



AGENDA

February 19, 2019

TRANSPORTATION COMMISSION MEETING
7:00 p.m.
Council Chambers
311 Vernon Street
Roseville, California

THE CITY OF ROSEVILLE WELCOMES YOUR PARTICIPATION

If an agenda item is open to public comment, such public comment shall be addressed to the chair of the meeting.

Public Comment - Speakers have three minutes under Public Comment to speak on issues that are not listed on the agenda and are within the City's jurisdiction. The Brown Act does not permit any action or discussion on items not listed on the agenda.

Consent Calendar - If applicable, the Consent Calendar consists of routine items that may be approved by one motion. Any person can remove an item from the Consent Calendar to be discussed separately.

Agenda Items - Speakers have five minutes to address items that are listed on the agenda.

Americans with Disabilities Act - Notify the City Clerk or Secretary at least 72 hours in advance if special assistance is required to participate in a meeting including the need of auxiliary aids or services.

Audio/Visual Presentations - If making a presentation regarding an agenda item, audio/visual materials must be submitted to the City Clerk or Secretary at least 72 hours in advance.

Roseville City Clerk 311 Vernon Street, Roseville, CA 916-774-5200 TDD 916-774-5220

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **PLEDGE OF ALLEGIANCE**
4. **PUBLIC COMMENTS**
5. **CONSENT CALENDAR**
 - 5.1. Approval of December 18, 2018 Minutes (ACTION REQUIRED)
6. **REQUESTS/PRESENTATIONS**

6.1. Appointment of 2019 Chair and Vice-Chair to the Transportation Commission (ACTION REQUIRED)

6.2. Roseville Short Range Transit Plan 2018-2025 (ACTION REQUIRED)

This item requests that the Transportation Commission review and recommend City Council approval of the Roseville Short Range Transit Plan 2018-2025.

6.3. Draft Planning and Feasibility Study for the Dry Creek Greenway West Multi-Use Trail (ACTION REQUIRED)

Memo from Alternative Transportation Manager Mike Dour and Alternative Transportation Analyst Jeannie Gandler requesting the Transportation Commission recommend the City Council accept the Draft Planning and Feasibility Study for the Dry Creek Greenway West Multi-Use Trail. The City of Roseville, Placer County, Rails to Trails Conservancy (RTC) and the Placer County Transportation Planning Agency (PCTPA) worked collaboratively to obtain funding and complete the study. The project is part of the Greater Dry Creek Parkway trail system with future regional connections to the American River Parkway and Sacramento Northern Trails. The three-mile segment of trail that is part of this study is identified in the City of Roseville Bicycle Master Plan and the Placer County Regional Bikeway Plan. It is an important local connection to existing Class I paths at Cook Riolo Road in Placer County, Saugstad Park in Roseville, and the proposed Dry Creek Greenway East trail at Riverside Road in Roseville. The recommended alignment represents the most favorable location for a path based on available information, input received from a robust public engagement process, and an evaluation process which considered the amount of publicly owned land vs privately held parcels, safety, aesthetic experience for path users, environmental considerations, consistency with current municipal operations, existing plans, facilities, and utilities. Should the study be accepted by the partnering agencies, it is expected that future efforts to move ahead with the project would continue to be a collaborative effort between the City of Roseville, Placer County, and the Placer County Transportation Planning Agency. The study is funded by the Sustainable Communities Transportation Planning (SCTP) grant program administered by Caltrans.

7. ADJOURNMENT



TRANSPORTATION COMMISSION COMMUNICATION

Title: Approval of December 18, 2018 Minutes (ACTION REQUIRED)

Contact: Lisa Lozano, llozano@roseville.ca.us, (916) 746-1285

Meeting Date: 2/19/2019

Item #: 5.1.

ATTACHMENTS:

Description

DRAFT December 18, 2018 Minutes



Transportation Commission

Regular Meeting

December 18, 2018 – 7:00 p.m.

Draft Minutes

1. Call to Order

The meeting was called to order at 7:00 p.m. by Commissioner Horton.

2. Roll Call

Commissioners Present

Joe Horton – *Chair*
Sergey Terebkov – *Vice-Chair*
Jeff Short
Chinnaian Jawahar - *absent*
David Nelson - *absent*
Brandon Baldwin - *absent*
Peter Ashby
Taylor Urrutia – *Youth Commissioner*

Staff Present

Mike Dour, Alternative Transportation Manager
Eileen Bruggeman, Alternative Transportation Analyst II
Michael Christensen, Deputy City Attorney
Jason Shykowski, Acting Public Works Director
Debbie Dion, Recording Secretary

3. Pledge of Allegiance

Commissioner Terebkov led those in attendance in the Pledge of Allegiance.

4. Public Comments

Commissioner Horton opened the Public Comment period.

Jerry Mitchell, addressed the Commission on behalf of his son, Paul Mitchell who lives in the Phoenician Condos on Secret Ravine Parkway and is disabled. Mr. Mitchell wanted to know how the decision was made to remove the bus shelter located on Secret Ravine Parkway, which his son and other school children use.

Staff will follow up with Mr. Mitchell.

Mike Barnbaum, Ride Downtown 916, addressed the Commission on regional events.

Commissioner Horton closed the Public Comment period.

5. Consent Calendar

5.1 Approval of September 18, 2018 Minutes

5.2 Approval of Roseville 80 Transportation Systems Management Plan (TSM)

Commissioner Terebkov requested that Item 5.1 be corrected as it showed he did second a motion but he was not in attendance to do so.

MOTION:

Commissioner Short made the motion, which was seconded by Commissioner Terebkov to approve the Minutes as amended.

Ayes: Short, Horton, Terebkov, Ashby, Urrutia
Noes: None
Absent: Baldwin, Nelson, Jawahar

MOTION:

Commissioner Short made the motion, which was seconded by Commissioner Terebkov to approve the Transportation Systems Management Plan for Roseville 80.

Ayes: Short, Horton, Terebkov, Ashby, Urrutia
Noes: None
Absent: Baldwin, Nelson, Jawahar

6. Special Presentation/Reports**6.1. Dry Creek Greenway East Trail Project – Final Environmental Impact Report (EIR) and Project Approval**

Mike Dour, Alternative Transportation Manager, introduced Fran Ruger, Senior Environmental Project Manager, with Ascent Environmental, Inc. and Brian Wright, PE, Senior Project Engineer, with PSOMAS who made the presentation.

Commissioner Horton opened the Public Comment period.

Bill Connell resident, on Charleston Circle, addressed the Commission and wanted to know about the paving of the proposed trail and how that would affect the floodplain. He also has concern about safety to the neighborhood.

Sandy Germond resident, on Juanita Way, addressed the Commission and is opposed to the bike trail and is concerned about safety and homeless issues.

Ms. Tran resident, on Juanita Way, addressed the Commission and asked the Commission to further review the proposed EIR and not to base decisions on cost.

Commissioner Short asked Mike Dour to clarify the Hillcrest Segment options.

Mike Dour clarified.

Kenneth Gregory resident, Tim Lewis homes Old Auburn/Cirby addressed the Commission and would like to know if there will be further input from the community on the Phase 3 alignment. He is also concerned with the homeless along the proposed bike trail.

David Allen 21 year resident of Roseville, addressed the Commission he is an avid runner and bicyclist that uses many bike trails and is excited about the trail and feels overall it makes the City a better place to live.

Keith Halston resident on Machado Lane addressed the Commission and thinks the trail will be a great amenity. Mr. Halston would like to make sure that site distance is reviewed for the proposed bike trail.

Rosalyn Clement resident of the Meadow Oaks neighborhood addressed the Commission and is concerned about homeless around the bike trail. Ms. Clement is concerned about tree canopy and protecting the temperature of the water and wants to know when that will be addressed.

Blair Baldwin resident on Mallard Lane addressed the Commission and is concerned about losing a portion of his property to proposed bike trail. Mr. Baldwin has concern about the homeless and environmental impact and the impact on the neighborhood.

Linda Norris resident on Juanita Way addressed the Commission about the location of the bridge across Darling Way.

Mike Dour will go over the map with Ms. Norris after the meeting.

Commissioner Horton closed the Public Comment period.

Staff and Commissioners discussed.

Sergeant Jeff Beigh, Roseville Police Department, Social Services Unit provided answers to Commissioner Short in regards to the homeless and safety concerns.

MOTION:

Commissioner Short made the motion, which was seconded by Commissioner Terebkov to recommend that the City Council certify the Dry Creek Greenway East Trail Project EIR and recommend that the City Council approve the Dry Creek Greenway East Trail Project with the use of Alignment option 1B for the Hillcrest Area and option 5A for the Sunrise area.

Ayes: Short, Horton, Terebkov, Ashby, Urrutia
Noes: None
Absent: Baldwin, Nelson, Jawahar

6.2. Transit Performance Report – 4th Quarter of Fiscal Year 2018 – Accept the Transit Performance Report

Eileen Bruggeman, Alternative Transportation Analyst II, made the presentation.

Commissioner Horton opened the Public Comment period.

Mike Barnbaum, Ride Downtown 916, addressed the Commission and thanked staff for the Louis Orlando Transfer Center.

Commissioner Horton closed the Public Comment period.

Staff and Commissioners discussed.

MOTION:

Commissioner Terebkov made the motion, which was seconded by Commissioner Short to accept the Transit Performance Report for the year end 4th Quarter of Fiscal Year 2018.

Ayes: Short, Horton, Terebkov, Ashby, Urrutia
Noes: None
Absent: Nelson, Jawahar, Baldwin

7. Board Member/Commissioner/Staff Report

7.1. Alternative Transportation Division Update

1. FTA grant award for Roseville Zero-Emission Commuter Bus Replacement Project
2. Short Range Transit Plan

Mike Dour, Alternative Transportation Manager, made the presentation on Items 1-2.

Commissioner Horton opened the Public Comment period.

There were no public comments.

Commissioner Horton closed the Public Comment period.

Staff and Commissioners discussed.

Staff provided this item as informational only. No action required.

Mike Dour, Alternative Transportation Manager, introduced Jason Shykowski, Acting Public Works Director who addressed the Commission with a status of some of the Capital Improvement Projects that are near completion.

Commissioner Horton announced that there are two Commissioners and two Staff members leaving the Commission; Commissioner Jawahar, who has served 8 years on the Commission, and Youth Commissioner Urrutia; and City Staff members: Alternative Transportation Analyst, Sue Schooley, and Administrative Assistant/Recording Secretary, Debbie Dion are both retiring from City service.

8. Pending Agenda

None

9. Adjournment

MOTION

Commissioner Terebkov made the motion, which was seconded by Commissioner Short, to adjourn the meeting.

Ayes: Horton, Short, Terebkov, Ashby, Urrutia

Noes: None

Absent: Nelson, Jawahar, Baldwin

The meeting was adjourned at 9:08 p.m.

Joe Horton, Chair

Lisa Lozano, Recording Secretary



TRANSPORTATION COMMISSION COMMUNICATION

Title: Appointment of 2019 Chair and Vice-Chair to the Transportation Commission
(ACTION REQUIRED)

Contact: Michael Dour, mdour@roseville.ca.us, (916) 746-1304

Meeting Date: 2/19/2019

Item #: 6.1.

RECOMMENDATION

Staff recommends the Transportation Commission take action to appoint a Chair and Vice-Chair for the Transportation Commission to serve until December 31, 2019.

BACKGROUND

In accordance with the Transportation Commission Meeting Procedures, a Chair and Vice-Chair shall be appointed for a period of one year. There are no limitations on the number of consecutive terms a Commissioner may serve as Chair or Vice Chair, provided they are appointed or re-appointed to the Commission.

Respectfully Submitted,

Michael Dour, Alternative Transportation Manager

Jason Shykowski, Acting Public Works Director



TRANSPORTATION COMMISSION COMMUNICATION

Title: Roseville Short Range Transit Plan 2018-2025 (ACTION REQUIRED)
Contact: Eileen Bruggeman, ebruggeman@Roseville.ca.us, (916) 774-5449

Meeting Date: 2/19/2019
Item #: 6.2.

RECOMMENDATION

Staff requests that the Transportation Commission:

- Accept the staff report on the *Roseville Short Range Transit Plan 2018-2025*;
- Accept public comments; and
- Provide City Council recommendation for adoption.

BACKGROUND

The Roseville Transit Short Range Transit Plan 2018-2025 (SRTP) provides a multi-year plan for operations and capital investment strategies to better address changing transit needs. The contents of the SRTP include:

- Executive Summary (Pages E1-E6)
- Chapter 1-6 - Intro & Existing Conditions
- Chapter 7 - Goals, Objectives and Performance Standards
- Chapters 8-10 - Alternatives considered
- Chapter 11 - Recommended Short Range Transit Plan (The Service Plan)

Existing Conditions

The SRTP notes that, as with most transit agencies nationwide, Roseville Transit has experienced ridership declines over the past few years. Some of the reasons may include:

- Continued low gas prices
- Strong economic conditions allow for increased car ownership and use
- Increased mobility choices offered by Transportation Network Companies (TNC) such as Uber/Lyft

The SRTP also recognizes changes in the regulatory landscape for transit agencies. These changes include new federal and state requirements for transit. An example is the California Air

Resources Board Transit Fleet Emissions Rule (adopted December 2018) that will require all public transit agencies to transition to zero emission fleets beginning with new bus purchases in 2026.

Performance Standards

Chapter 7 provides an updated list of performance standards that provide quantifiable means to assess system performance. Table 27 (pages 86-87) shows existing and updated standards. The updated standards are based on analysis of applicable laws, performance history and peer transit operator performance (peer review provided in Tables 22, 23 and 24). Following adoption by City Council, the updated standards will be used in the semi-annual transit performance reports, and will be the basis of evaluation in the next PCTPA conducted triennial performance review currently in process.

Service Plan

The SRTP evaluates a range of operational, capital, financial and management alternatives for Roseville Transit in Chapters 8-10. The alternatives are evaluated for their potential to provide needed mobility services while effectively & efficiently using the limited resources available to Roseville Transit. Effectiveness and efficiency are measured by looking at how the various alternatives would influence ridership, fare box revenue, operating costs, and operating subsidy. The end result of this evaluation is the Service Plan contained in Chapter 11 and summarized below:

Local Service: The public survey for the SRTP (Chapter 5) identifies the following key information relevant to local service:

- Passengers using Local service are primarily a workforce ridership, with fairly consistent use of the service (90% of survey respondents use the bus at least 2 days a week).
- One-third of the respondents do not possess a driver's license, down from 60% in a 2010 survey.
- Nearly half of the respondents thought that increasing the frequency of service for Local services would draw more ridership.
- Other common suggestions included increased service to West Roseville and East Roseville, on-board Wi Fi, and better transfers.

Based upon the above factors and the alternatives analysis contained in Chapter 8, the recommended local service changes identified in Chapter 11 (Table 46, page 157) include:

- Modify Routes C/G/F/E/L – The SRTP Service Plan provides several options for modifying these routes. The options include:
 1. Remove unproductive segments and provide minimum 1-hour frequency of service (headway), including potential for eliminating service to Sierra College in Rocklin.
 2. Eliminate routes G/F/E, combine routes C and L, and offset the loss of service in east Roseville through a service agreement with a TNC or microtransit service similar to the app-based SmarT ride program offered by Sacramento Regional Transit or the Via On-demand Rideshare program offered in West Sacramento.
 3. Extend Saturday service until 6pm. Eliminate the 1st hour of service on Routes D, C, G and M on weekdays.
 4. When Capitol Corridor service expands, add local service to the Roseville Train Station.

The SRTP indicates that the above changes are all anticipated to have the benefit of reducing vehicle hours, miles and operating costs, while increasing ridership and fare revenue. With that said, it should be noted that the use of TNCs for transit purposes is an emerging field and the true costs TNCs are still being evaluated by pilot programs such as the Via Rideshare and SmaRT ride programs. For these reasons, we recommend that Roseville Transit further investigate these and other potential improvements to routes C/G/F/E/L through a comprehensive local transit route enhancement project that would begin in the next fiscal year. Staff will present a work plan for that project to the Transportation Commission at a future meeting.

Commuter Service: The public survey for the SRTP (Chapter 5) identifies the following key information relevant to local service:

- 90% of respondents use the service 2 to 5 days a week.
- 96% of responding commuters have a driver's license.
- 54% of responding commuters drive to the bus boarding stop, 39% walk to their boarding stop, and less than 5% got a ride, transferred from a Local route, or rode their bike to the bus stop.
- Common suggestions included: Increase service frequency (51%); provide service to new areas (32%), and; add a mid-day commuter run.

Based upon the above factors and the alternatives analysis contained in Chapter 8, the recommended commuter service changes identified in Chapter 11 (Table 46, page 157) include:

- Expand capacity by adding two (2) runs in the morning, and two runs in the afternoon;
- Eliminate reverse Commuter service (where the contractor is paid to carry passengers traveling in the reverse direction, such as going from Roseville to Sacramento in the afternoon);
- Increase service to the Mahany Park pick up;
- Eliminate service to Maidu Park, while increasing service to the newly constructed park-and-ride lot at Louis Orlando Transit Center; and
- Add a mid-day run from Sacramento to Roseville.

The proposed addition of commuter routes will require additions to the commuter fleet that will take 2-3 years to accomplish. Without fleet additions new commuter routes could not be added without significantly affecting commuter service reliability. We believe that the adjustment to Roseville commuter stop locations should include additional consideration of vehicle hours, availability of park-n-ride spaces, accessibility to freeways, proximity to other commuter stops, and reliability. Such an analysis could lead us to modify the SRTP's recommendations for stop locations.

Given the above, we anticipate pursuing the commuter changes in phases. A work plan for the commuter changes will be presented to the Commission at a future meeting.

Dial-A-Ride Service (DAR): DAR is a shared ride, advance reservation-based bus service operating within the city limits of Roseville for any trip purpose. The existing Dial-A-Ride (DAR) service is provided as both general public and Americans with Disabilities Act (ADA) Paratransit service (complement to Local service available to individuals with disabilities preventing them from using Local bus service). The alternatives analysis on p. 143-145 evaluates existing conditions and the potential to modify DAR by eliminating general public service. However, the SRTP concludes that the DAR system provides a high quality of service that meets performance measures, has a high customer satisfaction ranking, and provides a needed mobility option that includes service on Sundays when our local service does not operate. As a result, the SRTP recommendation is to continue the DAR service as it exists.

It was noted in the Roseville SRTP that the Placer County SRTP includes a recommendation for elimination of the Placer County Transit DAR service, with replacement with a TNC subsidy program along with contracting with Roseville Transit to provide ADA paratransit service in Granite Bay. Further analysis and coordination would be required. An agreement would need to be structured to ensure that if Roseville were to provide paratransit service in Granite Bay it would not result in net cost impacts to the City, or reduction in service quality to its residents.

Other Considerations: The SRTP evaluated our existing fare structure and marketing programs in Chapter 9. Roseville's local fares are less expensive than Sacramento Regional Transit (as recently lowered by RT in 2018), but are higher than Placer County Transit and Auburn Transit. The SRTP does not recommend any modifications to the local service fares, except for how we define the age for children who ride free, which they indicate should be raised to 5 and under (from 4 and under) to be consistent with Placer County Transit and Auburn Transit. It should be also be noted that the consultant recommends that Auburn Transit and Placer County Transit local service fares be increased to match Roseville's fares.

Roseville's resident commuter fares are lower than most regional operators including Placer County Transit, but our non-resident fare is slightly higher than Placer County Transit. The consultant noted that aligning our fares with Placer County Transit is an option to simplify customer information and fare collection. The report notes that this would likely result in reduced passenger trips and fare revenue and, as a result, does not recommend any changes to the commuter fare structure.

The SRTP (p. 169) notes that Roseville Transit has attractive, effective and high-quality marketing materials, and that we have plans to develop an overall transit marketing plan. However, the SRTP recommends that we consider additional "timed" stops in our transit guides and that we consider joint commuter service marketing opportunities with Placer County Transit. We will consider these recommendations as we update our local and commuter service plan updates.

Next Steps: Following City Council adoption of the SRTP staff will pursue further analysis of the recommendations based on direction received from the Transportation Commission and City Council regarding timing and prioritization of the recommendations. Major changes will require, in some cases, coordination with adjacent transit operators, potential policy changes, additional public participation and input, budgeting of staff and financial resources, and approval by the Transportation Commission and, in some cases, the City Council. After adoption by the City Council, we will return to the Transportation Commission with a work plan inclusive of public outreach identified for Local and Commuter improvements.

Respectfully Submitted,

Eileen Bruggeman, Alternative Transportation Analyst

Jason Shykowski, Acting Public Works Director

ATTACHMENTS:

Description

Roseville Short Range Transit Plan 2018-2025



Roseville Short Range Transit Plan 2018-2025 FINAL

Prepared for the



PLACER COUNTY
TRANSPORTATION
PLANNING AGENCY

Placer County Transportation
Planning Agency

Roseville Transit Short Range Transit Plan 2018-2025 FINAL

Prepared for the

Placer County Transportation Planning Agency
299 Nevada Street
Auburn, California 95603

Prepared by

LSC Transportation Consultants, Inc.
2690 Lake Forest Road, Suite C
P. O. Box 5875
Tahoe City, California 96145

August 10, 2018

Executive Summary

2018-2025 Roseville Transit Short Range Transit Plan

Prepared by LSC Transportation Consultants, Inc.

This document presents a seven-year Short-Range Transit Plan (SRTP) developed for the City of Roseville's transit program. An SRTP is intended to provide a detailed business plan to guide improvements to the transit organization. An SRTP is also important to state and Federal funding partners so they can ensure that funds for improvements are consistent with a comprehensive overall strategy that has been developed through a public process. It includes a review of demographics and transit needs, a series of surveys and ridership counts conducted for all Roseville Transit services, a review of the effectiveness and efficiency of existing services, a review of similar systems, analysis of a wide range of options, and the results of public input processes. The resulting SRTP provides operational, capital and institutional plans, including an implementation plan. This SRTP plan has been prepared jointly with the development of parallel SRTPs for Placer County Transit, Auburn Transit and the Western Placer Consolidated Transit Service Agency.

SURVEYS AND DATA COLLECTION

This SRTP study included surveys of all routes and runs, which yielded a total of 654 completed surveys, detailing passenger ridership characteristics, trip patterns, and opinions. Data was also collected on all Roseville Transit local fixed routes and commuter service runs, including boarding data and on-time performance data.

EXISTING DEMOGRAPHICS

The population of Roseville, per the 2015 US Census estimates is 126,327. Persons living in **households without vehicles** total 2,134, or 5 percent of the total population. **Youth** (persons 10 to 17 years of age) total 14,295, or 11 percent of total population. **Elderly** persons over age 60 total 24,910 (20 percent). There are a total of 3,979 persons living in households below the federal **poverty** level (9 percent of total population). Persons who indicate they have a **disability** total 4,830, or 4 percent of total population.

OVERVIEW OF ROSEVILLE TRANSIT

Roseville Transit is a service provided through the City of Roseville, providing fixed route services, general public Dial-A-Ride service and Americans with Disabilities Act paratransit throughout the city, as well as a commuter service to downtown Sacramento and "Game Day Express" service to Sacramento Kings games. Management, marketing and planning are provided by City employees, while service operations and vehicle maintenance is provided by a private contractor. The City Council is the decision making body, with input from the Transportation Committee.

The fixed-route service consists of up to 10 buses at a time operating a total of 11 bus routes on weekdays and 5 on Saturdays. Service is generally provided from 6:00 AM to as late as 10:00 PM

on weekdays and 8:00 AM to 5:00 PM on Saturdays. Ridership in Fiscal Year (FY) 2016/17 was 191,900 boardings per year, which is a 34 percent reduction from the ridership in FY 2008/09. The fixed route service is not currently achieving goals regarding ridership productivity and cost effectiveness. A peer comparison indicates that ridership per vehicle-hour is 24 percent lower than the peer average while costs per vehicle-hour are 13 percent higher. The annual average ridership per capita is higher than two of the peer systems, but lower than the other three.

The Dial-A-Ride program provides curb-to-curb public transit and ADA paratransit service throughout the City. Service encompasses all of the hours of local fixed route service. Up to five vehicles are in operation at peak times. Ridership in FY 2016/17 was 28,408 passengers, reflecting a 20 percent reduction from FY 2008/09. Ridership productivity and cost effectiveness goals are not currently being met. While costs per vehicle-hour are 17 percent above the peer average, ridership per vehicle-hour is 14 percent above the peer average and the cost per passenger-trip is 5 percent below the peer average.

The Commuter Service consists of ten AM runs to downtown Sacramento and ten PM runs returning to Roseville. Three runs in each peak period also offer “reverse commuter” service in the opposite direction. FY 2016/17 ridership was 139,084, which was a 30 percent increase over the FY 2008/09 boardings. While the cost per vehicle-hour on the Commuter Service does not attain the goal, the ridership productivity and the cost effectiveness achieves goals. The commuter service costs per vehicle-hour are 21 percent below the peer average, while the passenger-trips per vehicle-hour are 23 percent higher and the cost per passenger is 43 percent lower.

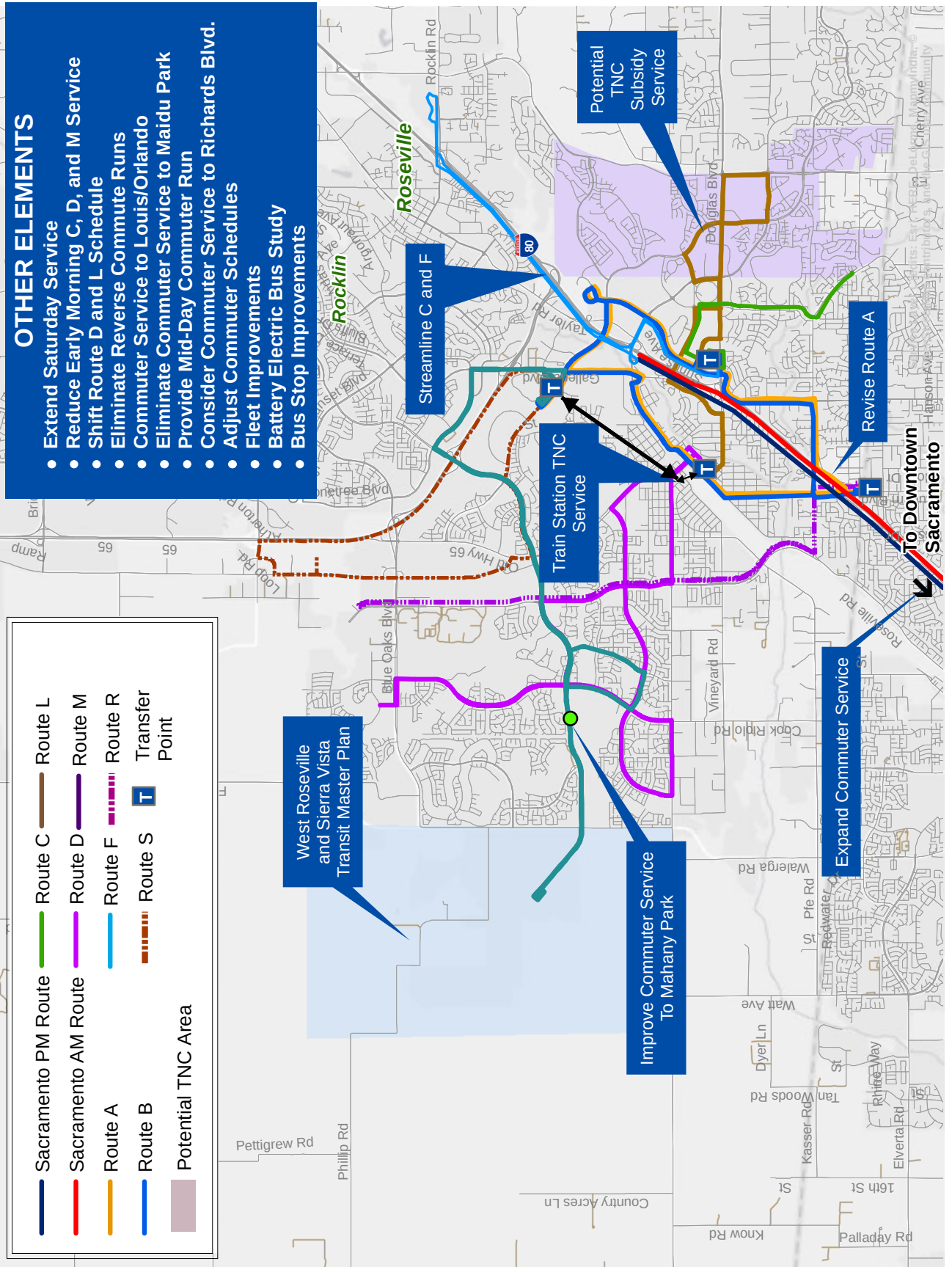
SHORT RANGE TRANSIT PLAN ELEMENTS

Service Plan

The service plan is developed in particular to help attain the first goal of the transit program -- *"Sustainably operate an efficient and effective system through maximizing service and minimizing cost impacts"*. In particular, it addresses the objectives under this goal. It *minimizes operating cost* where appropriate by eliminating or modifying unproductive services. In addition, it *increases transit passengers and revenue* by providing new services where ridership demand can attain performance standards. The plan will also help attain the second goal – *Provide safe, reliable and high quality transportation* – specifically by reducing wait times between buses and improving on-time performance. An extensive analysis of potential service alternatives based on public and staff input identified the following recommended plan elements (see Figure E-1):

- Revise Route C/G/F/E or Replace With Transportation Network Company Service – The provision of a discount for Transportation Network Company (TNC) service in southeast Roseville (along with revisions to Route L and C/G/F/E) should be pursued. If deemed feasible, this strategy should be implemented and could be a demonstration project for larger TNC service in Roseville. If not feasible, Route C/G/F/E should be realigned to an hourly route connecting South Cirby Way with Sierra College (along with a minor realignment of Route L).

Figure E-1
Roseville Transit Short Range Transit Plan



- Extend the Saturday Span Of Service Until 6 PM – One additional hour of service should be added to Routes A, B, D, L and M.
- Reduce Early Morning Weekday Service – The initial runs on Routes C, D, G and M should be eliminated, starting service around 7:30 AM.
- Shift Route D and Route L 3 to 5 Minutes Earlier – This will improve connections with Route A and B at the Civic Center transfer point.
- Shift Route A onto Orlando Way between Cirby/Orlando and the Louis/Orlando Transit Center – This will improve on-time performance with only a minor impact on existing passengers boarding on Cirby Way. It will require changes to the median on Orlando near the Transit Center.
- Provide TNC Subsidy for Trips Between the Roseville Train Station and Nearby Transit Hubs – This is the most effective means of connecting train passengers to local transit.
- Expand Commuter Service by Two AM and Two PM Runs per Day – This will address current capacity constraints, increase ridership and allow for a broader range of service times.
- Eliminate the Reverse Commute Service – This has proven very ineffective in generating ridership, with no real potential for being cost effective.
- Increase PM Service to Mahany Park – By extending existing routes, service can be substantially improved at low additional cost.
- Consolidate Commuter Stops in Southeast Roseville – This will better serve more riders, reduce travel times and reduce costs.
- Serve New Roseville Stops as Demand Warrants – No additional commuter stops are currently needed in Roseville, but future demand will warrant new stops in the future.
- Provide a Mid-Day Commuter Run – A single mid-day round trip would improve the overall usefulness of the commuter service at a modest cost, and would be popular with the ridership.
- Investigate Service to the Richards Boulevard Area North of Downtown – This growing employment center could be served at a small increase in cost and impact on existing riders, but will require a detailed evaluation of potential demand. Service to other employment centers in Sacramento would be costly and ineffective.
- Improvements to On-Time Performance – An additional 10 minute should be added to schedules to more realistically reflect actual travel times. Buses should be reallocated to avoid

the impacts of delays on some runs on later runs. Travel times on the Capital City Freeway should be monitored to identify if routes should be shifted to I-5.

Overall, this service plan will increase ridership by 44,700 annual boardings per year, or 12.5 percent. A 3 percent increase (5,700 per year) is forecast for the local fixed routes and a 28 percent increase (39,000 per year) for the commuter service.

Capital Plan

- Bus Purchases – 3 commuter buses will be needed for service expansion. A total of 11 commuter buses, 9 fixed route buses and 11 DAR vehicles will also be needed by 2026 for replacements.
- Regional Battery Electric Bus Readiness Study – Roseville should participate in a study regarding Battery Electric Bus vehicle and charging options.
- Passenger Facility Improvements – New shelter locations are identified, along with improvements to the Sierra Gardens transfer center and the Taylor Road park-and-ride.

Financial Plan

The overall impact of this plan will be to increase operating costs by \$79,400 per year (or 1.4 percent). The overall impact of the plan on the need for operating subsidy funding is a decrease of \$93,200 (or 2.3 percent). The **local fixed routes** operating costs will be reduced overall by \$31,700 per year (0.9 percent), resulting in a \$43,600 overall decrease in operating subsidy requirements (1.6 percent). The **commuter service** will have a total increase in operating costs of \$111,100 per year, or 13.3 percent. Operating subsidy requirements will be decreased by \$49,600 (29 percent).

Depending on propulsion technology and other vehicle attributes, the total costs for vehicle purchases over the next seven years will be on the order of \$15 Million to \$18 Million.

Roseville should participate in a Regional Day Pass program with PCT and Auburn Transit, should participate in an investigation of a Sierra College Student Pass program, and should continue to promote use of the Connect Card.

Institutional/Marketing Plan

- Minor improvements to published schedules.
- Increased social media-based target marketing
- Joint Roseville/PCT commuter service marketing
- Prepare focused transit master plan for West Roseville and Sierra Vista plan areas, as specific land use and street network plans are defined

Summary

Overall, this SRTP increases ridership 12.5 percent, decreases operating subsidy requirements by 2.3 percent, addresses warranted capital improvements, and helps the Roseville Transit program to achieve its mission statement and goals.

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The City of Roseville Short-Range Transit Plan (SRTP) was prepared to assess transit and related transportation issues in Roseville and the surrounding region and provide a “road map” for improvements to the public transit program over the upcoming seven years. The intent of this study is to evaluate the specific needs for transit services, as well as to develop plans for improvements and service revisions. This was accomplished through the review of existing demographic and transit conditions and evaluation of operations, as well as through public outreach via onboard surveys, online community surveys, and community-based meetings. A wide range of alternatives are evaluated. The ultimate goal of the study is to provide a comprehensive strategy of short-range service, capital, and institutional improvements, with a supporting financial and implementation plan.



PLACER COUNTY
TRANSPORTATION
PLANNING AGENCY

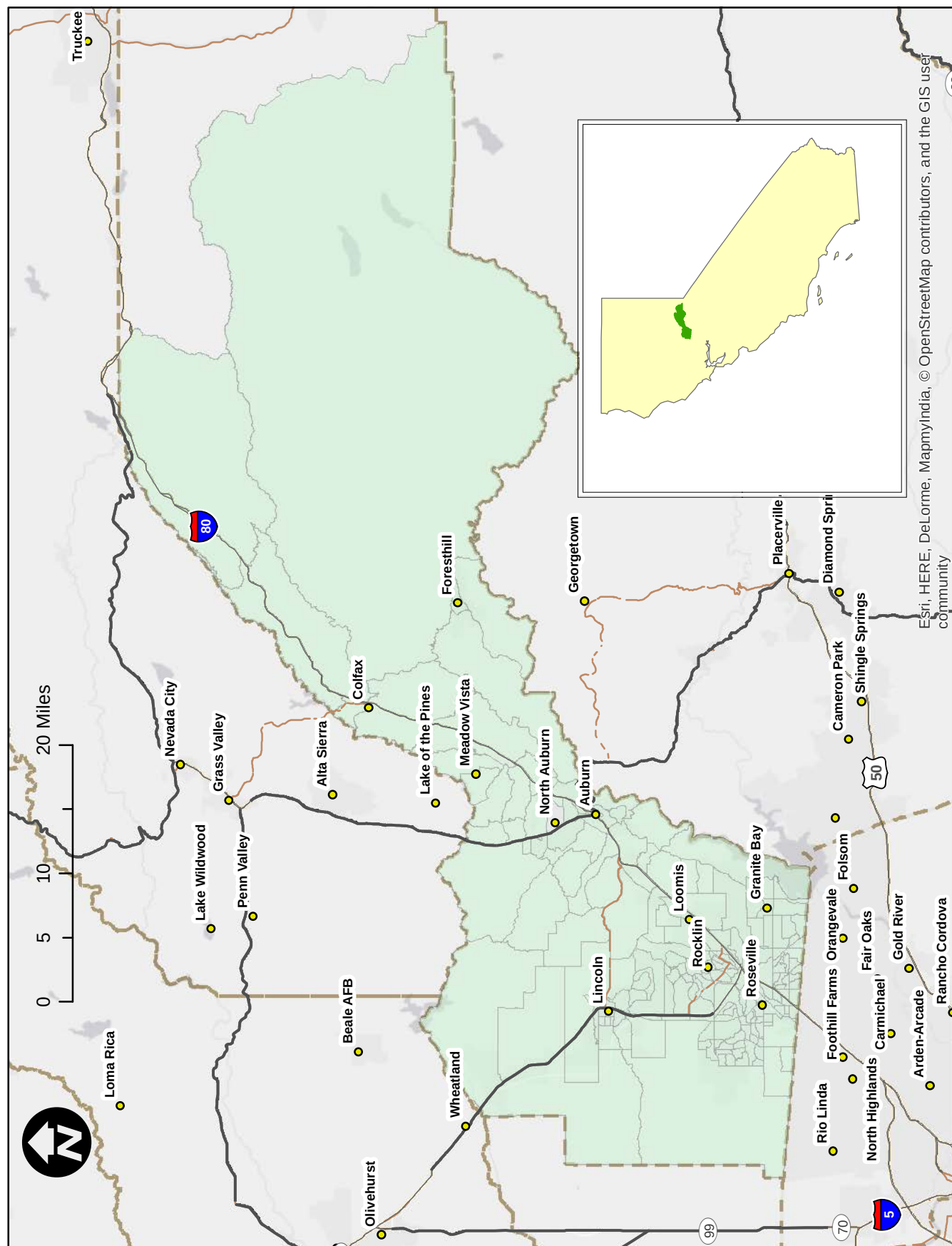
Public transportation is a vital service to many residents of western Placer County. Transit services provide mobility to resident, including access to important medical, recreational, social, educational and economic services and opportunities. In addition to being important to the quality of life of residents in the region, public transit services assist in the functioning of educational programs, public and private employers, and social service programs throughout the region.

SETTING

The Placer County Transportation Planning Agency (PCTPA) is responsible for allocation of transportation funds to public transit operators outside of the Lake Tahoe Basin or Western Placer County. Figure 1 displays a map of the total study area. Four separate transit operators fall under the jurisdiction of the PCTPA: Auburn Transit, Placer County Transit (PCT), Roseville Transit and the Western Placer Consolidated Transportation Services Agency (WPCTSA):

- The Public Works Department of the City of Auburn provides two deviated fixed routes generally within the incorporated areas of Auburn, Monday through Saturday.
- Placer County Transit (PCT) is the regional transit operator for Western Placer County serving communities not served by the two municipal transit operators. PCT is managed by the Placer County Department of Public Works and provides a variety of services throughout the community such as commuter runs to Sacramento, Dial-A-Ride and fixed routes between communities. Under agreements with the City of Rocklin and the City of Lincoln, City of Loomis and City of Colfax, Placer County Transit operates service in these cities.

Figure 1
Western Placer County Site and Location



- Roseville Transit provides 11 local fixed routes, 10 commuter routes to Sacramento, with connections to Placer County Transit and Sacramento Regional Transit (SacRT) transit services. Roseville Transit also provides demand response service available to the general public within the city limits of Roseville, along with origin-to-destination paratransit service. In 2017 Roseville Transit also began operation of the Game Day Express providing service between Roseville and the Golden One Arena for Kings basketball home games. On behalf of and with support from the Western Placer Consolidated Transportation Services Agency (WPCTSA) the City of Roseville operates the following regional programs: the South Placer Transit Information Center, Transit Ambassador Program, and mobility program. Roseville Transit is managed by the City of Roseville Public Works Department, using a contractor to provide management and operations of Roseville Transit and the South Placer Transit Information Center.
- The WPCTSA presently sponsors several programs that provide transportation or facilitate the use of public transit services. Services are administered by various agencies and draw upon a variety of funding sources (public and private) including funds allocated through Article 4.5 of the Transportation Development Act (TDA), community transit services. WPCTSA programs such as Non-Emergency Medical Transportation (Health Express) and volunteer driver program (MyRides) are designed to provide transportation for Western Placer County residents only if a trip cannot be served on regular public transit services. WPCTSA programs are administered by PCTPA staff and the PCTPA Board Members serve as WPCTSA Board Members. Overall, there are many individual mobility needs that are not easily met, particularly demand-responsive services for persons unable to make use of fixed-route services between Placer County jurisdictions or to/from regional destinations in nearby Sacramento County. This is particularly important to seniors and persons with disabilities that would find transfers between services to be a difficult if not insurmountable barrier to completing their trip. The WPCTSA is key in addressing these needs.

This document represents the Short Range Transit Plan for Roseville Transit for 2018 to 2025. Transit plans for the other Western Placer County transit operators have been prepared under separate cover.

PUBLIC/STAKEHOLDER INPUT

Public/stakeholder outreach for all the Western Placer SRTP updates was conducted throughout the study with the assistance of AIM Consulting. The public and stakeholders were provided multiple opportunities to comments prior to and after the analysis of a large range of transit service, capital, institutional and financial alternatives. The Public Outreach Plan for the project is included as Appendix A. In summary, outreach included:

- On-line survey distributed concurrently with the Unmet Transit Needs Process
- On-board bus surveys

- Virtual Community Workshop (on-line interactive survey) available prior to the development of alternatives
- April Public Workshop as part of PCTPA Board meeting to present potential alternatives
- April presentation at Roseville Transportation Commission to present potential alternatives
- May Public Workshop as part of PCTPA Board meeting to present alternatives analysis
- June Public Workshop as part of PCTPA Board meeting to present Draft Plans

In addition to public and stakeholder outreach, the Study Team conducted multiple conference calls and face to face meetings PCTPA and transit operator staff to refine alternatives and draft plans.

OVERVIEW

This plan reflects the realities of the role of public transit in Roseville:

- The community is relatively affluent, with high auto ownership rates. However, there are also many residents that face mobility challenges due to disabilities, age or the economics of auto ownership. There are also others that can afford autos, but can benefit from the cost savings provided by public transit. It is important that mobility be provided to those who can benefit from transit services.
- Much of Roseville has developed at a relatively low residential population density. While there is a vibrant historical downtown, the community is also served by a dispersed pattern of commercial, institutional and educational centers. The overall pattern is inherently difficult for public transit to serve at a high level of productivity or cost-effectiveness.
- Roseville is part of a broader and continuous developed area. Many residents, visitors and employees in Roseville travel beyond the city boundaries, particularly to the east south and southwest. Roseville's transit services need to function as part of a regional network, either through direct services extending outside the city where effective or by providing convenient connections to other services.
- Like any public transit provider, the City of Roseville faces real limitations on the funding available for transit – particularly the ongoing funding needed for operations (driver wages, maintenance, fuel, etc.). Particularly for local fixed route and Dial-A-Ride services, transit ridership fares can only cover a small portion of the necessary operating costs. Public transit planning is therefore in large part a matter of allocating a finite amount of annual subsidy funding that can meet the goals of the transit program.

This plan has been developed to help attain the overall Mission Statement for Roseville Transit:
"We provide and continually enhance reliable, convenient and safe transportation options"

In particular, the SRTP will help attain the first goal of the Roseville Transit program, to *"Sustainably operate an efficient and effective system through maximizing service and minimizing cost impacts"*. It addresses the objectives under this goal: (1) it *minimizes operating cost* where appropriate by eliminating or modifying unproductive services and (2) it *increases transit passengers and revenue* by providing new services where ridership demand can attain performance standards. The plan will also help attain the second goal – *Provide safe, reliable and high quality transportation* – specifically by reducing wait times between buses and improving on-time performance.

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LITERATURE REVIEW



To meet the goals of the study, it is essential that the regulatory and institutional context of the study effort be fully documented. This section reviews pertinent documents and previous transit planning studies for the transit operators.

Roseville Transit Planning Studies

2011 Roseville Short Range Transit Plan

The prior Short Range Transit Plan for Roseville Transit was completed in 2011 and accepted by the PCTPA Board. The plan identified two Alternative Plan Scenarios:

- Alternative A – This scenario included recommendations to optimize transit services within existing financial constraints.
- Alternative B – This scenario identified operational and capital improvements to provide enhanced transit services if allowed by increased funding opportunities.

Alternative A represented the financially-constrained scenario recommending the implementation of minor operational and administrative enhancements to maximize the effectiveness of service within existing resources and included the following recommendations:

- Adjust wait/transfer times.
- Extend hours of operation.
- Modify operating schedules.
- Enhance connections with Placer County Transit
- Introduce “new route” policy.
- Conduct Park & Ride Feasibility study.
- Conduct Transfer Point Locational study.
- Conduct Service Optimization study.
- Conduct annual Community Survey.
- Enhance Route G connection to PCT Taylor Road Shuttle extension.
- Increase farebox recovery ratio standard.

Alternative B incorporated the recommendations made in Alternative A plus additional capital/infrastructure and schedule improvements:

- Establish new stops along Route S.

- Increase off-peak hour frequencies on select routes.
- Reduce Route G and I runs during the late afternoon.
- Assume operation of Placer County Transit Dial-A-Ride services in Granite Bay.
- Expand service to new and existing developments.
- Consider Extending Service South Along the I-80 Corridor
- Include Louis Lane/Orlando Blvd stop as a West Roseville Shuttle stop.
- Modify Route M.
- Extend Route R.
- Introduce Western Roseville route.
- Enhance bus stop amenities and transfer points.

Roseville Transit Triennial Performance Audit FY 2012/13 to FY 2014/15

The most recent Triennial Performance Audit for Roseville Transit covered the years from Fiscal Year (FY) 2012-13 to FY 2014-15 and had the following recommendations:

- Recommendation 1: Ensure the timely completion and submittal of the annual State Controller Transit Operators Financial Transactions Reports.
- Recommendation 2: Ensure that Full-time Equivalent Employee hours are calculated properly.
- Recommendation 3 – Track and separate riders by passenger types for Dial-A-Ride (DAR) reports to determine if more riders could be encouraged to ride fixed route.

The audit also noted that operating cost per passenger increased by 13.5 percent during the audit period, with the majority of the increase occurring on the DAR. Similarly, passenger-trips per vehicle service hour increased significantly on commuter services, remained relatively flat on the local fixed routes and decreased on DAR.

Placer County Transit Planning Studies

2011 Placer County Transit Plan

The prior Short Range Transit Plan for Placer County Transit was completed in 2011 but was not adopted by the Placer County Board of Supervisors. The plan identified two Alternative Plan Scenarios: a status quo scenario with minor improvements (Alternative A) and scenario including additional operational and capital improvements to the existing transit network (Alternative B).

Alternative A included minor improvements to address community input:

- Develop a no-show and trip cancellation policy for dial-a-ride.
- Develop a College Transit Pass Program.

- Raise farebox recovery standard from 10 percent to 13.3 percent.
- Reduce number of time points published in transit schedule.
- Extend service hours on the Lincoln/Sierra College route.
- Seek grant funding to support service enhancements.

Alternative B added the following capital and schedule improvements to Alternative A:

- Convert Highway 49 Loop to on-call service.
- Reduce number of vehicles operating on Highway 49.
- Launch a “Foresthill deviated fixed-route” pilot program.
- Convert Rocklin DAR into a deviated fixed-route.
- Introduce commuter bus service along Highway 65 in Lincoln.
- Increase frequency on Auburn Light Rail service.
- Extend service hours on the Lincoln/Sierra College service.
- Extend Taylor Road Shuttle service to Sierra Gardens.
- Develop a route to/within Meadow Vista.
- Enhance Taylor Road Shuttle service by incorporating two round trips into the baseline schedule and formalizing the daily schedule.
- Develop a Highway 193 service

2011 Lincoln Short Range Transit Plan

Prior to 2015, the City of Lincoln operated transit service in the City. Therefore a separate SRTP was developed for Lincoln Transit, most recently in 2011. Recommendations were divided into a Reallocation and Growth Scenario. The Reallocation Scenario would add a fixed route with one route focusing on school trips and the other as a downtown circulator. Dial-A-Ride service was also recommended. The Growth Scenario went further to recommend two additional fixed routes along with an optional tripper to the Roseville Galleria.

Placer County Rural Transit Study, 2016

In 2016 PCTPA conducted a study regarding potential improvements in public transit services in rural western Placer County. The study reviewed the existing transit services, the needs for transit services in currently unserved and underserved rural areas, and assessed the feasibility of various strategies to expand services. One component of this study was to define performance standards specific to rural transit services and use these standards as performance measurement for alternatives.

The study recommended the following strategies to improving mobility for rural Placer County residents:

- Combined Sheridan/SR 193 Corridor Lifeline Service 1 Day per Week as a three year demonstration program with two round trips per day, one day per week.

- Foresthill lifeline service one day per week as a three year demonstration program.
- Shift the hours of the Alta/Colfax route to allow persons with a traditional work schedule to ride public transit to Auburn as well as provide rural residents requiring services in Auburn with a transit round trip option with a shorter layover time. The strategy would also add one mid-day round trip.
- Roseville Transit operates the Granite Bay DAR
- Conduct a more detailed service review of public transit in the greater Auburn area as there is service overlap between Auburn Transit and PCT.
- Expand PCT Vanpool Budget to Meet Rural Commuter Needs

These strategies as well as other alternatives considered will be revisited as part of this SRTTP update.

Rocklin Community Transit Study 2014

PCTPA conducted a study regarding potential improvements in public transit services in Rocklin, California. Rocklin has grown in recent years and prior public input has indicated a need to serve more residential areas and some new commercial centers. The ultimate objective of this study was to determine if there was a need to modify existing transit services or to establish new routes or services to better serve Rocklin residents. Additionally, the most recent Short Range Transit Plan for Placer County recommended a more detailed study of transit needs in the City of Rocklin and therefore did not identify specific recommendations for new service.

The study reviewed a variety of ways to serve the large residential neighborhoods not currently served by the PCT Lincoln-Sierra College Route but found them to not be cost effective. The study recommended realigning the Lincoln – Sierra College Route along Granite Drive to serve the Rocklin Crossings and Commons shopping centers. In addition, it recommended that the Taylor Road Shuttle be revised to serve the Rocklin Crossings and Rocklin Commons shopping centers during the layover at Sierra College.

Transit Master Plan for South Placer County (2007)

In light of anticipated growth in the southern portion of Placer County, PCTPA conducted a transit master planning process in 2007. The principal objectives of the plan was to examine all aspects of transit service delivery and prepare a consistent, coordinated vision for Placer County transit operators over the long term (2030 – 2040). By the horizon year, the plan assumes that annual vehicle miles and hours for South Placer County transit operators will increase by 190 percent.

The plan offered the following service recommendations by transit mode:

Local Fixed Route

- Provide a base backbone system with 30 or 60 minute headways.
- Where justified, provide greater frequencies during peak periods (15 minute headways).
- Provide a limited number of “express” routes to link specific pairs or groups of activity centers with limited stops in between.

Regional Fixed Route

- Identify and “brand” specific routes as providing longer-distance trips between urban or community zones such as Lincoln-Roseville, Auburn-Roseville, Placer Vineyards-Roseville, and Citrus Heights-Roseville.
- Make limited “lifeline” service a priority: Foresthill, Meadow Vista, Sheridan, and Bickford Ranch.

Commuter Bus

- Continue with all existing routes. Look for a significant increase in Placer County Transit PCE service and Roseville Transit commuter services. Optimize both operations as required.
- Add routes as new development occurs at origins and destinations.
- Add or remove service in concert with changes in Capitol Corridor rail service.
- Consider adding limited commuter service to the Bickford Ranch area.

Bus Rapid Transit (BRT)

- Continue close coordination with major development projects and Sacramento Regional Transit BRT service planning. In particular, continue a dialog with RT on a Watt Avenue BRT system extension.
- Preserve right-of-way for stations, bypass lanes, transition lanes, and other needs. Continue to work with developers to set aside right-of-way for these needs.
- Implement proposed BRT routes in the following order: BRT-1, BRT-2, and BRT-3 (Refer to BRT Study below).

Paratransit

- Develop an administrative structure to support cross-jurisdictional trips. Address key issues such as fare collection/distribution and cost allocation.
- Consider consolidation of all paratransit under one provider, or with separate providers under one managing/coordinating entity. At a minimum, establish one fare card for all ADA travel.
- Expand the CTSA dial-a-ride voucher program to include non-emergency medical trips.
- Provide a senior discount.

- Identify areas with most intensive growth in senior populations, such as Rocklin. Identify key trip attractors in other jurisdictions such as the Galleria, Wal-Mart, and Kaiser.
- Set up “Ambassador” program for seniors to assist with trip planning (subsequently completed).
- Consider removing dial-a-ride service from the Roseville farebox recovery ratio calculation, especially with respect to ADA services.
- Conduct a paratransit needs study to guide design and provision of services targeted to each user group. Include consideration of developing an “accessibility database.”
- Coordinate near-term actions with ongoing dial-a-ride study results in areas such as service integration, addressing cross-jurisdictional problems, establishing ADA certification.

The plan also includes a variety of institutional recommendations to slowly integrate the different transit operators in South Placer County.

Bus Rapid Transit (BRT) Service Study for South Placer County (2008)

The concept of Bus Rapid Transit (BRT) is to combine the frequency and amenities of light rail with the greater flexibility of a bus in an effort to serve high demand corridors cost effectively. BRT services typically include traffic signal prioritization for buses, enhanced transit stations, off-vehicle fare collection and bus only lanes. PCTPA conducted a study of BRT services for the growing South Placer County region. The study recommends the following BRT routes travelling between Sacramento and Placer County:

- BRT 1 – Watt/I-80 Light Rail Station to future Placer Ranch development along I-80 with a transit center at the Galleria in Roseville and stations at Blue Oaks/I-80 and Blue Oaks and Foothill Blvd.
- BRT 2 – Watt/I-80 Light Rail Station to future Placer Ranch development along Watt Ave with transit centers at the proposed Sierra Vista and West Roseville Town Center and a station at the proposed Placer Vineyards Center
- BRT 3 – From the Sunrise Light Rail Station to Hazel Light Rail Station along Hazel Avenue to Sierra College Blvd and the Taylor Park and Ride

The implementation schedule of full BRT is beyond the SRTP’s 7 year horizon however, the BRT Study recommends implementation of BRT “light” from 2010 to 2025. The “light” concept calls for the purchase and use of new stylized buses with longer travel times, less frequency and limited capital improvements than the full BRT concept.

South Placer Regional Dial-A-Ride Study (2007)

The objective of the study was to provide additional guidance to PCTPA and its transit operators as how to cost-effectively meet the needs of residents requiring DAR services within available

resources. The study made four basic recommendations some of which have been implemented:

- Establish PCTPA leadership to guide the County’s operators towards an integrated, regional demand response program.
- Promote general public demand response policies that improve efficiencies and build capacity in South Placer County.
- Establish a CTSA for South Placer County that promotes specialized transportation options and addresses the needs of residents.
- Develop a coordinated information strategy for demand response services oriented to the information needs of consumers, agency personnel and transit operators in South Placer County.

Unmet Transit Needs Process

Background

California’s Transportation Development Act (TDA) legislates funding for transit purposes primarily, and for non-transit purposes under certain conditions. TDA funds are distributed through the Regional Transportation Planning Agencies (RTPA) (in this case PCTPA). An RTPA must assess its jurisdiction’s unmet transit needs prior to allocating any TDA funds for purposes not directly related to public transit or facilities used exclusively by pedestrians and bicyclists. Each year, PCTPA conducts a citizen participation process to receive public comment concerning transit needs within the RTPA jurisdiction and summarizes the comments into a Draft Unmet Transit Needs Report. The PCTPA Social Services Transportation Advisory Council (SSTAC) and the Technical Advisory Committee (TAC)¹ review the draft report and provide input. With recommendations from the SSTAC, at the end of the process the PCTPA Board makes a finding that:

- (a) There are no unmet transit needs; or
 - (b) There are no unmet transit needs which are reasonable to meet; or
 - (c) There are unmet transit needs, including those that are reasonable to meet.
- (Section 99401.5)

PCTPA has adopted the following definition of an unmet transit need:

An unmet transit need is an expressed or identified need, which is not currently being met through the existing system of public transportation services. Unmet transit needs are also those needs required to comply with the requirements of the Americans with Disabilities Act.

¹ The SSTAC is comprised of citizens that represent a cross-section of transit users, while the TAC is comprised of representatives of various jurisdictions and entities.

PCTPA has adopted the following definition of an unmet transit need which is reasonable to meet. Unmet transit needs may be found to be "reasonable to meet" if all of the following criteria prevail:

1. Service, which if implemented or funded, would result in the responsible service meeting the farebox recovery requirement specified in California Code of Regulations Sections 6633.2 and 6633.5, and Public Utilities Code 99268.2, 99268.3, 99268.4, and 99268.5.
2. Notwithstanding Criterion 1) above, an exemption to the required farebox recovery requirement is available to the claimant for extension of public transportation services, as defined by California Code of Regulations Section 6633.8, and Public Utilities Code 99268.8.
3. Service, which if implemented or funded, would not cause the responsible operator to incur expenditures in excess of the maximum amount of Local Transportation Funds, State Transit Assistance Funds, Federal Transit Administration Funds, and fare revenues and local support, as defined by Sections 6611.2 and 6611.3 of the California Administrative Code, which may be available to the claimant.
4. Community support exists for the public subsidy of transit services designed to address the unmet transit need, including but not limited to, support from community groups, community leaders, and community meetings reflecting a commitment to public transit.
5. The need should be in conformance with the goals included in the Regional Transportation Plan.
6. The need is consistent with the intent of the goals of the adopted Short Range Transit Plan, as amended, for the applicable jurisdiction.

FY 2016/17 Unmet Needs Process

During the FY 2016/17 Unmet Needs Process, PCTPA received 76 comments which pertained to western Placer County. Common topics brought up during the meetings included:

- Later service hours in Lincoln, Roseville, and on Placer County Transit.
- Sunday fixed route service in Lincoln, Roseville, and on Placer County Transit.
- Sunday dial-a-ride service in Lincoln, Rocklin, and on Placer County Transit.
- Challenges with scheduling dial-a-ride trips.

Specific to Roseville Transit, common requests were for:

- Expansion of local route services in West Roseville and to Santucci Justice Center.
- Longer weekday hours of operation.

- Increased service frequency on Routes A, B and R.
- Additional commuter service to Mahany Park and Saugstad Park.
- Later AM commuter runs, and earlier PM commuter runs.

PCTPA determined that there were no new unmet transit needs reasonable to meet for implementation in FY 2017/18. However, several comments warrant further study or monitoring and will be addressed in the alternatives analysis section of the SRTP updates:

- **Later Evening Weekday Service** - Comments pertaining to later evening weekday service has been voiced annually, but fixed route ridership has not reached prerecession levels, has declined on average one percent annually since FY 2011/12.
- **Challenges Scheduling Dial-a-Ride Trips** – Several comments identified challenges with scheduling dial-a-ride trips in Lincoln, Rocklin, and countywide. Passengers are allowed to schedule trips up to 14 days in advanced and are encouraged to allow sufficient time to accomplish their intended activities between drop off and pickup due to the shared ride nature of the service. As a result, passengers may encounter challenges with getting their preferred time slot, but call center operators can offer alternative travel time options. Dial-a-ride trips have increased five percent between FY 2014 and 2015 and trip denials totaled approximately 1.6 percent in FY 2015. Beginning FY 2016, PCT began providing contracted dial-a-ride service in Lincoln and the Health Express reservation process was modified to assign intracity trips to the local dial-a-ride and intercity trips only to Health Express, except for under certain circumstances. Given these changes, PCTPA recommends monitoring dial-a-ride trips, denials, or other potential issues.
- **Short Range Transit Plan Updates** – The Unmet Transit Needs report recommends that the SRTP updates should consider past unmet transit needs comments including but not limited to: later service hours, expanded weekend service, dial-a-ride scheduling and capacity, additional service options to Sacramento on the Health Express, and include a review of federal transit policy regulations and any changes resulting from amendments to the federal Americans with Disabilities Act (September 15, 2010).
- **On-board Passenger Surveys** – The Social Services Transportation Advisory Council recommended that the PCTPA and the Transit Operators Working Group pursue funding to conduct on-board passenger surveys in support of the short range transit plan updates. The surveys could provide valuable insight into the factors that influence passenger use and/or community perception given the downward trend of annual ridership statistics system wide. The surveys could seek data, such as but not limited to: demographics, destinations of choice, frequency of use, challenges with using the service, and the mode of choice (i.e., walk, bike, etc.) for pre and post-trip.

Prior common Unmet Need Meetings comments relevant to this study include:

- The PCT Highway 49 DAR area and Auburn Transit deviated fixed route service area do not encompass many residents who require transportation.
- Easier forms of fare payment, particularly for passes on PCT
- Service along the SR 193 corridor
- Service to the communities of Sheridan and Foresthill
- Commuter routes to the Stockton/Broadway corridor in Sacramento
- More service for Lincoln residents
- Additional Commuter Runs for Roseville Transit and PCT (earlier/later times)
- Additional Health Express service options to Sacramento.

POPULATION

Historical and Projected County-wide Population



Placer County was originally settled during the gold rush years and has become an increasingly attractive place to live as it is situated between employment opportunities in the greater Sacramento region and recreational activities in the Sierra Nevada foothills. As shown in Table 1, Placer County (including the portion east of the Sierra Crest which is not in this study area) has grown at a faster rate than that of California as a whole. From the period of 1970 to 2010, Placer County's population increased by at least 40 percent every ten years whereas statewide population did not increase more than 26 percent during a ten year period. Going forward, the California Department of Finance predicts that the population of Placer County will grow at a rate of 1.2 to 1.4 percent annually or around 12 – 14 percent every ten years.

Table 1: Historical and Projected Population

Total Placer County

	Historic					Projected		
	1970	1980	1990	2000	2010	2020	2030	2040
Placer County	77,632	117,247	172,796	248,399	348,432	396,669	454,102	507,740
Annual Percent Growth	--	5.1%	4.7%	4.4%	4.0%	1.4%	1.4%	1.2%
Over Previous Period	--	51%	47%	44%	40%	14%	14%	12%
California Population	19,971,068	23,667,836	29,758,213	33,873,086	37,253,956	40,719,999	44,019,846	46,884,801
Annual Percent Growth	--	1.9%	2.6%	1.4%	1.0%	0.9%	0.8%	0.7%
Over Previous Period	--	19%	26%	14%	10%	9%	8%	7%

Source: California Department of Finance Demographic Research Unit

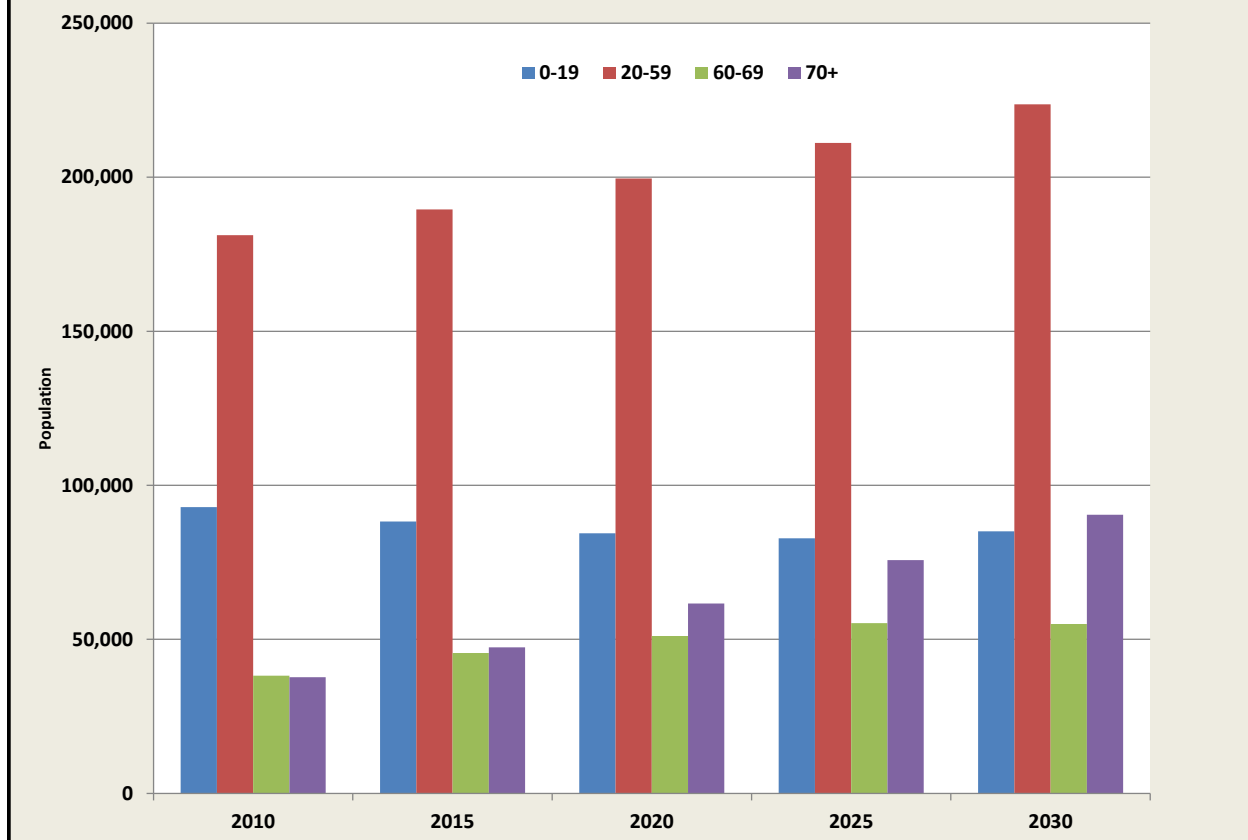
Of particular interest to public transit is the growth of the older adult population, as these residents become more likely to depend on public transit for mobility. Table 2 and Figure 2 demonstrates that the number of Placer County residents age 60 to 69 is projected to increase by 21.4 percent between 2015 and 2025, while the number of residents age 70 and older is projected to increase by a full 59.6 percent during the same time period. Extending the timeframe to 2030, the number of residents older than 70 could increase by 90.7 percent over existing levels. Put another way, the proportion of total population age 70 and above is expected to increase from today's 13 percent to 20 percent by 2030.

Table 2: Placer County Population Projections by Age Group

Year	Population by Age Group			
	0-19	20-59	60-69	70+
2010	92,921	181,200	38,229	37,702
2015	88,236	189,539	45,534	47,429
2020	84,396	199,594	51,076	61,603
2025	82,786	211,095	55,281	75,696
2030	85,076	223,620	54,967	90,439
% Change 2015 to 2025	-6.2%	11.4%	21.4%	59.6%
% Change 2015 to 2030	-3.6%	18.0%	20.7%	90.7%

Source: CA Department of Finance (Estimated and Projected Population for CA counties)

Figure 2: Placer County Population Projections by Age Group



Population Density

One of the greatest challenges facing public transit in auto-dominated California is how to serve communities and cities with dispersed populations. Buses travelling long distances to serve only a few residents is not cost effective; however these residents may depend on public transit for transportation to commercial and medical centers. Figure 3 illustrates population density for the study area at the block group level. As shown, population density ranges from less than one person per square mile as one travels east on I-80 to around 27,000 people per square mile in the City of Roseville.

Transit Dependent Population

Nationwide, transit system ridership is drawn largely from various groups of persons who make up what is often referred to as the “transit dependent” population. This category includes youth, elderly persons, persons with disabilities, low income households, and members of households with no available vehicles. There is considerable overlap among these groups. Figures 4 through 13 present key demographic data for Roseville as well as for western Placer County (to provide a broader context). The figures illustrate where existing and potential public transit passengers live. Transit dependent data is presented in tabular format for each transit operator as part of Appendix B. A review of this data indicates the following:

- **Youth** – For purposes of this study, youth is defined as persons age 10 – 17 or those who are unlikely to drive yet able to ride the bus by themselves. Youth travelling to/from school contribute to public transit ridership, particular in the City of Lincoln. A total of 39,528 residents (11 percent) in the Western Placer County area fit into this category.
 - Figure 4 shows the density of the youth population for western Placer County area at the census tract level. As shown, higher concentrations of youth 400 or more per square mile are generally concentrated in areas served by public transit.
 - A more detailed view youth population density at the block group level in the Roseville Transit service area is shown in Figure 5. As shown areas, near Junction Blvd and Woodcreek Oaks Blvd have higher concentrations of youth (1,300 – 1,400 per square mile) and are relatively well served by transit.
- **Seniors** – Seniors (defined here as older adults age 60 and older) tend to become more dependent on public transit as they lose the ability to drive. Roughly 24 percent or 83,522 Western Placer County residents are considered seniors.
 - For the western county area (Figure 6), the largest concentrations of seniors are located in the North Auburn area and in the residential tracts of the City of Lincoln along Sun City and Del Webb Blvd (1,000 – 1,400 seniors per square mile). Some of these homes in

Figure 3
Total Population Density By Block Group Western Placer County

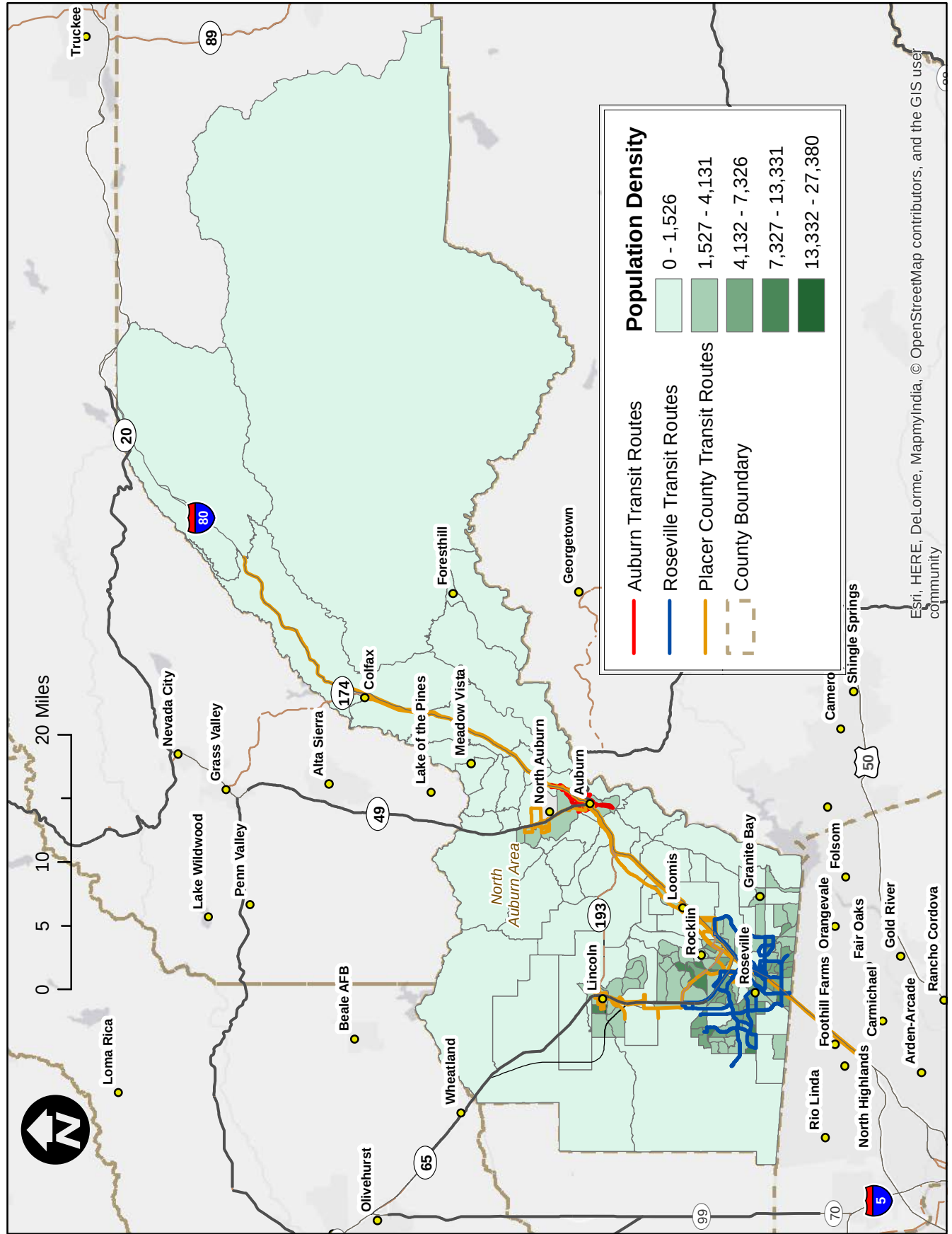




Figure 4
Youth Population Density By Census Tract Placer County Transit Area

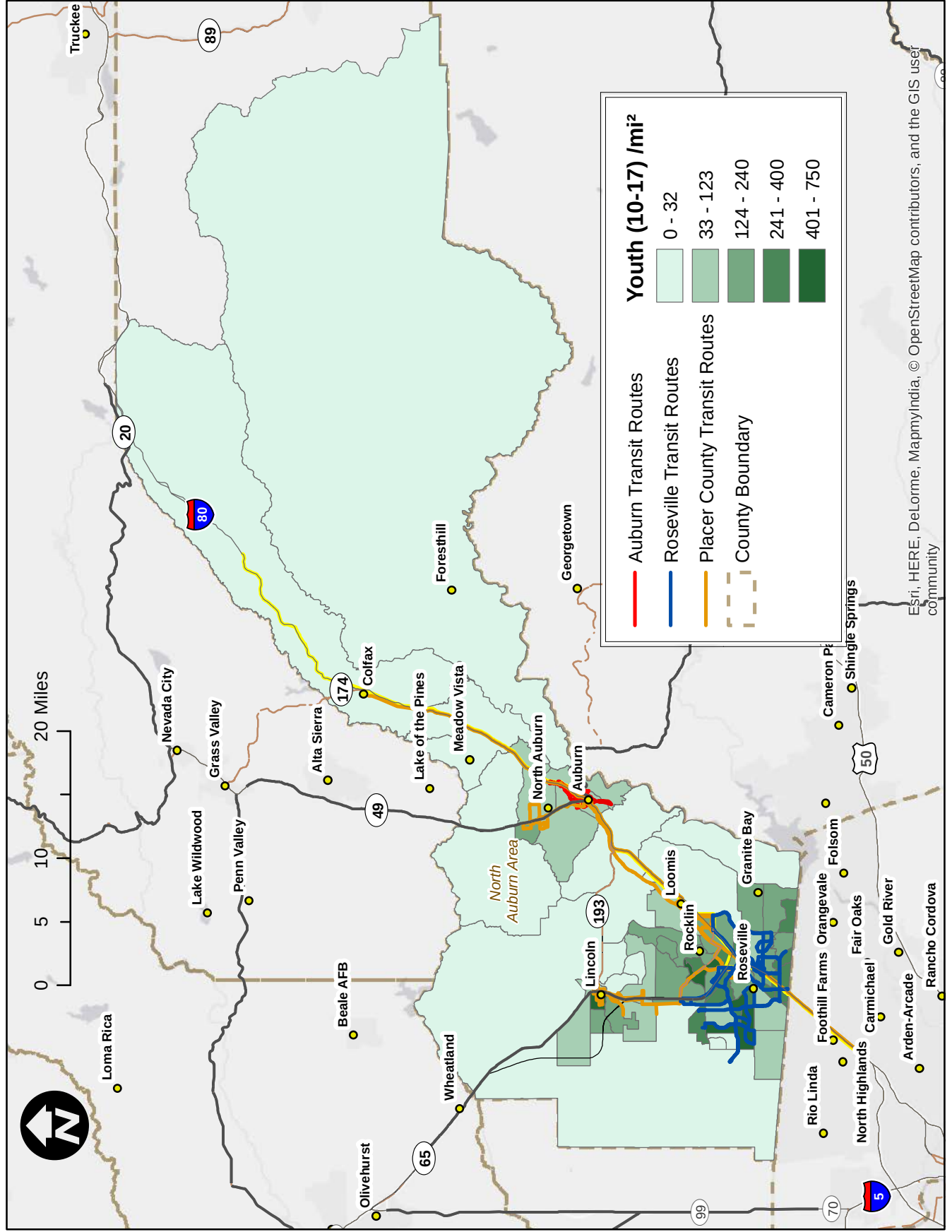


Figure 5
Youth Population Density in the Roseville Area

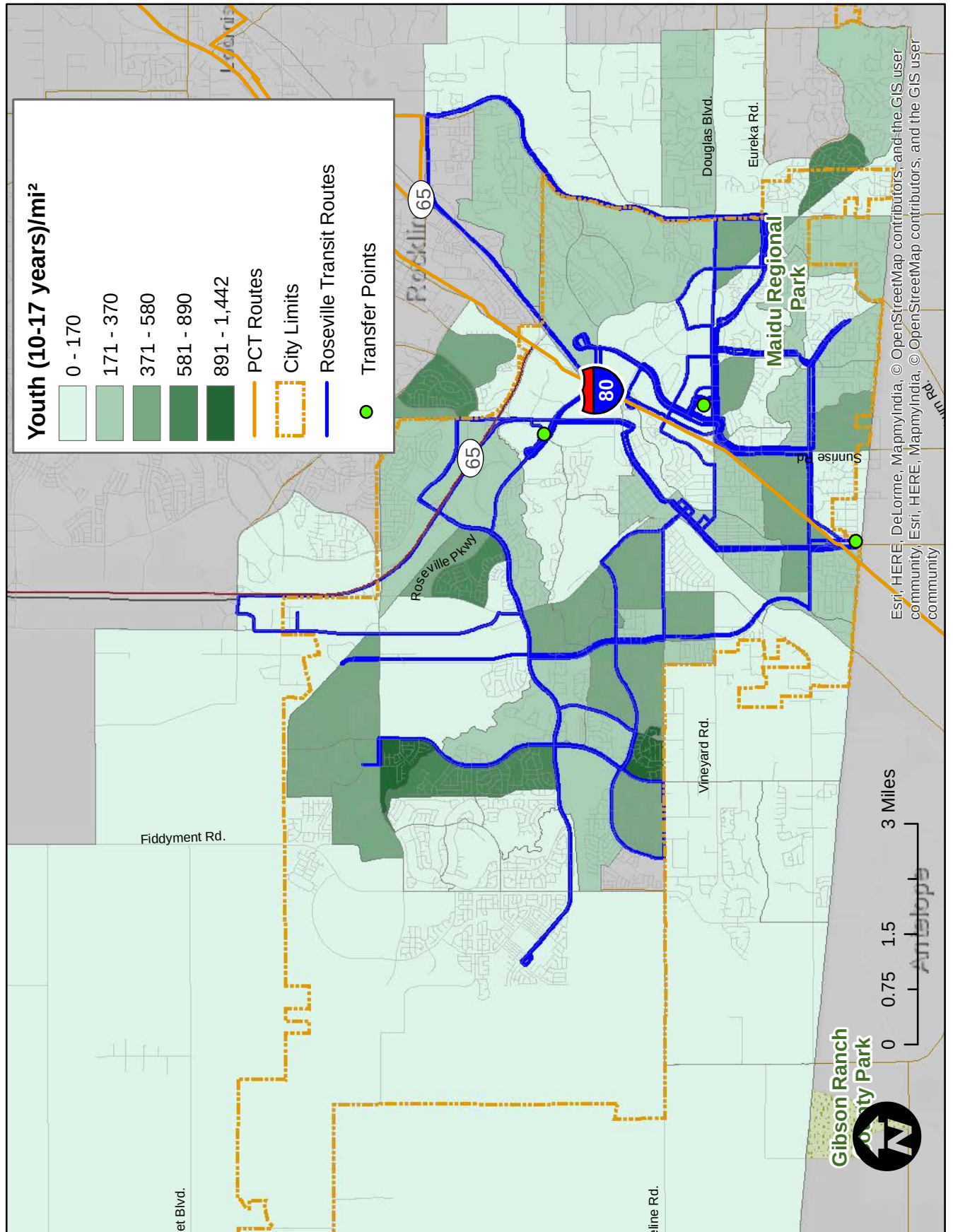
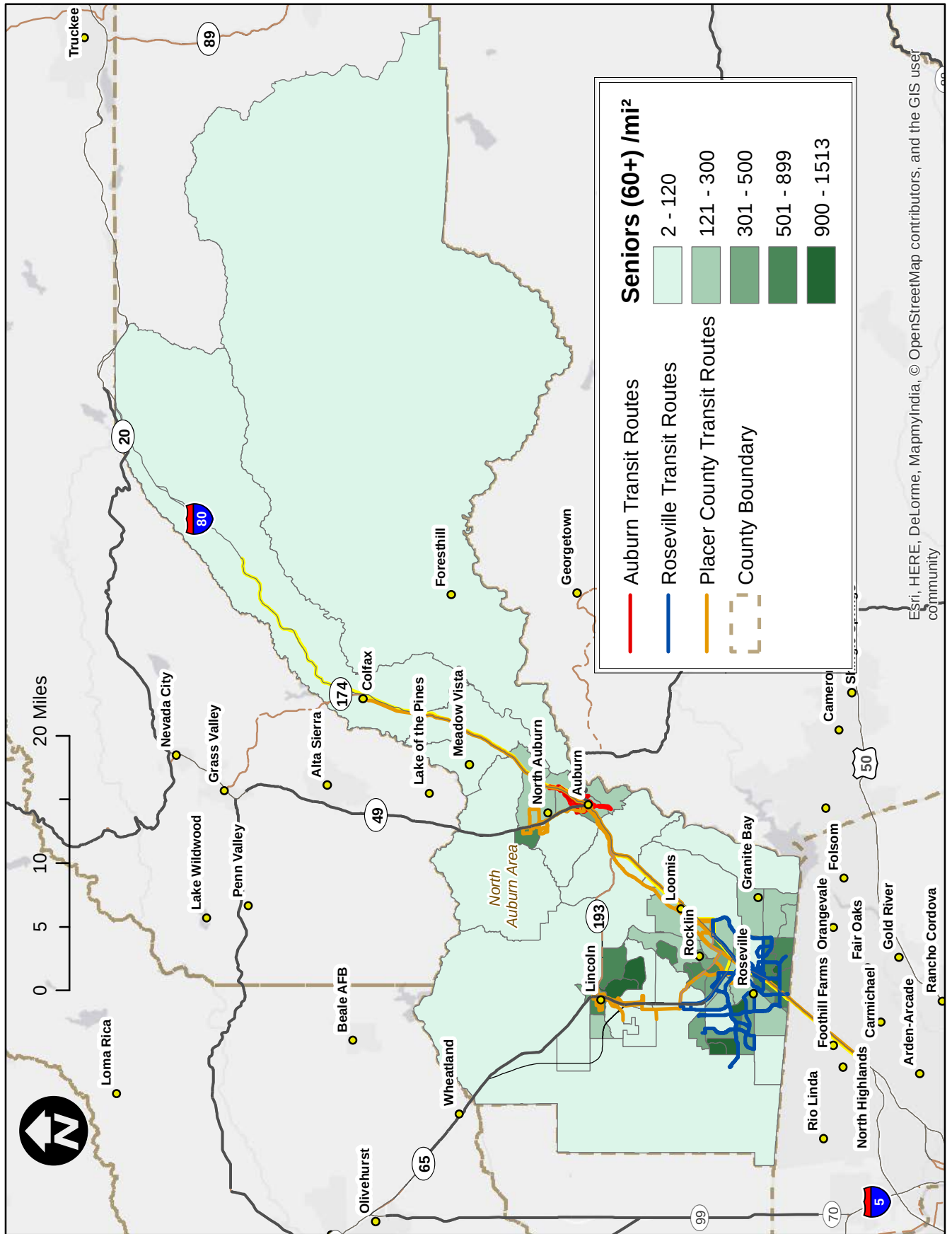


Figure 6
Senior Population Density By Census Tract Placer County Transit Area



ESri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Figure 7
Senior Population Density in the Roseville Area

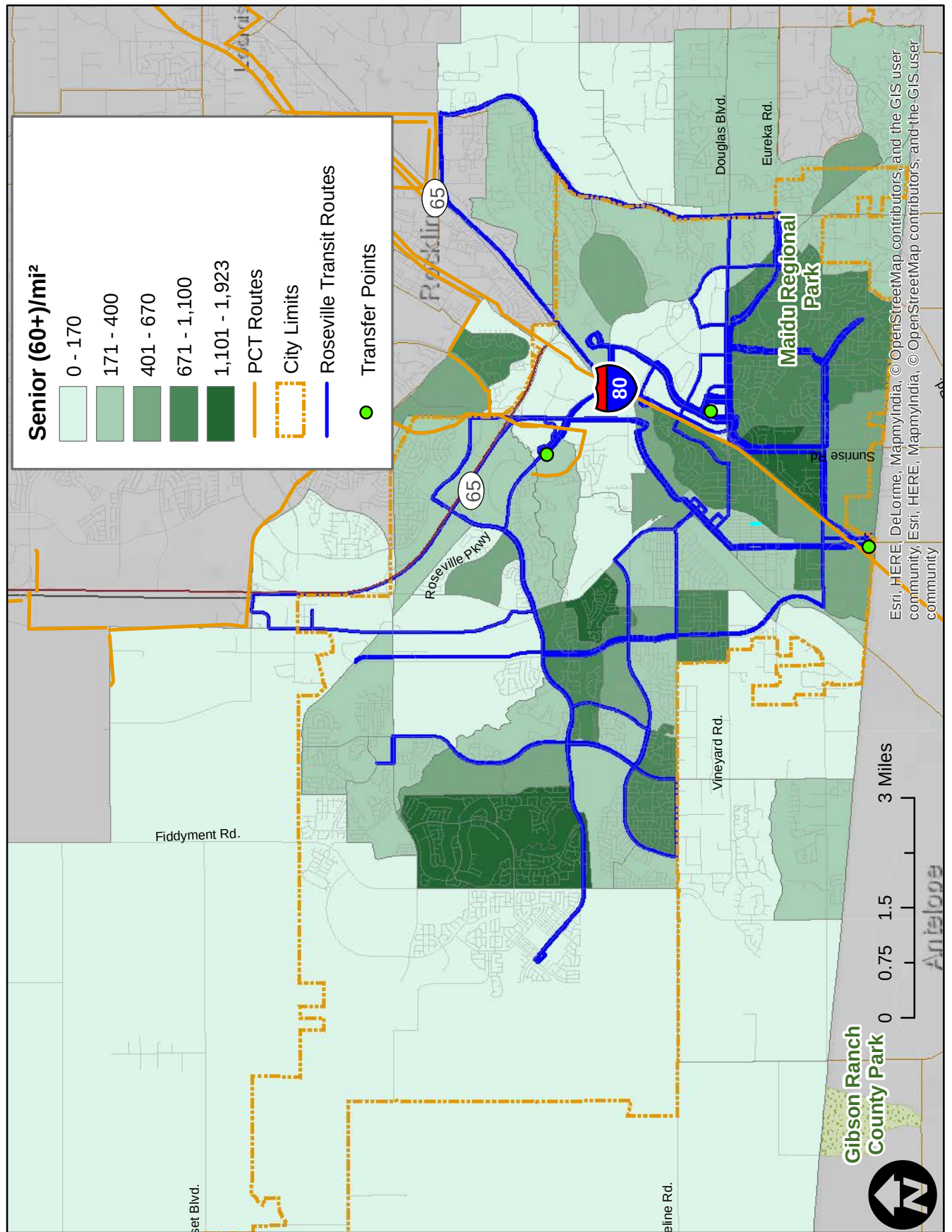
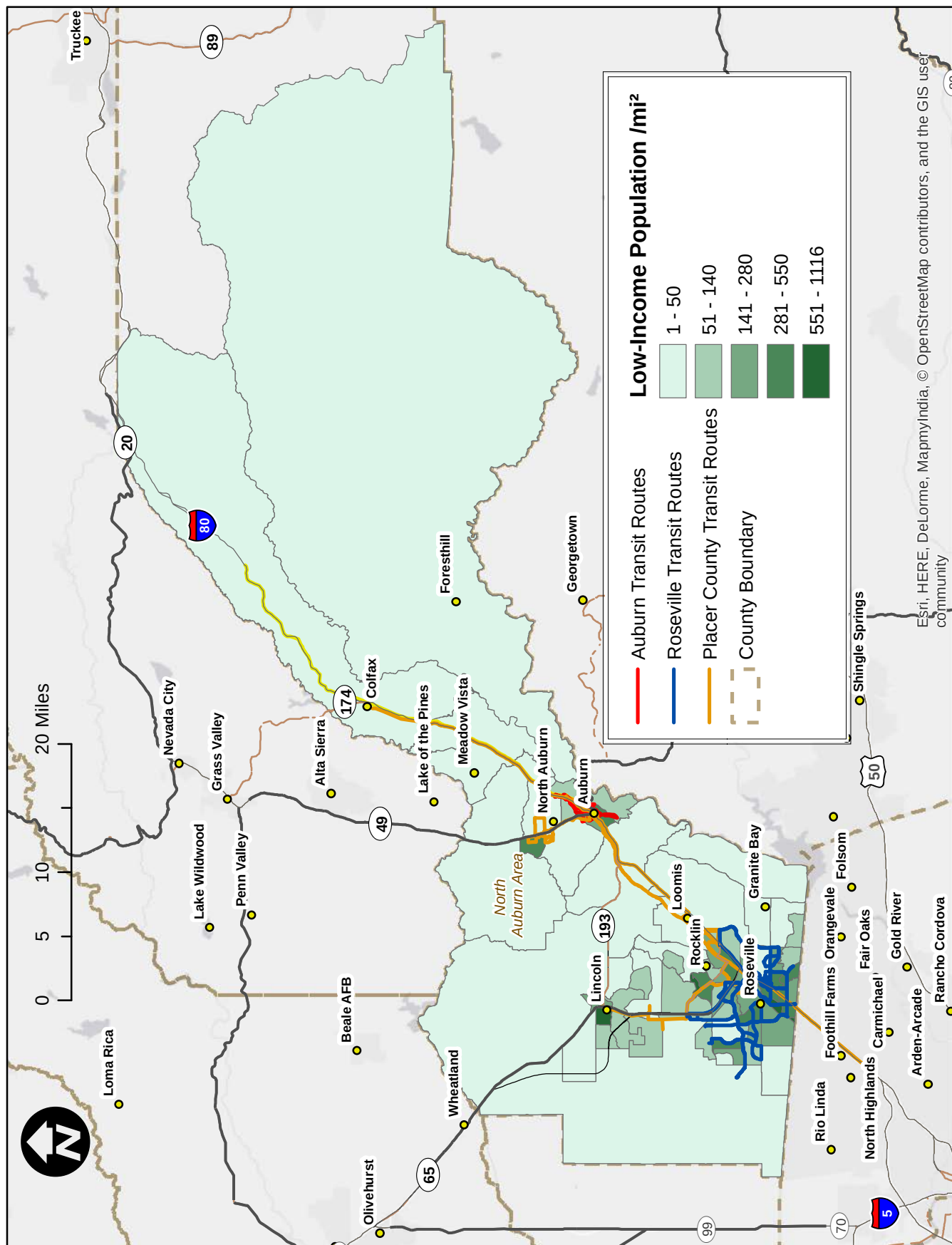


Figure 8
Low-Income Density By Census Tract Placer County Transit Area



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Figure 9
Low Income Household Density in the Roseville Area

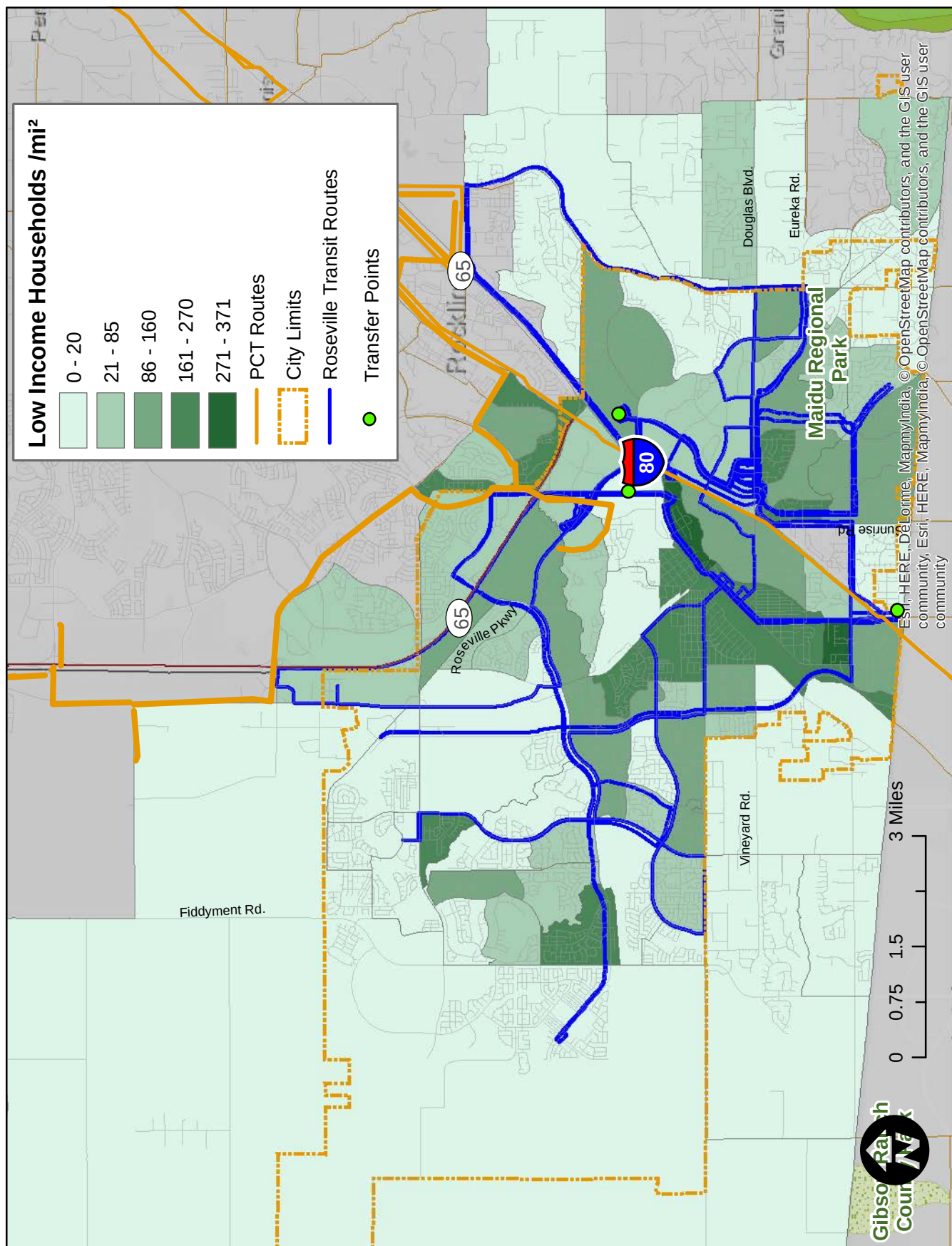


Figure 10
Population with a Disability Density By Census Tract Placer County Transit Area

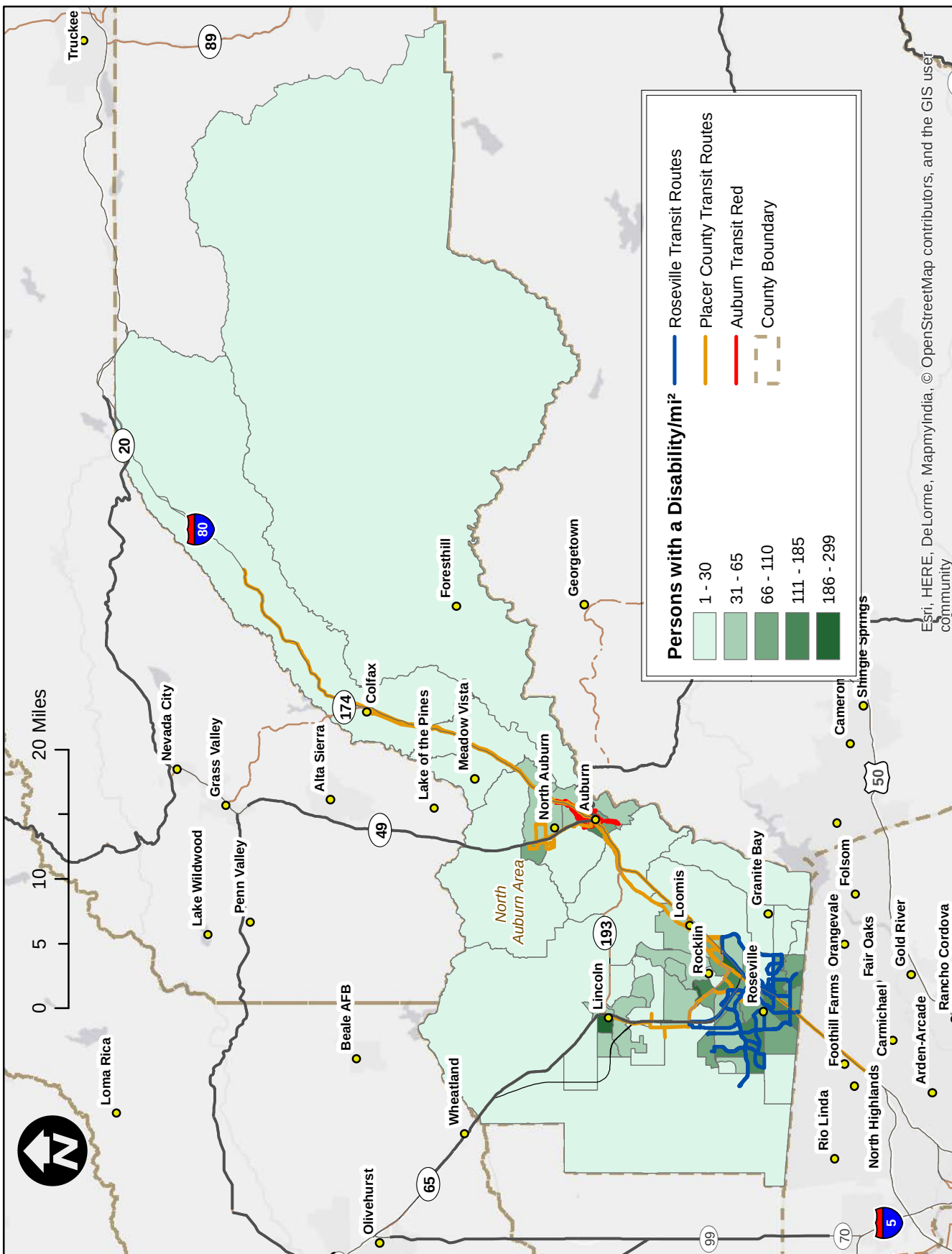


Figure 11
Population with a Disability Density in the Roseville Area

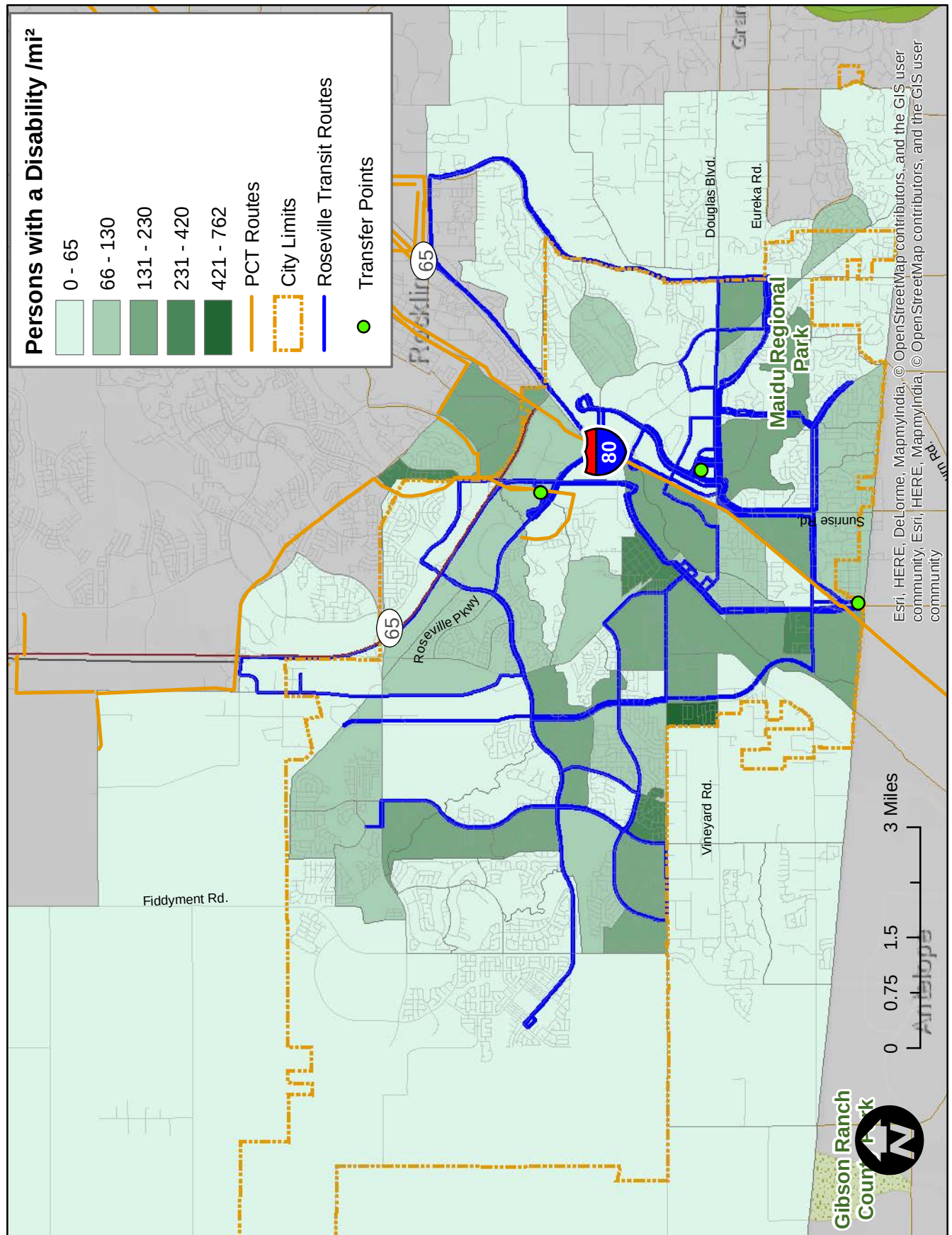
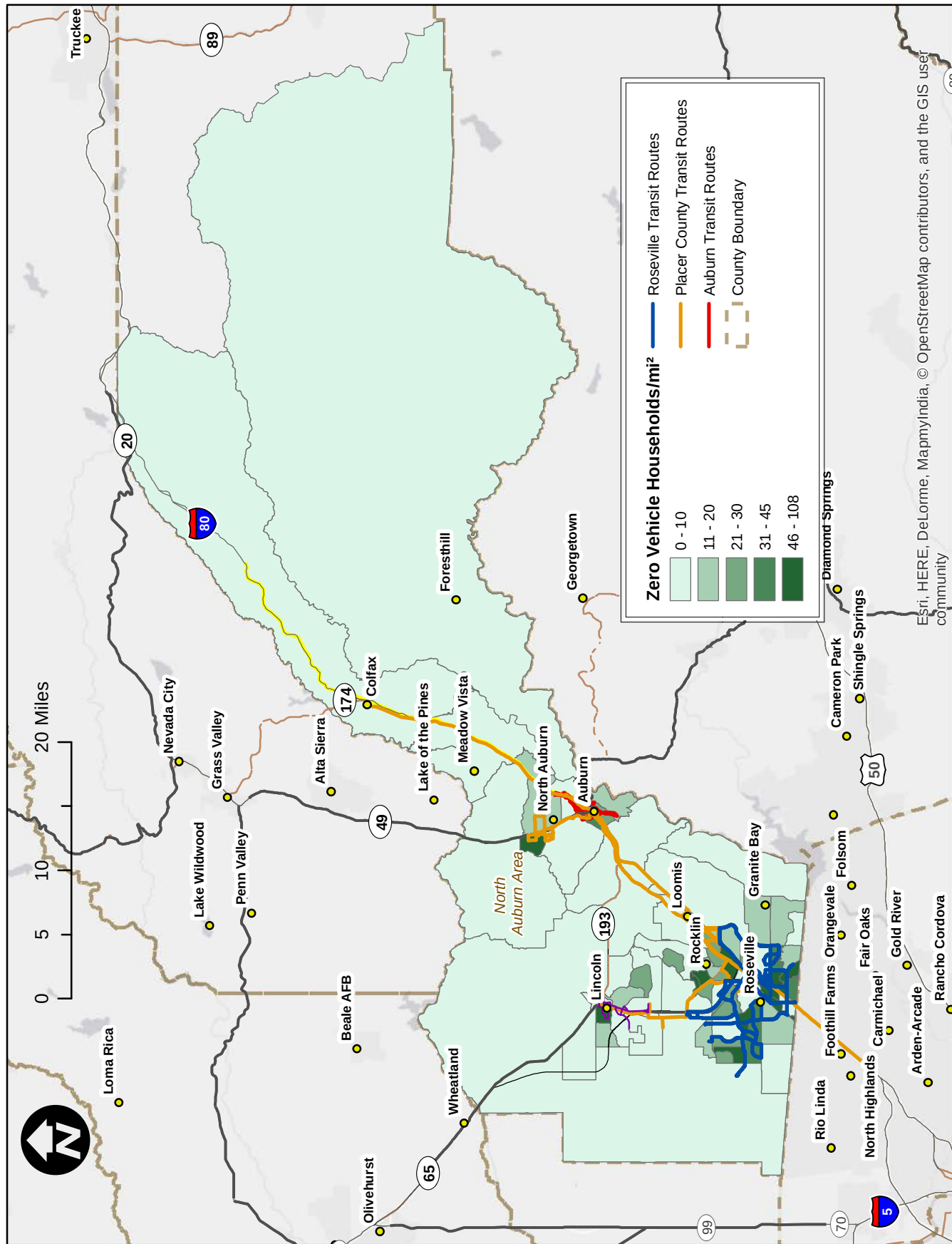
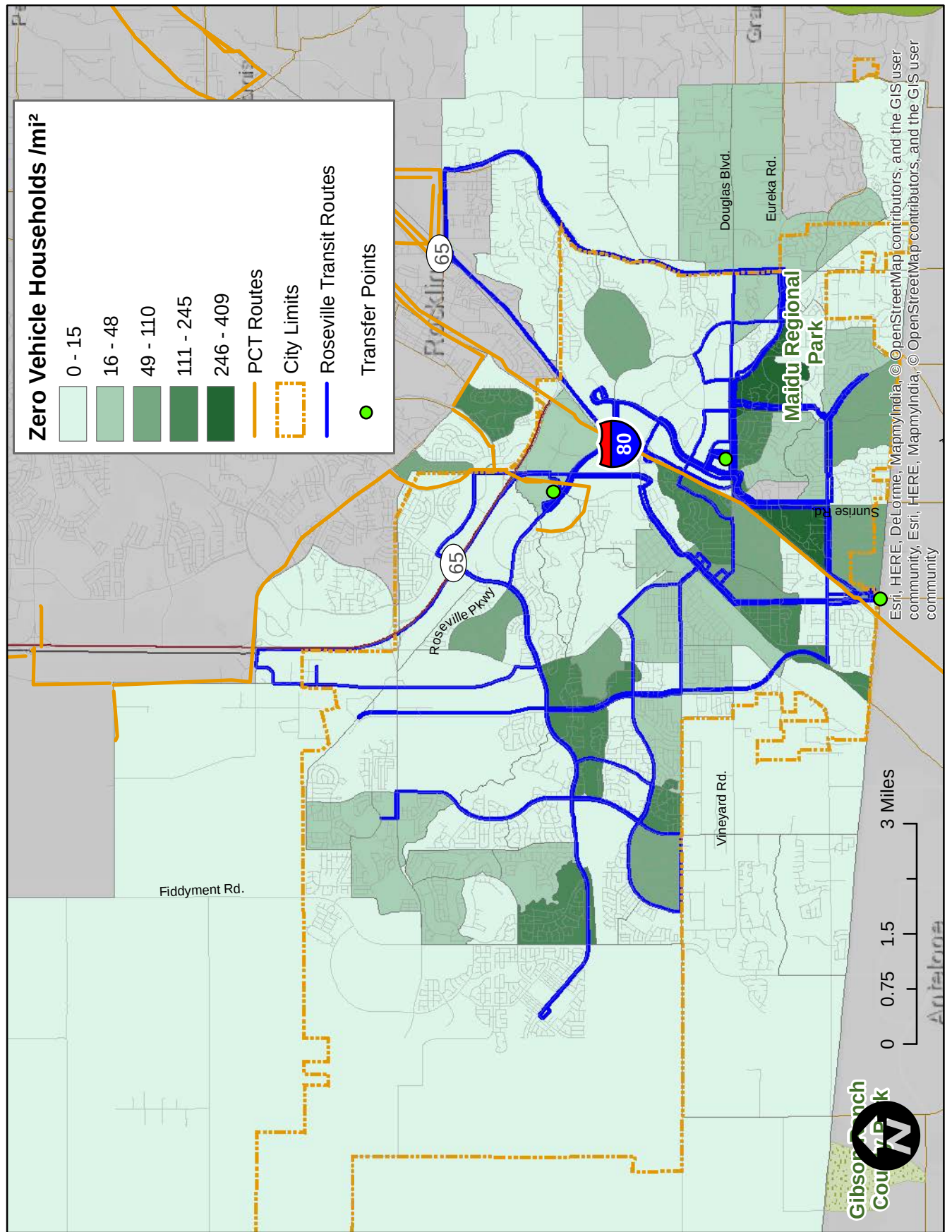


Figure 12
Zero Vehicle Household Density By Census Tract Placer County Transit Area



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Figure 13
Zero Vehicle Household Density in the Roseville Area



services but some are over a one mile walk away. However, DAR does serve these areas directly.

- In Roseville (Figure 7) the greatest number of residents over age 60 per square mile are found in the block groups near the Sierra Pines Golf Course (1,500 to 1,900 per square mile).
- **Low Income Households** - According to the Census roughly 9 percent of study area households or 31,300 households were living below the poverty level in 2015. There is likely significant overlap between low income households and zero-vehicle households.
 - Figure 8 (data for the western county area by census tract) shows that central Lincoln has the greatest concentration of low income households in the study area with over 1,000 low income households per square mile followed by the commercial core area of Rocklin north of Sunset Avenue with 680 low income households per square mile.
 - Within the Roseville Transit service area (Figure 9) there are multiple block groups of 300 or more low income households per square mile: between Dry Creek and Cirby Way, near Eastwood Park and in the Enwood area south of Atlantic Ave.
- **Disabled** - Roughly five percent of the study area population age 20 to 64 (16,086 persons) has some type of disability.
 - For the broader area (Figure 10), the census tracts with the densest population of disabled residents are located in Rocklin (commercial core area north of Sunset and the area west of I-80 and south of Rocklin Road) and central Lincoln. In all these census tracts at least 200 disabled residents per square mile were recorded.
 - In the Roseville Transit service area (Figure 11), the block group which stands out as having the greatest concentration of disabled residents is located between Foothill Blvd, Riesling Drive and the City Limits (762 disabled residents per square mile).
- **Zero Vehicle Households** – Perhaps the greatest indicator of transit dependency is households with no vehicle available. The study area as a whole has 4,204 zero vehicle households. This represents three percent of the households in the study area according to the US Census American Community Survey.
 - The census tracts with the largest concentration of zero vehicle households in western Placer County are found in Roseville (Figure 12). West central Lincoln

and the commercial core area of Rocklin north of Sunset have close to 60 zero vehicle households per square mile. Both these area are fairly well served by public transit.

- In Roseville (Figure 13), the block group which includes the Terraces of Roseville retirement community has the greatest concentration of zero vehicle households (438), followed closely by the block group including Eastwood Park (373 zero vehicle households per square mile). Both of these areas are well served by public transit making it possible for residents to live in these areas without a vehicle.

Other Population Characteristics

Veteran Population

Another subset of transit dependent population is veterans. Veterans often need to travel longer distances to medical centers and clinics which are part of the Veterans Administration (VA). Veterans are potentially eligible for WPTCSA services if they are disabled or over age 60. The closest VA Medical Center for Western Placer County residents is in Mather, CA just outside Sacramento. VA Outpatient Clinics are located in McClellan, Mather and Auburn, CA. A Vet Center is located in nearby Citrus Heights. Table 3 shows the total veteran population for each transit operator service area according to the US Census. Tables B-4 – B-6 in Appendix B present the veteran population by census tract and block group for each region.

Table 3: Western Placer County Other Population Characteristics									
Transit Service Area	Total Population	Total Households	Square Miles	Veteran		Hispanic or Latino, or Other Race, not White		Limited English Proficiency Households	
				#	%	#	%	#	%
Western Placer County	353,847	130,482	1,952	27,487	7.8%	103,046	29.1%	3,243	2.5%
Roseville Area	135,392	49,325	160	9,254	6.8%	45,695	33.8%	1,471	3.0%
Source: US Census American Community Survey, 2015 Estimates									

- For Western Placer County as a whole, roughly 7.8 percent (27,487 people) of the population are veterans. As for census tracts with the greatest number of veterans: over 1,000 veterans live in the census tract that includes the Sun City Lincoln Homes active adult community. A relatively high number of veterans (around 900) reside in the census
- tracts which encompass the City of Colfax, Alta and Dutch Flat. Fixed route public transit services are limited to these communities.

- In the Roseville area, 9,254 veterans were recorded by the US Census. The block group with the greatest number of veterans is located West of Fiddymment Road (639 veterans)

Minority and Limited English Proficiency Population

An important part of the planning process is ensuring environmental justice. Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Any planning process should not have a greater significant negative impact on minority populations. Additionally, the planning process should ensure meaningful involvement from these populations. The objective of a transit plan is to improve mobility for all community residents, including minority populations. To ensure that all segments of the population are considered in the transit planning process, Table 3 and Tables B4 – B6 in Appendix B identify population number for “Latino, Hispanic, Other Race Non-White” residents and households with limited English proficiency. This data is also helpful for identifying pockets where bilingual transit information and marketing is particularly important.

- Roughly 29 percent of the western Placer Study Area (103,046 people) is considered Hispanic, Latino or Other Race not-White. In the Roseville Area, the proportion is greater: 33.8 percent. There are 3,243 Limited English Proficiency (LEP) households in the study area (Western Placer County), which represents around 2 percent of total households. The study area census tract with the highest proportion of “Non-White” residents is located in central Lincoln west of Lincoln Blvd, where 57 percent of residents (4,511) fit into the Hispanic, Latino, Other Race Non-White category. This census tract also has the highest number of LEP households in the study area, 387 households or 16 percent. The large census tract west of Lincoln and Roseville also has a high proportion of “Non-White” residents (42 percent or 5,715 people). This area is not served by fixed route public transit.
- In Roseville, the block groups in Roseville Heights (1,313 or 64 percent) and Between Dry Creek, Vernon, Cirby and Riverside (697 or 59 percent) have the greatest proportion of “Non-White” residents. The block group west of Fiddymment Road (much of which is outside the City limits) has the greatest number of LEP households (160 or 4 percent).

EMPLOYMENT

Commute Patterns

Countywide

An analysis of commute patterns is important for public transit planning, particularly as both Roseville Transit and Placer County Transit operate successful commuter services into downtown Sacramento. The US Census Longitudinal Employer Household Dynamics (LEHD)

provides commute pattern data for 2015. As LEHD data tracks job locations by employer address, it is difficult to accurately track those who telecommute. For this reason, LEHD data can often show high numbers of employees travelling long distances to work. Nevertheless, the LEHD data is the best data available to review commute patterns.

Table 4 presents commute patterns for Placer County as a whole. As shown, the greatest number of employed Placer County residents work within the City of Roseville (22,193 or 16.1 percent). This is closely followed by the City of Sacramento (19,034 or 13.8 percent). Other Placer County communities with a significant amount of jobs for Placer County residents are Rocklin, North Auburn, Auburn, and Lincoln. For jobs located within Placer County, the greatest number of employees filling these jobs live in the City of Roseville (17,344 or 13 percent), followed by the City of Rocklin (9,440 or 7.1 percent). A significant number of Placer County employees commute from the City of Sacramento (6,858 or 5.1 percent) and an additional 6,255 employees (4.7 percent) commute from nearby Citrus Heights.

Roseville

Figure 14 graphically displays locations of employment for Roseville residents by census tract. This includes persons employed at all employers. The greatest number of Roseville residents (2,112 employees) work in the census tract which encompasses the Lead Hill area, Kaiser Permanente and the Sierra Gardens Roseville Transit Transfer Point within Roseville. The next largest pocket of employment locations for Roseville residents is downtown Sacramento centered around the Capital (1,546 employees). Other areas of note are the census tract including the Galleria Mall and the tract including Foothills Blvd north of Pleasant Grove.

