0.55
Avail Cap(c_a), veh/h	493	0	0	494	0	0	148	2708	1167	118	2562	1402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	0.0	27.5	0.0	0.0	28.3	4.1	2.3	28.2	3.1	3.1
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.8	0.0	0.0	2.0	1.1	0.0	2.0	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.8	0.0	0.0	0.6	8.8	0.2	0.6	4.8	5.4
LnGrp Delay(d),s/veh	28.5	0.0	0.0	28.3	0.0	0.0	30.3	5.2	2.4	30.2	3.4	3.7
LnGrp LOS	C			C			C	A	A	C	A	A
Approach Vol, veh/h	53				50		2026				2221	
Approach Delay, s/veh	28.5				28.3		5.5				3.9	
Approach LOS	C				C		A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.4	48.3	6.4		5.3	48.4	6.4					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	43.3	15.0		4.0	42.3	15.0					
Max Q Clear Time (g_c+I1), s	3.2	20.2	3.7		3.1	12.5	3.6					
Green Ext Time (p_c), s	0.0	22.4	0.3		0.0	29.4	0.3					
Intersection Summary												
HCM 2010 Ctrl Delay			5.2									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

153: Foothills Blvd & Vineyard Rd

Cumulative Plus Project
PM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	88	76	153	137	364	111	386	2131	85	96	1949	41				
Future Volume (veh/h)	88	76	153	137	364	111	386	2131	85	96	1949	41				
Number	1	6	16	5	2	12	7	4	14	3	8	18				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900				
Adj Flow Rate, veh/h	93	80	161	144	383	0	406	2243	0	101	2052	43				
Adj No. of Lanes	1	2	1	2	2	1	2	3	1	2	3	0				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	130	537	238	226	510	202	489	3218	976	180	2783	58				
Arrive On Green	0.07	0.15	0.15	0.07	0.14	0.00	0.14	0.63	0.00	0.05	0.54	0.53				
Sat Flow, veh/h	1774	3539	1568	3442	3539	1583	3442	5085	1583	3442	5126	107				
Grp Volume(v), veh/h	93	80	161	144	383	0	406	2243	0	101	1356	739				
Grp Sat Flow(s),veh/h/ln	1774	1770	1568	1721	1770	1583	1721	1695	1583	1721	1695	1843				
Q Serve(g_s), s	6.2	2.4	11.6	4.9	12.5	0.0	13.8	34.8	0.0	3.4	36.6	36.7				
Cycle Q Clear(g_c), s	6.2	2.4	11.6	4.9	12.5	0.0	13.8	34.8	0.0	3.4	36.6	36.7				
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06				
Lane Grp Cap(c), veh/h	130	537	238	226	510	202	489	3218	976	180	1841	1001				
V/C Ratio(X)	0.72	0.15	0.68	0.64	0.75	0.00	0.83	0.70	0.00	0.56	0.74	0.74				
Avail Cap(c_a), veh/h	148	540	239	258	510	202	545	3218	976	201	1841	1001				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	54.4	44.2	48.1	54.7	49.3	0.0	50.1	14.5	0.0	55.5	20.9	21.0				
Incr Delay (d2), s/veh	10.2	0.2	8.0	2.6	6.5	0.0	8.6	1.3	0.0	1.1	1.6	3.0				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	3.4	1.2	5.6	2.4	6.6	0.0	7.1	16.6	0.0	1.7	17.4	19.3				
LnGrp Delay(d),s/veh	64.6	44.3	56.1	57.2	55.8	0.0	58.6	15.7	0.0	56.6	22.5	24.0				
LnGrp LOS	E	D	E	E	E		E	B		E	C	C				
Approach Vol, veh/h	334				527				2649							
Approach Delay, s/veh	55.7				56.2				22.3							
Approach LOS	E				E				C							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	11.8	20.0	9.3	78.9	10.9	20.9	20.1	68.1								
Change Period (Y+Rc), s	4.0	5.7	4.0	6.0	4.0	5.7	4.0	6.0								
Max Green Setting (Gmax), s	9.0	14.3	6.0	71.0	8.0	15.3	18.0	59.0								
Max Q Clear Time (g_c+I1), s	8.2	14.5	5.4	36.8	6.9	13.6	15.8	38.7								
Green Ext Time (p_c), s	0.0	0.0	0.0	32.1	0.0	0.7	0.3	19.5								
Intersection Summary																
HCM 2010 Ctrl Delay																
HCM 2010 LOS																

HCM 2010 Signalized Intersection Summary

154: Foothills Blvd & Denio Loop

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	6	301	2335	159	323	1857		
Future Volume (veh/h)	6	301	2335	159	323	1857		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	6	0	2458	167	340	1955		
Adj No. of Lanes	1	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	32	29	3235	1007	359	4448		
Arrive On Green	0.02	0.00	0.64	0.64	0.20	0.87		
Sat Flow, veh/h	1774	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	6	0	2458	167	340	1955		
Grp Sat Flow(s),veh/h/ln	1774	1583	1695	1583	1774	1695		
Q Serve(g_s), s	0.3	0.0	28.6	3.6	15.9	6.6		
Cycle Q Clear(g_c), s	0.3	0.0	28.6	3.6	15.9	6.6		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	32	29	3235	1007	359	4448		
V/C Ratio(X)	0.19	0.00	0.76	0.17	0.95	0.44		
Avail Cap(c_a), veh/h	571	510	3273	1019	359	4607		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	40.6	0.0	10.7	6.2	33.0	1.1		
Incr Delay (d2), s/veh	2.7	0.0	1.1	0.1	33.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	0.0	13.5	1.6	11.1	2.9		
LnGrp Delay(d),s/veh	43.3	0.0	11.8	6.3	66.3	1.2		
LnGrp LOS	D		B	A	E	A		
Approach Vol, veh/h	6		2625			2295		
Approach Delay, s/veh	43.3		11.5			10.8		
Approach LOS	D		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	20.0	57.4				77.4		6.5
Change Period (Y+Rc), s	4.0	6.0				* 6		6.0
Max Green Setting (Gmax), s	16.0	52.0				* 74		26.0
Max Q Clear Time (g_c+I1), s	17.9	30.6				8.6		2.3
Green Ext Time (p_c), s	0.0	20.8				60.2		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			11.2					
HCM 2010 LOS			B					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

155: Washington Blvd & Freedom Way

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	26	47	448	96	744	208	1267	241	369	1341	0
Future Volume (veh/h)	0	26	47	448	96	744	208	1267	241	369	1341	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	27	49	472	0	850	219	1334	254	388	1412	0
Adj No. of Lanes	2	1	1	2	0	2	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	4	106	90	558	0	826	187	1641	734	463	1744	780
Arrive On Green	0.00	0.06	0.06	0.16	0.00	0.26	0.11	0.46	0.46	0.13	0.49	0.00
Sat Flow, veh/h	3442	1863	1583	3548	0	3167	1774	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	0	27	49	472	0	850	219	1334	254	388	1412	0
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	0	1583	1774	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.0	1.2	2.6	11.0	0.0	22.2	9.0	27.7	8.7	9.4	28.7	0.0
Cycle Q Clear(g_c), s	0.0	1.2	2.6	11.0	0.0	22.2	9.0	27.7	8.7	9.4	28.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	106	90	558	0	826	187	1641	734	463	1744	780
V/C Ratio(X)	0.00	0.26	0.55	0.85	0.00	1.03	1.17	0.81	0.35	0.84	0.81	0.00
Avail Cap(c_a), veh/h	606	393	334	624	0	826	187	1641	734	484	1744	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	38.5	39.1	34.9	0.0	31.5	38.1	19.7	14.6	36.0	18.3	0.0
Incr Delay (d2), s/veh	0.0	1.3	5.1	9.6	0.0	38.8	118.7	4.5	1.3	11.9	4.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	1.2	6.1	0.0	14.1	10.5	14.4	4.1	5.2	14.9	0.0
LnGrp Delay(d),s/veh	0.0	39.7	44.2	44.5	0.0	70.3	156.9	24.2	15.9	47.8	22.4	0.0
LnGrp LOS		D	D	D		F	F	C	B	D	C	
Approach Vol, veh/h	76				1322				1807			
Approach Delay, s/veh	42.6				61.1				39.1			
Approach LOS	D				E				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	43.5	17.4	8.8	13.0	46.0	0.0	26.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	12.0	39.0	15.0	18.0	9.0	42.0	15.0	18.0				
Max Q Clear Time (g_c+I1), s	11.4	29.7	13.0	4.6	11.0	30.7	0.0	24.2				
Green Ext Time (p_c), s	0.1	8.6	0.4	0.3	0.0	10.3	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	40.9
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
156: Washington Blvd & Hallissy Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	121	38	573	136	65	1207		
Future Volume (veh/h)	121	38	573	136	65	1207		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	127	40	603	143	68	1271		
Adj No. of Lanes	1	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	370	330	1783	798	175	2368		
Arrive On Green	0.21	0.21	0.50	0.50	0.10	0.67		
Sat Flow, veh/h	1774	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	127	40	603	143	68	1271		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	1774	1770		
Q Serve(g_s), s	2.7	0.9	4.6	2.2	1.6	8.3		
Cycle Q Clear(g_c), s	2.7	0.9	4.6	2.2	1.6	8.3		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	370	330	1783	798	175	2368		
V/C Ratio(X)	0.34	0.12	0.34	0.18	0.39	0.54		
Avail Cap(c_a), veh/h	1006	898	1889	845	276	2676		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.2	14.4	6.7	6.1	19.0	3.8		
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.2	0.5	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.4	0.4	2.2	1.0	0.8	4.0		
LnGrp Delay(d),s/veh	15.7	14.6	6.9	6.3	19.5	4.2		
LnGrp LOS	B	B	A	A	B	A		
Approach Vol, veh/h	167		746			1339		
Approach Delay, s/veh	15.4		6.8			5.0		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.4	25.7				33.1		11.9
Change Period (Y+Rc), s	4.0	6.0				6.0		4.0
Max Green Setting (Gmax), s	6.0	21.0				31.0		24.0
Max Q Clear Time (g_c+I1), s	3.6	6.6				10.3		4.7
Green Ext Time (p_c), s	0.0	12.3				16.7		0.6
Intersection Summary								
HCM 2010 Ctrl Delay			6.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
157: Washington Blvd & Industrial Blvd

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	23	401	188	743	1533	4		
Future Volume (veh/h)	23	401	188	743	1533	4		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	24	422	198	782	1614	4		
Adj No. of Lanes	1	1	1	2	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	340	304	232	2541	1878	804		
Arrive On Green	0.19	0.19	0.13	0.72	0.53	0.51		
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583		
Grp Volume(v), veh/h	24	422	198	782	1614	4		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583		
Q Serve(g_s), s	1.0	17.0	9.7	7.1	34.9	0.1		
Cycle Q Clear(g_c), s	1.0	17.0	9.7	7.1	34.9	0.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	340	304	232	2541	1878	804		
V/C Ratio(X)	0.07	1.39	0.85	0.31	0.86	0.00		
Avail Cap(c_a), veh/h	340	304	240	2595	1916	822		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	29.4	35.8	37.7	4.5	18.0	10.8		
Incr Delay (d2), s/veh	0.1	194.5	23.9	0.1	4.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	29.9	6.3	3.4	17.9	0.0		
LnGrp Delay(d),s/veh	29.4	230.3	61.5	4.6	22.1	10.8		
LnGrp LOS	C	F	E	A	C	B		
Approach Vol, veh/h	446			980	1618			
Approach Delay, s/veh	219.5			16.1	22.1			
Approach LOS	F			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		66.6		22.0	16.6	50.0		
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		
Max Green Setting (Gmax), s		63.0		17.0	12.0	46.0		
Max Q Clear Time (g_c+I1), s		9.1		19.0	11.7	36.9		
Green Ext Time (p_c), s		34.4		0.0	0.0	8.2		
Intersection Summary								
HCM 2010 Ctrl Delay			49.1					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary
158: Washington Blvd & Diamond Oaks Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	8	268	7	316	8	876	70	226	1616	32
Future Volume (veh/h)	5	2	8	268	7	316	8	876	70	226	1616	32
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	5	2	8	282	7	333	8	922	74	238	1701	34
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	42	47	283	5	439	49	1453	117	298	2053	41
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.44	0.44	0.17	0.58	0.58
Sat Flow, veh/h	0	149	171	679	17	1575	1774	3317	266	1774	3549	71
Grp Volume(v), veh/h	15	0	0	289	0	333	8	492	504	238	846	889
Grp Sat Flow(s),veh/h/ln	320	0	0	696	0	1575	1774	1770	1814	1774	1770	1850
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	14.6	0.3	16.3	16.3	9.7	29.1	29.4
Cycle Q Clear(g_c), s	21.0	0.0	0.0	21.0	0.0	14.6	0.3	16.3	16.3	9.7	29.1	29.4
Prop In Lane	0.33		0.53	0.98		1.00	1.00		0.15	1.00		0.04
Lane Grp Cap(c), veh/h	153	0	0	288	0	439	49	775	794	298	1024	1070
V/C Ratio(X)	0.10	0.00	0.00	1.00	0.00	0.76	0.16	0.63	0.63	0.80	0.83	0.83
Avail Cap(c_a), veh/h	153	0	0	288	0	439	188	852	873	329	1024	1070
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	0.0	30.6	0.0	24.9	35.8	16.5	16.5	30.1	12.8	12.9
Incr Delay (d2), s/veh	0.1	0.0	0.0	53.8	0.0	6.8	0.6	1.9	1.8	10.4	6.1	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	10.2	0.0	7.2	0.2	8.3	8.5	5.6	15.8	16.6
LnGrp Delay(d),s/veh	21.8	0.0	0.0	84.5	0.0	31.7	36.4	18.4	18.3	40.6	18.9	18.9
LnGrp LOS	C			F		C	D	B	B	D	B	B
Approach Vol, veh/h	15		622				1004			1973		
Approach Delay, s/veh	21.8		56.2				18.5			21.5		
Approach LOS	C		E				B			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	15.7	35.7	24.0		5.1	46.3	24.0					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	13.0	33.3	20.0		7.0	39.3	20.0					
Max Q Clear Time (g_c+I1), s	11.7	18.3	23.0		2.3	31.4	23.0					
Green Ext Time (p_c), s	0.0	11.7	0.0		0.0	7.7	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			26.6									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
159: Washington Blvd & Sawtell Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	0	31	64	4	19	44	907	7	20	1747	37
Future Volume (veh/h)	54	0	31	64	4	19	44	907	7	20	1747	37
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	57	0	33	67	4	20	46	955	7	21	1839	39
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	0	96	93	6	86	78	2581	1118	44	2518	53
Arrive On Green	0.06	0.00	0.06	0.06	0.06	0.06	0.04	0.73	0.71	0.02	0.71	0.69
Sat Flow, veh/h	1774	0	1583	1679	100	1549	1774	3539	1581	1774	3544	75
Grp Volume(v), veh/h	57	0	33	71	0	20	46	955	7	21	915	963
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1779	0	1549	1774	1770	1581	1774	1770	1849
Q Serve(g_s), s	2.8	0.0	1.8	3.5	0.0	1.1	2.3	9.0	0.1	1.1	27.9	28.3
Cycle Q Clear(g_c), s	2.8	0.0	1.8	3.5	0.0	1.1	2.3	9.0	0.1	1.1	27.9	28.3
Prop In Lane	1.00		1.00	0.94		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	107	0	96	99	0	86	78	2581	1118	44	1257	1314
V/C Ratio(X)	0.53	0.00	0.35	0.72	0.00	0.23	0.59	0.37	0.01	0.47	0.73	0.73
Avail Cap(c_a), veh/h	335	0	299	99	0	86	79	2581	1118	99	1257	1314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	0.0	40.6	41.8	0.0	40.7	42.2	4.5	3.9	43.3	7.8	7.9
Incr Delay (d2), s/veh	1.5	0.0	0.8	19.4	0.0	0.5	7.6	0.2	0.0	2.9	3.7	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.8	2.3	0.0	0.5	1.3	4.5	0.1	0.5	14.5	15.5
LnGrp Delay(d),s/veh	42.6	0.0	41.4	61.2	0.0	41.2	49.9	4.7	3.9	46.2	11.5	11.5
LnGrp LOS	D		D	E		D	D	A	A	D	B	B
Approach Vol, veh/h	90			91			1008			1899		
Approach Delay, s/veh	42.1			56.8			6.8			11.9		
Approach LOS	D			E			A			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.9	66.6	8.0		5.2	68.3	8.4					
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	49.3	4.0		4.0	48.3	16.0					
Max Q Clear Time (g_c+I1), s	4.3	30.3	5.5		3.1	11.0	4.8					
Green Ext Time (p_c), s	0.0	18.6	0.0		0.0	36.1	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay	12.5											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

160: Washington Blvd & Junction Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	258	0	472	12	4	2	912	661	0	4	993	830
Future Volume (veh/h)	258	0	472	12	4	2	912	661	0	4	993	830
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	272	0	0	13	4	2	960	696	0	4	1045	874
Adj No. of Lanes	2	0	1	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	473	0	193	107	70	35	956	2369	0	53	1530	684
Arrive On Green	0.13	0.00	0.00	0.06	0.06	0.05	0.28	0.67	0.00	0.03	0.43	0.43
Sat Flow, veh/h	3548	0	1583	1774	1173	586	3442	3632	0	1774	3539	1583
Grp Volume(v), veh/h	272	0	0	13	0	6	960	696	0	4	1045	874
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1759	1721	1770	0	1774	1770	1583
Q Serve(g_s), s	6.5	0.0	0.0	0.6	0.0	0.3	25.0	7.3	0.0	0.2	21.4	38.9
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.6	0.0	0.3	25.0	7.3	0.0	0.2	21.4	38.9
Prop In Lane	1.00		1.00	1.00		0.33	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	473	0	193	107	0	106	956	2369	0	53	1530	684
V/C Ratio(X)	0.58	0.00	0.00	0.12	0.00	0.06	1.00	0.29	0.00	0.08	0.68	1.28
Avail Cap(c_a), veh/h	473	0	194	276	0	274	956	2369	0	177	1530	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	40.1	0.0	40.1	32.5	6.1	0.0	42.5	20.6	25.5
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.5	0.0	0.2	30.1	0.3	0.0	0.6	1.3	135.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.3	0.0	0.1	15.8	3.6	0.0	0.1	10.7	42.7
LnGrp Delay(d),s/veh	38.3	0.0	0.0	40.6	0.0	40.3	62.6	6.4	0.0	43.1	21.8	161.3
LnGrp LOS	D			D		D	F	A		D	C	F
Approach Vol, veh/h	272			19			1656			1923		
Approach Delay, s/veh	38.3			40.5			39.0			85.3		
Approach LOS	D			D			D			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	63.9		14.0	26.0	42.6		7.4				
Change Period (Y+Rc), s	4.0	5.7		4.0	3.0	* 5.7		4.0				
Max Green Setting (Gmax), s	7.0	43.3		10.0	23.0	* 29		12.0				
Max Q Clear Time (g_c+I1), s	2.2	9.3		8.5	27.0	40.9		2.6				
Green Ext Time (p_c), s	0.0	18.8		0.2	0.0	0.0		0.0				

Intersection Summary

HCM 2010 Ctrl Delay 61.9
HCM 2010 LOS E

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
161: Washington Blvd & All American City Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1	30	0	4	29	53	1209	0	34	918	99
Future Volume (veh/h)	59	1	30	0	4	29	53	1209	0	34	918	99
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	62	1	32	0	4	31	56	1273	0	36	966	104
Adj No. of Lanes	1	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	3	89	0	57	48	76	1748	782	55	1555	167
Arrive On Green	0.06	0.06	0.06	0.00	0.03	0.03	0.04	0.49	0.00	0.03	0.48	0.48
Sat Flow, veh/h	1774	48	1542	0	1863	1583	1774	3539	1583	1774	3224	347
Grp Volume(v), veh/h	62	0	33	0	4	31	56	1273	0	36	530	540
Grp Sat Flow(s),veh/h/ln	1774	0	1591	0	1863	1583	1774	1770	1583	1774	1770	1802
Q Serve(g_s), s	1.8	0.0	1.0	0.0	0.1	1.0	1.6	14.7	0.0	1.0	11.5	11.5
Cycle Q Clear(g_c), s	1.8	0.0	1.0	0.0	0.1	1.0	1.6	14.7	0.0	1.0	11.5	11.5
Prop In Lane	1.00		0.97	0.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	103	0	92	0	57	48	76	1748	782	55	854	869
V/C Ratio(X)	0.60	0.00	0.36	0.00	0.07	0.64	0.74	0.73	0.00	0.65	0.62	0.62
Avail Cap(c_a), veh/h	754	0	676	0	792	673	137	1846	826	137	923	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	0.0	23.5	0.0	24.4	24.8	24.5	10.4	0.0	24.8	9.9	9.9
Incr Delay (d2), s/veh	5.6	0.0	2.3	0.0	0.5	13.3	13.1	1.4	0.0	12.1	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.5	0.0	0.1	0.6	1.1	7.4	0.0	0.7	5.7	5.8
LnGrp Delay(d),s/veh	29.4	0.0	25.8	0.0	24.9	38.1	37.5	11.8	0.0	36.9	11.0	11.0
LnGrp LOS	C		C		C	D	D	B		D	B	B
Approach Vol, veh/h	95				35		1329				1106	
Approach Delay, s/veh	28.1				36.6		12.8				11.9	
Approach LOS	C				D		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.6	30.6	8.0		7.2	30.0	6.6					
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s	4.0	27.0	22.0		4.0	27.0	22.0					
Max Q Clear Time (g_c+I1), s	3.0	16.7	3.8		3.6	13.5	3.0					
Green Ext Time (p_c), s	0.0	8.9	0.3		0.0	11.3	0.1					
Intersection Summary												
HCM 2010 Ctrl Delay			13.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

162: Fairway Dr & Cortina Cir

Cumulative Plus Project
PM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	179	2	105	22	1	27	83	822	24	72	1011	110								
Future Volume (veh/h)	179	2	105	22	1	27	83	822	24	72	1011	110								
Number	7	4	14	3	8	18	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	189	0	111	23	1	28	87	865	25	76	1064	116								
Adj No. of Lanes	2	0	1	1	1	0	1	2	1	1	2	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	462	0	206	146	5	127	146	1663	744	118	1608	719								
Arrive On Green	0.13	0.00	0.13	0.08	0.08	0.08	0.08	0.47	0.47	0.07	0.45	0.45								
Sat Flow, veh/h	3548	0	1583	1774	55	1537	1774	3539	1583	1774	3539	1583								
Grp Volume(v), veh/h	189	0	111	23	0	29	87	865	25	76	1064	116								
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1592	1774	1770	1583	1774	1770	1583								
Q Serve(g_s), s	3.4	0.0	4.5	0.8	0.0	1.2	3.3	11.8	0.6	2.9	16.2	3.0								
Cycle Q Clear(g_c), s	3.4	0.0	4.5	0.8	0.0	1.2	3.3	11.8	0.6	2.9	16.2	3.0								
Prop In Lane	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	462	0	206	146	0	131	146	1663	744	118	1608	719								
V/C Ratio(X)	0.41	0.00	0.54	0.16	0.00	0.22	0.60	0.52	0.03	0.64	0.66	0.16								
Avail Cap(c_a), veh/h	1029	0	459	309	0	277	309	1730	774	309	1730	774								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	27.5	0.0	28.0	29.4	0.0	29.6	30.5	12.8	9.8	31.4	14.7	11.1								
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.2	0.0	0.3	1.4	0.3	0.0	2.2	1.0	0.1								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.0	0.4	0.0	0.5	1.7	5.8	0.3	1.5	8.1	1.3								
LnGrp Delay(d),s/veh	27.8	0.0	28.9	29.6	0.0	29.9	32.0	13.2	9.9	33.5	15.7	11.2								
LnGrp LOS	C		C	C		C	C	B	A	C	B	B								
Approach Vol, veh/h	300				52				977		1256									
Approach Delay, s/veh	28.2				29.8				14.8		16.3									
Approach LOS	C				C				B		B									
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	8.6	37.7	13.0		9.7	36.6	9.7													
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	5.3	4.0													
Max Green Setting (Gmax), s	12.0	33.7	20.0		12.0	33.7	12.0													
Max Q Clear Time (g_c+I1), s	4.9	13.8	6.5		5.3	18.2	3.2													
Green Ext Time (p_c), s	0.0	16.3	0.5		0.0	13.1	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay	17.4																			
HCM 2010 LOS	B																			
Notes																				
User approved volume balancing among the lanes for turning movement.																				

HCM 2010 Signalized Intersection Summary
163: Westbrook Blvd & High School Road

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	3	30	5	6	13	5		
Future Volume (veh/h)	3	30	5	6	13	5		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	3	32	5	6	14	5		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	111	99	64	54	40	653		
Arrive On Green	0.06	0.06	0.03	0.03	0.02	0.35		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	3	32	5	6	14	5		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	0.0	0.3	0.0	0.1	0.1	0.0		
Cycle Q Clear(g_c), s	0.0	0.3	0.0	0.1	0.1	0.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	111	99	64	54	40	653		
V/C Ratio(X)	0.03	0.32	0.08	0.11	0.35	0.01		
Avail Cap(c_a), veh/h	2187	1952	2405	2045	729	3718		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	7.5	7.6	8.0	8.0	8.2	3.6		
Incr Delay (d2), s/veh	0.1	1.9	0.5	0.9	5.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.1	0.0		
LnGrp Delay(d),s/veh	7.6	9.5	8.5	8.9	13.3	3.6		
LnGrp LOS	A	A	A	A	B	A		
Approach Vol, veh/h	35		11			19		
Approach Delay, s/veh	9.3		8.7			10.8		
Approach LOS	A		A			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.4	5.6				11.0		6.1
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	7.0	22.0				34.0		21.0
Max Q Clear Time (g_c+l1), s	2.1	2.1				2.0		2.3
Green Ext Time (p_c), s	0.0	0.0				0.0		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			9.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

164: Target Dwy & Fairway Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1086	65	95	867	29	134	32	20	3	34	13
Future Volume (veh/h)	54	1086	65	95	867	29	134	32	20	3	34	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	57	1143	68	100	913	31	88	109	21	3	36	14
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	1749	782	160	1863	834	203	213	181	8	95	37
Arrive On Green	0.08	0.49	0.49	0.09	0.53	0.53	0.11	0.11	0.11	0.08	0.08	0.06
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	100	1206	469
Grp Volume(v), veh/h	57	1143	68	100	913	31	88	109	21	53	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1775	0	0
Q Serve(g_s), s	1.6	12.7	1.2	2.9	8.7	0.5	2.4	2.9	0.6	1.5	0.0	0.0
Cycle Q Clear(g_c), s	1.6	12.7	1.2	2.9	8.7	0.5	2.4	2.9	0.6	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.06		0.26
Lane Grp Cap(c), veh/h	136	1749	782	160	1863	834	203	213	181	140	0	0
V/C Ratio(X)	0.42	0.65	0.09	0.63	0.49	0.04	0.43	0.51	0.12	0.38	0.00	0.00
Avail Cap(c_a), veh/h	202	1902	851	236	2036	911	573	601	511	202	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.2	10.0	7.0	23.1	8.0	6.0	21.7	21.9	20.9	23.2	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.9	0.1	1.5	0.3	0.0	0.5	0.7	0.1	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.2	0.5	1.5	4.3	0.2	1.2	1.5	0.3	0.8	0.0	0.0
LnGrp Delay(d),s/veh	23.9	10.8	7.1	24.6	8.2	6.0	22.3	22.6	21.0	23.8	0.0	0.0
LnGrp LOS	C	B	A	C	A	A	C	C	C	C		
Approach Vol, veh/h	1268				1044				218		53	
Approach Delay, s/veh	11.2				9.7				22.3		23.8	
Approach LOS	B				A				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	9.0		7.7	29.7	6.2		6.0	31.4				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	16.0		6.0	26.3	4.0		4.0	28.3				
Max Q Clear Time (g_c+I1), s	4.9		4.9	14.7	3.5		3.6	10.7				
Green Ext Time (p_c), s	0.4		0.0	9.3	0.0		0.0	13.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.8											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
165: Lowes Dwy/Central Park Dr & Fairway Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	860	223	176	912	38	227	45	112	19	37	66
Future Volume (veh/h)	79	860	223	176	912	38	227	45	112	19	37	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	83	905	235	185	960	40	273	0	118	20	39	69
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1405	629	257	1473	659	367	0	164	166	209	178
Arrive On Green	0.09	0.40	0.40	0.14	0.42	0.42	0.10	0.00	0.10	0.09	0.11	0.11
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	1774	1863	1583
Grp Volume(v), veh/h	83	905	235	185	960	40	273	0	118	20	39	69
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1774	1863	1583
Q Serve(g_s), s	2.2	10.0	5.1	4.8	10.5	0.7	3.6	0.0	3.5	0.5	0.9	2.0
Cycle Q Clear(g_c), s	2.2	10.0	5.1	4.8	10.5	0.7	3.6	0.0	3.5	0.5	0.9	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	1405	629	257	1473	659	367	0	164	166	209	178
V/C Ratio(X)	0.52	0.64	0.37	0.72	0.65	0.06	0.74	0.00	0.72	0.12	0.19	0.39
Avail Cap(c_a), veh/h	184	1590	711	257	1736	777	367	0	164	503	563	479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	11.8	10.3	19.7	11.3	8.4	21.0	0.0	21.0	20.1	19.4	19.9
Incr Delay (d2), s/veh	1.0	0.9	0.5	8.2	0.9	0.1	7.1	0.0	12.5	0.5	0.6	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.0	2.3	2.9	5.2	0.3	2.1	0.0	2.1	0.3	0.5	0.9
LnGrp Delay(d),s/veh	21.9	12.7	10.8	27.9	12.2	8.5	28.1	0.0	33.4	20.5	20.0	21.9
LnGrp LOS	C	B	B	C	B	A	C		C	C	C	C
Approach Vol, veh/h	1223				1185				391		128	
Approach Delay, s/veh	13.0				14.5				29.7		21.1	
Approach LOS	B				B				C		C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	8.0		10.0	22.2	8.1		9.1	23.1				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.6		5.7	* 5.7				
Max Green Setting (Gmax), s	4.0		6.0	19.0	12.7		4.0	* 21				
Max Q Clear Time (g_c+I1), s	5.6		6.8	12.0	4.0		4.2	12.5				
Green Ext Time (p_c), s	0.0		0.0	4.5	0.3		0.0	4.9				
Intersection Summary												
HCM 2010 Ctrl Delay	16.2											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
166: Home Depot Dwy & Fairway Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	916	84	66	829	2	142	40	10	3	17	92
Future Volume (veh/h)	84	916	84	66	829	2	142	40	10	3	17	92
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	88	964	88	69	873	2	149	42	11	3	18	97
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	1294	579	146	1362	609	462	130	523	21	123	123
Arrive On Green	0.07	0.37	0.37	0.08	0.38	0.38	0.33	0.33	0.33	0.08	0.08	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1399	394	1583	264	1585	1583
Grp Volume(v), veh/h	88	964	88	69	873	2	191	0	11	21	0	97
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1793	0	1583	1850	0	1583
Q Serve(g_s), s	4.3	21.4	3.4	3.3	18.1	0.1	7.2	0.0	0.4	1.0	0.0	5.4
Cycle Q Clear(g_c), s	4.3	21.4	3.4	3.3	18.1	0.1	7.2	0.0	0.4	1.0	0.0	5.4
Prop In Lane	1.00		1.00	1.00		1.00	0.78		1.00	0.14		1.00
Lane Grp Cap(c), veh/h	131	1294	579	146	1362	609	592	0	523	144	0	123
V/C Ratio(X)	0.67	0.74	0.15	0.47	0.64	0.00	0.32	0.00	0.02	0.15	0.00	0.79
Avail Cap(c_a), veh/h	217	1534	686	197	1494	669	592	0	523	144	0	123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.6	24.9	19.2	39.5	22.6	17.1	22.6	0.0	20.3	38.7	0.0	40.8
Incr Delay (d2), s/veh	2.2	2.0	0.2	0.9	1.1	0.0	1.4	0.0	0.1	0.2	0.0	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	10.8	1.5	1.7	9.1	0.0	3.8	0.0	0.2	0.5	0.0	3.3
LnGrp Delay(d),s/veh	42.8	26.9	19.4	40.3	23.7	17.1	24.1	0.0	20.4	38.9	0.0	66.7
LnGrp LOS	D	C	B	D	C	B	C		C	D		E
Approach Vol, veh/h	1140				944				202			
Approach Delay, s/veh	27.6				24.9				23.9			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	32.7		11.4	35.9	10.0		9.7	37.6				
Change Period (Y+Rc), s	4.0		5.0	* 5	4.0		4.0	5.0				
Max Green Setting (Gmax), s	21.0		9.0	* 37	6.0		10.0	36.0				
Max Q Clear Time (g_c+I1), s	9.2		5.3	23.4	7.4		6.3	20.1				
Green Ext Time (p_c), s	1.0		2.4	7.5	0.0		0.0	7.8				
Intersection Summary												
HCM 2010 Ctrl Delay	27.9											
HCM 2010 LOS	C											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

167: Five Star Blvd & Fairway Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	546	380	57	462	64	421	70	50	59	45	18
Future Volume (veh/h)	40	546	380	57	462	64	421	70	50	59	45	18
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	42	575	400	60	486	67	496	0	53	62	47	19
Adj No. of Lanes	1	2	1	1	2	1	2	0	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1242	845	96	1258	563	687	0	307	92	70	142
Arrive On Green	0.04	0.35	0.34	0.05	0.36	0.36	0.19	0.00	0.19	0.09	0.09	0.09
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3548	0	1583	1030	781	1583
Grp Volume(v), veh/h	42	575	400	60	486	67	496	0	53	109	0	19
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	0	1583	1811	0	1583
Q Serve(g_s), s	2.1	11.3	14.2	3.0	9.2	2.6	11.8	0.0	2.5	5.2	0.0	1.0
Cycle Q Clear(g_c), s	2.1	11.3	14.2	3.0	9.2	2.6	11.8	0.0	2.5	5.2	0.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.57		1.00
Lane Grp Cap(c), veh/h	69	1242	845	96	1258	563	687	0	307	162	0	142
V/C Ratio(X)	0.61	0.46	0.47	0.62	0.39	0.12	0.72	0.00	0.17	0.67	0.00	0.13
Avail Cap(c_a), veh/h	118	1242	845	197	1258	563	1064	0	475	262	0	229
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.6	22.6	13.1	41.7	21.7	19.5	34.0	0.0	30.3	39.7	0.0	37.8
Incr Delay (d2), s/veh	3.3	0.4	0.7	2.4	0.9	0.4	1.7	0.0	0.3	1.8	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.6	8.9	1.5	4.7	1.2	6.0	0.0	1.1	2.7	0.0	0.4
LnGrp Delay(d),s/veh	45.9	23.1	13.8	44.1	22.6	19.9	35.8	0.0	30.6	41.5	0.0	37.9
LnGrp LOS	D	C	B	D	C	B	D		C	D		D
Approach Vol, veh/h	1017				613				549			
Approach Delay, s/veh	20.3				24.4				35.3			
Approach LOS	C				C				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	20.4		7.9	34.6	11.0		7.5	35.0				
Change Period (Y+Rc), s	4.0		4.0	5.0	4.0		5.0	* 5				
Max Green Setting (Gmax), s	26.0		9.0	26.0	12.0		5.0	* 30				
Max Q Clear Time (g_c+I1), s	13.8		5.0	16.2	7.2		4.1	11.2				
Green Ext Time (p_c), s	2.6		0.0	4.9	0.1		0.0	3.8				
Intersection Summary												
HCM 2010 Ctrl Delay	26.1											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

168: Stanford Ranch Rd & Highland Park

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	14	36	24	12	4	37	1366	6	7	956	190
Future Volume (veh/h)	192	14	36	24	12	4	37	1366	6	7	956	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1853	1853	1890	1863	1863	1900	1825	1825	1825	1900	1900	1900
Adj Flow Rate, veh/h	202	15	38	25	13	4	39	1438	6	7	1006	200
Adj No. of Lanes	1	1	0	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	73	186	279	92	28	102	2508	779	49	2448	761
Arrive On Green	0.17	0.16	0.16	0.08	0.07	0.07	0.06	0.50	0.50	0.03	0.47	0.47
Sat Flow, veh/h	1765	464	1176	3442	1367	420	1739	4984	1549	1810	5187	1612
Grp Volume(v), veh/h	202	0	53	25	0	17	39	1438	6	7	1006	200
Grp Sat Flow(s),veh/h/ln	1765	0	1641	1721	0	1787	1739	1661	1549	1810	1729	1612
Q Serve(g_s), s	6.0	0.0	1.6	0.4	0.0	0.5	1.2	11.3	0.1	0.2	7.1	0.9
Cycle Q Clear(g_c), s	6.0	0.0	1.6	0.4	0.0	0.5	1.2	11.3	0.1	0.2	7.1	0.9
Prop In Lane	1.00		0.72	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	0	259	279	0	120	102	2508	779	49	2448	761
V/C Ratio(X)	0.67	0.00	0.20	0.09	0.00	0.14	0.38	0.57	0.01	0.14	0.41	0.26
Avail Cap(c_a), veh/h	410	0	490	738	0	543	186	2508	779	194	2540	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	20.5	23.8	0.0	24.6	25.4	9.7	6.9	26.6	9.7	0.4
Incr Delay (d2), s/veh	0.9	0.0	0.3	0.1	0.0	0.2	0.9	0.5	0.0	0.5	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.7	0.2	0.0	0.3	0.6	5.2	0.0	0.1	3.4	0.4
LnGrp Delay(d),s/veh	22.6	0.0	20.8	23.8	0.0	24.8	26.3	10.2	6.9	27.1	9.9	0.8
LnGrp LOS	C		C	C		C	C	B	A	C	A	A
Approach Vol, veh/h	255				42		1483				1213	
Approach Delay, s/veh	22.2				24.2		10.6				8.5	
Approach LOS	C				C		B				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.5	30.8	7.5	13.1	6.3	29.0	13.9	6.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.3	4.0	6.0	5.3	* 4				
Max Green Setting (Gmax), s	5.0	24.0	11.0	15.7	5.0	24.0	12.0	* 16				
Max Q Clear Time (g_c+I1), s	2.2	13.3	2.4	3.6	3.2	9.1	8.0	2.5				
Green Ext Time (p_c), s	0.0	10.7	0.0	0.6	0.0	13.9	0.3	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
169: Stanford Ranch Rd & Fairway Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	380	260	196	224	13	252	1335	215	70	922	81
Future Volume (veh/h)	89	380	260	196	224	13	252	1335	215	70	922	81
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	94	400	274	206	236	14	265	1405	226	74	971	85
Adj No. of Lanes	1	2	1	2	1	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	581	260	267	305	18	322	2841	885	121	2545	792
Arrive On Green	0.07	0.16	0.16	0.08	0.18	0.18	0.19	1.00	1.00	0.04	0.50	0.50
Sat Flow, veh/h	1774	3539	1583	3442	1741	103	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	94	400	274	206	0	250	265	1405	226	74	971	85
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	0	1845	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	6.3	12.8	19.7	7.0	0.0	15.5	8.9	0.0	0.0	2.5	14.1	3.4
Cycle Q Clear(g_c), s	6.3	12.8	19.7	7.0	0.0	15.5	8.9	0.0	0.0	2.5	14.1	3.4
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	581	260	267	0	323	322	2841	885	121	2545	792
V/C Ratio(X)	0.80	0.69	1.05	0.77	0.00	0.77	0.82	0.49	0.26	0.61	0.38	0.11
Avail Cap(c_a), veh/h	310	581	260	602	0	323	602	2841	885	602	2545	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.2	47.3	50.2	54.3	0.0	47.2	47.8	0.0	0.0	57.1	18.5	15.8
Incr Delay (d2), s/veh	4.6	3.7	70.8	1.8	0.0	11.5	2.0	0.6	0.7	1.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	6.5	13.7	3.4	0.0	9.0	4.3	0.2	0.2	1.2	6.6	1.5
LnGrp Delay(d),s/veh	59.8	51.0	120.9	56.1	0.0	58.7	49.9	0.6	0.7	58.9	18.7	15.9
LnGrp LOS	E	D	F	E		E	D	A	A	E	B	B
Approach Vol, veh/h	768				456				1896			
Approach Delay, s/veh	77.0				57.5				7.5			
Approach LOS	E				E				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	73.4	13.3	25.0	15.2	66.5	12.0	26.3				
Change Period (Y+Rc), s	4.0	* 6.4	4.0	5.3	4.0	6.4	4.0	5.3				
Max Green Setting (Gmax), s	21.0	* 40	21.0	19.7	21.0	38.6	21.0	19.7				
Max Q Clear Time (g_c+I1), s	4.5	2.0	9.0	21.7	10.9	16.1	8.3	17.5				
Green Ext Time (p_c), s	0.1	35.0	0.3	0.0	0.3	18.4	0.1	1.3				

Intersection Summary

HCM 2010 Ctrl Delay	29.0
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

170: Stanford Ranch Rd & 5 Star Blvd

Cumulative Plus Project
PM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	100	106	278	350	79	42	612	1669	219	111	1235	130								
Future Volume (veh/h)	100	106	278	350	79	42	612	1669	219	111	1235	130								
Number	3	8	18	7	4	14	5	2	12	1	6	16								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863								
Adj Flow Rate, veh/h	105	112	293	368	83	44	644	1757	231	117	1300	137								
Adj No. of Lanes	1	1	1	2	1	0	2	3	1	2	3	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	291	306	260	449	145	77	752	1894	850	588	1707	532								
Arrive On Green	0.16	0.16	0.16	0.13	0.13	0.13	0.22	0.37	0.37	0.17	0.34	0.34								
Sat Flow, veh/h	1774	1863	1583	3548	1147	608	3442	5085	1583	3442	5085	1583								
Grp Volume(v), veh/h	105	112	293	368	0	127	644	1757	231	117	1300	137								
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1755	1721	1695	1583	1721	1695	1583								
Q Serve(g_s), s	6.3	6.4	19.7	12.1	0.0	8.2	21.6	39.8	9.5	3.5	27.4	7.6								
Cycle Q Clear(g_c), s	6.3	6.4	19.7	12.1	0.0	8.2	21.6	39.8	9.5	3.5	27.4	7.6								
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00								
Lane Grp Cap(c), veh/h	291	306	260	449	0	222	752	1894	850	588	1707	532								
V/C Ratio(X)	0.36	0.37	1.13	0.82	0.00	0.57	0.86	0.93	0.27	0.20	0.76	0.26								
Avail Cap(c_a), veh/h	291	306	260	582	0	288	918	1894	850	588	1707	532								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Uniform Delay (d), s/veh	44.6	44.6	50.2	51.1	0.0	49.3	45.1	36.1	15.1	42.7	35.6	29.0								
Incr Delay (d2), s/veh	0.8	0.7	94.4	7.0	0.0	2.3	7.8	9.4	0.8	0.2	2.3	0.4								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	3.2	3.4	15.4	6.4	0.0	4.1	11.1	20.2	5.8	1.7	13.1	3.4								
LnGrp Delay(d),s/veh	45.3	45.3	144.6	58.1	0.0	51.6	52.9	45.5	15.9	42.9	37.8	29.4								
LnGrp LOS	D	D	F	E		D	D	D	B	D	D	C								
Approach Vol, veh/h	510				495				2632											
Approach Delay, s/veh	102.4				56.4				44.7											
Approach LOS	F				E				D											
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	24.5	50.0	20.5		30.2	44.3	25.0													
Change Period (Y+Rc), s	4.0	5.3	5.3		4.0	4.0	5.3													
Max Green Setting (Gmax), s	16.0	44.7	19.7		32.0	30.0	19.7													
Max Q Clear Time (g_c+I1), s	5.5	41.8	14.1		23.6	29.4	21.7													
Green Ext Time (p_c), s	5.2	2.6	1.1		2.6	0.6	0.0													
Intersection Summary																				
HCM 2010 Ctrl Delay	49.3																			
HCM 2010 LOS	D																			
Notes																				
User approved pedestrian interval to be less than phase max green.																				

HCM 2010 Signalized Intersection Summary
171: Galleria Blvd/Stanford Ranch & Hwy-65 NB Ramps

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations							 	  			  	
Traffic Volume (veh/h)	0	0	426	0	0	844	805	1675	0	0	1802	353
Future Volume (veh/h)	0	0	426	0	0	844	805	1675	0	0	1802	353
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h	0	0	0	0	0	0	847	1763	0	0	1897	372
Adj No. of Lanes	0	0	1	0	0	1	2	3	0	0	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	2	2	0	0	2	2
Cap, veh/h	0	0	0	0	0	0	993	3782	0	0	2196	684
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.74	0.00	0.00	0.43	0.43
Sat Flow, veh/h		0			0		3442	5253	0	0	5253	1583
Grp Volume(v), veh/h		0.0			0.0		847	1763	0	0	1897	372
Grp Sat Flow(s),veh/h/ln							1721	1695	0	0	1695	1583
Q Serve(g_s), s							30.0	17.5	0.0	0.0	43.6	22.5
Cycle Q Clear(g_c), s							30.0	17.5	0.0	0.0	43.6	22.5
Prop In Lane							1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h							993	3782	0	0	2196	684
V/C Ratio(X)							0.85	0.47	0.00	0.00	0.86	0.54
Avail Cap(c_a), veh/h							1521	4561	0	0	2196	684
HCM Platoon Ratio							1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)							0.61	0.61	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh							43.3	6.5	0.0	0.0	33.2	27.2
Incr Delay (d2), s/veh							1.9	0.1	0.0	0.0	4.8	3.1
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							14.5	8.2	0.0	0.0	21.4	10.4
LnGrp Delay(d),s/veh							45.2	6.5	0.0	0.0	38.0	30.3
LnGrp LOS							D	A			D	C
Approach Vol, veh/h								2610			2269	
Approach Delay, s/veh								19.1			36.8	
Approach LOS								B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6						
Phs Duration (G+Y+Rc), s		100.2			40.2	60.0						
Change Period (Y+Rc), s		5.3			4.0	5.3						
Max Green Setting (Gmax), s		114.7			56.0	54.7						
Max Q Clear Time (g_c+l1), s		19.5			32.0	45.6						
Green Ext Time (p_c), s		64.7			4.3	8.6						
Intersection Summary												
HCM 2010 Ctrl Delay			27.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
172: Galleria Blvd & Hwy-65 SB Ramps

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  		  	  	
Traffic Volume (veh/h)	0	0	858	0	0	168	0	2312	590	549	1748	0
Future Volume (veh/h)	0	0	858	0	0	168	0	2312	590	549	1748	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	0	1863	0	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	0	0	903	0	0	0	0	2434	621	578	1840	0
Adj No. of Lanes	0	0	1	0	0	1	0	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	2	0	0	2	0	2	2	2	2	0
Cap, veh/h	0	0	0	0	0	0	0	3165	986	655	4318	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.62	0.38	1.00	0.00
Sat Flow, veh/h		0			0		0	5253	1583	3442	5253	0
Grp Volume(v), veh/h		0.0			0.0		0	2434	621	578	1840	0
Grp Sat Flow(s),veh/h/ln							0	1695	1583	1721	1695	0
Q Serve(g_s), s							0.0	44.7	31.4	20.2	0.0	0.0
Cycle Q Clear(g_c), s							0.0	44.7	31.4	20.2	0.0	0.0
Prop In Lane							0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h							0	3165	986	655	4318	0
V/C Ratio(X)							0.00	0.77	0.63	0.88	0.43	0.00
Avail Cap(c_a), veh/h							0	3165	986	808	4318	0
HCM Platoon Ratio							1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(l)							0.00	0.49	0.49	0.67	0.67	0.00
Uniform Delay (d), s/veh							0.0	17.6	15.1	38.6	0.0	0.0
Incr Delay (d2), s/veh							0.0	0.9	1.5	6.9	0.2	0.0
Initial Q Delay(d3),s/veh							0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln							0.0	21.0	14.0	10.2	0.1	0.0
LnGrp Delay(d),s/veh							0.0	18.5	16.6	45.5	0.2	0.0
LnGrp LOS								B	B	D	A	
Approach Vol, veh/h								3055			2418	
Approach Delay, s/veh								18.2			11.0	
Approach LOS								B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6						
Phs Duration (G+Y+Rc), s	29.2	85.0				114.2						
Change Period (Y+Rc), s	5.7	5.7				5.7						
Max Green Setting (Gmax), s	29.3	79.3				69.3						
Max Q Clear Time (g_c+I1), s	22.2	46.7				2.0						
Green Ext Time (p_c), s	1.3	23.9				22.6						
Intersection Summary												
HCM 2010 Ctrl Delay			15.0									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
173: JC Penny & Galleria Circle

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	21	23	11	14	11	104	139	0	28	159	160
Future Volume (veh/h)	23	21	23	11	14	11	104	139	0	28	159	160
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	24	22	24	12	15	12	109	146	0	29	167	168
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	25	27	232	33	26	133	1437	0	39	301	303
Arrive On Green	0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.41	0.00	0.02	0.35	0.35
Sat Flow, veh/h	579	531	579	554	693	554	1774	3632	0	1774	853	858
Grp Volume(v), veh/h	70	0	0	39	0	0	109	146	0	29	0	335
Grp Sat Flow(s),veh/h/ln	1689	0	0	1802	0	0	1774	1770	0	1774	0	1711
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	1.4	0.6	0.0	0.4	0.0	3.6
Cycle Q Clear(g_c), s	0.9	0.0	0.0	0.5	0.0	0.0	1.4	0.6	0.0	0.4	0.0	3.6
Prop In Lane	0.34		0.34	0.31		0.31	1.00		0.00	1.00		0.50
Lane Grp Cap(c), veh/h	291	0	0	291	0	0	133	1437	0	39	0	605
V/C Ratio(X)	0.24	0.00	0.00	0.13	0.00	0.00	0.82	0.10	0.00	0.74	0.00	0.55
Avail Cap(c_a), veh/h	562	0	0	425	0	0	543	3251	0	388	0	1422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.8	0.0	0.0	10.6	0.0	0.0	10.4	4.2	0.0	11.1	0.0	5.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0	4.7	0.0	0.0	9.7	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.2	0.0	0.0	0.8	0.3	0.0	0.3	0.0	1.8
LnGrp Delay(d),s/veh	11.0	0.0	0.0	10.7	0.0	0.0	15.2	4.2	0.0	20.8	0.0	6.7
LnGrp LOS	B			B			B	A		C		A
Approach Vol, veh/h	70				39		255				364	
Approach Delay, s/veh	11.0				10.7		8.9				7.8	
Approach LOS	B				B		A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.5	13.3	5.1		5.7	12.1	5.1					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	5.0	21.0	5.0		7.0	19.0	3.0					
Max Q Clear Time (g_c+I1), s	2.4	2.6	2.9		3.4	5.6	2.5					
Green Ext Time (p_c), s	0.0	2.8	0.1		0.0	2.5	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			8.7									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
174: Galleria Blvd & Antelope Creek Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	512	69	106	461	93	325	103	1888	190	271	1761	163
Future Volume (veh/h)	512	69	106	461	93	325	103	1888	190	271	1761	163
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1810	1810	1810	1810	1810	1810
Adj Flow Rate, veh/h	539	73	0	485	98	0	108	1987	0	285	1854	172
Adj No. of Lanes	3	1	1	3	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	5	5	5	5	5	5
Cap, veh/h	740	259	214	710	249	205	347	1737	522	383	1721	531
Arrive On Green	0.14	0.14	0.00	0.13	0.13	0.00	0.10	0.35	0.00	0.11	0.35	0.35
Sat Flow, veh/h	5322	1863	1583	5322	1863	1583	3343	4940	1538	3343	4940	1525
Grp Volume(v), veh/h	539	73	0	485	98	0	108	1987	0	285	1854	172
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1672	1647	1538	1672	1647	1525
Q Serve(g_s), s	11.6	4.2	0.0	10.4	5.8	0.0	3.6	42.2	0.0	9.9	41.8	9.9
Cycle Q Clear(g_c), s	11.6	4.2	0.0	10.4	5.8	0.0	3.6	42.2	0.0	9.9	41.8	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	740	259	214	710	249	205	347	1737	522	383	1721	531
V/C Ratio(X)	0.73	0.28	0.00	0.68	0.39	0.00	0.31	1.14	0.00	0.74	1.08	0.32
Avail Cap(c_a), veh/h	998	349	290	958	335	278	627	1737	522	627	1721	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.26	0.26	0.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	49.5	46.3	0.0	49.6	47.6	0.0	49.8	38.9	0.0	51.4	39.1	28.7
Incr Delay (d2), s/veh	1.8	0.6	0.0	1.7	1.4	0.0	0.0	66.9	0.0	0.1	36.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	2.2	0.0	5.2	3.1	0.0	1.7	29.9	0.0	4.6	24.7	4.2
LnGrp Delay(d),s/veh	51.3	46.9	0.0	51.2	49.0	0.0	49.9	105.8	0.0	51.5	75.2	28.9
LnGrp LOS	D	D		D	D		D	F		D	F	C
Approach Vol, veh/h		612			583			2095			2311	
Approach Delay, s/veh		50.7			50.8			102.9			68.8	
Approach LOS		D			D			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	45.4		19.4	16.7	45.0		19.2				
Change Period (Y+Rc), s	4.0	5.7		4.9	5.7	* 5.7		4.0				
Max Green Setting (Gmax), s	21.0	39.3		20.1	21.0	* 39		21.0				
Max Q Clear Time (g_c+I1), s	11.9	44.2		12.4	5.6	43.8		13.6				
Green Ext Time (p_c), s	0.4	0.0		2.1	5.9	0.0		1.6				

Intersection Summary

HCM 2010 Ctrl Delay 77.7
HCM 2010 LOS E

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
175: Galleria Blvd & Berry St

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	0	101	5	1	6	192	1595	5	54	2077	283
Future Volume (veh/h)	119	0	101	5	1	6	192	1595	5	54	2077	283
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	125	0	106	5	1	6	202	1679	5	57	2186	298
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	0	150	48	10	51	193	2593	8	87	2405	1076
Arrive On Green	0.09	0.00	0.09	0.03	0.03	0.03	0.11	0.72	0.71	0.05	0.68	0.68
Sat Flow, veh/h	1774	0	1583	1490	298	1583	1774	3620	11	1774	3539	1583
Grp Volume(v), veh/h	125	0	106	6	0	6	202	821	863	57	2186	298
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1788	0	1583	1774	1770	1861	1774	1770	1583
Q Serve(g_s), s	8.8	0.0	8.4	0.4	0.0	0.5	14.0	31.6	31.6	4.1	66.6	9.6
Cycle Q Clear(g_c), s	8.8	0.0	8.4	0.4	0.0	0.5	14.0	31.6	31.6	4.1	66.6	9.6
Prop In Lane	1.00		1.00	0.83		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	168	0	150	58	0	51	193	1268	1333	87	2405	1076
V/C Ratio(X)	0.74	0.00	0.71	0.10	0.00	0.12	1.05	0.65	0.65	0.66	0.91	0.28
Avail Cap(c_a), veh/h	290	0	258	139	0	123	193	1268	1333	138	2451	1096
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	0.0	56.5	60.5	0.0	60.5	57.3	9.7	9.7	60.1	17.3	8.1
Incr Delay (d2), s/veh	2.4	0.0	2.3	0.3	0.0	0.4	77.6	1.3	1.3	3.1	5.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	3.8	0.2	0.0	0.2	11.0	15.7	16.5	2.1	34.1	4.2
LnGrp Delay(d),s/veh	59.2	0.0	58.8	60.8	0.0	60.9	134.9	11.0	10.9	63.3	22.9	8.3
LnGrp LOS	E		E	E		E	F	B	B	E	C	A
Approach Vol, veh/h	231				12		1886				2541	
Approach Delay, s/veh	59.0				60.8		24.3				22.1	
Approach LOS	E				E		C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.3	96.2	16.1		15.0	90.5	7.1					
Change Period (Y+Rc), s	4.0	6.0	4.9		4.0	6.0	4.0					
Max Green Setting (Gmax), s	9.0	88.1	20.0		11.0	86.1	9.0					
Max Q Clear Time (g_c+I1), s	6.1	33.6	10.8		16.0	68.6	2.5					
Green Ext Time (p_c), s	0.0	52.8	0.4		0.0	15.9	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			24.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
176: Harding Blvd & Wills Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	326	7	199	13	16	41	238	1451	5	5	1565	595
Future Volume (veh/h)	326	7	199	13	16	41	238	1451	5	5	1565	595
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	343	7	209	14	17	43	251	1527	5	5	1647	626
Adj No. of Lanes	2	1	0	1	1	1	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	663	10	296	84	89	75	287	2176	7	28	1889	845
Arrive On Green	0.19	0.19	0.19	0.05	0.05	0.05	0.08	0.60	0.58	0.02	0.53	0.53
Sat Flow, veh/h	3442	52	1540	1774	1863	1583	3442	3618	12	1774	3539	1583
Grp Volume(v), veh/h	343	0	216	14	17	43	251	747	785	5	1647	626
Grp Sat Flow(s),veh/h/ln	1721	0	1591	1774	1863	1583	1721	1770	1861	1774	1770	1583
Q Serve(g_s), s	7.5	0.0	10.7	0.6	0.7	2.2	6.1	24.5	24.5	0.2	34.1	25.6
Cycle Q Clear(g_c), s	7.5	0.0	10.7	0.6	0.7	2.2	6.1	24.5	24.5	0.2	34.1	25.6
Prop In Lane	1.00		0.97	1.00		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	663	0	306	84	89	75	287	1064	1119	28	1889	845
V/C Ratio(X)	0.52	0.00	0.70	0.17	0.19	0.57	0.88	0.70	0.70	0.18	0.87	0.74
Avail Cap(c_a), veh/h	1269	0	587	84	89	75	287	1064	1119	84	1937	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	31.7	38.4	38.5	39.2	38.1	11.6	11.6	40.8	17.1	15.1
Incr Delay (d2), s/veh	0.6	0.0	3.0	0.3	0.4	6.5	23.9	2.7	2.6	1.1	5.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	4.9	0.3	0.4	1.1	3.8	12.6	13.2	0.1	17.8	12.1
LnGrp Delay(d),s/veh	31.1	0.0	34.7	38.8	38.9	45.7	62.0	14.3	14.1	41.9	22.1	19.3
LnGrp LOS	C		C	D	D	D	E	B	B	D	C	B
Approach Vol, veh/h	559			74			1783			2278		
Approach Delay, s/veh	32.5			42.8			20.9			21.4		
Approach LOS	C			D			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.3	53.5		19.2	10.0	47.9		7.0				
Change Period (Y+Rc), s	4.0	5.5		4.0	4.0	5.5		4.0				
Max Green Setting (Gmax), s	3.0	46.5		30.0	6.0	43.5		3.0				
Max Q Clear Time (g_c+I1), s	2.2	26.5		12.7	8.1	36.1		4.2				
Green Ext Time (p_c), s	0.0	19.8		2.5	0.0	6.3		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			22.9									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
177: Harding Blvd & Lead Hill Blvd

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	772	775	837	458	1017	838		
Future Volume (veh/h)	772	775	837	458	1017	838		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	813	816	881	482	1071	882		
Adj No. of Lanes	2	1	2	1	2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	956	961	2879	1288	1082	4007		
Arrive On Green	0.28	0.29	0.81	0.81	0.31	1.00		
Sat Flow, veh/h	3442	1583	3632	1583	3442	3632		
Grp Volume(v), veh/h	813	816	881	482	1071	882		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1721	1770		
Q Serve(g_s), s	20.1	26.3	5.6	7.4	27.9	0.0		
Cycle Q Clear(g_c), s	20.1	26.3	5.6	7.4	27.9	0.0		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	956	961	2879	1288	1082	4007		
V/C Ratio(X)	0.85	0.85	0.31	0.37	0.99	0.22		
Avail Cap(c_a), veh/h	956	961	2879	1288	1082	4007		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	30.7	14.4	2.1	2.3	30.7	0.0		
Incr Delay (d2), s/veh	7.0	6.9	0.1	0.2	24.7	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.4	30.0	2.7	3.2	17.0	0.1		
LnGrp Delay(d),s/veh	37.8	21.3	2.2	2.5	55.4	0.1		
LnGrp LOS	D	C	A	A	E	A		
Approach Vol, veh/h	1629		1363			1953		
Approach Delay, s/veh	29.5		2.3			30.5		
Approach LOS	C		A			C		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				107.5		28.0	30.0	77.5
Change Period (Y+Rc), s				* 5.3		4.0	4.0	5.3
Max Green Setting (Gmax), s				* 58		24.0	26.0	26.7
Max Q Clear Time (g_c+I1), s				2.0		28.3	29.9	9.4
Green Ext Time (p_c), s				27.6		0.0	0.0	13.1
Intersection Summary								
HCM 2010 Ctrl Delay			22.4					
HCM 2010 LOS			C					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary

178: Harding Blvd & Estates Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	307	15	28	25	15	55	43	924	0	70	1315	219
Future Volume (veh/h)	307	15	28	25	15	55	43	924	0	70	1315	219
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	361	0	0	26	16	58	45	973	0	74	1384	231
Adj No. of Lanes	2	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	223	0	29	18	65	247	2193	0	94	1591	262
Arrive On Green	0.12	0.00	0.00	0.07	0.07	0.07	0.28	1.00	0.00	0.05	0.52	0.52
Sat Flow, veh/h	3548	1863	0	434	267	969	1774	3632	0	1774	3042	502
Grp Volume(v), veh/h	361	0	0	100	0	0	45	973	0	74	798	817
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1670	0	0	1774	1770	0	1774	1770	1774
Q Serve(g_s), s	12.0	0.0	0.0	7.1	0.0	0.0	2.3	0.0	0.0	4.9	47.0	48.9
Cycle Q Clear(g_c), s	12.0	0.0	0.0	7.1	0.0	0.0	2.3	0.0	0.0	4.9	47.0	48.9
Prop In Lane	1.00		0.00	0.26		0.58	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	425	223	0	111	0	0	247	2193	0	94	925	928
V/C Ratio(X)	0.85	0.00	0.00	0.90	0.00	0.00	0.18	0.44	0.00	0.78	0.86	0.88
Avail Cap(c_a), veh/h	591	310	0	111	0	0	247	2193	0	163	1013	1016
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	0.0	55.6	0.0	0.0	38.1	0.0	0.0	56.1	24.9	25.3
Incr Delay (d2), s/veh	6.2	0.0	0.0	53.5	0.0	0.0	0.1	0.7	0.0	5.3	7.4	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	0.0	5.0	0.0	0.0	1.1	0.2	0.0	2.6	24.7	26.1
LnGrp Delay(d),s/veh	58.0	0.0	0.0	109.1	0.0	0.0	38.3	0.7	0.0	61.4	32.2	33.9
LnGrp LOS	E			F			D	A		E	C	C
Approach Vol, veh/h		361			100			1018			1689	
Approach Delay, s/veh		58.0			109.1			2.3			34.3	
Approach LOS		E			F			A			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	79.3		18.4	21.6	68.0		12.0				
Change Period (Y+Rc), s	4.0	4.9		4.0	4.9	* 5.3		4.0				
Max Green Setting (Gmax), s	11.0	64.1		20.0	6.0	* 69		8.0				
Max Q Clear Time (g_c+I1), s	6.9	2.0		14.0	4.3	50.9		9.1				
Green Ext Time (p_c), s	0.0	14.8		0.4	1.2	11.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				29.1								
HCM 2010 LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

179: Harding Blvd & Roseville Square

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	20	133	126	7	48	130	791	20	25	1141	38
Future Volume (veh/h)	159	20	133	126	7	48	130	791	20	25	1141	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	21	140	133	7	51	137	833	21	26	1201	40
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	25	196	161	8	151	164	1826	46	204	1914	64
Arrive On Green	0.12	0.12	0.12	0.10	0.10	0.10	0.09	0.52	0.52	0.11	0.55	0.55
Sat Flow, veh/h	1584	199	1583	1689	89	1583	1774	3528	89	1774	3495	116
Grp Volume(v), veh/h	188	0	140	140	0	51	137	418	436	26	608	633
Grp Sat Flow(s),veh/h/ln	1784	0	1583	1778	0	1583	1774	1770	1847	1774	1770	1842
Q Serve(g_s), s	12.4	0.0	10.2	9.3	0.0	3.6	9.1	17.9	17.9	1.6	28.4	28.4
Cycle Q Clear(g_c), s	12.4	0.0	10.2	9.3	0.0	3.6	9.1	17.9	17.9	1.6	28.4	28.4
Prop In Lane	0.89		1.00	0.95		1.00	1.00		0.05	1.00		0.06
Lane Grp Cap(c), veh/h	221	0	196	170	0	151	164	916	956	204	969	1009
V/C Ratio(X)	0.85	0.00	0.71	0.83	0.00	0.34	0.84	0.46	0.46	0.13	0.63	0.63
Avail Cap(c_a), veh/h	297	0	264	222	0	198	222	916	956	204	969	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.20	0.20	0.20	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	0.0	50.5	53.3	0.0	50.7	53.6	18.3	18.3	47.7	18.7	18.7
Incr Delay (d2), s/veh	12.6	0.0	3.0	13.6	0.0	0.5	3.2	0.3	0.3	0.1	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	4.6	5.2	0.0	1.6	4.6	8.8	9.2	0.8	14.3	14.8
LnGrp Delay(d),s/veh	64.1	0.0	53.6	66.9	0.0	51.2	56.8	18.6	18.6	47.8	20.2	20.2
LnGrp LOS	E		D	E		D	E	B	B	D	C	C
Approach Vol, veh/h	328				191				991			
Approach Delay, s/veh	59.6				62.7				23.9			
Approach LOS	E				E				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.7	67.0		18.9	15.1	70.6		15.4				
Change Period (Y+Rc), s	4.9	* 4.9		4.0	4.0	4.9		4.0				
Max Green Setting (Gmax), s	6.0	* 62		20.0	15.0	53.1		15.0				
Max Q Clear Time (g_c+I1), s	3.6	19.9		14.4	11.1	30.4		11.3				
Green Ext Time (p_c), s	0.0	10.4		0.5	0.1	13.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	29.4											
HCM 2010 LOS	C											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
180: N. Sunrise Ave & Stone Point Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	72	280	710	46	349	760		
Future Volume (veh/h)	72	280	710	46	349	760		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	76	295	747	48	367	800		
Adj No. of Lanes	2	1	3	1	1	3		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	827	381	2024	630	454	3478		
Arrive On Green	0.24	0.24	0.40	0.40	0.26	0.68		
Sat Flow, veh/h	3442	1583	5253	1583	1774	5253		
Grp Volume(v), veh/h	76	295	747	48	367	800		
Grp Sat Flow(s),veh/h/ln	1721	1583	1695	1583	1774	1695		
Q Serve(g_s), s	1.1	11.5	6.8	1.2	12.8	3.9		
Cycle Q Clear(g_c), s	1.1	11.5	6.8	1.2	12.8	3.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	827	381	2024	630	454	3478		
V/C Ratio(X)	0.09	0.78	0.37	0.08	0.81	0.23		
Avail Cap(c_a), veh/h	1147	528	2542	791	484	4082		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.5	23.4	14.0	12.3	23.1	3.9		
Incr Delay (d2), s/veh	0.0	3.0	0.2	0.1	8.5	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	5.3	3.2	0.6	7.3	1.8		
LnGrp Delay(d),s/veh	19.5	26.4	14.2	12.4	31.6	4.0		
LnGrp LOS	B	C	B	B	C	A		
Approach Vol, veh/h	371		795			1167		
Approach Delay, s/veh	25.0		14.1			12.6		
Approach LOS	C		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	18.9	29.3				48.2		17.9
Change Period (Y+Rc), s	4.0	5.7				5.7		4.0
Max Green Setting (Gmax), s	16.0	30.3				50.3		20.0
Max Q Clear Time (g_c+I1), s	14.8	8.8				5.9		13.5
Green Ext Time (p_c), s	0.1	14.7				23.3		0.4
Intersection Summary								
HCM 2010 Ctrl Delay			15.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
181: Automall Dr & N. Sunrise Ave

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	742	27	143	751	123	100	17	492	254	6	81
Future Volume (veh/h)	69	742	27	143	751	123	100	17	492	254	6	81
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	73	781	28	151	791	129	105	18	518	271	0	85
Adj No. of Lanes	1	3	0	1	3	1	0	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	1756	63	186	1854	577	426	73	442	454	0	203
Arrive On Green	0.09	0.35	0.33	0.10	0.36	0.36	0.28	0.28	0.28	0.13	0.00	0.13
Sat Flow, veh/h	1774	5041	180	1774	5085	1583	1525	261	1583	3548	0	1583
Grp Volume(v), veh/h	73	525	284	151	791	129	123	0	518	271	0	85
Grp Sat Flow(s),veh/h/ln	1774	1695	1831	1774	1695	1583	1786	0	1583	1774	0	1583
Q Serve(g_s), s	3.4	10.3	10.3	7.2	10.1	4.8	4.6	0.0	24.0	6.2	0.0	4.3
Cycle Q Clear(g_c), s	3.4	10.3	10.3	7.2	10.1	4.8	4.6	0.0	24.0	6.2	0.0	4.3
Prop In Lane	1.00		0.10	1.00		1.00	0.85		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	1181	638	186	1854	577	499	0	442	454	0	203
V/C Ratio(X)	0.47	0.44	0.45	0.81	0.43	0.22	0.25	0.00	1.17	0.60	0.00	0.42
Avail Cap(c_a), veh/h	186	1341	724	186	2012	626	499	0	442	867	0	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	21.6	21.7	37.6	20.5	18.9	24.0	0.0	31.0	35.4	0.0	34.5
Incr Delay (d2), s/veh	0.8	0.5	1.0	21.9	0.3	0.4	0.1	0.0	98.8	0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.9	5.4	4.7	4.7	2.2	2.3	0.0	22.6	3.1	0.0	1.9
LnGrp Delay(d),s/veh	38.0	22.1	22.7	59.5	20.9	19.3	24.1	0.0	129.8	35.8	0.0	35.0
LnGrp LOS	D	C	C	E	C	B	C		F	D		D
Approach Vol, veh/h	882			1071			641			356		
Approach Delay, s/veh	23.6			26.1			109.5			35.6		
Approach LOS	C			C			F			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	32.9		27.0	10.6	34.3		14.0				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	8.0	31.7		23.0	8.0	31.7		20.0				
Max Q Clear Time (g_c+I1), s	9.2	12.3		26.0	5.4	12.1		8.2				
Green Ext Time (p_c), s	0.0	15.3		0.0	0.0	15.5		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay	44.6											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

182: N. Sunrise Ave & Lead Hill Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	636	555	78	631	181	503	696	56	162	660	280
Future Volume (veh/h)	200	636	555	78	631	181	503	696	56	162	660	280
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1928	1928	1928
Adj Flow Rate, veh/h	211	669	584	82	664	191	529	733	59	171	695	295
Adj No. of Lanes	1	2	1	1	2	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	1000	447	164	981	439	446	1910	571	372	1844	574
Arrive On Green	0.11	0.28	0.28	0.09	0.28	0.28	0.13	0.38	0.36	0.10	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	3442	5085	1583	3562	5263	1639
Grp Volume(v), veh/h	211	669	584	82	664	191	529	733	59	171	695	295
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1721	1695	1583	1781	1754	1639
Q Serve(g_s), s	9.0	14.2	24.0	3.7	14.2	8.4	11.0	8.9	2.1	3.8	8.4	12.1
Cycle Q Clear(g_c), s	9.0	14.2	24.0	3.7	14.2	8.4	11.0	8.9	2.1	3.8	8.4	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1000	447	164	981	439	446	1910	571	372	1844	574
V/C Ratio(X)	1.12	0.67	1.31	0.50	0.68	0.44	1.19	0.38	0.10	0.46	0.38	0.51
Avail Cap(c_a), veh/h	188	1000	447	188	1006	450	446	2176	653	378	2128	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	26.9	30.4	36.6	27.3	25.2	36.9	19.3	18.0	35.7	20.6	21.8
Incr Delay (d2), s/veh	101.8	2.3	153.0	0.9	2.1	1.1	104.1	0.2	0.1	0.3	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	7.2	29.4	1.9	7.2	3.8	11.6	4.2	0.9	1.9	4.1	5.6
LnGrp Delay(d),s/veh	139.7	29.2	183.5	37.5	29.4	26.3	141.0	19.5	18.2	36.1	20.8	23.0
LnGrp LOS	F	C	F	D	C	C	F	B	B	D	C	C
Approach Vol, veh/h	1464			937			1321			1161		
Approach Delay, s/veh	106.7			29.5			68.1			23.6		
Approach LOS	F			C			E			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	27.3	14.0	32.7	12.0	26.1	11.9	34.9				
Change Period (Y+Rc), s	4.0	* 5.3	4.0	5.3	4.0	5.3	4.0	5.3				
Max Green Setting (Gmax), s	8.0	* 22	10.0	32.0	8.0	21.4	8.0	34.0				
Max Q Clear Time (g_c+I1), s	5.7	26.0	13.0	14.1	11.0	16.2	5.8	10.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	13.3	0.0	4.6	0.1	16.2				

Intersection Summary

HCM 2010 Ctrl Delay 61.7
HCM 2010 LOS E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
183: N. Sunrise Ave & Sierra Gardens Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	23	95	154	13	393	95	801	47	290	937	72
Future Volume (veh/h)	80	23	95	154	13	393	95	801	47	290	937	72
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1928	1891	1891	1863	1934	1900	1928	2005	1928
Adj Flow Rate, veh/h	84	24	100	162	14	414	100	843	49	305	986	76
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	47	185	392	34	675	128	1029	60	314	2066	569
Arrive On Green	0.12	0.12	0.12	0.25	0.24	0.25	0.07	0.29	0.27	0.17	0.38	0.35
Sat Flow, veh/h	1395	398	1583	1664	144	1605	1774	3527	205	1836	5474	1639
Grp Volume(v), veh/h	108	0	100	176	0	414	100	439	453	305	986	76
Grp Sat Flow(s),veh/h/ln	1793	0	1583	1808	0	1605	1774	1837	1894	1836	1825	1639
Q Serve(g_s), s	4.3	0.0	4.5	6.2	0.0	15.3	4.2	16.9	16.9	12.5	10.4	2.4
Cycle Q Clear(g_c), s	4.3	0.0	4.5	6.2	0.0	15.3	4.2	16.9	16.9	12.5	10.4	2.4
Prop In Lane	0.78		1.00	0.92		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	210	0	185	426	0	675	128	536	553	314	2066	569
V/C Ratio(X)	0.51	0.00	0.54	0.41	0.00	0.61	0.78	0.82	0.82	0.97	0.48	0.13
Avail Cap(c_a), veh/h	212	0	188	493	0	734	234	564	581	314	2066	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	31.6	24.2	0.0	17.2	34.6	25.0	25.1	31.3	18.0	17.0
Incr Delay (d2), s/veh	0.9	0.0	1.6	0.2	0.0	0.8	3.9	10.4	10.2	42.5	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.1	3.1	0.0	6.8	2.2	10.1	10.4	10.1	5.3	1.1
LnGrp Delay(d),s/veh	32.4	0.0	33.2	24.4	0.0	18.0	38.5	35.5	35.3	73.8	18.3	17.2
LnGrp LOS	C		C	C		B	D	D	D	E	B	B
Approach Vol, veh/h	208		590				992			1367		
Approach Delay, s/veh	32.8		19.9				35.7			30.6		
Approach LOS	C		B				D			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	12.9		9.5	31.7	21.9		16.0	25.2				
Change Period (Y+Rc), s	4.0		4.0	5.3	4.0		4.0	5.3				
Max Green Setting (Gmax), s	9.0		10.0	23.0	20.7		12.0	21.0				
Max Q Clear Time (g_c+I1), s	6.5		6.2	12.4	17.3		14.5	18.9				
Green Ext Time (p_c), s	0.1		0.0	9.7	0.6		0.0	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			30.4									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
184: Sunrise Ave/Sunrise & Oak Ridge Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	3	69	875	4	222	926		
Future Volume (veh/h)	3	69	875	4	222	926		
Number	1	16	8	18	7	4		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	3	73	921	4	234	975		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	248	222	1619	7	335	2524		
Arrive On Green	0.14	0.14	0.45	0.45	0.19	0.71		
Sat Flow, veh/h	1774	1583	3707	16	1774	3632		
Grp Volume(v), veh/h	3	73	451	474	234	975		
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1860	1774	1770		
Q Serve(g_s), s	0.1	1.6	7.5	7.5	4.9	4.3		
Cycle Q Clear(g_c), s	0.1	1.6	7.5	7.5	4.9	4.3		
Prop In Lane	1.00	1.00		0.01	1.00			
Lane Grp Cap(c), veh/h	248	222	793	833	335	2524		
V/C Ratio(X)	0.01	0.33	0.57	0.57	0.70	0.39		
Avail Cap(c_a), veh/h	953	851	987	1037	360	3032		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.6	15.3	8.1	8.1	14.9	2.2		
Incr Delay (d2), s/veh	0.0	0.9	0.6	0.6	5.4	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	1.5	3.6	3.8	2.8	2.1		
LnGrp Delay(d),s/veh	14.6	16.2	8.7	8.7	20.3	2.3		
LnGrp LOS	B	B	A	A	C	A		
Approach Vol, veh/h	76		925			1209		
Approach Delay, s/veh	16.1		8.7			5.8		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				30.9		8.5	10.5	20.5
Change Period (Y+Rc), s				* 4.8		4.0	4.0	* 4.8
Max Green Setting (Gmax), s				* 32		20.2	7.0	* 20
Max Q Clear Time (g_c+I1), s				6.3		3.6	6.9	9.5
Green Ext Time (p_c), s				10.0		0.2	0.0	6.2
Intersection Summary								
HCM 2010 Ctrl Delay			7.4					
HCM 2010 LOS			A					
Notes								
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.								

HCM 2010 Signalized Intersection Summary
185: Sunrise Ave & Frances Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	24	0	24	0	1396	28	32	1640	0
Future Volume (veh/h)	0	0	0	24	0	24	0	1396	28	32	1640	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	0	1863	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	0	0	0	25	0	25	0	1469	29	34	1726	0
Adj No. of Lanes	0	1	1	1	0	1	0	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	0	4	3	79	0	0	0	2576	51	78	2945	0
Arrive On Green	0.00	0.00	0.00	0.04	0.00	0.02	0.00	0.73	0.70	0.04	0.83	0.00
Sat Flow, veh/h	0	-74510	1583	1774	25		0	3643	70	1774	3632	0
Grp Volume(v), veh/h	0	0	0	25	23.0		0	732	766	34	1726	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	C		0	1770	1850	1774	1770	0
Q Serve(g_s), s	0.0	0.0	0.0	0.7			0.0	9.2	9.3	0.9	7.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.7			0.0	9.2	9.3	0.9	7.6	0.0
Prop In Lane	0.00		1.00	1.00			0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	0	4	3	79			0	1284	1343	78	2945	0
V/C Ratio(X)	0.00	0.00	0.00	0.32			0.00	0.57	0.57	0.44	0.59	0.00
Avail Cap(c_a), veh/h	0	935	794	185			0	1284	1343	148	3041	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00			0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	22.1			0.0	3.1	3.1	22.3	1.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8			0.0	1.2	1.2	1.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.3			0.0	4.7	4.9	0.5	3.6	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	23.0			0.0	4.3	4.2	23.7	1.8	0.0
LnGrp LOS				C				A	A	C	A	
Approach Vol, veh/h		0						1498			1760	
Approach Delay, s/veh		0.0						4.3			2.2	
Approach LOS								A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6						
Phs Duration (G+Y+Rc), s	5.1	37.6	5.1	0.0		42.7						
Change Period (Y+Rc), s	4.0	4.9	4.0	4.0		4.9						
Max Green Setting (Gmax), s	3.0	32.1	4.0	24.0		39.1						
Max Q Clear Time (g_c+I1), s	2.9	11.3	2.7	0.0		9.6						
Green Ext Time (p_c), s	0.0	20.4	0.0	0.0		28.2						
Intersection Summary												
HCM 2010 Ctrl Delay			3.3									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

186: Sunrise Ave & Coloma Way

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	9	53	62	20	64	33	1654	42	29	1808	35
Future Volume (veh/h)	63	9	53	62	20	64	33	1654	42	29	1808	35
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	66	9	56	65	21	67	35	1741	44	31	1903	37
Adj No. of Lanes	1	1	1	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	181	154	194	42	134	100	2127	54	94	2130	41
Arrive On Green	0.10	0.10	0.10	0.11	0.11	0.11	0.06	0.60	0.59	0.05	0.60	0.59
Sat Flow, veh/h	1774	1863	1583	1774	383	1223	1774	3527	89	1774	3551	69
Grp Volume(v), veh/h	66	9	56	65	0	88	35	871	914	31	945	995
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1606	1774	1770	1846	1774	1770	1850
Q Serve(g_s), s	3.1	0.4	3.0	3.0	0.0	4.6	1.7	34.4	34.9	1.5	41.1	41.7
Cycle Q Clear(g_c), s	3.1	0.4	3.0	3.0	0.0	4.6	1.7	34.4	34.9	1.5	41.1	41.7
Prop In Lane	1.00		1.00	1.00		0.76	1.00		0.05	1.00		0.04
Lane Grp Cap(c), veh/h	172	181	154	194	0	176	100	1067	1114	94	1061	1110
V/C Ratio(X)	0.38	0.05	0.36	0.34	0.00	0.50	0.35	0.82	0.82	0.33	0.89	0.90
Avail Cap(c_a), veh/h	178	187	159	337	0	305	158	1067	1114	158	1068	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	36.7	37.9	36.9	0.0	37.6	40.7	13.9	14.0	40.9	15.4	15.5
Incr Delay (d2), s/veh	1.2	0.1	1.2	0.9	0.0	1.9	0.8	5.3	5.3	0.7	9.7	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.2	1.3	1.5	0.0	2.1	0.9	18.3	19.2	0.8	22.5	24.0
LnGrp Delay(d),s/veh	39.1	36.8	39.1	37.8	0.0	39.5	41.4	19.2	19.3	41.6	25.1	25.4
LnGrp LOS	D	D	D	D		D	D	B	B	D	C	C
Approach Vol, veh/h	131				153				1820			
Approach Delay, s/veh	39.0				38.8				19.7			
Approach LOS	D				D				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	57.0		12.8	7.8	57.4		11.7				
Change Period (Y+Rc), s	4.0	* 5.3		4.0	4.0	5.3		4.0				
Max Green Setting (Gmax), s	7.0	* 52		16.0	7.0	51.7		8.0				
Max Q Clear Time (g_c+I1), s	3.7	43.7		6.6	3.5	36.9		5.1				
Green Ext Time (p_c), s	0.0	8.0		0.4	0.0	14.7		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	23.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
187: Sunrise Ave & Sun Tree Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	55	26	10	105	31	58	5	2174	9	36	2497	73
Future Volume (veh/h)	55	26	10	105	31	58	5	2174	9	36	2497	73
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1937	1900	1900	1937	1900	1863	1827	1900	1863	1828	1900
Adj Flow Rate, veh/h	58	27	11	111	33	61	5	2288	9	38	2628	77
Adj No. of Lanes	0	1	0	0	1	0	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	4	2	4	4
Cap, veh/h	78	36	15	133	39	73	37	2861	11	61	2791	81
Arrive On Green	0.07	0.07	0.07	0.14	0.14	0.14	0.02	0.56	0.55	0.03	0.56	0.56
Sat Flow, veh/h	1113	518	211	970	288	533	1774	5129	20	1774	4984	145
Grp Volume(v), veh/h	96	0	0	205	0	0	5	1483	814	38	1748	957
Grp Sat Flow(s),veh/h/ln	1842	0	0	1792	0	0	1774	1663	1823	1774	1663	1802
Q Serve(g_s), s	7.7	0.0	0.0	16.7	0.0	0.0	0.4	53.4	53.5	3.2	73.1	74.7
Cycle Q Clear(g_c), s	7.7	0.0	0.0	16.7	0.0	0.0	0.4	53.4	53.5	3.2	73.1	74.7
Prop In Lane	0.60		0.11	0.54		0.30	1.00		0.01	1.00		0.08
Lane Grp Cap(c), veh/h	129	0	0	245	0	0	37	1855	1017	61	1863	1009
V/C Ratio(X)	0.74	0.00	0.00	0.84	0.00	0.00	0.14	0.80	0.80	0.63	0.94	0.95
Avail Cap(c_a), veh/h	160	0	0	334	0	0	154	1862	1021	154	1863	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.56	0.56	0.56	0.42	0.42	0.42
Uniform Delay (d), s/veh	68.4	0.0	0.0	63.1	0.0	0.0	72.1	26.5	26.5	71.5	30.6	31.0
Incr Delay (d2), s/veh	9.8	0.0	0.0	9.5	0.0	0.0	0.3	1.5	2.7	1.7	5.2	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	9.0	0.0	0.0	0.2	24.9	27.7	1.6	34.6	39.7
LnGrp Delay(d),s/veh	78.2	0.0	0.0	72.6	0.0	0.0	72.5	28.0	29.2	73.2	35.8	40.6
LnGrp LOS	E			E			E	C	C	E	D	D
Approach Vol, veh/h		96			205			2302			2743	
Approach Delay, s/veh		78.2			72.6			28.5			38.0	
Approach LOS		E			E			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	8.1	86.7		13.5	7.8	87.0				
Change Period (Y+Rc), s		4.0	4.0	5.7		4.0	5.7	* 5.7				
Max Green Setting (Gmax), s		27.0	12.0	81.3		12.0	12.0	* 81				
Max Q Clear Time (g_c+I1), s		18.7	5.2	55.5		9.7	2.4	76.7				
Green Ext Time (p_c), s		0.5	0.0	21.7		0.1	8.8	4.5				
Intersection Summary												
HCM 2010 Ctrl Delay			36.0									
HCM 2010 LOS			D									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary
188: Sunrise Ave & Kensington Dr/Sandringham Dr

Cumulative Plus Project
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations									  		  		
Traffic Volume (veh/h)	38	0	189	369	0	8	40	2185	43	7	2465	166	
Future Volume (veh/h)	38	0	189	369	0	8	40	2185	43	7	2465	166	
Number	1	6	16	5	2	12	7	4	14	3	8	18	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	0	1863	1863	0	1863	1863	1863	1900	1863	1863	1900	
Adj Flow Rate, veh/h	40	0	199	388	0	8	42	2300	45	7	2595	175	
Adj No. of Lanes	1	0	1	1	0	1	1	3	0	1	3	0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	0	2	2	0	2	2	2	2	2	2	2	
Cap, veh/h	382	0	0	382	0	0	63	3694	72	28	3379	223	
Arrive On Green	0.22	0.00	0.01	0.22	0.00	0.01	0.04	0.72	0.72	0.02	0.69	0.69	
Sat Flow, veh/h	1774	40		1774	388		1774	5132	100	1774	4865	322	
Grp Volume(v), veh/h	40	58.7		388	123.5		42	1517	828	7	1792	978	
Grp Sat Flow(s),veh/h/ln	1774	E		1774	F		1774	1695	1842	1774	1695	1797	
Q Serve(g_s), s	3.4			40.0			4.3	42.2	42.5	0.7	63.7	67.9	
Cycle Q Clear(g_c), s	3.4			40.0			4.3	42.2	42.5	0.7	63.7	67.9	
Prop In Lane	1.00			1.00			1.00		0.05	1.00		0.18	
Lane Grp Cap(c), veh/h	382			382			63	2440	1326	28	2354	1248	
V/C Ratio(X)	0.10			1.02			0.66	0.62	0.62	0.25	0.76	0.78	
Avail Cap(c_a), veh/h	382			382			76	2440	1326	48	2354	1248	
HCM Platoon Ratio	1.00			1.00			1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00			1.00			1.00	1.00	1.00	0.55	0.55	0.55	
Uniform Delay (d), s/veh	58.6			73.0			88.6	13.2	13.3	90.5	18.4	19.1	
Incr Delay (d2), s/veh	0.0			50.4			9.2	1.2	2.2	1.0	0.9	1.9	
Initial Q Delay(d3),s/veh	0.0			0.0			0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.7			25.0			2.3	20.0	22.2	0.4	29.9	34.1	
LnGrp Delay(d),s/veh	58.7			123.5			97.8	14.4	15.5	91.4	19.3	21.0	
LnGrp LOS	E			F			F	B	B	F	B	C	
Approach Vol, veh/h									2387				2777
Approach Delay, s/veh									16.3				20.1
Approach LOS									B				C
Timer	1	2	3	4	5	6	7	8					
Assigned Phs	1		3	4	5		7	8					
Phs Duration (G+Y+Rc), s	43.0		4.9	138.1	43.0		9.6	133.4					
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7					
Max Green Setting (Gmax), s	39.0		3.0	87.3	39.0		7.0	83.3					
Max Q Clear Time (g_c+I1), s	5.4		2.7	44.5	42.0		6.3	69.9					
Green Ext Time (p_c), s	0.1		0.0	42.1	0.0		0.0	13.0					
Intersection Summary													
HCM 2010 Ctrl Delay					25.9								
HCM 2010 LOS					C								

HCM 2010 Signalized Intersection Summary
189: Rocky Ridge Dr & Stone Point Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	1	312	344	52	188	30		
Future Volume (veh/h)	1	312	344	52	188	30		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1	328	362	55	198	32		
Adj No. of Lanes	1	2	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	62	1816	1327	594	340	304		
Arrive On Green	0.04	0.51	0.38	0.38	0.19	0.19		
Sat Flow, veh/h	1774	3632	3632	1583	1774	1583		
Grp Volume(v), veh/h	1	328	362	55	198	32		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1583	1774	1583		
Q Serve(g_s), s	0.0	1.4	2.1	0.7	3.0	0.5		
Cycle Q Clear(g_c), s	0.0	1.4	2.1	0.7	3.0	0.5		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	62	1816	1327	594	340	304		
V/C Ratio(X)	0.02	0.18	0.27	0.09	0.58	0.11		
Avail Cap(c_a), veh/h	1035	5500	3072	1374	1588	1418		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	13.6	3.8	6.3	5.9	10.7	9.7		
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.1	0.6	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	0.7	1.0	0.3	1.5	0.5		
LnGrp Delay(d),s/veh	13.6	3.9	6.5	6.0	11.3	9.8		
LnGrp LOS	B	A	A	A	B	A		
Approach Vol, veh/h		329	417		230			
Approach Delay, s/veh		3.9	6.5		11.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				19.7		9.5	4.0	15.6
Change Period (Y+Rc), s				5.7		4.9	4.0	5.7
Max Green Setting (Gmax), s				44.3		25.1	16.0	24.3
Max Q Clear Time (g_c+I1), s				3.4		5.0	2.0	4.1
Green Ext Time (p_c), s				7.1		0.5	0.0	5.9
Intersection Summary								
HCM 2010 Ctrl Delay			6.7					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary

190: Rocky Ridge Dr & Lead Hill Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	391	484	162	340	131	402	523	171	42	510	74
Future Volume (veh/h)	46	391	484	162	340	131	402	523	171	42	510	74
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	48	412	0	171	358	0	423	551	0	44	537	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	769	310	205	957	394	475	1574	678	121	1245	0
Arrive On Green	0.06	0.22	0.00	0.12	0.27	0.00	0.27	0.44	0.00	0.07	0.24	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	3539	1583	1774	5253	0
Grp Volume(v), veh/h	48	412	0	171	358	0	423	551	0	44	537	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1583	1774	1695	0
Q Serve(g_s), s	2.0	8.0	0.0	7.3	6.4	0.0	17.8	8.0	0.0	1.8	6.9	0.0
Cycle Q Clear(g_c), s	2.0	8.0	0.0	7.3	6.4	0.0	17.8	8.0	0.0	1.8	6.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	111	769	310	205	957	394	475	1574	678	121	1245	0
V/C Ratio(X)	0.43	0.54	0.00	0.83	0.37	0.00	0.89	0.35	0.00	0.36	0.43	0.00
Avail Cap(c_a), veh/h	160	1032	427	205	1141	476	479	1742	753	182	1653	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.1	27.0	0.0	33.7	23.0	0.0	27.4	14.2	0.0	34.7	24.8	0.0
Incr Delay (d2), s/veh	1.0	0.9	0.0	23.3	0.5	0.0	17.7	0.3	0.0	0.7	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.0	0.0	4.9	3.2	0.0	11.0	4.0	0.0	0.9	3.3	0.0
LnGrp Delay(d),s/veh	36.1	27.9	0.0	56.9	23.5	0.0	45.1	14.5	0.0	35.3	25.3	0.0
LnGrp LOS	D	C		E	C		D	B		D	C	
Approach Vol, veh/h	460				529				974			
Approach Delay, s/veh	28.8				34.3				27.8			
Approach LOS	C				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	19.9	23.9	22.1	7.9	24.0	8.3	37.6				
Change Period (Y+Rc), s	4.0	5.7	4.0	5.3	4.0	* 5.7	4.0	5.3				
Max Green Setting (Gmax), s	8.0	20.0	20.0	23.0	6.0	* 22	7.0	36.0				
Max Q Clear Time (g_c+I1), s	9.3	10.0	19.8	8.9	4.0	8.4	3.8	10.0				
Green Ext Time (p_c), s	0.0	4.2	0.0	7.8	0.0	5.2	0.0	11.2				

Intersection Summary

HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
191: Rocky Ridge Dr & Professional Dr

Cumulative Plus Project
PM Peak Hour

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	7	26	101	162	33	128	46	856	25	68	1376	34						
Future Volume (veh/h)	7	26	101	162	33	128	46	856	25	68	1376	34						
Number	5	2	12	1	6	16	3	8	18	7	4	14						
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0						
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00						
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900						
Adj Flow Rate, veh/h	7	27	106	171	35	0	48	901	26	72	1448	0						
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95						
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2						
Cap, veh/h	116	355	346	334	46	346	115	1964	57	120	1888	0						
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.00	0.06	0.56	0.53	0.07	0.53	0.00						
Sat Flow, veh/h	200	1624	1583	1027	210	1583	1774	3513	101	1774	3632	0						
Grp Volume(v), veh/h	34	0	106	206	0	0	48	454	473	72	1448	0						
Grp Sat Flow(s),veh/h/ln	1824	0	1583	1237	0	1583	1774	1770	1845	1774	1770	0						
Q Serve(g_s), s	0.0	0.0	3.4	8.8	0.0	0.0	1.6	9.1	9.2	2.4	19.4	0.0						
Cycle Q Clear(g_c), s	0.9	0.0	3.4	9.7	0.0	0.0	1.6	9.1	9.2	2.4	19.4	0.0						
Prop In Lane	0.21		1.00	0.83		1.00	1.00		0.05	1.00		0.00						
Lane Grp Cap(c), veh/h	471	0	346	380	0	346	115	989	1031	120	1888	0						
V/C Ratio(X)	0.07	0.00	0.31	0.54	0.00	0.00	0.42	0.46	0.46	0.60	0.77	0.00						
Avail Cap(c_a), veh/h	517	0	388	415	0	388	118	989	1031	177	1888	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00						
Uniform Delay (d), s/veh	18.7	0.0	19.6	22.5	0.0	0.0	27.0	7.8	7.9	27.2	11.1	0.0						
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.9	0.0	0.0	0.9	0.4	0.4	1.8	3.1	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.5	3.3	0.0	0.0	0.8	4.5	4.7	1.2	10.1	0.0						
LnGrp Delay(d),s/veh	18.7	0.0	20.0	23.4	0.0	0.0	27.9	8.3	8.3	29.0	14.1	0.0						
LnGrp LOS	B		C	C			C	A	A	C	B							
Approach Vol, veh/h	140				206				975									
Approach Delay, s/veh	19.7				23.4				9.3									
Approach LOS	B				C				A									
Timer	1	2	3	4	5	6	7	8										
Assigned Phs	2		3	4	6		7	8										
Phs Duration (G+Y+Rc), s	16.4		8.6	35.0	16.4		7.1	36.5										
Change Period (Y+Rc), s	4.9		5.7	* 5.7	4.9		4.0	5.7										
Max Green Setting (Gmax), s	13.1		3.0	* 29	13.1		5.0	27.3										
Max Q Clear Time (g_c+I1), s	5.4		3.6	21.4	11.7		4.4	11.2										
Green Ext Time (p_c), s	0.9		0.0	6.0	0.2		0.0	6.4										
Intersection Summary																		
HCM 2010 Ctrl Delay	13.8																	
HCM 2010 LOS	B																	
Notes																		
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.																		

HCM 2010 Signalized Intersection Summary
192: Rocky Ridge Dr & Meadowlark Way/Maidu Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	2	1	53	5	55	1	917	27	95	1558	6
Future Volume (veh/h)	7	2	1	53	5	55	1	917	27	95	1558	6
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	7	2	1	56	5	58	1	965	28	100	1640	6
Adj No. of Lanes	0	1	1	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	12	405	77	4	405	45	1986	58	146	2182	8
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.03	0.57	0.54	0.08	0.60	0.58
Sat Flow, veh/h	0	46	1583	0	14	1583	1774	3512	102	1774	3617	13
Grp Volume(v), veh/h	9	0	1	61	0	58	1	486	507	100	802	844
Grp Sat Flow(s),veh/h/ln	46	0	1583	15	0	1583	1774	1770	1845	1774	1770	1860
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.5	0.0	14.8	14.8	4.9	29.6	29.6
Cycle Q Clear(g_c), s	23.0	0.0	0.0	23.0	0.0	2.5	0.0	14.8	14.8	4.9	29.6	29.6
Prop In Lane	0.78		1.00	0.92		1.00	1.00		0.06	1.00		0.01
Lane Grp Cap(c), veh/h	83	0	405	80	0	405	45	1001	1043	146	1068	1122
V/C Ratio(X)	0.11	0.00	0.00	0.76	0.00	0.14	0.02	0.49	0.49	0.68	0.75	0.75
Avail Cap(c_a), veh/h	83	0	405	80	0	405	79	1001	1043	217	1068	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	25.0	43.6	0.0	25.9	42.8	11.7	11.8	40.2	13.0	13.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	33.4	0.0	0.2	0.1	0.5	0.5	5.6	4.9	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.3	0.0	1.1	0.0	7.3	7.6	2.6	15.7	16.5
LnGrp Delay(d),s/veh	28.4	0.0	25.0	77.0	0.0	26.0	42.8	12.2	12.3	45.7	17.8	17.6
LnGrp LOS	C		C	E		C	D	B	B	D	B	B
Approach Vol, veh/h	10			119			994			1746		
Approach Delay, s/veh	28.1			52.2			12.3			19.3		
Approach LOS	C			D			B			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.0	57.0	26.0		10.4	53.6	26.0					
Change Period (Y+Rc), s	5.7	* 5.7	4.0		4.0	5.7	4.0					
Max Green Setting (Gmax), s	3.0	* 51	22.0		10.0	44.3	22.0					
Max Q Clear Time (g_c+I1), s	2.0	31.6	25.0		6.9	16.8	25.0					
Green Ext Time (p_c), s	0.0	15.2	0.0		0.1	10.7	0.0					

Intersection Summary

HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
193: Rocky Ridge Dr & McLaren Dr

Cumulative Plus Project
PM Peak Hour

							
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	3	100	883	50	123	1492	
Future Volume (veh/h)	3	100	883	50	123	1492	
Number	7	14	6	16	5	2	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	
Adj Flow Rate, veh/h	3	105	929	53	129	1571	
Adj No. of Lanes	1	1	2	0	1	2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	166	148	1216	69	769	2983	
Arrive On Green	0.09	0.09	0.36	0.34	0.87	1.00	
Sat Flow, veh/h	1774	1583	3497	194	1774	3632	
Grp Volume(v), veh/h	3	105	483	499	129	1571	
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1828	1774	1770	
Q Serve(g_s), s	0.1	5.8	21.7	21.7	1.0	0.0	
Cycle Q Clear(g_c), s	0.1	5.8	21.7	21.7	1.0	0.0	
Prop In Lane	1.00	1.00		0.11	1.00		
Lane Grp Cap(c), veh/h	166	148	632	653	769	2983	
V/C Ratio(X)	0.02	0.71	0.76	0.76	0.17	0.53	
Avail Cap(c_a), veh/h	434	387	871	900	769	2983	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.78	0.78	
Uniform Delay (d), s/veh	37.0	39.6	25.6	25.7	3.5	0.0	
Incr Delay (d2), s/veh	0.0	2.3	3.1	3.0	0.0	0.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.1	5.1	11.1	11.5	0.4	0.2	
LnGrp Delay(d),s/veh	37.0	41.9	28.7	28.7	3.5	0.5	
LnGrp LOS	D	D	C	C	A	A	
Approach Vol, veh/h	108		982			1700	
Approach Delay, s/veh	41.8		28.7			0.7	
Approach LOS	D		C			A	
Timer	1	2	3	4	5	6	7 8
Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		78.6		11.4	43.7	34.9	
Change Period (Y+Rc), s		5.7		4.0	5.7	* 5.7	
Max Green Setting (Gmax), s		59.3		21.0	14.0	* 41	
Max Q Clear Time (g_c+I1), s		2.0		7.8	3.0	23.7	
Green Ext Time (p_c), s		17.9		0.2	7.5	5.4	
Intersection Summary							
HCM 2010 Ctrl Delay			12.2				
HCM 2010 LOS			B				
Notes							
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.							