Major Employers in Placer County

Data from the California Employment Development Department presented in Table 5 confirms that the majority of major employers in western Placer County are located in Roseville. Industries range from tech companies to health care. Placer County is a large employer and most offices are located in Auburn. The Thunder Valley Casino located in Lincoln is also a major employer for the area.

MAJOR ACTIVITY CENTERS

Figure 15 displays likely destinations for transit riders. These include schools, colleges, government services, medical facilities and large shopping centers. As shown, generally fixed route services serve most transit activity centers. A few senior apartment complexes are located off the fixed route but they are served by DAR.

PROPOSED LAND DEVELOPMENT PROJECTS

As shown in Table 1 above, Placer County has been growing at a rapid rate and is projected to continue to grow at 1.4 percent annually. There is vacant land available on the outskirts of each community and many large development projects have been approved or are under construction. Some of these developments could generate significant demand for new transit services. The following outlines proposed land use development projects by area that are expected to result in at least partial development over the coming seven years.

Table 4: Commute Patterns for Placer County Residents and Workers

Places Where Placer County Workers are Employed			Placer Where Placer County Workers Live		
	Count	Share		Count	Share
Roseville, CA	22,193	16.1%	Roseville, CA	17,344	13.0%
Sacramento, CA	19,034	13.8%	Rocklin, CA	9,440	7.1%
Rocklin, CA	7,902	5.7%	Sacramento, CA	6,858	5.1%
North Auburn CDP, CA	5,238	3.8%	Citrus Heights, CA	6,255	4.7%
Arden-Arcade CDP, CA	4,109	3.0%	Lincoln, CA	5,995	4.5%
Folsom, CA	3,985	2.9%	Antelope CDP, CA	3,056	2.3%
Rancho Cordova, CA	3,951	2.9%	Auburn, CA	2,840	2.1%
Auburn, CA	3,757	2.7%	Folsom, CA	2,647	2.0%
Lincoln, CA	2,828	2.1%	Granite Bay CDP, CA	2,630	2.0%
San Francisco, CA	2,525	1.8%	Carmichael CDP, CA	2,326	1.7%
Citrus Heights, CA	2,230	1.6%	North Auburn CDP, CA	2,296	1.7%
Carmichael CDP, CA	1,897	1.4%	Arden-Arcade CDP, CA	2,290	1.7%
Granite Bay CDP, CA	1,724	1.3%	Orangevale CDP, CA	1,996	1.5%
North Highlands CDP, CA	1,690	1.2%	Elk Grove, CA	1,822	1.4%
San Jose, CA	1,496	1.1%	North Highlands CDP, CA	1,761	1.3%
West Sacramento, CA	1,434	1.0%	Foothill Farms CDP, CA	1,760	1.3%
Loomis town, CA	1,412	1.0%	Rancho Cordova, CA	1,700	1.3%
Stockton, CA	1,047	0.8%	Truckee town, CA	1,557	1.2%
El Dorado Hills CDP, CA	884	0.6%	Fair Oaks CDP, CA	1,398	1.0%
Elk Grove, CA	881	0.6%	El Dorado Hills CDP, CA	1,326	1.0%
Oakland, CA	831	0.6%	Yuba City, CA	1,227	0.9%
Grass Valley, CA	773	0.6%	Loomis town, CA	1,059	0.8%
Yuba City, CA	745	0.5%	San Jose, CA	1,029	0.8%
Gold River CDP, CA	672	0.5%	Reno, NV	1,022	0.8%
Antelope CDP, CA	666	0.5%	Stockton, CA	782	0.6%
All Other Locations	43,752	31.8%	All Other Locations	50,944	38.2%
Total Employed Residents	137,656		Total Workers	133,360	

Source: US Census Longitudinal Household Employer Dynamics 2015 data

Figure 14
Where Roseville Residents Work

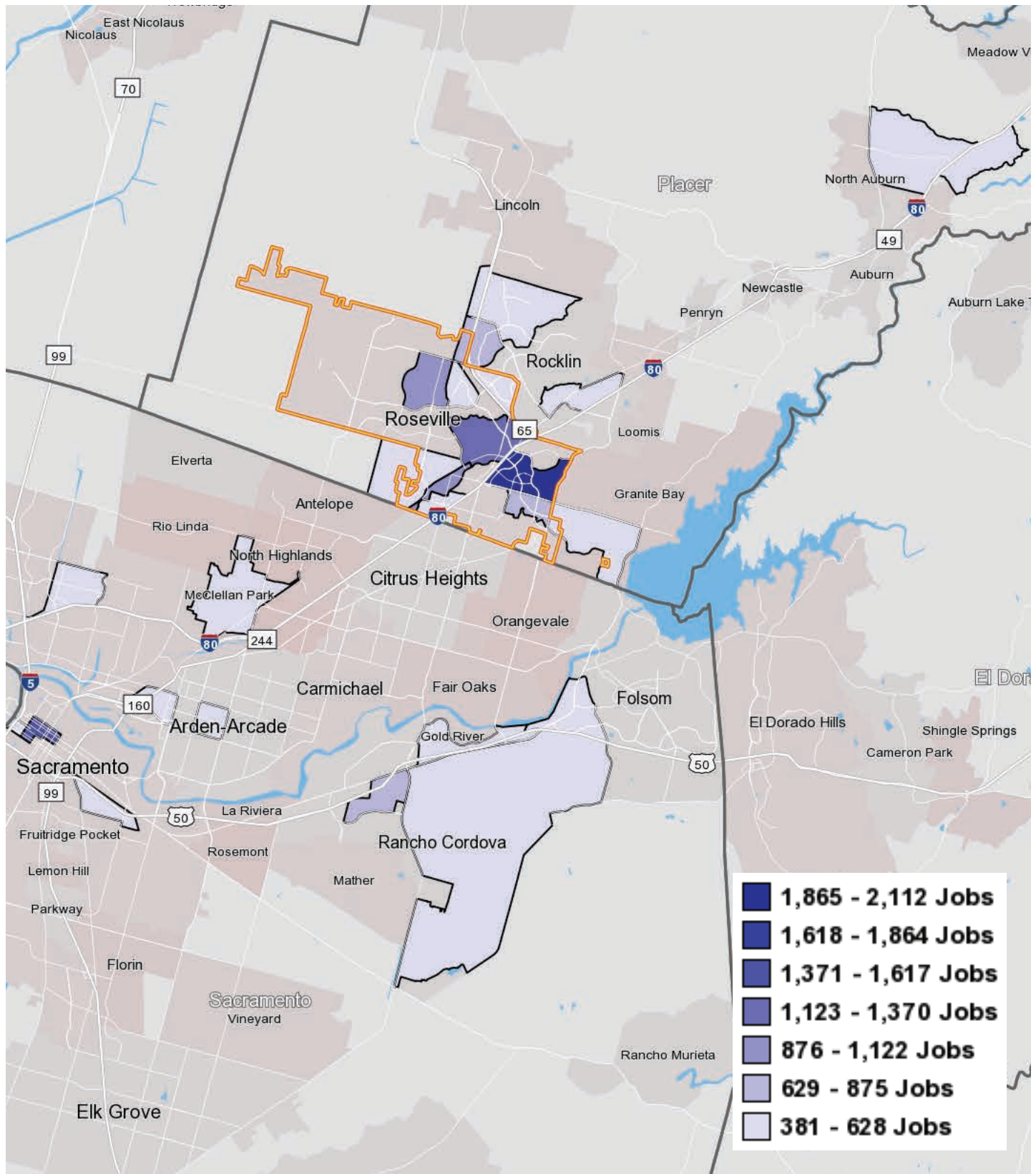


Table 5: Major Employers in Western Placer County

Employer	# of Employees	Location
AT&T	1,000 - 1,499	Lincoln Way, Auburn
Hewlett Packard	1,000 - 1,499	Foothills Blvd, Roseville
Placer County Government Services	1,000 - 1,499	B Street, Auburn
Pride Industries	1,000 - 1,499	Foothills Blvd, Roseville
Sutter Roseville Medical Center	1,000 - 1,499	Medical Plaza Dr, Roseville
Thunder Valley Casino	1,000 - 1,499	Athens Ave., Lincoln
Consolidated Communications	500 - 999	Industrial Ave, Roseville
Placer County Education	500 - 999	Nevada St., Auburn
Advantist Health	500-999	Creekside Ridge Dr., Roseville
Golfand Sunsplash	500-999	Taylor Rd, Roseville
Source: CA Employment Development Department		

City of Roseville Projects

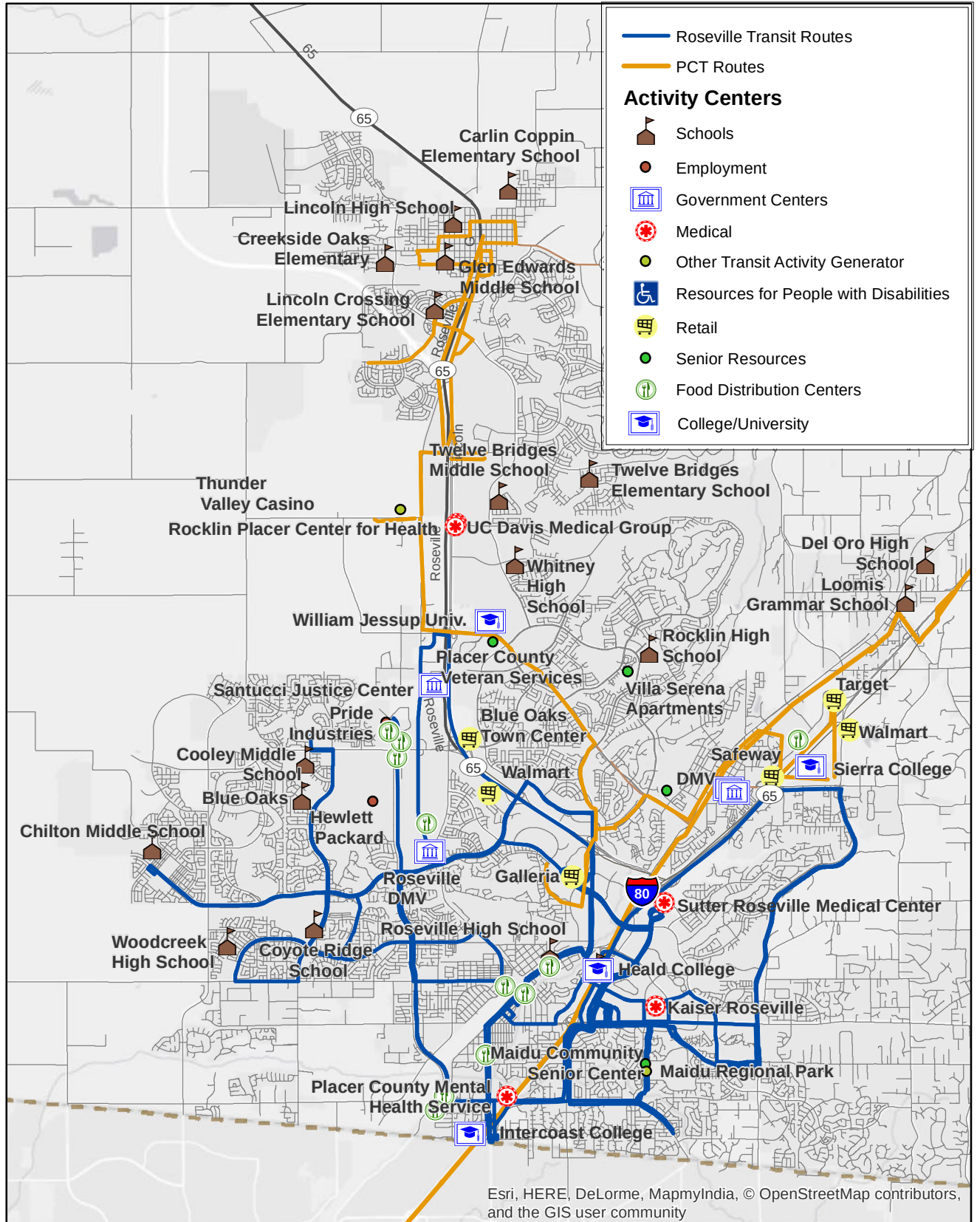
Amoruso Ranch is a 694 acre specific plan project located northwest of the current City limits, south of West Sunset Boulevard approximately 1.5 miles west of Fiddymment Road. The proposed project will result in the development of a mix of uses, including 337 acres of low, medium and high density residential land developed with 2,827 dwelling units. The land use plan also includes three commercial parcels totaling 51 acres, a 9.6-acre elementary school site, seven neighborhood parks, and a 3-acre fire station/public facilities site. Approximately 135 acres of the site will be set aside as open space preserve.

The **West Roseville Specific Plan** is the 3,162 acres area west of Fiddymment Road, generally north of Pleasant Grove Boulevard. The plan was adopted in February 2004 and the plan area was annexed into the City of Roseville from unincorporated Placer County. The adopted specific plan allows for 8,792 single and multi- family units, including approximately 704 age-restricted units, 57 acres of commercial, 109 acres of industrial, 255 acres of park, 705 acres of open space, and 108 acres of schools. At build-out the plan area is expected to accommodate approximately 22,332 residents and provide 3,726 jobs. The remainder of the plan area is expected to be constructed over the next five to ten years. Currently Roseville Transit serves only the Pleasant Grove Boulevard corridor of this plan area.

Campus Oaks Master Plan area is located east of Woodcreek Oaks Blvd and south of Blue Oaks Blvd. The approved project will include 948 new residential units with a mixture of high density, medium density and low density. Most of these units will be within one quarter mile of existing Roseville Transit Routes.



Figure 15
South Placer Activity Centers



Kaiser Riverside and Cirby Medical Office Building – There is a planned expansion of the existing medical office building located on Riverside Drive which will double the capacity of the existing building. The building is currently served by Roseville Transit.

Unincorporated Placer County

There are several major developments in unincorporated Placer County that could have impacts on the demand for or provision of transit service in Roseville:

- **Placer Vineyards:** The Placer Vineyards Specific Plan Area consists of approximately 5,230 acres of land located north of the city of Sacramento and southwest of the city of Roseville in an unincorporated area of Placer County. The Specific Plan Area is located at the southwest corner of Placer County and is bound by Base Line Road to the north, the Placer County / Sutter County line and Pleasant Grove Road to the west, the Placer County / Sacramento County line to the south, Dry Creek to the south and east, and an abandoned portion of Walerga Road to the east. At buildout, the specific plan area will increase the population of Placer County by 32,800 new people over the next 20 to 30 years. Currently Roseville Transit Routes D and M travel within one mile of the edge of the development and the closest connection to Placer County Transit would be at the Roseville Galleria. The Placer Vineyards Specific Plan requires the development to implement transit-related mitigation requirements. The Placer Vineyards Transit Master Plan outlined the following transit services to be implemented as development occurs:
 - Local route circulating around the Specific Plan area on hourly and half-hourly peak headways.
 - Commuter route via Watt Avenue to connect residents to Sac RT Light Rail
 - Inter-regional service that connects to the Roseville Galleria on hourly headways

At this time, it is unknown who will operate these transit services and if there will be sufficient demand to implement these services within the seven-year SRTP time frame. Regardless, Roseville Transit and Placer County Transit will need to connect to the new Placer Vineyards Inter-regional route at the Roseville Galleria in the future.

- **Riolo Vineyard:** The Riolo Vineyard Specific Plan Area is a 526-acre master planned community planned for 884 single family residential units and 10.5 acres of commercial located just south and east of Placer Vineyards. In 2017 as part of the Riolo Vineyard Specific Plan, a Transit Zone of Benefit was established by the Placer County Board of Supervisors. The Zone of Benefit includes the area bound by Watt Ave to the west, PFE Road to the south and Walerga Road to the east. As part of the program, future home owners in the development will be assessed a fee of \$46.46 per year in property tax to help fund the future transit service identified in the Placer Vineyards Transit Master Plan. This develop could also impact the need for revisions to Route D and/or commuter service.

- **Sunset Industrial Area/Placer Ranch:** The Sunset Industrial Area (SIA) is an 8,900-acre area in unincorporated western Placer County, located west of the Highway 65 corridor and situated between the Cities of Lincoln to the north, Rocklin to the east, and Roseville to the south. The Placer Ranch Specific Plan area lies within the SIA. The existing Thunder Valley Casino is located within the SIA planning area. The draft land use vision for the area is to include more modern planning concepts, such as an entertainment mixed-use district to bring in visitors and consumers from outside the region; a 400-acre innovation center district similar to a Google corporate campus; and an eco-industrial district to provide opportunities for energy alternatives, enhanced recovery of materials and solid waste related research and development. Development of the SIA area is likely beyond the time horizon of this SRTP as a Draft Environmental Impact Report (EIR) has not yet been prepared.

DEMOGRAPHIC OVERVIEW FINDINGS

The following presents a summary of findings from the demographics review:

- The population of Roseville (and western Placer as a whole) has the potential to expand significantly over the next 10 years, particularly older adults who may become transit dependent. Another result of population growth is an increase in traffic volumes on local roadways. This could make some public transit services (particularly commuter routes) more attractive.
- There are multiple large residential and commercial developments currently going through the planning process. Although many may not be built out during this plans time horizon, they should be considered in drafting the short range transit plans
- A significant number of Roseville and other western Placer area residents commute to Sacramento for work. The majority of these commuters work in the downtown area near the capital. This indicates that although commuter services to other Sacramento locations could be warranted, the majority of services should continue to serve the downtown area.
- Roseville has the most employment centers as well as major transit activity generators for western Placer County residents. This underscores the importance of maintaining and increasing good connections between Roseville Transit and Placer County Transit.

OVERALL SERVICE DESCRIPTION AND ORGANIZATION

Public transit has been operating in Roseville since 1970. A fixed route service was initially operated by Mountain Transportation Cooperative (MTC), which evolved into a demand responsive service in 1971. With the loss of federal funding in 1973, MTC was forced to shut down which in turn led to the City of Roseville contracting with the Sacramento Regional Transit District for commuter and fixed route service. Demand response service resumed in 1978 under contract. The service has since evolved into three service modes: local fixed route, commuter and Dial-A-Ride. The Dial-A-Ride and ADA paratransit services both operate within the jurisdictional boundaries of the City of Roseville during regular service hours and on Sundays.



In 2017 Roseville Transit also began operation of the Game Day Express providing service between Roseville and the Golden One Arena for Kings basketball home games. On behalf of and with support from the Western Placer Consolidated Transportation Services Agency (WPCTSA), the City of Roseville operates the following regional programs: the South Placer Transit Information Center, Transit Ambassador Program, and mobility program.

Roseville Transit is managed by the City of Roseville Public Works Department, using a contractor to provide management and operations of Roseville Transit and the South Placer Transit Information Center. Vendor responsibilities include providing drivers, dispatch, reservationists, direct oversight, and insurance as well as cleaning of all the bus shelters. City of Roseville Alternative Transportation Division staff manage the contract and City of Roseville Public Works staff maintain and supply fuel for the city-owned transit vehicle fleet. City staff also manage the contract with trainers for the mobility program, recruit and train transit ambassadors, staff outreach events, and provide a wide range of marketing materials, public information using social media and print materials.

LOCAL FIXED ROUTES

Roseville Transit operates 11 local fixed routes within the City of Roseville and connecting to other regional public transit services. The following services are provided, as shown in Figure 16 and summarized in Table 6:

Local Route A- Louis/Orlando, Civic Center, Galleria to Sierra Gardens -- Routes A and B operate as directional pairs on the same large loop. Service runs Monday through Friday every 30 minutes, beginning at 6:00 am to 6:30 pm, then hourly thereafter until 9:53 pm. On Saturdays, this service operates hourly in a clockwise direction from 8:00 am to

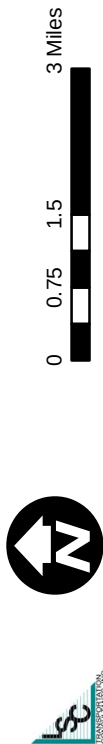
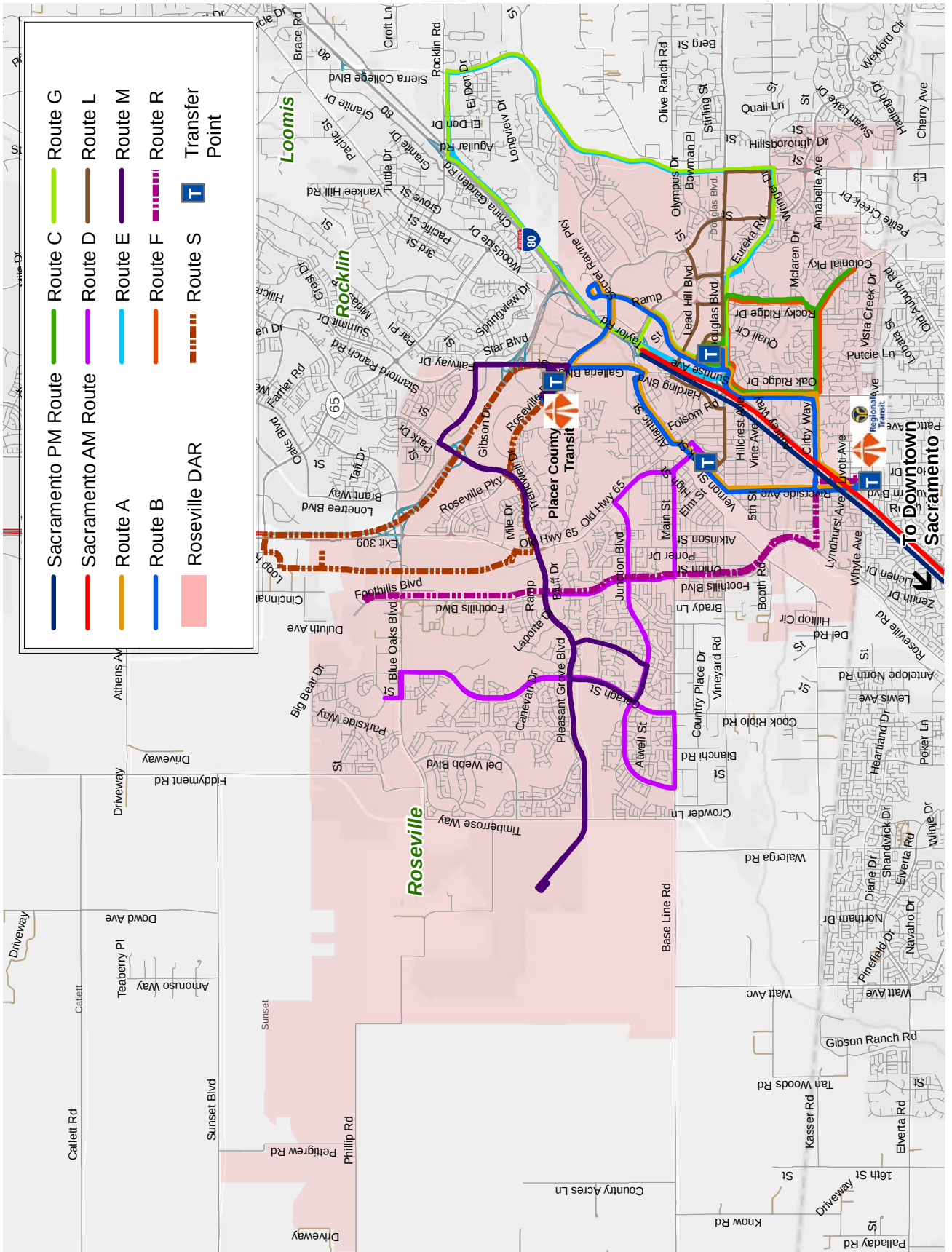


Figure 16
Roseville Transit Existing Transit Services



5:00 pm. There are four transfer points along this route, at Sierra Gardens, Louis/Orlando the Civic Center and the Galleria at Roseville shopping center, with connections to Placer County Transit, Sacramento Regional Transit, other local routes and Commuter Routes. Key destinations along this route include Sutter Roseville Medical Center, Sierra College, Johnson Pool, Roseville High School and the Galleria at Roseville Shopping Center.

Table 6: Existing Local Roseville Transit Service Plan

		Route										
		A	B	C	D	E	F	G	L	M	R	S
Service Frequency -- Minutes Between Buses												
Weekday	Start Time	6:00	6:10	6:30	5:42	7:53	7:39	6:53	6:25	5:57	7:30	
	6:00 AM	30	30	120	60				60			
	7:00 AM	30	30	120	60			120	60	60	2 Runs	2 Runs
	8:00 AM	30	30	120	60	120	120	120	60	60		
	9:00 AM	30	30	120	60	120	120	120	60	60		
	10:00 AM	30	30	120	60	120	120	120	60	60		
	11:00 AM	30	30	120	60	120	120	120	60	60		
	12:00 PM	30	30	120	60	120	120	120	60	60		4 Runs
	1:00 PM	30	30	120	60	120	120	120	60	60		
	2:00 PM	30	30	120	60	120	120	120	60	60		
	3:00 PM	30	30	120	60	120	120	120	60	60		
	4:00 PM	30	30	120	60	120	120	120	60	60	2 Runs	2 Runs
	5:00 PM	30	30	120	60	120	120	120	60	60		
	6:00 PM	30	30	120	60	120	120	120		60		
	7:00 PM	60	60							60		
	8:00 PM	60	60							60		
	9:00 PM	60	60							60		
	End Time	21:53	21:43	18:53	18:35	18:30	17:53	17:30	18:15	21:57	17:20	
Saturday	Start Time	8:00	8:07	--	7:42	--	--	--	8:25	7:57	--	--
	8:00 AM	60	60	--	60	--	--	--	60	60	--	--
	Saugstad PnR	60	60	--	60	--	--	--	60	60	--	--
	10:00 AM	60	60	--	60	--	--	--	60	60	--	--
	11:00 AM	60	60	--	60	--	--	--	60	60	--	--
	12:00 PM	60	60	--	60	--	--	--	60	60	--	--
	1:00 PM	60	60	--	60	--	--	--	60	60	--	--
	2:00 PM	60	60	--	60	--	--	--	60	60	--	--
	3:00 PM	60	60	--	60	--	--	--	60	60	--	--
	4:00 PM	60	60	--	60	--	--	--	60	60	--	--
	End Time	17:00	16:50	--	16:35	--	--	--	17:02	16:57	--	--
Cycle Length (Min)		60	60	23	53	37	23	37	50	60	45	50
Number of Buses in Operation												Total
Weekday		2	2	0.19	1	0.31	0.19	0.31	1	1	1	10
Saturday		1	1	--	1	--	--	--	1	1	0	5

- **Local Route B- Civic Center, Louis/Orlando, to Sierra Gardens and Galleria** -- This service operates along the same route as Local Route A, except in a counter-clockwise direction. Service is provided Monday through Friday every 30 minutes from 6:10 am to 6:40 pm and hourly thereafter until 9:43 pm. Saturday service operates hourly from 8:07 am to 4:50 pm. Transfer opportunities are the same as Route A.
- **Local Route C- Rocky Ridge, Cirby, Sunrise to Sierra Gardens** -- Route C operates Monday through Friday every other hour from 6:30 am to 6:53 pm in a clockwise loop along South Cirby and then westbound on Cirby, north along Sunrise, south on Santa Clara, east on Douglas, then south on Rocky Ridge back to South Cirby. Destinations along this route include the Pepperwood Apartments, Oakmont High School, Safeway and Bel Air grocery stores, the Roseville Gateway site, several big box retail stores, Kaiser Permanente and Roseville Medical Center offices, Maidu School and Regional Park, and Country Villa Mobile Home Park. Passengers can transfer to Roseville Transit routes: A, B, E, F, G, L and Commuter. This route interlines² with Routes G, F, and E.
- **Local Route D- Civic Center, Junction, Woodcreek Oaks, Blue Oaks to Foothills** -- This route operates service Monday through Friday every hour from 5:42am to 6:35pm, and on Saturdays from 7:42 am to 4:35pm. From the Civic Center Transfer Point, it serves a large area of northwest Roseville, focusing on service along Baseline Road/Main Street, Junction Boulevard, Woodcreek Oaks Boulevard, and Pleasant Grove Boulevard. Service is provided as far west as Baseline Road/Junction Boulevard and as far north as Diamond Creek Boulevard/Parkside Way. Other than the section north of Pleasant Grove Boulevard, service is provided only in one direction along each roadway. A transfer point at the Civic Center provides connections to local Routes A, B, L and the Commuter Route. Stops at Foothills Boulevard and Pleasant Grove Boulevard offer connections to Route M and Route R. Destinations served along this route include Kaseberg School, the Brickyard shopping area (Bel Air and Rite Aid), Coyote Ridge School, Woodcreek High School, Mahany Park, Raley's, Quail Glen School, Silverado School, Foothill Junction shopping area (Save Mart and CVS), and the County Fairgrounds. After Route D concludes on weekdays, Route M provides deviated service on request to areas along Woodcreek Oaks, Junction and Country Club.
- **Local Route E- Sierra Gardens to Sierra College Campus, Eureka and Douglas** -- Route E operates in a clockwise loop Monday through Friday every other hour from 7:53 am to 6:30 pm. This route does not operate on weekends. The Sierra Gardens Transfer Point provides a connection to local routes A, B, C, F, G, L, and the Commuter service. This route follows I-80 to Rocklin Road eastbound, then south on Sierra College Boulevard to Renaissance Creek Shopping Center. The route then heads west on Eureka and Douglas, and then circles around the Sierra Gardens transfer point. Major destinations along this route include Sierra College and Kaiser Roseville Medical Center, plus Deer Valley

² "Interlining" is the practice of scheduling an individual vehicle to operate different routes in succession.

Apartments and several grocery and retail shopping centers. This route interlines with Routes C, G, and F.

- **Local Route F- Sierra Gardens, Sunrise, Cirby and Rocky Ridge** -- Route F provides service Monday through Friday every other hour from 7:30 am to 5:53 pm. This route does not operate on weekends. Route F operates as the complement to Route C with service in the counter-clockwise direction starting at South Cirby, north on Rocky Ridge, west on Douglas, a loop north onto North Sunrise then south on Santa Clara, looping west to Sierra College Gateway Campus and south on Sunrise, east on Cirby and South Cirby as far as County Villa Mobile Home Park, then returning north on Rocky Ridge to Douglas Boulevard and west to the Sierra Garden Transfer Point. At Sierra Gardens, connections are available to local routes A, B, C, E, G, L and the Commuter Service. Like Route C, this route serves Kaiser Permanente Medical Center, Sierra College Gateway Campus, Oakmont High School, Maidu School and Regional Park and Rocky Ridge Town Center.
- **Local Route G- Sierra Gardens, Douglas, Eureka, and Sierra College Campus** -- Route G operates as the complement to Route E, travelling in the counter-clockwise direction serving Sierra College, the Sierra Gardens transfer point, Kaiser Roseville Medical Center, Deer Valley Apartments and Renaissance Creek Shopping Center. This route operates every other hour from 6:35 am to 5:30pm, Monday through Friday. This route does not operate on weekends. Connections to Routes A, B, C, E, F, L and Commuter are available at the Sierra Gardens Transfer Point.
- **Local Route L – Civic Center, Harding, Lead Hill, Douglas, Sierra College Boulevard** -- Route L operates Monday through Friday on an hourly basis from 6:25am to 6:15pm. Saturday service operates hourly from 8:25am to 5:02pm. This route goes from the Civic Center Transfer Point to the Lead Hill area, the Kaiser Medical Center, the Renaissance Creek Shopping Center and Sierra Gardens Transfer Point. The Civic Center Transfer point offers connections to local routes A, B, D and Commuter Service. The Sierra Gardens Transfer Point offers connections to local routes A, B, C, E, F, G and Commuter Service.
- **Local Route M- Galleria to West Park** -- Route M operates Monday through Friday bi-directionally from 5:57 am to 9:57 pm and on Saturdays from 7:57 am to 4:57 pm. This route consists of a long east-west route operating between the Vintage Square senior housing complex at the corner of Market Street and Pleasant Grove Boulevard, eastward on Pleasant Grove across State Highway 65 to Fairway Drive, connecting to WinCo Foods and a Costco outlet, then south on Fairway Drive and Galleria Boulevard, ending at the Galleria at Roseville and the Galleria Transfer Point. Other destinations along Route M include Target and Kohl's, Walmart and Sam's Club, Safeway, a State DMV office, Silverado Middle School, Woodcreek High School, Roseville Aquatics Complex, Sun City Roseville, Eskaton Roseville Manor, CVS and Vintage Square. Passengers can make connections at the Galleria to local routes A, B and S, as well as

Commuter bus and Placer County Transit. Certain stops in the Woodcreek Oaks area are only served on weekday evenings by request only.

- **Local Route R- Louis/Orlando, Foothills Blvd** -- Route R operates Monday through Friday during the peak hours of 7:30 am to 8:57 am and from 3:53 pm to 5:20 pm, in both directions of travel. There is no weekend service on this route. This route operates mainly along Foothills Boulevard beginning at Pasco Scientific / Pride Industries on the north, then turning east on Cirby and south on Riverside, ending at the Louis/Orlando Transfer Point. At Louis/Orlando, riders can connect to Routes A, B, and Commuter Service, as well as Sacramento Regional Transit and Placer County Transit. Destinations along this route include Pride Industries, Hewlett-Packard, Telefunken, Save Mart, California Family Fitness, Bel Air, Rite Aid and Crethaven Park.
- **Local Route S- Galleria to Santucci Justice Center** -- Route S operates 6.5 round trips Monday through Friday between the Galleria Transfer Point and the Placer County Santucci Justice Center which includes the Placer County Superior Court. Service is provided on approximately hourly frequencies, except that one late morning and one mid-afternoon run is not operated.

ROSEVILLE COMMUTER SERVICE

Commuter Express to Sacramento

Roseville Transit operates ten morning and evening commuter routes between Roseville and downtown Sacramento Monday through Friday during the peak commute hours of 5 - 9 am and 3:30 - 6:30 pm. Various Park-and-Ride (PnR) lots and other key locations are served in Roseville. As shown in Table 2, various runs serve differing stops within Roseville, though all but two runs serve the Taylor Road/I-80 PnR in both directions.

Within downtown Sacramento, all buses enter via 12th Avenue and exit via 16th Avenue, with service as far south as P Street and as far west and 15th Street. All AM buses operate consistent counterclockwise loop serving 15 stops in the downtown area, while all PM buses operate a consistent loop generally 1 to 2 blocks off of the AM loop serving 13 stops.

As also shown in Table 7, three AM runs and three PM runs provide “reverse commute” service for commuters to Roseville from downtown Sacramento. The Civic Center Transfer Center is served in the reverse direction in both the AM and PM periods, while Galleria and Louis/Orlando are served by AM reverse commute runs only and Sierra Gardens and Taylor/I-80 are served by PM reverse commute runs only.

TABLE 7: Summary of Existing Commuter Service*In Order of Downtown Service Times**Other Downtown Stop Times Not Shown*

Stop	AM 1 ⁽¹⁾	AM 2	AM 3	AM 4	AM 7	AM 6 ⁽¹⁾	AM 8	AM 10	AM 9
Foothills/Junction	--	5:35	6:00	--	--	--	--	--	--
Mahany PnR	--	5:41	6:07	--	--	--	--	--	7:10
Roseville Amtrak	--	--	6:17	--	--	--	--	--	--
Galleria	--	5:51	--	--	--	--	--	--	--
Louis/Orlando	--	--	--	6:00	--	--	--	--	--
Cirby/Sunrise	--	--	--	6:04	--	--	--	--	--
Maidu PnR	5:10	--	--	6:09	--	--	--	--	--
Taylor/I-80 PnR	5:17	6:00	--	6:18	--	6:45	6:55	7:18	7:23
Saugstad PnR	--	--	6:21	--	6:50	--	--	7:27	7:31
Downtown P&7th	6:01	6:37	6:58	6:54	7:24	7:30	7:40	8:14	8:18
<i>Galleria</i>	<i>Reverse Commute</i>		7:44	--	--	--	--	--	--
<i>Louis/Orlando</i>			--	7:24	--	--	--	--	--
<i>Civic Center</i>			--	--	--	--	--	--	9:00

Stop	PM 1	PM 2	PM 3	PM 4	PM 6	PM 7	PM 8	PM 9	PM 10
<i>Sierra Gardens</i>	<i>Reverse Commute</i>		--	--	--	3:40	--	--	--
<i>Taylor/I-80 PnR</i>			--	--	--	--	--	4:15	4:37
<i>Civic Center</i>			--	--	--	--	--	--	4:47
Downtown P&7th	3:31	3:36	3:46	3:57	4:11	4:26	4:41	4:56	5:26
Louis/Orlando	4:05	--	--	--	--	--	--	--	--
Taylor/I-80 PnR	--	4:27	4:37	4:48	4:55	5:10	5:25	6:00	--
Cirby/Sunrise	4:11	--	--	--	--	--	--	--	--
Maidu PnR	4:15	--	--	--	--	5:17	--	--	--
Saugstad PnR	4:29	--	--	--	5:07	5:32	--	6:12	6:22
Roseville Amtrak	--	--	--	--	5:16	--	--	--	--
Foothills/Junction	--	--	--	--	5:25	--	--	6:30	--
Mahany PnR	--	--	--	--	5:33	--	--	6:38	--
Taylor/I-80 PnR	--	--	--	--	--	--	--	--	6:37

Note 1: Monday to Thursday only.

Game Day Express

Game Day Express is a special service which began in October 2016 and provides Roseville residents transportation to Sacramento Kings basketball games at the Golden 1 Center in downtown Sacramento. The bus departs the Civic Center Transfer Point one hour and 15 minutes before game time. Tickets for the service can be purchased on-line, over the phone, at the Roseville Transit office, or on the bus. General public passengers are charged \$4.50 one-way or \$9.00 per round-trip. Discount passengers with a valid discount ID card can ride for \$3.25 one-way and \$6.50 round trip.

ROSEVILLE DIAL-A-RIDE AND ADA PARATRANSIT SERVICE

Roseville Transit Dial-A-Ride provides curb-to-curb public bus service and complementary ADA (Americans with Disabilities Act) paratransit service. Dial-A-Ride is a general public shared ride

transit service that operates within the city limits of Roseville. Passengers are transported in small buses that are ADA compliant and equipped with wheelchair lifts and securement areas.

Roseville ADA Paratransit service is also a shared ride curb to curb service but is only available for individuals with disabilities preventing them from using local routes. The ADA Paratransit Service operates Monday through Friday from 5:45 am to 10:00 pm and on weekends from 8:00 am to 5:00 pm, with limited to no service on holidays.

The ADA Certification Process

The City of Roseville follows the Federal Transit Administration's ADA guidelines to determine a person's eligibility based on their ability to get to and from the bus stop, board and exit the bus, and the ability to understand and navigate the local service.

Applicants have 60 calendar days in which to return a completed, signed, original application to the Alternative Transportation office by mail or in person. All information is kept confidential and will be used to determine if the applicant can ride the fixed route system or if the applicant is eligible for Paratransit services. A determination is made in 21 days. If ADA Paratransit eligibility is denied, a letter indicating the reason(s) for the denial and how to appeal the decision will be mailed. Denial of eligibility applies only to Roseville ADA Paratransit service.

Eligibility may be granted to an individual if the disability or incapacity is expected to last more than 90 days and is long-term but not permanent. Roseville will honor ADA Paratransit certifications from other transit agencies. An individual from out-of-town requesting ADA Paratransit Service must present verification of their ADA Paratransit certification to the Alternative Transportation office prior to the first reservation. Visitors using the service more than 21 days will be required to submit a Roseville Transit ADA Paratransit application.

ROSEVILLE TRANSIT FARE STRUCTURE

Roseville Transit's fares are structured based on passenger category and media type. Multi-trip passes are also available for purchase. Discounted fares are available for qualified passengers showing the following forms of valid identification: Roseville Transit Discount ID Card, middle or high school issued ID card, Medicare card, DMV Senior Citizen photo ID card, and discount ID card issued by another transit agency. The Roseville Transit Discount ID card is issued to qualified persons with disabilities, youth ages 13 to 18, and seniors ages 60 and older. Children age 4 and under ride free (up to 2 children) with a fare paying adult. Roseville Transit's fare structure is summarized in Table 8.

Stop and Shop Validation

If transit passengers spend \$10 or more at the Galleria at Roseville, they can receive a free trip home on Roseville Transit local fixed routes (excludes purchases at a few department stores).

Connect Card Program

Connect Card is a relatively new electronic transit fare payment system for Sacramento Regional public transit operators. Connect Card is a “smart card” - a plastic credit card with an electronic chip that allows the rider to purchase a set number of rides in advance. That value is stored in the card and the appropriate amount is deducted from the card each time it is used. The primary benefit to the Connect Card program is that a passenger only needs one card to ride many of the regional services, consisting of Sacramento Regional Transit, El Dorado Transit, Etran, Folsom Stage Line, Placer County Transit, Roseville Transit, SCT/Link, YoloBus, and Yuba-Sutter Transit. To obtain a Connect Card, riders create an account online and load transit fares onto the Connect Card through their checking account. As Connect Card is a relatively new program, not all passengers are currently using it. Generally more commuters use Connect Card than other types of passengers

Table 8: Roseville Transit Fare Structure

Fare Category	Local Fixed Route	Dial-a-Ride	Commuter
Single Cash Fare			
General Public	\$1.50	\$3.50	
Discount (with ID)	\$0.75	\$2.50	
Same-Day Trips		\$7.50	
Non-Roseville Resident			\$4.50
Roseville Resident & Reverse			\$3.25
Children ages 4 and under	Free up to two per paying adult		
Local Daily Pass (Electronic)			
General Public	\$4.00		
Discount (with ID)	\$2.00		
Local 10-Ride Pass			
General Public	\$15.00	\$37.50	
Discount (with ID)	\$7.50	\$25.00	
Same-Day Trips			
Non-Roseville Resident			
Roseville Resident & Reverse			
Local 30-Day Pass			
General Public	\$58.00		
Residents			\$110.00
Non-Residents			\$155.00

Source: Roseville Transit

ROSEVILLE TRANSIT FACILITIES AND EQUIPMENT

The City of Roseville Alternative Transportation Administration office is located at 316 Vernon Street, near the Civic Center Transfer Point. Operations are performed by the contractor and are based at the City of Roseville corporation yard at 2075 Hilltop Circle. Vehicle maintenance is conducted by City of Roseville staff at the same location.



Bus Shelter Inventory

The City of Roseville has an extensive list of benches and shelters located at around 300 bus stop locations. Of that total, 43 shelters date back to 1996 or 1998 and may need to be replaced or upgraded, 6 are in the process of being updated, and 3 locations had only benches and no shelters.

Park-and-Ride Facilities

Several Park and Ride lots located within the City of Roseville and served primarily by commuter routes and some local fixed routes. Park and Ride lot characteristics are as follows:

- Church Street and North Grant Street – Roseville Amtrak Station
 - 78 parking spaces available
 - Bike lockers
 - Served by Roseville Transit
 - Served by Amtrak Capitol Corridor, Greyhound lines
- Foothills Boulevard and Junction Boulevard California Family Fitness
 - 25 parking spaces available
 - Served by Roseville Transit
- Louis Orlando Transit Center - Louis Lane and Orlando Avenue
 - 44 parking spaces
 - 2 electric vehicle charging stations
 - Bike lockers
 - Served by Roseville Transit, Sacramento Regional Transit, and Placer County Transit
- 1000 Pleasant Grove Boulevard - Highland Crossing Shopping Center
 - 25 parking spaces available
 - Served by Roseville Transit

- Pleasant Grove Boulevard and Michener Drive – Mahany Park
 - 42 parking spaces available
 - Bike lockers
 - Served by Roseville Transit
- Maidu Drive and Rocky Ridge Drive – Maidu Regional Park
 - 50 parking spaces available
 - Bike lockers
 - Served by Roseville Transit
- Galleria Circle and West Drive – Galleria Transfer Point
 - 50 parking spaces available
 - Served by Roseville Transit and Placer County Transit
- Douglas Boulevard and Buljan Drive – Saugstad Park
 - 91 parking spaces available
 - Bike lockers
 - Served by Roseville Transit
- Stanford Ranch Road and Five Star Boulevard
 - 35 parking spaces available
- Taylor Road and Eureka Road - Taylor & I-80 Park & Ride Lot (adjacent to Golfland Sunsplash)
 - 150 parking spaces available
 - Bike lockers
 - Served by Roseville Transit and Placer County Transit

Roseville's Fleet Inventory

The City of Roseville has an extensive fleet of revenue and non-revenue vehicles as shown in Appendix C. There are sixteen (16) vehicles for local fixed route use. These vehicles range in passenger capacity from 28 to 32 seated passengers. Eleven (11) 40 foot buses for the commuter routes. These vehicles can hold from 39 – 45 seated passengers. The Dial-A-Ride fleet includes 11 seventeen-passenger buses. The City of Roseville also maintains ten non-revenue vehicles used for staff/supervisor transport. Four of the fixed route buses and four commuter route buses have met minimum service life requirements and are due for replacement. Three of the oldest busses have more than 500,000 miles. All of Roseville's bus fleet is operating on either diesel or regular gasoline.

Route Observations

Consultant staff rode a selection of Roseville Transit local fixed routes and one commuter route in November 2017 to gain a better understanding of areas served and potential issues and bus stop deficiencies. Observations consisted of the following:

- *On-time Performance*- Most of the local fixed routes observed ran on-time. In fact, during the middle of the day, some routes arrived at checkpoints early and waited. Route E and the Commuter Route were slightly behind schedule. Drivers indicated that during the holidays and peak commute times, traffic can delay the bus routes.
- *Operational Issues* - Overall, Roseville Transit buses are clean, appear to be well maintained and stocked with current transit information. Bus drivers are helpful and follow protocol by calling out major stops for passengers. Occasionally, if the driver needs to tie down a wheelchair or walker, there is a few minutes of delay. Bicycle boardings are relatively quick and do not slow down the boarding process. East Roseville Ave and Sunrise Ave can be congested and cause short delays.
- *Bus Stop Deficiencies* – The Galleria Transfer Center can accommodate up to four Roseville Transit buses on the upper level and four PCT buses on the lower level. Sufficient shelters and benches are available for waiting passengers and ample convenient parking is located nearby. There didn't appear to be room on the upper level for a fifth bus.
- *Other Issues and Observations* – The peak travel times are in the morning and late afternoon with lower levels of during the day for medical appointments or other essential needs. Typical transit generators are the Galleria, Foothills Shopping Center, Walmart, library and Vintage Square. The City of Roseville is a mixture of commercial centers and largely low-density housing developments (mostly single family homes). As such it is difficult to serve all portions of each development without creating long passenger travel times and high operating costs. Therefore, buses are usually located on the major arterials adjacent to the development, which is not always convenient for residents.

OTHER REGIONAL TRANSIT PROVIDERS

Amtrak Capital Corridor

Roseville Transit passengers can access Amtrak Capital Corridor trains (traveling as far west as San Jose and as far east as Auburn) at the Amtrak station (close to a Route D stop). There is currently only a single Capital Corridor train serving Roseville 7:03 AM on weekdays and 8:43 AM on weekends in the westbound direction, and 5:48 PM / 8:38 PM on weekends. Three to

seven daily Amtrak Thruway buses also provide service to and from the Sacramento rail station for passengers traveling by train west of Sacramento.

Placer County Transit

Placer County Transit is the county operated regional transit provider for all of western Placer County. Roseville Transit passengers can transfer directly to PCT Lincoln Sierra College and Auburn Light Rail routes at the Galleria Transfer Point and to the PCT Auburn Light Rail Route at Louis and Orlando or at Sierra College.

Placer County also provides two general public Dial-A-Ride service that provide connection opportunities to Roseville Transit:

- The Rocklin/Loomis DAR (Monday-Friday 6:00 AM to 7:55 PM, Saturday 9:00 AM to 3:55 PM) serves locations in northeast Roseville, including the Galleria.
- The Granite Bay DAR (Monday-Friday 9:00 AM to 11:00 AM, and 2:00 PM to 4:00 PM) provides the opportunity to connect with Roseville Transit on stops along Sierra College Boulevard.

Sacramento Regional Transit

The Sacramento RT transit system connects with Roseville Transit's local routes at the Louis/Orlando transfer hub (along Auburn Avenue) in southwest Roseville. At present, three RT routes serve this hub:

- Route 21 (Sunrise-Citrus Heights) provides service to Sunrise Mall and Mather Field/Mills Station every half-hour between 6:24 AM and 9:58 PM on weekdays, every hour between 10:52 AM and 6:52 PM on Saturdays, and every hour between 10:55 AM and 6:55 PM on Sundays.
- Route 93 (Hillsdale) provides service to Watt/I-80 (LRT connection) via McLellan Business Park generally every half hour between 5:41 AM and 9:34 PM on weekdays and every hour from 8:00 AM to 6:35 PM on Saturdays and Sundays.
- Route 103 (Auburn Boulevard) provides commute period service to Watt/I-80 via Auburn Road, with four westbound departures between 5:51 AM and 6:51 AM, and four eastbound arrivals between 4:33 PM and 6:03 PM.

It should be noted that Sacramento RT is currently conducting a route realignment study that could change routes and services to Louis/Orlando. Also, Sac RT's new SmaRT Ride micro transit system services the Kaiser Riverside medical campus per an agreement between the City of Roseville and Sacramento Regional Transit.

OTHER CITY OF ROSEVILLE ALTERNATIVE TRANSPORTATION SERVICES

South Placer Transportation Call Center

The City of Roseville contracts with the Western Placer Consolidated Transportation Services Agency (WPCTSA) to operate the South Placer Transportation Call Center. The Call Center provides transit riders with one phone number for information and reservations for all demand response services in the South Placer area including Roseville Transit, Placer County Transit and Health Express. The program is intended to reduce call reservation staff time and costs for the various transit agencies, and to increase overall efficiency of the public transit process. When a call for a ride comes in, Call Center staff determine which operator (including Health Express) should receive the trip booking.

Transit Ambassador Program

In partnership with WPCTSA, the City of Roseville operates a Transit Ambassador Program for Western Placer County services. The program includes conducting a variety of outreach efforts to existing and potential passengers, such as face-to-face assistance to passengers, transit training for potential transit users and attending outreach events. The City of Roseville manages the program, recruits and trains volunteers and provides insurance for the volunteers. WPCTSA pays up front for insurance for volunteers and bills Roseville for the cost. Volunteers undergo anywhere from 6 to 30 hours of training. The cost to the City of Roseville for administering the Transit Ambassador program was \$37,000 in FY 2016/17.

In FY 2016/17, a total of seven Transit Ambassadors contributed 469 volunteer hours assisting passengers on public transportation and providing support to staff at outreach events throughout the western Placer region.

Mobility Training Program

The City of Roseville also operates a mobility training program to individuals and groups using Paratransit mobility trainers. This is an extensive program designed to teach persons with disabilities, seniors, or others requiring assistance how to live more independently by riding the bus. It covers transit services throughout the south Placer area.

This chapter first provides a review of transit ridership. This is followed by a review of existing transit funding sources and costs. Operational characteristics of the services are then reviewed. Finally, the existing marketing program is discussed.



RIDERSHIP PATTERNS AND ANALYSIS

Historical Ridership

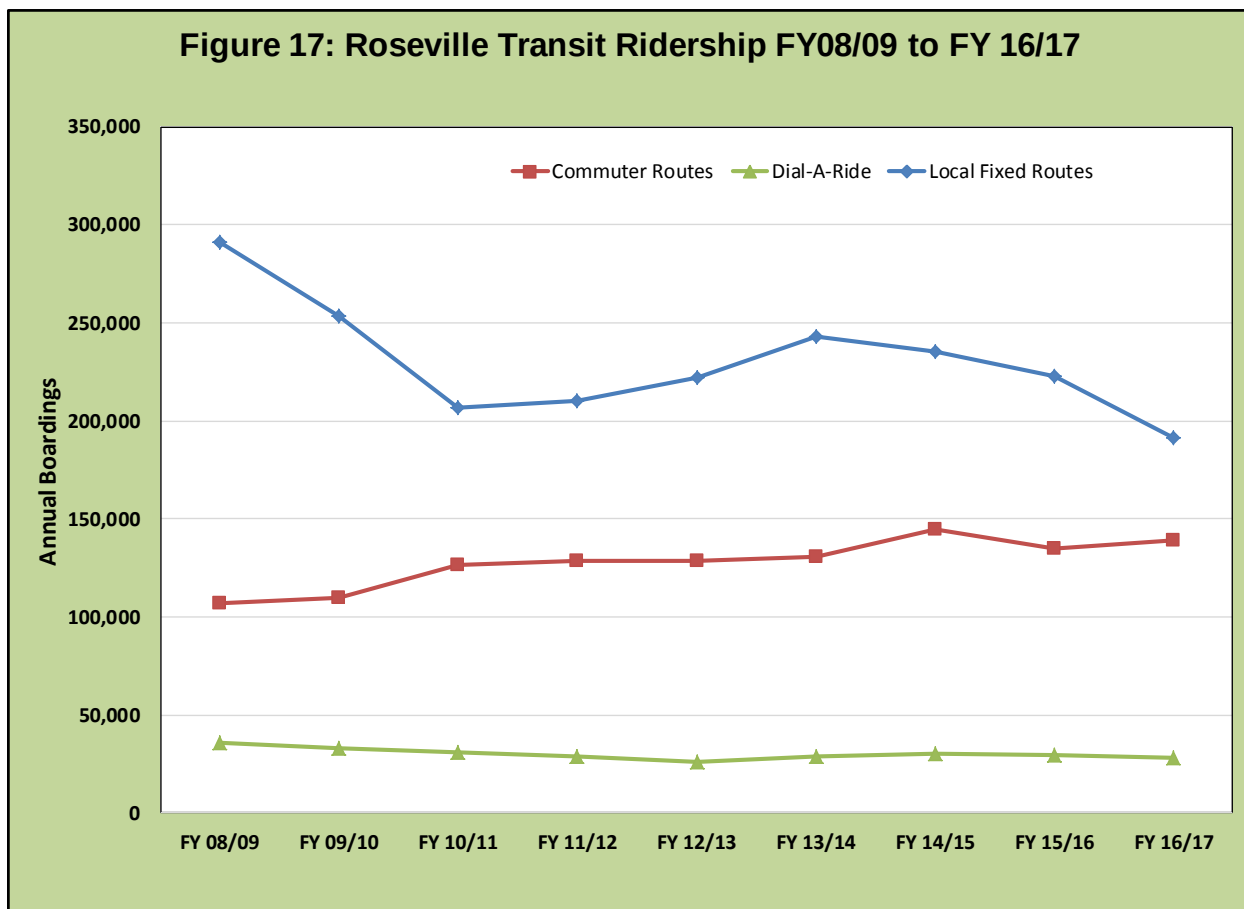
As with many public transit operators, ridership on Roseville Transit peaked in FY 2008/09 and has generally seen a downward trend since then. FY 2016/17 systemwide ridership on Roseville Transit of 357,313 is down 17 percent from FY 2008/09 levels (433,854), as shown in Table 9 and Figure 17. By service, the local fixed routes have seen the largest decline in ridership (34 percent), from 291,267 to 192,701 passengers per year. Ridership on the DAR has decreased 20 percent from 35,499 to 28,404 between FY 2008/09 to FY 2016/17. In contrast, ridership on the Commuter Service increased 30 percent from 107,088 to 136,208 in FY 2016-17; however the peak in ridership occurred in FY 2014/15 (144,445).

Table 9: Roseville Transit Historical Ridership

Fiscal Year	Local Fixed Routes	Commuter Routes (1)	Dial-A-Ride	Total Systemwide
FY 08/09	291,267	107,088	35,499	433,854
FY 09/10	253,747	109,584	32,762	396,093
FY 10/11	207,085	126,214	30,811	364,110
FY 11/12	210,340	128,824	28,834	367,998
FY 12/13	222,283	128,570	25,981	376,834
FY 13/14	243,298	130,448	28,654	402,400
FY 14/15	235,475	144,445	30,200	410,120
FY 15/16	222,689	134,880	29,505	387,074
FY 16/17	191,800	139,084	28,408	359,292
% Change from FY 08/09 to FY 16/17	-34%	30%	-20%	-17%

Note 1: Includes Game Day Express Ridership

Note: Data for FY 2011/12 - FY 2014/15 from Triennial Performance Audit. Data from FY 2015-16 to FY 2016-17 from Roseville Transit Quarterly Performance Reports.



Nationwide Trends Contributing to Bus Ridership Decline

The decline in fixed-route transit ridership in Roseville mirrors a general decline in transit ridership nationwide. Research conducted by the American Public Transportation Association (APTA) in 2017 provides several different potential explanations for the recent nationwide downward trend in public transit ridership³. The price of gasoline is relatively low and down from 2008 levels. There has also been a significant increase in the number of auto loans since 2009. Another factor could be that telecommuting is more common. Not only does this decrease the number of days employees actually commute to work, it makes the cost of a monthly transit pass less attractive. If employees do not have a monthly pass they are likely not as “loyal” to the transit system, and may be more likely to find other modes of transportation to work. Employees of Transportation Network Companies (TNCs) (who formerly were public transit riders) may see driving for the TNC as a way to pay for the cost of auto ownership. Also, TNCs now offer “ridesplitting” services which may be more attractive to some passengers. Lastly, gentrification may have displaced some transit dependent groups to less transit oriented areas. Interestingly, while total bus ridership is down by 13 percent from 2000 – 2015, rail ridership is up by 46 percent in the US.

³ APTA Policy and Development Research, November 2017, *Understanding Recent Ridership Changes*

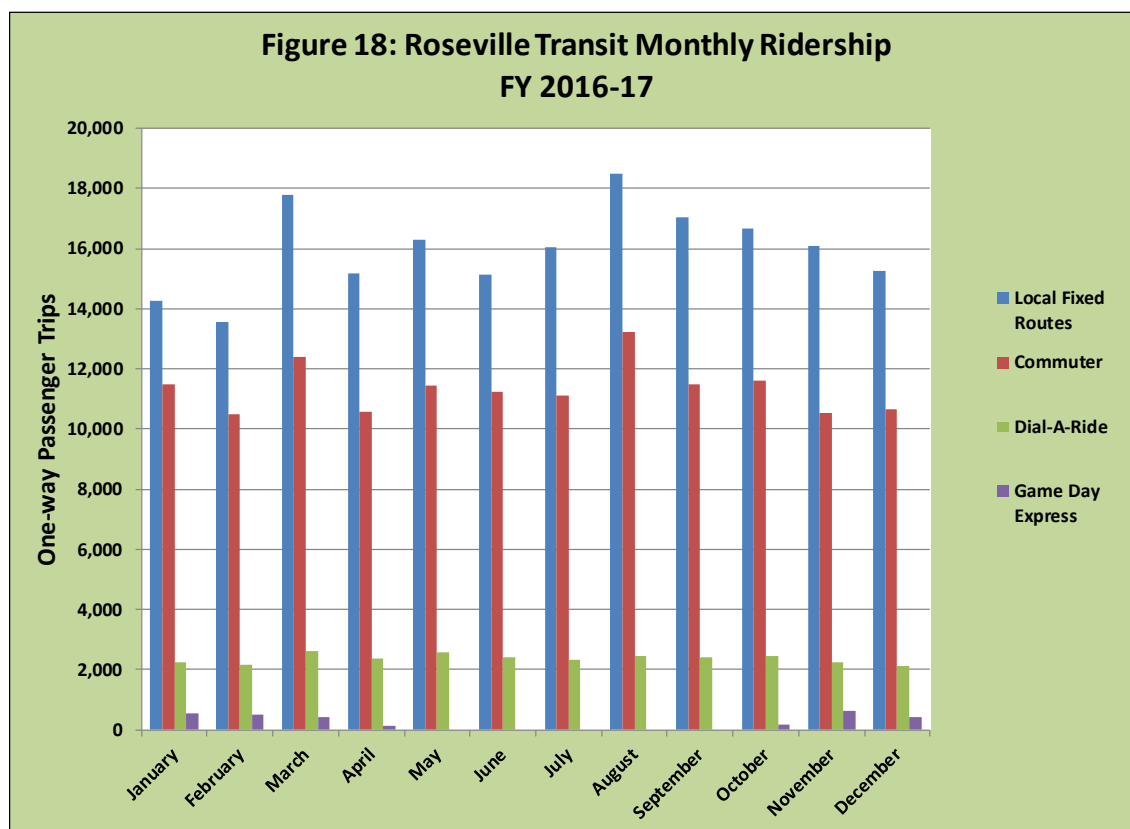
Monthly Ridership Trends

Table 10 and Figure 18 present FY 2016/17 Roseville Transit ridership by month. August is the busiest month for the local fixed routes (18,494 trips), when ridership is 16 percent higher than the average month. Commuter route ridership also peaks in August (13,225 trips, or 16 percent higher than average), whereas March was the busiest month for the Dial-A-Ride (2,623). Game Day Express service only operated for seven months of the year, and did not operate from May through September. The highest ridership for Game Day Express was 618 rides in November, coinciding with basketball season.

Table 10: Western Placer Commuter Service Summary

	Annual Data				Performance Measure			
	Ridership	Vehicle Hours	Vehicle Miles	Operating Cost	Pax per Hour	Pax per Mile	Operating Cost per Hour	Operating Cost per Pax
Roseville Transit	137,102	6,327	242,187	\$837,296	21.7	0.57	\$132.34	\$6.11
PCT Commuter	70,677	3,163	101,279	\$865,744	22.3	0.70	\$273.74	\$12.25
Total	207,779	9,490	343,466	\$1,703,040	21.9	0.60	\$179.46	\$8.20

Source: FY 2016-17 data from individual operators.



Ridership by Passenger Type

Commuter Routes

Table 11 presents ridership on the Commuter Routes by type of fare paid for FY 2016/17. As noted above, Roseville has a different fare structure for City of Roseville residents and non-residents. The majority of commuter passengers (77 percent) are Roseville residents.

Table 11: Roseville Transit Commuter Ridership by Fare Type			
2016/17			
Fare Type	Roseville Resident	Non-Resident	Total
Cash	1,097	640	1,737
10 Ride	28,542	6,191	34,733
30 Day	66,787	13,592	80,379
Monthly Roseville/Capital Corridor	8,267	630	8,897
PCE Add Fare	--	--	8,421
Amtrak Monthly	--	--	876
Short Fare	--	--	416
Free	--	--	0
Total			135,459
Percent of Total			
Cash	1%	0%	1%
10 Ride	21%	5%	26%
30 Day	49%	10%	59%
Monthly Roseville/Capital Corridor	6%	0%	7%
PCE Add Fare	--	--	6%
Amtrak Monthly	--	--	1%
Short Fare	--	--	0%
Free	--	--	0%
Total	77%	16%	100%
Source: Roseville Transit 12 June Com Stats 2017			

Commuter passengers tend to be frequent riders. As such, of the Roseville residents 64 percent boarded with a 30 day pass, 27 percent used a 10 day passes and 8 percent used the Monthly Roseville/Capital Corridor pass. Only 22 percent of commuter passengers were non-residents (including persons transferring from Placer Commuter Express service, who are presumed to not be residents). Proportions for type of fare media used by non-residents are similar to the residents with the majority using 30 day passes. Roughly 6.2 percent of commuter passenger boardings are made by PCT commuter pass holders who paid the additional \$.50 fare to ride a Roseville Transit commuter bus. Less than one percent of boardings were made with an Amtrak Capital Corridor pass.

Local Fixed Routes

As shown in Table 12, there are roughly the same proportion of boardings made by general public passengers as are made by discounted passengers (42 percent each). Students represent 1.3 percent of the boardings, while 10 percent of passengers boarding were transferring from PCT or Sac RT. Lastly, 3.2 percent of passengers were free (typically less than 5 years of age) and

0.9 percent were short fare. Of the 42 percent discounted passengers, 32 percent (or 13 percent of the total) are ADA, while 68 percent (or 29 percent of the total) are others entitled to the discount fare.

Table 12: Roseville Transit Ridership by Passenger Type 2016/17		
	Annual Ridership	
	#	%
Local Fixed Routes		
General Public	79,620	42.6%
Discount	78,519	42.0%
Student	2,474	1.3%
Free	5,989	3.2%
Transfers from PCT and RT	18,693	10.0%
Short Fare	1,678	0.9%
Total	186,973	
Dial-A-Ride		
General Public	4,299	17.2%
Discount	20,513	82.2%
Same Day	22	0.1%
Free	106	0.4%
Total	24,940	
Source: Roseville Transit 12 June DAR Stats 2017, 12 June FR Stats 2017		
Note: Ridership by fare totals do not represent " Adjusted Total" and therefore do not match totals in other tables.		

Dial-A-Ride

For the Dial-A-Ride service, 82 percent of passenger boardings paid a discounted fare. Less than one percent of boardings were considered "same day" trips.

ADA Paratransit Ridership

The Roseville Transit ADA complementary paratransit service carried 7,699 one-way passenger trips in FY 2016-17. Roughly 24 percent of these trips were subscription trips and 16 percent represent trips taken by a Personal Care Attendant (PCA). The Alta California Regional Center pays for roughly ¼ of the ADA Paratransit trips.

Ridership by Day of Week

Table 13 identifies weekday ridership versus weekend ridership for the local fixed route and DAR service. For the fixed routes, Saturday ridership was only 35 percent of average weekday ridership, indicating that overall only 6.6 percent of ridership was carried on Saturdays. For the DAR, Saturday ridership was 32 percent of average weekday ridership, while Sunday ridership

was 33 percent of average weekday ridership. Saturday generates 5.7 percent of annual ridership while Sunday generates 5.9 percent. The DAR is the only service which operates on Sundays.

Table 13: Roseville Transit Ridership by Day of Week

	Fixed Routes				Dial-A-Ride			
	Annual	% of Total	Average Daily	% of Average Weekday	Annual	% of Total	Average Daily	% of Average Weekday
Weekday	174,584	93.4%	685	100%	28,088	88.4%	109	100%
Saturday	12,389	6.6%	238	35%	1,800	5.7%	35	32%
Sunday	--	--	--	--	1,888	5.9%	36	33%
Total	186,973	100.0%			31,776	100.0%		

Note: Unadjusted totals

Source: 12 June FR Stats 2017, 12 June DAR Stats 2017

CURRENT FINANCIAL CONDITIONS

Operating Revenues

Table 14 provides annual revenues available to the Roseville Transit program as per the FY 2016-17 City of Roseville Financial Statements. As shown, Transportation Development Act Funds (TDA) represent the largest revenue source for transit (69.5 percent), followed by passenger fares (18.8 percent). During this fiscal year, Roseville Transit did not receive any Federal Transit Administration grants (although this has occurred in prior years).

Operating Expenses

Table 15 presents Roseville Transit operating expenses and cost model for FY 2016-17. The operating cost of the Roseville Transit program in FY 2016-17 was \$5.5 million. When developing and evaluating service alternatives, it is useful to develop a “cost model,” which can easily show the financial impact of any proposed changes. Table 15 also presents the FY 2016-17 cost allocation model for Roseville Transit operations. It should be noted that the cost model

Table 14: Roseville Transit Operating Revenues		
	FY 2016-17 Actual	%
Passenger Fares	\$1,016,447	18.8%
Auxiliary Revenue ⁽¹⁾	\$148,708	2.7%
Non-Transportation Revenue ⁽²⁾	\$139,368	2.6%
SB 325 Allocations (Transportation Development Act)	\$3,758,224	69.5%
Transit Assistance Funds	\$348,287	6.4%
FTA Funds	\$0	0.0%
Other State Grants	\$0	0.0%
Total Operating Revenues	\$5,411,034	100%
Source: Data originating from City of Roseville Financial Statements with review by Finance Dept. Financial Analyst and Alternative Transportation Div. Financial Analyst.		
Note 1: Advertising Revenue, Program Revenue, Accident Recovery, Reimbursement		
Note 2: Interest Earnings, Transfers In, Misc Revenue, Development Contribution		

shows the total operating cost rather than the total subsidy, which is total operating cost minus passenger fare revenues. Each cost item is allocated to that quantity on which it is most dependent. Maintenance costs, for example are allocated to vehicle service miles. This provides a more accurate estimate of costs than a simple total-cost-per-vehicle-hour factor, which does not vary with the differing mileage associated with an hour of service on DAR versus the fixed-route. It should also be noted that this model excludes depreciation.

MV Transportation, the operating contractor, is paid a fixed monthly fee and per revenue vehicle hour (the time which vehicles are in service) for services provided. Fuel and vehicle maintenance (which represents per mile costs) are provided by the City of Roseville. As such, an increase in deadhead travel would increase the City's per mile cost but not per hour costs. The appropriate Roseville Transit cost model service factors therefore reflect vehicle revenue service hours but total vehicle miles (includes both revenue and deadhead miles). For FY 2016-17, the Roseville Transit equation is:

$$\begin{aligned}
 \text{Operating Cost} &= \$1.15 \times \text{total vehicle miles} \\
 &\quad + \$36.41 \text{ per vehicle service hour} \\
 &\quad + \$2,649,281 \text{ annually for fixed costs}
 \end{aligned}$$

This equation can be used to estimate the cost of any changes in service, such as the operation of additional routes or changes in service span as well as evaluate Roseville Transit performance by route.

Table 15: Roseville Transit Expenses and Cost Model

FY 2016 - 2017 Actuals

Operating Expense Category	Total	Fixed	Cost Model Variable	
			Vehicle Revenue	Vehicle Service
			Hour	Mile
City Administrative Staff Salaries and Benefits	\$387,695	\$387,695	\$0	\$0
Transit Operations Services and Supplies	\$636,502	\$636,502	\$0	\$0
Fuel	\$423,531	\$0	\$0	\$423,531
Vehicle Maintenance	\$608,932	\$0	\$0	\$608,932
MV Operating Contract	\$3,450,450	\$1,622,295	\$1,828,156	\$0
Casualty and Liability Costs	\$27,800	\$0	\$27,800	\$0
Utilities	\$2,790	\$2,790	\$0	\$0
Total Operating Costs	\$5,537,700	\$2,649,281	\$1,855,956	\$1,032,463
FY 2016/17 Service Quantities			50,969	899,317
Cost Model FY 2016/17 = \$2,649,281 + \$36.41 + \$1.15				
			per Veh-Hour	Per Veh-Mi

Source: City of Roseville Financial Statements. Excludes depreciation.

FY 2016/17 OPERATING STATISTICS AND PERFORMANCE**Systemwide**

Table 16 presents operating data and performance by type of service for Roseville Transit. A review of this data indicates the following:

- Systemwide productivity (as measures in one-way passenger-trips per vehicle revenue hour) for Roseville Transit is 7.1 trips per vehicle revenue hour. This is slightly lower than the City adopted standard of 8.0 trips per hour.
- As a whole Roseville Transit carries 0.4 passenger-trips per vehicle service mile and costs \$15.34 per trips to operate. Systemwide operating cost per vehicle revenue hour is \$108.65.
- The Commuter Routes are by far the most productive type of service.
- Subsidy per trip reflects the desired output of a transit service (ridership) and the most important input (public subsidy). A lower figure is preferred, as it reflects that less public funding is required for each passenger served. Operating subsidy per trip by type of service is displayed in Figure 19. As shown, DAR is the most expensive type of service with a subsidy per trip of \$40.01, while the Commuter Service requires only \$1.25 in subsidy per passenger-trip. Operating subsidy per trip systemwide is \$12.07.

Table 16: Roseville Transit Performance - Systemwide

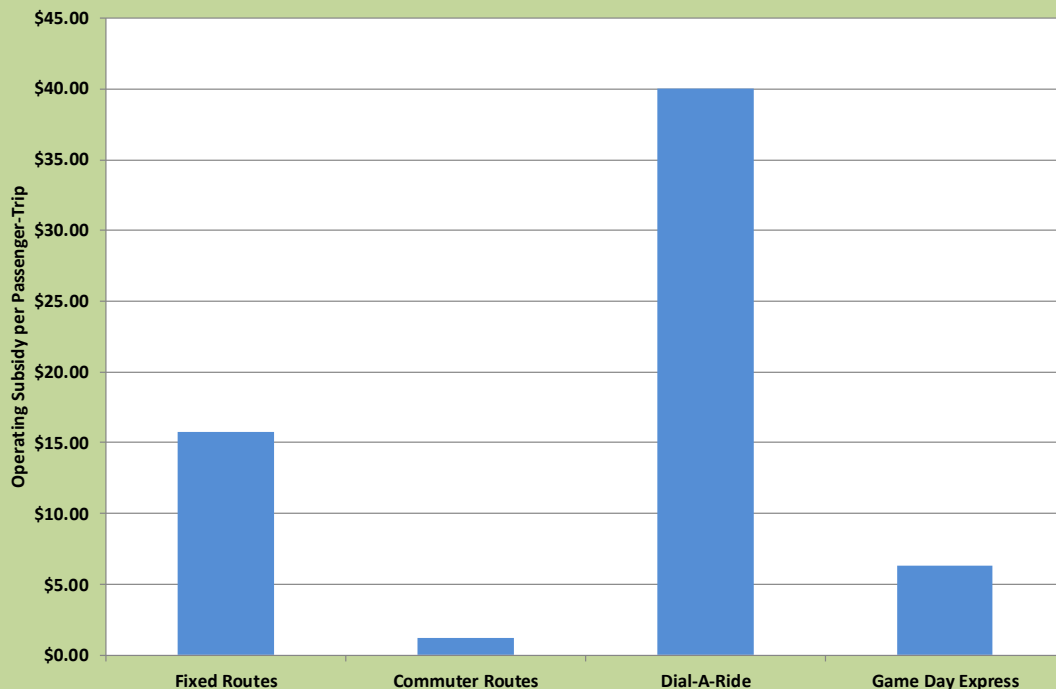
FY 2016-17

Input Data -- Annual						
	Passenger Trips	Vehicle Revenue Hours	Vehicle Service Miles	Operating Cost	Fare Revenue	
Fixed Routes	192,701	32,753	470,644	\$3,435,382	\$402,432	
Commuter Routes	137,102	6,327	242,187	\$837,296	\$666,287	
Dial-A-Ride	28,408	11,642	184,006	\$1,240,301	\$103,788	
Game Day Express	2,671	247	2,480	\$24,680	\$7,747	
Total Systemwide	360,882	50,969	899,317	\$5,537,660	\$1,180,254	

Performance Analysis						
	Pax per Vehicle Hour	Pax per Vehicle Mile	Operating Cost per Trip	Operating Cost per Veh-Hour	Subsidy per Trip	Farebox Ratio
Fixed Routes	5.9	0.4	\$17.83	\$104.89	\$15.74	11.7%
Commuter Routes	21.7	0.6	\$6.11	\$132.34	\$1.25	79.6%
Dial-A-Ride	2.4	0.2	\$43.66	\$106.54	\$40.01	8.4%
Game Day Express	10.8	1.1	\$9.24	\$99.92	\$6.34	31.4%
Total Systemwide	7.1	0.4	\$15.34	\$108.65	\$12.07	21.3%
Systemwide Standard	8.0	--	--	--	--	15.0%

Source: Roseville Transit Quarter 4 2016-17

**Figure 19: Roseville Transit Operating Subsidy per Passenger-Trip
FY 2016-17**



- A measure of the portion of operating cost which is covered by passenger fares is the farebox recovery ratio. The farebox recovery ratio is particularly important for determining the level of eligibility for TDA funds. Roseville Transit exceeds the TDA farebox ratio requirement and City standard of 15 percent with a farebox ratio of 21.3 percent.

Local Fixed Routes

Table 17 presents operating data and performance by route for the local fixed routes. Vehicle service miles and revenue hours were estimated for each route based on a snapshot of miles and hours recorded for June 2017. The Roseville Transit cost model identified above was applied to service level quantities for each route to determine operating cost per route. In FY 2016-17, the local fixed routes carried 192,701 one-way passenger trips, operated 32,753 vehicle revenue hours and 470,644 vehicle service miles. Routes A and B, Roseville Transit's core routes, clearly carry the most passengers (52,025 and 49,610), reflecting in part the fact that they have the greatest span of service. Route M has the next greatest ridership (29,334 trips). Route S carries the fewest passengers (4,454 trips). Route I, which was the reverse of Route D, was discontinued in August of 2017; therefore data for the two routes are combined. As Routes C, G, F and E are interlined (operated by the same bus and driver), operating data for these routes are combined in Roseville Transit operating reports.

Table 17: Roseville Transit Local Fixed Route Operating Statistics					
FY 2016-17					
Route	Passenger Trips	Vehicle Revenue Hours	Annual		
			Vehicle Service Miles	Operating Cost ⁽²⁾	Fare Revenue
A	52,025	7,630	112,222	\$803,276	\$108,649
B	49,610	7,398	90,179	\$757,422	\$103,603
D / I ⁽¹⁾	19,794	3,743	58,808	\$398,383	\$41,338
C, G, F, E	9,052	3,173	56,068	\$344,855	\$18,904
L	18,184	3,437	36,243	\$345,453	\$37,974
M	29,334	4,557	73,463	\$487,127	\$61,260
R	10,248	743	16,701	\$84,877	\$21,401
S	4,454	2,071	26,960	\$214,016	\$9,302
Total Local Fixed Routes	192,701	32,753	470,644	\$3,435,382	\$402,432
Source: Roseville Transit Quarter 4 2016-17, FR Service Revenue Log 16-17					
Note 1: Route I has been discontinued. Route I was the reverse of Route D and only operated as a separate route for two months during this period.					
Note 2: Including fixed operating costs allocated by vehicle revenue hours.					

Table 18 presents six performance indicators typically used to evaluate public transit's effectiveness and efficiency for the local fixed routes:

- ♦ **One-Way Passenger-Trips per Vehicle Revenue Hour** – Roseville Transit has adopted a standard of 8.0 passenger trips per hour for local fixed route services. Passenger-trips per hour is considered to be a measure of the services' productivity. Only Route R meets this standard (13.8 trips per hour). Route R operates only four round trips per day and primarily serves passengers travelling to Pride Industries day programs. Collectively, the fixed routes carry 5.9 trips per hour. Route S, which makes limited trips between the Galleria and the Santucci Justice Center, carries the fewest trips per hour (2.2). Routes A and B, the core routes, carry close to 7 trips per hour. Notably, the interlined Routes C, G, F and E (which only provide service every 2 hours) have the second-lowest productivity.

Table 18: Roseville Transit Performance - Fixed Routes					
<i>FY 2016-17</i>					
Shading Indicates Attains Standard					
Route	Pax per Vehicle Hour	Pax per Vehicle Mile	Operating Cost per Trip ⁽¹⁾	Subsidy per Trip ⁽¹⁾	Farebox Ratio ⁽¹⁾
A	6.8	0.5	\$15.44	\$13.35	13.5%
B	6.7	0.6	\$15.27	\$13.18	13.7%
D / I	5.3	0.3	\$20.13	\$18.04	10.4%
C, G, F, E	2.9	0.2	\$38.10	\$36.01	5.5%
L	5.3	0.5	\$19.00	\$16.91	11.0%
M	6.4	0.4	\$16.61	\$14.52	12.6%
R	13.8	0.6	\$8.28	\$6.19	25.2%
S	2.2	0.2	\$48.05	\$45.96	4.3%
Total Fixed Route	5.9	0.4	\$17.83	\$15.74	11.7%
Fixed Route Standard	8.0	--	--	\$5.00	15%

Source: Roseville Transit Quarter 4 2016-17
Note 1: Including fixed operating costs allocated by vehicle revenue hours.

- ♦ **One-Way Passenger-Trips per Vehicle Service Mile** – As a whole, the fixed routes carry 0.4 trips per mile. Route S and C/G/F/E, which serve Sierra College and Cirby Ave, have the lowest trips per mile (0.2) while Route B and R have the highest (0.6).
- ♦ **Operating Cost per One-Way Passenger Trips** – Operating cost per trip for all fixed routes combined is \$17.83. Per route this ranges from a low of \$8.28 on Route R to a high of \$48.05 on Route S. Route R only operates during peak periods, thereby making the route more efficient by this measure.
- ♦ **Operating Subsidy per One-way Passenger Trip** - In total the local fixed routes require \$15.74 in subsidy per trip. Route S requires the greatest amount of subsidy per trip (\$45.96), followed by C/G/F/E (\$35.01). The most cost effective route is Route R (\$6.19 per trip), followed by Routes A and B (\$13.35 and \$13.18 respectively). Roseville Transit has set a standard for subsidy per trip on the local fixed routes of \$5.00 per trip. None of the routes make this standard, although Route R comes fairly close.

- ♦ **Farebox Ratio** - The farebox recovery ratio for Roseville Transit fixed route services is 12.0 percent, which is below the City local fixed route farebox ratio standard of 15 percent. State TDA farebox ratio requirements are only applicable to systemwide performance measures, discussed above. On a route by route basis, only Route R meets the standard.

Commuter Routes

Commuter Service operating statistics and performance are displayed in Table 19 and 20. Of the AM Routes, Route 8 (which picks up at the Taylor and I-80 Park and Ride and drops off in downtown Sacramento at 7:45 AM) carried the most passenger-trips (9,542 per year). For the afternoon service, Route 2 (3:30 PM Sacramento departure) carried the most trips (8,243). AM Routes 9 and 3 operate the most vehicle hours (over 400 annually) and miles (around 14,000 annually) of the morning runs. For the afternoon runs, PM Route 9 operated the most vehicle revenue hours (554 hours) and PM Route 6 travelled the most miles.

- ♦ **One-Way Passenger-Trips per Vehicle Revenue Hour** –Productivity on the commuter routes far surpasses the City standard of 8.0 trips per hour. The AM Routes have an average passenger- trips per hour of 22.5 while the PM Routes carry 20.9 trips per hour. The most productive routes are AM Route 8 (7:47 AM arrival in Sacramento) and PM Route 4 (4 PM departure from Sacramento). The least productive routes are AM Route 1 (9.9 trips per hour) which arrives in Sacramento at 6:00 AM and PM Route 10 (11.1 trips per hour) which departs Sacramento at 5:20 PM.
- ♦ **One-Way Passenger-Trips per Vehicle Service Mile** –The Commuter Routes average 0.6 passenger trips per mile. AM Route 1 has the lowest trips per mile (0.2) and AM Route 8 and 4 have the highest (0.8).
- ♦ **Operating Cost per One-Way Passenger Trips** – Operating cost per trip for the Commuter Routes as a whole is \$6.11. The most cost efficient route is AM Route 8 which costs \$3.54 per trip, followed by PM Route 2 (\$4.06). The least cost effective routes under this performance measure are AM Route 1 (\$14.12) and PM Route 10 (\$10.93).
- ♦ **Operating Subsidy per One-way Passenger Trip** – The Commuter Routes have a very low subsidy per trip of \$1.25 overall. In fact many of the routes more than pay for themselves. This is helped by the fact that commuters are regular customers and tend to purchase monthly passes on a regular basis.
- ♦ **Farebox Ratio** – Along the same lines, farebox ratio is 79.6 percent for the commuter routes as a whole, which exceeds the standard of 75 percent. The commuter route with the greatest farebox ratio is AM Route 8 (137.1 %). The route with the lowest farebox ratio is AM Route 1 (34.4 percent).

Dial-A-Ride

Operating data and performance measures for Roseville Transit Dial-A-Ride are displayed in Table 21. Demand response services by nature are much less productive and cost efficient, particularly in an area as extensive as Roseville. Roseville Transit DAR carries 2.4 passenger trips per hour, which is below the 3.0 standard. The service carries 0.2 trips per mile and costs \$43.66 per trip. Operating cost per hour is \$106.54 and subsidy per trip is \$40.01. The Dial-A-Ride service has a respectable farebox ratio of 8.6 percent but this is much lower than the 15 percent standard.

**Table 19: Roseville Transit Commuter Route
Operating Statistics**

FY 2016-17

Routes	Passenger Trips	Vehicle Revenue Hours	Vehicle Service Miles	Operating Cost ⁽¹⁾	Fare Revenue
AM Routes					
1	2,711	274	12,209	\$38,264	\$13,174
2	8,744	284	13,206	\$40,306	\$42,496
3	6,574	439	14,202	\$55,145	\$31,948
4	9,008	356	11,960	\$45,162	\$43,779
5	8,687	300	12,707	\$41,081	\$42,217
6	4,095	234	11,711	\$34,099	\$19,903
7	4,494	185	9,967	\$27,831	\$21,840
8	9,542	234	11,462	\$33,813	\$46,370
9	7,644	465	13,953	\$57,104	\$37,150
10	7,138	284	10,714	\$37,445	\$34,689
Subtotal AM Routes	68,638	3,056	122,090	\$410,251	\$333,565
PM Routes					
1	4,664	279	11,711	\$38,141	\$22,668
2	8,243	249	9,967	\$33,444	\$40,060
3	5,763	208	10,465	\$30,424	\$28,005
4	7,978	211	11,711	\$32,079	\$38,772
5	7,445	292	12,957	\$40,693	\$36,181
6	8,201	381	13,455	\$49,123	\$39,856
7	7,391	452	13,206	\$55,123	\$35,917
8	5,883	221	11,462	\$32,691	\$28,589
9	8,185	554	12,957	\$63,818	\$39,776
10	4,712	424	12,209	\$51,510	\$22,898
Subtotal PM Routes	68,464	3,271	120,097	\$427,046	\$332,722
Total	137,102	6,327	242,187	\$837,296	\$666,287

Source: Roseville Transit Quarter 4 2016-17, Comm Rev Log 16-17

Note 1: Including fixed operating costs allocated by vehicle revenue hours.

Table 20: Roseville Transit Performance - Commuter Routes

FY 2016-17

Shading Indicates Attains Standard					
Route	Pax per Vehicle Hour	Pax per Vehicle Mile	Operating Cost per Trip ⁽¹⁾	Subsidy per Trip ⁽¹⁾	Farebox Ratio ⁽¹⁾
AM Routes					
1	9.9	0.2	\$14.12	\$9.26	34.4%
2	30.7	0.7	\$4.61	-\$0.25	105.4%
3	15.0	0.5	\$8.39	\$3.53	57.9%
4	25.3	0.8	\$5.01	\$0.15	96.9%
5	29.0	0.7	\$4.73	-\$0.13	102.8%
6	17.5	0.3	\$8.33	\$3.47	58.4%
7	24.2	0.5	\$6.19	\$1.33	78.5%
8	40.8	0.8	\$3.54	-\$1.32	137.1%
9	16.4	0.5	\$7.47	\$2.61	65.1%
10	25.1	0.7	\$5.25	\$0.39	92.6%
Subtotal AM Routes	22.5	0.6	\$5.98	\$1.12	81.3%
PM Routes					
1	16.7	0.4	\$8.18	\$3.32	59.4%
2	33.1	0.8	\$4.06	-\$0.80	119.8%
3	27.7	0.6	\$5.28	\$0.42	92.0%
4	37.8	0.7	\$4.02	-\$0.84	120.9%
5	25.5	0.6	\$5.47	\$0.61	88.9%
6	21.5	0.6	\$5.99	\$1.13	81.1%
7	16.3	0.6	\$7.46	\$2.60	65.2%
8	26.6	0.5	\$5.56	\$0.70	87.5%
9	14.8	0.6	\$7.80	\$2.94	62.3%
10	11.1	0.4	\$10.93	\$6.07	44.5%
Subtotal PM Routes	20.9	0.6	\$6.24	\$1.38	77.9%
Total	21.7	0.6	\$6.11	\$1.25	79.6%
Commuter Standards	8.0	--	--	--	75.0%

Source: Roseville Transit Quarter 4 2016-17

Note 1: Including fixed operating costs allocated by vehicle revenue hours.

Table 21: Roseville Transit Performance - Dial-A-Ride

FY 2016-17

Annual Data						
	Passenger Trips	Vehicle Revenue Hours	Vehicle Service Miles	Operating Cost ⁽¹⁾	Fare Revenue	
Dial-A-Ride Operating Statistics	28,408	11,642	184,006	\$1,240,301	\$103,788	

Performance Analysis						
	Pax per Vehicle Hour	Pax per Vehicle Mile	Operating Cost per Trip	Operating Cost per Hour	Subsidy per Trip	Farebox Ratio
Dial-A-Ride Performance Measures	2.4	0.2	\$43.66	\$106.54	\$40.01	8.4%
DAR Standard	3.0	--	--	--	--	15.0%

Source: Roseville Transit Quarter 4 2016-17

On-Time Performance

In FY 2016-17, the Dial-A-Ride service was “on-time” 98.5 percent of the time. DAR is considered on-time if the passenger is picked up within the 30 minute window. Fixed Route services averaged 89.4 percent on-time performance while the Commuter Routes averaged 93.3 percent on-time performance. On-time for the fixed and commuter routes is 1 minute before and 5 minutes after the scheduled departure time.

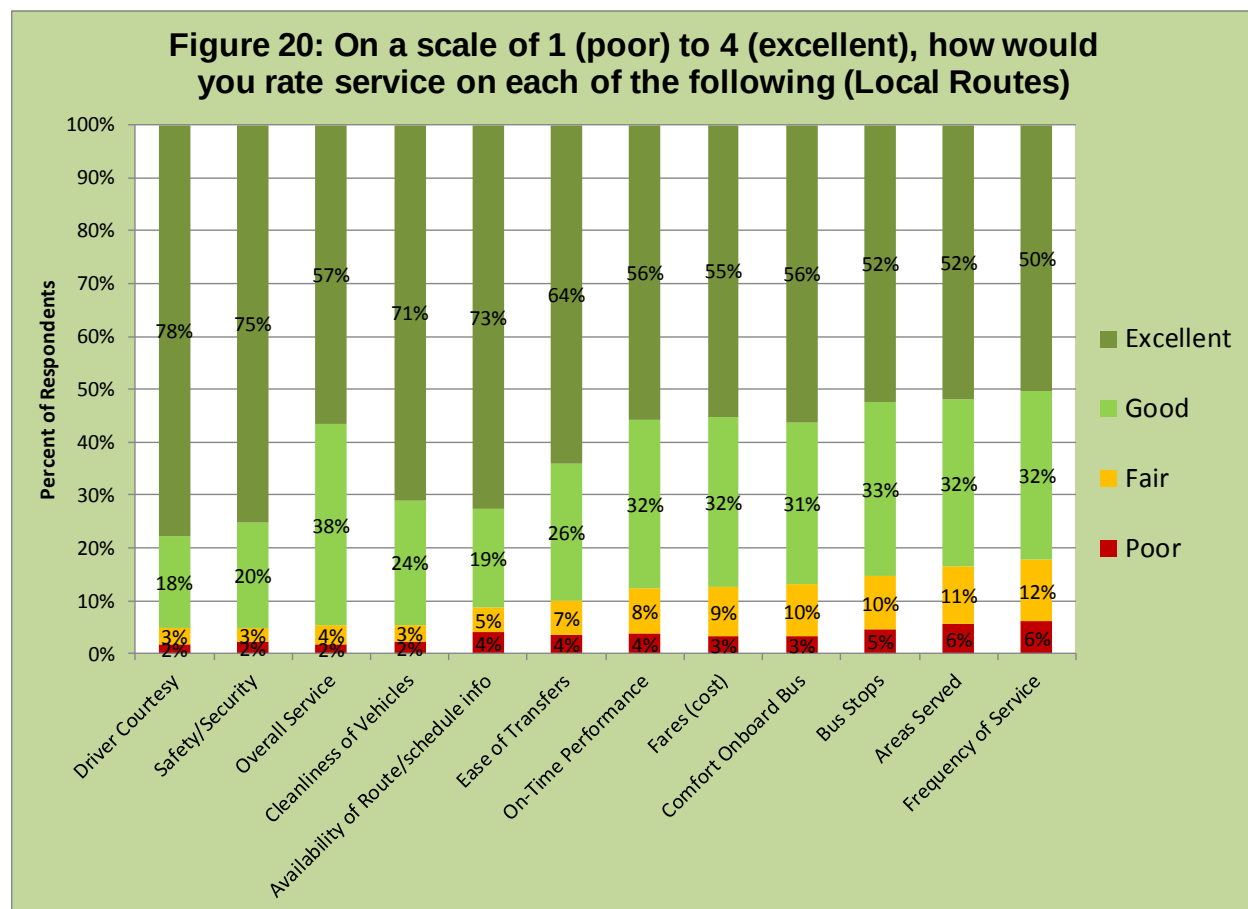
ROSEVILLE TRANSIT ON-BOARD SURVEY RESULTS

LSC Transportation Consultants conducted on-board surveys on Roseville’s fixed route, Commuter and Dial-A-Ride services system between Tuesday, November 7 and Friday, December 15, 2017 (including one Saturday on December 9 for the local fixed route service). The team surveyed each weekday run once during this time period, and surveyed half of the Saturday runs, administering bilingual passenger feedback surveys (English and Spanish), collecting boarding and alighting counts by stop, and conducting travel time-checks at specific stops. Complete results of the survey effort are included as Appendix D. A summary of important findings is described below:

Passenger Characteristics and Feedback

Fixed Route

- Roseville Transit’s ridership base is primarily a workforce ridership. Eighty-two percent are aged 17-59, and 73 percent are employed.
- Ninety percent of respondents use the bus at least two days a week.
- A third of respondents noted that they did not possess a driver’s license. This is a change from the 2010 surveys, when more than half (60 percent) of respondents stated that they did not have a driver’s license.
- Ninety-five percent of respondents rated Overall Service either “Good” or “Excellent.” Respondents were well-satisfied, with 82 percent or more providing a positive score in all service categories. Highest ranked categories were “Driver Courtesy” and “Safety/Security.” Lowest ranked categories were “Frequency of Service” and “Areas Served”, as shown in Figure 20.



- Nearly half of all riders (43 percent) thought that increasing the frequency of service is the improvement that is most likely to draw more ridership.
- Multiple respondents gave specific suggestions for improving Roseville transit. More common suggestions included:
 - More service to West Roseville, Granite Bay
 - Wi-Fi
 - Better transfers – buses should take the same pass
- Nearly three-quarters of all respondents (73 percent) obtain their transit information from sources produced for general consumption, i.e., not individualized service such as talking to a customer service representative on the phone. This is a change from the 2010 surveys, when the top three sources of transit information among respondents were “Bus driver,” “At the bus stop,” or “Call City Offices.”

Commuter Service

- Fully 96 percent of Commuter riders are employed, with 77 percent between the ages of 26 and 59, 3 percent between 17 and 25, and 20 percent 60 or older.
- 90 percent use the service two to five days a week, with 6 percent riding all five days a week, 2 percent one day a week to 2 days a month, and 1 percent less than one day a month.
- 96 percent of riders have a driver’s license, and 54 percent drive to the bus. Another 39 percent walk to their boarding stop, while less than 5 percent each got a ride, transferred from a local route, or bicycled.
- Overall, riders are happy with the service, with over 95 percent indicating the service is “good” or “excellent”. Individual factors that scored relatively low (82 to 88 percent indicating good or excellent) consisted of on-time performance, fares, bus stops, service frequency, and comfort on the bus.
- When asked what would most increase ridership, the most prevalent response (51 percent) was for more frequent service, followed by 32 percent indicating service to new areas. A mid-day commuter run was also a commonly identified need.

Dial-A-Ride

- A quarter of respondents would not have made the trip if Dial-A-Ride were not available. Another 59 percent stated that they would have gotten a ride or taken a taxi. Of those that selected “Other,” three (12 percent of the total) stated that they would have used Uber or Lyft.

- Respondents ranked each of eleven rider satisfaction categories very highly, with 85 percent or more rating each category positively. Respondents gave System Safety the highest ranking, followed by Bus Cleanliness. Other highly-ranked categories included On-line Information Services, Areas Served, and Driver Courtesy, as well as Overall Service. The two categories with the lowest rankings were Travel Time and On-Time Performance.

Boarding and Alighting Survey

Ridership by Run

The following runs have relatively high average boardings:

- Route A: 11:00 AM run – 17 passengers; 8:00 AM, 9:00 AM, 1:00 PM and 3:00 PM runs – 12 passengers.
- Route B: 12:30 PM and 2:30 PM runs – 12 passengers.
- Route M: 1:30 PM run – 20 passengers.
- Route R: 7:30 AM and 4:00 PM runs – 16 passengers.
- PM Commuter: 3:30 PM – 46 passengers; and 3:50 PM – 42 passengers.

At the other extreme, the following runs had average ridership of 5 or less passengers per run:

- Route A: 6:00 AM, 6:30 AM, 8:30 AM, 10:30 AM, 11:30 AM, 3:30 PM, 4:00 PM, 5:00 PM, 5:30 PM, 6:00 PM, 7:00 PM, 8:00 PM, and 9:00 PM.
- Route B: 6:00 AM, 6:30 AM, 7:00 AM, 12:00 PM, 1:00 PM, 2:00 PM, 3:30 PM, 4:30 PM, 5:30 PM, 6:00 PM, 6:30 PM, and 7:30 PM.
- Route D: 6:30 AM, 11:30 AM, 12:30 PM, 1:30 PM, 3:30 PM, 4:30 PM, and 5:30 PM.
- Route CGFE: 4:40 PM.
- Route L: 6:30 AM, 7:30 AM, 10:30 AM, 11:30 AM, 4:30 PM and 5:30 PM.
- Route M: 6:30 AM, 10:30 AM, 6:30 PM, 7:30 PM, and 8:30 PM.
- Route R: 8:30 AM and 4:30 PM.
- Route S: 7:30 AM, 8:30 AM, 11:00 AM, 11:30 AM, 1:30 PM, and 4:00 PM.

There were no passengers observed boarding the following runs:

- Route CGFE: 6:30 PM.
- Route S: 5:00 PM.

Ridership by Stop/Passenger Loads

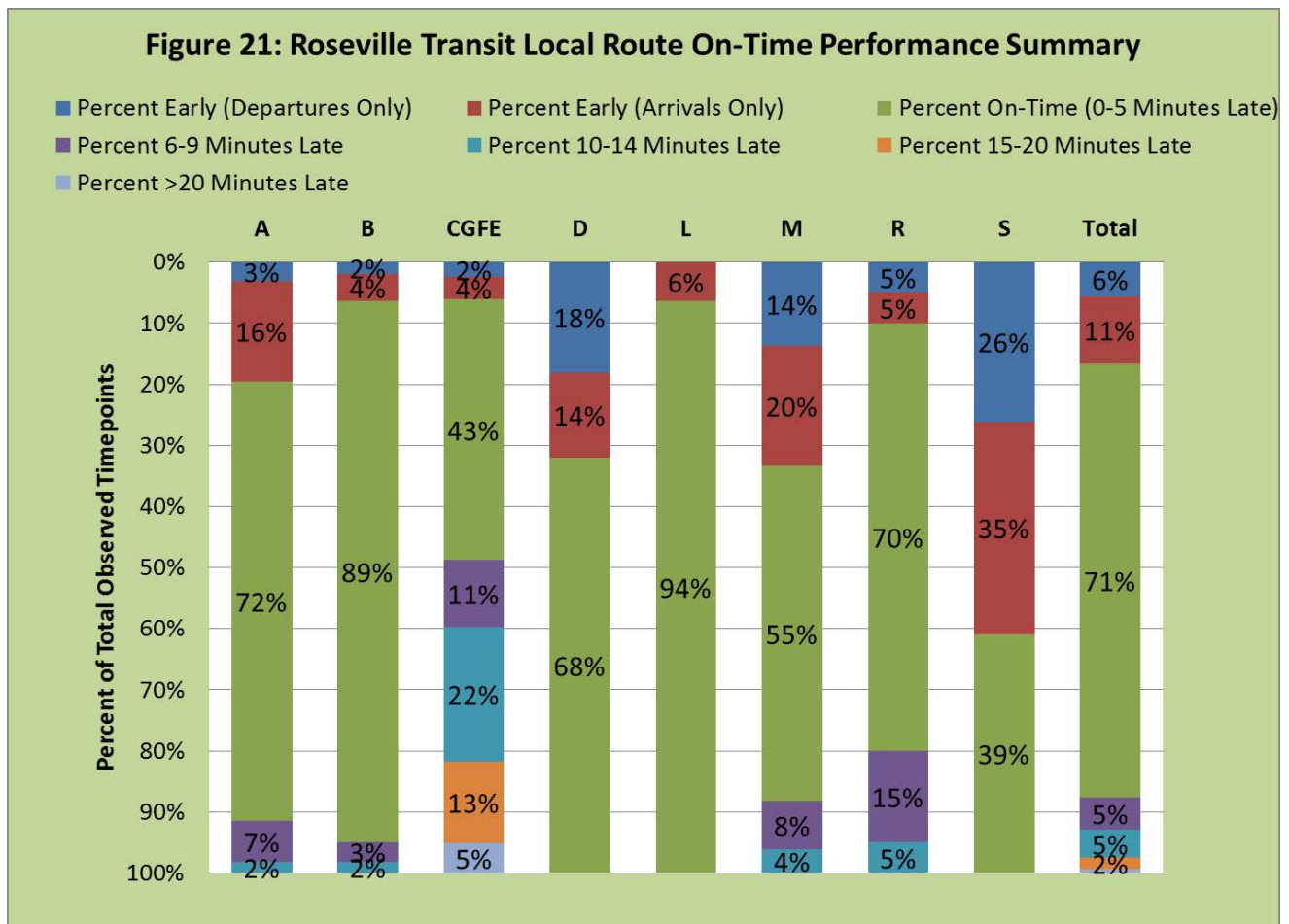
Key findings related to passenger activity at individual stops and maximum passenger loads after stops include:

- Excluding the commuter routes, the largest passenger activity occurs at the Galleria Transfer Point. The station is serviced by Routes A, B, M and S and experiences a total of 181 boarding and alighting counts on an average day.
- Route A experiences the largest total daily passengers, with a total of 184 boardings throughout the day. The greatest activity on Route A is at the Galleria Center Transfer Point, the Civic Center Transfer Point, and the Louis/Orlando Transfer Point. These stations experienced 69, 58, and 61 total boarding and alighting counts respectively.
- Route D has the greatest activity at the Woodcreek/Junction stop and Civic Center Transfer Point, with 17 and 31 total average daily boardings and alightings, respectively.
- Route R has high activity at the Foothills Boulevard at Pride Industries Stop, with 25 average daily boardings and alightings, and at Louis/Orlando Transfer Point, with 34 average daily boardings and alightings.
- On the commuter routes, the stop with the highest number of boardings and alightings is the Taylor & I-80/SunSplash stop, with 146 total average daily boardings and 186 total average daily alightings. The next most popular stop is Saugstad, with 35 boardings and 40 alightings, then Mahany Park, with 13 boardings and 15 alightings.
- The highest maximum load on all Roseville local routes is 17, generated once per day each on routes M and R. The highest loads on the commuter routes are after the last stop in Sacramento, 16th and H, with 46 passengers.

On-Time Performance Survey

As part of the data collection that generated the onboard surveys and boarding/alighting counts, surveyors also recorded the times that stops were served on each run and route. Data was recorded on the local service at a total of 595 time points on weekdays. An additional 94 time points were recorded on the commuter routes. This information was analyzed to identify the on-time performance of the individual fixed routes, as well as to evaluate the specific route segments and times of day that experience delay. Figure 21 shows the results for the local routes graphically.

On weekdays on the local routes, 71 percent of time points were served within Roseville Transit's standard on-time "window" of zero to five minutes behind schedule. An additional 11 percent of weekday time points consisted of early arrivals at transfer points along the route. Other, non-arrival stops served early totaled 6 percent of the weekday observations. Time points served six or more minutes behind the published schedule totaled 13 percent of all weekday observations.



Other key findings include:

- Route A operates later than scheduled between the Louis/Orlando and the Civic Center Transfer Point stops on multiple runs throughout the day. Route A consistently arrives at the Galleria Transfer earlier than scheduled until 3:00 PM, when it begins to operate on-time or late throughout the PM commuter peak.
- Route B operates later than scheduled between the Sierra Gardens Transfer Point and the Galleria Transfer Point between the 3:40 PM and 6:10 PM commuter peak. Earlier in the day there are late arrivals at the Galleria on the 10:10 AM and 12:10 PM runs.
- Route CGFE consistently operates behind schedule on the afternoon runs.
- Route M consistently operates behind schedule in the 1:30 PM to 5:30 PM timeframe. Outside of that timeframe, the route consistently operates earlier than scheduled between the Pleasant Grove before Foothills stop and the Galleria Transfer Point.

- The A M commuters #3 (6:00 AM departure), #7 (6:50 AM departure), #9 (7:10 AM departure), and #10 (7:18 AM departure) were fifteen or more minutes late by the time they reached the first timepoint in Sacramento.
- Only one of the PM commuters, PM Commuter #2 (3:30 PM departure), met the on-time standard of no more than five minutes late for all stops. PM Commuter #9 and #10, both of which have reverse commutes leaving from Roseville, were more than 15 minutes late to the first time point in Sacramento on the day of observation. PM Commuter #9 was 45 minutes late to the first time point in Sacramento.

ROSEVILLE TRANSIT MARKETING PROGRAM

The City of Roseville Alternative Transportation staff includes one Marketing and Communications Analyst position whose time is spent on promoting all facets of the entire Public Works Department which includes but is not limited to: transit, bicycling and other transportation options.

Alternative Transportation staff attends outreach events at locations, such as Sierra College. The Roseville Transit website is easy to follow and provides good access to maps and schedules and relevant announcements. Text and e-mail alerts are available to those who sign up. Roseville Transit has a good presence on social media and Roseville Transit information is also available through the South Placer Transit Information website and Placer County Transportation Planning Agency website. The City of Roseville conducts a number of marketing campaigns (including paid advertising) throughout the year in an effort to increase ridership.

Another marketing effort for Roseville Transit and the south Placer region is the Transit Ambassador Program which is funded through the Consolidated Transportation Services Agency. Volunteers are trained and spend time at transfer centers to answer questions and assist passengers with deciphering transit information and planning trips. Roseville Transit also has an extensive Mobility Training for individuals or groups who may need special help in order to use transit independently.

The Marketing and Communications Analyst also provides support to regional partners when it comes to communications and marketing, i.e. Summer Youth Bus Pass, South Placer Transit Information, etc.

The City of Roseville will direct a future contract to research and develop an overall marketing and communications plan for Roseville Transit. The plan will identify target budgets for resources, and outline marketing, advertising, and public relations initiatives.

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A “peer analysis” is a useful tool in comparing a transit program with other, similar programs. This can provide a good context for the ridership and performance figures, and help in identifying areas of relative strength and weakness. This discussion first presents the peer systems selected for comparison, followed by the data and analysis.



PEER TRANSIT OPERATORS

Table 22 displays operating data for five municipally operated transit systems in California with populations ranging from 128,000 to 163,000. These peer systems were also chosen to be similar to Roseville Transit, such as by not serving a major university. A brief overview of each system follows:

- **Corona Cruiser** – The City of Corona is located in inland Southern California and has a slightly larger population than Roseville (161,000). The city operates two fixed routes and a DAR service six days per week. Systemwide service levels are less than Roseville Transit, as well as ridership (213,164).
- **E-Tran** – The relatively newly-incorporated City of Elk Grove outside of Sacramento operates 7 fixed routes (6 days per week) and 10 commuter routes into Sacramento. The population of the city is roughly 30,000 more than the City of Roseville. The service is similar to Roseville Transit in that they provide local fixed routes, commuter, general public Dial-A-Ride as well as paratransit services. Ridership on E-Tran is significantly greater than Roseville Transit, with 922,757 trips at similar service levels.
- **Simi Valley Transit** – The City of Simi Valley in southern California operates four fixed routes and a demand response service six days per week. Population (126,126) and ridership (377,104) levels are very similar to Roseville Transit services, but Simi Valley Transit operates fewer vehicle miles annually (roughly 160,000 fewer).
- **Thousand Oaks** – Nearby to Simi Valley is the City of Thousand Oaks with a population size very similar to the City of Roseville. The City operates four fixed routes, one commuter shuttle to a Metrolink station and Dial-A-Ride, six days per week. Ridership is very similar to Roseville Transit (128,623) but service levels are greater.
- **Visalia Transit** – Located in the Central Valley, the Visalia Transit receives funding from Tulare County’s Measure R tax. As such, service levels are significantly higher than Roseville Transit. Visalia Transit operates 13 fixed routes, Town Trolley, DAR, and a shuttle service to

Sequoia National Park. Visalia Transit operates around 1.5 million trips per year but has a population very similar to Roseville Transit.

Table 22: Roseville Transit Systemwide Peer Analysis

	Operating Data					
	Annual Ridership	Vehicle Service Hours	Vehicle Service Miles	Service area Population ⁽¹⁾	Annual Operating Costs	Fare Revenues
Roseville Transit	360,882	50,969	899,317	128,276	\$5,537,660	\$1,180,254
Corona Cruiser	213,164	31,970	394,915	161,614	\$2,242,023	\$366,913
E-Tran (Elk Grove)	922,757	59,012	901,579	163,634	\$7,397,909	\$1,454,582
Simi Valley Transit	377,104	42,701	563,461	126,126	\$6,327,326	\$704,217
Thousand Oaks Transit	255,950	66,015	1,043,089	128,623	\$4,554,192	\$689,402
Visalia Transit	1,598,083	140,823	1,991,572	128,738	\$9,365,073	\$1,766,472
Peer Average	673,412	68,104	978,923	141,747	\$5,977,305	\$996,317

	Performance Measures					
	Ridership per Capita	Pax per Hour	Pax per Mile	Operating Cost per Hour	Operating Cost per Trip	Farebox Ratio
Roseville Transit	2.81	7.08	0.40	\$108.65	\$15.34	21.3%
Plan Recommended Standard	--	7.00	0.50	\$100.00	\$12.00	15.0%
Corona Cruiser	1.32	6.67	0.54	\$70.13	\$10.52	16.4%
E-Tran (Elk Grove)	5.64	15.64	1.02	\$125.36	\$8.02	19.7%
Simi Valley Transit	2.99	8.83	0.67	\$148.18	\$16.78	11.1%
Thousand Oaks Transit	1.99	3.88	0.25	\$68.99	\$17.79	15.1%
Visalia Transit	12.41	11.35	0.80	\$66.50	\$5.86	18.9%
Peer Average	4.87	9.27	0.66	\$95.83	\$11.79	16.2%
Roseville % of Peer Average	58%	76%	61%	113%	130%	131%
Roseville Ranking of 6 Systems	4th Highest	4th Highest	5th Highest	4th Lowest	4th Lowest	Highest

Source: State Controller 2016 Data

Note 1: American Community Survey 2016 estimate

PERFORMANCE COMPARISON

- The annual ridership average for the peer transit systems is 673,412. If Visalia Transit is not included, the average is 442,244. Roseville Transit's ridership falls below both of these figures, at 58 percent of the peer average. Roseville Transit's vehicle hours and miles are less but not far off from the peer annual vehicle hours of 68,104 and annual vehicle miles of 978,923.

- Peer ridership per capita is 4.87 trips, on average. This is greater than Roseville Transit's ridership per capita of 2.81 (76 percent of the peer average). Visalia Transit brings up the average significantly with 12.41 trips per capita. E-Trans also has relatively high ridership per capita of 5.64. Corona Cruiser has the lowest ridership per capita of 1.32 trips per person. If Visalia is excluded from the peers, Roseville's rate is just below the average of 2.98.
- In terms of productivity, the peer average annual passenger-trips per hour is 9.27. E-Trans is the most productive of the services, carrying 15.64 passenger trips per hour. Roseville Transit carries 7.08 trips per hour, which is better than both Corona Cruiser and Thousand Oaks Transit, and is 76 percent of the peer average.
- The passenger-trips per vehicle service mile peer average is 0.66. Roseville Transit ranks second to lowest (0.40), in front of Thousand Oaks Transit (0.25). E-Trans carries the most passenger-trips per mile (1.02).
- Roseville Transit's operating budget is in-line with the peer average of \$5.9 million. Visalia Transit has the largest budget of \$9.3 million and Corona has the smallest budget of \$2.2 million.
- Roseville Transit's operating cost per hour is 13 percent greater than the peer average of \$95.38, but less than E-Trans (\$125.36) and Simi Valley (\$148.18).
- The peer average operating cost per passenger-trip is \$11.79. At \$15.34, Roseville Transit is 30 percent higher than this average.
- Roseville Transit's passenger fare revenues (\$1,180,284) is greater than the peer average of \$996,317.
- In terms of farebox ratio, Roseville Transit has the highest farebox ratio of all the peer transit operators, 21.3 percent.

Sacramento Commuter Comparison

Several transit operators in the greater Sacramento region provide commuter public transit services into downtown Sacramento: Yuba-Sutter Transit from Marysville/Yuba City, El Dorado Transit from Placerville, Placer County Transit from as far as Colfax and Yolo from Woodland. While each system has its differences, the fact that all serve the same employment market makes this a useful peer comparison. Table 23 compares these services to Roseville Transit's commuter routes.

The peer average ridership for the Sacramento Commuter Services is 96,745, lower than Roseville Transit's ridership of 137,102. Annual vehicle hours operated range from 2,565 on

Table 23: Roseville Transit Commuter Route Peer Analysis

	Annual Data				Performance Measure		
	Ridership	Vehicle Hours	Vehicle Miles	Operating Cost	Pax per Hour	Pax per Mile	Operating Cost per Hour
Roseville Transit	137,102	6,327	242,187	\$837,296	21.7	0.57	\$132.34
PCT Commuter	70,677	3,163	101,279	\$865,744	22.3	0.70	\$273.74
El Dorado Transit	139,792	9,057	281,027	\$1,411,252	15.4	0.50	\$155.82
Yuba Sutter Transit	118,307	11,630	418,000	\$855,307	10.2	0.28	\$73.54
YoloBus Route 45	58,204	2,565	65,323	NA	22.7	0.89	NA
Peer Average	96,745	6,604	216,407	\$1,044,101	17.7	0.59	\$167.70
<i>Roseville % of Peer Average</i>					123%	96%	79%
<i>Roseville Ranking</i>					3rd Highest of 5	3rd Highest of 5	2nd Lowest of 4
Source: FY 2016-17 data for all but YoloBus, which is FY 2014-15							

Yolobus Route 45 to 11,630 on Yuba Sutter Transit. Roseville Transit is very close to the peer average of 6,604 in terms of vehicle hours. Yuba-Sutter Transit also travels the greatest number of vehicle miles (418,000), much more than the peer average of 216,407. Yolobus Route 45 only travels 65,323 annual vehicle miles.

Roseville Transit, PCT and Yolobus Route 45 all carry over 20 passenger-trips per vehicle hour. At 21.7, Roseville Transit is 23 percent above the peer average of 17.7. Yuba Sutter Transit has the lowest productivity, at 10.2 trips per hour. Roseville Transit's passenger per mile performance is very similar to the peer average of 0.59 trips per mile. Yuba-Sutter Transit's Commuter Routes (not including mid-day service to Sacramento) are clearly the most cost effective, with an operating cost per hour of \$73.54. Roseville Transit's operating cost per hour is 17 percent lower than the peer average of \$132.34 and below PCT (\$273.74) and El Dorado Transit (\$155.82). PCT's cost per hour is significantly above the peer average. Many factors may contribute to this, including that half of the hours for each commuter route is deadhead travel and therefore not included in the revenue hour calculation, split shifts and the high proportion of deadhead travel require drivers to check in multiple times, there were particularly high maintenance costs in FY 2016-17, and difficulties with the contractor requiring additional administrative oversight. Additionally, PCT cost figures include allocated county staff time spent managing the commuter service contract; whereas, that level of detail was not available for the other transit operators.

General Public DAR Peer Comparison

Many small city/suburban transit operators provide Dial-A-Ride service; however most of these services are only available to ADA eligible passengers. Other similar public transit operators which offer general public DAR similar to Roseville Transit are: PCT, El Dorado Transit and Visalia Transit. Table 24 displays operating and performance characteristics for these transit operators. Only data for PCT's Rocklin/Loomis DAR is presented and it should be noted that Visalia Transit's DAR service is only available to the general public if space is available. Ridership of the various services varies significantly from 8,752 trips on the PCT Rocklin/Loomis DAR to 34,224 trips on Visalia Transit DAR. Roseville Transit ridership, service levels and costs are all greater than the peer average.

Table 24: Roseville Transit General Public DAR Peers				
	Annual Ridership	Vehicle Service Hours	Vehicle Service Miles	Est. Annual Operating Costs
Roseville Transit	28,408	11,642	184,006	\$1,240,301
Placer County Transit (Rocklin Loomis)	8,752	5,129	49,561	\$368,980
El Dorado Transit	20,880	11,293	208,545	\$1,513,306
Visalia Transit	34,224	11,938	158,347	\$793,906
Peer Average	21,285	9,453	138,818	\$892,064
Roseville % of Peer Average	133%	123%	133%	139%
	Pax per Hour	Pax per Mile	Operating Cost per Hour	Operating Cost per Trip
Roseville Transit	2.4	0.15	\$106.54	\$43.66
Recommended Standard	2.5	0.20	\$100.00	\$35.00
Placer County Transit (Rocklin Loomis)	1.7	0.18	\$71.94	\$42.16
El Dorado Transit	1.8	0.10	\$134.00	\$72.48
Visalia Transit	2.9	0.22	\$66.50	\$23.20
Peer Average	2.1	0.2	\$90.82	\$45.94
Roseville % of Peer Average	114%	94%	117%	95%

- Passengers per Vehicle Hour – Roseville Transit DAR is the second most productive of the peers and carries 2.4 trips per hour, above the peer average of 2.1 trips per hour.
- Passenger per Vehicle Mile – Roseville Transit is at 94 percent of the peer average in terms of passenger trips per vehicle mile.