HCM 2010 Signalized Intersection Summary
194: Sierra College & Secret Ravine Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	0	233	2	0	2	248	755	4	0	913	140
Future Volume (veh/h)	274	0	233	2	0	2	248	755	4	0	913	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1900	1863	1900	1748	1799	1816	1909	1837	1891
Adj Flow Rate, veh/h	288	0	245	2	0	2	261	795	4	0	961	147
Adj No. of Lanes	2	1	0	0	1	0	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	2	2	2	2	6	3	2	2	6	3
Cap, veh/h	846	0	383	21	0	21	231	1981	895	3	1377	634
Arrive On Green	0.25	0.00	0.25	0.03	0.00	0.03	0.14	0.58	0.58	0.00	0.39	0.39
Sat Flow, veh/h	3408	0	1542	837	0	837	1664	3417	1544	1818	3491	1607
Grp Volume(v), veh/h	288	0	245	4	0	0	261	795	4	0	961	147
Grp Sat Flow(s),veh/h/ln	1704	0	1542	1673	0	0	1664	1709	1544	1818	1745	1607
Q Serve(g_s), s	4.5	0.0	9.2	0.2	0.0	0.0	9.0	8.2	0.1	0.0	14.9	3.9
Cycle Q Clear(g_c), s	4.5	0.0	9.2	0.2	0.0	0.0	9.0	8.2	0.1	0.0	14.9	3.9
Prop In Lane	1.00		1.00	0.50		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	846	0	383	42	0	0	231	1981	895	3	1377	634
V/C Ratio(X)	0.34	0.00	0.64	0.10	0.00	0.00	1.13	0.40	0.00	0.00	0.70	0.23
Avail Cap(c_a), veh/h	1185	0	536	259	0	0	231	1981	895	253	1672	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	0.0	21.7	30.8	0.0	0.0	27.9	7.4	5.7	0.0	16.4	13.1
Incr Delay (d2), s/veh	0.3	0.0	2.6	0.4	0.0	0.0	97.8	0.2	0.0	0.0	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	4.2	0.1	0.0	0.0	10.3	3.9	0.0	0.0	7.3	1.8
LnGrp Delay(d),s/veh	20.3	0.0	24.4	31.2	0.0	0.0	125.7	7.7	5.7	0.0	17.7	13.4
LnGrp LOS	C		C	C			F	A	A		B	B
Approach Vol, veh/h	533				4		1060				1108	
Approach Delay, s/veh	22.2				31.2		36.7				17.1	
Approach LOS	C				C		D				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	0.0	40.5	19.6		12.0	28.5	4.6					
Change Period (Y+Rc), s	4.0	6.4	6.0		4.0	6.4	4.0					
Max Green Setting (Gmax), s	8.0	27.6	20.0		8.0	27.6	9.0					
Max Q Clear Time (g_c+I1), s	0.0	10.2	11.2		11.0	16.9	2.2					
Green Ext Time (p_c), s	0.0	13.6	2.4		0.0	5.2	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			25.8									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
195: Sierra College Blvd & Miners Ravine Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	0	53	1	0	6	118	995	1	1	1088	59
Future Volume (veh/h)	26	0	53	1	0	6	118	995	1	1	1088	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	0	56	1	0	6	124	1047	1	1	1145	62
Adj No. of Lanes	0	1	1	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	0	232	33	0	29	190	1919	830	3	1607	719
Arrive On Green	0.15	0.00	0.15	0.02	0.00	0.02	0.11	0.54	0.52	0.00	0.45	0.45
Sat Flow, veh/h	1774	0	1583	1774	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	27	0	56	1	0	6	124	1047	1	1	1145	62
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.7	0.0	1.8	0.0	0.0	0.2	3.8	10.8	0.0	0.0	14.7	1.3
Cycle Q Clear(g_c), s	0.7	0.0	1.8	0.0	0.0	0.2	3.8	10.8	0.0	0.0	14.7	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	0	232	33	0	29	190	1919	830	3	1607	719
V/C Ratio(X)	0.12	0.00	0.24	0.03	0.00	0.21	0.65	0.55	0.00	0.32	0.71	0.09
Avail Cap(c_a), veh/h	378	0	365	945	0	843	409	1919	830	378	1797	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	21.3	27.2	0.0	27.2	24.1	8.4	6.4	28.1	12.4	8.7
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.1	0.0	1.3	1.4	0.5	0.0	20.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.8	0.0	0.0	0.1	1.9	5.4	0.0	0.0	7.5	0.6
LnGrp Delay(d),s/veh	21.3	0.0	21.5	27.3	0.0	28.5	25.5	8.8	6.4	48.1	13.8	8.8
LnGrp LOS	C		C	C		C	C	A	A	D	B	A
Approach Vol, veh/h	83				7		1172				1208	
Approach Delay, s/veh	21.4				28.3		10.6				13.6	
Approach LOS	C				C		B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4			6	7	8			
Phs Duration (G+Y+Rc), s	11.3		9.0	31.0			5.0	4.1	36.0			
Change Period (Y+Rc), s	4.0		4.0	6.4			4.0	4.0	6.4			
Max Green Setting (Gmax), s	12.0		12.0	27.6			30.0	12.0	27.6			
Max Q Clear Time (g_c+I1), s	3.8		5.8	16.7			2.2	2.0	12.8			
Green Ext Time (p_c), s	0.1		0.1	7.9			0.0	0.0	12.6			
Intersection Summary												
HCM 2010 Ctrl Delay			12.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
196: Sierra College Blvd & Olympus Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1	478	7	1	5	296	1005	10	4	1053	75
Future Volume (veh/h)	110	1	478	7	1	5	296	1005	10	4	1053	75
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	117	0	503	8	0	5	312	1058	11	4	1108	79
Adj No. of Lanes	2	0	1	2	1	0	1	2	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1005	0	448	144	0	64	243	1722	770	33	1872	583
Arrive On Green	0.28	0.00	0.28	0.04	0.00	0.04	0.14	0.49	0.49	0.02	0.37	0.37
Sat Flow, veh/h	3548	0	1583	3548	0	1583	1774	3539	1583	1774	5085	1583
Grp Volume(v), veh/h	117	0	503	8	0	5	312	1058	11	4	1108	79
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1774	0	1583	1774	1770	1583	1774	1695	1583
Q Serve(g_s), s	2.0	0.0	22.7	0.2	0.0	0.2	11.0	17.6	0.3	0.2	14.1	2.7
Cycle Q Clear(g_c), s	2.0	0.0	22.7	0.2	0.0	0.2	11.0	17.6	0.3	0.2	14.1	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1005	0	448	144	0	64	243	1722	770	33	1872	583
V/C Ratio(X)	0.12	0.00	1.12	0.06	0.00	0.08	1.28	0.61	0.01	0.12	0.59	0.14
Avail Cap(c_a), veh/h	1005	0	448	443	0	198	243	1722	770	155	2068	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	28.7	37.0	0.0	37.0	34.6	15.1	10.6	38.7	20.5	16.8
Incr Delay (d2), s/veh	0.1	0.0	80.2	0.3	0.0	0.8	154.4	0.9	0.0	0.6	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	19.9	0.1	0.0	0.1	15.8	8.7	0.1	0.1	6.7	1.2
LnGrp Delay(d),s/veh	21.4	0.0	108.9	37.2	0.0	37.8	189.0	16.0	10.7	39.3	21.0	17.0
LnGrp LOS	C		F	D		D	F	B	B	D	C	B
Approach Vol, veh/h	620		13				1381				1191	
Approach Delay, s/veh	92.4		37.4				55.0				20.8	
Approach LOS	F		D				E				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.5	42.0	25.7		14.0	32.5	8.0					
Change Period (Y+Rc), s	4.0	* 6.4	5.7		4.0	6.4	5.7					
Max Green Setting (Gmax), s	6.0	* 34	20.0		10.0	29.2	9.0					
Max Q Clear Time (g_c+I1), s	2.2	19.6	24.7		13.0	16.1	2.2					
Green Ext Time (p_c), s	0.0	12.7	0.0		0.0	10.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay	49.5											
HCM 2010 LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
197: Sierra College Glvd/Sierra College Blvd & Indigo Creek Apts Dwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	256	4	282	110	5	65	146	1362	44	94	1562	182
Future Volume (veh/h)	256	4	282	110	5	65	146	1362	44	94	1562	182
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	272	0	297	116	5	68	154	1434	46	99	1644	192
Adj No. of Lanes	2	0	1	0	1	1	1	3	0	1	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	650	0	290	170	7	158	195	2417	78	237	2381	277
Arrive On Green	0.18	0.00	0.18	0.10	0.10	0.10	0.11	0.48	0.46	0.13	0.52	0.52
Sat Flow, veh/h	3548	0	1583	1704	73	1583	1774	5062	162	1774	4620	538
Grp Volume(v), veh/h	272	0	297	121	0	68	154	960	520	99	1205	631
Grp Sat Flow(s),veh/h/ln	1774	0	1583	1778	0	1583	1774	1695	1834	1774	1695	1768
Q Serve(g_s), s	8.1	0.0	22.0	7.9	0.0	4.8	10.2	24.8	24.8	6.1	32.1	32.2
Cycle Q Clear(g_c), s	8.1	0.0	22.0	7.9	0.0	4.8	10.2	24.8	24.8	6.1	32.1	32.2
Prop In Lane	1.00		1.00	0.96		1.00	1.00		0.09	1.00		0.30
Lane Grp Cap(c), veh/h	650	0	290	177	0	158	195	1619	876	237	1748	911
V/C Ratio(X)	0.42	0.00	1.02	0.68	0.00	0.43	0.79	0.59	0.59	0.42	0.69	0.69
Avail Cap(c_a), veh/h	650	0	290	237	0	211	266	1619	876	237	1748	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	49.0	52.2	0.0	50.8	52.1	22.9	22.9	47.7	21.9	21.9
Incr Delay (d2), s/veh	0.2	0.0	58.9	2.1	0.0	0.7	7.3	1.6	3.0	0.4	1.6	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	14.3	4.0	0.0	2.1	5.4	12.0	13.3	3.1	15.3	16.4
LnGrp Delay(d),s/veh	43.5	0.0	108.0	54.3	0.0	51.5	59.4	24.5	25.9	48.1	23.5	25.0
LnGrp LOS	D		F	D		D	E	C	C	D	C	C
Approach Vol, veh/h	569				189				1634			
Approach Delay, s/veh	77.1				53.3				28.2			
Approach LOS	E				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	60.0		25.0	16.2	63.9		15.0				
Change Period (Y+Rc), s	5.0	* 5.7		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	12.0	* 54		21.0	17.0	50.0		15.0				
Max Q Clear Time (g_c+I1), s	8.1	26.8		24.0	12.2	34.2		9.9				
Green Ext Time (p_c), s	0.2	19.6		0.0	0.1	14.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	34.4											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary
198: Sierra College Blvd & Old Auburn Rd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	103	84	21	90	37	254	1428	25	61	2055	393
Future Volume (veh/h)	332	103	84	21	90	37	254	1428	25	61	2055	393
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	349	108	88	22	95	39	267	1503	26	64	2163	414
Adj No. of Lanes	2	1	0	0	2	0	2	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	256	209	0	261	102	348	2627	818	217	2819	878
Arrive On Green	0.13	0.27	0.27	0.00	0.10	0.10	0.10	0.52	0.52	0.12	0.55	0.55
Sat Flow, veh/h	3548	951	775	0	2489	972	3442	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	349	0	196	0	66	68	267	1503	26	64	2163	414
Grp Sat Flow(s),veh/h/ln	1774	0	1726	0	1770	1691	1721	1695	1583	1774	1695	1583
Q Serve(g_s), s	11.4	0.0	11.2	0.0	4.2	4.5	9.1	24.3	0.8	3.9	39.6	8.8
Cycle Q Clear(g_c), s	11.4	0.0	11.2	0.0	4.2	4.5	9.1	24.3	0.8	3.9	39.6	8.8
Prop In Lane	1.00		0.45	0.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	445	0	465	0	186	177	348	2627	818	217	2819	878
V/C Ratio(X)	0.78	0.00	0.42	0.00	0.36	0.38	0.77	0.57	0.03	0.30	0.77	0.47
Avail Cap(c_a), veh/h	562	0	465	0	251	240	373	2627	818	217	2819	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	36.1	0.0	49.9	50.1	52.6	19.9	10.2	48.0	20.7	3.4
Incr Delay (d2), s/veh	4.3	0.0	1.0	0.0	1.8	2.1	7.6	0.9	0.1	0.3	1.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	5.5	0.0	2.1	2.2	4.7	11.5	0.4	2.0	18.8	3.9
LnGrp Delay(d),s/veh	55.2	0.0	37.1	0.0	51.8	52.2	60.1	20.8	10.2	48.2	22.2	4.2
LnGrp LOS	E		D		D	D	E	C	B	D	C	A
Approach Vol, veh/h	545				134				1796			
Approach Delay, s/veh	48.7				52.0				26.5			
Approach LOS	D				D				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.7	65.0	0.0	35.3	15.1	69.5	19.8	15.6				
Change Period (Y+Rc), s	6.0	* 6	4.0	5.7	4.0	6.0	5.7	* 5.7				
Max Green Setting (Gmax), s	9.0	* 59	10.0	22.3	12.0	56.0	18.0	* 14				
Max Q Clear Time (g_c+I1), s	5.9	26.3	0.0	13.2	11.1	41.6	13.4	6.5				
Green Ext Time (p_c), s	1.2	16.8	0.0	1.5	0.1	13.3	0.6	0.4				

Intersection Summary

HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
199: Europa St & Olympus Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	538	17	14	260	8	14	2	15	7	0	5
Future Volume (veh/h)	6	538	17	14	260	8	14	2	15	7	0	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	566	18	15	274	8	15	2	16	7	0	5
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	1549	49	94	1590	46	71	9	75	57	0	41
Arrive On Green	0.04	0.44	0.39	0.05	0.45	0.40	0.09	0.09	0.09	0.06	0.00	0.06
Sat Flow, veh/h	1774	3501	111	1774	3512	102	764	102	815	985	0	704
Grp Volume(v), veh/h	6	286	298	15	138	144	33	0	0	12	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1843	1774	1770	1845	1681	0	0	1689	0	0
Q Serve(g_s), s	0.1	3.6	3.7	0.3	1.6	1.6	0.6	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.1	3.6	3.7	0.3	1.6	1.6	0.6	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.06	0.45		0.48	0.58		0.42
Lane Grp Cap(c), veh/h	75	783	815	94	801	835	156	0	0	98	0	0
V/C Ratio(X)	0.08	0.37	0.37	0.16	0.17	0.17	0.21	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	472	1254	1306	367	1150	1199	1340	0	0	499	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.6	6.3	6.3	15.3	5.5	5.5	14.2	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.3	0.2	0.2	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.9	1.9	0.1	0.8	0.8	0.3	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	15.7	6.8	6.8	15.6	5.7	5.7	14.5	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h	590				297			33			12	
Approach Delay, s/veh	6.9				6.2			14.5			15.3	
Approach LOS	A				A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	6.1		4.8	18.0	5.0		4.4	18.3				
Change Period (Y+Rc), s	4.0		4.0	5.7	4.0		4.0	5.7				
Max Green Setting (Gmax), s	26.0		6.0	21.3	9.0		8.0	19.3				
Max Q Clear Time (g_c+I1), s	2.6		2.3	5.7	2.2		2.1	3.6				
Green Ext Time (p_c), s	0.1		0.0	6.6	0.0		0.0	6.6				
Intersection Summary												
HCM 2010 Ctrl Delay	7.0											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
200: Scarborough Dr & Secret Ravine Pkwy

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	537	12	39	323	34	4	0	13	12	0	123
Future Volume (veh/h)	158	537	12	39	323	34	4	0	13	12	0	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	166	565	13	41	340	36	4	0	14	13	0	129
Adj No. of Lanes	1	2	1	1	2	1	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	1338	599	121	1073	480	23	0	80	350	0	312
Arrive On Green	0.14	0.38	0.38	0.07	0.30	0.30	0.06	0.00	0.06	0.20	0.00	0.20
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	360	0	1262	1774	0	1583
Grp Volume(v), veh/h	166	565	13	41	340	36	18	0	0	13	0	129
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1622	0	0	1774	0	1583
Q Serve(g_s), s	3.8	5.1	0.2	1.0	3.2	0.7	0.5	0.0	0.0	0.3	0.0	3.1
Cycle Q Clear(g_c), s	3.8	5.1	0.2	1.0	3.2	0.7	0.5	0.0	0.0	0.3	0.0	3.1
Prop In Lane	1.00		1.00	1.00		1.00	0.22		0.78	1.00		1.00
Lane Grp Cap(c), veh/h	253	1338	599	121	1073	480	103	0	0	350	0	312
V/C Ratio(X)	0.66	0.42	0.02	0.34	0.32	0.07	0.17	0.00	0.00	0.04	0.00	0.41
Avail Cap(c_a), veh/h	614	1797	804	532	1633	731	487	0	0	1199	0	1071
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	10.0	8.5	19.3	11.6	10.8	19.2	0.0	0.0	14.1	0.0	15.2
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.6	0.2	0.1	0.3	0.0	0.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.5	0.1	0.5	1.6	0.3	0.2	0.0	0.0	0.1	0.0	1.3
LnGrp Delay(d),s/veh	18.6	10.2	8.5	19.9	11.8	10.8	19.5	0.0	0.0	14.1	0.0	15.5
LnGrp LOS	B	B	A	B	B	B	B			B		B
Approach Vol, veh/h	744		417				18		142			
Approach Delay, s/veh	12.1		12.5				19.5		15.4			
Approach LOS	B		B				B		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	6		7	8				
Phs Duration (G+Y+Rc), s	5.8		5.9	19.4	12.3		9.2	16.1				
Change Period (Y+Rc), s	4.0		4.0	6.0	5.7		4.0	6.0				
Max Green Setting (Gmax), s	12.0		12.0	19.0	27.3		14.0	17.0				
Max Q Clear Time (g_c+I1), s	2.5		3.0	7.1	5.1		5.8	5.2				
Green Ext Time (p_c), s	0.0		0.0	5.0	0.2		0.1	4.9				
Intersection Summary												
HCM 2010 Ctrl Delay	12.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
202: Gibson Dr & Convention Center Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	1192	484	245	612	101	326		
Future Volume (veh/h)	1192	484	245	612	101	326		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1255	246	258	381	106	343		
Adj No. of Lanes	2	1	2	1	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	1474	678	1030	461	137	1543		
Arrive On Green	0.43	0.43	0.29	0.29	0.08	0.44		
Sat Flow, veh/h	3442	1583	3632	1583	1774	3632		
Grp Volume(v), veh/h	1255	246	258	381	106	343		
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1583	1774	1770		
Q Serve(g_s), s	24.2	7.7	4.1	16.5	4.3	4.5		
Cycle Q Clear(g_c), s	24.2	7.7	4.1	16.5	4.3	4.5		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	1474	678	1030	461	137	1543		
V/C Ratio(X)	0.85	0.36	0.25	0.83	0.78	0.22		
Avail Cap(c_a), veh/h	1823	839	1202	538	265	1971		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	18.9	14.3	20.0	24.4	33.3	13.0		
Incr Delay (d2), s/veh	3.4	0.3	0.1	9.1	9.0	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	12.0	3.4	2.0	8.4	2.5	2.2		
LnGrp Delay(d),s/veh	22.4	14.6	20.1	33.4	42.4	13.0		
LnGrp LOS	C	B	C	C	D	B		
Approach Vol, veh/h	1501		639			449		
Approach Delay, s/veh	21.1		28.0			20.0		
Approach LOS	C		C			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.7	26.4				37.1		36.5
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	11.0	25.0				41.0		39.0
Max Q Clear Time (g_c+I1), s	6.3	18.5				6.5		26.2
Green Ext Time (p_c), s	0.1	2.9				6.1		5.4
Intersection Summary								
HCM 2010 Ctrl Delay			22.6					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary
204: Riverside Ave & Orlando Ave

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑		↑		↑↑	↑	↑	↑↑	
Traffic Volume (veh/h)	0	480	178	181	0	371	0	1408	99	99	1510	0
Future Volume (veh/h)	0	480	178	181	0	371	0	1408	99	99	1510	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	0	1863	0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	0	490	182	185	0	379	0	1437	101	101	1541	0
Adj No. of Lanes	0	2	1	2	0	1	0	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	0	2	0	2	2	2	2	0
Cap, veh/h	0	656	294	320	0	0	0	1628	728	128	2031	0
Arrive On Green	0.00	0.19	0.19	0.09	0.00	0.00	0.00	0.46	0.46	0.07	0.57	0.00
Sat Flow, veh/h	0	3632	1583	3442	185		0	3632	1583	1774	3632	0
Grp Volume(v), veh/h	0	490	182	185	42.4		0	1437	101	101	1541	0
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1721	D		0	1770	1583	1774	1770	0
Q Serve(g_s), s	0.0	12.6	10.2	5.0			0.0	35.5	3.5	5.4	31.6	0.0
Cycle Q Clear(g_c), s	0.0	12.6	10.2	5.0			0.0	35.5	3.5	5.4	31.6	0.0
Prop In Lane	0.00		1.00	1.00			0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	656	294	320			0	1628	728	128	2031	0
V/C Ratio(X)	0.00	0.75	0.62	0.58			0.00	0.88	0.14	0.79	0.76	0.00
Avail Cap(c_a), veh/h	0	1104	494	895			0	1841	823	369	2031	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00			0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	37.0	36.0	41.8			0.0	23.6	15.0	43.9	15.5	0.0
Incr Delay (d2), s/veh	0.0	1.6	1.9	0.6			0.0	5.2	0.1	4.0	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.3	4.6	2.4			0.0	18.3	1.6	2.8	15.7	0.0
LnGrp Delay(d),s/veh	0.0	38.6	38.0	42.4			0.0	28.8	15.1	47.8	17.2	0.0
LnGrp LOS		D	D	D				C	B	D	B	
Approach Vol, veh/h		672						1538			1642	
Approach Delay, s/veh		38.4						27.9			19.1	
Approach LOS		D						C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4		6						
Phs Duration (G+Y+Rc), s	11.0	49.1	12.9	23.1		60.1						
Change Period (Y+Rc), s	4.0	4.9	4.0	5.3		4.9						
Max Green Setting (Gmax), s	20.0	50.0	25.0	30.0		50.0						
Max Q Clear Time (g_c+I1), s	7.4	37.5	7.0	14.6		33.6						
Green Ext Time (p_c), s	0.1	6.7	0.3	3.2		15.6						
Intersection Summary												
HCM 2010 Ctrl Delay			26.7									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
205: Stonecrest Dr & Junction Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	365	6	6	712	709	2	13	5	219	9	56
Future Volume (veh/h)	71	365	6	6	712	709	2	13	5	219	9	56
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	75	384	6	6	749	746	2	14	5	231	9	59
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1756	785	43	1591	712	16	110	107	335	13	310
Arrive On Green	0.07	0.50	0.50	0.02	0.45	0.45	0.07	0.07	0.07	0.20	0.20	0.20
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	231	1620	1583	1711	67	1583
Grp Volume(v), veh/h	75	384	6	6	749	746	16	0	5	240	0	59
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1851	0	1583	1777	0	1583
Q Serve(g_s), s	2.3	3.4	0.1	0.2	8.2	25.0	0.5	0.0	0.2	7.0	0.0	1.7
Cycle Q Clear(g_c), s	2.3	3.4	0.1	0.2	8.2	25.0	0.5	0.0	0.2	7.0	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	0.12		1.00	0.96		1.00
Lane Grp Cap(c), veh/h	126	1756	785	43	1591	712	126	0	107	348	0	310
V/C Ratio(X)	0.60	0.22	0.01	0.14	0.47	1.05	0.13	0.00	0.05	0.69	0.00	0.19
Avail Cap(c_a), veh/h	191	1756	785	160	1591	712	366	0	313	671	0	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.1	7.9	7.1	26.6	10.7	15.3	24.4	0.0	24.2	20.8	0.0	18.7
Incr Delay (d2), s/veh	1.7	0.1	0.0	0.5	0.3	47.0	0.2	0.0	0.1	0.9	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.7	0.0	0.1	4.0	20.0	0.2	0.0	0.1	3.5	0.0	0.8
LnGrp Delay(d),s/veh	26.7	8.0	7.1	27.1	10.9	62.3	24.5	0.0	24.3	21.7	0.0	18.8
LnGrp LOS	C	A	A	C	B	F	C		C	C		B
Approach Vol, veh/h	465		1501				21		299			
Approach Delay, s/veh	11.0		36.5				24.5		21.1			
Approach LOS	B		D				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.4	30.6	13.9		6.9	28.0	6.8					
Change Period (Y+Rc), s	4.0	6.0	4.0		4.0	6.0	4.0					
Max Green Setting (Gmax), s	4.0	23.0	20.0		5.0	22.0	10.0					
Max Q Clear Time (g_c+I1), s	2.2	5.4	9.0		4.3	27.0	2.5					
Green Ext Time (p_c), s	0.0	11.0	0.7		0.0	0.0	0.0					
Intersection Summary												
HCM 2010 Ctrl Delay			29.2									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary

206: Park Regency & Junction Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	558	10	89	1407	60	7	5	43	44	4	20
Future Volume (veh/h)	32	558	10	89	1407	60	7	5	43	44	4	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	34	587	11	94	1481	63	7	5	45	46	4	21
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	1708	764	122	1848	827	13	128	109	64	182	154
Arrive On Green	0.03	0.48	0.48	0.07	0.52	0.52	0.01	0.07	0.07	0.04	0.10	0.10
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	34	587	11	94	1481	63	7	5	45	46	4	21
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	1.1	6.0	0.2	3.0	20.0	1.2	0.2	0.1	1.6	1.5	0.1	0.7
Cycle Q Clear(g_c), s	1.1	6.0	0.2	3.0	20.0	1.2	0.2	0.1	1.6	1.5	0.1	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	52	1708	764	122	1848	827	13	128	109	64	182	154
V/C Ratio(X)	0.66	0.34	0.01	0.77	0.80	0.08	0.54	0.04	0.41	0.72	0.02	0.14
Avail Cap(c_a), veh/h	335	1947	871	335	1947	871	335	544	463	335	512	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	9.3	7.8	26.6	11.4	6.9	28.8	25.3	26.0	27.7	23.7	24.0
Incr Delay (d2), s/veh	13.4	0.1	0.0	9.8	2.4	0.0	30.2	0.1	2.5	14.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.9	0.1	1.8	10.3	0.5	0.2	0.1	0.8	1.0	0.1	0.3
LnGrp Delay(d),s/veh	41.4	9.5	7.8	36.4	13.8	7.0	58.9	25.4	28.5	41.7	23.8	24.4
LnGrp LOS	D	A	A	D	B	A	E	C	C	D	C	C
Approach Vol, veh/h	632		1638				57		71			
Approach Delay, s/veh	11.1		14.8				31.9		35.6			
Approach LOS	B		B				C		D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	9.0	9.0	33.1	5.4	10.7	6.7	35.4				
Change Period (Y+Rc), s	5.0	* 5	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	* 17	11.0	32.0	11.0	16.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	3.5	3.6	5.0	8.0	2.2	2.7	3.1	22.0				
Green Ext Time (p_c), s	0.0	0.1	0.1	17.2	0.0	0.1	0.0	8.4				

Intersection Summary

HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
207: Woodcreek Oaks Blvd & Junction Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	310	27	189	1069	147	36	642	153	185	741	611
Future Volume (veh/h)	393	310	27	189	1069	147	36	642	153	185	741	611
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	414	326	0	199	1125	0	38	676	0	195	780	0
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	457	1378	578	370	1289	538	235	887	364	370	1026	426
Arrive On Green	0.13	0.39	0.00	0.11	0.36	0.00	0.07	0.25	0.00	0.11	0.29	0.00
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	414	326	0	199	1125	0	38	676	0	195	780	0
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	9.8	5.1	0.0	4.5	24.5	0.0	0.9	14.7	0.0	4.4	16.6	0.0
Cycle Q Clear(g_c), s	9.8	5.1	0.0	4.5	24.5	0.0	0.9	14.7	0.0	4.4	16.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	457	1378	578	370	1289	538	235	887	364	370	1026	426
V/C Ratio(X)	0.91	0.24	0.00	0.54	0.87	0.00	0.16	0.76	0.00	0.53	0.76	0.00
Avail Cap(c_a), veh/h	457	1380	579	374	1294	541	374	970	401	374	1026	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.4	17.0	0.0	35.0	24.5	0.0	36.4	28.8	0.0	35.0	26.8	0.0
Incr Delay (d2), s/veh	21.0	0.1	0.0	0.8	7.1	0.0	0.1	3.7	0.0	0.6	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	2.5	0.0	2.2	13.1	0.0	0.4	7.6	0.0	2.1	8.7	0.0
LnGrp Delay(d),s/veh	56.4	17.2	0.0	35.8	31.7	0.0	36.5	32.4	0.0	35.6	30.6	0.0
LnGrp LOS	E	B		D	C		D	C		D	C	
Approach Vol, veh/h	740			1324			714			975		
Approach Delay, s/veh	39.1			32.3			32.7			31.6		
Approach LOS	D			C			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	35.0	8.7	27.3	14.0	32.9	11.9	24.1				
Change Period (Y+Rc), s	4.0	5.7	4.0	* 6	4.0	5.7	4.0	6.0				
Max Green Setting (Gmax), s	8.0	29.3	8.0	* 20	10.0	27.3	8.0	20.0				
Max Q Clear Time (g_c+I1), s	6.5	7.1	2.9	18.6	11.8	26.5	6.4	16.7				
Green Ext Time (p_c), s	0.1	12.1	0.0	1.3	0.0	0.6	0.1	1.4				

Intersection Summary

HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
208: Country Club Dr & Junction Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	518	100	248	1173	50	247	215	19	60	92	51
Future Volume (veh/h)	39	518	100	248	1173	50	247	215	19	60	92	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	41	545	105	261	1235	53	260	226	20	63	97	54
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	979	188	323	1566	67	311	404	36	163	176	98
Arrive On Green	0.06	0.33	0.31	0.18	0.45	0.43	0.18	0.24	0.22	0.09	0.16	0.14
Sat Flow, veh/h	1774	2963	569	1774	3458	148	1774	1687	149	1774	1126	627
Grp Volume(v), veh/h	41	325	325	261	632	656	260	0	246	63	0	151
Grp Sat Flow(s),veh/h/ln	1774	1770	1762	1774	1770	1837	1774	0	1836	1774	0	1752
Q Serve(g_s), s	1.7	11.2	11.3	10.5	22.5	22.6	10.5	0.0	8.7	2.5	0.0	5.9
Cycle Q Clear(g_c), s	1.7	11.2	11.3	10.5	22.5	22.6	10.5	0.0	8.7	2.5	0.0	5.9
Prop In Lane	1.00		0.32	1.00		0.08	1.00		0.08	1.00		0.36
Lane Grp Cap(c), veh/h	106	585	582	323	801	832	311	0	440	163	0	274
V/C Ratio(X)	0.39	0.56	0.56	0.81	0.79	0.79	0.84	0.00	0.56	0.39	0.00	0.55
Avail Cap(c_a), veh/h	167	660	658	358	851	883	311	0	660	215	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.6	20.4	20.7	29.1	17.3	17.4	29.6	0.0	24.8	31.7	0.0	29.1
Incr Delay (d2), s/veh	0.9	1.1	1.1	10.5	5.0	4.9	16.9	0.0	1.5	0.6	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.6	5.6	6.1	12.0	12.4	6.6	0.0	4.6	1.2	0.0	3.0
LnGrp Delay(d),s/veh	34.5	21.5	21.8	39.6	22.3	22.2	46.5	0.0	26.4	32.3	0.0	31.5
LnGrp LOS	C	C	C	D	C	C	D		C	C		C
Approach Vol, veh/h	691				1549		506				214	
Approach Delay, s/veh	22.4				25.2		36.7				31.8	
Approach LOS	C				C		D				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	20.4	16.5	27.5	16.0	14.2	7.4	36.6				
Change Period (Y+Rc), s	4.0	4.9	4.0	5.7	4.0	4.9	4.0	5.7				
Max Green Setting (Gmax), s	8.0	24.4	14.0	25.0	12.0	20.4	6.0	33.0				
Max Q Clear Time (g_c+I1), s	4.5	10.7	12.5	13.3	12.5	7.9	3.7	24.6				
Green Ext Time (p_c), s	0.0	1.9	0.1	8.2	0.0	1.8	0.0	6.3				
Intersection Summary												
HCM 2010 Ctrl Delay			27.0									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
209: Junction Blvd & Revere Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	12	578	1593	35	87	7		
Future Volume (veh/h)	12	578	1593	35	87	7		
Number	5	2	6	16	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	13	608	1677	37	92	7		
Adj No. of Lanes	1	2	2	0	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	69	2652	2313	51	241	215		
Arrive On Green	0.04	0.75	0.65	0.62	0.14	0.14		
Sat Flow, veh/h	1774	3632	3634	78	1774	1583		
Grp Volume(v), veh/h	13	608	836	878	92	7		
Grp Sat Flow(s),veh/h/ln	1774	1770	1770	1849	1774	1583		
Q Serve(g_s), s	0.4	2.7	16.2	16.4	2.5	0.2		
Cycle Q Clear(g_c), s	0.4	2.7	16.2	16.4	2.5	0.2		
Prop In Lane	1.00			0.04	1.00	1.00		
Lane Grp Cap(c), veh/h	69	2652	1156	1208	241	215		
V/C Ratio(X)	0.19	0.23	0.72	0.73	0.38	0.03		
Avail Cap(c_a), veh/h	238	3250	1286	1344	713	636		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.3	2.0	6.0	6.0	20.6	19.6		
Incr Delay (d2), s/veh	0.5	0.1	2.0	2.0	0.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	1.3	8.3	8.7	1.2	0.2		
LnGrp Delay(d),s/veh	24.8	2.0	8.0	8.0	21.0	19.6		
LnGrp LOS	C	A	A	A	C	B		
Approach Vol, veh/h		621	1714		99			
Approach Delay, s/veh		2.5	8.0		20.9			
Approach LOS		A	A		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.2		10.1	5.0	37.1		
Change Period (Y+Rc), s		5.7		4.0	4.0	5.7		
Max Green Setting (Gmax), s		45.3		20.0	6.0	35.3		
Max Q Clear Time (g_c+I1), s		4.7		4.5	2.4	18.4		
Green Ext Time (p_c), s		24.2		0.2	0.0	13.0		
Intersection Summary								
HCM 2010 Ctrl Delay			7.1					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
210: Americana Dr & Junction Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	595	56	179	1629	0	68	0	59	0	0	0
Future Volume (veh/h)	0	595	56	179	1629	0	68	0	59	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	626	59	188	1715	0	72	0	62	0	0	0
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	3	1869	778	298	2594	0	320	0	286	0	3	0
Arrive On Green	0.00	0.53	0.49	0.17	0.73	0.00	0.18	0.00	0.18	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3632	0	1774	0	1583	0	1863	0
Grp Volume(v), veh/h	0	626	59	188	1715	0	72	0	62	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	0	1774	0	1583	0	1863	0
Q Serve(g_s), s	0.0	5.5	1.1	5.4	13.6	0.0	1.9	0.0	1.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.5	1.1	5.4	13.6	0.0	1.9	0.0	1.8	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		0.00
Lane Grp Cap(c), veh/h	3	1869	778	298	2594	0	320	0	286	0	3	0
V/C Ratio(X)	0.00	0.34	0.08	0.63	0.66	0.00	0.22	0.00	0.22	0.00	0.00	0.00
Avail Cap(c_a), veh/h	229	2234	941	490	2755	0	718	0	641	0	343	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.4	7.3	21.0	3.8	0.0	19.0	0.0	19.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	2.2	0.6	0.0	0.4	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	0.5	2.8	6.6	0.0	1.0	0.0	0.8	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.5	7.3	23.2	4.3	0.0	19.4	0.0	19.4	0.0	0.0	0.0
LnGrp LOS		A	A	C	A		B		B			
Approach Vol, veh/h	685				1903				134			
Approach Delay, s/veh	7.5				6.2				19.4			
Approach LOS	A				A				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	31.4		0.0	0.0	42.5		11.8				
Change Period (Y+Rc), s	4.0	5.7		4.0	4.0	5.7		4.0				
Max Green Setting (Gmax), s	13.0	31.3		8.0	5.0	39.3		20.0				
Max Q Clear Time (g_c+I1), s	7.4	7.5		0.0	0.0	15.6		3.9				
Green Ext Time (p_c), s	0.2	18.2		0.0	0.0	18.1		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	7.1											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
211: Porter Dr/Sawtell Rd & Junction Blvd

Cumulative Plus Project
PM Peak Hour

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	35	682	36	103	1661	10	12	15	105	26	15	23								
Future Volume (veh/h)	35	682	36	103	1661	10	12	15	105	26	15	23								
Number	5	2	12	1	6	16	3	8	18	7	4	14								
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0								
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00								
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1863								
Adj Flow Rate, veh/h	37	718	38	108	1748	11	13	16	111	27	16	24								
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95								
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2								
Cap, veh/h	112	2058	109	167	2282	14	170	173	242	218	108	242								
Arrive On Green	0.06	0.60	0.57	0.09	0.63	0.60	0.15	0.15	0.15	0.15	0.15	0.15								
Sat Flow, veh/h	1774	3420	181	1774	3606	23	536	1129	1583	783	704	1583								
Grp Volume(v), veh/h	37	371	385	108	857	902	29	0	111	43	0	24								
Grp Sat Flow(s),veh/h/ln	1774	1770	1831	1774	1770	1859	1665	0	1583	1487	0	1583								
Q Serve(g_s), s	1.2	6.3	6.3	3.5	20.5	20.6	0.0	0.0	3.8	0.0	0.0	0.8								
Cycle Q Clear(g_c), s	1.2	6.3	6.3	3.5	20.5	20.6	0.8	0.0	3.8	1.2	0.0	0.8								
Prop In Lane	1.00		0.10	1.00		0.01	0.45		1.00	0.63		1.00								
Lane Grp Cap(c), veh/h	112	1065	1102	167	1120	1176	342	0	242	326	0	242								
V/C Ratio(X)	0.33	0.35	0.35	0.65	0.77	0.77	0.08	0.00	0.46	0.13	0.00	0.10								
Avail Cap(c_a), veh/h	209	1070	1107	298	1159	1218	769	0	665	708	0	665								
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00								
Uniform Delay (d), s/veh	26.7	6.0	6.0	26.0	7.8	7.8	21.7	0.0	23.0	21.9	0.0	21.7								
Incr Delay (d2), s/veh	0.6	0.3	0.3	1.6	3.2	3.1	0.0	0.0	0.5	0.1	0.0	0.1								
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
%ile BackOfQ(50%),veh/ln	0.6	3.1	3.2	1.8	10.8	11.3	0.4	0.0	1.7	0.6	0.0	0.3								
LnGrp Delay(d),s/veh	27.3	6.2	6.3	27.6	11.0	10.9	21.7	0.0	23.5	21.9	0.0	21.7								
LnGrp LOS	C	A	A	C	B	B	C		C	C		C								
Approach Vol, veh/h	793		1867				140		67											
Approach Delay, s/veh	7.2		11.9				23.1		21.9											
Approach LOS	A		B				C		C											
Timer	1	2	3	4	5	6	7	8												
Assigned Phs	1	2	4		5	6	8													
Phs Duration (G+Y+Rc), s	8.6	38.8	12.1		6.7	40.7	12.1													
Change Period (Y+Rc), s	4.0	5.7	4.0		4.0	5.7	4.0													
Max Green Setting (Gmax), s	9.0	33.3	24.0		6.0	36.3	24.0													
Max Q Clear Time (g_c+I1), s	5.5	8.3	3.2		3.2	22.6	5.8													
Green Ext Time (p_c), s	0.0	21.2	0.5		0.0	12.4	0.4													
Intersection Summary																				
HCM 2010 Ctrl Delay					11.4															
HCM 2010 LOS					B															

HCM 2010 Signalized Intersection Summary
212: Del Rd/Hilltop Cir & PFE Rd

Cumulative Plus Project
PM Peak Hour

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	103	438	6	2	691	77	2	0	2	113	0	240				
Future Volume (veh/h)	103	438	6	2	691	77	2	0	2	113	0	240				
Number	5	2	12	1	6	16	3	8	18	7	4	14				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900				
Adj Flow Rate, veh/h	108	461	6	2	727	81	2	0	2	119	0	253				
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	244	1817	24	40	1261	140	23	0	23	390	0	349				
Arrive On Green	0.14	0.51	0.48	0.02	0.39	0.36	0.03	0.00	0.03	0.22	0.00	0.22				
Sat Flow, veh/h	1774	3578	47	1774	3212	358	837	0	837	1774	0	1583				
Grp Volume(v), veh/h	108	228	239	2	400	408	4	0	0	119	0	253				
Grp Sat Flow(s),veh/h/ln	1774	1770	1855	1774	1770	1800	1673	0	0	1774	0	1583				
Q Serve(g_s), s	3.0	3.9	3.9	0.1	9.6	9.6	0.1	0.0	0.0	3.0	0.0	8.0				
Cycle Q Clear(g_c), s	3.0	3.9	3.9	0.1	9.6	9.6	0.1	0.0	0.0	3.0	0.0	8.0				
Prop In Lane	1.00		0.03	1.00		0.20	0.50		0.50	1.00		1.00				
Lane Grp Cap(c), veh/h	244	899	942	40	695	707	45	0	0	390	0	349				
V/C Ratio(X)	0.44	0.25	0.25	0.05	0.58	0.58	0.09	0.00	0.00	0.30	0.00	0.73				
Avail Cap(c_a), veh/h	428	899	942	428	886	901	403	0	0	658	0	587				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00				
Uniform Delay (d), s/veh	21.4	7.5	7.5	25.8	12.9	13.0	25.6	0.0	0.0	17.6	0.0	19.5				
Incr Delay (d2), s/veh	0.5	0.2	0.2	0.2	1.0	1.0	0.6	0.0	0.0	0.2	0.0	1.1				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	1.5	1.9	2.0	0.0	4.9	5.0	0.1	0.0	0.0	1.5	0.0	3.5				
LnGrp Delay(d),s/veh	21.8	7.7	7.7	26.0	13.9	14.0	26.2	0.0	0.0	17.7	0.0	20.6				
LnGrp LOS	C	A	A	C	B	B	C			B		C				
Approach Vol, veh/h	575				810				4		372					
Approach Delay, s/veh	10.4				14.0				26.2		19.7					
Approach LOS	B				B				C		B					
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2			4	5	6	8								
Phs Duration (G+Y+Rc), s	4.2	30.4			14.9	10.4	24.2	4.5								
Change Period (Y+Rc), s	4.0	5.7			4.0	4.0	5.7	4.0								
Max Green Setting (Gmax), s	12.0	24.3			19.0	12.0	24.3	12.0								
Max Q Clear Time (g_c+I1), s	2.1	5.9			10.0	5.0	11.6	2.1								
Green Ext Time (p_c), s	0.0	8.9			0.9	0.1	6.8	0.0								
Intersection Summary																
HCM 2010 Ctrl Delay			14.0													
HCM 2010 LOS			B													

HCM 2010 Signalized Intersection Summary
213: Santucci Blvd & Solaire Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	6	33	152	4	50	21	949	152	6	568	16
Future Volume (veh/h)	26	6	33	152	4	50	21	949	152	6	568	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	6	35	160	4	53	22	999	160	6	598	17
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	67	57	211	241	205	38	1936	603	11	1860	579
Arrive On Green	0.03	0.04	0.04	0.12	0.13	0.13	0.02	0.38	0.38	0.01	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	27	6	35	160	4	53	22	999	160	6	598	17
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.7	0.1	1.0	3.8	0.1	1.3	0.5	6.6	3.0	0.1	3.7	0.3
Cycle Q Clear(g_c), s	0.7	0.1	1.0	3.8	0.1	1.3	0.5	6.6	3.0	0.1	3.7	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	45	67	57	211	241	205	38	1936	603	11	1860	579
V/C Ratio(X)	0.59	0.09	0.62	0.76	0.02	0.26	0.58	0.52	0.27	0.53	0.32	0.03
Avail Cap(c_a), veh/h	203	1365	1161	569	1749	1487	203	2330	725	163	2213	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	20.4	20.7	18.6	16.6	17.1	21.2	10.4	9.3	21.6	10.0	8.9
Incr Delay (d2), s/veh	11.8	0.6	10.3	5.5	0.0	0.7	13.1	0.2	0.2	32.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.6	2.2	0.0	0.6	0.4	3.1	1.3	0.2	1.7	0.1
LnGrp Delay(d),s/veh	32.9	20.9	31.1	24.1	16.6	17.8	34.3	10.6	9.5	54.4	10.1	8.9
LnGrp LOS	C	C	C	C	B	B	C	B	A	D	B	A
Approach Vol, veh/h	68				217				1181			
Approach Delay, s/veh	30.9				22.5				10.9			
Approach LOS	C				C				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	21.6	10.2	6.6	5.9	21.0	6.1	10.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	20.0	14.0	32.0	5.0	19.0	5.0	41.0				
Max Q Clear Time (g_c+I1), s	2.1	8.6	5.8	3.0	2.5	5.7	2.7	3.3				
Green Ext Time (p_c), s	0.0	8.0	0.2	0.3	0.0	9.0	0.0	0.3				
Intersection Summary												
HCM 2010 Ctrl Delay	12.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
214: Santucci Rd & Federico Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	12	26	290	39	17	64	1095	312	28	710	14
Future Volume (veh/h)	11	12	26	290	39	17	64	1095	312	28	710	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	12	13	27	305	41	18	67	1153	328	29	747	15
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	138	86	405	503	396	122	1883	555	83	1771	520
Arrive On Green	0.03	0.07	0.05	0.23	0.27	0.25	0.07	0.37	0.35	0.05	0.35	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	12	13	27	305	41	18	67	1153	328	29	747	15
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.3	0.3	0.8	8.0	0.8	0.4	1.8	9.2	8.5	0.8	5.6	0.3
Cycle Q Clear(g_c), s	0.3	0.3	0.8	8.0	0.8	0.4	1.8	9.2	8.5	0.8	5.6	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	138	86	405	503	396	122	1883	555	83	1771	520
V/C Ratio(X)	0.21	0.09	0.31	0.75	0.08	0.05	0.55	0.61	0.59	0.35	0.42	0.03
Avail Cap(c_a), veh/h	178	1270	1048	640	1756	1461	178	1938	572	178	1938	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	21.5	22.7	17.9	13.6	14.2	22.5	12.8	13.3	23.0	12.4	11.4
Incr Delay (d2), s/veh	1.8	0.3	2.1	2.9	0.1	0.0	3.8	0.5	1.5	2.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	4.2	0.4	0.2	1.0	4.4	3.9	0.4	2.6	0.1
LnGrp Delay(d),s/veh	25.3	21.8	24.8	20.8	13.7	14.2	26.3	13.3	14.8	25.6	12.6	11.4
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h	52				364				1548			
Approach Delay, s/veh	24.1				19.7				14.2			
Approach LOS	C				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	21.5	15.4	6.7	7.4	20.4	5.6	16.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	17.0	17.0	32.0	4.0	17.0	4.0	45.0				
Max Q Clear Time (g_c+I1), s	2.8	11.2	10.0	2.8	3.8	7.6	2.3	2.8				
Green Ext Time (p_c), s	0.0	5.0	0.5	0.4	0.0	7.8	0.0	0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	14.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
215: Santucci Blvd & Sierra Village Dr

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	7	40	49	16	77	100	1428	110	44	1013	51
Future Volume (veh/h)	23	7	40	49	16	77	100	1428	110	44	1013	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	24	7	42	52	17	81	105	1503	116	46	1066	54
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	105	89	71	138	117	136	2556	796	65	2354	733
Arrive On Green	0.02	0.06	0.06	0.04	0.07	0.07	0.08	0.50	0.50	0.04	0.46	0.46
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	24	7	42	52	17	81	105	1503	116	46	1066	54
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.7	0.2	1.4	1.6	0.5	2.7	3.2	11.5	2.2	1.4	7.8	1.0
Cycle Q Clear(g_c), s	0.7	0.2	1.4	1.6	0.5	2.7	3.2	11.5	2.2	1.4	7.8	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	105	89	71	138	117	136	2556	796	65	2354	733
V/C Ratio(X)	0.61	0.07	0.47	0.73	0.12	0.69	0.77	0.59	0.15	0.71	0.45	0.07
Avail Cap(c_a), veh/h	129	1086	923	129	1086	923	291	2779	865	129	2354	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	24.5	25.1	26.1	23.8	24.8	24.9	9.6	7.3	26.1	10.0	8.2
Incr Delay (d2), s/veh	14.0	0.3	3.8	13.7	0.4	7.1	9.0	0.3	0.1	13.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.7	1.0	0.3	1.4	1.9	5.4	1.0	0.9	3.7	0.5
LnGrp Delay(d),s/veh	40.6	24.8	28.9	39.7	24.2	31.9	33.9	9.9	7.4	39.2	10.2	8.2
LnGrp LOS	D	C	C	D	C	C	C	A	A	D	B	A
Approach Vol, veh/h	73			150				1724			1166	
Approach Delay, s/veh	32.4			33.7				11.2			11.2	
Approach LOS	C			C				B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	32.6	7.2	8.1	9.2	30.4	6.2	9.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	4.0	30.0	4.0	32.0	9.0	25.0	4.0	32.0				
Max Q Clear Time (g_c+I1), s	3.4	13.5	3.6	3.4	5.2	9.8	2.7	4.7				
Green Ext Time (p_c), s	0.0	14.1	0.0	0.5	0.1	13.3	0.0	0.5				
Intersection Summary												
HCM 2010 Ctrl Delay	12.8											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
216: Hayden Parkway & Holt Parkway

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	67	58	19	62	3	53	116	15	2	43	45
Future Volume (veh/h)	95	67	58	19	62	3	53	116	15	2	43	45
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	100	71	61	20	65	3	56	122	16	2	45	47
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	332	281	36	217	10	89	302	40	6	116	121
Arrive On Green	0.08	0.18	0.18	0.02	0.12	0.12	0.05	0.19	0.19	0.00	0.14	0.14
Sat Flow, veh/h	1774	1863	1574	1774	1766	82	1774	1613	211	1774	832	869
Grp Volume(v), veh/h	100	71	61	20	0	68	56	0	138	2	0	92
Grp Sat Flow(s),veh/h/ln	1774	1863	1574	1774	0	1848	1774	0	1824	1774	0	1702
Q Serve(g_s), s	1.6	1.0	1.0	0.3	0.0	1.0	0.9	0.0	2.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	1.6	1.0	1.0	0.3	0.0	1.0	0.9	0.0	2.0	0.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.12	1.00		0.51
Lane Grp Cap(c), veh/h	135	332	281	36	0	227	89	0	342	6	0	238
V/C Ratio(X)	0.74	0.21	0.22	0.55	0.00	0.30	0.63	0.00	0.40	0.33	0.00	0.39
Avail Cap(c_a), veh/h	271	1266	1070	271	0	1256	271	0	1240	271	0	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	10.3	10.3	14.3	0.0	11.8	13.7	0.0	10.5	14.6	0.0	11.5
Incr Delay (d2), s/veh	7.8	0.3	0.4	12.3	0.0	0.7	7.2	0.0	0.8	29.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.5	0.4	0.3	0.0	0.5	0.6	0.0	1.0	0.1	0.0	0.7
LnGrp Delay(d),s/veh	21.1	10.6	10.7	26.6	0.0	12.5	20.9	0.0	11.3	43.8	0.0	12.5
LnGrp LOS	C	B	B	C		B	C		B	D		B
Approach Vol, veh/h	232				88				194			
Approach Delay, s/veh	15.2				15.7				14.1			
Approach LOS	B				B				B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.6	10.0	5.1	9.7	6.0	8.6	6.7	8.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	4.5	20.0	4.5	20.0	4.5	20.0	4.5	20.0				
Max Q Clear Time (g_c+I1), s	2.0	4.0	2.3	3.0	2.9	3.4	3.6	3.0				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.8	0.0	1.1	0.0	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay	14.6											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
217: Industrial Dr/Industrial Ave & Alantown Dr

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	33	302	438	0	478	772		
Future Volume (veh/h)	33	302	438	0	478	772		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	35	318	461	0	503	813		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	390	348	582	494	464	1197		
Arrive On Green	0.22	0.22	0.31	0.00	0.26	0.64		
Sat Flow, veh/h	1774	1583	1863	1583	1774	1863		
Grp Volume(v), veh/h	35	318	461	0	503	813		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	1774	1863		
Q Serve(g_s), s	1.1	14.3	16.4	0.0	19.0	20.1		
Cycle Q Clear(g_c), s	1.1	14.3	16.4	0.0	19.0	20.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	390	348	582	494	464	1197		
V/C Ratio(X)	0.09	0.91	0.79	0.00	1.08	0.68		
Avail Cap(c_a), veh/h	390	348	641	544	464	1255		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	22.6	27.7	22.8	0.0	26.9	8.2		
Incr Delay (d2), s/veh	0.1	27.4	6.2	0.0	66.7	1.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	8.8	9.5	0.0	17.7	10.6		
LnGrp Delay(d),s/veh	22.7	55.1	29.1	0.0	93.5	9.7		
LnGrp LOS	C	E	C		F	A		
Approach Vol, veh/h	353		461			1316		
Approach Delay, s/veh	51.9		29.1			41.7		
Approach LOS	D		C			D		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	24.0	27.7				51.7		21.0
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	19.0	25.0				49.0		16.0
Max Q Clear Time (g_c+I1), s	21.0	18.4				22.1		16.3
Green Ext Time (p_c), s	0.0	4.3				10.6		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			40.7					
HCM 2010 LOS			D					

HCM 2010 Signalized Intersection Summary
218: Industrial Avenue & Freedom Way

Cumulative Plus Project
PM Peak Hour

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	47	32	539	13	33	795		
Future Volume (veh/h)	47	32	539	13	33	795		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	49	34	567	14	35	837		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	115	103	1227	1043	644	1227		
Arrive On Green	0.06	0.06	0.66	0.66	0.66	0.66		
Sat Flow, veh/h	1774	1583	1863	1583	830	1863		
Grp Volume(v), veh/h	49	34	567	14	35	837		
Grp Sat Flow(s),veh/h/ln	1774	1583	1863	1583	830	1863		
Q Serve(g_s), s	0.9	0.7	4.9	0.1	0.7	9.1		
Cycle Q Clear(g_c), s	0.9	0.7	4.9	0.1	5.6	9.1		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	115	103	1227	1043	644	1227		
V/C Ratio(X)	0.43	0.33	0.46	0.01	0.05	0.68		
Avail Cap(c_a), veh/h	872	778	2003	1702	989	2003		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	14.6	14.5	2.7	1.9	4.1	3.4		
Incr Delay (d2), s/veh	2.5	1.9	0.3	0.0	0.0	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.3	2.5	0.0	0.2	4.6		
LnGrp Delay(d),s/veh	17.1	16.4	3.0	1.9	4.1	4.1		
LnGrp LOS	B	B	A	A	A	A		
Approach Vol, veh/h	83		581			872		
Approach Delay, s/veh	16.8		3.0			4.1		
Approach LOS	B		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		26.4				26.4		6.1
Change Period (Y+Rc), s		5.0				5.0		4.0
Max Green Setting (Gmax), s		35.0				35.0		16.0
Max Q Clear Time (g_c+l1), s		6.9				11.1		2.9
Green Ext Time (p_c), s		11.1				10.4		0.1
Intersection Summary								
HCM 2010 Ctrl Delay			4.4					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
219: La Sierra Drive & Pleasant Grove Blvd

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	396	6	56	450	0	5	0	0	0	0	0
Future Volume (veh/h)	0	396	6	56	450	0	5	0	0	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	417	6	59	474	0	5	0	0	0	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	1409	629	98	2242	1003	10	10	0	8	8	0
Arrive On Green	0.00	0.40	0.40	0.05	0.63	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1774	3539	1579	1774	3539	1583	1774	1863	0	1774	1863	0
Grp Volume(v), veh/h	0	417	6	59	474	0	5	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1579	1774	1770	1583	1774	1863	0	1774	1863	0
Q Serve(g_s), s	0.0	1.8	0.1	0.7	1.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.8	0.1	0.7	1.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	8	1409	629	98	2242	1003	10	10	0	8	8	0
V/C Ratio(X)	0.00	0.30	0.01	0.61	0.21	0.00	0.52	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	320	3194	1425	320	3194	1429	320	2605	0	320	2605	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.6	4.0	10.2	1.7	0.0	11.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	5.9	0.0	0.0	36.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	4.7	4.0	16.1	1.8	0.0	47.5	0.0	0.0	0.0	0.0	0.0
LnGrp LOS		A	A	B	A		D					
Approach Vol, veh/h		423			533			5			0	
Approach Delay, s/veh		4.7			3.4			47.5			0.0	
Approach LOS		A			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	4.1	5.2	12.8	4.1	0.0	0.0	18.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	31.0	4.0	20.0	4.0	31.0	4.0	20.0				
Max Q Clear Time (g_c+I1), s	0.0	0.0	2.7	3.8	2.1	0.0	0.0	3.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	4.9	0.0	0.0	0.0	5.0				
Intersection Summary												
HCM 2010 Ctrl Delay			4.2									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
220: Westbrook Blvd & Road D

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	6	0	1	12	16	849	0	39	971	2
Future Volume (veh/h)	2	1	6	0	1	12	16	849	0	39	971	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	1	6	0	1	13	17	894	0	41	1022	2
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	295	251	9	39	33	60	2025	631	128	2126	662
Arrive On Green	0.00	0.16	0.16	0.00	0.02	0.02	0.02	0.40	0.00	0.04	0.42	0.42
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	2	1	6	0	1	13	17	894	0	41	1022	2
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	0.0	0.1	0.0	0.0	0.3	0.2	4.7	0.0	0.4	5.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.1	0.0	0.0	0.3	0.2	4.7	0.0	0.4	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	9	295	251	9	39	33	60	2025	631	128	2126	662
V/C Ratio(X)	0.21	0.00	0.02	0.00	0.03	0.39	0.28	0.44	0.00	0.32	0.48	0.00
Avail Cap(c_a), veh/h	1025	807	686	1025	807	686	1025	2340	729	1025	2340	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	13.1	13.1	0.0	17.7	17.8	17.9	8.1	0.0	17.3	7.8	6.3
Incr Delay (d2), s/veh	11.1	0.0	0.0	0.0	0.3	7.3	2.6	0.2	0.0	1.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	0.0	0.0	0.2	0.1	2.2	0.0	0.2	2.5	0.0
LnGrp Delay(d),s/veh	29.5	13.1	13.2	0.0	18.0	25.2	20.5	8.3	0.0	18.8	8.0	6.3
LnGrp LOS	C	B	B		B	C	C	A		B	A	A
Approach Vol, veh/h	9			14			911			1065		
Approach Delay, s/veh	16.8			24.7			8.5			8.4		
Approach LOS	B			C			A			A		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.4	19.7	0.0	10.9	5.6	20.4	5.1	5.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	2.4	6.7	0.0	2.1	2.2	7.4	2.0	2.3				
Green Ext Time (p_c), s	0.0	8.0	0.0	0.0	0.0	7.5	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay	8.6											
HCM 2010 LOS	A											

HCM 2010 Signalized Intersection Summary
222: Westbrook Blvd/Westbrook Blvd & Road B

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	52	0	12	0	960	124	29	919	0
Future Volume (veh/h)	0	0	0	52	0	12	0	960	124	29	919	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	0	0	55	0	13	0	1011	131	31	967	0
Adj No. of Lanes	1	1	1	1	1	1	1	3	1	1	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	6	6	5	86	107	91	6	2168	675	54	3146	979
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.06	0.00	0.43	0.43	0.03	0.62	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	1774	5085	1583	1774	5085	1583
Grp Volume(v), veh/h	0	0	0	55	0	13	0	1011	131	31	967	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1774	1695	1583	1774	1695	1583
Q Serve(g_s), s	0.0	0.0	0.0	0.9	0.0	0.2	0.0	4.4	1.6	0.5	2.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.9	0.0	0.2	0.0	4.4	1.6	0.5	2.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	6	6	5	86	107	91	6	2168	675	54	3146	979
V/C Ratio(X)	0.00	0.00	0.00	0.64	0.00	0.14	0.00	0.47	0.19	0.58	0.31	0.00
Avail Cap(c_a), veh/h	633	966	821	633	966	821	633	2802	873	633	3146	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	14.4	0.0	13.8	0.0	6.3	5.5	14.8	2.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	7.5	0.0	0.7	0.0	0.2	0.1	9.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.6	0.0	0.1	0.0	2.0	0.7	0.4	1.3	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	21.9	0.0	14.5	0.0	6.5	5.7	24.2	2.8	0.0
LnGrp LOS				C		B		A	A	C	A	
Approach Vol, veh/h		0			68			1142			998	
Approach Delay, s/veh		0.0			20.5			6.4			3.5	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	18.1	6.5	0.3	0.0	24.1	0.0	6.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	2.5	6.4	2.9	0.0	0.0	4.8	0.0	2.2				
Green Ext Time (p_c), s	0.0	6.8	0.0	0.0	0.0	9.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			5.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
224: Westbrook Blvd & Road A

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	103	32	1	0	263	1153	75	0	1128	1
Future Volume (veh/h)	1	1	103	32	1	0	263	1153	75	0	1128	1
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1	1	108	34	1	0	277	1214	79	0	1187	1
Adj No. of Lanes	2	1	1	2	1	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	8	162	138	106	217	185	438	2786	868	8	1573	490
Arrive On Green	0.00	0.09	0.09	0.03	0.12	0.00	0.13	0.55	0.55	0.00	0.31	0.31
Sat Flow, veh/h	3442	1863	1583	3442	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	1	1	108	34	1	0	277	1214	79	0	1187	1
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1721	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	0.0	0.0	3.0	0.4	0.0	0.0	3.4	6.4	1.1	0.0	9.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.0	0.4	0.0	0.0	3.4	6.4	1.1	0.0	9.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	8	162	138	106	217	185	438	2786	868	8	1573	490
V/C Ratio(X)	0.13	0.01	0.79	0.32	0.00	0.00	0.63	0.44	0.09	0.00	0.75	0.00
Avail Cap(c_a), veh/h	844	664	565	844	664	565	844	2786	868	844	1927	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	18.7	20.1	21.3	17.5	0.0	18.6	6.0	4.8	0.0	14.0	10.7
Incr Delay (d2), s/veh	7.5	0.0	9.4	1.7	0.0	0.0	1.5	0.1	0.0	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.6	0.2	0.0	0.0	1.7	3.0	0.5	0.0	4.6	0.0
LnGrp Delay(d),s/veh	29.8	18.7	29.5	23.0	17.5	0.0	20.1	6.1	4.9	0.0	15.3	10.7
LnGrp LOS	C	B	C	C	B		C	A	A		B	B
Approach Vol, veh/h	110				35				1570			
Approach Delay, s/veh	29.4				22.8				8.5			
Approach LOS	C				C				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	29.6	6.4	8.9	10.7	18.9	5.0	10.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	11.0	17.0	11.0	16.0	11.0	17.0	11.0	16.0				
Max Q Clear Time (g_c+I1), s	0.0	8.4	2.4	5.0	5.4	11.4	2.0	2.0				
Green Ext Time (p_c), s	0.0	7.7	0.0	0.2	0.5	2.4	0.0	0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	12.3											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary
 225: Falcon Pointe Lane/Medical Plaza Drive & Secret Ravine Pkwy

Cumulative Plus Project
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	847	0	9	344	7	0	1	17	21	1	25
Future Volume (veh/h)	23	847	0	9	344	7	0	1	17	21	1	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	24	892	0	9	362	7	0	1	18	22	1	26
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	1484	0	17	1438	28	0	2	38	88	3	76
Arrive On Green	0.02	0.42	0.00	0.01	0.40	0.40	0.00	0.03	0.03	0.05	0.05	0.05
Sat Flow, veh/h	1774	3632	0	1774	3551	69	0	84	1505	1774	59	1526
Grp Volume(v), veh/h	24	892	0	9	180	189	0	0	19	22	0	27
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1850	0	0	1589	1774	0	1585
Q Serve(g_s), s	0.4	6.3	0.0	0.2	2.2	2.2	0.0	0.0	0.4	0.4	0.0	0.5
Cycle Q Clear(g_c), s	0.4	6.3	0.0	0.2	2.2	2.2	0.0	0.0	0.4	0.4	0.0	0.5
Prop In Lane	1.00		0.00	1.00		0.04	0.00		0.95	1.00		0.96
Lane Grp Cap(c), veh/h	43	1484	0	17	717	749	0	0	40	88	0	79
V/C Ratio(X)	0.56	0.60	0.00	0.53	0.25	0.25	0.00	0.00	0.48	0.25	0.00	0.34
Avail Cap(c_a), veh/h	220	1976	0	220	988	1033	0	0	1035	1156	0	1032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	7.3	0.0	15.9	6.4	6.4	0.0	0.0	15.5	14.7	0.0	14.8
Incr Delay (d2), s/veh	11.2	0.4	0.0	23.0	0.2	0.2	0.0	0.0	8.5	1.5	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.1	0.0	0.2	1.1	1.1	0.0	0.0	0.3	0.2	0.0	0.3
LnGrp Delay(d),s/veh	26.7	7.7	0.0	38.9	6.5	6.5	0.0	0.0	24.0	16.2	0.0	17.4
LnGrp LOS	C	A		D	A	A			C	B		B
Approach Vol, veh/h	916			378			19			49		
Approach Delay, s/veh	8.2			7.3			24.0			16.9		
Approach LOS	A			A			C			B		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		3	4	5		6	7	8			
Phs Duration (G+Y+Rc), s	4.8		4.3	17.5	5.6		4.8	17.1				
Change Period (Y+Rc), s	4.0		4.0	4.0	4.0		4.0	4.0				
Max Green Setting (Gmax), s	21.0		4.0	18.0	21.0		4.0	18.0				
Max Q Clear Time (g_c+I1), s	2.4		2.2	8.3	2.5		2.4	4.2				
Green Ext Time (p_c), s	0.0		0.0	5.1	0.1		0.0	6.4				
Intersection Summary												
HCM 2010 Ctrl Delay			8.5									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary
226: Hayden Pkwy & High School Road

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1	17	20	0	28	10	205	55	61	91	10
Future Volume (veh/h)	16	1	17	20	0	28	10	205	55	61	91	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	1	18	21	0	29	11	216	58	64	96	11
Adj No. of Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	129	109	38	136	115	21	445	377	101	529	448
Arrive On Green	0.02	0.07	0.07	0.02	0.00	0.07	0.01	0.24	0.24	0.06	0.28	0.28
Sat Flow, veh/h	1774	1863	1573	1774	1863	1573	1774	1863	1577	1774	1863	1578
Grp Volume(v), veh/h	17	1	18	21	0	29	11	216	58	64	96	11
Grp Sat Flow(s),veh/h/ln	1774	1863	1573	1774	1863	1573	1774	1863	1577	1774	1863	1578
Q Serve(g_s), s	0.2	0.0	0.3	0.3	0.0	0.5	0.2	2.6	0.8	0.9	1.0	0.1
Cycle Q Clear(g_c), s	0.2	0.0	0.3	0.3	0.0	0.5	0.2	2.6	0.8	0.9	1.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	32	129	109	38	136	115	21	445	377	101	529	448
V/C Ratio(X)	0.54	0.01	0.17	0.55	0.00	0.25	0.53	0.49	0.15	0.63	0.18	0.02
Avail Cap(c_a), veh/h	272	1571	1327	272	1571	1327	272	1571	1330	408	1714	1452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	11.3	11.4	12.6	0.0	11.4	12.8	8.5	7.8	12.0	7.0	6.7
Incr Delay (d2), s/veh	13.5	0.0	0.7	11.6	0.0	1.1	19.1	0.8	0.2	6.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.3	0.0	0.2	0.2	1.4	0.3	0.6	0.5	0.1
LnGrp Delay(d),s/veh	26.3	11.3	12.1	24.2	0.0	12.6	31.9	9.4	8.0	18.5	7.2	6.8
LnGrp LOS	C	B	B	C		B	C	A	A	B	A	A
Approach Vol, veh/h	36				50				285			
Approach Delay, s/veh	18.8				17.4				10.0			
Approach LOS	B				B				A			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	10.2	4.6	5.8	4.3	11.4	4.5	5.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	22.0	4.0	22.0	4.0	24.0	4.0	22.0				
Max Q Clear Time (g_c+I1), s	2.9	4.6	2.3	2.3	2.2	3.0	2.2	2.5				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.1	0.0	1.9	0.0	0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	11.7											
HCM 2010 LOS	B											

HCM 2010 Signalized Intersection Summary

1001: Riverside & Darling

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	55	73	190	71	16	65	630	195	6	727	46
Future Volume (veh/h)	48	55	73	190	71	16	65	630	195	6	727	46
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	51	58	77	200	75	17	68	663	205	6	765	48
Adj No. of Lanes	0	1	1	0	1	0	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	125	205	259	97	22	121	817	694	43	1336	84
Arrive On Green	0.13	0.13	0.13	0.21	0.21	0.21	0.07	0.44	0.44	0.02	0.39	0.39
Sat Flow, veh/h	852	969	1583	1221	458	104	1774	1863	1583	1774	3383	212
Grp Volume(v), veh/h	109	0	77	292	0	0	68	663	205	6	400	413
Grp Sat Flow(s),veh/h/ln	1820	0	1583	1783	0	0	1774	1863	1583	1774	1770	1825
Q Serve(g_s), s	3.8	0.0	3.0	10.5	0.0	0.0	2.5	21.0	5.7	0.2	12.0	12.0
Cycle Q Clear(g_c), s	3.8	0.0	3.0	10.5	0.0	0.0	2.5	21.0	5.7	0.2	12.0	12.0
Prop In Lane	0.47		1.00	0.68		0.06	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	235	0	205	378	0	0	121	817	694	43	699	721
V/C Ratio(X)	0.46	0.00	0.38	0.77	0.00	0.00	0.56	0.81	0.30	0.14	0.57	0.57
Avail Cap(c_a), veh/h	242	0	210	710	0	0	209	926	787	183	882	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	27.0	25.2	0.0	0.0	30.6	16.6	12.3	32.4	16.0	16.0
Incr Delay (d2), s/veh	0.5	0.0	0.4	1.3	0.0	0.0	1.5	4.3	0.1	0.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	1.3	5.2	0.0	0.0	1.3	11.7	2.5	0.1	5.9	6.1
LnGrp Delay(d),s/veh	27.9	0.0	27.4	26.5	0.0	0.0	32.1	20.9	12.4	32.9	16.7	16.7
LnGrp LOS	C		C	C			C	C	B	C	B	B
Approach Vol, veh/h	186				292				936		819	
Approach Delay, s/veh	27.7				26.5				19.8		16.9	
Approach LOS	C				C				B		B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	4.6	34.0	17.3		7.6	31.1	11.8					
Change Period (Y+Rc), s	4.0	5.3	4.0		4.0	* 5.3	4.0					
Max Green Setting (Gmax), s	6.0	32.7	26.0		7.0	* 33	8.0					
Max Q Clear Time (g_c+I1), s	2.2	23.0	12.5		4.5	14.0	5.8					
Green Ext Time (p_c), s	0.0	5.7	0.9		0.0	8.5	0.1					

Intersection Summary

HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

1002: Riverside & Vernon & Douglas

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	182	0	368	441	5	0	399	382	0	391	355
Future Volume (veh/h)	208	182	0	368	441	5	0	399	382	0	391	355
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	206	211	0	387	464	5	0	420	402	0	412	0
Adj No. of Lanes	1	1	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	0	2	2
Cap, veh/h	306	321	0	575	1162	13	0	607	516	0	607	516
Arrive On Green	0.17	0.17	0.00	0.32	0.32	0.32	0.00	0.33	0.33	0.00	0.33	0.00
Sat Flow, veh/h	1774	1863	0	1774	3587	39	0	1863	1583	0	1863	1583
Grp Volume(v), veh/h	206	211	0	387	229	240	0	420	402	0	412	0
Grp Sat Flow(s),veh/h/ln	1774	1863	0	1774	1770	1856	0	1863	1583	0	1863	1583
Q Serve(g_s), s	7.0	6.8	0.0	12.1	6.4	6.5	0.0	12.6	14.7	0.0	12.3	0.0
Cycle Q Clear(g_c), s	7.0	6.8	0.0	12.1	6.4	6.5	0.0	12.6	14.7	0.0	12.3	0.0
Prop In Lane	1.00		0.00	1.00		0.02	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	306	321	0	575	573	601	0	607	516	0	607	516
V/C Ratio(X)	0.67	0.66	0.00	0.67	0.40	0.40	0.00	0.69	0.78	0.00	0.68	0.00
Avail Cap(c_a), veh/h	580	609	0	748	746	783	0	690	586	0	681	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	24.8	0.0	18.8	16.9	16.9	0.0	18.8	19.6	0.0	18.7	0.0
Incr Delay (d2), s/veh	1.9	1.7	0.0	3.0	1.0	0.9	0.0	2.5	5.9	0.0	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.6	0.0	6.4	3.3	3.4	0.0	6.8	7.2	0.0	6.6	0.0
LnGrp Delay(d),s/veh	26.8	26.5	0.0	21.8	17.8	17.8	0.0	21.4	25.4	0.0	20.8	0.0
LnGrp LOS	C	C		C	B	B		C	C		C	
Approach Vol, veh/h	417			856			822			412		
Approach Delay, s/veh	26.7			19.6			23.3			20.8		
Approach LOS	C			B			C			C		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	24.2			15.4			24.2			24.7		
Change Period (Y+Rc), s	* 4.2			5.3			* 4.2			4.9		
Max Green Setting (Gmax), s	* 23			20.0			* 23			26.1		
Max Q Clear Time (g_c+I1), s	16.7			9.0			14.3			14.1		
Green Ext Time (p_c), s	3.2			1.1			4.0			5.7		
Intersection Summary												
HCM 2010 Ctrl Delay	22.2											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 2010 Signalized Intersection Summary

1003: Grant & Vernon

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	576	183	54	461	21	147	54	64	8	40	17
Future Volume (veh/h)	21	576	183	54	461	21	147	54	64	8	40	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	22	606	193	57	485	22	155	57	67	8	42	18
Adj No. of Lanes	0	1	1	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	1105	967	138	928	40	318	96	420	93	273	103
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	25	1810	1583	96	1521	66	729	361	1583	48	1028	387
Grp Volume(v), veh/h	628	0	193	564	0	0	212	0	67	68	0	0
Grp Sat Flow(s),veh/h/ln	1835	0	1583	1683	0	0	1091	0	1583	1463	0	0
Q Serve(g_s), s	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	1.6	0.1	0.0	0.0
Cycle Q Clear(g_c), s	9.9	0.0	2.7	8.5	0.0	0.0	10.1	0.0	1.6	10.2	0.0	0.0
Prop In Lane	0.04		1.00	0.10		0.04	0.73		1.00	0.12		0.26
Lane Grp Cap(c), veh/h	1195	0	967	1107	0	0	414	0	420	469	0	0
V/C Ratio(X)	0.53	0.00	0.20	0.51	0.00	0.00	0.51	0.00	0.16	0.15	0.00	0.00
Avail Cap(c_a), veh/h	1195	0	967	1107	0	0	522	0	538	595	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.7	0.0	4.3	5.5	0.0	0.0	16.9	0.0	14.1	14.1	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.5	1.5	0.0	0.0	0.4	0.0	0.1	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	1.3	4.7	0.0	0.0	2.8	0.0	0.7	0.7	0.0	0.0
LnGrp Delay(d),s/veh	7.4	0.0	4.8	7.0	0.0	0.0	17.3	0.0	14.1	14.1	0.0	0.0
LnGrp LOS	A		A	A			B		B	B		
Approach Vol, veh/h	821		564				279				68	
Approach Delay, s/veh	6.8		7.0				16.5				14.1	
Approach LOS	A		A				B				B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	33.7		16.3		33.7		16.3					
Change Period (Y+Rc), s	* 4.2		4.0		* 4.2		4.0					
Max Green Setting (Gmax), s	* 26		16.0		* 26		16.0					
Max Q Clear Time (g_c+I1), s	11.9		12.2		10.5		12.1					
Green Ext Time (p_c), s	6.8		0.4		7.1		0.4					
Intersection Summary												
HCM 2010 Ctrl Delay	8.7											
HCM 2010 LOS	A											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1004: Judah & Vernon

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	591	23	34	645	62	12	43	29	115	76	94
Future Volume (veh/h)	45	591	23	34	645	62	12	43	29	115	76	94
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	47	622	24	36	679	65	13	45	31	121	80	99
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	1178	45	518	1106	106	230	221	152	276	133	341
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	713	1782	69	781	1674	160	1200	1029	709	748	618	1583
Grp Volume(v), veh/h	47	0	646	36	0	744	13	0	76	201	0	99
Grp Sat Flow(s),veh/h/ln	713	0	1851	781	0	1834	1200	0	1738	1366	0	1583
Q Serve(g_s), s	2.0	0.0	9.1	1.3	0.0	11.6	0.5	0.0	1.8	5.4	0.0	2.6
Cycle Q Clear(g_c), s	13.6	0.0	9.1	10.4	0.0	11.6	7.7	0.0	1.8	7.2	0.0	2.6
Prop In Lane	1.00		0.04	1.00		0.09	1.00		0.41	0.60		1.00
Lane Grp Cap(c), veh/h	450	0	1223	518	0	1212	230	0	374	409	0	341
V/C Ratio(X)	0.10	0.00	0.53	0.07	0.00	0.61	0.06	0.00	0.20	0.49	0.00	0.29
Avail Cap(c_a), veh/h	450	0	1223	518	0	1212	380	0	591	596	0	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.7	0.0	4.4	7.1	0.0	4.8	21.8	0.0	16.1	18.5	0.0	16.4
Incr Delay (d2), s/veh	0.5	0.0	1.6	0.3	0.0	2.3	0.0	0.0	0.1	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.0	0.3	0.0	6.4	0.2	0.0	0.9	2.6	0.0	1.1
LnGrp Delay(d),s/veh	9.2	0.0	6.1	7.4	0.0	7.2	21.8	0.0	16.2	18.8	0.0	16.6
LnGrp LOS	A		A	A		A	C		B	B		B
Approach Vol, veh/h	693		780				89		300			
Approach Delay, s/veh	6.3		7.2				17.0		18.1			
Approach LOS	A		A				B		B			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	36.2		13.8		36.2		13.8					
Change Period (Y+Rc), s	* 4.2		4.0		* 4.2		4.0					
Max Green Setting (Gmax), s	* 26		16.0		* 26		16.0					
Max Q Clear Time (g_c+I1), s	15.6		9.2		13.6		9.7					
Green Ext Time (p_c), s	6.0		0.8		6.8		0.7					
Intersection Summary												
HCM 2010 Ctrl Delay			9.1									
HCM 2010 LOS			A									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

1005: Lincoln & Vernon

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	562	33	510	482	22	47	31	328	70	99	49
Future Volume (veh/h)	41	562	33	510	482	22	47	31	328	70	99	49
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	43	592	35	537	507	23	49	33	345	74	104	52
Adj No. of Lanes	1	1	0	1	1	0	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	658	39	575	1170	53	153	89	285	101	108	47
Arrive On Green	0.04	0.38	0.38	0.32	0.66	0.66	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1774	1742	103	1774	1768	80	528	495	1583	296	600	262
Grp Volume(v), veh/h	43	0	627	537	0	530	82	0	345	230	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1845	1774	0	1849	1022	0	1583	1157	0	0
Q Serve(g_s), s	2.4	0.0	32.0	29.3	0.0	13.6	0.0	0.0	18.0	11.7	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	32.0	29.3	0.0	13.6	6.3	0.0	18.0	18.0	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.04	0.60		1.00	0.32		0.23
Lane Grp Cap(c), veh/h	72	0	697	575	0	1223	242	0	285	256	0	0
V/C Ratio(X)	0.60	0.00	0.90	0.93	0.00	0.43	0.34	0.00	1.21	0.90	0.00	0.00
Avail Cap(c_a), veh/h	106	0	734	585	0	1235	242	0	285	256	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.00	0.85	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	47.2	0.0	29.3	32.7	0.0	8.0	35.8	0.0	41.0	42.7	0.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	11.8	21.6	0.0	1.1	0.3	0.0	122.8	30.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	18.5	17.8	0.0	7.3	2.0	0.0	17.6	8.5	0.0	0.0
LnGrp Delay(d),s/veh	49.7	0.0	41.2	54.3	0.0	9.2	36.1	0.0	163.8	73.1	0.0	0.0
LnGrp LOS	D		D	D		A	D		F	E		
Approach Vol, veh/h	670				1067				427			
Approach Delay, s/veh	41.7				31.9				139.3			
Approach LOS	D				C				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.4	41.0		21.0	7.1	69.3		21.0				
Change Period (Y+Rc), s	4.0	* 4.2		4.0	4.0	* 4.2		4.0				
Max Green Setting (Gmax), s	32.0	* 39		17.0	5.0	* 66		17.0				
Max Q Clear Time (g_c+I1), s	31.3	34.0		20.0	4.4	15.6		20.0				
Green Ext Time (p_c), s	0.1	2.7		0.0	0.0	8.5		0.0				

Intersection Summary

HCM 2010 Ctrl Delay	57.8
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

1006: Washington & Main

Cumulative Plus Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	114	268	199	71	2	662	1086	46	30	1163	2
Future Volume (veh/h)	70	114	268	199	71	2	662	1086	46	30	1163	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	74	120	282	209	75	2	697	1143	48	32	1224	0
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	310	264	295	310	263	688	1384	597	261	1273	547
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.20	0.39	0.38	0.15	0.36	0.00
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	74	120	282	209	75	2	697	1143	48	32	1224	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.3	5.2	15.0	10.0	3.2	0.1	18.0	26.2	1.8	1.4	30.5	0.0
Cycle Q Clear(g_c), s	3.3	5.2	15.0	10.0	3.2	0.1	18.0	26.2	1.8	1.4	30.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	310	264	295	310	263	688	1384	597	261	1273	547
V/C Ratio(X)	0.25	0.39	1.07	0.71	0.24	0.01	1.01	0.83	0.08	0.12	0.96	0.00
Avail Cap(c_a), veh/h	295	310	264	295	310	264	688	1469	634	261	1273	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	33.4	37.5	35.5	32.6	31.3	36.0	24.7	18.0	33.4	28.2	0.0
Incr Delay (d2), s/veh	0.2	0.3	75.1	6.5	0.1	0.0	37.7	4.0	0.1	0.1	16.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.7	12.0	5.4	1.6	0.0	12.1	13.5	0.8	0.7	17.8	0.0
LnGrp Delay(d),s/veh	32.8	33.7	112.7	42.0	32.8	31.3	73.8	28.7	18.1	33.4	45.2	0.0
LnGrp LOS	C	C	F	D	C	C	F	C	B	C	D	
Approach Vol, veh/h	476				286				1888			
Approach Delay, s/veh	80.4				39.5				45.1			
Approach LOS	F				D				D			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.3	37.8		18.0	20.0	34.1		18.0				
Change Period (Y+Rc), s	4.0	4.9		4.0	3.0	* 4		4.0				
Max Green Setting (Gmax), s	10.0	35.1		14.0	17.0	* 30		14.0				
Max Q Clear Time (g_c+I1), s	3.4	28.2		17.0	20.0	32.5		12.0				
Green Ext Time (p_c), s	4.7	4.8		0.0	0.0	0.0		0.1				

Intersection Summary

HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
1007: Oak Street & S Grant Street

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	40	517	476	245	314	22		
Future Volume (veh/h)	40	517	476	245	314	22		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900		
Adj Flow Rate, veh/h	42	544	501	258	352	0		
Adj No. of Lanes	1	2	1	1	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	0		
Cap, veh/h	68	2116	830	703	618	281		
Arrive On Green	0.04	0.60	0.45	0.45	0.17	0.00		
Sat Flow, veh/h	1774	3632	1863	1576	3548	1615		
Grp Volume(v), veh/h	42	544	501	258	352	0		
Grp Sat Flow(s),veh/h/ln	1774	1770	1863	1576	1774	1615		
Q Serve(g_s), s	0.8	2.6	7.2	3.8	3.2	0.0		
Cycle Q Clear(g_c), s	0.8	2.6	7.2	3.8	3.2	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	68	2116	830	703	618	281		
V/C Ratio(X)	0.62	0.26	0.60	0.37	0.57	0.00		
Avail Cap(c_a), veh/h	202	3023	1167	987	2222	1012		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	16.6	3.4	7.4	6.5	13.3	0.0		
Incr Delay (d2), s/veh	8.8	0.1	0.7	0.3	0.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	1.2	3.8	1.7	1.6	0.0		
LnGrp Delay(d),s/veh	25.5	3.4	8.1	6.8	14.1	0.0		
LnGrp LOS	C	A	A	A	B			
Approach Vol, veh/h		586	759		352			
Approach Delay, s/veh		5.0	7.6		14.1			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				25.0		10.1	5.3	19.7
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s				30.0		22.0	4.0	22.0
Max Q Clear Time (g_c+I1), s				4.6		5.2	2.8	9.2
Green Ext Time (p_c), s				9.0		1.1	0.0	6.4
Intersection Summary								
HCM 2010 Ctrl Delay			8.1					
HCM 2010 LOS			A					
Notes								
User approved volume balancing among the lanes for turning movement.								

HCM 2010 Signalized Intersection Summary

1008: Oak Street & Lincoln Street

Cumulative Plus Project
PM Peak Hour

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	291	595	817	6	6	558		
Future Volume (veh/h)	291	595	817	6	6	558		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	306	626	864	0	6	587		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	473	422	946	1118	497	421		
Arrive On Green	0.27	0.27	0.27	0.00	0.27	0.27		
Sat Flow, veh/h	1774	1583	3548	1863	1863	1577		
Grp Volume(v), veh/h	306	626	864	0	6	587		
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1577		
Q Serve(g_s), s	9.2	16.0	14.2	0.0	0.1	16.0		
Cycle Q Clear(g_c), s	9.2	16.0	14.2	0.0	0.1	16.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	473	422	946	1118	497	421		
V/C Ratio(X)	0.65	1.48	0.91	0.00	0.01	1.40		
Avail Cap(c_a), veh/h	473	422	946	1118	497	421		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00		
Uniform Delay (d), s/veh	19.5	22.0	21.3	0.0	16.2	22.0		
Incr Delay (d2), s/veh	3.1	229.6	13.0	0.0	0.0	192.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.8	39.0	8.5	0.0	0.1	29.3		
LnGrp Delay(d),s/veh	22.5	251.6	34.3	0.0	16.2	214.0		
LnGrp LOS	C	F	C		B	F		
Approach Vol, veh/h	932			864	593			
Approach Delay, s/veh	176.4			34.3	212.0			
Approach LOS	F			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		40.0		20.0	20.0	20.0		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		36.0		16.0	16.0	16.0		
Max Q Clear Time (g_c+I1), s		0.0		18.0	16.2	18.0		
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			133.8					
HCM 2010 LOS			F					
Notes								
User approved volume balancing among the lanes for turning movement.								

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
PM Peak Hour

Intersection 1 **Cirby Way/Foothills Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	830	665	80.2%	192.7	40.5	F
	Right Turn	460	352	76.6%	221.8	47.6	F
	Subtotal	1,290	1,018	78.9%	202.9	42.0	F
SB	Left Turn	1,480	1,363	92.1%	69.7	20.4	E
	Through	760	869	114.4%	43.6	17.7	D
	Right Turn						
	Subtotal	2,240	2,233	99.7%	59.5	18.5	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	550	378	68.8%	61.0	9.4	E
	Through						
	Right Turn	1,970	1,343	68.2%	24.2	7.7	C
	Subtotal	2,520	1,721	68.3%	32.3	6.3	C
Total		6,050	4,972	82.2%	79.4	15.0	E

Intersection 2 **Cirby Way/Vernon St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	25	83.6%	87.3	47.6	F
	Through	60	55	91.8%	47.3	11.0	D
	Right Turn	130	128	98.2%	31.5	8.0	C
	Subtotal	220	208	94.5%	42.8	10.4	D
SB	Left Turn	80	73	90.7%	50.0	14.6	D
	Through	170	165	97.2%	41.1	10.1	D
	Right Turn	620	470	75.9%	117.8	29.3	F
	Subtotal	870	708	81.4%	93.6	21.4	F
EB	Left Turn	370	297	80.3%	134.6	56.3	F
	Through	1,540	1,271	82.5%	47.6	19.3	D
	Right Turn	30	22	73.5%	45.1	15.1	D
	Subtotal	1,940	1,590	82.0%	64.5	27.4	E
WB	Left Turn	100	74	74.5%	105.7	32.6	F
	Through	1,870	1,319	70.5%	72.1	33.0	E
	Right Turn	60	47	78.5%	58.0	38.6	E
	Subtotal	2,030	1,441	71.0%	73.2	32.6	E
Total		5,060	3,947	78.0%	70.9	15.6	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
PM Peak Hour

Intersection 3 **Cirby Way/Melody Ln** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	260	228	87.7%	44.3	20.7	D
	Subtotal	260	228	87.7%	44.3	20.7	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,920	1,535	80.0%	16.2	4.8	B
	Right Turn	10	7	72.2%	13.5	9.9	B
	Subtotal	1,930	1,542	79.9%	16.2	4.8	B
WB	Left Turn	360	259	72.0%	26.7	12.6	C
	Through	2,240	1,765	78.8%	5.5	2.6	A
	Right Turn						
	Subtotal	2,600	2,025	77.9%	8.2	3.9	A
Total		4,790	3,795	79.2%	13.6	4.7	B

Intersection 4 **Cirby Way/Riverside Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	1,130	1,005	89.0%	47.6	6.9	D
	Through	720	670	93.1%	43.1	4.0	D
	Right Turn	250	229	91.5%	22.4	2.2	C
	Subtotal	2,100	1,905	90.7%	43.0	3.9	D
SB	Left Turn	370	329	88.9%	95.6	24.9	F
	Through	700	544	77.7%	149.9	33.8	F
	Right Turn	160	128	80.3%	134.5	41.5	F
	Subtotal	1,230	1,001	81.4%	130.3	31.6	F
EB	Left Turn	160	109	68.2%	171.2	21.1	F
	Through	970	750	77.3%	62.5	8.0	E
	Right Turn	1,050	842	80.2%	18.5	3.0	B
	Subtotal	2,180	1,701	78.0%	47.7	4.8	D
WB	Left Turn	480	304	63.3%	143.3	32.5	F
	Through	1,280	887	69.3%	92.3	15.3	F
	Right Turn	190	121	63.8%	90.9	20.7	F
	Subtotal	1,950	1,312	67.3%	104.2	13.5	F
Total		7,460	5,919	79.3%	72.5	7.4	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
PM Peak Hour

Intersection 5 **Cirby Way/Cirby Hills Dr-Kaiser North Driveway** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	180	155	85.9%	121.3	48.0	F
	Through						
	Right Turn	330	334	101.3%	16.0	1.6	B
	Subtotal	510	489	95.9%	49.7	17.0	D
SB	Left Turn	30	28	93.7%	68.1	20.5	E
	Through						
	Right Turn	70	68	97.7%	33.3	11.9	C
	Subtotal	100	97	96.5%	41.9	10.6	D
EB	Left Turn	60	51	85.5%	66.7	20.5	E
	Through	1,440	1,162	80.7%	16.4	1.1	B
	Right Turn	80	66	82.2%	13.1	2.2	B
	Subtotal	1,580	1,279	81.0%	18.2	1.1	B
WB	Left Turn	50	31	62.3%	90.8	13.6	F
	Through	1,700	1,194	70.3%	44.2	20.0	D
	Right Turn	20	14	68.4%	40.2	32.6	D
	Subtotal	1,770	1,239	70.0%	45.3	19.6	D
Total		3,960	3,104	78.4%	34.6	9.2	C

Intersection 6 **Cirby Way/Orlando Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	60	61	101.3%	59.5	11.9	E
	Through						
	Right Turn	520	476	91.6%	70.2	18.2	E
	Subtotal	580	537	92.6%	69.0	16.1	E
SB	Left Turn	10	8	83.6%	50.8	27.6	D
	Through						
	Right Turn	30	35	116.5%	12.4	3.3	B
	Subtotal	40	43	108.3%	20.5	8.8	C
EB	Left Turn	40	34	84.6%	76.6	12.5	E
	Through	1,560	1,283	82.2%	36.9	7.9	D
	Right Turn	200	159	79.6%	39.1	12.0	D
	Subtotal	1,800	1,476	82.0%	38.1	8.4	D
WB	Left Turn	190	145	76.4%	34.3	4.1	C
	Through	1,680	1,252	74.5%	4.0	0.9	A
	Right Turn						
	Subtotal	1,870	1,397	74.7%	7.2	1.4	A
Total		4,290	3,453	80.5%	30.2	5.2	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
PM Peak Hour

Intersection 7 **Cirby Way/Sunrise Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	710	462	65.1%	188.6	7.9	F
	Through	1,230	847	68.9%	53.4	9.1	D
	Right Turn	180	123	68.4%	32.7	11.1	C
	Subtotal	2,120	1,433	67.6%	95.8	2.1	F
SB	Left Turn	220	157	71.2%	219.0	28.2	F
	Through	1,440	1,032	71.7%	197.6	25.4	F
	Right Turn	280	201	71.8%	177.7	27.8	F
	Subtotal	1,940	1,390	71.7%	197.2	25.7	F
EB	Left Turn	410	282	68.9%	143.7	27.3	F
	Through	900	617	68.5%	125.1	27.6	F
	Right Turn	590	404	68.5%	89.1	23.3	F
	Subtotal	1,900	1,303	68.6%	118.1	26.5	F
WB	Left Turn	570	407	71.3%	191.2	34.4	F
	Through	730	575	78.7%	132.6	18.6	F
	Right Turn	60	47	77.9%	112.5	18.9	F
	Subtotal	1,360	1,028	75.6%	155.0	23.6	F
Total		7,320	5,154	70.4%	140.5	11.6	F

Intersection 8 **Riverside Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,690	1,526	90.3%	39.4	10.1	D
	Right Turn	340	295	86.8%	15.8	1.4	B
	Subtotal	2,030	1,822	89.7%	35.6	8.6	D
SB	Left Turn						
	Through	920	697	75.8%	16.4	4.2	B
	Right Turn						
	Subtotal	920	697	75.8%	16.4	4.2	B
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	940	888	94.5%	45.2	8.4	D
	Through						
	Right Turn	330	321	97.3%	26.3	4.2	C
	Subtotal	1,270	1,210	95.2%	40.2	6.7	D
Total		4,220	3,729	88.4%	33.7	4.4	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
PM Peak Hour

Intersection 9 **Riverside Blvd/I-80 EB Ramps-Orlando Ave** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,410	1,213	86.1%	98.1	29.4	F
	Right Turn	100	98	98.4%	105.9	35.6	F
	Subtotal	1,510	1,312	86.9%	98.7	29.7	F
SB	Left Turn	100	76	76.4%	63.2	9.1	E
	Through	1,510	1,297	85.9%	27.3	5.0	C
	Right Turn						
	Subtotal	1,610	1,373	85.3%	29.4	4.7	C
EB	Left Turn						
	Through	480	472	98.3%	36.1	3.0	D
	Right Turn	180	182	101.3%	26.0	3.0	C
	Subtotal	660	654	99.1%	33.3	2.2	C
WB	Left Turn	190	177	93.0%	36.6	3.8	D
	Through						
	Right Turn	370	333	89.9%	125.4	64.4	F
	Subtotal	560	509	90.9%	92.9	38.8	F
Total		4,340	3,848	88.7%	61.7	10.2	E

Intersection 106 **Riverside Ave/Kaiser Drwy** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	1,920	1,746	90.9%	3.4	0.3	A
	Right Turn	100	102	101.8%	1.8	0.4	A
	Subtotal	2,020	1,848	91.5%	3.3	0.2	A
SB	Left Turn						
	Through	920	692	75.2%	3.3	0.4	A
	Right Turn	710	523	73.6%	4.3	0.7	A
	Subtotal	1,630	1,215	74.5%	3.8	0.3	A
EB	Left Turn						
	Through						
	Right Turn	600	473	78.9%	6.7	0.3	A
	Subtotal	600	473	78.9%	6.7	0.3	A
WB	Left Turn						
	Through						
	Right Turn	180	172	95.6%	13.9	3.5	B
	Subtotal	180	172	95.6%	13.9	3.5	B
Total		4,430	3,708	83.7%	4.4	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Villasport EIR
Cumulative Plus Project
PM Peak Hour

Intersection 102 **Lindsay Dr-Northridge Dr/Cirby Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn	50	48	95.8%	18.0	7.9	B
	Subtotal	50	48	95.8%	18.0	7.9	B
SB	Left Turn	50	47	93.5%	61.5	9.2	E
	Through						
	Right Turn	20	16	77.9%	20.0	12.7	B
	Subtotal	70	62	89.0%	51.9	10.1	D
EB	Left Turn	20	19	93.1%	51.7	28.2	D
	Through	1,780	1,459	82.0%	4.1	1.0	A
	Right Turn	30	23	77.3%	2.5	1.5	A
	Subtotal	1,830	1,501	82.0%	4.6	0.9	A
WB	Left Turn	10	8	83.6%	61.5	33.2	E
	Through	2,150	1,703	79.2%	10.7	6.0	B
	Right Turn	10	7	72.2%	6.5	11.8	A
	Subtotal	2,170	1,718	79.2%	11.0	6.0	B
Total		4,120	3,330	80.8%	9.0	3.2	A

Intersection 104 **San Simeon Dr/Cirby Way** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	140	138	98.5%	83.7	23.9	F
	Through						
	Right Turn	260	246	94.7%	35.2	14.6	D
	Subtotal	400	384	96.0%	53.3	9.9	D
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	1,640	1,365	83.2%	15.1	2.2	B
	Right Turn	450	372	82.6%	18.4	3.1	B
	Subtotal	2,090	1,736	83.1%	15.8	2.3	B
WB	Left Turn	60	36	59.5%	46.7	10.6	D
	Through	1,730	1,262	72.9%	3.9	0.4	A
	Right Turn						
	Subtotal	1,790	1,297	72.5%	5.1	0.4	A
Total		4,280	3,418	79.9%	15.9	1.1	B

RESOLUTION NO. 17-343

CERTIFYING A FINAL ENVIRONMENTAL IMPACT REPORT RELATING
TO THE VILLA SPORT ATHLETIC CLUB AND SPA PROJECT, ADOPTING FINDINGS
OF FACT, ADOPTING MITIGATION MEASURES, AND ADOPTING THE MITIGATION
MONITORING AND REPORTING PROGRAM

WHEREAS, VillaSport LLC proposes to build an athletic club and spa project (“the Project”) on a 7.5-acre property within the North Central Roseville Specific Plan Area; and

WHEREAS, the Project would consist of an approximately 88,000 square-foot, two-story building and an approximately 50,000 square-foot outdoor area with amenities including swimming pools, whirlpools, a basketball court, exercise equipment, exercise studios, locker rooms, a spa, a café, a kids’ area with a basketball court, studios for skill-based classes, and play areas; and

WHEREAS, the City of Roseville (“City”) determined that an environmental impact report (“EIR”) should be prepared for the Project pursuant to the California Environmental Quality Act (“CEQA”) (Pub. Resources Code, § 21000 et seq.); and

WHEREAS, the Notice of Preparation for the Project was circulated for comment by responsible and trustee agencies and the public from September 15, 2014, through October 14, 2014; and

WHEREAS, the Draft EIR for the Project was distributed to the public and various public agencies for review and comment beginning on October 19, 2016 through December 5, 2016; and

WHEREAS, written and oral comments on the Draft EIR were received, and responses to those comments were prepared and included in a proposed Final EIR published on April 28, 2017; and

WHEREAS, on May 11, 2017, the City Planning Commission (“Commission”), as the ostensible final decisionmaking body on the Project (absent an administrative appeal), held a public hearing on the merits of the Project, and took public testimony both for and against the Project; and

WHEREAS, the Commission received oral testimony to the effect that the Commission would be violating the City’s General Plan as amended in June 2016 if the Commission approved the Project, as the traffic study for the Project, as included in the EIR, did not include a “‘full build-out’ analysis that evaluates traffic conditions assuming build-out of the City and 2035 Market development outside of the City” and did not include level of service (“LOS”) calculations derived from the “Highway Capacity Manual” tool for assessing traffic impacts; and

WHEREAS, that evening the Commission also received a lengthy written submission attacking the Final EIR from a law firm representing Roseville Citizens for Quality Development (“Roseville Citizens”); and

WHEREAS, after completing its public hearing and its deliberations, the Commission voted to certify the Final EIR and to approve the Project; and

WHEREAS, on May 22, 2017, Roseville Citizens filed an administrative appeal of the Planning Commission’s actions to the Roseville City Council; and

WHEREAS, CEQA case law requires that a public agency’s final decisionmaking body (e.g., a City Council) must be responsible for certifying an EIR prepared for a proposed project, regardless of whether a subsidiary agency body (e.g., a Planning Commission) has previously certified the document prior to the filing of an administrative appeal (see, e.g., *California Clean Energy Committee v. City of San Jose* (2013) 220 Cal.App.4th 1325, 1347-1342; *Citizens for the Restoration of L Street v. City of Fresno* (2014) 229 Cal.App.4th 340, 360; and *POET, LLC v. State Air Resources Board* (2013) 218 Cal.App.4th 681, 731); and

WHEREAS, pursuant to this case law, the Roseville City Council, if it chooses to reject the appeal filed by Roseville Citizens and approve the Project, will have to certify the Final EIR itself before taking action to approve the Project; and

WHEREAS, CEQA case law allows a lead agency to continue to modify and augment a proposed Final EIR up until the moment when the lead agency’s final decisionmaking body certifies the document pursuant to section 15090 of the CEQA Guidelines (which are found in Title 14 of the California Code of Regulations, commencing with section 15000) (see *Beverly Hills Unified School District v. Los Angeles County Metropolitan Transportation Authority* (2015) 241 Cal.App.4th 627, 664-666 [describes process whereby a lead agency prepared an addendum to a final EIR after publicly releasing a proposed final EIR]); and

WHEREAS, City staff determined that an addendum to the original Final EIR might provide useful information to the City Council on the subject of General Plan consistency and with respect to the issues raised in the appeal filed by Roseville Citizens; and

WHEREAS, the Addendum included an updated traffic study that includes a “‘full build-out’ analysis that evaluates traffic conditions assuming build-out of the City and 2035 Market development outside of the City” and that also includes LOS calculations derived from the Highway Capacity Manual; and

WHEREAS, the updated traffic study confirmed the conclusions from the original traffic study with respect to the significance of various impacts, and did not identify any new significant impacts or substantial increases in the severity of any previously-identified effects; and

WHEREAS, the updated traffic study rendered moot the contention presented to the Planning Commission to the effect that approval of the Project would violate the City’s General Plan; and

WHEREAS, City staff made both the Final EIR, as certified by the Planning Commission, and the later-prepared Addendum to the Final EIR available to the City Council on July 20, 2017; and

WHEREAS, the City Council held a public hearing on the Project on August 2, 2017; and

WHEREAS, the Final EIR, including the Addendum, was presented to the City Council, which has reviewed and considered the information in the Final EIR; and

WHEREAS, the City Council has determined that the Final EIR, including the Addendum, reflects the City's independent judgment; and

WHEREAS, the City Council has determined that the Final EIR, including the Addendum, has been completed in compliance with CEQA; and

WHEREAS, the Final EIR identified certain significant effects on the environment that, absent the adoption of mitigation measures, would be caused by the construction and operation of the Project; and

WHEREAS, the City Council is required, pursuant to Public Resources Code section 21081, subdivision (a), to adopt all feasible mitigation measures or feasible project alternatives that can substantially lessen or avoid any significant project-related environmental effects; and

WHEREAS, as demonstrated by the Findings of Fact attached as Exhibit A to this Resolution, the Project's significant environmental effects can be reduced to a less than significant level through the adoption of feasible mitigation measures; and

WHEREAS, because the adoption of all feasible mitigation measures would mitigate all significant effects on the environment associated with the Project to a less than significant level, the City Council need not, as a legal matter, consider the feasibility of alternatives, as set forth in the Final EIR, that will have environmental impacts less severe than those of the Project; and

WHEREAS, the City Council nevertheless has determined, for reasons set forth in Exhibit A attached hereto, that the alternatives, as described in the Final EIR, are infeasible in any event; and

WHEREAS, because the Project will not cause any significant unavoidable impacts, the City Council is not required to adopt a Statement of Overriding Considerations pursuant to Public Resources Code section 21081, subdivision (b), and CEQA Guidelines section 15093; and

WHEREAS, the City Council is required by Public Resources Code section 21081.6, subdivision (a), to adopt a Mitigation Monitoring and Reporting Program to ensure that the mitigation measures adopted by the City Council are actually carried out; and

WHEREAS, the City has prepared for the Project a Mitigation Monitoring and Reporting Program, which is included as Chapter 4.0 of the Final EIR; and

WHEREAS, none of the comments made during the public review period, none of the oral or written testimony presented during the public hearings on the Project, and no other information presented to the City on the Project and the EIR have included significant new information requiring recirculation of some or all of the Draft EIR pursuant to CEQA Guidelines section 15088.5; and

WHEREAS, the Development Services Director is the custodian of the documents that constitute the record of proceedings for this Project, and the record of proceedings is located at the Roseville Civic Center, Development Services Department, at 311 Vernon Street, Roseville, CA 95678; and

WHEREAS, the City Council is inclined to approve the Project;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Roseville, having independently considered the environmental effects of the Project as shown in the Final EIR, including the Addendum, as follows:

1. The above recitals are true and correct and are hereby incorporated as substantive findings of this Resolution.
2. The Final EIR for the Project shall be understood to include the Addendum available to the City Council on July 20, 2017.
3. It is hereby certified that the City Council has reviewed the Final EIR prepared for the Project, including the Addendum, as well as all staff reports pertaining to the Project, and all other pertinent documents relating to the preparation of the Final EIR, including the Draft EIR and all comments received thereon.
4. It is hereby certified that the Final EIR is adequate and complete and has been prepared in compliance with CEQA.
5. It is hereby certified that the Final EIR reflects the independent judgment of the City as lead agency.
6. The City Council, in anticipation of approving the Project, hereby adopts the CEQA Findings of Fact, attached hereto as Exhibit A, pursuant to Public Resources Code Section 21081, subdivision (a).
7. The City Council, in anticipation of approving the Project, hereby adopts and incorporates into the Project all of the mitigation measures for the Project that are within the responsibility and jurisdiction of the City that are identified in the Findings.