- Operating cost per Vehicle Hour – Roseville Transit’s operating cost per hour (\$106.54) is greater than the peer average of \$90.82 but less than El Dorado Transit’s cost of \$134.
- Operating cost per Passenger-trip – Roseville Transit’s operating cost per trip (\$43.66) is less than the peer average of \$45.94.

Peer Fare Structure Comparison

Another worthwhile comparison is to review the fare structures of the peer transit systems. Table 25 shows that only E-Trans has a higher general public base fare. Table 26 demonstrates that Roseville Transit’s Resident commuter fare is below the peer average. Only YoloBus has the same fare.

Table 25: Roseville Transit Fixed Route Base Fare Peer Comparison		
	General Public One-way fare	Discount One-Way Fare
Roseville Transit	\$1.50	\$0.75
Corona Cruiser	\$1.50	\$0.70
E-Trans (Elk Grove)	\$2.25	\$1.10
Simi Valley Transit	\$1.50	\$0.75
Thousand Oaks Transit	\$1.50	\$0.75
Visalia Transit	\$1.50	\$0.75

Table 26: Roseville Transit Commuter Route Fare Peer Comparison		
	One-Way Fare	Monthly Pass
Roseville Transit (Resident)	\$3.25	\$110.00
PCT Commuter ⁽¹⁾	\$4.25	\$131.25
El Dorado Transit	\$5.00	\$180.00
Yuba Sutter Transit	\$4.00	\$128.00
YoloBus Route 45	\$3.25	\$121.00
Peer Average	\$4.13	\$140.06
Note 1: Fare from Rocklin/Roseville		

SUMMARY

The following findings can be made from the existing services review of Roseville Transit:

- Although commuter route ridership has grown 30 percent over the past 9 years, systemwide ridership has declined by 17 percent.
- Due to a high commuter route farebox ratio, Roseville Transit meets the TDA farebox requirement of 15 percent. Roseville Transit's farebox ratio is also higher than the other peer transit operators reviewed.
- On a per route basis, Route R performs the best in terms of productivity and cost efficiency. Likely due to the fact, this route serves a significant transit generator (Pride Industries) during peak hours. Route S had the worst performance in FY 2016-17. Although this route has low ridership, it provides an important connection to county government services.
- The low productivity of the interlined Routes C, G, F and E indicate the need for a review of this service element, including an evaluation of alternative service models.
- Roseville Transit serves as an element of a regional transit network, as 10 percent of fixed route boardings are transfers from PCT or Sac RT.
- Overcrowding is an issue on some of the Commuter runs, particularly in the afternoon.
- The peer comparison demonstrated that Roseville has lower ridership than many similar sized cities outside of the Sacramento region. However, compared to other Sacramento Commuter Services, Roseville Transit's commuter routes perform well.
- Passengers are most interested in more frequent service. There are also specific desires for expanded connections with Granite Bay, and service to West Roseville.
- Roseville Transit's fixed route fare structure is in line with peers and the resident commuters receive a good discount.

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Chapter 7

GOALS, OBJECTIVES AND PERFORMANCE STANDARDS

An important element in the success of any organization is a clear and concise set of goals and objectives, as well as the performance measures and standards needed to attain them. As a public entity, a public transit organization is expending public funds and therefore has a responsibility to provide the public with transparent information on how funds are being spent and how well it is doing in meeting its goals. Funding partners also have a responsibility to ensure that funds provided to the transit program are being used appropriately. This is accomplished by providing information on the effectiveness and efficiency of the transit program. Additionally, an adopted set of goals and performance standards helps to communicate the values of the transit program to other organizations, to the public, and to the organization staff.



The current mission statement for the Roseville Transit program is as follows:

“We provide and continually enhance reliable, convenient and safe transportation options.”

The Study Team reviewed the goals, objectives and performance standards from the prior Short Range Transit Plan. Table 27 presents existing and updated performance standards which will be used for analysis of the service alternatives. The standards are compared to actual performance in FY 2009-10 and FY 2016-17. The recommended standards were based on applicable laws, performance history and peer transit operator performance. Peer transit performance data can be found in Tables 22, 23 and 24.

Table 27: Roseville Transit Goals, Objectives and Performance Standards (1 of 2)

Objective	Performance Measure	Existing Standard	Actual Performance		Standard met in 2016-17?	Recommended Standard
			FY 2008-09	FY 2016-17		
Goal 1: Sustainably operate an efficient and effective transit system through maximizing service and minimizing cost impacts						
Minimize Operating Cost	Farebox Ratio					
	Systemwide	15%	17.1%	21.3%	Yes	15%
	Fixed Route	15%	9.5%	11.7%	No	15%
	Commuter	75%	66.9%	79.6%	Yes	75%
	Dial-A-Ride	10%	8.0%	8.4%	No	8%
	Operating Cost per Vehicle Hour					
	Systemwide	\$80	\$78.48	\$108.65	No	\$100
	Fixed Route		\$78.80	\$104.89	No	\$100
	Commuter		\$74.32	\$132.34	No	\$130
	Dial-A-Ride		\$80.25	\$106.54	No	\$100
	Operating Cost per Passenger					
	Systemwide	\$10	\$12.11	\$12.07	No	\$12
	Fixed Route		\$11.83	\$15.74	No	\$15
	Commuter		\$6.12	\$6.11	Yes	\$6
	Dial-A-Ride		\$34.29	\$40.01	No	\$35
Increase Transit Passengers	Passengers per Vehicle Hour					
	Systemwide	8.0	6.5	7.1	No	7.0
	Fixed Route		6.7	5.9	No	7.0
	Commuter		12.2	21.7	Yes	20.0
	Dial-A-Ride	3.0	2.3	2.4	No	2.5
	Passengers per Vehicle Mile					
	Systemwide	1.00	0.47	0.4	No	0.5
	Fixed Route		0.53	0.4	No	0.5
	Commuter		0.50	0.6	No	0.6
	Dial-A-Ride		0.21	0.2	No	0.2
	Annual Growth in Passengers					
	Systemwide	2%	-8.7%	-7.2%	No	Growth Exceeding Annual Population Growth Rates
	Fixed Route		-11.3%	-13.9%	No	
	Commuter		2.3%	3.1%	Yes	
	Dial-A-Ride		-7.7%	-3.7%	No	
Increase Revenues	Fare per Passenger					
	Systemwide	\$2.00	\$2.07	\$3.27	Yes	\$3.50
	Fixed Route		\$1.13	\$2.08	Yes	\$2.25
	Commuter		\$4.09	\$4.85	Yes	\$5.00
	Dial-A-Ride		\$2.74	\$3.65	Yes	\$3.75

Table 27: Roseville Transit Goals, Objectives and Performance Standards (2 of 2)

Table 27: Roseville Transit Goals, Objectives and Performance Standards (2 of 2)						
Objective	Performance Measure	Existing Standard	Actual Performance		Standard met in 2016-17?	Recommended Standard
			FY 2008-09	FY 2016-17		
Goal 2: Provide safe, reliable, and high quality transportation						
Provide Service Safely	Passenger injuries	<1 per 100K boardings	Met Standard	NA	Unknown	<1 per 100K boardings
	Preventable accidents	Min. of 60K miles between preventable accidents	Met Standard	1 per 39,101 miles	No	<1 per 50,000 miles
	All accidents	<1 per 25,000 miles	--	1 per 23,059 miles	No	<1 per 25,000 miles
Reliable Transit Service	On-time performance					
	Fixed Route	95% of all trips on- time (1 minute early or no more than 5 minutes late)	Met Standard	89.4%	No	95 % of all trips on- time (1 minute early or no more than 5 minutes late)
	Commuter Bus	95% of all trips on- time (1 minute early or no more than 5 minutes late)	Met Standard	93.3%	No	95 % of all trips on- time (1 minute early or no more than 5 minutes late)
	Dial-A-Ride	90% pick up within 30 minute window	Met Standard	98.5%	Yes	Pick up within 30 minute window
	Maintenance Standard	> 10,000 miles per road call	--	1 per 28,104 miles	Yes	> 10,000 miles per road call
	Dial-A-Ride Missed Trips	< 1 percent of monthly trips	Met Standard	0.03%	Yes	< 1 percent of monthly trips

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This chapter presents the analysis of a wide range of transit service alternatives. At the end of this section, the various alternatives are compared and an analysis on system performance is presented.

These alternatives have been developed based upon a review of existing service performance, public input, and with the intent of addressing the City's adopted transit goals. In particular, this plan addresses the first goal: *"Sustainably operate and effective transit system through maximizing service and minimizing cost impacts"*. Some of these alternatives address the key objective under this goal of *"Minimize operating cost"* by identifying services that are not cost-effective. Other alternatives address another key objective: *"Increase transit passengers"* and the associated *"Increase revenues"* by assessing options that could increase ridership.



In reviewing these alternatives, it is important to consider that the Roseville Transit service is an interconnected network of routes, with many passengers using a combination of routes to complete individual trips. In addition, many Roseville Transit local route riders also transfer to other connecting services. To provide a background on this, the onboard surveys conducted on the Roseville Transit local routes (excluding the commuter service) were analyzed to estimate the number of individual one-way passenger trips occurring between various portions of the service area on an average weekday. A total of 227 valid passenger survey responses were evaluated, and then factored by the average one-way passenger-trips (adjusted to eliminate transfers). The resulting origin/destination pattern across the service region is presented in Table 28 and shown in Figure 22. Beyond reflecting the intricate pattern of passenger-trips, this figure indicates the following:

- The busiest overall individual origin/destination pairs are between southwest Roseville and the Galleria area, followed by northern Roseville and the Galleria.
- All of the five busiest origin/destination pairs with more than 40 passenger-trips per day are to from the Galleria area, reflecting this area's role as a key hub in the Roseville Transit system.
- The Douglas East and East zones (the latter of which includes Sierra College) have relatively low ridership to/from other zones.
- The overall pattern is generally consistent with the current route structure. In particular, it is consistent with the Route A/Route B loops that are the key element of the local route structure.

Figure 22
Roseville Transit Average Daily Transit Passenger Trips
by Origin and Destination

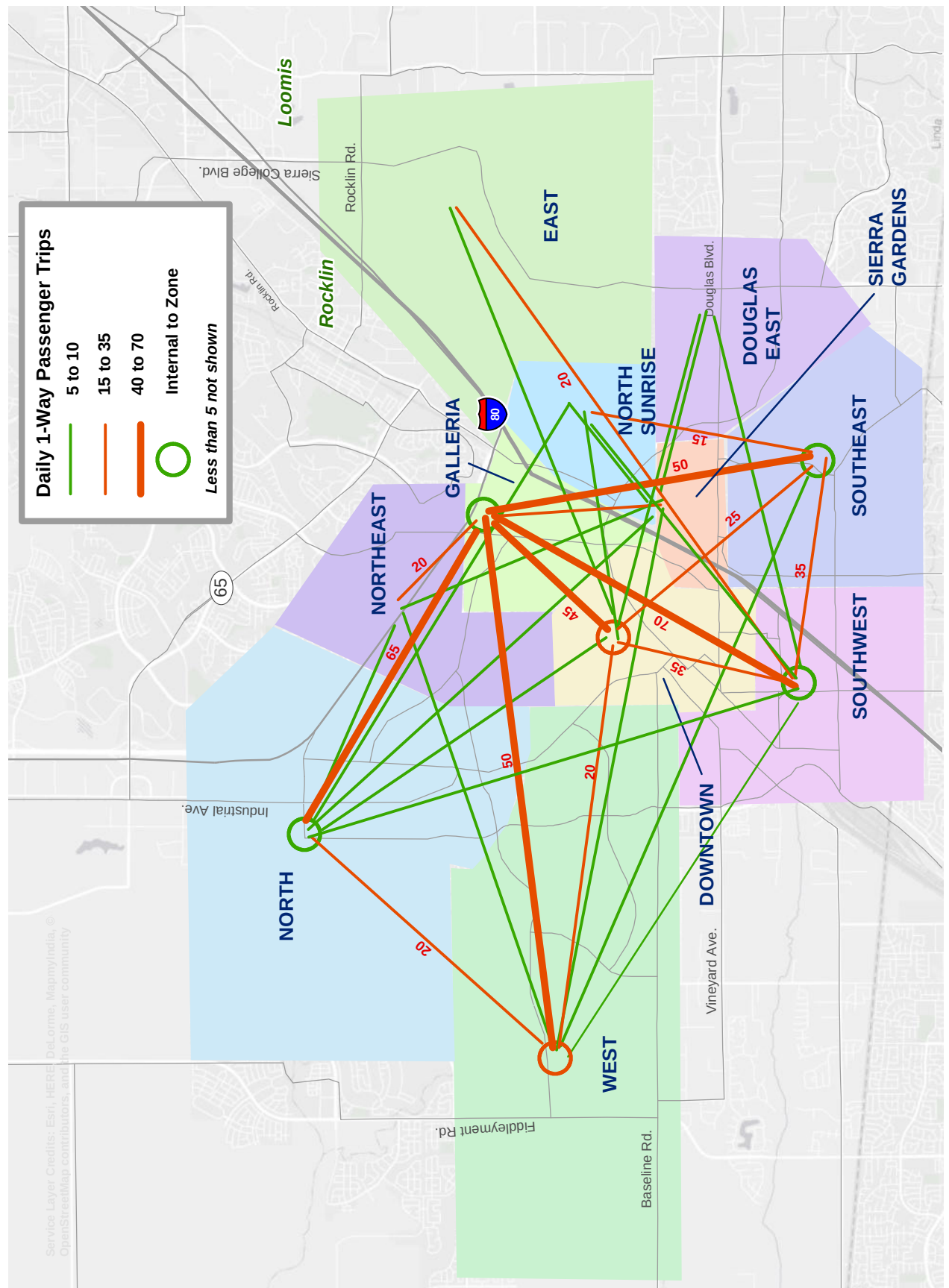


TABLE 28: Roseville Transit Estimated Average Weekday Daily 2-Way Passenger Trips by Origin-Destination

		AND ZONE												Total 2-Way	Proportion of All Trip-Ends
		West	North	Northeast	Downtown	Galleria	North Sunrise	East	Douglas East	Sierra Gardens	Southeast	Southwest			
BETWEEN ZONE	West	15	20	10	20	50	0	0	0	5	5	5	145	10%	
	North	--	5	5	10	65	5	0	0	10	0	10	135	10%	
	Northeast	--	--		0	20	0	0	0	5	0	0	40	3%	
	Downtown	--	--	--	15	45	10	5	5	10	25	35	195	14%	
	Galleria	--	--	--	--	5	0	0	5	20	50	70	335	24%	
	North Sunrise	--	--	--	--	--	0	0	0	5	15	10	45	3%	
	East	--	--	--	--	--	--	0	0	20	0	0	25	2%	
	Douglas East	--	--	--	--	--	--	--	0	10	0	5	25	2%	
	Sierra Gardens	--	--	--	--	--	--	--	--	0	10	25	120	8%	
	Southeast	--	--	--	--	--	--	--	--	--	5	35	150	11%	
	Southwest	--	--	--	--	--	--	--	--	--	--	5	205	14%	
Source: Survey of 227 Roseville Local Route Passengers															

In addition, the surveys were used to identify the total transfer patterns between the various Roseville Transit routes, as well as to/from connecting services. As shown in Table 29, transfers are a key part of the transit system, with fully 47 percent of all Roseville Transit passengers transferring as part of their trip. This 47 percent is made up of up 36 percent that transfer between Roseville Transit routes, 6 percent that transfer to/from Sacramento RT routes, and 5 percent that transfer to/from PCT routes. Within the Roseville Transit system, a relatively high proportion of transfers occur among riders on Routes C, D, E, F, G and L, all of which have more than 60 percent of passengers using other routes as part of their trip. This information is useful in assessing how service changes on one element of the Roseville system can impact ridership on connecting routes.

TRANSPORTATION NETWORK COMPANY/MICROTRANSIT

Prior to discussing individual service options, it is worthwhile to more broadly discuss emerging forms of public mobility, namely the use of Transportation Network Companies (TNCs), such as Lyft or Uber, or the “app-based” demand-response general public “microtransit” services.

Serving lower-demand areas, serving low-demand periods (such as evenings) and making first-mile/last-mile connection have long been a challenge for public transit agencies. With the nationwide decline in public transit ridership, transit operators and public agencies are looking for new and innovative ways to provide public transit that will attract more riders at a lower cost. Contracting with TNCs or “microtransit” companies is seen by many as a potential solution. The following section explores this topic in greater detail, while Appendix E presents a review of seven pilot projects which have been conducted throughout the country. Lastly, this

TABLE 29: Transfer Summary -- Roseville Local Route Riders

Source - Survey of 340 Riders

Shading Reflects Relative Value From Low (Green) to High (Red)

No Transfer	A/B	C/G/E/F	D	L	M	R	S	Roseville Commuter	Auburn/LR	Lincoln/SC	RT 21	RT 93	Subtotal: Roseville Local	Subtotal: PCT	Subtotal: RT	Total Transfers	Total
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Percentage of Ridership on Route Transferring To/From Other Routes

A/B	58%	0%	3%	5%	5%	7%	3%	3%	0%	3%	3%	5%	6%	25%	7%	11%	42%	100%
C/G/E/F	38%	33%	10%	0%	14%	0%	0%	0%	5%	0%	0%	0%	0%	57%	0%	0%	62%	100%
D	36%	26%	0%	0%	14%	21%	2%	0%	0%	0%	0%	0%	0%	64%	0%	0%	64%	100%
L	33%	37%	10%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	67%	0%	0%	67%	100%
M	59%	22%	0%	12%	0%	0%	1%	0%	0%	0%	4%	1%	0%	36%	4%	1%	41%	100%
R	45%	32%	0%	5%	0%	5%	0%	0%	5%	0%	0%	0%	9%	41%	0%	9%	55%	100%
S	52%	33%	0%	0%	0%	0%	0%	0%	5%	5%	5%	0%	0%	33%	10%	0%	48%	100%
Total	53%	13%	3%	6%	4%	6%	2%	2%	1%	2%	3%	3%	4%	36%	5%	6%	47%	100%

Estimated Average Weekday Ridership

A/B	216	0	11	17	17	26	11	11	0	12	12	17	23	92	25	40	156	373
C/G/E/F	26	23	7	0	10	0	0	0	3	0	0	0	0	40	0	0	43	69
D	12	9	0	0	5	7	1	0	0	0	0	0	0	21	0	0	21	33
L	22	24	7	13	0	0	0	0	0	0	0	0	0	44	0	0	44	67
M	64	24	0	13	0	0	1	0	0	0	0	4	1	38	4	1	44	108
R	18	13	0	2	0	2	0	0	2	0	0	0	4	16	0	4	22	40
S	9	6	0	0	0	0	0	0	1	1	1	0	0	6	2	0	9	18
Total	373	93	19	42	31	42	14	11	5	14	19	19	26	252	33	45	334	707

section applies the lessons learned from other projects to recommend areas of Roseville where contracting with microtransit/TNCs may be feasible.

What is a TNC or Microtransit?

It is first important to define TNCs and microtransit and compare these methods of service delivery to existing/traditional public transit. Table 2 presents a comparison of the different characteristics of each type of service. As microtransit and TNC use is constantly evolving, Table 30 presents the general concept for these types of ridesharing services.

Fixed Route public transit services work best in dense urban environments, particularly if the service can be operated frequently. The primary distinguishing characteristic is that there is no flexibility as to where a passenger can board/disembark the bus. Given adequate ridership demand, fixed route services should be the most productive type of service in terms of passenger trips per vehicle per day (at least 250) or passenger-trips per vehicle hour (around 10 to 30). The disadvantage of fixed route services is that if a passenger's destination is not within a quarter mile of the fixed route, the service is not convenient. If demand is not adequate, moreover, this can be an ineffective service strategy.

Table 30: Parameters for Shared Transportation Modes

Fixed Route			Dial-A-Ride		Route Deviation		Microtransit		TNC	
Distinguishing Characteristics	Set stops	Generally 3/4 mile of fixed route or municipal boundaries	Fixed route can pick up/drop off passengers outside of published stops within certain limits	Technology enabled reservations and driver routing, defined service area, fixed stops that can be modified to meet demand	Technology enabled reservations and driver routing, complete demand/response, no fixed stops					
Dispatching Technology	Generally not required. Radio contact between driver and dispatcher	Transit agency has routing software such as Trapeze. Passengers do not have access.	Radio contact with dispatcher	Driver routing through application	Driver routing through application, no dispatcher					
Reservation Method	None Necessary	Telephone, usually at least 24 hours in advance, or standing order	Telephone, 1 hour in advance	Smart phone app, telephone	Smart phone app, telephone					
Service Area	urban, intercity, intracity	urban and rural communities	Rural, small city, intercity	Urban, suburban	Urban, suburban, very limited in rural areas					
Public or Private	public	public	public	private or public/private partnership	private					
Size of vehicle	15-40 pax	2-10 pax	10-25 pax	10-25 pax	0-6 pax					
Typical Passengers per Day per Vehicle	200-600	20-50	75	30	15					
Typical Passengers per Revenue Hour	10-30	2-4	8	2	1.5					
Average Fare	\$1.00 - \$3.00	\$2.00 - 5.00	\$2.00 - 5.00	\$1.50 - \$7.00	\$2.00 and up depends on distance travelled					

- **Dial-A-Ride (DAR)** or “paratransit” services evolved as a way to serve passengers who are unable to access a fixed-route bus service as they allow for “curb to curb” transportation within a defined service area. DAR services can be limited to older adults or persons with disabilities or are used as a way to broadly serve the general public in a rural or suburban area where fixed route would not be productive. DAR service typically carry only 2 to 4 passenger trips per vehicle hour or 20 to 50 per day (depending on service span). Passengers must call the transit agency (often at least 24 hours in advance) to schedule a ride, or have a standing subscription for service at specific times. Although curb to curb is very convenient, many passengers find that having to make advance reservations limiting.
- **Route Deviation** is a hybrid of fixed route and DAR that is typically used in rural or low-density suburban areas as a way to cost effectively provide fixed route service while meeting ADA complementary paratransit service requirements. Passengers requesting a deviation must call the transit agency in advance for pick up; however shorter notice may be required than for DAR services. In terms of productivity, route deviation is closer to a fixed route service and may carry around 8 passenger-trips per hour.
- **Microtransit** is a relatively new concept and therefore is bit more difficult to define. For this study, microtransit is defined as a privately operated ridehailing form of transportation which employs on-demand dynamic route transportation technology.

The US Department of Transportation defines microtransit as *“a privately owned and operated shared transportation system that can offer fixed routes and schedules, as well as flexible routes and on-demand scheduling. The vehicles generally include vans and buses.”*

It should also be noted that some existing microtransit program have used public agency vehicles and drivers.

The primary difference between microtransit and a route deviation service is that microtransit employs technology that has only recently been available. Microtransit includes the use of software and smartphone technology which: (1) allow the passenger to reserve a ride directly (without the use of a dispatcher), (2) provides the driver with pick-ups and drop off assignments in real time and (3) calculates the most efficient route between passenger pick-ups/drop offs. Microtransit service may also require a passenger to walk to a specific service location. General routes and schedules are followed, but these can be modified as passenger demands evolve. Microtransit services will typically use vans instead of larger buses but will cost more than a fixed route service. The hope is that technology will allow microtransit programs to carry more passengers than a DAR service for a smaller cost.

- **TNC’s** are widely used in urbanized areas and are a privately operated form of demand response transportation enabled through the use of technology for both reservations and driver routing. Drivers generally choose the hours and areas they serve, rather than being dispatched by the TNC. Passengers must have access to a smart phone or internet to make

reservations. Wait times for a TNC are typically less than 15 minutes. Vehicles are not wheelchair accessible, and drivers do not meet FTA drug and alcohol requirements and are not trained in accommodating persons with disabilities. The cost of a ride with a TNC increases with the distance travelled. Therefore, TNC's are most popular for short distance trips where they are more convenient than a city bus or DAR. In rural areas, there may not be adequate demand for service to make TNC driving profitable. As a result, TNC service is either not available in rural areas, or requires long wait times.

Public transit agencies are beginning to partner with TNCs in areas where demand for DAR service is low and expensive to operate. The challenge with using a TNC is that most are not ADA accessible. Therefore, most transit agencies only use TNCs for operating non-ADA paratransit service.

TNC/Microtransit Success Factors and Applications to Placer County

This section summarizes specific elements which make partnering with a TNC or operating a microtransit program feasible and how this might apply to public transit in Placer County. Table 31 presents a list of "success factors" for TNC use and identifies areas in Western Placer County which include these factors.

- **Can TNC drivers make a living?** – Part of the appeal of becoming an Uber or Lyft driver is that the driver dictates his/her own work schedule and therefore will only work when and where he/she feels that there is money to be made. An example of the available Uber vehicle map on a typical weekday afternoon shows that there is sufficient supply of drivers to make a TNC program work in the urbanized areas. Another factor is whether a trip to an outlying residential area will generate a long return trip with little potential for a return fare. In Roseville, this is more likely to happen for TNC service to lower density residential areas with relatively little associated commercial/employment centers, such as areas north of Pleasant Grove Boulevard or west of Foothills Boulevard.

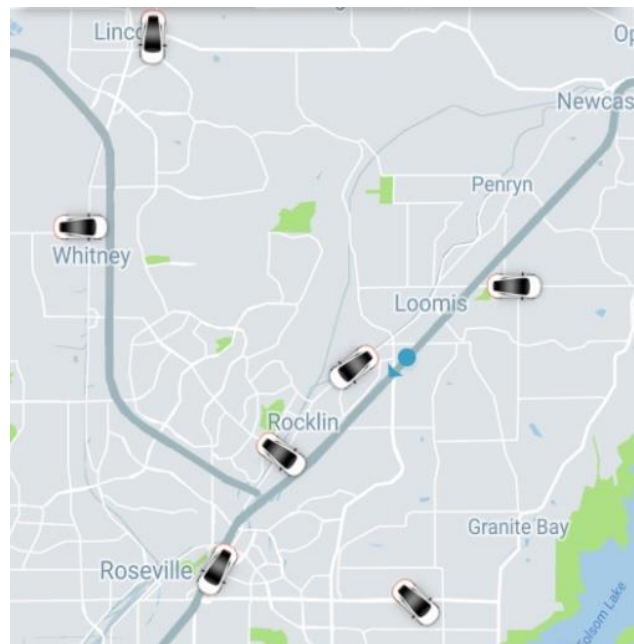


Table 31: TNC/Microtransit Success Factors

Success Factor	Roseville Conditions	Potential Markets in Roseville
Adequate rider demand to make serving the area profitable for TNC drivers	Yes	Relatively high potential east of Foothills Blvd, south of Pleasant Grove Blvd
Existing vehicles available for microtransit program	Potentially	Citywide
Is public paratransit service available to accommodate ADA Trips?	Yes	Citywide
Short distance trips	Yes	Relatively high potential east of Foothills Blvd, south of Pleasant Grove Blvd
Evening service	Not currently offered	Relatively high potential in downtown and in larger commercial centers
Strong ridership demand in peak commute times, generated by regional transit services	Proportion of existing commuter services not driving to their stop is currently low	Provide "first-mile/last-mile" connections to commuter transit service and Capital Corridor
Low proportion of special needs population	Yes, other than in retirement communities	All except retirement communities
Paid Parking	None	Not applicable

- **Can existing DAR vehicles be used for microtransit service?** – If Placer County transit operators were to take on a microtransit program, a significant cost savings would occur by using existing public transit vehicles.
- **Is ADA compliant service already available?** - The examples discussed in Appendix E show that providing ADA compliant service through a TNC or microtransit program is expensive, if not infeasible. The low number of rides requested for an ADA compliant service is not cost efficient. In many cases, it may not be possible to provide ADA service as most TNC drivers or taxi cab companies do not have wheelchair accessible vehicles. Therefore, a TNC program will be more successful in areas which are currently served by existing complimentary paratransit service. The Roseville DAR program provides this existing service throughout Roseville.
- **Short distance trips** – The Transportation Research Board (TRB) Shared Mobility Center identified price as one of the five key reasons to use a TNC. The research indicates that passengers find TNC use the most cost effective for trips three miles or less. Given this parameter, Roseville TNC programs would be the most successful within areas close to trip destinations, such as around downtown, the Galleria area, or along Douglas Boulevard.

- **Evening service** – Drinking/dining in the evening was also noted by the TRB as one of the main factors which increase TNC use. In particular, many passengers use TNC services in order to avoid the potential for DUI driving. As the last runs of Roseville Transit start around 9 PM on weekdays and 4 PM on Saturdays, TNC services to replace existing transit service would not address this potential “market”. However, later evening service could be a potential future market, if deemed desirable. Again the more urban and commercialized areas of Roseville and Rocklin would be the most successful.
- **Peak commute times** – Beyond weekend evenings, TRB research showed that demand for TNC use is the highest during rush hour commutes. Given the commute patterns of Roseville residents, a potential market would be for subsidized TNC service to provide “first-mile/last-mile” connections between regional transit services (Amtrak station, key commuter park-and-rides) and residences.
- **Large proportion of special needs population** – There is a segment of the population which may not technically be eligible for ADA paratransit service but may still need special assistance boarding a vehicle. These residents may feel intimidating by TNC’s and prefer the familiarity and personal attention of DAR. A TNC program may be less successful in areas of Roseville with high concentrations of elderly and disabled residents such as near the Sierra Pines Golf Course and Kaseburg-Kingswood neighborhood in Roseville and Del Webb senior development.
- **Parking** – A third key factor for increased TNC use as noted by TRB research is limited or expensive parking. As Roseville generally has ample free parking, this factor would not apply to the study area.

Overall, this review of factors indicate that TNC service could potentially be successful throughout Roseville. Relatively strong potential “markets” are:

- Service to lower density residential areas where fixed-route transit service has proven to generate low productivity levels, particular in areas (such as southeast Roseville) where trip lengths are relatively short.
- Service providing connecting trips to/from regional commuter services (Capital Corridor rail service or Sacramento Commuter bus services)
- Evening service, if expansion of the hours of public transit were to be desired.

Other Considerations

The underlying objective of providing public transit is to provide transportation that is accessible to everyone, particularly those who have no other option. As such, PCTPA and transit

operators should consider designing TNC/Microtransit services which are also accessible and usable by passengers without a smart phone.

TNC's may be more attractive to a segment of the population and are growing at a fast rate but there is a negative side. TNC's do not help to reduce traffic congestion. Some TNC trips are taking away from existing public transit or non-motorized trips or may even be a trip that would have not been taken all together. Additionally, there is the fact that the TNC must travel to the passenger pick up location. Therefore, in developing partnerships with TNCs, transit agencies and public entities could consider incentivizing shared ride forms of TNC transportation. One strategy used in other existing programs is to offer the subsidized discount only as part of the "Uber Pool" and/or "Lyft Line" service options, both of which provide at least the potential that an individual passenger could share their trip with other passengers.

LOCAL FIXED ROUTE ALTERNATIVES

Route C/G/F/E Alternatives

Routes C, G, F and E are all operated using a single bus that operates each route in turn (in that order) from the Sierra Gardens transfer point. Routes C and F comprise the clockwise and counterclockwise (respectively) operation of a loop in south Roseville (consisting generally of Douglas Avenue, Rocky Ridge Drive, South Cirby Way and Sunrise Avenue), while Routes E and G are similar clockwise and counterclockwise (respectively) operations of a longer loop consisting of I-80, Rocklin Road, Sierra College Boulevard, Eureka Road, and Douglas Boulevard. The overall productivity of these combined routes is relatively low at 2.9 passenger boardings per vehicle-hour, compared with a systemwide average of 5.9. As a result, the cost per passenger is 2.1 times the systemwide average, at an estimated value for Fiscal Year 2018/19 of \$21.10.

To gain an understanding of the effectiveness of the individual routes, a performance analysis was conducted using Roseville Transit data and survey data. As shown in Table 32, Routes E and G are relatively more productive than are Routes C and F, at 3.6 passengers per hour compared with 2.0. While the passengers per vehicle-mile are roughly equivalent, the cost and subsidy per passenger trip on Routes E and G are approximately 1/3 less than those of Routes C and F.

It is also useful to review the ridership served on various portions of these routes:

- On Routes C and F, most of the boardings/alightings are along Cirby near Piedmont and Nighthawk (Pepperwood Apartments) with a total of 8 passenger-trips per day, at Sierra Gardens (6), and at Sunrise/Cirby (5). Notably, no passenger activity was observed at the far end of the route (Country Village Mobile Home Park) or at Oakmont High School.

TABLE 32: Performance Analysis of Routes C, G, F and E

Route	Annual						Performance Analysis				
	Pass-engers	Vehicle-Hours of Service	Vehicle-Miles of Service	Marginal Operating Cost (1)	Fares Revenue	Operating Subsidy	Pax per Vehicle Hour	Pax per Vehicle Mile	Operating Cost per Trip	Subsidy per Trip	Farebox Ratio
C	1,460	730	8,820	\$40,400	\$3,000	\$37,400	2.0	0.17	\$27.67	\$25.62	7.4%
G	3,066	857	18,584	\$57,400	\$6,400	\$51,000	3.6	0.16	\$18.72	\$16.63	11.1%
F	1,460	730	9,450	\$41,100	\$3,000	\$38,100	2.0	0.15	\$28.15	\$26.10	7.3%
E	3,066	857	19,214	\$58,200	\$6,400	\$51,800	3.6	0.16	\$18.98	\$16.89	11.0%
Total	9,052	3,173	56,068	\$197,100	\$18,800	\$178,300	2.9	0.16	\$21.77	\$19.70	9.5%

Source: Roseville Transit figures for FY 2016/17 for four routes in total, allocated by observed ridership, scheduled service time and route length
Note 1: Estimated FY 18/19 costs.

- On Routes E and G, passenger activity was concentrated at Sierra College (14) and at Sierra Gardens (7). Other passenger trips were largely scattered along Douglas Boulevard and Eureka Road. Only 3 passenger-trips were served along Sierra College Boulevard between Sierra College and Douglas Boulevard.

There are several factors that appear to be limiting ridership on these combined routes:

- The every-two-hour service frequency makes the service inconvenient for many potential passenger trips. A general rule of thumb in urban transit planning is that service at more than hourly frequencies generates very low ridership. While the combination of routes does provide roughly hourly service to/from Sierra College and the southern Cirby Way residences, this is still a detriment to overall ridership.
- Much of Routes C/E are also served by other more frequent routes: Routes A/B along Sunrise and Route L along Douglas. Only areas along Cirby and Rocky Ridge are not served by other routes.
- Similarly, portions of Routes E and G are also served by the hourly Route L. While these routes do provide the only direct service between Sierra College and Sierra Gardens, the origin/destination analysis indicates that more of the overall transit demand for Sierra College travel to/from Roseville is concentrated on Galleria rather than Sierra Gardens.

Eliminate Routes C, G, F and E

A straightforward option would be to simply eliminate Routes C, G, F and E. The Fiscal Year 2018/19 marginal cost of this (and other) service alternatives can be estimated by using the negotiated rate identified in the service contract for that year and by inflating the other costs from 2016/17 values assuming a 3 percent annual rate of inflation. This yields the following 2017/18 marginal operating cost equation:

$$\begin{aligned}\text{Marginal Operating Cost} &= \$40.57 \times \text{vehicle-hours of service} \\ &+ \$1.22 \times \text{vehicle-miles of service}\end{aligned}$$

Applying this equation, the elimination of these routes would reduce operating costs by \$197,100 in FY 2018/19, as shown in Table 33. The number of buses in operation at peak would also be reduced by one.

The disadvantage of this would be the impact on ridership. In particular, passengers along portions of the routes not also served by other routes would have all fixed route service eliminated. On Routes C and F, this consists of Cirby Way east of Sunrise Avenue to the Country Village Mobile Home Park, as well as along Rocky Ridge Drive between Cirby Way and Douglas Boulevard (an estimated 8 one-way passenger-trips per day). On Routes E and G, Roseville Transit service would be eliminated to Sierra College as well as along Sierra College Boulevard from Rocklin Road to Douglas Boulevard (an estimated 15 passenger-trips per day)⁴. Other existing passengers along these routes (largely along Sunrise Avenue and Douglas Boulevard) would have lower frequency of Roseville Transit route service, via Routes A, B and L.

For these passengers, an “elasticity analysis” can be conducted. Elasticity analysis is a standard means of assessing the ridership impact of a change in existing service. Based upon the principals of microeconomics, it considered the proportionate change in ridership compared with the proportionate change in service or fare factor (in this case, the effective travel time), as observed in similar transit services that have observed ridership changes associated with changes in the service factor in the past. In this particular case, the factor to be evaluated is the reduction in the frequency of service. Adding the loss of passengers in areas losing all service to the loss due to the lower frequency in the other areas, the overall impact of this alternative would be a loss of 7,000 passenger-trips per year. Applying the average fare per passenger on the existing routes, this would result in a reduction in farebox revenue of \$14,500 per year, as shown in Table 31. Considering both the reduction in operating costs and the loss of revenue, the net impact would be a reduction in annual operating subsidy of \$182,600.

Provide Direct 2-Way Hourly Routes C and E on Cirby Way and I-80

The every-two-hour frequency on existing Routes C, G, F and E makes the schedule confusing to understand, results in long wait times at specific stops between buses, eliminates half of the potential transfer opportunities and also creates substantial overlap with other routes. An alternate route configuration would be to provide two routes that could together be operated on hourly headways, as shown in Figure 23:

⁴ Sierra College would still be served by hourly PCT service directly to/from the Galleria, which could serve some of the passengers currently using the Roseville Transit routes. For purposes of this analysis, the additional inconvenience of transferring between systems and lower service frequency is assumed to eliminate these passenger-trips.

TABLE 33: Roseville Transit Local Route Alternatives Service/Cost Analysis

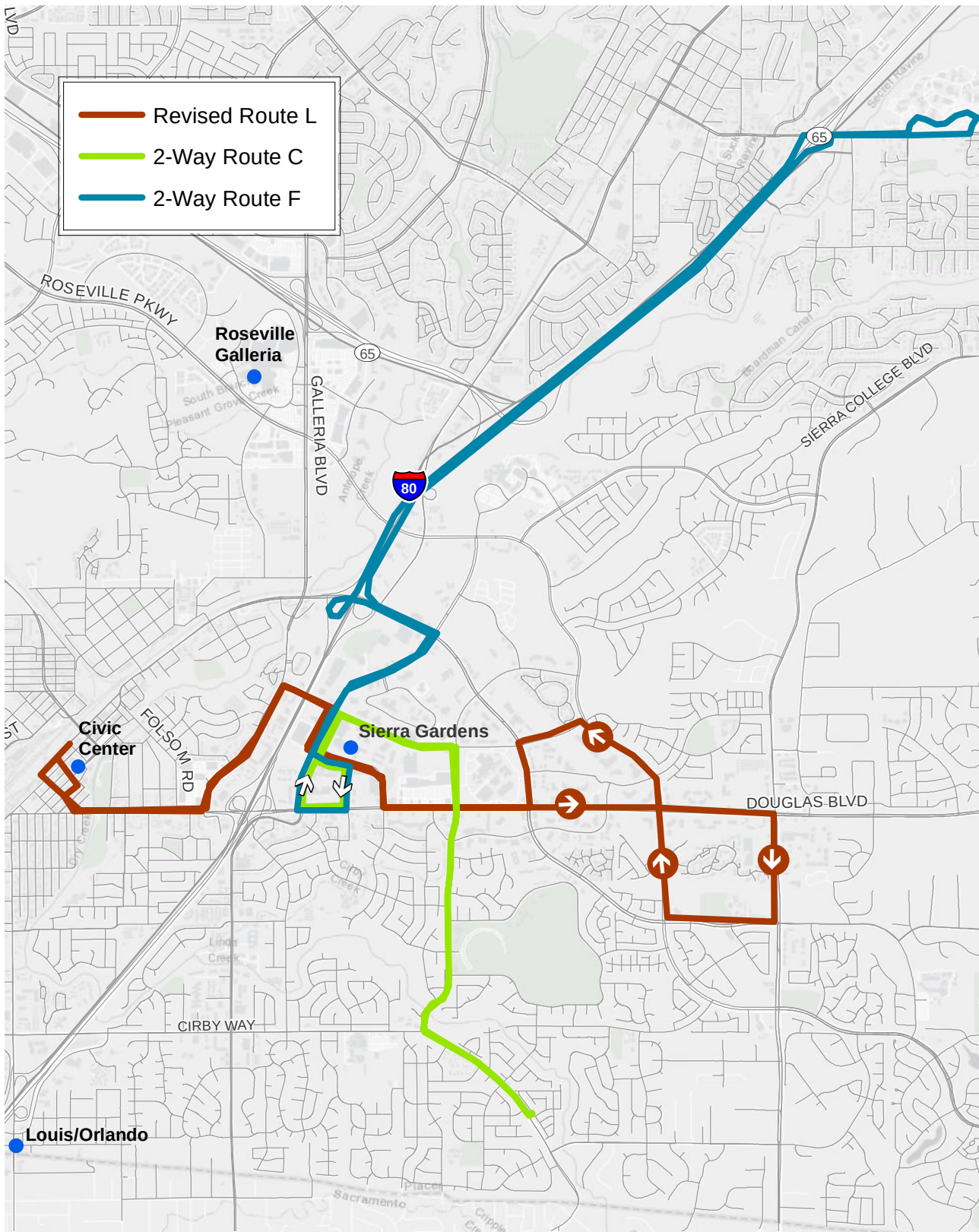
	Run Parameters			Weekday Service			Saturday Service(1)			Annual		Annual		
	Hours	Miles	Runs	Days/Yr	Hours	Miles	Runs	Days/Yr	Hours	Miles	Hours	Miles	Annual	
													Marginal	
													Cost	
Eliminate Routes C,G,E,F												-3,173	-56,068	-\$197,100
Streamline Routes C and E														
Route C	0.42	6.4	13	255	5,417	83	0	52	0	0	1,384	21,216	\$82,000	
Route E	0.58	11.1	12	255	7	133	0	52	0	0	1,789	33,966	\$114,000	
Total					12.42						3,173	55,182	\$196,000	
Net Change											0	-886	-\$1,100	
Combined Route L/Streamlined Route C, Eliminate F, G and E														
Existing Route L	1.00	9.9	12	255	12	119	9	52	9	89	3,528	34,927	\$185,700	
Combined Route L/Streamlined C	1.00	10.3	12	255	12	124	9	52	9	93	3,528	36,338	\$187,500	
Net Change											0	1,411	\$1,800	
Elimination of Existing Routes CGFE											-3,173	-56,068	-\$197,100	
Total Net Change in Fixed route											-3,173	-54,657	-\$195,300	
Extension of Roseville Route S to Public Defender's Office														
--	--	--	--	242	1	10	0	0	0	0	242	2,420	\$12,800	
Increased Weekday Service on Routes D, L and M														
Route D	1.00	15.4	10.0	255	10	154	0	52	0	0	2,550	39,270	\$151,400	
Route L	1.00	9.9	10.0	255	10	99	0	52	0	0	2,550	25,245	\$134,300	
Route M	1.00	17.0	11.0	255	11	187	0	52	0	0	2,805	47,685	\$172,000	
Total											7,905	112,200	\$457,700	
Add Reverse Route D on Weekdays	1.00	15.4	10.0	255	10	154	0	52	0	0	2,553	39,270	\$151,500	
Revised Route S -- 8 Runs per Day														
Existing Service	--	--	--	242	4.5	80	0	0	0	0	1,089	19,360	\$67,800	
Revised Service	1.00	10.3	8.0	255	8	82	0	52	0	0	2,040	21,012	\$108,400	
Net Change											951	1,652	\$40,600	
Revised Route S -- 11 Runs per Day														
Revised Service	1.00	10.3	11.0	255	11	113	0	52	0	0	2,805	28,892	\$149,000	
Net Change											1,854	27,240	\$108,400	
Hourly Route R Service	1.00	12.7	6.0	255	6	76	0	52	0	0	1,533	19,431	\$85,900	
Eliminate First Hour of Routes D, CGFE and M Weekday Service														
Route CGFE	2.00	35.6	-0.5	255	-1	-18	0	52	0	0	-255	-4,539	-\$15,900	
Route D	1.00	15.4	-1	255	-1	-15	0	52	0	0	-255	-3,927	-\$15,100	
Route M	1.00	17.0	-1	255	-1	-17	0	52	0	0	-255	-4,335	-\$15,600	
Total											-765	-12,801	-\$46,600	
Eliminate Weekday Service After 7 PM														
Route A	1.00	11.1	-3	255	-3	-33	0	52	0	0	-765	-8,492	-\$41,400	
Route B	1.00	11.3	-3	255	-3	-34	0	52	0	0	-765	-8,645	-\$41,600	
Route M	1.00	17.0	-3	255	-3	-51	0	52	0	0	-765	-13,005	-\$46,900	
Additional Dispatch													-\$19,100	
Total											-2,295	-30,141	-\$149,000	
Extend Saturday Service Until 6 PM														
Route A	1.00	11.1	0	255	0	0	1	52	1	11	52	577	\$2,800	
Route B	1.00	11.3	0	255	0	0	1	52	1	11	52	588	\$2,800	
Route D	1.00	15.4	0	255	0	0	1	52	1	15	52	801	\$3,100	
Route L	1.00	11.0	0	255	0	0	1	52	1	11	52	572	\$2,800	
Route M	1.00	17.0	0	255	0	0	1	52	1	17	52	884	\$3,200	
Additional Dispatch													\$1,300	
Total											260	3,422	\$16,000	
Sunday Service -- 9 Hour Span														
Route A	1.00	11.1	0	255	0	0	9.0	52	9.0	100	468	5,195	\$25,300	
Route B	1.00	11.3	0	255	0	0	8.7	52	8.7	98	453	5,122	\$24,600	
Route D	1.00	15.4	0	255	0	0	8.9	52	8.9	137	462	7,114	\$27,400	
Route L	1.00	11.0	0	255	0	0	8.6	52	8.6	95	448	4,929	\$24,200	
Route M	1.00	17.0	0	255	0	0	9.0	52	9.0	153	468	7,956	\$28,700	
Additional Dispatch													\$11,700	
Total											2,299	30,315	\$141,900	
Sunday Service -- 7 Hour Span														
Route A	1.00	11.1	0	255	0	0	7.0	52	7.0	78	364	4,040	\$19,700	
Route B	1.00	11.3	0	255	0	0	6.7	52	6.7	76	349	3,947	\$19,000	
Route D	1.00	15.4	0	255	0	0	6.9	52	6.9	106	358	5,512	\$21,200	
Route L	1.00	11.0	0	255	0	0	6.6	52	6.6	73	344	3,785	\$18,600	
Route M	1.00	17.0	0	255	0	0	7.0	52	7.0	119	364	6,188	\$22,300	
Additional Dispatch													\$9,100	
Total											1,779	23,472	\$109,900	

TABLE 34: Roseville Transit Local Route Service Alternatives Summary

Alternative	Change In Annual Service						Change in Peak Buses
	Service Hours	Service Miles	Marginal Operating Cost	Ridership	Fare Revenues	Operating Subsidy	
Eliminate C, G, F, E	-3,173	-56,068	-\$197,100	-7,000	-\$14,500	-\$182,600	-1
<i>Change From Existing CGFE</i>	-100%	-100%	-100%	-77%	-77%	-102%	-100%
Streamline Routes C and E	0	-886	-\$1,100	5,400	\$11,200	-\$12,300	0
<i>Change From Existing CGFE</i>	0%	-2%	-1%	60%	59%	-7%	0%
Combine Route L with Streamlined C, Provide TNC Service, Eliminate Routes E, F and G							
Net Change in Fixed Route	-3,173	-54,657	-\$195,300	-5,500	-\$11,400	-\$183,900	-1
TNC Service	--	--	\$75,600	8,400	\$16,800	\$58,800	--
Total	-3,173	-54,657	-\$119,700	2,900	\$5,400	-\$125,100	-1
<i>Change From Existing CGFE, L</i>	-48%	-59%	-31%	11%	9%	-39%	-50%
Increased D, L and M Frequency	7,905	112,200	\$457,700	21,100	\$44,100	\$413,600	3
<i>Change From Existing D, L, M</i>	67%	67%	53%	31%	31%	58%	100%
Add Reverse Route D	2,553	39,270	\$151,500	3,900	\$5,900	\$145,600	1
<i>Change From Existing D</i>	68%	67%	38%	20%	14%	41%	100%
Hourly Route R Service	1,533	19,431	\$85,900	4,000	\$8,300	\$77,600	0
<i>Change From Existing R</i>	206%	116%	170%	39%	39%	266%	0%
Revise Route S -- 8 Runs/Day	951	1,652	\$40,600	2,700	\$5,600	\$35,000	0
<i>Change From Existing S</i>	46%	6%	35%	61%	60%	33%	0%
Revise Route S -- 11 Runs/Day	1,854	27,240	\$108,400	5,200	\$10,800	\$97,600	0
<i>Change From Existing S</i>	90%	101%	93%	117%	116%	91%	0%
Extend Route S to Public Defender's Office	242	2,420	\$12,800	2,400	\$5,000	\$7,800	0
<i>Change From Existing S</i>	12%	9%	11%	54%	54%	7%	0%
Eliminate First Hour of Routes D, C, G and M Weekday Service	-765	-12,801	-\$46,600	-1,900	-\$3,900	-\$42,700	0
<i>Change From Existing CGFE, D, M</i>	-7%	-7%	-5%	-3%	-3%	-6%	0%
Eliminate Weekday Service After 7 PM	-2,295	-30,141	-\$149,000	-6,800	-\$14,100	-\$134,900	0
<i>Change From Existing All Routes</i>	-7%	-92%	-455%	-21%	-43%	-412%	0%
Extend Saturday Service Until 6 PM -- All Routes	260	3,422	\$16,000	2,200	\$4,600	\$11,400	0
<i>Change From Existing All Routes</i>	0.8%	0.7%	0.6%	1.1%	1.1%	0.5%	0.0%
Extend Saturday Service Until 6 PM -- Routes A & B Only	104	1,165	\$6,900	1,300	\$2,600	\$4,300	0
<i>Change From Existing All Routes</i>	0.3%	0.2%	0.2%	0.7%	0.6%	0.2%	0.0%
Sunday Service - 8 AM to 5 PM	2,299	30,315	\$141,900	7,800	\$16,200	\$125,700	0
<i>Change From Existing All Routes</i>	7%	6%	5%	4%	4%	5%	0%
Sunday Service 8 AM to 3 PM	1,779	23,472	\$109,900	3,800	\$7,900	\$102,000	0
<i>Change From Existing All Routes</i>	5%	5%	4%	2%	2%	4%	0%



Figure 23
Streamlined C and F Alternative



- Route C would depart Sierra Gardens Transfer Point, and make a loop clockwise on Douglas Boulevard westbound and N. Sunrise Avenue northbound before servicing Lead Hill Boulevard eastbound. (This would allow Route L to serve Sierra Gardens Transfer

Point in the eastbound direction, rather than traveling along Lead Hill Road, thereby increasing the transfer opportunities between Route L and Routes A, B, C and E.) Route C would then head southbound on Rocky Ridge and eastbound on Cirby Way to the current terminus at Rimma Drive. The return route would follow the outbound route, except the bus would turn left on Sierra Gardens Drive from southbound N. Sunrise Avenue to return to the Transfer Center.

- The other route (identified as Route E for purposes of this discussion) would depart the Sierra Gardens Transfer Point, make a clockwise loop on Douglas Boulevard East and North Sunrise Avenue, and then use Eureka Road, I-80 and Rocklin Road to arrive at Sierra College. Turning around via Campus Drive, the route would follow the outbound route back to Sierra Gardens Transfer Point, making the southbound left onto Sierra Gardens Drive.

In total, these routes would be 17.5 miles in length and require approximately 50 minutes to operate. This alternative would result in a slight reduction in vehicle mileage, resulting in a small (\$1,100 per year) reduction in operating costs.

There would be several factors impacting ridership, both positively and negatively:

- The ability to transfer to/from the eastbound Route L at Sierra Gardens Transfer Center would generate an estimated 2,300 annual passenger trips.
- The provision of two-way service on Lead Hill Boulevard (rather than the existing one-way eastbound only) would generate 2,000 passenger trips.
- More convenient hourly service in both directions for the stops along Rocky Ridge Drive and South Cirby Way would increase ridership by 1,600 passenger trips.
- Consistent hourly schedule of service at Sierra College would increase annual ridership by 900 passenger-trips
- The loss of service along Cirby Way between Sunrise and Rocky Ridge would reduce ridership. While the onboard surveys recorded no existing ridership, a loss of 200 is assumed along this stretch to be conservative.
- Loss of service along Sierra College Boulevard between Douglas Boulevard and Sierra College would reduce ridership by an estimated 600 passenger trips.

- The reduction in service frequency for passengers at other stops with a reduction (but not elimination) of fixed route service would reduce ridership by 600 passenger-trips.

In total, ridership is estimated to increase by 5,400 passenger-trips per year. This in turn would increase farebox revenue by roughly \$11,200. Overall, a reduction in annual operating subsidy of \$12,300 would result.

There were six other route alternatives considered for this service element:

- Two way service between Sierra Gardens and Sierra College could be operated along Douglas Boulevard and Sierra College Boulevard, along with the service via Cirby Way to the south. However, this would require approximately 65 minutes to operate, and would not allow good timed connections to other routes.
- A route connecting Louis/Orlando, Sierra Gardens and Sierra College was considered, via Orlando Avenue, Cirby Way Rocky Ridge Drive, Douglas Boulevard, N. Sunrise Avenue, E. Roseville Parkway, I-80 and Rocklin Road. However, this would require approximately 70 minutes per round trip (eliminating timed connections), would partially duplicate existing Route A and B service, and would provide a service (one-bus connections between Sierra College and Louis/Orlando) that is already provided at a shorter travel time by the PCT Auburn—Light Rail Route.
- Adding the segment on Rocky Ridge and South Cirby to Route L was considered, but found to take more than an hour to complete. This would also disrupt existing east-west trips across Roseville on Route L.
- Providing consistent hourly service on both Routes E and G was considered. As each route requires 37 minutes to operate, two buses would be required. This would increase costs on the order of \$178,000 per year and would result in an inefficient overall utilization of buses. Ridership would only increase by approximately 2,500 passenger-trips per year. Due to these factors, this option is not considered further.
- Service could be provided from Sierra College in Rocklin to the Civic Center transit plaza, adjacent to the Sierra College Roseville Center nearby on Vernon Street. While this would provide a convenient means of transferring between classes on the two campuses, experience at other similar “commuter” college campuses indicate that the actual transit demand for travel between campuses is quite low, given the need to coordinate fixed class schedules with limited transit services and the availability of a relatively low-cost semester parking pass (\$53 per semester). This route option would also eliminate the ability to share a vehicle with Routes C and F.
- Service between Sierra College (Rocklin) and Sierra Gardens could be provided via Taylor Road rather than via I-80. Depending on the time of day, travel via Taylor Road can take

approximately 8 to 10 minutes more than I-80, due to traffic signals and congestion. A round-trip would therefore need to be scheduled to include an additional 20 minutes. To provide hourly service with one vehicle, this would in turn require dropping the Route C service. Service along Taylor Road would generate additional ridership, but given that the portion north of SR 65 is in Rocklin, much of the additional ridership would be generated in Rocklin. It would also parallel existing PCT Lincoln-Sierra College between Sierra College and Sunset Parkway, reducing ridership on this existing service.

Replace the Eastern Portion of Route L with TNC Service, Provide Streamlined Route C Service and Eliminate Sierra College Service

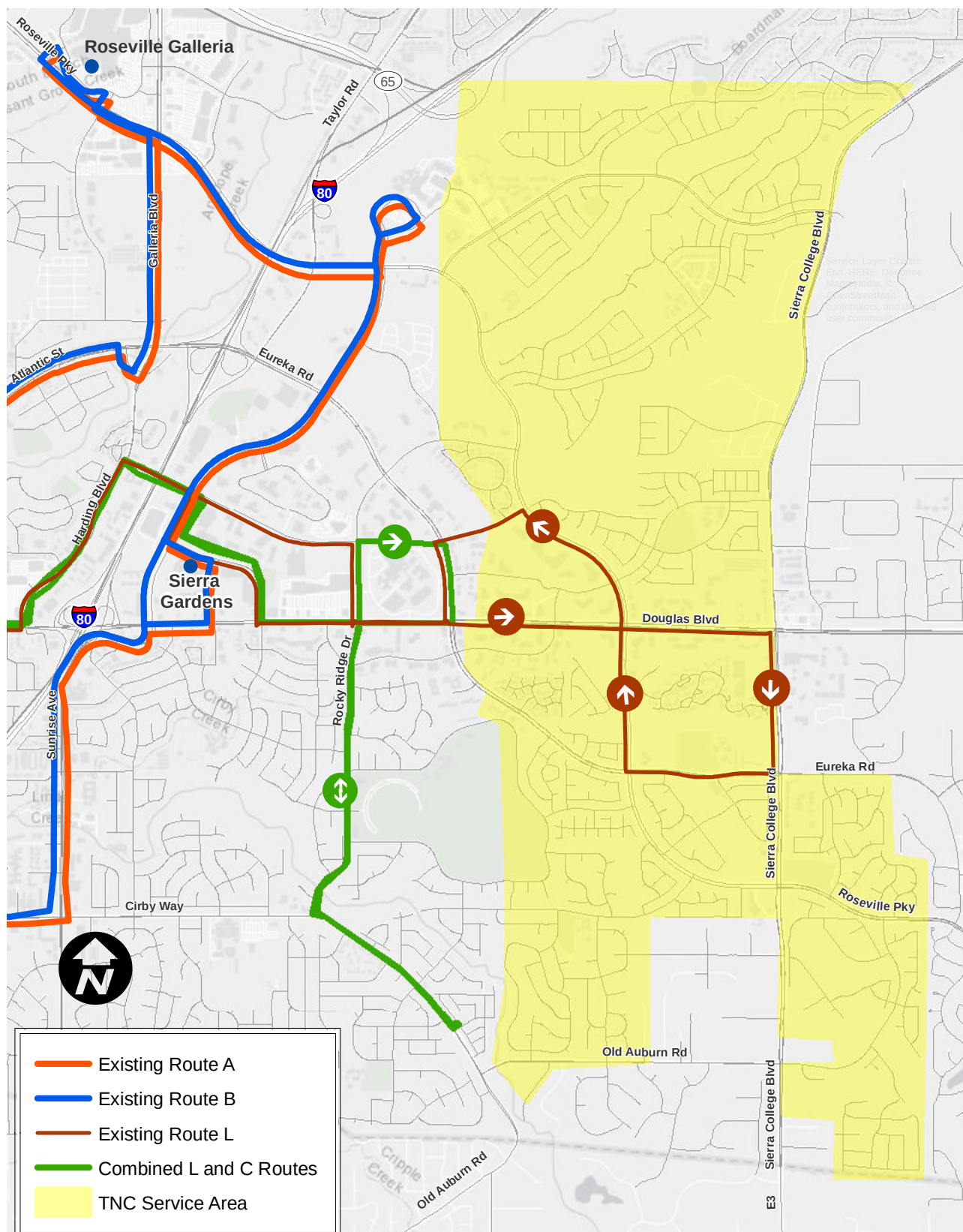
While performing better than Routes C/G/F/E, Route L has a relatively low utilization (5.3 passengers per vehicle-hour) and a relatively high subsidy per trip (\$16.91, in 2016/17). A review of the ridership activity by stop shows that approximately 80 percent of the ridership is generated in the western portion of the route (west of Eureka Boulevard) and only 20 percent in the eastern portion (which encompasses 35 percent of the route mileage).

Given this, one option would be to truncate Route L at Eureka Boulevard and use the resulting time within an hourly headway to operate the streamlined Route C, as discussed above. Along with the elimination of Roseville Transit service to Sierra College, this could reduce the number of buses in operation by one, and reduce fixed route operating costs by \$195,300 per year. This revised fixed route is shown in Figure 24.

To replace and augment this reduction in fixed route service, subsidy could be provided for residents using a Transportation Network Company (TNC), such as Lyft or Uber. To manage the program and control costs, restrictions would need to be defined for the program, such as the following:

- At least one trip-end would need to be within the program zone. Figure 24 presents an example zone defined as all of incorporated Roseville east of the Eureka Boulevard/Douglas Boulevard intersection (extending to the north and south). Note that this area includes substantial areas not currently served, but excludes areas that would continue to be served with fixed routes.
- Any trips outside of the TNC area could be limited to specific locations, such to Sierra Gardens Transfer Point and the Galleria Transfer Point (for connections to other transit services). It may also be appropriate to add other key nearby destinations, such as Sierra College, Sutter Roseville Medical Center, and/or Kaiser Permanente Roseville Medical Center. Other commercial destinations along Douglas Boulevard between I-80 and Eureka Boulevard may also be appropriate.

Figure 24
Replace Eastern Route L With TNC Service



- Passengers wishing to use the subsidy program must provide the discount code. Distribution of this discount code could provide a check on total program costs.

A typical average Uber fare for trips following these guidelines is \$9.00. Subtracting the average existing transit fare, the subsidy per passenger-trip would be on the order of \$7.00. Actual ridership would vary greatly depending on the specific constraints placed on the program. If the program were to serve the existing ridership on Route L that would be eliminated (3,800 per year) plus existing Route E and G ridership on the areas to be eliminated (4,600 per year), the total existing passenger-trips that could shift to the TNC program would equal 8,400 per year. At a subsidy of \$7.00 per trip, this program would require a subsidy on the order of \$58,800 per year. While other administrative costs could be incurred regarding the formation and monitoring of this program, the net impact on operating subsidy requirements would be a savings on the order of \$125,100. This could also be considered a pilot program for future expansion of TNC subsidy programs to other low-demand portions of Roseville, such as northwest Roseville. This program could also be combined with a TNC service for the Granite Bay area, as identified in the Placer County Transit SRTP. This plan element would replace the current Granite Bay Dial-A-Ride with a subsidized TNC service for Granite Bay residents (with destinations extending into Roseville).

One issue with this alternative (or any other alternative providing TNC service for a specific area or population) is the equity issue of providing a service for one segment of Roseville residents without providing it to all. In the short run, this limited TNC program could be considered a “demonstration program”, identified due to the low existing transit ridership (which providing funding for TNC service through the elimination of current fixed route service) combined with the density of development and potential TNC market in the area. In the long run assuming the success of the demonstration service, the City would need to define policies identifying what areas or travel corridors warrant inclusion in a TNC program.

Route Revisions in Northwest Roseville to Serve New Development

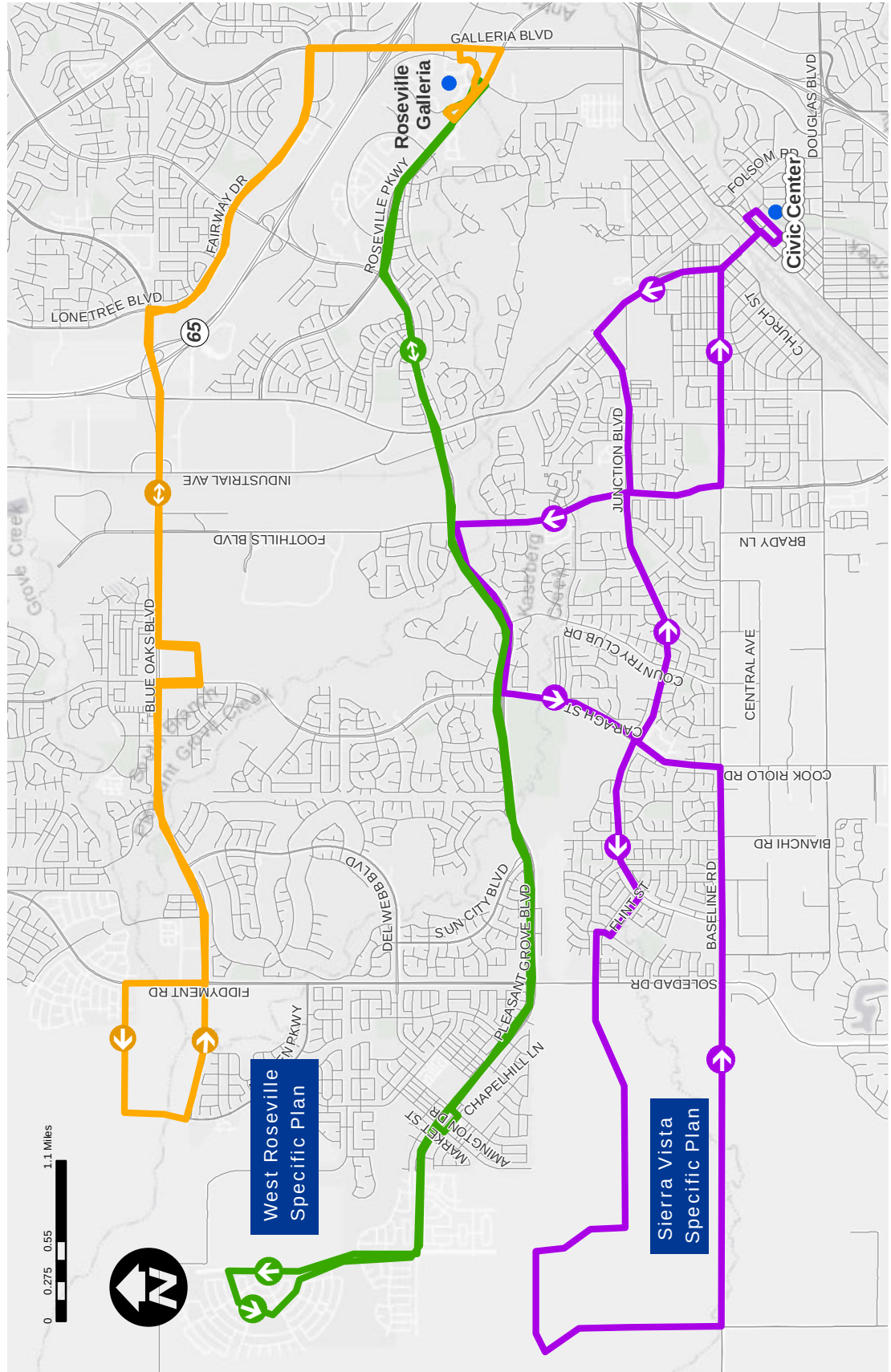
Significant development is currently underway in northwest Roseville and this is expected to continue over the SRTP planning period. At some point (dependent on specific development schedules), the existing routes (notably Routes D and M) will need to be modified to serve new development in the Sierra Vista Specific Plan Area and the West Roseville Specific Plan Area. In addition, there is development occurring in the HP Campus area that increases the need for transit service along the Blue Oaks Boulevard corridor.

Figure 25 presents a conceptual route plan that could serve expected development over the mid-term in this area:

- Route D would be extended westward to serve the Sierra Vista Specific Plan area. The route shown is designed in particular to serve commercial areas (largely along Baseline Road) and the higher density residential areas. To provide adequate running time

Figure 25
West Roseville Route Concept

 Extended Route D
 New Route N
 Extended Route M



within an hourly schedule, the current out-and-back route element north of Pleasant Grove Boulevard would be eliminated. This segment between Pleasant Grove Boulevard and Blue Oaks Boulevard currently only generates 7 passenger trips per day, and would not be cost-effective to serve if service is also provided along both of these east-west corridor. This revision also has the benefit of reducing the travel time between the existing western portions of Route D and the Civic Center.

- Route M would be extended westward along Pleasant Grove Boulevard and north on Durango Way, to serve additional residential development areas. To provide the additional running time, the route between the Galleria and Pleasant Grove Boulevard would be shifted from Fairway Drive to Roseville Parkway, with the Fairway Drive area served by the following route.
- A new route (such as Route N) would depart the Galleria following the existing Route M route via Galleria Boulevard and Fairway Drive, extending along Fairway Drive and westward along Blue Oaks Boulevard. The route would leave Blue Oaks Boulevard to better serve residential development in the HP Campus area, and would have a terminal loop in the northern portion of the West Roseville specific Plan area (focusing on streets serving high density residential areas).
- As discussed above, the frequency of service on Route R could also be increased, providing additional north-south travel options in the area.

Depending on the specific span of service on the new routes, this revision would increase annual operating costs on the order of \$600,000 per year. Ridership would depend upon the level of development, as well as the span of service.

Increase Weekday Service Frequency on Routes D, L and M to Half-Hourly

At present, only Routes A and B provide service every half-hour. With the exception of the Route CGFE service discussed above, the other routes provide service only hourly. A common request is for increased frequency of service on these hourly routes. In addition to substantially improving the quality of service, this would improve transfer connections, notably at the Galleria at the top of the hour and at Civic Center Transfer Center at roughly 50 minutes past the hour.

Providing half-hourly service over the bulk of the service day (excluding early morning and late afternoon periods with low ridership) would cost \$457,700 per year, and require three additional buses in operation. Ridership, based on an elasticity analysis and the improved connections, would increase by an estimated 21,100 per year. Including the additional fare revenues, the overall operating subsidy requirements would be increased by \$413,000 annually.

Add Reverse Route D Service

Route D consists of a large one-way loop (that overlaps in two places) along with a northerly two-way service segment along Woodcreek Oaks Boulevard. This route structure ensures that passengers (other than those within walking distance of the two locations along Junction Boulevard where the loop overlaps) will have a long in-vehicle travel time in one direction or the other, totaling an hour on the bus to complete a round trip. This is one factor that results in relatively poor productivity of this route.

One means of solving this would be to operate an additional bus in the opposite direction (along the lines of the previously-operated Route I). If this is operated on weekdays only and on a limited span of service from 8:10 AM to 6:10 PM, it would increase annual operating costs by \$151,500 per year. An elasticity analysis based on the reduction in in-vehicle travel time indicates that this would result in a ridership increase of 3,900 per year. Factoring for the additional fare revenues, operating subsidy would be increased by \$145,600 per year. An additional peak bus would also be required.

Revise Route S – 8 Runs per Day

Route S provides service connecting the Galleria with the Santucci Justice Center eight times per day. The current route proceeds northbound via Roseville Parkway, Pleasant Grove Boulevard and Industrial Avenue (very few riders are served between the two end points), and returns via SR 65. Full round trips are operated on four of the service times, while the other four only provide service in one or the other direction. To avoid providing service when the Justice Center is not in operation, this route is not operated on more holidays (13) than the remainder of the system (6).

This route is the least efficient of the Roseville Transit fixed routes, serving an average of only 2.2 passengers per vehicle-hour of service and requiring over \$45 in subsidy per passenger-trip. In addition, the growth in traffic congestion on SR 65 has made it increasingly difficult to operate on a consistent schedule. One option that could help address both of these issues would be to revise the route to travel north from the Galleria on Stanford Ranch Road, then northwest on Fairway Drive, west on Blue Oaks Boulevard and north on Industrial Avenue, returning on the same route. This could provide new service to commercial destinations along Fairway Drive north of Pleasant Grove Boulevard (including Target and Kohl's) not currently served. It would also double frequency between the Galleria and the commercial destinations along Fairway Drive south of Pleasant Grove Boulevard, specifically timed to provide direction transfers with Routes A and B at the top of the hour. While this revised route is slightly shorter, it would take an estimated 10 minutes more per run to operate. To provide a more consistent service along Fairway Drive, full round-trips would be operated on each run, and the number of holidays would be reduced to match the remainder of the fixed routes. The net impact of this option would be to increase operating costs by \$40,600.

Ridership associated with the new service north of Pleasant Grove Boulevard can be estimated by considering the transit trip generation of the existing service along Fairway Drive south of Pleasant Grove Boulevard, factored to reflect the difference in service quality. In addition, the increased frequency south of Pleasant Grove Boulevard would increase ridership. The overall increase in ridership generated by this option is estimated to be 2,700 annual passenger-trips. Subtracting the increase in passenger fares, the overall impact on operating subsidy would be \$35,000.

Revise Route S – 11 Runs per Day

An additional alternative would be identical to that discussed above, except that consistent hourly service would be provided 11 hours per day (from 7:00 AM to 6:00 PM). This would increase annual operating costs by \$108,400, but increase ridership by 5,200 passenger-trips per year. Total impact on operating subsidy, adjusted for the increased fares, would be \$97,600 per year.

Route S Extension to Public Defender's Office

As also discussed in the parallel Placer County Transit document, there is a need for service between the Santucci Justice Center (in Roseville) and the Public Defender's Office 0.7 miles to the north (in unincorporated Placer County). This service could potentially be provided by extending Roseville Transit Route S service north of the Justice Center to the Public Defender's Office. The vehicle could turn around at the end of Technology Drive to return to Industrial Boulevard. Reflecting the intermittent need for this service, it would best be offered on an on-call basis, requiring a call to the dispatch office at least 15 minutes prior to the scheduled time. This would add approximately 1 hour of in-service time per day and an additional 10 vehicle-miles per day. Assuming all these hours and miles are "charged" to Placer County by the City, the total cost over 242 annual days of service would be \$12,800. A rough estimate of the additional ridership generated by this extension would be 2,000 passenger-trips per year. Subtracting the additional fare revenue, the subsidy would be approximately \$9,800 per year.

Another option to provide the connection to the Public Defender's Office that would not impact Route S would be for Placer County to subsidize the provision of a discount for TNC trips between the Office and the Santucci Justice Center. To serve the same ridership level at PCT fare levels, the subsidy would be approximately \$9,500 per year.

Hourly Route R Service

Route R provides four runs per weekday along the Foothills Boulevard corridor between Louis/Orlando Transit Center on the south and the industrial park that includes PRIDE Industries (just north of Blue Oaks Boulevard) on the north. This is the most productive of the existing Roseville Transit routes, carrying 13.8 passenger-trips per vehicle-hour. Of the total ridership, 36 percent is generated by PRIDE Industries and (to a lesser extent) the adjacent Pasco Scientific plant.

Given this existing high productivity and the fact that additional service could increase transfer opportunities with Routes D and M, it is worth considering providing an additional six round-trips per weekday to provide roughly hourly service⁵. This service enhancement would increase annual operating costs by \$85,900 per year. Ridership impacts were evaluated by considering an elasticity analysis of the non-employee ridership, and found to be 4,000 additional passenger-trips per year. Subtracting the associated fare revenues, the impact on annual subsidy would be \$77,600.

Reduce Early Morning Weekday Service

The initial runs on Routes C, D, G and M have relatively low ridership (only one or two riders were observed in the onboard surveys). Eliminating these initial runs (starting service between 6:57 AM and 7:30 AM) would save \$46,600 in annual operating costs, while reducing ridership by an estimated 1,900 passenger-trips per year. The reduction in operating subsidy would be \$42,700 per year.

Reduce Evening Service

Weekday evening service consists of one bus each on Routes A, B, and M, providing hourly service. Ridership after 7:00 PM is relatively low, with an estimated average of 16 passenger-trips per day. Eliminating these runs would reduce operating costs by an estimated \$149,000 per year (assuming no parallel reduction in DAR service). Overall ridership is estimated to be reduced by 6,800 passenger-trips per year, including some trips during the remaining service span that would not be made as passengers could not complete a round-trip. Including the loss of \$14,100 in fares, the overall impact on operating subsidy would be a reduction of \$134,900 per year.

One impact of this reduction would be the elimination of the 7:30 PM connection at the Galleria for passengers arriving on the last PCT Auburn-Light Rail trip from Sierra College. One option would be to retain the 7:00 PM on Routes A and/or B to provide this connection, if additional survey data warrants it.

Later Saturday Service

The current Saturday service (Routes A, B, D, L and M only) ends around 5:00 PM. Providing one additional hour on all or some of the routes would address a common passenger request and provide more opportunity for employment, shopping and recreational trips on Saturdays. The following two options were considered:

- Adding one additional hour on all five routes currently operating on Saturday would increase annual costs by \$16,000. Considering the relative ridership in this hour on other transit systems running a longer span of service, this would increase ridership by

⁵ Service times would shift during the day to best serve the employee work shifts.

2,200 per year and fare revenue by \$4,600 per year, resulting in an operating subsidy increase of \$11,400 annually.

- In reviewing the existing ridership on Saturdays by route, ridership on Routes A and B is roughly double that of the other three routes. Extending the service span for these two routes only would increase costs by \$6,900 while still increasing ridership by 1,300 per year, resulting in an operating subsidy of \$4,300 per year.

Sunday Service

The desire for Sunday service is often raised in the annual transit unmet needs hearing process. This idea, however, generated little positive response in the onboard passenger surveys. To assess this, two different spans of service were evaluated:

- If Sunday service were provided between roughly 8 AM and 5 PM (matching the existing Saturday span of service), the annual operating cost impact (including additional dispatch cost) would be \$141,900. Based on the relative proportion of ridership generated on other similar systems currently operating service, annual ridership is estimated to be 7,800 per year. Including fare revenue, the annual operating subsidy required would be \$125,700.
- If Sunday service were to end around 3 PM, annual operating costs would drop to \$109,900. Ridership by hour at other transit systems, however, indicate a relatively high proportion of Sunday ridership in these late afternoon hours that would be eliminated. As a result, ridership would drop to 3,800 per year and subsidy requirements would still be \$102,000 annually.

Timed Transfers Between Local Routes

Existing schedules were reviewed (in light of current ridership patterns) at the key transfer points, which yielded the following conclusions:

- At the Galleria, existing schedules are well-coordinated between Roseville Transit routes, as well as with PCT routes.
- At the Civic Center Transfer Station, Routes A and B are on-site at 10 and 40 after the hour, while Route D arrives at 13 after and departs at 20 after and Route L arrives at 15 after and departs at 25 after. As a result, passengers arriving on Routes D and L have a long wait to transfer to Routes A and B (a common pattern), though a relatively short wait for transfers in the opposite direction (from A or B to D or L). While drivers currently strive to hold runs in order to make connections work, overall transfers could be substantially improved if Route D schedules were moved 3 minute early and Route L schedules were moved 5 minutes earlier. This would provide a schedule by which all four routes were at this location at 10 minutes after the hour (fully using the available

four-bus bay capacity). This shift would not change transfer opportunities at Sierra Gardens on Route L. On Route D, the transfer opportunity with Route M at Pleasant Grove/Foothills would require a 7 minute wait rather than the existing 4 minute wait when transferring from D to M, but a corresponding 3 minute reduction in wait time in the opposite direction. Overall, this shift in schedules would be beneficial to ridership, so long as it does not cause a problem with school bell times.

- At the Sierra Gardens Transfers Center, schedules are well coordinated between Route A, the Route CGFE bus and Route L. While Route B serves this location 5 minutes after the other buses depart, there is no way to shift the Route B schedule at this location without negatively impacting transfer opportunities at other, more critical, transfer points.
- At the Louis/Orlando Transit Center, Route A is well-coordinated with RT Route 93, while Route B is well-coordinated with RT Route 21.

Overall, the shift to slightly earlier schedules on Routes D and L should be considered further, in order to improve timed connections at Civic Center Transfer Station.

Modifications to Address On-Time Performance Issues

Several options were considered to address current on-time performance challenges:

- **Route A** operates 6 or minutes behind schedule on 9 percent of observed runs, while **Route B** is behind schedule on 5 percent of observed runs. Most of the longer delays occur in the mid-afternoon period. These routes generally run on the most direct routes available. One options to reduce the route length would be to use Orlando Avenue between Cirby Way and the Louis Orlando Transit Center rather than Riverside Avenue. This would reduce the route lengths by a quarter mile and avoid three signals, thereby resulting in several minutes of running time savings. This would eliminate service to the stops (in each direction) on Cirby east of Riverside. At present, 3 passengers board/alight at this Route A (westbound) stop and 10 at the Route B (eastbound) stop. Given that ridership is low on Route A while the Route A on-time performance is worse, it would be a net benefit to overall ridership if Route A were rerouted via Orlando Avenue while Route B were to remain on the current alignment. This rerouting of Route A would provide new service to the Merryhill School and the Somerset Hills Apartments. This option is a net benefit as it would make a noticeable improvement in overall on-time reliability.
- **Routes C, G, F and E** have the worst overall on-time performance, with fully 51 percent of runs operating late (up to 25 minutes late). Most delays occur in the afternoon when traffic congestion creates delays. One modification (beyond those discussed above) would be to discontinue service along Eureka Road south of Douglas Boulevard, operating along Douglas Boulevard west of Sierra College Boulevard. This would result

in a slight improvement (at the cost of 4 passengers per day loss in ridership), but would not address the bulk of the problem.

- **Route M** operates late on 12 percent of the runs, largely in the mid-afternoon. As this route is relatively direct and as the western terminus generates substantial ridership, the only option to reduce running time would be to use Roseville Parkway between the Galleria and Pleasant Grove Boulevard, rather than Fairway Drive. This, however, would eliminate approximately 30 percent of Route M ridership, and would clearly be an overall detriment.
- The final route identified as having late runs in the data collected as part of this SRTP (**Route R**) was the result of a late start on an initial run, and thus can be addressed through operations. As it was not a function of the route or schedule, it is not a subject for an SRTP.

Service to Roseville Amtrak Station

Capitol Corridor rail service to the Roseville Amtrak Station is currently limited to a 7:03 AM westbound departure and 5:48 PM eastbound departure on weekdays, and an 8:43 AM westbound and 8:48 PM eastbound departures on weekends. However, the Capitol Corridor Joint Powers Authority is planning on increasing service to three round-trips per weekday in 2021. In addition, service is tentatively planned for up to 10 round-trips starting in 2025 (depending on funding).

The nearest existing Roseville Transit stop is at Main Street/Washington Boulevard, approximately a 900 foot walk away from the train station. However, this stop is only served hourly in the northbound direction, requiring almost a full hour to connect with other transit routes at the Civic Center Transfer Station. This Transfer Station is approximately 1,000 feet walk distance from the train station (only 100 feet more), which is less than a five minute walk (though not a particularly pleasant walk along a sidewalk through a long underpass).

Given the success of the *Capital Corridor* service and the plans for expansion, it is clear that public transit connections to the Roseville Train Station will be needed within this SRTP planning period. There are three ways in which this could be provided:

- Existing Route D could be modified to service a stop at the station. To be effective, this would need to occur in both directions. This would add approximately 0.6 miles per round-trip and approximately 3 minutes of running time. Given the limited number train trips in the short term, most runs would not serve any passengers. Service would only be available once an hour in each direction. While the existing rail times are within the Route D span of service, the fact that the rail times are near the beginning and end of the overall system span of service means that little connecting service would be available (particularly in the morning) to provide trips beyond downtown Roseville. As Roseville is near the eastern end of the rail service, many of the new service times can

be expected to occur prior to or after the span of Roseville Transit service. Overall, this would be an inefficient strategy.

- Route D service could be provided on an on-call basis, with rail passengers required to contact the Roseville Transit dispatcher at least 15 minutes prior to specific scheduled times for service. This would avoid the provision of inefficient service to the Train Station (at least one passenger would be served each time), but would still have the other disadvantages of the previous alternative.
- A TNC subsidy program could be established to provide subsidized TNC trips between the train station and the nearby key transit centers at Civic Center and the Galleria. Passengers would be provided with a discount code that is valid to/from either of the transit centers. The subsidy level could be set to result in a cost to the passenger equivalent to the Roseville Transit fare. The substantial advantage of this approach is that passenger wait times would be dramatically reduced. In addition, it would be available to serve all train times, and would avoid operational impacts on Route D. TNC service would also be more convenient for passengers accompanied by baggage.

On balance, pursuing a TNC subsidy strategy to serve the train station appears to be the best strategy. This is similar to the TNC subsidy program provided by the Solano Transportation Authority for service to/from the Vacaville/Fairfield *Capital Corridor* station. Whether this service is a responsibility of the City of Roseville or the Capital Corridor JPA would be a matter for future discussion. If the latter, it is worth noting that a similar first-mile/last-mile program could also be appropriate for the other stations in western Placer County.

Service to Watt/I-80

Another potential new route option would be provision of a new route connecting the existing local route network with the RT Blue Line LRT service at Watt/I-80. One bus could operate hourly service between Watt/I-80 and Civic Center via Louis/Orlando. This would incur annual operating costs on the order of \$118,000 per year and would require at least one additional bus. It would not provide better access to significantly more employers than does the existing downtown commuter service (with connections to Light Rail or other RT services). In addition, there already is a publicly-funded hourly service connecting the Light Rail station with the Roseville (PCT Auburn – Light Rail Route). As ridership potential is low, this option is not considered further.

Serve New Roseville Stops as Development Warrants

At present, no other additional park-and-ride locations in Roseville are recommended for service. Doing so would further complicate the already-complicated route structure, and would not significantly improve total commute times. In the future as areas grow, however, new park-and-ride lots will warrant service. The provision of new park-and-ride locations/transit

stops depends on a variety of factors specific to the geography of the community and the neighborhoods. General considerations are as follows:

- It can be expected that passengers access the commuter transit stops by car. As a result, driving a few miles more on local roadways to a more distance stop is not a significant burden or detriment to using the commuter service.
- As discussed above, serving locations with small ridership or parking capacity can reduce the overall effectiveness of a commuter transit program. A reasonable standard would be to not serve a location generating less than 15 passenger boardings per day (unless a specific stop is directly along an existing route and can be served with only a few minutes of delay to passenger on board).
- Passengers tend to want to be driving towards their work location, rather than away, to access a park-and-ride. In Roseville, this means that park-and-rides should be located south and west of the residential area.

COMPARISON OF LOCAL FIXED ROUTE ALTERNATIVES AND PERFORMANCE ANALYSIS

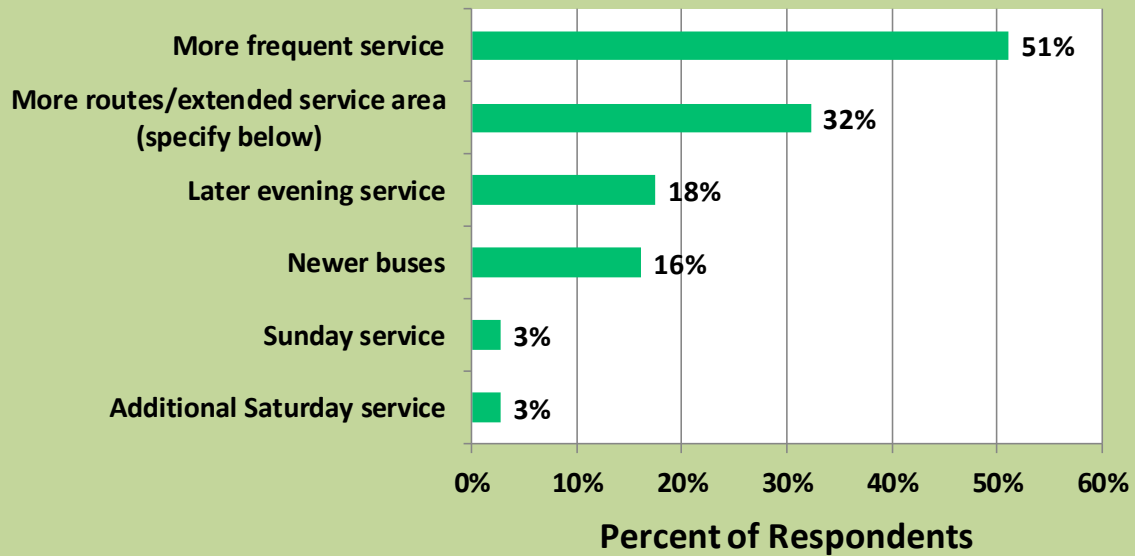
Table 31 summarizes the ridership and operating subsidy requirement impacts of the various local fixed route alternatives. Figure 26 also presents the ridership impacts in graphical terms. As shown, the greatest potential ridership increases are associated with half-hourly weekday service on Routes D, L and M (21,100 annual passenger-trips) followed by Sunday service (7,800), the streamlined Routes C and E (5,400) and the revised Route S with 11 runs per day (5,200). Three alternatives would reduce ridership, with the largest reductions coming from the elimination of CGFE service (7,000) and the elimination of weekday service after 7 PM (6,800).

Impact on annual subsidy requirements also vary widely, as shown in Figure 27. The most expensive alternative is the provision of half-hourly weekday service on Routes D, L and M (an increase of \$413,600), followed by reverse Route D service (\$145,600 per year) and the Sunday service options (between \$102,000 and \$125,700 per year). The subsidy implications of several options are relatively modest, including the Route S extension, changes in Saturday service, and the streamlined Routes C and E. Other alternatives would result in substantial reductions in subsidy, with the greatest (\$182,600) coming from the elimination of the Route CGFE bus.

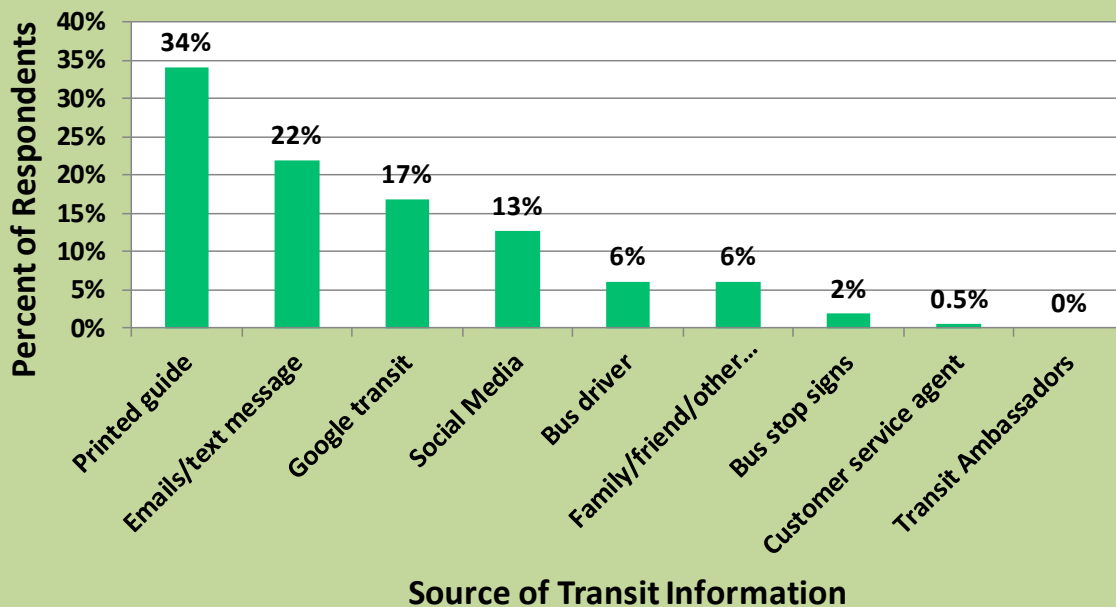
Performance Analysis

An analysis of the performance of the service alternatives is presented in the right side of Table 35. This considers the following key transit service performance measures. For those measures with a performance measure, those attaining the recommended performance standard are shown in green shading.

**Figure 26: What do you think would most increase ridership on Roseville Transit?
(Check only one) (Commuter)
(n = 217)**

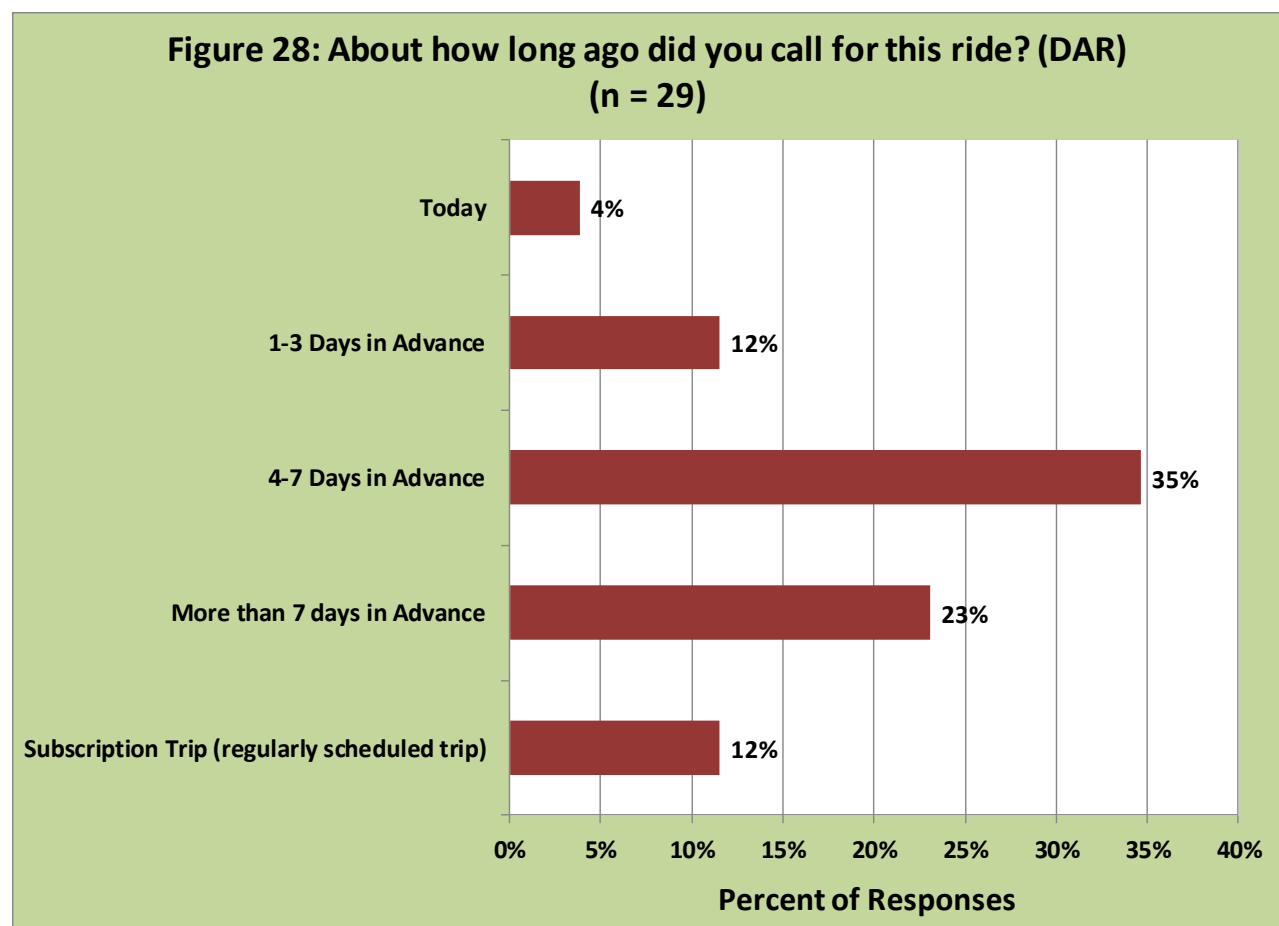


**Figure 27: What is your primary source for transit information? (Commuter)
(n = 214)**



Passenger-Trips per Vehicle-Hour

The marginal passenger-trips per vehicle-hour is a key measure of the productivity of a transit service. Note that the alternative to streamline Routes C and E does not result in a change in vehicle-hours, making this measure inapplicable. As also shown in Figure 28, the “best” of the alternatives by this measure is the alternative to combine Routes L and C, eliminate Routes E and G and provide TNC service in eastern Roseville, which yield a negative 0.9 figure (reflecting an increase in ridership over a decrease in vehicle-hours). Note that the vehicle-hours pertain only to Roseville Transit, and exclude TNC vehicle-hours. Of those alternatives that increase both ridership and vehicle-hours, the best is adding one additional hour of Route A and B service on Saturdays, which generates 12.5 passenger-trips per additional vehicle-hour. This is followed by the Route S service to the Public Defender’s office (9.9). Of those that reduce both ridership and vehicle-hours, the better alternative is the elimination of Route CGFE, which eliminates a relatively low 2.2 passenger-trips per vehicle-hour compared with the 3.0 passenger-trips lost for every hour of reduced service associated with the elimination of weekday service after 7 PM.



Note that some alternatives are identified as attaining the performance standard because they add more passengers per new vehicle-hour than the standard, or add passengers while reducing vehicle-hours. Others are identified as attaining the standard because they eliminate existing service that does not attain the standard at present.

Passenger-Trips per Vehicle-Mile of Service

This measure yields a negative value for the streamlined Routes C/E alternative and the option that combines L with C, eliminated E and G and provides TNC service, reflecting an increase in ridership and a decrease in vehicle-miles (a good outcome). Of the alternatives that increase ridership and mileage, the “best” is the revision to Route S with 8 runs per day, with 1.63 passenger-trips per vehicle-mile. Other alternatives that achieve the pertinent standard are the two other options addressing Routes CGFE, the extension of Route S to the Public Defender’s office and the extension of Saturday span of service. Other alternatives are consistent with the standard in that they eliminate service not attaining the standard.

Cost Per Passenger-Trip

The operating cost per passenger-trip yields negative value for both options to revise the Route CGFE service, reflecting an increase in ridership and a reduction in cost. Of those alternatives resulting in both an increase in ridership and costs, the “best” is the Route S service to the Public Defender’s office, which requires a relatively low \$5.33 in additional cost per new passenger-trip. At the other extreme, adding a reverse Route D would require \$38.85 in operating cost for every new passenger-trip served.

Subsidy per Passenger-Trip

This measure directly relates the key public input (funding) to the key desired output (ridership). The results exhibit the same pattern as the previous performance measure. The best of those alternatives is the combination of Routes C and L, provision of a TNC subsidy program in eastern Roseville and elimination of Routes E, F and G, which would save \$43.14 in subsidy for every additional passenger-trip served. Of those that increase subsidy, the best is the extension of Route S to the Public Defender’s office, requiring \$3.25 in subsidy for every new trip, while the worst is the reverse Route D service. There is no adopted standard for this performance measure. These figures are also shown in Figure 29.

Marginal Farebox Return Ratio

This is the ratio of marginal passenger-fares to marginal operating costs. The negative values for some alternatives (notably regarding Route CGFE) reflect a positive condition, in that fares increase while operating costs decrease. Some alternatives (eliminating evening service, eliminating Route CGFE) have positive ratios reflecting reductions in fares over reductions in costs. Of those alternatives increasing fares as well as costs, the better alternatives as reflected by a higher farebox ratio, with the best being the extension of Route S service to the Public Defender’s Office and the extension of Route A and B Saturday span of service.

TABLE 35: Roseville Transit Fixed Route Service Alternatives Performance Analysis

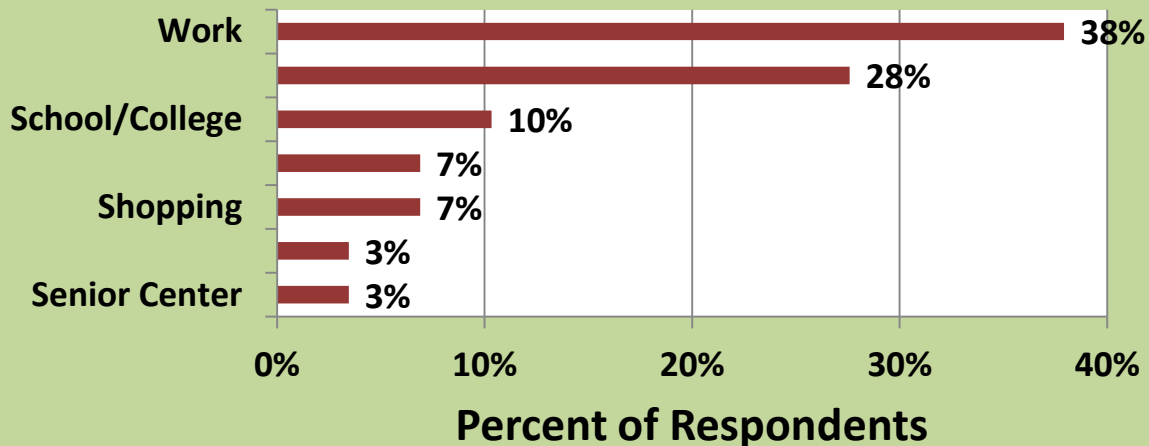
Alternative	Values Achieving Recommended Performance Standards Shaded						
	Annual Change		Change From Existing Service				
	Ridership	Operating Subsidy	Psg-rips per Service-Hour	Psg-rips per Service-Mile	Cost per Psg-rip	Subsidy per Psg-rip	Marginal Farebox Ratio
	Performance Standard		7.0	0.50	< \$15.00	No Standard	15%
Eliminate C, G, F, E	-7,000	-\$182,600	2.2	0.12	\$28.16	\$26.09	7.4%
Streamline Routes C and E	5,400	-\$12,300	--	-6.09	-\$0.20	-\$2.28	-1018%
Combine Route L with Streamlined C, Provide TNC Service, Eliminate Routes E, F and G	2,900	-\$125,100	-0.9	-0.05	-\$41.28	-\$43.14	-4.5%
Increased D, L and M Frequency	21,100	\$413,600	2.7	0.19	\$21.69	\$19.60	9.6%
Add Reverse Route D	3,900	\$145,600	1.5	0.10	\$38.85	\$37.33	3.9%
Extend Route S to Public Defender's Office	2,400	\$7,800	9.9	0.99	\$5.33	\$3.25	39.1%
Hourly Route R Service	4,000	\$77,600	2.6	0.21	\$21.48	\$19.40	9.7%
Revise Route S -- 8 Runs/Day	2,700	\$35,000	2.8	1.63	\$15.04	\$12.96	13.8%
Revise Route S -- 11 Runs/Day	5,200	\$97,600	2.8	0.19	\$20.85	\$18.77	10.0%
Eliminate First Hour of Routes D, C, G and M Weekday Service	-1,900	-\$42,700	2.5	0.15	\$24.53	\$22.47	8.4%
Eliminate Weekday Service After 7 PM	-6,800	-\$134,900	3.0	0.23	\$21.91	\$19.84	9.5%
Extend Saturday Service Until 6 PM -- All Routes	2,200	\$11,400	8.5	0.64	\$7.27	\$5.18	28.8%
Extend Saturday Service Until 6 PM Rts A & B Only	1,300	\$4,300	12.5	1.12	\$5.31	\$3.31	37.7%
Sunday Service - 8 AM to 5 PM	7,800	\$125,700	3.4	0.26	\$18.19	\$16.12	11.4%
Sunday Service 8 AM to 3 PM	3,800	\$102,000	2.1	0.16	\$28.92	\$26.84	7.2%

Financial numbers in FY 2018/19 dollars

Note: Green indicates alternatives that are consistent with standard by expanding service in a manner that exceeds standard.

Note: Blue shading indicates alternatives that are consistent with standard by eliminating service not currently attaining standard.

Figure 29: What is the main purpose of your trip? If you are going home what was the main purpose of your trip? (DAR) (n = 29, multiple responses allowed)



Summary

In sum, this review provides useful information for making decisions regarding the individual routes and services. It is also important to consider that there are many other factors (in particular, the ability to provide a dependable and safe transit service) beyond these financial and performance measures. Many alternatives will require additional analysis (including specific surveys and data collection) before a final decision can be made. Nonetheless, the following are key overall findings that result from this evaluation:

- Alternatives with a high potential consist of the following:
 - Combination of Route L with a streamlined Route C and provision of a TNC service for east Roseville. If a TNC program is not feasible, streamlining the existing CGFE service into two-way Routes C and E is also viable.
 - Extending the Saturday span of service until 6 PM.
 - Shift the Route D and Route L 3 to 5 minutes earlier to provide better connections at Civic Center.
 - A TNC subsidy program for connections between the train station and the nearby transit hubs.
- Alternatives that have a low potential consist of the following:
 - Reverse Route D service
 - Sunday service
 - Half-hourly service on Routes D, L and M
 - Hourly Route R service

Other alternatives not mentioned largely reflect trade-offs between costs, the benefits of expanding service area, and the benefits of providing more or less evening service. The revision of Route S to serve Fairway Drive may be more feasible if some of the required increase in subsidy can be generated by Placer County, as this expands service availability to the Santucci Justice Center.

COMMUTER SERVICE ALTERNATIVES

Roseville Transit's Commuter service is a successful element of the overall transit program. It improves the quality of life of Roseville residents by reducing the stress and costs associated with commuting, increasing the attractiveness of Roseville as a residential area for downtown employees, and helps to address the congestion and air quality impacts along the I-80 corridor. At the same time, it is relatively productive (approximately 3 times as many passenger boardings per vehicle-hour as the local fixed routes) and financially sustainable (passenger fare

revenues cover almost 80 percent of the operating costs). The alternatives presented below address the key issues currently facing this service, namely:

- Should service be expanded?
- What locations should be served, both in Roseville and in Sacramento?
- How should schedules be changed to best meet rider needs?
- What strategies can improve on-time performance?

Summary of Regional Commuter Services

As background information for the evaluation of Roseville Transit commuter service alternatives, it is worthwhile to review the overall services providing commuter transit service from western Placer County into downtown Sacramento, specifically the PCE service and the Roseville Transit commuter service.

Table 36 presents a summary of the two systems as a whole. As shown, in total the services carry roughly 208,000 passenger-trips per year, consisting of approximately 2/3 on Roseville Transit and 1/3 on PCE. The quantity of service totals 9,460 vehicle-hours and 343,466 vehicle-miles of service annually, at approximately the same splits. Total operating costs in FY 2016/17 were just over \$1.7 Million, of which slightly more than half was for PCE service. The productivity of the two services are very similar, at 22.3 passengers per vehicle-hour of service for PCE and 21.7 for Roseville Transit, for an overall figure of 21.9. Costs for PCE on a per-hour and per-passenger basis are substantially higher than for Roseville's commuter program.

Table 36: Western Placer Commuter Service Summary

	Annual Data				Performance Measure			
	Ridership	Vehicle Hours	Vehicle Miles	Operating Cost	Pax per Hour	Pax per Mile	Operating Cost per Hour	Operating Cost per Pax
Roseville Transit	137,102	6,327	242,187	\$837,296	21.7	0.57	\$132.34	\$6.11
PCT Commuter	70,677	3,163	101,279	\$865,744	22.3	0.70	\$273.74	\$12.25
Total	207,779	9,490	343,466	\$1,703,040	21.9	0.60	\$179.46	\$8.20

Source: FY 2016-17 data from individual operators.

Overall annual ridership trends over the last ten years are shown in Table 37. The region as a whole carried a peak of 225,212 commuter passengers in FY 2014/15, with a slight decline over the most recent years. By system, the Roseville program has dropped only 4 percent, while PCE has dropped by 12 percent.

**Table 37: Western Placer Commuter Services
Ridership Trends**

Fiscal Year	Roseville Commuter (1)	Placer County Express	Total
FY 08/09	107,088	77,120	184,208
FY 09/10	109,584	75,098	184,682
FY 10/11	126,214	80,093	206,307
FY 11/12	128,824	83,114	211,938
FY 12/13	128,570	80,636	209,206
FY 13/14	130,448	81,782	212,230
FY 14/15	144,445	80,767	225,212
FY 15/16	134,880	78,722	213,602
FY 16/17	139,084	70,677	209,761
% Change from FY 08/09 to FY 16/17	30%	-8%	14%
% Change from FY 14/15 to FY 16/17	-4%	-12%	-7%
Note 1: Includes Game Day Express Ridership			

Table 38 provides an overall summary of scheduled services, organized by the time that downtown Sacramento is served. This table also presents the average daily ridership on each of the runs. A review of this information indicates the following:

- A total of 14 AM trips and 14 PM trips are provided on Mondays through Thursdays, with two less AM and one less PM trips on Fridays. While PCE AM arrivals in downtown Sacramento are concentrated between 7:00 AM and 7:50 AM, Roseville Transit serves a broader span between 6:01 AM and 8:18 AM. In the afternoon, the first departure (on Roseville Transit) occurs at 3:31 PM, with the first PCE departure not occurring until 4:31 PM. The last departure time on both services occurs around 5:30 PM. Notably, Roseville Transit runs departing around 3:30 PM and 4:00 PM generate substantial ridership prior to PCE service.
- Passengers per trip are mostly higher on PCE runs than on Roseville Transit runs, with the exception of the two later afternoon PCE runs. While in part this reflects the greater seating capacity of PCT's 45-foot buses, this also indicates more need for expansion of the PCE service, as well as a need to review service times. In general the highest ridership is seen on AM runs serving work start times around 7:00 AM to 7:30 AM, and PM run times serving work end times around 4:00 PM, 4:30 PM and 5:00 PM.

Total ridership by stop within Placer County is shown in Table 39. This shows the concentration of passenger activity at the Taylor Road Park-and-Ride (adjacent to Sunsplash), where 61.7 percent of all passengers board or deboard (463 total trip-ends per day, on average). The next

TABLE 38: Combined Existing Commuter Schedules and Daily Ridership by Run*In Order of Downtown Service Times*

AM															Daily Trips
Stop	Rsvl Bus 1(1)	Rsvl Bus 2	Rsvl Bus 4	Rsvl Bus 3	PCE Bus 1	Rsvl Bus 5	PCE Bus 2	Rsvl Bus 7	Rsvl Bus 6(1)	Rsvl Bus 8	PCE Bus 3	PCE Bus 4	Rsvl Bus 10	Rsvl Bus 9	
Average Daily Riders	13.6	34.8	35.9	26.2	40.5	34.6	40.3	17.9	20.6	30.5	36.8	34.6	28.4	30.5	
Colfax Depot	--	--	--	--	5:20	--	5:40	--	--	--	6:18	--	--	--	3
Clipper Gap PnR	--	--	--	--	5:32	--	5:52	--	--	--	6:30	--	--	--	3
Auburn Station	--	--	--	--	5:42	--	6:03	--	--	--	--	6:37	--	--	3
Penryn PnR	--	--	--	--	5:55	--	6:15	--	--	--	6:45	--	--	--	3
Loomis Station	--	--	--	--	5:59	--	6:19	--	--	--	--	6:53	--	--	3
Rocklin Station	--	--	--	--	6:06	--	6:26	--	--	--	--	7:00	--	--	3
Foothills/Junction	--	5:35	--	6:00	--	--	--	--	--	--	--	--	--	--	2
Mahany PnR	--	5:41	--	6:07	--	--	--	--	--	--	--	--	--	7:10	3
Roseville Amtrak	--	--	--	6:17	--	--	--	--	--	--	--	--	--	--	1
Galleria	--	5:51	--	--	--	--	--	--	--	--	--	--	--	--	1
Louis/Orlando	--	--	6:00	--	--	--	--	--	--	--	--	--	--	--	1
Cirby/Sunrise	--	--	6:04	--	--	--	--	--	--	--	--	--	--	--	1
Maidu PnR	5:10	--	6:09	--	--	--	--	--	--	--	--	--	--	--	2
Taylor/I-80 PnR	5:17	6:00	6:18	--	6:15	6:40	6:35	--	6:45	6:55	7:00	--	7:18	7:23	11
Saugstad PnR	--	--	--	6:21	--	--	--	6:50	--	--	--	--	7:27	7:31	4
Downtown	6:01	6:37	6:54	6:58	7:00	7:16	7:20	7:24	7:30	7:40	7:50	7:50	8:14	8:18	14
REVERSE COMMUTE															Daily Trips
Stop	Rsvl Bus 1	Rsvl Bus 2 (1)	Rsvl Bus 3	Rsvl Bus 4	Rsvl Bus 5	Rsvl Bus 6	Rsvl Bus 7	PCE Bus 1	PCE Bus 2	Rsvl Bus 8	PCE Bus 3	Rsvl Bus 9	Rsvl Bus 10	PCE Bus 4	
Galleria	--	--	7:44	--	--	--	--	--	--	--	--	--	--	--	
Louis/Orlando	--	--	--	7:24	--	--	--	--	--	--	--	--	--	--	
Civic Center	--	--	--	--	--	--	--	--	--	--	--	--	--	9:00	
Sierra Gardens	--	--	--	--	--	7:51	--	--	--	--	--	--	--	--	
Sierra Gardens	--	--	--	--	--	--	3:50	--	--	--	--	--	--	--	
Taylor/I-80 PnR	--	--	--	--	--	--	--	--	--	--	4:15	--	--	--	
Galleria	--	--	--	--	--	--	--	--	--	--	--	--	4:37	--	
Civic Center	--	--	--	--	--	--	--	--	--	--	--	--	4:47	--	
PM															Daily Trips
Stop	Rsvl Bus 1	Rsvl Bus 2 (1)	Rsvl Bus 3	Rsvl Bus 4	Rsvl Bus 5	Rsvl Bus 6	Rsvl Bus 7	PCE Bus 1	PCE Bus 2	Rsvl Bus 8	PCE Bus 3	Rsvl Bus 9	Rsvl Bus 10	PCE Bus 4	
Average Daily Riders	23.4	32.8	23.0	31.8	29.7	32.7	29.4	37.0	43.6	23.4	28.9	32.6	18.8	22.2	
Downtown	3:31	3:36	3:46	3:57	4:02	4:11	4:26	4:32	4:37	4:41	4:47	4:56	5:26	5:30	14
Louis/Orlando	4:05	--	--	--	--	--	--	--	--	--	--	--	--	--	1
Taylor/I-80 PnR	--	4:27	4:37	4:38	4:43	4:55	5:10	5:12	--	5:25	5:27	6:00	6:37	6:10	12
Cirby/Sunrise	4:11	--	--	--	--	--	--	--	--	--	--	--	--	--	1
Maidu PnR	4:15	--	--	--	--	--	5:17	--	--	--	--	--	--	--	2
Saugstad PnR	4:29	--	--	--	--	5:07	5:32	--	--	--	--	6:12	6:22	--	5
Roseville Amtrak	--	--	--	--	--	5:16	--	--	--	--	--	--	--	--	1
Foothills/Junction	--	--	--	--	--	5:25	--	--	--	--	--	6:30	--	--	2
Galleria	--	--	--	--	4:52	--	--	--	--	--	--	--	--	--	1
Mahany PnR	--	--	--	--	5:02	5:33	--	--	--	--	--	6:38	--	--	3
Rocklin Station	--	--	--	--	--	--	--	--	5:17	--	5:35	--	--	6:18	3
Loomis Station	--	--	--	--	--	--	--	--	5:24	--	5:42	--	--	6:25	3
Penryn PnR	--	--	--	--	--	--	--	5:24	--	--	5:49	--	--	6:32	3
Auburn Station	--	--	--	--	--	--	--	--	5:40	--	6:00	--	--	6:43	3
Clipper Gap PnR	--	--	--	--	--	--	--	5:39	--	--	6:12	--	--	6:55	3
Colfax Depot	--	--	--	--	--	--	--	5:51	--	--	6:24	--	--	7:07	3

Source: Existing schedules. Downtown Times Shown for P&7th (Roseville) and P&5th (PCE). Other Downtown Stop Times Not Shown

Note 1: Monday to Thursday only.

TABLE 39: Western Placer Commuter Service Ridership by Stop*Average Daily Boarding & Alighting at Stops In Placer County*

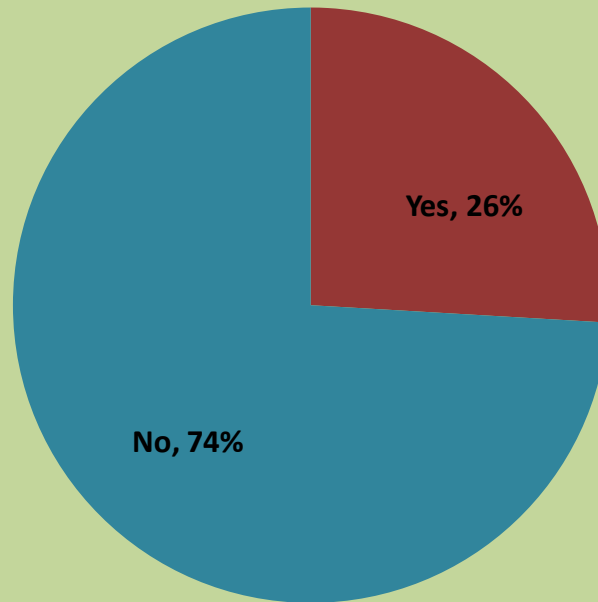
	PCE	Roseville	Total	Percent of Total		
				PCE	Roseville	Both
Colfax Depot/Main St	3	--	3	1.1%	--	0.4%
Clipper Gap PnR	6	--	6	2.0%	--	0.7%
Auburn Station/Nevada St	24	--	24	8.5%	--	3.2%
Penryn PnR	14	--	14	4.8%	--	1.8%
Loomis Station	18	--	18	6.3%	--	2.3%
Rocklin Station	85	--	85	30.2%	--	11.3%
Roseville/Taylor Rd PnR	132	332	463	47.0%	70.5%	61.7%
Saugstad	--	75	75	--	15.9%	9.9%
Mahany Park	--	28	28	--	5.9%	3.7%
Cirby at Sunrise	--	14	14	--	3.0%	1.9%
Maidu Community Center	--	10	10	--	2.1%	1.3%
Galleria Transfer Point	--	8	8	--	1.7%	1.0%
Amtrak	--	5	5	--	1.1%	0.7%
TOTAL	280	471	751	100.0%	100.0%	100.0%

FY 2016/17 figures provided by service providers.

highest location, Rocklin Station with 85 passenger-trip-ends, serves only 11.3 percent. This table also indicates the low ridership generated east of Auburn, as well as at some of the other Roseville Transit stops.