8. The City Council, in anticipation of approving the Project, hereby adopts the Mitigation Monitoring and Reporting Program for the VillaSport project, as set forth in Chapter 4.0 of the Final EIR.

9. Direction to staff: The City Clerk is directed to file a Notice of Determination, together with this resolution and its exhibits in the Office of the County Clerk of Placer County and, in accordance with Public Resources Code Section 21152, shall cause such Notice to be posted in the County Clerk's Office within five working days following adoption of this resolution.

PASSED AND ADOPTED by the Council of the City of Roseville this _____ day of August 2017, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

ATTEST:

MAYOR

City Clerk

EXHIBIT A
(Findings of Fact)

CEQA FINDINGS OF FACT

**OF THE CITY COUNCIL
OF THE CITY OF ROSEVILLE**

for the

**VILLASPORT ATHLETIC CLUB
AND SPA PROJECT**

August 2, 2017

I. INTRODUCTION

The Environmental Impact Report (EIR) prepared for the VillaSport Athletic Club and Spa Project (Project) addresses the potential environmental effects associated with constructing and operating the Project. These findings have been prepared to comply with requirements of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.). These findings refer to the Notice of Preparation (NOP) or Final EIR (FEIR) where the material appears in either of those documents. Otherwise, references are to the Draft EIR (DEIR).

CEQA generally requires that a lead agency must take reasonable efforts to mitigate or avoid significant environmental impacts when approving a project. In order to effectively evaluate any potentially significant environmental impacts of a proposed project, an EIR must be prepared. The EIR is an informational document that serves to inform the agency decision-making body and the public in general of any potentially significant environmental impacts. The preparation of an EIR also serves as a medium for identifying possible methods of minimizing any significant effects and assessing and describing a reasonable range of potentially feasible alternatives to the project.

The EIR for this Project was prepared by the City of Roseville (City) as the “lead agency” in accordance with CEQA and has been prepared to identify and assess the anticipated effects of the Project. The City, as the lead agency, has the principal responsibility for approval of the Project.

II. TERMINOLOGY OF FINDINGS

CEQA and the CEQA Guidelines require that, for each significant environmental effect identified in an EIR for a proposed project, the approving agency decision-making body must issue a written finding reaching one or more of the three allowable conclusions:

1. Changes or alterations which avoid or mitigate the significant environmental effects as identified in the EIR have been required or incorporated into the project;
2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding, and such changes have been adopted by such other agency or can and should be adopted by such other agency; or
3. Specific economic, legal, social, technological, or other considerations, including consideration for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the DEIR.

(Pub. Resources Code, § 21081, subds. (a)(1)-(a)(3); see also CEQA Guidelines, § 15091, subds. (a)(1)-(a)(3).)

For purposes of these findings, the terms listed below will have the following definitions:

- “Mitigation measures” shall constitute the “changes or alterations” discussed above.
- “Avoid” refers to the effectiveness of one or more mitigation measures to reduce an otherwise significant effect to a less than significant level
- “Feasible,” pursuant to the CEQA Guidelines, means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

III. DEFINITIONS AND ACRONYMS

Unless otherwise stated herein, these findings use the same definitions and acronyms set forth in the EIR.

IV. PROJECT DESCRIPTION

A. PROJECT OVERVIEW

The VillaSport Athletic Club and Spa Project consists of the following development located on approximately 7.5 acres in the City of Roseville, within the North Central Roseville Specific Plan:

- An approximately 88,000-square-foot, two story building with an approximately 50,000-square-foot outdoor area.
- Indoor amenities that will include: swimming pools; whirlpools; a basketball court; exercise equipment; exercise studios; locker rooms; a spa; a café; and a kid’s area with a basketball court, studios for skill-based classes, and play areas.
- Outdoor amenities that will include: an outdoor pool area with two swimming pools (one with 26-foot slides); whirlpools; an outdoor café; an outdoor play area with play structures; and an area for an artificial turf field.

B. THE PROJECT

The Project applicant proposes to develop an approximately 88,000-square-foot building and an approximately 50,000-square-foot outdoor area. The structure will be up to two stories in height with a front entrance canopy of approximately 48 feet. Indoor amenities will include: swimming pools; whirlpools; a basketball court; exercise equipment; exercise studios; locker rooms; a spa; a café; and a kids’ area with a basketball court, studios for skill-based classes, and play areas. Outdoor amenities will include: an outdoor pool area with two swimming pools (one with 26-foot slides); whirlpools; an outdoor café; an outdoor play area with play structures; and an area for a potential future artificial turf field. The outdoor pool area will be surrounded by a fence and landscaping. The operating hours for the proposed facility will be from 5:00 a.m. to 11:00 p.m., seven days a week. The project applicant anticipates hiring approximately 250 employees.

C. PROJECT SITE

The VillaSport Athletic Club and Spa Project area encompasses approximately 7.5 acres within the North Central Roseville Specific Plan (NCRSP). The Project site is located adjacent to State Route 65 (SR-65) and approximately two miles from Interstate 80 (I-80) at 291 Conference Center Drive. The Project site is located on a portion of Parcel 40A within the NCRSP area and is identified as assessor's parcel number (APN) 363-011-085.

D. EXISTING LAND USE DESIGNATIONS AND ZONING

The Project site is designated Business Professional/Community Commercial uses by the NCRSP. Uses permitted by the NCRSP for the Business Professional/Community Commercial designation include, among other things, retail, hotel, conference center, or cultural facilities.

The site is zoned Community Commercial/Special Area-North Central (CC/SA-NC). Health club facilities are permitted uses (allowed by right) in this zoning district.

E. ADJACENT USES

The Project site is located at the northwestern end of Conference Center Drive, which connects to Roseville Parkway via Gibson Drive. A business park is located to the west of the project site, while undeveloped commercial land is adjacent to the site to the east and south. SR-65 runs along the northern boundary of the project site.

The Project site is relatively flat and contains minimal vegetation. No trees, waterways, or streams are located on the site. Vegetation primarily consists of non-native grasses. The Project site was originally approved for development nearly 30 years ago, and steps were taken to get the site ready for construction. At the time the property was rough graded in 1989, all wetlands on the project site were filled in accordance with a Clean Water Act Section 404 Permit issued for the Specific Plan area; and wetland inoculate was removed pursuant to approved regulatory permits for use at off-site locations in conjunction with establishing vernal pools as mitigation. Since the initial vegetation removal, the parcel has been mowed and disked at least once a year for fire control. The south branch of Pleasant Grove Creek is located 600 feet to the east of the project site.

F. PROJECT OBJECTIVES

The following project objectives were developed by the City and the project applicant for the Project.

- Create a high-end, family oriented sports, fitness, family recreation and resort/spa center that provides a range of indoor and outdoor amenities.
- Provide residents and workers the opportunity to experience a broad range of high-quality programs and facilities to achieve their total health objectives, athletic aspiration, and fitness and lifestyle goals.

- Design an energy-efficient facility that encourages water and energy conservation consistent with the Air Quality and Climate Change Element of the City's General Plan and the City's Water-Efficient Landscape Ordinance.
- Provide the residents, workers, and their families within the North Central Roseville Specific Plan area and surrounding areas with a convenient location for their recreational and fitness needs reasonably accessible by bicycle, transit, or pedestrian travel.
- Create a project that contributes to a land use pattern that integrates residential and non-residential land uses in close proximity, such that residents may easily walk or bike to services, employment, and leisure activities consistent with the Blueprint Implementation Strategies as administered by the City.
- Create a fiscally positive project that will provide a substantial number (e.g., approximately 250) new jobs for the local economy.

G. PROJECT CONSTRUCTION

Project construction is anticipated to take approximately a year to complete. The first two months will consist of site preparation, which will include grading along with trenching to install utilities. The remaining 10 months will consist of building construction followed by the installation of landscaping and parking facilities. Construction staging would occur onsite.

H. REQUIRED DISCRETIONARY ACTIONS

The City of Roseville is the lead agency for the Project. As required by Section 15124(d)(1)(B) of the CEQA Guidelines, the EIR must contain a list of permits and other approvals required to implement the Project. The project requires the following approvals:

- Certification of the EIR and adoption of the Mitigation Monitoring and Reporting Plan (MMRP);
- Conditional Use Permit to allow Outdoor Recreation uses; and
- Design Review Permit.

These discretionary actions are within the province of the City Council, which is acting as the City's final decisionmaker on the Project due to the filing of a formal administrative appeal by Roseville Citizens for Quality Development (RCQD) of the City Planning Commission's May 11, 2017 approval of the Project.

V. ENVIRONMENTAL REVIEW PROCESS

In accordance with CEQA, the City released a Notice of Preparation (NOP) on October 14, 2014. The purpose of the NOP was to provide notification that an EIR for the Project was being prepared and to solicit guidance on the scope and content of the document. The Draft EIR was circulated for public review and comment for a period of 45 days from October 19, 2016, through December

2, 2016. This period satisfied the requirement for the public review period as set forth in Public Resources Code section 21091(a) and CEQA Guidelines section 15105.

A list of public agencies and individuals commenting on the Draft EIR is included in Chapter 3 in the Final EIR. A total of 6 comment letters were received.

On April 28, 2017, the City published the FEIR for the Project. The FEIR includes comments received on the DEIR, responses to significant environmental issues raised in the comments, and revisions to the text of the DEIR. The comments in the FEIR and the DEIR as revised by the FEIR constitute the EIR for the Project.

On May 11, 2017, the City Planning Commission held a public hearing on the merits of the Project, took public testimony both for and against the Project, and ultimately voted to approve the Project. In taking such actions, the Commission certified the Final EIR and adopted CEQA Findings.

On May 22, 2017, Roseville Citizens filed an administrative appeal of the Planning Commission's actions to the Roseville City Council, thereby placing the Project and the certification of the FEIR within the City Council's jurisdiction.

On July 20, 2017, the City published an addendum to the FEIR, to augment the FEIR with additional analysis relevant to the proposed project.

VI. RECORD OF PROCEEDINGS

For the purposes of CEQA, and the findings herein set forth, the administrative record for the Project consists of those items listed in Public Resources Code section 21167.6, subdivision (e). The record of proceedings for the City's decision on the Project consists of the following documents, at a minimum:

- The NOP and all other public notices issued by the City in conjunction with the Project;
- The DEIR for the Project and all documents relied upon or incorporated by reference;
- All comments submitted by agencies or members of the public during the 45-day comment period on the DEIR;
- The FEIR for the Project, including comments received on the DEIR; the City's responses to those comments; technical appendices; the addendum to the FEIR, and all documents relied upon or incorporated by reference;
- The mitigation monitoring and reporting program (MMRP) for the Project;
- All findings and resolutions adopted by the City in connection with the Project, and all documents cited or referred to therein;
- The staff reports prepared for the Planning Commission and City Council;
- Minutes and/or transcripts of the Planning Commission public hearing held on May 11, 2017 and of the City Council public hearing held on August 2, 2017;

- All other reports, studies, memoranda, maps, staff reports, or other planning documents relating to the Project prepared by the City or consultants to the City with respect to the City's compliance with the requirements of CEQA and with respect to the City's action on the Project;
- All resolutions or findings adopted by the City regarding the Project, and all staff reports, analyses, and summaries related to the adoption of those resolutions or findings;
- The City's General Plan and all updates and related environmental analyses;
- The North Central Roseville Specific Plan and all updates and related environmental analyses;
- Relevant sections of the City's Zoning Code;
- Any documents expressly cited in these findings, in addition to those cited above; and
- Any other materials required for the record of proceedings by Public Resources Code section 21167.6, subdivision (e).

Pursuant to Guidelines section 15091(e), the administrative record of these proceedings is located at, and may be obtained from, the City's Community Development Department at 311 Vernon Street, Roseville, CA 95678. The custodian of these documents and other materials is Lauren Hocker.

The City Council has relied on all of the documents listed above in reaching its decisions on the Project even if not every document was formally presented to the Council or City Staff as part of the City files generated in connection with the Project. Without exception, any documents set forth above not found in the Project files fall into one of two categories. Many of them reflect prior planning or legislative decisions with which the City Council was aware in approving the Project. (See *City of Santa Cruz v. Local Agency Formation Commission* (1978) 76 Cal.App.3d 381, 391-392; *Dominey v. Department of Personnel Administration* (1988) 205 Cal.App.3d 729, 738, fn. 6.) Other documents influenced the expert advice provided to City Staff or consultants, who then provided advice to the City Council as the City's decisionmaking body. For that reason, such documents form part of the underlying factual basis for the Council's decisions relating to approval of the Project. (See Pub. Resources Code, § 21167.6, subd. (e)(10); *Browning-Ferris Industries v. City Council of City of San Jose* (1986) 181 Cal.App.3d 852, 866; *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 153, 155.)

VII. FINDINGS REQUIRED UNDER CEQA

Public Resources Code section 21002 provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects[.]" The same statute provides that the procedures required by CEQA "are intended to assist public agencies in systematically identifying both the significant effects of projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects." Section 21002 goes on to provide that "in the event [that] specific economic, social, or other

conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof.”

The mandate and principles announced in Public Resources Code section 21002 are implemented, in part, through the requirement that agencies must adopt findings before approving projects for which EIRs are required. For each significant environmental effect identified in an EIR for a project, the approving agency must issue a written finding reaching one or more of three permissible conclusions. As noted earlier, the first such finding is that changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR. The second permissible finding is that such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding, and such changes have been adopted by such other agency or can and should be adopted by such other agency. The third potential conclusion is that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR. (CEQA Guidelines, § 15091.) Public Resources Code section 21061.1 defines “feasible” to mean “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, legal, and technological factors.” CEQA Guidelines section 15364 adds another factor: “legal” considerations. (See also *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 565 (“*Goleta II*”).)

The concept of “feasibility” also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417 (*City of Del Mar*); (*Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, 1506-1509 [court upholds CEQA findings rejecting alternatives in reliance on applicant’s project objectives]; see also *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1001 (CNPS) [“an alternative ‘may be found infeasible on the ground it is inconsistent with the project objectives as long as the finding is supported by substantial evidence in the record’”] (quoting Kostka & Zischke, *Practice Under the Cal. Environmental Quality Act* [Cont.Ed.Bar 2d ed. 2009] (Kostka), § 17.309, p. 825); *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165, 1166 (*Bay-Delta*) [“[i]n the CALFED program, feasibility is strongly linked to achievement of each of the primary program objectives”; “a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal”].) Moreover, “‘feasibility’ under CEQA encompasses ‘desirability’ to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors.” (*City of Del Mar, supra*, 133 Cal.App.3d at p. 417; see also CNPS, *supra*, 177 Cal.App.4th at p. 1001 [“an alternative that ‘is impractical or undesirable from a policy standpoint’ may be rejected as infeasible”] [quoting Kostka, *supra*, § 17.29, p. 824]; *San Diego Citizenry Group v. County of San Diego* (2013) 219 Cal.App.4th 1, 17.)

Here, as set forth in Table A to these CEQA Findings, the City Council has adopted the first permissible finding with respect to all significant effects identified in the EIR, concluding that all such effects can be mitigated to less than significant levels. The Council therefore has no need to consider the feasibility of any project alternatives. (Pub. Resources Code, § 21002; *Laurel Hills*

Homeowners Association v. City Council (1978) 83 Cal.App.3d 515, 521 (*Laurel Hills*); see also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 730-731; and *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376, 400-403.) Even so, the Council, in the interest of transparency, sets forth below (in Section XV below) its reasons for concluding that all such alternatives are infeasible within the meaning of CEQA.

For purposes of these findings (including Table A as described below), the term “avoid” refers to the effectiveness of one or more mitigation measures to reduce an otherwise significant effect to a less than significant level. Although CEQA Guidelines section 15091 requires only that approving agencies specify that a particular significant effect is “avoid[ed] or substantially lessen[ed],” these findings, for purposes of clarity, in each case will specify whether or not the effect in question has been “avoided” (i.e., reduced to a less than significant level).

With respect to a project for which significant impacts are not mitigated to a less than significant level, a public agency, after adopting proper findings, may nevertheless approve the project if the agency first adopts a statement of overriding considerations setting forth the specific reasons why the agency found that the project’s “benefits” rendered “acceptable” its “unavoidable adverse environmental effects.” (CEQA Guidelines, §§ 15093, 15043, subd. (b); see also Pub. Resources Code, § 21081, subd. (b).) The California Supreme Court has stated, “[t]he wisdom of approving . . . any development project, a delicate task which requires a balancing of interests, is necessarily left to the sound discretion of the local officials and their constituents who are responsible for such decisions. The law as we interpret and apply it simply requires that those decisions be informed, and therefore balanced.” (*Goleta II*, *supra*, 52 Cal.3d at p. 576.)

Here, because the Council has adopted all of the mitigation measures recommended in the EIR for the Project, there are no significant and unavoidable impacts; thus, no Statement of Overriding Considerations is required.

VIII. LEGAL EFFECT OF FINDINGS

These findings constitute the City’s best efforts to set forth the evidentiary and policy bases for its decision to approve the Project in a manner consistent with the requirements of CEQA. To the extent that these findings conclude that various mitigation measures outlined in the Final EIR are feasible and have not been modified, superseded or withdrawn, the City hereby binds itself to implement these measures. These findings, in other words, are not merely informational, but rather constitute a binding set of obligations that will come into effect when the City approves the Project.

IX.

MITIGATION MONITORING AND REPORTING PROGRAM

A Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Project, and is being approved by the City Council by the same motion that has adopted these findings. The City will use the MMRP to track compliance with Project mitigation measures. The Mitigation Monitoring and Reporting Program will remain available for public review during the compliance period. The Final Mitigation Monitoring and Reporting Program is found in Chapter 4 of the Final

EIR and is approved in conjunction with certification of the EIR and adoption of these Findings of Fact.

X.

SIGNIFICANT EFFECTS AND MITIGATION MEASURES

The Draft EIR identified potentially significant environmental effects (or impacts) that the Project will cause or contribute to. All of these significant effects can be avoided (i.e., rendered less than significant) by the adoption of feasible mitigation measures. Therefore, these Findings need not address the feasibility of alternatives; and a statement of overriding considerations is not required.

Table of Impacts, Mitigation Measures and CEQA Findings

The City Council's findings with respect to the Project's significant effects and mitigation measures are set forth in the table attached to these findings ("Table A"). The findings set forth in the table are hereby incorporated by reference and the Council adopts all of the mitigation measures identified therein. This table does not attempt to describe the full analysis of each environmental impact contained in the EIR. Instead, the table provides a summary description of each impact, describes the applicable mitigation measures identified in the Draft or Final EIR and adopted by the Council, and states the Council's findings on the significance of each impact after imposition of the adopted mitigation measures. A full explanation of these environmental findings and conclusions can be found in the Draft and Final EIRs, and these findings hereby incorporate by reference the discussion and analysis in those documents supporting the EIR's determinations regarding mitigation measures and the Project's impacts and mitigation measures designed to address those impacts. In making these findings, the City Council ratifies, adopts, and incorporates into these findings the analysis and explanation in the Draft and Final EIRs, and ratifies, adopts, and incorporates in these findings the determinations and conclusions of the Draft and Final EIRs relating to environmental impacts and mitigation measures, except to the extent any such determinations and conclusions are specifically and expressly modified by these findings.

XI.

GROWTH INDUCEMENT

CEQA requires a discussion of the ways in which a project could be growth inducing. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, the stimulation of economic activity within the region, or the establishment of policies or other precedents that directly or indirectly encourage additional growth. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment.

In general, a project could foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area, or a change in zoning or General Plan amendment approval), or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion).

As discussed in the Draft EIR, the growth induced directly and indirectly by the Project could contribute to the environmental impacts, discussed in Chapter 4 of the Draft EIR, in the City and adjacent Placer County, as well as the greater regional area. Any such environmental effects, however, are too diffuse and speculative to predict or describe with any particularity. Indirect and induced population growth in the City would contribute to the loss of open space because it would encourage the conversion of undeveloped land to urban uses for additional housing and infrastructure. The particular open space that might get converted cannot be predicted with any particularity. It is assumed, however, that this new growth would occur within areas of the City designated and zoned for development.

In summary, although the Project can be said to induce growth, the consequences of such growth-inducement are too speculative to predict and cannot be said to contribute meaningfully to any significant environmental effect. Growth-inducing effects are less than significant. (See Draft EIR, pp. 6.0-3 – 6.0-5.)

XII.

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

Section 15126.2 (c) of the CEQA Guidelines requires a discussion of any significant irreversible environmental change that would be caused by the proposed project. Generally, a project would result in significant irreversible changes if:

- The primary and secondary impacts would generally commit future generations to similar uses (such as highway improvement that provides access to a previously inaccessible area);
- The project would involve a large commitment of nonrenewable resources (CEQA Guidelines Section 15126.2(c));
- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- The project would involve a large commitment of nonrenewable resources; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the Project would result in the long-term commitment of resources of the Project site to urban land use. The development of the Project would likely result in or contribute to the following irreversible environmental changes:

- Conversion of undeveloped land. Approximately 7.5 acres of undeveloped land would be converted to urban uses, thus precluding other alternate land uses in the future.

- Irreversible consumption of energy and natural resources associated with the future use of the site, including water, electricity, natural gas, and fossil fuels. Wood products, asphalt, and concrete would be used in construction along with gas and diesel fuel.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by environmental accidents associated with the project. While the Project would result in the use, transport, storage, and disposal of minor amounts of hazardous materials during project construction and operation, as described in the Initial Study found in Appendix 1.0 of the Draft EIR, all such activities would comply with applicable local, state and federal laws related to the use, storage and transport hazardous materials, which significantly will reduce the likelihood and severity of accidents that could result in irreversible environmental damage. The Project itself does not include any uniquely hazardous uses that would require any special handling or storage. Further, the Project does not contain any industrial uses that would use or store acutely hazardous materials.

Implementation of the Project will result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts include the use of non-renewable and/or slowly renewable natural and energy resources, such as lumber and other forest products and water resources during construction activities. Operations associated with future uses will also consume natural gas and electricity. (See Draft EIR, pp. 6.0-1 – 6.0-3.) These irreversible impacts, which are unavoidable consequences of urban growth, are described in detail in the appropriate sections of the Draft EIR.

XIII.

MITIGATION MEASURES PROPOSED BY COMMENTERS

A handful of commenters suggested additional conditions of approval, mitigation measures, or modifications to the measures recommended in the Draft EIR. In considering specific recommendations from commenters, the City has been cognizant of its legal obligation under CEQA to substantially lessen or avoid significant environmental effects to the extent feasible. The City recognizes, moreover, that comments frequently offer thoughtful suggestions regarding how a commenter believes that a particular mitigation measure can be modified, or perhaps changed significantly, in order to more effectively, in the commenter's eyes, reduce the severity of environmental effects. The City is also cognizant, however, that the mitigation measures recommended in the EIR represent the professional judgment and long experience of the City's expert staff and environmental consultants. The City therefore believes that these recommendations should not be lightly altered. Thus, in considering commenters' suggested changes or additions to the mitigation measures as set forth in the Draft and Final EIR, the City, in determining whether to accept such suggestions, either in whole or in part, has considered the following factors, among others: (i) whether the suggestion relates to an environmental impact that can already be mitigated to less than significant levels by proposed mitigation measures in the Draft EIR; (ii) whether the proposed language represents a clear improvement, from an environmental standpoint, over the draft language that a commenter seeks to replace; (iii) whether the proposed language is sufficiently clear as to be easily understood by those who will implement the mitigation as finally adopted; (iv) whether the language might be too inflexible to allow for

pragmatic implementation; (v) whether the suggestions are feasible from an economic, technical, legal, or other standpoint; and (vi) whether the proposed language is consistent with the Project objectives.

As is often evident from the specific responses given to specific suggestions, City staff and consultants spent time carefully considering and weighing proposed or requested mitigation language. In some instances, the City revised mitigation measures in accordance with the comments. In other instances, the City developed alternative language addressing the same issue that was of concern to a commenter. In no instance, however, did the City fail to take seriously a suggestion made by a commenter or fail to appreciate the sincere effort that went into the formulation of suggestions.

With respect to mitigation measures, project conditions or alternatives proposed by commenters, the City has made the following changes to mitigation measures as they appeared originally in the Draft EIR. These changes are reflected in Table A to these findings.

1. In response to the California Department of Fish and Wildlife's comment letter, Mitigation Measure BIO-1a on pages 4.2-14 and 4.2-15 of the Draft EIR was revised as follows:

MM BIO-1a Prior to grading or any other ground disturbing activity, surveys for burrowing owls shall be conducted to determine if burrowing owls are present as a wintering and/or nesting species. These surveys shall be conducted by a qualified biologist acceptable to the City within 14 days prior to the commencement of construction activities. Surveys shall be conducted consistent with the procedures outlined in the "California Department of Fish and Game 2012 Staff Report on Burrowing Owl Mitigation." The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the City prior to ground-disturbing activity. If non-nesting owls are observed, construction work can proceed after any owls have been evacuated from the construction footprint using closure procedures approved by a qualified biologist acceptable to the City, and in consultation with the California Department of Fish and Wildlife, and after alternative burrow sites have been provided; approval by the qualified biologist is required to evacuate burrowing owls from a site, and a brief written report shall be provided to the City for approval prior to evacuation activities. If nesting is occurring, construction work within 500 feet shall be delayed until fledglings have left the nest. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barrier, and construction personnel shall be instructed on the sensitivity of nest areas. A qualified biological monitor acceptable to the City shall serve as a construction monitor during those periods when construction activities would occur near active nest areas to ensure that no inadvertent impacts on these nests occur. If it is found during the surveys that the project site is used by nesting or resident burrowing owls, the replacement of burrowing habitat shall be required at

a location recommended by the qualified biologist at a ratio of 6.5 acres per pair or individual owl, and subject to approval by the City

(FEIR, pp. 2.0-7 to 2.0-8.)

2. In response to the California Department of Fish and Wildlife's and Roseville Citizens' comment letters, Mitigation Measure BIO-1b on page 4.2-15 of the Draft EIR was revised as follows:

MM BIO-1b Prior to construction activities occurring during the nesting season (February–August),—focused surveys for Swainson's hawk shall be conducted within suitable habitat located within one half mile of the project site pursuant to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee, 2000, May 31). These surveys shall be conducted by a qualified biologist acceptable to the City within 14 days prior to the commencement of construction activities. The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the City prior to ground-disturbing activity. If a Swainson's hawk nest is identified, the CDFW will be contacted for recommendations on how to proceed, including whether an Management Authorization incidental take permit pursuant to Section 2081 of the California Fish and Game Code is needed. Additionally, ~~if an active Swainson's hawk nest is identified during the survey,~~ the project applicant shall mitigate for the loss of Swainson's hawk foraging habitat by purchasing foraging habitat credits at a mitigation bank in the area, based on a ~~4:1~~ 0.75:1 ratio for each acre of foraging habitat removed by the project.

(FEIR, p. 2.0-8.)

3. In response to the California Department of Fish and Wildlife's and Roseville Citizens' comment letters, Mitigation Measure BIO-1d on pages 4.2-15 and 4.2-16 of the Draft EIR was revised as follows:

MM BIO-1d If construction would commence anytime during the nesting/breeding season of other bird species potentially nesting on or near the site (typically February through August in the project region), a pre-construction survey for nesting birds shall be conducted on and within ~~500~~ 600 feet of the project site.

This survey shall be conducted by a qualified biologist acceptable to the City within 14 days ~~of~~ prior to the commencement of construction activities

that would occur during the nesting/breeding season. The intent of the survey shall be to determine if active nests of special status bird species or other species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present within the construction zone or within ~~500~~ 600 feet of the construction zone. The survey area shall include all trees and shrubs, as well grasslands and areas of bare dirt (which could be utilized by ground nesting species) in the construction zone and a surrounding ~~500~~ 600-foot area. If ground disturbance activities are delayed following a survey, then an additional pre-construction survey shall be conducted such that no more than two weeks will have elapsed between the last survey and the commencement of ground disturbance activities. The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the City prior to ground-disturbing activity.

If active nests are found in areas that could be directly affected or are within ~~500~~ 600 feet of construction and would be subject to prolonged construction-related noise, a no-disturbance buffer zone shall be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted within them will be determined by the qualified biologist by taking into account factors such as the following:

- Noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity;
- Distance and amount of vegetation or other screening between the construction site and the nest; and
- Sensitivity of individual nesting species and behaviors of the nesting birds.

Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or another appropriate barrier, and construction personnel shall be instructed on the sensitivity of nest areas. Prior to commencing any ground-disturbing activities, the biologist shall supply a brief written report to the City describing the recommended avoidance measures; a copy of this report shall also be maintained on the construction site. The biologist shall also consult with the California Department of Fish and Wildlife with regard to the avoidance measures for all listed bird species found nesting during the pre-construction survey.

Once the construction on the project site has commenced, the biologist shall monitor the active nests identified during the preconstruction surveys and confirm the effectiveness of the buffer zone. Should construction activities cause the nesting birds to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, the buffer zone shall be increased such that activities are far enough from the nest to stop the agitated behavior.

(FEIR, pp. 2.0-9 to 2.0-10.)

4. In response to correspondence with the United Auburn Indian Community of the Auburn Rancheria, Mitigation Measure CUL-1 on pages 4.3-12 of the Draft EIR was revised as follows:

MM CUL-1 Proper Handling of Archaeological Resources. A minimum of seven days prior to beginning earthwork or other soil disturbance activities, the applicant shall notify the City of the proposed earthwork start-date, in order to provide the City with time to contact the United Auburn Indian Community (UAIC). A UAIC tribal representative shall be invited to inspect the project site, including any soil piles, trenches, or other disturbed areas, within the first five days of groundbreaking activity. During this inspection, a site meeting of construction personnel shall also be held in order to afford the tribal representative the opportunity to provide cultural resources awareness information. If any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains are encountered during this initial inspection or during any subsequent construction activities, work shall be suspended within 100 feet of the find, and the project applicant shall immediately notify the City of Roseville Development Services Director. The applicant shall and coordinate any necessary investigation of the site with a qualified archeologist approved by the City, and as part of the site investigation and resource assessment, the archeologist shall consult with the UAIC as needed to assess the resources (i.e., whether it is a “historical resource” or a “unique archaeological resource”) and provide proper management recommendations should potential impacts to the resources be found to be significant. A written report detailing the site assessment, coordination activities, and management recommendations shall be provided to the City by the qualified archaeologist. Possible management recommendations for historical or unique archaeological resources could include resource avoidance or, where avoidance is infeasible in light of project design or layout or is unnecessary to avoid significant effects, ~~data recovery excavations~~ preservation in place or other measures. In consultation with the archaeologists, the contractor shall implement any measures deemed by City staff to be necessary and feasible to avoid or minimize significant effects to the cultural resources.

(FEIR, pp. 2.0-11 to 2.0-12.)

XIV.

FINDINGS REGARDING RECIRCULATION OF THE DRAFT EIR

The City Council adopts the following findings with respect to whether to recirculate the DEIR. Under section 15088.5 of the CEQA Guidelines, recirculation of an EIR is required when “significant new information” is added to the EIR after public notice is given of the availability of the Draft EIR for public review but prior to certification of the Final EIR. The term “information” can include changes in the project or environmental setting, as well as additional data or other information. New information added to an EIR is not “significant” unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponents have declined to implement. “Significant new information” requiring recirculation includes, for example, a disclosure showing that:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project’s proponents decline to adopt it.
- (4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

(CEQA Guidelines, § 15088.5.)

Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR. The above standard is “not intend[ed] to promote endless rounds of revision and recirculation of EIRs.” (*Laurel Heights Improvement Assn. v. Regents of the University of California* (1993) 6 Cal. 4th 1112, 1132.) “Recirculation was intended to be an exception, rather than the general rule.” (*Ibid.*)

The City Council recognizes that the Final EIR contains additions, clarifications, modifications, and other changes to the Draft EIR. As noted above, some comments on the Draft EIR either expressly or impliedly sought changes to proposed mitigation measures identified in the Draft EIR as well as additional mitigation measures. As explained in the Final EIR (Text Revisions), some of the suggestions were found to be appropriate and feasible and were adopted in the Final EIR. Where changes have been made to mitigation measures, these changes do not change the significance of any conclusions presented in the Draft EIR.

CEQA case law emphasizes that “[t]he CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal.” (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 736-737; see also *River Valley Preservation Project v. Metropolitan Transit Development Bd.* (1995) 37 Cal.App.4th 154, 168, fn. 11.) “CEQA compels an interactive process of assessment of environmental impacts and responsive project modification which must be genuine. It must be open to the public, premised upon a full and meaningful disclosure of the scope, purposes, and effect of a consistently described project, with flexibility to respond to unforeseen insights that emerge from the process.’ [Citation.] In short, a project must be open for public discussion and subject to agency modification during the CEQA process.” (*Concerned Citizens of Costa Mesa, Inc. v. 33rd Dist. Agricultural Assn.* (1986) 42 Cal.3d 929, 936.) Here, the changes made to mitigation measures are exactly the kind of project improvements that the case law recognizes as legitimate and proper.

The changes to the mitigation measures described in the Chapter 2 of the Final EIR supplement or clarify the existing language. Thus, none of these changes involves “significant new information” triggering recirculation because the changes to the mitigation measures did not result in any new significant environmental effects or any substantial increase in the severity of any previously identified significant effects, and did not otherwise trigger recirculation. Instead, the modifications were either environmentally benign or environmentally neutral, and thus represent the kinds of changes that commonly occur as the environmental review process works towards its conclusion. Under such circumstances, the Council finds that recirculation of the EIR is not required.

XV. PROJECT ALTERNATIVES

A. BASIS FOR ALTERNATIVES

As explained earlier, CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Project modification or alternatives are not required, however, where significant environmental impacts will not occur.

As is evident from the text of the EIR and the attached table describing the disposition of the significant effects of the Project, all significant effects of the Project have been avoided (that is, rendered less than significant) by the adoption of feasible mitigation measures. There are no impacts that remain significant and unavoidable.

Under CEQA, project alternatives are developed in order to give agency decisionmakers options for reducing or eliminating significant environmental effects of proposed projects while still meeting most, if not all, of the basic project objectives. “Alternatives and mitigation measures have the same function – diminishing or avoiding adverse environmental effects.” (*Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376, 403.) Here, the adoption of mitigation measures set forth in the Project EIR are sufficient to reduce all significant impacts to less than significant levels. Under CEQA, then, the City Council has no obligation even to consider the feasibility of the alternatives set forth in the EIR. (*Laurel Hills Homeowners Association v. City Council of City of Los Angeles* (1978) 83 Cal.App.3d 515, 521 (“*Laurel Hills*”).) Even so, however, the Council, in the interest of transparency, sets forth below

its reasons for concluding that all such alternatives are infeasible within the meaning of CEQA. This information is being supplied on a voluntary basis for the benefit of City residents, not because it is required by CEQA.

B. ALTERNATIVES CONSIDERED AND DISMISSED FROM FURTHER CONSIDERATION

As noted previously, the purpose of an alternatives analysis is to develop alternatives to a proposed project that substantially lessen at least one of the significant environmental effects identified as a result of the project, while still meeting most, if not all, of the basic project objectives. Here, the Project does not result in any significant and unavoidable impacts, but does result in impacts that, in the absence of mitigation, would be significant. Project alternatives that would reduce the size of development on the site or change the mix of uses that would lessen the severity of impacts identified under the Project are addressed in the EIR and summarized below.

There are no other parcels of undeveloped land of similar size in the City that could accommodate development of the Project that have been graded, are designated and zoned for commercial uses, do not contain any sensitive biological resources, provide adequate site accessibility, and could be acquired by the applicant. Therefore, an off-site or alternate project location was dismissed from further evaluation because a suitable site was not identified within the City that would fulfill most of the project objectives, would eliminate environmental effects, and/or would be potentially feasible.

Moreover, as discussed in *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553 (*Goleta II*), where a project is consistent with an approved general plan, the EIR for the project generally need not analyze off-site alternatives. The EIR “is not ordinarily an occasion for the reconsideration or overhaul of fundamental land-use policy.” (*Goleta II, supra*, 52 Cal.3d at p. 573.) In approving a general plan, the local agency has already identified and analyzed suitable alternative sites for particular types of development and has selected a feasible land use plan. “Informed and enlightened regional planning does not demand a project EIR dedicated to defining alternative sites without regard to feasibility. Such ad hoc reconsideration of basic planning policy is not only unnecessary, but would be in contravention of the legislative goal of long-term, comprehensive planning.” (*Goleta II, supra*, 52 Cal.3d at pp. 572-573.) The Project is consistent with the City’s General Plan. For these reasons and others mentioned above, the EIR was not required to analyze an offsite alternative.

C. ALTERNATIVES CONSIDERED IN THE EIR

The project alternatives identified in the Draft EIR address the significant impacts (before mitigation) identified for the Project, including traffic impacts during Project operation. Thus, some of the alternatives developed for the Project contemplate a smaller Project footprint to address these impacts. In many instances, the impacts are virtually identical to those of the Project.

The alternatives analyzed in the Draft EIR are briefly described below.

- **Alternative 1: No Project/Existing Zoning Alternative.** This alternative assumes development would be consistent with currently allowable land uses, zoning, and maximum development intensities. For the purposes of this alternative, a development with 78,410 square feet (sf) of retail and 52,270 sf of office uses for a total of 130,680 sf was assumed, consistent with the NCRSP.
- **Alternative 2: Reduced Footprint Alternative.** This alternative assumes development of a smaller project that includes development of a 61,600 sf building and does not include an indoor café, a kids' area with a basketball court, or an outdoor café.
- **Alternative 3: Reduced Footprint/Reduced Intensity Alternative.** This alternative assumes development of a 35,200 sf building and does not include a basketball court, café, kids' area with a basketball court, studios for skill-based classes, or play areas.

Each of the alternatives is described in more detail, below, followed by an assessment of the alternative's impacts relative to the Project.

ALTERNATIVE 1: NO PROJECT/EXISTING ZONING

Description

CEQA requires the evaluation of the comparative impacts of the "No Project" alternative (CEQA Guidelines, Section 15126.6(e)(1)). The No Project alternative "shall discuss the existing conditions at the time the [NOP] is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." (CEQA Guidelines, Section 15126.6(e)(2).) "The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." (CEQA Guidelines, Section 15126.6(e)(1).)

The No Project/Existing Zoning alternative assumes that if the Project is not approved, the land could be developed with retail and office uses under the existing specific plan land use and zoning designations. The Project site is designated Business Professional/Community Commercial uses in the NCRSP and zoned Community Commercial/Special Area-Neighborhood Commercial (CC/SA-NC). The NCRSP allows a floor area ratio (FAR) of 40 percent with no more than 60 percent of the ultimate gross floor area dedicated to retail uses. As a result the 7.5-acre site could be developed with 78,410 sf of retail and 52,270 sf of office uses for a total of 130,680 sf.

Comparative Analysis of Environmental Effects

The No Project/Existing Zoning alternative would increase the Project's impacts related to air quality, greenhouse gas (GHG) emissions, noise, and energy, as the amount of indoor building space constructed and the number of daily vehicle trips generated would be greater than with the Project while decreasing the Project's impacts related to traffic, as the number of vehicle trips generated during the PM peak hour would be slightly less than with the Project. Impacts related to biological resources and cultural resources as the same amount of ground disturbance would occur as would occur under the Project. In addition, impacts related to hydrology and water supply would

be similar to those of the Project, as site drainage would comply with all City drainage requirements and the proposed retail and office uses would demand the same amount of potable water.

Relationship to Project Objectives

The No Project/Existing Zoning alternative would not achieve many of the project objectives because it would not develop the site with a high-end, family oriented sports, professional fitness, family recreation and resort/spa center that provides a range of indoor and outdoor amenities, provides residents and workers with programs and facilities to address their health objectives, or provides the residents and nearby employees with a convenient location to meet their recreational and fitness needs. It is assumed this alternative would generally meet the third objective of developing an energy-efficient project by incorporating water and energy conservation measures consistent with the City's General Plan and Water-Efficient Landscape Ordinance and the fifth objective of creating a project that contributes to a land use pattern that integrates residential and non-residential land uses in close proximity. Finally, this alternative would meet the last objective by creating a fiscally positive project that would provide a substantial number of new jobs for the local economy.

Feasibility of the No Project/Existing Zoning Alternative

As noted earlier, because the Project as mitigated would not result in any significant and unavoidable environmental impacts, the City Council, in these findings, has no obligation to assess the feasibility of any of the alternatives set forth in the EIR, including the No Project/Existing Zoning alternative. Furthermore, even if the Project as mitigated would result in one or more significant unavoidable impacts, the Council would not be required to assess the feasibility of any alternative that was not environmentally superior to the mitigated Project with respect to any such specific significant, unavoidable impacts. As discussed above, the No Project/Existing Zoning alternative is environmentally inferior to the Project, as it would increase impacts related to air quality, GHG emissions, noise, and energy. Thus, no policy of CEQA would be served by approving this alternative in lieu of the Project as mitigated. Though not required to do so, the Council finds this alternative to be infeasible.

ALTERNATIVE 2: REDUCED FOOTPRINT

Description

This alternative assumes the proposed facility would be developed on the same site and would generally include the same amenities as the Project. However, the footprint would be approximately 25 percent smaller. Under this alternative, the proposed structure would total approximately 61,600 sf, while the outdoor area would total approximately 38,500 sf. Similar to the Project, the structure under this alternative would be up to two stories in height. Indoor amenities would include the following: swimming pools, whirlpools, a basketball court, exercise equipment, exercise studios, locker rooms, a spa, studios for skill-based classes, and play areas. Outdoor amenities would include the following: an outdoor pool area with two swimming pools (one with 26-foot slides), whirlpools, an outdoor play area with play structures, and an area for a

potential future artificial turf field. The following project amenities would not be provided under this alternative: an indoor café, a kids' area with a basketball court, and an outdoor café.

Comparative Analysis of Environmental Effects

The Reduced Footprint alternative would reduce the Project's impacts related to air quality, biological resources, cultural resources, GHG emissions, hydrology noise, water supply, traffic, and energy, as less building space would be constructed, fewer vehicle trips would be generated, and less ground disturbance would occur.

Relationship to Project Objectives

The loss of the kids' area with a basketball court under this alternative would make the facility less family-oriented; and the loss of the indoor and outdoor cafés under this alternative would reduce the facility's appeal as a spa destination. As a result, the first objective of the Project to create a high-end, family-oriented sports, professional fitness, family recreation and resort/spa center that provides a range of indoor and outdoor amenities would not fully be met under the Reduced Footprint Alternative. As for the remaining objectives, this alternative would meet the second and third project objectives, respectively, as area residents and workers would be provided with the opportunity to experience a broad range of high-quality programs and facilities and the proposed structure would be designed as an energy efficient facility consistent with the City's General Plan and Water Efficient Landscape Ordinance. Regarding the next two objectives, this alternative would provide residents and workers within the NCRSP area as well as surrounding area a convenient location for their recreational needs that is accessible via bicycle and walking from adjacent areas, consistent with the City's "Blueprint Implementation Strategies." Finally, this alternative would meet the last project objective, although to a lesser extent, as fewer employees would be needed.

Feasibility of the Reduced Footprint Alternative

Because, as explained earlier, the Project as mitigated would not result in any significant and unavoidable environmental impacts, the City Council need not address the feasibility of this alternative. Even so, the Council has determined that the Reduced Footprint alternative is infeasible. After engaging in a reasonable balancing of competing considerations, the Council concludes that the loss of the kids' area and indoor and outdoor cafes make this alternative undesirable from a policy standpoint. The Council has concluded that a high-end, family oriented destination fitness and spa facility represents a more desirable policy outcome than a facility more similar to a traditional high-turnover fitness facility (e.g., Planet Fitness or 24 hour Fitness). (See *City of Del Mar*, *supra*, 133 Cal.App.3d 410, 417; *Sierra Club v. County of Napa*, *supra*, 121 Cal.App.4th at pp. 1506-1509; *CNPS*, *supra*, 177 Cal.App.4th at p. 1001.)

ALTERNATIVE 3: REDUCED FOOTPRINT/REDUCED INTENSITY

Description

This Reduced Footprint/Reduced Intensity alternative would be very similar to Alternative 2. However, the project footprint would be 50 percent smaller and the facility would offer fewer amenities. Specifically, this alternative would not provide the basketball court, café, kids' area with a basketball court, studios for skill-based classes, and play areas. Under this alternative the proposed structure would total approximately 35,200 sf, while the outdoor area would total approximately 38,500 sf. Unlike the structure that will be built with the Project, the structure under this alternative would only be one story in height. Indoor amenities would include the following: swimming pools, whirlpools, exercise equipment, exercise studios, locker rooms, and a spa. Outdoor amenities would include the following: an outdoor pool area with two swimming pools (one with 26-foot slides), whirlpools, an outdoor play area with play structures, and an area for a potential future artificial turf field.

Comparative Analysis of Environmental Effects

The Reduced Footprint/Reduced Intensity alternative would reduce the Project's impacts related to air quality, biological resources, cultural resources, GHG emissions, hydrology, noise, water supply, traffic, and energy, as less building space would be constructed, fewer vehicle trips would be generated, and less ground disturbance would occur.

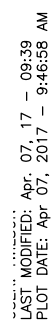
Relationship to Project Objectives

The loss of several indoor and outdoor project amenities under this alternative would severely diminish the ability of the Project to meet the first two project objectives. The first objective of the Project to create a high-end, family-oriented sports, professional fitness, family recreation and resort/spa center would not be met, as the loss of amenities would change the nature of the project from a high-end, family oriented destination fitness and spa facility into a more traditional high-turnover fitness facility (e.g., Planet Fitness or 24 hour Fitness). The second objective to provide residents and workers the opportunity to experience a broad range of high-quality programs and facilities would not be met due to the loss of facilities. As for the remaining objectives, this alternative would meet the second and third project objectives, respectively, as area residents and workers would be provided with the opportunity to experience a broad range of high-quality programs and facilities; and the proposed structure would be designed as an energy efficient facility consistent with the City's General Plan and Water Efficient Landscape Ordinance. Regarding the next two objectives, this alternative would provide residents and workers within the NCRSP area, as well as surrounding area a convenient location for their recreational needs that is accessible via bicycle and walking from adjacent areas consistent with the Blueprint Implementation Strategies. Finally, this alternative would meet the last project objective, although to a lesser extent, as fewer employees would be needed.

Feasibility of Reduced Footprint/Reduced Intensity Alternative

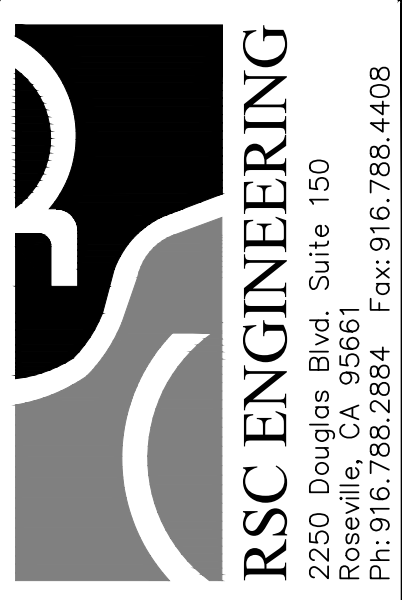
The loss of several indoor and outdoor project amenities under this alternative would severely diminish the ability of the proposed project to meet the first two project objectives. The first objective of the project to create a high-end, family-oriented sports, professional fitness, family recreation and resort/spa center would not be met, as the loss of amenities would change the nature of the project from a high-end, family oriented destination fitness and spa facility into a more traditional high-turnover fitness facility (e.g., Planet Fitness or 24 hour Fitness). The second objective to provide residents and workers the opportunity to experience a broad range of high-quality programs and facilities would not be met due to the loss of facilities. As for the remaining objectives, this alternative would meet the second and third project objectives, respectively, as area residents and workers would be provided with the opportunity to experience a broad range of high-quality programs and facilities and the proposed structure would be designed as an energy efficient facility consistent with the City's General Plan and Water Efficient Landscape Ordinance. Regarding the next two objectives, this alternative would provide residents and workers within the NCRSP area, as well as surrounding area a convenient location for their recreational needs that is accessible via bicycle and walking from adjacent areas consistent with the Blueprint Implementation Strategies. Finally, this alternative would meet the last project objective, although to a lesser extent, as fewer employees would be needed.

Because the Project would not result in any significant and unavoidable environmental impacts, the City Council need not address the feasibility of the Reduced Footprint/Reduced Intensity alternative. Even so, the Council has determined that the Reduced Footprint/ Reduced Density Alternative is infeasible. After engaging in a reasonable balancing of competing considerations, the Council concludes that the loss of the kids' area and indoor and outdoor cafes make this alternative undesirable from a policy standpoint. The Council has concluded that a high-end, family oriented destination fitness and spa facility that provides residents and workers the opportunity to experience a broad range of high-quality programs and facilities represents a more desirable policy outcome than a facility more similar to a traditional high-turnover fitness facility (e.g., Planet Fitness or 24 hour Fitness). (See *City of Del Mar*, *supra*, 133 Cal.App.3d 410, 417; *Sierra Club v. County of Napa*, *supra*, 121 Cal.App.4th at pp. 1506-1509; *CNPS*, *supra*, 177 Cal.App.4th at p. 1001.)



VILLASPORT
150 PELICAN WAY
SAN RAFAEL, CA 94901

REV NO.	DATE	DESCRIPTION	ENG BY CITY INT.	DATE
△				
△				
△				
△				
△				



PROJECT NO:	157-001
DRAWN BY:	RSC Eng
CHECKED BY:	RSC Eng
DESIGNED BY:	RSC Eng

**PLANNING SUBMITTAL FOR
VILLASPORT ROSEVILLE**

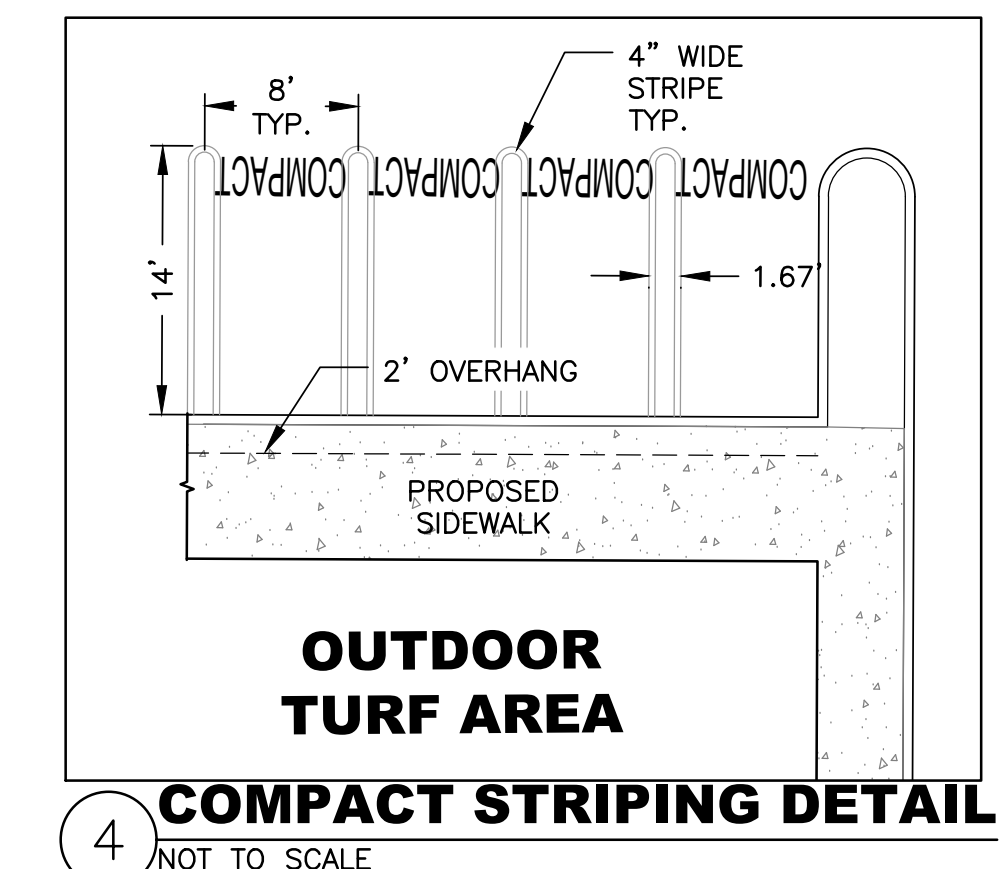
**2291 CONFERENCE CENTER DRIVE
ROSEVILLE, CA 95678**

SHEET TITLE

**PRELIMINARY
SITE PLAN**

SHEET NO.
SP1
OF **5**

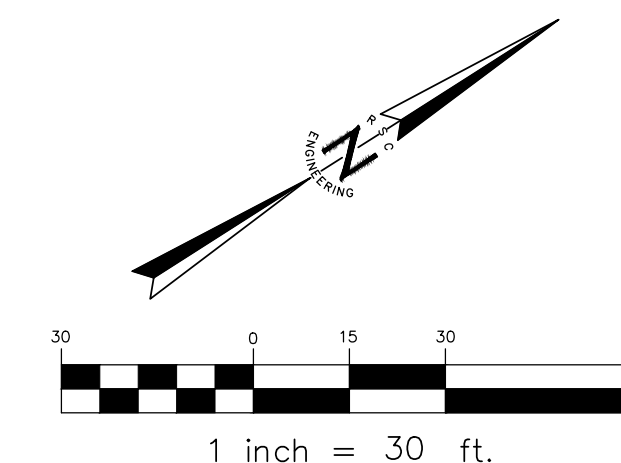
DATE: MARCH 24, 2017



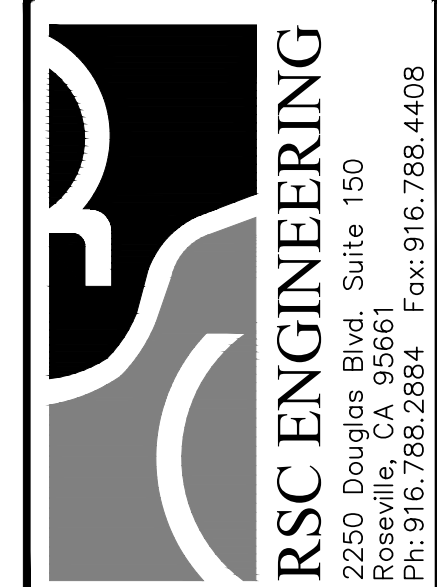
OUTDOOR TURF AREA

COMPACT STRIPING DETAIL

4) NOT TO SCALE



DATE: MARCH 24, 2017

[illegible]

PROJECT NO:	157-001
DRAWN BY:	RSC Eng
CHECKED BY:	RSC Eng
DESIGNED BY:	RSC Eng

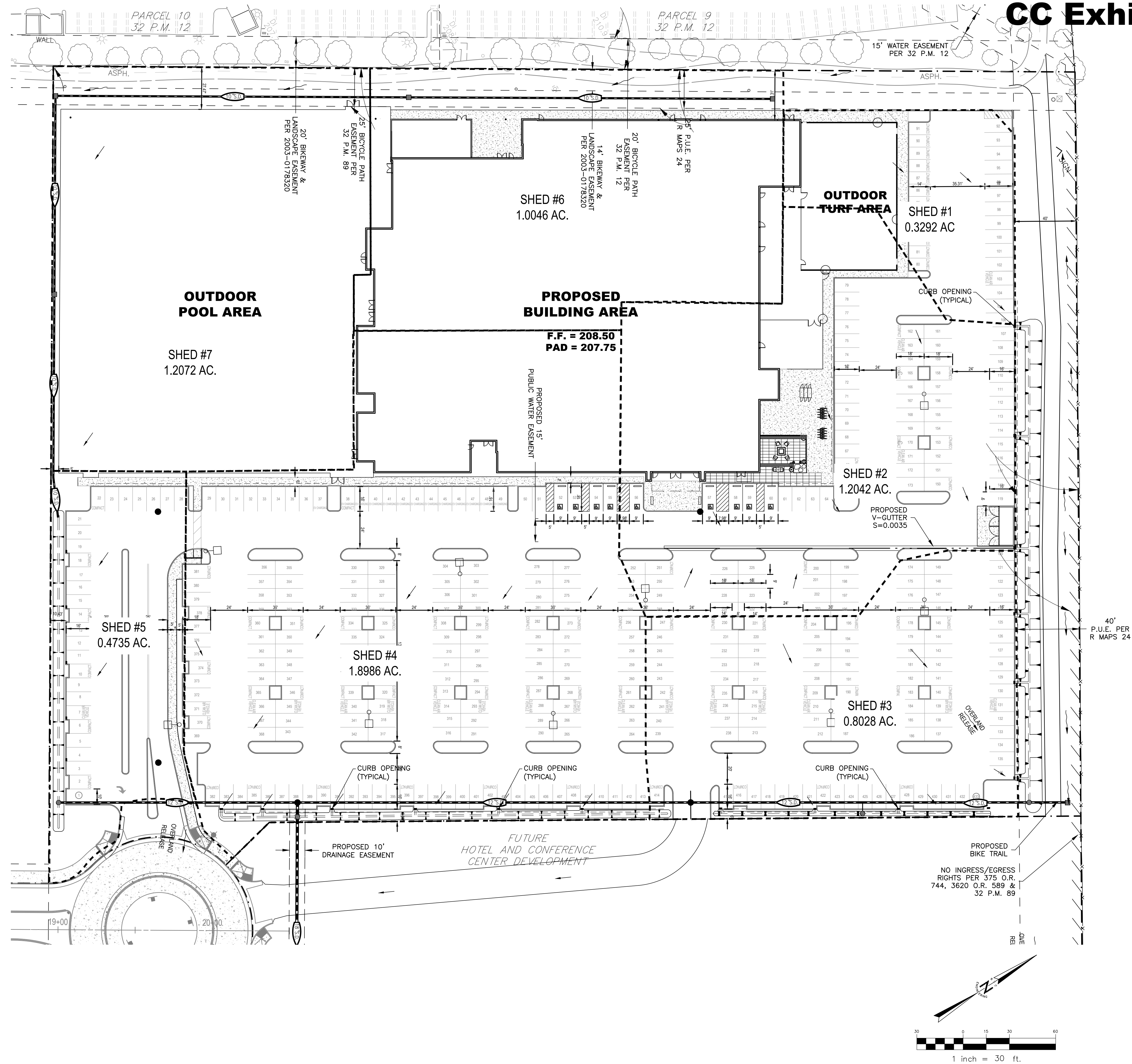
**PLANNING SUBMITTAL FOR
VILLASPORT ROSEVILLE**

**291 CONFERENCE CENTER DRIVE
ROSEVILLE, CA 95678**

SHEET TITLE
**PRELIMINARY
DRAINAGE
SHEDS**

SHEET NO.
SD1
OF **5**

DATE: MARCH 24, 2017



ELS
ARCHITECTURE AND URBAN DESIGN
 2040 ADDISON STREET, BERKELEY, CA 94704
 P 510.549.2929 F 510.843.3304
 WWW.ELSARCH.COM

PROJECT:

VillaSport
ATHLETIC CLUB AND SPA
ROSEVILLE, CALIFORNIA

PROJECT ADDRESS:
**291 CONFERENCE CENTER DRIVE
ROSEVILLE, CA 95678**

CLIENT: **VillaSport, LLC**
150 PELICAN WAY, SAN RAFAEL, CA 94901
P 415.448.8435 F 415.448.8346

PROJECT NUMBER:
201609.00

CONSULTANTS

STRUCTURAL:
SIMPSON, GUMPERTZ & HEGER
500 12TH STREET, SUITE 270
OAKLAND, CA 94607
P 510.457.4600
WWW.SGH.COM

MEP:
SCHNACKEL ENGINEERS
3035 SOUTH 72ND STREET
OMAHA, NE 68124
P 402.391.7680
WWW.SCHNACKEL.COM

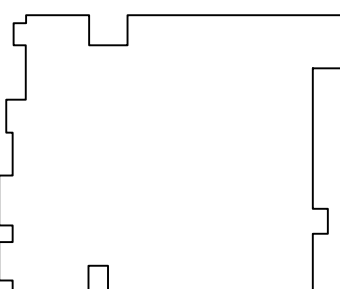
POOL:
WATER TECHNOLOGY, INC.
100 PARK AVENUE
BEAVER DAM, WI 53916
P 920.887.7375
WWW.WATERTECHNOLOGYINC.COM

LANDSCAPE:
MPSLA
10008 SIERRA GLEN WAY
SACRAMENTO, CA 95827
P. 916.364.5527

CODE ANALYSIS:
THE PREVIEW GROUP, INC.
2765 PRINCE STREET
BERKELEY, CA 94705
P 510.547.7748
WWW.THEPREVIEWGROUP.CO

SPECIFICATIONS:
PAWPRINT SPECS, LLC
1001 NATIONAL AVENUE, #405
SAN BRUNO, CA 94066
P 650.636.4603
WWW.PAWPRINTSPECS.COM

KEY PLAN



REVISIONS

[illegible]

ISSUE: **2ND SUBMITTAL**

DATE: **MARCH 16, 2017**

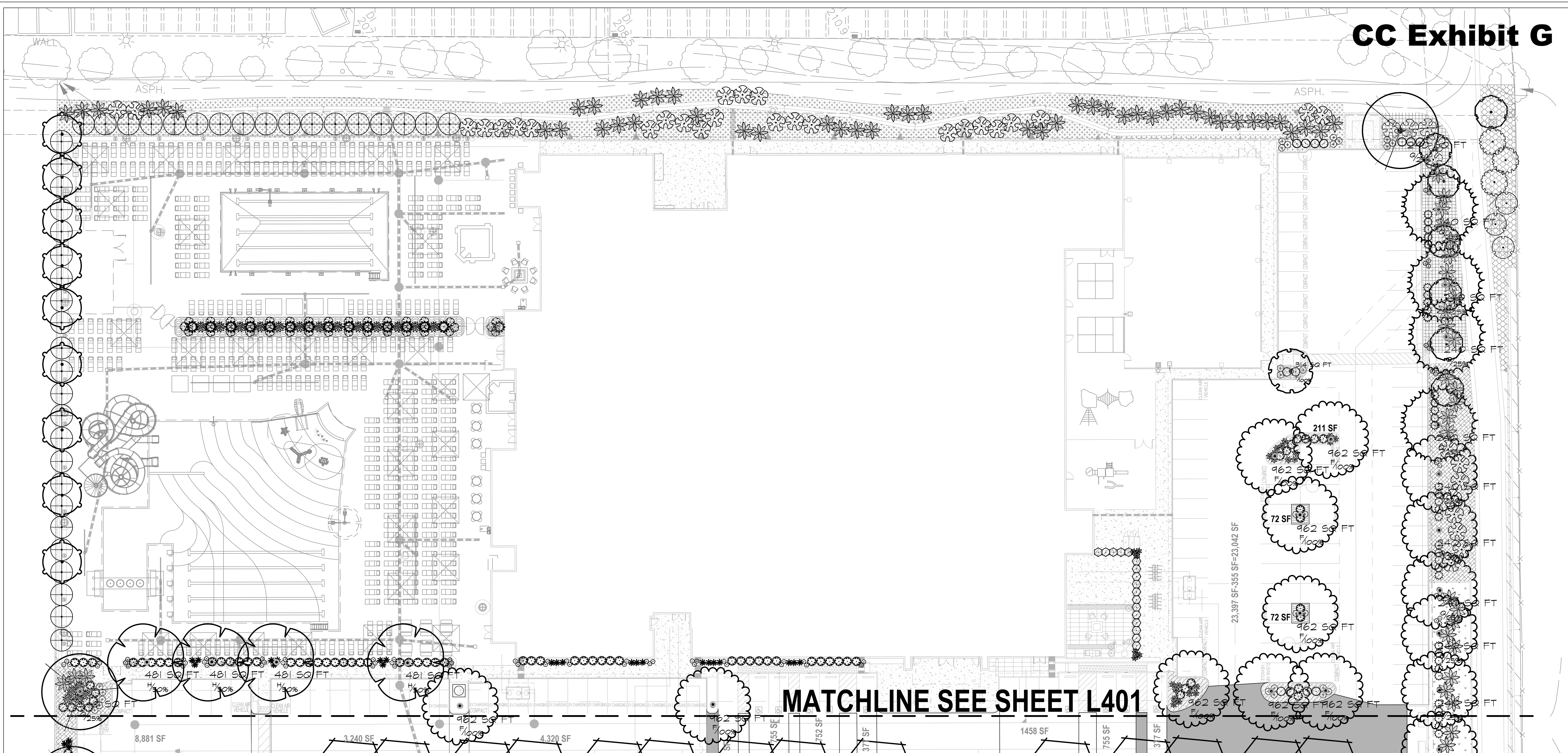


SHEET TITLE:

PLANTING PLAN

SHEET NUMBER

L400



PARKING LOT SHADE CALCULATIONS- CITY OF ROSEVILLE

TREE SPECIES	INTERIOR PLANTER 100%	SOUTH, EAST, WEST 50%	CORNER & NORTH 25%	
CALOCERDUS DECURRENS (30-35')	0@962sf=0sf	0@481sf=0sf	4@240sf=960sf	
FRAXINUS UIDEI (30-35')	8@962sf=7698sf	4@722sf=2888sf	4@240sf=960sf	
PISTACIA CHINENSIS (30-35')	4@962sf=3848sf	9@722sf=6498sf	3@240sf=720sf	
CINNAMOMUM CAMPHORA (30-35')	15@962sf=14430sf	9@722sf=6498sf	5@240sf=1200sf	
UMB. CALIFORNICA (30-35')	32@962sf=30784sf	0@722sf=0sf	0@240sf=0sf	
RHUS LANCEA (15-20')	1@314sf=314sf	22@157sf=3454sf	0@79sf=0sf	
CALCULATED TOTALS:	57,074sf	19,388sf	3,840sf	80,302 SF

- | | |
|--|------------|
| 1. TOTAL QUALIFYING PAVED AREA IN PARKING LOT: | 124,653 SF |
| 2. SHADE REQUIRED (50% OF QUALIFIED PAVED AREA): | 63,326 SF |
| 3. SHADE PROVIDED: | 80,302 SF |
| 4. % SHADE PROVIDED (ITEM 3 DIVIDED BY ITEM 1): | 64% |

**CITY OF ROSEVILLE MWELo NOTE:
I HAVE COMPLIED WITH THE CRITERIA OF THE WATER
EFFICIENT LANDSCAPING ORDINANCE
AND APPLIED SUCH CRITERIA FOR THE EFFICIENT USE OF
WATER IN THE LANDSCAPE DESIGN PLAN.**

SIGNED:  MICHAEL P. SCHEELE, LEED AP, CLIA, ASLA
CA. PL#1-3861 **DATE:** 09-13-16

PARKING LOT PAVED AREA LEGEND

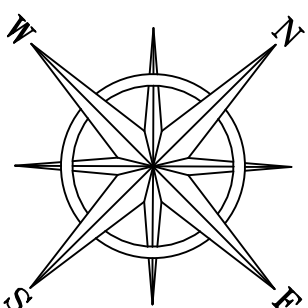


EXEMPT FROM SHADE CALCULATIONS

PLANTING NOTES

1. PRE-CONSTRUCTION MEETING, ALONG WITH THE OTHER OBSERVATIONS/INSPECTIONS DESCRIBED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SET UP A PRE-CONSTRUCTION MEETING BETWEEN THE OWNER, THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR AND LANDSCAPE CONTRACTOR (AS APPLICABLE) TO DISCUSS AND COORDINATE BID DOCUMENTS, PROJECT SUBMITTALS, RFI PROCEDURES, LINES OF COMMUNICATION, SCHEDULE, PROPOSED SUBSTITUTIONS ETC. THIS PRE-CONSTRUCTION MEETING SHALL OCCUR AS EARLY AS POSSIBLE BUT NO LATER THAN THREE WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR SHALL COMMUNICATE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS (PLANS, SPECIFICATIONS, ADDENDA ETC.) TO THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO BIDDING.
3. PLANT CUTOFFS SHOWN ARE FOR BIDDING REFERENCE ONLY. CONTRACTOR SHALL SUPPLY ALL PLANTS REQUIRED TO FULFILL DESIGN INTENT AS SHOWN. ADDITIONALLY, IF A GROUNDCOVER SYMBOL OR PATTERN IS SHOWN STOPPING AT THE EDGE OF A TREE OR SHRUB CANOPY SYMBOL, THE INTENT IS THAT THE GROUNDCOVER CONTINUE UNDERNEATH THE CANOPY SYMBOL(S) TO PROVIDE AN EVENLY COVERED GROUND PLANE.
4. CONTRACTOR SHALL PROTECT AND MAINTAIN ALL PLANT MATERIAL FROM THE TIME OF DELIVERY TO THE TIME OF PROJECT ACCEPTANCE. THE OWNER SHALL NOT BE RESPONSIBLE FOR LOSSES DUE TO VANDALISM, THEFT, OR SEVERE WEATHER.
5. ALL PLANT MATERIALS SHALL BE INSPECTED UPON DELIVERY BY THE OWNERS REPRESENTATIVE. CONTRACTOR SHALL GIVE A MINIMUM OF 2 WORKING DAY NOTICE FOR THIS INSPECTION/OBSERVATION AND SHALL MAKE DILIGENT EFFORT TO HAVE ALL MATERIAL ON SITE FOR REVIEW AT ONE TIME. CONTRACTOR SHALL PROMPTLY REPLACE ANY MATERIAL AS REQUESTED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PLACE PLANT MATERIALS SO THEY DO NOT INTERFERE WITH IRRIGATION SYSTEM OR INHIBIT REQUIRED COVERAGE. PLANT LOCATIONS MAY BE ADJUSTED AS LONG AS DESIGN IS NOT ALTERED SIGNIFICANTLY.
6. ALL NON-SLOPED PLANTING AREAS SHALL RECEIVE A PRE-EMERGENT HERBICIDE TREATMENT AND THREE INCH (3") LAYER OF "REGULAR WALK ON" FIBR BARK MULCH TOP DRESS (2 INCH AVG. SIZE-SUBMIT SAMPLES) REFER TO SPECS. AS AVAILABLE FROM: REDI-GRO CORP. 8909 ELDER CREEK RD. SACRAMENTO, CA. 95828 (800)-654-4358. NO REDWOOD, CEDAR OR SHREDED BARK (GORILLA HWR) IS TO BE USED FOR LANDSCAPING FOR THIS PROJECT. AREAS ARE SHOWN WITHIN DASHED LINE.
7. ALL PLANTING AREAS SHALL BE MAINTAINED IN A HEALTHY, WEED-FREE CONDITION AT ALL TIMES. DEAD PLANT MATERIAL SHALL BE REPLACED IMMEDIATELY. ALL TREES SHALL BE MAINTAINED AND PRUNED IN ACCORDANCE WITH THE ACCEPTED PRACTICES OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA).
8. PRIOR TO PLANTING, CONTRACTOR SHALL CROSS-RIP/LOOSEN ALL PLANTING AREA SOILS TO A SIX INCH (6") MINIMUM DEPTH AND FORTIFY WITH AMENDMENTS. REFER TO SPECIFICATIONS, SOIL FERTILITY ANALYSES AND DETAILS FOR SITE-SPECIFIC SOIL AMENDMENT AND PLANTING INFORMATION. AS NECESSARY, CONTRACTOR SHALL EXCAVATE AND REMOVE ANY LIME-TREATED OR UNSUITABLE SOIL TO A DEPTH OF TWELVE INCHES (12") AND/OR ROOT-TILLY/RIP (OVER 2" IN SIZE) AND BUILDING MATERIALS FROM ALL PLANTERS TO A MINIMUM DEPTH OF TWELVE INCHES (12"). IN AREAS THAT HAVE BEEN EXCAVATED AND REMOVED, CONTRACTOR SHALL FURTHER RIP/LOOSEN SUB-GRADE SOIL FOUR TO SIX INCHES (4-6") PRIOR TO PLACING ANY REQUIRED AND PREVIOUSLY ACCEPTED IMPORT PLANTING/TOPSOIL MIX TO REQUIRED GRADES. ANY SUCH IMPORT PLANTING AREA SOIL SHALL THEN BE FORTIFIED WITH AMENDMENTS BASED ON FRESH FERTILITY ANALYSIS OF SAID IMPORT MATERIALS.
9. CONTRACTOR SHALL INSTALL ROOT BARRIERS FOR ALL TREES WITH TRUNKS SHOWN 5 FEET OR CLOSER TO PAVING. BARRIERS SHALL BE: DEEPROOT PARTNERS LP MODEL # LB-18-2 PANELS INSTALLED IN THE LINER FASHION AS SHOWN IN THE MANUFACTURERS INSTRUCTIONS. WIDTH OF TREE SYMBOL SHOWN MAY SERVE AS TREES EXPECTED CANOPY WIDTH AT MATURITY FOR CALCULATIONS OF QUANTITY/LENGTH OF ROOT BARRIER PANELS TO INSTALL.
10. PLANT MATERIALS OVER 4 INCHES IN HEIGHT AT MATURITY SHALL BE PLACED/ADJUSTED SO AS TO MAINTAIN A 3 FOOT CLEARANCE AROUND ALL NON-DOOR SIDES OF ELECTRICAL TRANSFORMERS AND SWITCH GEARS WITH AN 8 FOOT CLEARANCE AWAY FROM DOOR ACCESS SIDES. TREE TRUNKS SHALL BE ADJUSTED TO MAINTAIN A 5 FOOT CLEARANCE AROUND ALL FIRE HYDRANTS AND FIRE PROTECTION EQUIPMENT. TREE TRUNKS SHALL ADDITIONALLY BE KEPT A MINIMUM OF 10 FEET CLEAR FROM ANY STREET LIGHT AND PARKING LOT LIGHT POLES. HOLD ALL PLANT MATERIALS 4 FEET AWAY FROM BACKFLOW PREVENTORS AND FOR MAINTENANCE ACCESS, PROVIDE 8 FOOT CLEARANCE ON ONE SIDE FOR ALL PLANT MATERIAL OVER 12 INCHES IN HEIGHT.
11. ADA PATHWAY CLEARANCE. ALL TREE LIMBS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM HEIGHT OF EIGHTY INCHES (80") ABOVE ANY ACCESSIBLE PATHS OF TRAVEL.
12. TREES OR OTHER LANDSCAPE MATERIALS AT BUILDINGS SHALL BE ADJUSTED OR PRUNED SO THAT AT MATURITY, THE MATERIALS DO NOT OBSCURE THE ADDRESS OR BUILDING NUMBERS.

SEE SHEET L401 FOR PLANT LEGEND



GRAPHIC SCALE

20 10 0 2

1 in = 20 ft

GENERAL NOTES

- A. ALL FOOT CANDLE CALCULATIONS ARE BASED ON A SINGLE CALCULATION ZONE.
- B. INNER LUMINARIES ISO CURVE INDICATES 5 FOOT CANDLE. INTERMEDIATE CURVES INDICATE 1 & 2 FOOT CANDLES. OUTER LUMINARIES ISO CURVE INDICATES 0.5 FOOT CANDLES.

AGENCY REQUIREMENTS

- A. 1 FOOT CANDLE MIN. FOR PARKING AND DRIVE AISLES.
- B. 0.5 FOOT CANDLE MIN. FOR WALK AND PEDESTRIAN AREAS.

LEGEND

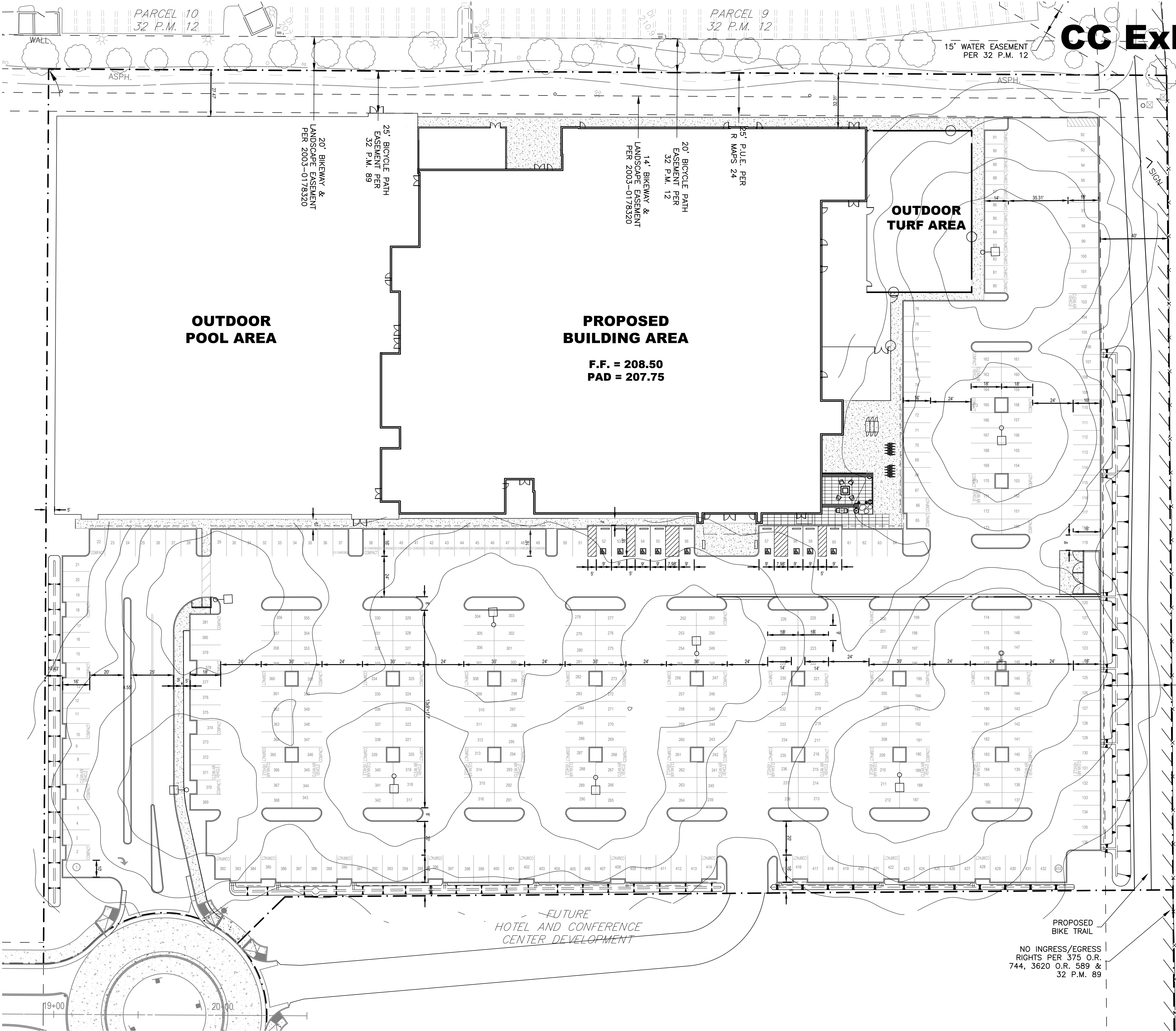
○ □ SITE LUMINAIRE (SINGLE HEAD)
20 FOOT MOUNTING HEIGHT

GENERAL
PHOTOMETRIC
SCHEDULE

AVERAGE FOOTCANDLES	3.11
MAXIMUM FOOTCANDLES	20.6
MINIMUM FOOTCANDLES	0.4
MINIMUM TO MAXIMUM FC RATIO	0.00
MAXIMUM TO MINIMUM FC RATIO	516.37
AVE. TO MIN. FC RATIO	77.73

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	DESCRIPTION	866-516-9497	MOUNTING	MODEL	VOLTS	NOTE 1	NOTE 2	NOTE 3	QUANTITY
MON-3	○ □	866-516-9497	MONTEREY SIZE 3 TYPE 5 REFLECTOR-FLAT GLASS LENS LUMINAIRE SIZE 33.8" x 29.3"	ELECTRONIC	POLE	VISIONAIRE LIGHTING, LLC, MON-3 T5-1000PS-VLFG-SEG	120V 1P 2W	1000W PULSE START		M351000P 120000 Lms.	11



CC Exhibit H

VILLASPORT
150 PELICAN WAY
SAN RAFAEL, CA 94901

DATE	BY	APPROVED
DATE	DESCRIPTION	DATE

RSC ENGINEERING
2250 Douglas Blvd. Suite 150
Roseville, CA 95661
Ph: 916.786.2864 Fax: 916.786.4408

PROJECT NO: 157-001
DRAWN BY: RSC Eng
CHECKED BY: RSC Eng
DESIGNED BY: RSC Eng

PLANNING SUBMITTAL FOR
VILLASPORT ROSEVILLE
291 CONFERENCE CENTER DRIVE
ROSEVILLE, CA 95678

SHEET TITLE
PRELIMINARY
PHOTMETRIC
PLAN

SHEET NO.
E1
OF 5

DATE: MARCH 24, 2017

CC Exhibit I

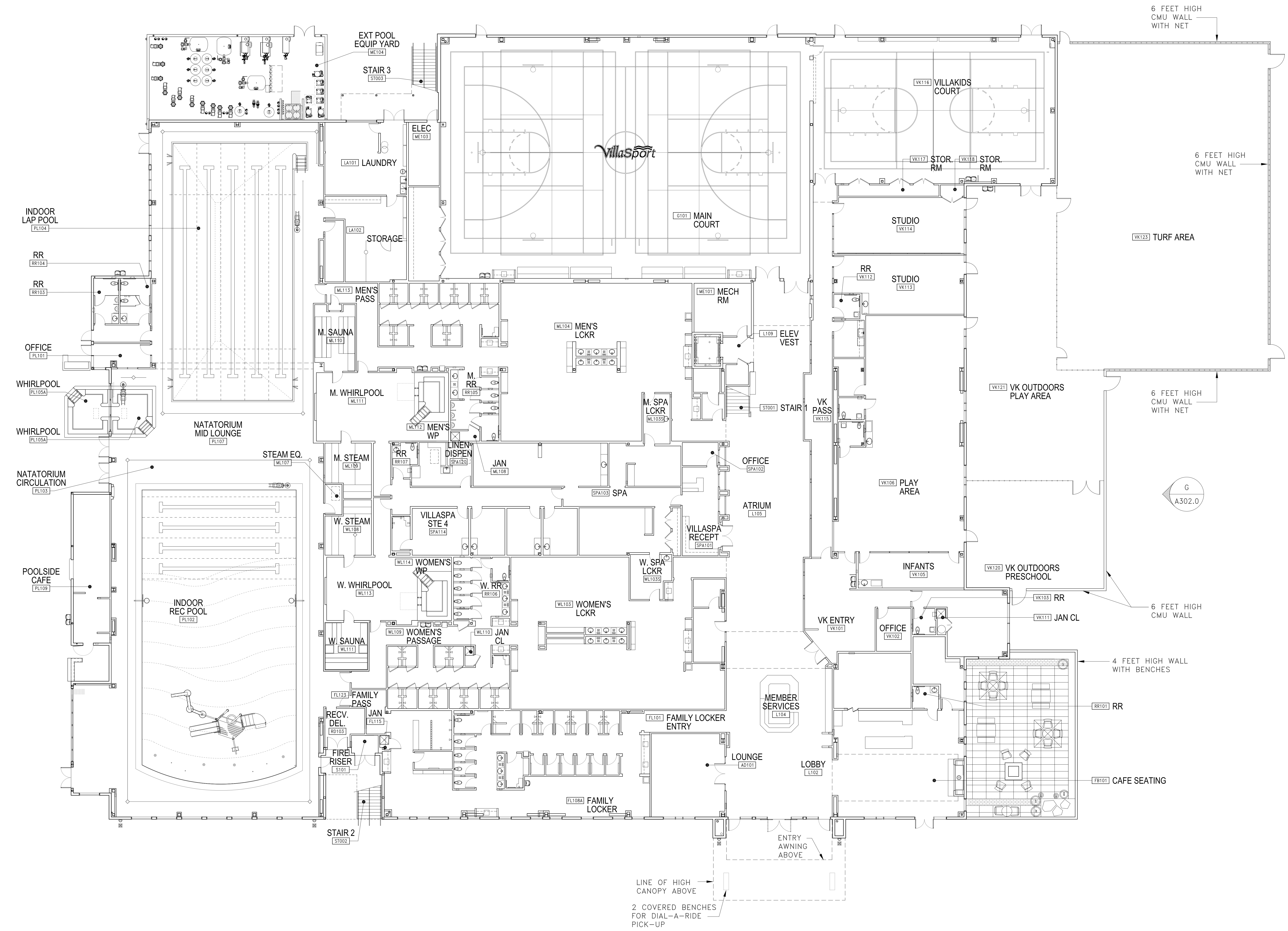
ELS
ARCHITECTURE AND URBAN DESIGN
2040 ADDISON STREET, BERKELEY, CA 94704
P 510.549.2929 F 510.843.3304
WWW.ELSARCH.COM

PROJECT:
VillaSport
ATHLETIC CLUB AND SPA
ROSEVILLE, CALIFORNIA

PROJECT ADDRESS:
**291 CONFERENCE CENTER DRIVE
ROSEVILLE, CA 95678**

CLIENT:
VillaSport, LLC
150 PELICAN WAY, SAN RAFAEL, CA 94901
P 415.448.8435 F 415.448.8346

PROJECT NUMBER:
201609.00

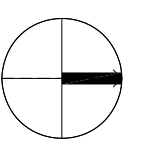
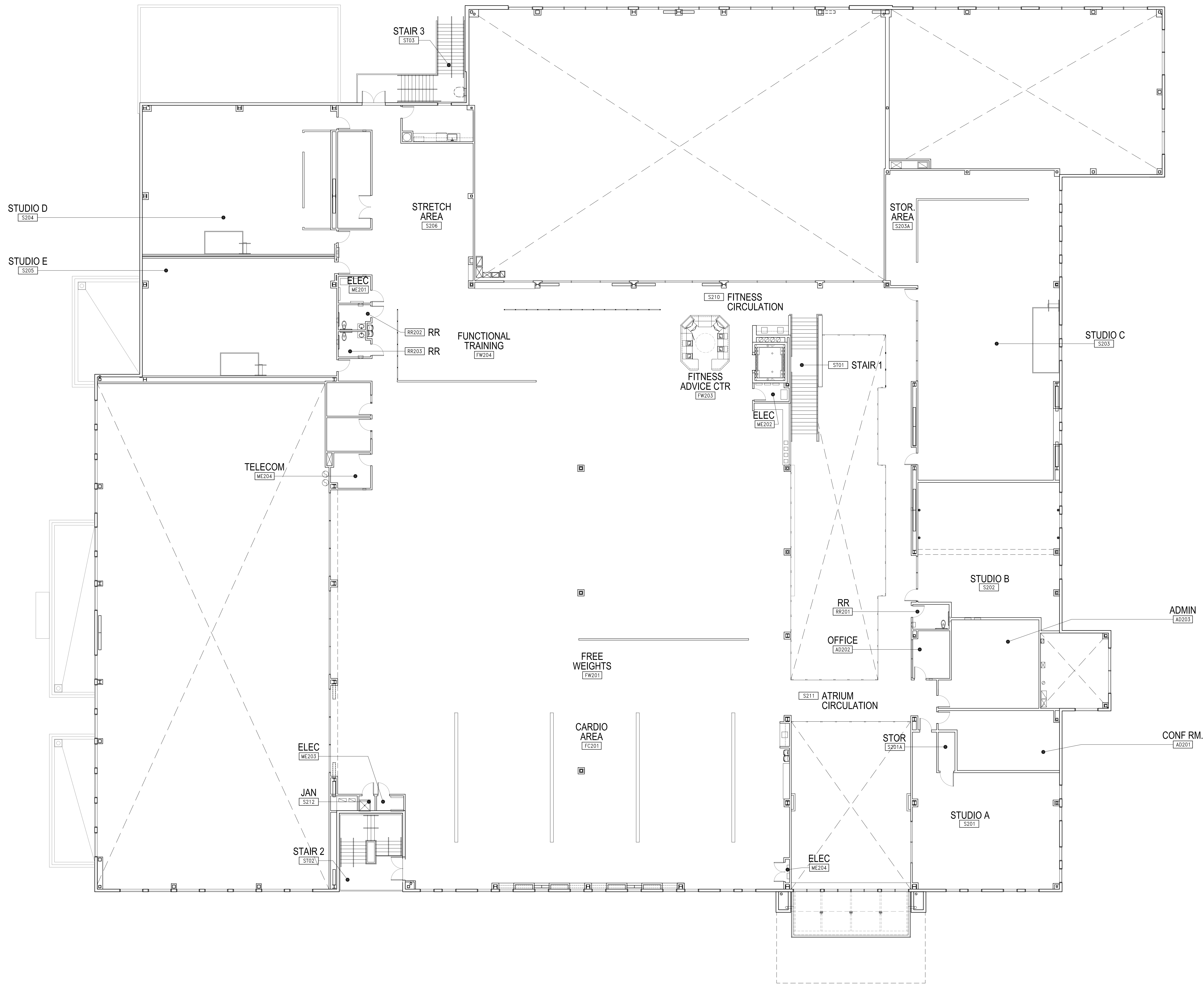


1 FLOOR PLAN - LEVEL 1
3/32" = 1'-0"

SHEET TITLE:
**FLOOR PLAN
LEVEL 1**

SHEET NUMBER:

A111.0



COLOR LEGEND (BASE SCHEME/ENTITLEMENTS SUBMITTAL)



CC Exhibit J

ELS ARCHITECTURE AND URBAN DESIGN
2407 DODSON STREET, BERKELEY, CA 94704
ARCHITECTURE AND URBAN DESIGN
XOMX RUSADON SOMET, BERKELEY, CA 94704
P 510.543.2323 F 510.843.3304
WWW.ELSARCH.COM

VillaSport
ATHLETIC CLUB AND SPA
ROSEVILLE, CALIFORNIA
PROJECT ADDRESS: SAN JOSE, CALIFORNIA

CLIENT: **VillaSport, LLC**
150 PELICAN WAY, SAN RAFAEL, CA 94901
P 415.448.8346 F 415.448.8346
PROJECT P 415.448.8346 F 415.448.8346
CONSULTANTS: 201609.00

STRUCTURAL:
SIMPSON, GUMPERTZ & HEGER
500 12TH STREET, SUITE 270
OAKLAND, CA 94607
P 510.457.4600
WWW.SGH.COM

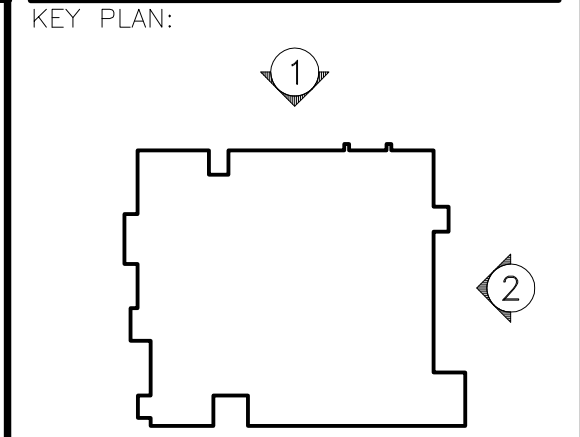
MEP:
SCHNACKEL ENGINEERS
3035 SOUTH 72ND STREET
OMAHA, NE 68124
P 402.391.7680
WWW.SCHNACKEL.COM

POOL:
WATER TECHNOLOGY, INC.
100 PARK AVENUE
BEAVER DAM, WI 53916
P 920.887.7375
WWW.WATERTECHNOLOGYINC.COM

LANDSCAPE:
GATES + ASSOCIATES
2671 CROW CANYON ROAD
SAN RAMON, CA 94583
P 925.736.8176
WWW.DGATES.COM

CODE ANALYSIS:
THE PREVIEW GROUP, INC.
2765 PRINCE STREET
BERKELEY, CA 94705
P 510.547.7748
WWW.THEPREVIEWGROUP.COM

SPECIFICATIONS:
TOPFLIGHT SPECS
55 NEW MONTGOMERY STREET
SUITE 805
SAN FRANCISCO, CA 94105
P 415.546.6033
WWW.TOPFLIGHTSPECS.COM



REVISIONS:

NO.	DESCRIPTION	DATE

ISSUE: **PRELIMINARY DESIGN**
DATE: **05 SEPTEMBER 2014**

PRELIMINARY
NOT FOR CONSTRUCTION

SHEET TITLE:
COLORED BUILDING ELEVATIONS BASE SCHEME

SHEET NUMBER:
A201.0



1 BUILDING ELEVATION - EAST
3/32" = 1'-0"

1 BUILDING ELEVATION - NORTH
3/32" = 1'-0"



2 BUILDING ELEVATION - NORTH
3/32" = 1'-0"

2 BUILDING ELEVATION - EAST
3/32" = 1'-0"

BEHR - DOZEN ROSES BEHR - ARTISAN BEHR - CURRY POWDER BEHR - CORK BEHR - BEAR RUG



3 BUILDING ELEVATION - SOUTH
3/32" = 1'-0"



4 BUILDING ELEVATION - WEST
3/32" = 1'-0"

PROJECT: **VillaSport**
VILLAGE CLUB AND SPA
ROSEVILLE, CALIFORNIA
ATHLETIC CLUB AND SPA
PROJECT ADDRESS:
SAN JOSE, CALIFORNIA

STRUCTURAL:
SIMPSON, GUMPERTZ & HEGER
500 12TH STREET, SUITE 270
OAKLAND, CA 94607
P 510.457.4600
WWW.SGH.COM

MEP:
SCHNACKEL ENGINEERS
3035 SOUTH 72ND STREET
OMAHA, NE 68124
P 402.391.7680
WWW.SCHNACKEL.COM

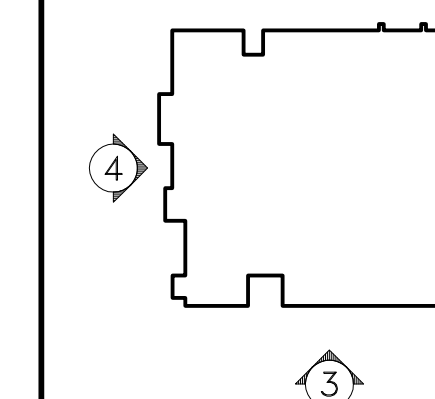
POOL:
WATER TECHNOLOGY, INC.
100 PARK AVENUE
BEAVER DAM, WI 53916
P 920.887.7375
WWW.WATERTECHNOLOGYINC.CO

LANDSCAPE:
GATES + ASSOCIATES
2671 CROW CANYON ROAD
SAN RAMON, CA 94583
P 925.736.8176
WWW.DGATES.COM

CODE ANALYSIS:
THE PREVIEW GROUP, INC.
2765 PRINCE STREET
BERKELEY, CA 94705
P 510.547.7748
WWW.THEPREVIEWGROUP.COM

SPECIFICATIONS:
TOPFLIGHT SPECS
55 NEW MONTGOMERY STREET
SUITE 805
SAN FRANCISCO, CA 94105
P 415.546.6033
WWW.TOPFLIGHTSPECS.COM

KEY PLAN:



REVISIONS:

[illegible]

ISSUE:

PRELIMINARY DESIGN

DATE: **05 SEPTEMBER 2014**



SHEET TITLE:

COLONNED ELEVATIONS

SHEET NUMBER:

A202.0

CC Exhibit K

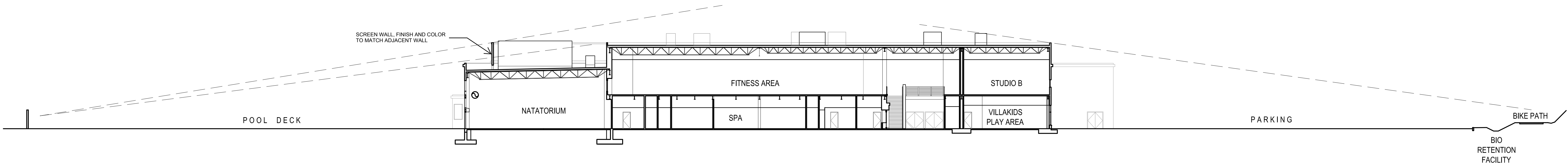
ELS
ARCHITECTURE AND URBAN DESIGN
2040 ADDISON STREET, BERKELEY, CA 94704
P 510.549.2929 F 510.843.3304
WWW.ELSARCH.COM

PROJECT:
VillaSport
ATHLETIC CLUB AND SPA
ROSEVILLE, CALIFORNIA

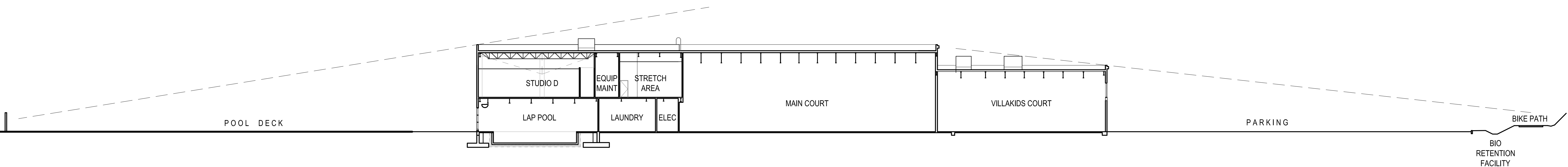
PROJECT ADDRESS:
291 CONFERENCE CENTER DRIVE
ROSEVILLE, CA 95678

CLIENT:
VillaSport, LLC
150 PELICAN WAY, SAN RAFAEL, CA 94901
P 415.448.8435 F 415.448.8346

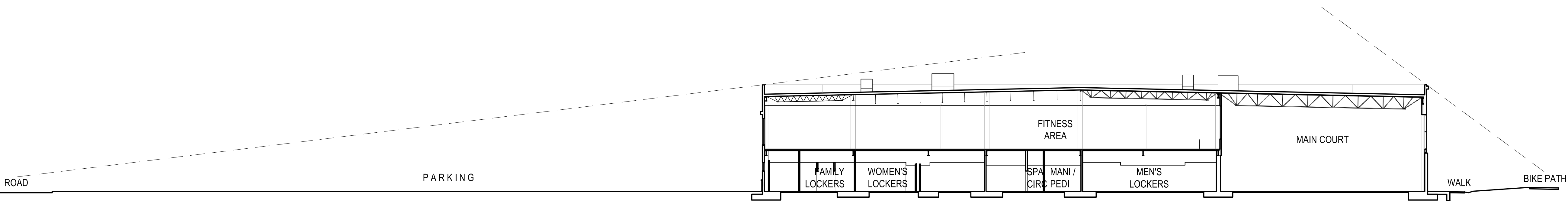
PROJECT NUMBER:
201609.00



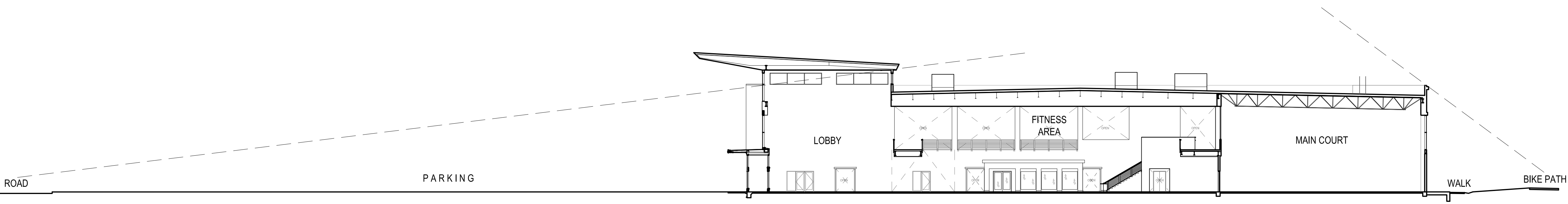
D LINE OF SIGHT SECTION D
1" = 20'-0"



C LINE OF SIGHT SECTION C
1" = 20'-0"



B LINE OF SIGHT SECTION B
1" = 20'-0"

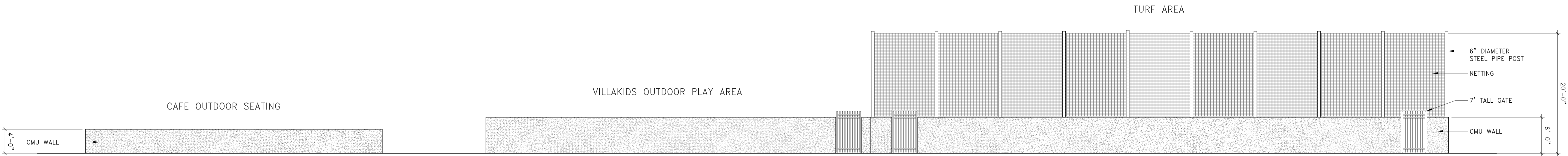


A LINE OF SIGHT SECTION A
1" = 20'-0"

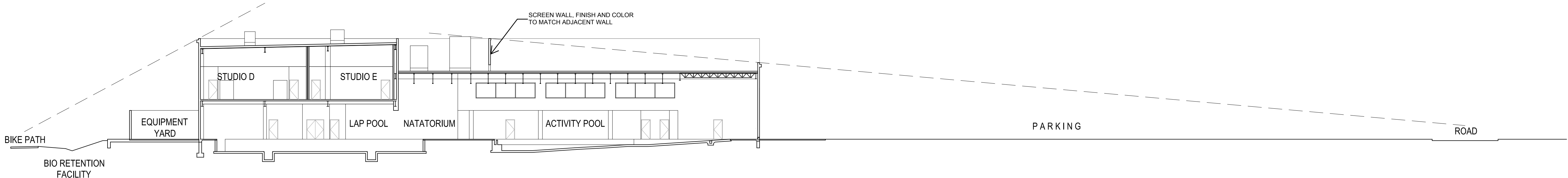
SHEET TITLE:
**LINE OF SIGHT
SECTIONS**

SHEET NUMBER:

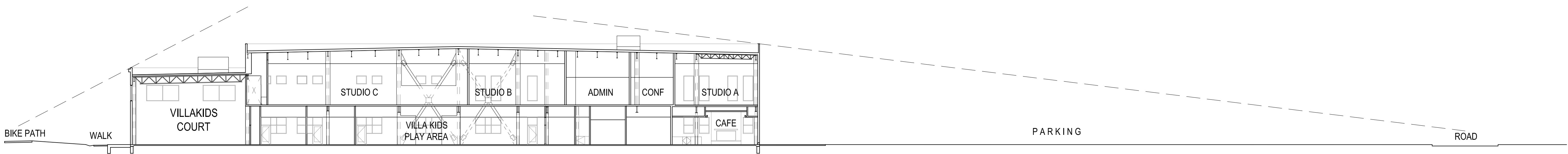
A301.0



G WALL ELEVATION
1/8" = 1'-0"



F LINE OF SIGHT SECTION F
1" = 20'-0"



E LINE OF SIGHT SECTION E
1" = 20'-0"

CONDITIONS OF APPROVAL FOR THE CONDITIONAL USE PERMIT

1. The Conditional Use Permit is approved based on the operational parameters established in the staff report and the exhibits thereto, including the Environmental Impact Report. The operating hours of the facility are 5 am to 11 pm. (Planning)

CONDITIONS OF APPROVAL FOR THE DESIGN REVIEW PERMIT

1. This Design Review Permit approval shall be effectuated within a period of two (2) years from **August 2, 2017** and if not effectuated shall expire on **August 2, 2019**. Prior to said expiration date, the applicant may apply for an extension of time, provided this approval is does not extend the expiration beyond **August 2, 2020**. (Planning)
2. The project is approved as shown in Exhibits A – K and as conditioned or modified below. (Planning)
3. The project shall comply with all required environmental mitigation identified in the Villa Sport Environmental Impact Report. The applicable mitigation measures shall be included as construction notes on the Improvement Plans and/or Building Plans. (Planning)
4. The applicant shall pay City's actual costs for providing plan check, mapping, GIS, and inspection services. This may be a combination of staff costs and direct billing for contract professional services. (Engineering, Environmental Utilities, Electric, Finance)
5. The design and construction of all improvements shall conform to the Design and Construction Standards of the City of Roseville, or as modified by these conditions of approval, or as directed by the City Engineer. (Engineering)
6. The applicant shall not commence with any on-site improvements or improvements within the right-of-way until such time as grading, underground and/or improvement plans are approved and grading and/or encroachment permits are issued by the Development Services Department – Land Development Engineering Division. (Engineering)
7. The approval of this project does not constitute approval of proposed improvements as to size, design, materials, or location, unless specifically addressed in these conditions of approval. (Engineering)

PRIOR TO ISSUANCE OF BUILDING PERMITS:

8. Parking lot design shall meet, or exceed, the minimum standards of the Zoning Ordinance, including the following minimum standards:
 - a. All parking stalls shall be double-striped. Parking stalls adjacent to sidewalks, landscaped areas or light fixtures, and all Accessible stalls shall abut a 6" raised curb or concrete bumper. (Planning)
 - b. Standard -- 9 feet x 18 feet; Compact--9 feet x 16 feet; Accessible--14 feet x 18 feet (a 9 foot wide parking area plus a 5 foot wide loading area) and a minimum of one (1) parking space shall be Accessible van accessible--17 feet x 18 feet (9 foot wide parking area plus an 8 foot wide loading area). (Planning)
 - c. An 'exterior routes of travel' site accessibility plan incorporating slope, cross-slope, width, pedestrian ramps, curb ramps, handrails, signage, detectable warnings or speed limit signs or equivalent means shall comprise part of the site improvement plans submitted to City for review, prior to building plan check approvals. This site accessibility plan shall also include:
 - i) Accessible parking stalls shall be dispersed and located closest to accessible entrances. The total number of accessible parking spaces shall be established by Table 11B-208.2 of the CBC.