Finally, the onboard passenger surveys conducted as part of this SRTP can be used to evaluate the overall residence location of riders on the combined system. As shown in Table 40, when adjusted to reflect the average daily ridership on the two systems, this analysis indicates that just over half of all transit commuters on the two systems live in Roseville (53 percent) followed by 20 percent that live in Rocklin and 3 percent in Lincoln. Figure 30 also shows the relative proportion of residents in each community choosing to use one or the other service. As indicated, 16 percent of Roseville residents choose to use the PCE service, while on the other hand 18 percent of Rocklin residents choose to use the Roseville Transit commuter service. This data also indicates ridership coming from other counties (such as Nevada County, the northern portion of El Dorado County, as well as Citrus Heights in Sacramento County) to use the two transit systems. This data also provides the information on the residential location within Roseville of Roseville Transit commuter passengers (by zip code). As shown, 53 percent of these passengers live in the western portion of Roseville (generally west of Foothill Boulevard, 29 percent live in the central portion between Foothill Boulevard and I-80/Rocklin city limit, and 18 percent live east of I-80. This indicates a large number of commuters are driving east from their homes to the park-and-ride locations.

Figure 30: Was there a vehicle that you could have used for this trip instead of Dial-A-Ride? (n = 27)



Additional Runs

Roseville Transit's commuter runs frequently run at or near the seating capacity: in the surveys conducted as part of this S RTP study, the PM Route 2 carried 46 passengers while the PM Route 4 carried 42. The passenger seating capacity of the largest buses in the fleet is 45. While the average annual ridership per runs only reaches as high as 35.9 in the AM period (Bus 4) and 32.8 in the PM period (Bus 2), the variability in ridership by season and day of week results in overcrowding on particular days. In addition to providing a poor ride experience for those passengers forced to stand, the potential that an individual passenger may not get a seat is a substantial disincentive to use a commuter transit service at all. It is important to avoid this perception by providing adequate capacity to ensure a seat in all but the most unusual periods.

Part of this overcrowding issue is related to the fact that ridership in the PM period is 13 percent higher than in the AM period (perhaps reflecting commuters that can use a carpool or vanpool in the AM but find Roseville Transit more convenient in the PM.) Also, the ridership in the PM service period is more concentrated in peak periods than in the AM service period: the five PM runs starting in the half hour between 3:40 PM and 4:10 PM carry 54 percent of all PM ridership, while the five AM runs arriving downtown in the half hour between 6:58 AM and 7:28 AM carry 42 percent of all AM ridership.

Overall, the existing ridership data indicates the need to increase the service by two to four trips per day for service between downtown and Taylor/I-80. (Discussion of service to other park-and-ride locations in Roseville is provided, below). While more detailed surveys of existing passenger would be needed to specific exact new schedules, available data indicates the following:

- In the AM period, the first priority would be a run departing Taylor/I-80 around 6:10 AM, followed by a run departing Taylor/I-80 around 6:30 AM.
- In the PM period, the first need is to provide additional capacity departing downtown around 3:30 to 3:45 PM, to Taylor/I-80. The second priority is to provide a run starting around 4:15 PM.

As shown in Table 41, two additional runs per day would increase annual operating costs by \$59,500, while four additional runs would increase this figure to \$119,000. An elasticity analysis indicates that two runs would increase annual ridership by 13,500 passenger-trips per year, increasing to 25,500 for four runs per day as summarized in Table 38. At the existing average fare per passenger, this would generate increases in passenger fares of \$65,600 with two new runs and \$123,900 with four new runs. Overall, fares would slightly exceed the marginal operating cost, yielding reductions in subsidy of \$6,100 with two additional runs and \$4,900 with four additional runs.

Earlier PM Commuter Runs

At present, the first downtown departures begin at 3:25 PM. An earlier PM departure time was mentioned by five survey respondents, making it the second-most frequent request. An additional 3:00 PM run would incur an operating cost of \$25,000 per year. Based on the relative ridership on El Dorado Transit service (which operates an earlier PM run), ridership generated by this additional run is estimated to be 6,300 per year (500 less than if this additional run were operated within the existing peak periods). Including the additional fare revenue, this would result in a decrease in operating subsidy of \$5,600. This bus would also have approximately 57 minutes to return to Sacramento to start the PM Route 9 run, so an additional bus would not be required.

Mid-Day Run

Provision of a mid-day commuter run is a common request among existing Roseville Transit commuter riders: of the 18 specific requests for additional runs out of the current span of service generated by the onboard surveys conducted for this SRTP, 7 were for mid-day service. This would allow passengers to work half-days in either the morning or afternoon, and also provide convenient service for other Roseville resident trips to downtown Sacramento. While

Table 40: Western Placer Commuter Programs Average Daily Ridership by Rider Residence

	Transit System			Percent of Total		
	Roseville Transit	PCE	Total	Roseville Transit	PCE	Total
Roseville	332	64	396	71%	23%	53%
<i>Western Roseville</i>	177	NA	NA	38%	NA	NA
<i>Central Roseville</i>	97	NA	NA	21%	NA	NA
<i>Eastern Roseville</i>	58	NA	NA	12%	NA	NA
Rocklin	45	108	153	9%	39%	20%
Lincoln	7	19	26	1%	7%	3%
Unincorporated Placer County	2	24	26	0%	9%	3%
Auburn	0	23	23	0%	8%	3%
Sacramento	45	0	45	9%	0%	6%
Citrus Heights	3	0	3	1%	0%	0%
Loomis	7	14	21	1%	5%	3%
Granite Bay	13	0	13	3%	0%	2%
Nevada County	0	6	6	0%	2%	1%
El Dorado County	3	0	3	1%	0%	0%
Colfax	0	5	5	0%	2%	1%
Rancho Cordova	2	0	2	0%	0%	0%
Carmichael	0	0	0	0%	0%	0%
Orangevale	2	0	2	0%	0%	0%
Fair Oaks	2	0	2	0%	0%	0%
North Highlands	0	0	0	0%	0%	0%
Other	10	17	27	2%	6%	4%
Total	471	280	751	100%	100%	100%
Source: Onboard passenger surveys, factored by ridership totals.						

TABLE 41: Typical Passenger Boardings and Vehicles in Operation per Hour
Roseville Dial-A-Ride

	Hour (Start Time)														
	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM
Weekday															
Total Passenger Boardings	6	8	9	12	8	7	10	7	8	1	6	3	2	1	2
- General Public	2	2	0	2	1	0	0	0	1	0	1	3	0	0	1
# of Vehicles in Service	2	4	5	5	5	4	5	5	4	3	3	2	1	1	1
Saturday															
Total Passenger Boardings		1	4	5	3	2	2	3	2	2	1	0			
- General Public		0	1	2	0	1	0	0	1	0	0	0			
# of Vehicles in Service		1	2	2	2	2	1	2	1	2	2	1			
Sunday															
Total Passenger Boardings		1	6	7	3	3	4	3	3	3	1	0			
- General Public		1	1	1	1	1	1	0	1	1	0	0			
# of Vehicles in Service		1	3	3	3	3	2	2	3	3	1	1			
Source: Operator manifests for March, 2017															

there are other existing public transit options, a commuter run could provide a much more convenient service. For example, a mid-day trip from downtown Sacramento to the Taylor/I-80 Park-and-Ride currently takes approximately 1 hour and 40 minutes to complete (by RT Blue Line LRT, PCT Auburn-Light Rail Route, and Roseville Transit Route B). In comparison, a commuter run requires only roughly 30 minutes for the same trip.

An example of another commuter bus service that operates mid-day runs is Yuba-Sutter Transit, which operates two mid-day runs from Marysville/Yuba City that serve stops in downtown Sacramento around Noon and 2:00 PM. These runs in total average 41 passenger-trips per day, split evenly between the two runs. Roughly one-third of this ridership consists of travel into downtown Sacramento in the mid-day, while the other two-thirds is for trips from downtown.

A reasonable route for mid-day service would be to connect downtown Sacramento with Saugstad Park, Taylor/I-80 and the Galleria. The latter stop would allow connections to other Roseville and PCT routes to complete connections to other park-and-ride locations. An 11:30 AM departure from the Galleria would serve downtown stops around 12:30 PM, returning to the Galleria by 1:30 PM. This additional round-trip would increase costs by an estimated \$34,700 per year. Ridership generated by this alternative is estimated to be 8,900 (including additional ridership on existing runs). The average fare per new passenger would be relatively low, considering that many of the passengers currently use unlimited monthly passes (and thus would not generate new fare revenue). Subtracting an estimated \$14,300 per year in new fare revenue, the net impact on overall subsidy would be a relatively modest \$20,400 per year.

A mid-day run would also benefit passengers using the Placer County Express service. It would provide direct trips from the Taylor/I-80 stop also served by PCE, and would also provide direct transfers at the Galleria to the Lincoln-Sierra College Route (for connection to the Rocklin Station Park-and-Ride) as well as to the Auburn-Light Rail Route (for connection to the Auburn Station Park-and-Ride). As such, a portion of the subsidy required for this enhanced service could be funded through Placer County.

Reverse Commute Runs

At present, the Roseville Commuter schedules include three “reverse commute” opportunities per commute period, providing service from downtown Sacramento to Roseville in the morning and return trips in the afternoon. Ridership on these runs, however, is minimal: over a total of five days of service, only four passengers were recorded. As the contract with the service contractor is on an in-service hourly basis, taking these runs off of the schedule would reduce overall operating costs by \$43,700, at least in the short run. (In the long-run, the driver costs associated with the deadhead travel could be part of the bid rate in a future contract.) A total of approximately 400 passenger-trips would be eliminated (including passenger-trips on the opposite side of individual passenger round-trips). Including the loss of \$1,900 of passenger fares, this alternative would reduce operating subsidy by \$41,800 per year.

There are very real limits on the potential market for reverse commute runs. The population of downtown Sacramento is relatively limited, indicating that most potential riders on reverse commute runs would need to transfer from other public transit services (a disincentive to ridership). In addition, the fact that employment sites in Roseville are not concentrated around the park-and-ride locations means that reverse commuters would largely need to transfer to local routes, further reducing the attractiveness of public transit. Those employers within close walking distances of the reverse commuter stops in Roseville (such as the retailers in the Galleria) also tend to have shift times not compatible with viable reverse commuter transit schedules. In sum, there is little chance that an increase in reverse commute schedules or marketing would result in any significant increase in ridership that would warrant the additional costs of providing the service.

Changes in Roseville Stops Served

The current commuter service design is a complicated structure of various stops served on the individual runs. Over the ten total runs in each period, a total of seven individual combination of stops are served. Other than the four runs in each period serving only the Taylor/I-80 Park-and-Ride, the other six routes all serve different combinations.

The boarding and alighting data, as presented in Table 13, shows that Roseville commuter ridership activity within Roseville is concentrated at the Taylor Road Park-and-Ride (70 percent of all boardings and alightings), followed by 16 percent at Saugstad Park and 6 percent at

Mahany Park. Divided by the number of daily runs serving each stop yields the following average of number passengers getting on or off each bus:

Taylor/I-80	20	Galleria	4
Saugstad Park	8	Amtrak Station	3
Mahany Park	5	Maidu Comm. Center	2

This ridership pattern is very consistent with that seen on other commuter systems: the last stops before leaving the residential area for the employment center are the most popular. This makes sense when considered from the perspective of the individual commuter (the large majority of which have a car available): driving to the last stop saves overall travel time. A Roseville resident living near Mahany Park, for example can choose to drive to Mahany Park to catch a bus that will get to Saugstad Park in 21 minutes, or instead leave 11 minutes later to drive to Saugstad Park in 10 minutes⁶.

Service to Mahany Park

A common passenger request is for additional service to/from Mahany Park, including the potential for direct service to/from downtown Sacramento. With regards to the schedule serving this stop, a particular comment is the desire for an earlier and later afternoon runs. The first return trip serving Mahany Park currently departs downtown at 4:02 PM, arriving at Mahany Park at 5:02 PM, while the last departs downtown at 4:56 PM, arriving at Mahany Park at 6:38 PM. One option would be to provide the opportunity to request service to Mahany Park on the PM Bus 1 and Bus 10 runs, both of which currently terminate at Saugstad Park. This would add approximately 11 minutes and 4.4 miles to each run, but would provide downtown departures at 3:31 PM and 5:26 PM, greatly expanding the afternoon schedule options. Another possible improvement would be to provide service to Mahany on demand at the end of the Bus 8 PM run, which currently terminates at Taylor/I-80. This would add approximately 19 minutes and 4.9 miles to this run, but would reduce the in-vehicle-travel time for passengers wishing to leave work around 4:30 PM from the current 1 hour 42 minutes (on Bus 9) down to 1 hour 3 minutes on Bus 8. In addition, this would allow PM Bus 9 to terminate at Saugstad Park, as the Bus 8 service would be much more attractive to riders.

The operating cost associated with this option would depend on the actual ridership requests; conservatively assuming that all runs are extended on all days (and including the savings of trimming the Bus 9 run), the total cost increase would be \$7,900 per year. The improvements in PM span of service as well as reduced running times on later runs would increase ridership by an estimated 8,000 passenger-trips per year.

Current runs provide travel times between Mahany Park and downtown ranging from 56 minutes to 1 hour 8 minutes in the AM period, and from 1 hour to 1 hour 42 minutes in the PM

⁶ The fact that the Taylor Road Park-and-Ride is more popular than Saugstad Park is probably a reflection of the more convenient access to a broader area of the Taylor Road location, as well as the non-Roseville ridership.

period. Due to traffic congestion on I-80, Capital City Freeway and/or I-5, the direct drive time between these two locations can often be 45 minutes to 1 hour. Particularly in the PM commute period, the shortest travel time is often via I-5 and SR 99 to Baseline Road. While there is a perception among the passengers that the current routes add considerably to their travel time, in reality an express run serving only Mahany Park in Roseville would be scheduled to only save approximately 15 minutes.

The cost of providing one express run per day in each direction would be \$47,500 per year (as well as the cost for an additional bus). An elasticity analysis of the existing ridership levels generated by the Mahany Park stop indicates that the express service would increase ridership by an estimated 2,500 (in the short term, prior to additional development in the area). Including the additional fare revenue, the increase in subsidy would be \$35,400 per year.

Service to Maidu Park-and-Ride and Louis/Orlando Park-and-Ride

While two AM runs and two PM runs currently serve Maidu Park, a total of only 10 passenger-trips per day (or five round-trips) are served at this location on the average weekday. As three of the four runs serve Maidu Park between other stops, serving this stop both increases operating costs while increasing the travel time for other passengers. In addition, a new 39-space park-and-ride has recently opened adjacent to the Louis/Orlando transfer station. This location (2.8 miles from Maidu Park) is more conveniently located just off of I-80, and in a location that can also accommodate commuters driving (or taking local Roseville Transit routes) from other neighborhoods to the north. Overall ridership would benefit from eliminating the service to Maidu Park and instead provide a minimum of two runs in each commute period serving the Louis/Orlando park-and-ride.

Service to New Roseville Stops

Other park-and-ride lots in Roseville could potentially be served. One location in particular is a 25-space lot near Washington Boulevard and Freedom Way. This location, however, is not convenient to a substantial number of Roseville residences, and is relatively small. Moreover, the number of locations in Roseville currently served already results in a complicated schedule that limits individual passenger's choices or results in long in-vehicle travel times on one end of a passenger's round-trip or the other. Adding service to additional stops would further complicate the schedule, increase the potential for passengers to end up on runs not returning them to their car, and tend to reduce the overall convenience and effectiveness of the program. Establishing service to new locations is therefore not recommended, until new development substantially increases demand.

The provision of new park-and-ride locations/transit stops depends on a variety of factors specific to the geography of the community and the neighborhoods. General considerations are as follows:

- It can be expected that passengers access the commuter transit stops by car. As a result, driving a few miles more on local roadways to a more distant stop is not a significant burden or detriment to using the commuter service.
- As discussed above, serving locations with small ridership or parking capacity can reduce the overall effectiveness of a commuter transit program. A reasonable standard would be to not serve a location generating less than 15 passenger boardings per day (unless a specific stop is directly along an existing route and can be served with only a few minutes of delay to passenger on board).
- Passengers tend to want to be driving towards their work location, rather than away, to access a park-and-ride. In Roseville, this means that park-and-rides should be located south and west of the residential area.

Changes in Sacramento Stops Served

Existing Stops

A review of boarding/alighting activity at the existing stops served in downtown Sacramento indicates overall good utilization at almost all stops. The only exception is the N & 10th stop, which is only served in the AM period and was observed to only generate 1 passenger alighting. This stop is only one block from the busier stop at N & 9th, and should be dropped from the schedule.

There have also been passenger requests to split the downtown stops between runs, in order to reduce running times. This, however, greatly adds to the complexity of the individual runs (particularly given the existing variation in stops served in the Roseville area by run), reduces the service options available at individual stops, increases the potential for passengers to board the wrong bus, and would only save roughly 5 to 7 minutes per run. For these reasons, El Dorado Transit, which for many years operated two different loops in the downtown area, recently chose to consolidate their stops into a single loop. This strategy is not recommended for Roseville Transit.

Service to Employers North of Downtown

The area north of downtown (around Richards Boulevard / 7th Street) is a growing employment area, including the new California Highway Patrol Headquarters building. While free parking is available in this area, the State subsidizes transit fares for employees. Service to stops along Richards Boulevard east of 7th Street and along 7th Street between Richards and B Street could be provided in three ways:

- Two AM and two PM runs could be rerouted. The AM runs would turn west on Richards Boulevard, south on 7th Street, and return east on B Street to 12th Street. This would add 0.5 miles and approximately 2 minutes to the running time. In the PM, the route

would turn west from northbound 16th Street on B Street, north on 7th Street and east of Richards Boulevard to return to 16th Street. This would add 1.6 miles and approximately 6 minutes to each schedule. The disadvantage of this option would be that the large majority of riders on the runs would be provided with longer travel times, particularly in the afternoon.

- Two or all three of the reverse commute runs in both directions could be modified to include these new stops. This would add approximately 18 minutes to the travel time for employees in this northern area, but would not delay the greater number of passengers in the existing downtown service area.
- These two strategies could be combined, by serving the northern area only in the inbound direction to downtown on two or three runs in each peak period. This provides a minimal increase in travel time for existing passengers in the AM runs, while avoiding the larger increase in travel time on the PM runs. It also minimizes the operating costs and potential delays to buses.

While specific timing of service would require surveys of employee interest and work schedules, this latter strategy appears to be a net benefit to the transit service. Surveys of existing riders as well as CHP employees would also be helpful in identifying the specific need for this service.

Service to the Sacramento Valley Train Station

As part of efforts to enhance the *Capital Corridor* and the *San Joaquins* rail service (as well as the Railyard Redevelopment project), Sacramento's rail station at 4th and H streets is being improved and provided with expanded service. This station is four blocks west of the nearest PM stop and five blocks west of the nearest AM stop. In both directions, it is along the portion of the downtown loop where passenger loads are near their highest, indicating that regular service to the train station would impact the travel times of many existing passengers. This in turn would be a detriment to the primary purpose of the commuter service. Adding service to the beginning of the PM service in downtown and the end of the AM service (to minimize impacts to existing passengers) would add approximately 10 minutes to each run.

In addition, until/unless planned railyard development takes place, ridership demand generated by the train station can be expected to be episodic (as it depends on the limited schedules of Roseville Transit commuter buses and the schedule of rail service) and there are other public transit opportunities for travel between this train station and Roseville (notably Amtrak Thruway buses as well as the combination of RT light rail and PCT Auburn-Light Rail service). Unless a strong pattern of regular requests for service at specific times emerges, Roseville Transit commuter bus service directly to the train station is not recommended at this time.

Service to Other Employment Centers in Sacramento Region

There are common requests to provide direct Roseville Transit service to other employment centers in Sacramento, such as the Broadway corridor and UC Davis. While the area north of downtown discussed above can be served with the existing route with only a small impact on operating costs and existing rider's travel time, service to other areas in Sacramento would require new routes, or extensions of the existing runs that would significantly increase operating costs.

There are several factors, moreover, that make downtown Sacramento employers particularly strong generators of transit ridership, and that tend to work against the potential for direct service to other areas to be productive:

- Paid parking is a strong disincentive to commuting by auto, and indeed is typically found to be the single greatest determinate as to whether workers commute by transit. Parking fees in downtown Sacramento range between roughly \$135 and \$185 per month, while many employees in outlying areas of Sacramento do not face parking fees.
- Those major employers that subsidize transit passes (in particular Sacramento County and the State of California, which pay up to \$65 per month) are concentrated in downtown. While this voucher program is also available to State and County employees at non-downtown work locations, the proportion of total persons employed in other areas that have transit subsidy programs are much less than in downtown.
- The high density of employment sites within a convenient walk distance of a relatively short (15 minute) loop makes downtown a particularly efficient area to serve with a commuter service. Commuter services are typically only attractive to ridership if the walk between the destination stop and the work site is very convenient. More suburban work locations outside of the downtown typically require long travel times to reach individual employers separated by parking areas, and/or long walks from nearby streets to the front door.
- The work hours for government and office employees in downtown Sacramento are highly concentrated in the traditional "white collar" commute periods, allowing transit services to be efficiently focused on the busy AM and PM peak periods. In contrast, other areas of Sacramento have a broader mix of employers (such as health care, retail and manufacturing) with a broader array of work shifts that increase the cost of service a substantial proportion of workers.

For these reasons, commuter services provided by other transit programs in the Sacramento area have not proven productive. In particular, the El Dorado Transit service (which provides a successful commuter transit program from El Dorado County into downtown Sacramento) operated a commuter service to the Rancho Cordova area (including the Franchise Tax Board) for several years. As this service only generated 5 to 7 passenger-trips per run, it was ultimately

terminated. A similar Roseville Transit route serving other employment sites in Sacramento would face these same challenges, and is not recommended.

It is worth noting that the Connect Card program now provides more convenient means of making transfers in downtown Sacramento to RT services to other employment centers. It also provides greater ability to track transfer activity. If future review of transfers indicates a strong pattern of transfers between Roseville Transit and RT routes, the potential for new service to provide trips to other employment sites could be revisited.

Revisions to Improve On-time Performance

The Commuter Service on-time performance data collected as part of this study indicated that 29 percent of AM service operated 6 or more minutes behind schedule (up to 24 minutes late) and 46 percent of PM service operated late (up to 45 minutes late). It is clear from the observations that virtually all of this delay is generated by traffic delays along I-80 and/or the Capital City Freeway. Route running times within Roseville and within downtown Sacramento are consistent with the published schedule. However, the growth in traffic volumes on the freeways are now near or exceeding roadway capacity, where any minor collision or disabled vehicle can result in long delays, particularly in the late afternoon.

This issue, of course, is regional in nature and far outside the capacity of the transit service to control. To a degree, regular passengers can adjust their daily morning routine by choosing an earlier run that provides them with their desired level of assurance of arriving by their scheduled work start time. There are several strategies that could help address on-time performance:

- Consider routing the service via I-80 and I-5 west of Watt/I-80, rather than Capital City Freeway. With the completion of the “Across the Top” improvements on I-80 and the growth in congestion on the Capital City Freeway, drive times on the I-5 route can often be 15 minutes quicker. Caltrans plans, moreover, are more advanced to complete HOV lanes along I-80 and I-5 (including a freeway-to-freeway connection at the I-80/I-5 interchange) than they are along the Capital City Freeway. It is worth noting that the PCE service via this alternative route was observed (in the limited data collected as part of this SRTP) to be late a relatively low 15 percent of the time. This option would require reconfiguration of the downtown service route. One strategy would be to provide a route consistent with the current and relatively simple PCE route using J Street eastbound, 15th Street southbound and P Street westbound, which serves stops within at most a two block walk of all existing Roseville Transit stops.
- Eliminate or modify the existing strategy of operating PM Routes 3 and 10 with the same bus. At present, Route 10 can only serve departing downtown stops on time if the bus has already successfully negotiated the freeway corridor in both directions without encountering significant delays – an increasingly unlikely outcome. If it is not feasible to operate a second bus due to limited bus availability, moving the Route 3 departure time

earlier by five minutes and Route 10 departure time later by five minutes would provide at least some additional ability to keep to schedule.

- Consider building ten minutes of additional time into the schedules for AM Runs 3 to 10 and all PM runs. This would reduce the proportion of runs operating late by an estimated 15 percent, though many runs impacted by severe traffic delays would still be behind schedule, and other runs would arrive ahead of schedule. Overall, this would provide passengers with a more realistic indication of their actual arrival time, and would help the reputation of the transit program regarding reliability. The impact of this additional scheduled time would be approximately \$31,000 per year, except that the City already pays for actual on-the-clock time generated by delays. The net result would be an increase in costs on the order of \$15,000 per year.

COMPARISON OF COMMUTER ALTERNATIVES AND PERFORMANCE

The performance analysis for the commuter services is presented in Table 42 and Figure 31 depicts the results. Those attaining the pertinent performance standards are shaded in green. A review of these results indicate the following:

- Ridership impacts range from a loss of 400 from the elimination of the reverse commute service to an increase of 25,500 generated by four additional runs.
- Subsidy impacts range from a reduction of \$41,800 (elimination of reverse commute service) to an increase of \$35,400 for a Mahany Park express run. Several other alternatives yield net reductions in operating subsidy by generating fare revenue increases greater than the cost increase.

TABLE 42 Roseville Transit Commuter Service Alternatives Performance Analysis

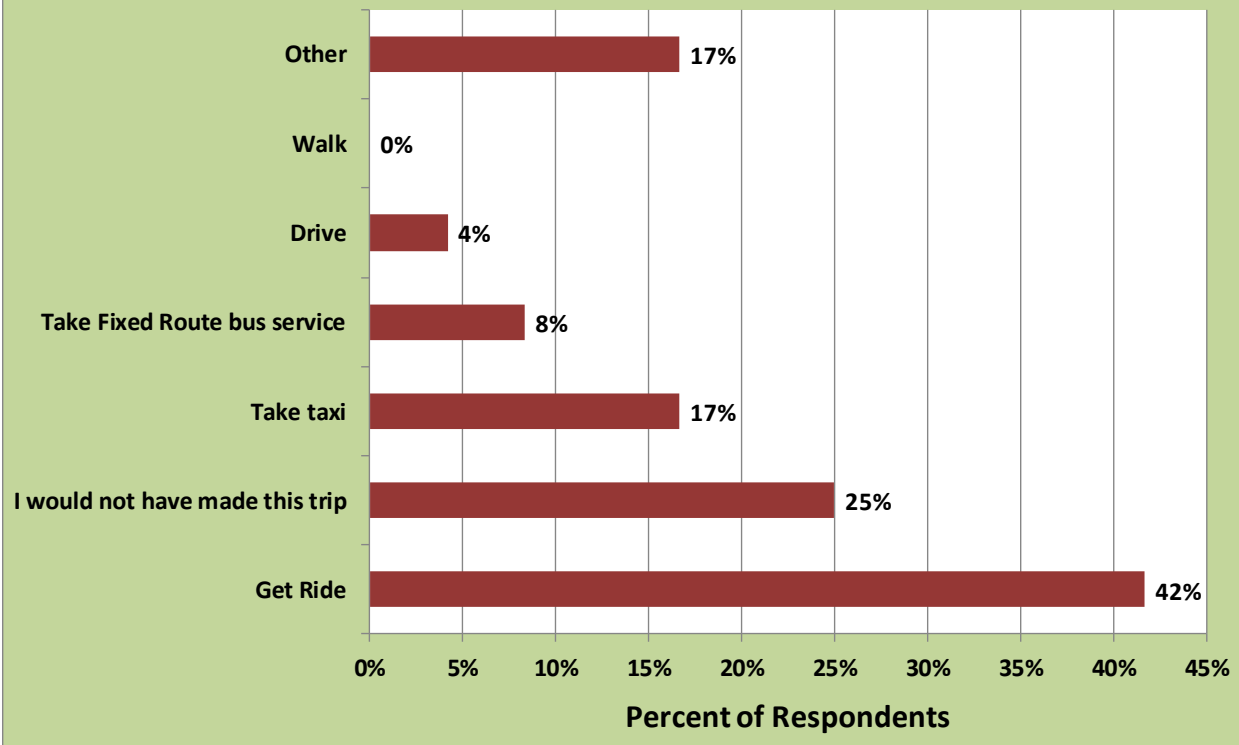
Values Achieving Recommended Performance Standards Shaded							
Alternative	Annual Change		Change From Existing Service				
	Ridership	Operating Subsidy	Psgr-Trips per Service-Hour	Psgr-Trips per Service-Mile	Cost per Psgr-Trip	Subsidy per Psgr-Trip	Marginal Farebox Ratio
	Performance Standard		20.0	0.60	< \$6.00	No Standard	75%
1 New Run in Each Direction Per Day	10,200	\$9,900	12.5	0.47	\$5.83	\$0.97	83%
2 New Runs in Each Direction Per Day	19,400	\$24,700	11.9	0.45	\$6.13	\$1.27	79%
3:00 PM Run	5,000	\$700	17.3	0.46	\$5.00	\$0.14	97%
Mid-day Service	8,900	\$20,400	17.7	0.76	\$3.90	\$2.29	41%
Improved PM Service to Mahany Park	8,100	-\$31,500	64.3	3.46	\$0.98	-\$3.89	499%
Mahany Park Express Run	2,500	\$35,400	5.0	0.11	\$19.00	\$14.16	25%
Eliminate Reverse Commute Service	-400	-\$41,800	0.5	0.04	\$109.25	\$104.50	4.3%

Financial numbers in FY 2018/19 dollars

Note: Green indicates alternatives that are consistent with standard by expanding service in a manner that exceeds standard.

Note: Blue shading indicates alternatives that are consistent with standard by eliminating service not currently attaining standard.

Figure 31: If the Dial-A-Ride service was not available, how would you have made this trip? (n = 24, multiple responses allowed)



- Passenger-trips per vehicle-hour of service would be as high as 64.3 (resulting from the relatively strong ridership benefit associated with short extensions to provide greater PM service to Mahany Park). The additional 3:00 PM run attains the standard by providing more than 20 passenger-trips, while the elimination of the reverse commute service is consistent with the standard in that the vehicle-hours eliminated only generate 0.5 passenger-trips apiece. It is worth noting that the Mahany Park express run generated a relatively low 5.0 passenger-trips per vehicle-hour, but the other three expansion alternatives all generated results not far below the 20 passenger-trips per vehicle-hour standard.
- The impact on passenger-trips per vehicle-mile show a similar pattern, ranging from 3.46 passenger-trips gained per vehicle-mile for the improved PM service to Mahany Park to a loss of 0.04 for elimination of reverse commute service.
- Eliminating the reverse commute service would save \$109.25 in operating cost for every passenger-trip lost. Of the alternatives that increase costs, the “best” is the extension in PM runs to provide improved Mahany Park service, which requires only \$0.98 in additional cost per new passenger. On the other hand, operating express service for Mahany Park requires \$19 per passenger-trip.

- The subsidy per passenger-trip shows a similar pattern, with the elimination of reverse commute service saving \$104.50 in subsidy per additional new passenger-trip. On the other extreme, the Mahany Park express service requires \$14.16 in subsidy per passenger-trip, while the mid-day service requires \$2.29 and the other options all yield a net reduction in operating subsidy per passenger-trip.
- The marginal operating farebox ratios exceed 100% (revenues higher than costs) for most of the expansion alternatives, with the exception of the mid-day service and the Mahany Park express service. Eliminating the reverse commute service attains the farebox ratio standard as it is only 4 percent.

Summary

In sum, this review provides useful information on a wide range of commuter service alternatives. It is also important to consider that there are many other factors such as passenger preference, funding availability and bus availability beyond these financial and performance measures that merit consideration. Many alternatives will require additional analysis (including specific surveys and data collection) before a final decision can be made. Nonetheless, the following are key overall findings that result from this evaluation:

- The alternatives with a high potential consist of the following:
 - Extending some of the PM runs to improve service to the Mahany Park park-and-ride.
 - Elimination of the reverse commute service.
 - Providing at least two and preferably four additional runs per day, with one of the new PM runs departing downtown around 3 PM.
 - Revising the schedules to provide an additional 10 minutes of running time along the freeway corridor (and consideration of shifting to the I-5 corridor)
 - Serving the Louis/Orlando park-and-ride, instead of the Maidu Park park-and-ride.

These alternatives help address goals of expanding ridership, improving cost-efficiency by reducing ineffective services, and improving service quality.

- A moderate level of potential is associated with the following:
 - Provision of mid-day runs. While it attains some but not all performance standards, it would provide a real benefit to the commuter service and its riders.
 - Providing service to the area north of downtown (CHP Headquarters) on specific runs in a manner that minimizes impact on existing riders.
- Alternatives that have a low potential consist of the following:
 - Express runs to/from Mahany Park

- Establishing service to new portions of Sacramento outside of the downtown, as well as to the Sacramento train station.

Other alternatives not mentioned largely reflect trade-offs between costs and the benefits of expanding service availability.

DIAL-A-RIDE

The overall purpose of Roseville's Dial-a-Ride program is to provide mobility to Roseville residents that otherwise would not have the accessibility to activities needed for a high quality of life. In addition, the program serves some trips that are otherwise not efficient to serve with the local fixed routes. Increasing ridership is not a key goal of the program, so long as it fills the needs of the community. Providing a high quality of service is instead the key goal of the service.

The program currently serves approximately 28,400 passenger-trips per year. This figure is 20 percent below the annual ridership in Fiscal year 2008/09, and 6 percent below the figure for FY 2014/15. While ridership over the last two years increased by 1 percent on Saturdays, it decreased by 4.4 percent on weekdays and 12 percent on Sundays. Table 40 presents a summary of typical passenger activity by hour and day of week, as well as the number of vehicles in operation.

Table 43: Western Placer County Public Transit Route Rates			
	Placer County Transit	Roseville Transit	Auburn Transit
One-Way - General Public	\$1.25	\$1.50	\$1.00
One-Way - Senior/Youth/Disabled	\$0.60	\$0.75	\$0.50
24 Hour Pass - General Public	\$2.50	\$4.00	\$2.50
24 Hour Pass - Senior/Youth/Disabled	\$1.25	\$2.00	\$1.25
10 Ride Pass - General Public	\$10.00	\$15.00	--
10 Ride Pass - Senior/Youth/Disabled	\$5.00	\$7.50	--
14 Day Pass - General Public	\$21.50	--	--
14 Day Pass - Senior/Youth/Disabled	\$10.75	--	--
30 Day Pass - General Public	\$37.50	\$58.00	\$40.00
30 Day Pass - Senior/Youth/Disabled	\$18.75	\$29.00	\$20.00
30 Ride Pass - General Public	--	--	\$24.00
30 Ride Pass - Senior/Youth/Disabled	--	--	\$12.00
5 and under	Free	Free ¹	Free
Summer Youth	\$10.00	\$10.00	\$10.00
*Free is 4 years old and under on Roseville Transit. Maximum 2 children per adult rider.			
Source: LSC Transportation Consultants, Inc.			

The overall Dial-A-Ride program was reviewed to reach the following conclusions:

- Late cancellations are those where a passenger does not call at least 2 hours in advance of the scheduled pick-up time window. FY 2016/17 data indicates that this occurs on 1.4 percent of all trips, in addition to 0.3 percent of cancellations that occur at the door. The percentage of total cancellations is generally considered to be high if over 15%. Overall, cancellations are not a significant issue for the Roseville program.
- 2.5 percent of trips result in a “no show” (the passenger is not at the pickup location). The industry standards for these metrics are no more than 5 percent for no-shows, again indicating that the Roseville program has a good handle on this factor.
- The City of Roseville’s policies on late cancellations and no-shows is consistent with industry practice in that it is based on the percent of trips (rather than the absolute number), includes an appeal process, provides an advance notice prior to imposing a penalty, and provides ADA passengers with the option of a suspension rather than only imposing a fine.
- Missed trips occur on 0.028 percent of all scheduled trips (only 8 over the course of a year). This rate is typically not considered to be of concern unless it exceeds 0.05 percent.
- 24 percent of Dial-A-Ride passenger-trips are “subscription” trips (standing orders to serve specific passengers at specific times and days). This is a relatively low proportion compared with other similar systems, and indicates that the program is managing the level of subscription trips to avoid limiting availability for other “casual” ride requests.
- The Dial-A-Ride program serves 2.4 passenger-trips per vehicle service hour. Factors that tend to reduce this figure are the dispersed nature of most of the passenger trips (with individual trips made between scattered locations, rather than group trips to program sites) as well as the large geographic size of the service area. Considering these factors, this figure is relatively good compared with paratransit services in similar communities, and indicates an appropriate level of service for the level of ridership.
- The reservation process is standard in the industry, and does not appear to be creating any significant problems for the service or the passengers.
- It is important to consider that the overall goal of a public transit program is not to maximize ridership, but to ensure that the community’s mobility needs are being met. This is particularly true on demand response services such as Dial-A-Ride, as growth in ridership requires increased operations and associated costs. If DAR passengers choose to shift to new mobility options (such as TNCs), this should be considered a positive step.

Elimination of General Public Ridership on Dial-A-Ride

One option that could be considered would be to eliminate the availability of Dial-A-Ride service to the general public (persons without disabilities and not elderly). General public ridership makes up 17 percent of all passenger-trips (or approximately 12 trips per day). As reflected in Table 18, above, this proportion is 14 percent on weekdays, 20 percent on Saturdays, and 24 percent on Sundays. This data was reviewed to estimate the reduction in vehicle-hours that could be made if general public riders were to be eliminated. This was found to be three vehicle-hours on weekdays, one on Saturdays and four on Sundays. Over the course of a year, this equates to a 7.4 percent reduction in vehicle-hours of service (though the peak number of vans in service would remain unchanged). This in turn would reduce operating cost by an estimated \$51,300 per year. Assuming all existing DAR General Public riders would be eliminated (rather than shifting to fixed route service), fare revenue would be reduced by \$15,000 per year, resulting in a net reduction in operating subsidy of \$36,300 per year.

A performance analysis of this alternative indicates the following:

- At 5.0 passenger-trips eliminated per vehicle-hour of reduction, this alternative is not consistent with the standard of providing service that yields at least 2.5 passenger-trips per vehicle-hour.
- Similarly, the elimination of 3.2 passenger-trips per vehicle-mile is not consistent with the standard of 0.20.
- This alternative would save \$8.43 in operating cost per passenger-trip lost, less than the standard of no more than \$35.00.
- The farebox ratio of fares to operating cost would be 29 percent, more than the minimum standard of 8 percent.

In sum, eliminating general public ridership from the Dial-A-Ride program is not consistent with any of the standards. It also provides a service to Roseville residents who find that the fixed route service does not meet their needs.

FARE ALTERNATIVES

Potential changes in the passenger fare structure for Roseville Transit are reviewed in this section.

Fixed Route Fares

In the interest of marketing and coordination between the western Placer County public transit services, a review of the fare structures of the three fixed route operators is worthwhile.



A comparison of fixed route fares on the two programs is shown in Table 44. As shown, Roseville Transit has the highest base fare of \$1.50. This is in line with other peer transit around the region, per the following examples and as shown in Table 22 in Chapter 6:

Table 44: Western Placer County Public Transit Route Rates			
	Placer County Transit	Roseville Transit	Auburn Transit
One-Way - General Public	\$1.25	\$1.50	\$1.00
One-Way - Senior/Youth/Disabled	\$0.60	\$0.75	\$0.50
24 Hour Pass - General Public	\$2.50	\$4.00	\$2.50
24 Hour Pass - Senior/Youth/Disabled	\$1.25	\$2.00	\$1.25
10 Ride Pass - General Public	\$10.00	\$15.00	--
10 Ride Pass - Senior/Youth/Disabled	\$5.00	\$7.50	--
14 Day Pass - General Public	\$21.50	--	--
14 Day Pass - Senior/Youth/Disabled	\$10.75	--	--
30 Day Pass - General Public	\$37.50	\$58.00	\$40.00
30 Day Pass - Senior/Youth/Disabled	\$18.75	\$29.00	\$20.00
30 Ride Pass - General Public	--	--	\$24.00
30 Ride Pass - Senior/Youth/Disabled	--	--	\$12.00
5 and under	Free	Free ¹	Free
Summer Youth	\$10.00	\$10.00	\$10.00
*Free is 4 years old and under on Roseville Transit. Maximum 2 children per adult rider.			
Source: LSC Transportation Consultants, Inc.			

- Folsom Stage -- \$2.50
- Gold Country Stage (Grass Valley) -- \$1.50 to \$3.00 depending on zone
- El Dorado Transit -- \$1.50
- E-Tran (Elk Grove) -- \$2.25
- Roseville Transit -- \$1.50
- Sacramento RT -- \$2.75

One notable difference between Roseville Transit and the other two western Placer operators is the age for a child. On Auburn Transit and PCT, a child may ride free at age 5 and under; whereas on Roseville Transit the child must be 4 and under. To be consistent, Roseville Transit should consider changing the age of a child to 5 and under. Given the high proportion of riders in the area that use multiple transit services, providing consistent fare policies help to improve the convenience of the transit network as a whole, and reduce conflicts between passengers and drivers.

Commuter Fares

Table 45 presents a comparison of commuter service fares on PCE and Roseville Transit. The base one-way cash fare from Rocklin/Roseville is slightly less on PCE (\$4.25) than for non-residents on Roseville Transit (\$4.50), although the resident fare on Roseville Transit is lower (\$3.25). Similarly, the cost of a PCE monthly pass from the Roseville/Rocklin area (\$131.25) is between the Roseville 30-day Pass for non-residents (\$155) and residents (\$110). PCE has a lower one-way fare for Connect Card users traveling from between Penryn and Roseville to Sacramento. Roseville Transit does not offer this option.

In addition, other commuter transit fares in the Sacramento Region are as follows:

	<u>Base 1-Way</u>	<u>Monthly Pass</u>
El Dorado Transit	\$5.00	\$180.00
Yuba Sutter Transit	\$4.00	\$128.00
YoloBus Route 45	\$3.25	\$121.00

In comparison, Roseville Transit's resident fares are at the low end of the peer system fares.

One option would be to better align Roseville Transit commuter and PCE fares as a step to coordinate the two similar services. Overall, fare prices are fairly similar between the two operators. As noted above, the price from Rocklin/Roseville on PCE is \$4.25 vs. \$4.50 for non-residents on Roseville Transit. A complicating factor is the discounted fare option for Roseville Transit residents (\$3.25). It would likely be an unpopular policy to eliminate this discount for Roseville Transit residents. Roughly 77% of Roseville Transit riders are residents.

Table 45: Western Placer County Commuter Service Fares

Placer County Express				
	Colfax / Clipper Gap	Auburn / Penryn / Loomis	Rocklin / Roseville	Sacramento
Cash One-Way	\$5.75	\$4.75	\$4.25	\$4.25
Monthly Pass	\$178.50	\$147.00	\$131.25	--
Connect One-Way	\$5.75	\$4.50	\$3.70	\$3.70

Roseville Transit			
	Resident	Non-Resident	Reverse Commuter
Single Fare	\$3.25	\$4.50	\$3.25
10-Ride Pass	\$32.50	\$45.00	\$32.50
30-Day Pass	\$110.00	\$155.00	\$110.00
Roseville Transit Commuter/Capital	\$110.00	\$155.00	--
Corridor Monthly Pass			

Source: Individual websites.

If Roseville Transit were to eliminate the discount for a Roseville resident and align commuter fares with the PCE base fare from Roseville (\$4.25 cash/ \$132 monthly pass), roughly 10,000 trips per year would be lost and \$23,000 in fare revenue would be gained. Roseville Transit services have a high farebox ratio of 79 percent, which achieves the standard of 75 percent, and thus does not necessarily need to increase fares for this service. Given that the commuter services have such a high farebox ratio and given the potential for conflict from eliminating the Resident discount, promoting the use of Connect Card may be a better way of coordinating PCE and Roseville Transit services.

College Transit Pass Program

College transit pass programs have become relatively common, particularly among larger colleges and universities. Under these programs, funds are provided (typically from student activity fees) to offset the loss of transit fares that accompanies a fare program by which students are allowed to board the bus system at no charge. Some programs also include college staff and faculty (with funding provided from non-student-fee sources). Consideration was given both to a college pass program for Sacramento State University and for Sierra College.

Sacramento State University students may ride all Sacramento RT fixed-route transit services, including the light rail, by presenting a valid Sacramento State OneCard and the student

commuter sleeve. Students pay a nominal fee for this service through their registration fees. Approximately 5,000 “Sac State” students live in Placer County. This bears the questions whether western Placer County transit operators should also offer discounts or free rides to Sac State students through a registration fee program.

Two factors which contribute to the success of a college transit pass program are student transit demand and parking costs. The demand for transit service between Placer County and Sac State is reduced by the long travel times resulting from the current schedules of the various transit services. As an example, a student living near downtown Roseville wishing to use transit to the Sac State campus faces a total travel time ranging from 1 hour 45 minutes (using Roseville Route B, RT Route 21 and Gold Line LRT) up to 2 hours 15 minutes (using Roseville Route B, RT Route 93 and RT Route 26), depending on the time of travel. In comparison, driving would take around 30 minutes. Daily parking fees at Sac State student lots are \$6.00, which does not create much incentive to spend an additional 2.5 to 3 hours a day commuting to/from campus. Given this, it is not surprising that the onboard passenger surveys did not identify any existing Roseville Transit passengers traveling to or from Sac State. It can be concluded that a pass program for Sac State students would not generate a noticeable level of use on Roseville Transit unless parking costs increase and/or much more direct transit services are provided.

A partnership between Sierra College and western Placer County transit operators may be more useful. A reasonable scenario would be a pass program that provides free boardings on Roseville Transit and PCT to current students (showing a current student ID, or ultimately a Connect Card). The reduction in farebox revenue would be offset by funding generated by the campus. To determine the feasibility of this option, surveys would need to be conducted to help determine specific student travel patterns and interest in public transit. Next, the transit operators would need to negotiate with Sierra College an annual subsidy which is reasonable and meets the needs of all parties. College pass programs are typically financed by student fees or parking revenues.

Regional Day Pass

Currently, the three fixed route transit operators in western Placer County charge different fares, although there are free transfers between the different systems. Table 44 shows the different fare structures for each transit operator. Western Placer County communities focus on commercial services in Roseville and Rocklin. Therefore, it is not out of the question for someone to require travel on all three operators in one day. While the second leg of the journey would be covered by a transfer but the third leg would require purchasing a new fare. In an effort to make transferring more simple and seamless, a regional day pass could be implemented.

Many other areas, such as Sacramento, San Luis Obispo and King County, Washington have developed universal passes and fare revenue-sharing agreements so that riders can transfer between one system and another without having to pay a second fare. In the San Luis Obispo area, multiple transit agencies have coordinated to offer a universal pass to riders. The San Luis

Obispo Regional Transit Authority (RTA) coordinates with South County Transit, Paso Express, and San Luis Obispo Transit. Each system has different fare pricing; however, riders may purchase an one-day pass for \$5.00 which can be used on any of the four different systems. Likewise, there is a regional 31-day pass valid for rides on any of the four transit systems.

Internally, the agencies share revenues by calculating a fare-weighted ridership percentage for each system, and distribute collected pass revenues to each agency based on the percentage of fare-weighted ridership. Fare-weighted ridership is calculated by multiplying the number of pass-holding trips on each transit system by the average fare for that system (presumably the weighted average of adult, senior, and youth single-ride fares collected).

A reasonable regional day pass price for unlimited rides on the three Western Placer County transit operators would be around \$4.50. This represents a 10 percent discount to round trips on all three transit operators in one day (including free transfers).

Use of regional passes in similar systems indicate that actual usage would be low. The available survey data regarding the number passengers making multiple transfers indicates that use (and thus fare revenue impacts) would be small. However, this would be a step towards making the various western Placer County transit systems operate more effectively as a regional network.

MARKETING STRATEGIES

The City of Roseville will direct a future contract to research and develop an overall marketing and communications plan for Roseville Transit. The plan will identify target budgets for resources, and outline marketing, advertising, and public relations initiatives.

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This chapter focuses on the capital items needed to operate public transit, focusing on buses and bus stop facilities.



Zero Emission Bus Technology

Roseville Transit's fleet is currently a mix of diesel and gasoline fueled vehicles. The California Air Resource Board (CARB) is in the process of developing new regulations (the "Transit Fleet Rule") that are expected to ultimately require all public transit fleets in the state to use only Zero Emission Bus (ZEB) vehicles. ZEB technologies consist of Battery Electric Buses (BEBs) and hydrogen fuel cell buses. However, in 2009 staff concluded that the technology was not commercially ready and the Board directed staff to withhold the ZEB purchase requirement. Since that time CARB staff has been evaluating the commercial readiness of zero-emission technology. In 2015 staff concluded that the commercialization of ZEB technologies had advanced to the point where they may feasibly be incorporated into transit fleets. Staff is now in the process of proposing amendments to the Transit Fleet Rule. A draft proposal, called the Innovative Clean Transit Regulation is summarized below.

The regulation would apply to all public transit agencies that own, lease, or operate buses with a gross vehicle weight rating greater than 14,000 lbs. In the draft proposal, buses subject to the regulation include cutaway buses, transit buses (including bus rapid transit), articulated buses, double-deckers, commuter coaches, trolley buses and vintage trolley buses. Based on comments received on the draft, however, CARB staff has indicated that cutaway buses will not be included in the initial implementation requirement as there are currently no ZEB Altoona-tested⁷ cutaway vehicles and it is unclear when manufacturers may begin testing for zero-emission cutaways.

The following is a summary of the overall rule proposal. Fleet size would be based on the number of buses in the active fleet in 2019.

January 1, 2020

- Large transit fleets with 100 buses or more would need to:
 - Purchase 25 percent ZEB when bus purchases are made or implement an equivalent innovative zero emissions mobility program.
 - Purchase renewable fuels when diesel or natural gas contracts are renewed.
 - Report fleet-wide information for all modes and fuel purchases needed to evaluate their progress in meeting a fleet-wide performance-based goal.
- All transit agencies in more polluted areas of California would be required to purchase low NOx engines if available at the time of conventional bus purchases.

⁷ FTA regulations require all federally-funded transit vehicles models be tested in a facility located in Altoona, PA.

January 1, 2023

- The proposed concept would be expanded to include medium-size transit fleets with more than 30 buses.
- Affected transit fleets would need to meet a 50 percent ZEB purchase requirement.

January 1, 2026

- All transit fleets, including smaller transit systems would need to meet a 75 percent ZEB purchase requirement.

January 1, 2029

- All bus purchases would need to be ZEBs.

The purchase requirement applies at time of normal purchase and does not require any accelerated purchases. Transit agencies that make ZEB purchases before they are required by the regulation would generate a ZEB credit that could be banked and used for a future purchase date.

Staff is also proposing an “innovative zero emission” credit mechanism that would count towards the ZEB purchase requirement. Innovative zero emission mobility options are non-bus (nor fixed guideway) transportation services provided by the transit agency with lighter Zero Emission Vehicles (ZEVs) like micro transit, on-demand van or car transportation, or autonomous shuttle services. The transit agency would need to apply to the CARB Executive Officer to determine the appropriate credit amount for new and innovative services based on the details of the program. The credit would be provided in the form of a ZEB purchase credit where 350,000 zero emission passenger miles per year from the program would be deemed to be equivalent to purchasing a ZEB.

As noted above, CARB is currently in the process of meeting with transit agencies to understand the impacts of the proposed rule and to modify the rule as necessary. Another change under consideration is to allow each transit agency to develop and submit an individualized plan, approved by their board, for a transition to zero emissions, including their start date. Staff is interested in providing this flexibility but also wants to encourage near-term action. CARB staff plans to bring a proposed recommendation to the CARB board in June 2018.

With the exclusion of cutaway buses, Roseville Transit’s bus fleet consists of 29 large buses, just within the 30 bus criteria for a small-sized fleet. As such, the City is not required to be purchasing ZEBs until 2026 (under the current proposal). However, it is clear that operators of all transit fleets should be preparing for ultimately transitioning to ZEB fleets over time. Of the two ZEB technologies, by far the more prevalent option is Battery Electric Buses.

Battery-Electric Transit Vehicles

Technology and experience for battery-electric transit vehicles are still fairly new. Some larger transit systems and mid-sized system have purchased battery-electric buses, with many more on order. The closest existing BEB fleet to western Placer County is the 17 buses at the San Joaquin RTD system in Stockton. Recharging BEB's can either occur at the fleet operations facility (generally overnight using a slow charging station), or along the route at stops where at least 10 minutes of time are available (using an overhead fast-charging technology). As an example of cost, Marin County recently purchased two battery-electric vehicles for \$1.6 million. The cost includes purchase of the buses, GPS and fare collection equipment purchase and vehicle inspections.

Beyond the issue of cost, a key factor regarding battery electric buses is the potential range between charges. While buses with a range of 120-150 miles have been available for several years, some manufacturers have recently announced new technology that can operate up to 350 miles between charges – much more than Roseville Transit's daily mileage per bus. However, these claims do not reflect the requirements to also power onboard heating and cooling systems – an important consideration in Roseville's hot summers.

Vehicle Replacement

A review of Roseville Transit's vehicle fleet shows that the following buses will be eligible for replacement over the next seven years based on age:

- Currently eligible for replacement – 1 fixed route 28 passenger bus, 4 commuter buses, 3 DAR vehicles
- 2019 – 4 fixed route 29 passenger buses, 8 DAR vehicles
- 2021 – 7 commuter buses
- 2026 – 4 fixed route vehicles (CARB purchase rules apply)

In order to maintain a good working fleet with minimal maintenance costs, Roseville Transit should seek grant funding to replace vehicles according to the schedule above. By the end of the planning period, Roseville Transit should be purchasing ZEB vehicles in accordance with CARB regulations.

Bus Stop Improvements

Passenger facilities include all equipment and amenities that serve the passenger as they access the bus. This includes bus stop shelters, benches and signs, information kiosks, pedestrian crossing amenities and transfer centers. The quality of passenger amenities is a very important factor in a passenger's overall perception of a transit service. Depending on the trip, a

passenger can spend a substantial proportion of their total time using the transit service waiting at their boarding location. If this is an uncomfortable experience, if it is perceived to be unsafe, or if it does not provide adequate protection from rain and inclement weather, the bus stop can be the deciding factor regarding a potential passenger's use of the transit system.

A bus shelter is typically considered to be warranted at stops with a minimum of 10 passenger boardings per day⁸. A review of the existing location of shelters compared with observed passenger activity indicates that the following stops warrant a shelter:

- Woodcreek Northbound after Junction
- Pleasant Grove Westbound at Foothills

Passenger amenities should be replaced as need during the planning period. If an alternative with a new route alignment is chosen, bus stop signs and pullouts will need to be constructed.

While a Caltrans facility, the Taylor Road Park-and-Ride needs improvements. This is the single busiest commuter bus boarding location on the Roseville system (as well as the PCE system). In particular, a minimum of two large shelters should be provided, along with additional overhead street lighting.

The facilities provided at three of the four key hubs in the Roseville system (Civic Center, Galleria and Auburn/Whyte) are adequate and in good condition. Improvements would be beneficial at the Sierra Gardens Transfer Point. This location consists of a pull-out along the south side of Sierra Gardens Drive between North Sunrise Avenue and Santa Clara Drive, behind the Placer Village shopping center. It is provided with two bus shelters, and has adequate sidewalk width to accommodate wheelchair loading/unloading as well as sidewalk connections to other nearby destinations. The bay is adequate to accommodate up to three transit vehicles at a time (under the current schedule there are a maximum of two vehicles at this location at the peak times). The location is difficult to serve for buses traveling in the westbound direction. As a result, Route L serves a stop on the north side of Sierra Gardens Drive at Santa Clara Drive, 100 yards to the east. No passenger amenities are provided at this location. A 3-way Stop control of this intersection provides some protection to passengers walking between the bus stop locations. A deficiency of this overall location is that overhead lighting is not sufficient for the main stop (eastbound direction). In addition, a bus bench is warranted for the westbound stop. Construction of improvements at this is already scheduled for 2018.

⁸ For example, the transit design guidelines for the Sunline Transit Agency (California), El Dorado Transit (California), Regional Transit District (Colorado), Pima County (Arizona) and Denton (Texas) all cite 10 boardings per day as a standard for warranting a shelter.

This chapter presents the recommended work plan for Roseville Transit for the next 5-7 years. The work plan was developed in consideration of the identified goals and policies, and the information and analysis found in previous chapters and in the appendices. This chapter includes:



- Service Plan
- Capital Plan
- Financial Plan
- Institutional/Management Plan
- Implementation Plan

Figure 32 presents an overview of the plan.

SERVICE PLAN

This Service Plan presents a list of recommended service modifications for Roseville's Local Fixed Route, Commuter and Dial-a-Ride services. This plan also identifies service enhancements that may be implemented if additional transit funding becomes available. Table 46 summarizes the impacts of the Service Plan elements on service levels, ridership and costs.

Local Fixed Route Services

FR1. Revise Routes C/G/F/E/L

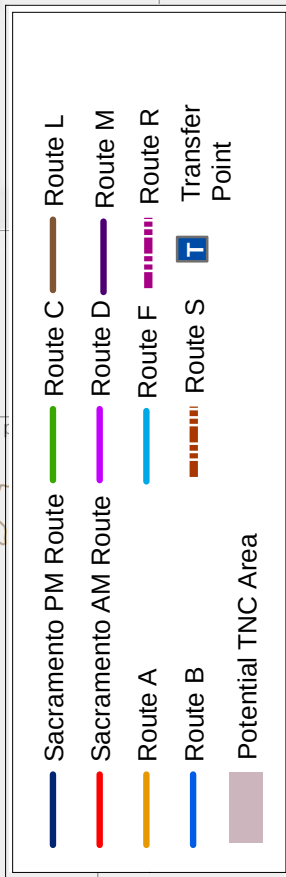
Description of Existing Service: Routes C/G/F/E serve southeastern Roseville and provide service to Sierra College, using one bus on a two-hour-long schedule. Route L serves east Roseville from the Civic Center Transfer Point to Sierra College Boulevard using one bus and a one-hour long schedule.

Issue: Ridership on routes C/G/F/E is very low (2.9 passengers per vehicle hour, which is only half of the local route systemwide average). In particular, the ridership generated by serving Sierra College is low (only 7 boardings and 7 alightings per day, or just over 1 passenger per trip) due in part to unproductive route segments along I-80 and Sierra College Boulevard. Ridership on Route L to the east of Eureka Boulevard is low with few boardings and alightings.

Recommendations: After a review of a wide range of alternatives as discussed in Chapter 8, two potential strategies are recommended for further consideration:



0 0.75 1.5 3 Miles



- OTHER ELEMENTS**
- Extend Saturday Service
 - Reduce Early Morning C, D, and M Service
 - Shift Route D and L Schedule
 - Eliminate Reverse Commute Runs
 - Commuter Service to Louis/ORlando
 - Eliminate Commuter Service to Maidu Park
 - Provide Mid-Day Commuter Run
 - Consider Commuter Service to Richards Blvd.
 - Adjust Commuter Schedules
 - Fleet Improvements
 - Battery Electric Bus Study
 - Bus Stop Improvements

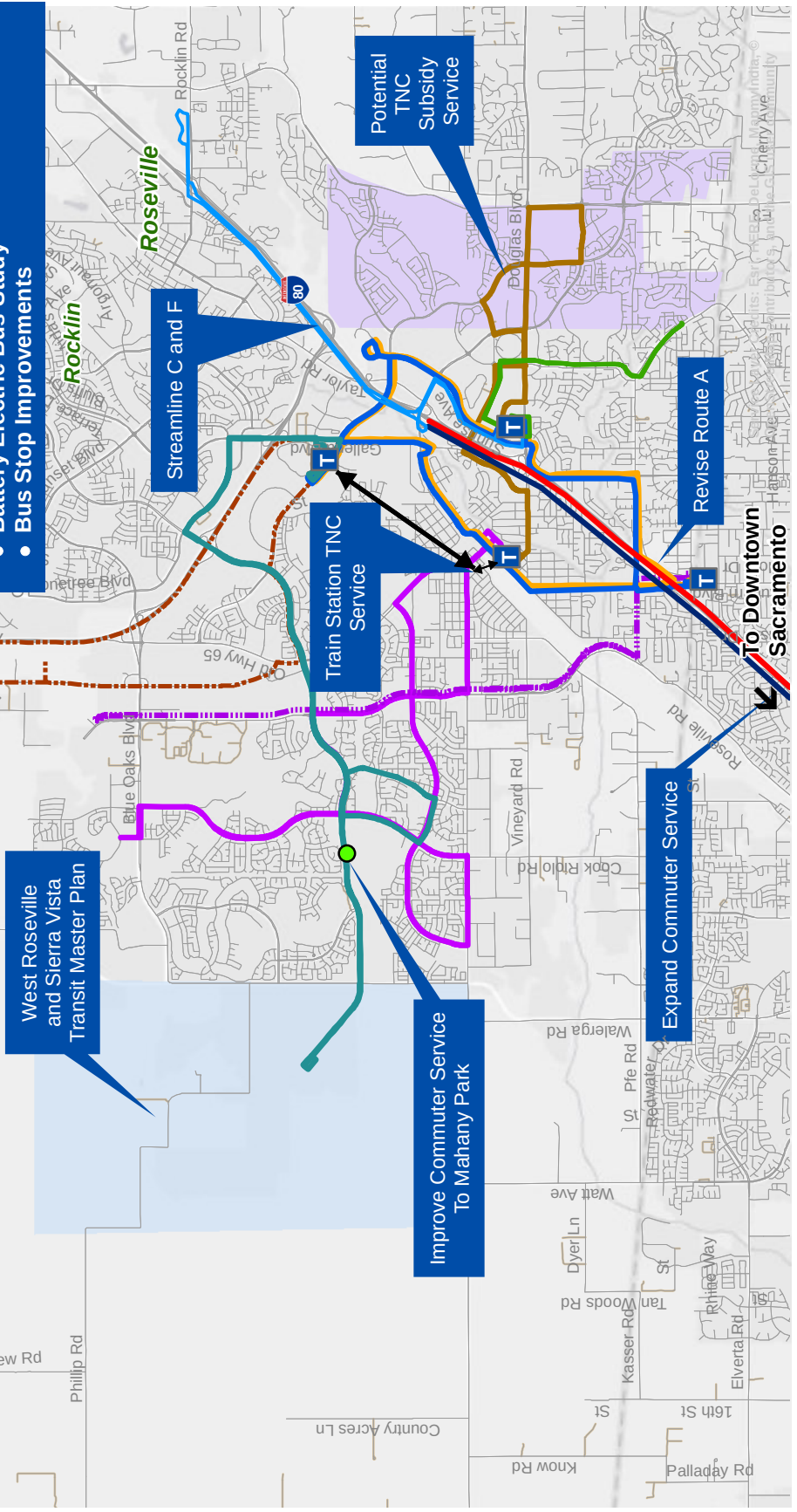


Figure 32
Roseville Transit Short Range Transit Plan

TABLE 46: Roseville Transit Short Range Transit Plan

Plan Element	Annual Quantities -- Change From Existing						
	Passengers	Vehicle-Hours	Vehicle-Miles	Operating Cost	Farebox Revenue	Operating Subsidy	Peak Vehicles
Local Fixed Routes							
<i>Existing Total</i>	192,701	32,753	470,644	\$3,435,382	\$402,432	\$2,720,651	10
Revise Route C/G/F/E ¹	5,400	0	-886	-\$1,100	\$11,200	-\$12,300	\$0
Eliminate First Hour of Rt D, C, G and M Wkdy Service	-1,900	-765	-12,801	-\$46,600	-\$3,900	-\$42,700	\$0
Extend Saturday Service Until 6 PM	2,200	260	3,422	\$16,000	\$4,600	\$11,400	\$0
Total Impacts of Service Modifications	5,700	-505	-10,266	-\$31,700	\$11,900	-\$43,600	\$0
Total With Service Modifications	198,401	32,248	460,378	3,403,682	414,332	2,677,051	10
<i>Percent Impacts of Service Modifications</i>	3.0%	-1.5%	-2.2%	-0.9%	3.0%	-1.6%	0.0%
Commuter Service							
<i>Existing Total</i>	137,102	6,327	242,187	\$837,296	\$666,287	\$171,009	9
Expand Capacity by 2 AM and 2 PM Runs	19,400	1,630	43,344	\$119,000	\$94,300	\$24,700	2
Improved PM Service to Mahany Park	8,100	126	2,344	\$7,900	\$39,400	-\$31,500	0
Eliminate Maidu Park, Add Louis/Orlando	3,000	-134	-1,109	-\$6,800	\$14,600	-\$21,400	0
Eliminate Reverse Commute Service	-400	-773	-10,080	-\$43,700	-\$1,900	-\$41,800	0
Mid-day Service	8,900	504	11,693	\$34,700	\$14,300	\$20,400	0
Total Impacts of Service Modifications	39,000	1,352	46,192	\$111,100	\$160,700	-\$49,600	2
Total With Service Modifications	176,102	7,679	288,379	\$948,396	\$826,987	\$121,409	11
<i>Percent Impacts of Service Modifications</i>	28.4%	21.4%	19.1%	13.3%	24.1%	-29.0%	22.2%
TOTAL Roseville Transit							
<i>Existing Total</i> ²	358,211	50,722	896,837	\$5,512,980	\$1,172,507	\$4,028,173	24
Total Impacts of Service Modifications	44,700	847	35,926	\$79,400	\$172,600	-\$93,200	2
Total With Service Modifications	402,911	51,569	932,763	\$5,592,380	\$1,345,107	\$3,934,973	26
<i>Percent Impacts of Service Modifications</i>	12.5%	1.7%	4.0%	1.4%	14.7%	-2.3%	8.3%
Note 1: While the plan includes options for either streamlined Route C/F service or a TNC subsidy program, the streamlined C/F option is reflected here in order to be conservative as it has the higher subsidy requirement.							
Note 2: Also includes DAR.							

- Modify routes C/G/F/E and L to eliminate unproductive segments and provide one-hour headways minimum – Figure 32 and Figure 23 in Chapter 8 show an example of how this could be accomplished. In this example, the existing bus could be used to operate a streamlined Route C and F, operating an hourly route connecting South Cirby Way with Sierra College via Sierra Gardens and I-80. Route L would also be realigned slightly to serve Sierra Garden in both directions, making better connections to other routes. The more consistent service would increase ridership (by 5,400, or 60 percent), and the shorter mileage would reduce operating subsidy (by \$12,300, or 7 percent).
- Eliminate routes C/G/F/E, modify route L and replace with TNC or Microtransit Service – The City could eliminate routes C/G/F/E and replace this service with a TNC subsidy program or Microtransit service (private or public). The TNC/Microtransit service would be provided in areas of the City previously served by routes C/G/F/E and L. This change

would eliminate Roseville Transit service to Sierra College and substantially reduce operating costs -- the cost savings of operating one less bus is anticipated to be larger than the TNC subsidy cost, leading to an overall cost savings of \$119,700 (31 percent of the existing C/G/F/E and L operating costs). A modest (2,900 passengers per year, or 9 percent) increase in ridership would occur, depending on the parameters of the TNC subsidy. This option could potentially be implemented as a demonstration project, as it would be a good candidate location to test the potential for TNC subsidy or microtransit service options to replace under-performing fixed route service.

There would be a wide range of policy issues that would need to be addressed in establishing a TNC/Microtransit program, including the appropriate area for trip origins, the appropriate area for trip destinations, the subsidy level, the hours/days the discount would be provided, program pre-approvals, and accessibility under the Americans with Disabilities Act and Title VI. This strategy would also raise questions of equity with other areas of Roseville not within the demonstration TNC area. The City should further pursue this option and address these policy questions. In the meantime, the streamlined Route C/F strategy discussed above would increase the productivity and performance of service in this area.

FR2. Extend the Saturday Span Of Service Until 6 PM

Description of Existing Service: The last runs of Saturday service depart around 4 PM.

Issue: The mobility of transit users is limited. Extension of Saturday service is a common passenger request and would provide more opportunity for employment, shopping and recreational trips on Saturdays.

Recommendation: It is recommended that one additional hour of service should be added to the routes operated on Saturday (A, B, D, L and M). This will increase ridership by 2,200 per year (1.1 percent) while increasing subsidy requirements by \$11,400 (0.5 percent).

FR3. Reduce Early Morning Weekday Service on Routes C, D, G and M

Description of Existing Service: Service on Routes C, D, G and M begin at 6:30am, 6:20am, 6:50 am and 6:30 am respectively each weekday morning.

Issue: The initial runs on Routes C, D, G and M have relatively low ridership (only one or two riders on each run) and are not cost-effective (requiring \$24.53 in operating cost per passenger).

Recommendation: If confirmed by review of additional ridership data, these initial runs should be eliminated in order to improve efficiency and provide funding for other transit improvements. Eliminating these initial runs will save \$42,700 in annual operating subsidy (6

percent over these routes), while reducing ridership by only an estimated 1,900 passenger-trips per year (3 percent).

FR4. Shift Route D and Route L 3 to 5 Minutes Earlier

Description of Existing Service: While schedules at other transfer locations are well-timed, some routes at Civic Center miss each other by a few minutes, resulting in long passenger waits between connecting buses.

Issue: Routes A and B are on-site at 10 and 40 after the hour, while Route D arrives at 13 after and departs at 20 after and Route L arrives at 15 after and departs at 25 after.

Recommendation: Route D schedules should be shifted 3 minute earlier and Route L schedules 5 minutes earlier. This will provide a schedule by which all four routes were at this location at 10 minutes after the hour (fully using the available four-bus bay capacity). This shift would not change transfer opportunities at Sierra Gardens on Route L. While this would shift other transfer opportunities (such as between Routes D and M along Pleasant Grove Boulevard), the passenger counts indicate very little transfer activity at these locations. Overall, this would not impact operating costs, and should result in a long-term modest growth in ridership.

FR5. Minor Modification of Route A to Improve On Time Performance

Description of Existing Service: Route A operates a large clockwise loop. At its southern end, it operates westbound on Orlando Way and then southbound on Auburn Boulevard to the Louis/Orlando Transit Center.

Issue: Route A operates six or more minutes behind schedule on 9 percent of runs, falling below the standard of being on time for at least 95 percent of the runs.

Recommendation: It is recommended that this route be realigned to use Orlando Way westbound between Cirby Way and the Louis/Orlando Transit Center, rather than the current route westbound on Cirby Way and southbound on Auburn Boulevard. While this will eliminate westbound service to the stop on Cirby Way at Cirby Hills Drive, this stop only serves 3 passengers per day and is within a reasonable walk distance of the stop on the east side of Riverside Avenue north of Cirby Way. The realignment, moreover, will save at least 2 minutes of running time each hour during busy periods, thereby benefitting all passengers by improving on-time performance. It will also allow new stops to be served at Merryhill School and Somerset Hills Apartments. Note that this strategy will require modifications to the existing raised median on Orlando Way at the northern entrance to the Transit Center, which will require review and approval by the City Traffic Engineer.

FR6. Additional Service to the Roseville Train Station.

Description of Existing Service: Capital Corridor currently provides train service to the Roseville Train Station, with one train departing Roseville for Sacramento and the bay area each morning,

and one train returning each evening. However, Roseville Transit fixed routes do not currently directly serve the Train Station.

Issue: While the demand for service to the station is currently modest, the planned expansion of *Capital Corridor* service will increase the importance of providing connecting service. Within the time frame of the SRTP, it is anticipated that Capital Corridor will expand service to the Roseville Train Station, adding 2 morning and 2 evening trains each weekday for a total of 3 trips morning and 3 evening. Beyond the 5-7 year horizon for this plan, Capital Corridor plans to increase the number of trips to 10 each morning and 10 each evening.

Recommendation: As discussed in Chapter 8, it is anticipated that the most effective means of serving the station would be to subsidize a discount code for TNC service (including potentially local cab companies) to provide trips between the Train Station and the Civic Center as well as the Galleria transit centers. To provide a \$1.25 cost to the passenger (consistent with the transit fare), the average subsidy would be on the order of \$5.50 to \$6.00 per trip. Ridership (and thus subsidy requirements) would depend on the level of train ridership, but is expected to be modest. The cost of this program could potentially be shared with the Capital Corridor JPA.

Dial-A-Ride Services

Chapter 8 includes a detailed review of the Roseville Transit Dial-A-Ride service. The review indicates that the service is overall going a good job of meeting its key goals of addressing the mobility needs of the community that cannot be accommodated on the fixed routes and providing a high quality of service. One option considered was the elimination of general public ridership on the DAR service. This would reduce the necessary vehicle-hours of service by three on weekdays, one on Saturdays and four on Sundays, resulting in a reduction in operating subsidy of \$36,300 per year. However, this would eliminate 5,000 passenger-trips per year, much of which consist of trips that cannot be made on the fixed-route service. Overall, allowing general public on the DAR was found to be consistent with adopted performance measures, and should not be eliminated. There were no further recommendations identified for Roseville Transit Dial-A-Ride service.

The Placer County Transit SRTP includes a recommendation for elimination of the PCT Dial-A-Ride and replacement with a TNC subsidy program (for persons able to use such as service) along with “contracting” with the City of Roseville to provide ADA paratransit service in Granite Bay. The City should work with Placer County to craft an agreement that provides this service in a manner that does not result in any net cost impacts to the City, or reduction in service quality to its residents.

Commuter Service

Roseville Transit’s Commuter service is a successful element of the overall transit program, carrying approximately 3 times as many passenger boardings per vehicle-hour as the local fixed

routes) and covering almost 80 percent of the operating costs through passenger revenues. There are a number of issues facing the service that are addressed by this plan, namely:

- Capacity constraints at peak times
- Demand increases associated with development of new areas of Roseville
- On-time performance challenges
- Desire for service to new areas.

CS1. Expand Commuter Service

Description of Existing Service: Roseville Transit currently provides commuter bus service to Downtown Sacramento, with ten buses departing Roseville for Sacramento each morning, and ten buses returning each evening.

Issue: Roseville Transit's commuter runs frequently run at or near the seating capacity: in the surveys conducted as part of this SRTP study, the PM Route 2 carried 46 passengers while the PM Route 4 carried 42. The passenger seating capacity of the largest buses in the fleet is 45. Other routes reach capacity on particular days. In addition to providing a poor ride experience for those passengers forced to stand, the potential that an individual passenger may not get a seat is a substantial disincentive to use a commuter transit service at all. It is important to avoid this perception by providing adequate capacity to ensure a seat in all but the most unusual periods.

Recommendation: Overall, the existing ridership data indicates the need to increase the service by at least one and ultimately two trips in each commute period per day for service between downtown and Roseville. While more detailed surveys of existing passenger should be conducted to define specific new schedules, available data indicates the following:

- In the AM period, the first priority would be a run departing Taylor/I-80 around 6:10 AM, followed by a run departing Taylor/I-80 around 6:30 AM.
- In the PM period, the first need is to provide additional capacity departing downtown around 3:30 to 3:45 PM, to Taylor/I-80. The second priority is to provide a run starting around 4:15 PM.

Two additional runs in each direction will increase operating costs by an estimated \$119,000 per year (or a 14 percent increase over the operating cost of the existing Commuter service). Ridership is forecast to increase by 19,400 per year (14 percent) once potential passengers are fully aware of the availability for additional capacity. The additional fare revenues will offset much of the additional costs, yielding an increase in annual operating subsidy requirements of \$24,700). While two additional buses will be needed at peak times, the purchase of three commuter buses is recommended to keep the commuter fleet spare ratio over the desired 20 percent level.

CS2. Eliminate Reverse Commute Runs

Description of Existing Service: The Roseville Commuter schedules include three “reverse commute” opportunities per commute period, providing service from downtown Sacramento to Roseville in the morning and return trips in the afternoon.

Issue: Ridership on these runs is very minimal (roughly 1 passenger per day over all runs), while costs are high (on the order of \$43,700 under the current service contract). This is primarily due to the dispersed nature of employment sites in Roseville, the presence of other public transit options to travel to Roseville, the limited housing in downtown Sacramento, and the challenges of traveling into downtown to access the reverse commute runs.

Recommendation: This service should be eliminated. This will reduce ridership by roughly 400 passengers per year, but reduce operating subsidy by an estimated \$41,800 (or 24 percent), at least in the short run. (In the long-run, the driver costs associated with the deadhead travel could be part of the bid rate in a future contract.) A total of approximately 400 passenger-trips would be eliminated (including passenger-trips on the opposite side of individual passenger round-trips). Including the loss of \$1,900 of passenger fares, this alternative would reduce operating subsidy by \$41,800 per year (or 24 percent).

CS3. Improve PM Service to Mahany Park

Description of Existing Service: Mahany Park is the primary park-n-ride lot in northwest Roseville for commuter service. Roseville commuter buses pick up at Mahany Park three times in the morning (AM 2, AM 3 and AM 9) and drop off at Mahany Park two times in the evening (PM 5 and PM 6).

Issue: The range of time when service is provided to Mahany Park is limited. Roseville Transit commonly receives passenger requests for additional service to/from Mahany Park, including the potential for direct service to/from downtown Sacramento.

Recommendation: As discussed in Chapter 8, providing a direct “express” runs to/from Mahany Park was found to not meet performance standards and is not recommended. However, additions to existing runs are recommended as follows:

- Passengers should be provided the opportunity to request service to Mahany Park on the PM Bus 1 and Bus 10 runs, both of which currently terminate at Saugstad Park. This will provide downtown departures at 3:31 PM and 5:26 PM, greatly expanding the afternoon schedule options.
- Service should also be provided to Mahany Park on demand at the end of the Bus 8 PM run, which currently terminates at Taylor/I-80. This will reduce the in-vehicle-travel time for passengers wishing to leave work around 4:30 PM from the current 1 hour 42 minutes (on Bus 9) down to 1 hour 3 minutes on Bus 8. In addition, this would allow PM

Bus 9 to terminate at Saugstad Park, as the Bus 8 service would be much more attractive to riders.

By adding to existing runs, the cost impacts of this strategy is relatively modest, at \$7,900 per year (1 percent). Ridership is forecast to increase by 2,500 per year (2 percent), generating farebox revenues that will more than offset the cost increases and thus will reduce overall operating subsidy requirements.

CS4. Consolidate Stop Locations in Southeast Roseville

Description of Existing Service: In southeast Roseville, commuter buses currently serve the Maidu Park, Cirby at Sunrise and Louis Orlando stops. These stops are located within 2.6 miles of each other. The City recently completed a new 39-space park-and-ride lot and other passenger amenities at the Louis/Orlando Transit Center.

Issue: Serving multiple nearby stops depart increases travel time for passengers. Two AM runs and two PM runs currently serve Maidu Park with a total of only 10 passenger-trips per day (or five round-trips) are served. Serving this stop incurs a cost of approximately \$7,000 per year. The Maidu Park lot has bike lockers that may serve commuters. Statistics are not available for the Cirby at Sunrise location, but this location is not an established park-and-ride lot, although the property owner has apparently been tolerant of commuter parking.

Recommendation: Either the Maidu or Cirby at Sunrise stops should be eliminated. Depending on the stop eliminated, passengers will need to drive from 1 to 3 miles further. However, this will reduce costs while being more convenient for most residents north of I-80.

CS5. Provide a Mid-Day Commuter Run

Description of Existing Service: The current Roseville Commute consists of ten morning commute runs (with a latest arrival in downtown Sacramento at 8:18 AM) and ten afternoon commute runs (with the first departure from downtown Sacramento at 3:31 PM), with no service in the mid-day period.

Issue: Provision of a mid-day commuter run is a common request among existing Roseville Transit commuter riders: of the 18 specific requests for additional runs out of the current span of service generated by the onboard surveys conducted for this SRTP, 7 were for mid-day service. Experience with the other Sacramento commuter service that offers mid-day service shows that passengers use the service to work half-days and to conduct personal errand or business downtown.

Recommendation: Provision of a mid-day round-trip (an 11:30 AM departure from the Galleria and return trip from downtown stops around 12:30 PM) is recommended as a lower priority. It will increase costs by an estimated \$34,700 per year (4 percent), while yielding an overall ridership increase of 8,900 (6 percent). Overall operating subsidy increase will total \$20,400, or

12 percent. While less productive than other improvements, this run will significantly increase the overall range of trip purposes and usefulness of the commuter service.

CS6. Consider Service to Employers North of Downtown

Description of Existing Service: The existing downtown stops are all in the downtown area south of the Union Pacific Railroad tracks.

Issue: The area north of downtown (around Richards Boulevard / 7th Street) is a growing employment area, including the new California Highway Patrol Headquarters building. Unlike other potential new employment centers in Sacramento, this area could be served at a relatively modest cost. Specifically, two AM runs could turn west on Richards Boulevard, south on 7th Street, and return east on B Street to 12th Street, adding 0.5 miles and approximately 2 minutes to the running time. In the PM, this area could be served on two runs prior to the existing stops (in order to minimize the impact on travel time for existing passengers). While impacts on operating costs would be low, whether serving this area would be a net benefit (considering the additional travel time) will depend on the specific commute patterns of this area.

Recommendation: City staff should contact the major employers in the area to determine (potentially through surveys) the residential location, commute times, parking availability, cost of parking, availability of employer-based commuter subsidies and the overall level of interest in service to this area. While there are common requests to provide direct Roseville Transit service to other employment centers in Sacramento, such as the Broadway corridor and UC Davis Health Center, providing service to new areas would incur substantial new costs for new routes or major route extensions. As ridership potential in these areas is much lower than in downtown (as these areas do not have paid parking or a high proportion of employers willing to subsidize transit fares), service to additional areas is not recommended.

CS7. Modifications to Improve On-Time Performance

Description of Existing Service: The Commuter Service schedules have been developed based on typical travel times over recent years.

Issue: At present, 29 percent of AM service operated 6 or more minutes behind schedule (up to 24 minutes late) and 46 percent of PM service operated late (up to 45 minutes late). Virtually all of this delay is generated by traffic delays along I-80 and/or the Capital City Freeway. This issue, of course, is regional in nature and far outside the capacity of the transit service to control.

Recommendation: To provide a schedule more in line with the realities of freeway congestion, it is recommended that 10 minutes be added to the schedule for AM Runs 3 to 10 and all PM runs. This will reduce the proportion of runs operating late by an estimated 15 percent, though many runs impacted by severe traffic delays would still be behind schedule, and other runs

would arrive ahead of schedule. Overall, this will help the reputation of the transit program regarding reliability. The impact of this additional scheduled time would be approximately \$31,000 per year, except that the City already pays for actual on-the-clock time generated by delays. The net result will be an increase in costs on the order of \$15,000 per year.

In addition, the City should eliminate or modify the existing strategy of operating PM Routes 3 and 10 with the same bus. At present, Route 10 can only serve departing downtown stops on time if the bus has already successfully negotiated the freeway corridor in both directions without encountering significant delays – an increasingly unlikely outcome. If it is not feasible to operate a second bus due to limited bus availability, moving the Route 3 departure time earlier by five minutes and Route 10 departure time later by five minutes would provide at least some additional ability to keep to schedule.

Finally, City and contractor staff should monitor changes in traffic delays on the Central City Freeway. With the completion of the “Across the Top” improvements on I-80 and the growth in congestion on the Capital City Freeway, drive times on the I-5 route can often be 15 minutes quicker. Caltrans plans, moreover, are more advanced to complete HOV lanes along I-80 and I-5 (including a freeway-to-freeway connection at the I-80/I-5 interchange) than they are along the Capital City Freeway. It is worth noting that the PCE service via this alternative route was observed (in the limited data collected as part of this SRTP) to be late a relatively low 15 percent of the time. This option would require reconfiguration of the downtown service route, but stops within a two block walk of all existing Roseville Transit stops could be easily provided.

CAPITAL PLAN

Fleet Improvements

The service plan will not change the number of buses needed to operate the Dial-A-Ride or local fixed route services, except if the TNC option is implemented the number of peak fixed-route buses in operation would be reduced by one. Three full-sized commuter buses will be needed to operate the additional Commuter runs. While in the short term these could potentially be leased, preferably Federal or state funding should be used to purchase these vehicle in the long term.

In addition, the following vehicles in the existing fleet will require replacement over the SRTP period:

- Currently eligible for replacement – 1 fixed route 28 passenger bus (01-377), 4 commuter buses (00-461 to 00-465), 3 DAR vehicles (11-460, 11-463, 11-473)
- 2019 – 4 fixed route 29 passenger buses (09-414, 09-416, 09-417, 09-419), 8 DAR vehicles (14-444 to 14-469)
- 2021 – 7 commuter buses (09-408 to 09-498)

Funding these vehicle purchases will require careful management of Federal, state and regional grant sources, as well as local capital reserves. Appendix C presents a full fleet inventory.

Regional Battery Electric Bus Readiness Study

The California Air Resources Board (CARB) is currently developing updates to the Transit Fleet Rule intended to reduce the greenhouse gas emissions of California's transit fleets. Current draft regulations would not require Roseville Transit bus purchases within the seven-year SRTP period to be Zero Emission Bus (such as Battery Electric Bus or "BEB") technology, reflecting the relatively small size of the fleet as well as the lack of BEB options for smaller capacity transit vehicles.

While BEB vehicles are not required to be implemented within the SRTP period, it is clear that this technology will be a requirement not long after 2025. Though BEB technologies are advancing rapidly, there are many factors that need to be evaluated before the right strategy can be identified, including the following:

- Appropriate charging technologies: slow charge (overnight in the storage yard) versus fast charge (at layover points along the routes).
- Impacts on existing maintenance/storage facilities.
- Impacts on transit centers.
- Operating range, particularly given the power demands of air conditioning, heating and climbing grades.
- Cost implications of charging during peak vs. off-peak periods.

Given that all western Placer County transit operators are facing these new requirements and that facilities at the transit centers (such as Galleria and Watt/I-80) could serve multiple transit systems, it would be most effective to address these issues through a "Regional BEB Readiness Plan"⁹. Roseville Transit should be an active part of this planning process. In particular, it would be useful to have a clear plan for BEB implementation by 2020, in time to inform the purchase of the five commuter replacement buses in 2022.

Passenger Facility Improvements

Providing attractive and comfortable bus stops is important in attracting and maintaining ridership. It is particularly important for sensitive populations, such as seniors or persons with disabilities to be provided with shelter from the weather and seating.

⁹ While Roseville has participated in a previous plan through the Sacramento Air District, this new study would focus on the specifics of BEB operations among the western Placer transit operations.

A review of the existing location of shelters indicates that the following stops warrant a shelter:

- Woodcreek Northbound after Junction
- Pleasant Grove Westbound at Foothills

Passenger amenities should be replaced as need during the planning period. New bus stops will need to be established southbound on Orlando Avenue between Cirby Way and Louis/Orlando Transit Center. Longer term changes to address development in West Roseville would also be accompanied by the need for new stops. In addition, the changes in commuter services will require the signing of a stop at the Louis/Orlando Transit Center, and potentially new stops in the Richards Boulevard area of northern Sacramento.

Improvements are also needed at the Taylor Road Park-and-Ride (owned by Caltrans), which is the busiest passenger location on both the Roseville Transit commuter service and Placer Commuter Express systems. Specifically, a minimum of two large shelters should be provided (with a total covered area of approximately 240 square feet and seating for 24), along with additional overhead street lighting. Siting and design of these improvements will need to address utility line easements. The City should work with Caltrans to implement these improvements.

There is also a need for improvements to the Sierra Gardens Transfer Point, which the City is in the process of implementing.

FINANCIAL PLAN

Overall Financial and Ridership Impact

As shown in Table 44, the overall impact of this plan will be to increase operating costs by \$79,400 per year (or 1.4 percent)¹⁰. Ridership will increase by 44,700 annual boardings (or 12.5 percent) per year. This ridership increase (particularly on the commuter service) will increase farebox revenues by \$172,600 (14.7 percent) per year. As a result, the overall impact of the plan on the need for operating subsidy funding is a decrease of \$93,200 (or 2.3 percent).

It is worthwhile to review these financial impacts for the local fixed route and the commuter services:

- The **local fixed routes** operating costs will be reduced overall by \$31,700 per year (0.9 percent). A 3.0 percent (5,700 passengers per year) ridership increase will generate a 3.0 percent increase in farebox revenues (\$11,900 per year), resulting in a \$43,600 overall decrease in operating subsidy requirements (1.6 percent).

¹⁰ Note that the more conservative option (the streamlined Route C/F option, with higher costs) is assumed regarding the eastern Roseville service.

- The **commuter service** will have a total increase in operating costs of \$111,100 per year, or 13.3 percent. Ridership is forecast to grow by 39,000 (28.4 percent), yielding a \$160,700 increase in farebox revenues (24.1 percent). On balance, operating subsidy requirements will be decreased by \$49,600.

Given these figures, it is expected that operating funding can be provided through existing funding sources, notably Local Transportation Funds and State Transit Assistance funding. However, it is important to note that there are always uncertainties in the ongoing provision of State and Federal funding sources that may require additional local funding sources over the course of this SRTP period.

Depending on propulsion technology and other vehicle attributes, the total costs for vehicle purchases over the next seven years will be on the order of \$15 Million to \$18 Million. Potential funding sources include:

- FTA Bus and Bus Facilities Infrastructure Investment Program
- FTA 5309 Capital Investment Grants
- FTA Congestion Mitigation and Air Quality Program
- FTA 5339(a) Grants for Buses and Bus Facilities Program
- FTA 5339 (c) Low or No Emission Vehicle Program
- California Proposition 1B Transit Capital Program
- Sacramento Emergency Clean Air & Transportation Grant Program

Participate in a Regional Day Pass Program

Surveys conducted as part of this SRTP indicate that 14 percent of Roseville Transit local route riders also use other transit services as part of their overall trip. A trip from a neighborhood in Auburn to a medical office in Roseville, for example, can require traveling on Auburn Transit, PCT and Roseville Transit. Even though transfers are available to passengers on their first boarding, a second transfer and the need to understand various fare programs to complete such a trip tends to discourage residents from using transit. A regional day pass program, priced at \$4.50 for general public and \$2.25 for seniors, youth and persons with disabilities should be established that allows for all-day boardings on Auburn Transit, PCT and Roseville Transit local fixed route services. While in the short term this is expected to have a negligible impact on overall ridership and fare revenues, over the longer term it would encourage the growth of longer regional trips via transit. Tracking the passes sold and passenger boardings on each system would allow the operators to “settle up” on a monthly basis to ensure that the revenues are distributed equitably.

Investigate Sierra College Student Pass Program

Pass programs that provide “free” transit boardings for college students in exchange for a per-pupil fee are increasingly common across California and the nation. The Sierra College Rocklin campus is well-served by public transit, and faces parking issues as student population grows.

The City of Roseville should participate in discussions with Placer County and PCTPA regarding the potential for a student pass program. The transit operators would then need to negotiate with Sierra College to identify an annual subsidy which is reasonable and offsets the expected loss of passenger revenue. If pursued, a college pass program should become part of the Connect Card options.

Promote Use of the Connect Card

The greater Sacramento Region's transit operators have invested a great deal of effort in the development and deployment of a region-wide "Connect Card" that provides a convenient means of purchasing fares and boarding transit services throughout the region. This consists of a "reloadable" card that is valid for the major transit services throughout the region (including Roseville Transit and PCT). Roseville should continue its efforts to promote the use of the Connect Card. This could ultimately allow the reduction in the number of multiday/multiride pass options, simplifying the management and accounting of the Roseville Transit fare media.

INSTITUTIONAL/MANAGEMENT PLAN

This plan includes no recommended changes to the institutional structure of Roseville Transit. Management through City staff and service provision through a private contractor allows the transit program to take advantage of the larger Public Works Department, allows the transit management staff to be relatively "lean" (compared to a separate transit organization), provides specialized transit operations expertise in a cost-effective manner through the contractor staff, and minimizes overall costs of service.

Updated Standards

Table 27 in Chapter 7 presents recommended revisions to the Roseville performance standards that can encourage improvements in efficiency and effectiveness and that better reflect the realities of the transit "markets" served by the organization. Adoption of these updated standards is recommended.

Marketing Strategies

Roseville Transit benefits from a wide range of high-quality marketing materials (schedules and brochures) as well as an attractive and effective website. The only recommendation is that schedules should show service times for additional stops. For instance, the Route D schedule only shows times for two stops over the course of the hour-long route, which gives riders little information about when to arrive at a particular stop. A typical rule of thumb is to provide a scheduled time roughly every five stops.

The growth of social media has increased the ability to provide targeted marketing campaigns to promote specific transit services. For instance, popular social media platforms allow a transit agency to provide ads only in specific geographic neighborhoods, or to persons of particularly

demographics that may be more likely to make use of a new service. In light of the variety of Roseville services, the ability to target limited advertising dollars to high-potential new riders is a key benefit.

The commuter service could benefit from a joint marketing program between PCE and the Roseville commuter service. Data presented in this document reflects that many residents of all portions of western Placer County choose between the two commuter transit programs. The fact that an individual passenger could use the “other” service when circumstances require (such as a work assignment running late) is a potential strength of the two services that is not currently capitalized. Joint marketing of the two commuter bus programs should include marketing of a website and phone number where joint information of the two programs can be obtained. Note that this would not include joint branding.

Planning for Transit Service in Developing Areas

The West Roseville and Sierra Vista areas will merit focused a detailed transit master planning processes during the course of this SRTTP plan period. While general land uses and policies have been defined for these areas (including the need for transit services and the provision of funding strategies for transit), specific routes, stops and schedules will depend on more detailed planning to be developed over the next several years. Once this detail is available, transit master planning for these areas should be conducted. An additional route into the area along the Blue Oaks Boulevard corridor (as discussed in Chapter 8) will ultimately be warranted.

IMPLEMENTATION PLAN

The following is a “to do” list that can be initiated immediately to start implementation of this plan.

Near Term

- Investigate TNC service options, and develop policies with regards to provision of such services
- Extend the Saturday span of service Until 6 PM
- Reduce early morning weekday service
- Shift Route D and Route L 3 to 5 minutes earlier
- Realign Route A on Orlando Avenue
- Improve PM commuter service to Mahany Park

- Replace the Maidu Park commuter service stop with service to the Louis/Orlando Transit Center
- Eliminate reverse commute service
- Modify commuter schedules to better reflect realistic travel times
- Contact employers in Richards Boulevard area (and potentially conduct employee surveys) to identify the potential for commuter service
- Conduct passenger surveys regarding mid-day commuter service
- Purchase necessary replacement vehicles
- Begin grant and procurement process for three additional commuter buses
- Participate in a regional Battery Electric Bus Readiness Study
- Continue ongoing bus stop improvement program
- Participate in discussions regarding a regional day pass program and Sierra College student pass program

Mid-Term

- Provide TNC Subsidy for Trips Between the Roseville Train Station and nearby Transit Hubs
- Expand Commuter Service
- If vehicle availability allows, operate PM Routes 3 and 10 with different buses
- Purchase seven replacement commuter buses
- Initiate mid-day Commuter Service
- Continue ongoing bus stop improvement program

Long-Term

- Procure five new DAR vehicles in 2025
- Review delays on Capital City Freeway and review the Commuter Service route

- Continue ongoing bus stop improvement program
- Prepare transit master plan for the West Roseville area
- Purchase four replacement fixed route vehicles



TRANSPORTATION COMMISSION COMMUNICATION

Title: Draft Planning and Feasibility Study for the Dry Creek Greenway West Multi-Use Trail (ACTION REQUIRED)

Contact: Jeannie Gandler, jgandler@Roseville.ca.us, 916-746-1289

Meeting Date: 2/19/2019

Item #: 6.3.

RECOMMENDATION

Staff recommends that the Transportation Commission:

1. Accept the Staff Report on the Dry Creek Greenway West Multi-Use Trail Planning and Feasibility Study;
2. Accept public comment on the Dry Creek Greenway West Multi-Use Trail Planning and Feasibility Study; and
3. Recommend the City Council accept the Dry Creek Greenway West Multi-Use Trail Planning and Feasibility Study.

BACKGROUND

Study Area

The Dry Creek Greenway West (DCG West) Trail is identified in the City of Roseville Bicycle Master Plan and the Placer County Regional Bikeway Plan as a Class I shared use bikeway that would run alongside Dry Creek from Cook-Riolo Road in Placer County to Riverside Avenue in Roseville (Figure i -1: Dry Creek Greenway West Study Area, Page i). The project would provide important local connections to existing Class I paths at Saugstad Park and Cook Riolo Road. The trail would also connect to the proposed Dry Creek Greenway East path that will extend along Dry, Cirby, and Linda Creek from Riverside Avenue to Old Auburn Road and for which the City is currently in the planning and environmental review process.

The three mile segment that is part of this planning and feasibility study would travel through the Theiles Manor neighborhood, Union Pacific Rail yard, adjacent to the City Corporation Yard, and in portions of unincorporated Placer County. The project is part of the Greater Dry Creek Parkway trail system with future regional connections to the American River Parkway and Sacramento Northern trails, (refer to DCG West Feasibility Study – Regional Trail System map - Page 3).

SCTP Grant and PCTPA Agreement

The varied nature of this trail corridor and the associated design challenges made this project a suitable candidate for the Federal Transit Administration Section 5304 Sustainable Communities Transportation Planning (SCTP) grant program. In 2016, the City of Roseville, in partnership with Placer County and the Placer County Transportation Planning Agency (PCTPA) submitted a SCTP grant application for the Dry Creek Greenway West Multi-use Trail Planning and Feasibility Study and was awarded funding. As the lead applicant, PCTPA administers the grant with oversight from Caltrans District 3. The City of Roseville is co-applicant and, through a sub-recipient agreement with PCTPA approved by City Council on October 18, 2017, receives grant funds for the study.

Consultant Selection and Approval

On June 7, 2017, the City of Roseville released RFP #15-53 for the Dry Creek Greenway West Planning & Feasibility Study. The City received four proposals for this project that were reviewed by an eight member committee consisting of staff from the PCTPA, City of Roseville, Placer County, RTC, and Caltrans. Dokken Engineering was chosen based upon the quality and content of their scope of work and presentation which included a strong emphasis on the public outreach component of this study and collaboration with stakeholders. On October 18, 2017, City Council approved the professional services agreement with Dokken engineering.

Rails to Trails Conservancy (RTC)

The RTC is also listed as a co-applicant in the grant to take advantage of their experience planning trails along active rail lines. RTC's role has been to provide professional services to assist with the community outreach component of the study, research similar projects and potential funding sources, and participate on the project development team.

Planning and Feasibility Study Goals

On October 19, 2017, the project team, consisting of representatives from the City of Roseville, Placer County, PCTPA, Caltrans and RTC met with Dokken engineering to launch the project. The goals of the project included:

- Identify an Active Transportation Route along the Dry Creek Greenway West corridor;
- Based on field reviews and existing local and regional planning documents, develop recommended alignments that will provide regional connectivity to existing and future trails; and,
- Using information gathered from field reviews, existing planning documents and the public engagement process, develop a recommended alignment that is compatible with the neighboring environment, feasible to build, and competitive for grant funding.

Study Goals and Process

Meeting the goals of this feasibility study involved the following steps:

- Collection and review of available background information from the City of Roseville and Placer County;
- Site walks with staff and adjacent property owners and facility operators;
- Identification of existing conditions, opportunities and constraints;
- Development of potential alignments;
- Public engagement;
- Evaluation of alignment options; and,
- Proposing a recommended alignment.

To ensure continuity with existing and planned trails in Placer County and the City of Roseville, this

feasibility study was developed based on relevant standards used by Placer County jurisdictions including:

City of Roseville;

- General Plan
- Design/Construction Standards
- Creek and Riparian Management and Restoration Plan
- GIS Data Clearinghouse
- Public Participation Plan

Placer County;

- Riolo Vineyards Specific Plan
- Design Standards and Guidelines
- Dry Creek West Placer Community Plan
- Open GIS Data

Public Engagement

A public engagement plan was developed to introduce the study, gather input and ideas about trail location, assess community support and keep people informed about the various steps in the study process. Methods of engaging the public included:

- Project partner and key stakeholder meetings, interviews, and site visits;
- Direct mailers to introduce the study and invite participation at community workshops or online;
- A community workshop and online questionnaire to introduce the study, solicit input and assess community support, (over 150 people participated);
- A second community workshop and online virtual workshop to present potential trail alignments and gather input, (over 200 people participated);
- Ongoing social media postings to share information about outreach events and to solicit input from the community;
- Digital newsletters including email and text messaging;
- Frequently updated links to feasibility study information on public agency websites; and,
- Local news media, email notifications and, calls to stakeholders.

Evaluation of Alignment Options

After extensive review of existing planning documents, field walks, stakeholder interviews, a biological needs assessment, a community workshop, and an online questionnaire, the study was broken down into six “Areas” with several possible alignments in each area. The alignments were presented at a second community workshop and through a virtual online workshop. Participants in both workshops were given an opportunity to comment on the proposed alignments, and all alignments were evaluated against a list of criteria which included (Table 5A – Alignment Evaluation Criteria, Page 64):

- Proximity of path alignment to private property, on private or public property, compatibility, and effect on current aesthetics;
- Path Users experience including separation from busy roads, convenient access to key destinations, and aesthetic experience;
- Public Safety issues such as access for emergency vehicles, separation from busy roads, visibility of the path, and minimizing dark or confined areas;
- Environmental considerations including minimizing impacts to sensitive environmental

- resources and obstruction to creek and erosion; and,
- Opportunities, considerations and consistency regarding municipal operations (City of Roseville and Placer County) existing plans, facilities, utilities and resources for safety, security, construction, and maintenance.

The public input and evaluation process resulted in a recommended alignment for a paved multi-use trail through the study area.

Recommended Alignment

Given the available information, the recommended alignment represents the most favorable location for a continuous path connecting all six sections/Areas through the study corridor (Page 66 in the attached study). Alignment recommendations could change depending on the outcome of studies during the environmental documentation and preliminary engineering phase of the project.

Area 1

Starting at Area 1 the recommended alignment connects to the existing Cook Riolo Road Bike Path just north of the Cook Riolo Road Bridge. The trail loops under the north end of the bridge, follows the existing utility access road north of the creek, passes the south side of the Creekview Ranch School, and continues along the south edge of the open pasture roughly following the sewer easement to near the south west corner of the Waste Water Treatment Plant (WWTP). From there it turns to the south, following the maintenance road towards the creek, crosses the creek channel at bridge C1, and then Dry Creek. The major factors leading to the selection of “Alignment 1-2” are as follows:

- This northerly alignment is nearly all on high ground, limiting exposure to flooding and impacts on the flood plain;
- It generally follows an existing sewer easement, minimizing right-of-way costs and providing improved access to the sewer;
- Approximately one quarter of the alignment would be on publicly-owned lands;
- It would provide opportunity for a direct link to the Creekview Ranch School and alignments south of Dry Creek would not;
- It would provide opportunity for employee access to the WWTP;
- It would affect only two private parcels. One of the parcels has an existing sewer maintenance road in an easement crossing the entire property. The other parcel is tentatively planned for development and the owners have expressed willingness to work with the County to incorporate the trail into their development plans.
- It connects to the strongly recommended alignment in Area 2.

The estimated cost to construct Alignment 1-2 in Area 1 is approximately \$5,860,000.

Area 2

The recommended alignment in Area 2 is Alignment 2-3, which starts at the bridge crossing and follows the south bank of Dry Creek on City of Roseville property along the north edge of the Roseville Corporation Yard. The major factors leading to selection of Alignment 2-3 are as follows:

- This southerly alignment is on higher ground than the northerly alignments, limiting exposure to flooding and impacts on the flood plain;
- It minimizes the length of interface between the trail and the WWTP, simplifying separation for plant security purposes; and,

- It would provide opportunity for employee access to the Corporation Yard. Collectively, with Alignment 1-1 in Area 1, access would be provided to both the WETP and the Corp Yard.

The estimated cost of Alignment 2-3 in Area 2 is \$1,420,000.

Area 3

Alignment 3-5, in Area 3, starts at the south side of Dry Creek near the east end of the Corporation Yard and continues along the south bank of two undeveloped private parcels to a crossing of the creek near Atkinson Street. The crossing takes the trail to the eastern edge of an undeveloped parcel owned by the City of Roseville and would follow the eastern edge of this parcel to an at-grade crossing of Booth Road. This alignment was selected for the following reasons:

- This southerly alignment is unconstrained by existing development;
- It affects fewer private parcels (2) than the northerly alignment (5);
- This alignment follows a proposed new sewer alignment, providing opportunity for dual use;
- The bridge which would be required to cross Dry Creek is a potential crossing for sewer lines as well;
- It makes use of the City-owned parcel on Booth Road which could be a potential trailhead; and,
- It is entirely within City right-of-way.

The estimated cost of this alignment is \$2,650,000.

Area 4

Alignment 4-3 is the recommended alignment for Area 4 in the study area. This alignment starts at the north side of Booth Road at the southwest corner of Beatty Way neighborhood, the alignment would follow the north side of Booth Road within the road right-of-way as a side path, crossing the Walker Drive entrance to the neighborhood at-grade. It would continue along the north side of Booth Road to Atkinson Street and then continue as a side path along Atkinson Street under the Atkinson undercrossing of Foothills Boulevard to the Denio's loop, continuing along the inside of the ramp to its intersection with Foothills Boulevard. The major factors leading to selection of Alignment 4-3 are as follows:

- Of the two low-cost alignments within this area, it is the only one compatible with the three feasible alignments for Area 5; and,
- It is entirely within City right-of-way.

The estimated cost to construct Alignment 4-3 is \$220,000.

Area 5

In Area 5, Alignment 5-3 is the recommended alignment. This section of trail starts at the southeasterly corner of the Denio's loop ramp and Foothills Boulevard, and follows the northeast side of the Foothills Boulevard bridge as a barrier separated side path across Atkinson Street, the UPRR yard, and Dry Creek. Then the trail would loop sharply back to the north after leaving the south end of the Foothills Boulevard bridge, cross Dry Creek again and follow the north side of the creek along the southerly edge of the UPRR parking lot to Vernon Street. The trail would go under the north end of the Vernon Street bridge over Dry Creek. The major factors leading to the selection of Alignment 5-3 in Area 5 are as follows:

- It was the only one of the three alignments in Area 5 considered feasible that had a positive

rating based on the criteria matrix;

- By widening the existing sidewalk and narrowing existing lanes, shoulders, and median, this alignment can be incorporated into the two Foothills Boulevard bridges without widening the bridges or reducing the number of traffic lanes;
- Of the feasible alignments, it provides the best user experience and greatest safety for users; and,
- It is mostly within City right-of-way, and the portion within UPRR property would be along the former City subway right-of-way at the edge of the lightly used UPRR parking lot.

The biggest drawback of this alignment is that it requires UPRR right-of-way east of the rail yard. The estimated cost to construct this alignment is \$5,560,000.

Area 6

Alignment 6-2 is the recommended alignment in Area 6. This alignment starts at the northeastern corner of the Vernon Street bridge over Dry Creek, follows the north bank of Dry Creek to Riverside Avenue, then crosses under the existing Riverside Avenue bridge to connect with the proposed Dry Creek Greenway Trail East. The major factors leading to the selection of Alignment 6-2 are:

- It crosses only one private parcel with a potentially cooperative owner;
- The exact alignment can be designed to minimize impacts to the potential development of this property; and,
- It has high value for users as it closely follows the contours of the creek bank while staying on relatively high ground.

The estimated cost to construct Alignment 6-2 is approximately \$650,000.

It should be noted that Alignment 6-1 is considered a viable alternative to Alignment 6-2 having similar cost and similar impacts on private property. This alignment would follow the existing sewer maintenance road through the center of the property. The choice of alignment would be left to final design and coordination with potential development plans for the parcel.

Cost

The estimated cost for construction of the entire trail is \$16,360,000. Estimated costs include preliminary engineering and environmental documentation, acquisition of right-of-way, construction, construction administration, and includes 10% for mobilization and a 25% contingency. The right-of-way costs are based on acquisition of a 30-foot easement along properties not owned by the City or County. The cost estimates do not include any annual maintenance costs nor can they anticipate many details that might further inform the capital costs, such as the results of drainage and geotechnical investigations, and the need for utility relocations. The unit costs for the estimate are based on Caltrans cost data and recent relevant completed projects in the region. An estimate for each alignment alternative was used as a criterion in the evaluation of the recommended alignment. However, the recommended alignments are not necessarily the least costly options for each area as cost is only one criteria considered.

Next Steps

Once the feasibility study has been reviewed and accepted by the responsible parties (Roseville Transportation Commission, Western Placer Municipal Advisory Council, Placer County Parks Commission, Roseville City Council, Placer County Transportation Planning Agency, and Placer County Board of Supervisors) and as funding becomes available, the project will move into the preliminary engineering and environmental documentation phase. During this phase, engineering

will be further refined, and the public will have opportunities to comment on the recommended alignment during approval of the final Environmental Document. After approval of the final Environmental Document, the project will move into Final Design and Right-of-Way negotiations, and finally construction. Advancing the project forward through all necessary steps is contingent on available funding (DCG West Study – Appendix H: Funding). We anticipate this project will compete well for state and federal Active Transportation grants. It is expected the City and County will continue to collaborate to obtain grant funding, coordinate the necessary processes, and complete the project if directed to do so.

Respectfully Submitted,

Jeannie Gandler, Alternative Transportation Analyst II/Bikeways

Jason Shykowski, Acting Public Works Director

ATTACHMENTS:

Description

- 1-Exec Summary-Study Goals & Process-DCGW- Planning-Feasibility Study
- 2-Alignment-Options-DCGW-Planning-Feasibility-Study
- 3-Recommendations-DCGW-Planning-Feasibility-Study
- 4-Design-Implementation-DCGW-Planning-Feasibility-Study
- 5-Appendices-DCGW-Planning-Feasibility-Study

Draft Planning and Feasibility Study for the Dry Creek Greenway West Multi-Use Trail



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District 2 - Robert Weygandt
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i. Executive Summary

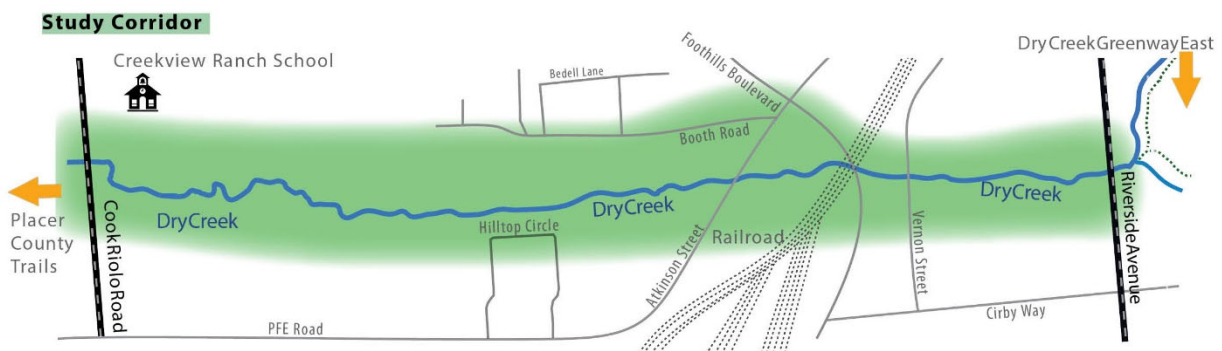
In collaboration with Placer County and the Rails-to-Trails Conservancy, the City of Roseville is undertaking a Planning and Feasibility Study for the Dry Creek Greenway West. This study will evaluate the feasibility of a three-mile multi-use trail between Cook Riolo Road and Riverside Avenue along the Dry Creek Corridor.

This potential trail would ultimately connect to the existing Dry Creek Trail in unincorporated Placer County via the Cook Riolo Road multi-use path, and the proposed Dry Creek Greenway East (Riverside Avenue to Old Auburn Road). The Dry Creek Greenway is just one of the trails in the City of Roseville and Placer County bicycle master plans.

In addition to being identified in the City of Roseville *Bicycle Master Plan* and the *Placer County Regional Bikeway Plan*, the Dry Creek Greenway (East and West) was identified in the *Placer County Dry Creek Greenway Regional Vision Plan* as part of a continuous and coordinated system of preserved lands and habitat providing a connecting corridor from the Sacramento County line to the Folsom Lake State Recreation Area. Specifically, the Dry Creek Greenway West Trail would be part of a continuous 70-mile loop of trails including the Dry Creek Greenway, Dry Creek Parkway, Ueda Parkway, American River Parkway, and Baldwin Reservoir Connection.

The Dry Creek Greenway West study area, shown in *Figure i-1*, generally straddles Dry Creek from Cook Riolo Road to Riverside Avenue. Within this area is a mix of low-density residential, agricultural, light industrial and municipal land uses on a combination of public and private property. Similarly, the character of the creek within the study area varies from channelized and stabilized to meandering and mostly undisturbed. Within the study area, Dry Creek crosses five roads, and the Union Pacific Railroad J.R. Davis Yard (UP Railroad Yard).

Figure i-1: Dry Creek Greenway West Study Area



Preparation of this feasibility study involved the following steps:

- Collection and review of available background information from the City of Roseville and Placer County,
- Meetings with interested public agencies,
- Site walks with staff and property owners,
- Identification of existing conditions, opportunities and constraints,
- Development of potential alignments,
- Public engagement,
- Evaluation of alignment options,
- Preparation of Feasibility Study Report

The project team collected and reviewed relevant planning and engineering documents and existing mapping to develop existing conditions mapping and identify opportunities and constraints. This existing data collection was supplemented by meetings and field walks with staff and property owners along the study corridor to further clarify and understand the existing conditions. In addition, A *Biological*



A family enjoying one of Roseville's multi-use trails.

Resources Memorandum was prepared for the proposed project, which consisted of an analysis of biological resources within the feasibility study area and includes recommendations to minimize impacts to sensitive resources and natural communities.

There are several important constraints that will create challenges to completion of this project. However, all are balanced by opportunities to address the challenges.

Most of the corridor is privately owned; however, a large portion of the private property is concentrated into several very large parcels. At least two of these parcels have potential development plans that will provide opportunities to work with owners to incorporate the trail into proposed projects.

The five roads crossed by the creek will all require safe and convenient crossings for trail users. All have existing bridges over the creek that were constructed to accommodate the trail underneath (Cook Riolo Road bridge) or can be modified to accommodate the trail beneath (Atkinson Street, Foothills Boulevard, Vernon Street and Riverside Avenue).

Perhaps the greatest challenge will be crossing the UP Railroad Yard. While the existing railroad bridges over the creek would provide an opportunity for the trail to pass under, the Union Pacific has indicated that they will not allow the trail to be constructed through the rail yard. There is, however, a viable alternative, which consists of re-allocating space on the existing Foothills Boulevard overcrossing of the UP Railroad Yard to provide a barrier-protected path on the bridge, while maintaining all existing traffic lanes.

Public engagement was an important component of this study. In addition to field reviews and meetings with property owners and other stakeholders, there were two community workshops, an online questionnaire and workshop, and three outreach efforts at community events to gather input on the project from residents in Roseville and Placer County.

The study evaluated a total of thirty-three alignment segments based on twenty-three evaluation criteria to determine a recommended alignment. The recommended alignment, shown in *Exhibit 5-1, Recommended Alignment* (at the end of Section 5 of the report), generally follows the north side of Dry Creek from Cook Riolo Road to the Roseville Wastewater Treatment Plant, then crosses to the south side and follows the south side of Dry Creek to near Atkinson Street, turns north to Booth Road, follows Booth Road to Foothills Boulevard, where it uses the existing Foothills Boulevard bridge to cross the UP Railroad Yard, then generally follows the north side of Dry Creek to Riverside Avenue. The estimated cost for the recommended alignment is \$16,360,000, including preliminary engineering and environmental documentation, right-of-way, construction and construction administration, 10 percent for mobilization, and a 25-percent contingency.

Funding for trail construction has not been identified at this time. Several potential funding sources are anticipated, including federal, state, regional and local sources, as well as private and non-traditional ones. It should be noted that General Funds are not included in the list of potential funding sources for this facility as they typically are not used by the City or County for trails.

The significant cost of the project will likely lead to constructing the trail in the following three phases:

- Cook Riolo Road Bike Path to Booth Road
- Booth Road to Vernon Street
- Vernon Street to Riverside Avenue (Connection to Dry Creek Greenway East).

Upon acceptance of this feasibility study by the Placer County Board of Supervisors and the Roseville City Council, the next steps at their direction will include:

- Environmental documentation and preliminary engineering
- Procurement of funding
- Right-of-way acquisition
- Construction.

The schedule is dependent on funding.

1. Background

1.1. Introduction

The Dry Creek Greenway West Planning and Feasibility Study, funded by a Federal Transit Administration (FTA) Section 5304 Sustainable Communities grant administered by Caltrans, provides a conceptual planning foundation for the Dry Creek Greenway West Trail corridor. The study has been prepared for the City of Roseville and Placer County, in collaboration with the Placer County Transportation Planning Agency (PCTPA) and the Rails-to-Trails Conservancy.

The study evaluates the feasibility of a 3-mile multi-use path between Cook-Riolo Road in Placer County and Riverside Avenue in the City of Roseville.

1.2. Purpose and Need Statement

The purpose of the Dry Creek Greenway West Multi-Use Trail project is to provide local residents a safe and convenient active transportation option along the Dry Creek corridor either by bike (*Photo 1-1*) or on foot. Further, it would provide additional connectivity between the local schools, residential developments, and commercial developments. The



Photo 1-1: A family enjoying one of Roseville's trails.

multi-use trail will also provide regional connectivity to existing and future trails to create a regional loop for the public to enjoy. The Dry Creek Greenway West Multi-Use Trail is a critical component of the planned and existing bikeway and trail system within the City of Roseville and unincorporated Placer County. It will provide an additional off-street active transportation route through the region.

1.3. Relevant Planning Documents

The Dry Creek Greenway West Multi-Use Trail is consistent with the region's Bicycle Master Plans, which identify it as a part of the trail network within the region, which will make bicycling more safe, comfortable, convenient and enjoyable for all users. Additionally, the multi-use trail is consistent with the Circulation Element of the *Roseville General Plan*.

Specific relevant planning documents include the following:

- *City of Roseville Bicycle Master Plan (2008)*
- *Placer County Regional Bikeway Plan (2002/2018)*
- *Placer County Parks and Trails Master Plan (in progress)*
- *Dry Greenway Concept Report (1996)*
- *Dry Creek Greenway Regional Vision (2004)*
- *SACOG Regional Bicycle Pedestrian, and Trails Master Plan*

In addition, to ensure continuity with existing trails in Placer County and the City of Roseville, this feasibility study was developed based on relevant standards and plans used by these jurisdictions. These included:

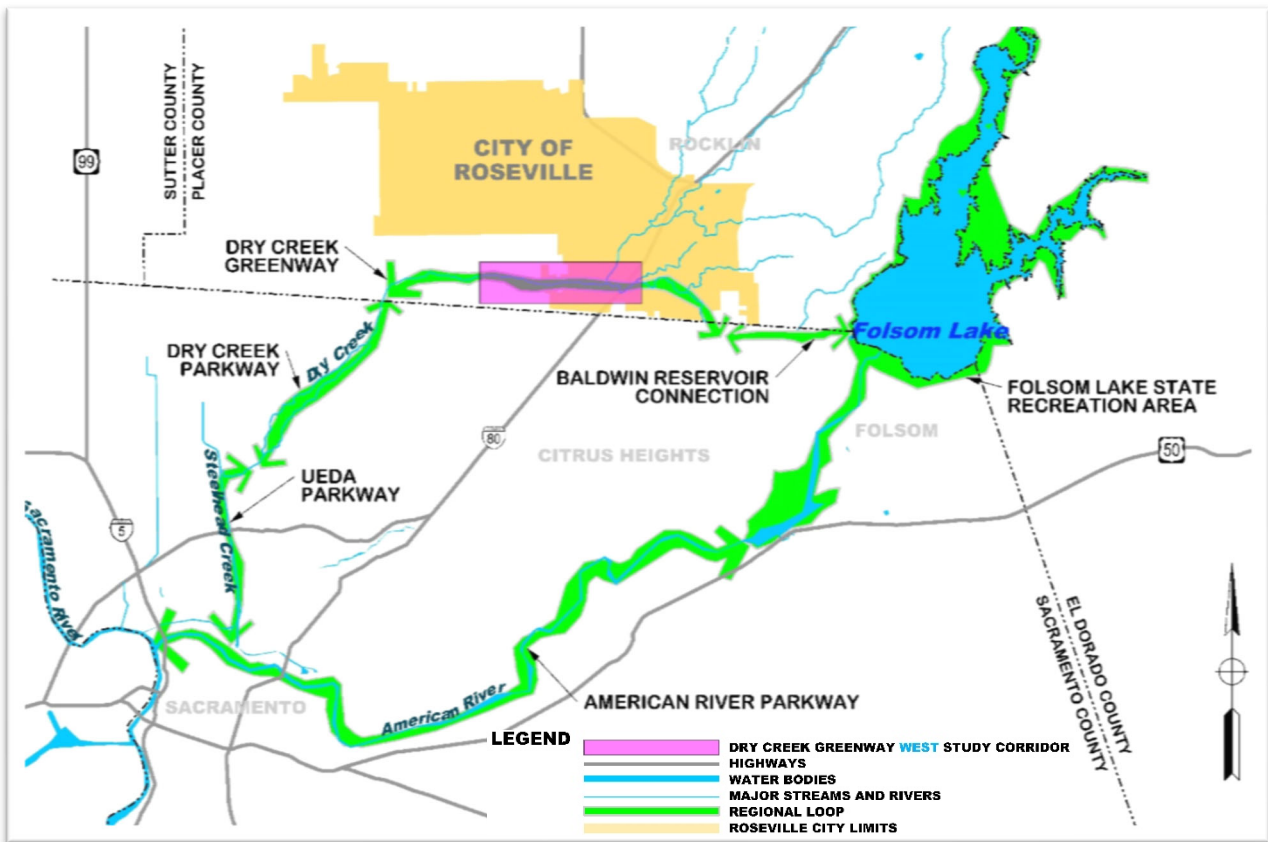
- *City of Roseville General Plan 2035*
- *City of Roseville Design/Construction Standards*
- *City of Roseville Creek and Riparian Management and Restoration Plan*
- *City of Roseville GIS Data Clearinghouse*
- *City of Roseville Public Participation Plan*
- *Placer County Riolo Vineyards Specific Plan*
- *Placer County Design Standards and Guidelines*
- *Placer County Dry Creek West Placer Community Plan*
- *Placer County Open GIS Data*

1.4. Regional Setting

The Dry Creek Greenway is in Placer County and includes over 62 miles of open space corridor from Folsom Lake on the east to the Placer-Sacramento County line on the west, to the City of Auburn on the north. Trails are proposed along approximately 36 of the 62 linear miles of open space.

According to the *Dry Creek Greenway Master Plan (2004)*, the vision for the Dry Creek Greenway is to create a multifunction open space that includes beneficial uses in the areas of recreation, habitat, floodwater conveyance, water quality, and others. Among the objectives of the plan is to create a connecting trail corridor from the Sacramento County line to the Folsom Lake State Recreation Area. Specifically, the Dry Creek Greenway Trail (including the existing Dry Creek Trail in Placer County, the Dry Creek Greenway West; the subject of this study, and the proposed Dry Creek Greenway East) will connect the Dry Creek Parkway in Sacramento County with the Folsom Lake State Recreation Area.

Figure 1-1: Regional Trail Network



These trails, together with the Uda Parkway along Steelhead Creek, the American River Parkway, and the Baldwin Reservoir Connection, when complete, will result in a seamless 70-mile loop of trails through northeastern Sacramento County and southwestern Placer County along (see *Figure 1-1*). To date, slightly more than half of the 70-mile loop is complete, including approximately 3.7 miles of the Uda Parkway, 2.0 miles of the Dry Creek Parkway in Sacramento County, 1.6 miles of the Placer County portion of the Dry Creek Trail, and 30 miles of the American River Parkway Trail.

1.5. Project Setting

The study area for the Dry Creek Greenway West Multi-Use Trail Planning and Feasibility Study comprises approximately 3 miles of creek corridor, generally along Dry



Photo 1-2: Existing multi-use path along Cook Riolo Road, looking north.

Creek from Cook Riolo Road to Riverside Avenue. The proposed trail will connect to the existing multi-use path along the west side of Cook Riolo Road, shown in *Photo 1-2 (on previous page)*, and the proposed Dry Creek Greenway East Multi-Use Trail just east of Riverside Avenue and north of Dry Creek.

Figure 1-2 shows the proposed typical section of the multi-use trail within the city limits of the City of Roseville. *Figure 1-3* shows the proposed typical section of the multi-use trail in Placer County outside of the Roseville city limits.

Figure 1-2: Proposed Multi-use Trail Typical Section in the City of Roseville

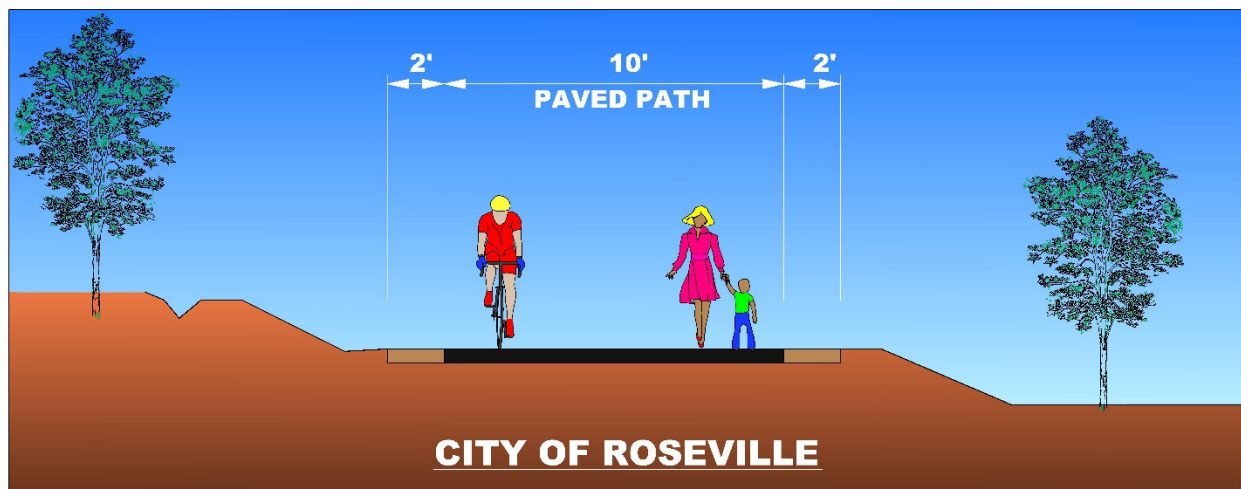
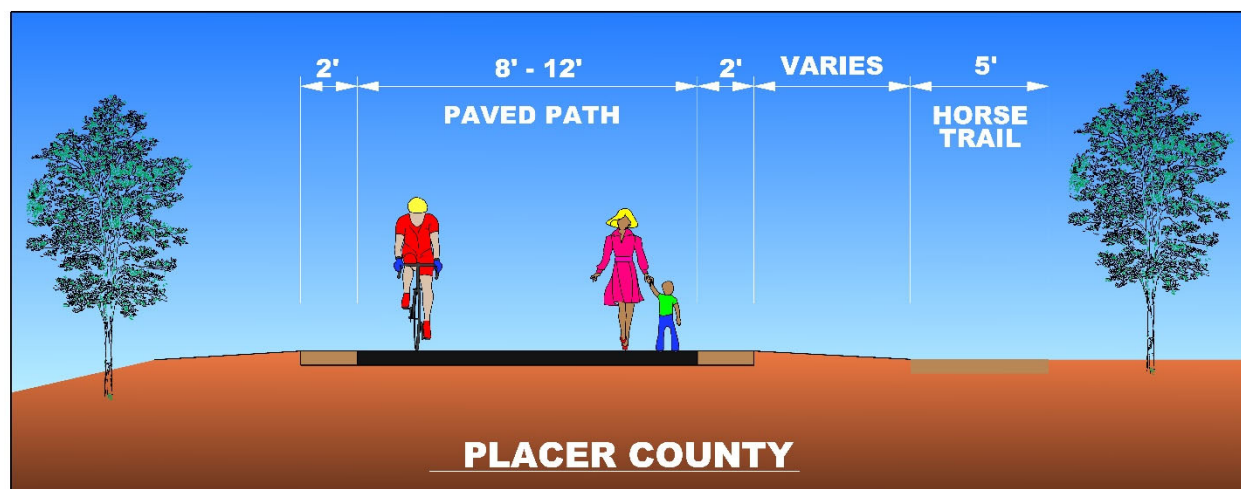


Figure 1-3: Proposed Multi-use Trail Typical Section in Placer County



The study area starts in unincorporated Placer County where Dry Creek flows under Cook Riolo Road. The trail would be constructed adjacent to the creek through privately-owned rural acreage consisting of grazed grasslands and riparian areas (see *Photo 1-3*), leading

into the City of Roseville, where the study area includes privately owned residences and light industrial uses on large lots. The study area is bisected by the Union Pacific Railroad J.R. Davis Yard (UP Railroad Yard) and continues east through the City of Roseville following Dry Creek to Riverside Avenue.



Photo 1-3: View of Dry Creek riparian area east of Cook Riolo Road.

The proposed trail would pass through or near the state-designated low-income

Roseville Heights central Roseville: the Theiles Manor communities in central Roseville. Residents with lower incomes are more inclined than those with higher incomes to bicycle as their primary mode of transportation, making safe bicycle facilities a critical component of transportation equity. Trail connections to Vernon Street and Riverside Avenue will facilitate multi-modal connections for trail users, consistent with the goals of the Federal Transit Administration, Section 5304, Sustainable Communities program, administered through Caltrans, which helped fund this study.

1.6. Study Methodology

The *Dry Creek Greenway West Multi-Use Trail Planning and Feasibility Study* consisted of the following activities:

- Collection and review of available background information from the City of Roseville and Placer County,
- Meetings with key stakeholders and interested public agencies,
- Site walks with staff and property owners,
- Identification of existing conditions, opportunities and constraints, including documentation of biological resources,
- Development of potential alignments,
- Public engagement, including two (2) Community Workshops, an on-line survey, a virtual workshop and pop-up information booths at community events,
- Evaluation of alignment options,
- Preparation of this Feasibility Study Report.

After acceptance of this planning and feasibility study by the Placer County Board of Supervisors and Roseville City Council, the next steps at their direction are:

- Environmental documentation and preliminary engineering
- Procurement of funding
- Right-of-way acquisition
- Construction.

These next steps are described in more detail in *Section 6, Design and Implementation*, of this report.

2. Existing Conditions, Opportunities and Constraints

The proposed Dry Creek Greenway West Multi-Use Trail would be in an area that spans 3 miles of rural, industrial and residential properties adjacent to Dry Creek. This section of the study describes in general terms the existing conditions along the corridor, as well as some of the potential opportunities, or reasons why the trail would work somewhere within this corridor, and potential constraints, or challenges, involved in constructing the project.

2.1. Land Uses/Zoning

The Dry Creek Greenway West corridor passes through a mixture of low density residential, open space, municipal, and industrial land uses. To the east of Cook Riolo Road and north of Dry Creek, land use is identified as rural, low density residential, and includes the Creekview Ranch School, in the Dry Creek Joint Elementary School District. To the east of the school, there are two large, mostly undeveloped, privately-owned properties, both of which are in the early stages of potential development planning.

South of Dry Creek, and directly east of Cook Riolo Road, the feasibility study area runs through private, low density residential lands. Further east of these large properties, Dry Creek runs through property owned by the City of Roseville occupied by the Roseville Waste Water Treatment Plant (WWTP) on the north (*Photo 2-1*) and Roseville Corporation Yard (Corp Yard) to the south. Between the WWTP/Corp Yard and Atkinson Street, the open space is surrounded by mixed industrial, light industrial and residential land uses.



Photo 2-1: View of Roseville WWTP from Corp Yard.

East of Atkinson Street, the parcels are zoned for industrial, as these are owned by the Union Pacific Railroad (UPRR) and contain a wide variety of railroad lines and infrastructure. East of the railroad is more open space, residential and commercial areas.

The study area on the north side of Dry Creek, however, includes an existing utility easement located on private property (*Photo 2-2*), which presents an opportunity for joint use. All alignment options require right-of-way acquisition. A map showing land use along the corridor is included in *Appendix A*.



Photo 2-2: Utility maintenance road on private property between Vernon Street and Riverside Avenue, looking east.

2.2. Flood Management

Most of the proposed Dry Creek Greenway West Multi-Use Trail will fall within the Regulatory Floodplain or High Hazard Flood Zone along Dry Creek and its tributary drainages, as defined by the Federal Emergency Management Agency (FEMA).

Constructing improvements in the floodplain has the potential to impact flood levels. If not properly designed, the trail and its associated structures, such as bridges and retaining walls, may be susceptible to flood damage or may cause flood damage to adjacent properties. Also, during storm events, sections of the trail may experience flooding and will be unavailable to the public.

To prevent damage to the trail, it will be designed to City of Roseville, Placer County Flood Damage Prevention Ordinance, Central Valley Flood Protection Board and Caltrans standards that dictate such criteria as the minimum elevation of the trail (freeboard), construction materials and design details. To prevent damage to adjacent properties, these standards prohibit any significant increase in flood elevations associated with the trail construction.

Any crossing under existing roadways and bridges, such as those at Atkinson Street, Vernon Street, or Riverside Avenue, will likely be the most vulnerable, as well as sections near the banks of Dry Creek. Any bridges necessary for the project will likely need to meet the criteria used in the *Dry Creek Greenway East Planning and Feasibility Study*, which required: 1) the bridge low chord elevations to be set three (3) feet above the water surface elevation during the 200-year storm event and 2) that the new bridge result in no water surface elevation increases greater than 0.10 feet during the 100-year storm event. Hydraulic models would be used during design of the trail to minimize impacts from flooding.

While flood management concerns, as described above, constrain the design of the trail within the floodplain, there are several benefits to locating the trail there. These include:

- Recreational access for trail users to the rich riparian habitat along the creek,
- Natural shade for trail users, provided by the native trees in the riparian zone,
- Maintenance and emergency access to the immediate vicinity of the creek,
- Access to drainage facilities that follow the creek,
- Minimizing impacts to buildable private property outside the floodplain.

Refer to *Section 4, Project Alignment Options*, for mapping of flood zones along the corridor.

2.3. Community Partnerships

A vital component of the proposed multi-use trail is fostering partnerships with the local community, including neighborhood groups, schools, and nearby churches. Participation by these groups in the planning process helps to ensure the trail is successful. Their members are familiar with the needs of the area and are potentially active users and patrons of the trail system. Collaboration with local community groups will ensure the trail meets any unique needs of the surrounding community.

An important neighborhood group is the Roseville Coalition of Neighborhood Associations (RCONA), a local group that oversees the 42 neighborhood associations within the City of Roseville. The mission of RCONA is to improve the social, physical, and economic health of the region. On-going coordination with RCONA has had and will continue to help ensure the local neighborhood associations are involved with the planning and implementation of the multi-use trail.

Consultations with public school representatives, including the Creekview Ranch School, were performed prior to and during the public engagement process for the *Dry Creek Greenway West Planning and Feasibility Study*. The local school administrators are

generally in support of the multi-use trail, as it would afford their students and faculty additional routes to go to and from the schools, as well as provide additional recreational opportunities near local schools. School representatives note concerns about security and access control to be addressed during project design.

In addition to meetings with representative organizations, the project team met on site, individually, or in small groups with several of the potentially-impacted property owners along the corridor to hear their thoughts and concerns about the project.

2.4. Destinations

The region has numerous destinations for both bicyclists and pedestrians including schools, parks and recreational facilities, employment centers, and commercial centers. Additional discussion regarding the opportunities and constraints associated with specific destinations are included in *Section 4, Project Alignment Options*.

There are five schools near the study area to which access could be improved through implementation of the trail. They are:

- Creekview Ranch Elementary School (*Photo 2-3*)
- Creekview Ranch Middle School
- St. Rose Catholic School
- George Cirby Elementary
- St. Albans Country Day



Photo 2-3: Creekview Ranch School.

There are eleven recreational facilities near the proposed multi-use trail, including parks, pools, a golf course, and various trails, access to which could be improved through construction of the trail. These parks and recreational facilities include the following:

- Oak Creek BMX Park (Privately owned and operated)
- Cresthaven Park
- Mark White Neighborhood Park
- Saugstad Park and Royer Park (via connection at Riverside/Darling)
- Johnson Pool
- Dry Creek Community Park
- Morgan Creek Golf Course (Private)

- Trails
 - Miner's Ravine Trail (Existing, shown in *Photo 2-4*)
 - Dry Creek Greenway East (Proposed)
 - Dry Creek Trail (Placer County, Existing).



Photo 2-4: Miner's Ravine Trail.

The trail would improve active transportation access to six main employment centers along the corridor, including the following:

- City of Roseville Corporation Yard
- City of Roseville Waste Water Treatment Plant
- UP Railroad Yard (*Photo 2-5*)
- Riverside Avenue/Kenroy Lane Area
- Industrial Park within Placer County (along Viking Place)
- Schools (See above).



Photo 2-5: UP Railroad Yard.

The proposed trail would improve access for bicyclists and pedestrians to local commercial centers such as the Denio's Farmer's Market, and centers along Cirby Way near Vernon Street and Riverside Avenue.

2.5. Utilities

While there are both public and private utilities within the feasibility study area, the proposed multi-use trail would be minimally-constrained by these utilities. Most of the trail would be constructed at-grade or using existing structures to go under roads, limiting utility impacts. PG&E is the major private utility within the study area, with multiple gas and electric lines crossing the creek corridor. There are also multiple communication utilities that will need to be identified during the design phase, some of which may require relocation.

Public utilities include Placer County water and sewer, and City of Roseville electric, sewer and water. These include two major public utility corridors/easements running

through the feasibility study area, one each for Placer County and City of Roseville sewer lines. The Placer County sewer line is located on the north side of the creek and extends from Cook Riolo Road to the waste water treatment plant. The City of Roseville sewer line is also located north of the creek and extends from the waste water treatment plant to Vernon Street and on to Riverside Avenue.

There is also a tentatively planned City of Roseville sewer line that would cross Dry Creek near the east end of the WWTP, run south of Dry Creek and extend from the Roseville Corporation Yard to Atkinson Street; however, there are private properties along the corridor and the City must work with the property owners to obtain an easement.

The City of Roseville's Utilities Department, as well as the County's Environmental Engineering Division, recommended the proposed trail follow a similar alignment as the existing sewer easements, which would allow the trail to provide dual use as access for maintenance of the sewer lines. Existing utility maps can be found in *Appendix B*.

2.6. Network Connections - Increasing Active Transportation

The Dry Creek Greenway West Multi-Use Trail would provide several network connections, gap closures and barrier removals for bicyclists and pedestrians, as well as providing additional creek access. The connections and barrier removals will facilitate increased bicycling and walking for transportation purposes in the study area and surroundings.

The regional connections were discussed in *Section 1.4, Regional Setting*.

Construction of the trail will improve or provide new local connections:

- Between Cook Riolo Road Trail and Atkinson Street that will allow cyclists and pedestrians to avoid PFE and Vineyard Roads, neither of which has bicycle or pedestrian facilities.
- To the Creekview Ranch School.
- Between Atkinson and Vernon Streets, reducing the major barrier presented by the UP Railroad Yard.
- Across Dry Creek between Cook Riolo Road and Atkinson Street, reducing out-of-direction travel for north-south-bound pedestrians and cyclists.
- Between Vernon Street and Riverside Avenue parallel to the very heavily-traveled Kirby Way.
- To the Miner's Ravine and Dry Creek Greenway East Trails.

Although Dry Creek is not currently an obvious barrier to active transportation, there are two very long stretches – 1.5 miles between Cook Riolo Road and Atkinson Street, and

0.5 miles between Vernon Street and Riverside Avenue – with no crossings of the creek. The proposed trail would potentially provide two creek crossings in the former stretch (for details, see *Section 4.1 Descriptions of Alignments* for Areas 1, 2 and 3, and *Exhibits 4-2 through 4-4* at the end of Section 4), and one in the latter (for details, see *Section 4.1 Descriptions of Alignments* for Area 6, and *Exhibit 4-6*, at the end of Section 4), as well as improving existing crossings at Foothills Boulevard and Vernon Street.

2.7. Topography

Along the corridor there are various alignment segments that allow for sufficient space above the creek bank to build a standard path. Many of the segments also have gentle profile slopes that will allow for minimal grading to meet standard slope requirements. Although many locations have pleasant topography, there are also areas where the creek banks are very steep, areas where the side slopes have failed, and areas where retaining walls will be necessary to reduce fill and impacts to adjacent properties or waterways. Two significant areas of steep banks – both along the south side of Dry Creek – are between Foothills Boulevard and Vernon Street, and between Vernon Street and Riverside Avenue.

In the locations with steep banks, as seen in *Photo 2-6*, creek crossings would allow an alternative to avoid the constraint. Fortunately, along this corridor the path is not constrained with steep slopes on both banks; in all locations, there is at least one alternative alignment either north or south of the creek that would allow the path to avoid steep banks. Locations of steep banks requiring retaining walls are shown on the *Area Trail Alignment Options* maps in *Section 4.1, Descriptions of Alignment Options*.



Photo 2-6: Steep bank along the south side of Dry Creek between Vernon St. and Riverside Ave.

2.8. Road Crossings

Road crossings by the trail are considered constraints because they present a barrier and potential safety hazard for trail users. The proposed Dry Creek Greenway West Bike Trail would cross up to seven roads ranging from low-speed, low-volume residential streets to five-lane, high-speed arterials. However, the existing bridges across Dry Creek at each

of these roads provide an opportunity for the trail to pass underneath alongside the creek with varying levels of modification.

2.9. Railroad Crossing

The UP Railroad Yard is the largest rail facility on the west coast. Two tracks cross Dry Creek on a bridge at the west side of the UP Railroad Yard adjacent to Atkinson Street, and 13 tracks and a maintenance road cross on two adjacent bridges near the east side of the corridor (see *Photo 2-7*). The Dry Creek Greenway West Trail must traverse these tracks in some fashion to link the eastern and western areas of Roseville with an uninterrupted trail route. The most direct route for the proposed trail would need to pass under all three rail bridges, the longer two extending approximately 350 feet, or utilize a newly-constructed tunnel. The Union Pacific Railroad *Guidelines for Railroad Grade Separation Projects (UPRR Guidelines)* explicitly prohibit the use of an existing structure that conveys water under an active UP Railroad line for a trail, and strongly discourage the construction of new trail tunnels beneath their property. If allowed by the UPRR, a new tunnel would face many of the same challenges as the use of the existing creek bridges, and at prohibitive expense.



Photo 2-7: Foothills Blvd. and UP Railroad Yard bridges over Dry Creek, looking north.

If the UPRR relented and allowed construction of the trail beneath the existing bridges, this portion of the trail's route would likely be subject to flooding during high flows, would

require “protective covers” over the trail to keep trail users safe from falling debris near the edges of the bridges, and user security concerns would need to be addressed because of the significant length of the crossing.

The UPRR will not allow site access to explore these options further. Therefore, for administrative, technical, and financial reasons, these options are considered infeasible.

As such, the most feasible routing for the trail is an on-road route over the UP Railroad Yard via the existing Foothills Boulevard bridges. This option would require road and bridge modifications, and trail users would need to navigate inclines on the approaches in both directions. There is, however, the side benefit of enhanced visibility of the trail from its placement along a well-traveled road, which may increase trail use.

2.10. Land Ownership on Potential Alignments

A major challenge for this project is the fact that most of the land required for all potential alignments is privately owned, with either residential or industrial/commercial uses. This includes a large swath of property between Atkinson Street and Foothills Boulevard owned by Union Pacific Railroad, which has indicated that they would not be open to allowing any multi-use trail to be constructed on their property. Any of the privately-owned parcels may become a constraint if property owners are not willing to sell or allow an easement for the trail. Further discussions with property owners affected by the recommended alignment option will be conducted when the project advances to the next phase of project development. While the preponderance of privately-owned land is a potential constraint, several of these parcels are very large, in various stages of planning for development, and have potentially cooperative land owners, which presents opportunities to work with these owners to incorporate the trail into the proposed developments.

2.11. Biological and Environmental Constraints

A *Biological Resources Memorandum* was prepared for the proposed project, which included analysis of biological resources within the feasibility study area and includes recommendations to minimize impacts to sensitive resources and natural communities. *Photos 2-8 and 2-9* show some typical

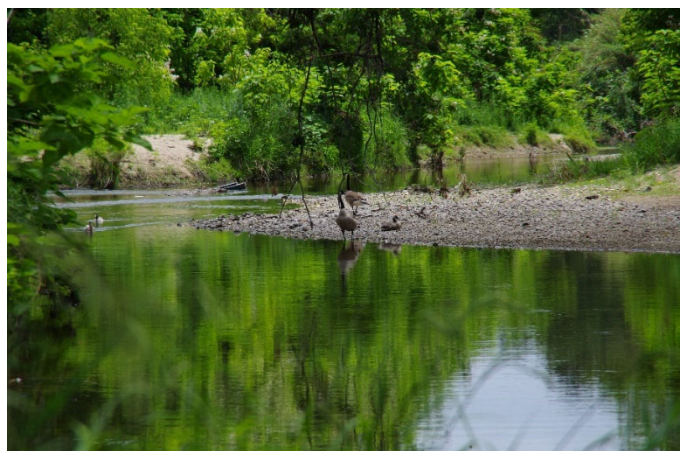


Photo 2-8: Representative biological resources along Dry Creek.

biological resources along the corridor. The Memo identified the following guidelines for planning of the Dry Creek Greenway West Multi-Use Trail to minimize environmental impacts:

- Follow existing utility corridors including easements and access roads where possible to avoid effects to sensitive communities including oak woodlands, riparian vegetation, and annual grasslands.
- Minimize the number of water crossings, including bridges over tributaries and Dry Creek, to maximize protection of existing riparian vegetation.
- Meander the trail through oak woodlands to avoid removal of any large and established native tree species. Avoidance of tree removal will reduce the amount of mitigation necessary to offset project effects.
- Route the trail on the north side of Dry Creek where possible to limit creek-side vegetation removal along the south bank and preserve shaded riverine aquatic habitat that is more common there.

If this project moves forward, further environmental review will be required, as described in *Section 6.1, Next Steps*.

The full *Biological Resources Memorandum* can be found in *Appendix C*.



Photo 2-9: Riparian habitat along Dry Creek, looking west from the Roseville WWTP.

3. Public Engagement Activities

3.1. Public Engagement Plan

A public engagement plan was developed to promote optimal community involvement and reach a diverse range of audiences. Efforts to involve the public included:

- Project partner and key stakeholder meetings and interviews
- Project partner and key stakeholder field visits
- Key stakeholder interviews
- Community workshops/open houses (See *Photo 3-1*)
- Virtual community workshop
- Online questionnaire
- Public communication
 - Direct mailers
 - Social media
 - Digital newsletters (email and text message)
 - Website
 - Local news media
 - Emails/Calls to stakeholders



Photo 3-1: Community Workshop #1.

Public engagement helped accomplish the following:

- Identified existing conditions within the project area;
- Highlighted potential concerns related to the trail;
- Gave community members opportunities to help identify the best trail alignments;
- Engaged the under-represented community.

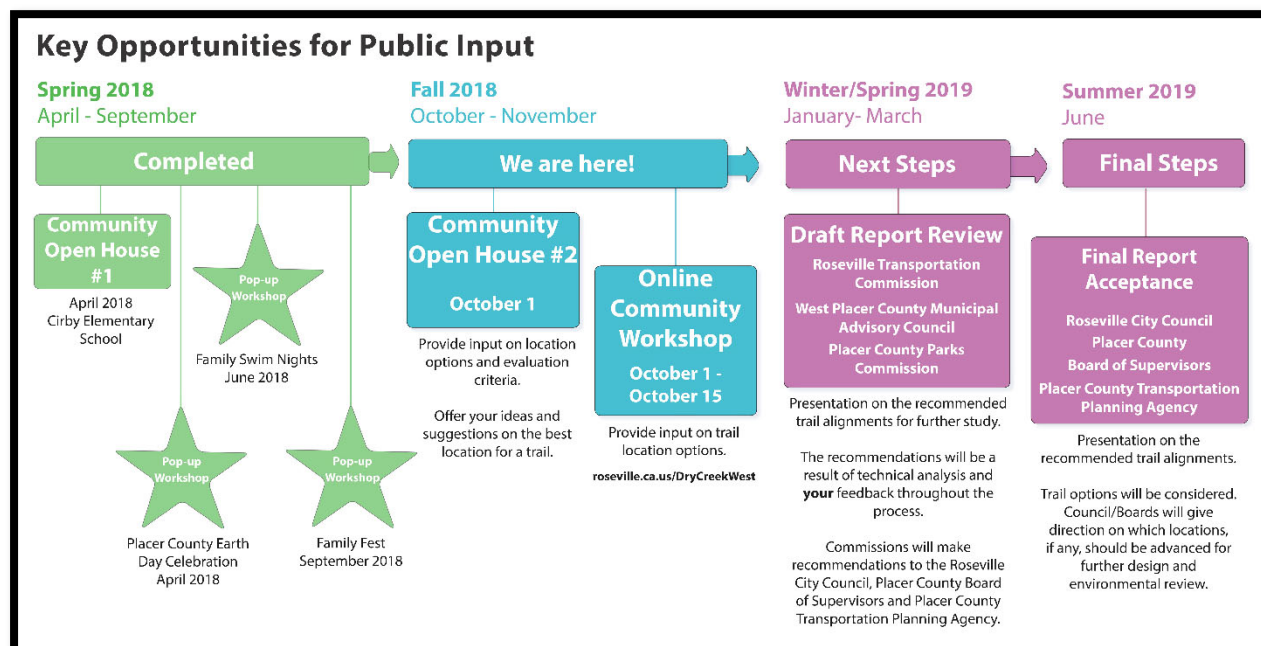
3.2. Public Engagement Activities

The public engagement activities, which included two open houses, three community events, and online workshops are illustrated on the diagram in *Figure 3-1* on the following page. Events started in the beginning of 2018 and continued through late summer of 2018.

The first opportunity for public input was a community open house on Monday, April 9, 2018, sponsored jointly by the City of Roseville, Placer County, the Placer County

Transportation Planning Agency (PCTPA), and the Rails-to-Trails Conservancy. The purpose was to seek early input from the community on existing area conditions and

Figure 3-1: Public Input Opportunities



trails in general. The open house was held from 6 – 8 p.m. at Cirby Elementary School in the multi-purpose room, located at 814 Darling Way, Roseville CA, 95678. A total of 50 community members signed in to the community open house and 25 community members submitted written questionnaire responses.

The City of Roseville also asked for community input at the Placer County Earth Day Celebration on April 21, 2018, held at Royer Park from 10 a.m. to 3 p.m. Questionnaires were printed and distributed to interested parties at Earth Day.

Additionally, an online questionnaire was open for two weeks from April 9 to April 24, 2018. The responses collected throughout the public engagement period were submitted in response to notifications at the open house, on social media, on the City’s website, and at the Earth Day community event. The City received a total of 156 responses during this period.

On Wednesday, June 20, 2018, and Wednesday, June 27, 2018, members of the project team staffed a booth at Family Swim Nights at Johnson Pool. Information was shared about the Dry Creek Greenway West project and alternative transportation options, and there was an opportunity to enter a contest to win a bike. Johnson Pool is

in the Theiles Manor Neighborhood and is within walking distance of the Roseville Heights Neighborhood, two of the City's underserved communities.

The City of Roseville had a second community event at Family Fest (*Photo 3-2*) on Saturday, September 29, 2018, in Vernon Street Town Square from 11 am to 2 pm. City of Roseville and Rails-to-Trail Conservancy representatives staffed a booth providing information about the proposed trail and interactive trail related activities that informed the communities adjacent to the feasibility study area about the idea of a bike trail for recreational/commuter purposes.



Photo 3-2: Public outreach at Roseville Family Fest.

The second community open house was held on Monday, October 1, 2018, sponsored jointly by the City of Roseville, Placer County, the Placer County Transportation Planning Agency (PCTPA), and the Rails-to-Trails Conservancy. The open house was held from 6 – 8 p.m. in the multi-purpose room at Cirby Elementary School. The project team presented trail alignment options and community members were able to share their thoughts on which alignment options they prefer and why or why not they prefer them. A total of 18 community members signed in to the community open house and four community members submitted written feedback forms.

On October 1, the project team began hosting a concurrent virtual community workshop on the City of Roseville's website. The virtual workshop was open from October 1, 2018 through October 26, 2018. The purpose of this online workshop was to reach community members who were not able to attend the Monday night community open house, and to reach a larger range of trail-users throughout Placer County, Roseville, and the greater Sacramento area. Over 200 community members provided input through the virtual community workshop.

A complete summary of these public outreach activities is provided in *Appendix D*.

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4. Project Alignment Options

The purpose of this study is to determine if a multi-use paved path is feasible in the Dry Creek Greenway West study corridor. Based on available data collected from Placer County and the City of Roseville, site walks with public and private property owners (see *Photo 4-1*), preliminary engineering analyses, and input from public engagement activities, several project alternatives, or trail alignments, on the north and south sides of Dry Creek were identified, evaluated and ranked to identify a recommended alignment to advance for further study. This section discusses studied alignments, including a brief description of each alignment considered, important existing conditions along that alignment, key opportunities and constraints specific to the alignment, and estimated project costs.



Photo 4-1: Site walk with property owner.

4.1. Descriptions of Alignment Options

The Dry Creek Greenway corridor was divided into six areas to organize and simplify the option descriptions and evaluations. Each area begins and ends with one or more nodes that are located along the various trail alignment alternatives. The nodes, “a” through “w”, are provided both for reference and to designate a decision point. Segments are identified between nodes. Segments are categorized as north (e.g., “N11A”), south (e.g., “S1”), or a connection (e.g., “C3”) and there are multiple options between some nodes. Bridges (e.g., “[B4]”) and stub paths to access points (e.g., “(1)”) are also identified. A trail alignment alternative within one of the areas will be the summation of several segments along the trail.

The areas, nodes and segments are shown on *Exhibit 4-1 – Trail Alignment Options*, at the end of this section. Also at the end of this section, *Exhibits 4-2 through 4-7 – Trail Alignment Options (Area 1 through Area 6)*, show trail alignment options for each of the areas defined below. The areas can be generally described as follows:

Area 1: Cook-Riolo Road to Waste Water Treatment Plant / Roseville Corporation Yard

Area 2: Along Waste Water Treatment Plant and Roseville Corporation Yard

Area 3: Waste Water Treatment Plant / Roseville Corporation Yard to Atkinson Street

Area 4: Booth Road/Foothills Boulevard Area

Area 5: Atkinson Street/Foothills Boulevard to Vernon Street

Area 6: Vernon Street to Riverside Avenue

The alignment alternatives within each area are defined in *Tables 4A-4F*. Area 1 alignments are identified as 1-1, 1-2 and so on.

Area 1 – Cook Riolo Road to WWTP/Corp Yard Alignment Options

Area 1 of the potential trail stretches east from Cook Riolo Road to just east of the Placer County/City of Roseville jurisdictional boundary, where the City's Wastewater Treatment Plant and Corporation Yard facilities border Dry Creek. The area is highlighted in Key Map Area 1, below.

Key Map Area 1



Existing Conditions:

The study corridor in Area 1 is within the jurisdiction of Placer County, apart from the eastern end, where the WWTP and Corp. Yard are both within the City of Roseville. Except for the boundaries, which include Cook Riolo Road and the Creek View Ranch School on the west and the WWTP and Corp. Yard on the east, Area 1 is characterized by few large, private, residential and agricultural properties, including pastureland for cattle grazing. Dry Creek runs through this area mostly well-ensconced in undisturbed lowland forest, and spreads into several natural flood channels. This is the most pristine section of Dry Creek within the study area.

Opportunities and Constraints:

In many cases, constraints along the corridor are paired with closely related opportunities to address them. The major opportunities and constraints in Area 1 are related to the following features of this area:

- Cook Riolo Road
- Creek View Ranch School
- Private property
- Placer County Sewer Easement
- Roseville WWTP and Corp. Yard
- Topography

Cook Riolo Road is a two-lane rural major collector connecting the Creekview Ranch School with Vineyard Road and PFE Road. The speed limit is 35 mph, but the project area is within a school zone dropping the speed limit to 25 mph when children are present. Cook Riolo Road has an existing multi-use path on the west side of the road, shown in *Photo 4-2*, which connects the existing Dry Creek Trail to the school entrance, 650 feet north of the creek.



Photo 4-2: Existing multi-use path along west side of Cook Riolo Road, looking north from Dry Creek trailhead.

When Placer County replaced the Cook Riolo Road Bridge over Dry Creek in 2014, a flat area (bench) (*Photo 4-3*) was graded under the bridge at the north abutment to facilitate construction of a future bike trail to the east from the existing Cook Riolo Road Bike Trail. With use of the existing bench, trail users will need to navigate inclines on approach from/ to the existing trail. Vertical clearance under the bridge is adequate for a path. However, additional engineering analysis will be required to determine the appropriate balance between head room over the path and susceptibility to inundation during high-return-frequency flood events.



Photo 4-3: Existing graded area under Cook Riolo Road Bridge at north abutment, looking west.

The proposed trail will provide the opportunity for students and staff to bicycle or walk to school more safely than is currently possible using roads, but it also poses security concerns for the school. The school district is interested in controlled access along the east side of their property (Spur 1), potentially incorporating an emergency vehicle access (EVA) and

a drop-off area if private development occurs on the large private parcel to the east.

The sewer access road and easement north of the creek provide potential for a dual-purpose maintenance road and trail for alignments north of the creek.

Most of the length of the trail options in Area 1 will cross private property. Acquisition of the right-of-way required to build the trail will add significantly to the cost of construction.

There is, however, only one private property owner north of the trail, and that owner has expressed interest in working with the County to incorporate the trail in proposed residential development of the property.

Security is a concern for both the WWTP and the Corp. Yard. For the WWTP, the main concern is that a trail along its western and southern boundaries would provide easy access to areas of the plant that are not currently fenced. The northerly boundary of the Corp. Yard is securely fenced. One common challenge for both facilities would be providing employee access while preventing public access.

Following flood events in 1986 and 1995, the City of Roseville implemented projects to reduce the risk of flooding within the Dry Creek watershed. These included relocating an existing levee along the southern perimeter of the WWTP (*Photo 4-4*). The levee is now 100 feet behind the Dry Creek bank, increasing the capacity of Dry Creek. Setting back the levees re-created a floodplain reach approximately 2,200 feet long and led to about five acres of



Photo 4-4: New levee at Roseville WWTP, looking west.

restored riparian habitat in the floodplain. Trail alignments north of Dry Creek in this area will be within this restored area and will need to cross the expanded floodway. These alignments would require additional mitigation for disturbing the prior mitigation plantings. Fencing along northerly alignments in this area would need to be designed for the competing goals of providing security for the WWTP while not impeding flood flows in the overflow channel.

Northerly alignments crossing the creek to the Corporation Yard side would cross the bypass channel between the old and new WWTP levees. This section of trail would need to be designed as a low water crossing, or the bridge across the creek would need to be extended to cross both the main and bypass channels of the creek. Also, the location of a bridge must consider maintenance access to the WWTP outfall.

The topography of Area 1 varies both along the length of the creek and from one side to the other. North of the creek, the terrain beyond the immediate vicinity of the creek is generally 10 to 25 feet above the elevation of the creek, with the westerly portion being higher than the east. South of the creek, elevations are generally closer to those of the creek and more prone to flooding.

Alignment Options:

Table 4A lists the six alignments in Area 1 and provides the segment sequence for each. Refer to *Exhibit 4-2 (at the end of this section): Area 1 Trail Alignment Options* for a graphical representation. The potential trail alignments take trail users either on the north side of the creek, adjacent to

Creekview Ranch School, then eastward along the tree line and through a meadow, or on the southern side of the creek, also through an open meadow and adjacent to the tree line. The northern alignments are mostly on higher ground well above the elevation of the creek, whereas the southern alignments are much closer to creek elevation.

Table 4A - Area 1 Alignment Definitions*	
1-1	N1 (1)(2)[B1], N2A, N3
1-2	N1 (1)(2)[B1], N2A, N3, C1 [B6]
1-3	N1 (1)(2)[B1], N2B, N3
1-4	N1 (1)(2)[B1], N2B, N3, C1 [B6]
1-5	S1 [B2, B3, B4, B5]
1-6	S1 [B2, B3, B4, B5], C1 [B6]
*Area 1 begins at node "a" and ends at node "d" or "e"	

Key Features and Issues for Area 1

- Between Cook Riolo Road and the WWTP, this area is entirely within the jurisdiction of Placer County. The County trail standard includes equestrian access. The City trail will not. A potential equestrian staging area at Cook Riolo Road and a natural turnaround somewhere west of the WWTP will be needed.
- The existing Placer County sewer maintenance road east of Cook Riolo Road and north of Dry Creek provides an opportunity for dual use as a trail.
- Public right-of-way immediately east of Cook Riolo Road (along sewer access road) is narrow between private property to the north and steep creek banks to the south, potentially requiring retaining walls to avoid fill into the creek or acquisition of right-of-way from the private parcel to the north.
- The westerly approach to Bridge B1 would traverse a steep hill, requiring a large embankment, retaining wall and/or a long bridge, but would provide beautiful views of the pastureland below.
- Access to private parcels south of and including the creek was not authorized for this study; consequently, the alignment of segment S1 is based entirely on aerial mapping, large portions of which were obscured by heavy vegetation.
- Segment S1 would require four bridges or culverts to cross Dry Creek (B2), a side channel of Dry Creek (B3) and two small tributaries (B4 and B5). A retaining wall is needed as this segment approaches Area 2.

Area 2 – Adjacent to Waste Water Treatment Plant/Corporation Yard

Alignment Options

Area 2, highlighted in *Key Map Area 2*, below, runs north of the City of Roseville Corporation Yard, between the Corporation Yard and the City's Wastewater Treatment Plant north of Dry Creek.

Key Map Area 2



Existing Conditions:

The study corridor in Area 2 is entirely within the City of Roseville. Area 2 is characterized by private and municipal light industrial uses on both sides of Dry Creek and is dominated by the WWTP on the north and the City of Roseville Corporation Yard on the south. Dry Creek runs through this area between well-defined levees, with a leveed bypass channel to the north of the main channel running the entire length. There is a treated water outfall from the WWTP into the creek near the west end of Area 2.

Opportunities and Constraints:

Through Area 2, the northern alignment is limited to following the old levee, which is at a low elevation, generally about 10 feet above the creek bottom and would be prone to frequent inundation. Fencing to secure the WWTP from path users would either need to be at the top of the main detention pond levee or along the path, where it would be prone to inundation and debris damage. Near the western end of the area, the path would have to cross the bypass channel, which would complicate the construction of security fencing and require a low-water crossing of the bypass channel by the trail.

Bridging the creek near the west end of Area 2 would facilitate providing access to both the WWTP and the Corporation Yard by trail users. Because the level of security at both facilities, this access would need to be restricted to employees only. Bridging Dry Creek near the east end of the WWTP would also facilitate employee access to the two facilities,

and would have the added benefit of potentially providing a dual-use bridge carrying a proposed relocated sewer line, along with the trail.

Alignment Options:

Table 4B lists the four alignments in Area 2 and provides the segment sequence for each. Refer to *Exhibit 4-3: Area 2 Trail Alignment Options (at the end of this section)* for a graphical representation of each. The

Table 4B - Area 2 Alignment Definitions*	
2-1	N4
2-2	N4, C2 [B7]
2-3	S2 (4)
2-4	S2 (4), C2 [B7]
*Area 2 begins at node "d" or "e" and ends at node "f" or "g"	

two northerly alignments would run along the north side of Dry Creek on land owned by the City and used for the WWTP. The path would be along the old levee or along the overflow channel between the old and new levees along the south side of the WWTP. A fence would separate the path from the facility. Some trees would be affected. The path would be subject to flooding in major storm events. Alignment 2-1 would stop on the north side of the creek. Alignment 2-2 would cross the creek at the east end of the WWTP on a new bridge and stop on the south side of the creek.

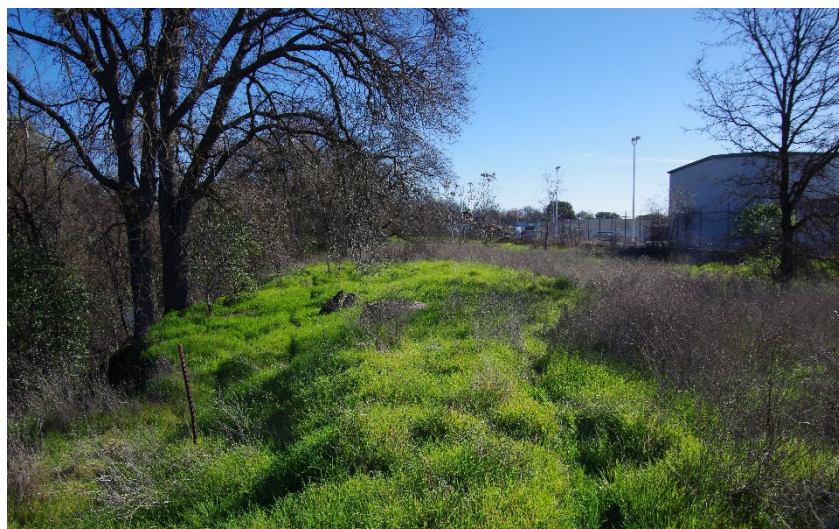


Photo 4-5: South bank of Dry Creek behind Corp Yard, looking east.

The two southerly alignments would start near the west end of a City parcel behind a private commercial business at the end of Viking Place, then continue east on City owned land behind the City's Corporation Yard. The open space area behind the Corp. Yard (Photo 4-5) is approximately 5 feet further above the creek than the

north bank, making the southerly alignments less subject to flooding than the northerly ones. The path would weave through a moderately dense treed area; tree removal would need to be mitigated. Prior surveys have noted potential cultural resources south of Dry Creek. Future surveys are needed to locate any cultural resources and determine appropriate alignment of Segment S2. A spur connection from the southerly alignments for employees of the Corporation Yard is possible. Alignment 2-3 would stop on the south

side of the creek. Alignment 2-4 would cross the creek at the east end of the WWTP on a new bridge and stop on the north side of the creek.

Key Features and Issues for Area 2
• The northerly alignments would follow the old levee between Dry Creek and the northerly bypass channel, which would leave them isolated in flood events. • The southerly alignments and the spur to the Corp. Yard would pass through an area of mitigation plantings (mitigating impacts from the WWTP expansion), which would require further mitigation planting. • Prior surveys have noted potential cultural resources south of Dry Creek. Future surveys are needed to locate any cultural resources and determine appropriate alignment of Segment S2. • The spur to the Corp. Yard would provide employee access from the trail. This would require access control to allow authorized personnel only into the Corp. Yard and would require reconfiguration of a portion of the storage yard. • Bridge B7 (at the east end of Area 2) could potentially serve a dual purpose in support of the proposed new sewer alignment. • Retaining walls would be needed for a portion of the southerly alignment due to steep existing slopes between the Corp. Yard and creek.

Area 3 – WWTP/Corp. Yard to Atkinson Street/Booth Road Alignment Options

Area 3, highlighted in *Key Map Area 3*, below, extends from the eastern edge of the WWTP and Corporation Yard properties to Atkinson Street on the east and Booth Road on the north.

Key Map Area 3



Existing Conditions:

The study corridor in Area 3 comprises mostly private property along both sides of Dry Creek, except for a large, vacant, City-owned parcel near the eastern end of Area 3 extending north from Dry Creek to Booth Road. Area 3 is characterized by private light industrial and residential uses on both sides of Dry Creek, although properties south of the creek are mostly lightly or undeveloped. In Area 3, the levees along Dry Creek are less well-defined than in Area 2, with the south bank being more natural than the north bank. As in Area 2, the south bank reaches elevations approximately 5 feet higher than the north bank.

Opportunities and Constraints:

Developed properties and dense trees adjacent to the north bank of Dry Creek leave limited space for a northerly trail alignment without impacting existing trees or facilities. Steep banks further constrain potential alignments north of the creek. Also, several of the property owners north of the creek have expressed opposition to an alignment crossing their properties.

There are only three properties south of the creek in Area 3; none have developed facilities near the creek. The area south of the creek is also less densely treed than the area north of it.

There is an existing sewer north of the creek from the WWTP to Atkinson Street, to which a northerly trail alignment would facilitate maintenance access. On the other hand, there

is a proposed sewer alignment south of the creek, which would also provide dual-use opportunities with the trail.

Overall, the south alignment provides the most promising opportunities for locating the trail within Area 3. To continue east of Atkinson Street (into Area 5), the trail would need to cross both Atkinson Street (see *Photo 4-5*) and the UP Railroad Yard, staying on the south side of Dry Creek. The UP Railroad Yard is the largest rail facility on the west coast. Two tracks cross Dry Creek on a bridge at the west side of the right-of-way adjacent to Atkinson Street, and 13 tracks and a maintenance road cross the creek on two adjacent bridges near the east side of the right-of-way. The most direct route for the proposed trail would need to pass under the south end of all three structures, the longer two extending approximately 350 feet. Detailed information on the longer two bridges was not available for this study because access was not authorized.

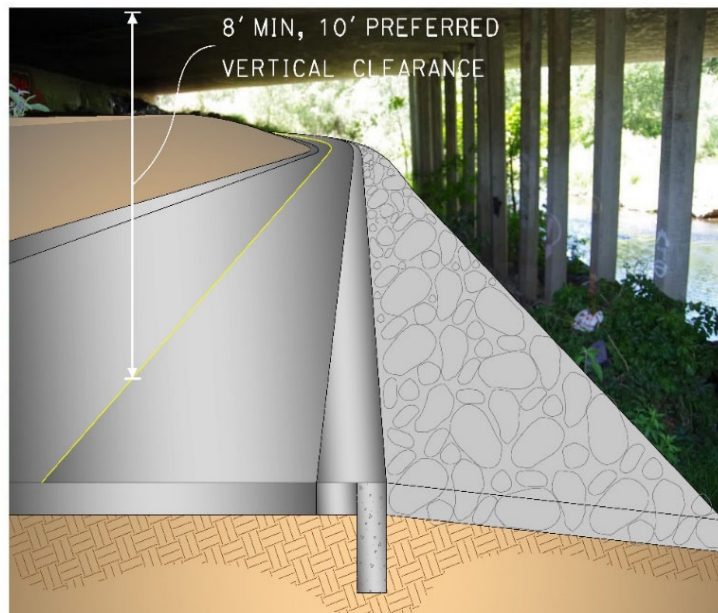


Photo 4-5: End slope at south abutment of Atkinson Street Bridge over Dry Creek.

The existing Atkinson Street Bridge has standard 1.5:1 end slopes at the abutments, leaving minimal vertical clearance near the abutments. This end slope could be excavated to improve the vertical clearance. This would require either a high-side retaining wall and a low-side cut-off wall with rock slope protection, or retaining walls on both sides. The potential trail undercrossing is shown in *Figure 4-1*.

This portion of the trail's route would likely be subject to flooding during high flows, would

Figure 4-1: Rendering of Potential Path under Atkinson Street Bridge



require protective covers – debris sheds independent of and under the railroad bridges to protect trail users – per the *UPRR Guidelines*, and safety concerns would need to be addressed given the significant length of the underpass. The use of an existing structure that conveys water under an active Union Pacific Railroad line for trail use is explicitly banned in the *UPRR Guidelines*, and the railroad has denied site access to explore the option further.

A related option is the construction of a new underpass for the trail. However, this would face many of the same challenges as the use of the existing bridges, and at considerably greater expense. Indeed, Union Pacific's *Guidelines for Railroad Grade Separation Projects* outlines their policy of discouraging the construction of new trail underpasses beneath their property. For administrative, technical, and financial reasons, this option is likely infeasible.

Given the challenges of a trail along the creek through the UP Railroad Yard, the most feasible routing for the trail East of Area 3 is an on-road route over the rail yard via the existing Foothills Boulevard bridges. This option, explored in more detail in the Area 5 discussion later in this section, would require road and bridge modifications, is approximately 1/2-mile longer, and requires trail users to navigate inclines on approach in both directions. However, the enhanced visibility of the trail from its placement along a well-traveled road may have the side benefit of increased awareness of the trail, promoting its use. Also, the on-road option provides enhanced neighborhood connections.

To get to Foothills Boulevard, the trail would need to cross back to the north side of the creek. This could be done by using the existing Atkinson Street Bridge over Dry Creek or cross on a new bridge to the City-owned property near the east end of Area 2. This City-owned property provides an opportunity to connect to Booth Road and ultimately to Foothills Boulevard (in Area 4).

Atkinson Street is a two-lane major collector that parallels the UP Railroad Yard connecting rural Placer County with the City of Roseville. Atkinson Street crosses over Dry Creek on a bridge (*Photo 4-6*) designed for future widening from two (2) to five (5) lanes, and under Foothills Boulevard approximately 1300 feet to the northeast. A short distance northeast



Photo 4-6: Atkinson Street Bridge over Dry Creek, looking north

of the proposed trail, Atkinson Street borders and provides access to Denio's Farmers Market and the Roseville Heights neighborhood. Atkinson Street is moderately traveled with an Annual Average Daily Traffic (AADT) of approximately 9,000 vehicles at a posted speed limit of 45 mph.

The existing Atkinson Street Bridge over Dry Creek and its roadway approaches – currently carrying two lanes of traffic and a 5-foot sidewalk – were built to accommodate a future widening to five lanes. The existing bridge typical section is shown in *Figure 4-2*. The extra width would allow the shoulder to be reconfigured as a Class I Bike Path, as shown in *Figure 4-3*.

Figure 4-2: Atkinson Street Bridge over Dry Creek – Existing Configuration

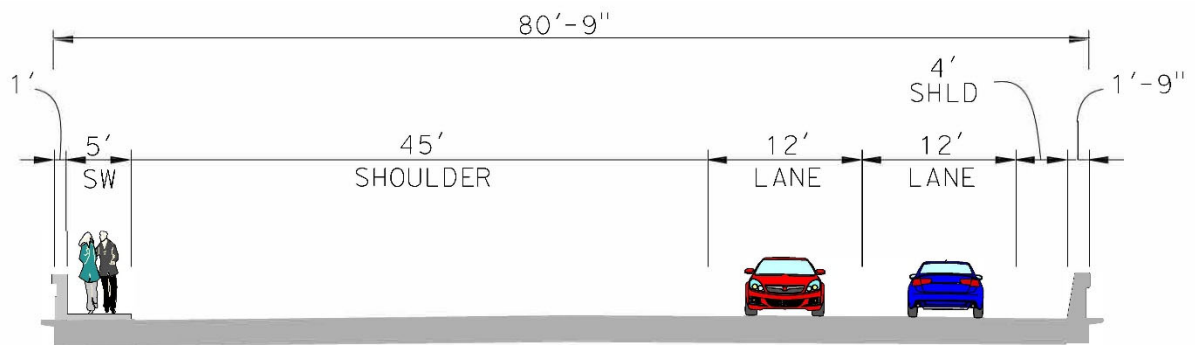
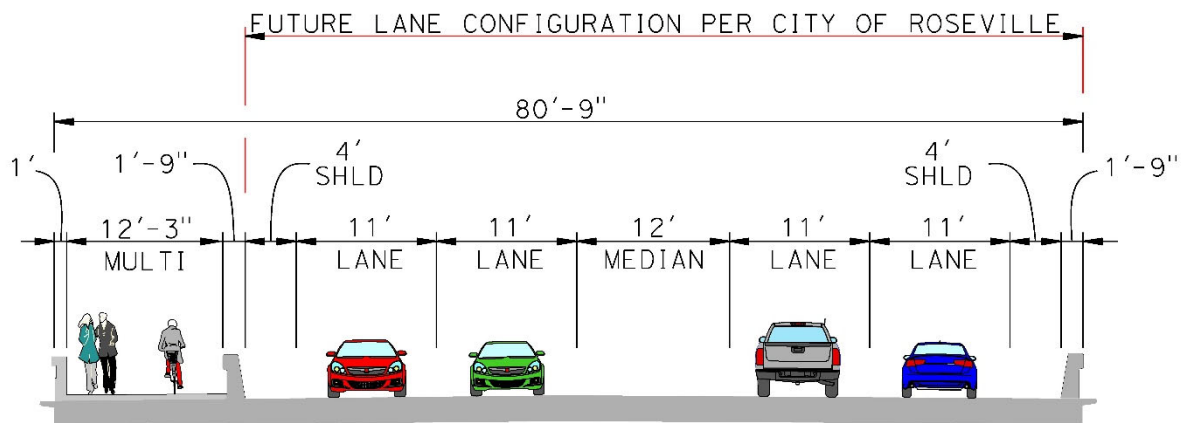


Figure 4-3: Atkinson Street Bridge over Dry Creek – Proposed Configuration



Either creek crossing would provide an access point at Booth Road, while using the existing Atkinson Street Bridge would provide an access point at Atkinson Street, but would also impact additional private property north and south of the creek.

Alignment Options:

Table 4C lists the six alignments in Area 3 and provides the segment sequence for each. Refer to *Exhibit 4-4: Area 3 Trail Alignment Options (at the end of this section)* for a graphical representation of each. The three

Table 4C - Area 3 Alignment Definitions*	
3-1	N5 (5), N6
3-2	N5 (5), C4
3-3	N5 (5), C3 [B8], S4
3-4	S3, S4
3-5	S3, C3 [B8], N6
3-6	S3, S4, C4 (5), N6
*Area 3 begins at node "f" or "g" and ends at node "j" or "k"	

northerly alignments would run along the north side of Dry Creek across one City-owned and five private parcels, with the option of either heading north across the City-owned parcel to Booth Road, crossing Dry Creek on a new bridge at the City-owned parcel, or continuing to Atkinson Street and crossing the creek on the existing Atkinson Street Bridge. The first option would connect to Area 4 and cross the UP Railroad Yard on the existing Foothills Boulevard Bridges. The second two would cross under Atkinson Street at the south end of the existing bridge, and then continue along the south side of the creek across the UP Railroad Yard in Area 5.

Similarly, the three southerly alignment options would follow the creek through two private parcels to a new bridge across Dry Creek at the City-owned parcel and then continue to Booth Road, cross on the existing Atkinson Street Bridge and then head back west along the north side of the creek to the City-owned parcel and north to Booth Road, or stay on the south side and continue under the south end of the Atkinson Street Bridge into the UP Railroad Yard.

Key Features and Issues for Area 3

- Most of the northerly alignment along the creek and all of the southerly alignment would be on private property.
- Current UPRR policy prohibits crossing the UP Railroad Yard under the existing rail yard bridges; therefore, the only alignments considered feasible at this time will connect to Booth Road across the City-owned parcel.
- In addition to providing right-of-way for the connection to Booth Road, the City-owned parcel provides a potential trailhead with access from Booth Road.
- The City is considering a sewer easement along the south side of the creek from the WWTP to Atkinson Street, which may provide an opportunity for joint use in this area.

(Continued on next page)

Key Features and Issues for Area 3

(Continued from previous page)

- The southerly alignment would require retaining walls on the approach to Atkinson Street.
- A creek crossing using the existing Atkinson Street Bridge would incorporate reallocated space on the bridge to eliminate the cost of a new bridge (see *Figure 4-2* and *Figure 4-3*), while also providing access to the trail from Atkinson Street, but would require more trail and right-of-way, as well as out-of-direction travel by users.

Area 4 – Booth Road to Foothills Boulevard

Alignment Options

Area 4, highlighted in *Key Map Area 4*, below, extends from Booth Road at the City/County line to the intersection of Foothills Boulevard and Denio Loop.

Key Map Area 4



Existing Conditions:

The study corridor in Area 4 is almost entirely within the City of Roseville. All alignment options start at the City/County line, and one of the alignment options would start on private property in unincorporated Placer County just west of the City/County line. Area 4 north of Booth Road is at the border of agricultural lands in the unincorporated County and residential development in the City, bounded on the east by Foothills Boulevard and Atkinson Street. South of Booth Road is characterized by light industrial uses to Atkinson Street.

Trail alignments would cross or follow several roads in Area 4, ranging from very low traffic residential streets (Beatty Way and Walker Drive), to major arterials (Foothills Boulevard).

Opportunities and Constraints:

An existing sewer easement and a stormwater detention pond in the Beatty Road neighborhood just north of Booth Road provide an opportunity to keep the trail separated from streets and use existing City land for a northerly alignment. This option, however, would require private right-of-way north of Booth Road to get the trail to the sewer easement, with a mid-block crossing of Beatty Way. It would also place the trail very close to the back fences of homes on Beatty Way, and require retaining walls and tree removal to avoid impacting the detention pond.

The more southerly alignments in Area 4 would be entirely within existing City rights-of-way and would cross under the existing Foothills Boulevard Bridge over Atkinson Street.

All alignments would need to be coordinated with a proposed project to build a southwest Denio Loop ramp and widen Atkinson Street between the Dry Creek Bridge and Denio Loop. Construction of the new ramp would not preclude any of the alignment options but would create an additional relatively high-volume street crossing for each one. Depending on the alignment, this street crossing might be accommodated by incorporating a trail undercrossing of the new ramp into the ramp project.

Alignment Options:

Table 4D lists the three alignments in Area 4 and provides the segment sequence for each. Refer to *Exhibit 4-5: Area 4 Trail Alignment Options (at the end of this section)* for a graphical representation of each.

Table 4D - Area 4 Alignment Definitions*	
4-1	N7A
4-2	N7B, N7B1
4-3	N7B, N7B2 (3)
*Area 4 begins at node "k" and ends at node "n" or "o"	

All alignment options in Area 4 are considered "northerly" alignments because they are entirely north of Dry Creek, and all options would start with an at-grade crossing of Booth Road, a low-traffic local road with a posted speed limit of 25 mph and good visibility. The proposed crossing would be marked with a high-visibility crosswalk and appropriate signage.

The more northerly alignment within Area 4 would extend north from Booth Road along the City/County line to an existing sewer easement containing a detention pond in the Sierra Crossings neighborhood just north of Booth Road. It would cross Beatty Way mid-



Photo 4-7: Typical Residential Street Crossing

block to get into the area of the detention pond and, at the east end of the neighborhood, climb to meet the grade of Foothills Boulevard. Beatty Way and Walker Drive are narrow, low-traffic residential streets with speed limits of 25 mph. These characteristics render an at-grade crossing appropriate for either location; marked with a high-visibility crosswalk and appropriate signage, similar to the one shown in *Photo 4-7*.

Southerly alignment options would follow the north side of Booth Road within the road right-of-way, requiring a crossing of Walker Drive at its intersection with Booth Road. While this is less than ideal, traffic on both roads is very light, which will minimize conflicts with turning traffic. East of Walker Drive, the trail

would either turn to the northeast and climb to connect with the south/west side of Foothills Boulevard, or follow Booth Road to Atkinson Street, and then Atkinson Street under Foothills Boulevard to the Denio Loop, and along the inside of the Denio Loop to its intersection with the north/east side of Foothills Boulevard. The undercrossing along Atkinson Street would not require reconfiguration of the road, as there is adequate space for a multi-use path along the north side of Atkinson Street, and vertical clearance far exceeds minimum requirements. These alignment options would be entirely within existing City rights-of-way, but would need to be coordinated with the proposed ramp project. Construction of the new ramp would not preclude any of the alignment options.

Key Features and Issues for Area 4
• An at-grade crossing of Booth Road for all alignment options would require passive traffic control features to ensure safety of trail users. • All alignments would be designed in coordination with proposed improvements at the Foothills Blvd./Atkinson Street interchange. • The most northerly alignment option would take advantage of City-owned property. • The most northerly alignment option would require an at-grade crossing of Beatty Way and retaining walls to minimize impacts to the drainage basin. It would also be very close to the back of homes on Beatty Way and Keeble Court that have very small back yards. • All alignments would include an at-grade crossing or undercrossing of the future southerly loop ramp. • The alignments along Booth Road would function as a “side path” with conflicts from turning traffic at Walker Drive.

Area 5 – Atkinson Street/Foothills Boulevard at Denio Loop to Vernon Street

Alignment Options

Area 5, highlighted in *Key Map Area 5*, below, extends from Atkinson Street (Area 3) or the intersection of Foothills Boulevard and Denio Loop (Area 4) to Vernon Street.

Key Map Area 5



Existing Conditions:

The study corridor in Area 5 is entirely within the City of Roseville and almost entirely within or adjacent to the northerly end of the UP Railroad Yard. Dry Creek flows relatively undisturbed through approximately half of the UP Railroad Yard between the two-track railroad bridge just east of Atkinson Street and the main rail yard bridges, which carry thirteen tracks and a maintenance road over Dry Creek. East of the rail yard bridges, the creek crosses under Foothills Boulevard and continues to Vernon Street.

Opportunities and Constraints:

The most significant constraint in Area 5, and in the corridor overall, is the large railroad parcels and facilities that stretches along the study corridor from Atkinson Street to Vernon Street. As previously noted in the Area 3 discussion, the UPRR is opposed to at grade crossings of the rail yard and a new underground or overhead facility is prohibitively expensive. Fortunately, the existing Foothill Boulevard overcrossing provides an opportunity to use the existing elevated route over the rail yard for a part of the trail system.

Given the complexities in this area, additional discussion about opportunities and constraints have been incorporated into the following alignment discussion for Area 5.

Alignment Options:

Table 4E lists the nine alignments in Area 5 and provides the segment sequence for each. Refer to *Exhibit 4-6: Area 5 Trail Alignment Options (at the end of this section)* for a graphical representation of each.

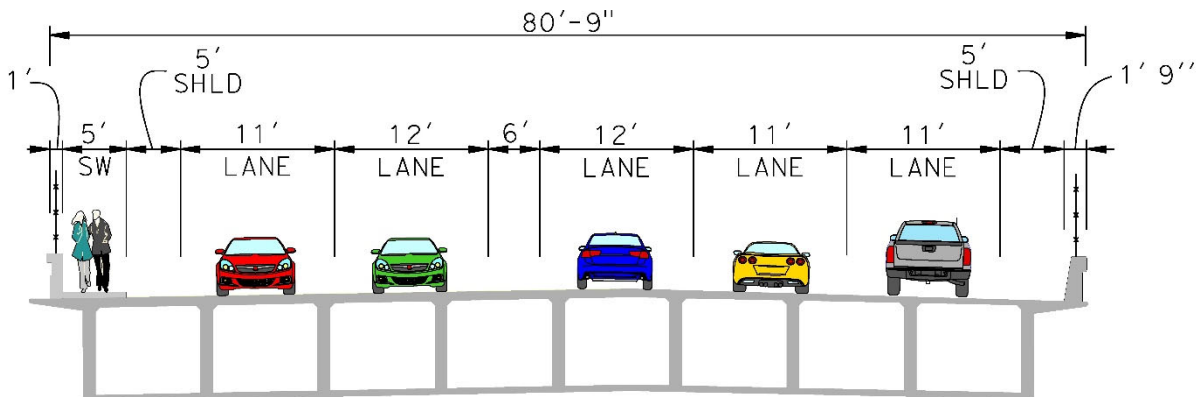
Table 4E - Area 5 Alignment Definitions*	
5-1	N8A, S6
5-2	N8A, S6, C6, N10
5-3	N8A, C5, N9 (6) [B9], N10
5-4	N8B, N9 (6) [B9], N10
5-5	N8B, C5, S6
5-6	N8B, C5, S6, C6, N10
5-7	S5, N9 (6) [B9], N10
5-8	S5, C5, S6
5-9	S5, C5, S6, C6, N10

*Area 5 begins at node "j", "n" or "o" and ends at node "r" or "t"

The northerly alignment options start at the intersection of Foothills Boulevard and Denio Loop. The southerly alignment option starts at the south side of Dry Creek at Atkinson Street.

The northerly alignments start with a barrier-protected path along either the east or west side of Foothills Boulevard. The configuration of the existing structures is shown in *Figure 4-4*. They are 80'-9" wide with five lanes of traffic (two northbound and three southbound), two 5-foot shoulders, a 5-foot sidewalk on the north side, and a 6-foot median.

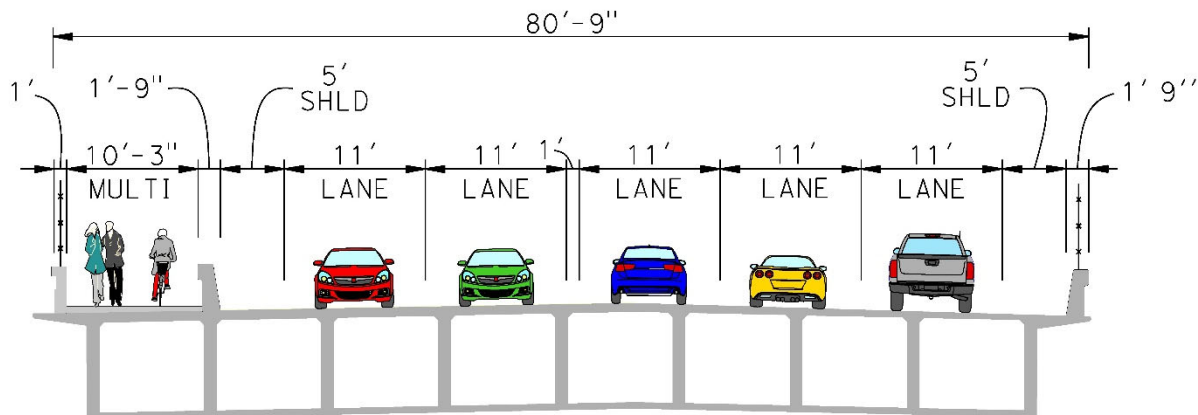
Figure 4-4: Foothills Boulevard Overhead and Bridge – Existing Configuration



The northern alignment (N8A) would take the opportunity to reconfigure the structures without requiring widening, and would limit the required coordination with the UPRR, because the work would all be done on the bridge deck, which would remain 80'-9" wide. The work to reconfigure the structures would consist of widening the existing northern sidewalk toward the center of the bridge to create a 10'-3" multi-use path, adding a protective concrete traffic barrier, and restriping the deck to reduce the median to 1 foot

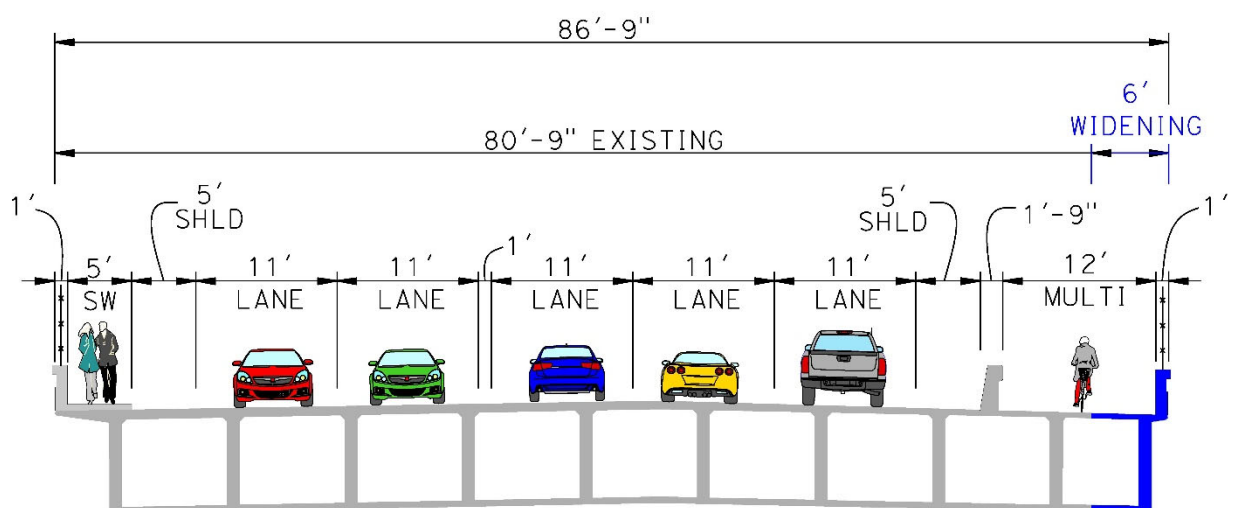
and the lanes to 11 feet, while maintaining the 5-foot shoulder/bike lanes. The proposed configuration is shown in *Figure 4-5*.

Figure 4-5: Foothills Boulevard Overhead and Bridge – Proposed Configuration for Northerly Path (N8A)



A trail alignment (N8B) on the south side of the bridge would require widening by a minimum of 6 feet to add the multi-use path while still accommodating the five lanes of traffic, two 5-foot shoulders and the 5-foot sidewalk on the north side, as shown in *Figure 4-6*. This alternative would be substantially more expensive than the northern path alternative because of the narrow structure widening, and the fact that this would have to be done without disrupting UP Railroad Yard traffic.

Figure 4-6: Foothills Boulevard Overcrossing – Proposed Configuration for Southerly Path (N8B)



At the southeast end of the Foothills Boulevard rail yard and Dry Creek bridge crossing, the east side path alignment (N8A) would turn 180-degrees, heading downhill and back

towards the creek, while the west side alignment (N8B) would loop more gradually back towards the creek on UP Railroad Yard property.

From the south end of the Foothills Boulevard Bridge, alignments would either follow the south bank of Dry Creek to Vernon Street, or cross Dry Creek and follow the north bank to Vernon Street.

The southerly alignment (S5) would cross under the existing Atkinson Street Bridge over Dry Creek and continue along the south side of the creek through an undeveloped part of the Union Pacific Railroad right-of-way and then under the existing UPRR bridges over Dry Creek. There is a potential spur path for employee access to the UPRR offices in this area. While this is the most direct route for the path, and as indicated previously, the UPRR has indicated that they would not allow the path to cross their property. Other concerns with this alignment are the length of the undercrossing of the UP Railroad Yard (over 350 feet), which would make it very challenging to create a path environment conducive to actual and perceived safety for users and security for the UP Railroad Yard. While the northerly alignments along Foothills Boulevard appear most feasible in the short-term, the Rails-to-Trails Conservancy investigated three case studies that may be instructive for a longer-term routing of the path through the UP Railroad Yard. This document can be found in *Appendix E*.

Once through the UP Railroad Yard property, the south alignment options to arrive at Vernon Street are the same as the Foothills Blvd alignment options. Several of the alignment options in this area would pass under the Foothill Boulevard Bridge near its south abutment (see *Photo 4-8*). Vertical clearance under this



Photo 4-8: Location of potential trail at south end of Foothills Boulevard Bridge.

bridge is generous; however, near the south abutment the existing side slopes are steep and there is a large drainage feature flowing into Dry Creek from the south across potential trail alignments south of the creek. Retaining walls would be needed to support the trail in this area, and a large culvert would be required to carry the existing drainage across the trail to the creek. Further engineering design and analyses during the next

project phase will be necessary to better define the extent of retaining walls and size of culvert in this area.

East of Foothills Boulevard, the north side of the creek is relatively flat, with a larger and lightly-used UPRR parking lot abutting the north bank. This area includes City of Roseville right-of-way remaining from the abandoned subway under the rail yard. South of Dry Creek, potential alignments are constrained by adjacent industrial uses and steep, eroded creek banks. Extensive and tall retaining walls would be required to construct a trail south of the creek.

Potential trail alignments would need to cross Vernon Street and/or cross Dry Creek near Vernon Street. Crossing Vernon Street at-grade is feasible, but not ideal due to the traffic volume. Vernon Street is a two-lane major collector with a double left-turn lane starting from Cirby Way and continuing across the Dry Creek Bridge. Vernon Street is moderately traveled with an AADT of approximately 9,200 vehicles at a posted speed limit of 40 mph.

Figure 4-7: Vernon Street Bridge over Dry Creek – Existing Configuration

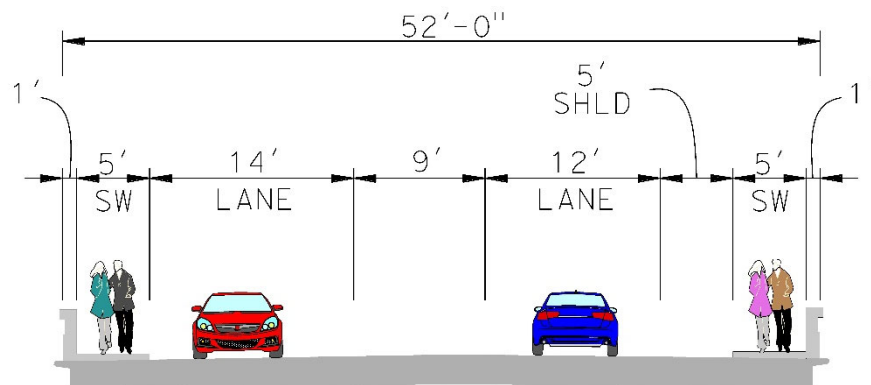
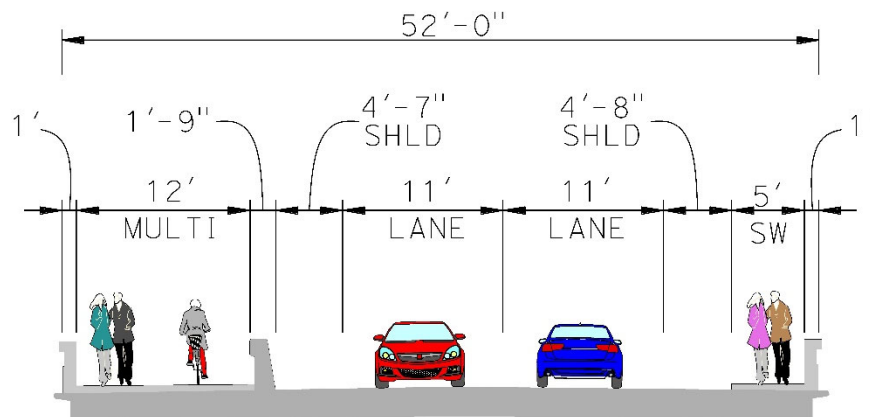


Figure 4-8: Vernon Street Bridge over Dry Creek – Proposed Configuration



The bridge has well-used sidewalks on both sides. The existing Vernon Street Bridge over Dry Creek is shown on the previous page in *Figure 4-7*.

The reconfigured bridge, shown on the previous page in *Figure 4-8*, would have two 11-foot lanes, two shoulders averaging 4 feet 7.5 inches, a 5-foot sidewalk and a 12-foot, barrier-separated path.

The turn lane is unnecessary because there are no businesses north of the bridge that require a designated left turn.

Heading east from Vernon Street, both the north and south alignments would cross under the existing Vernon Street Bridge near the north and south bridge abutments,



Photo 4-9: Existing graded area at the south abutment of the Vernon Street Bridge, looking west.

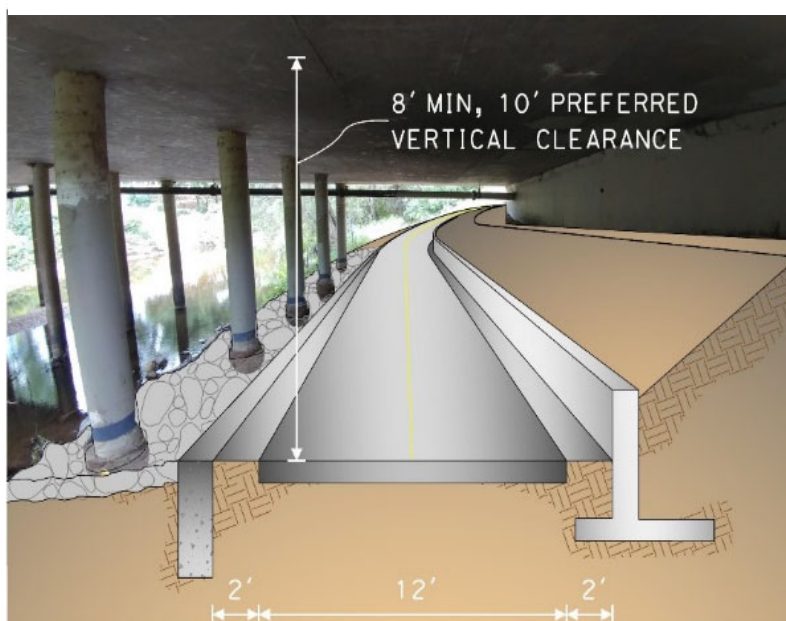
respectively, with access to the west side of Vernon Street. The area near the south abutment is shown in *Photo 4-9*.

These options are like those at Atkinson Street and would require either a high-side retaining wall and a low-side cut-off wall with slope protection, as shown in *Figure 4-9*, or retaining walls on

both sides.

At both the north and south abutments, with some excavation and supplementary support for the bridge abutments, the trail could pass under the bridge. Additional hydraulic and structural analyses will be required to determine the appropriate balance between head room over the path and susceptibility to inundation during common flood events.

Figure 4-9: Rendering of Potential Path under Vernon Street Bridge



Key Features and Issues for Area 5

- UPRR policy prohibits crossing their rail yard; therefore, the only alignments considered feasible at this time will use the existing Foothills Boulevard Bridges.
- The alignment through the rail yard would provide a potential employee access to the UPRR offices but would also require security fencing and potentially other security measures along the entire alignment within UPRR right-of-way.
- The undercrossing of the rail yard would use space under the existing bridges over the creek, would be nearly 350 feet long and would require retaining walls at the approaches to the undercrossing, protective covers over the trail, lighting, and mitigation measures for the large resident bat colony.
- The alignment option along the east side of Foothills Boulevard would reallocate space by narrowing lanes, shoulders and the median, while incorporating the existing sidewalk into a barrier-separated path on the east side.
- The south end of the east alignment option along Foothills Boulevard would require a short-radius, 180-degree curve on a 2.7% grade, as well as retaining walls and fencing to protect the adjacent storage facilities.
- The option along the west side of Foothills Boulevard would require widening both Foothills Boulevard bridges to the west to provide a barrier-separated path.
- Retaining walls and a large drainage structure would be required for segments passing under the Foothills Boulevard bridge near the south abutment.
- The option along the north side of Dry Creek east of the UP Railroad Yard would use historic City right-of-way. Further investigation is needed to determine the status of mapped right-of-way; the UPRR may no longer recognize this right-of-way.
- The alignment option south of Dry Creek would traverse the top of a steep bank and require significant retaining walls and right-of-way acquisition.
- The alignment option crossing Dry Creek at Vernon Street would reallocate space by narrowing lanes and shoulders and eliminating the existing, unused, 2-way left turn lane, while incorporating the existing sidewalk into a barrier-separated path on the west side of the existing Vernon Street bridge.
- East of the rail yard, options traverse areas with large homeless encampments.

Area 6 – Vernon Street to Riverside Avenue Alignment Options

Area 6, highlighted in Key Map Area 6, extends from Vernon Street to Riverside Avenue.

Key Map Area 6



Existing Conditions:

The study corridor in Area 6 is entirely within the City of Roseville. All alignment options start at Vernon Street and end with a connection to the proposed Dry Creek Greenway East on the east side of Riverside Avenue north of Dry Creek. The property north of Dry Creek is undeveloped except for a BMX bike park and has a single owner who has tentative development plans. South of the creek is a mixture of multi-family housing and light industrial uses with multiple owners.

The topography north of the creek is generally flat and at a lower elevation than south of the creek. Because the area to the north is undeveloped, there is potentially space to keep the trail away from the steep, eroded banks of the creek. Particularly near Riverside Avenue, development south of the creek extends nearly to the top of the high and severely eroded banks (in some area, bank erosion has undermined fences and other facilities).

Opportunities and Constraints:

The flat, undeveloped terrain north of Dry Creek provides the best opportunities for the trail. The existing sewer maintenance easement provides both a dual-use potential for the trail and the easiest area for construction. The potential development of this area provides an opportunity for collaboration to beneficially incorporate the trail into the development, but the owner has expressed some concern about how trail development would impact the property's development potential.

The steep banks south of Dry Creek make an alignment to the south infeasible, except for the westerly 800-1000 feet. Use of this portion would require a new bridge across Dry

Creek but would facilitate access to both sides of the creek in Area 6. There was some neighborhood opposition to this segment.

All alignment options would connect to the Dry Creek Greenway East Trail by crossing Riverside Avenue under the existing bridge along the north side of Dry Creek to the north east corner of Riverside Avenue and Dry Creek. The existing vertical clearance is adequate, but the trail will likely be inundated by relatively frequent storm events. This undercrossing would require a low-side retaining wall to enable a path wider than the existing bench.

Alignment Options:

Table 4F lists the five alignments in Area 6 and provides the segment sequence for each. Refer to *Exhibit 4-7: Area 6 Trail Alignment Options (at the end of this section)* for a graphical representation of each.

Table 4F - Area 6 Alignment Definitions*	
6-1	N11A,
6-2	N11B, N12
6-3	N11B, C7 [B10], S8 (7)
6-4	S7, S8 (7)
6-5	S7, C7 [B10], N12
*Area 6 begins at node "r" or "t" and ends at node "w".	

There are three basic alignment options in Area 6, two north and one south of Dry Creek. The most northerly would follow an existing sewer maintenance road easement through the middle of the single, large, private parcel to the north. The other northerly alignment would closely follow the creek, just above the top of bank, avoiding areas of bank erosion. The southerly alignment would follow the south bank, much of which is steep and eroded, and considered infeasible, except for the westerly portion. This westerly portion would potentially facilitate a spur to the Cirby Woods neighborhood.

Key Features and Issues for Area 6

- Beyond Vernon Street, Area 6 north of Dry Creek is entirely within a single private parcel. The owner has indicated a desire to sell or develop the property as an RV resort.
- Either side of Vernon Street north of Dry Creek provides an opportunity for access from the street and/or a trailhead.
- Either north or south alignments would cross under the existing Vernon Street bridge, requiring retaining walls and replacement of existing gabion basket slope protection (for the south alignment).

(Continued on next page)

Key Features and Issues for Area 6

(Continued from previous page)

- The most northerly alignment would follow the existing sewer maintenance road through the center of the property on generally flat, open terrain.
- The north alignment closer to Dry Creek would roughly follow the north bank of the creek, following the gently rolling terrain above the bank. This would both provide for good views of the creek and minimize impacts to the potential development of the property.
- The southerly alignment would pass south of the Cirby Woods community on rolling to steep terrain. In conjunction with a potential bridge (B10) shifting the trail back to the north side, this would provide access to both sides of the creek within Area 6, as well as potential direct access to the Cirby Woods neighborhoods.
- The eastern portion of the south alignment would traverse very steep terrain in a narrow swath of land between Dry Creek and the industrial uses to the south. Construction would require very tall retaining walls over nearly the entire segment length, as well as widening of the Riverside Avenue Bridge over Dry Creek. As a result, this segment is considered infeasible.
- All alignments would cross under the north end of the Riverside Avenue Bridge to connect to the planned Dry Creek Greenway East trail near a planned trailhead north of Dry Creek. The undercrossing would require retaining walls and would be only slightly higher than the normal water surface elevation.

4.2. Estimated Cost of Alignment Options

Table 4G, on the following page, is a summary of planning-level cost estimates for each of the alignment options described in *Section 4.1*. Estimated costs include preliminary engineering and environmental documentation, right-of-way, construction and construction administration, and include 10 percent for mobilization and a 25 percent contingency. The right-of-way costs are based on acquisition of a 30-foot wide easement along properties not owned by the City or County. The cost estimates do not include any annual maintenance costs, nor can they anticipate many details that might further inform the capital costs, such as the results of drainage and geotechnical investigations, and the need for utility relocations. Trailhead improvements are also not included in the costs. The unit costs for the estimate are based on Caltrans cost data and recent relevant completed projects in the region. For detailed cost estimates for all alignments, see *Appendix F*.

Table 4G - Alignment Alternative Cost Estimate			
	Alignment		
	Name	Segment Definition	Project Cost
Area 1	1-1	N1 (1)(2)[B1], N2A (3), N3	\$ 4,190,000
	1-2	N1 (1)(2)[B1], N2A (3), N3, C1 [B6]	\$ 5,860,000
	1-3	N1 (1)(2)[B1], N2B (3), N3	\$ 4,260,000
	1-4	N1 (1)(2)[B1], N2B (3), N3, C1 [B6]	\$ 5,880,000
	1-5	S1 [B2, B3, B4, B5]	\$ 2,950,000
	1-6	S1 [B2, B3, B4, B5], C1 [B6]	\$ 4,560,000
Area 2	2-1	N4	\$ 310,000
	2-2	N4, C2 [B7]	\$ 2,360,000
	2-3	S2 (4)	\$ 1,420,000
	2-4	S2 (4), C2 [B7]	\$ 3,450,000
Area 3	3-1	N5 (5), N6	\$ 770,000
	3-2	N5 (5), C4	\$ 1,410,000
	3-3	N5 (5), C3 [B8], S4	\$ 2,590,000
	3-4	S3, S4	\$ 880,000
	3-5	S3, C3 [B8], N6	\$ 2,650,000
	3-6	S3, S4, C4 (5), N6	\$ 1,890,000
Area 4	4-1	N7A	\$ 1,380,000
	4-2	N7B, N7B1	\$ 130,000
	4-3	N7B, N7B2	\$ 220,000
Area 5	5-1	N8A, S6	\$ 4,710,000
	5-2	N8A, S6, C6, N10	\$ 5,290,000
	5-3	N8A, C5, N9 [B9], N10	\$ 5,560,000
	5-4	N8B, N9 [B9], N10	\$ 16,400,000
	5-5	N8B, C5, S6	\$ 15,700,000
	5-6	N8B, C5, S6, C6, N10	\$ 16,400,000
	5-7	S5 (6), N9 [B9], N10	\$ 6,660,000
	5-8	S5 (6), C5, S6	\$ 6,000,000
	5-9	S5 (6), C5, S6, C6, N10	\$ 6,620,000
Area 6	6-1	N11A	\$ 460,000
	6-2	N11B, N12	\$ 650,000
	6-3	N11B, C7 [B10], S8 (7)	\$ 9,930,000
	6-4	S7, S8 (7)	\$ 8,310,000
	6-5	S7, C7 [B10], N12	\$ 3,740,000
Key: N## = North segment (#) = Spur Trail # S## = South segment [B#] = Bridge #			

TRAIL AREA OVERVIEW - ALIGNMENT OPTIONS

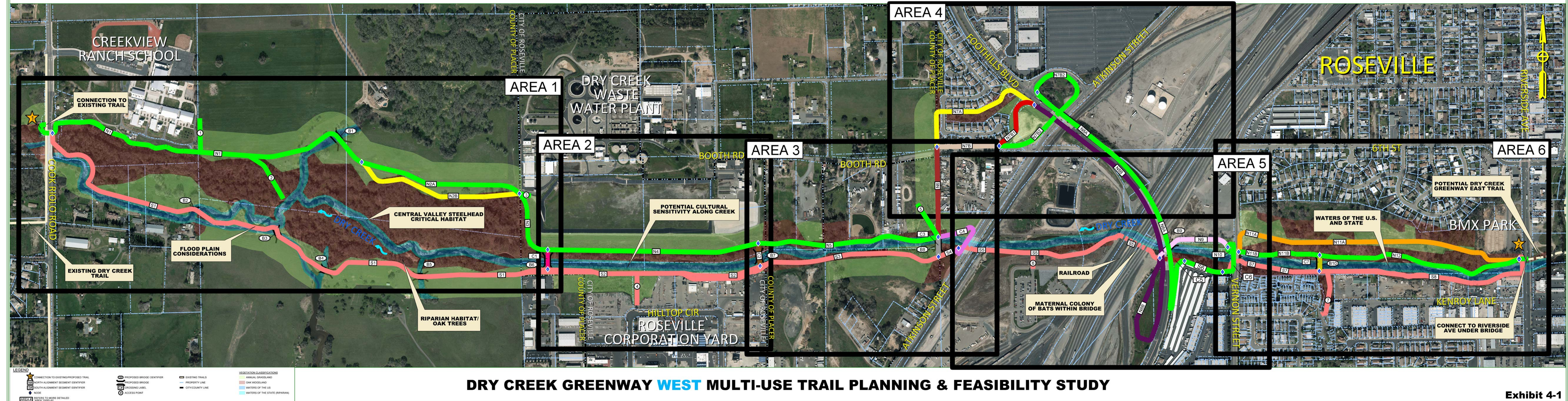
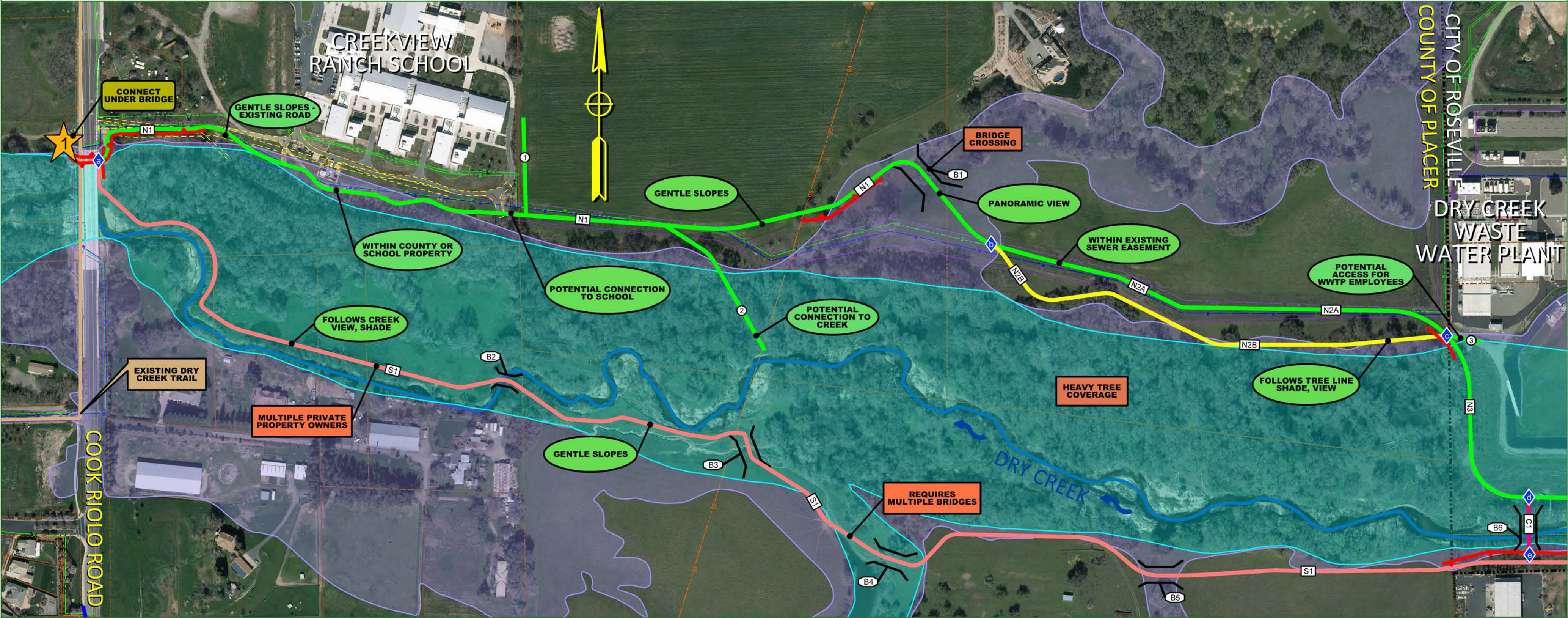


Exhibit 4-1

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AREA 1 TRAIL ALIGNMENT OPTIONS



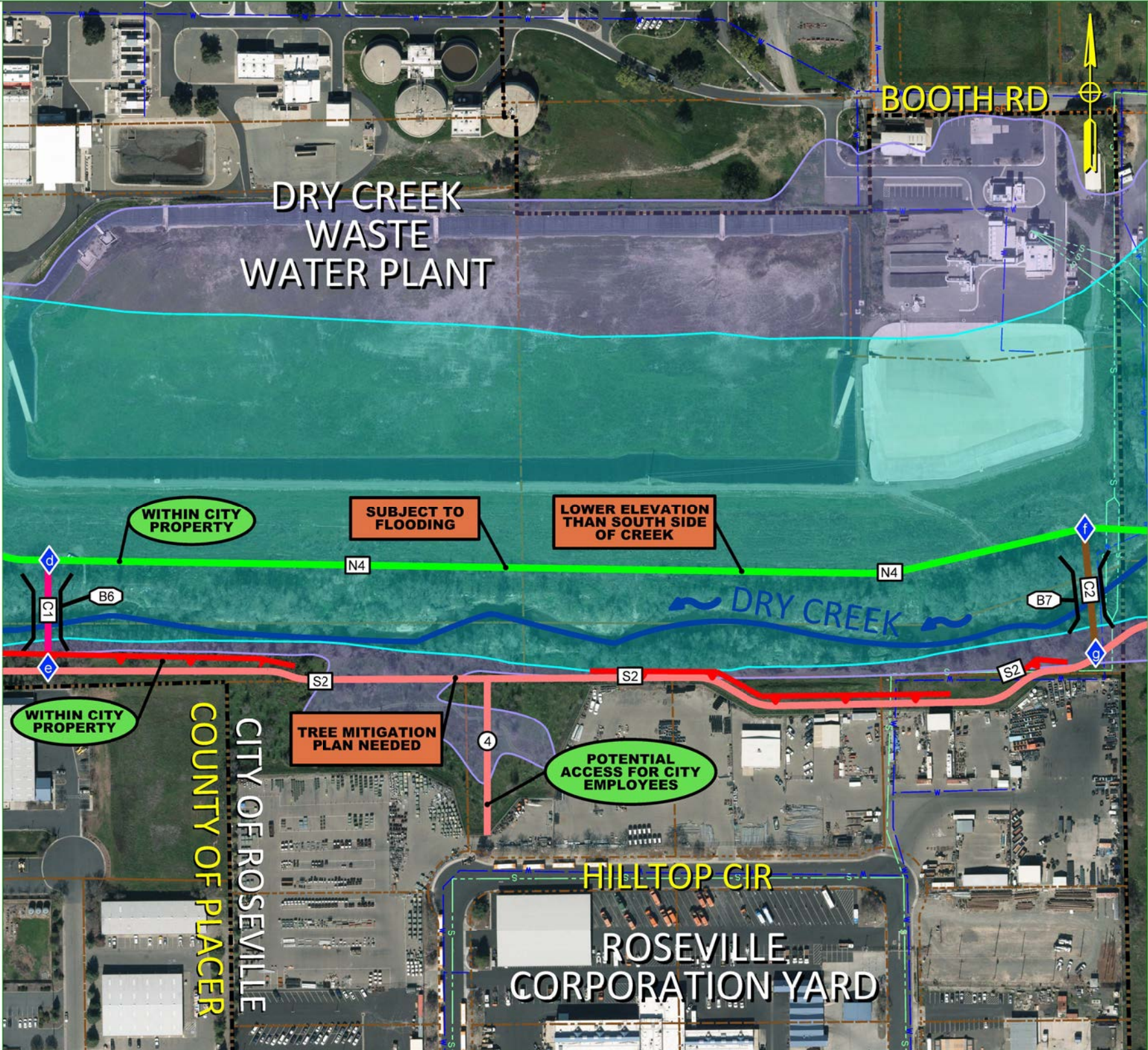
LEGEND		
☆ CONNECTION TO EXISTING/PROPOSED TRAIL	BP PROPOSED BRIDGE IDENTIFIER	○ OPPORTUNITY
N# NORTH ALIGNMENT SEGMENT IDENTIFIER	PROPOSED BRIDGE	■ NEUTRAL
S# SOUTH ALIGNMENT SEGMENT IDENTIFIER	C# CROSSING LABEL	■ CONSTRAINT
◆ NODE	EXISTING BIKE TRAIL	■ REGULATORY FLOODWAY
Ⓜ ACCESS POINT	PROPERTY LINE	■ HIGH HAZARD FLOOD ZONE
■ RETAINING WALL	--- CITY/COUNTY LINE	

DRY CREEK GREENWAY WEST MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY

Exhibit 4-2

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AREA 2 TRAIL ALIGNMENT OPTIONS



LEGEND		
★ CONNECTION TO EXISTING/PROPOSED TRAIL	(B#) PROPOSED BRIDGE IDENTIFIER	○ OPPORTUNITY
[N#] NORTH ALIGNMENT SEGMENT IDENTIFIER	(C#) PROPOSED BRIDGE CROSSING LABEL	■ NEUTRAL
[S#] SOUTH ALIGNMENT SEGMENT IDENTIFIER	— EXISTING BIKE TRAIL	■ CONSTRAINT
◆ NODE	--- PROPERTY LINE	■ REGULATORY FLOODWAY
⊕ ACCESS POINT	- - - CITY/COUNTY LINE	■ HIGH HAZARD FLOOD ZONE
■ RETAINING WALL		

DRY CREEK GREENWAY WEST
MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY
 Exhibit 4-3

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AREA 3 TRAIL ALIGNMENT OPTIONS



LEGEND		
★ CONNECTION TO EXISTING/PROPOSED TRAIL	BP PROPOSED BRIDGE IDENTIFIER	OPPORTUNITY
N# NORTH ALIGNMENT SEGMENT IDENTIFIER	PROPOSED BRIDGE	NEUTRAL
S# SOUTH ALIGNMENT SEGMENT IDENTIFIER	C# CROSSING LABEL	CONSTRAINT
◆ NODE	EXISTING BIKE TRAIL	REGULATORY FLOODWAY
⊕ ACCESS POINT	PROPERTY LINE	HIGH HAZARD FLOOD ZONE
RETAINING WALL	CITY/COUNTY LINE	

DRY CREEK GREENWAY WEST
MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY
Exhibit 4-4

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AREA 4 TRAIL ALIGNMENT OPTIONS



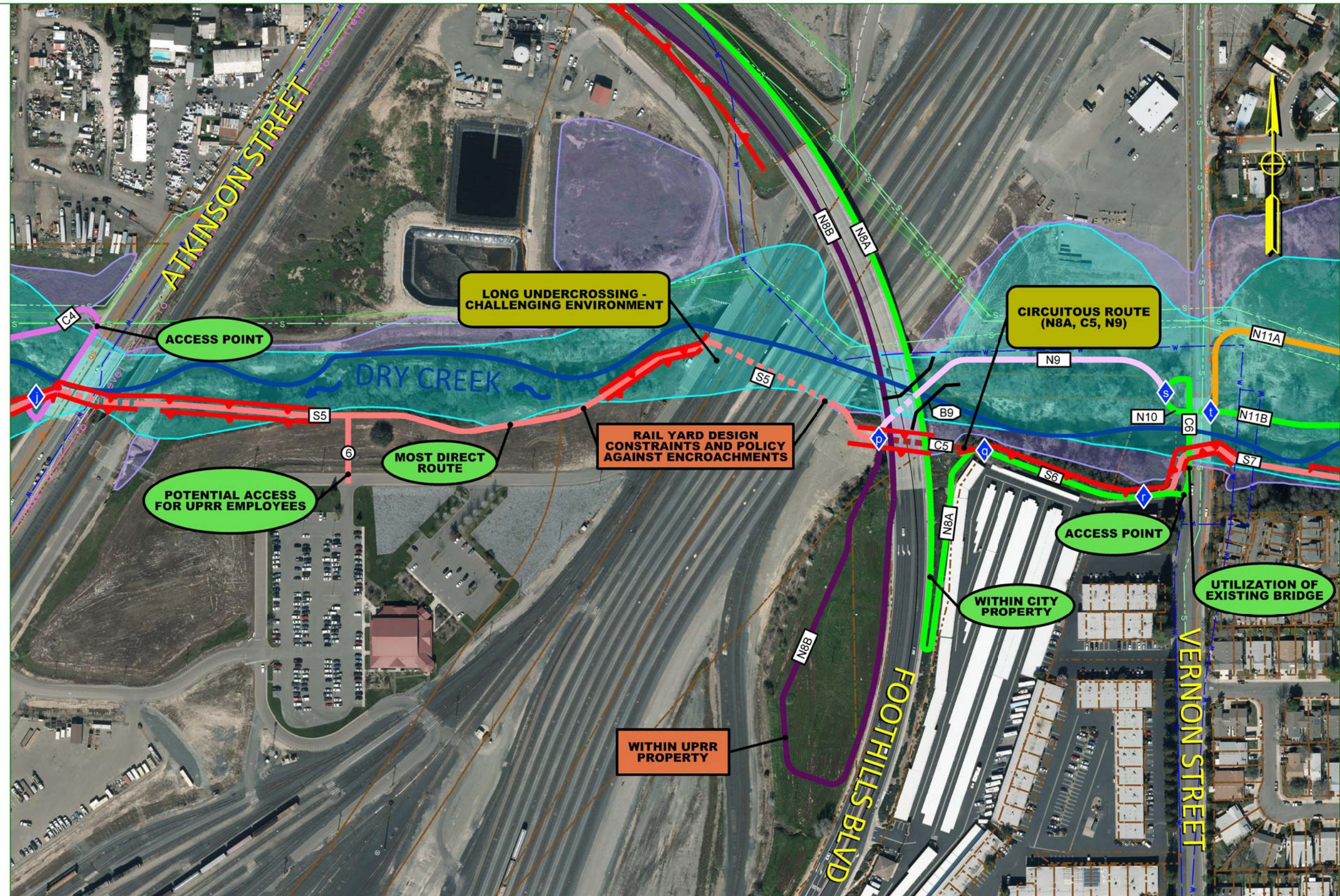
LEGEND			
★ CONNECTION TO EXISTING/PROPOSED TRAIL	ⓑ# PROPOSED BRIDGE IDENTIFIER	○ OPPORTUNITY	
Ⓝ# NORTH ALIGNMENT SEGMENT IDENTIFIER	ⓓ PROPOSED BRIDGE	■ NEUTRAL	
Ⓢ# SOUTH ALIGNMENT SEGMENT IDENTIFIER	ⓔ# CROSSING LABEL	■ CONSTRAINT	
◆ NODE	— EXISTING BIKE TRAIL	■ REGULATORY FLOODWAY	
⊕ ACCESS POINT	- - PROPERTY LINE	■ HIGH HAZARD FLOOD ZONE	
▬ RETAINING WALL	- - CITY/COUNTY LINE		

DRY CREEK GREENWAY WEST MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY

Exhibit 4-5

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AREA 5 TRAIL ALIGNMENT OPTIONS



LEGEND					
	CONNECTION TO EXISTING/PROPOSED TRAIL		PROPOSED BRIDGE IDENTIFIER		OPPORTUNITY
	NORTH ALIGNMENT SEGMENT IDENTIFIER		PROPOSED BRIDGE		NEUTRAL
	SOUTH ALIGNMENT SEGMENT IDENTIFIER		CROSSING LABEL		CONSTRAINT
	NODE		EXISTING BIKE TRAIL		REGULATORY FLOODWAY
	ACCESS POINT		PROPERTY LINE		HIGH HAZARD FLOOD ZONE
	RETAINING WALL				

DRY CREEK GREENWAY WEST
MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY
 Exhibit 4-6

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AREA 6 TRAIL ALIGNMENT OPTIONS



LEGEND		
CONNECTION TO EXISTING/PROPOSED TRAIL	PROPOSED BRIDGE IDENTIFIER	OPPORTUNITY
NORTH ALIGNMENT SEGMENT IDENTIFIER	PROPOSED BRIDGE	NEUTRAL
SOUTH ALIGNMENT SEGMENT IDENTIFIER	CROSSING LABEL	CONSTRAINT
NODE	PROPOSED BIKE TRAIL (EAST)	REGULATORY FLOODWAY
ACCESS POINT	PROPERTY LINE	HIGH HAZARD FLOOD ZONE
RETAINING WALL		

DRY CREEK GREENWAY WEST
MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY
 Exhibit 4-7

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5. Recommendations

5.1. Evaluation Criteria

A rating system was developed to compare alignment alternatives based on a variety of technical and non-technical considerations, including comments and concerns raised during the public engagement efforts. *Table 5A – Alignment Evaluation Criteria* (on the following page) lists the constituency, the rating criteria, and the measure for the criteria. Some comments or concerns are not directly measurable, including effects on neighborhood privacy, tranquility, and property values. In those cases, the criteria considered path characteristics such as the relative separation or buffer of path alternatives to private property areas.

Evaluation of the alternatives is presented in *Section 5.2, Evaluation of Alignment Options*, with the recommended alignment, estimated costs for the recommended alignment, potential funding sources and proposed phasing presented in the following sections. Alignment recommendations could change depending on the outcome of studies during the environmental documentation and preliminary engineering phase of the project.

5.2. Evaluation of Alignment Options

A system of “+”, “o”, and “-” was used in each table to rate each alignment. A “+” (+1 point) indicates favorable conditions, a “o” (0 points) indicates mixed or neutral conditions, and a “-” (-1 point) indicates unfavorable conditions. These ratings were then added to assist in determining a preferred alignment. The complete evaluation tables can be found in *Appendix G*.

Because the alignments within individual areas are not truly independent of those in the adjacent areas, the ratings of adjacent areas were considered together to select the recommended alignments from both areas. For example, the best rated combination of workable alignments for Areas 1 and 2 comprises Alignments 1-1 and 2-3 or 2-4. Analysis of the Area 3 ratings leads to the conclusion that the trail should stay south of the creek, leading to the choice of Alignment 2-3 in Area 2, even though Segment 2-4 is rated higher in Area 2.

Table 5B, following, is a summary table showing the results for each area. Recommended alignments are highlighted yellow in the table. Alternate recommended alignments are highlighted in green in the table.

Table 5A - Alignment Evaluation Criteria

Constituency		Rating Criteria	Does the Alignment...
Property Owners	Property owners near the path	Compatibility with Nearby Property	Provide a separation or buffer between sensitive uses and path or path access points?
		Parking & Traffic	Minimize neighborhood traffic and parking by providing access to off-street public parking?
		Aesthetics	Minimize potential for cuts, fills, walls or structures?
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	Require property from owners willing to sell or grant an easement?
		Public vs. private property	Maximize the use of public property?
		Impact on property	Minimize impacts to existing/planned uses of private property?
Path Users	Walkers and cyclists	Path Design	And path design (width/materials) accommodate anticipated users?
		Path User Comfort	Minimize user exposure to busy roadways and advance a lower stress level environment?
		Transportation System Performance	Provide direct connections between key destinations and other pathways and close gaps?
		Recreation Facility Performance	Result in a continuous off-street facility with well distributed access points?
		Environmental Interpretation	Afford opportunities for enjoyment of natural resources/interpretation?
		Exposure to hazards	Minimize exposure to noise and air pollution?
Public Safety	Property owners and path users	Natural Surveillance	Support visibility of path and minimizes exposure to dark or confined crossings?
		Separation	Provide spatial separation or barriers between adjacent properties and path users to discourage trespassing?
		Emergency response	Provide access points for emergency vehicles?
Environmental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	Minimize the impact to sensitive environmental resources?
		Flooding	Minimize the potential for obstruction of creek flows or erosion?
Municipal Operations	City of Roseville or Placer County	Utility System Performance	Facilitate access to and minimize the potential for impacts to existing utilities?
		Consistency with Local Plans	Achieve consistency with adopted plans?
		Cost Efficiency	Efficiently use limited resources for construction and maintenance?
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	Facilitate access to and minimize the potential for impacts to existing facilities?
		Compatible with Planned Improvements	Conform with planned facility improvements?
		Security	Maintain or enhance security of the facility?

Table 5B – Evaluation Matrix Summary			
	Alignment		
	Name	Segment Definition	Rating
Area 1	1-1	N1 (1)(2)[B1], N2A (3), N3	7
	1-2	N1 (1)(2)[B1], N2A (3), N3, C1 [B6]	5
	1-3	N1 (1)(2)[B1], N2B (3), N3	7
	1-4	N1 (1)(2)[B1], N2B (3), N3, C1 [B6]	5
	1-5	S1 [B2, B3, B4, B5]	-2
	1-6	S1 [B2, B3, B4, B5], C1 [B6]	-3
Area 2	2-1	N4	-6
	2-2	N4, C2 [B7]	0
	2-3	S2 (4)	4
	2-4	S2 (4), C2 [B7]	5
Area 3	3-1	N5 (5), N6	0
	3-2	N5 (5), C4	-5
	3-3	N5 (5), C3 [B8], S4	-7
	3-4	S3, S4	4
	3-5	S3, C3 [B8], N6	6
	3-6	S3, S4, C4 (5), N6	1
Area 4	4-1	N7A	-1
	4-2	N7B, N7B1	4
	4-3	N7B, N7B2	6
Area 5	5-1	N8A, S6	-2
	5-2	N8A, S6, C6, N10	-1
	5-3	N8A, C5, N9 [B9], N10	4
	5-4	N8B, N9 [B9], N10	0
	5-5	N8B, C5, S6	-5
	5-6	N8B, C5, S6, C6, N10	-4
	5-7	S5 (6), N9 [B9], N10	1
	5-8	S5 (6), C5, S6	-2
	5-9	S5 (6), C5, S6, C6, N10	-1
Area 6	6-1	N11A	10
	6-2	N11B, N12	11
	6-3	N11B, C7 [B10], S8 (7)	-8
	6-4	S7, S8 (7)	-10
	6-5	S7, C7 [B10], N12	5
Key: Recommended alignments are highlighted yellow. Alternate recommended alignments are highlighted green. N## = North segment (#) = Spur Trail # S## = South segment [B#] = Bridge #			

5.3. Recommended Alignment

The recommended alignment is described by area in this section and shown in *Exhibit 5-1* at the end of this section.

Area 1 – Cook Riolo Road to WWTP/Corp Yard Recommended Alignment

Alignment:	1-2
Segments:	N1 (Bridge B1), N2A, N3 and C1 (Bridge B6)
Alternate Alignment:	1-4
Alternate Segments:	N1 (Bridge B1), N2B, N3 and C1 (Bridge B6)
Spurs:	1 (Creekview Ranch School), 2 (Dry Creek), 3 (WWTP)

Starting with a connection to the existing Cook Riolo Road Bike Path just north of the Cook Riolo Road Bridge over Dry Creek, the alignment loops under the north end of the bridge, follows the existing utility access road north of the creek, passes the south side of the Creekview Ranch School, continues along the south edge of the open pasture (*Photo 5-1*), roughly following the sewer easement to near the southwest corner of the Waste Water Treatment Plant. From there it turns to the south, following the maintenance road (*Photo 5-2, on following page*) towards the creek, crosses the bypass channel and then Dry Creek.



Photo 5-1: Pasture on high ground north of Dry Creek.

The major factors leading to selection of Alignment 1-2 are the as follows:

- This northerly alignment is nearly all on high ground, limiting exposure to flooding and impacts on the flood plain.
- It generally follows an existing sewer easement, providing improved sewer access.
- Approximately one quarter of the alignment would be on publicly-owned lands, minimizing right-of-way costs.
- It would provide an opportunity for a direct link to the Creekview Ranch School (Spur 1), which alignments south of Dry Creek would not.



Photo 5-2: WWTP maintenance road north of Dry Creek.

- It would provide opportunity for an employee access to the WWTP (Spur 3).
- It would affect only two private parcels. One has an existing sewer maintenance road in an easement crossing the entire property. The other is tentatively planned for development; the owners' have expressed willingness to work with the County to incorporate the trail into their development plans.
- It connects to the strongly recommended alignment in Area 2.

The major challenges associated with the recommended alignment are as follows:

- Cost. Although it includes only two bridges, compared to four for the southerly alignments, both would be significant structures, whereas three of the four on the southerly alignments would be pipe or box culverts. The northerly alignment would also require retaining walls near the Cook Riolo Road Bridge and on the approach to Bridge B1.
- The need to cross the bypass channel north of Dry Creek (Segment N3) without restricting flood flows in that channel.
- Security concerns for the Waste Water Treatment Plant.

Alignments south of Dry Creek scored poorly for the following reasons:

- They would cross multiple private parcels while not utilizing any existing publicly-owned property or easements. At least one of the affected property owners has expressed strong opposition.
- They would traverse mostly riparian lowlands, creating much greater environmental and floodway impacts, and be much more prone to flooding.

Alternate Segment N2B is included because the alignment including this segment is essentially the same as the one including N2A, with the difference being that N2B diverges from the sewer easement to more closely follow the edge of woodland and top of bank, making for a shadier and more pleasant experience for users. The cost difference between the two would be negligible. This is a decision that can be left for final design, taking into consideration development plans for the private parcel crossed by Segment N2A or N2B.

Area 2 – WWTP/Corp. Yard

Recommended Alignment

Alignment:	2-3
Segments:	S2
Alternate Alignment:	None
Spurs:	4 (Roseville Corp. Yard Employee Access)

Starting from the south end of Bridge B6, the alignment follows the south bank of Dry Creek on City of Roseville property along the north edge of the Roseville Corporation Yard. Retaining walls would be required along portions of this alignment due to steep banks and limited right-of-way width. A portion of the trail and the spur to the Corp. Yard would pass through an area of mitigation plantings from the WWTP expansion project.

The major factors leading to selection of Alignment 2-3 are as follows:

- This southerly alignment is on higher ground than the northerly alignments, limiting exposure to flooding and impacts on the flood plain.
- It minimizes the length of interface between the trail and WWTP, simplifying separation for plant security purposes.
- It would provide opportunity for employee access to the Corp Yard (*Photo 5-3*), so collectively with Alignment 1-1 in Area 1, access would be provided to both the WWTP and the Corp. Yard.



Photo 5-3: Area for potential spur, S2, to Corp. Yard. Looking south through mitigation plantings towards Corp. Yard.

The major challenges associated with the recommended alignment are as follows:

- Steep banks requiring retaining walls along portions of the alignment.
- Mitigation for mitigation trees impacted by the path and the spur, although the path can be designed to minimize these impacts.
- Maintaining security for both the path and the Corp. Yard for this isolated stretch of path (issues would be similar, but more challenging for northerly alignments), while also providing restricted access.
- Prior surveys have noted potential cultural resources south of Dry Creek. Future surveys are needed to locate any cultural resources and determine an appropriate alignment of Segment S2.
- Access to the Corp. Yard will require some reconfiguration of storage areas.

Alignments north of Dry Creek scored poorly for the following reasons:

- Security issues for the WWTP.
- The location of the alignment between the main and bypass channels of Dry Creek.
- The low-lying ground on which the northerly alignments would be built, with little opportunity to raise the profile.

Area 3 – WWTP/Corp. Yard to Atkinson Street/Booth Road

Recommended Alignment

Alignment:	3-5
Segments:	S3, C3 (Bridge B8), N6
Alternate Alignment:	3-6
Alternate Segments:	S3, S4, C4 (Atkinson Street Bridge), N6
Spurs:	5 (Trailhead on City Property on Booth Road)

Starting along the south side of Dry Creek near the east end of the Roseville Corporation Yard, the alignment would continue along the south bank (*Photo 5-4*) on two undeveloped private parcels to a crossing of the creek (Bridge 8) near Atkinson Street. The crossing would take the trail onto the eastern edge of an undeveloped parcel owned by the City of Roseville. The trail would follow the eastern edge of this parcel to an at-grade crossing of Booth Road. Spur 5 (shown schematically) could provide a trailhead on the City-owned parcel.

The major factors leading to selection of Alignment 3-5 are as follows:

- This southerly alignment is unconstrained by existing development.
- It only impacts two private parcels.
- This alignment follows a possible new sewer alignment, providing opportunity for dual use.
- Bridge B8 is a possible crossing for the sewer line as well.
- It makes use of the City-owned parcel on Booth Road, providing a possible trailhead.



Photo 5-4: Looking southwest across Dry Creek east of the Roseville Corp. Yard.

The major challenges associated with the recommended alignment are as follows:

- The new bridge makes this the costliest alignment in Area 3.
- Attempts to contact one of the two affected property owners were not successful.

Alignments north of Dry Creek scored poorly for the following reasons:

- Opposition from property owners.
- Constrained right-of-way due to development of multiple private parcels and a recent flood protection project on the north bank of the creek.

Alignment 3-4, which would stay south of Dry Creek, cross under the Atkinson Street Bridge and continue into Area 5 onto the UP Railroad Yard property via Alignments 5-7, 5-8 or 5-9, was the second highest rated alignment in Area 3 (Rating = 4), but was dismissed because the aforementioned Area 5 alignments are considered infeasible at this time due to stated objections by the UPRR.

Alternate Segments S4 and C4 are included because the alignment including these segments (Alignment 3-6) would provide a less costly crossing of Dry Creek by utilizing currently unused space on the existing Atkinson street Bridge over Dry Creek. This alternate rated lower because of the additional length of trail, diminished user comfort, the impacts the trail would have on potential development of the private parcels on both sides of the creek between the City parcel and Atkinson Street (*Photo 5-5*), and the incompatibility with the proposed widening of Atkinson Street.



Photo 5-5: Looking west along Dry Creek from Atkinson Street Bridge.

Area 4 – Booth Road to Foothills Boulevard

Recommended Alignment

Alignment:	4-3
Segments:	N7B, N7B2
Alternate Alignments:	None
Spurs:	None

Starting at the north side of Booth Road at the southwest corner of the Beatty Way neighborhood, the alignment would follow the north side of Booth Road within the road right-of-way as a side path, crossing the Walker Drive entrance to the neighborhood at grade. It would continue along the north side of Booth Road to Atkinson Street (*Photo 5-6*), and then continue as a side path along Atkinson Street under the Atkinson Undercrossing of Foothills Boulevard to the Denio's loop, continuing along the inside of the ramp to its intersection with Foothills Boulevard.

The major factors leading to selection of Alignment 4-3 are the as follows:

- Of the two low-cost alignments within this area, it is the only one compatible with the three feasible alignments for Area 5 (5-1, 5-2 and 5-3).
- It is entirely within City right-of-way.



Photo 5-6: Existing intersection of Atkinson Street and Booth Road, looking southwest.

Following are the major challenges associated with the recommended alignment:

- Design of the at-grade crossing of Walker Drive.
- Improvement of the Denio's interchange with a south side loop ramp would require either an at-grade crossing of that ramp, or a realignment of the trail and an undercrossing of the proposed ramp. However, the cost of the undercrossing would be minimized by incorporating it into the interchange project.

The alignment (4-1) through the neighborhood open space scored poorly because:

- Cost associated with retaining walls required to maintain the detention basin.
- Close proximity to open back yard fences of homes along Beatty Way.

Area 5 – Atkinson Street/Booth Road to Vernon Street

Recommended Alignment

Alignment:	5-3
Segments:	N8A, C5, N9 (Bridge B9), N10
Alternate Alignments:	5-2
Alternate Segments:	N8A, S6, C6, N10
Spurs:	None

Starting at the southeasterly corner of the Denio’s loop ramp and Foothills Boulevard, this alignment would follow the northeast side of the Foothills Boulevard Bridge as a barrier-separated side path across Atkinson Street, the UP Railroad Yard and Dry Creek, loop sharply back to the north after leaving the south end of the Foothills Boulevard Bridge (*Photo 5-7*), cross Dry Creek again on Bridge B9 (*Photo 5-8 on following page*), and follow



Photo 5-7: South end of Foothills Boulevard Bridge, looking south. Proposed path would use a widened sidewalk and loop back under the bridge at this location.

the north side of the creek along the southerly edge of the UPRR parking lot to Vernon Street, and then under the north end of the Vernon Street Bridge over Dry Creek.

The major factors leading to selection of Alignment 5-3 are the as follows:

- It was the only one of the three alignments in Area 5 considered feasible that had a positive rating (Rating = 4).
- By widening the existing sidewalk and narrowing existing lanes, shoulders and median, this alignment can be incorporated into the two Foothills Boulevard bridges without widening the bridges or reducing the number of traffic lanes.



Photo 5-8: Proposed location of Bridge B9 near south end of Foothills Boulevard Bridge.

- Of the feasible alignments, it provides the best user experience and greatest safety for users.
- It is mostly within City right-of-way and the portion within UPRR property would be along the former City Subway right-of-way at the edge of a lightly-used UPRR parking lot.

The major challenges associated with the recommended alignment are as follows:

- The horizontal path geometry at the south end of the Foothills Boulevard Bridge and Overhead is severely constrained by right-of-way, which will require designing the trail with a sharp curve on a down grade with a substandard design speed.
- Vertical geometry for Bridge B9 will also be challenging because of a large drop from Foothills Boulevard to the grade of the parking lot and Vernon Street.
- This alignment requires UPRR right-of-way east of the UP Railroad Yard.

Alignment 5-2 is included as an alternate in consideration of the potential challenges associated with Bridge B9, which will be evaluated during preliminary engineering.

Alignments 5-4 through 5-6 are considered infeasible because they would require a narrow widening of both Foothills Boulevard bridges at a cost roughly three times that of any other alignment. This widening would also require substantial construction within and over the UP Railroad Yard, which would dramatically increase the permitting efforts.

Alignments 5-7 through 5-9 are considered infeasible because they would cross the entire width of the UPRR right-of-way, including passing under existing structures carrying all fifteen tracks in the rail yard. The UPRR has indicated that they will not allow a trail across their right-of-way.

Area 6 – Vernon Street to Riverside Avenue

Recommended Alignment

Alignment:	6-2
Segments:	N11B, N12
Alternate Alignment:	6-1
Alternate Segment:	N11A
Spurs:	None

Starting at the northeastern corner of the Vernon Street Bridge over Dry Creek (*Photo 5-9*), this alignment would follow the north bank of Dry Creek (*Photo 5-10 on following page*) to Riverside Avenue, and then cross under the existing Riverside Avenue Bridge to connect with the proposed Dry Creek Greenway Trail East.



Photo 5-9: Looking east from Vernon Street north of Dry Creek.

The major factors leading to selection of Alignment 6-2 are the as follows:

- It crosses only one private parcel with a potentially cooperative owner.
- The exact alignment can be designed to minimize impacts to the potential development of this property.
- It has high value for users as it closely follows the contours of the creek bank, while staying on relatively high ground.



Photo 5-10: Typical view of north bank of Dry Creek between Vernon Street and Riverside Avenue, looking east.

The major challenges associated with the recommended alignment are as follows:

- The entire alignment is on private property. The owner has expressed a preference for Alignment 6-5, which would reduce the length of trail on his property by about one third.
- There is limited headroom and hydraulic capacity under the existing Riverside Avenue Bridge (this is common to all alignment options in Area 6).

Alignments all or in part on the south side of the creek (Alignments 6-3 through 6-5) all scored poorly due to high cost for one or both of two reasons:

- All would require an additional crossing of Dry Creek, either via new Bridge B10 or by widening the existing Riverside Avenue Bridge.
- Retaining walls would be required for most of the alignment south of the creek. A significant length of Segment S8 (nearest Riverside Avenue) is considered infeasible due to extremely high, steep and badly eroded slopes.

Alignments 6-1 (Segment N11A) is considered a viable alternative to Alignment 6-2, having similar cost and similar impacts on private property. This alignment would follow the existing sewer maintenance road through the center of the property. The choice of alignment would be left to final design in coordination with potential development plans for the parcel.

5.4. Cost Estimate – Recommended Alignment

Table 5C, on the following page, is a summary of planning-level cost estimates based on the recommended alignment described in *Section 5.3*. Estimated costs include preliminary engineering and environmental documentation, right-of-way, construction and construction administration, and include 10 percent for mobilization and a 25 percent contingency. The right-of-way costs are based on acquisition of a 30-foot wide easement along properties not owned by the City or County. The cost estimates do not include any annual maintenance costs, nor can they anticipate many details that might further inform the capital costs, such as the results of drainage and geotechnical investigations, and the need for utility relocations. Trailhead improvements are also not included in the costs. The unit costs for the estimate are based on Caltrans cost data and recent relevant completed projects in the region. An estimate for each alignment alternative was used as a criterion in the evaluation of the recommended alignment. However, the recommended alignments are not necessarily the least cost options for each area, as cost is only one of the criteria considered. For detailed cost estimates for all alignments, see *Appendix F*.

Table 5C – Estimate of Project Costs				
	Recommended Alignment			
	Name	Description	Segment Definition	Cost
Area 1	1-2	Cook Riolo Road Path to WWTP	N1 (1)(2)[B1], N2A (3), N3, C1 [B6]	\$5,860,000
Area 2	2-3	Along WWTP/ Corp Yard ROW	S2 (4)	\$1,420,000
Area 3	3-5	Corp Yard to Booth Road	S3, C3 [B8], N6	\$2,650,000
Area 4	4-3	Booth – Atkinson – Denio's Ramp	N7B, N7B2	\$220,000
Area 5	5-3	Rail Yard – Denio's to Vernon	N8A, C5, N9 [B9], N10	\$5,560,000
Area 6	6-2	Vernon to Riverside	N11B, N12	\$650,000
TOTAL PROJECT COST				\$16,360,000

5.5. Funding

Funding for trail construction has not been identified at this time. The proposed multi-use trail project anticipates utilizing several different funding sources to construct the project. There are multiple federal, state, regional and local sources of funding that may be available, as well as private and non-traditional funding sources. It should be noted that General Funds are not included in the list of potential funding sources for this facility as they typically are not used by the City or County for trails. Please see *Appendix H* for a comprehensive discussion of potential funding sources.

5.6. Phasing

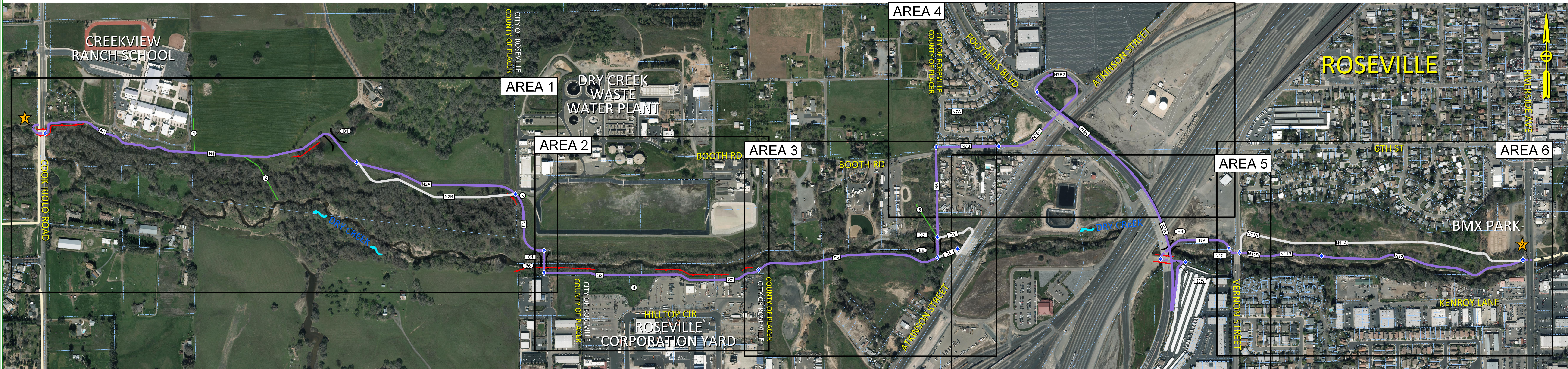
Because of the high cost of the project and the need to obtain grant funding for construction, the Dry Creek Greenway Multi-Use Trail will probably need to be constructed in phases. Construction phases must each have independent utility, so they are valuable for users before and until the other phases are built. For the Dry Creek Greenway West, there are three logical phases for construction as follows:

- Cook Riolo Road Bike Path to Booth Road
- Booth Road to Vernon Street
- Vernon Street to Riverside Avenue (Connection to Dry Creek Greenway East)

Because there are no logical access points within two of the three phases (Cook Riolo to Booth, and Vernon to Riverside), and the second (Booth to Vernon) would result in one very short phase if broken up, there is no logical phasing scheme with more than three phases.

The sequencing of these will be based on availability of funding and right-of-way, as well as timing of potential development projects on adjacent private parcels. The first phase would logically start at one of the two ends, which would connect to existing (Cook Riolo Road Bike Path/Dry Creek Trail) or proposed (Dry Creek Greenway East Multi-Use Trail) trails. Saving the middle phase for last will help to create demand for the final link, while allowing time for reconsideration of the feasibility of alignments through the railroad yard. Both the western and eastern segments would best serve the public as an intermediate phase as these would provide links for residential communities to either local schools or public parks.

TRAIL AREA OVERVIEW - RECOMMENDED ALIGNMENT



LEGEND

CONNECTION TO EXISTING PROPOSED TRAIL	PROPOSED BRIDGE IDENTIFIER	EXISTING TRAILS	RECOMMENDED ALIGNMENT
NORTH ALIGNMENT SEGMENT IDENTIFIER	PROPOSED BRIDGE	PROPERTY LINE	ALTERNATIVE SEGMENT
SOUTH ALIGNMENT SEGMENT IDENTIFIER	CROSSING LABEL	CITY/COUNTY LINE	
NODE	ACCESS POINT	RETAINING WALL	
AREA 1			

AREA 1 REFERS TO MORE DETAILED AREA DISPLAY

DRY CREEK GREENWAY WEST MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY

Exhibit 5-1

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6. Design and Implementation

6.1. Next Steps

Once the feasibility study has been approved by the responsible parties, if funding is available, the project will move into the preliminary engineering and environmental documentation phase. During this phase, the engineering will be further refined, and the public will have opportunities to comment on the recommended alternative during public circulation of the draft Environmental Document as well as during approval of the final Environmental Document. Once the final Environmental Document is approved, the project will move into Final Design and Right-of-Way negotiations. *Figure 6-1*, below,

Figure 6-1: Next Steps



shows the steps necessary to advance the proposed multi-use trail through to construction.

6.2. Right-of-Way Strategies

Right-of-way from both public agencies and private property owners will need to be acquired to accommodate the proposed multi-use trail. The City of Roseville and Placer County will work to gain dedicated easements for the multi-use trail along public right-of-way. Right-of-way negotiations would be needed with private property owners. The location of some segments of the trail will be determined during right-of-way negotiations.

6.3. Project Design

The Dry Creek Greenway West Multi-Use Trail will provide Placer County and City of Roseville residents improved active transportation opportunities, additional connectivity between vital local origins and destinations, and regional connectivity to existing and future trails as part of a 70-mile regional loop. While providing these key elements, project design must conform to the surrounding land uses and landscapes, consider local standards, and meet safety needs for all users. Design practices will consider many path improvement features: standard pavement sections, roadway crossings, creek crossings, path access, landscaping, signing, and other aesthetic features. The Dry Creek Greenway West Multi-Use Trail will be designed and constructed to current local, state and federal standards. These will include the following:

- *County of Placer General Specifications* (April 2018) (*County Specifications*)
- *City of Roseville Design Standards* (January 2016) (*City Standards*)
- *Highway Design Manual, Chapter 1000* (Caltrans) (*HDM*)
- *California Manual on Uniform Traffic Control Devices* (CA MUTCD)
- *Design Information Bulletin, DIB 82-06, Pedestrian Accessibility Guidelines for Highway Projects* (Caltrans) (*DIB 82-06*)
- *California Code of Regulations, Title 23. Waters, Division 1., Central Valley Flood Protection Board* (CVFPB Regulations)
- *Guide for the Development of Bicycle Facilities* (American Association of State Highway and Transportation Officials) (*AASHTO Bike Guide*)
- *Load and Resistance Factor Bridge Design Specifications* (AASHTO) (*AASHTO Bridge Specifications*)
- *Load and Resistance Factor Guide Specifications for Design of Pedestrian Bridges* (AASHTO) (*AASHTO Guide for Pedestrian Bridges*)

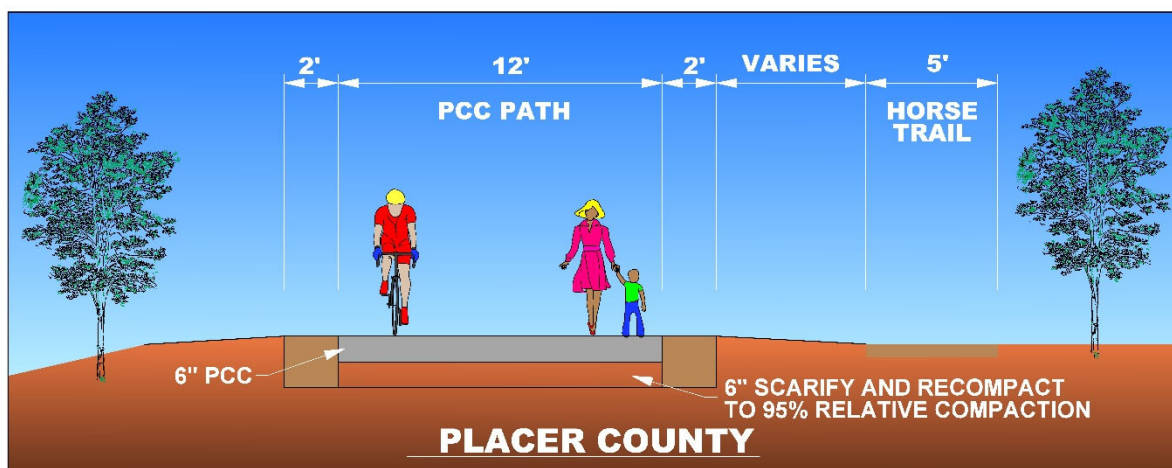
For consistency between the Dry Creek Greenway East and West Trail projects, where applicable, project design features discussed in this section are consistent with those discussed in the *Dry Creek Greenway East Planning and Feasibility Study (DCGE Study)*.

6.3.1. Surface/Typical Sections/Geometrics

The standard path “typical” section for the Dry Creek Greenway West Multi-Use Trail will differ for portions of the trail within the jurisdictions of Placer County and the City of Roseville. In both areas, geotechnical studies during the preliminary design phase of the project will determine if there are soil conditions that require special structural sections.

Within Placer County limits, the trail will conform to the *County of Placer General Specifications, Plate 123, Multi Use Trails*. The typical section consists of a 12-foot wide concrete path with 2-foot aggregate base shoulders and a 5-foot graded trail for equestrian use, as shown in *Figure 6-2*. The horse trail will only be included west of the WWTP. During final design, a logical equestrian turnaround will need to be located and designed.

Figure 6-2: Typical Trail Section - Placer County

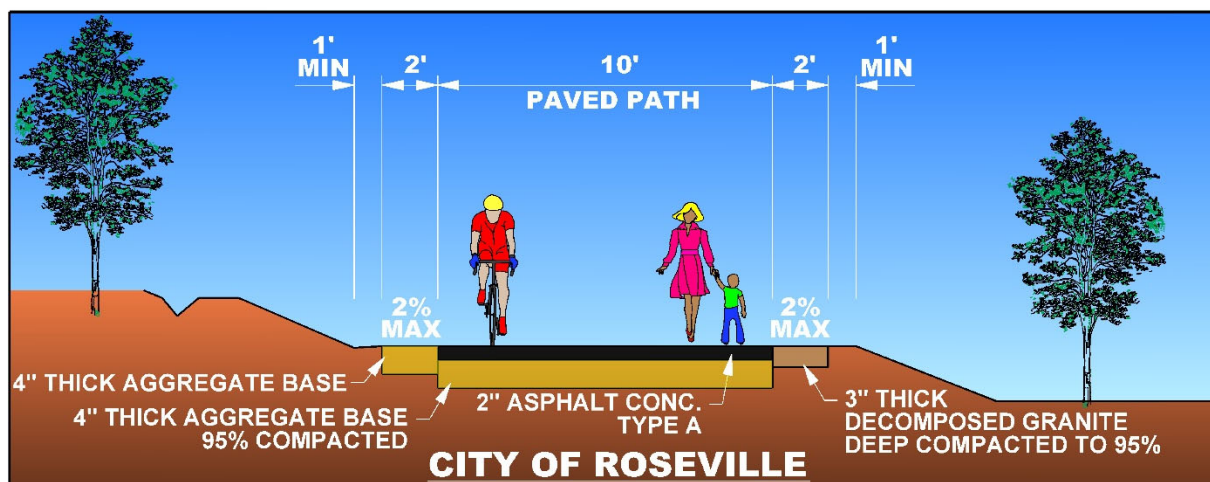


The County standard pavement section consists of a minimum of 6 inches of Portland Cement Concrete over sub-base that is scarified and compacted to a 95% relative compaction.

Within the City limits, the path will conform to *Section 6: Park Standard Details, Detail PK-43, Bike Trail Section* of the *City of Roseville Design Standards*. The typical section, shown in *Figure 6-3*, on the following page, consists of a 10-foot wide paved path with 2-foot shoulders, the high-side shoulder comprising 4 inches of aggregate base and the low-side shoulder comprising 3 inches of decomposed granite. The pavement section

consists of a minimum of 2 inches of hot mix asphalt, Type A over 4, 6 or 8 inches of Class 2 aggregate base, depending on the R-value of the soil.

Figure 6-3: Typical Trail Section – City of Roseville



Within the City of Roseville, where the trail will be constructed more than one foot below the 10-year Water Surface Elevation (WSE), the *City Standards* require a PCC pavement section along with toe-of-slope protection conforming to *Section 13-5, Bike Paths in Floodplains* to prevent the path from being undermined during flood events.

During final design, logical locations for transition between the City and County typical sections will need to be identified and detailed.

For all trail sections, depending on subsurface soil type and drainage needs, geotextiles may be employed to provide stability and facilitate drainage of subsurface soils. In addition, longitudinal grades determined during final design will need to be reviewed and changes made to the structural section materials if needed to prevent erosion of the shoulder materials.

Where the trail is constructed within cut-slopes, a drainage ditch of suitable dimensions will be required along the uphill side to intercept the hillside drainage. Where the trail is constructed on top of fill slopes, a drainage ditch of suitable dimensions will be required along the downhill side to intercept trail drainage. Cut and fill slopes will be constructed per the recommendations of a licensed Geotechnical Engineer.

Longitudinal grades will follow HDM guidelines and, wherever possible, will be limited to 5% to avoid *Americans with Disabilities Act* (ADA) ramp requirements. Design cross-slopes will be set to 1.5% to ensure ADA compliance when built.

6.3.2. Access Points/Trailheads

Along the Dry Creek Greenway West Multi-Use Trail corridor, there are several potential trail access points. Access points are an oft-overlooked feature that are critical to the success of the trail. Without safe and convenient points of access, trail use will fail to meet expectations. Beyond the obvious functional benefits of access points, they also provide visibility to potential users of the trail who may otherwise not be aware of its existence.

Additionally, there are several opportunities for trailheads along the corridor. These will create formal points of access, typically including parking, trail information, trash receptacles, benches and sometimes additional facilities such as restrooms and water fountains. Further discussions will be required during preliminary design to determine exact trailhead locations.

Potential access points are listed below:

- Cook Riolo Road
- East side of Creekview Ranch School
- Dry Creek Waste Water Plant (Employees Only)
- Roseville Corporation Yard (Employees Only)
- Booth Road
- Beatty Way/Walker Drive (off Booth)
- Atkinson Street (Various Locations)
- Foothills Boulevard at Denio's Ramp
- Foothills Boulevard south of Dry Creek (access to Cirby Way)
- Vernon Street
- Cirby Woods III Neighborhood
- Riverside Avenue

Potential trailhead locations are as follows:

- Cook Riolo Road – west side, south of Dry Creek Trail connection
- City-owned parcel near east end of Booth Road
- Existing UPRR parking lot north of creek on west side of Vernon Street
- North of creek and east of Vernon Street
- City-owned parcel East of Riverside Avenue and north of Dry Creek (Planned with Dry Creek Greenway East project)

6.3.3. Creek Crossings and Access

The recommended alignment for the Dry Creek Greenway West Trail corridor contains six creek crossing, four that cross Dry Creek and two that cross minor drainages feeding Dry Creek. These creek crossings are listed in *Table 6A* below. Please note that Bridges B8 and C4 in *Table 6A* are alternate crossings, one of which will be selected during final design.

Table 6A: Potential Creek Crossing Locations			
Creek Crossing	Location	Feature Crossed	Type
B1	Along N1, east of Creekview Ranch School	Tributary	Bridge
B6 / C1	Between N3 and S2,	Dry Creek	Bridge
B8 / C3	Between S3 and N5,	Dry Creek	Bridge
C4	Atkinson Street	Dry Creek	Existing Bridge
N8A / N8B	Foothills Boulevard	Dry Creek	Existing Bridge
C5	Between S5/N8B & S6, over roadway/bridge drainage	Tributary	Culvert
C6	Vernon Street	Dry Creek	Existing Bridge

Path bridges will conform to the *County Standards* or *City Specifications*, as appropriate, as well as the *HDM*, the *AASHTO Bridge Specifications*, the *AASHTO Guide for Pedestrian Bridges* and *CVFPB Regulations*. The minimum clear width of bridges is 12 feet, with 14 feet preferred. The minimum vertical clearance is 12 feet when Fire Department access is required, otherwise 9 feet. The minimum railing height is 54 inches for the City of Roseville, otherwise 48 inches, and must have a toe board at the base and be designed to resist the 100-year flood event if the bridge is in the flood plain.

Creek crossings using existing bridges would require reconfiguration of the space on the bridges, as described in *Section 4.1, Description of Alignment Options*.

6.3.4. Roadway Intersections/Crossings

Roadway crossings can be a major challenge to continuous path networks. The recommended alignment for the Dry Creek Greenway West Multi-Use Trail has six roadway crossings, ranging from low volume residential streets to six-lane arterials. The proposed path will use several methods to cross these roadways, but the majority would cross under existing bridges to avoid at-grade crossings. The only at-grade crossings would be at Booth Road and Walker Drive. Crossing treatments for both were discussed in *Section 4.1, Description of Alignment Options*.

6.4. Safety and Security

Public safety and security are important concerns when trails are proposed in new areas. The elements of design that help ensure public safety were highlighted and discussed with the public during the community open houses. These elements include emergency access, trail access, trail use, respecting boundaries, maintenance and natural surveillance, as highlighted in *Figure 6-4*, below.

Figure 6-4 – Public Safety and Security



Key elements maximizing public safety include designing the trail to provide vehicular and bike access to the police and fire departments. Although the public will be prohibited from driving on the trail, the pavement will be designed to accommodate emergency and maintenance vehicle access.

Additionally, trail access points will be clearly recognizable through consistent use of design elements such as signage, entrance features and landscaping. Distinct features such as pavement treatment and ornamental planting will help the public identify access points to the multi-use trail. Once users are on the trail, signage and wayfinding systems will help keep users safe by providing essential information about distance, location and

connections to local amenities, transportation routes, and other trails, thus creating clearly-defined navigable routes for the public.

The design of the trail will help reinforce boundaries between public and private property through planting, fencing, signage and other enhancements to help distinguish those areas along the trail corridor specifically intended for public use from adjacent private uses.

To ensure the public feels safe along the multi-use trail, the project will incorporate natural surveillance elements to provide unobstructed lines of visibility into and on the trail corridor. Some elements include pruning and clearing existing vegetation and trees to maintain views along the trail, providing long sightlines at where the trail crosses under bridges, minimizing obstructions and providing lighting at key locations along the trail.

7. Appendices

Appendix A: Land Use Maps

Appendix B: Existing Utility Maps

Appendix C: Biological Resources Memorandum

Appendix D: Public Workshop and Open House Summaries

Appendix E: RTC Similar Projects Memo

Appendix F: Project Cost Estimates

Appendix G: Alignment Evaluation Tables

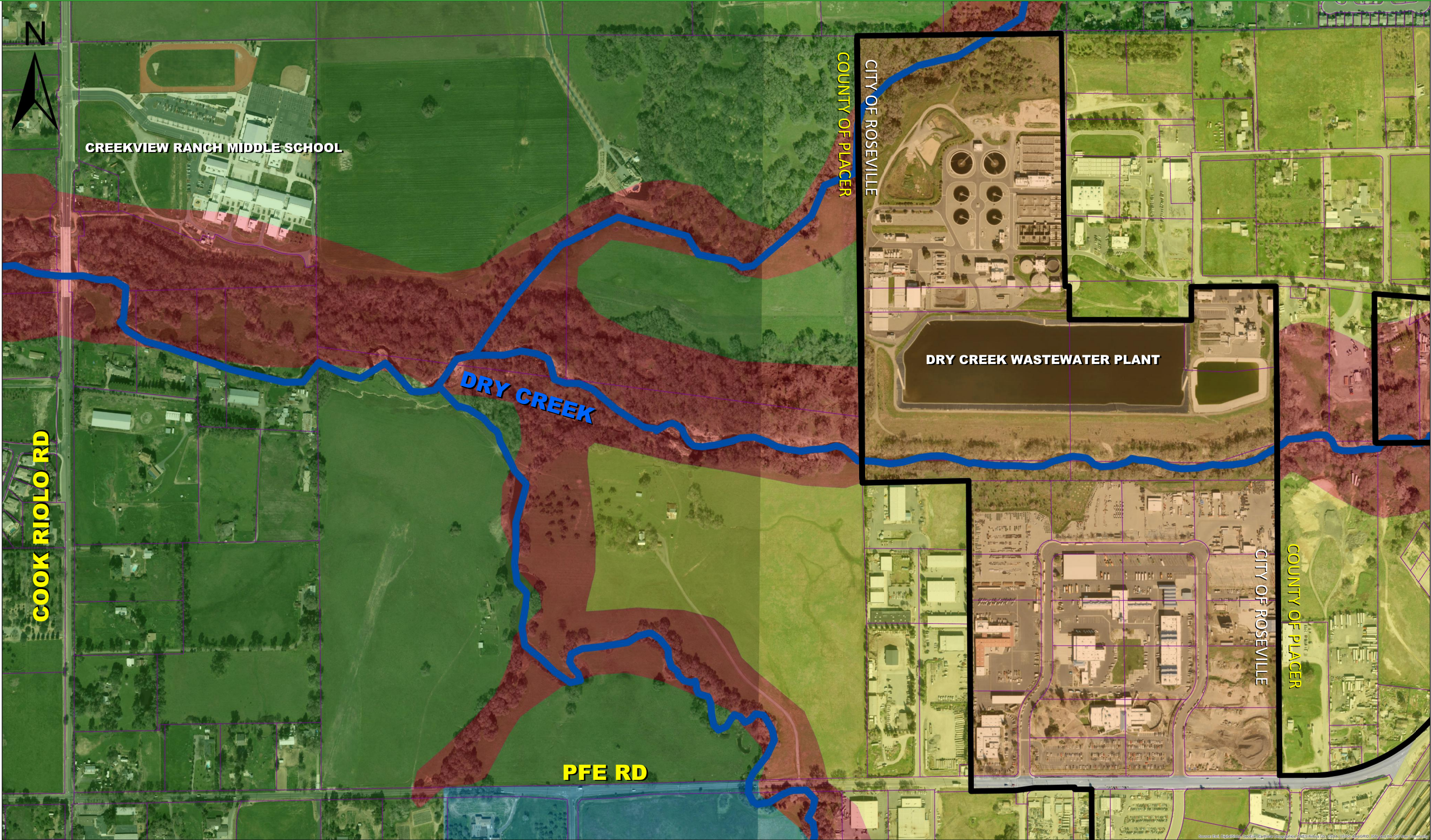
Appendix H: Funding

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Appendix A: Land Use Maps

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PROJECT AREA LAND USES



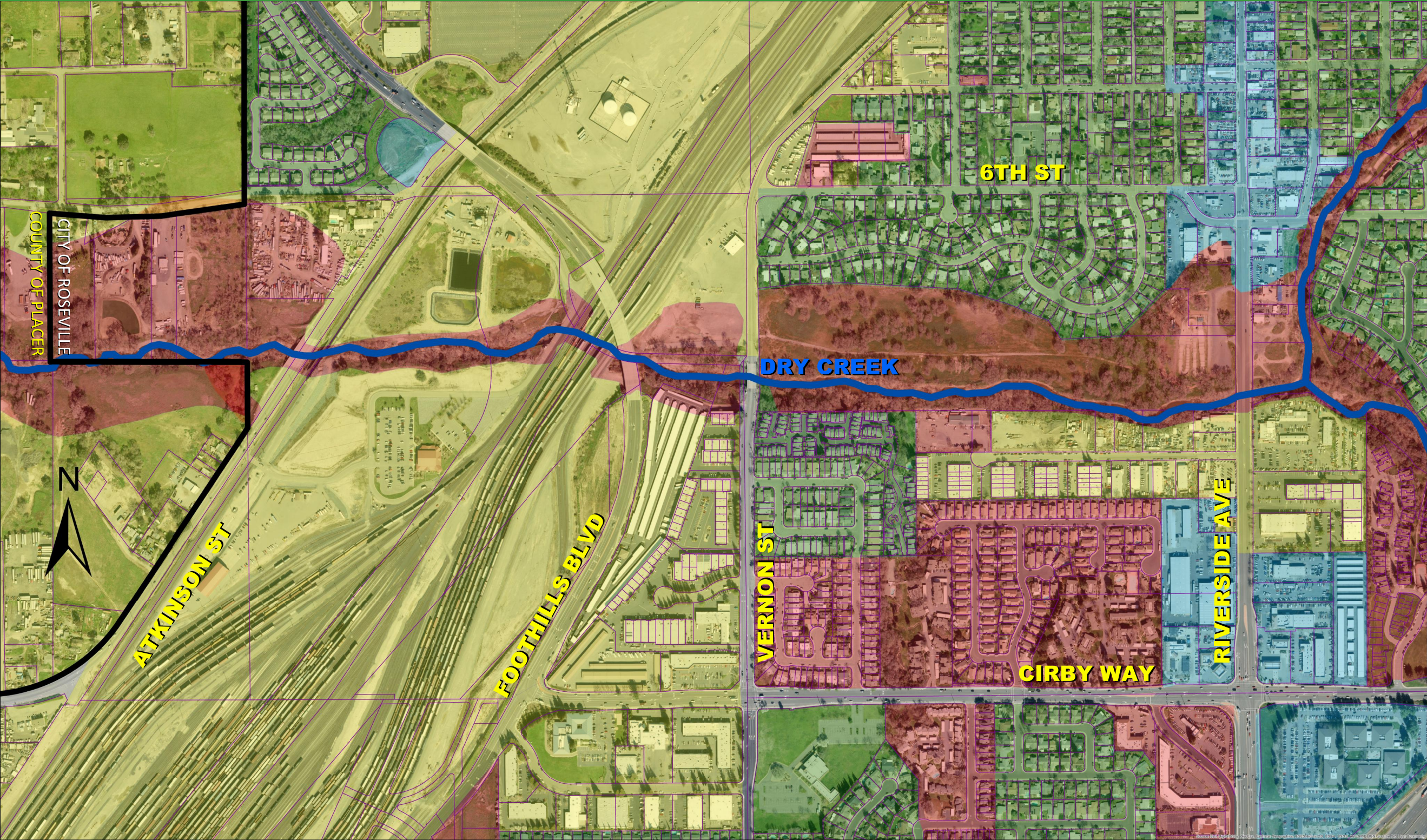
LEGEND

- Residential
- Commercial
- Industrial
- Civic and Resource Protection
- Open Space
- City Boundary Line
- Parcel Lines

DRY CREEK GREENWAY WEST MULTI-USE TRAIL
PLANNING & FEASIBILITY STUDY

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PROJECT AREA LAND USES



0 375 750 1,500 2,250 3,000 Feet

LEGEND

- Residential
- Commercial
- Industrial
- Civic and Resource Protection
- Open Space

- City Boundary Line
- Parcel Lines

DRY CREEK GREENWAY WEST MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY

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Appendix B: Existing Utility Maps

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EXISTING UTILITIES MAP 1



LEGEND

- | | |
|--|--|
|  PROJECT AREA |  SEWER |
|  PARCELS |  RAW WATER |
|  CITY COUNTY LINE |  RECYCLED WATER |
|  ELECTRIC | |
|  WATER | |

DRY CREEK GREENWAY **WEST** MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY

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EXISTING UTILITIES MAP 2



LEGEND

- | | |
|--|---|
|  PROJECT AREA |  SEWER |
|  PARCELS |  RAW WATER |
|  CITY COUNTY LINE |  FIBER OPTIC |
|  ELECTRIC | |
|  WATER | |

DRY CREEK GREENWAY **WEST** MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY

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Appendix C: Biological Resources Memorandum

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Draft Biological Resources Memorandum for the Dry Creek Greenway West Multi-use Trail Planning and Feasibility Study



Prepared for:
City of Roseville
Public Works Department—Alternative Transportation
316 Vernon St, Suite #150,
Roseville, CA 95678

Prepared by:
Dokken Engineering
110 Blue Ravine Road,
Folsom, CA 95630

September 2018

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INTRODUCTION

The Dry Creek Greenway West Multi-Use Trail is a portion of the Dry Creek Greenway and will be a Class 1, paved, multi-use path between Cook Riolo Road in Placer County and Riverside Avenue in the City of Roseville, spanning approximately three miles (see Figure 1: Project Vicinity and Figure 2: Project Location). It will be a shared use path connecting neighborhoods, parks, schools, businesses, and the on-street bikeway system for cyclists, walkers, joggers, and disabled users. A wide variety of constraints exist within the study area including private property, environmental concerns, and the railroad and as a result, the proposed project requires extensive coordination with the appropriate stakeholders.

This Biological Resources Memorandum describes the methods used to identify potential biological resource issues, presents the results of findings, and includes a list of recommendations to provide general guidance for developing trail alternatives. These recommendations are intended to minimize effects to biological resources that occur within the project's vicinity. The recommendations also intend to minimize the necessary mitigation associated with construction of the multi-use path.

The purpose of this report is to assist the City in developing design alternatives for the Dry Creek Greenway West Multi-Use Trail that avoid and minimize effects on biological resources. The information presented in this report should be considered preliminary and used for planning purposes only. Additional comprehensive biological surveys will be required to support future environmental documentation consistent with the state California Environmental Quality Act (CEQA) and the federal National Environmental Policy Act (NEPA).

METHODOLOGY

Literature research and a desktop survey was conducted to review existing information and to prepare lists of special-status plant and wildlife species known to occur or with potential to occur in the project region. Literature research was conducted through the United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants to identify habitats and special-status species having the potential to occur within the project vicinity. A desktop survey was conducted through review of aerial imagery to document existing biological resources, detect potential jurisdictional waters of the U.S. and CDFW and search for suitable habitat of sensitive protected species. Potential effects to resources were analyzed based on the proposed alignments and ecological resources identified. Limited preliminary field reconnaissance surveys were conducted where access was available to verify results of the desktop survey.

RESULTS

The study area is located in western Placer County, a semi-urbanized region that has retained large, contiguous areas of undeveloped corridors along Dry Creek. These undeveloped corridors support terrestrial and aquatic species and sensitive natural communities. Within the feasibility study corridor, habitat quality ranges from disturbed, low quality to high quality habitat. Although the habitat value of the urban creek corridor that occurs in the study area may be diminished because of adjacent and surrounding development, the Dry Creek corridor provides migratory

habitat of wildlife species including migratory fish, which are federally protected, as well as riparian habitat for the federally protected valley elderberry longhorn beetle.

The feasibility study corridor supports both important and common biological communities. Important biological communities are habitats considered sensitive because of high species diversity, high productivity, unusual characteristics, limited distribution, declining status, or a combination of these attributes. Local, state, and federal agencies consider such habitats important. The USFWS considers certain habitats, such as wetlands and riparian communities, important to wildlife. The USACE and the Environmental Protection Agency (EPA) consider wetland habitats important for water quality and wildlife. The biological communities in the study area that meet the criteria for important natural communities are Oak Woodland and Waters of the U.S. and State (Riparian). The riparian corridors provide habitat for the federally protected valley elderberry longhorn beetle, while Dry Creek provides habitat for federally protected anadromous fish.

Common biological communities are habitats that have low species diversity, are widespread, reestablish naturally following disturbance, or support primarily nonnative species. These communities are generally not protected by environmental regulation unless the specific site is habitat for or supports sensitive species (e.g., raptor foraging or nesting habitat, upland habitat in a wetland watershed). The only common biological community in the study area is annual grassland. The disturbed vegetation classifications are either developed parcels, or parcels so degraded they do not currently support habitat or vegetation.

The general location and extent of these biological communities is shown in the following Figure 3: Feasibility Study – Environmental Considerations.

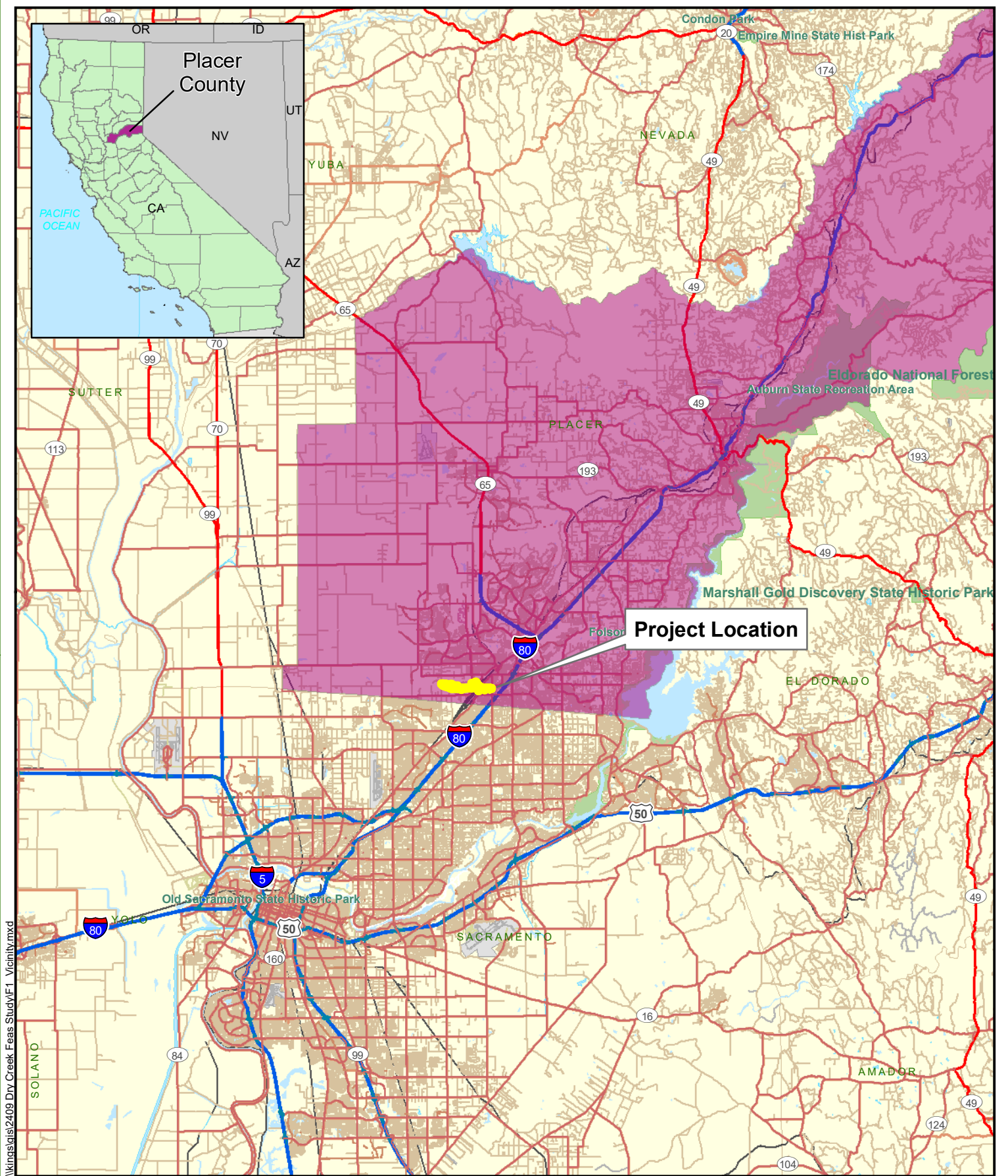


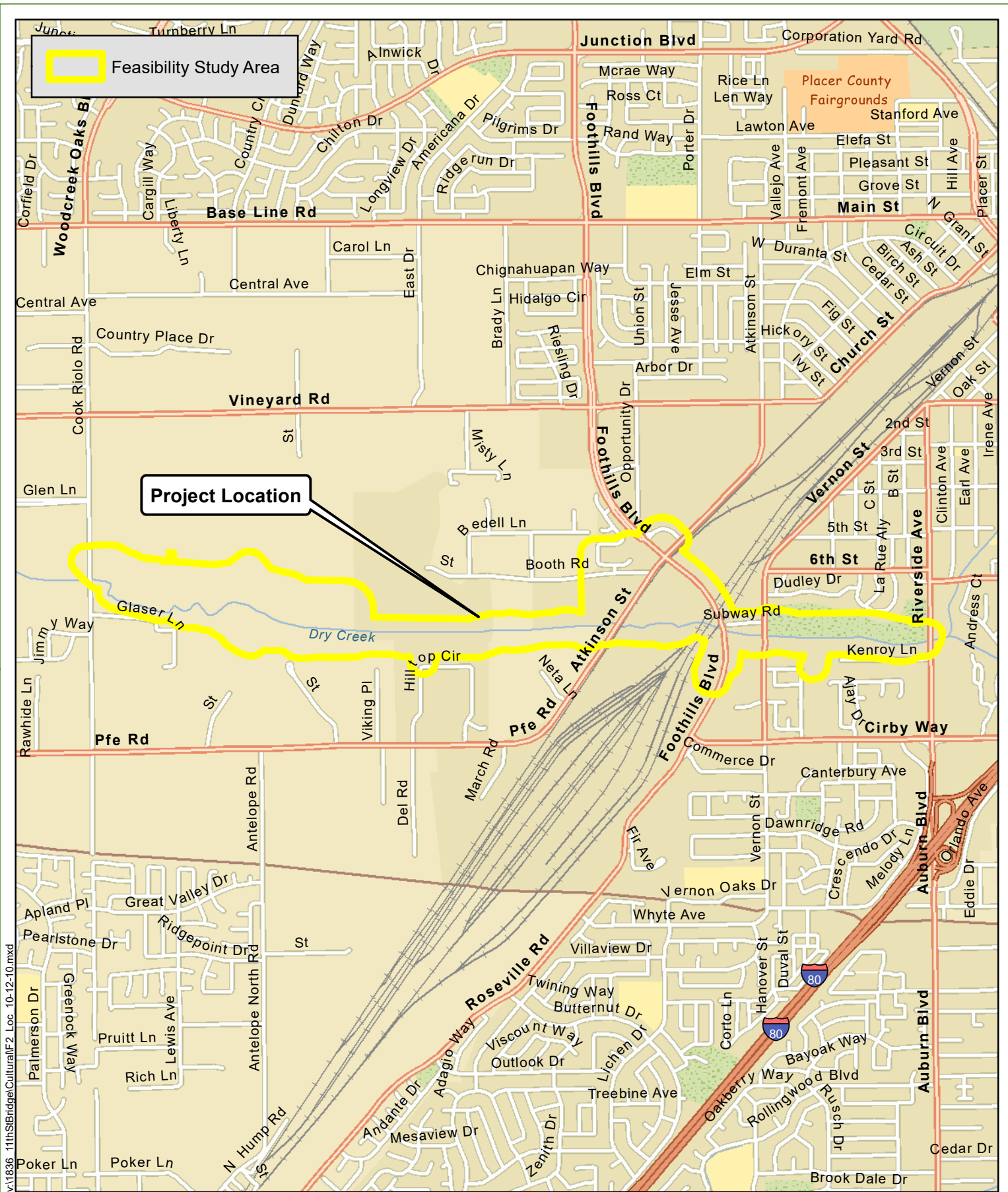
Figure 1

Project Vicinity

Dry Creek Greenway West Multiuse Trail Project Feasibility Study
City of Roseville, Placer County, California



0 5 10 15 Miles



\\1836-11thStBridge\Cultural\F2 Loc 10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 9/14/2018; Created By: zachl

Figure 2
Project Location

Dry Creek Greenway West Multiuse Trail Project Feasibility Study
City of Roseville, Placer County, California

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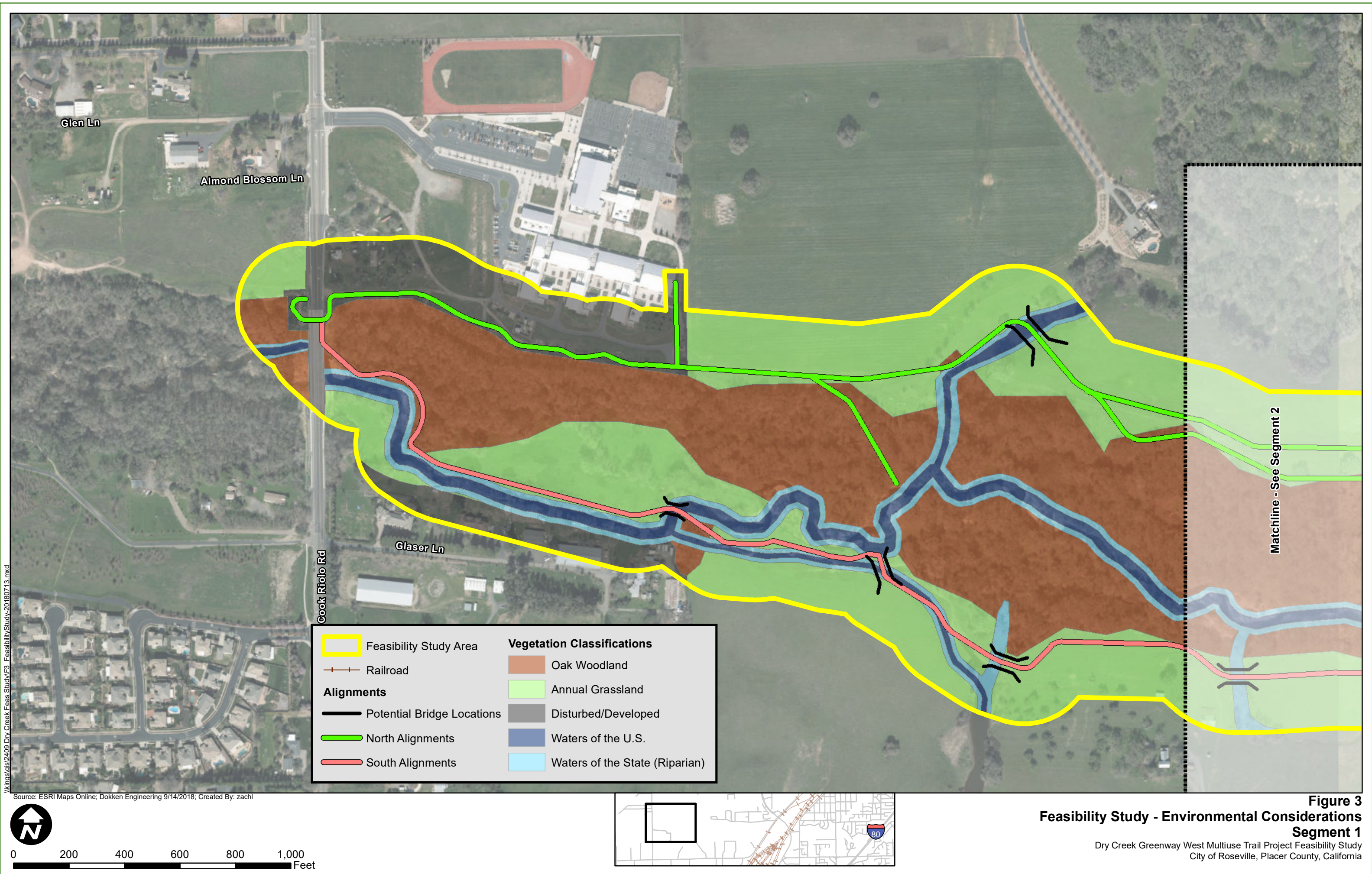


Figure 3
Feasibility Study - Environmental Considerations
Segment 1
Dry Creek Greenway West Multiuse Trail Project Feasibility Study
City of Roseville, Placer County, California

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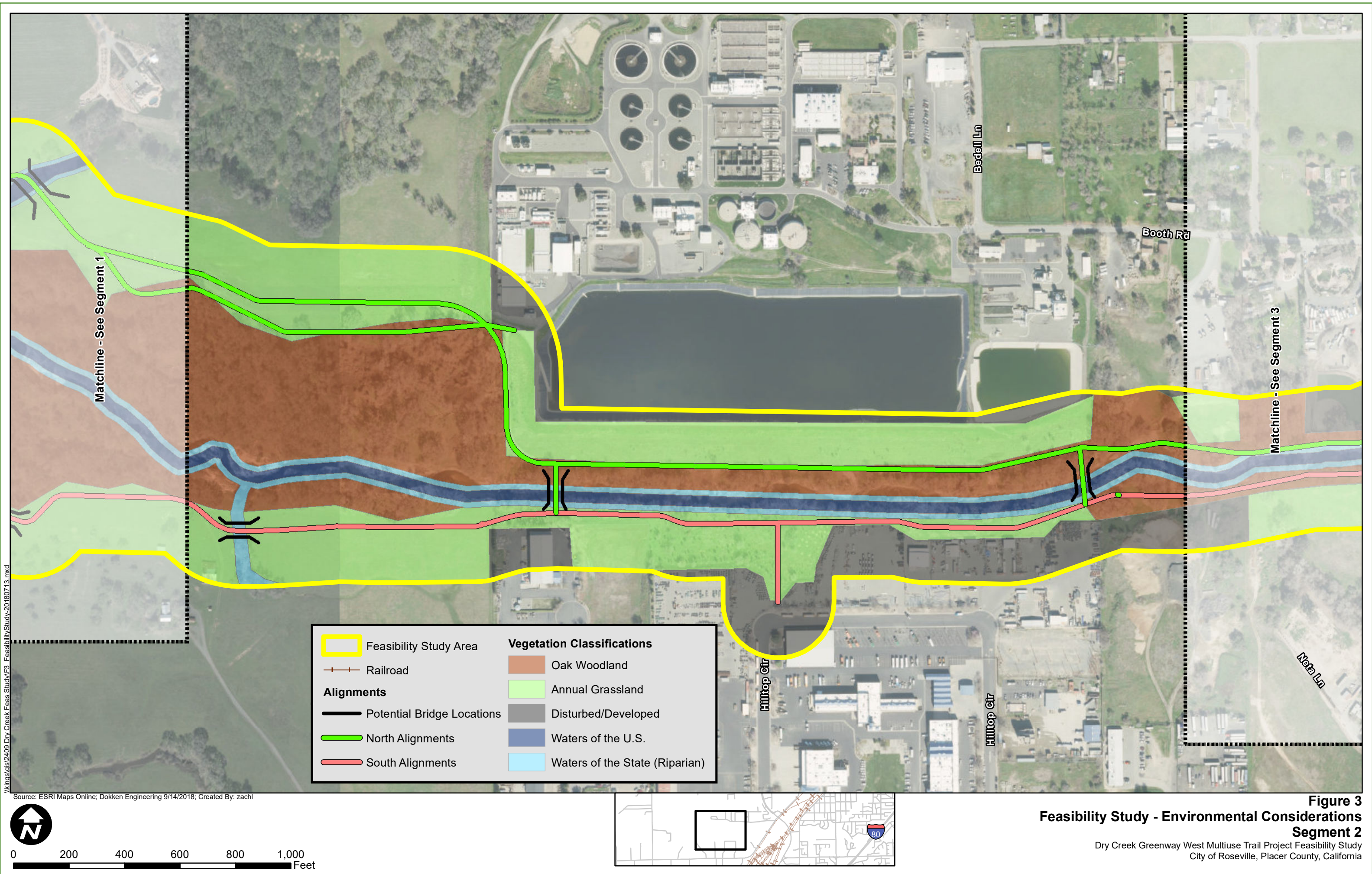


Figure 3
Feasibility Study - Environmental Considerations
Segment 2

Dry Creek Greenway West Multiuse Trail Project Feasibility Study
City of Roseville, Placer County, California

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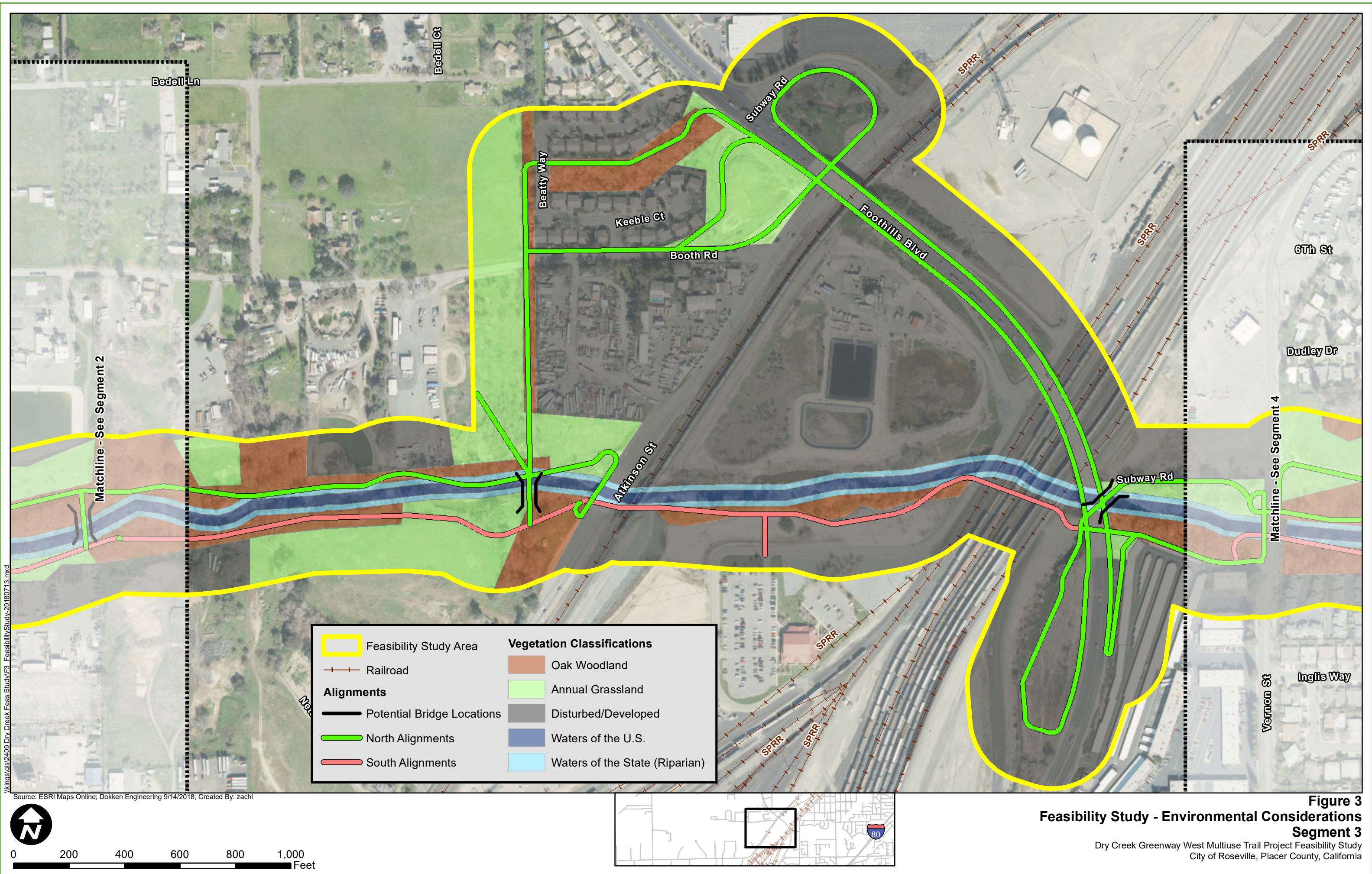


Figure 3
Feasibility Study - Environmental Considerations
Segment 3
Dry Creek Greenway West Multiuse Trail Project Feasibility Study
City of Roseville, Placer County, California

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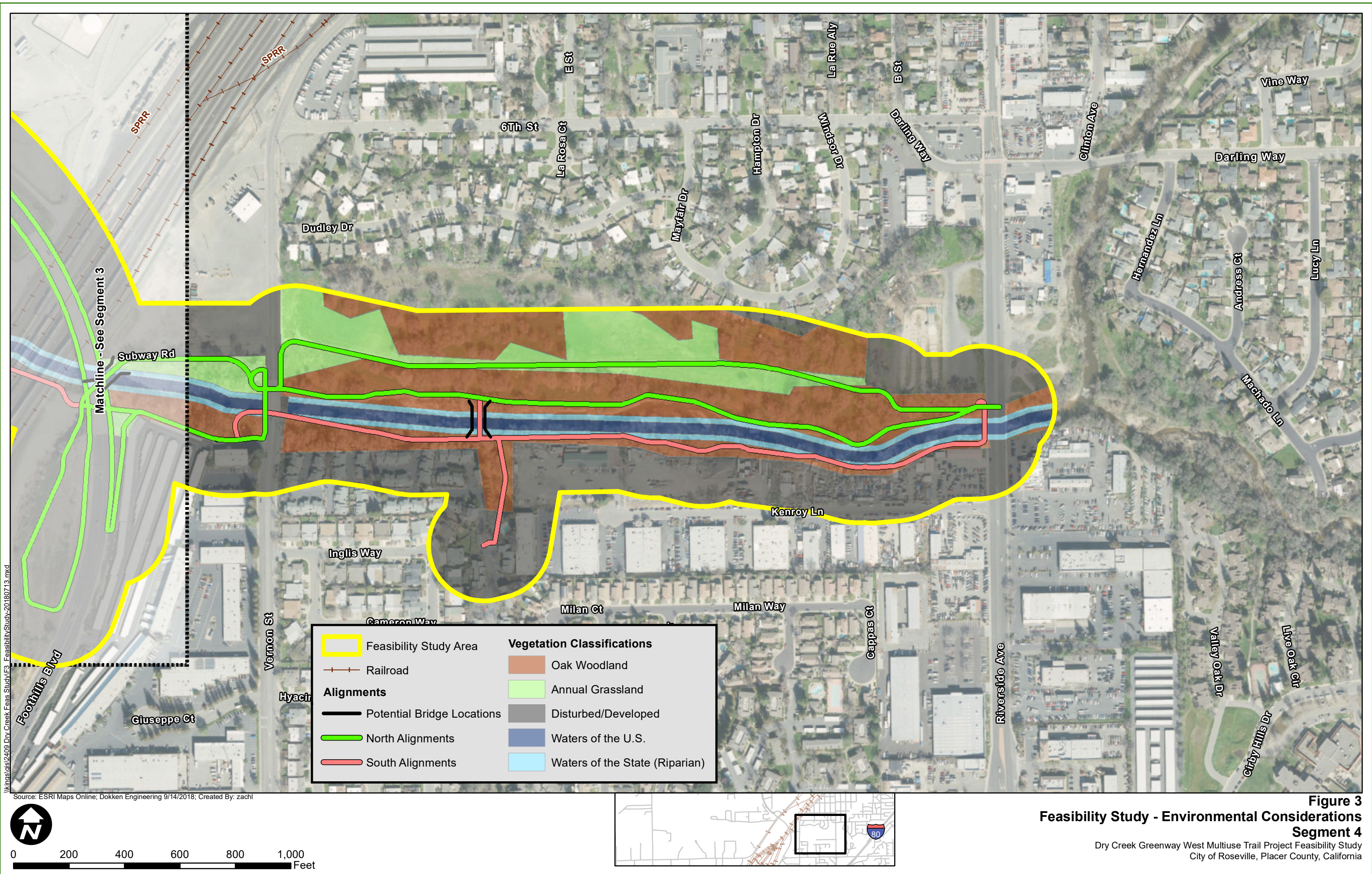


Figure 3
Feasibility Study - Environmental Considerations
Segment 4
Dry Creek Greenway West Multiuse Trail Project Feasibility Study
City of Roseville, Placer County, California

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RESULTS (continued)

Each segment's north and south alignments were analyzed to determine the potential for environmental effects to sensitive resources. Environmental effects were rated either Not Applicable, Minimal, Moderate, and Heavy for effects to woodland, grassland, and riparian. The number of water crossings were also evaluated, with one water crossing rated as minimal effects, two water crossing rated as moderate effects, and three water crossing rated as heavy effects. These effects are then totaled and averaged for each alignment to estimate overall environmental effects (Minimal, Minimal/Moderate, Moderate, Moderate/Heavy, and Heavy) for each alignment.

Segment 1

Segment 1's north alignment starts at Cook Riolo Road and follows an existing maintenance road through disturbed/developed lands south of Creekview Ranch Elementary School and then transitions to follow an existing utility easement through annual grasslands. There is one bridge crossing over a ravine and pond for this alignment. Segment 1's north alignment will have minimal effects to oak woodlands, annual grasslands, riparian habitat, and one water crossing of a tributary to Dry Creek, a waters of the U.S. and State. Overall, Segment 1's north alignment will have minimal biological effects and one water crossing/bridge (see Table 1 below).

Segment 1's south alignment starts at Cook Riolo Road and follows along the creek through oak woodland and waters of the State (riparian) vegetation before crossing over Dry Creek. From this crossing, the proposed south alignment meanders through annual grasslands and requires up to two other bridge crossings of ravines and tributaries. Segment 1's south alignment will have moderate effects to oak woodlands, annual grasslands, riparian habitat, and moderate/heavy effects due to one bridge crossing Dry Creek, which has the potential to impact federally protected fish species, and two other crossings of tributaries to Dry Creek, both waters of the U.S. and/or State (see Table 1 below).

Table 1: Segment 1 Alignment Effects

Effects	North Alignment	South Alignment
Woodland Effects	Minimal	Moderate
Grassland Effects	Minimal	Moderate
Riparian Effects	Minimal	Moderate
Waters Effects	One water crossing	Three water crossings
TOTAL	Minimal Effects	Moderate/Heavy Effects

Overall, Segment 1's north alignment will have minimal biological effects and one water crossing/bridge. Segment 1's south alignment will have moderate/heavy biological effects and three water crossings/bridges.

Segment 2

Segment 2's north alignment continues along the existing utility easement through annual grasslands and then utilizes a maintenance road along the top of a second levee adjacent to the levee protecting the Dry Creek Wastewater Treatment Plant from flooding. There are zero bridge crossings for Segment 2 north alignment. Segment 2's north alignment will have minimal effects on annual grasslands; however, due to the proximity of Segment 2's north alignment riparian

habitat and the presence of a number of trees on top of the levee, riparian and to oak woodlands effects are rated as moderate (see Table 2 below).

Segment 2's south alignment continues to meander through annual grasslands and follows along the top embankment of Dry Creek just north of the industrial park. There are a number of small trees recently planted here as mitigation for development of the Dry Creek Wastewater Treatment Plant, which will be avoided to the greatest extent feasible to ensure the treatment plant remains in compliance with their mitigation commitments. One bridge crossing is required at the start of Segment 2's south alignment to cross a tributary to Dry Creek, a waters of the State. Segment 2's south alignment will have minimal effects to oak woodlands, and moderate effects to annual grasslands and riparian habitat. Segment 2's south alignment has one water crossing, a waters of the State; however, it does not cross over Dry Creek, and does not have the potential to impact federally protected fish species (see Table 2 below).

Table 2: Segment 2 Alignment Effects

Effects	North Alignment	South Alignment
Woodland Effects	Moderate	Minimal
Grassland Effects	Minimal	Moderate
Riparian Effects	Moderate	Moderate
Waters Effects	Zero water crossings	One water crossing
TOTAL	Moderate Effects	Moderate Effects

Overall, Segment 2's north alignment will have moderate biological effects and zero water crossings/bridges. Segment 2's south alignment will have moderate biological effects and one water crossing/bridge.

Segment 3

Segment 3's north alignment continues along the top of the embankment through an oak woodland corridor and then veers northward through annual grasslands to connect to Foothills Boulevard. The trail then follows Foothills Boulevard southbound until it reconnects to the north side of Dry Creek in an area with dispersed oak woodland, grassland, and developed/disturbed environment. There is one potential bridge crossing to connect the trail from Foothills Boulevard to the north side of Dry Creek over a waters of the U.S. and State. Segment 3's north alignment will have minimal effects to annual grasslands and moderate effects to oak woodlands and riparian vegetation due to the amount of tree and vegetation removal along the top of the creek's bank (see Table 3 below).

Segment 3's south alignment continues along the top embankment which is classified as a mixture of oak woodland and annual grasslands and is bounded to the south by industrial development and disturbed habitat. The trail then goes under the railroad bridges and follows along the edge of the creek, passing through riparian and oak woodland. Segment 3's south alignment will have minimal effects to annual grasslands and to oak woodlands, and moderate effects to riparian due to the close proximity of the alignment to the edge of Dry Creek. Segment 3's south alignment does not have any water crossings (see Table 3 below).

Table 3: Segment 3 Alignment Effects

Effects	North Alignment	South Alignment
Woodland Effects	Moderate	Minimal
Grassland Effects	Minimal	Minimal
Riparian Effects	Moderate	Moderate
Waters Effects	Potential water crossing	Zero water crossing
TOTAL	Moderate Effects	Minimal/Moderate Effects

Overall, Segment 3's north alignment will have moderate biological effects and one potential water crossing/bridge. Segment 3's south alignment will have minimal/moderate biological effects and zero water crossings.

Segment 4

Segment 4's north alignment continues either along the existing maintenance road within annual grasslands, or weaves through the oak woodland atop the banks of Dry Creek and terminates at Riverside Avenue. There is one potential water crossing needed for Segment 4's north alignment depending on which alignment is selected in Segment 3, which will cross over a waters of the U.S. and State. Segment 4's north alignment will have minimal effects to annual grasslands and moderate effects to oak woodlands and riparian vegetation (see Table 4 below).

Segment 4's south alignment continues to weave through the oak woodland atop the banks of Dry Creek and terminates at Riverside Avenue. Segment 4's north alignment utilizes the existing bridge at Riverside Avenue to cross over to the eastern terminus of the multi-use trail. Segment 4's south alignment will have minimal effects to annual grasslands and moderate effects to oak woodlands and riparian vegetation (see Table 4 below).

Table 4: Segment 4 Alignment Effects

Effects	North Alignment	South Alignment
Woodland Effects	Moderate	Moderate
Grassland Effects	Minimal	Minimal
Riparian Effects	Moderate	Moderate
Waters Effects	Potential water crossing	Zero water crossing
TOTAL	Moderate Effects	Moderate Effects

Overall, Segment 4's north alignment will have moderate biological effects and one potential water crossing/bridge. Segment 4's south alignment will have moderate biological effects and zero water crossings.

Additional considerations should be made for each creek crossing to minimize potential effects to Dry Creek, which is spawning and migratory habitat for federally protected anadromous fish. The number of crossings should be minimized to limit disturbance of this sensitive environment. Bridge crossing points should maximize the potential for community access to the trail system while attempting to minimize the number and size of crossings in order to limit effects to the biological environment.

CONCLUSION

Based on the results of the analysis, the northerly alignments appear to have fewer biological effects because they often follow existing utility easement corridors and access roads; thereby, minimizing the effects to sensitive natural communities including oak woodlands and riparian vegetation. If creekside vegetation removal is required, the north bank is preferred because the south bank vegetation provides greater shaded riverine aquatic habitat benefits due to the summer sun angle. Additionally, the northerly alignments have fewer water crossings, which would minimize the potential effects to sensitive aquatic habitats including the habitat of federally protected anadromous fish species.

As shown, the North Alignment is generally the least environmentally damaging alignment for the analyzed segments; however, the South Alignment is the least environmentally damaging alignment for Segment 3. Additional considerations will be made when determining the most feasible alternative such as community effects and maximizing community access to the trail during the detailed environmental analysis phase of the project.

Implementation of the following guidelines can be used to further avoid and minimize environmental effects during planning of the Dry Creek Greenway West Multi-Use Trail:

- The multi-use trail should follow existing utility corridors including easements and access roads where possible to avoid effects to sensitive communities including oak woodlands, riparian vegetation, and annual grasslands.
- The number of water crossings including bridges over tributaries and Dry Creek should be minimized to protect existing riparian vegetation as much as feasible.
- The trail should meander through oak woodlands to avoid removal of any large and established native tree species. Avoidance of removal of trees will reduce the amount of mitigation necessary to offset project effects.
- Where creekside vegetation removal is required, avoiding the South bank preserves shaded riverine aquatic habitat.

Appendix D: Public Workshop and Open House Summaries

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Dry Creek Greenway **West Planning and Feasibility Study**

A MULTI-USE PAVED TRAIL ALONG DRY CREEK, FROM COOK RIOLO ROAD TO RIVERSIDE AVENUE

Community Open House #1

SUMMARY 4.20.2018

Open House Summary

Introduction

On Monday, April 9, 2018, in coordination with Placer County, Placer County Transportation Planning Agency (PCTPA), and the Rails-to-Trails Conservancy, the City of Roseville held a community open house for the Dry Creek Greenway West Planning and Feasibility Study. The open house was held from 6:00 – 8:00 p.m. at Cirby Elementary School in the multi-purpose room, located at 814 Darling Way, Roseville CA, 95678.

Project Overview

The Dry Creek Greenway West Planning and Feasibility Study will evaluate the possibility of developing a 3-mile multi-use trail between Cook Riolo Road and Riverside Avenue, which would ultimately connect with the existing Dry Creek Greenway in unincorporated Placer County, west of Cook Riolo Road and the proposed Dry Creek Greenway East (Riverside Avenue to Old Auburn Road).



Open House Purpose and Format

The community open house provided a project introduction to the Dry Creek Greenway West Planning and Feasibility Study. The meeting provided community members with an opportunity to learn about the study and share input on the trail concept and potential challenges and opportunities.

The meeting was held in an “open house” format, with five information stations set up around the room for attendees to review and provide input, with project team members stationed around the room to answer questions.

The open house objectives included the following:

- Provide an overview of the Dry Creek Greenway West Feasibility Study goals, objectives, and potential schedule
- Gather input on the trail concept and existing trail challenges and opportunities
- Gather community questions and concerns



Stations

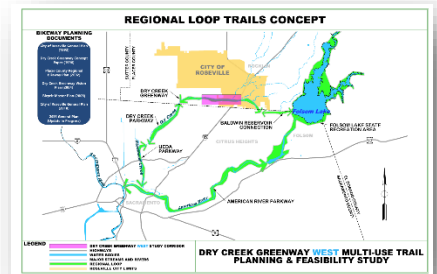
The open house consisted of the following staffed information stations:

Station 1: Regional Loop Trails Concept

The objective of this station was to gather information about community members' current use of trails and inform the community about the comprehensive community benefits of paved trails. The station featured an overview of the City and County's vision for paved trails in the region.

Displays Included:

- Regional Loop Trails Concept
 - Map displaying the connections to the American River Parkway
- City of Roseville and Western Placer County Trails
 - Map showing trails in Roseville and Placer County, along with illustrative photos of community use of existing paved trails in Roseville and Placer County. The board also included the City and County trail cross section standards.



Station 2: Dry Creek Greenway West Overview

The objective of this station was to inform the community about the Dry Creek Greenway West Planning and Feasibility Study. This station provided an overview of the Dry Creek Greenway West study corridor.

Displays included:

- Large study corridor map
- Photo board of illustrative photos

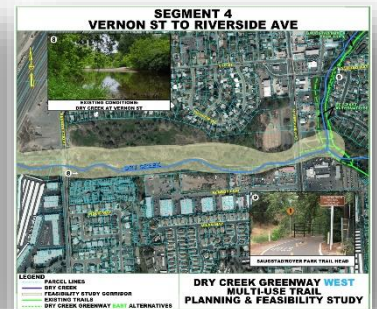
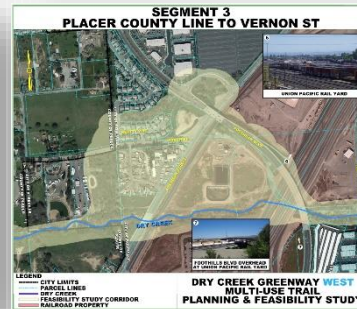
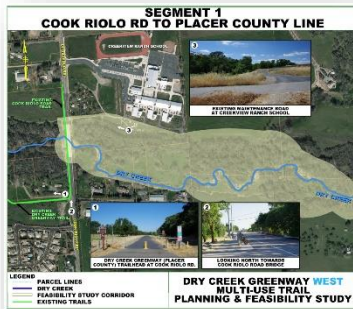


Station 3: Trail Corridor Segments

The objective of this station was to familiarize community members with the connections of the different study corridor segments and identify the opportunities and constraints of each segment.

Displays included:

- Aerial Map of Trail Corridor Segment 1: Cook Riolo Road – Placer County Line
- Aerial Map of Trail Corridor Segment 2: Placer County Line – City of Roseville
- Aerial Map of Trail Corridor Segment 3: Placer County Line – Vernon Street
- Aerial Map of Trail Corridor Segment 4: Vernon Street – Riverside Avenue



Station 4: Public Safety

The objective of this station was to inform community members about the public safety benefits of a formal trail along with safety options to consider with the trail. Roseville Police Department and Fire Department representatives were present at this station to discuss community concerns.

Display included:

- A board including illustrative photos depicting potential safety measures for the trail including privacy measures and trail crossings

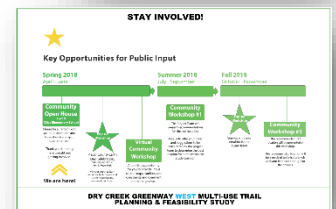
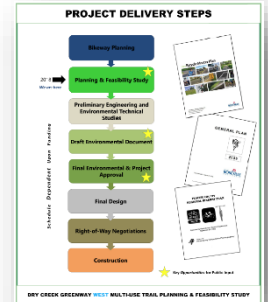


Station 5: Stay Involved

The objective of this station was to inform community members about the project delivery steps to construction, outreach opportunities during the study and direct them to an online questionnaire. Along with displays, the station included printed questionnaires for community members to complete and return to the project team.

Displays included:

- Project Delivery Steps
- Public Outreach Timeline
 - Take-home fliers with questionnaire website address for community members to take home.
- “Additional Thoughts” Board
 - Blank board with a question prompting attendees to leave additional thoughts with post-its.



Any Additional Thoughts?

Share Here!

A green arrow points from the text "Share Here!" to a blank space for writing.

Community Input

Below are the comments submitted by community members through the “Additional Thoughts” board and submitted questionnaires.

- We would move if the trail was built, our property is on Cook Riolo Road. We have five children and homeschool them. I am not always there to protect them. We cannot build a fence because Dry Creek floods every winter. How do we keep them and us safe? How do we stop people from scoping out our house to rob later? How will we be protected from increased fire danger? Please don't put this trail in our backyard!
- As home owners next to this proposed trail, we are concerned about additional homeless traffic and crime. We already see trespassers on our property on a regular basis and have noticed the trail between Walerga and Cook Riolo has increased people "exploring". We call the fire department when we see bonfires. In those areas, we find drug needles, alcohol containers, and crack pipes. We have called the police more times than I can remember. Our concern is also related to our small children and their safety.



- You should consider placing lighting at trail/road intersections and trail access points. Provide bike parking at all trail heads and access points and especially where motor vehicle parking is provided.
- I would love to be able to access bike/walking trails near my home rather than ride or drive to reach a trail. I would use it 3-4 times per week to walk my dogs or would even consider buying a bike again, so I could safely ride it.
- Some properties along the potential trail do not have gates, please include them so property owners can access the trail.
- Create grade separated street crossings wherever possible. Don't use bollards at access points. Strive to mimic the American River Parkway trail in width and having decomposed granite shoulders. Provide as much shade as possible and as many views of the creek as possible. Continue to promote regional loops.
- Command a reversing trail circulation policy to have all users on the right side of the trail, including walkers – no opposing circulation. Opening new trails will increase safety and reduce potential security and crime issues. There are many regional trail successes where local residents have increased property values.
- Linking together un-connected sections should be priority #1. As a trail runner and mountain biker, I also would love parallel single-track options, like the ones that exist along the current Dry Creek Trail.
- The existing trail from Cook Riolo to Walerga has a paved trail and a parallel dirt trail. I suggest the continuation of that concept, with a separate but parallel dirt trail in the corridor as far west as possible. This will provide a convenient way to train for high school mountain bike teams without having to take the kids and bikes up the hills and will provide a local outlet for all mountain bikers, so they don't have to drive to Tahoe.
- The box culvert under Riverside Avenue could also provide flood overflow capacity under Riverside Avenue. Old Subway Road gets a path under the railyards. Pay attention to sight distance along the path to ease conflicts between trail users.
- I use the American River Parkway and Folsom Trails twice a week. It will be nice once the Roseville trails are more connected. It will also be great when the SACOG planned loop is complete.
- Segment 3 is a challenge with the Railyards – do you have an alternate segment plan?
- Looking forward to being able to ride a majority of the Roseville-Sacramento-Folsom loop on bike trails.
- Don't let the "old people" derail the trail.



- By having a bike trail running between Riverside and lower Vernon, the City of Roseville would be able to: encourage outdoor recreation, monitor the homeless camping in the area, and protect the wildlife and nature by keeping the land a greenbelt.
- This is a very necessary transit option for Roseville, Placer, and the whole region. Getting people out of cars and in a [bike] saddle can make a huge difference in health and well-being, not only for those using the trail, but those that live along the roads and travel by car.
- No complaints about the existing trails. To gain connectivity will be wonderful. I've been frustrated that I couldn't safely take my daughter to preschool on the other side of I-80 without crossing at Cirby. I would also like connectivity with Folsom Lake. Safe bike routes under or over I-80 would be great!
- Consider an adopted mile stewardship program.

Notification

A total of 50 community members signed-in to the community open house and 25 community members submitted written questionnaire responses. To promote the community open house, a direct mail piece was sent to over 2,000 residents near the study corridor. Email notifications were sent to the City of Roseville, Placer County, Placer County Transportation Planning Agency, and Rails-to-Trails distribution lists. Local news stations in the City of Roseville were also notified. The project team reached out to community-based organizations and local businesses to share the event through their social media, newsletters, and fliers.

The open house was promoted on the City of Roseville's website and social media (Facebook, NextDoor, Twitter, and Instagram). The following organizations shared the event through social media and/or newsletter:

- City of Roseville
- Placer County
- PCTPA
- Dry Creek School District
- Ladies of Roseville Walking and Running Club
- Lifetime Cycle
- Performance Bicycle
- Roseville Chamber of Commerce
- Roseville Trail-Bike Group
- SABA
- Roseville Hub Bike Shop



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Dry Creek Greenway West Planning and Feasibility Study

A MULTI-USE PAVED TRAIL ALONG DRY CREEK, FROM COOK RIOLO ROAD TO RIVERSIDE AVENUE

Online Questionnaire 4.9.2018 - 4.24.2018

SUMMARY

Online Questionnaire Summary

Introduction

The Dry Creek Greenway West Planning and Feasibility Study will evaluate the possibility of developing a 3-mile multi-use trail between Cook Riolo Road and Riverside Avenue. The trail would ultimately connect with the existing Dry Creek Greenway in unincorporated Placer County, west of Cook Riolo Road and the proposed Dry Creek Greenway East (Riverside Avenue to Old Auburn Road).

Community Outreach Approach

The project team engaged with the City of Roseville community members to gather concerns and input on the current opportunities and constraints of the study corridor as well as input about regional and county trails.

As part of the engagement process, the project team hosted a community open house on Monday, April 9. This open house gave community members the opportunity to learn about the potential trail, its context within the overall regional trail network, and to provide input on existing conditions along the study corridor. Along with the community open house, the project team launched a brief online questionnaire. This was available in a hard copy at the open house, as well as on the City of Roseville's website for two weeks, from Monday April 9 through Tuesday at midnight, April 24. The project team also collected responses at the April 21 Placer County Earth Day Celebration through printed questionnaires.

Methodology

This brief online questionnaire served as a forum for the community to contribute input on the current and potential trail usage study corridor and help the project team gather information about what the potential trail would be most used for and what would make the community use the trail.

The eight questions that appear in this summary focus on:

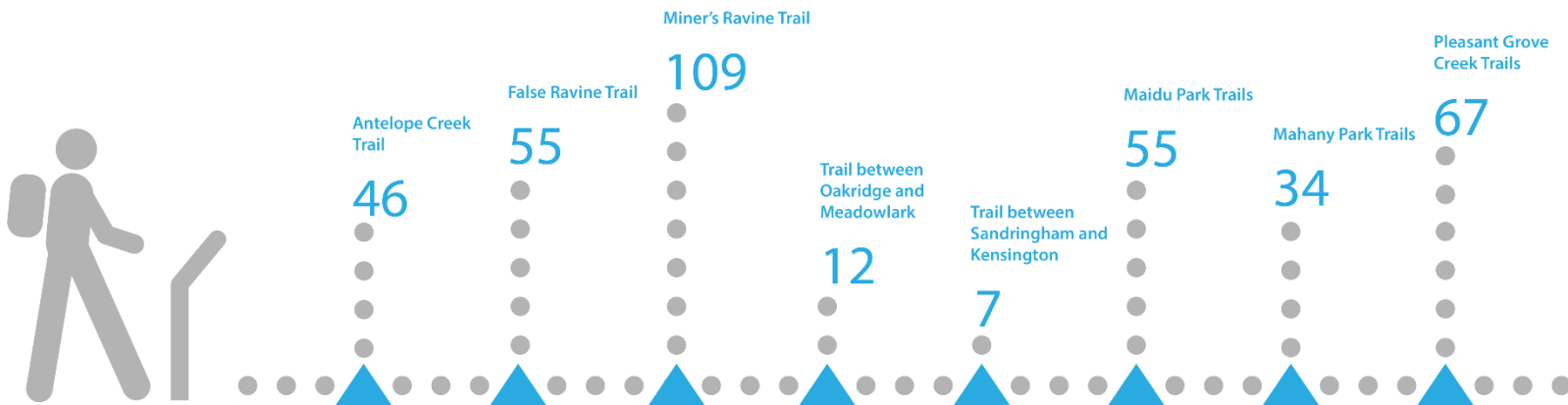
- Regional trail usage
- County trail usage
- Access to the potential Dry Creek West
- Trail amenities

Examples and maps were shown to help provide clarity on regional and county trail usage. Respondents were given multiple choice questions as well as open-ended questions. From the April 9 Community Open House, April 21 Earth Day pop-up event, and throughout the 2-week duration of the questionnaire being available online, the project team received 156 responses from community members.

Summary of Feedback

Below is a summary of feedback the project team received from all submitted questionnaires, organized by question.

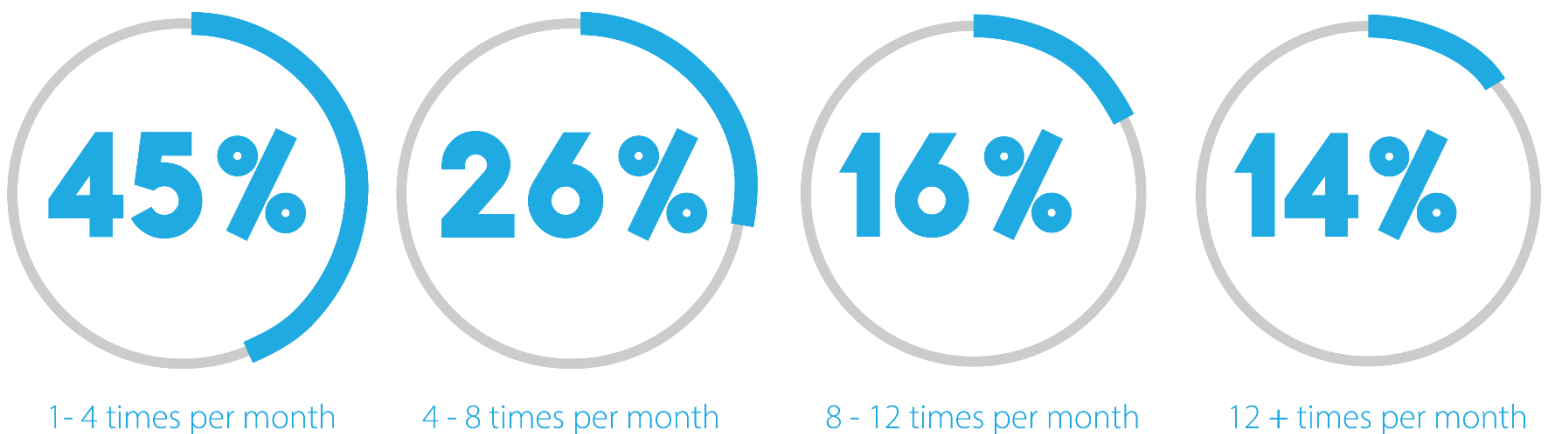
Question 1: Which paved trails do you use in Roseville? Choose all that apply.



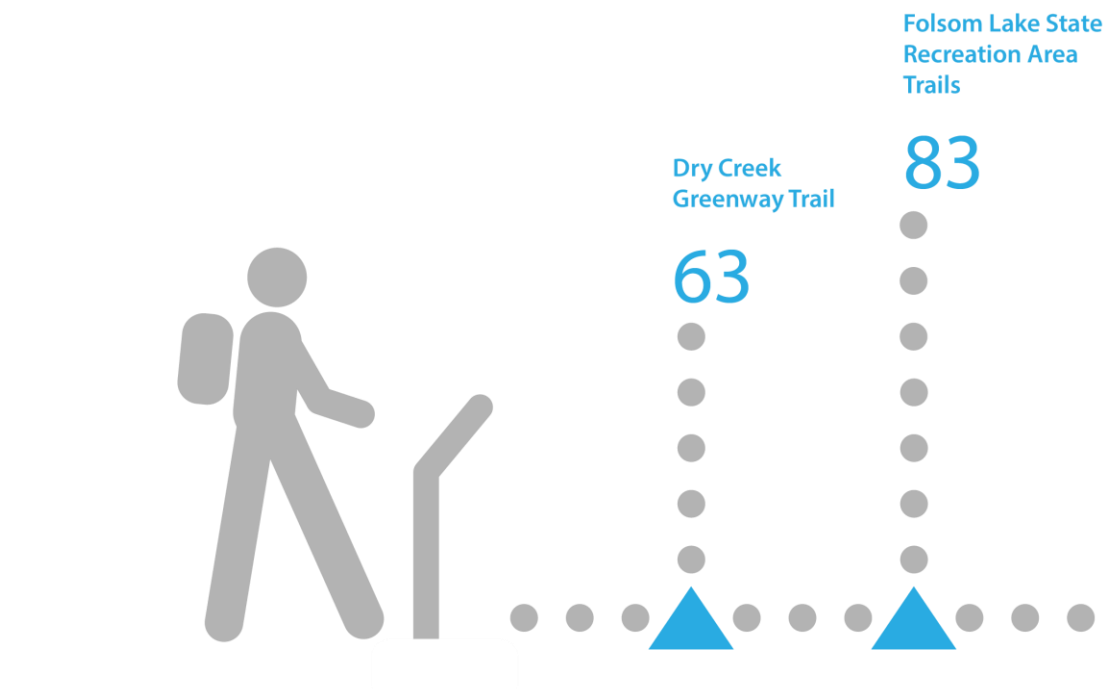
Other regional paved trails:

- American River Parkway
- Harding-Royer Trail
- West Park Trails
- Washington to Pleasant Grove – parallel to Roseville Parkway
- Saugstad Park Trails

Question 2: How often do you use these paved trails?



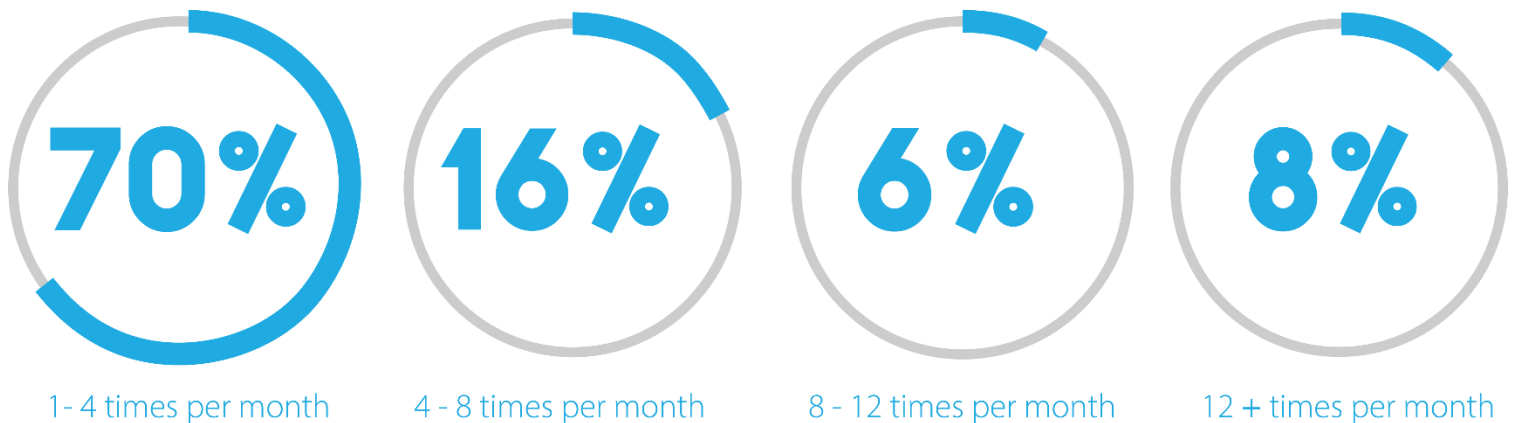
Question 3: Which regional paved trails in Placer County do you use?



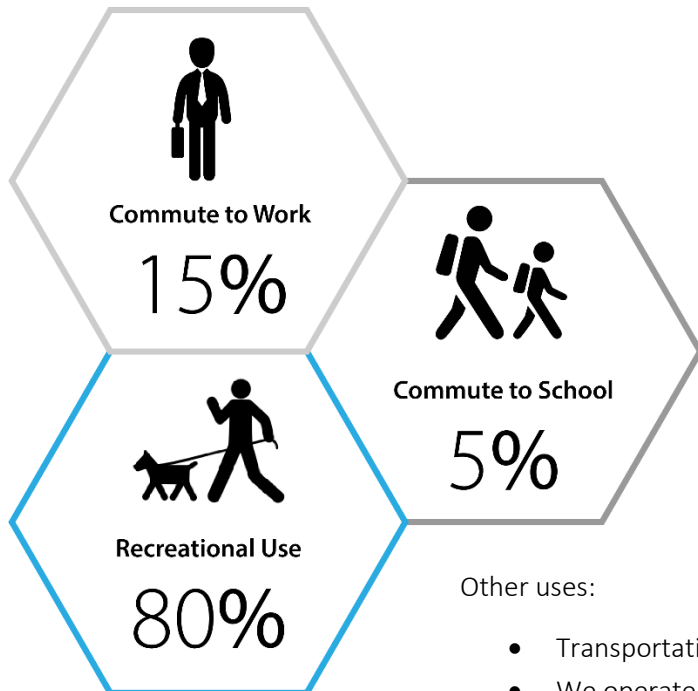
Other county paved trails:

- Olympus Pointe Sculpture Park
- American River Parkway

Question 4: How often do you use these paved trails?



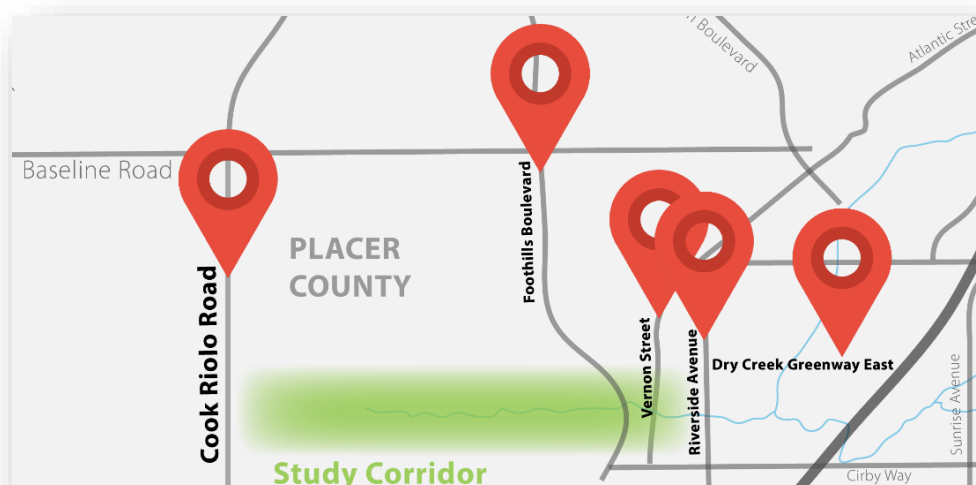
Question 5: What do you use paved trails for?



Other uses:

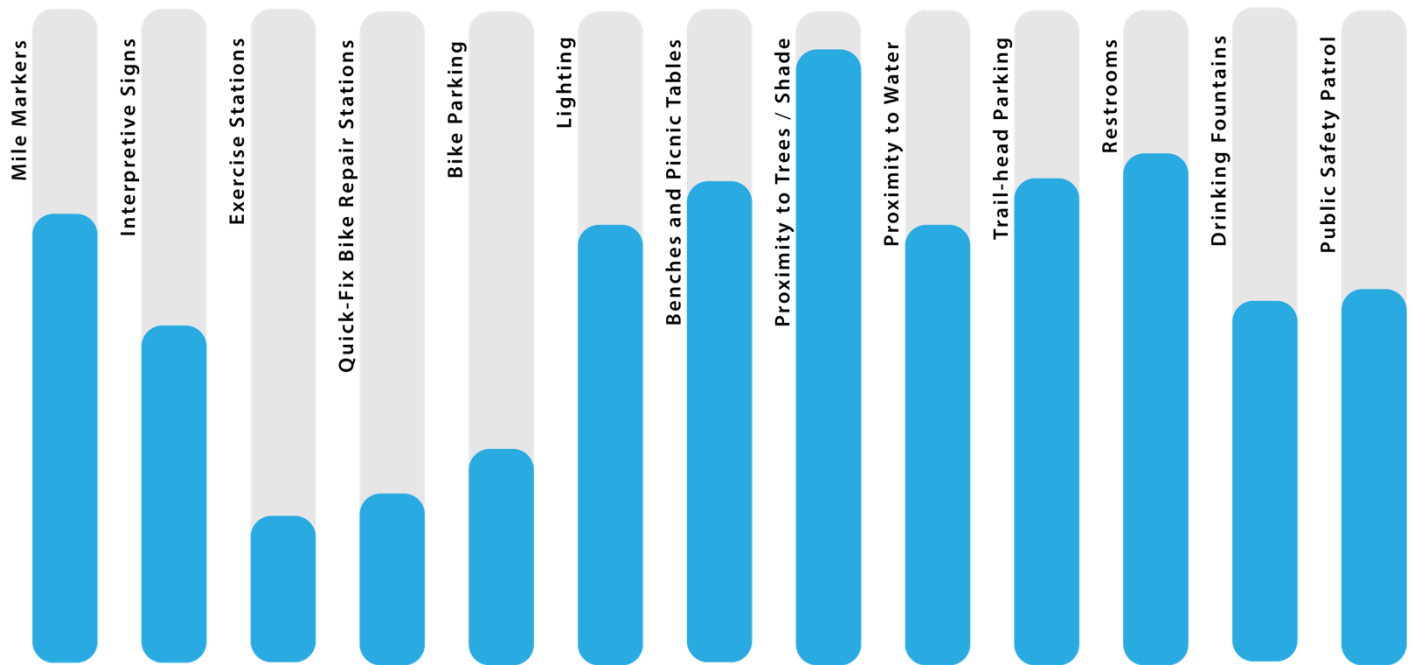
- Transportation to the dentist and Galleria
- We operate the BMX track on Riverside
- If the trails linked up to shopping areas, I would use them to run my errands

Question 6: If the Dry Creek Greenway West Trail was built, where would you most often access the trail?



1 The map above represents the streets where people would like to access the potential Dry Creek West Trail

Question 7: What amenities would encourage you to use the paved trail?



Other Amenities:

- Dog watering stations
- Dog waste bags & containers would be useful and help keep trail cleaner
- Trash cans, several along the trail
- Natural (dirt) trail along side of the pavement
- Signs with rules to enforce the flow of traffic
- Proximity to coffee shops or cafes
- Bathrooms near major trail starting areas – this adds to cost to have further safety measures/homeless patrol. Potentially design the trail with bathroom access at the parks.

Question 8: Additional Comments.

Amenities

- Provide dog-friendly trails.
- My husband and I love the trails and use them regularly to walk our dogs and ride our bikes. I especially have a difficult time continuing a ride or walk if I can't find a restroom, there are no construction outhouses to depend upon!
- I used to be in an organization that used the American River Parkway, which has water and restroom amenities.

- I probably would not use this trail, but I still think it should be built. Roseville needs more off-road trails that cyclists can use that are separated from roadways and cars.
- These trails are like the Cain's of the city, leading to the heart of downtown. Cyclists are good downtown Roseville shoppers. Could we get more places to lock up our bikes? How about discount to anyone who shops by bike with the downtown merchants?
- I like the mile markers on Miner's Ravine, if not actually on the trail, it could be nice to be able to look it up on the web site where we have the online trail map.
- We love Dry Creek trail between Walerga and Cook Riolo and would love to see it extended. We walk every day! More garbage cans are needed to help keep it clean
- No restrooms on the trail. They only draw the homeless to the area.

Access

- I love riding my bike on the trails rather than the busy streets like East Parkway, Douglas, and Harding.
- Bike access is needed under the tracks on Washington near Oak.
- Please build the Dry Creek connector to Riverside!
- Build more trails that are connected, and people will start biking more. Eventually we will run out of road space for automobiles, so we need to improve and build protected bike lanes and class 1 trails for commuting and exercise away from the bad/crazy/inattentive/aggressive Roseville drivers.
- I look forward to more cycling/walking trails in the area. Connecting trails are the best.
- I've been approached by many millennials on the Dry Creek trail asking about other trails. This would provide access to work, school and eateries in the downtown area which are presently a challenge to get to on a bike. The age and growth of the population in this area certainly needs a completed trail.
- Looking forward to the day when Pleasant Grove Creek Trail extends south from Woodcreek Oaks to connect with other Roseville trails.
- This would be a great extension of the trail I most often use, which starts at Walerga and ends at Cook Riolo!
- What's most needed is connectivity to all cycling trails in Roseville and Greater Sacramento so cyclists can safely bike throughout the region. Thank you!
- County, please complete the patchy trail system along Walerga Road to connect West Roseville to Dry Creek Greenway Trail. City, please extend Pleasant Grove Creek Trail to Corin Drive and Royal Gorge Loop in the west and to Rocklin's Lonetree Boulevard in the east.

Safety

- There are safety problems with the Oak trees being undermined by the water west of Riverside.
- Roseville has spent money on bike lanes, but drivers do not respect cyclist rights to the road. More trails are needed to ensure the safety of cyclists.
- Getting off the roads and away from traffic has always been my big concern with commuting by bike to work.
- I truly enjoy the trails in Roseville. My concern lies in the abuse of the trails from a camping perspective. It is not the camping that is annoying, but rather the mess that is created. I am disgusted by how much litter is left around.

- I enjoy running the Dry Creek trail and we also use it to walk/bike with our kids to get to the school and nearby park. It feels fairly safe now. If expanded I would want more safety incorporated. There are sometimes a lot of transients along the river.
- Putting in restrooms? That encourages people to hang about and discourages wildlife. It leads to the destruction of plants, garbage, homelessness, etc. Its a big fools idea.

Other

- Keep up the good work - this is what makes Roseville awesome!
- Roseville has great walking and biking trails! Many do not end or go by commercial / business areas.
- Looking forward to the new trail!
- This is a great chance to use trails as a family.
- Great new location!
- Would love to see an expansion of the Roseville trail system!
- Keep up the good work. Roseville trails paved and unpaved are a great asset to the community.
- Great trail system. I wish more were available in Placer County.
- We are very fortunate to have such beautiful landscapes around us. My family and many friends peruse the trails whenever we can and are thankful to have them. We have taken to not venture on them alone, though.
- Love these trails!
- Having the paved trails is the main thing I love about Roseville.
- How long will this process take?
- Very pleased with Placer counties effort to provide walking trails in natural environments.
- We enjoy many bike trails in this area. We avoid riding on city streets as much as possible!
- Big fan of this idea – please build!
- I want to thank all involved - this is very exciting! I think it will help sell Roseville as a great place to live for those considering it, and as such will be money well spent.
- I think this is a great project.
- We need more paved trails in Placer County for the safety of walkers and riders. This will help with tourism!
- I am not interested in the trail. Would not use it and wouldn't want to pay for it either.
- Please build the new proposed trails! I would use them a lot.
- I'm a city employee and would like to access the bike path for commuting. I would like to see the path on the same side of the creek where Hilltop Circle is located with a back gate for entering the Corporation Yard. It would be good for employees to use to enter the building.
- The Roseville trails are appreciated. I am happy to see that the City of Roseville is starting to expand their bike/multi-use trails, as the City of Folsom has done over the past few years.
- We like the rural feeling, let's not do too much to "city-fi" the area.
- I use the American River Parkway twice a week for running and /or bicycling. Would be nice to have the Roseville trail system connected and extended.
- I hope I live long enough to ride on a trail from Doyle Ranch park to Folsom Lake. Keep up the good work!!
- Pedals are becoming more popular and being used more and more as a transit alternative to cars. Hoping Roseville stays ahead of this shift.

Notification

Community members were notified through email, social media, and at the open house and pop-up workshop. Below is a graphic depicting how community members heard about the questionnaire.



Email

43%



Earth Day Event

30%



Facebook

10%



Twitter

10%



Family / Friend

7%

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To: Dry Creek Greenway West Project Development Team

From: Alison Winter, Alternative Transportation

Date: July 12, 2018

Subject: Summary of Dry Creek Greenway West Outreach at Operation Swim

The purpose for participating in this outreach effort was to bring awareness to about active transportation and the Dry Creek Greenway West project to the disadvantaged community in the project area. Roseville Alternative Transportation staff, Jeannie Gandler and Alison Winter, attended Family Swim Nights as part of Operation Swim at the Johnson Pool on June 20, 2018 and June 27, 2018. During Family Swim Nights, the City offers free admission to the pool between 7:00 PM and 8:30 PM. Through Operation Swim, children have the opportunity to receive a new swimsuit and towel. These events were heavily attended by the community and the facility reached capacity. Johnson Pool is located at 100 D Street in the Theiles Manor Neighborhood and is within walking distance of the Roseville Heights Neighborhood.

Alternative Transportation staff set up a table providing information about the Dry Creek Greenway West project, alternative transportation in Roseville, and a contest to win bike. The contest is called the “Active Transportation Summer Challenge” that includes biking and walking challenges along with safety reminders and facts. The contest is open to participants under the age of 18 and entries must be returned by August 1st to the Johnson Pool to be eligible for the drawing. Contest entry forms were provided in both English and Spanish. One winner will receive a new bike, a helmet, and a bike lock. Between the two nights, approximately 100 people took a contest entry form. The second night was more successful because staff positioned themselves just outside the facility and had mini beach balls to hand out to the kids as they exited the pool. The mini beach balls were provided as a courtesy from Pool Safely, a national public education campaign that promotes pool safety.

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Dry Creek Greenway West Planning and Feasibility Study

A MULTI-USE PAVED TRAIL ALONG DRY CREEK, FROM COOK RIOLO ROAD TO RIVERSIDE AVENUE

Community Open House #2 and Virtual Community Workshop

SUMMARY

Open House and Virtual Community Workshop Summary

Introduction

On Monday, October 1, 2018, in coordination with Placer County, Placer County Transportation Planning Agency (PCTPA), and the Rails-to-Trails Conservancy, the City of Roseville held the second community open house for the Dry Creek Greenway West Planning and Feasibility Study. The open house was held from 6:00 – 8:00 p.m. at Cirby Elementary School in the multi-purpose room, located at 814 Darling Way. The project team presented trail alignment options and community members were able to share their thoughts on which alignment options they prefer and why or why not they prefer them.

At the same time, on October 1, the project team hosted a virtual community workshop on the City of Roseville's website. The virtual workshop was open from October 1, 2018 – October 19, 2018 and received over 200 responses from community members. The purpose of this online workshop was to reach community members who were not able to attend the Monday night community open house, and to reach a larger range of trail-users throughout Placer County, Roseville, and the Sacramento areas.

Project Overview

The Dry Creek Greenway West Planning and Feasibility Study will evaluate the possibility of developing a 3-mile multi-use trail between Cook Riolo Road and Riverside Avenue. The trail would ultimately connect with the existing Dry Creek Greenway in unincorporated Placer County, west of Cook Riolo Road and the proposed Dry Creek Greenway East (Riverside Avenue to Old Auburn Road).



Virtual Community Workshop Format

The virtual community workshop provided a project overview of the Dry Creek Greenway West Feasibility Study and presented the trail alignment options within the six areas of the entire potential trail. The online workshop provided community members a convenient opportunity to learn about the different alignment options and share their thoughts on which options they prefer and why. The online workshop consisted of area maps along with illustrative images and descriptions of each alignment option. Each area provided community members with trail alignment options where the user was to provide a “thumbs up” or a “thumbs down” as to whether they preferred the trail alignment or not, and provide any comments relating to the particular alignment option.

Open House Purpose and Format

The second community open house provided a project overview of the Dry Creek Greenway West Feasibility Study and presented the trail alignment options within the six areas of the entire potential trail. This meeting provided community members with an opportunity to learn about the different alignment options and share their thoughts on which options they prefer and why.

The meeting was held in an “open house” format, with four information stations set up around the room for attendees to review and provide input.

The four information stations included:

- Regional Trail Boards
 - Regional Trails
 - Roseville / West Placer County Trails
- Dry Creek Greenway West Trail Area Map and Area Maps
- Evaluation Criteria
 - How an Alignment is Chosen
- Boards from the First Community Open House
 - Project Delivery Steps
 - Site Photos
 - Public Safety
 - Stay Involved
 - Additional Thoughts Board



Community Open House #2 Stations

The open house consisted of the following staffed information stations:

Station 1: Regional Trails

The objective of this station was to provide an overview of the regional trails that surround and would potentially connect to the Dry Creek Greenway West.

Displays included:

- Regional Loop Trails Concept
 - Map displaying the connections to the American River Parkway, proposed 72-mile Dry Creek Greenway Regional Trail
- City of Roseville and Western Placer County Trails
 - Map showing trails in Roseville and Placer, along with illustrative photos of community use of paved trails currently in Roseville and Placer County, City and County trail cross section standards, and a flow chart of the bikeway’s development background.

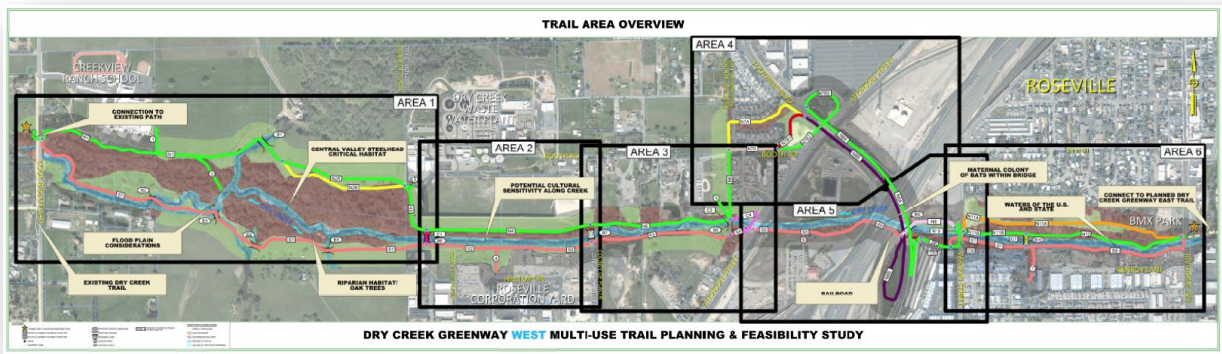
Station 2: Dry Creek Greenway West Trail Map and Area Maps

The objective of this station was to present the different trail alignment options for each of the six areas of the proposed trail and gather community input on which alignment options are preferred and why.

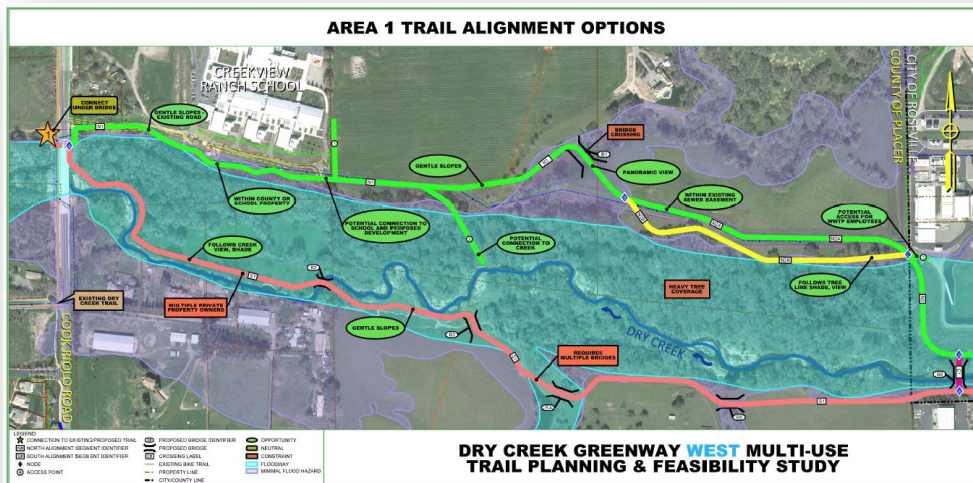
This station presented the opportunities and constraints for the various alignment alternatives, giving community members an idea of terrain, property ownership, floodplain impacts, tree coverage, and the user experience for each alignment.

Displays included:

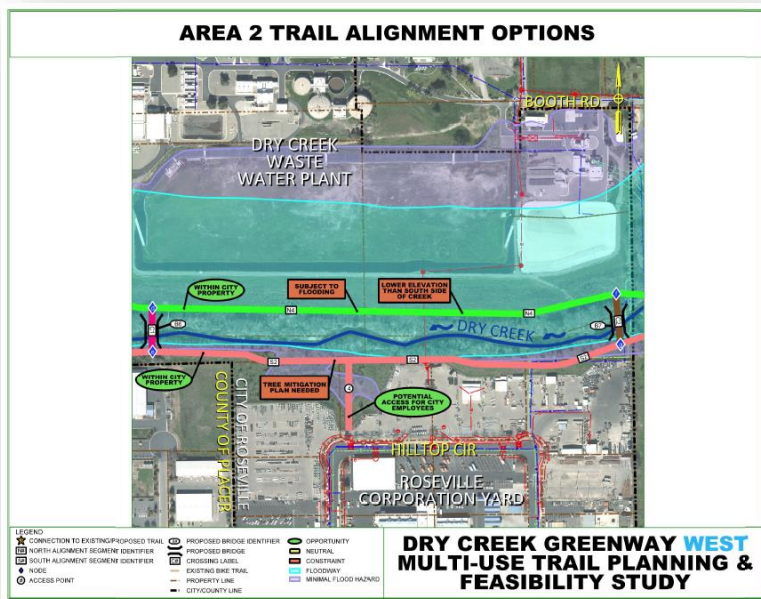
- Large study corridor map



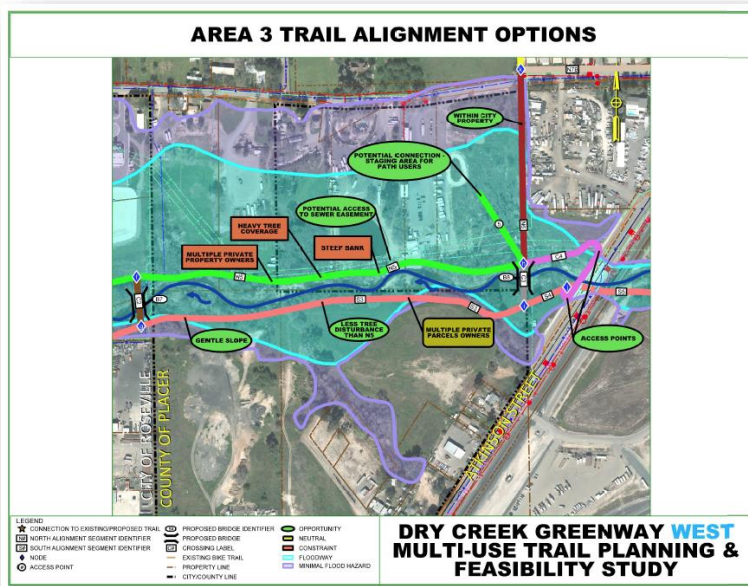
- Area 1 Map



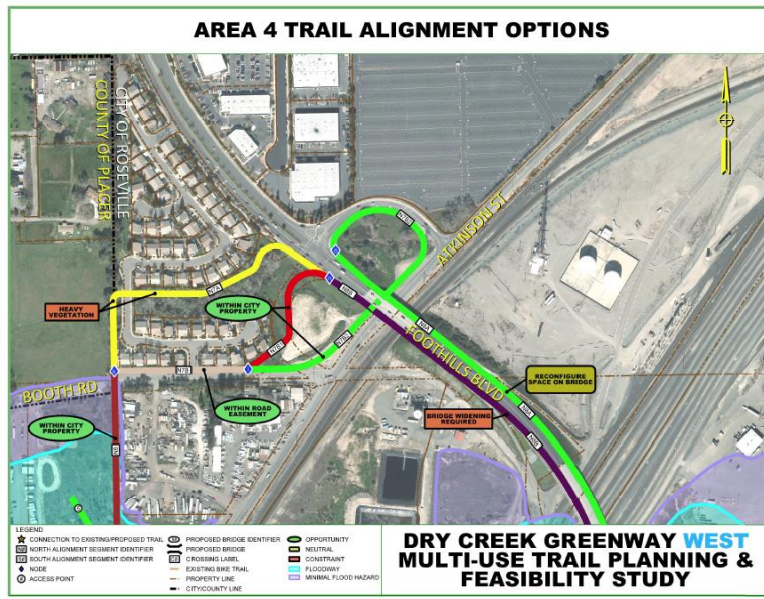
- Area 2 Map



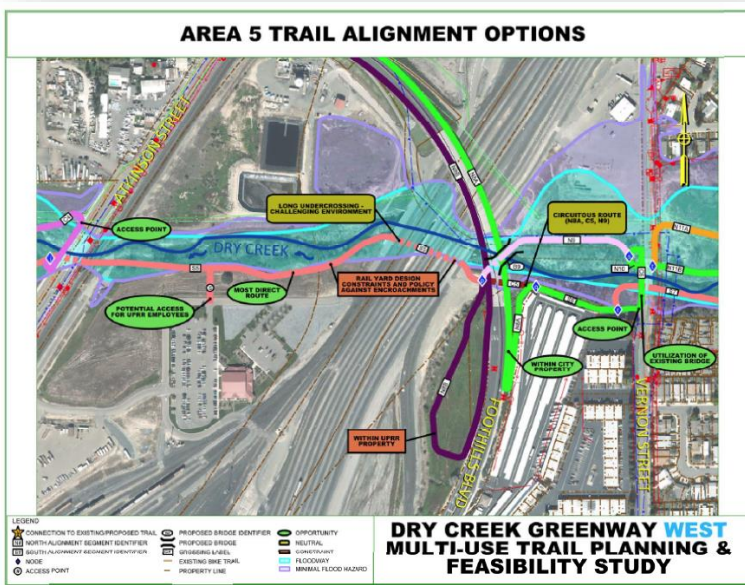
- Area 3 Map



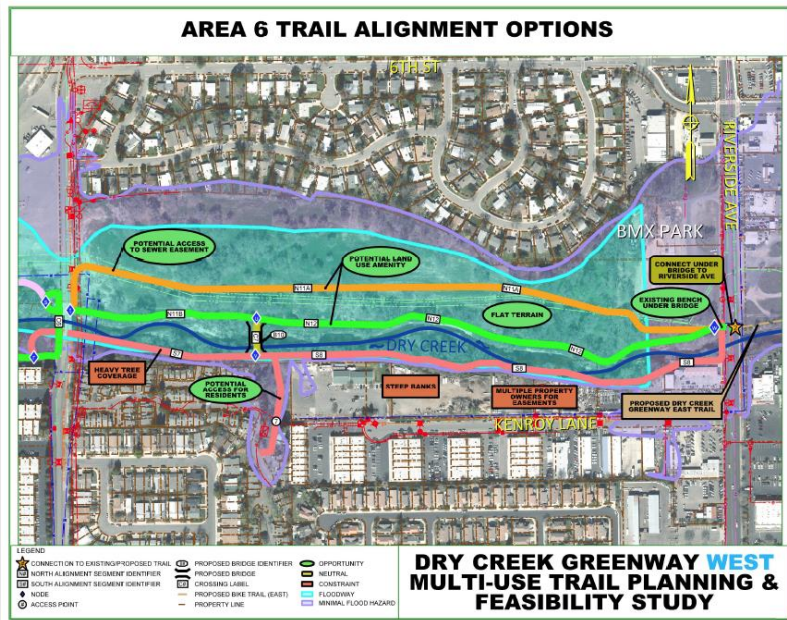
- Area 4 Map



- Area 5 Map



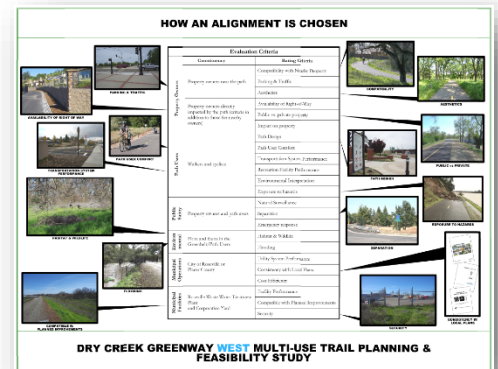
- Area 6 Map



Station 3: Evaluation Criteria

The objective of this station was to inform the community about the path alternative rating system that was developed to compare alignment alternatives as they relate to property owners, path users, public safety, environmental, municipal operations and municipal facilities. The evaluation criteria, along with public input, will help to identify the preferred alternative.

This station provided community members with a display showing criteria that will be used to rate the alignments and provide an opportunity for public input.



Station 4: Boards from the First Community Open House

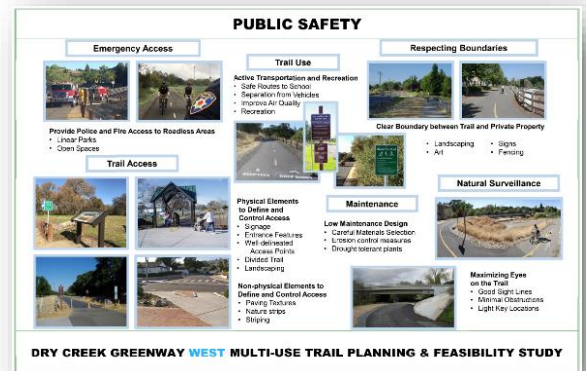
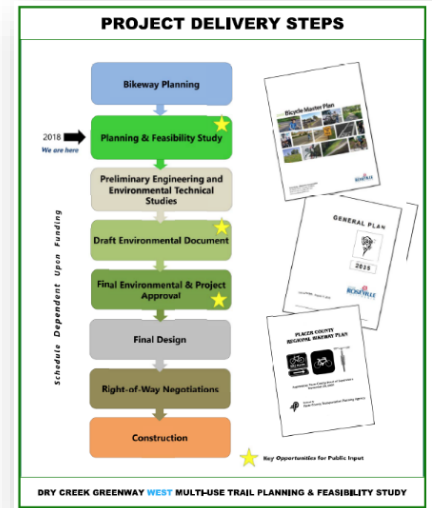
The objective of this station was to inform community members about the project, opportunities to participate in the process, and direct them to the virtual community workshop.

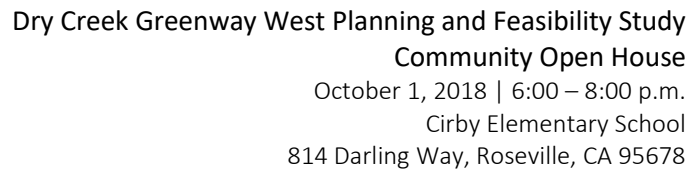
This station featured a board showing the steps involved in planning a multi-use trail including community outreach events planned to gather public input.

This station also provided a computer for community members to participate in the virtual community workshop.

Displays included:

- Project Delivery Steps
- Site Photos
- Public Safety





- ## STAY INVOLVED!
- ### Key Opportunities for Public Input
- | Spring 2018
April - September | Fall 2018
October - November | Winter/Spring 2019
January - March | Summer 2019
June |
|---|---|---|---|
| Completed | We are here! | Next Steps | Final Steps |
| <p>Community Open House #1</p> <p>April 2018
Cody Elementary School</p> <p><i>Presented by:</i>
Family Farm Nights
June 2018</p> <p><i>Presented by:</i>
Place County Earth Day Celebration
April 2019</p> <p><i>Presented by:</i>
Family Farm Nights
September 2018</p> | <p>Community Open House #2</p> <p>October 1</p> <p>Provides input on location options and evaluation</p> <p><i>Offer open house and Signatories on the best routes for a trail.</i></p> <p>www.placecounty.com/Trail</p> | <p>Draft Report Review</p> <p>Responsible City/County Commission
Next Steps: Responder Advisory Council
Place County Parks
Place County Planning</p> <p>Presentation is for the recommended trail alignments for further trail location options.</p> <p>The recommendations will be a result of technical analysis and year-long community input.</p> <p>Committees will make recommendations to the Responsible City/County - Place County Board of Supervisors and Place County Transportation Planning Agency</p> | <p>Final Report Acceptance</p> <p>Responsible City/County Board of Supervisors
Place County Transportation Planning Agency</p> <p>Presentation on the recommended trail alignments, trail options, and the considered City/County will give district officials an opportunity to give input on which to move forward. If any, should be advanced for the Responder and environmental review.</p> |
- ### DRY CREEK GREENWAY WEST MULTI-USE TRAIL PLANNING & FEASIBILITY STUDY

Any Additional Thoughts?

Share Here!

Open House #2 Community Input

Below are the comments submitted by community members through the feedback forms provided based on each trail area.

Area 1

- Though constraints occur, Pathway "N1" could be closer to the creek yet remain north of the Creek. Doing so there appears to be less of a barrier than pathway "S1"
- I prefer N1 (Green) then N2B (Yellow)



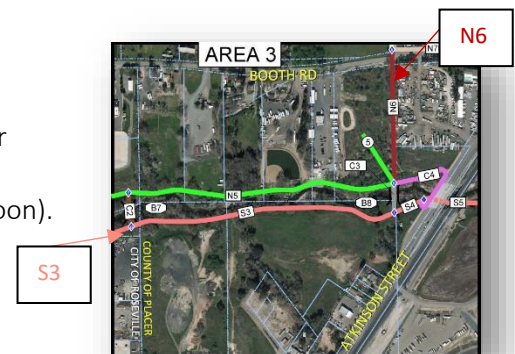
Area 2

- I prefer N4 because there will be better views.



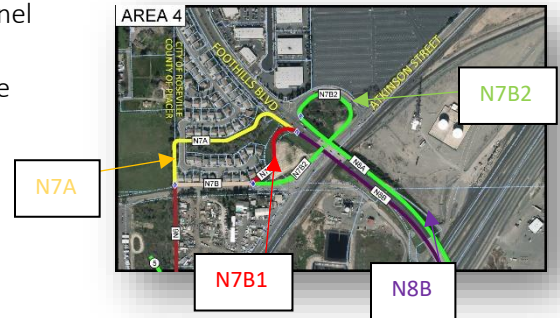
Area 3

- I live on Booth Road and I am in favor of N5 to N6. The S3 option seems less safe due to transient activity in the under populated area.
- S3 (Salmon) will have better views to C3 (Grey) to N6 (Maroon).



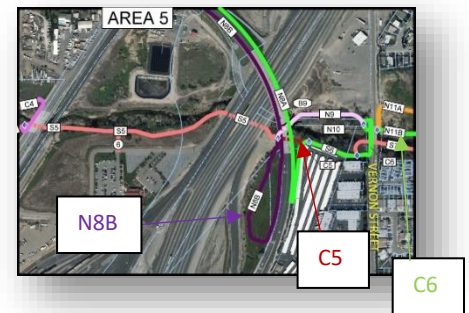
Area 4

- Strongly support continued efforts with railroad to use tunnel under the yard. Offer tax incentives?
- N7A or N7B1 would be favorable. N7B2 is not a terribly safe route for walkers. There is a lot of transient activity along Atkinson Road and along the Rail Tracks.
- I prefer N6 to N7A (Yellow) to N8B (Purple).



Area 5

- I prefer N8B, (Purple) to C5 to S6 (Green) to C6 (Green) to N11B (Green).



Area 6

- I Recommend pathway "N12" as it meets all goals.
- I prefer N12 (Green)



Additional Thoughts and Comments

- Generally, having trails closer to creeks and within shaded landscapes is preferred because aesthetics is prettier and offer a greater sense of seclusion. Also, shade is greatly sought after in our summer heat. This should be a primary goal. A secondary goal is to separate hiking, biking, and pedestrian traffic from motorized traffic. A third goal is to minimize over-development of the pathway. I fully support this project.
- I am a property owner along the proposed pathway and I am excited at the idea of extending. Can't wait for it to happen!

Notification for the Community Open House

A total of 18 community members signed-in to the community open house and four community members submitted written feedback forms. To promote the second community open house, a direct mail piece was sent to over 2,000 residents near the study corridor. Email notifications were sent to the City of Roseville, Placer County, Placer County Transportation Planning Agency, and Rails-to-Trails distribution lists. Local news stations in the City of Roseville were also notified. The project team reached out to community-based organizations and local businesses to share the event through their social media, newsletters, and fliers.



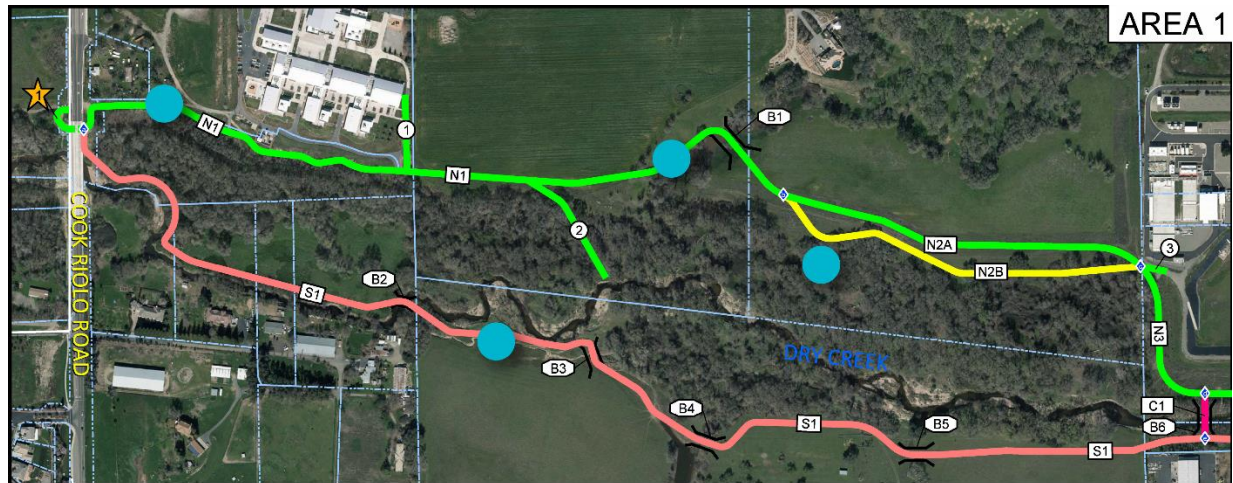
The open house was promoted on the City of Roseville's website and social media (Facebook, NextDoor, Twitter, and Instagram). The following organizations shared the event through social media, email, newsletter, and/or flyer:

- City of Roseville
- Placer County
- PCTPA
- Ladies of Roseville Walking and Running Club
- Placer Land Trust
- Roseville Chamber of Commerce
- SABA
- Dry Creek Unified School District
- Roseville City Elementary School District
- St. Rose School
- Sun City Cycling
- Biking Roseville
- Fleet Feet Sports – Roseville
- American River Parkway Foundation
- Dry Creek Parkways Advisory Committee

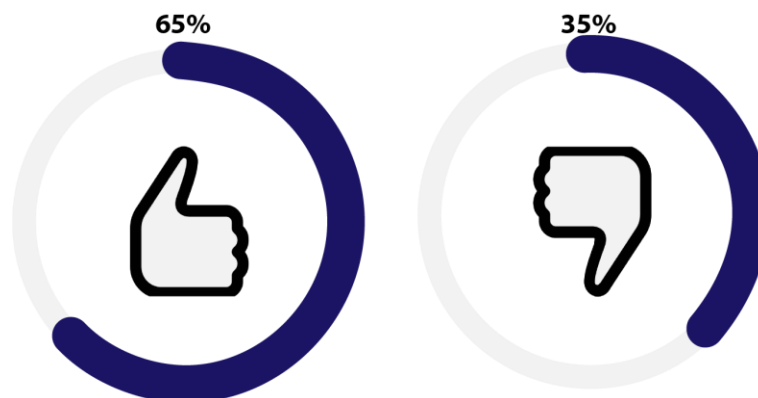
Virtual Community Workshop Input

Below is the community input received through the virtual community workshop, organized by trail area.

Area 1



Option1: Green (N1, new bridge B1) to Green (N2A) to Green (N3)



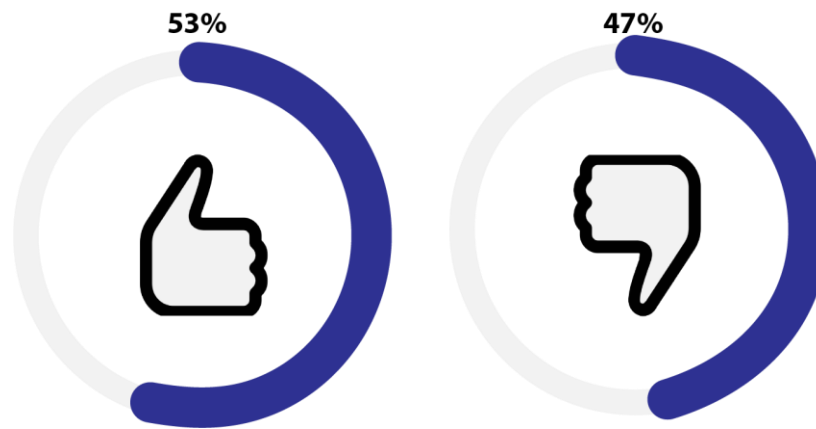
Comments

- Acceptable route.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Any of these options would be fine – I would suggest following whichever option can be completed soonest with the least amount of resistance regarding private property.
- From the map, this option does not look as scenic as other options. I'm not "opposed" to this option, but like others better.
- I am not in favor of the N1 piece as I believe it can allow dangerous elements that has the potential to affect the children going to school.

- I believe tree coverage provides shade and creates a cooler environment. With there being over 300 days per year of sunshine it's important to have access to shade. This side of the bike path appears to have the best potential for shade. I also like how there is potential access to play at the school's field and park. If the trail is shut down during school hours for child safety, I would vote against having trail access on this route as I believe the bike trail should be open during commute hours for adults. This only requires one new bridge to be built which would be cheaper and doesn't seem to cross over any critical habitat areas you've outlined.
- I frequently ride my bike on the trails in Roseville. The more trails and the more they interconnect, the better for walkers and cyclists. The roads are not the safest for cyclists with speeders and distracted drivers.
- I like that fewer trees would be removed than on S1.
- I like the idea of connecting/extending the existing trail to the school for an alternate student entrance away from drop-off/pick-up traffic. My biggest concern about the trail is safety as it gets into more rural areas.
- I love the idea of making Roseville a more bike friendly town. I have ridden my bike in Folsom. They have fantastic bike/running/hiking trails that go on for miles. It would be great if Roseville could do the same.
- Please install at least two public bathrooms along the Dry Creek Greenway West trail.
- Might be least expensive.
- Minimal amount of bridges to lower the cost. Preferred elevation is above the flood zone.
- My only reservation is if the kids will be able to ride their bikes down the trail will there be many people watching over the kids! Super excited though to see another trail in the neighborhood!
- Nice plan, simple.
- Not near the creek, out in a pasture.
- Option 1 seems a long way from the riparian corridor of Dry Creek, which is the best aesthetic amenity. It also seems that connections to the school and the WWTP are not real important; if those connections are more important that they first appear, then this may be a good option. This option would be the least costly to construct and maintain.
- Seems like this route will be easier to maintain.
- The existing paved trail west of Cook Riolo Road has a parallel dirt trail, which should be continued in this section. The paved trail should follow the green route. Starting at Cook Riolo, the dirt trail should follow the salmon route as far as B2, but instead of crossing the creek should angle left up to B1, or have its own bridge downstream, then continue on in the trees, either on the yellow route or closer to the creek. The dirt trail can be an important element of the Dry Creek corridor, used by hikers, trail runners, equestrians, and mountain bikers, including the local high school mountain bike teams, providing a place for them to train without having to drive a long distance.
- This section will be less interesting and hot.

- There is mention of a possibility of the public having access to the creek and a picnic area near the creek. Our (Schellhaus) family owns the property on the south side of the creek near the area labeled #2 in green and I see a potential problem with people wading across the creek onto our property. Then we might be responsible for injuries, etc.
- "This looks to have the least number of turns. This is good for commuting.
- This is a more general comment, but it would be cool to see a natural surface (mountain bike trail) in addition to the paved trail.
- This option seems OK, but I like Option 4 a bit better since the terrain is more interesting and there is some shade for the trail.
- This option seems very reasonable, but I would opt for the very similar route that includes N2B and some shade along this segment.
- This shows a trail (labelled 2) that goes to the creek. Our family (Schellhaus) owns property on the other side of the creek (and possibly a portion of this as well, not sure) and we would rather not have public access to the creek. We have a home on the other side and are worried about people coming across the creek and accessing the property. It would be much better to have the trail away from the creek.
- This trail should never be built. Ever since opening Dry Creek Park, the amount of traffic, trash, graffiti and vandalism near Morgan Creek has been ridiculous. Opening the other side of the trail will be a threat to those homeowners and Creekview Ranch school.
- Too close to the school.
- Tree removal: Please indicate whether the trees are native or exotic. Are there other native vegetation being disturbed i.e. pipe vine. School access is important as it would permit children to have access to environmental science projects.
- Until you finish current regional parks I think any additional projects should not even be worked. Spend the resources on what you have been lying about for 15 years. Build Central Park.
- Water is the staff of life! You will have a hard time walking and bicycling if you have no water to drink. Maybe Placer county should put supplying water to the state by building more dams and put recreational plans second.
- We need a rest stop and eating area near the Cook Riolo Road.
- We need a rest stop and tables, benches close to Cook Riolo Road.
- Why are we stopping only on the north side of the creek?

Option 2: Green (N1, new bridge B1) to Green (N2A) to Green (N3) to Pink (C1, new bridge B6)

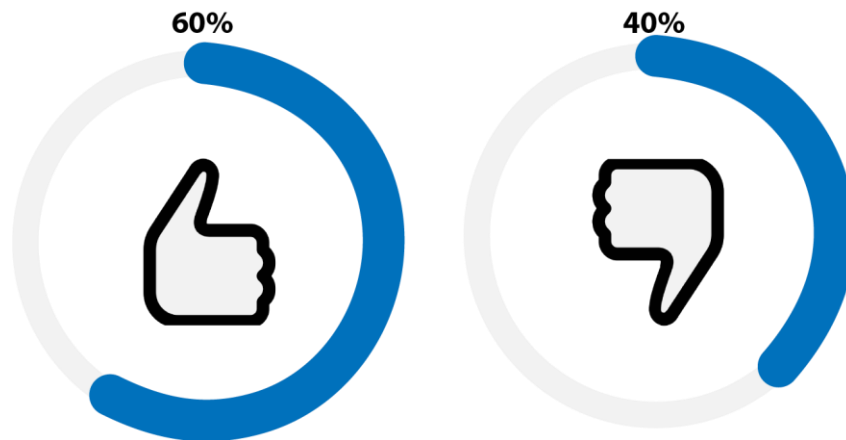


Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Appears to avoid cultural sensitivity area on N3 continuation however requires an additional bridge expense. Would depend on how sensitive the area is culturally. Can the path on N3 go around the cultural sensitivity area?
- C1 is nice to get to the other side so kids can run some loops around the creek – future cross county trail!
- Depends on what the "cultural sensitivity" is.
- From map this option does not look as scenic as other options.
- I am not in favor of the N1 piece as I believe it can allow dangerous elements that has the potential to affect the children going to school.
- I believe there are too many political, budgetary, and environmental barriers that would allow C1 new bridge to be constructed fast and cheap enough to allow access to the corporation yard within my time frame. However, it would be really cool to have a bridge that crosses to view during high flood events, view the fish population, and over all enjoyment of a bridge in the middle of this awesome habitat. I would hope the bridge would be high enough to cross during high rain events too.
- I like the B6 connecting bridge
- I like the idea of creek access and a picnic area option.
- It would be a good idea to make the bike trails connect to one another with the least amount of traffic.
- Option 2 also seems to waste the opportunity to run the trail along the creek. Bridge C1 would have to be very high, providing a poor vertical alignment for the trail.
- Shade would help on hot days. Construction would have to give wide berth for oak tree root disruption.

- This option is the best of all, although option 4 would also be good. The varied terrain and views make this slightly preferable to option 1
- Until you finish current regional parks I think any additional projects should not even be worked on. Spend the resources on what you have been lying about for 15 years. Build Central Park.

Option 3: Green (N1, new bridge B1) to Yellow (N2B) to Green (N3)

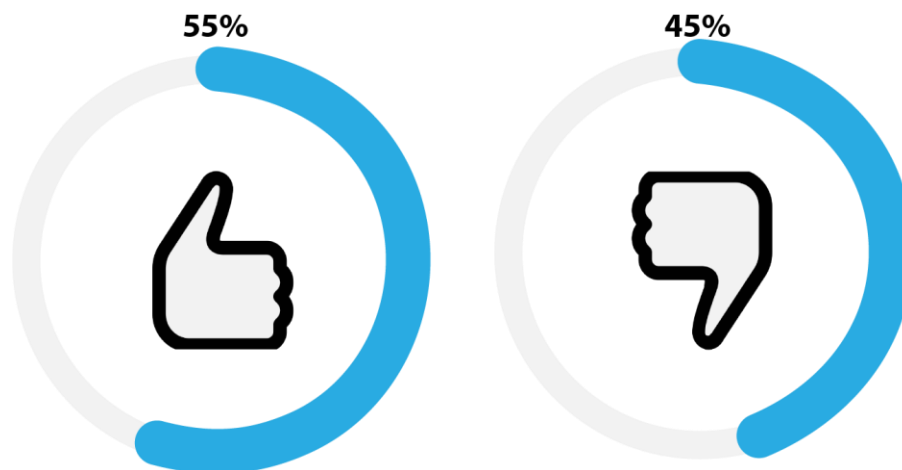


Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Avoid disruption to native vegetation allowing for adopt a stream replanting.
- See Dry Creek Conservancy's contract with City of Roseville for Adopt a Stream.
- Reforestation of open space would be excellent project. How will you provide for keeping wild weeds under control?
- From just a glance at the map this appears to be the most sensible route, takes the users into the trees a little, yet appears to be the safest from a washout from flooding and washouts.
- From map this option does not look as scenic as other options. I'm not "opposed" to this option, but like others better.
- I am not in favor of the N1 piece as I believe it can allow dangerous elements that has the potential to affect the children going to school.
- I like how yellow seems more scenic.
- I like the 'varied terrain' and 'more shade' for this route.
- I like this option best... Seems to be a little bit longer. The coverage of the trees at the edge is a huge advantage for people who like to stay shielded as much as possible from the sun.
- I prefer this option for several reasons; it would provide better access to the multi-use trail for the school children & staff, local business and public facilities employees, use some existing parcels owned by the county, and be less subject to flooding.
- I would be good with any of these options for area 1.
- It's nice to have a little shade.

- I like the yellow route – closer to trees
- N2B is most desirable because of the shade and terrain changes it provides.
- Shade is always welcome on a trail.
- This is like Option 1, but with a bit more shade.
- Simple, access to school campus for students, some trail variation, nice option for Waste Water employees to have trail access.
- The more shade the better.
- This option only involves one new bridge; the trail would be farther from the creek than S1 so hopefully wildlife would be less disturbed. N2B sounds like more interesting terrain than N2A and there is also apparently some shade there.
- This seems like a good compromise between adding new and appreciated facilities, along with less impact to the riparian area, and likely more cost effective as opposed to more bridges for S1 route.
- This seems to be the best and most cost-effective option.
- While S1 looks to be preferable in the summer, I think N1 is the best option for year around use, as well as school and City yard access. Plus, the alignment is likely to be less expensive since it is mostly on government or easement land. To add the shade factor, I would like to see N2B selected. I also would like to see the spur 2 added for creek access.

Option 4: Green (N1, new bridge B1) to Yellow (N2B) to Green (N3) to Pink (C1, new bridge B6)

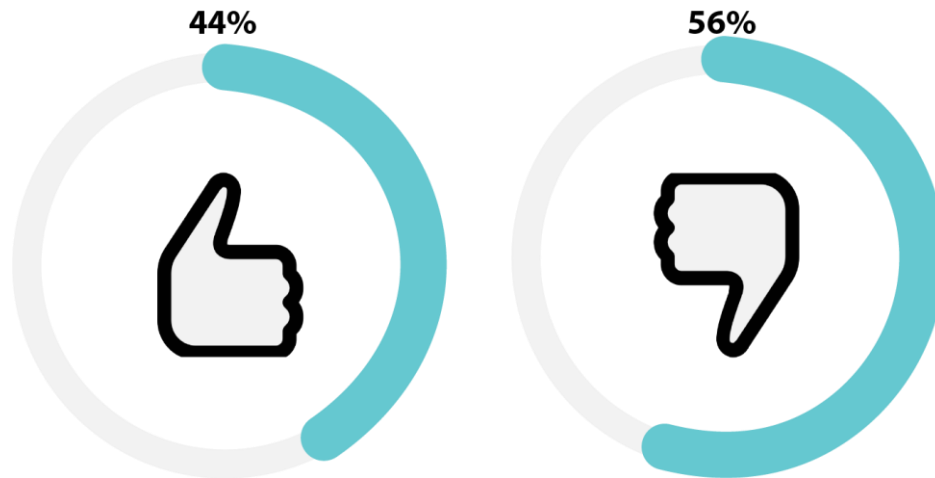


Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Based on the photos provided, this seems like the prettiest, most scenic trail.
- Better to be on the edge of the two ecosystems Grass and Oaks, also better for summer shade.
- The pink connector to salmon is key. I like the northern route held close to the trees and water

- I am not in favor of the N1 piece as I believe it can allow dangerous elements that has the potential to affect the children going to school.
- I like N2B – gives me some shade and a new bridge C1 and this would be the best option then.
- I would be good with any of these options for area 1.
- N2B again is most desirable because of the shade and terrain changes it provides, however, I'm worried about the cost of building a bridge over the creek to cross sides then a bridge on the same side.
- Option 4 also seems to waste the opportunity to run the trail along the creek. Bridge C1 would have to be very high, providing a poor vertical alignment for the trail.
- I prefer to stay on south side of Dry Creek.
- Simple, access to school campus for students, some trail variation, nice option for Waste Water employees to have trail access
- The new bridge at B6 is unclear what that would look like.
- The yellow section of the trail looks like it cuts through part of our property. This could cause issues in the future for us as well as problems if there are cattle on the property. Any fencing would cut through our property and if there is no fencing, it would allow access to the creek and possible access to our property on the other side of the creek. We want to avoid this.
- This one would be a great option due to the terrain, and shade that would be provided during the summer months. Additionally, the access for WWTP employees makes this option beneficial. Hopefully, the access to the picnic area would be included. The bridge enabling access to the pink trail is ideal. If the pink trail is flooded this trail could still be used.
- This seems like a good compromise between adding new and appreciated facilities, along with less impact to the riparian area, and likely more cost effective as opposed to more bridges for S1 route.
- Shady in many places.
- This looks like a desirable option since it apparently provides some shade for the trail yet is still far enough away from the creek such that the wildlife may be less disturbed.

Option 5: Salmon (S1, new bridges B2, B3, B4, B5)

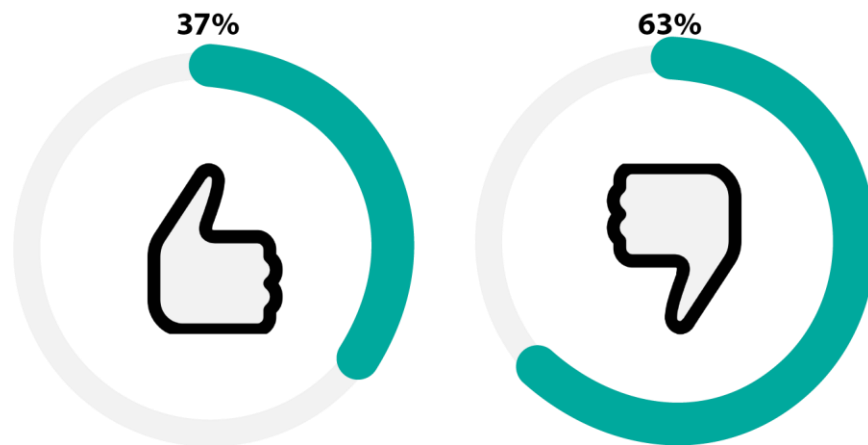


Comments

- This option is nice but has a lot of bridges.
- Appears to be most scenic option. I like riding on the existing bike path along Dry Creek on west side of Cook-Riolo Road, and this option seems the best to continue the nice characteristics of that existing bike path.
- Both this option and option 6 are less desirable: too many crossings of public parcels and too many bridges required to be built. These problems (plus potential flooding in winter) outweigh the benefits of being under the trees and closer to the creek.
- Extra cost for bridges, doesn't help school access for students.
- I am not in favor of the S1 piece as it goes through private property for my neighbors and I.
- I bike to Roseville Electric for work several times a week and would love to take this instead of going down PFE Road.
- I prefer the trail that provides direct access for students to the school away from traffic. Also, concerned about the number of bridges that would need to be constructed and the safety with so much of the trail being near the creek. There are sometimes transients that reside close to the creek currently.
- I'd like to see as many bike trails as possible in Roseville. I've been to the town of Folsom and they have an extended miles of bike trails that are fantastic to ride on.
- Would love to see Roseville become a bike/walking/running friendly town.
- I'm not necessarily opposed to this option, but it seems like it may have more of an impact on the riparian area, both by removing trees and building more bridge, but also by allowing more direct human access that may wonder off-trail.
- It seems that with the 4 extra bridges needed, and the impact on some private land, this would be a costlier proposition, unless the shorter distance of the trail made up for the difference in cost.

- Neat route, but lots of expensive bridges, plus likely more maintenance and possibly less use in winter.
- Our family owns most of the land (Schellhous property) along both sides of this option and we think that it would lower the value of our land. It divides our property and might complicate and make more expensive any future development. We also do not want public access to our land and buildings, and don't want the expense of putting up fences. Also, we sometimes lease out the land as pasture for cattle and would need fencing.
- Our Schellhous family owns most of the land on both sides of this option. We feel that this path would lower the value of our property. It would divide our property and could create extra expenses and difficulty in any future development. We do not want public access so close to the house and farm sheds. We might be liable for any injuries on our land. We also sometimes lease out the pasture for cattle grazing and would need fences.
- Subject to storm events would stop riders from accessing the path once the storm and ended but the water hasn't receded yet. However, I'm always for better and more interesting terrain for users. No one enjoys a boring trail or path in sun drenched asphalt.
- The cost and disruption of natural habitat for the several bridge crossings are not worth it. Also, there would not be an option for children to access the school if they took the path to/from campus.
- The options involving Salmon S1 are too close to the creek and have a higher potential for disturbing the wildlife therein. Also, several bridges would be required and that is costly
- This creates the best visual, but it seems it would be at greater expense.
- This is my preferred option, but I understand that the issues with potential flooding and increased cost of construction due to grading and tree removal. If these factors are cost-prohibitive, then other options which would encompass the route most closely following Dry Creek would be my preference.
- This is my preferred route as I like its proximity to the creek
- This seems to offer the best experience for trail users, and coordinates with the southerly alignment in Segment 2 while avoiding bridge C1.
- This trail is less desirable than the north side trails because it is closer to the creek and would disturb the riparian wildlife more; it also sounds like there are more construction issues such as extra bridges to build and a higher potential for flooding
- This whole section of the Salmon trail crosses back and forth across and through the creek and we would strongly oppose this as it allows people to access the creek and our property. It seems also that it would be very expensive to build the bridges and would also interfere with the natural flow of the creek.
- Too much sun.
- Why build bridges if we don't need them on N1?

Option 6: Salmon (S1, new bridges B2, B3, B4, B5) to Pink (C1, new bridge B6)



Comments

- I prefer the trail that provides direct access for students to the school away from traffic. Also, concerned about the number of bridges that would need to be constructed and the safety with so much of the trail being near the creek. There are sometimes transients that reside close to the creek currently.
- A neat route, but lots of expensive (I'm thinking) bridges, plus likely more maintenance and possibly less use in winter.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- As an avid trail user this trail by far makes the most sense; I would want to be out there as close to the creek as possible. Also, there should be an effort to emphasize the creek's salmon run; the fact that salmon still manage to find their way upstream and spawn in Dry Creek (despite all the development and relative inattention to their existence) over the last several decades is pretty much a miracle. Let's celebrate this wonderful resource and educate folks on just how valuable this watershed really is.
- Better to avoid bridge C1 and stay on the south side of the creek.
- For the same reasons as Option 5, we would strongly oppose this option and it doesn't seem to make much sense. Again, it would be much better to have any trail be away from the creek.
- I am for all New routes in Placer County.
- I am not in favor of the S1 piece as it goes through private property for me and my neighbors.
- I like any path that allows me access to the corporation yard.
- I'm not necessarily opposed to this option, but it seems like it may have more of an impact on the riparian area, both by removing trees and building more bridge, but also by allowing more direct human access that may wonder off-trail.
- The northern route will prettier.
- Our family owns most of the (Schellhaus) land on both sides of this option and we think it would lower the land value. It would divide our property and might complicate and make more

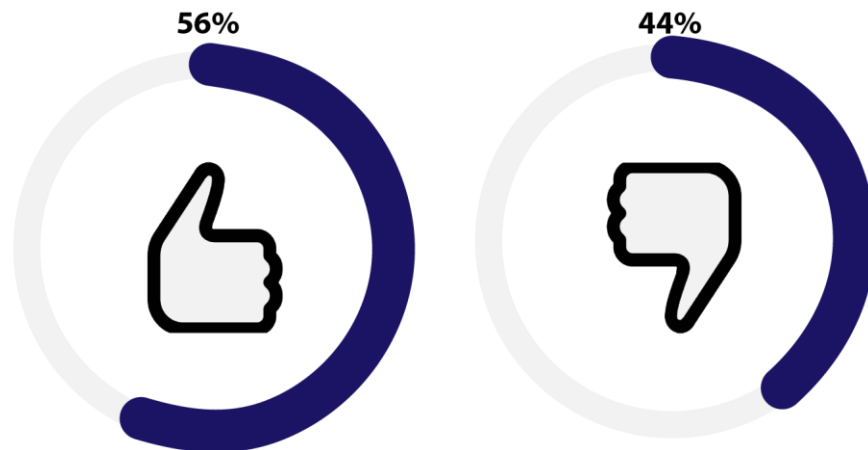
expensive any future development. We do not want public access to our land and buildings. We sometimes lease out the land as pasture for cattle and would need fencing.

- Our Schellhous family owns both sides of the creek for most of this option. It would divide our property and could create future problems in developing the property. Thus, lowering the value of our property. We have a house and farm sheds nearby and don't want public access to them. We sometimes lease out the land for cattle grazing and would need fencing.
- Prefer to stay on south side of Dry Creek.
- The cost and disruption of natural habitat for the several bridge crossings are not worth it. Also, there would not be an option for children to access the school if they took the path to/from campus.
- This option along with Option 4 would work great. The bridge (B6) would enable users to connect to both trails. If S1 is flooded, users could just not use it. However, if the proposal is for only one trail then Option 4 would be my selection.
- This route sounds too complicated.
- What work has been done about chasing off the homeless from using this as a highway to bother residents? Until that is figured out no point in building as it is a project endangering resident.

Area 2



Option 1: Green (N4)

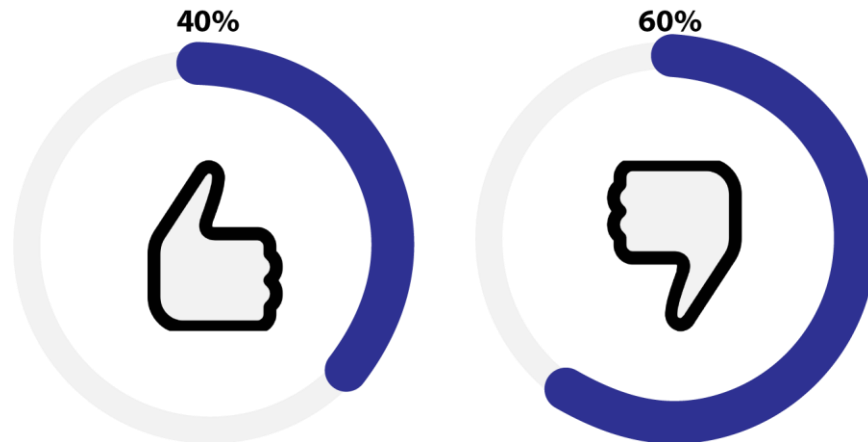


Comments

- It's recommended that that a dirt trail parallel the paved on whichever side of the creek has the most space, which is hard to determine without actually walking the route.
- Any area more prone to flooding and thus closure and repair seems like a less desirable alternative.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Best out of the options but not happy with any of suggestions.
- Boring, unappealing scenery (WWTP), and no connection to the Corp Yard.
- Please install at least two public bathrooms along the Dry Creek Greenway West trail.

- It makes sense to keep the trail on just one side of the creek; building bridges disturbs the creek and its wildlife and is costly.
- Keeping the trail higher up will allow it to stay open more often during rain events.
- Less likely to expose users to undesirable elements.
- Please make it crystal clear that these are meant to be multi-use. That means cyclists, respecting others, and slowing down. I run into nothing but problems with cyclists and mountain bikers taking over trails, and roads. They are the most self-entitled group of people ever. There are so many people that want to & would like to utilize trails, but are intimidated, frightened of being hit, know that their experience of walking on a trail comfortably, is long gone with the on slot of cyclists. I have ridden a bike many times and I know how to be respectful, considerate of everyone else. Please make that clear on the trail. I am quite confident, many that are reading this are cyclists.
- Next to the treatment plant is not ideal.
- No obstacles.
- No, because of possible flooding.
- I don't think fencing is needed. We've ridden on the levees by Elkhorn/Elverta to Discovery Park and there is no fencing on those levees.
- Prefer keeping a natural screen from the ugly corporation yard.
- S2 would probably be the preferred route – looks more interesting.
- This option seems less costly.
- The WWTP is ugly and smelly and doesn't provide access to the Corporation Yard.
- This looks like the simplest and most direct route for the trail.
- This route keeps it on the same side of the creek, eliminates a bridge, to keep costs down and prevent a washout that could require repairs and shut down the path.
- This seems the most reasonable considering cost for new bridge construction and minimizing impact to the riparian zone. Neither option really provides more connected routes, so with this respect they seem equivalent.
- This option is very exposed with little shade.

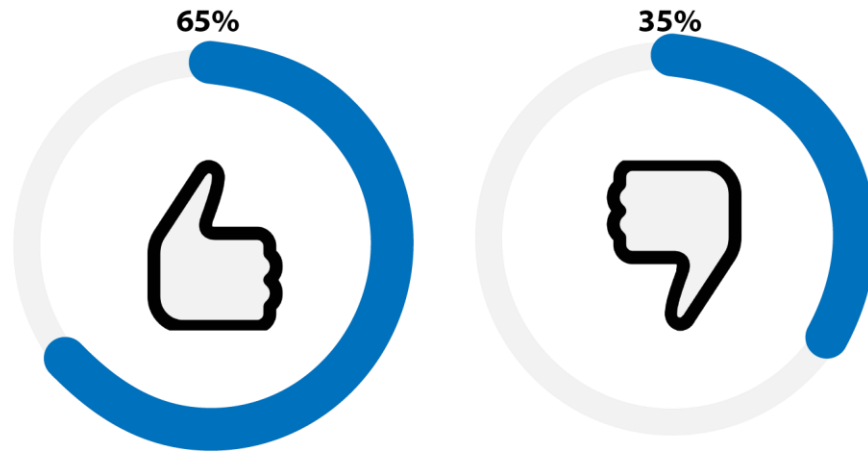
Option 2: Green (N4) to Brown (C2, new bridge B7)



Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Boring, unappealing scenery (WWTP), and no connection to Corp Yard. Bridge B7 would add cost for both construction and maintenance and may force a poor alignment (both horizontal & vertical).
- I like the idea of access to the corporation yard. It might become a possible bike commute route. Again, trees on a trail always makes a trail more inviting.
- Not sure about this since I don't prefer N4 but may need the bridge B7 for access to Corporation Yard people.
- The south side is better, more interesting.
- This one seems to avoid going right next to the parking lot which is nice.
- Very exposed with little shade.
- Yes, I'd like to support any bridge access to the side of the Corporation Yard. I feel this is valuable for many reasons which would include staff access to trails during lunch breaks to take walks. Access for employees to bike and walk to work at the corporation yard. Currently during lunch breaks, staff at the corporation yard walk the enclosed hilltop circle access road which provides no side walk safety or interesting terrain. Walking during lunch breaks can provide physical health and mental benefits for staff who work at a desk 9 hours a day.
- You are going to build bridges for peoples' pleasure. If you don't have dams to supply water, you won't be able to bike and walk! Have you considered that no water means no life?

Option 3: Salmon (S2)



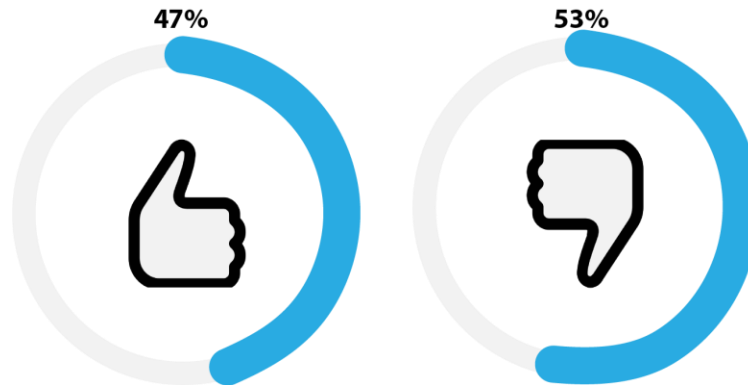
Comments

- Again, more shade for summer riding and less flooding.
- Although perhaps less scenic because of the corporation yard's proximity, the availability of shade is a huge plus, and more protection from flooding is also desirable.
- Avoids flooding. Keeps the trail open in rainy seasons which promotes people using it to commute as well as for recreation
- Because I'd like to commute by bike and access the path for lunch break walks id like trail access to be on the most shaded, most terrain interesting side, closest side to the Corporation Yard, and least likely to flood during a storm event. Because this option doesn't require any bridge work I believe it will be faster to build, approve, and stay on budget.
- Corporation Yard access turns this into a viable commute option for some.
- I bike to Roseville Electric for work several times a week and would love to take this instead of going down PFE Road.
- I prefer this option as it utilizes a city parcel or city-owned land and provides access to staff who work at the city's Corporate Yard.
- Near existing connections, so it would be helpful to see what land use is planned in the area.
- Nice access to employment while being beautiful.
- This seems to be the best use and certainly a better visual.
- The shade and connectivity to the Corporation Yard are positives that would make both this and option 4 preferable.
- Think it would be much better to stay away from the creek as much as possible.
- This seems the best option for Area 2, since it's less subject to flooding (which will reduce maintenance cost) is more scenic, and provides for a connection to the Corp Yard, which is accessed by both the public and employees. It also avoids extra bridges across the creek, which

would add cost for both construction and maintenance, and may force a poor horizontal and vertical alignment.

- Varied terrain, nice for access for Corporation Yard employees, less of a chance of flooding.
- Yes, because there is no flooding, lots of trees, a City parcel and nice access for the Corporation Yard, if they want it.

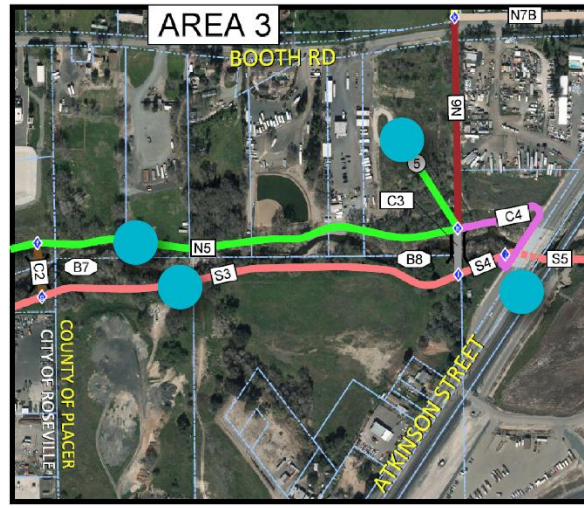
Option 4: Salmon (S2) to Brown (C2, new bridge B7)



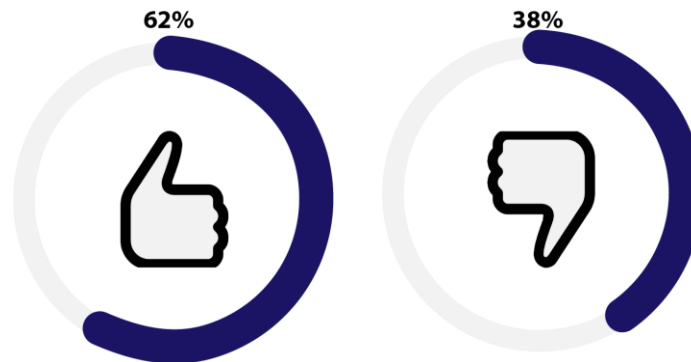
Comments

- You would only need B7 if there is a trail over there.
- All these seem great ideas. I would love to see the bike trails in Greenbelt areas and away from car traffic as much as possible.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- I also support this option, any option that will allow trail access to the creek from the Corporation Yard with the highest possible full-time around use which would include increase shade coverage and increase height to avoid flooding.
- I bike to Roseville Electric for work several times a week and would love to take this instead of going down PFE Road.
- Less flooding is better from a riding perspective since there are no detours available in case of flood.
- More bridges lead to more loops which is more fun!
- Save money with no bridge.

Area 3



Option 1: Green (N5) to Maroon (N6)

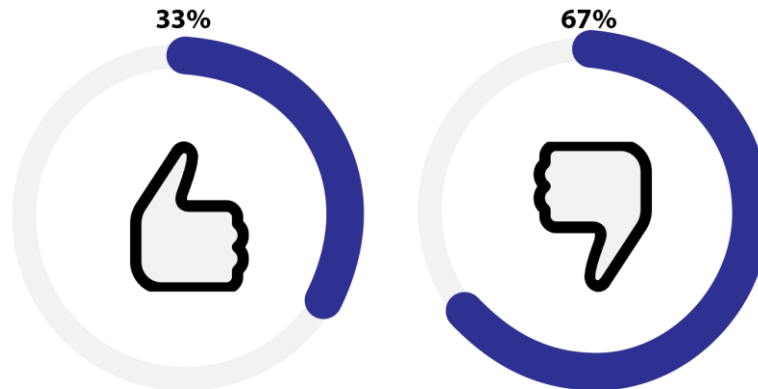


Comments

- I suggest picking the route that can be completed the soonest, with the fewest number of obstacles, such as private property.
- This looks like a nice direct route.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- I support this option because I don't want to go under the bridge where a maternal colony of bats live, and so I'm assuming this option will take me around the bat bridge. I don't understand bats, so I think they'd attack me. If you did any sort of explaining or education about the maternal bat colony I might change my mind.
- I'm not in favor of the trail at all. But if it must be done, keep it as far away from vagrant elements as possible. With that in mind I think this option might be best. Though since I don't want it to go through, perhaps looking for the priciest bridge option might be the best option.
- Not crazy about this side.

- This affects a lot of private parcels.
- The upside is the option for parking for a trailhead and for access to trail for employees from businesses on Booth Road.
- This route puts users behind industrial parks that seem unsafe and intimidating to females using the path alone or with small children.

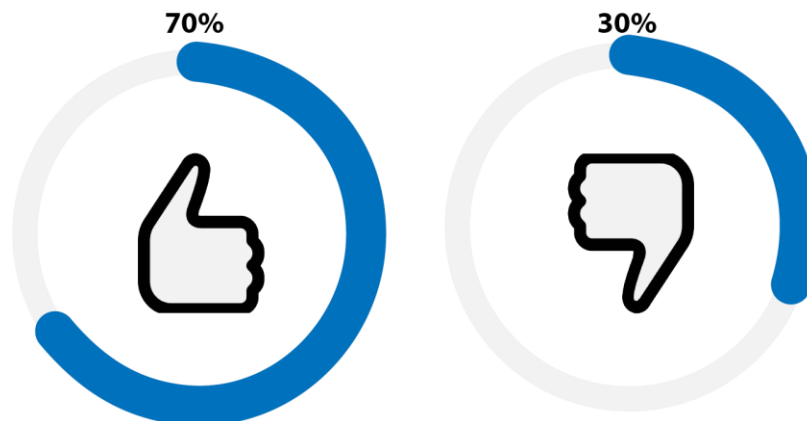
Option 2: Green (N5) to Magenta (C4, on existing Atkinson Street Bridge) to Salmon (S5)



Comments

- I voted this option down because I don't like the idea of crossing Atkinson Road and going under a bridge with bats. However, if there was safety in crossing Atkinson and I have more education about bats and if they would attack me, I might not have voted this option down.
- The upside is the option for parking for a trailhead and for access to trail for employees from businesses on Booth Road.
- This seems like the prettiest route.
- This is too complex, keep it simple.
- Would prefer not to ride on a busy street.

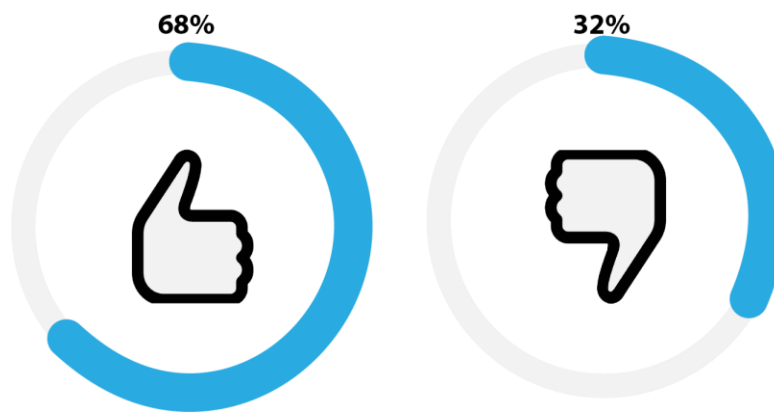
Option 3: Green (N5) to Grey (C3, new bridge B8) to Salmon (S4, S5) under existing bridge at Atkinson



Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- I like this option. It allows for good connections north of Dry Creek and provides an off-street crossing and access to/from eastern Dry Creek. The bridge crossing here would provide direct access to N6 and neighborhoods to the north.
- If N5 is picked, then this is the best way to get to S5.
- Seems the easiest.
- This affects a lot of private parcels.
- The upside is the option for parking for a trailhead and for access to trail for employees from businesses on Booth Road.
- This is a better option than Option 2 because the bridge is allowing me to avoid traveling on Atkinson Road, but then continues under the bridge where bats will. Please provide education on bats and what they do to humans. I can only imagine what I know from the movies like Bruce Wayne in Batman being attacked by bats.
- Underneath the bridge seems very unsafe for female runners/walkers when crossing through an area frequented by homeless people and those who ride the trains through the rail yard.

Option 4: Salmon (S3, S4, S5) under existing bridge at Atkinson

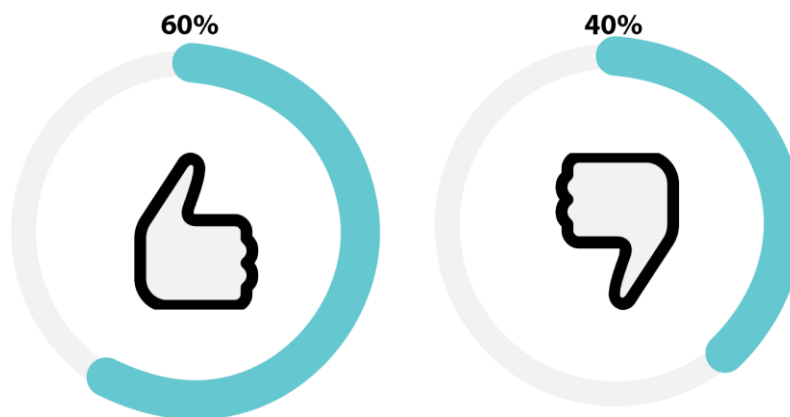


Comments

- Again, dirt trail should parallel paved trail, but closer to creek. Seems to be the most space on the south side.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Bike trail floods during heavy rains. I'd try and keep away from stream. This will also keep pollution out of Dry Creek.
- I am loving the Salmon option, all the way through!
- I bike to Roseville Electric for work several times a week and would love to take this instead of going down PFE Road.

- I highly recommend this route for its beauty, terrain, and ease of construction.
- I like any option that is on the south side of the creek and would require less maintenance.
- Least invasive.
- Less cost for new bridges, simpler.
- looks like the most straightforward.
- Nice variety of terrain and less impact on private parcels.
- Option 4 seems the most straightforward and practical, avoiding odd turns that may tend to confuse trail users.
- Simple, direct and beautiful.
- Straight Shot! Best option! Plus, the sound of the creek is so pleasant.
- This part looks nice and seems a 'cleaner ' route.

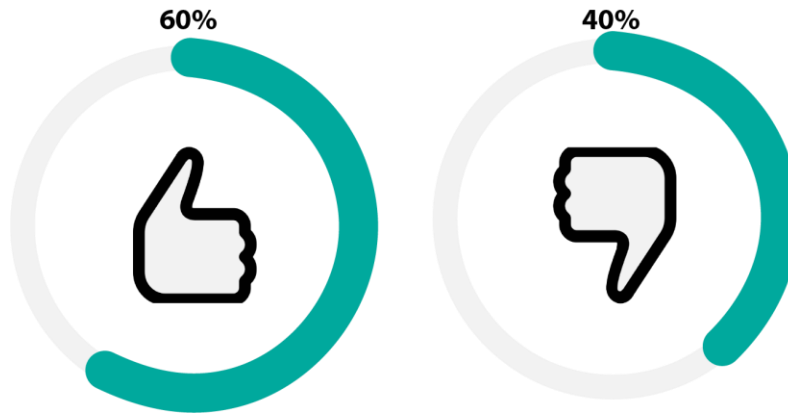
Option 5: Salmon (S3) to Grey (C3, new bridge B8) to Maroon (N6)



Comments

- I bike to Roseville Electric for work several times a week and would love to take this instead of going down PFE Road.
- I like this option because it avoids the bats and Atkinson road.
- I think that bridge B8 is not necessary...keep the trail uncomplicated.
- Nice variety of terrain and less impact on private parcels.
- Not acceptable. Route should be planned to hook into S5.

Option 6: Salmon (S3, S4) to Magenta (C4, on Atkinson Street Bridge) to Maroon (N6)



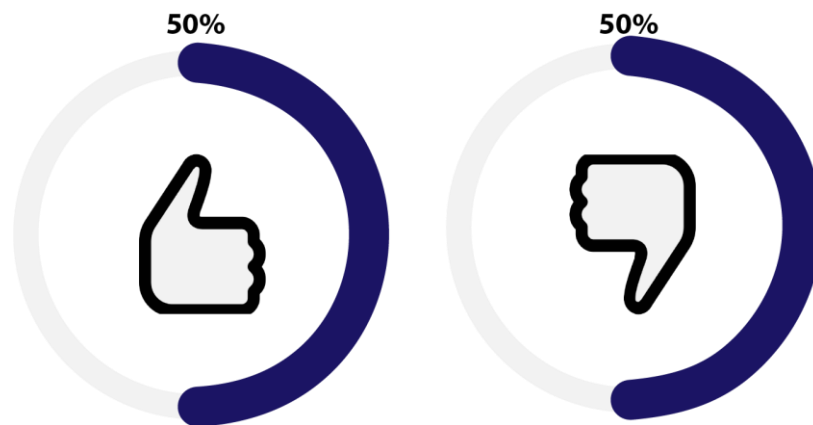
Comments

- Heading north to cross the freeway seems less desirable to me.
- I bike to Roseville Electric for work several times a week and would love to take this instead of going down PFE Road.
- Nice variety of terrain and less impact on private parcels
- Better to continue under the bridge.
- Not acceptable, this route should be planned to hook into S5.

Area 4



Option 1: Maroon (N6) to Yellow (N7A) to Purple (N8B, along Foothills Boulevard over Atkinson Street)

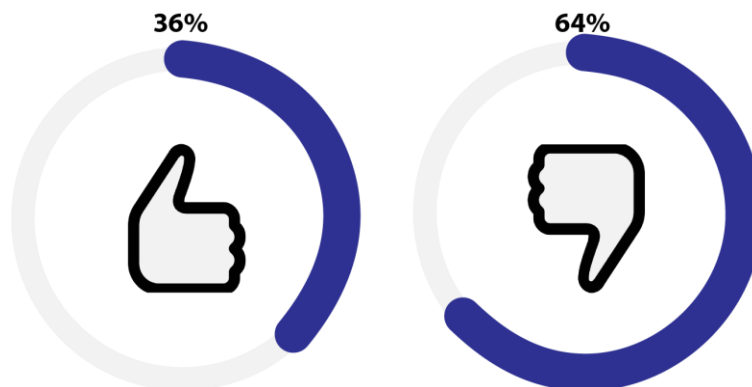


Comments

- Again, I would support whatever trail configuration provides the most separation of bicycles and vehicles, and whatever is the most practical in terms of getting the trail built
- All the northern alignments in Area 4 include out-of-direction turns away from the creek corridor, which will tend to confuse trail users. However, N6 and one of the N7 options may be a nice addition to provide access to the main trail.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Any bike trail that is planned to use the bike lane on Foothills Boulevard and Riverside Boulevard is a horrible idea. Even to a seasoned cyclist accustomed to riding on busy roads, I actively avoid these roads. For less serious cyclists, these will be a serious impediment to using this entire trail.

- Any route that puts bicycle traffic on Foothills overpass should be avoided if you want families to use it.
- I like the idea of hooking into this neighborhood, but I don't like the Foothills Boulevard sections.
- I like this option because it goes through dense trees behind the homes.
- Make it the longest journey for vagrant population to travel to keep them from reaching Dry Creek.
- N6 to N7A to N8B is a good option.
- None of the suggested routes in area 4 are preferred, due to the complicated construction requirements, unsightly views, and noise from nearby traffic.
- Seems the simplest.
- Since I am not a fan of the north route, go forth with the most cost-efficient trail option.
- The busyness of Foothills in this makes any of these option undesirables to me.
- This is less direct than Option 2.
- This N7a route to N8B maybe the better route.
- This is way too complex and indirect, these will cut use by 50%.

Option 2: Maroon (N6) to Beige (N7B) to Red (N7B1) to Purple (N8B, along Foothills Boulevard over Atkinson Street)



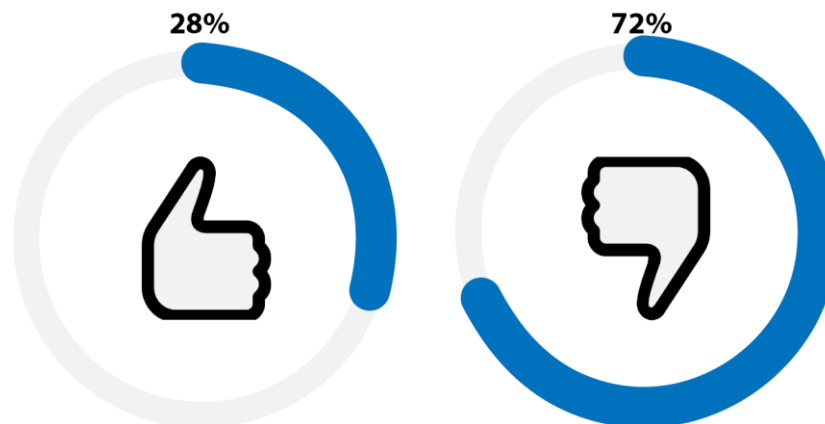
Comments

- All the northern alignments in Area 4 include out-of-direction turns away from the creek corridor, which will tend to confuse trail users. However, N6 and one of the N7 options may be a nice addition to provide access to the main trail.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Any Route that puts bicycle traffic on Foothills overpass should be avoided if you want families to use it.
- Choose a route with minimal stops and traffic controls.
- I don't really understand the proposed routes or what they are trying to solve in the way they are presented, but Option 2 seems the less problematic. It's not clear to me why there wouldn't be

on-street bike lanes on Booth, Atkinson, and Denio Loop in both traffic directions to allow access on and off Foothills Boulevard. Having a bike path on only one side of the road (How would you turn right to head west on Foothills Boulevard?) this greatly limits cyclists' ability turn left or right and choose a desired direction of travel. Aside from the Beatty Way neighborhood providing access to Foothills Boulevard eastbound, the N7B1 option trail would provide simplified access to Foothills Boulevard. I think regular bike lanes on Booth, Atkinson, and Denio Loop would be best, and maybe standard, buffered bikes lanes on Foothills Boulevard over the railway would be an improvement as opposed to separate "trail" or "cycle path."

- Looks like a direct route, however, thought must be given to what the trail will look like on Foothills Boulevard. Motorists drive way too quickly on this route, making it dangerous for cyclists. If a secure dedicated bike trail can't be assured on this side of Foothills, then Option 3 would be safer; there is currently a sidewalk on that side of Foothills and it could be used as the trail, providing some degree of safety for cyclists and pedestrians.
- The busyness of Foothills in this makes all of this option undesirable to me.
- This looks like the best route since it involves less distance than N7A or N7B2. However, Foothills Boulevard is a dangerous road with motorists driving way too fast, so if a nice safe dedicated bike path can't be assured then I would vote for Option 3 since N8A is on the side of Foothills Boulevard which has a sidewalk which bicyclists could use and be somewhat protected from traffic.

Option 3: Maroon (N6) to Beige (N7B, along north side of Booth Road) to Green (N7B2, along Atkinson Street under Foothills Boulevard) to Green (N8A, along Foothills Boulevard over Atkinson Street)

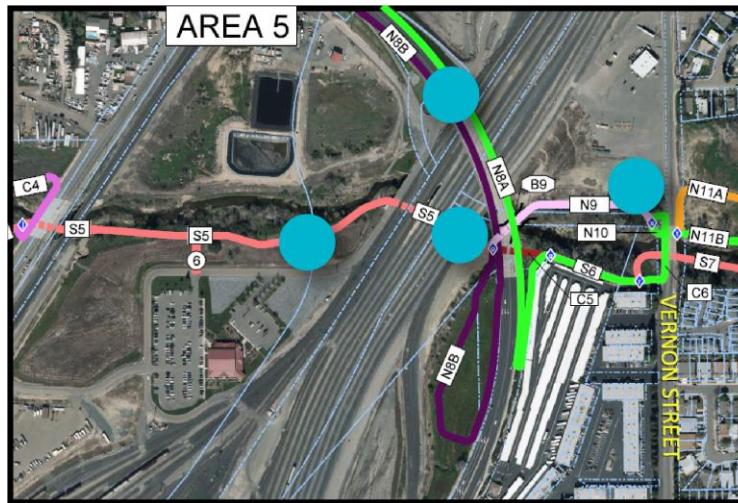


Comments

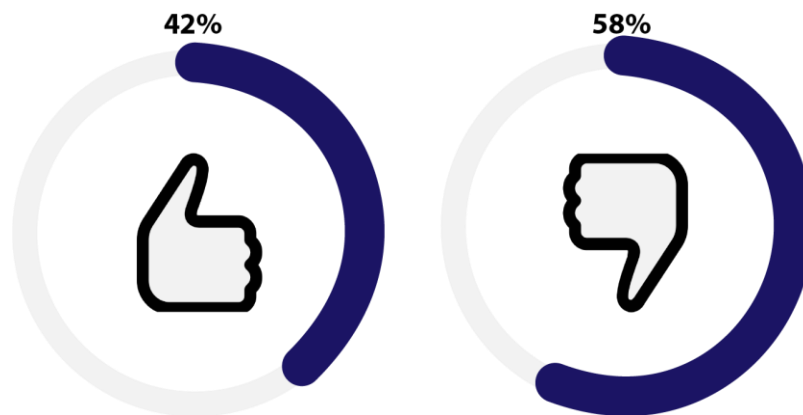
- A lot of homeless people congregate under this area.
- A more direct route, but I am not sure of the loop.
- If the trail is on Foothills, then both N8A or N8B will require some kind of bike barrier on Foothills, because both require a rider to be on the wrong side of the road.

- All the northern alignments in Area 4 include out-of-direction turns away from the creek corridor, which will tend to confuse trail users. However, N6 and one of the N7 options may be a nice addition to provide access to the main trail.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Any route that puts bicycle traffic on Foothills overpass should be avoided.
- I don't like it because this area is busy with traffic noise.
- The busyness of Foothills in this makes any of these option undesirables to me.
- This would be my first choice if Option 2 could not provide a safe bike path on N8B.
- This would be my preference if Option 2 couldn't provide a safe bike path on this side of Foothills Boulevard, N8A is on the side of Foothills Boulevard that has a sidewalk which could be used by bicycles and protect them from speeding vehicles driven by inattentive motorists.
- This is an ugly option.

Area 5



Option 1: Green (N8A, along Foothills Boulevard over Union Pacific Railroad) to Green (S6) to Salmon (S7, under the Vernon Street bridge)



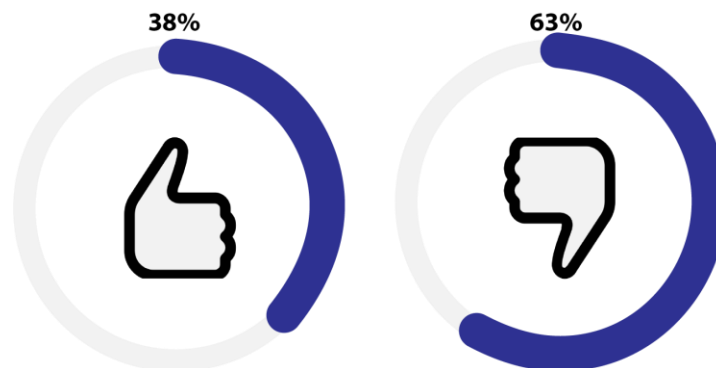
Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Avoid heavily traveled roads.
- Good use of preexisting paths/sidewalks.
- I don't understand the cycle path idea over Foothills Boulevard. This would greatly limit the options to cyclists to continue on further, northwest along Foothills Boulevard, it would limit or remove access to cyclists traveling from Cirby or Roseville Road over the rail yard on Foothills Boulevard. Reducing the already present cycling facilities on Foothills Boulevard to accommodate a trail along Dry Creek seems like it's diminishing travel route for cyclists elsewhere in the area. If the bridge of Foothills Boulevard is necessary to accommodate a cycle trail along Dry Creek, it seems like it would be better to integrate the present travel options into the current plan as

opposed to reduce the travel options. If safety appears to be an issue, the either painted buffered bike lanes in each direction or barrier protected bike lanes in each direction would be much better option for all cyclists of all skills and abilities.

- Please install at least two public bathrooms along the Dry Creek Greenway West trail.
- If Union Pacific is unwilling to work with planners, there is no option – you will have to go with what works!
- It's not clear to me what changes if any will be made to Foothills Boulevard bridge on N8A. What is considered a barrier protected trail? Is a sidewalk, bike lane, and chain link fence, as seen as existing in the photo already considered a barrier protected trail? If so, I don't like it and it would deter me from riding. Road noise and safety is my main concern here.
- Lots of odd, out-of-direction turns, which would be confusing to trail users. Sending trail users along Foothills Boulevard would be a terrible experience.
- N8 to S6 seems confusing to navigate for new trail users.
- No, avoid the Foothills overpass unless you are going to widen it with a protected bicycle lane
- Pick a route with minimal traffic stops and elevation changes.
- This option looks like the best coming from the Bob Kolak property east of Vernon.
- This would be a good route if N8A is the designated path.
- Whichever pass gives one a view of the historic transcontinental rail line.
- This would be a perfect spot for historic signage Kids would love to see the switching yard in action.

Option 2: Green (N8A, along Foothills Boulevard over Union Pacific Railroad) to Green (S6) to Green (C6, on the Vernon Street bridge) to Green loop (N10, under the Vernon Street bridge) to Orange (N11A) or Green (N11B)

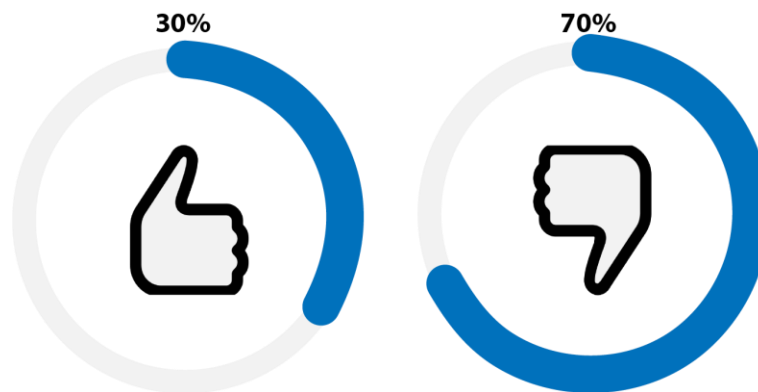


Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Avoid heavily traveled roads.
- If N8A becomes the chosen option for the trail, then this is a good option for this area.

- Lots of odd, out-of-direction turns, which would be confusing to trail users. Sending trail users along Foothills Blvd would be a terrible experience.
- No, avoid Foothills overpass unless you are going to build a new, separate bicycle portion.
- Think history / children watching trains!
- This would be a good route if N8A becomes the chosen route for the trail.

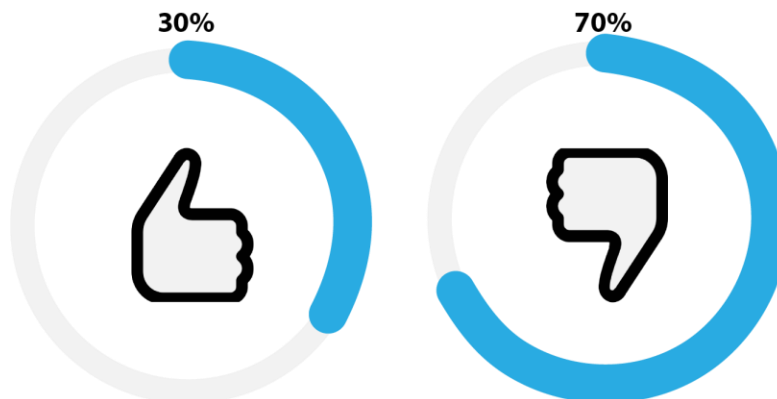
Option 3: Green (N8A, along Foothills Boulevard over Union Pacific Railroad) to Maroon (C5, under the Foothills Boulevard bridge) to Pink (N9, new bridge B9) to Green loop (N10, under the Vernon Street bridge) to Orange (N11A) or Green (N11B)



Comments

- Lots of odd, out-of-direction turns, which would be confusing to trail users. Sending trail users along Foothills Blvd would be a terrible experience.
- No advantage to this route and a new bridge will be costly.
- No, avoid Foothills overpass unless you are going to build a new, separate bicycle bridge.
- This is less desirable than Option 2 since it would require a new bridge.

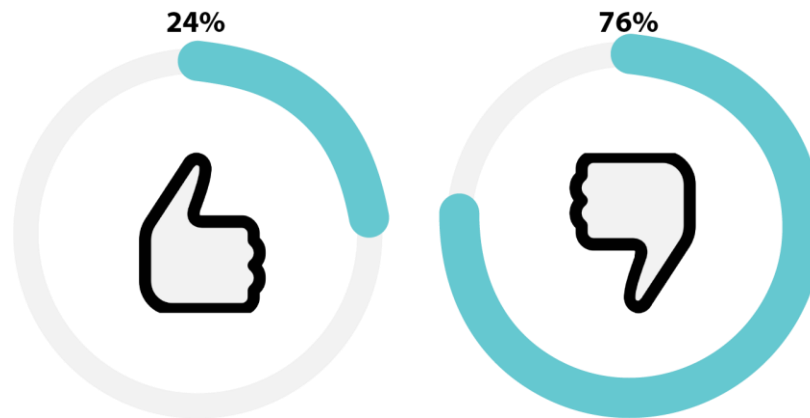
Option 4: Purple (N8B, along Foothills Boulevard over Union Pacific Railroad) to Pink (N9, new bridge B9) to Green loop (N10, under the Vernon Street bridge) to Orange (N11A) or Green (N11B)



Comments

- What is the cost of widening the bridge and effect on traffic?
- If N8B becomes the chosen trail route, then this option is a good one for this section of trail.
- If this works, it would have to have a very good barrier to protect bicycle riders from traffic – drivers think this is an extension of I-80!
- Longest, most difficult path for vagrant population to get to Dry Creek.
- Lots of odd, out-of-direction turns, which would be confusing to trail users. Sending trail users along Foothills Boulevard would be a terrible experience.
- No, avoid Foothills overpass unless you are going to build a separate, protected bicycle bridge.
- This would be a good path if N8B is the ultimate route chosen for the trail.

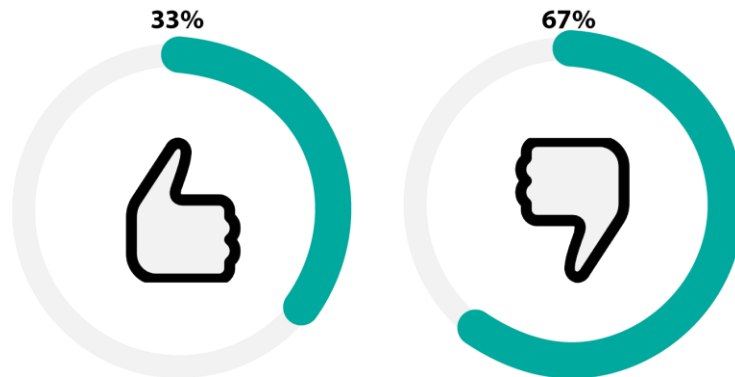
Option 5: Purple (N8B, along Foothills Boulevard over Union Pacific Railroad) to Maroon (C5, under the Foothills Boulevard bridge) to Green (S6) to Salmon (S7, under Vernon Street bridge)



Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Avoid heavily travelled roads.
- Look at the cost of widening the bridge and effect on traffic
- Lots of odd, out-of-direction turns, which would be confusing to trail users. Sending trail users along Foothills Boulevard would be a terrible experience.

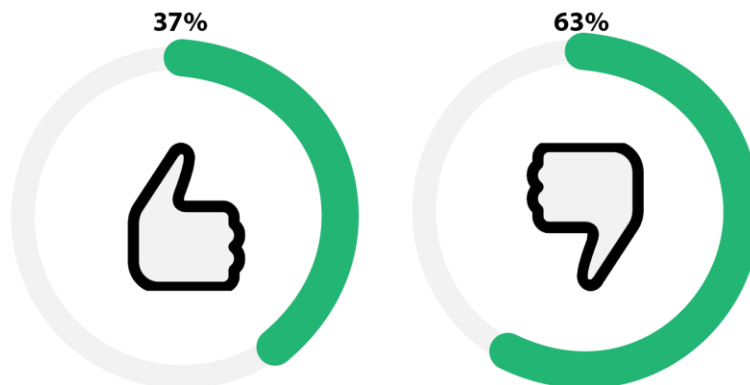
Option 6: Purple (N8B, along Foothills Boulevard over Union Pacific Railroad) to Maroon (C5, under the Foothills Boulevard bridge) to Green (S6) to Green (C6, on the Vernon Street bridge) to Green loop (N10, under Vernon Street bridge) to Orange (N11A) or Green (N11B)



Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Avoid heavily travelled roads.
- Look at the cost of widening the bridge and effect on traffic
- Lots of odd, out-of-direction turns, which would be confusing to trail users. Sending trail users along Foothills Boulevard would be a terrible experience.

Option 7: Salmon (S5, under the railroad bridges) to Pink (N9, new bridge B9) to Green loop (N10, under the Vernon Street bridge) to Orange (N11A) or Green (N11B)

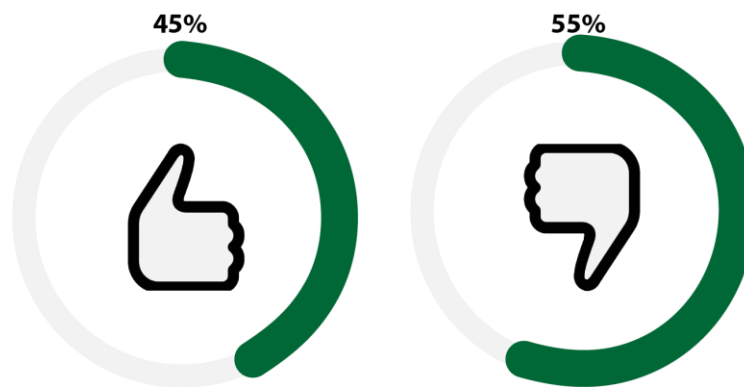


Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Dirt trail parallel to paved trail, but closer to creek.
- I like S5.
- It's best to steer clear of the rail yard.
- This option is nice and direct.

- Option 7 seems the most straightforward and practical alignment in Area 5. It keeps the trail along the creek and avoids confusing out-of-direction turns.
- Poor safety; too much resistance from UPRR

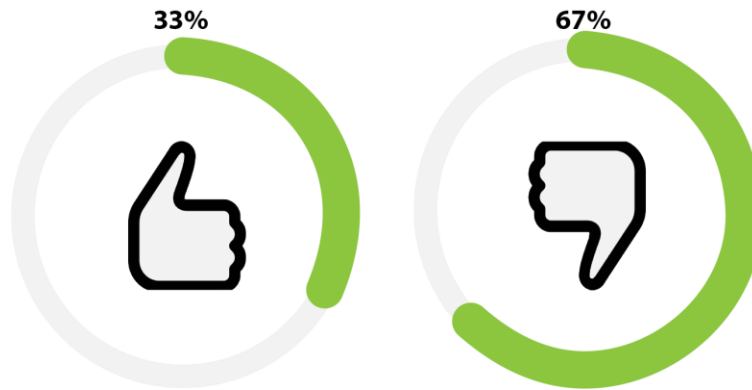
Option 8: Salmon (S5, under the railroad bridges) to Maroon (C5, under the Foothills Boulevard bridge) to Green (S6) to Salmon (S7, under Vernon Street bridge)



Comments

- It's a little hard to tell, but it looks like all of these options follow the creek and it would seem much better to stay away from the creek. Also, if there is an issue with a bat colony, it seems like it wouldn't be a good idea.
- Not too bad.
- Poor safety; too much resistance from UPRR.
- S5 straight to S7 – need to get through this industrial area fast – shortest route please.
- This by far would be the route I prefer, except I believe that a separate multi-use trail should be built over the railroad tracks. UPRR's statement that they would not allow the trail to cross over their tracks should be challenge. After all, Foothills Boulevard currently crosses over the tracks. A modification to the above Option 8 plan would be to consider the construction of a new connecting trail (not shown) that would run north along the west side of the tracks from S5 up to N8B, then to C5, S6, and S7.
- This seems like the sanest option.
- This seems most direct route. I have gotten stuck on the wrong side of the railroad and used the bridge under the tracks which was not great.

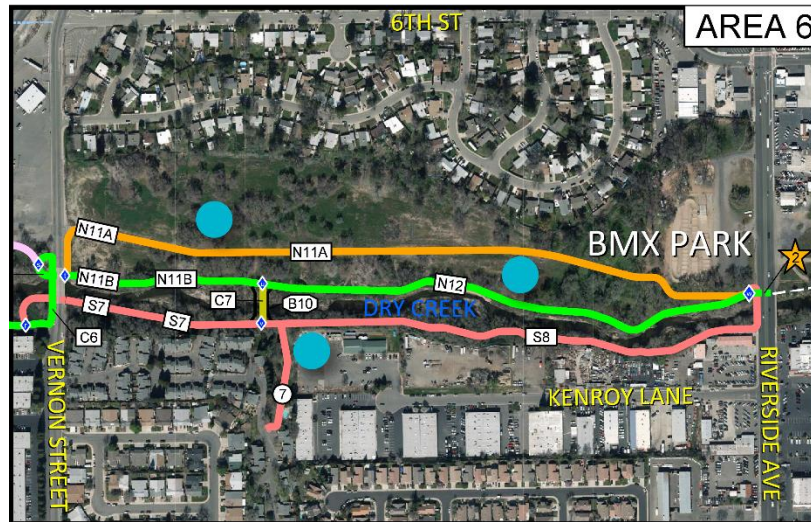
Option 9: Salmon (S5, under the railroad bridges) to Maroon (C5, under the Foothills Boulevard Bridge) to Green (S6) to Green (C6, on Vernon Street Bridge) to Green loop (N10, under the Vernon Street bridge) to Orange (N11A) or Green (N11B)



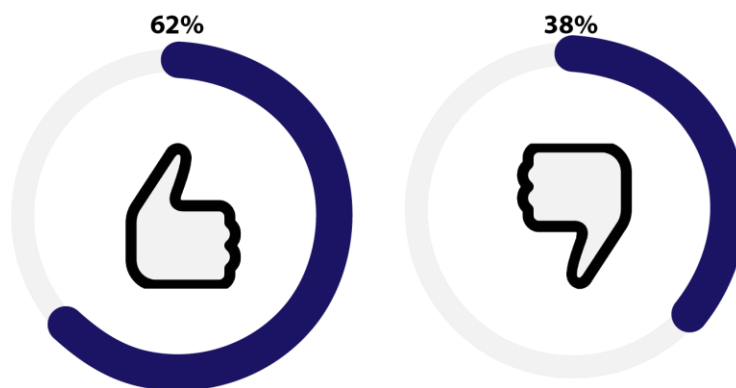
Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- N10 is a terrible alignment, from a sight distance point of view. That would tend to cause conflicts between trail users.
- Poor safety; too much resistance from UPRR.
- Until you finish current regional parks I think any additional projects should not be considered. Spend the resources on what you have on building Central Park.

Area 6



Option 1: Orange (N11A) to Riverside Avenue

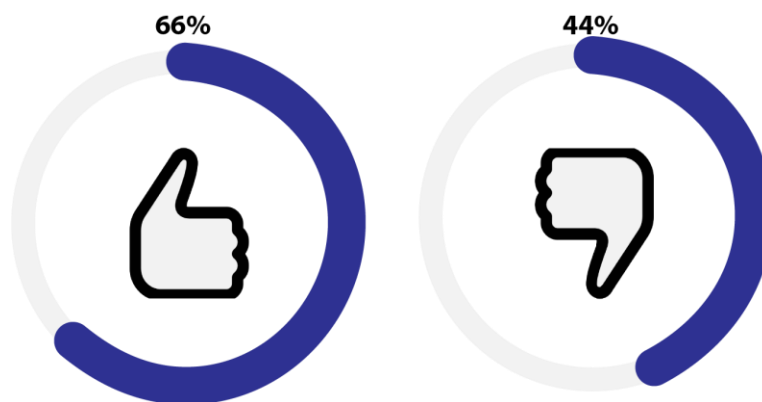


Comments

- Easy, offers some shade and grading would be less work.
- For recreational cyclists, and cycle commuters, a flat, direct, route with minimal stops or traffic controls is desirable.
- Least impact on existing home population.
- N11A Orange trail, less urban noise.
- Nice and simple.
- Option 1 is a reasonable alignment, but not as appealing to trail users as Option 2.
- Paved trail on orange route. Dirt trail on green route.
- Seems the most direct.
- Still have the homeless population to contend with especially with the Roseville Police Department feeling powerless to move the bums out.

- The most feasible route that includes the most trees and creek views is best
- The orange option will cause us lots of grief. But you could buy us out. Parks and recreation could run the track. Currently there is a homeless problem along both sides of the creek. Lots of garbage clean-up and wierdo's too close to the kids who race.
- Allowing just anyone to ride through our events would cost us a lot of business.
- This option makes the most sense. A road already exists, least disruptive to wildlife and does not encroach on homes along the trail.
- This route makes sense because it follows an existing easement
- Too far from creek, less enjoyable, and doesn't include B10. Bad all around.
- Must have bridge (B10) since Vernon and Riverside are too far apart and too fast/busy. It's also dangerous to get to these from southern neighborhoods because Cirby is also extremely busy. The best bike crossing from the south is the Northridge/Lindsay light, but there needs to be a connection from that road to Milan Court (best), Promenade Park Apartments (second best), or Inglis Way (ok).

Option 2: Green (N11B) to Green (N12) to Riverside Avenue

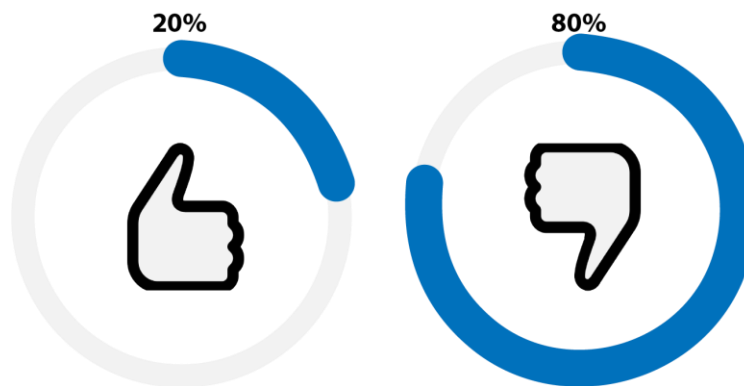


Comments

- Again, just picking the one farthest away from the creek as this would seem to be better.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- Good proximity to creek. Need B10 and 7 added for connectivity to Lindsay/Northridge light.
- Must have bridge (B10) since Vernon and Riverside are too far apart and too fast/busy. It's also dangerous to get to these from southern neighborhoods because Cirby is also extremely busy. The best bike crossing from the south is the Northridge/Lindsay light, but there needs to be a connection from that road to Milan Ct. (best), Promenade Park Apartments (second best), or Inglis Way (ok).
- I like creek view.
- Nice terrain.

- Option 2 seems the best and most practical alignment for Area 6, but should also include and underpass under Riverside Avenue, since a grade-level crossing of Riverside would be dangerous. The alignment along the creek would be visually appealing and interesting.
- Paved trail on orange route. Dirt trail on green route. There is already a dirt trail there. You wouldn't close it, would you?
- Same as above. Any activity among our families in their pit areas would cause our patrons to go elsewhere. Putting our events success in danger. How can you even consider taking our property on the north side of the creek?
- Shady and close to creek.
- Should include connection (C7) and bridge (B10) to connect to Cirby Woods Apartments area.
- Simple direct and beautiful, however this option misses access to neighborhoods.
- This looks to have the best aesthetics while still high enough to stay out of the flood plain. It would be cool to add some dirt trails in here also.
- This sounds prettier and nicer than N11A.

Option 3: Green (N11B) to Yellow (C7, new bridge B10) to Salmon (S8) to Riverside Avenue, on the Riverside Avenue bridge to the north side of creek

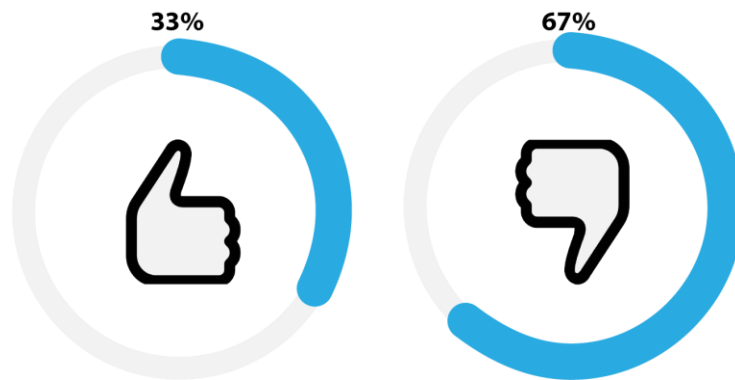


Comments

- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- As a resident of the Cirby Woods Townhomes that borders S7, I oppose this option. It will increase the number of people walking into the Cirby Woods community.
- Extra bridge on the eroded side of the creek is needed.
- This is not feasible so should not be an option.
- S8 doesn't seem like a good route.
- S8 is too narrow for construction, why even include this?
- Section S8 seems likely to be problematic to maintain.

- When we have State and National events, this would create problems as we use the west entrance. Any influx on the north side of the creek will put our normal events in danger. A bridge on private property for what? How much would that cost?

Option 4: Salmon (S7) to Salmon (S8) to Riverside Avenue, on the Riverside Avenue bridge to the north side of creek

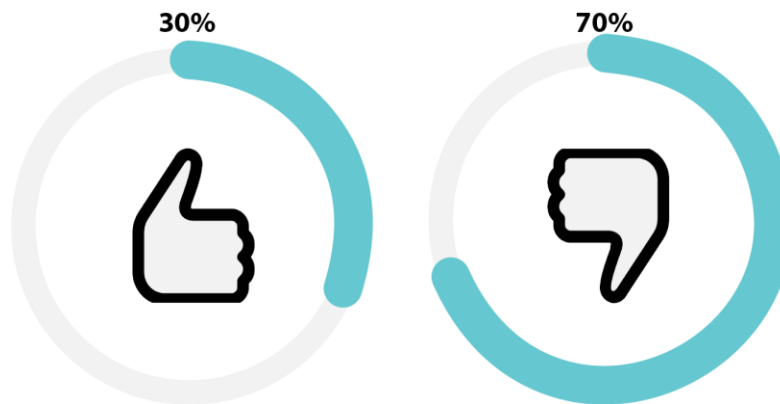


Comments

- No to S8.
- All are fine. I like the neighborhood access.
- Any bike trail in this area will only aid in spreading homeless camps throughout the region.
- From the Riverside bridge going west on the south side (S8) of Dry Creek would be the best for the land owner. Talking with the owner of this property, he also feels that the green (N12) would be fine to go from Riverside bridge west. Within 200 yards, build a bridge going to the south side of Dry Creek west to Vernon. The City of Roseville also could purchase this property for a beautiful park or as one of the only RV Parks in the city or surrounding areas. We are agreeable to the bike trail going through our property in some fashion, agreeable to both parties for certain consideration.
- We would also like to thank all the hard-working staff for their input and for their visit to the property site. It was very enjoyable to be able to walk the property and see the views from the professionals. Thank you.
- It still puts a lot of strangers on our property right through our events for no reason.
- No, no, no! Strongly oppose this option. This trail would land just a few feet from my deck that currently looks out over the creek. I also strongly oppose trail 7 that runs right through the Cirby Woods property! We already struggle with homeless here! Please do not place the trail here.
- This one is not as pretty but has good access.
- This is not feasible, so it should not be an option.
- S8 is too narrow for construction, why even include this?
- Straight shot S7 to S8.

- Though the alignment may not be the best, this option provides more neighborhood access to the proposed trail. Neither Vernon Street nor Riverside Avenue have cycle-friendly bike lanes, and so the neighborhoods south of Dry Creek, which are relatively close, would not be able to easily and safely access the trail. More on street bike lanes and road diets could be an alternative.
- Yes, I love the Salmon route! And it would be good to get a connection into the neighborhoods – the apartments, condos, homes.

Option 5: Salmon (S7) to Yellow (C7, new bridge B10) to Green (N12) to Riverside Avenue, under the Riverside Avenue to proposed Dry Creek Greenway East



Comments

- I prefer this option as it is very feasible for construction, provides great scenery, could provide access to the residential area on both the north and south sides of the creek.
- Just no. Please eliminate the Salmon option altogether.
- Nice option to give apartments access to trail.
- Not too bad, but extra bridge would introduce poor horizontal and vertical alignments.
- We don't want anyone north of the creek! Why does this need to be an option?
- This would work fine.
- This would work, I like the idea of going under Riverside. All these options should include the underpass at Riverside.
- Must have bridge (B10) since Vernon and Riverside are too far apart and too fast/busy. It's also dangerous to get to these from southern neighborhoods because Cirby is also extremely busy. The best bike crossing from the south is the Northridge/Lindsay light, but there needs to be a connection from that road to Milan Court (best), Promenade Park Apartments (second best), or Inglis Way (ok).

Notification for the Virtual Community Workshop

Over 200 community members provided input in the virtual community workshop. The online workshop was promoted through the Community Open House on October 1st, as well as through traditional and electronic means. The City of Roseville and Placer County Transportation Planning Agency sent emails to interested community members who either signed up their mail to receive information at one of the community open houses, or who had signed up through the project website.

The virtual community workshop was also shared through social media by community-based organizations or groups, as well as individuals, and through various organizations' e-blasts, or e-newsletters:

- City of Roseville
- Placer County
- PCTPA
- AIM Consulting
- Creekview Ranch School PTA
- Get Outdoors and Play
- Moms Run this Town Running group
- Rails-to-Trails Conservancy
- Sacramento Area Bicycle Advocates (SABA)
- Total Body Fitness Roseville
- Running Friends with Yard Sale Benefits group

Appendix E: RTC Similar Projects Memo

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TO: Jeannie Gandler, City of Roseville and Dokken Engineering

FROM: Rails-to-Trails Conservancy

DATE: July 2018

SUBJECT: Dry Creek West Feasibility Study, Research and Documentation of Similar Projects

JULY 13, 2018 DRAFT FOR TEAM REVIEW

The development of the Dry Creek Greenway West offers opportunities to expand the City of Roseville's active transportation system, linking existing multiuse trails and promoting a safe and connected city. Within the study area, Dry Creek passes under multiple tracks owned by Union Pacific Railroad. The Dry Creek Greenway West necessarily must traverse the same Union Pacific Railroad tracks in some fashion to link the western and eastern ends of Roseville via an uninterrupted trail route.

The most direct alignment of the Dry Creek Greenway West under the active Union Pacific Railroad tracks would parallel Dry Creek. However, the existing width is not great enough to accommodate both the creek and the trail on available land. Three different potential solutions to this challenge are available, with the first two examined in this memo:

1. **Elevated Trail:** The routing of the trail over a portion of the creek via a boardwalk or other elevated structure;
2. **Underpass:** The construction of a new underpass that serves as a dedicated right-of-way for the trail; and
3. **Re-routing on Local Roads:** The routing of the trail around the existing creek passage, likely via nearby roads. This alternative is outside the scope of this memo.

Multiuse trails that pass under railroad trestles may also provide useful lessons, as many of the characteristics, negotiating tactics, and design and construction guidelines will be the same. One such example – Sand Creek Regional Greenway - is presented in this memo.

It must be noted that the use of an existing structure that conveys water under an active Union Pacific Railroad line for trail use is explicitly banned in the railroad's *Guidelines for Railroad Grade Separation Projects*. The same document emphasizes the railroad's policy of discouraging the construction of new trail underpasses. Overcoming the barriers set by the guidelines may require political pressure or the implementation of improvements to Union Pacific property near the underpass or in another part of the city. Even if ultimately approved, the underpass project will likely be subject to detailed design requirements and strict scrutiny from the railroad.

While precedents comparable to the proposed underpass along Dry Creek Greenway West in terms of design and process can be found, the specific parameters of this project (particularly the

need to pass under multiple railroad tracks) made it a challenge to identify direct comparisons. Despite ample research, identical projects—multiuse trails constructed parallel to waterways that pass under multiple train tracks where the trail is constructed either over the waterway or adjacent to it via a new underpass—simply may not exist. However, we are confident that the case studies of projects comparable in terms of design and process highlighted below, as well as general design guidelines discussed later, can nevertheless be helpful in informing the route selection and potential design of this portion of the Dry Creek Greenway West.

Elevated Trail Constructed Over Waterway

Where conditions warrant it, short sections of multiuse trails have been constructed over waterways as raised walkways. These boardwalk sections allow for the free flow of water while maintaining a trail on its preferred course. However, such a solution may not be feasible due to clearance requirements for both trail users and the water below. The width of the waterway also may not be adequate to accommodate the displacement of water caused by caissons. Where possible, construction of a raised walkway is likely to add considerable expense to a trail project and be subject to additional environmental regulations and permitting requirements. Once open, flooding and slick surfaces may also be a concern.

Case Study

In Washington, D.C., the Anacostia Riverwalk Trail courses 28 miles on both sides of the Anacostia River. The newest section of trail, opened in 2016, connects the trail directly to nearly 50 miles of multiuse trail in Maryland. Long a gap in the trail due to the presence of Kenilworth Park & Aquatic Gardens, a site administered by the National Park Service and home to natural wetlands, the trail was routed over a series of boardwalks and bridges to address environmental and security concerns. Further, Amtrak's active Northeast Corridor line and a U.S. Highway just north of Kenilworth Park & Aquatic Gardens necessitated a routing of the trail over the edge of the Anacostia River to avoid dangerous at-grade crossings and railroad and road abutments (see Figure 1).

The 1,250-foot raised walkway was constructed with concrete piers, metal fencing, and a concrete surface to better resist damage from flooding. The substantial marine work led to higher bids than originally budgeted for, and work below Amtrak's right-of-way required significant coordination with the railroad and thus a longer lead time than expected. Where the trail passes under the Amtrak line, chain-link fencing that extends to the underside of the railroad bridge and forms a roof over the trail protects trail users from falling debris (see Figure 2). Project leaders from the District Department of Transportation identified "time, money, and friends in high places" as crucial requirements when working with the railroad.



Figure 1: Design of the Kenilworth Aquatic Gardens Segment of the Anacostia Riverwalk in Washington, D.C.; photo courtesy Anacostia Waterfront Initiative



Figure 2: Raised walkway undercrossing of Amtrak's Northeast Corridor line over the Anacostia River along the Anacostia Riverwalk in Washington, D.C.; photo courtesy Greater Greater Washington

Other Examples

Numerous other examples of trails constructed over waterways at constrained points can be found. In Dexter, Michigan, the Border-to-Border Trail was constructed as a wooden boardwalk over Mill Creek where it passes under an active rail line. Despite the railroad bridge's stone construction, a roof was installed over the trail to protect trail users from falling debris (see Figure 3). The Walnut Creek Trail in Raleigh, North Carolina, features a similar design where it passes under a railroad trestle that spans Walnut Creek, as does the Ann and Roy Butler Hike and Bike Trail where it jogs out over the Colorado River under the Ann Richards Congress Avenue Bridge in Austin, Texas.

In Chicago, Illinois, the Chicago Riverwalk runs along the Chicago River in the Loop—the city's commercial core. The path once effectively ended at each road crossing over the river, requiring trail users to ascend to road level, cross a busy road, and descend on the other side. In 2016, a reconstruction of the Riverwalk opened, extending the path over the Chicago River where it now passes under these road bridges (see Figure 4). The award-winning project required Congressional approval to redefine the width of the navigational channel to allow for a 20-foot buildout under each bridge. Unlike the previous raised walkway examples, caissons were drilled directly into the riverbed alongside steel sheeting, allowing project managers to create new land where once was water.



Figure 3: Boardwalk undercrossing of Amtrak line over Mill Creek along the Border-to-Border Trail in Dexter, Michigan; photo courtesy Rails-to-Trails Conservancy



Figure 4: Undercrossing of road bridge along the Chicago Riverwalk in Chicago, Illinois, on new land taken for the project from the Chicago River; photo courtesy Rails-to-Trails Conservancy

New Underpass to Accommodate Trail

Another solution to crossing an active rail line below grade is to construct an entirely new underpass for the trail, such as a box culvert. Like the raised walkway solution, this option allows a trail to preserve its course without significant grade changes, at-grade crossings, or lengthy detours. However, due to its expense and a variety of other challenges, including gaining the consent of the railroad, meeting loadbearing and permitting requirements, and difficult construction conditions, this alternative is rarely implemented. Further, it is an option easiest to accomplish for shorter spans, such as below only one or two train tracks.

Case Study

The Truckee Mousehole shares similarities with the Dry Creek Greenway West pedestrian underpass, including the railroad operating above. The Town of Truckee, California, found that pedestrians were walking along State Route 89, a narrow but high-traffic and high-speed road, to cross under tracks owned by Union Pacific Railroad. As part of the State Route 89 Mousehole Improvement Project that largely took place in 2015, the Town installed a bicycle and pedestrian underpass referred to as the “Mousehole” that opened in 2016 (see Figure 5). The project, which cost approximately \$13 million, was completed in partnership with Caltrans, the Nevada County Transportation Commission, Federal Highway Administration, Placer County, and Union Pacific

Railroad. The Truckee Mousehole received funding from a variety of sources due to its unique location along a state highway, beneath a transcontinental railroad, and bordering two counties.

In order to construct the new underpass, pipes were inserted into the ground immediately below the railroad tracks and a brine solution pumped through to freeze the ground, providing enough stability in the area above where the underpass was to be installed to support the rail line during construction activities below. The box was assembled immediately outside its planned resting place, and the ground below the freezing pipes was partially excavated. Once complete, the box was pushed through with hydraulic rams, with progress halted periodically for additional excavation. Full installation of the underpass in this fashion took six days and was a complete success: there was no impact to Union Pacific Railroad's operations or any recorded track movement.



Figure 5: The Mousehole Underpass in Truckee, California; photo courtesy Town of Truckee

Case Study

A similar trail underpass of an active rail line opened in November 2017 where the Mass Central Rail Trail, Norwottuck Rail-Trail, and Manham Rail Trail meet in Northampton, Massachusetts (see Figure 6). A critical active transportation junction for the region, the connection was formerly interrupted by the Connecticut River Line, an active track owned by the Massachusetts Department of Transportation and home to Pan Am Railways freight service and Amtrak's *Vermont* passenger rail service. Before the bicycle and pedestrian underpass opened, trail users wishing to continue on their trek would often trespass across the active line via a hole in a fence, creating safety and liability headaches for Northampton, MassDOT, and the operating railroads.

In fact, the underpass was constructed as “an investment in safety,” according to Massachusetts Secretary of Transportation Stephanie Pollack.

The \$4.4 million project was managed by the Massachusetts Bay Transportation Authority. The new underpass was just one component of a much larger \$83 million project to make upgrades to the rail line required for a desired reroute of Amtrak’s service and eventual commencement of commuter rail service along the corridor. Federal American Recovery and Reinvestment Act funds supplied \$73 million of the total project cost, with \$10 million, including the \$4.4 million underpass cost, provided by the state.

Because the Connecticut River Line at the location of the underpass has only one track in a fairly wide corridor, the construction contractor was able to reroute the active line via a new shoofly (temporary) track approximately 20 feet to the west while the eastern portion of the precast-concrete underpass was installed. When that half of the underpass was complete, the track was restored to its original location and the shoofly track removed, allowing for completion of the western portion of the underpass.



Figure 6: The Northampton Underpass in Northampton, Massachusetts; photo courtesy Trains in the Valley

Case Study

A longer undercrossing of active Union Pacific Railroad tracks was installed in San Jose, California, in 2017 (see Figure 7). The new 80-foot-long underpass tunnels under three tracks, allowing cyclists and pedestrians to access Santa Clara Station and its commuter rail services

from the north. The underpass was actually an extension to an existing underpass that tunneled under two railroad tracks to reach the commuter rail island platform from the south (see Figure 8). The \$13.8 million project was led by the Santa Clara Valley Transportation Authority.

Unlike the previous two case studies, construction of the underpass extension was disruptive to railroad operations. Commuter rail service in both directions was relocated to a single track over the existing underpass and Union Pacific service was halted for four days as 24-hour construction occurred. The project contractor used cut-and-cover construction techniques to complete the new underpass, including the cutting of approximately 200 feet of railroad track, excavation, the installation of 14 precast-concrete boxes, and restoration of the three Union Pacific tracks. After opening, the underpass was named the 2018 Golden State Award Winner by the American Council of Engineering Companies.



Figure 7: The Santa Clara Pedestrian Underpass in Santa Clara, California; photo courtesy Engineering California

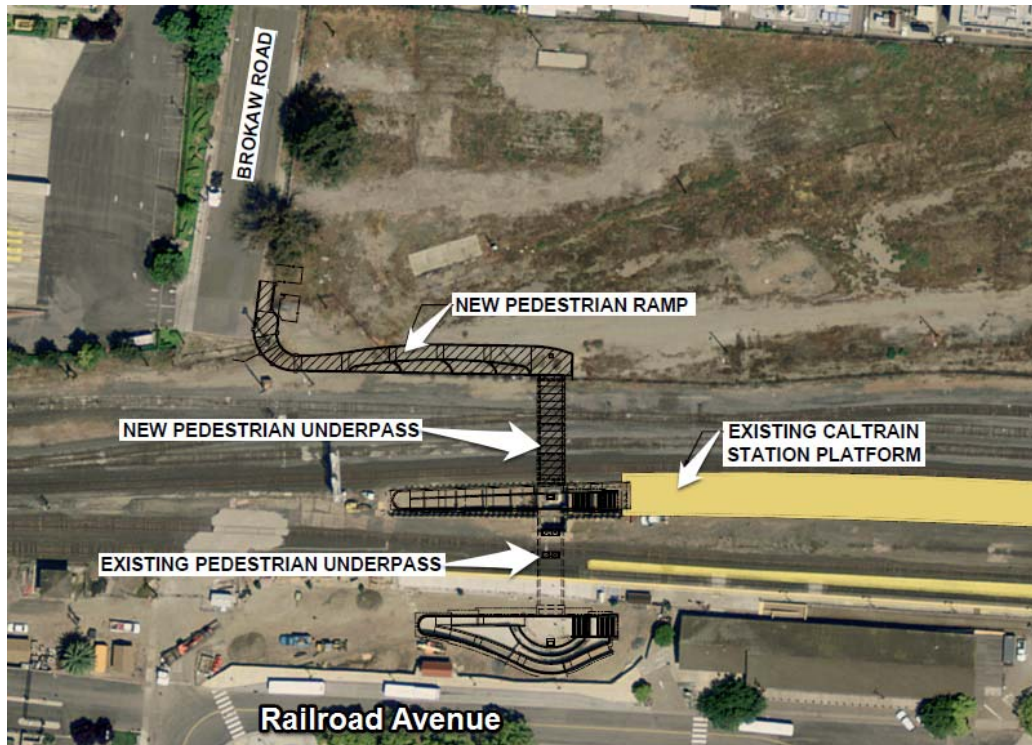


Figure 8: Design for the Santa Clara Pedestrian Undercrossing of three Union Pacific Railroad tracks in Santa Clara, California; photo courtesy Santa Clara Valley Transportation Authority

Trail Under Multiple Rail Lines

Cases like the above, where a multiuse trail passes under more than two consecutive railroad tracks, are exceptionally rare. Where these examples can be found, the trail generally passes under a series of railroad trestles—not a railyard or other single piece of railroad property. While construction techniques and costs in these cases likely differ greatly from the Dry Creek Greenway West underpass project, many of the principles involved are similar, such as interactions with the railroad, safety and liability concerns, and design features and requirements.

Case Study

The Sand Creek Regional Greenway in Commerce City, Colorado, passes under three consecutive railroad trestles that span Sand Creek (see Figures 9 and 10). One of the structures is owned by Union Pacific Railroad, while another is owned by BNSF Railway. All three trestles featured adequate space between the piers to accommodate the trail with no construction impact on railroad structures or operations. Fencing was installed on both sides of the trail and roofing was installed to protect trail users from falling debris.

Beth Nobles, Executive Director of the Sand Creek Regional Greenway, spoke to the efficacy of “political muscle” when working to develop trails adjacent to or under railways. This was especially necessary when facing negotiations with both Union Pacific and BNSF. The Sand

Creek Regional Greenway Board has an elected official from each community that the greenway runs through. Additionally, each community nominates another board member, oftentimes without political affiliations. The “political muscle” that results from having elected officials on the board has been helpful in working with both railroads.



Figure 9: Sand Creek Regional Greenway undercrossing of BNSF and UP trestles; photo courtesy TrailLink.com



Figure 10: Street view of the Sand Creek Regional Greenway undercrossing of BNSF and UP trestles; photo courtesy Google Maps

Design Best Practices

A variety of sources, including the *AASHTO Guide for the Development of Bicycle Facilities*, provide general design guidance for underpasses along multiuse trails. However, it is not uncommon for an affected railroad to set stricter design requirements than might otherwise be deemed necessary during negotiations. Further, where the trail must run directly over a waterway to pass under active tracks, such as via a boardwalk, additional environmental regulations will apply and planning and construction costs will be higher. Where a new underpass is constructed, engineers would need to determine whether a new trail tunnel could accommodate the heavy loads of trains above. Ultimately, successful design will delicately balance the operational, maintenance, and safety requirements of a railroad with the specific needs and characteristics of a variety of recreational and commuting trail user types.

Fencing/Roofing

Fencing is likely to be required adjacent to the trail where it approaches the underpass and on rail property above the underpass to prevent trespassing from trail users. Railroads often require that fencing adheres to specific height and material requirements. Railroads may also require the installation of protection over the trail, such as a roof, where it passes under exposed trackage or at the entrance and exit of an underpass. Overhead protection may be constructed of solid metal, chain-link, or wood (see Figures 3, 10, 11, and 12). Such overhead protection could prevent trail user injury from falling freight or debris and reduce the liability of both the railroad and trail manager.

Lighting

Dark, isolated underpasses that are hidden from public view can attract illegal activity, so they should be designed to be as short as possible to increase the amount of light available and thus decrease their attractiveness for crime. Adequate artificial lighting is also extremely important and may be mandated by the railroad. Lighting can be designed as public art to encourage desired trail use of the underpass while meeting safety needs (see Figure 13). Trail designers should consider lighting's impact on train operations and visibility. One possible solution is to have lighting activated by motion detectors, so that the trail is illuminated while people approach and a few minutes after they pass, but not for the entire night.

Drainage

Drainage is a concern in underpasses. According to AASHTO guidelines, a minimum recommended pavement cross slope of 1 percent should be adequate. The trail surface should be even to prevent water pooling. The decking for a raised walkway over water could be constructed with a material other than wood, such as concrete or composites, to increase its longevity.

When constructing a new underpass, its impact on the railroad's drainage system above will also need to be considered. Railroad corridors are constructed with both lateral and cross-roadbed

drainage to keep water off the tracks and ballast. Lateral drainage consists of the ditches parallel to most tracks, which help direct water into natural or built waterways. Cross-roadbed drainage pipes link lateral drainage ditches via a connection under the tracks. Maintaining the integrity of the railroad drainage system is of paramount importance for any project that impacts railroad right-of-way.

Dimensions

Trail planners must allow for adequate overhead clearance in an underpass, remembering that some trail users on bicycles will sit higher than the tallest pedestrian. Union Pacific Railroad guidelines set a minimum of 8 feet of vertical clearance, while the *AASHTO Guide for the Development of Bicycle Facilities* (2012) recommends a minimum of 10 feet. The resource also recommends the minimum width of a multiuse trail through an underpass be the same as the width of the approach path, with an additional 2-foot clear area on each side. Locations where such clearances cannot be secured are likely infeasible. Larger horizontal and vertical clearances may be needed for certain types of maintenance and emergency vehicles. Future needs for vehicular access should be taken into consideration when designing these structures.

Grade

Approach grades for underpasses along multiuse trails should follow AASHTO guidelines and typically also must meet ADA Accessibility guidelines. A grade greater than 5 percent is not recommended.



Figure 11: Trail along Red River in Fargo, North Dakota, crossing under BNSF Railway line with metal cover to protect trail users; photo courtesy Stuart Macdonald



Figure 12: Integrated chain-link cover and fencing protects trail users along East Grand Forks National Recreation Trail in Minnesota; photo courtesy Stuart Macdonald



Figure 13: LED lights illuminate the 18th Street Underpass in Birmingham, Alabama; photo courtesy REV Birmingham, Hal Yaeger and Bill FitzGibbons

Working with Railroads

Those involved in the development of any structure that impacts railroad property or operations must approach all negotiations with the knowledge that any railroad's overriding concern is safety, and must be prepared to be creative to meet the railroad's various needs. Design and construction strategies that reduce the liability of the railroad will be viewed favorably and likely make negotiations easier.

In some cases, addressing a railroad's area of concern elsewhere in the area, such as closing an at-grade crossing, adding new signals at a crossing, or authorizing higher speeds along the line, may increase their willingness to discuss the target bicycle and pedestrian project—sometimes even despite the presence of guidelines that reject the project in principle. In other cases, leveraging political influence may bring the railroad to the negotiating table. The Sand Creek Regional Greenway's strategy of building “political muscle” by including elected officials in the greenway's governing board is one such example of this method.

Another example is an upcoming extension of the Whittier Greenway, a rail-with-trail in Whittier, California. The trail will parallel Union Pacific Railroad tracks both within and immediately adjacent to their right-of-way despite the railroad's formal opposition to such projects. According to Nancy Mendez, Assistant City Manager for the City of Whittier, negotiations with Union Pacific broke down twice. In both instances, political pressure brought the railroad back to the negotiating table. “At the time of the negotiations, [U.S. Representative] Grace Napolitano represented part of Whittier, and she was a ranking member of the House Transportation Committee,” Nancy Mendez recounted in an interview. “So when she told the railroad to go back and talk with our people, the railroad went back and talked to our people.”

Conclusion

The development of the Dry Creek Greenway West underpass would establish the multiuse trail's extension along the most direct course, creating a range of benefits, including promoting active transportation and encouraging recreation for Roseville residents and visitors. While we have yet to identify a case study with exactly the same parameters as Dry Creek, the similar projects profiled above should demonstrate that the development of a trail undercrossing of Union Pacific Railroad tracks is feasible given sufficient funding and public and political support, and would eliminate a major barrier in the continuing development of Roseville's active transportation network.

Appendix F: Project Cost Estimates

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Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 1-1

Description: N1 (1)(2)[B1], N2A (3), N3

PROJECT ESTIMATE:

November 2018

Length of Path: 6,100 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal		\$645,000	
RIGHT OF WAY				
30' Easement	181,300	SF	\$1.75	\$318,000
			Subtotal	\$318,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	120	TON	\$120	\$14,000
** Portland Cement Concrete	1,310	CY	\$300	\$390,000
Aggregate Base	90	CY	\$60	\$5,000
Decomposed Granite	10	CY	\$40	\$400
Scarify and Recompact Native Material	10,000	SY	\$15	\$150,000
Structures - Bridge 'B1'	1,600	SF	\$300	\$480,000
Retaining Walls (< 10')	4,840	SF	\$75	\$363,000
Fencing	3,900	LF	\$30	\$117,000
Tree/Brush Removal	3,000	SF	\$4	\$12,000
Supplemental Earthwork (Import)	7,200	CY	\$22	\$158,000
Supplemental Earthwork (Excavation)	1,340	CY	\$65	\$87,000
Environmental Mitigation	1	LS	\$38,000	\$38,000
Roadway Supplemental Items	5%		\$91,000	
			subtotal	\$1,910,000
Mobilization	10%		\$191,000	
Contingency	25%		\$478,000	
			Construction Items subtotal	\$2,580,000
ADMINISTRATION				
Construction Administration	25%		\$645,000	
			Subtotal	\$645,000
TOTAL PROJECT COST	\$4,190,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 1-2

Description: N1 (1)(2)[B1], N2A (3), N3, C1 [B6]

PROJECT ESTIMATE:

November 2018

Length of Path: 6,300 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$923,000
RIGHT OF WAY				
30' Easement	186,700	SF	\$1.70	\$318,000
			Subtotal	\$318,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	130	TON	\$120	\$16,000
** Portland Cement Concrete	1,310	CY	\$300	\$390,000
Aggregate Base	100	CY	\$60	\$6,000
Decomposed Granite	10	CY	\$40	\$400
Scarify and Recompact Native Material	10,000	SY	\$15	\$150,000
Structures - Bridge 'B1'	1,600	SF	\$300	\$480,000
Structures - Bridge 'B6'	2,400	SF	\$300	\$720,000
Retaining Walls (< 10')	4,840	SF	\$75	\$363,000
Fencing	3,900	LF	\$30	\$117,000
Tree/Brush Removal	3,500	SF	\$4	\$14,000
Supplemental Earthwork (Import)	7,400	CY	\$22	\$163,000
Supplemental Earthwork (Excavation)	1,840	CY	\$65	\$120,000
Environmental Mitigation	1	LS	\$59,000	\$59,000
Roadway Supplemental Items	5%			\$130,000
			subtotal	\$2,730,000
Mobilization	10%			\$273,000
Contingency	25%			\$683,000
			Construction Items subtotal	\$3,690,000
ADMINISTRATION				
Construction Administration	25%			\$923,000
			Subtotal	\$923,000
TOTAL PROJECT COST	\$5,860,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 1-3

Description: N1 (1)(2)[B1], N2B (3), N3

PROJECT ESTIMATE:

November 2018

Length of Path: 6,100 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$655,000
RIGHT OF WAY				
30' Easement	183,100	SF	\$1.75	\$321,000
			Subtotal	\$321,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	120	TON	\$120	\$14,000
** Portland Cement Concrete	1,320	CY	\$300	\$400,000
Aggregate Base	90	CY	\$60	\$5,000
Decomposed Granite	10	CY	\$40	\$400
Scarify and Recompact Native Material	10,100	SY	\$15	\$152,000
Structures - Bridge 'B1'	1,600	SF	\$300	\$480,000
Retaining Walls (< 10')	4,840	SF	\$75	\$363,000
Fencing	3,900	LF	\$30	\$117,000
Tree/Brush Removal	4,800	SF	\$4	\$19,000
Supplemental Earthwork (Import)	7,200	CY	\$22	\$158,000
Supplemental Earthwork (Excavation)	1,360	CY	\$65	\$88,000
Environmental Mitigation	1	LS	\$52,000	\$52,000
Roadway Supplemental Items	5%			\$92,000
			subtotal	\$1,940,000
Mobilization	10%			\$194,000
Contingency	25%			\$485,000
			Construction Items subtotal	\$2,620,000
ADMINISTRATION				
Construction Administration	25%			\$655,000
			Subtotal	\$655,000
TOTAL PROJECT COST	\$4,260,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 1-4

Description: N1 (1)(2)[B1], N2B (3), N3, C1 [B6]

PROJECT ESTIMATE:

November 2018

Length of Path: 6,300 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$925,000
RIGHT OF WAY				
30' Easement	188,500	SF	\$1.70	\$321,000
			Subtotal	\$321,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	130	TON	\$120	\$16,000
** Portland Cement Concrete	1,320	CY	\$300	\$400,000
Aggregate Base	100	CY	\$60	\$6,000
Decomposed Granite	10	CY	\$40	\$400
Scarify and Recompact Native Material	10,100	SY	\$15	\$152,000
Structures - Bridge 'B1'	1,600	SF	\$300	\$480,000
Structures - Bridge 'B6'	2,400	SF	\$300	\$720,000
Retaining Walls (< 10')	4,840	SF	\$75	\$363,000
Fencing	3,900	LF	\$30	\$117,000
Tree/Brush Removal	5,300	SF	\$4	\$21,000
Supplemental Earthwork (Import)	7,400	CY	\$22	\$163,000
Supplemental Earthwork (Excavation)	1,390	CY	\$65	\$90,000
Environmental Mitigation	1	LS	\$73,000	\$73,000
Roadway Supplemental Items	5%			\$130,000
			subtotal	\$2,740,000
Mobilization	10%			\$274,000
Contingency	25%			\$685,000
			Construction Items subtotal	\$3,700,000
ADMINISTRATION				
Construction Administration	25%			\$925,000
			Subtotal	\$925,000
TOTAL PROJECT COST	\$5,880,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 1-5

Description: S1 [B2, B3, B4, B5]

PROJECT ESTIMATE:

November 2018

Length of Path: 5,200 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$440,000
RIGHT OF WAY				
30' Easement	154,700	SF	\$2	\$310,000
			Subtotal	\$310,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	0	TON	\$120	\$0
** Portland Cement Concrete	1,250	CY	\$300	\$380,000
Aggregate Base	0	CY	\$60	\$0
Decomposed Granite	0	CY	\$40	\$0
Scarify and Recompact Native Material	9,600	SY	\$15	\$144,000
Structures - Bridge 'B2'	1,280	SF	\$300	\$384,000
Structures - Bridge 'B3'	80	SF	\$100	\$8,000
Structures - Bridge 'B4'	32	SF	\$75	\$3,000
Structures - Bridge 'B5'	32	SF	\$75	\$3,000
Retaining Walls (< 10')	750	SF	\$75	\$57,000
Fencing	3,400	LF	\$30	\$102,000
Tree/Brush Removal	4,000	SF	\$4	\$16,000
Supplemental Earthwork (Import)	800	CY	\$22	\$18,000
Supplemental Earthwork (Excavation)	1,150	CY	\$65	\$75,000
Environmental Mitigation	1	LS	\$50,000	\$50,000
Roadway Supplemental Items	5%			\$62,000
			subtotal	\$1,302,000
Mobilization	10%			\$130,000
Contingency	25%			\$326,000
			Construction Items subtotal	\$1,760,000
ADMINISTRATION				
Construction Administration	25%			\$440,000
			Subtotal	\$440,000
TOTAL PROJECT COST	\$2,950,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 1-6

Description: S1 [B2, B3, B4, B5], C1 [B6]

PROJECT ESTIMATE:

November 2018

Length of Path: 5,400 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$708,000
RIGHT OF WAY				
30' Easement	160,100	SF	\$1.95	\$313,000
			Subtotal	\$313,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	10	TON	\$120	\$1,000
** Portland Cement Concrete	1,250	CY	\$300	\$380,000
Aggregate Base	0	CY	\$60	\$0
Decomposed Granite	1	CY	\$40	\$0
Scarify and Recompact Native Material	9,600	SY	\$15	\$144,000
Structures - Bridge 'B2'	1,280	SF	\$300	\$384,000
Structures - Bridge 'B3'	80	SF	\$100	\$8,000
Structures - Bridge 'B4'	32	SF	\$75	\$3,000
Structures - Bridge 'B5'	32	SF	\$75	\$3,000
Structures - Bridge 'B6'	2,400	SF	\$300	\$720,000
Retaining Walls (< 10')	750	SF	\$75	\$56,000
Fencing	3,400	LF	\$30	\$102,000
Tree/Brush Removal	4,500	SF	\$4	\$18,000
Supplemental Earthwork (Import)	1,000	CY	\$22	\$22,000
Supplemental Earthwork (Excavation)	1,190	CY	\$65	\$77,000
Environmental Mitigation	1	LS	\$64,000	\$64,000
Roadway Supplemental Items	5%			\$99,000
			subtotal	\$2,090,000
Mobilization	10%			\$209,000
Contingency	25%			\$523,000
			Construction Items subtotal	\$2,830,000
ADMINISTRATION				
Construction Administration	25%			\$708,000
			Subtotal	\$708,000
TOTAL PROJECT COST	\$4,560,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 2-1

Description: N4

PROJECT ESTIMATE:

November 2018

Length of Path: 1,900 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$51,000
RIGHT OF WAY				
30' Easement	56,500	SF	\$0	\$0
			Subtotal	\$0
CONSTRUCTION ITEMS				
* Asphalt Concrete	350	TON	\$120	\$42,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	280	CY	\$60	\$17,000
Decomposed Granite	30	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls	0	SF	\$75	\$0
Fencing	1,900	LF	\$30	\$57,000
Tree/Brush Removal	0	SF	\$4	\$0
Supplemental Earthwork (Import)	0	CY	\$22	\$0
Supplemental Earthwork (Excavation)	410	CY	\$65	\$27,000
Environmental Mitigation	0	LS	\$0	\$0
Roadway Supplemental Items	5%			\$7,000
			subtotal	\$152,000
Mobilization	10%			\$15,000
Contingency	25%			\$38,000
			Construction Items subtotal	\$205,000
ADMINISTRATION				
Construction Administration	25%			\$51,000
			Subtotal	\$51,000
TOTAL PROJECT COST	\$310,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 2-2

Description: N4, C2 [B7]

PROJECT ESTIMATE:

November 2018

Length of Path: 2,100 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$393,000
RIGHT OF WAY				
30' Easement	62,700	SF	\$0	\$0
			Subtotal	\$0
CONSTRUCTION ITEMS				
* Asphalt Concrete	360	TON	\$120	\$43,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	280	CY	\$60	\$17,000
Decomposed Granite	40	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B7'	2,720	SF	\$300	\$816,000
Retaining Walls	0	SF	\$75	\$0
Fencing	1,900	LF	\$30	\$57,000
Tree/Brush Removal	0	SF	\$4	\$0
Supplemental Earthwork (Import)	5,400	CY	\$22	\$119,000
Supplemental Earthwork (Excavation)	460	CY	\$65	\$30,000
Environmental Mitigation	1	LS	\$16,000	\$16,000
Roadway Supplemental Items	5%			\$55,000
			subtotal	\$1,160,000
Mobilization	10%			\$116,000
Contingency	25%			\$290,000
			Construction Items subtotal	\$1,570,000
ADMINISTRATION				
Construction Administration	25%			\$393,000
			Subtotal	\$393,000
TOTAL PROJECT COST	\$2,360,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 2-3

Description: S2 (4)

PROJECT ESTIMATE:

November 2018

Length of Path: 2,300 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$236,000
RIGHT OF WAY				
30' Easement	66,600	SF	\$0	\$0
			Subtotal	\$0
CONSTRUCTION ITEMS				
* Asphalt Concrete	420	TON	\$120	\$50,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	330	CY	\$60	\$20,000
Decomposed Granite	40	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls (< 10')	7,420	SF	\$75	\$557,000
Fencing	0	LF	\$30	\$0
Tree/Brush Removal	0	SF	\$4	\$0
Supplemental Earthwork (Import)	400	CY	\$22	\$9,000
Supplemental Earthwork (Excavation)	420	CY	\$65	\$27,000
Environmental Mitigation	0	LS	\$0	\$0
Roadway Supplemental Items	5%			\$33,000
			subtotal	\$698,000
Mobilization	10%			\$70,000
Contingency	25%			\$175,000
			Construction Items subtotal	\$943,000
ADMINISTRATION				
Construction Administration	25%			\$236,000
			Subtotal	\$236,000
TOTAL PROJECT COST	\$1,420,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 2-4

Description: S2 (4), C2 [B7]

PROJECT ESTIMATE:

November 2018

Length of Path: 2,500 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$575,000
RIGHT OF WAY				
30' Easement	72,800	SF	\$0	\$0
			Subtotal	\$0
CONSTRUCTION ITEMS				
* Asphalt Concrete	420	TON	\$120	\$50,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	330	CY	\$60	\$20,000
Decomposed Granite	40	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B7'	2,720	SF	\$300	\$816,000
Retaining Walls (< 10')	7,420	SF	\$75	\$557,000
Fencing	0	LF	\$30	\$0
Tree/Brush Removal	0	SF	\$4	\$0
Supplemental Earthwork (Import)	5,770	CY	\$22	\$127,000
Supplemental Earthwork (Excavation)	470	CY	\$65	\$31,000
Environmental Mitigation	1	LS	\$16,000	\$16,000
Roadway Supplemental Items	5%			\$81,000
			subtotal	\$1,700,000
Mobilization	10%			\$170,000
Contingency	25%			\$425,000
			Construction Items subtotal	\$2,300,000
ADMINISTRATION				
Construction Administration	25%			\$575,000
			Subtotal	\$575,000
TOTAL PROJECT COST	\$3,450,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 3-1

Description: N5 (5), N6

PROJECT ESTIMATE:

November 2018

Length of Path: 2,900 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$111,000
RIGHT OF WAY				
30' Easement	85,500	SF	\$1.15	\$99,000
			Subtotal	\$99,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	530	TON	\$120	\$64,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	420	CY	\$60	\$25,000
Decomposed Granite	50	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls	0	SF	\$75	\$0
Fencing	2,400	LF	\$30	\$72,000
Tree/Brush Removal	11,300	SF	\$4	\$45,000
Supplemental Earthwork (Import)	0	CY	\$22	\$0
Supplemental Earthwork (Excavation)	610	CY	\$65	\$40,000
Environmental Mitigation	1	LS	\$64,000	\$64,000
Roadway Supplemental Items	5%			\$16,000
			subtotal	\$328,000
Mobilization	10%			\$33,000
Contingency	25%			\$82,000
			Construction Items subtotal	\$443,000
ADMINISTRATION				
Construction Administration	25%			\$111,000
			Subtotal	\$111,000
TOTAL PROJECT COST	\$770,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 3-2

Description: N5 (5), C4

PROJECT ESTIMATE:

November 2018

Length of Path: 2,700 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$206,000
RIGHT OF WAY				
30' Easement	79,900	SF	\$2.05	\$164,000
	Subtotal			\$164,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	500	TON	\$120	\$60,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	390	CY	\$60	\$23,000
Decomposed Granite	50	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Atkinson St. Space Reallocation	2,795	SF	\$110	\$307,000
Retaining Walls	0	SF	\$75	\$0
Fencing	2,000	LF	\$30	\$60,000
Tree/Brush Removal	8,400	SF	\$4	\$34,000
Supplemental Earthwork (Import)	50	CY	\$22	\$1,000
Supplemental Earthwork (Excavation)	580	CY	\$65	\$38,000
Environmental Mitigation	1	LS	\$57,000	\$57,000
Roadway Supplemental Items	5%			\$29,000
	subtotal			\$611,000
Mobilization	10%			\$61,000
Contingency	25%			\$153,000
	Construction Items subtotal			\$825,000
ADMINISTRATION				
Construction Administration	25%			\$206,000
	Subtotal			\$206,000
TOTAL PROJECT COST	\$1,410,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 3-3

Description: N5 (5), C3 [B8], S4

PROJECT ESTIMATE:

November 2018

Length of Path: 2,400 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$410,000
RIGHT OF WAY				
30' Easement	71,500	SF	\$1.70	\$122,000
	Subtotal			\$122,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	420	TON	\$120	\$50,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	330	CY	\$60	\$20,000
Decomposed Granite	40	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B8'	2,400	SF	\$300	\$720,000
Retaining Walls (< 10')	910	SF	\$75	\$69,000
Fencing	1,800	LF	\$30	\$54,000
Tree/Brush Removal	7,800	SF	\$4	\$31,000
Supplemental Earthwork (Import)	4,200	CY	\$22	\$92,000
Supplemental Earthwork (Excavation)	520	CY	\$65	\$34,000
Environmental Mitigation	1	LS	\$78,000	\$78,000
Roadway Supplemental Items	5%			\$58,000
	subtotal			\$1,210,000
Mobilization	10%			\$121,000
Contingency	25%			\$303,000
	Construction Items subtotal			\$1,640,000
ADMINISTRATION				
Construction Administration	25%			\$410,000
	Subtotal			\$410,000
TOTAL PROJECT COST	\$2,590,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 3-4

Description: S3, S4

PROJECT ESTIMATE:

November 2018

Length of Path: 1,900 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$131,000
RIGHT OF WAY				
30' Easement	54,900	SF	\$1.70	\$94,000
Subtotal				\$94,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	40	TON	\$120	\$5,000
** Portland Cement Concrete	400	CY	\$300	\$120,000
Aggregate Base	30	CY	\$60	\$2,000
Decomposed Granite	4	CY	\$40	\$100
Scarify and Recompact Native Material	2,200	SY	\$15	\$33,000
Retaining Walls (< 10')	910	SF	\$75	\$69,000
Fencing	1,800	LF	\$30	\$54,000
Tree/Brush Removal	4,100	SF	\$4	\$16,000
Supplemental Earthwork (Import)	60	CY	\$22	\$1,000
Supplemental Earthwork (Excavation)	400	CY	\$65	\$26,000
Environmental Mitigation	1	LS	\$43,000	\$43,000
Roadway Supplemental Items	5%			\$18,000
subtotal				\$387,000
Mobilization	10%			\$39,000
Contingency	25%			\$97,000
Construction Items subtotal				\$523,000
ADMINISTRATION				
Construction Administration	25%			\$131,000
Subtotal				\$131,000
TOTAL PROJECT COST		\$880,000		

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 3-5

Description: S3, C3 [B8], N6

PROJECT ESTIMATE:

November 2018

Length of Path: 2,700 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$428,000
RIGHT OF WAY				
30' Easement	78,400	SF	\$1.00	\$79,000
			Subtotal	\$79,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	160	TON	\$120	\$19,000
** Portland Cement Concrete	400	CY	\$300	\$120,000
Aggregate Base	120	CY	\$60	\$7,000
Decomposed Granite	20	CY	\$40	\$1,000
Scarify and Recompact Native Material	2,200	SY	\$15	\$33,000
Structures - Bridge 'B8'	2,400	SF	\$300	\$720,000
Retaining Walls	0	SF	\$75	\$0
Fencing	2,400	LF	\$30	\$72,000
Tree/Brush Removal	8,600	SF	\$4	\$34,000
Supplemental Earthwork (Import)	4,150	CY	\$22	\$91,000
Supplemental Earthwork (Excavation)	570	CY	\$65	\$37,000
Environmental Mitigation	1	LS	\$71,000	\$71,000
Roadway Supplemental Items	5%			\$60,000
			subtotal	\$1,265,000
Mobilization	10%			\$127,000
Contingency	25%			\$316,000
			Construction Items subtotal	\$1,710,000
ADMINISTRATION				
Construction Administration	25%			\$428,000
			Subtotal	\$428,000
TOTAL PROJECT COST	\$2,650,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 3-6

Description: S3, S4, C4 (5), N6

PROJECT ESTIMATE:

November 2018

Length of Path: 3,700 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$288,000
RIGHT OF WAY				
30' Easement	109,400	SF	\$1.45	\$159,000
			Subtotal	\$159,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	380	TON	\$120	\$46,000
** Portland Cement Concrete	400	CY	\$300	\$120,000
Aggregate Base	300	CY	\$60	\$18,000
Decomposed Granite	40	CY	\$40	\$2,000
Scarify and Recompact Native Material	2,200	SY	\$15	\$33,000
Atkinson St. Space Reallocation	2,795	SF	\$110	\$307,000
Retaining Walls (< 10')	910	SF	\$75	\$68,000
Fencing	1,800	LF	\$30	\$54,000
Tree/Brush Removal	11,100	SF	\$4	\$44,000
Supplemental Earthwork (Import)	60	CY	\$22	\$1,000
Supplemental Earthwork (Excavation)	790	CY	\$65	\$51,000
Environmental Mitigation	1	LS	\$64,000	\$64,000
Roadway Supplemental Items	5%			\$40,000
			subtotal	\$848,000
Mobilization	10%			\$85,000
Contingency	25%			\$212,000
			Construction Items subtotal	\$1,150,000
ADMINISTRATION				
Construction Administration	25%			\$288,000
			Subtotal	\$288,000
TOTAL PROJECT COST	\$1,890,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 4-1

Description: N7A

PROJECT ESTIMATE:

November 2018

Length of Path: 1,300 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$227,000
RIGHT OF WAY				
30' Easement	38,900	SF	\$0.33	\$13,000
			Subtotal	\$13,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	240	TON	\$120	\$29,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	190	CY	\$60	\$11,000
Decomposed Granite	20	CY	\$40	\$1,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls (< 10')	6,800	SF	\$75	\$510,000
Fencing	280	LF	\$30	\$8,000
Tree/Brush Removal	4,000	SF	\$4	\$16,000
Supplemental Earthwork (Import)	125	CY	\$22	\$3,000
Supplemental Earthwork (Excavation)	280	CY	\$65	\$18,000
Environmental Mitigation	1	LS	\$43,000	\$43,000
Roadway Supplemental Items	5%			\$32,000
			subtotal	\$671,000
Mobilization	10%			\$67,000
Contingency	25%			\$168,000
			Construction Items subtotal	\$906,000
ADMINISTRATION				
Construction Administration	25%			\$227,000
			Subtotal	\$227,000
TOTAL PROJECT COST	\$1,380,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 4-2

Description: N7B, N7B1

PROJECT ESTIMATE:

November 2018

Length of Path: 1,200 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$20,000
RIGHT OF WAY				
30' Easement	34,600	SF	\$0	\$0
			Subtotal	\$0
CONSTRUCTION ITEMS				
* Asphalt Concrete	220	TON	\$120	\$26,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	170	CY	\$60	\$10,000
Decomposed Granite	20	CY	\$40	\$1,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls	0	SF	\$75	\$0
Fencing	0	LF	\$30	\$0
Tree/Brush Removal	0	SF	\$4	\$0
Supplemental Earthwork (Import)	160	CY	\$22	\$4,000
Supplemental Earthwork (Excavation)	250	CY	\$65	\$16,000
Environmental Mitigation	0	LS	\$0	\$0
Roadway Supplemental Items	5%			\$3,000
			subtotal	\$60,000
Mobilization	10%			\$6,000
Contingency	25%			\$15,000
			Construction Items subtotal	\$81,000
ADMINISTRATION				
Construction Administration	25%			\$20,000
			Subtotal	\$20,000
TOTAL PROJECT COST	\$130,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 4-3

Description: N7B, N7B2

PROJECT ESTIMATE:

November 2018

Length of Path: 2,100 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$36,000
RIGHT OF WAY				
30' Easement	61,500	SF	\$0	\$0
			Subtotal	\$0
CONSTRUCTION ITEMS				
* Asphalt Concrete	380	TON	\$120	\$46,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	300	CY	\$60	\$18,000
Decomposed Granite	40	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls	0	SF	\$75	\$0
Fencing	0	LF	\$30	\$0
Tree/Brush Removal	200	SF	\$4	\$1,000
Supplemental Earthwork (Import)	160	CY	\$22	\$4,000
Supplemental Earthwork (Excavation)	450	CY	\$65	\$29,000
Environmental Mitigation	0	LS	\$0	\$0
Roadway Supplemental Items	5%			\$5,000
			subtotal	\$105,000
Mobilization	10%			\$11,000
Contingency	25%			\$26,000
			Construction Items subtotal	\$142,000
ADMINISTRATION				
Construction Administration	25%			\$36,000
			Subtotal	\$36,000
TOTAL PROJECT COST	\$220,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-1

Description: N8A, S6

PROJECT ESTIMATE:

November 2018

Length of Path: 3,300 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$778,000
RIGHT OF WAY				
30' Easement	96,900.00	SF	\$0.40	\$39,000
	Subtotal			\$39,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	600	TON	\$120	\$72,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	480	CY	\$60	\$29,000
Decomposed Granite	60	CY	\$40	\$3,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Foothills Blvd. Bridge Space Reallocation	13,200	SF	\$110	\$1,460,000
Retaining Walls (< 10')	720	SF	\$75	\$54,000
Retaining Walls (> 10')	3,960	SF	\$125	\$495,000
Fencing	490	LF	\$30	\$15,000
Tree/Brush Removal	1,200	SF	\$4	\$5,000
Supplemental Earthwork (Import)	70	CY	\$22	\$2,000
Supplemental Earthwork (Excavation)	700	CY	\$65	\$46,000
Environmental Mitigation	1	LS	\$8,000	\$8,000
Roadway Supplemental Items	5%			\$109,000
	subtotal			\$2,300,000
Mobilization	10%			\$230,000
Contingency	25%			\$575,000
	Construction Items subtotal			\$3,110,000
ADMINISTRATION				
Construction Administration	25%			\$778,000
	Subtotal			\$778,000
TOTAL PROJECT COST	\$4,710,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-2

Description: N8A, S6, C6, N10

PROJECT ESTIMATE:

November 2018

Length of Path: 3,400 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$873,000
RIGHT OF WAY				
30' Easement	103,000	SF	\$0.50	\$52,000
			Subtotal	\$52,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	700	TON	\$120	\$84,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	560	CY	\$60	\$34,000
Decomposed Granite	70	CY	\$40	\$3,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Foothills Blvd. Bridge Space Reallocation	13,200	SF	\$110	\$1,460,000
Vernon St. Space Reallocation	1,900	SF	\$110	\$209,000
Vernon St. Undercrossing	1	LS	\$30,000	\$30,000
Retaining Walls (< 10')	720	SF	\$75	\$54,000
Retaining Walls (> 10')	3,960	SF	\$125	\$495,000
Fencing	490	LF	\$30	\$15,000
Tree/Brush Removal	1,400	SF	\$4	\$6,000
Supplemental Earthwork (Import)	70	CY	\$22	\$2,000
Supplemental Earthwork (Excavation)	820	CY	\$65	\$53,000
Environmental Mitigation	1	LS	\$10,000	\$10,000
Roadway Supplemental Items	5%			\$123,000
			subtotal	\$2,580,000
Mobilization	10%			\$258,000
Contingency	25%			\$645,000
			Construction Items subtotal	\$3,490,000
ADMINISTRATION				
Construction Administration	25%			\$873,000
			Subtotal	\$873,000
TOTAL PROJECT COST	\$5,290,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-3

Description: N8A, C5, N9 [B9], N10

PROJECT ESTIMATE:

November 2018

Length of Path: 4,000 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$915,000
RIGHT OF WAY				
30' Easement	118,400	SF	\$0.55	\$66,000
Subtotal				\$66,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	710	TON	\$120	\$85,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	560	CY	\$60	\$34,000
Decomposed Granite	70	CY	\$40	\$3,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B9'	2,400	SF	\$300	\$720,000
Foothills Blvd. Bridge Space Reallocation	13,200	SF	\$110	\$1,460,000
Foothills Blvd. South Abutment (Walls & Box Culvert)	160	SF	\$200	\$32,000
Vernon St. Undercrossing	1	LS	\$30,000	\$30,000
Retaining Walls	0	SF	\$75	\$0
Fencing	990	LF	\$30	\$30,000
Tree/Brush Removal	2,400	SF	\$4	\$10,000
Supplemental Earthwork (Import)	4,150	CY	\$22	\$91,000
Supplemental Earthwork (Excavation)	860	CY	\$65	\$56,000
Environmental Mitigation	1	LS	\$29,000	\$29,000
Roadway Supplemental Items	5%			\$129,000
subtotal				\$2,710,000
Mobilization	10%			\$271,000
Contingency	25%			\$678,000
Construction Items subtotal				\$3,660,000
ADMINISTRATION				
Construction Administration	25%			\$915,000
Subtotal				\$915,000
TOTAL PROJECT COST		\$5,560,000		

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-4

Description: N8B, N9 [B9], N10

PROJECT ESTIMATE:

November 2018

Length of Path: 4,400 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$2,700,000
RIGHT OF WAY				
30' Easement	131,000	SF	\$0.95	\$125,000
			Subtotal	\$125,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	780	TON	\$120	\$94,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	620	CY	\$60	\$37,000
Decomposed Granite	80	CY	\$40	\$4,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B9'	2,400	SF	\$300	\$720,000
Foothills Blvd. Bridge Widening	7,110	SF	\$800	\$5,690,000
Vernon St. Undercrossing	1	LS	\$30,000	\$30,000
Retaining Walls (< 10')	10,500	SF	\$75	\$788,000
Fencing	1,400	LF	\$30	\$42,000
Tree/Brush Removal	3,000	SF	\$4	\$12,000
Supplemental Earthwork (Import)	4,150	CY	\$22	\$91,000
Supplemental Earthwork (Excavation)	940	CY	\$65	\$61,000
Environmental Mitigation	1	LS	\$36,000	\$36,000
Roadway Supplemental Items	5%			\$380,000
			subtotal	\$7,990,000
Mobilization	10%			\$799,000
Contingency	25%			\$2,000,000
			Construction Items subtotal	\$10,800,000
ADMINISTRATION				
Construction Administration	25%			\$2,700,000
			Subtotal	\$2,700,000
TOTAL PROJECT COST	\$16,400,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-5

Description: N8B, C5, S6

PROJECT ESTIMATE:

November 2018

Length of Path: 4,100 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$2,600,000
RIGHT OF WAY				
30' Easement	122,300	SF	\$1.00	\$123,000
Subtotal				\$123,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	760	TON	\$120	\$91,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	600	CY	\$60	\$36,000
Decomposed Granite	80	CY	\$40	\$4,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Foothills Blvd. Bridge Widening	7,105	SF	\$800	\$5,690,000
Foothills Blvd. South Abutment (Walls & Box Culvert)	160	SF	\$200	\$32,000
Retaining Walls (< 10')	11,220	SF	\$75	\$842,000
Retaining Walls (> 10')	3,960	SF	\$125	\$495,000
Fencing	900	LF	\$30	\$27,000
Tree/Brush Removal	1,800	SF	\$4	\$7,000
Supplemental Earthwork (Import)	80	CY	\$22	\$2,000
Supplemental Earthwork (Excavation)	880	CY	\$65	\$57,000
Environmental Mitigation	1	LS	\$15,000	\$15,000
Roadway Supplemental Items	5%			\$365,000
subtotal				\$7,670,000
Mobilization	10%			\$767,000
Contingency	25%			\$1,920,000
Construction Items subtotal				\$10,400,000
ADMINISTRATION				
Construction Administration	25%			\$2,600,000
Subtotal				\$2,600,000
TOTAL PROJECT COST		\$15,700,000		

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-6

Description: N8B, C5, S6, C6, N10

PROJECT ESTIMATE:

November 2018

Length of Path: 4,600 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$2,700,000
RIGHT OF WAY				
30' Easement	138,200	SF	\$1.25	\$173,000
Subtotal				\$173,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	860	TON	\$120	\$103,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	680	CY	\$60	\$41,000
Decomposed Granite	90	CY	\$40	\$4,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Foothills Blvd. Bridge Widening	7,105	SF	\$800	\$5,690,000
Foothills Blvd. South Abutment (Walls & Box Culvert)	160	SF	\$200	\$32,000
Vernon St. Space Reallocation	1,872	SF	\$110	\$206,000
Vernon St. Undercrossing	1	LS	\$30,000	\$30,000
Retaining Walls (< 10')	11,220	SF	\$75	\$842,000
Retaining Walls (> 10')	3,960	SF	\$125	\$495,000
Fencing	900	LF	\$30	\$27,000
Tree/Brush Removal	2,000	SF	\$4	\$8,000
Supplemental Earthwork (Import)	110	CY	\$22	\$3,000
Supplemental Earthwork (Excavation)	1,000	CY	\$65	\$65,000
Environmental Mitigation	1	LS	\$15,000	
Roadway Supplemental Items	5%			\$377,000
subtotal				\$7,930,000
Mobilization	10%			\$793,000
Contingency	25%			\$1,990,000
Construction Items subtotal				\$10,800,000
ADMINISTRATION				
Construction Administration	25%			\$2,700,000
Subtotal				\$2,700,000
TOTAL PROJECT COST		\$16,400,000		

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-7

Description: S5 (6), N9 [B9], N10

PROJECT ESTIMATE:

November 2018

Length of Path: 2,400 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$1,080,000
RIGHT OF WAY				
30' Easement	86,000	SF	\$2.00	\$172,000
	Subtotal			\$172,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	480	TON	\$120	\$58,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	380	CY	\$60	\$23,000
Decomposed Granite	50	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B9'	2,400	SF	\$300	\$720,000
Atkinson Street Undercrossing	1	LS	\$30,000	\$30,000
Amtrak Undercrossing	1	LS	\$30,000	\$30,000
UPRR Undercrossing	7,000	SF	\$100	\$700,000
Vernon St. Undercrossing	1	LS	\$30,000	\$30,000
Retaining Walls (< 10')	13,460	SF	\$75	\$1,010,000
Retaining Walls (> 10')	1,500	SF	\$125	\$188,000
Fencing	2,000	LF	\$30	\$60,000
Tree/Brush Removal	3,900	SF	\$4	\$16,000
Supplemental Earthwork (Import)	4,650	CY	\$22	\$102,000
Supplemental Earthwork (Excavation)	570	CY	\$65	\$37,000
Environmental Mitigation	1	LS	\$39,000	\$39,000
Roadway Supplemental Items	5%			\$152,000
	subtotal			\$3,200,000
Mobilization	10%			\$320,000
Contingency	25%			\$800,000
	Construction Items subtotal			\$4,320,000
ADMINISTRATION				
Construction Administration	25%			\$1,080,000
	Subtotal			\$1,080,000
TOTAL PROJECT COST	\$6,660,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-8

Description: S5 (6), C5, S6

PROJECT ESTIMATE:

November 2018

Length of Path: 2,500 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$973,000
RIGHT OF WAY				
30' Easement	72,000	SF	\$2.15	\$155,000
			Subtotal	\$155,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	460	TON	\$120	\$55,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	370	CY	\$60	\$22,000
Decomposed Granite	50	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Atkinson Street Undercrossing	1	LS	\$30,000	\$30,000
Amtrak Undercrossing	1	LS	\$30,000	\$30,000
UPRR Undercrossing	7,000	SF	\$100	\$700,000
Foothills Blvd. South Abutment (Walls & Box Culvert)	160	SF	\$200	\$32,000
Retaining Walls (< 10')	14,180	SF	\$75	\$1,070,000
Retaining Walls (> 10')	5,460	SF	\$125	\$683,000
Fencing	1,400	LF	\$30	\$42,000
Tree/Brush Removal	2,700	SF	\$4	\$11,000
Supplemental Earthwork (Import)	500	CY	\$22	\$11,000
Supplemental Earthwork (Excavation)	510	CY	\$65	\$33,000
Environmental Mitigation	1	LS	\$19,000	\$19,000
Roadway Supplemental Items	5%			\$137,000
			subtotal	\$2,880,000
Mobilization	10%			\$288,000
Contingency	25%			\$720,000
			Construction Items subtotal	\$3,890,000
ADMINISTRATION				
Construction Administration	25%			\$973,000
			Subtotal	\$973,000
TOTAL PROJECT COST	\$6,000,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 5-9

Description: S5 (6), C5, S6, C6, N10

PROJECT ESTIMATE:

November 2018

Length of Path: 3,000 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal		\$1,070,000	
RIGHT OF WAY				
30' Easement	89,000	SF	\$2.35	\$210,000
			Subtotal	\$210,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	560	TON	\$120	\$67,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	440	CY	\$60	\$26,000
Decomposed Granite	60	CY	\$40	\$3,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Atkinson Street Undercrossing	1	LS	\$30,000	\$30,000
Amtrak Undercrossing	1	LS	\$30,000	\$30,000
UPRR Undercrossing	7,000	SF	\$100	\$700,000
Vernon St. Space Reallocation	1,872	SF	\$110	\$206,000
Foothills Blvd. South Abutment (Walls & Box Culvert)	160	SF	\$200	\$32,000
Vernon St. Undercrossing	1	LS	\$30,000	\$30,000
Retaining Walls (< 10')	14,180	SF	\$75	\$1,070,000
Retaining Walls (> 10')	5,460	SF	\$125	\$683,000
Fencing	1,400	LF	\$30	\$42,000
Tree/Brush Removal	2,900	SF	\$4	\$12,000
Supplemental Earthwork (Import)	500	CY	\$22	\$11,000
Supplemental Earthwork (Excavation)	630	CY	\$65	\$41,000
Environmental Mitigation	1	LS	\$20,000	\$20,000
Roadway Supplemental Items	5%			\$150,000
			subtotal	\$3,160,000
Mobilization	10%			\$316,000
Contingency	25%			\$790,000
			Construction Items subtotal	\$4,270,000
ADMINISTRATION				
Construction Administration	25%			\$1,070,000
			Subtotal	\$1,070,000
TOTAL PROJECT COST	\$6,620,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 6-1

Description: N11A

PROJECT ESTIMATE:

November 2018

Length of Path: 2,700 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$53,000
RIGHT OF WAY				
30' Easement	81,000	SF	\$1.70	\$138,000
			Subtotal	\$138,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	510	TON	\$120	\$61,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	400	CY	\$60	\$24,000
Decomposed Granite	50	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls	0	SF	\$75	\$0
Fencing	0	LF	\$30	\$0
Tree/Brush Removal	1,300	SF	\$4	\$5,000
Supplemental Earthwork (Import)	520	CY	\$22	\$11,000
Supplemental Earthwork (Excavation)	590	CY	\$65	\$38,000
Environmental Mitigation	1	LS	\$8,000	\$8,000
Roadway Supplemental Items	5%			\$7,000
			subtotal	\$156,000
Mobilization	10%			\$16,000
Contingency	25%			\$39,000
			Construction Items subtotal	\$211,000
ADMINISTRATION				
Construction Administration	25%			\$53,000
			Subtotal	\$53,000
TOTAL PROJECT COST	\$460,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 6-2

Description: N11B, N12

PROJECT ESTIMATE:

November 2018

Length of Path: 2,600 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal		\$85,000	
RIGHT OF WAY				
30' Easement	77,100	SF	\$1.70	\$132,000
			Subtotal	\$132,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	480	TON	\$120	\$58,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	380	CY	\$60	\$23,000
Decomposed Granite	50	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Retaining Walls	0	SF	\$75	\$0
Fencing	2,600	LF	\$30	\$78,000
Tree/Brush Removal	2,800	SF	\$4	\$11,000
Supplemental Earthwork (Import)	600	CY	\$22	\$13,000
Supplemental Earthwork (Excavation)	560	CY	\$65	\$36,000
Environmental Mitigation	1	LS	\$20,000	\$20,000
Roadway Supplemental Items	5%			\$12,000
			subtotal	\$253,000
Mobilization	10%			\$25,000
Contingency	25%			\$63,000
			Construction Items subtotal	\$341,000
ADMINISTRATION				
Construction Administration	25%			\$85,000
			Subtotal	\$85,000
TOTAL PROJECT COST	\$650,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 6-3

Description: N11B, C7 [B10], S8 (7)

PROJECT ESTIMATE:

November 2018

Length of Path: 3,300 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$1,578,000
RIGHT OF WAY				
30' Easement	98,800	SF	\$4.65	\$460,000
			Subtotal	\$460,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	584	TON	\$120	\$70,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	461	CY	\$60	\$28,000
Decomposed Granite	58	CY	\$40	\$3,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B10'	2,560	SF	\$300	\$768,000
Retaining Walls (< 10')	3,800	SF	\$75	\$285,000
Retaining Walls (> 10')	22,100	SF	\$125	\$2,770,000
Fencing	720	LF	\$30	\$22,000
Tree/Brush Removal	5,400	SF	\$4	\$22,000
Supplemental Earthwork (Import)	17,600	CY	\$22	\$387,000
Supplemental Earthwork (Excavation)	620	CY	\$65	\$40,000
Environmental Mitigation	1	LS	\$44,000	\$44,000
Roadway Supplemental Items	5%			\$222,000
			subtotal	\$4,670,000
Mobilization	10%			\$467,000
Contingency	25%			\$1,170,000
			Construction Items subtotal	\$6,310,000
ADMINISTRATION				
Construction Administration	25%			\$1,580,000
			Subtotal	\$1,580,000
TOTAL PROJECT COST	\$9,930,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 6-4

Description: S7, S8 (7)

PROJECT ESTIMATE:

November 2018

Length of Path: 3,400 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal			\$1,310,000
RIGHT OF WAY				
30' Easement	101,200	SF	\$4.60	\$466,000
	Subtotal			\$466,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	630	TON	\$120	\$76,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	500	CY	\$60	\$30,000
Decomposed Granite	60	CY	\$40	\$3,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Vernon St. Undercrossing	1	LS	\$30,000	\$30,000
Retaining Walls (< 10')	8,160	SF	\$75	\$612,000
Retaining Walls (> 10')	22,100	SF	\$125	\$2,770,000
Fencing	0	LF	\$30	\$0
Tree/Brush Removal	6,400	SF	\$4	\$26,000
Supplemental Earthwork (Import)	2,500	CY	\$22	\$55,000
Supplemental Earthwork (Excavation)	640	CY	\$65	\$42,000
Environmental Mitigation	1	LS	\$30,000	\$30,000
Roadway Supplemental Items	5%			\$184,000
	subtotal			\$3,860,000
Mobilization	10%			\$386,000
Contingency	25%			\$965,000
	Construction Items subtotal			\$5,220,000
ADMINISTRATION				
Construction Administration	25%			\$1,310,000
	Subtotal			\$1,310,000
TOTAL PROJECT COST	\$8,310,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION



Dry Creek Greenway West Multi-Use Trail Feasibility Study

Alignment 6-5

Description: S7, C7 [B10], N12

PROJECT ESTIMATE:

November 2018

Length of Path: 3,000 ft.

ITEM	QUANTITY		UNIT COST	ITEM COST
PRELIMINARY ENGINEERING				
Environmental Document & PS&E	25% of Construction Items Subtotal		\$598,000	
RIGHT OF WAY				
30' Easement	89,300	SF	\$1.70	\$152,000
			Subtotal	\$152,000
CONSTRUCTION ITEMS				
* Asphalt Concrete	530	TON	\$120	\$64,000
** Portland Cement Concrete	0	CY	\$300	\$0
Aggregate Base	420	CY	\$60	\$25,000
Decomposed Granite	50	CY	\$40	\$2,000
Scarify and Recompact Native Material	0	SY	\$15	\$0
Structures - Bridge 'B10'	2,560	SF	\$300	\$768,000
Retaining Walls (< 10')	4,360	SF	\$75	\$327,000
Fencing	1,800	LF	\$30	\$54,000
Tree/Brush Removal	4,800	SF	\$4	\$19,000
Supplemental Earthwork (Import)	15,300	CY	\$22	\$337,000
Supplemental Earthwork (Excavation)	650	CY	\$65	\$42,000
Environmental Mitigation	1	LS	\$42,000	\$42,000
Roadway Supplemental Items	5%		\$84,000	
			subtotal	\$1,770,000
Mobilization	10%		\$177,000	
Contingency	25%		\$443,000	
			Construction Items subtotal	\$2,390,000
ADMINISTRATION				
Construction Administration	25%		\$598,000	
			Subtotal	\$598,000
TOTAL PROJECT COST	\$3,740,000			

* ASSUMES CITY STANDARD PAVEMENT SECTION

** ASSUMES COUNTY STANDARD PAVEMENT SECTION

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Appendix G: Alignment Evaluation Tables

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Table 5A - Alignment Evaluation Criteria

Constituency		Rating Criteria	Does the Alignment...
Property Owners	Property owners near the path	Compatibility with Nearby Property	Provide a separation or buffer between sensitive uses and path or path access points?
		Parking & Traffic	Minimize neighborhood traffic and parking by providing access to off-street public parking?
		Aesthetics	Minimize potential for cuts, fills, walls or structures?
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	Require property from owners willing to sell or grant an easement?
		Public vs. private property	Maximize the use of public property?
		Impact on property	Minimize impacts to existing/planned uses of private property?
Path Users	Walkers and cyclists	Path Design	And path design (width/materials) accommodate anticipated users?
		Path User Comfort	Minimize user exposure to busy roadways and advance a lower stress level environment?
		Transportation System Performance	Provide direct connections between key destinations and other pathways and close gaps?
		Recreation Facility Performance	Result in a continuous off-street facility with well distributed access points?
		Environmental Interpretation	Afford opportunities for enjoyment of natural resources/interpretation?
		Exposure to hazards	Minimize exposure to noise and air pollution?
Public Safety	Property owners and path users	Natural Surveillance	Support visibility of path and minimizes exposure to dark or confined crossings?
		Separation	Provide spatial separation or barriers between adjacent properties and path users to discourage trespassing?
		Emergency response	Provide access points for emergency vehicles?
Environmental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	Minimize the impact to sensitive environmental resources?
		Flooding	Minimize the potential for obstruction of creek flows or erosion?
Municipal Operations	City of Roseville or Placer County	Utility System Performance	Facilitate access to and minimize the potential for impacts to existing utilities?
		Consistency with Local Plans	Achieve consistency with adopted plans?
		Cost Efficiency	Efficiently use limited resources for construction and maintenance?
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	Facilitate access to and minimize the potential for impacts to existing facilities?
		Compatible with Planned Improvements	Conform with planned facility improvements?
		Security	Maintain or enhance security of the facility?

Table 5B – Evaluation Matrix Summary

	Alignment		
	Name	Segment Definition	Rating
Area 1	1-1	N1 (1)(2)[B1], N2A (3), N3	7
	1-2	N1 (1)(2)[B1], N2A (3), N3, C1 [B6]	5
	1-3	N1 (1)(2)[B1], N2B (3), N3	7
	1-4	N1 (1)(2)[B1], N2B (3), N3, C1 [B6]	5
	1-5	S1 [B2, B3, B4, B5]	-2
	1-6	S1 [B2, B3, B4, B5], C1 [B6]	-3
Area 2	2-1	N4	-6
	2-2	N4, C2 [B7]	0
	2-3	S2 (4)	4
	2-4	S2 (4), C2 [B7]	5
Area 3	3-1	N5 (5), N6	0
	3-2	N5 (5), C4	-5
	3-3	N5 (5), C3 [B8], S4	-7
	3-4	S3, S4	4
	3-5	S3, C3 [B8], N6	6
	3-6	S3, S4, C4 (5), N6	1
Area 4	4-1	N7A	-1
	4-2	N7B, N7B1	4
	4-3	N7B, N7B2	6
Area 5	5-1	N8A, S6	-2
	5-2	N8A, S6, C6, N10	-1
	5-3	N8A, C5, N9 [B9], N10	4
	5-4	N8B, N9 [B9], N10	0
	5-5	N8B, C5, S6	-5
	5-6	N8B, C5, S6, C6, N10	-4
	5-7	S5 (6), N9 [B9], N10	1
	5-8	S5 (6), C5, S6	-2
	5-9	S5 (6), C5, S6, C6, N10	-1
Area 6	6-1	N11A	10
	6-2	N11B, N12	11
	6-3	N11B, C7 [B10], S8 (7)	-8
	6-4	S7, S8 (7)	-10
	6-5	S7, C7 [B10], N12	5
Key: Recommended alignments are highlighted yellow. Alternate recommended alignments are highlighted green. N## = North segment (#) = Spur Trail # S## = South segment [B#] = Bridge #			

Table 5C – Estimate of Project Costs

	Recommended Alignment			
	Name	Description	Segment Definition	Cost
Area 1	1-2	Cook Riolo Road Path to WWTP	N1 (1)(2)[B1], N2A (3), N3, C1 [B6]	\$5,860,000
Area 2	2-3	Along WWTP/ Corp Yard ROW	S2 (4)	\$1,420,000
Area 3	3-5	Corp Yard to Booth Road	S3, C3 [B8], N6	\$2,650,000
Area 4	4-3	Booth – Atkinson – Denio's Ramp	N7B, N7B2	\$220,000
Area 5	5-3	Rail Yard – Denio's to Vernon	N8A, C5, N9 [B9], N10	\$5,560,000
Area 6	6-2	Vernon to Riverside	N11B, N12	\$650,000
TOTAL PROJECT COST				\$16,360,000

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Table 5D – Area 1 Evaluation Matrix								
			Alignments					
			1-1	1-2	1-3	1-4	1-5	1-6
Property Owners	Property owners near the path	Compatibility w/ Nearby Property	O	O	O	O	-	-
		Parking & Traffic	O	O	O	O	O	O
		Aesthetics	+	+	+	+	+	+
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	+	+	+	+	-	-
		Public vs. private property	O	O	O	O	-	-
		Impact on property	+	+	+	+	-	-
Path Users	Walkers and cyclists	Path Design	+	O	+	O	O	-
		Path User Comfort	+	+	+	+	+	+
		Trans System Performance	O	+	O	+	-	O
		Recreation Facility Performance	O	+	O	+	+	+
		Environmental Interpretation	O	O	+	+	+	+
		Exposure to hazards	+	+	+	+	+	+
Public Safety	Property owners and path users	Natural Surveillance	O	O	O	O	-	-
		Separation	O	O	O	O	O	O
		Emergency response	O	+	O	+	-	O
Environmental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	+	O	+	O	-	-
		Flooding	O	-	O	-	-	-
Municipal Operations	City of Roseville or Placer County	Utility System Performance	+	+	O	O	O	O
		Consistency with Local Plans	+	O	+	O	O	-
		Cost Efficiency	O	-	O	-	+	O
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	-	-	-	-	O	O
		Compatible with Planned Improvements	O	O	O	O	O	O
		Security	-	-	-	-	+	+
TOTAL			7	5	7	5	-2	-3

N1/N2 passes by private property within utility easement, along school and onto large private parcel slated for development. S1 close to existing residences at west end
No residential areas near access point at Cook Riolo; all alignments may help reduce school traffic if large parcels developed

All alignments would mostly follow existing contours through currently undeveloped land.

North alignments use existing easements and public land plus one private parcel with planned development; south alignments cross multiple private parcels with apparently unwilling owners. Nearly 1/3 of north alignments use existing easements or public land. South alignments nearly all on multiple private parcels.

N1/N2A mostly follow access road and sewer easement; N2B on edge of developable private parcel; N3 along access road. S1 close to residences.

North alignments following existing terrain mostly on high ground; C1 will require embankment between channels. S1 mostly very low with multiple stream crossings

All alignments would be pleasant and gently rolling with no conflicts

North alignments provide potential for direct access to school; C1 provides connection to Corp Yard.

North alignment has great views at E end of N1 and spur to creek; S1 more shaded and closer to creek.

N2 follows edge of woods; S1 close to creek and crosses several times.

All alignments well-separated from hazards.

North alignments close to school and in open areas. S1 more in wooded areas out of sight.

North alignments close to one residence and school; West end of S1 close to residences, but separated by creek.

North alignments provide access from school, potential development and WWTP; S1 more difficult to access except at Corp Yard.

North alignments mostly avoid riparian habitats; S1 much lower and closer to creek. Bridges add impacts.
N3 crosses overflow channel; C1 requires embankment in/near the overflow channel. S1 multiple creek crossings has more locations to impact flooding.

N1, N2A follow sewer easement. N2B close. S1 no impacts on utilities, but does not help access.

N3 impacts access road and bypass channel. C1 potentially impacts access to outflow from WWTP.

North alignments create access conflicts for WWTP and bypass channel.

No planned municipal facilities in Area 1.

North alignments create security concerns for WWTP.

Table 4A - Area 1 Alignment Definitions*	
1-1	N1 (1)(2)[B1], N2A (3), N3
1-2	N1 (1)(2)[B1], N2A (3), N3, C1 [B6]
1-3	N1 (1)(2)[B1], N2B (3), N3
1-4	N1 (1)(2)[B1], N2B (3), N3, C1 [B6]
1-5	S1 [B2, B3, B4, B5]
1-6	S1 [B2, B3, B4, B5], C1 [B6]

*Area 1 begins at node "a" and ends at node "d" or "e"

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Table 5E – Area 2 Evaluation Matrix								
			Alignments					
			2-1	2-2	2-3	2-4		
Property Owners	Property owners near the path	Compatibility w/ Nearby Property	0	0	0	0		
		Parking & Traffic	0	0	+	+		
		Aesthetics	-	-	-	-		
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	+	+	+	+		
		Public vs. private property	+	+	+	+		
		Impact on property	-	-	0	0		
Path Users	Walkers and cyclists	Path Design	-	-	0	0		
		Path User Comfort	+	+	+	+		
		Trans System Performance	0	+	+	+		
		Recreation Facility Performance	0	0	0	0		
		Environmental Interpretation	0	0	0	0		
		Exposure to hazards	-	-	0	0		
Public Safety	Property owners and path users	Natural Surveillance	-	-	-	-		
		Separation	-	-	0	0		
		Emergency response	+	+	+	+		
Environmental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	0	-	0	-		
		Flooding	-	-	0	-		
Municipal Operations	City of Roseville or Placer County	Utility System Performance	-	+	0	+		
		Consistency with Local Plans	0	+	0	+		
		Cost Efficiency	+	0	0	-		
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	-	+	0	+		
		Compatible with Planned Improvements	-	+	0	+		
		Security	-	-	0	0		
TOTAL			-6	0	4	5		

Table 4B - Area 2 Alignment Definitions*	
2-1	N4
2-2	N4, C2 [B7]
2-3	S2 (4)
2-4	S2 (4), C2 [B7]
*Area 2 begins at node "d" or "e" and ends at node "f" or "g"	

No affected nreaby properties.

No access points that could affect traffic or local properties. S2 provides potential connection to Corp Yard for employees.

N4 along levee; south along back fences of industrial uses.

All alignments on public property owned by City.

All alignments on public property owned by City.

N4 impact access and security at WWTP, and bypass channel; Corp Yard access impacts mitigation plantings.

N4 challenging to design along narrow old levee. Narrow and steep slopes near west end for S2, remainder fairly open.

All alignments simple and gentle.

S2 access to Corp yard; C2 creates opposite side access.

None of alignments will be particularly interesting or attractive to users.

No tmuch of interest in this area due to industrial uses.

N4 susceptible to being isolated by flooding

All alignments at back of large industrial properties with no other users nearby.

N4 will require fencing to separate WWTP from path.

Adjacent municipal properties facilitate emergency response.

B7 embankment impacts riparian area.

N4 susceptible to being isolated by flooding; B7 embankments in flood plain.

N4 creates conflicts with outfall structure access. B7 consistent with potential sewer crossing of creek.

B7 consistent with potential sewer crossing of creek.

N4 impacts outfall access; B7 provides access across creek for sewer.

B7 consistent with potential sewer crossing of creek.

N4 requires additional security measures for WWTP.

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Table 5F – Area 3 Evaluation Matrix								
			Alignments					
			3-1	3-2	3-3	3-4	3-5	3-6
Property Owners	Property owners near the path	Compatibility w/ Nearby Property	-	-	-	0	0	0
		Parking & Traffic	+	+	+	0	+	0
		Aesthetics	-	-	-	0	0	0
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	0	-	-	-	+	0
		Public vs. private property	0	-	-	-	+	0
		Impact on property	0	0	0	0	+	-
Path Users	Walkers and cyclists	Path Design	-	-	-	0	+	-
		Path User Comfort	0	0	0	+	+	-
		Trans System Performance	0	+	+	+	0	+
		Recreation Facility Performance	0	-	0	+	+	-
		Environmental Interpretation	0	0	0	0	0	0
		Exposure to hazards	0	-	0	0	0	-
Public Safety	Property owners and path users	Natural Surveillance	0	0	0	0	0	0
		Separation	-	-	-	0	0	0
		Emergency response	0	+	0	-	0	+
Environmental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	0	0	-	0	-	0
		Flooding	+	+	0	+	0	+
Municipal Operations	City of Roseville or Placer County	Utility System Performance	+	+	0	-	-	+
		Consistency with Local Plans	0	-	-	+	0	+
		Cost Efficiency	+	0	-	+	-	0
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	0	0	0	+	+	+
		Compatible with Planned Improvements	0	-	0	+	+	0
		Security	0	0	0	0	0	0
TOTAL			0	-5	-7	4	6	1

N5 along narrow corridor at back of residential/industrial properties, opposition from owners. S3 two properties.

City property potential parking area.

S3 more attractive than N5; some walls required on N5.

N5, N6 use City property; N5 crosses multiple private parcels with opposition from some owners. S3 unknown private owner opinions.

N5, N6 use City property; N5 crosses multiple private parcels with opposition from some owners. S3 unknown private owner opinions.

3-6 has most impact on properties. N5 more impacts than S3.

N5 tight corridor, walls, close to ball field & fences. S3 follows undeveloped land along top of bank. C4 on bridge as sidepath and out-of-direction.

N5 tight corridor, close to ball field & fences. S3 follows top of bank. C4 on bridge as sidepath and out-of-direction.

Alignments that connect to Atkinson provide best connections.

S3 more attractive than N5. C4 out of direction and along road.

All alignments traverse disturbed land.

C4 takes users onto Atkinson.

All alignments at back of large properties with little opportunity for natural surveillance.

N5 corridor very narrow and adjacent to existing uses.

All provide good access for emergency response. Those with N6 or C4 are best.

B8 has higher impacts.

B8 has higher potential flood impacts; others have little effect.

N5 potential access to sewer. C4 adds maintenance access from Atkinson.

N6 uses City property. Potential water line along S3, S4.

N5 potentially affects flood remediation (RSP) along north bank.

C4 may not be compatible with build out of Atkinson. S3 compatible with proposed sewer line.

No impact on security of municipal facilities.

Table 4C - Area 3 Alignment Definitions*	
3-1	N5 (5), N6
3-2	N5 (5), C4
3-3	N5 (5), C3 [B8], S4
3-4	S3, S4
3-5	S3, C3 [B8], N6
3-6	S3, S4, C4 (5), N6
*Area 3 begins at node "f" or "g" and ends at node "j" or "k"	

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Table 5G – Area 4 Evaluation Matrix								
			Alignments					
			4-1	4-2	4-3			
Property Owners	Property owners near the path	Compatibility w/ Nearby Property	-	-	0			
		Parking & Traffic	-	0	0			
		Aesthetics	-	-	0			
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	0	+	+			
		Public vs. private property	0	+	+			
		Impact on property	0	+	+			
Path Users	Walkers and cyclists	Path Design	0	-	-			
		Path User Comfort	+	0	-			
		Trans System Performance	0	0	0			
		Recreation Facility Performance	0	-	-			
		Environmental Interpretation	0	-	-			
		Exposure to hazards	0	0	0			
Public Safety	Property owners and path users	Natural Surveillance	0	+	+			
		Separation	-	0	+			
		Emergency response	0	+	+			
Environmental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	0	+	+			
		Flooding	+	+	+			
Municipal Operations	City of Roseville or Placer County	Utility System Performance	+	0	0			
		Consistency with Local Plans	0	0	0			
		Cost Efficiency	-	+	+			
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	+	+	+			
		Compatible with Planned Improvements	0	0	0			
		Security	0	0	0			
TOTAL			-1	4	6	0	0	0

Table 4D - Area 4 Alignment Definitions*	
4-1	N7A
4-2	N7B, N7B1
4-3	N7B, N7B2
*Area 4 begins at node "k" and ends at node "n" or "o"	

- 1- very close to small back yards with open fences
- 1- potential for trail parking on residential street
- 1, 2 - very close to open back yards; aesthetic impact on properties
- 1 -requires private ROW, 2, 3 do not
- 1 -requires private ROW, 2, 3 do not
- 1 - impact private property, 2, 3 do not
- 2, 3 - Sidepath along Booth
- 2, 3 - along Booth road; 3 along Atkinson
- All provide access to trail at more than one location
- 2, 3 - side path along busy road
- 1 - passes through/by heavily-treed detention basin
- All require crossing at least one residential street, but avoid busy roadway crossings.
- 2, 3 - alignment along roads easily viewed by motorists
- 1-very close to backyards and on farm property, 2-also close to some backyards; 3-separated by sound wall from yards
- All easily accessible from roads, except part of 1
- 1 would require walls along detention basin
- No impacts on creek
- 1 would be along existing sewer access and expand that access.
- All three would be compatible with, but be impacted by proposed interchange improvements.
- 1 would require retaining walls; 2,3 along existing grades
- All three would be compatible with, but be impacted by proposed interchange improvements.

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Table 5H – Area 5 Evaluation Matrix											
			Alignments								
			5-1	5-2	5-3	5-4	5-5	5-6	5-7	5-8	5-9
Property Owners	Property owners near the path	Compatibility w/ Nearby Property	O	O	O	O	O	O	O	O	O
		Parking & Traffic	O	+	+	+	O	+	+	O	+
		Aesthetics	-	-	O	O	-	-	O	-	-
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	O	O	+	-	-	-	-	-	-
		Public vs. private property	O	O	+	-	-	-	-	-	-
		Impact on property	O	O	O	O	O	O	O	O	O
Path Users	Walkers and cyclists	Path Design	-	-	-	+	O	O	+	O	O
		Path User Comfort	-	-	O	+	O	O	O	-	-
		Trans System Performance	O	O	O	O	O	O	+	+	+
		Recreation Facility Performance	-	-	-	-	-	-	+	+	+
		Environmental Interpretation	-	-	-	-	-	-	+	+	+
		Exposure to hazards	O	O	O	O	O	O	O	O	O
Public Safety	Property owners and path users	Natural Surveillance	O	O	+	+	O	O	-	-	-
		Separation	O	O	O	O	O	O	+	+	+
		Emergency response	O	O	+	+	O	O	-	-	-
Enviro mental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	+	+	+	+	+	+	O	O	O
		Flooding	+	+	O	O	+	+	-	O	O
Municipal Operations	City of Roseville or Placer County	Utility System Performance	O	O	O	O	O	O	O	O	O
		Consistency with Local Plans	O	O	O	-	-	-	O	O	O
		Cost Efficiency	+	+	+	-	-	-	O	O	O
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	O	O	O	O	O	O	O	O	O
		Compatible with Planned Improvements	O	O	O	O	O	O	O	O	O
		Security	O	O	O	O	O	O	O	O	O
TOTAL			-2	-1	4	0	-5	-4	1	-2	-1

All adjacent properties are industria.

Alignments that go N of creek provide potential for parking area.

Retaining walls on S6

N8B and S5 require ROW from UPRR; S6 requires private property; N9 may be able to stay in City ROW, but may require UPRR ROW from parking lot

N8B and S5 require ROW from UPRR; S6 requires private property; N9 may be able to stay in City ROW, but may require UPRR ROW from parking lot

Impacts would be minor to any of the private parcels; all are on currently unused portions of parcels.

Geometrics of N8A are challenging-hairpin curve. C-5 design will be challenging due to drainage and grades.

S5 long undercrossing; S6 tight up against undustrial properties

S5 provides direct connection where none exists; all improve bike-ped access across tracks.

S5 traverses mostly undeveloped RR land and stays by creek;

S5 traverses mostly undeveloped RR land and stays by creek;

Security along S5 will be critical; N8A/N8B along road barrier protected, but still close to high-speed traffic.

S5 isolated and hidden; N8A/B clse teo traffic; N9 generally visible from Vernon

S5 completely separated; N8A/B separated but close.

N8A/B and N9 segments prprovide best emergency access; S5 would provide access where it doesn't currently exist.

S5 may have more impacts than N8A/B

S5 and B9 may result in flood concerns.

None affect utility performance

N8B potentially conflicts more with proposed interchange improvements;

N8B requires widening Foothills Bridges; S5 requires protective covers and construction low in flood plain; S6 requires large retaining walls.

No impacts on WWTP or Corp Yard

No impacts on WWTP or Corp Yard

No impacts on WWTP or Corp Yard

Table 4E - Area 5 Alignment Definitions*	
5-1	N8A, S6
5-2	N8A, S6, C6, N10
5-3	N8A, C5, N9 [B9], N10
5-4	N8B, N9 [B9], N10
5-5	N8B, C5, S6
5-6	N8B, C5, S6, C6, N10
5-7	S5 (6), N9 [B9], N10
5-8	S5 (6), C5, S6
5-9	S5 (6), C5, S6, C6, N10
*Area 5 begins at node "j", "n" or "o" and ends at node "r" or "t"	

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Table 5I – Area 6 Evaluation Matrix								
			Alignments					
			6-1	6-2	6-3	6-4	6-5	
Property Owners	Property owners near the path	Compatibility w/ Nearby Property	+	+	0	0	0	
		Parking & Traffic	+	+	+	0	0	
		Aesthetics	0	+	-	-	+	
	Property owners directly impacted by the path (criteria in addition to those for nearby owners)	Availability of Right-of-Way	0	0	0	0	+	
		Public vs. private property	0	0	0	0	0	
		Impact on property	-	0	0	0	0	
Path Users	Walkers and cyclists	Path Design	+	+	-	-	0	
		Path User Comfort	+	+	-	-	0	
		Trans System Performance	0	0	+	0	+	
		Recreation Facility Performance	0	+	-	-	+	
		Environmental Interpretation	-	+	0	0	+	
		Exposure to hazards	+	+	-	-	0	
Public Safety	Property owners and path users	Natural Surveillance	+	0	-	-	0	
		Separation	+	+	-	-	0	
		Emergency response	+	0	-	-	0	
Environmental	Flora and fauna in the Greenbelt/Path Users	Habitat & Wildlife	+	0	-	-	0	
		Flooding	+	+	0	0	0	
Municipal Operations	City of Roseville or Placer County	Utility System Performance	+	0	0	0	0	
		Consistency with Local Plans	0	0	0	0	0	
		Cost Efficiency	+	+	-	-	0	
Municipal Facilities	Roseville Waste Water Treatment Plant and Corporation Yard	Facility Performance	0	0	0	0	0	
		Compatible with Planned Improvements	0	0	0	0	0	
		Security	0	0	0	0	0	
TOTAL			10	11	-8	-10	5	

Some resistance from Apartment/Condo residents along S7

N11A/B provide opportunity for staging area north of creek at Vernon

N11A cuts through center of large parcel; Very large walls likely along S8;

Property owner north of creek may be ammenable to incorporating trail into deve;lopment plans; prefers 6-5.

All private property

N11A through center of large private parcel.

N11A flat and straight; S7 terrain challenging; S8 extremely steep;

S8 will be narrow and isolated along industrial fences

C7 provides creek crossing opportunity and potential access to south side residential

N11A less interesting following sewer access road; S8 along fences

S7, S8 isolated along industrial fences high above creek.

S7, S8 isolated along industrial fences high above creek.

N11A/B would be potentially integrated into development

N11A would be along a maintenance access road.

C7 and S8 have potential flood impacts

N11A follows utility access road.

No relevant plans

B10 and walls along S8 drive up cost

No affects on WWTP or Corp Yard

Table 4F - Area 6 Alignment Definitions*	
6-1	N11A
6-2	N11B, N12
6-3	N11B, C7 [B10], S8 (7)
6-4	S7, S8 (7)
6-5	S7, C7 [B10], N12
*Area 6 begins at node "r" or "t" and ends at node "w".	

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Appendix H: Funding

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FEDERAL AND STATE SOURCES

BUILD Transportation Discretionary Grants Program (formerly TIGER)

The U.S. Department of Transportation (DOT) allocated \$1.5 billion in discretionary grant funding through the Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program in 2018. BUILD Transportation grants replace the previous Transportation Investment Generating Economic Recovery (TIGER) grant program. The FY 2018 BUILD funds are to be awarded for projects that will have a significant local or regional impact. BUILD funding can support roads, bridges, transit, rail, ports or intermodal transportation.¹ Projects for BUILD will be evaluated based on merit criteria that include safety, economic competitiveness, quality of life, environmental protection, state of good repair, innovation, partnership, and additional non-Federal revenue for future transportation infrastructure investments. The maximum amount of funding awarded in each grant is capped at \$25 million. Thirty percent of all funds will be reserved for rural projects.

- **Application Process:** The deadline for the 2018 grant cycle was July 19th, 2018. The timeline for the next round of BUILD grants has not yet been advertised, but grant funding is typically allocated on an annual basis. Grant applications can be found here: <https://www.transportation.gov/BUILDgrants>
- **Previously funded trail projects:**
 - o Nelson Island Accessibility and Transportation Infrastructure Viability Enhancement (N.A.T.I.V.E.) Project, Nelson Island, AK
 - o City of Burlington Downtown/Riverfront Revitalization Project, Burlington, Iowa
 - o Bridging the Trail Gap: Enhancing, Regional Connections in PA, Philadelphia, PA

¹ Intermodal projects are defined as projects that connect various modes of transportation

- o Additional projects can be found here:
https://www.transportation.gov/sites/dot.gov/files/docs/policy-initiatives/tiger/306331/t9-fact-sheets_0.pdf
- **Contact Information:** Office of Infrastructure Finance and Innovation, Office of the Secretary of Transportation, 1200 New Jersey Ave, SE, Washington, DC 20590, phone: 202-366-0301, email: BUILDgrants@dot.gov

Federal Land Access Program

The Federal Lands Access Program (FLAP) provides funds for transportation projects that are located on, adjacent to, or provide access to federal lands. Funds can be used for preventative maintenance, rehabilitation, restoration, and reconstruction of transportation facilities, which includes provisions for pedestrians and bicyclists. Funds are allocated to states using a formula that incorporates road mileage, number of bridges, land area, and visitation.

- **Previously Funded Projects:**
 - o Dollar Creek Shared Use Path, Placer County, CA
 - o Meeks Bay Bike Path, El Dorado County, CA
 - o Rock Creek Road Improvement Project, Mono County, CA
 - o A complete list of California projects funded in the last round of funding can be found here: <https://flh.fhwa.dot.gov/programs/flap/ca/documents/ca-2017-final-prioritized-projects.pdf>
- **Eligible Applicants:** State, county, town, township, tribe, municipal, or local governments.
- **Application Process:** The last call for applicants was in 2017. The program will re-open its call for projects in the winter of 2020. Application information can be found at <https://flh.fhwa.dot.gov/programs/flap/>.
- **Contact Info:** Frances Ramirez, Program Manager, Office of Federal Lands Highway, phone: (703) 404-6211, email: Frances.Ramirez@dot.gov

Active Transportation Program (ATP) and Transportation Alternatives Program (TAP)

The ATP was created in 2013 by legislation that merged most of the state's major bicycle, pedestrian and trail funding programs, including California's entire share of the federal Transportation Alternatives Program (previously known as Transportation Enhancements), Safe Routes to School, the Bicycle Transportation Account, and a portion of the Recreational Trails Program. ATP program goals include increasing biking and walking trips, improving safety and mobility of non-motorized users, reducing greenhouse gas emissions, and enhancing public health. There is a strong focus on projects that benefit disadvantaged communities. Most recently, the Road Repair and Accountability Act of 2017 Senate Bill 1 (SB 1) added approximately \$100 million per year in available funds for the ATP. This will nearly double the amount of available funds for the Active Transportation Program. The current funding level is approximately \$440 million per year, allocated as follows:

- o Regional share: 40% to Metropolitan Planning Organizations (MPOs), distributed based on total county population;
 - o Rural share: 10% to small urban and rural regions with populations of 200,000 or less; and
 - o Statewide share: 50% for a statewide competition for projects anywhere in the state
- **Eligible Applicants:** Local, regional or state agencies; transit agencies; natural resource or public land agencies; tribal governments; school districts or schools. A private non-profit tax-exempt organization is eligible to apply independently for Recreational Trails Program funded projects (only about \$2.8 million available per year within the ATP); otherwise, for trails or any other eligible projects, non-profits must partner with another eligible applicant.
- **Previously Funded Trail Projects:**
 - o Midtown Fresno School Area Multimodal Interconnectivity Project, Fresno, CA
 - o Juan Bautista De Anza Trail Gap Closure, Moreno Valley, CA

- o Dry Creek Greenway Multi-Use Trail Project, Roseville, CA
- **Application Process:** The California Transportation Commission (CTC) programs the statewide and rural shares, while the Metropolitan Transportation Commission (MTC) programs the regional share for the Bay Area. The 2018 call for projects deadline was July 31. The next call for projects will be in the spring of 2020. Check the website for more information: <http://www.catc.ca.gov/programs/>
- **Contact Information:** Laurie Waters, Associate Deputy Director, California Transportation Commission, phone: (916) 651-6145, email: Laurie.Waters@catc.ca.gov. A complete list of Caltrans ATP coordinators can be found here: <http://www.dot.ca.gov/hq/LocalPrograms/atp/documents/ATP-District-Coordinators.pdf>

Recreational Trails Program (RTP)

The Recreation Trails Program is a federal program that has been part of the federal transportation bill for many years, including the current Fixing America's Surface Transportation Act (FAST Act), signed into law in December 2015. It funds recreation trails and trails-related projects. California's current annual allotment is approximately \$5 - 6 million, of which 40% is included in the Active Transportation Program (see above) and the balance (approximately \$3 million) is administered by the California Department of Parks and Recreation. Half of this \$3 million goes to non-motorized projects, programmed through the Department's Office of Grants and Local Services (OGALS), and half goes to motorized projects, programmed through the Department's Off-Highway Motor Vehicle Recreation Division. There are no set minimum or maximum grant amounts. The program funds up to 88% of the total project cost and requires that the applicant match at least 12% of the total project cost.

Eligible match sources include state, local, or private funds, donated materials and services, or other federal funds. Projects must comply with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act and be listed on the State Transportation Improvement Plan (STIP) or a local Transportation Improvement Plan (TIP).

- **Eligible Applicants:** Cities, counties, districts, state, and federal agencies and non-profit organizations with management responsibilities of public lands.
- **Previously Funded Trail Projects:**
 - o San Francisco Bay Trail (Pinole Shores to Bay Front Park section), Pinole, CA
 - o Eureka Waterfront Trail (Phase C), Eureka, CA
 - o San Sevine Trail (Segment 2), Fontana, CA
 - o City Heights Canyon Loop, San Diego, CA
- **Application Process:** The next non-motorized RTP application cycle will commence in 2019/2020 at the earliest. Check the OGALS RTP webpage for further updates: https://www.parks.ca.gov/?page_id=24324. In the meantime, non-motorized RTP funding is also available through Caltrans' Active Transportation Program (ATP). The Caltrans California Transportation Commission (CTC) 2019 ATP (Cycle 4) had a due date of July 31, 2018. A portion of the funds are included in the ATP, so applicants must apply through that program (see above).
- **Contact Information:** To speak to an OGALS project officer, refer to this list: http://www.parks.ca.gov/pages/1008/files/po_contacts_city_county_2.9.2016.pdf

Affordable Housing and Sustainable Communities (AHSC) Grant Program

Administered by the Strategic Growth Council and implemented by the Department of Housing and Community Development, the AHSC Program funds land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce greenhouse gas (GHG) emissions. Funding for the AHSC Program is provided from the Greenhouse Gas Reduction Fund (GGRF), an account established to receive cap-and-trade auction proceeds.

The AHSC Program will assist project areas by providing grants and/or loans that will achieve GHG emissions reductions and benefit disadvantaged communities through increasing access to affordable housing, employment centers, and key destinations via low-carbon transportation options that result in fewer vehicle miles traveled (VMT). The maximum AHSC Program loan or

grant award or combination thereof is \$20 million with a minimum award of at least \$1 million in TOD Project Areas and \$500,000 in ICP and RIPA Project Areas.

Fifty percent of the available funds are set aside for affordable housing developments, and 50% of the available funds are set aside for projects benefitting disadvantaged communities.² This program is heavily focused on housing; only a small proportion of the projects funded to date contained biking or pedestrian elements.

- **Eligible Applicants:** A locality, public housing authority, redevelopment successor agency, transit agency or transit operator, regional transportation planning agency (RTPA), local transportation commission, congestion management agency, joint powers authority (JPA), school district, facilities district, university or community college district.
- **Eligible Activities:**
 - o Affordable housing developments
 - o Housing-related infrastructure
 - o Sustainable transportation infrastructure (Includes active transportation and transportation infrastructure)
 - o Transportation-related amenities
 - o Program costs (including active transportation, transit ridership, or criteria air pollutant reduction programs)
- **Previously Funded Projects:** The NOFA page has a list of previously funded projects and how much they were awarded: <http://www.hcd.ca.gov/grants-funding/nofas.shtml>
- **Application Process:** The AHSC has a two-step process. Applications are invited through the issuance the Notices of Funding Availability (NOFA). Applicants must submit a concept proposal for review and evaluation. HCD will notify and invite select applicants to submit a full application based on the ranking of concept proposals and

² A single project can address both set-asides above and are not mutually exclusive.

available funds. The next AHSC application is due on February 11, 2019. For More Information, visit HCD's website here: <http://www.hcd.ca.gov/grants-funding/active-funding/ahsc.shtml>

- **Contact Information:** Phone: (916) 263-2771, email: ahsc@hcd.ca.gov

Urban Greening Grant Program

Administered by the Strategic Growth Council, the Urban Greening Grant Program funds projects that transform the built environment into places that are more sustainable, enjoyable, and effective in creating healthy and vibrant communities by establishing and enhancing parks and open space, using natural solutions to improving air and water quality and reducing energy consumption, and creating more walkable and bikeable communities. Grants are awarded on a competitive basis. The program emphasizes and gives priority to projects that are proposed by and benefit the State's disadvantaged communities. All projects are required to show a net GHG benefit and provide multiple other benefits. To quantify GHG emission reductions, projects must include at least one of the following project activities –

1. Sequester and store carbon by planting trees
2. Reduce building energy use from strategically planting trees to shade buildings
3. Reduce commute, non-recreational and recreational vehicle miles travelled by constructing bicycle paths, bicycle lanes, or pedestrian facilities

The Legislature recently approved \$80 million for this program from the Greenhouse Gas Reduction Fund. In January 2018, \$24.7 million dollars was allocated for the Round 2 Call for Projects. There is no minimum or maximum project size, and no match is required, although having a match makes an application more competitive. In previous rounds, typical project grants ranged from \$75,000 to \$1 million.

- **Eligible Applicants:** Public agencies, special districts, JPA's and nonprofit organizations. The grant awards must be used for the preparation, adoption and implementation of an urban greening project that provides multiple benefits.

- **Previously Funded Trail Projects:**
 - o Refurbishing and creating four miles of trails that link schools, neighborhoods, and parks, San Diego, CA
 - o Creating a ¾ mile bike and pedestrian path that connects low-income neighborhoods to a Metro Station, Burbank, CA
 - o Preparing a plan that links greenway corridors, San Pedro, CA
- **Application Process:** The most recent deadline for the Round 2 Call for Projects was April 11, 2018. Guidelines and link to the application can be found here:
<http://resources.ca.gov/grants/wp-content/uploads/2018/01/Urban-Greening-Guidelines-Round-Two.pdf>
- **Contact Information:** For general application process questions, contact the California Natural Resources Agency at (916) 653-2812 or urbangreening@resources.ca.gov

Environmental Enhancement and Mitigation Program (EEMP)

The Environmental Enhancement and Mitigation Program, managed by the Natural Resources Agency, funds projects that reduce environmental impacts of modified or new public transportation facilities such as streets, highways, park and ride facilities, or transit stations. The three categories of projects that are eligible for funding are urban forestry projects, resource lands, and mitigation projects beyond the scope of the lead agency. Although a separate trail category has been removed, trail improvement projects are still eligible for funding if they are combined with an urban forestry or resource lands project. All projects must be directly or indirectly related to offsetting environmental damage and should provide multiple benefits that reduce impacts of climate change. In 2013, the funding level was reduced from \$10 million to \$7 million annually. Forty percent of project funding is allocated projects in northern California, and 60 percent is allocated to projects in southern California. Individual project grants do not exceed \$350,000.

- **Eligible Applicants:** Nonprofit organizations and local, state, and federal agencies. Joint projects between multiple agencies are accepted only if one agency leads.

- **Previously Funded Trail Projects:**
 - o Homewood Bike Trail Project, Tahoe City, CA
 - o Knickerbocker Channel Multiuse Trail, Big Bear Lake, CA
 - o Lacks Creek Recreational Trail System, Humboldt County, CA
 - o Additional examples of past awards can be found here:
<http://resources.ca.gov/grants/past-awards/>
- **Application Process:** Applications must be submitted to the office of the California Natural Resources Agency. EEMP is an annual program with the next solicitation expected in April of 2019. For more information, including future grant cycles, check here: <http://resources.ca.gov/grants/>.
- **Contact Information:** Phone: (916) 653-2812, email: eemcoordinator@resources.ca.gov

Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program funds construction projects that reduce traffic fatalities and serious injuries on public roads or public bicycle and pedestrian paths or trails. Eligible projects must identify a specific safety problem that will be corrected. A minimum of 90% of the project cost must be safety-related construction items and a maximum of 10% of the project cost can be used for non-safety construction items, such as landscaping. The maximum for individual project grants is \$1.5 million and the minimum is \$100,000. Projects are evaluated based on the benefit/cost (B/C) ratio and the projects with the highest B/C ratio are selected for funding. Proposed projects first go through statewide project selection, which allocates 70%-80% of HSIP funds. Projects that are not selected then go through district project selection, which allocates the remaining 20%-30% of HSIP funds. High Risk Rural Road Projects have a lower statewide B/C ratio cutoff.

- **Eligible applicants:** City, county, or tribal government federally recognized with the State of California.
- **Previously Funded Trail Projects:**
 - o Installed guardrail along various sections of Silverado Trail, Napa County, CA

- o Widened shoulder and upgraded drainage along Old Oregon Trail, Redding, CA
- o Installed a concrete abutment on a grade separated crossing on the Clovis Old Town Trail, Clovis, CA
- **Application Process:** Calls for projects are generally made every 1-2 years. Applications must be submitted to the respective Caltrans District Local Assistance Office and directed to the attention of the District Local Assistance Engineer. The most recent application submittal deadline was Friday, August 31, 2018. The HSIP Cycle 10 Call for Projects has not been announced yet. For more information, click here: http://www.dot.ca.gov/hq/LocalPrograms/HSIP/apply_now.htm
- **Contact Information:** a directory of Caltrans District Local Assistance Engineers (DLAE) can be found here: <http://www.dot.ca.gov/hq/LocalPrograms/dlae.htm>.

Congestion Mitigation and Air Quality (CMAQ) Program

The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to the attainment or maintenance of the National Ambient Air Quality Standards for ozone, carbon monoxide, and particulate matter. The CMAQ program has been reauthorized several times under federal transportation acts - most recently in 2015 through the Fixing America's Surface Transportation Act (FAST Act). The FAST Act provides approximately \$455 million of CMAQ funds annually to California. These funds are distributed to metropolitan planning organizations and regional transportation planning agencies in federally designated air quality nonattainment and maintenance areas within the state.

The Sacramento Area Council of Governments (SACOG) conducts funding rounds to allocate funds to transportation projects based on available apportionments of regional Congestion Mitigation and Air Quality (CMAQ). The funds get distributed through individual funding programs that together make up a funding round. The 2018 Funding Round consists of the Regional Program, Community Design, Regional ATP, Next Generation Transportation Demand Management (TDM), and Green Region programs.

- **Previously Funded Programs:** No information available

- **Application Process:** Project applications are solicited from public agencies and their partners located in the SACOG region
- **Contact Information:** Additional information can be found here:
<https://www.sacog.org/regional-funding-programs>

Regional Surface Transportation Program (RSTP)

California State Statute established the Regional Surface Transportation Program (RSTP) to leverage funds from the Surface Transportation Block Grant Program (STBGP), part of the federal Fixing America's Surface Transportation (FAST) Act. RSTP allows flexibility in state and local transportation decisions, providing flexible funding to address local transportation needs. In the most recent round of funding, California received \$320 million in grant funding through this program. The Placer County Transportation Planning Agency (PCTPA) administers this funding source within Placer County.

- **Eligible Applicants:** Cities, counties, and transit agencies
- **Previously Funded Trail Projects:** Trail projects funded by RSTP in the SACOG region include:
 - o Folsom/Placerville Rail Trail, Folsom, CA
 - o Clarksburg Branch Line Trail Extension, West Sacramento, CA
 - o Sprocket Bikeway Improvement, UC Davis, Davis, CA
- **Application Process:** Funds are distributed through individual funding programs (including RSTP) that together make up a funding round.
- **Contact Information:** For more information about the RSTP funding distribution, contact Lilibeth Green, in Caltrans' Office of Federal Transportation Management Program (OFTMP), phone: (916) 654-3521, email: lilibeth.green@dot.ca.gov.

State Transportation Improvement Program (STIP)

The STIP is a five-year capital improvement program for state highway, intercity rail, and regional highway and transit improvements. State law requires that it be updated biennially. The STIP is funded from the State Highway Account (SHA), the primary funds originating from the state gasoline tax and federal (primarily the Transportation Investment Fund) funds. The program provides funding for capital acquisition and construction of state highways and freeways, carpool lanes, local roads, public transit, pedestrian and bike facilities, grade separations, transportation demand management, sound walls, and safety projects.

- **Application Process:** To get a project included for funding in the RTIP, local agencies should work with their congestion management agency. For more information, visit the Caltrans website: <http://www.dot.ca.gov/hq/LocalPrograms/STIP.htm> or the CTC website: <http://www.catc.ca.gov/programs/stip/>.
- **Previous Funded Trail Projects:**
 - o Humboldt Bay Trail (Eureka to Bracut Segment), Humboldt County, CA
 - o Eureka Waterfront and Coastal Trail, Eureka, CA
 - o Antelope Run Bike/Ped Path, Tehachapi, CA
 - o Laguna Creek Trail - North Camden Spur, Elk Grove, CA
 - o Additional examples of past awards can be found here:
<http://www.catc.ca.gov/programs/stip/2016-stip/2016-stip-staff-recommendations.pdf>
- **Contact Information:** Teresa Favila, Associate Deputy Director, California Transportation Commission, phone: (916) 653-2064, email: teresa.favila@catc.ca.gov.

Land and Water Conservation Fund (LWCF)

The Land and Water Conservation Fund provides grants for acquiring and developing public outdoor recreation areas and facilities, with trails being one of the priority development projects. The National Parks Service allocates LWCF grants to state agencies and, in California, the Office of Grants and Local Services within the California Department of Parks and Recreation

allocates LWCF grants to local agencies. In 2018, the Outdoor Recreational Legacy Program (ORLP) allocated \$13.3 million for the program. During each funding cycle, each state may nominate up to three projects requesting \$250,000 to \$750,000 per project application. Applicants must provide a grant request range for the highest desired and lowest acceptable amount of funding the project requires. Project planning costs incurred up to three years before the application is submitted are eligible for reimbursement. Land that is acquired or developed through LWCF is placed under federal protection to be preserved in perpetuity for public outdoor recreational use.

- **Eligible Applicants:** Cities, counties, and districts that are authorized to acquire, develop, operate, and maintain park and recreation facilities.
- **Previously Funded Trail Projects:**
 - o Oasis Community Park, Oasis, CA (includes multiuse trail)
 - o Civic Center Park, Elk Grove, CA (includes multiuse trail)
 - o Previous projects include construction of multi-use bike trails in San Francisco and a walking trail loop in Farmersville. Additional project examples can be found here: https://www.parks.ca.gov/?page_id=21360.
- **Application Process:** The 2018 deadline for the ORLP was July 6, 2018. The next competitive cycle will occur in 2020 at the earliest. For updates, consult the OGALS website: http://www.parks.ca.gov/?page_id=1008.
- **Contact Information:** To contact your local county/city project officer, consult this page: https://www.parks.ca.gov/pages/1008/files/PO_Contacts_City_County_2.9.2016.pdf

Habitat Conservation Fund (HCF)

The Habitat Conservation Fund (HCF), authorized through the California Wildlife Protection Act in 1990, provides grants to programs that bring urban residents into parks, and to trail construction projects that protect wildlife corridors. Funds can be used either for site acquisition or enhancement, restoration, and development, not for both. The California Department of Parks and Recreation allocates \$2 million annually through the Office of Grants and Local Services

(OGALS). There are no set minimum and maximum grant amounts, but there is a 50% required match which cannot come from other state funding sources.³

- **Eligible Applicants:** Cities, counties, and districts
- **Previously Funded Trail Projects:** Projects recommended for 2018 funding cycle include:
 - o Lake Silveira Wildlife Trail, Morgan Hill, CA
 - o Austin Waterfront Park Trail, Clearlake, CA
 - o Harbor Point Park Trail Extension, Dana Point, CA
 - o Additional project examples can be found here:
https://www.parks.ca.gov/?page_id=21361.
- **Application Process:** The application deadline for 2018 was October 1, 2018. Grant cycles occur annually. Applications must be sent to the Office of Grants and Local Services.
- **Contact information:** Barbara Baker, phone: (916) 651-7743, email:
Barbara.Baker@parks.ca.gov.

Wildlife Conservation Board Public Access Program

The Public Access Program, a Wildlife Conservation Board program established by the Wildlife Conservation Law of 1947, funds projects that improve public access to hunting, fishing or other wildlife-oriented recreation, including trails for hiking and bird watching. Applicants must demonstrate that projects address an existing wildlife-oriented public access need in the area and demonstrate an ability to manage and maintain improvements for 25 years. The Wildlife Conservation Board allocates approximately \$1 million annually. Projects with 50% match are preferred.⁴

³ https://www.parks.ca.gov/?page_id=21361

⁴ <https://wcb.ca.gov/Programs/Public-Access>

- **Eligible Applicants:** Federal, state agencies, Cities, counties, special districts, and nonprofit organizations and corporations that manage and operate wildlife oriented public access properties or programs.
- **Previously Funded Trail Projects:**
 - o Public access to Cosumnes River Reserve, Sacramento County, CA
 - o Public access to Rio de Los Angeles State Park, Los Angeles County, CA
 - o Replacement of bridge at Battle Creek Wildlife Area, Shasta/Tehama County, CA
- **Application Process:** Application cycles occur annually. Prior to submitting an application, prospective applicants must discuss their projects with Wildlife Conservation Board staff, who will determine whether or not an application should be submitted and what project features need further development. Pre-applications are typically due in early summer, full applications are typically due in late summer.
- **Contact Information:** Sadie Smith, Public Access Program Manager, Wildlife Conservation Board, phone: 916-445-1113, email: sarah.smith@wildlife.ca.gov; Peter Perrine, Assistant Executive Director, Wildlife Conservation Board, phone: (916) 445-1099, email: peter.perrine@wildlife.ca.gov

Caltrans Sustainable Planning Grants⁵

Senate Bill 1, The Road Repair and Accountability Act of 2017 (SB 1), provides \$31 million for the Sustainable Communities and Climate Change Adaption Planning Grants. Funds can be used for a wide range of transportation planning purposes that address local and regional transportation needs, and implementation of these grants should ultimately lead to adoption of transportation improvements.

During the Fiscal Year (FY) 2018-19 Caltrans Transportation Planning Grant awards, a statewide total of 99 transportation planning projects were selected for grant awards, totaling

⁵ For planning purposes only

approximately \$29 million. In addition, metropolitan planning organizations will receive \$12.5 million in Sustainable Communities Formula grants to further their Regional Transportation Plan/Sustainable Communities Strategy.

- **Previously Funded Trail Projects:**
 - o Dracaea Avenue Neighborhood Greenway Corridor Study, Moreno Valley, CA
 - o Planning for Future Coastal Rail Trail Segments in an Integrated Transportation Network, Encinitas, CA
 - o Brea Creek Trail Gap Closure Feasibility Study, Buena Park, CA
 - o A complete list can be found here: http://www.dot.ca.gov/hq/tpp/grant_files/FY_18-19/2.FY18-19_SC_AwardList.pdf
- **Application Process:** the application deadline for the 2019-2020 cycle is November 30th, 2018. The 2019-2020 application guide can be found here: http://www.dot.ca.gov/hq/tpp/grant_files/FY_19-20/03_Final_5OCT18_STPGrantGuideFY2019-20.pdf.
- **Contact Information:** Priscilla Martinez-Velez, Senior Transportation Planner, Grant Management Office of Regional Planning, (916) 651-8196, priscilla.martinez-velez@dot.ca.gov.

Office of Traffic Safety – Pedestrian and Bicycle Safety Program

The Office of Traffic Safety manages a program to increase awareness of traffic rules, rights and responsibilities among various age groups, and to ensure that drivers of motor vehicles understand their need to share the road with pedestrians and bicyclists. These programs are developed to be attractive and interactive in an effort to truly impact students. At the elementary school level, parents and teachers are drawn into the programs as active role models and mentors in traffic safety. Grantees conduct traffic safety rodeos and presentations in an effort to build students' skills and demonstrate proper practical application of those skills. To boost compliance with the law and decrease injuries, safety helmets are properly fitted and distributed to children in need for use with bicycles, scooters, skateboards, and skates. There is a special emphasis on programs designed exclusively for the hard-to-reach population at the middle and

high school levels. Additional outreach endeavors include programs targeting the senior population along with a multicultural approach to address safer driving and walking behaviors.

The goals of the Pedestrian and Bicycle Safety Program are:

- o To reduce the total number of pedestrians killed
 - o To reduce the total number of pedestrians injured
 - o To reduce the total number of bicyclists killed in traffic related collisions
 - o To reduce the total number of bicyclists injured in traffic related collisions
 - o To increase bicycle helmet compliance for children aged 5 to 18
- **Previously Funded Trail Projects:** Unknown
- **Eligible Applicants:** Unknown
- **Application Process:** The California Office of Traffic Safety will host several meetings to discuss the application process for the Federal Fiscal Year 2020. These meetings will be held statewide starting in December 2019. Please check the website for updates for time and location:
https://www.ots.ca.gov/Grants/Pedestrian_and_Bicycle_Safety.asp.
- **Contact Information:** Phone: (916) 509-3030, email: ContactOTS@ots.ca.gov

REGIONAL AND LOCAL FUNDING SOURCES

Transportation Demand Management Mini-Grant Program

The Sacramento Area Council of Governments (SACOG) is soliciting applications for a pilot transportation demand management (TDM) mini-grant program. This request for grant applications (RGA) describes the eligibility requirements for the program, the project schedule, the grant application evaluation process, the minimum information that must be included in the application, and a sample grant agreement. A total of \$60,000 in funding is available through the TDM mini-grant program in two phases (\$30,000 for each phase) with applications considered on a rolling basis until all funds for that phase have been awarded. The first phase was open for applications until June 30, 2018. The second phase opened in July, with applications accepted

through December 31, 2018 if funds are still available. SACOG will award mini-grants of up to \$3,000 per project in support of small events and non-infrastructure programs or projects to reduce single occupancy vehicle trips and miles by encouraging biking, walking, riding transit, carpooling, vanpooling and teleworking as options for reducing car trips. Projects that focus on testing a new strategy or tactic for changing travel behavior will be prioritized.

- **Previously Funded Trail Projects:** None
- **Eligible Applicants:** Applicants must be located in El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties. Local governments and special districts, nonprofit organizations (e.g. transportation management organizations, community-based organizations business improvement districts, main street associations, neighborhood associations, chambers of commerce, etc.), community colleges, colleges, and universities K-12 public education institutions.
- **Application Process:** Completed application must be submitted to SACOG by December 31, 2018 at 5 p.m. for the second phase. Applications can be found online at: <https://www.sacog.org/post/tdm-mini-grant-program>. Confirm available funding before completing an application. A full schedule of the Regional ATP milestones can be found here: <https://www.sacog.org/pod/state-and-regional-atp-milestones>. <https://www.sacog.org/post/tdm-mini-grant-program>. Confirm available funding before completing an application. A full schedule of the Regional ATP milestones can be found here: .
- **Contact Information:** All questions relating to this request for applications may be directed to Adrienne Moretz, Sacramento Area Council of Governments, phone: (916) 319-5189, email: amoretz@sacog.org.

TDM Traditional Grant

The purpose of SACOG's Transportation Demand Management (TDM) program is to encourage people to drive alone less often by developing and implementing TDM programs, policies, services and/or information that promote bicycling, walking, riding transit, carpooling, vanpooling, and/or teleworking. The Traditional Grants are intended to provide funding for

projects, programs, and events that have been tried, tested, and proven to be effective in changing travel behavior.

A total of \$250,000 in funding is available beginning June 25, 2018 through the TDM Traditional Grant program. SACOG will award TDM Traditional Grants of no less than \$20,000 per project and no more than \$100,000 per project in support of small non-infrastructure projects, programs, or events to reduce single occupancy vehicle trips and miles by encouraging biking, walking, riding transit, carpooling, vanpooling and teleworking as options for reducing car trips. Projects that focus on testing a new strategy or tactic for changing travel behavior will receive a small number of additional points. However, the majority of the weighting is based on the potential of the project to reduce trips and/or miles and having a plan for measuring the behavior change resulting from the project.

- **Eligible Applicants:** Projects must take place in El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties. For-profit companies (e.g., contractors, suppliers, or consultants) may be partners in an application, but the lead applicant must be one of the eligible entities listed below. Partnerships are strongly encouraged. Awarded applicants will be responsible for subcontracts with project partners. Eligible applicants include:
 - o Local governments and special districts
 - o Nonprofit organizations (e.g., transportation management organizations, community-based organizations, business improvement districts, main street associations, neighborhood associations, chambers of commerce, etc.)
 - o Community colleges, colleges, and universities K-12 public education institutions
- **Previously Funded Projects:** Unknown
- **Application Process:** The application is available online and the 2018 competition had a deadline of July 25, 2018 at 5 p.m. The Project Review Panel will assist with evaluating, scoring, and recommending projects for award. The list of recommended projects will be taken to SACOG staff, for a recommendation to the SACOG Board of Directors; the Board will have final approval of the awards. The 2018 TDM Grant

Guidelines (including evaluation rubric) are found here: <https://sacog.forms.fm/tdm-traditional-grants/forms/5126>.

- **Contact Information:** Adrienne Moretz, Sacramento Area Council of Governments, 1415 L Street, Suite 300, Sacramento, CA, 95814, amoretz@sacog.org, (916) 319-5189

County Traffic Impact Fee Program

Any land development projects in Placer County pay a traffic impact fee to contribute to the future roadway system. The County participates in several local and regional traffic fee impact programs. Program fees are based on the anticipated impact that development will have on the transportation system. Improvements to local roadways rely heavily on this funding source.

- **Eligible Applicants:** Unknown
- **Previously Funded Projects:**
 - o Dollar Creek Shared Use Trail
 - o Snow Creek Restoration Project
 - o A complete list of projects can be found here:
<https://www.placer.ca.gov/departments/works/trafficfee>
- **Application Process:** Unknown
- **Contact Information:** Amber Conboy, Placer County Public Works, phone: 530-745-7512, email: aconboy@placer.ca.gov.

Regional Active Transportation Program (ATP)

The ATP, described in the “Federal and State sources” section earlier in this document, is a funding program that encourages increased use of active modes of transportation. Part of the funding source is distributed through a competitive statewide program, and part is distributed competitively by large metropolitan planning organizations (MPOs), including SACOG. The California Transportation Commission (CTC) program funds across four years. The CTC approved a fund estimate on May 16, 2018, which confirmed the following funding levels for

Cycle 4: \$440 million for the State ATP and \$11.6 million for SACOG's Six-County Regional ATP.

- **Eligible Applicants:** These are the same as in the statewide share: Applicants and/or implementing agencies must be able to comply with all the federal and state laws, regulations, policies and procedures. The following entities in California are eligible to apply for Active Transportation Program funds: local, regional or state agencies, Caltrans, transit agencies, natural resources of public land agencies, public schools or school districts, tribal governments, private non-profit tax-exempt organizations, and any other entity with responsibility for oversight of transportation or recreational trails that the Commission determines to be eligible.
- **Previously Funded Trail Projects:**
 - o Broadway Complete Streets Project, Sacramento, CA
 - o Northwood School and Transit Access Improvements, Sacramento, CA
 - o Electric Greenway, Citrus Heights, CA
 - o Mariposa Safe Routes to School Project, Phase IV, Citrus Heights, CA
- **Application Process:** 2018 applications for both the statewide and regional ATP were due on July 31, 2018. Projects that are not funded in the statewide share then compete in the regional share. Visit this site for more details:
https://www.sacog.org/sites/main/files/file-attachments/2019_atp_faqs_4.pdf
family.abrahams@dot.ca.gov.
- **Contact Information:** Emily Abrahams heads the Active Transportation Resource Center, which can provide technical assistance during the application process (phone: 916-653-6920, email: emily.abrahams@dot.ca.gov). Additional points of contact include: Jerry Barton, Senior Transportation Planner, EDCTC, phone: 530.642.5267, email: jbarton@edctc.org; Aaron Hoyt, Senior Planner, PCTPA, phone: 530.823.4032, email: ahoyt@pctpa.net; Victoria Cacciatore, Associate Analyst, SACOG, phone: 916.340.6214, email: vcacciatore@sacog.org.

Transportation Development Act Article 3 (TDA)

TDA 3 allows counties to implement a quarter-cent sales tax to finance a wide variety of transportation projects, including transit operation, bus and rail projects, special transit services for disabled riders, pedestrian and bicycle facilities, and transportation planning. TDA 3 provides funding annually for bicycle and pedestrian projects. This funding source provides Placer County with approximately \$450,000 annually.

- **Eligible Applicants:** Under the system currently used by The Placer County Transportation Planning Agency (PCTPA), all cities and the County are allocated Local Transportation Fund (LTF) money based on population. In addition, PCTPA and CTSA are apportioned funds. The City of Roseville is an eligible city.
- **Previously Funded Trail Projects:** Unknown
- **Application Process:** Eligible parties must submit a claim to receive funds. The key parts of the claim are the amount of funding requested and the purpose for which the funds will be used. PCTPA requires this information to ensure that jurisdictions are in compliance with the requirements of the Act. Appendix A of the Guidelines linked below shows the forms that must be completed and submitted to obtain TDA funds:
http://pctpa.net/library/tda/tda_guidelines_Oct2016_Final.pdf
- **Contact Info:** Questions should be directed to Placer County Transportation Planning Agency, phone: 530-823-4030, email: pctpa@pctpa.net

Safe Routes to School National Partnership Launch Program Technical Assistance⁶

The Safe Routes to School National Partnership helps ensure that Safe Routes to School funds succeed in California; they also work to leverage additional resources, and address and improve regional transportation policies. Similar to the Rails-to-Trails Conservancy, they provide

⁶ Technical assistance only

technical assistance in the form of consulting, coaching, workshops, webinars, toolkits and trainings to communities planning Safe Routes to School projects and programs.⁷

- **Eligible Applicants:** Selected California communities. In general, they program will provide TA to communities who need help. However, in the previous ATP Cycle 4, program staff could only provide TA to disadvantaged communities as defined by the grant outlines.
- **Previous Funded Projects:** Safe Routes to School Action Plans have been developed for a variety of communities throughout California. Details can be found here: <https://www.saferoutespartnership.org/safe-routes-school/local-work/safe-routes-launch/communities>
- **Application Process:** Communities interested in applying for the technical assistance for Safe Routes to School Launch Program can complete the interest form online here: https://www.saferoutespartnership.org/sites/default/files/sr_launch_intake_form_2018.pdf.
- **Contact Information:** Michelle Lieberman, Senior Technical Assistance Manager, phone: 415-637-6488, email: michelle@saferoutespartnership.org,

PRIVATE AND NON-TRADITIONAL FUNDING SOURCES

California Conservation Corps (CCC)

The CCC is not a funding source per se but is included here because they can provide trail construction services. In addition, the Active Transportation Program (described above), provides bonus points in their application process for projects that offer to use the CCC or a California Association of Local Conservation Corps (CALCC) on their project.

⁷ <https://www.saferoutespartnership.org/expert-help/safe-routes-launch>

The CCC and CALCC are programs that employ young people ages 18-24 to work on improving California's natural resources. The local corps works on projects that conserve or enhance natural resources or provide another public benefit, including construction of trails. The project site must be public land or be publicly accessible. CCC crews can be contracted on an hourly basis, an annual basis, or a per-project basis. The CCC can also be listed as a project partner in grant applications.

- **Eligible Applicants:** Non-profits and local, state and federal agencies.
- **Previous Trail Projects:** Constructed and maintained miles of trails in Six Rivers National Forest, the King Range National Conservation Area, and the Headwaters Forest Reserve
- **Application Process:** Call the local CCC center and discuss the project and needs with a project coordinator to determine if CCC crews can be of assistance and in what capacity.
- **Contact information:** Wei Hsieh, California Conservation Corps, phone: 916-341-3154, email: atp@ccc.ca.gov; Dominique Lofton, California Association of Local Conservation Corps, phone: 916-426-9170, email: info@calocalcorps.org, inquiry@atpcommunitycorps.org.

Benefit Assessments

Local governments, special districts, and park and recreation districts may create a benefit assessment district as a revenue source to pay for services and improvements in that district. Only properties that directly benefit from the services or improvements can be assessed and the assessment must be proportional to the special benefit provided to the property. Charges appear annually on property tax bills.

- **Eligible Applicants:** N/A
- **Previous Trail Projects:** N/A
- **Implementation Process:** Prior to creating a new assessment, the local agency must prepare a report outlining the project, cost, and the benefit formula, and conduct a

public hearing to solicit feedback on the proposal. After the agency generates its report, it is then responsible for mailing property owners within the proposed district an invitation to attend a public hearing and a ballot for them to vote on the proposed district. If a majority of the ballots received support the district, the district is officially established, and the assessment will be billed on property tax bills from that year forward. Once established, an assessment may always be repealed or reduced by popular vote. Learn more about the process here:

<http://www.californiataxdata.com/pdf/benefitsassessment.pdf>.

- **Contact information:** For more information, contact California Tax Data, phone: (949) 240-1520, email: info@californiataxdata.com.

People for Bikes Community Grant Program

The People for Bikes Community Grant Program supports bicycle infrastructure projects and targeted advocacy initiatives that make it easier and safer for people of all ages and abilities to ride. The program has awarded 395 grants to non-profit and local governments in the United States since 1999 for a total of \$3.3 million.

- **Eligible Applicants:** People for Bikes accepts grant applications from non-profit organizations with a focus on bicycling, active transportation, or community development, from city or county agencies or departments, and from state or federal agencies working locally. Requests must support a specific project or program and must not include general operating costs.
- **Previously Funded Trail Projects:**
 - o John Campbell Memorial Greenway and Strongs Creek Trail Master Plan, Fortuna, CA
 - o A full list of past grants awarded can be found here:
<https://peopleforbikes.org/grants-awarded/>
- **Application Process:** People for Bikes generally holds one or two open grant cycles every year. The grant program has two parts: (1) letter of interest, and (2) full application. The letter of interest should include basic information about the

organization and contact person, and an overview of the project proposed for funding. There are two annual grant cycles: one in the spring, and one in the fall. More information can be found here: <http://www.peopleforbikes.org/pages/community-grants>

- **Contact:** Zoe Kircos, Director of Grants and Partnerships, People for Bikes, phone: 303-449-4893 x106, email: zoe@peopleforbikes.org

Special Taxes

A municipality can impose a special tax for a specific purpose, such as park and recreation or transportation and infrastructure improvements. To levy a special tax, a two-thirds voter approval is required.

- **Eligible Applicants:** N/A
- **Previously Funded Trail Projects:** N/A
- **Implementation Process:** Additional information on voter-approval requirements for local taxes can be found here: <https://lao.ca.gov/reports/2014/finance/local-taxes/voter-approval-032014.aspx>
- **Contact Information:** Brian Uhler, Principal Fiscal & Policy Analyst, Legislative Analyst's Office, State of California, phone: (916) 319-8328, email: Brian.Uhler@LAO.CA.GOV

Quimby Act

Existing California State laws that govern new residential development allow local entities to charge a monetary exaction or "fee" in connection with the approval of a project. These fees are designed to defray all or a portion of the costs necessary to provide new residents with a wide variety of public facilities. Within this framework, many agencies have the ability to assess park mitigation fees, including counties, cities, and public recreation districts that have completed the appropriate legal processes. The nexus between a development project's impact on recreation and an appropriate offsetting fee is the basis for the Placer County Park Dedication Fee program. Regulations that govern the collection and use of these funds are contained in State

law (Govt Code 66477 "Quimby Act," and 66000 – AB1600 "Mitigation Fee Act"), and have been incorporated into the Placer County Code (Section 15.34.010 "Building and Development Parks and Recreational Facilities Fees" and 16.080.100 "Subdivisions Parks and Recreation Facilities" and 17.54.1 OO(D) "Planned Developments").

The development of new residential land uses in the unincorporated areas of Placer County generates an additional need for both active and passive recreational facilities. To mitigate this impact and implement goals and objectives of the Placer County General Plan, Placer County has operated a parkland-dedication/in-lieu-fee program since 1979. Through this program, when a development project does not include the construction of amenities or the dedication of parkland, Placer County collects a park dedication fee. In some cases, a combination of parkland dedication, constructed facilities, and fees is provided. These fees are based on the estimated cost to build recreational facilities that maintain a ratio of five acres of active parkland and five acres of passive parkland per 1,000 residents. This successfully assures that new development projects pay their fair share of the significant costs to provide adequate facilities for Placer County citizens.

- **Eligible Applicants:** Placer County, local schools, special districts
- **Previously Funded Trail Projects:** Unknown
- **Application Process:** More information about the Placer County Park Dedication Fee Program can be found here:
<http://placer.ca.gov/~media/cdr/Planning/CommPlans/SheridanCP/Parks%20and%20Trails.pdf>
- **Contact Information:** Placer County Revenue Services, phone: 916-543-3900, email: revserv@placer.ca.gov

Placer County Transient Occupancy Tax

The Transient Occupancy Tax is a tax paid by Placer County visitors to help fund projects that benefit the County as a whole. The tax is levied on all short-term (thirty days or fewer) rental properties in the County, and ranges from eight to ten percent depending on the location of the

short-term rental. The property owner or management company is responsible for collecting and remitting the tax on the County's behalf. Tax revenues go toward public parks, infrastructure improvements, and historical and environmental preservation.

- **Previously Funded Trail Projects:**
 - o Dollar Creek Shared-Use Trail, Placer County, CA
 - o Northstar/Martis Valley Community Multi-Purpose Trail, Placer County, CA
- **Eligible Applicants:** Unknown
- **Application Process:** Unknown
- **Contact Information:** Placer County Revenue Services, phone: 916-543-3900, email: revserv@placer.ca.gov