- ii) Accessible Parking spaces and crosswalks shall be signed, marked and maintained as required by Chapter 11B of the CBC.
 - iii) Accessible parking and exterior route of travel shall comply with CBC, Chapter 11B. (Building)
- 9. Signs and/or striping shall be provided on-site as required by the Planning Department to control on-site traffic movements. Parking lot striping and signage shall be maintained in a visible and legible manner. (Planning)
- 10. The plans submitted to the Building Department for permits shall indicate all approved revisions/alterations as approved by the Commission including all conditions of approval. (Planning)
- 11. The mechanical roof screens shall be painted cement plaster, consistent with the proposed building materials. (Planning)
- 12. The project Landscape Plans shall comply with the following:
 - a. The Landscape Plan shall indicate the location of, and be designed to avoid conflicts with, all pole-mounted light fixtures and utility equipment including (but not limited to) electric transformers, switchgear, and overhead lines, backflow preventers, fire department connections, and public water, sewer, and storm drain facilities. (Planning, Fire, EUD, Electric, Public Works)
 - b. The tree plantings in the parking lot shall be designed to provide a minimum of 50% shade coverage after 15 years. (Planning)
 - c. At a minimum, landscaped areas not covered with live material shall be covered with a rock, (3") bark (no shredded bark) or (3") mulch covering. (Planning)
 - d. The landscape plan shall comply with the Landscape Guidelines for the North Central Roseville Specific Plan and the City of Roseville Water Efficient Landscape ordinance. (Planning)
 - e. All landscaping in areas containing electrical service equipment shall conform with the Electric Department's Landscape Requirements and Work Clearances as outlined in Section 10.00 of the Departments "Specification for Commercial Construction." (Electric)
- 13. Any roof-mounted equipment and satellite dishes proposed shall be shown on the building plans. The equipment shall be fully screened from public streets and the surrounding properties. (Planning)
- 14. At the time of building permit application and plan submittal, the project applicant shall submit a proposed plan which shows the suite addressing plan for individual tenant spaces within the building. The Chief Building Official, or the designate, shall approve said plan prior to building permit approval. (Building)
- 15. A separate Site Accessibility Plan which details the project's site accessibility information as required by California Title 24, Part 2 shall be submitted as part of the project Building Permit Plans. (Building)
- 16. For Multiple Building Complexes: As part of the required Site Accessibility Plan, the developer shall delineate the extent of the site accessibility improvements being installed as part of the initial improvements for the project, and those that are planned to be developed as part of subsequent phases (i.e. around future pad buildings). (Building)
- 17. For all work to be performed off-site, permission to enter and construct shall be obtained from the property owner, in the form of a notarized right-of-entry. Said notarized right-of-entry shall be provided to the Engineering Division prior to approval of any plans. (Engineering)

18. The Improvement Plans shall include a complete set of Landscape Plans. The Landscape Plans shall be approved with the Improvement Plans. (Planning, Engineering, Fire, Environmental Utilities, Electric)
19. Construction access shall not cross the existing bike trail. The developer shall be responsible for any damage to the existing trail during construction. (Engineering, Alternative Transportation)
20. A bike trail shall be constructed per City Standards along the northern boundary of the project site, parallel to Highway 65, as shown in the City Bicycle Master Plan. Plants and irrigation shall be set back a minimum of 5 feet from the edge of pavement of the existing and new bike trail. Irrigation shall be designed to avoid overspray on the trails and positive drainage shall be provided away from the existing bike trail. (Engineering, Alternative Transportation, Planning)
21. Grading adjacent to the existing bike trail shall be designed to avoid nuisance or standing water on the bike trail. Construction plans shall include a detail and cross-section for the bicycle trail and drainage, for review and approval by Alternative Transportation. (Alternative Transportation)
22. A note shall be added to the grading plans that states:

*"Prior to the commencement of grading operations, the contractor shall identify the site where the **excess/borrow** earthen material shall be imported/deposited. If the **borrow/deposit** site is within the City of Roseville, the contractor shall produce a report issued by a geotechnical engineer to verify that the exported materials are suitable for the intended fill, and shall show proof of all approved grading plans. Haul routes to be used shall be specified."* (Engineering)
23. The applicant shall dedicate all necessary rights-of-way or Public Utility Easement for the widening of any streets or transfer of public utilities across and over any portion of the property as required with this entitlement. A separate document shall be drafted for approval and acceptance by the City of Roseville, and recorded at the County Recorder's Office. (Engineering)
24. All storm drainage, including roof drains, shall be collected on site and treated with Best Management Practices (BMP's) per the City's Stormwater Quality Design Manual and in conformance with the City's current MS4 Permit. All storm water shall be routed to the nearest existing storm drain system or natural drainage facility. Drain outfalls shall extend down to the receiving water and shall be constructed with adequate velocity attenuation devices. Access shall be provided to the stormwater swales to allow for maintenance. The grading/improvement plans for the site shall be accompanied with a shed map that defines that area tributary to this site and all drainage facilities shall be designed to accommodate the tributary flow. The storm drain system and proposed BMP's shall be privately owned and maintained by the property owner. Prior to the issuance of any permits, the owner shall provide a plan for the maintenance of the proposed BMP's and enter into a stormwater maintenance agreement with the City. (Engineering)
25. Prior to the issuance of any permits, the property owner shall prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the City, as defined by the Regional Water Quality Control Board. The SWPPP shall be submitted in a single three ring binder. Upon approval, the SWPPP will be returned to the property owner during the pre-construction meeting. (Engineering)
26. To ensure that the design for any necessary widening, construction, or modifications of Public Streets does not conflict with existing dry utilities generally located behind the curb and gutter, and prior to the approval of design drawings for those frontage improvements, the project proponent shall have the existing dry utilities pot holed for verification of location and depth. (Engineering)
27. Sight distances for all driveways shall be clearly shown on the improvement plans to verify that minimum standards are achieved. It will be the responsibility of the project proponent to provide appropriate landscaping and improvement plans, and to relocate and/or modify existing facilities as needed to meet these design objectives. (Engineering)

28. The applicant shall remove and reconstruct any existing damaged curb, gutter, and sidewalk along the property frontage. During plan check of the improvement plans and/or during inspection, the Engineering Division will designate the exact areas to be reconstructed. Any existing public facilities damaged during the course of construction shall be repaired by the property owner and at the property owner's expense, to the satisfaction of the City. (Engineering)
29. Prior to construction within any phase of the project, high visibility temporary construction fencing shall be installed along the parcel adjacent to the Preserve. Fencing shall be maintained daily until permanent fencing is installed, at which time the temporary fencing shall be removed from the project site. (Engineering, Development Services, Planning)
30. With the exception of access required for maintenance and/or emergency vehicles, the project shall be designed to prevent vehicle access into the Preserve. Post and cable fencing or other improvements shall be utilized to meet this requirement. (Engineering, Development Services, Planning)
31. Prior to the approval of the improvement plans, it will be the project proponent's responsibility to pay the standard City Trench Cut Recovery Fee for any cuts within the City streets that are required for the installation of underground utilities. (Engineering)
32. The project shall be addressed as 291 Conference Center Drive. All projects with multi-tenants or buildings must submit a plot plan with building footprint(s) to the Public Works Department (Engineering - Land Development Division) for building/suite addressing. (Planning)
33. Prior to the issuance of building permits, the property owner shall pay into the following fee programs: Citywide Drainage Fee, Citywide Traffic Mitigation Fee (TMF), Highway 65 Joint Partners Association (JPA), South Placer Regional Transportation Authority (SPRTA), and City/County Fee. (Engineering)
34. The applicant/developer shall prepare a Transportation Systems Management (TSM) Plan for VillaSport Club to be reviewed and approved by the Transportation Commission. (Public Works)
35. Bike parking and clean air vehicle spaces shall be provided per the California Green Building Standards. Both long-term and short term bicycle parking is required, with long-term bicycle parking consisting of covered and secure bicycle lockers and short-term bicycle parking consisting of bicycle racks near the front entrance. Based on preliminary calculations of the number of employees, it is anticipated that a minimum of 5 of the 22 bicycle parking spaces must be designated as long term bicycle parking. The location, layout, and design of short- and long-term bicycle parking shall be subject to the review and approval of Alternative Transportation. (Alternative Transportation, Building)
36. Prior to the issuance of a grading permit or approval of Improvement Plans, the grading plans shall clearly identify all existing water, sewer and recycled water utilities within the boundaries of the project (including adjoining public right of way). Existing utilities shall be identified in plan-view and in profile view where grading activities will modify existing site elevations over top of or within 15 feet of the utility. Any utilities that could potentially be impacted by the project shall be clearly identified along with the proposed protection measures. The developer shall be responsible for taking measures and incurring costs associated with protecting the existing water, sewer and recycled water utilities to the satisfaction of the Environmental Utilities Director. (Environmental Utilities)
37. The applicant shall pay all applicable water and sewer fees. (Environmental Utilities)
38. Water and sewer infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards and shall include:
 - a. Utilities or permanent structures shall not be located within the area which would be disturbed by an open trench needed to expose sewer trunk mains deeper than 12' unless approved by Environmental Utilities in these conditions. The area needed to construct the trench is a sloped cone above the sewer main. The cone shall have 1:1 side slopes.

- b. Water and sewer shall not exceed a depth of 12' below finished grade, unless authorized in these conditions of approval.
 - c. All sewer manholes shall have all-weather 10-ton vehicle access unless authorized by these conditions of approval. (Environmental Utilities)
39. Trees and their driplines shall not encroach within any water easement. (Environmental Utilities)
40. The sewer system shall be a public system and shall be installed within a public utility easement. (Environmental Utilities)
41. Trash enclosures, recycling areas, and enclosure approaches shall be designed to current Refuse Division specifications, the materials and colors shall match the building, and the location of such facilities shall be reviewed and approved by the Refuse Division, Planning and the Fire Department. The enclosure must have inside dimensions of 12 feet wide and 9 feet deep and be built to the specifications of the Solid Waste Department's Enclosure Description. (Refuse, Planning, Fire)
42. Access to trash enclosures shall have an inside turning radius of 25 feet and an outside turning radius of 45 feet must be maintained to allow the refuse truck access to and from the enclosure. Enclosures must have a clear approach of 65 feet in front of the enclosure to allow servicing bins. (Refuse)
43. A trash enclosure and recycling enclosure is required for each building and each tenant, otherwise, the building owner is responsible for the trash service. (Refuse)
44. The design and installation of all fire protection equipment shall conform to the California Fire Code and the amendments adopted by the City of Roseville, along with all standards and policies implemented by the Roseville Fire Department. (Fire)
45. The applicable codes and standards adopted by the City shall be enforced at the time construction plans have been submitted to the City for permitting (Fire)
46. The fire flow required, at a 50% reduction due to the buildings being sprinklered, will be based on the largest single structure in accordance with the California Fire Code at the time detail plans are submitted to the City of Roseville for review. The maximum fire flow will not exceed 4,000 gpm based on the Appendix III-AA of the California Fire Code. (Fire)
47. The fire department access road shall meet the City's requirements for width and turning radii as noted on the fire department standards for access. This shall be enforced at the time plans are submitted for review. Additional information can be found on the City's web site www.roseville.ca.us or contact Patrick Chew, Senior Fire Inspector, at 916-774-5823 or pchew@roseville.ca.us with the Fire Prevention Division for information. (Fire)
48. Automatic fire extinguishing system risers, fire alarm system panels and digital alarm communicator system panels shall be located within an approved fire control room and shall be accessible from an adjacent fire apparatus roadway. Said fire control room shall be a minimum size of thirty-five (35) square feet in size and shall be openable from the exterior via an approved door opening. (Fire)
49. Use, increase of hazardous materials or storage, liquids, gases and/or chemicals shall meet the requirements of the Chapter 6.95 of the Health and Safety Code, the Roseville Fire Department and the National Fire Codes. Submit a complete plan set and the Hazardous Materials Business Plan, including names and amount of any hazardous materials that will be stored or used, to the Fire and Life Safety Division for review and approval. A permit application shall also be provided at the time of submittal. Contact Steve Anderson of our Hazardous Materials Division within the Fire Department at (916) 774-5821 to initiate the process. Satisfaction of storage and use shall be determined prior to requesting occupancy. (Fire)

50. Adequate radio coverage shall be provided within all buildings for public safety agencies, as required by Roseville Municipal Code and the California Fire Code. A field test shall be provided by a person in possession of a current FCC License, or a current technician certification issued by the Associated Public-Safety Communications Officials International (APCO), or the National Association of Business and Educational Radio (NABER). The building owner shall retain all test records on the inspected premises and a copy shall be submitted to the Fire Department officials in accordance with Section 510 of the California Fire Code.

Adequate radio coverage shall include all of the following:

- a. A minimum signal strength of 95 dBm available in 90% of the area of each floor of the building when transmitted from the closest City of Roseville Radio Communication site.
 - b. A minimum signal strength of 95 dBm received at the closest City of Roseville Communication site when transmitted from 90% of the area of each floor of the building.
 - c. The frequency range that must be supported shall be 821-824 MHz and 866-869 MHz.
 - d. A 100 % reliability factor. (Fire, Police)
51. The Electric Department requires the submittal of the following information in order to complete the final electric design for the project:
- a. one (1) set of improvement plans
 - b. load calculations
 - c. electrical panel one-line drawings (Electric)
52. All on-site external lighting shall be installed and directed to have no off-site glare. Lighting within the parking areas and pedestrian walkways shall provide a maintained minimum of one (1) foot candle, and 0.5 foot candle of light, respectively. All exterior light fixtures shall be vandal resistant. (Planning and Police)
53. The parking lot shall have properly posted signs that state the use of the parking area is for the exclusive use of employees and customers of this project. (See California Vehicle Code Sections 22507.8, 22511.5, 22511.8, 22658(a), and the City of Roseville Municipal Code Section 11.20.110). The location of the signs shall be shown on the approved site plan. (Planning and Police)
54. Fencing shall be installed to protect the existing trees adjacent to the proposed swale, to restrict vehicle or equipment parking. (Parks, Recreation, and Libraries)
55. It is the developer's responsibility to notify PG&E of any work required on PG&E facilities. (PG&E)

DURING CONSTRUCTION & PRIOR TO ISSUANCE OF OCCUPANCY PERMITS:

56. Any backflow preventers visible from the street shall be painted green to blend in with the surrounding landscaping. The backflow preventers shall be screened with landscaping and shall comply with the following criteria:
- a. There shall be a minimum clearance of four feet (4'), on all sides, from the backflow preventer to the landscaping.
 - b. For maintenance purposes, the landscaping shall only be installed on three sides and the plant material shall not have thorns.
 - c. The control valves and the water meter shall be physically unobstructed.
 - d. The backflow preventer shall be covered with a green cover that will provide insulation. (Planning, Environmental Utilities)

57. The following easements shall be provided by separate instrument and shown on the site plan, unless otherwise provided for in these conditions:
- a. Water, sewer, and reclaimed water easements.
 - b. A public access and maintenance easement shall be provided over the bike trail. The width of the easement shall be 20 feet or as otherwise determined by the City Engineer. (Engineering, Alternative Transportation)
 - c. A private drainage easement, minimum 10 feet in width, shall be recorded across the adjacent Parcel 3 to allow the site to drain to the open space. (Engineering)
58. Easement widths shall comply with the City's Improvement Standards and Construction Standards. Separate document easements required by the City shall be prepared in accordance with the City's "Policy for Dedication of Easements to the City of Roseville". All legal descriptions shall be prepared by a licensed land Surveyor. All existing public utility, electric, water, sewer and reclaimed water easements shall be maintained unless otherwise authorized by these conditions of approval. (Public Works, Environmental Utilities, Electric)
59. Inspection of the potable water supply system on new commercial/ industrial/ office projects shall be as follows:
- a. The Environmental Utilities Inspector will inspect all potable water supply up to the downstream side of the backflow preventer.
 - b. The property owner/applicant shall be responsible for that portion of the water supply system from the backflow preventer to the building. The builder/contractor shall engage a qualified inspector to approve the installation of this portion of the water supply. The Building Division will require from the builder/ contractor, a written document certifying that this portion of the potable water supply has been installed per improvement plans and in accordance with the Uniform Plumbing Code. This certificate of compliance shall be submitted to the Building Division before a temporary occupancy or a building final is approved.
 - c. The building inspectors will exclusively inspect all potable water supply systems for the building from the shutoff valve at the building and downstream within the building. (Building, Environmental Utilities)
60. All improvements being constructed in accordance with the approved grading and improvement plans shall be accepted as complete by the City. (Engineering)
61. The words "traffic control appurtenances" shall be included in the list of utilities allowed in public utilities easements (PUE's) located along public roadways. (Engineering)
62. The applicant/developer shall prepare a Transportation Systems Management (TSM) Agreement for VillaSport Club to be reviewed and approved by the City Manager. (Public Works, Alternative Transportation)
63. Water, sewer and reclaimed water shall be constructed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. (Environmental Utilities)
64. All water backflow devices shall be tested and approved by the Environmental Utilities Department. (Environmental Utilities)
65. **Restaurants or other Food Service Establishment (FSE).** The applicant shall design for installation and/or install an exterior grease interceptor if the proposed business could potentially discharge substances containing fats, oils and grease (FOG) into the sewer system. The grease interceptor shall be adequate to separate and remove FOG contained in the wastewater from FSE's prior to discharge to the public sewer. (Environmental Utilities)

66. In the event an exterior grease interceptor cannot be installed due to space limitation, the developer shall install a grease trap, per City Standards, that will mechanically separate the FOG contained in the wastewater from the FSE prior to discharge to the public sewer. (Environmental Utilities)
67. Pursuant to the Municipal Code, the applicant shall apply for and obtain a FOG waste discharge permit (FOG WDP) from the Environmental Utilities Industrial Waste Division prior to occupancy or prior to discharging waste to the public sewer. The applicant shall submit information required by the Environmental Utilities Department for evaluation, including but not limited to: site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, FOG control device, grease interceptor or other pretreatment equipment and appurtenances by size, location and elevation. Additional information related to the applicant's business operations and potential discharge may be requested to properly evaluate the FOG WDP application. (Environmental Utilities)
68. All Electric Department facilities, including streetlights where applicable, shall be designed and built to the "City of Roseville Specifications for Commercial Construction." (Electric)
69. The City of Roseville Electric Department has electrical construction charges which are to be paid by the developer and which are explained in the City of Roseville "Specification for Commercial Construction." These charges will be determined upon completion of the final electrical design. (Electric)
70. Any relocation, rearrangement, or change of existing electric facilities due to this development shall be at the developer's expense. (Electric)
71. Any facilities proposed for placement within public/electric utility easements shall be subject to review and approval by the Electric Department before any work commences in these areas. This includes, but is not limited to, landscaping, lighting, paving, signs, trees, walls, and structures of any type. (Electric)
72. All electric metering shall be directly outside accessible. This can be accomplished in any of the following ways:
 - a. Locate the metered service panel on the outside of the building.
 - b. Locate the metered service panel in a service room with a door that opens directly to the outside. The developer will be required to provide a key to the door for placement in a lock box to be installed on the outside of the door. Any doors leading from the service room to other areas of the building shall be secured to prohibit unauthorized entry. (Electric)
73. One 3/4" conduit with a 2-pair phone line shall be installed from the buildings telephone service panel to the meter section of the customer's electrical switchgear or panel. (Electric)
74. It is the responsibility of the developer to insure that all existing electric facilities remain free and clear of any obstruction during construction and when the project is complete. (Electric)

OTHER CONDITIONS OF APPROVAL:

75. Signs shown on the elevations are not approved as part of the Design Review Permit. A Sign Permit is required for all project signs. (Planning)
76. Following the installation of the landscaping, all landscape material shall be maintained in a healthy and weed free condition; dead plant material shall be replaced immediately. All trees shall be maintained and pruned in accordance with the accepted practices of the International Society of Arboriculture (ISA). (Planning)
77. The City reserves the right to restrict vehicle turning movements within the public right-of-way in the future if deemed necessary by the City Engineer. (Engineering)

78. The required width of fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. Minimum required widths and vertical clearances established by the Fire Code shall be maintained at all times during construction. Closure of accesses for fire apparatus by gates, barricades and other devices shall be prohibited unless approved by the Fire Chief. (Fire)
79. Temporary aboveground storage tanks may be used at construction sites for diesel fuel only and shall not exceed 1,000 gallon capacity. Tanks shall comply with all provisions found within the Fire Code. A Fire Department Permit shall be obtained prior to tank installation. The permit shall expire after 90 days from the date of issuance, unless extended by the Fire Chief. (Fire)
80. If site survey or earth moving work results in the discovery of hazardous materials in containers or what appears to be hazardous wastes released into the ground, the contractor or person responsible for the building permit must notify the Roseville Fire Department immediately. A representative from the Fire Department will make a determination as to whether the incident is reportable or not and if site remediation is required. (Fire)
81. The location and design of the gas service shall be determined by PG&E. The design of the gas service for this project shall not begin until PG&E has received a full set of City approved improvement plans for the project. (PG&E)
82. The project is subject to the noise standards established in the City's Noise Ordinance. In accordance with the City's Noise Ordinance project construction is exempt between the hours of seven a.m. and seven p.m. Monday through Friday, and between the hours of eight a.m. and eight p.m. Saturday and Sunday. Provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order. (Building)
83. The developer (or designated consultant) shall certify that the building foundation location has been placed according to all approved setback requirements shown on the approved site plan. The developer shall prepare a written statement confirming building placement and provide an original copy to the City Building Division Field Inspector at the time of or prior to the foundation inspection. (Building)
84. Prior to Certificate of Occupancy, the applicant may apply for a Temporary Occupancy (TO) of the building. If a TO is desired, the applicant must submit a written request to the Building Division a minimum of thirty (30) days prior to the expected temporary occupancy date and shall include a schedule for occupancy and a description of the purpose for the Temporary Occupancy. (Building)
85. Concurrent with submittal for plan check and prior to a request for final building inspection, the applicant may request City approval of an occupancy phasing plan to allow individual or multiple building occupancies. This request shall be made in writing to the Building Department and shall include 10 copies of the following:
 - a. A description of measures that will be undertaken to minimize conflict between residents/ building occupants and construction traffic (e.g. fencing, etc.);
 - b. A phasing plan showing the proposed buildings, internal roads and access routes, landscaping, trash enclosure locations, and any other improvements planned for each phase; and
 - c. Estimated time frame for each phase and a specific date for the first phase. (Planning, Building)
86. A Reciprocal Access Agreement or Easement shall be recorded between the proposed project and the City property to the southeast. (Engineering)

Note to Applicant and/or Developer: Please contact the Planning Division staff at (916) 774-5276 prior to the Commission meeting if you have any questions on any of the recommended conditions for your project. If you challenge the decision of the Commission in court, you may be limited to raising only those issues which you or someone else raised at the public hearing held for this project, or in written correspondence delivered to the Planning Manager at, or prior to, the public hearing.



COUNCIL COMMUNICATION

CC #: 8654

File #: 0400-04-09-1

Title: West Roseville Specific Plan Fiddymment Ranch - Development Agreement Amendment

Contact: Ron Miller 916-774-5282 rmiller@roseville.ca.us

Meeting Date: 8/2/2017

Item #: 7.2.

RECOMMENDATION TO COUNCIL

The Planning Commission and City Staff recommend the City Council adopt the five (5) findings of fact and introduce for first reading the Ordinance approving the Development Agreement Amendment (DAA) - West Roseville Specific Plan (WRSP) Fiddymment Ranch Development Agreement Amendment #7

BACKGROUND

The West Roseville Specific Plan (WRSP) was approved by the Roseville City Council on February 4, 2004. The Fiddymment Ranch Property includes ±1,611 acres in the northwest portion of the WRSP area.

Development Agreement Amendment #5 (DAA #5) to the Development Agreement By and Between the City of Roseville and Roseville Fiddymment Land Venture, LLC Relative to the West Roseville Specific Plan (Fiddymment Ranch DA) was approved by City Council in May 2014 (Ordinance No. 5337), concurrently with the approval of the Fiddymment Ranch West Roseville Specific Plan Amendment #3 (SPA 3) (Planning File #2013PL-005). DAA #5 includes a provision that assesses a Placer County Traffic Mitigation Fee and Downtown Benefit Fee on the final 1,661 dwelling units to be constructed in the Fiddymment Ranch Phases 2 & 3 development area. DAA #7 to the Fiddymment Ranch DA proposes to modify the sequence of residential lots subject to the Placer County Traffic Mitigation Fee and Downtown Benefit Fee. The fees will continue to be applied to the final 1,661 dwelling units within Fiddymment Ranch Phases 2 & 3.

Summary Evaluation:

The SPA 3 project included a phasing plan identifying the order in which Fiddymment Ranch Phases 2 and 3 were anticipated to build out. The plan identified the specific neighborhoods that the final 1,661 residential units were located. Subsequent to approval of SPA 3, further engineering studies identified additional capacity in the Fiddymment Ranch east sewer crossing of Pleasant Grove Creek that allowed a portion of Village F-13 to be advanced earlier than

anticipated in the SPA 3 phasing plan. This resulted in a modification to the Fiddymment Ranch phasing plan.

The proposed DAA #7 would modify the DA such that the Placer County Traffic Mitigation Fee and Downtown Benefit Fee would continue to be assessed on the final 1,661 dwelling units as originally anticipated. Fiddymment Ranch DA Sections 3.5.17.1 (Placer County Traffic Mitigation Fee) and 3.15.15 (Downtown Benefit Fee) have been modified to reflect phasing plan modifications that impacted the location of the final 1,661 dwelling units.

Planning Commission Action:

The Planning Commission held a public hearing regarding the proposed DAA #7 on June 22, 2017. The Commission voted unanimously to recommend that the City Council approve the proposed Development Agreement Amendment.

FISCAL IMPACT

The proposed Fiddymment Ranch DA Amendment #7 does not result in a direct fiscal impact to the General Fund. The anticipated revenues from the Placer County Traffic Mitigation Fee and Downtown Benefit Fee will not change.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not Applicable.

ENVIRONMENTAL REVIEW

The project is exempt from environmental review pursuant to Section 15061(b) (3) (General Rule) of the California Environmental Quality Act (CEQA) and Section 305 of the City of Roseville CEQA Implementing Procedures.

Respectfully Submitted,

Ron Miller, Associate Planner

Kevin Payne, Development Services Director



Rob Jensen, City Manager

ATTACHMENTS:

Description

Attachment 1-Planning Commission Staff Report, Attachments & Exhibits ordinance

Exhibit A - Fiddymont DA Amendment #7 with exhibits



**PLANNING DIVISION STAFF REPORT
PLANNING COMMISSION MEETING**

JUNE 22, 2017

Prepared by: Ron Miller, Associate Planner

ITEM IV-B: DEVELOPMENT AGREEMENT AMENDMENT – WEST ROSEVILLE SPECIFIC PLAN (WRSP) FIDDYMENT RANCH DA AMENDMENT #7 – 4270 CRAWFORD PW – FILE# PL16-0442

REQUEST

The applicant requests approval of a Development Agreement Amendment (DAA) to modify the sequence of residential lots subject to the Placer County Traffic Mitigation Fee and Downtown Benefit Fee. The fees will continue to be applicable to the final 1,661 dwelling units within Fiddymment Ranch Phases 2 & 3. This DAA will be the seventh (7th) amendment to the Fiddymment Land Venture Development Agreement and is necessary due to changes in subdivision construction phasing.

Owner: David Ash, ATC Realty One, LLC

Applicant: Stephen Hicks, Signature Management Company

SUMMARY RECOMMENDATION

The Planning Department recommends that the Planning Commission take the following actions:

- A. Recommend that the City Council adopt the five findings of fact and approve the SEVENTH AMENDMENT OF DEVELOPMENT AGREEMENT BY AND BETWEEN THE CITY OF ROSEVILLE AND ROSEVILLE FIDDYMENT LAND VENTURE, LLC.

SUMMARY OF OUTSTANDING ISSUES

There are no outstanding issues associated with this request. The applicant and all affected City Departments have reviewed and are in agreement with the proposed DAA.

BACKGROUND

The WRSP was approved by the Roseville City Council on February 4, 2004. The WRSP guides development on ±3,162 acres located west of Fiddymment Road in the City of Roseville. The WRSP area is comprised of two distinct large landholdings: the Westpark Property, which consists of ±1,413 acres in the southwest portion of the WRSP area, and the Fiddymment Ranch Property, which includes ±1,611 acres in the northwest portion of the WRSP area. The WRSP is planned as a residential community with a wide range of residential densities and housing types. Other land uses in the plan area include recreation, open space, public/quasi-public (including school sites), commercial, business professional, and industrial. Since the original WRSP approval in 2004, the City of Roseville has processed several amendments to the specific plan.

DAA #5 to the Development Agreement By and Between the City of Roseville and Roseville Fiddymment Land Venture, LLC Relative to the West Roseville Specific Plan was approved by City Council in May 2014 (Ordinance No. 5337), concurrently with the approval of the Fiddymment Ranch West Roseville Specific Plan Amendment #3 (SPA 3 – Planning File #2013PL-005). DAA #5 includes a provision that assesses a Placer County Mitigation Fee and Downtown Benefit Fee against the final 1,661 Residential Units to be constructed in the Fiddymment Ranch Phases 2 & 3 development area.

DAA #6 to the Development Agreement By and Between the City of Roseville and Roseville Fiddymment Land Venture, LLC Relative to the West Roseville Specific Plan was approved by City Council in August 2014 (Ordinance No. 5385). DAA #6 included changes to text and maps relating to zoning and land use changes associated with the Oakbriar residential subdivision project (WRSP Parcel F-23 –File #PL13-0241).

The terms of the DA stipulate that it must be amended to remain consistent with the legislative actions described above. Accordingly, DAA#6 includes revisions to the land use acreages and units.

The Fiddymment Development Agreement (DA) Amendment #7 was originally scheduled for the Planning Commission's March 23, 2017 meeting. However, subsequent to mailing of the Public Hearing Notice, it was determined that the DA Amendment text did not reflect multiple property owners within the DA Amendment #7 property, nor address necessary changes to DA Section 3.5.17.1, Placer County Traffic Mitigation Fee . Therefore, the proposed DA Amendment #7 was removed from the March 23, 2017 agenda and rescheduled for the June 22, 2017 Planning Commission Meeting.

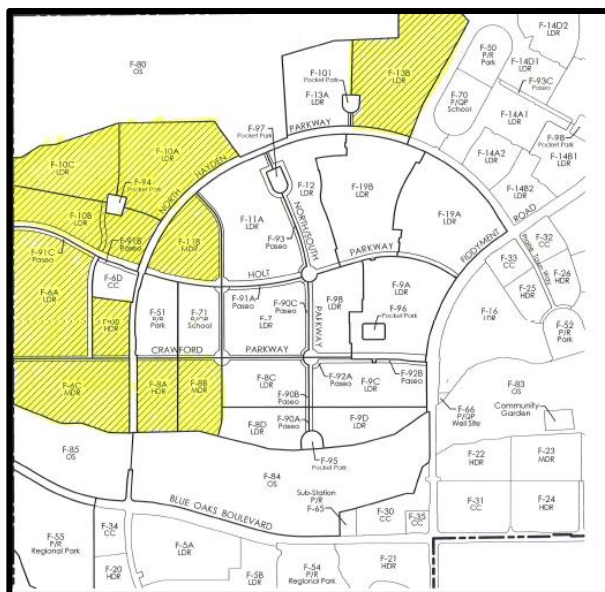
EVALUATION

The WRSP Development Agreements (DAs) are binding contracts with a 20-year term that address topics related to the development of the project area. The DAs also identify the various obligations of the landowners (i.e. dedications, improvements, financing) and obligations of the City. The Traffic Mitigation Fee and Downtown Benefit Fee obligations included in the Fiddymment Ranch DAA #5 were negotiated to offset traffic and fiscal impacts associated with the 1,661 unit increase within the plan area.

The Fiddymment Ranch SPA 3 project included a phasing plan that identified the order in which Fiddymment Ranch Phases 2 and 3 were anticipated to build out. This phasing plan identified the specific neighborhoods that the final 1,661 residential units were located. After the Fiddymment Ranch SPA 3 project and DAA #5 were approved, further engineering studies identified additional capacity in the Fiddymment Ranch east sewer crossing of Pleasant Grove Creek that allowed a portion of Village F-13 to be advanced earlier than anticipated in the SPA 3 phasing plan. This resulted in a modification to the Fiddymment Ranch phasing plan.

The proposed Development Agreement Amendment #7 (DAA #7) would modify the DA such that the Placer County Traffic Mitigation Fee and Downtown Benefit Fee would continue to be assessed on the final 1,661 Residential Units as originally anticipated (see Figures 1 & 2). In order to accomplish this adjustment, Sections 3.5.17.1 (Placer County Traffic Mitigation Fee) and 3.15.15 (Downtown Benefit Fee) have been modified to reflect phasing plan modifications that impacted the location of the final 1,661 residential units. The figures below reflect the parcels that were previously subject to these fees (Figure 1) and the proposed parcels that would be subject to the fees if proposed changes to the DA are adopted.

Figure 1 – Existing Placer County Traffic Mitigation & Downtown Benefit Fee Parcels



CONCLUSION

The proposed DAA does not change the number of dwelling units subject to the Placer County Traffic Mitigation Fee or Downtown Development Fee obligations, nor the Fee amounts. As a result, the City and Placer County will continue to receive the exact same fees once building permits are issued for these units. As discussed above, the proposed Amendment will solely modify the sequence of residential lots subject to the Fees. The Fees will continue to be applicable to the final 1,661 dwelling units within Fiddymment Ranch Phases 2 & 3. The proposed Amendment has been reviewed by all affected departments and the changes have been found to be acceptable to all parties and are consistent with the required findings.

Chapter 19.84 of the Zoning Ordinance requires the Planning Commission to make a recommendation to City Council on the Development Agreement Amendment following consideration of five findings. The required findings are listed below in ***bold italics***. As discussed above, staff finds that all five findings can be made and supports approval of the proposed DAA.

- 1. The Development Agreement is consistent with the objectives, policies, programs and land use designations of the City of Roseville General Plan and West Roseville Specific Plan;***
- 2. The Development Agreement is consistent with the provisions of the City of Roseville Zoning Ordinance;***
- 3. The Development Agreement is in conformance with the public health, safety and welfare;***
- 4. The Development Agreement will not adversely affect the orderly development of the property or the preservation of property values; and***
- 5. The provisions of the Development Agreement will provide sufficient benefit to the City to justify entering into the Agreement.***

ENVIRONMENTAL DETERMINATION

The project is exempt from environmental review pursuant to Section 15061(b) (3) (General Rule) of the California Environmental Quality Act (CEQA) and Section 305 of the City of Roseville CEQA Implementing Procedures.

RECOMMENDATION

The Planning Department recommends that the Planning Commission take the following actions:

Recommend that the City Council adopt the five findings of fact and approve the **DEVELOPMENT AGREEMENT AMENDMENT – WEST ROSEVILLE SPECIFIC PLAN (WRSP) FIDDYMENT RANCH DA AMENDMENT #7 – 4270 CRAWFORD PW – FILE# PL16-0442**

ATTACHMENTS

- Existing Downtown Benefit Fee Parcels – DAA #5
- Proposed Downtown Benefit Fee Parcels – DAA #7

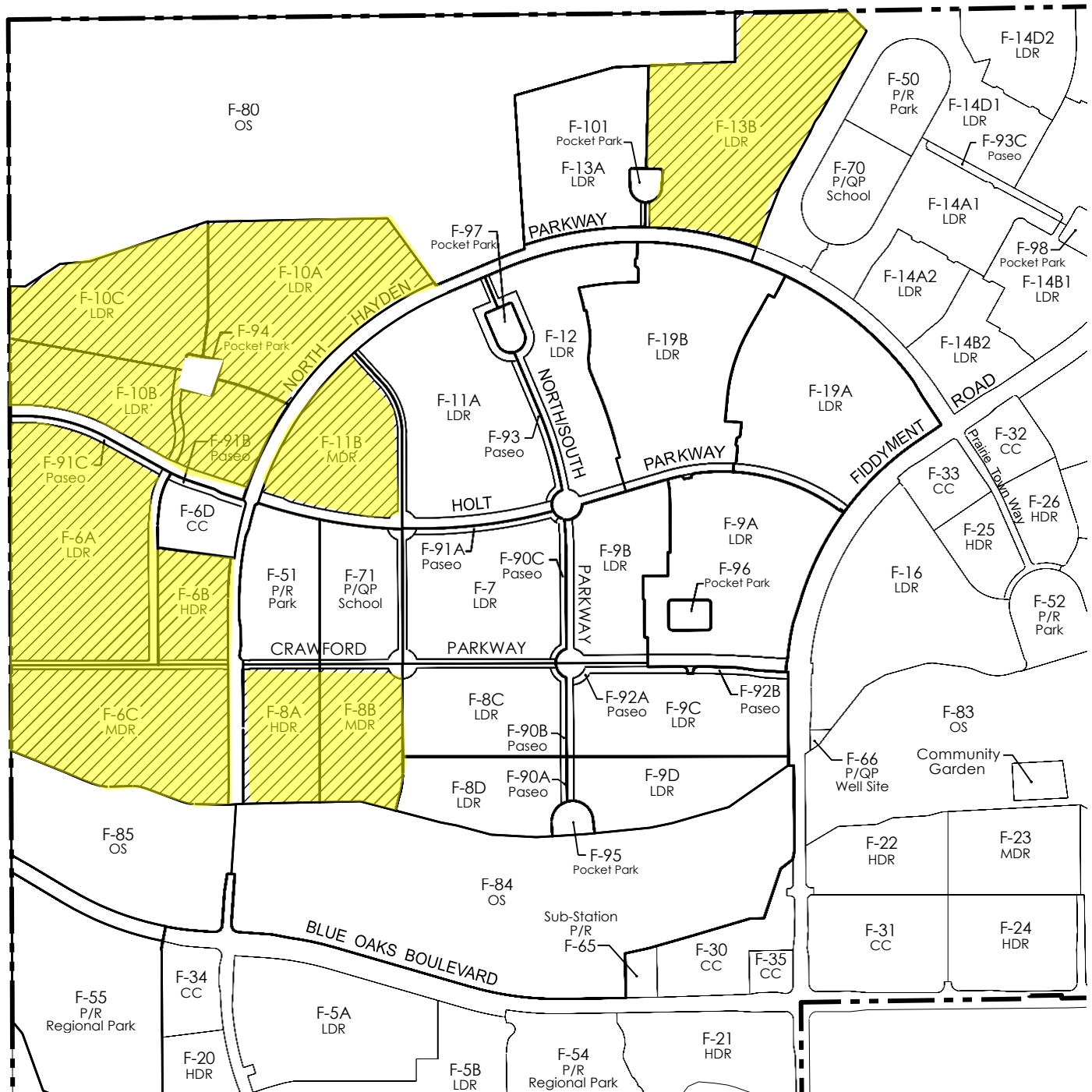
EXHIBIT

- A. Seventh Amendment of Development Agreement (with Attachments and Exhibits) by and Between the City of Roseville and Roseville Fiddymment Land Venture, LLC, Relative to the West Roseville Specific Plan

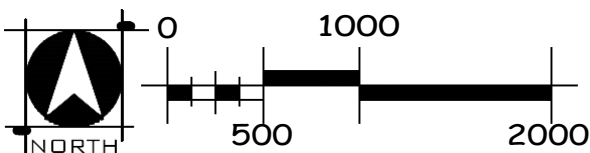
Note to Applicant and/or Developer: Please contact the Planning Division staff at (916) 774-5276 prior to the Commission meeting if you have any questions on any of the recommended conditions for your project. If you challenge the decision of the Commission in court, you may be limited to raising only those issues which you or someone else raised at the public hearing held for this project, or in written correspondence delivered to the Planning Manager at, or prior to, the public hearing.

EXISTING DOWNTOWN BENEFIT PARCELS ROSEVILLE, CALIFORNIA

MARCH 3, 2017



NOTE: PLANNING AREA F-13B, ONLY 95 UNITS ARE SUBJECT TO THE DOWNTOWN BENEFIT FEE.



[illegible]

Recording Requested by:

CITY OF ROSEVILLE

When Recorded Mail to:

City Clerk

City of Roseville

311 Vernon Street

Roseville, CA 95678

Exempt from Recording Fees Pursuant to

Cal. Gov. Code §27383

(This Space Reserved for Recorder's Use)

**SEVENTH AMENDMENT OF DEVELOPMENT AGREEMENT BY AND BETWEEN
THE CITY OF ROSEVILLE AND ROSEVILLE FIDDYMENT LAND
VENTURE, LLC, RELATIVE TO THE WEST ROSEVILLE SPECIFIC PLAN**

This Seventh Amendment of Development Agreement (this "Seventh Amendment") is entered into this ____ day of ____, 2017, by and among the CITY OF ROSEVILLE, a municipal corporation ("City") and ATC REALTY ONE, LLC, a Delaware limited liability company and FIDDYMENT 116 LOTS, LLC, a California limited liability company (collectively, "Developer"), pursuant to Sections 65864 through 65869.5 of the Government Code of California.

WITNESSETH:

A. Developer's predecessor in interest, Roseville/Fiddymment Land Venture, LLC ("RFLV") and City entered into a Development Agreement (the "Development Agreement") which was approved by the City Council of City on February 23, 2004, and recorded on June 21, 2004, in the Official Records of Placer County as Document No. 2004-0080708. The Development Agreement governs a portion of the West Roseville Specific Plan Area ("Specific Plan", "WRSP" or "Plan Area"). Except as otherwise defined herein, all capitalized terms used herein shall have the meanings ascribed thereto in the Development Agreement.

B. Certain terms of settlement agreements arising out of two lawsuits regarding the WRSP (Catalano v. Roseville and Defenders of Wildlife v. Norton) imposed additional conditions on the WRSP that require implementation through amendment of the Development Agreement.

C. On January 4, 2006, City and RFLV, by Ordinance No. 4324, entered into the First Amendment of the Development Agreement ("First Amendment"). The First

Amendment was recorded on March 2, 2006, in the Official Records of Placer County as Instrument No. 2006-0022488.

D. On June 18, 2008, City and RFLV, by Ordinance No. 4668, entered into the Second Amendment of the Development Agreement ("Second Amendment"). The Second Amendment was recorded on July 22, 2008, in the Official Records of Placer County as Instrument No. 2008-0059263.

E. On September 2, 2009, City and RFLV, by Ordinance No. 4767, entered into the Third Amendment of the Development Agreement ("Third Amendment"). The Third Amendment was recorded on September 10, 2009, in the Official Records of Placer County as Instrument No. 2009-0078876.

F. On July 17, 2013, City and ATC Realty One, LLC, by Ordinance No. 5211, entered into the Fourth Amendment of the Development Agreement ("Fourth Amendment"). The Fourth Amendment was recorded on August 20, 2013, in the Official Records of Placer County as Instrument No. 2013-0082174.

G. On May 7, 2014, City and ATC Realty One, LLC, by Ordinance No. 5337, entered into the Fifth Amendment of the Development Agreement ("Fifth Amendment"). The Fifth Amendment was recorded on June 18, 2014, in the Official Records of Placer County as Instrument No. 2014-0040699.

H. On August 6, 2014, City and West Roseville Development Company, Inc., by Ordinance No. 5385, entered into the Sixth Amendment of the Development Agreement ("Sixth Amendment"). The Sixth Amendment was recorded on August 14, 2014, in the Official Records of Placer County as Instrument No. 2014-0055752.

I. This Seventh Amendment affects portions of the property subject to the Development Agreement that is owned by each party comprising Developer within the Plan Area (the "Seventh Amendment Property"), which portions are described in Exhibit "A-1", and depicted in Exhibit "A-2" attached to this Seventh Amendment, and shall run with the land described therein.

J. This Seventh Amendment is authorized by Section 1.4 of the Development Agreement.

NOW THEREFORE, THE PARTIES MUTUALLY AGREE AS FOLLOWS:

1. AMENDMENT OF DEVELOPMENT AGREEMENT. The following sections of the Development Agreement are hereby amended as follows:

a. REVISED SECTION 3.5.17.1. Section 3.5.17.1 of the Development Agreement is hereby amended in its entirety to read as follows:

"3.5.17.1 Placer County Traffic Mitigation Fee. As more particularly described below, Developer agrees to pay to City at the time building permits are issued within the planning areas described below, a fee of \$125 per DUE (the "Placer County Traffic Mitigation Fee") to provide fair share funding to Placer County as full mitigation of impacts on the Placer County roadway circulation system for roadways in the adopted County Capital Improvement Program at the date of approval of this Agreement that are north of Interstate 80, west of Highway 65, and outside of County approved specific plan areas (excluding Watt Avenue (Santucci Boulevard) and the extension of Vista Grande Boulevard as provided in Section 3.5.15 above) for the additional 1,189 LDR and MDR units and the 472 HDR units. Once established, the Placer County Road Impact Fee shall be adjusted annually after the completion of annexation proceedings for the Specific Plan by the percentage of change in the CCI.

The Placer County Traffic Mitigation Fee will be collected within the following planning areas of the Seventh Amendment Property consistent with Large Lot Tentative Map PL16-0364, and as shown on attached Exhibit "B": F-6A1, F-6A2, F-6B, F-6C1, F-6C2, F-8A, F-8B, F-10A1, F-10A2, F-10B1, F-10B2, F-10C1, F-10C2, F-11B, F-13A-1, F-13A-2, and F-13B-3 (14 units). Planning area F-13B-3 is currently approved for 45 units. Concurrently with the City's approval of a small lot final subdivision map for planning area F-13B-3, lot numbers 1 through 14 within F-13B-3 will be subject to the Placer County Traffic Mitigation Fee."

b. REVISED SECTION 3.15.15. Section 3.15.15 of the Development Agreement is hereby amended in its entirety to read as follows:

"3.15.15 Downtown Benefit Fee. Developer acknowledges and agrees to pay to City at the time building permits are issued within the planning areas described below, the Downtown Benefit Fee, for the additional 1,189 LDR and MDR units and the 472 HDR units being added to the Fifth Amendment Property in connection with this Fifth Amendment. The Downtown Benefit Fee is \$5,000 per unit.

The Downtown Benefit Fee will be collected within the following planning areas of the Seventh Amendment Property consistent with Large Lot Tentative Map PL16-0364, and as shown on attached Exhibit "B": F-6A1, F-6A2, F-6B, F-6C1, F-6C2, F-8A, F-8B, F-10A1, F-10A2, F-10B1, F-10B2, F-10C1, F-10C2, F-11B, F-13A-1, F-13A-2, and F-13B-3 (14 units). Planning area F-13B-3 is currently approved for 45 units. Concurrently with the City's approval of a small lot final subdivision map for planning area F-13B-3, lot numbers 1 through 14 within F-13B-3 will be subject to the Downtown Benefit Fee."

2. **CONSISTENCY WITH GENERAL PLAN.** The City Council has found and determined that this Seventh Amendment of the Development Agreement is consistent with the General Plan and the West Roseville Specific Plan.

3. **AMENDMENT.** This Seventh Amendment amends, but does not replace or supersede, the Development Agreement, except as specified herein. As amended hereby, the Development Agreement remains in full force and effect.

4. **FORM OF AMENDMENT.** This Seventh Amendment is executed in two, duplicate originals, each of which is deemed to be an original.

[Signature Page Follows]

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Seventh Amendment in duplicate by its City Manager and attested to by its City Clerk under the authority of Ordinance No. _____, adopted by the Council of the City of Roseville on the _____ day of _____, 2017.

CITY OF ROSEVILLE,
a municipal corporation

ATC REALTY ONE, LLC,
a Delaware limited liability company

By: _____
Rob Jensen
City Manager

By: _____
Name: _____
Title: _____

ATTEST:

FIDDYMENT 116 LOTS, LLC, a
California limited liability company

By: _____
Sonia Orozco
City Clerk

By: _____
Name: _____
Title: _____

APPROVED AS TO FORM:

By: _____
Robert R. Schmitt
City Attorney

APPROVED AS TO SUBSTANCE:

By: _____
Kevin Payne
Development Services Director

EXHIBIT 'A-1'
WRSP Fiddymment Ranch DAA No. 7
Description of Properties Subject to DAA No. 7

Properties owned by ATC Reality One, LLC:

All that real property located in the City of Roseville, County of Placer, State of California as shown on Exhibit A-2 attached and described as follows:

PARCEL 1

All of the Designated Remainder, as shown on that certain map titled "Final Map of Fiddymment Ranch Phase 2, Large Lot Subdivision", filed in Book BB of Maps, at Page 24, Official Records of Placer County.

EXCEPTING THEREFROM,

All of that certain map titled "Final Map of Fiddymment Ranch – Phase 2, F-13B1", filed in Book DD of Maps, at Page 73, Official Records of Placer County.

FURTHER EXCEPTING THEREFROM,

All of that certain parcel of land conveyed to the City of Roseville in a Grant Deed recorded September 16, 2015 as Document No. 2015-0081570, Official Records of Placer County.

APN: 492-010-080-000

PARCEL 2

All of the Designated Remainder, as shown on that certain map titled "Final Map of Fiddymment Ranch Phase 2, Villages F-9 & F-19", filed in Book DD of Maps, at Page 9, Official Records of Placer County.

APN: 492-010-057-000

Properties Owned by Fiddymment 116 Lots, LLC:

All that real property located in the City of Roseville, County of Placer, State of California as shown on Exhibit A-2 attached and described as follows:

Lots 1 through 75, inclusive, and Lot D, all as shown on that certain map titled "Final Map of Fiddymment Ranch – Phase 2, F-13B1", filed in Book DD of Maps, at Page 73, Official Records of Placer County.

APNs:

403-010-001-000 through 403-010-029-000;

403-020-001-000 through 403-020-046-000; 492-010-079-000

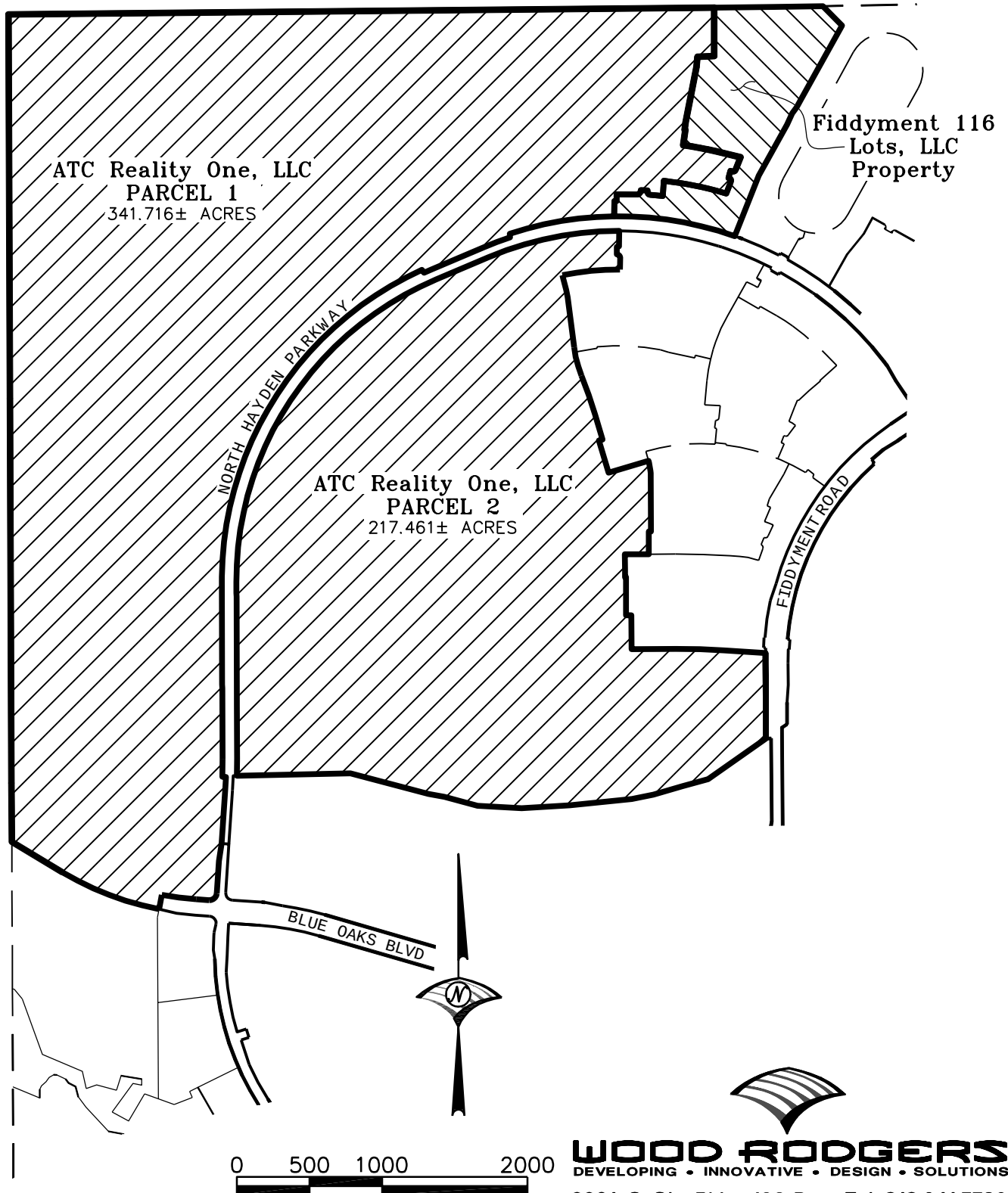
May 16, 2017

END OF DESCRIPTION

PREPARED BY WOOD RODGERS, INC
SACRAMENTO, CALIFORNIA

EXHIBIT 'A-2'

WRSP FIDDYMENT RANCH DAA NO. 7
PROPERTIES SUBJECT TO DAA NO. 7



0 500 1000 2000

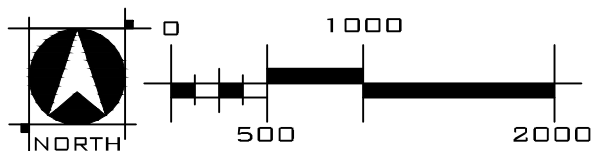
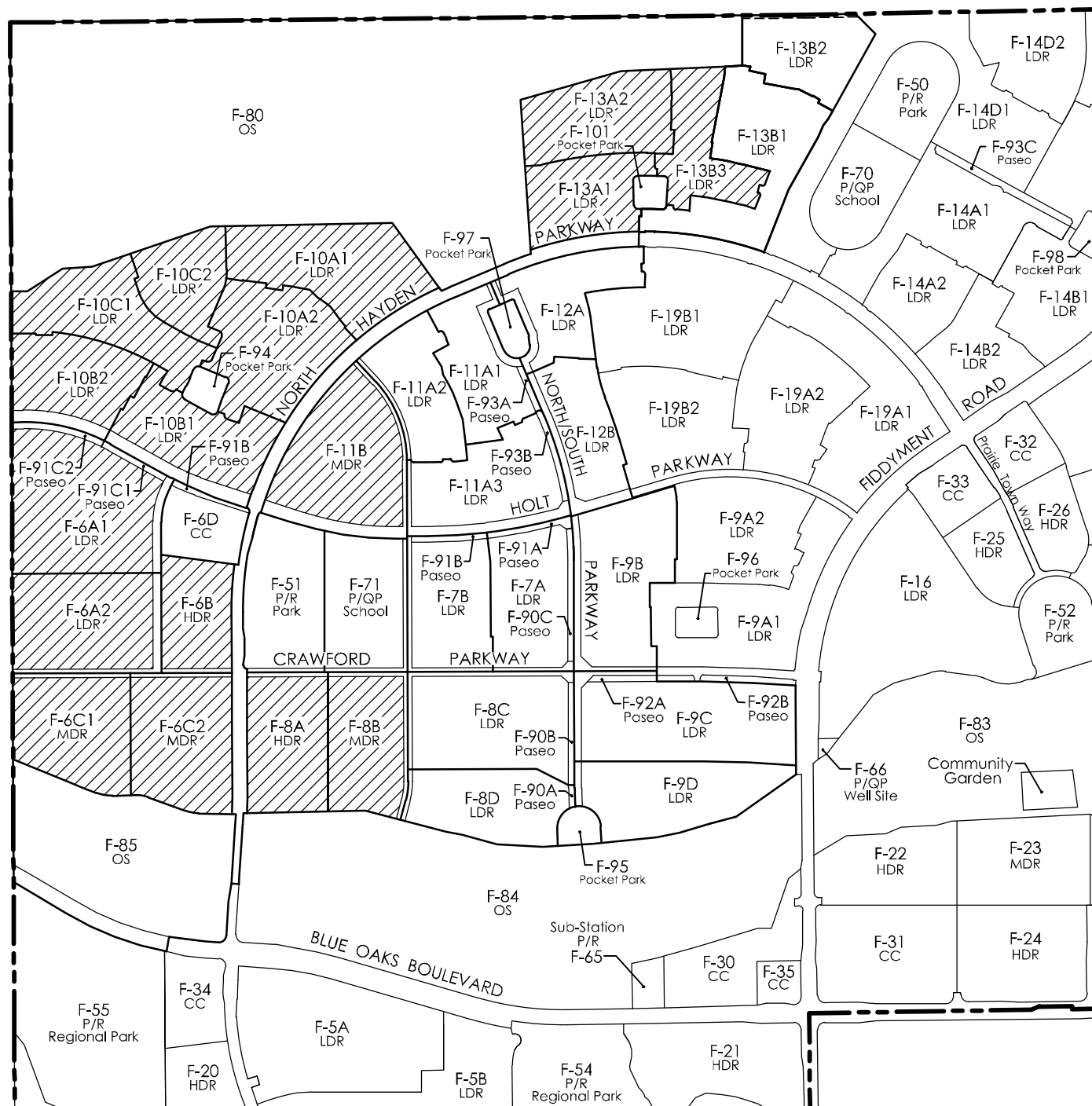
SCALE: 1" = 1000'

WOOD RODGERS
DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS

3301 C St., Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

MAY 16, 2017 1027.152 SHEET 1 OF 1

MAY 17, 2017



BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

3301 C St, Bldg. 100-B
Sacramento, CA 95816

Tel 916.341.7760
Fax 916.341.7767

ORDINANCE NO. _____

ORDINANCE OF THE COUNCIL OF THE CITY OF ROSEVILLE
ADOPTING A SEVENTH AMENDMENT TO DEVELOPMENT AGREEMENT
REGARDING THE WEST ROSEVILLE SPECIFIC PLAN,
AND AUTHORIZING THE CITY MANAGER TO
EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

THE CITY OF ROSEVILLE ORDAINS:

SECTION 1. In accordance with Chapter 19.84 of Title 19 of the Roseville Municipal Code (the Zoning Ordinance) of the City of Roseville, the City Council has received the recommendation of the Planning Commission that the City of Roseville enter into a Seventh Amendment to Development Agreement by and between the City of Roseville and ATC Realty One, LLC (hereinafter, the “Seventh Amendment to Development Agreement”).

SECTION 2. The Council of the City of Roseville has reviewed the findings of the Planning Commission recommending approval of the Seventh Amendment to Development Agreement, and makes the following findings:

1. The Seventh Amendment to Development Agreement is consistent with the objectives, policies, programs and land use designations specified in the City of Roseville General Plan and the West Roseville Specific Plan;
2. The Seventh Amendment to Development Agreement is consistent with the City of Roseville Zoning Ordinance;
3. The Seventh Amendment to Development Agreement is in conformance with the public health, safety and welfare;
4. The Seventh Amendment to Development Agreement will not adversely affect the orderly development of the property or the preservation of property values; and
5. The Seventh Amendment to Development Agreement will provide sufficient benefit to the City to justify entering into said Amendment.

SECTION 3. The Seventh Amendment to Development Agreement, a copy of which is on file in the City Clerk’s Department and incorporated herein by reference, is hereby approved and the City Manager is authorized to execute it on behalf of the City of Roseville.

SECTION 4. The City Clerk is directed to record the executed Seventh Amendment to Development Agreement, within ten (10) days of its execution by the City Manager, with the County Recorder’s office of the County of Placer.

SECTION 5. This ordinance shall be effective at the expiration of thirty (30) days from the date of its adoption.

SECTION 6. The City Clerk is hereby directed to cause this ordinance to be published in full at least once within fourteen (14) days after it is adopted in a newspaper of general circulation in the City, or shall within fourteen (14) days after its adoption cause this ordinance to be posted in full in at least three public places in the City and enter in the Ordinance Book a certificate stating the time and place of said publication by posting.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

Recording Requested by:
CITY OF ROSEVILLE
When Recorded Mail to:
City Clerk
City of Roseville
311 Vernon Street
Roseville, CA 95678

Exempt from Recording Fees Pursuant to
Cal. Gov. Code §27383

(This Space Reserved for Recorder's Use)

**SEVENTH AMENDMENT OF DEVELOPMENT AGREEMENT BY AND BETWEEN
THE CITY OF ROSEVILLE AND ROSEVILLE FIDDYMENT LAND
VENTURE, LLC, RELATIVE TO THE WEST ROSEVILLE SPECIFIC PLAN**

This Seventh Amendment of Development Agreement (this "Seventh Amendment") is entered into this ____ day of ____, 2017, by and among the CITY OF ROSEVILLE, a municipal corporation ("City") and ATC REALTY ONE, LLC, a Delaware limited liability company and FIDDYMENT 116 LOTS, LLC, a California limited liability company (collectively, "Developer"), pursuant to Sections 65864 through 65869.5 of the Government Code of California.

WITNESSETH:

A. Developer's predecessor in interest, Roseville/Fiddymment Land Venture, LLC ("RFLV") and City entered into a Development Agreement (the "Development Agreement") which was approved by the City Council of City on February 23, 2004, and recorded on June 21, 2004, in the Official Records of Placer County as Document No. 2004-0080708. The Development Agreement governs a portion of the West Roseville Specific Plan Area ("Specific Plan", "WRSP" or "Plan Area"). Except as otherwise defined herein, all capitalized terms used herein shall have the meanings ascribed thereto in the Development Agreement.

B. Certain terms of settlement agreements arising out of two lawsuits regarding the WRSP (Catalano v. Roseville and Defenders of Wildlife v. Norton) imposed additional conditions on the WRSP that require implementation through amendment of the Development Agreement.

C. On January 4, 2006, City and RFLV, by Ordinance No. 4324, entered into the First Amendment of the Development Agreement ("First Amendment"). The First

Amendment was recorded on March 2, 2006, in the Official Records of Placer County as Instrument No. 2006-0022488.

D. On June 18, 2008, City and RFLV, by Ordinance No. 4668, entered into the Second Amendment of the Development Agreement ("Second Amendment"). The Second Amendment was recorded on July 22, 2008, in the Official Records of Placer County as Instrument No. 2008-0059263.

E. On September 2, 2009, City and RFLV, by Ordinance No. 4767, entered into the Third Amendment of the Development Agreement ("Third Amendment"). The Third Amendment was recorded on September 10, 2009, in the Official Records of Placer County as Instrument No. 2009-0078876.

F. On July 17, 2013, City and ATC Realty One, LLC, by Ordinance No. 5211, entered into the Fourth Amendment of the Development Agreement ("Fourth Amendment"). The Fourth Amendment was recorded on August 20, 2013, in the Official Records of Placer County as Instrument No. 2013-0082174.

G. On May 7, 2014, City and ATC Realty One, LLC, by Ordinance No. 5337, entered into the Fifth Amendment of the Development Agreement ("Fifth Amendment"). The Fifth Amendment was recorded on June 18, 2014, in the Official Records of Placer County as Instrument No. 2014-0040699.

H. On August 6, 2014, City and West Roseville Development Company, Inc., by Ordinance No. 5385, entered into the Sixth Amendment of the Development Agreement ("Sixth Amendment"). The Sixth Amendment was recorded on August 14, 2014, in the Official Records of Placer County as Instrument No. 2014-0055752.

I. This Seventh Amendment affects portions of the property subject to the Development Agreement that is owned by each party comprising Developer within the Plan Area (the "Seventh Amendment Property"), which portions are described in Exhibit "A-1", and depicted in Exhibit "A-2" attached to this Seventh Amendment, and shall run with the land described therein.

J. This Seventh Amendment is authorized by Section 1.4 of the Development Agreement.

NOW THEREFORE, THE PARTIES MUTUALLY AGREE AS FOLLOWS:

1. AMENDMENT OF DEVELOPMENT AGREEMENT. The following sections of the Development Agreement are hereby amended as follows:

a. REVISED SECTION 3.5.17.1. Section 3.5.17.1 of the Development Agreement is hereby amended in its entirety to read as follows:

"3.5.17.1 Placer County Traffic Mitigation Fee. As more particularly described below, Developer agrees to pay to City at the time building permits are issued within the planning areas described below, a fee of \$125 per DUE (the "Placer County Traffic Mitigation Fee") to provide fair share funding to Placer County as full mitigation of impacts on the Placer County roadway circulation system for roadways in the adopted County Capital Improvement Program at the date of approval of this Agreement that are north of Interstate 80, west of Highway 65, and outside of County approved specific plan areas (excluding Watt Avenue (Santucci Boulevard) and the extension of Vista Grande Boulevard as provided in Section 3.5.15 above) for the additional 1,189 LDR and MDR units and the 472 HDR units. Once established, the Placer County Road Impact Fee shall be adjusted annually after the completion of annexation proceedings for the Specific Plan by the percentage of change in the CCI.

The Placer County Traffic Mitigation Fee will be collected within the following planning areas of the Seventh Amendment Property consistent with Large Lot Tentative Map PL16-0364, and as shown on attached Exhibit "B": F-6A1, F-6A2, F-6B, F-6C1, F-6C2, F-8A, F-8B, F-10A1, F-10A2, F-10B1, F-10B2, F-10C1, F-10C2, F-11B, F-13A-1, F-13A-2, and F-13B-3 (14 units). Planning area F-13B-3 is currently approved for 45 units. Concurrently with the City's approval of a small lot final subdivision map for planning area F-13B-3, lot numbers 1 through 14 within F-13B-3 will be subject to the Placer County Traffic Mitigation Fee."

b. REVISED SECTION 3.15.15. Section 3.15.15 of the Development Agreement is hereby amended in its entirety to read as follows:

"3.15.15 Downtown Benefit Fee. Developer acknowledges and agrees to pay to City at the time building permits are issued within the planning areas described below, the Downtown Benefit Fee, for the additional 1,189 LDR and MDR units and the 472 HDR units being added to the Fifth Amendment Property in connection with this Fifth Amendment. The Downtown Benefit Fee is \$5,000 per unit.

The Downtown Benefit Fee will be collected within the following planning areas of the Seventh Amendment Property consistent with Large Lot Tentative Map PL16-0364, and as shown on attached Exhibit "B": F-6A1, F-6A2, F-6B, F-6C1, F-6C2, F-8A, F-8B, F-10A1, F-10A2, F-10B1, F-10B2, F-10C1, F-10C2, F-11B, F-13A-1, F-13A-2, and F-13B-3 (14 units). Planning area F-13B-3 is currently approved for 45 units. Concurrently with the City's approval of a small lot final subdivision map for planning area F-13B-3, lot numbers 1 through 14 within F-13B-3 will be subject to the Downtown Benefit Fee."

2. **CONSISTENCY WITH GENERAL PLAN.** The City Council has found and determined that this Seventh Amendment of the Development Agreement is consistent with the General Plan and the West Roseville Specific Plan.

3. **AMENDMENT.** This Seventh Amendment amends, but does not replace or supersede, the Development Agreement, except as specified herein. As amended hereby, the Development Agreement remains in full force and effect.

4. **FORM OF AMENDMENT.** This Seventh Amendment is executed in two, duplicate originals, each of which is deemed to be an original.

[Signature Page Follows]

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Seventh Amendment in duplicate by its City Manager and attested to by its City Clerk under the authority of Ordinance No. _____, adopted by the Council of the City of Roseville on the _____ day of _____, 2017.

CITY OF ROSEVILLE,
a municipal corporation

By: _____
Rob Jensen
City Manager

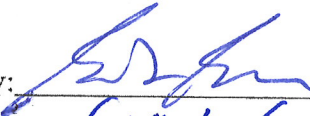
ATC REALTY ONE, LLC,
a Delaware limited liability company

By: 
Name: DAVID L. ASIH
Title: Sr VP

ATTEST:

By: _____
Sonia Orozco
City Clerk

FIDDYMENT 116 LOTS, LLC, a
California limited liability company

By: 
Name: Gary L. Galindo
Title: Trustee of member

APPROVED AS TO FORM:

By: _____
Robert R. Schmitt
City Attorney

APPROVED AS TO SUBSTANCE:

By: 
Kevin Payne
Development Services Director

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of San Francisco)
On 5/31/17 before me, Evelyn Howard, Notary Public,
Date Here Insert Name and Title of the Officer
personally appeared David L. Ash
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature Evelyn Howard
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____ Document Date: _____
Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer — Title(s): _____	☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer Is Representing: _____	Signer Is Representing: _____

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Alameda)

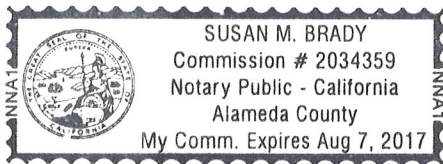
On June 1, 2017 before me, Susan M Brady, Notary Public
Date Here Insert Name and Title of the Officer

personally appeared Gary L. Galindo
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature Susan M Brady
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____ Document Date: _____

Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Corporate Officer — Title(s): _____

☐ Partner — ☐ Limited ☐ General

☐ Individual ☐ Attorney in Fact

☐ Trustee ☐ Guardian or Conservator

☐ Other: _____

Signer Is Representing: _____

Signer's Name: _____

☐ Corporate Officer — Title(s): _____

☐ Partner — ☐ Limited ☐ General

☐ Individual ☐ Attorney in Fact

☐ Trustee ☐ Guardian or Conservator

☐ Other: _____

Signer Is Representing: _____

EXHIBIT 'A-1'
WRSP Fiddymment Ranch DAA No. 7
Description of Properties Subject to DAA No. 7

Properties owned by ATC Reality One, LLC:

All that real property located in the City of Roseville, County of Placer, State of California as shown on Exhibit A-2 attached and described as follows:

PARCEL 1

All of the Designated Remainder, as shown on that certain map titled "Final Map of Fiddymment Ranch Phase 2, Large Lot Subdivision", filed in Book BB of Maps, at Page 24, Official Records of Placer County.

EXCEPTING THEREFROM,

All of that certain map titled "Final Map of Fiddymment Ranch – Phase 2, F-13B1", filed in Book DD of Maps, at Page 73, Official Records of Placer County.

FURTHER EXCEPTING THEREFROM,

All of that certain parcel of land conveyed to the City of Roseville in a Grant Deed recorded September 16, 2015 as Document No. 2015-0081570, Official Records of Placer County.

APN: 492-010-080-000

PARCEL 2

All of the Designated Remainder, as shown on that certain map titled "Final Map of Fiddymment Ranch Phase 2, Villages F-9 & F-19", filed in Book DD of Maps, at Page 9, Official Records of Placer County.

APN: 492-010-057-000

Properties Owned by Fiddymment 116 Lots, LLC:

All that real property located in the City of Roseville, County of Placer, State of California as shown on Exhibit A-2 attached and described as follows:

Lots 1 through 75, inclusive, and Lot D, all as shown on that certain map titled "Final Map of Fiddymment Ranch – Phase 2, F-13B1", filed in Book DD of Maps, at Page 73, Official Records of Placer County.

APNs:

403-010-001-000 through 403-010-029-000;

403-020-001-000 through 403-020-046-000; 492-010-079-000

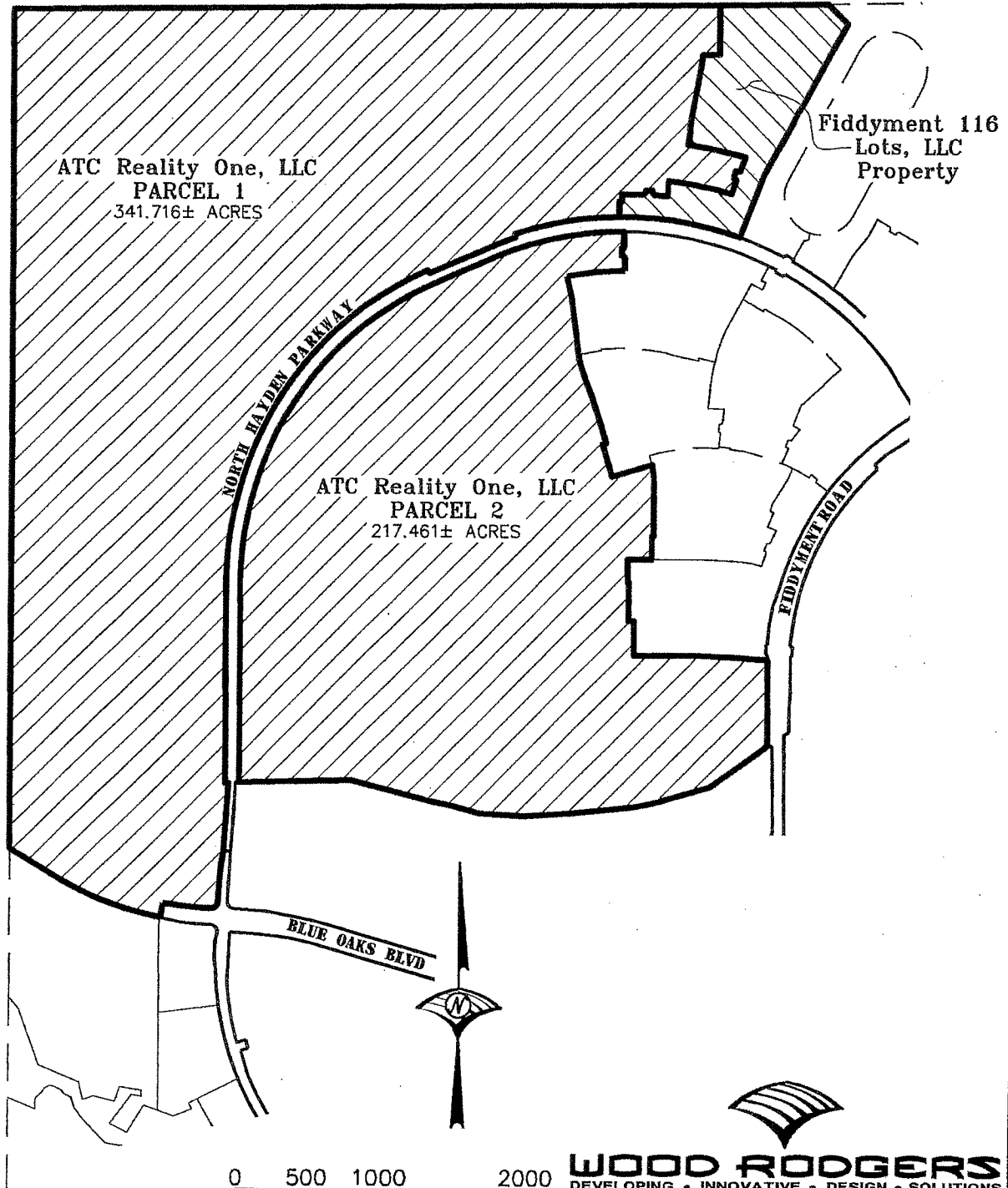
May 16, 2017

END OF DESCRIPTION

PREPARED BY WOOD RODGERS, INC
SACRAMENTO, CALIFORNIA

EXHIBIT 'A-2'

WRSP FIDDYMENT RANCH DAA NO. 7
PROPERTIES SUBJECT TO DAA NO. 7



0 500 1000 2000

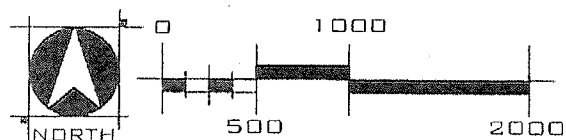
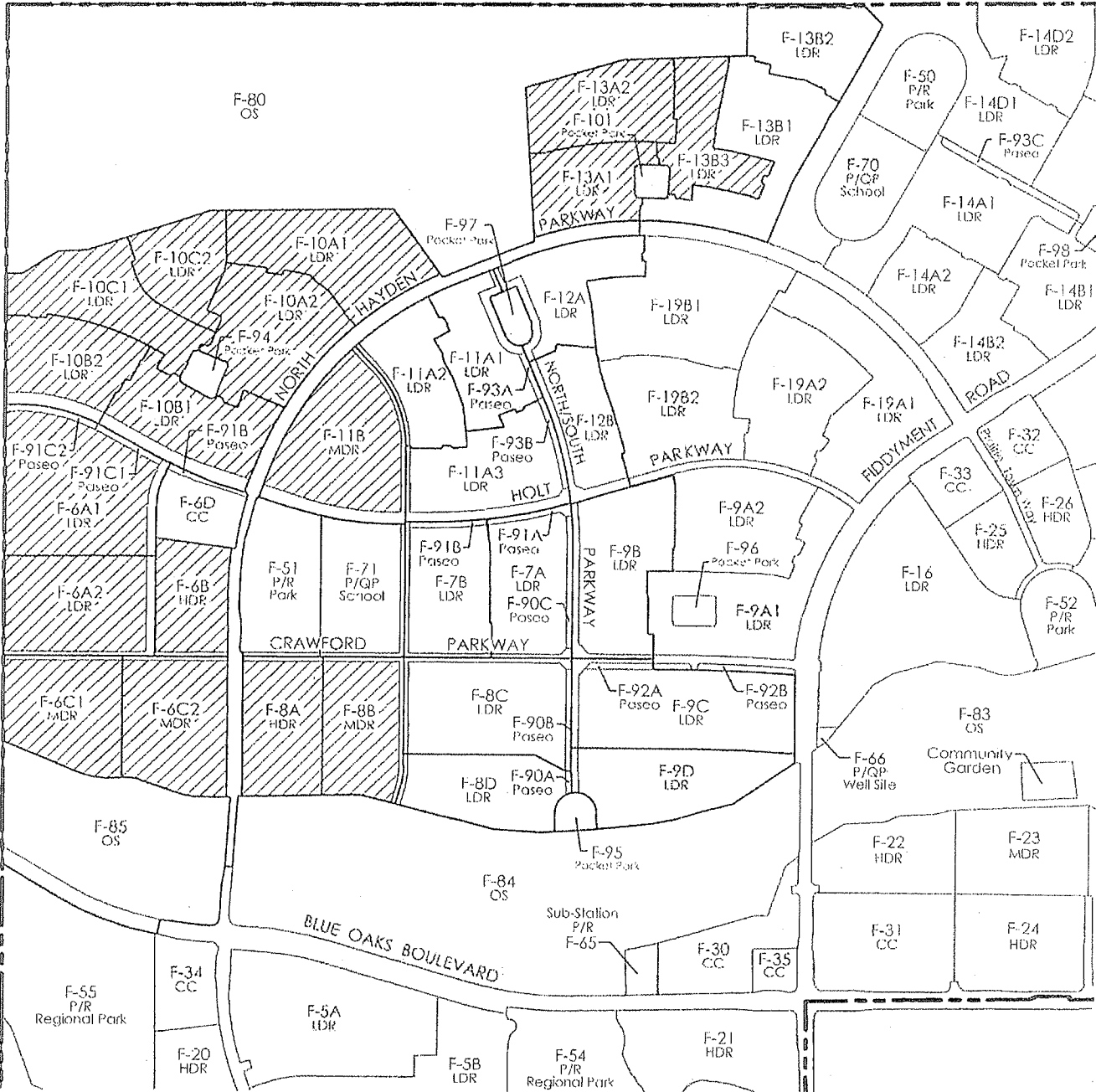
SCALE: 1" = 1000'

WOOD RODGERS
DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS

3301 C St., Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

MAY 16, 2017 1027.152 SHEET 1 OF 1

MAY 17, 2017



Tel 916.341.7760
Fax 916.341.7767



COUNCIL COMMUNICATION

CC #: 8658
File #: 0800-06

Title: Municipal Code Amendment - Marijuana Regulations
Contact: Greg Bitter 916-744-5294 gbitter@roseville.ca.us
Joseph Speaker 916-774-5329 jspeaker@roseville.ca.us

Meeting Date: 8/2/2017
Item #: 7.3.

RECOMMENDATION TO COUNCIL

The Planning Commission and City Staff recommends the City Council introduce for first reading an Ordinance Amendment to Title 19 - Zoning, of the Roseville Municipal Code, Chapters 19.62 (Marijuana Dispensaries) and 19.63 (Marijuana Cultivation) to provide regulations related to the non-medical use and cultivation of marijuana.

BACKGROUND

The City of Roseville most recently updated its marijuana regulations in April of 2016. Amendments to the Roseville Municipal Code (RMC) were in response to the passage of three bills pertaining to the regulation of marijuana; AB 243, AB 266, and SB 643, collectively known as the Medical Cannabis Regulation and Safety Act (MCRSA) of 2015.

On the November 8, 2016, voters of the State of California approved Proposition 64, the "Adult Use of Marijuana Act," (AUMA) which legalized marijuana for personal use by adults 21 years of age and older. Proposition 64 established the Bureau of Marijuana Control to regulate and license marijuana businesses throughout the state. In addition to regulating marijuana businesses, Proposition 64 established statewide excise taxes on marijuana sales and cultivation.

Proposition 64 allows local governments to regulate the commercial sale and cultivation of non-medical marijuana as well as to "reasonably regulate" the personal possession, use and cultivation of non-medical marijuana. It is anticipated that legally established commercial sales would not be allowed until the State has established its regulations and issued appropriate licenses and Proposition 64 continues to ban such operations until such time. However, Proposition 64 does allow for personal use and cultivation allowing individuals to grow and cultivate up to six (6) plants each, for personal recreational uses.

On June 27, 2017, Governor Brown signed into law SB 94, which attempts to synchronize the regulatory schemes envisioned by MCRSA and AUMA. SB 94 repeals MCRSA, includes certain provisions of MCRSA in the licensing provisions of AUMA, and creates a single regulatory scheme known as the Medicinal and Adult-Use Cannabis Regulation and Safety Act

(MAUCRSA).

The City currently regulates Marijuana Dispensaries and Medical Marijuana Cultivation within Chapters 19.62 and 19.63, respectively of Title 19 – Zoning. Chapter 19.62 of the RMC prohibits Medical Marijuana Dispensaries anywhere within the City limits. Chapter 19.63 of the RMC currently restricts the cultivation of marijuana to allow only those persons authorized by state law (i.e. persons with a Medical Marijuana Identification Card, Primary Caregivers, or Qualified Patients) to grow marijuana or engage in marijuana cultivation. Further, the RMC prohibits outdoor cultivation and only allows indoor cultivation within residential zones subject to strict standards and square footage limitations.

Proposed Ordinance Amendments

Staff is proposing to amend Chapters 19.62 and 19.63 of the RMC to regulate non-medical marijuana in the same manner that the City currently regulates medical marijuana and in conformance with Proposition 64 and the more recently adopted SB 94. The most significant modification is that new definitions are being proposed to differentiate “medical purpose” from “non-medical purpose” as these terms relate to the commercial use and cultivation, and personal use and cultivation of marijuana.

Modifications specific to Chapter 19.62 will prohibit marijuana dispensaries, processing facilities and testing laboratories throughout the City and the delivery of marijuana for both medical and non-medical purposes.

Modifications specific to Chapter 19.63 will introduce definitions for an “Accessory Structure” and a “Private Residence” in order to clarify where indoor cultivation is allowed in a residential zone. Indoor cultivation for non-medical purposes will be limited to six (6) marijuana plants per private residence or accessory structure, consistent with the provisions of Proposition 64 and SB 94. Indoor cultivation for medical purposes will continue to be limited to 50 square feet and 10 feet in height within a private residence or accessory structure.

The proposed modifications to the City’s Marijuana Dispensaries and Marijuana Cultivation regulations do not change the overall City policy regarding marijuana, but rather ensure that the sale, use and cultivation of marijuana for personal use is regulated in the same manner as medical marijuana and in conformance with the new State laws. These modifications are meant to continue local regulatory control over all forms of marijuana sales, use and cultivation.

Public Outreach

Staff presented the proposed ordinance to the Roseville Coalition of Neighborhoods at their June 15, 2017 board meeting. There were no objections from the board regarding the proposed amendments.

Planning Commission Action

The Planning Commission held a public hearing regarding the proposed ordinance on May 25, 2017. The Commission voted unanimously to recommend that the City Council approve the proposed ordinance.

Subsequent to the Commission’s action, SB 94 was signed into law. Staff has reviewed SB 94 and determined that only minor technical modifications were necessary to ensure the ordinance

language is consistent with this new legislation. Staff does not believe the minor changes are significant enough to take this ordinance back to the Planning Commission for a recommendation to the Council.

FISCAL IMPACT

The proposed ordinance does not create a fiscal impact.

ECONOMIC DEVELOPMENT / JOBS CREATED

Not applicable.

ENVIRONMENTAL REVIEW

This action is not a project subject to the California Environmental Quality Act (CEQA) because it involves only general policy and procedure making and does not have the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines, sections 15002(d), 15378, 15061(b)(3)).

Respectfully Submitted,

Gregory Bitter, Planning Manager/Joseph Speaker, Deputy City Attorney

Kevin Payne, Development Services Manager/Robert Schmitt, City Attorney



Rob Jensen, City Manager

ATTACHMENTS:

Description

Ordinance

ORDINANCE NO. ____

ORDINANCE OF THE COUNCIL OF THE CITY OF ROSEVILLE AMENDING SECTIONS
19.62.010, 19.62.020, 19.62.030, 19.62.040 OF CHAPTER 19.62 OF TITLE 19 AND
AMENDING SECTIONS 19.63.010, 19.63.020, 19.63.030, 19.63.040, 19.63.050, 19.63.060,
19.63.070 OF CHAPTER 19.63 OF TITLE 19 OF THE ROSEVILLE MUNICIPAL CODE
REGARDING MARIJUANA CULTIVATION, DISPENSARIES, AND USE.

THE CITY OF ROSEVILLE ORDAINS:

SECTION 1. Section 19.62.010 of Chapter 19.62 of Title 19 of the Roseville Municipal
Code is hereby amended to read as follows:

CHAPTER 19.62 MARIJUANA DISPENSARIES

19.62.010 Findings.

The City Council adopts this chapter based upon the following findings:

- A. The voters of the State of California approved Proposition 215 (codified as Health and Safety Code Section 11362.5 et seq., and entitled, “The Compassionate Use Act of 1996”).
- B. The intent of Proposition 215 was to enable persons who are in need of marijuana for medical purposes to be able to obtain and use it without fear of State criminal prosecution under limited, specified circumstances.

C. The State enacted SB 420 in 2004 to clarify the scope of the Compassionate Use Act of 1996 and to allow cities and other governing bodies to adopt and enforce rules and regulations consistent with SB 420.

D. The State further enacted SB 643, SB 266, and AB 243 in 2015 to further clarify the scope of the Compassionate Use Act of 1996 and to allow cities and other governing bodies to adopt and enforce rules and regulations, consistent with State law, for regulating marijuana distribution, cultivation, delivery, and transportation within their cities.

E. In 2016 the voters of the State of California approved Proposition 64 entitled, “The Adult Use of Marijuana Act”, which legalized limited recreational use of marijuana.

F. In 2017 the State enacted SB 94 to reconcile the Adult Use of Marijuana Act with prior State law on medical marijuana use.

G. The federal Controlled Substances Act, makes it unlawful to manufacture, distribute, dispense, or possess marijuana as it is a Schedule 1 controlled substance. Accordingly, marijuana possession and use is illegal under federal law.

SECTION 2. Section 19.62.020 of Chapter 19.62 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.62.020 Definitions.

For the purposes of this chapter, the words and phrases shall have the same meanings respectively ascribed to them by this section:

A. “Cannabis,” “marijuana,” “medical cannabis,” and/or “medical marijuana” shall be used interchangeably and means all parts of the plant *Cannabis sativa linnaeus*, *Cannabis indica*, or *Cannabis ruderalis*, whether for medical or non-medical purposes, whether growing or not; the seeds thereof; the resin, whether crude or purified, extracted from any part of the plant; and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds, or resin. This includes the separated resin, whether crude or purified, obtained from marijuana and as defined by California Health and Safety Code Section 11018, as may be amended. This section does not mean “industrial hemp” as defined by California Food and Agricultural Code Section 81000, as may be amended, or California Health and Safety Code Section 11018.5, as may be amended.

B. “Delivery” or “deliver” shall mean any transfer of marijuana or marijuana products, whether for compensation or otherwise.

C. “Distribution” means the procurement, sale, transfer, and/or transport of marijuana and/or products made from marijuana.

D. “Marijuana dispensary” or “dispensary” means a facility or location, whether permanent, temporary, or mobile, where marijuana, products made from marijuana, or devices for the use of marijuana are offered, either individually or in any combination, for sale, use, transportation, distribution, and/or delivery, whether for compensation or otherwise, by or to: (1) another dispensary or processing facility; or (2) two or more of the following: a primary caregiver, a qualified patient, a person with an identification card, or anyone authorized under State law to use marijuana.

E. “Medical Purpose” shall mean use of marijuana by a primary caregiver, qualified patient, and/or person with an identification card for personal medical purposes, as provided by California Health and Safety Code 11362.7 et seq.

F. “Non-Medical Purpose” shall mean use of marijuana by a person other than a primary caregiver, qualified patient, and/or person with an identification card, who is otherwise authorized under local, State, or Federal laws to cultivate marijuana, for personal non-medical use.

G. “Processing facility” means any facility or location, whether permanent, temporary, or mobile, that produces, prepares, propagates, processes, or compounds marijuana or products made from marijuana, directly or indirectly, by any method, for delivery, for compensation or otherwise. Processing facility does not mean any facility or location manufacturing “industrial hemp” as defined by California Food and Agricultural Code Section 81000, as may be amended, or California Health and Safety Code Section 11018.5, as may be amended.

H. “Person” means any individual, partnership, co-partnership, firm, association, joint stock company, corporation, limited liability company or combination of the above in whatever form or character.

I. “Person with an identification card” shall have the same definition as California Health and Safety Code Section 11362.7 et seq., as may be amended, and as may be amended by California Department of Public Health’s “Medical Marijuana Program.”

J. “Primary caregiver” shall have the same definition as in California Health and Safety Code Section 11362.7 et seq., as may be amended.

K. “Qualified patient” shall have the same definition as in California Health and Safety Code Section 11362.7 et seq., as may be amended.

L. “Testing laboratory” means a facility, person, or location that offers or performs tests of marijuana or marijuana products.

SECTION 3. Section 19.62.030 of Chapter 19.62 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.62.030 Marijuana dispensaries, processing facilities, and testing laboratories prohibited.

It is unlawful and a misdemeanor for any person to engage in, conduct or carry on, or to permit to be engaged in, conducted or carried on, in or upon any premises or location within any zoning district in the City of Roseville, the operation of a marijuana dispensary, and/or processing facility, and/or testing laboratory. Nothing in this chapter shall prohibit those activities expressly authorized under California Health and Safety Code Section 11362.1.

SECTION 4. Section 19.62.040 of Chapter 19.62 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.62.040 Delivery of marijuana prohibited.

Delivery of marijuana, products made from marijuana, or devices for the use of marijuana to or from any person, business, or location in the City of Roseville is prohibited. Notwithstanding the foregoing, a primary caregiver may personally deliver medical marijuana,

products made from marijuana, or devices for the use of marijuana to a qualified patient or person with an identification card, for whom he or she is the primary caregiver. Nothing in this chapter shall prohibit those activities expressly authorized under California Health and Safety Code Section 11362.1.

SECTION 5. Section 19.63.010 of Chapter 19.63 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

Chapter 19.63 MARIJUANA CULTIVATION AND USE

19.63.010 Purpose and applicability.

The city council adopts this chapter based on the following:

A. Purpose. The purpose and intent of this chapter is to regulate the cultivation of marijuana in a manner that protects the health, safety and welfare of the community. This chapter is not intended to interfere with a person's right to marijuana, as provided for under State law, as may be amended, nor does it criminalize marijuana possession or cultivation by specifically defined classifications of persons, pursuant to State law. This chapter is not intended to give any person independent legal authority to grow marijuana; it is intended simply to impose zoning restrictions on the cultivation of marijuana when it is authorized by California State law.

B. Applicability. No part of this chapter shall be deemed to conflict with Federal law as contained in the Controlled Substances Act, nor to otherwise permit any activity that is prohibited under that Act or any other local, State or Federal law, statute, rule or regulation. The

cultivation of marijuana in the City of Roseville is controlled by the provisions of this chapter of the municipal code, State law, and Federal law.

SECTION 6. Section 19.63.020 of Chapter 19.63 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.63.020 Definitions.

For the purposes of this chapter, the words and phrases shall have the same meanings respectively ascribed to them by this section:

A. “Authorized grower” means a person with an identification card, primary caregiver, qualified patient, or a person who is authorized by Federal or State law to cultivate marijuana for personal use in compliance with local, State, or Federal laws authorizing such marijuana cultivation.

B. “Accessory structure” shall mean a fully enclosed and secured structure detached from a private residence on the same parcel and incidental to that private residence. It is the intent of this section to ensure that all accessory structures comply with Section 19.22.030 of this code.

C. “Cannabis,” “marijuana,” “medical cannabis,” and/or “medical marijuana” shall be used interchangeably and means all parts of the plant *Cannabis sativa linnaeus*, *Cannabis indica*, or *Cannabis ruderalis*, whether for medical or non-medical purposes, including marijuana as defined by California Health and Safety Code Section 11018, as may be amended. This section does not mean “industrial hemp” as defined by California Food and Agricultural Code

Section 81000, as may be amended, or California Health and Safety Code Section 11018.5, as may be amended.

D. “Cultivation” or “cultivate” means any activity involving the planting, growing, harvesting, drying, curing, grading, or trimming of marijuana plants.

E. “Enforcement officer” means the chief of police, City of Roseville code enforcement officer, or any designee of either of them.

F. “Fully enclosed and secure structure” means a space within a parcel that complies with the California Building Standards Code, as adopted in the City of Roseville, or if exempt from the permit requirements of the California Building Standards Code, that has a complete roof enclosure supported by connecting walls extending from the ground to the roof; a foundation, slab or equivalent base to which the floor is secured by bolts or similar attachments; is secure against unauthorized entry; and is accessible through one or more lockable doors. Walls and roofs must be constructed of solid materials that cannot be easily penetrated or breached, such as two-inch by four-inch nominal or thicker studs overlaid with three-eighths inch or thicker plywood or the equivalent. Plastic sheeting, regardless of gauge, or similar products, do not satisfy this requirement. If indoor grow lights or air filtration systems are used, they must comply with the California Building, Electrical, and Fire Codes as adopted in the City of Roseville.

G. “Immature marijuana plant” means a marijuana plant, whether male or female, that has not yet flowered and which does not yet have buds that are readily observed by unaided visual examination.

H. “Indoors” means within a fully enclosed and secure structure as that structure is defined in subsection F.

I. “Mature marijuana plant” means a marijuana plant, whether male or female, that has flowered and which has buds that are readily observed by unaided visual examination.

J. “Medical Purpose” shall mean cultivation of marijuana by a primary caregiver, qualified patient, and/or person with an identification card for personal medical purposes, as provided by California Health and Safety Code 11362.7 et seq.

K. “Non-Medical Purpose” shall mean cultivation of marijuana by a person other than a primary caregiver, qualified patient, and/or person with an identification card, who is otherwise authorized under local, State, or Federal laws to cultivate marijuana, for personal non-medical use.

L. “Outdoor” means any location within the City of Roseville that is not within a fully enclosed and secure structure.

M. “Parcel” means property assigned a separate parcel number by the Placer County assessor.

N. “Person” means any individual, partnership, co-partnership, firm, association, joint stock company, corporation, limited liability company or combination of the above in whatever form or character.

O. “Person with an identification card” shall have the same definition as California Health and Safety Code Section 11362.7 et seq., as may be amended, and as may be amended by California Department of Public Health’s “Medical Marijuana Program”.

P. “Primary caregiver” shall have the same definition as in California Health and Safety Code Section 11362.7 et seq., as may be amended.

Q. “Private residence” means a house, apartment unit, mobile home, or other similar dwelling unit.

R. “Public place” shall mean any place or area open to the public, including but not limited to public streets, sidewalks, right-of-ways, parks, public parking facilities, any public transit services, and/or property or programs owned or operated by the City.

S. “Qualified patient” shall have the same definition as in California Health and Safety Code Section 11362.7 et seq., as may be amended.

SECTION 7. Section 19.63.030 of Chapter 19.63 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.63.030 Outdoor cultivation.

It is hereby declared to be unlawful, a public nuisance, and a violation of this chapter for any person owning, leasing, occupying, or having charge or possession of any parcel, property, and/or private residence, within any zoning district in the City of Roseville to cause or allow such parcel, property, and/or private residence to be used for the outdoor cultivation of marijuana plants.

SECTION 8. Section 19.63.040 of Chapter 19.63 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.63.040 Cultivation of marijuana—Regulations for residential zones.

A. When authorized by State law, an authorized grower shall be allowed to cultivate marijuana indoors in a private residence or accessory structure in residential zones, subject to the following regulations:

1. The private residence or accessory structure does not exceed the maximum allowed cultivation. For purposes of this section the “maximum allowed cultivation” shall be:
 - a. No more than six (6) marijuana plants per private residence or accessory structure, regardless of whether they are mature marijuana plants or immature marijuana plants, when the marijuana cultivation is for a non-medical purpose; or
 - b. No more than 50 square feet and 10 feet in height per private residence or accessory structure, when the marijuana cultivation area is for a medical purpose.
2. Marijuana cultivation lighting shall not exceed 1,200 watts total.
3. The use of gas products (CO₂, butane, etc.), including but not limited to “volatile solvents” as defined by California Health and Safety Code Section 11362.3, for marijuana cultivation or processing is prohibited.
4. From a public right-of-way, there shall be no exterior evidence of marijuana cultivation either within or outside the private residence or accessory structure.
5. The authorized grower shall not participate in marijuana cultivation in any other location within the City of Roseville.
6. The private residence shall maintain kitchen, bathrooms, and primary bedrooms for their intended use and not be primarily or exclusively for marijuana cultivation.

7. The marijuana cultivation area shall be in compliance with the current edition of the California Building Standards Code, as adopted by the City of Roseville.

8. The building official for the City of Roseville may require additional specific standards to meet the California Building Standards Code and Fire Code, including, but not limited to, installation of fire suppression sprinklers.

9. The marijuana cultivation area shall not adversely affect the health or safety of the occupants of other property by creating dust, glare, heat, noise, noxious gasses, odor, smoke, traffic, vibration, or other impacts, and shall not be maintained so as to constitute a hazard due to use or storage of materials, processes, products or wastes.

B. Any proposed marijuana cultivation by an authorized grower for a medical purpose that does not meet the grow area standard of subsection (A)(1) shall require the prior written determination of the City Manager for the City of Roseville, or designee, of the need for additional cultivation area.

1. Documentation, such as a physician's recommendation or verification of more than one authorized grower living in the residence, shall be submitted with the request showing why the cultivation area standard is not feasible.

2. The request for determination shall include written permission from the record property owner and no determination and authorization for additional area of marijuana cultivation shall issue without the written permission of the record property owner.

3. An approved marijuana cultivation area that exceeds 50 square feet shall conform to the following standards:

a. It shall be in compliance with subsections (A)(1) through (10).

b. The marijuana cultivation area shall not exceed an additional 49 square feet for a total of 99 square feet per residence and shall not exceed 10 feet in height per residence.

4. Any written determination of the need for additional cultivation area shall be issued for a period not exceeding one year, but may be renewed upon review of a subsequent submittal of the required documentation.

SECTION 9. Section 19.63.050 of Chapter 19.63 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.63.050 Indoor cultivation of marijuana restricted to authorized grower.

It is hereby declared to be unlawful, a public nuisance and a violation of this chapter for any person owning, leasing, occupying, or having charge or possession of any parcel, property, and/or private residence, within the City of Roseville to cause or allow such parcel, property, and/or private residence to be used for the cultivation of marijuana, unless the person is authorized by State law to grow marijuana, and such authorized grower is complying with all requirements of this chapter.

SECTION 10. Section 19.63.060 of Chapter 19.63 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.63.060 Public nuisance prohibited.

It is hereby declared to be unlawful and a public nuisance for any person to create a public nuisance in the course of cultivating and/or using marijuana or marijuana products in any location, indoor or outdoor. A public nuisance may be deemed to exist, if such activity produces:

A. Odors which are disturbing to people of normal sensitivity residing or present on adjacent or nearby property or areas open to the public.

B. Repeated responses to the parcel, property, and/or private residence, from law enforcement officers.

C. A repeated disruption to the free passage of persons or vehicles in the immediate neighborhood, excessive noise which is disturbing to people of normal sensitivity on adjacent or nearby property or areas open to the public.

D. Any other impacts on the neighborhood or public generally which are disruptive of normal activity in the area, including but not limited to smoking or ingesting marijuana or marijuana products in any public place, smoking marijuana or marijuana products in a location where smoking tobacco is prohibited, or any other prohibited activities outlined in California Health and Safety Code Section 11362.3, as may be amended from time to time.

SECTION 11. Section 19.63.070 of Chapter 19.63 of Title 19 of the Roseville Municipal Code is hereby amended to read as follows:

19.63.070 Violation.

Cultivation of marijuana on any parcel, property, and/or private residence, within the City that does not comply with this chapter constitutes a violation of this zoning ordinance and is

subject to the penalties and enforcement as provided in Section 19.63.080 of this chapter and Chapter 19.90 of this title.

SECTION 12. This ordinance shall be effective at the expiration of thirty (30) days from the date of adoption.

SECTION 13. The City Clerk is hereby directed to cause this ordinance to be published in full at least once within fourteen (14) days after it is adopted in a newspaper of general circulation in the City, or shall within fourteen (14) days after its adoption cause this ordinance to be posted in full in at least three (3) public places in the City and enter in the Ordinance Book a certificate stating the time and place of said publication by posting.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20__, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk