



El Cerrito

TECHNICAL ADVISORY COMMITTEE MEETING NOTICE & AGENDA

Hercules

DATE & TIME: Monday, November 7, 2022 • 10:00 AM – 12:00 PM

Pinole

REMOTE ACCESS: <https://us02web.zoom.us/j/7321058840>

MEETING ID#: 732 105 8840

PASSWORD (if requested): WCCTAC2020

Remote Participation Only

Richmond

As a result of the COVID-19 public health emergency, including the County Health Officer and Governor’s directives, **there will be no physical location for the TAC Meeting.** TAC members will attend via teleconference and members of the public are invited to attend the meeting and **participate remotely.**

San Pablo

Pursuant to the Governor’s Executive Order N-29-20, TAC members: Yvetteh Ortiz, Tim Rood, Sanjay Mishra, Denee Evans, Sarah Kolarik, Rob Thompson, Nathan Landau, Jamar Stamps, and Celestine Do may be attending this meeting via teleconference, as may WCCTAC Alternate TAC Members. Any votes conducted during the teleconferencing session will be conducted by roll call.

Contra Costa
County

The public may observe and address the WCCTAC TAC in the following ways:

Phone Participation

Dial one of the following numbers, enter the participant PIN followed by # to confirm:

+1 669 900 6833

Meeting ID: 732 105 8840

Password: 066620

AC Transit

Public Comment

Members of the public may address the TAC during the initial public comment portion of the meeting or during the comment period for agenda items.

BART

Participants may use the chat function on Zoom or physically raise their hands to indicate if they wish to speak on a particular item.

WestCAT

Written Comment (accepted until the start of the meeting, unless otherwise noted on the meeting agenda). Public comments received by 5:00 p.m. on the evening before the TAC meeting date will be provided to the WCCTAC TAC and heard before TAC action. Comments may be submitted by email to creilly@wcctac.org

Comments may also be submitted via e-mail to creilly@wcctac.org at any time prior to closure of the public comment portion of the item(s) under consideration. All written comments will be included in the record.

Reading of Public Comments: WCCTAC staff will read aloud email comments received during the meeting that include the subject line "FOR THE RECORD" as well as the item number for comment, provided that the reading shall not exceed three (3) minutes, or such other time as the TAC may provide.

1. CALL TO ORDER and MEMBER ROLL CALL

Estimated Time: 9:00 AM, (5 minutes)*

2. PUBLIC COMMENT

Estimated Time: 9:05 AM, (5 minutes)*

The public is welcome to address the TAC on any item that is not listed on the agenda. Please fill out a speaker card and hand it to staff. Please limit your comments to 3 minutes. Pursuant to provisions of the Brown Act, no action may be taken on a matter unless it is listed on the agenda, or unless certain emergency or special circumstances exist. The WCCTAC TAC may direct staff to investigate and/or schedule certain matters for consideration at a future TAC meeting.

3. CONSENT CALENDAR

Estimated Time: 9:10 AM, (5 minutes)*

A. Minutes from October 13, 2022 Meeting

Recommendation: Approve as presented

Attachment: Yes

4. REGULAR AGENDA ITEMS

A. Draft Action Plan for West Contra Costa

Description: CCTA and its consultant, Placeworks, will continue seeking feedback from the TAC on the Draft West County Action Plan. They plan to bring the draft final document to the WCCTAC Board in December.

Recommendation: Provide comments.

Attachments: Yes

Presenter/Lead Staff: CCTA and its consultant, Placeworks.

Estimated Time: 9:15 AM, (95 minutes)*

5. STANDING ITEMS

A. Technical Coordinating Committee (TCC) Report

Description: TCC representatives will report on the last TCC meeting.

Recommendation: None.

Attachment: No

* Estimated time for consideration is given as a service to the public. Please be advised that an item on the agenda may be considered earlier or later than the estimated time.

Presenter/Lead Staff: WCCTAC's TCC Representatives & WCCTAC Staff

Estimated Time:* **10:50 AM** (5 minutes)

B. Staff and TAC Member Announcements

Description: TAC members or WCCTAC staff can make general comments or announcements

Recommendation: Receive update.

Attachment: No

Presenter/Lead Staff: WCCTAC Staff and TAC Members

Estimated Time:* **10:55 AM** (5 minutes)

6. ADJOURNMENT

Description / Recommendation: Adjourn to the next Special Meeting of the TAC on Monday, November 14, 2022. The next meeting of the WCCTAC Board is Friday, December 9, 2022.

Estimated Time:* **11:00 AM**

-
- In compliance with the Americans with Disabilities Act of 1990, if you need special assistance to participate in the WCCTAC TAC meeting, or if you need a copy of the agenda and/or agenda packet materials in an alternative format, please contact Valerie Jenkins at 510.210.5930 prior to the meeting.
 - If you have special transportation requirements and would like to attend the meeting, please call the phone number above at least 48 hours in advance to make arrangements.
 - Handouts provided at the meeting are available upon request and may also be viewed at WCCTAC's office.
 - Please refrain from wearing scented products to the meeting, as there may be attendees susceptible to environmental illnesses. Please also put cellular phones on silent mode during the meeting.
 - A meeting sign-in sheet will be circulated at the meeting. Sign-in is optional.

* Estimated time for consideration is given as a service to the public. Please be advised that an item on the agenda may be considered earlier or later than the estimated time.

El Cerrito
Hercules
Pinole
Richmond
San Pablo
Contra Costa County
AC Transit
BART
WestCAT

WCCTAC TAC Meeting Action Minutes

MEETING DATE: October 13, 2022

MEMBERS PRESENT: Jamar Stamps, Contra Costa County; Yvetteh Ortiz, El Cerrito; Rachel Factor, BART; Sarah Kolarik, San Pablo; Sanjay Mishra, Pinole; Nathan Landau, AC Transit; Mike Roberts, Hercules; Denee Evans, Richmond; Rob Thompson, WestCAT

GUESTS: Bill Pinkham, WCCTAC citizen representative to CCTA; Patrick Phelan, City of Richmond; Kamala Parks, BART; Dave Campbell, and Robert Prinz, Bike East Bay; Luz Gomez, Contra Costa County Health Services; Misha Kaur, Pinole and TAC alternate; Colin Clarke, Matt Kelly and John Hoang, CCTA staff and David Early, Charlie Knox, and Raul Tovar, Placeworks.

STAFF PRESENT: John Nemeth, Coire Reilly, Leah Greenblat

ACTIONS LISTED BY: WCCTAC Staff

| ITEM | ITEM/DISCUSSION | ACTION/SUMMARY |
|-----------------------------|---|---|
| 1. | Call to Order | The meeting was called to order at 9:02 AM |
| 2. | Public Comment | Dave Campbell, of Bike East Bay, shared the news that they will be hosting a webinar on how to do a pop-up bike facility on October 20. |
| 3. | Consent Calendar: A. Minutes from September 8, 2022, Meeting | Sarah Kolarik moved, and Nathan Landau seconded, to approve the Consent Calendar. The motion passed with one abstention (Parks). |
| Regular Agenda Items | | |
| 4A. | Draft West County Action Plan | Matt Kelly introduced the item and David Early made the overview presentation. Mr. Early explained that this was the fifth meeting with the TAC and reviewed the draft Plan's chapters. |

| ITEM | ITEM/DISCUSSION | ACTION/SUMMARY |
|-------------------------------|--|---|
| | | <p>The TAC, and members of the public, provided comments. Given time limitations, the TAC decided it needed to meet an additional time to review the draft Plan further. It asked WCCTAC staff to send the TAC a doodle poll to find a date, given a Veteran's Day conflict with the regularly scheduled meeting. Additionally, the TAC agreed that a subcommittee should meet consisting of staff from BART, San Pablo, Richmond and WCCTAC to discuss potential actions relating to an extension of BART.</p> |
| 4B. | <p>Richmond Parkway Environmental Justice and Regional Mobility Plan – RFP</p> | <p>Leah Greenblat, WCCTAC Staff, requested feedback on the draft Request for Proposals. TAC members asked questions and provided comments. The TAC, by consensus, recommended forwarding the draft RFP to the Board.</p> |
| <p>Standing Items:</p> | | |
| 5A. | <p>Technical Coordinating Committee Report</p> | <p>There was no TCC meeting.</p> |
| 5B. | <p>Staff and TAC Member Announcements</p> | <p>No announcements were made.</p> |
| 6. | <p>Adjournment</p> | <p>The meeting adjourned at 11:14 AM.</p> |



..... **CONNECT CONTRA COSTA**

Planning for Tomorrow's Transportation



West County Action Plan

Draft | October 2022







West County Action Plan

Draft | October 2022



Member Jurisdictions:



West County Action Plan

Acknowledgements

This Action Plan is a culmination of work between many jurisdiction and agency representatives as listed below. This list is not exhaustive of all partner agencies that assisted in formulating this plan in one form or another.¹

West Contra Costa Transportation Advisory Committee (WCCTAC)

- John Nemeth, WCCTAC
- Leah Greenblat, WCCTAC
- Coire Reilly, WCCTAC
- Joanna Pallock, WCCTAC

WCCTAC Policy Committee Members

- Chris Kelley, City of Hercules
- Dion Bailey, City of Hercules
- Norma Martinez-Rubin, City of Pinole
- Devin Murphy, City of Pinole
- Tom Butt, City of Richmond
- Jael Myrick, City of Richmond
- Eduardo Martinez, City of Richmond
- Demnlus Johnson III, City of Richmond
- Rita Xavier, City of San Pablo
- Abel Pineda, City of San Pablo
- Paul Fadelli, City of El Cerrito
- Gabe Quinto, City of El Cerrito
- John Gioia, Contra Costa County
- Federal Glover, Contra Costa County

- Jovanka Beckles, AC Transit
- H.E. Christian Peeples, AC Transit
- Lateefah Simon, BART
- Mark Foley, BART
- Maureen Powers, WestCAT
- Aleida Andrino-Chavez, WestCAT

Member Agency Representatives

- Yvetteh Ortiz, City of El Cerrito
- Melanie Mintz, City of El Cerrito
- Lori Reese-Brown, City of Richmond
- Denee Evans, City of Richmond
- Allan Panganiban, City of San Pablo
- Sanjay Mishra, City of Pinole
- Misha Kaur, City of Pinole
- Mike Roberts, City of Hercules
- Robert Reber, City of Hercules
- Jamar Stamps, Contra Costa County
- John Cunningham, Contra Costa County
- Nathan Landau, AC Transit
- Celestine Do, BART
- Ricki Wells, BART
- Rob Thompson, WestCAT

¹ This Action Plan was funded by the Contra Costa Transportation Authority, who also provided technical assistance throughout the process. Technical consultants PlaceWorks, Fehr and Peers, and DKS Associates assisted CCTA, WCCTAC, member jurisdictions, and the WCCTAC Policy Board in plan preparation.

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West County Action Plan

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Abbreviations

| | |
|------|--|
| ADA | Americans with Disabilities Act |
| BART | Bay Area Rapid Transit |
| CBPP | Countywide Bicycle and Pedestrian Plan |
| CCTA | Contra Costa Transportation Authority |
| CEQA | California Environmental Quality Act / NEPA environmental review process |
| CTP | Countywide Transportation Plan |
| EIR | Environmental Impact Report |
| EPC | Equity Priority Communities |
| EV | electric vehicle |
| GHG | greenhouse gas |
| GMP | Growth Management Program |
| GPA | General Plan amendment |
| HOV | high-occupancy vehicle |
| HOT | high-occupancy toll |
| KSI | Killed or Severely Injured |
| LOS | Level of Service |
| LSBN | Low-Stress Bike Network |
| MPH | miles per hour |
| NOC | Notice of Completion (CEQA) |
| NOP | Notice of Preparation (CEQA) |
| PBT | Pedestrian-Bicycle-Transit |
| PCI | Pavement Condition Index |
| PDA | priority development area (MTC's Plan Bay Area 2050) |
| RRS | Routes of Regional Significance |
| RTOS | Regional Transportation Objectives |
| RTPC | Regional Transportation Planning Advisory Committee |

| | |
|----------|--|
| SB | State Senate Bill |
| SOV | Single-Occupant Vehicle |
| STMP | Subregional Transportation Mitigation Program |
| TDM | Transportation Demand Management |
| TEP | Transportation Expenditure Plan, voter-approved |
| TIMS | Transportation Injury Mapping System (UC Berkeley SafeTREC program) |
| TLC | Transportation for Livable Communities(Measure J Expenditure Programs 12 and 25) |
| TRANSPAC | Central County Transportation Planning Advisory, Partnership, and Cooperation Advisory Committee |
| TSM | Transportation Systems Management |
| ULL | Urban Limit Line |
| VMT | vehicle miles traveled |
| WCCTAC | West Contra Costa Transportation Advisory Committee |
| ZEV | zero-emission vehicle |

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West County Action Plan



Chapter 1: Introduction

This document is the Action Plan covering the incorporated and unincorporated communities throughout the West County subregion of Contra Costa County, prepared in compliance with the voter-approved Measure J Growth Management Program of the Contra Costa Transportation Authority (CCTA). This chapter provides background information about CCTA, Measure J, the Growth Management Program, and this Action Plan.

The Measure J Transportation and Growth Management Program

In November 2004, Contra Costa voters approved the renewal of the original Measure C Transportation Improvement and Growth Management Program (GMP) — a half-cent sales tax to fund transportation projects and programs—with a new ballot measure called Measure J. Measure J, which began expenditure implementation in April 2009, is anticipated to generate approximately \$2 billion (in 2008 dollars) over a 25-year period through 2034.

Measure J continues Contra Costa's innovative GMP that was originally adopted with Measure C, which voters approved in 1988. The goals of the GMP are as follows:

- Ensure that new residential, business, and commercial growth pays for the facilities required to meet the demands resulting from that growth.
- Require cooperative transportation and land use planning among local jurisdictions.
- Support land use patterns in Contra Costa County that make more efficient use of the transportation system, consistent with the general plans of local jurisdictions.
- Support infill and redevelopment in existing urban and brownfield areas.

To receive its share of local street maintenance and improvement funds and to become eligible for Transportation for Livable Communities (TLC) funds, a local jurisdiction must be found to be in compliance with the GMP, which requires each jurisdiction to comply with the following activities:

- **Adopt a Growth Management Element** as part of its general plan that outlines how the jurisdiction will comply with the other requirements in this list.
- **Adopt a local and regional Development Mitigation Program** that ensures new growth, remodel, and reuse projects pay for their share of the costs associated with that growth.
- **Participate in an ongoing, cooperative, multi-jurisdictional planning process** with other jurisdictions and agencies in Contra Costa to create a balanced, safe, and efficient transportation system and to manage the impacts of growth.
- **Address housing options** and demonstrate reasonable progress in providing housing options for people of all income levels in a report on the implementation of actions outlined in the adopted housing element.
- **Develop a five-year Capital Improvement Program** outlining the capital projects needed to meet the goals of the local jurisdiction's general plan.
- **Adopt a Transportation Systems Management (TSM) Ordinance or Resolution** conforming to CCTA's model TSM Ordinance or Resolution and promotes carpools, vanpools, and park and ride lots.
- **Adopt a voter-approved Urban Limit Line (ULL)** complying with the countywide, voter-approved ULL or the local jurisdiction's voter-approved ULL.

Among these elements, preparing an Action Plan at the subregional level is included under the requirement to "Participate in an Ongoing, Cooperative, Multi-jurisdictional Planning Process." The specific requirements of this element, as defined in Measure J, are as follows:

Each jurisdiction shall participate in an ongoing process with other jurisdictions and agencies, the Regional Transportation Planning Committees (RTPCs) and the Authority to create a balanced, safe, and efficient transportation system and to manage the impacts of growth. Jurisdictions shall work with the RTPCs to:

- Identify Routes of Regional Significance (RRS) and establish Regional Transportation Objectives (RTOs) for those routes and actions associated with achieving those objectives.

- Apply the Authority’s travel demand model and technical procedures to the analysis of General Plan Amendments (GPAs) and developments exceeding specified thresholds for their effect on the regional transportation system, including on Action Plan objectives.
- Create a development mitigation program.
- Assist with development of other plans, programs, and studies to address other transportation and growth management issues.

In consultation with the RTPCs, each jurisdiction shall use the travel demand model to evaluate changes to local General Plans and the impacts of major development projects for their effects on the local and regional transportation system and the ability to achieve the RTOs established in the Action Plans.

Jurisdictions shall also participate in the Authority’s ongoing countywide transportation planning process. As part of this process, the Authority shall support countywide and subregional planning efforts, including the Action Plans for RRS, and shall maintain a travel demand model. Jurisdictions shall help maintain the Authority’s travel demand modeling system by providing information on proposed improvements to the transportation system and planned and approved development within the jurisdiction.”²

A separate Action Plan is prepared and adopted for each of the five subregions in Contra Costa. The West County subregion, which is the subject of this Action Plan, encompasses the incorporated jurisdictions of El Cerrito, Richmond, San Pablo, Pinole, and Hercules as well as unincorporated portions of western Contra Costa County.

CCTA is responsible for accepting the adopted Action Plans created in each subregion for inclusion in the Countywide Transportation Plan (CTP), and for evaluating whether each jurisdiction fully complies with the GMP.³

Action Plan Purpose

The purpose of the Action Plans is for each RTPC to work cooperatively together to establish overall goals, identify RRS, create a set of performance measures (now called “regional transportation objectives,” or RTOs), and establish a set of actions that will support achievement of the RTOs.

Action Plans are required to be prepared by the RTPC for each subregion of Contra Costa County (West; Central; East; Lamorinda; and the Tri-Valley, which includes a portion of Alameda County). CCTA is responsible for funding this effort and for coordinating and coalescing the individual Action Plans from each RTPC together to form the foundation of the CTP.

² Measure J: Contra Costa’s Transportation Sales Tax Expenditure Plan, Contra Costa Transportation Authority, July 21, 2004, pp. 24–25.

³ The Contra Costa TLC Program funds transportation enhancement projects in urban, suburban, and rural communities to support a balanced transportation system, create affordable housing, and make Contra Costa’s communities more pedestrian, bicycle, and transit friendly.

Action Plan Contents

The West County Action Plan contains the following components:

- **Introduction (Chapter 1)**, which outlines the Measure J GMP and the purpose of this document.
- **Current Conditions, Trends, and Travel Patterns (Chapter 2)**, which assesses long-range land use and population changes and their anticipated impact to the transportation system.
- **Vision, Goals, and Policies (Chapter 3)** describes the overall vision and goals of the Action Plan, and identifies the RTOs that are applied to each Regional Route of Significance.
- **Routes of Regional Significance (Chapter 4)** maps and describes the multimodal corridors known as Routes of Regional Significance in West County.
- **Transit (Chapter 5)** identifies the policies, RTOs, and Actions related to transit service.
- **Active Transportation (Chapter 6)** identifies the policies, RTOs, and Actions related to active transportation.
- **Roadways (Chapter 7)** identifies the policies, RTOs, and Actions related to roadways.
- **Safety (Chapter 8)** identifies the policies, RTOs, and Actions related to transportation safety.
- **Equity (Chapter 9)** identifies the policies, RTOs, and Actions related to transportation equity.
- **Climate Change (Chapter 10)** identifies the policies, RTOs, and Actions related to climate change and transportation.
- **Innovation and Technology (Chapter 11)** identifies the policies, RTOs, and Actions related to innovation and new technology.
- **Financial Outlook/ (Chapter 12)** includes funding and multi-jurisdictional planning information.
- **Procedures for Notification, Review, and Monitoring (Chapter 13)** includes project notification procedures and the process for general plan review.

Chapters 5 to 11 includes the RTOs for each mode or topic, and a list of actions that are needed to achieve the RTO targets and to implement other goals and policies of this Plan. A consolidated list of actions for all chapter topics in this Action Plan can be found in Appendix B.

Relationship of this Action Plan to the Countywide Transportation Plan

This update of the West County Action Plan has been prepared concurrently with and in conjunction with updates being performed to the other four subregional Action Plans and utilizes a comprehensive approach that ensures the critical components of each Action Plan are similar to one another, with variations, as needed, to address the unique traits of West County and the other subregions. All five Action Plans will inform the policies and actions that will be later adopted in the CTP.

Public Engagement for the Action Plan

Extensive public outreach was conducted with the Contra Costa County community as part of the Action Plan update process. Both in-person and on-line outreach occurred during the March and April 2022 period. Outreach events in West County included two (2) in-person pop-up events, one virtual workshop, in addition to conducting an online community survey. At each outreach event and on the online community survey, participants were asked three questions:

- What do you think transportation should look like in the future?
- What can we do to help you with your transportation needs?
- What is your bright idea for improving transportation in the County?

Of the 704 comments received during this public outreach effort, 12 percent of the responses were specific to the West County subregion, and the remainder were either general to the county as a whole or to any of the other four subregions. Feedback regarding the West County subregion focused on providing safe and adequate roadways, transit improvements, active transportation improvements, and the general safety of all modes. Comments expressed a desire for:

- Expansion of well-maintained, continuous, protected, safe, calm bicycle networks that cross cities, especially connecting to waterfront destinations and regional routes, with safe and easy freeway crossings.
- Implementation of traffic-calming measures.
- Improvements to transit access for those with mobility needs.
- Creation of dedicated bus lanes on arterial routes between Alameda County and Contra Costa County.
- Improvements to timed/coordinated service between BART, Amtrak, and various bus agencies to serve long-distance and regional travel.
- Enhanced safety, comfort, and efficiency of transit service.
- Increase frequency of BART.
- Improvements to streetlight issues throughout Richmond, replace traffic lights, and fix potholes and paving issue areas.
- Infrastructure improvements to specific roadways, including San Pablo Ave, Cutting Blvd, Central Ave, Canal Blvd, and 15th Street.



Input received from this outreach effort provided CCTA, its consultants, and West County jurisdictions additional feedback to understand community priorities for consideration in the Action Plan update and the update of the CTP.

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Definition of Terms

This Action Plan uses several terms to describe specific components of the Action Plan. These terms and their definitions are listed below.

- **Goal:** A statement that describes, in general terms, a condition or quality of service desired.
- **Policy:** A statement that guides action and overall direction. Decisions regarding investments, program development, and development approvals are based on these policies.
- **Route of Regional Significance (RRS):** RRS are roadways, transit facilities, and active transportation facilities that connect two or more subareas of Contra Costa; cross county boundaries; carry significant through traffic; and/or provide access to a regional center, a regional highway, or a transit facility. They are also routes for which entities in the subregion want to share regional responsibility with neighboring jurisdictions. Routes of Regional Significance provide vital connections that support economic and recreational activities throughout the county.
- **Regional Transportation Objective (RTO):** RTOs are specific, quantifiable objectives that describe a desired level of performance for a component of the transportation system. They were referred to as Multimodal Transportation Service Objectives (MTSOs) in the 2009 and 2017 Action Plans, but have been renamed because they cover more topics than individual modes, and because not all of them refer to service levels. An RTO consists of a “metric” and a “standard.” More information on RTOs is at the end of this chapter.
- **Metric:** The unit by which an RTO is measured, such as “level of service,” “delay index,” or “vehicle miles traveled per capita.”
- **Standard:** The level or increment of a metric that is required by an RTO. For example, the standard for level of service might be ‘D’, and the standard for vehicle miles traveled (VMT) per capita might be “20 miles per person per day.”
- **Action:** Actions are the specific programs or projects that are recommended for implementation to meet the RTOs in the Action Plan. The responsibility of implementing the actions may fall to an individual local jurisdiction, to the RTPC as a whole, to CCTA, or to another agency such as Caltrans or BART. Actions are either “projects” or “programs” (defined below).
- **Project:** Projects are actions that involve the development, structural modification, or redevelopment of infrastructure, commercial uses, industrial uses, residential uses, or other properties. Projects may include clearing or land grading, improvements to existing structures, construction activities, and other activities requiring physical construction.
- **Program:** Programs are actions that do not involve construction but instead involve education, research, funding, or other non-construction activities. Like projects, they are carried out in response to an adopted policy to achieve a specific goal or objective.

Regional Transportation Objectives

Historically, Action Plans have included MTSOs, which were quantifiable objectives that the RTPCs would use to track progress in implementing the Action Plan. In this Action Plan, the MTSOs have been rebranded as “regional transportation objectives” and now include topics based on modes and new objectives such as safety, equity, climate change, and innovation and technology.

CCTA’s Growth Management Program Implementation Guide defines the topics that must be covered in Action Plans, but also gives each RTPC significant flexibility in choosing RTOs for its Action Plan. As long as the objective is quantifiable and includes a time frame for achievement of the objective, it can be proposed for inclusion in the Action Plan. Selection of the RTOs was based in part on whether the objective could be easily measured through observation and/or forecast through use of the Countywide Travel Demand Model.

There are a total of 27 RTOs identified in this Action Plan, listed below. These RTOs are summarized in tables and described in detailed in Chapters 5 through 11. Refer to Appendix A to see topics that were considered but not recommended for RTOs.

- **Transit RTO-1: Transit Mode Share.** Increase the mode share of transit trips in the subregion.
- **Transit RTO-2: Mode Share to BART.** Increase the number of riders who access BART using means other than automobiles, including transit and active transportation.
- **Transit RTO-3: Transit Trip Time.** Optimize peak hour and peak direction travel time for transit as compared to automobile travel time for the same trip.
- **Transit RTO-4: High Quality Transit Access.** Increase the proportion of urbanized land area in the subregion served by high quality transit.
- **Transit RTO-5: Paratransit Access.** Increase the number of rides by paratransit programs.
- **Active Transportation RTO-1: Increase Active Transportation Mode Share.** Increase the mode share of bicycling and walking in the subregion.
- **Active Transportation RTO-2: Low-Stress Bike Network.** Increase the proportion of the countywide low stress bike network completed in the subregion.
- **Active Transportation RTO-3: Unprotected Trail Crossings.** Eliminate the number of locations where the low-stress bike network has an unprotected crossing of a heavily traveled vehicle route.
- **Roadways RTO-1: Freeway Delay Index.** Maintain peak-hour delay index on select freeway segments.
- **Roadways RTO-2: Freeway Buffer Index.** Maintain peak-hour freeway segment buffer index on select freeway segments.
- **Roadways RTO-3: Intersection LOS.** Maintain peak-hour LOS at selected intersections in urban areas.
- **Roadways RTO-4: Roadway Segment LOS.** Maintain peak-hour segment LOS on selected two-lane roadways outside of urban areas.
- **Safety RTO-1: KSI Collisions.** Eliminate killed or severely injured (KSI) collisions in the subregion.

- **Safety RTO-2: Active Transportation Collisions.** Eliminate collisions in the subregion that involve users of active transportation.
- **Safety RTO-3: Active Transportation Collisions Near Schools.** Eliminate active transportation collisions within 500 feet of a school.
- **Equity RTO-1: EPC Low-Stress Bike Network Completion.** Ensure that the proportion of the countywide LSBN that has been completed in the subregion is equal to or greater than the proportion completed in the subregion as a whole.
- **Equity RTO-2: Collisions in EPCs.** Ensure that the proportion of KSI and active transportation-involved collisions in EPCs in the subregion is equal to or less than the proportion of the subregion's population living in EPCs.
- **Equity RTO-3: EPC Job Access: Driving.** Ensure that the number of jobs that can be reached by EPC residents with a 30-minute drive is equal to or greater than the number of jobs that can be reached with a 30-minute drive by all residents in the subregion.
- **Equity RTO-4: EPC Job Access: Transit.** Ensure that the number of jobs that can be reached by EPC residents with a 45-minute transit trip is equal to or greater than the number of jobs that can be reached with a 45-minute transit trip by all residents in the subregion.
- **Equity RTO-5: EPC Access to High Quality Transit.** Ensure that the proportion of urbanized EPC land area in the subregion served by high-quality transit is equal to or greater than the urbanized land area served by high-quality transit in the subregion as a whole.
- **Climate Change RTO-1: SOV Mode Share.** Reduce the mode share of single-occupant vehicles in the subregion.
- **Climate Change RTO-2: Carpool Mode Share.** Increase the mode share of carpooling in the subregion.
- **Climate Change RTO-3: Vehicle Miles Traveled.** Reduce vehicle miles traveled per capita in the subregion.
- **Climate Change RTO-4: Greenhouse Gas Emissions.** Reduce transportation greenhouse gas emissions per capita in the subregion.
- **Climate Change RTO-5: Zero Emission Vehicles.** Increase ownership of zero-emission vehicles in the subregion.
- **Technology and Innovation RTO-1: Signal Interconnect Project.** Complete the project to upgrade traffic signals to regional ethernet and/or fiber optic interconnection.

West County Action Plan

Chapter 2: Current Conditions, Trends, and Travel Patterns



This chapter documents existing transportation conditions in West County. These conditions are the basis for formulation of this Action Plan and include description of baseline and projected transportation conditions for West County and the entire county. This information helps CCTA and the subregion to understand patterns in the transportation system and to make informed decisions on how to improve the system over time, as is the goal of this Action Plan.

Travel Demand Modeling

Forecasts of future population and employment growth in West County, as well as projections of future travel demand on major West County transportation facilities, are drawn from the most recent available regional Travel Demand Model maintained by the Authority. This four-step, trip-based model was most recently revalidated to a 2018 base year. The version of the CCTA model applied for this analysis accommodates a 2050 horizon year and incorporates enhanced traffic assignment procedures for freeway express lanes.

For the Action Plan update, land use inputs for the horizon year of 2050 were based on the Metropolitan Transportation Commission's (MTC) Plan Bay Area's 2050 projections for Contra Costa County and Alameda County's portion for the Tri-Valley area. The transportation network assumptions for the Baseline 2050 scenario are derived from the latest CCTA Transportation Expenditure Plan (TEP) No Build scenario, to reflect only already-programmed improvements. In addition to the TEP projects, some additional express lanes are assumed on Interstate (I-) 680, and the extension of the Bay Area Rapid Transit (BART) service to Livermore was removed.

COVID-19 Effects

The Action Plan update process began in the summer of 2021, amid the COVID-19 pandemic. Though COVID-19 cases peaked nearly two years ago, from November 2020 to February 2021, COVID-19 impacts have been consistently present since March 2020. Specifically, shelter-in-place orders implemented by the Contra Costa County Health Officer and the State of California in March 2020 changed travel behavior significantly throughout the county and beyond. Commuters who were able to work remotely began to do so, recreational trips diminished, and our roadways were empty. As the pandemic slowed and mandates shifted, travel demand returned, but it is different than it was prior to the pandemic. These shifts in travel demand are important to acknowledge in the Action Plan update due to the uncertainties that the pandemic has produced.

In September 2020, CCTA undertook a study to understand various effects on travel behavior resulting from COVID-19.⁴ This study was intended to develop near-term mitigation measures to address post-COVID-19 impacts on anticipated traffic congestion in Contra Costa County. The study looked at data from March 2020 through June 2020 and showed that vehicle traffic volumes recovered after an initial decline and that transit ridership declined and remains low. CCTA also analyzed vehicle occupancy, unemployment, remote work rates, and BART data to predict traffic changes in the county. The analysis concluded that with an expected increase in the employment rate and a decrease in remote work, traffic volumes along Contra Costa corridors during peak conditions are expected to be higher than prior to COVID-19. The region should continue to track traffic trends to figure out what types of investments could address future changes.

The 2020 CCTA COVID report found that about 35 percent of employees in Contra Costa County were working from home at the peak of the pandemic. That number is expected to decrease to 25 percent with no mitigation to maintain work-from-home, or 30 percent with mitigation. As the effects of COVID-19 linger, it is unclear if work-from-home will remain as prevalent, in part dependent on whether employers update current work-from-home policies.

Blue Ribbon Transit Recovery Task Force

The Blue Ribbon Transit Recovery Task Force is a 32-member group created to assist MTC to further understand the scale of the COVID-19 crisis and how it impacts the transit systems in the Bay Area. The task force helped develop Bay Area Transit Transformation Action Plan to reshape the region's transit system into a more connected, efficient, and user-focused mobility network across the entire Bay Area.

⁴ CCTA, Impacts of COVID-19 on the Contra Costa Transportation System, September 2020.

Despite an initial decrease in vehicle traffic in 2020, Contra Costa County traffic volumes exceeded pre-pandemic levels by 4 percent as of July 2021. However, not all of the re-emerged traffic is for work purposes, as people have spread out the times during which they drive, including midday and weekends. In addition, the total number of vehicle collisions dropped in Contra Costa County, but fatalities have increased. It's noted that the trend in increased fatalities is occurring throughout the United States and is not a phenomenon specific to Contra Costa.



CCTA's COVID-19 report shows that transit ridership experienced a serious decline, with BART, County Connection, and Tri-Delta losing high proportions of riders in the county. BART reduced service and hours from March 2020 until early 2022, including a 9:00 pm closing time for the first seven months of 2021. By February 2022, BART restored service hours to pre-COVID levels. According to BART's Monthly Ridership Report,⁵ as of July 2022, although ridership is recovering, average weekday ridership is only 32 percent of pre-COVID levels. Some bus service in the Bay Area, especially AC Transit, showed a faster recovery than rail. The

CCTA report concludes that even if the increase of people working from home is higher than pre-COVID conditions, overall congestion is likely to increase if transit ridership continues to be less than the pre-COVID levels.

One outcome of the pandemic is higher demand for bicycle and pedestrian facilities, public spaces for outdoor activities, and car-free streets. Regional residents have a newfound appreciation for the outdoors with an increase in visits to public parks. Cities across the country, including the Bay Area, have embraced car-free, or slow, streets. Berkeley, for example, closed north Telegraph Avenue to cars indefinitely in June 2022. In addition, businesses expanded parklets and patios to limit exposure to COVID-19 and have consequently changed how many public rights-of-way now operate.

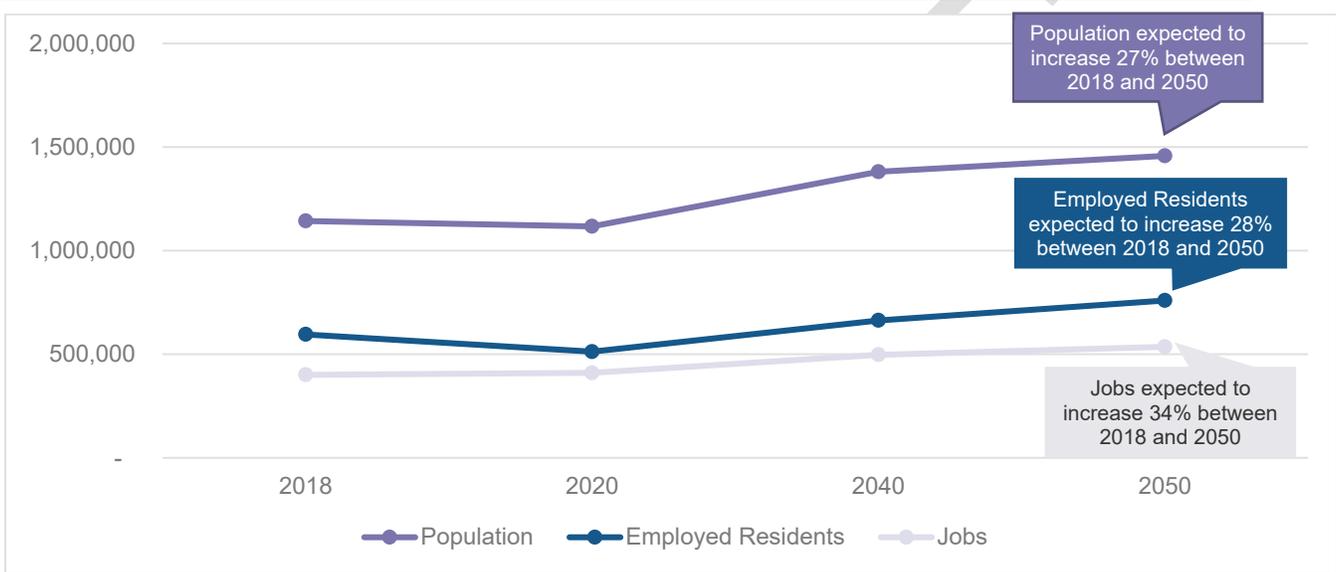
Due to the impact of COVID-19 on the transportation system, the Action Plan update process relies on pre-pandemic data for all traffic modeling in the CCTA Travel Demand Model. CCTA utilizes 2019 as the Action Plan base year, and used 2020, 2040, and 2050 population and employment data to interpolate and forecast for future years. A base year of 2018 was used because the impacts of the COVID-19 pandemic could skew analysis results due to constant fluctuations in travel behavior. While the direct impacts of the COVID-19 pandemic are not reflected in the Action Plan, CCTA hopes that the next update of the Action Plans is able to account for the "new normal" of travel behavior once a consistent behavior emerges in the coming years.

⁵ BART, Monthly Ridership Report, July 2022, <https://www.bart.gov/sites/default/files/docs/202207%20MRR.pdf>.

Population and Employment

Countywide forecasts for population, employed residents, and jobs condition are shown in Figure 2-1, which shows a downward trend of population and employed residents occurred between 2018 and 2020 due to the COVID-19 pandemic. Projecting beyond 2020, all three categories are expected to follow fairly similar growth patterns.

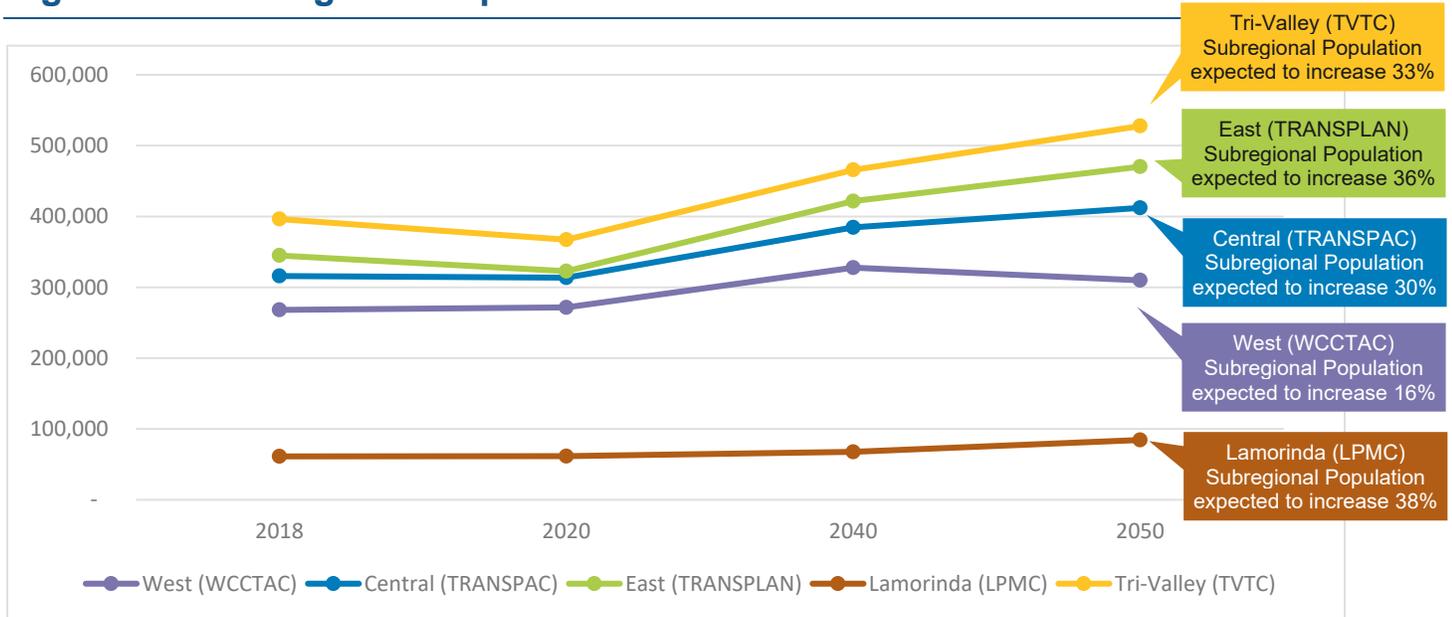
Figure 2-1: Contra Costa County Demographic Growth



The five subregional forecasts for population growth between 2018 and 2050 are shown in Figure 2-2. West County population, represented by the purple line, population is projected to grow at a fairly modest rate (16 percent between 2018 and 2040); by 2050, West County is anticipated to be home to about 309,913 people, a lower population than Central County, East County, and Tri-Valley but a much larger population than the Lamorinda area.

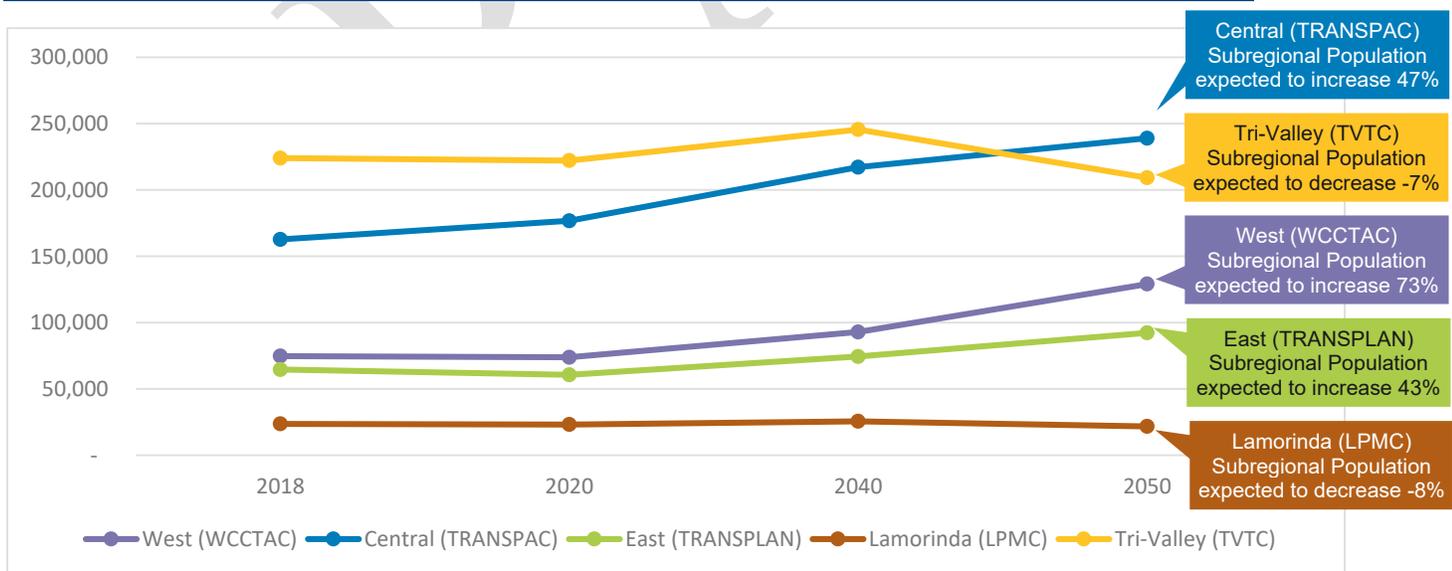


Figure 2-2: Subregional Population Growth⁶



Subregional forecasts for employment growth between 2018 and 2050 are shown in Figure 2-3. As shown in the previous graph, West County is represented by the purple line. Countywide, jobs are expected to grow faster than population, and West County is projected to experience significant employment growth of 73 percent between 2018 and 2050, more than any other subregion.

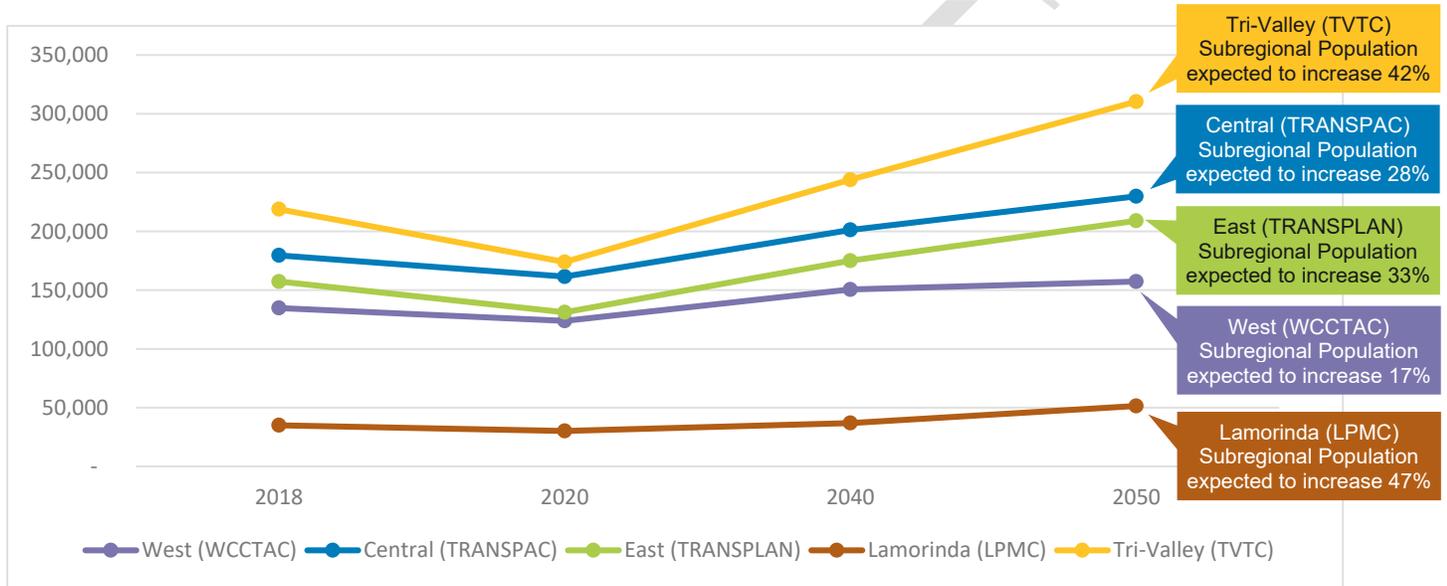
Figure 2-3: Subregional Job Growth



⁶ The projected decline in West County population is a result of a disconnect between Plan Bay Area 2050 projections and the population projections previously assumed for 2040 in the CCTA Travel Demand Model.

Subregional forecasts for employed residents are shown in Figure 2-4. Again, West County is represented by the purple line. Countywide, the percentage of employed residents is expected to grow more similar to population than to jobs, with West County projected to experience 17 percent growth of employed residents of between 2018 and 2050, the lowest of any other subregion.

Figure 2-4: Subregional Employed Residents



Commute Patterns and Travel Demand Forecasts⁷

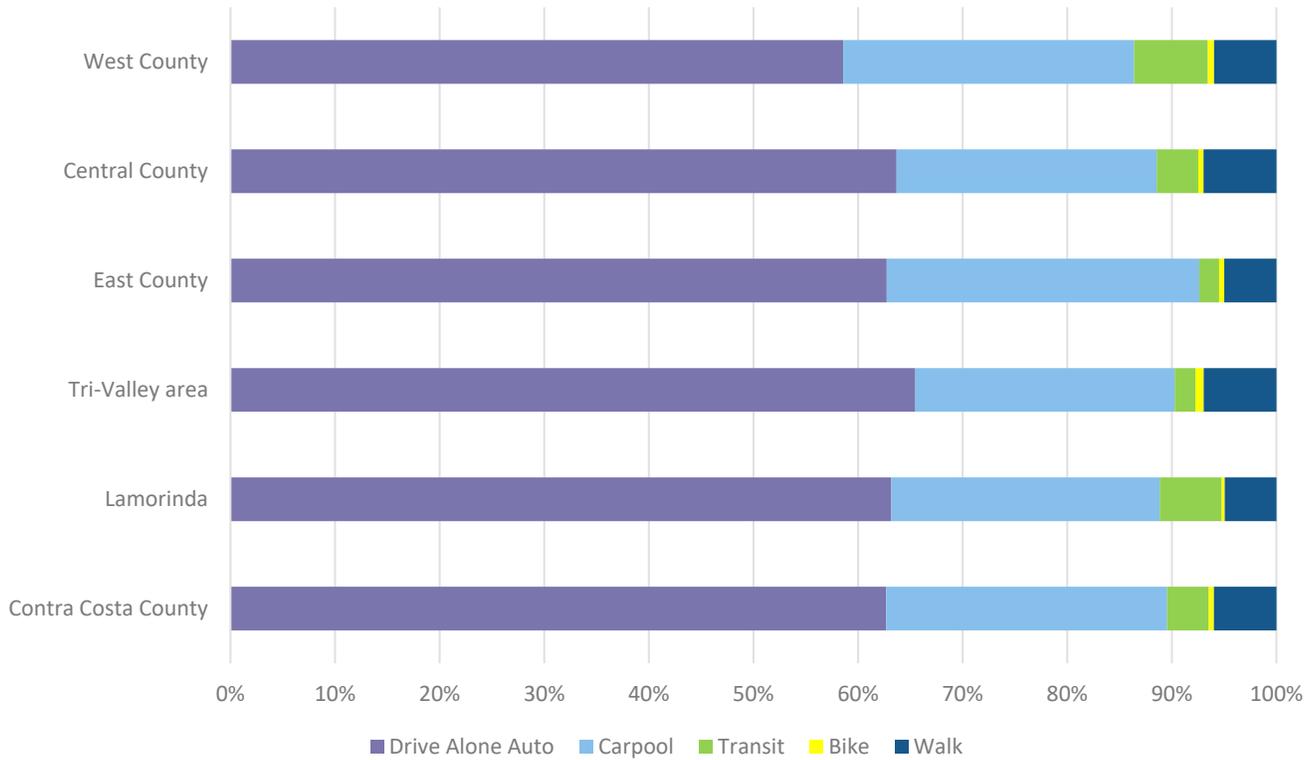
The regional Travel Demand Model was applied to generate estimates of the future traffic volumes expected on major roadways throughout the county. As with all subregions in the county, traffic volumes throughout West County are anticipated to increase each year as the local population continues to grow.

Countywide Mode Share

Each of the five CCTA subregions is geographically and socioeconomically unique. Some subregions have more dense, urban development that is quite conducive to transit and active transportation, and others are suburban or have hilly geographies that make transit and active transportation less viable. For instance, West County is relatively flatter than the Lamorinda subregion. Further, West County jurisdictions are more urban than subregions like East County. Therefore, the mode share for each form of transportation varies between subregions, as illustrated in Figure 2-5.

⁷ It should be noted that the model results shown in this chapter are intended to give an idea of the order-of-magnitude changes in traffic volumes anticipated across the region; much more detailed and refined studies would be undertaken for any specific project.

Figure 2-5: Mode Share of All Transit Trips by Subregion (2019)



Modeled Mode Share

Understanding mode share and how to shift it is key to changing the transit system and the active transportation system, and to curbing the transportation system’s impact on climate change. The modeled and forecast mode shares are derived from CCTA's trip-based travel demand model. It is important to note that this model does not account for shifts in travel patterns that emerged in response to the COVID pandemic and that may carry forward into the future. Therefore, the forecast results do not reflect increased rates of remote work that have occurred for some jobs.⁸ Also note that the mode shares for the active transportation modes only reflect trips that are made primarily by biking or walking. Walking or biking to reach transit stops is not counted as a separate active transportation trip but only as a transit trip.

⁸ Jobs, such as service jobs or healthcare, can only occur in person. However, many online-based jobs that are typically considered to be “white collar” jobs are able to be conducted remotely. As mentioned in the COVID-19 Effects section, only some of the online-based jobs that experienced a shift to remote work during the Pandemic will remain that way. A future update of the West County Action Plan can better understand the rate of post-pandemic remote work and the impact it has on mode share.

Reported Current Commute Mode Share

The American Community Survey estimates, published by the Census Bureau, report the number of work trips by mode. An estimated mode share based on this data is shown in Table 2-1, which shows the commute mode share for Contra Costa County and the West County subregion. As shown in Table 2-1, in 2019, about 79 percent of the work trips in Contra Costa County are made by automobile, either driving alone or by carpool, compared with 78 percent in the West County subregion, which shows a higher share by carpooling.

Table 2-1: Means of Transportation to Work in Contra Costa County and the West County Subregion (2019)

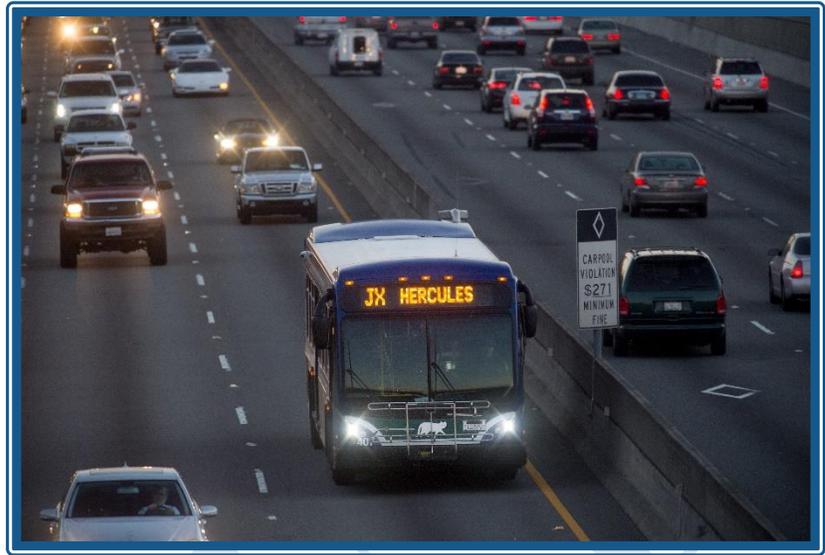
| Mode | Contra Costa County | | | West County Subregion | | |
|--|---------------------|-----------------|-----------------------|-----------------------|-----------------|-----------------------|
| | Estimate | Margin of Error | Percentage Mode Share | Estimate | Margin of Error | Percentage Mode Share |
| Total: | 544,376 | ±3,447 | | 133,436 | ±3,074 | |
| Car, truck, or van - drove alone | 367,467 | ±3,409 | 68% | 85,367 | ± 2,435 | 64% |
| Car, truck, or van - carpoled | 62,385 | ±2,486 | 11% | 18,606 | ±1,123 | 14% |
| Public transportation (excluding taxicab) | 59,068 | ±1,981 | 11% | 17,726 | ± 1,011 | 13% |
| Taxicab, motorcycle, bicycle, walked, or other means | 19,344 | ±2,462 | 4% | 4,556 | ± 641 | 3% |
| Worked from home | 36,112 | ±1,310 | 7% | 7,179 | ±607 | 5% |

Source: American Community Survey 5-Year Estimates, Table B08301.

Modeled Commute Mode Share

Mode shares for home-to-work trip purpose have been calculated based on the residence location (Table 2-2) or the work location (Table 2-3). These tables report mode shares for both West County and Contra Costa County as a whole. The modeling results show that most work trips by West County residents are made by automobile, specifically driving alone. West County's transit mode share for work trips is higher than the county's, reflecting the availability of BART service. Active transportation trips account for a very small portion of commute trips made by West County residents. (Note that the bicycle mode share only reflects trips made by bicycle from beginning to end and does not count access trips to and from transit stops.)

The mode shares for West County commuters are projected to remain similar to existing, with modest decreases in the drive-alone auto and transit mode shares and increases in carpool, bike, and walk shares. These shifts reflect the currently planned levels of transit service (e.g., BART to San Jose by 2040) and the projected population and employment distribution of 2050.



Commuters to jobs in West County predominantly use the automobile modes to get to work, especially driving alone. Transit and active transportation account for very small shares of this market. Commute mode shares are predicted to remain much the same by 2050, with a moderate increase in the transit mode share.

Table 2-2: Modeled Home-to-Work Mode Share: West County Residents

| | Contra Costa County | | West County | |
|------------------|---------------------|---------------|-------------|---------------|
| | 2019 | 2050 Baseline | 2019 | 2050 Baseline |
| Drive Alone Auto | 72% | 70% | 63% | 62% |
| Carpool | 14% | 15% | 14% | 16% |
| Transit | 12% | 13% | 21% | 20% |
| Bike | 0.3% | 0.5% | 0.3% | 0.7% |
| Walk | 1.4% | 2% | 1.4% | 2% |

Source: CCTA travel demand model and DKS Associates.

Note: Mode shares calculated with home-based work person trip ends at the production (home location) zone. Totals may not add due to rounding.

Table 2-3: Modeled Home-to-Work Mode Share: Jobs in West County

| | Contra Costa County | | West County | |
|------------------|---------------------|---------------|-------------|---------------|
| | 2019 | 2050 Baseline | 2019 | 2050 Baseline |
| Drive Alone Auto | 83% | 79% | 78% | 72% |
| Carpool | 12% | 13% | 14% | 16% |
| Transit | 3% | 4% | 5% | 8% |
| Bike | 0.4% | 0.7% | 0.4% | 0.9% |
| Walk | 2% | 3% | 3% | 3% |

Source: CCTA travel demand model and DKS Associates.

Note: Mode shares calculated with home-based work person trip ends at the attraction (work location) zone. Totals may not add due to rounding.

Mode Share for All Trip Purposes

Table 2-4 reports the mode share calculated for all trip purposes in the CCTA travel demand model—from home to work, shopping, social/recreation, grade school, high school, and college as well as trips not starting from home. The modeling results show that most trips are currently made by automobile, with transit and active transportation modes accounting for less than 14 percent of all trips.

By 2050, the mode shares are expected to remain similar to existing conditions, with a moderate increase in drive-alone share, decrease in transit share, and a moderate increase in the walk mode share.

Table 2-4: Mode Share for all Trips: West County Subregion Residents⁹

| | Contra Costa County | | West County | |
|------------------|---------------------|---------------|-------------|---------------|
| | 2019 | 2050 Baseline | 2019 | 2050 Baseline |
| Drive Alone Auto | 63% | 63% | 59% | 62% |
| Carpool | 27% | 28% | 28% | 26% |
| Transit | 4% | 3% | 7.1% | 5% |
| Bike | 0.5% | 1% | 0.6% | 0.5% |
| Walk | 6% | 6% | 6% | 7% |

Source: CCTA travel demand model and DKS Associates.

Note: Totals may not sum, due to rounding.

⁹ Note that projections in Table 2-4 are anticipating mode share shifts based on the CCTA Travel Demand Model and already planned for and/or funded projects. Therefore, some modes such as carpooling, transit, and bike are projected to decrease through 2050. This projection does not take into account the improvements adopted in this Action Plan, therefore, the 2050 share of these modes is anticipated by West County jurisdictions to be higher than reported in Table 2-4.

Transit

West County is heavily connected via public transportation, especially along the western edge of urbanized land in the subregion. Forms of public transportation include Amtrak rail and BART rail, one existing and one proposed ferry station, and several dozen bus routes. Several bus services transport residents and workers into and out of the subregion and the county. WestCAT service links riders to Central County, and AC Transit runs between Alameda, Solano, and Contra Costa counties through the West County subregion. Several other providers, including Golden Gate Transit, Fairfield and Suisun Transit, SolTrans, and Vine Transit, link West County to neighboring counties, including Alameda, Solano, and Marin counties. See Chapter 5, Transit, Figure 5-1 for a map depicting these routes and facilities.

Supporting Transit with a New Transit Center

The City of Hercules is in the process of developing the Regional Intermodal Transit Center in a convenient waterfront location along Bayfront Boulevard near Refugio Creek. The development would add 1,300 residential units as well as commercial, office, and live-work spaces. When complete, the station will be the only place on the West Coast with a single connection point to bus, transit, rail, and ferry, and it will be one of the largest transit-oriented developments in California.

The existing 2017 West County Action Plan and the CTP resulted in several positive transit system programs and developments. These include but are not limited to the continuation of the student bus pass program, completion of the Richmond Ferry project and future operations, and additional funding for various bus facilities.

As discussed in the beginning of Chapter 2, the COVID-19 pandemic caused a decrease in use of public transportation that is still reverberating throughout Contra Costa County. In 2019, West County transit trips accounted for just over 7 percent of all trips in the subregion, the highest of any Contra Costa County subregion. The long-term behavior change that the COVID-19 pandemic may cause in terms of transit ridership is unknown. However, it is the goal of this Action Plan to increase transit ridership to meet, then exceed pre-pandemic levels. See Chapter 5, Transit, for more information on objectives and actions to achieve this goal.



Active Transportation Facilities

The existing West County active transportation network includes abundant low stress facilities, Class I or IV, along the bay shoreline and adjacent to several major thoroughfares. These facilities, in conjunction with a network of non-low stress facilities, Class II and III, offer opportunities for both recreational and commute bike and pedestrian traffic to traverse the subregion. See Chapter 6, Active Transportation, Figure 6-1, for a map depicting these routes and facilities.

The existing 2017 West County Action Plan and the CTP resulted in several successful bike and pedestrian projects, including but not limited to the Ferry to Bridge project linking the Richmond-San Rafael Bridge with the newly opened Richmond Ferry Station, and improvements and completion of several gaps in the network, including the Yellow Brick Road, the Richmond Wellness Trail, the Point Molate Bay Trail, the Riverside Avenue Pedestrian Crossing, and the Marina Bay Parkway Undercrossing (Bradley Moody Memorial).

Despite the installation of these facilities, bike and pedestrian travel modes remain low, accounting for just under 7 percent of all West County trips in 2019. See Chapter 6, Active Transportation, for more information on objectives and actions to achieve bike and pedestrian goals.

Active Transportation

Active transportation is the movement of people or goods through nonmotorized means, usually through human activity like walking, pedaling, or rolling. It is essential for the reduction of carbon emissions, improving public health through physical activity, and increasing ADA-accessible spaces. Forms of active transportation can include shared and privately owned micromobility devices, standard or electric bicycles, wheelchairs and more.

Roadways

The West County roadway network is the most comprehensive travel network in the county and provides facilities for both automobile and non-automobile travel. Major facilities include I-80 and I-580 that link West County to Solano and Marin counties, SR-4 that links West County to Central and East County subregions, State Route 123 as San Pablo Avenue, and various roads that serve local and regional traffic. See Chapter 7, Roadways, Figure 7-1, for a map depicting these routes and facilities.

Although there have been various capacity improvements to local roadways in the past decades, traffic congestion continually gets worse as population and development increase. Additionally, as described in the beginning of Chapter 2, the impacts of the COVID-19 pandemic on the transportation network, mainly roadways, is ongoing and the future of congestion on these roadways is uncertain. It is estimated that approximately 86.5 percent of trips in West County are made by vehicle, either solo or as a carpool. This percentage translates to 23.5 VMT per capita in the subregion. The roadway and vehicle goals in this Action Plan aim to decrease both the mode share of single-occupancy vehicles and the VMT while increasing the carpooling mode share. See Chapter 7, Roadways, for more information on objectives and actions to achieve these roadway and vehicle goals.

Safety



Safety is a foundational consideration of the transportation system, which affects the lives and well-being of all West County residents, and for all modes of transportation, because collision and severe injury can happen if a Safe System Approach to redundancy in infrastructure design is not constructed. Collisions that result in death or severe injury may increase proportionally as population increases, particularly without a Safe System Approach, major improvements to infrastructure, and programming focused on improving safety for all, with a focus on vulnerable users including youth, seniors, people walking, and people bicycling. However, this Action Plan includes goals, RTOs, and actions that will reduce and eventually eliminate collisions resulting in death or severe injury, per the Authority's adopted core principles of Vision Zero.¹⁰ Vision Zero is a strategy to eliminate all fatalities and severe injuries that result from traffic collisions. The Vision Zero approach views transportation-related fatalities as preventable, not inevitable, and relies on multi-disciplinary collaboration that is informed by data and is focused on equity. CCTA and their member jurisdictions and partners are committed to the Vision

Zero approach and to a Safe System Approach that will enhance the existing transportation network and leverage future projects to ensure a safe environment for all.

If accompanied by a Safe System Approach to public right-of-way design and construction, intelligent transportation technologies can improve safety through vehicle technology deployment, such as connected/autonomous vehicles, smart traffic signals with bicyclist and pedestrian detection, and physical improvements such as roadway design, physically separated active transportation infrastructure, connectivity, broader educational outreach, training, and ongoing professional development. The importance of our community's safety of people traveling will increase as mobility increases, most often along shorter trips. Safety is a top priority of the Action Plan. See Chapter 8, Safety, for more information on objectives and actions to achieve these safety goals.

Equity

Residents in and from low-income communities are disproportionately burdened by air pollution, traffic congestion, risks to individual and public health, and limited access to services such as healthy food, banking, health services, parks, schools, and other important locations that support a healthy and prosperous lifestyle. These inequities are partially due to lack of access to essential goods and services, lack of proximity to transportation options, and inability to own a vehicle (let alone upgrade to an electric or hybrid vehicle). These inequities are important to consider within the transportation

¹⁰ CCTA codified Vision Zero work through Resolution 21-40-G which adopts the Contra Costa Countywide Transportation Safety Policy and Implementation Guide for Local Agencies.

system to ensure that communities with disproportionately less access to the greater community are considered in long-term transportation planning processes.

This Action Plan focuses its equity goals, policies, RTOs, and Actions on “equity priority communities” (EPCs) designated by MTC. They are places in West County that are documented to have less advantageous socioeconomic characteristics than the Bay Area as a whole. This Action Plan includes several initiatives to address potential inequities in these communities. See Chapter 9, Equity, for more information on objectives and actions to achieve equity goals.

Climate Change and GHG Trends and Forecasts

Climate change is the largest challenge facing people and the planet, and transportation is the largest contributor of greenhouse gas (GHG) emissions. The IPCC’s Sixth Assessment Report states that the increased consumption of fossil fuels (e.g., natural gas, coal, gasoline) has substantially increased atmospheric levels of the GHGs that change the climate. The transportation system is vulnerable to the effects of climate change, most notably changing climate and weather patterns, duration and frequency of events such as drought, wildfires, storms, and flooding; sea-level rise, and more needs to be done to make the transportation system resilient to these changes. Air pollution from mobile sources, especially heavy-duty vehicles and diesel-powered vehicles, increases the risk and occurrence of asthma and lung diseases. Therefore, the transportation system’s impacts on the environment and the environment’s impact on it, are key concerns that should be thoroughly address in the Action Plan, for our future. This Action Plan addresses climate change in Chapter 10, which outlines RTOs and actions that will reduce GHGs through decisions that will support cleaner transportation options.

Innovation and Technology

CCTA and its West Contra Costa Transportation Planning Advisory Committee (WCCTAC) are committed to ongoing innovation and the deployment of new technologies to improve the transportation system. Innovative initiatives and technology added to current projects and programs should reduce traffic congestion, improve air quality, and provide new, cleaner mobility options for all West County residents. Such innovations include in-vehicle technology such as sensors, automated capabilities, and safety enhancements, as well as outside-of-vehicle technology such as smart signals that employ artificial intelligence in real-time to help officials monitor and manage traffic flow and communicate to meet specific goals. Other technologies include “dynamic personal micro transit” (DPMT), which includes automated vehicles that could address first/last-mile connectivity issues, or “mobility as a service,” which gives riders dynamic and real-time information on available travel options at that time. See Chapter 11, Innovation and Technology, for more information on objectives and actions to achieve these goals.

Conclusion: Moving Toward a Multimodal Network

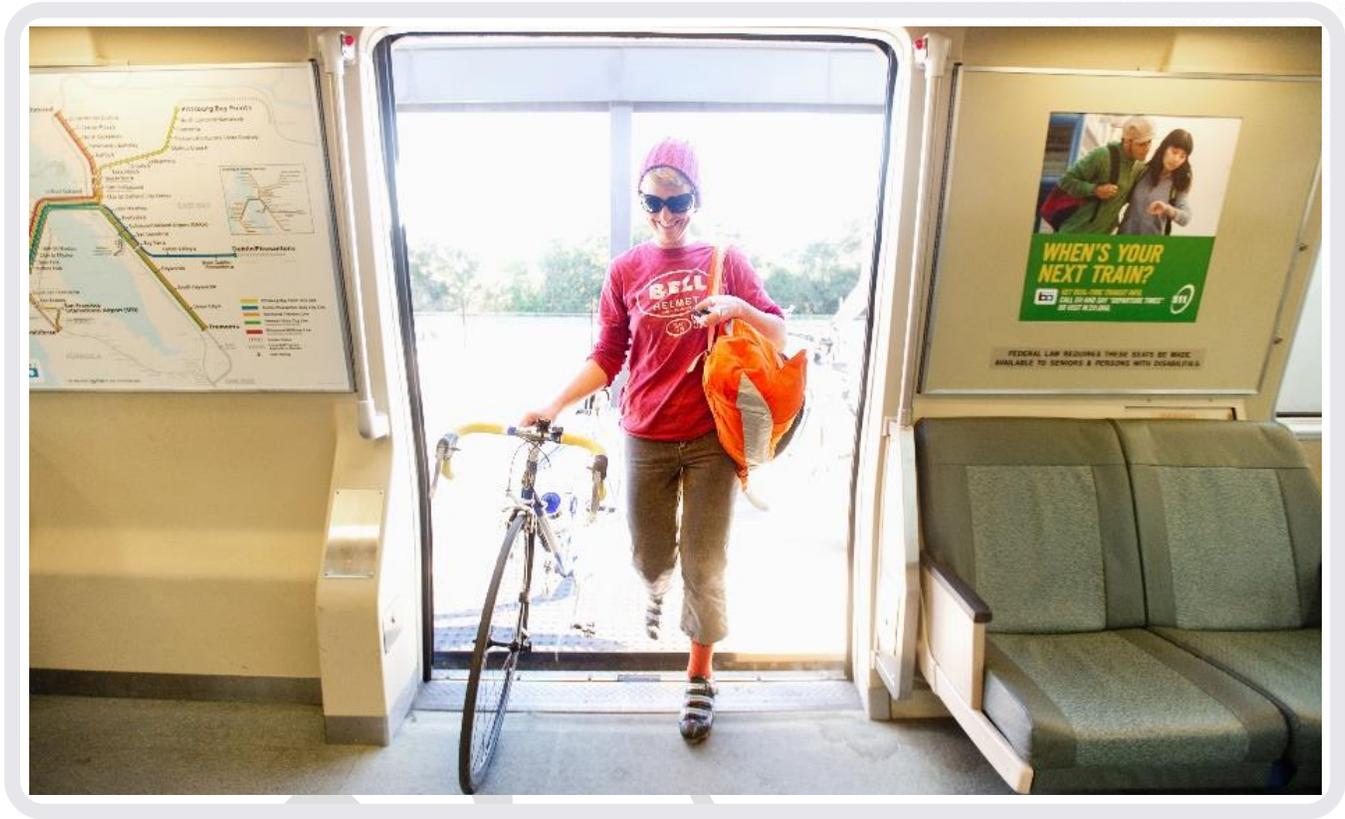
As is the case in all of Contra Costa, and the nation, West County's existing transportation network was constructed primarily with a focus on the efficient movement of vehicles. However, innovation and technology; prioritization of the movement of people (most efficiently transported via transit); considerations regarding the climate, safety, and equity; and an increased interest in non-vehicular modes of transportation have made a shift inevitable to a more dynamic future.

This Action Plan, if thoughtfully implemented, will improve the overall quality, sustainability, equity, and safety of transportation. This Action Plan includes goals, policies, RTOs, and actions to improve the transportation system and to ensure that all people can more equitably and safely travel through, to, and within West County.

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West County Action Plan

Chapter 3: Vision, Goals, and Policies



This chapter summarizes the vision, goals, and policies that lay the framework for this Action Plan.

Vision

The overall vision of the Action Plan is to ensure that the transportation system in West County serves needs of the community while accommodating and encouraging a shift in travel behavior that reduces congestion and leads to a healthier and better-quality life for all. The goals and performance measures in this Action Plan were designed to accomplish this vision and to ensure West County jurisdictions are working holistically, tapping into various modes, and using new technology and innovation.

Long-range transportation planning in West County and greater Contra Costa County requires a holistic, multimodal planning approach based on cooperation among all jurisdictions, partner agencies, and the community. This approach must consider all components of the transportation system simultaneously, anticipate the needs and desires of the community, and show the path to the future. Multi-jurisdictional coordination and ongoing discussions are critical to ensure that the services offered, projects pursued, and programs launched support and build off one another. Such a holistic approach can ensure that a unified plan is implemented to meet the needs of the community.

Innovation and technology will be key to achieving this vision. They are already improving the efficiency of the transportation network in Contra Costa County. Thanks to express lanes, integrated corridor management, traffic signal coordination, ramp metering, and shared-use mobility services, the transportation system is becoming more efficient and sustainable. Additional new technologies, such as fully connected and autonomous vehicles and Mobility as a Service, if harnessed correctly, can enrich the future of transportation even further.

Goals

This Action Plan includes 15 goals for the transportation system in West County. Some goals pertain to one mode or Action Plan topic, while other are multimodal and/or cover more than one topic.

1. Provide geographically comprehensive, efficient, and effective local and regional transit services.
2. Expand high-capacity transit in West County.
3. Increase use of active transportation modes.
4. Complete and expand the regional trail system.
5. Support active transportation modes through the creation and improvement of bicycle and pedestrian facilities.
6. Decrease single-occupant vehicle travel and VMT.
7. Actively support development in Priority Development Areas that includes strategies to implement transit-oriented development.
8. Improve the efficiency of highway and arterial operations through a holistic planning approach that considers shared mobility and prioritizes non-SOV transportation.
9. Maintain existing transportation facilities in adequate condition.
10. Ensure a safe and low stress transportation system for all modes of travel.
11. Support and improve quality of life in communities impacted by rail transport, heavy truck activity, and other high noise and pollution-generating transportation sources.
12. Minimize transportation impacts on the climate.
13. Ensure the transportation system is resilient in the face of climate change.
14. Continue the process of innovation and the development and implementation of new technologies and programs in transportation.
15. Support equitable mobility for all income groups, racial and ethnic groups, and all ages and abilities across all modes of transportation.

Action Plan Policies

- Engage in collaborative discussions with partner agencies, jurisdictions, boards, and committees to ensure that the perspectives and concerns of all relevant parties are addressed when making regional decisions that impact transportation facilities.
- Work with MTC and other agencies to implement regional initiatives such as OBAG/PDA development strategies.
- Implement the Actions in this Action Plan, and other projects and programs as needed, to achieve and maintain the RTOs in this Action Plan.
- Consider safety as a top priority when designing new or modified travel corridors to be consistent with Countywide Vision Zero.
- Support growth in downtowns, priority development areas (PDAs), transit priority areas, and other areas well-served by transit, so as to lessen reliance on single-occupancy vehicles.
- Promote transportation alternatives to reduce demand on existing facilities in lieu of widening roadways and further impacting the natural environment.
- Support land use decisions that improve jobs-housing balance.
- Coordinate with economic development agencies and non-governmental organizations to attract new employment to housing-rich areas.
- Improve transit and active transportation access to PDAs.
- Recognize, support, and subsidize transit as an essential and free or very low-cost service for transit-dependent people.
- Consider complete corridors, complete streets, and bicycle and pedestrian needs in all neighborhood and roadway planning and design efforts.
- Ensure the active transportation network is attractive for all users by maintaining facilities in good working order, including pavement condition, vegetation along facilities, and debris removal.
- Focus bicycle and pedestrian network efforts on closing gaps in the planned low-stress bike network, connecting key destinations such as downtowns, transit hubs and major recreation areas.
- Work to minimize congestion and maintain RTOs on the vehicular roadway network, while also prioritizing improvements and projects that support modes other than single-occupant vehicles,
- Support Transportation Demand Management (TDM) programs that reduce vehicle miles traveled (VMT), improve access to transit, and increase transit ridership.
- Encourage local jurisdictions to develop objective design standards to support the development of transit-oriented communities.
- Continue to expand coordination between Contra Costa and neighboring counties (including Alameda, Solano, and Marin) to reduce single-occupant vehicle travel along the I-80 corridor.

West County Action Plan

Chapter 4: Routes of Regional Significance



One of the key elements of an Action Plan is the designation of Routes of Regional Significance. The RTPCs have the authority to designate Routes of Regional Significance in their regions.

Routes of Regional Significance are facilities for which jurisdictions in the subregion want to share regional responsibility with neighboring jurisdictions. Designation of Routes of Regional Significance helps CCTA, WCCTAC, local jurisdictions, and the general public know which facilities are important to the region and serve as the basis for monitoring and maintenance by CCTA and WCCTAC.

When deciding which routes to designate, the Measure J GMP guidelines recommend four conditions to consider, outlined below. A transportation facility that meets one or more of these conditions is not required to be designated

Competing Modes in the Action Plan

Although the State of California no longer uses level of service (LOS) as a metric to measure the impacts of developments on the transportation system, this Action Plan contains performance metrics to track traditional level of service on roadways. The Action Plan also measures vehicle miles traveled, the newly adopted metric for evaluating vehicles on the transportation system.

This Action Plan is written in a manner that supports and prioritizes non-automobile modes on certain Routes of Regional Significance, including transit or active transportation. In some cases, local jurisdictions will need to determine which goals to implement at a given time on a given facility. Therefore, it may be the case that some goals in this Action Plan could compete with one another and it will be up to the local jurisdictions and their elected officials to prioritize their own goals without conflicting with the overarching goals of the Action Plan.

as a Route of Regional Significance —designations are the purview of the RTPC. The four conditions to consider when designating a Route of Regional Significance are:

1. Connect two or more subregions of Contra Costa County.
2. Cross county boundaries
3. Carry significant through traffic
4. Provide access to a regional center, regional highway, or transit facility.



Some routes that meet one or more of the criteria can remain undesignated, provided that a consensus not to designate such routes is reached among affected jurisdictions. Furthermore, routes that enter or leave the RTPC require joint discussions among the affected regional committees to determine if consensus can be reached regarding designation.

Historically, Action Plans have only been required to designate Routes of Regional Significance for roadway and vehicle facilities, largely with the intent to monitor delay and congestion. Only a few non-roadway Routes of Regional Significance were designated anywhere in the County. However, with the understanding that the future of transportation planning requires a holistic approach and consideration of shared mobility, this updated Action Plan includes designation of Routes of Regional Significance for transit facilities and active transportation as well as vehicles.

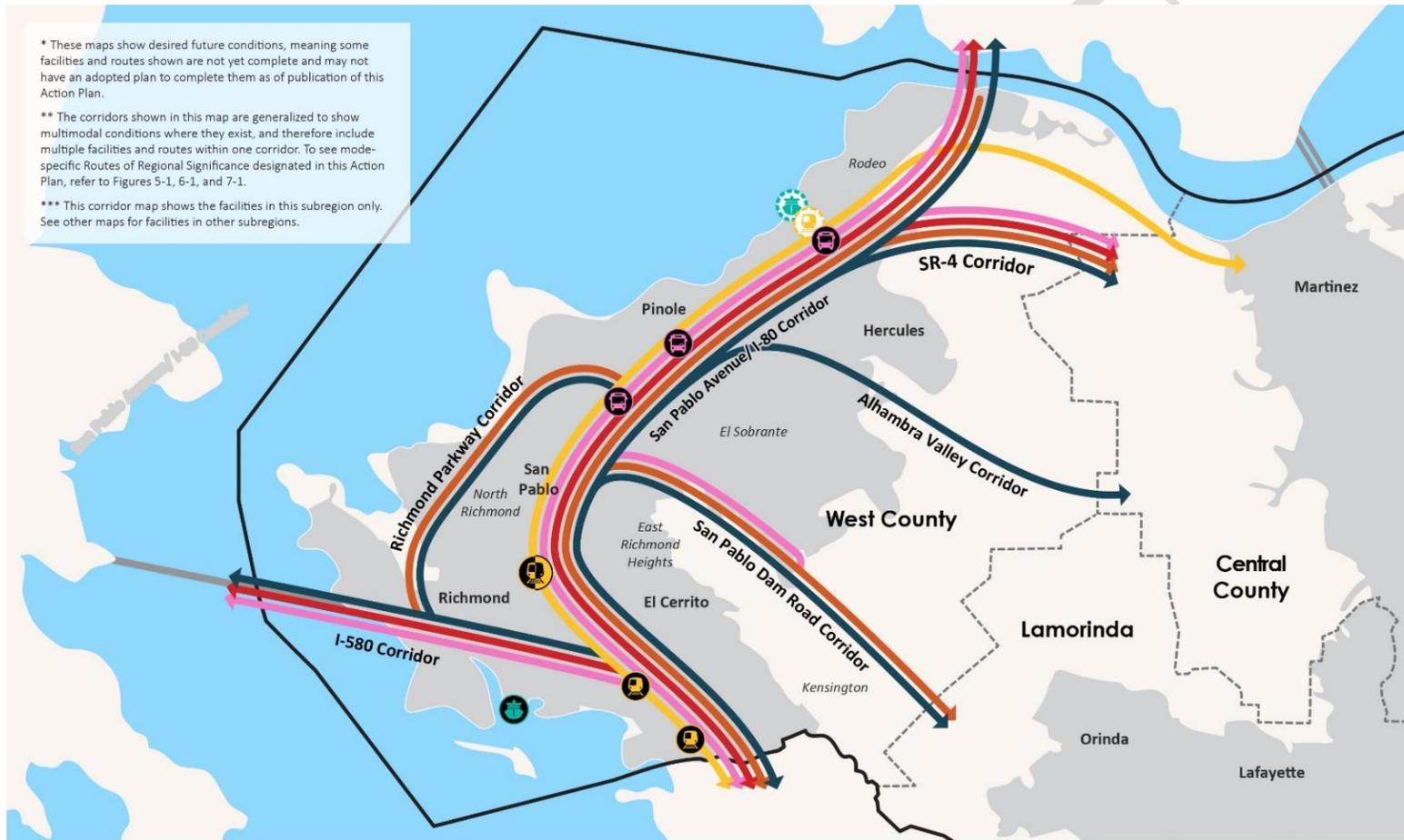
Multimodal Corridor Maps of Routes of Regional Significance

In order to characterize the multimodal nature of Routes of Regional Significance, CCTA has worked with WCCTAC and the other RTPCs to develop a series of multimodal corridor maps to show five different transportation modes on a single map (bus, rail, bike, freeway, and surface roadway). The maps are intended to illustrate the multimodal nature of the transportation network and to show that multiple facilities exist in any given transportation corridor. The maps are not intended to be exact, but to show travel corridors within the multimodal transportation network.

There are several critical notes to these corridor maps:

- The multimodal corridor maps show desired future conditions, meaning some facilities and routes shown are planned but not yet constructed.
- The corridors shown on the maps are highly generalized to show multimodal conditions where they exist or may someday exist, and therefore include multiple facilities and routes within one corridor.

Figure 4-1: West County Multimodal Corridor Map



West Contra Costa County Routes of Regional Significance Multimodal Corridor Map



West County Action Plan

Chapter 5: Transit



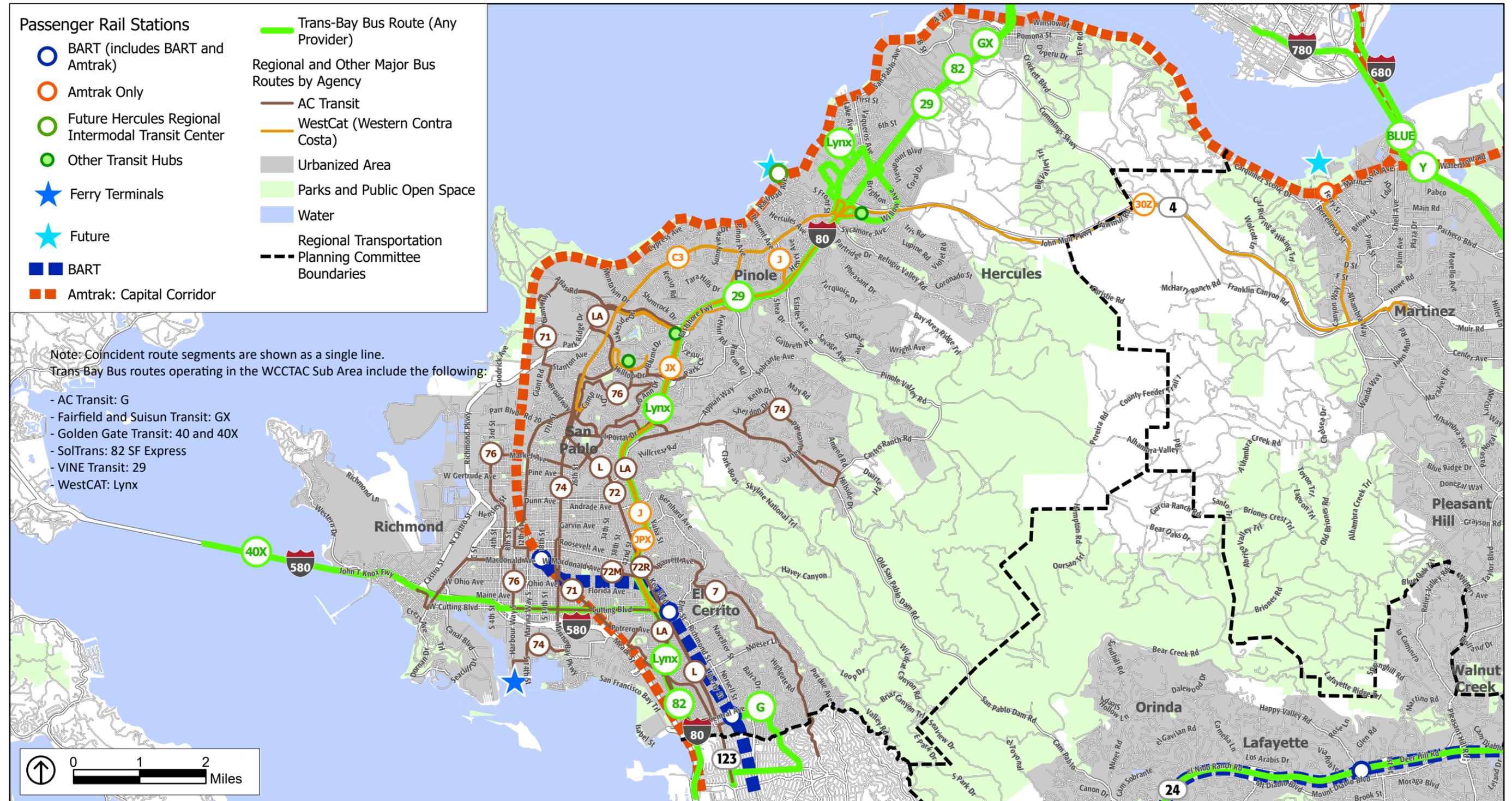
Transit in Contra Costa includes a variety of different providers, from multiple bus operators to Amtrak rail, BART rail, and ferry service. Transit service also includes vital accessible transportation services through ADA-mandated and non-ADA-mandated paratransit and other bus services for the elderly or residents with disabilities. Many of the routes and facilities vital to the Contra Costa transit system are shown in Figure 5-1.

Table 5-1: Summary of Transit Regional Transportation Objectives

| RTO Name | Definition | Existing Target | Proposed 2027 Target | Proposed 2050 Target |
|--|---|-----------------|--------------------------------------|--|
| Transit RTO-1: Transit Mode Share | Increase mode share of transit trips | None | 21% commute trips 7% of all trips | 40% of commute trips 10% of all trips |
| Transit RTO-2: Mode Share to/from BART | Increase mode share of people accessing BART with non-vehicle modes | None | 53% | 67% |
| Transit RTO-3: Transit Trip Time | Optimize peak commute travel time on transit for key corridors | None | Transit time ≤ auto travel time | Transit time ≤ auto travel time |
| Transit RTO-4: High Quality Transit Access | Increase urbanized land area served by high quality transit | None | 69% | 90% |
| Transit RTO-5: Paratransit Access | Increase rides through paratransit programs | None | Increase by 5% | Increase by 40% |

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Figure 5-1: Important Transit Routes in West County



Source: ABAG/MTC, 2021; CCTA, 2021; ESRI, 2021; PlaceWorks, 2022.

WEST CONTRA COSTA COUNTY TRANSIT FACILITIES AND ROUTES

RTOs

Transit RTO-1: Transit Mode Share

Increase the Mode Share of Transit Trips in the Subregion

As shown in Table 2-2 in Chapter 2, 21 percent of West County residents commute to work using transit, compared to 12 percent of residents in Contra Costa County as a whole. Table 2-2 and Table 2-3 illustrate that 2050 projections anticipate transit use will decrease to 20 percent mode share of home-to-work based on residence location but increase from 5 percent in 2019 to 8 percent in 2050 based on job location. Meanwhile, 2050 projections shown in Table 2-4 predict that around 5 percent of all trips (not strictly commute trips) will be taken by transit by 2050.

The COVID-19 pandemic has greatly reduced transit trips, so this Action Plan includes a performance target for transit mode share in the West County subregion to return to pre-pandemic levels of 21 percent of home-based work trips by 2027. A further target for 2050 is to roughly double the level of home-to-work transit trips to 40 percent by 2050. Further, this Action Plan proposes a target transit mode share of 10 percent of all trips by 2050. While these goals are ambitious, they are needed to meet local, regional, and statewide goals to minimize VMT, transportation-related GHG emissions, and congestion.

Transit RTO-2: Mode Share to/from BART

Increase the Number of Riders Who Access BART Using Means Other Than Automobiles, Including Transit and Active Transportation

This metric assesses the mode used by BART riders to access BART stations in West County.

BART and MTC conduct a ridership survey approximately once every 10 years that includes gathering information about modes used to access BART. The results of the most recent survey, conducted in 2015, are shown in Table 5-2.

The table shows that 46% of BART riders in West County used non-vehicle modes to access BART stations in 2015, as compared to 53% systemwide.

The performance target for this RTO is to meet and exceed current systemwide performance. For 2027, the target is to get to the same level as the system, which is 53%, or an increase of 7%. For 2050, the goal is to increase the share by an additional 14%, which would be the same proportional increase for the first seven years and would bring the non-vehicle share to 67%.

This RTO will only be assessed when BART and/or MTC conduct ridership surveys, so it may not be assessed as frequently as the other RTOs in this Action Plan.

Table 5-2: Mode Used to Access West County BART Stations (2015)

| Station | Active Transportation | Transit | Total for Non-Vehicle Modes |
|--------------------------|-----------------------|-----------|-----------------------------|
| El Cerrito Plaza | 29% | 13% | 42% |
| El Cerrito del Norte | 43% | 4% | 47% |
| Richmond | 41% | 8% | 49% |
| Total West County | 37% | 9% | 46% |
| Total BART System | 44% | 9% | 53% |

Source: MTC BART 2015 ridership survey

Transit RTO-3: Transit Trip Time

Optimize Peak Hour and Peak Direction Travel Time for Transit as Compared to Automobile Travel Time for the Same Trip

This metric compares the peak period transit travel time on select corridors to the equivalent single occupant vehicle travel time in the peak commute direction. The key corridor(s) monitored for the West County subregion along with the comparative travel times are shown in Table 5-3.

The performance target for this RTO is that transit travel time should be less than or equal to auto time, when measured from transit station to transit station. As shown in Table 5-3, travel by BART is not currently quicker than driving between the Pleasant Hill BART station and the Richmond BART station but is expected to be by 2050 in the morning westbound and afternoon eastbound directions. Between the Hercules Transit Center and Salesforce Transit Center in San Francisco, transit via the Lynx route compares favorably to driving in the morning westbound and afternoon eastbound directions. By 2050, these advantages will become more pronounced. In contrast, the bus trip from Contra Costa College to downtown Oakland takes about twice as long as driving. The transit to drive time ratio is expected to improve slightly for the southbound morning direction but worsen significantly for the afternoon northbound trip by 2050.

Table 5-3: Travel Time Ratio for Autos vs Transit on Key Corridors

| Corridor | Median Drive Time (Minutes) ^a | Scheduled Transit Time (Minutes) ^b | 2050 Drive Alone ^c | Transit/Drive Alone Time | |
|---|--|---|-------------------------------|--------------------------|------|
| | | | | Existing | 2050 |
| Richmond BART and Contra Costa Center (Pleasant Hill BART station) | | | | | |
| Morning – Westbound | 31.56 | 46.00 | 40.07 | 1.46 | 1.15 |
| Afternoon- Eastbound | 36.43 | 46.00 | 46.18 | 1.26 | 1.00 |
| Hercules Transit Center and Salesforce Transit Center in San Francisco | | | | | |
| Morning – Westbound | 47.55 | 38.00 | 116.07 | 0.80 | 0.33 |
| Afternoon- Eastbound | 48.38 | 50.00 | 130.42 | 1.03 | 0.38 |
| Contra Costa College and 14th Street/Broadway in Oakland | | | | | |
| Morning – Southbound | 27.66 | 56.00 | 31.10 | 2.02 | 1.80 |
| Afternoon - Northbound | 33.19 | 68.00 | 17.05 | 2.05 | 3.99 |

a) Range of average driving time for Tuesdays – Thursdays for April 2019 from INRIX Roadway Analytics.

b) From published schedules.

c) CCTA travel demand model congested time skims for a.m. and p.m. peak periods.

Transit RTO-4: High Quality Transit Access

Increase the Proportion of Urbanized Land Area in the Subregion Served by High Quality Transit

This RTO seeks to increase the proportion of urbanized land area in the subregion served by high quality transit, which is defined as urbanized land area within a quarter mile of bus stops served by bus routes with headways of 15 minutes or less, or within a half mile of rail or ferry terminals. Figure 5-2 and Table 5-4 indicate that only 46 percent of West County’s urbanized acreage is within this high-quality transit buffer.

Since some urbanized areas are too remote or have densities that are too low to support transit, it would not be realistic to set a goal that 100 percent of urbanized areas be served by high-quality transit. However, there is room for improvement over current conditions. Therefore, this Action Plan proposes that the subregion should aim to have 90 percent of urbanized acres served by high-quality transit by 2050. This Action Plan also includes an interim target of 69 percent completion by 2027, which is roughly a 50 percent increase over the current condition.

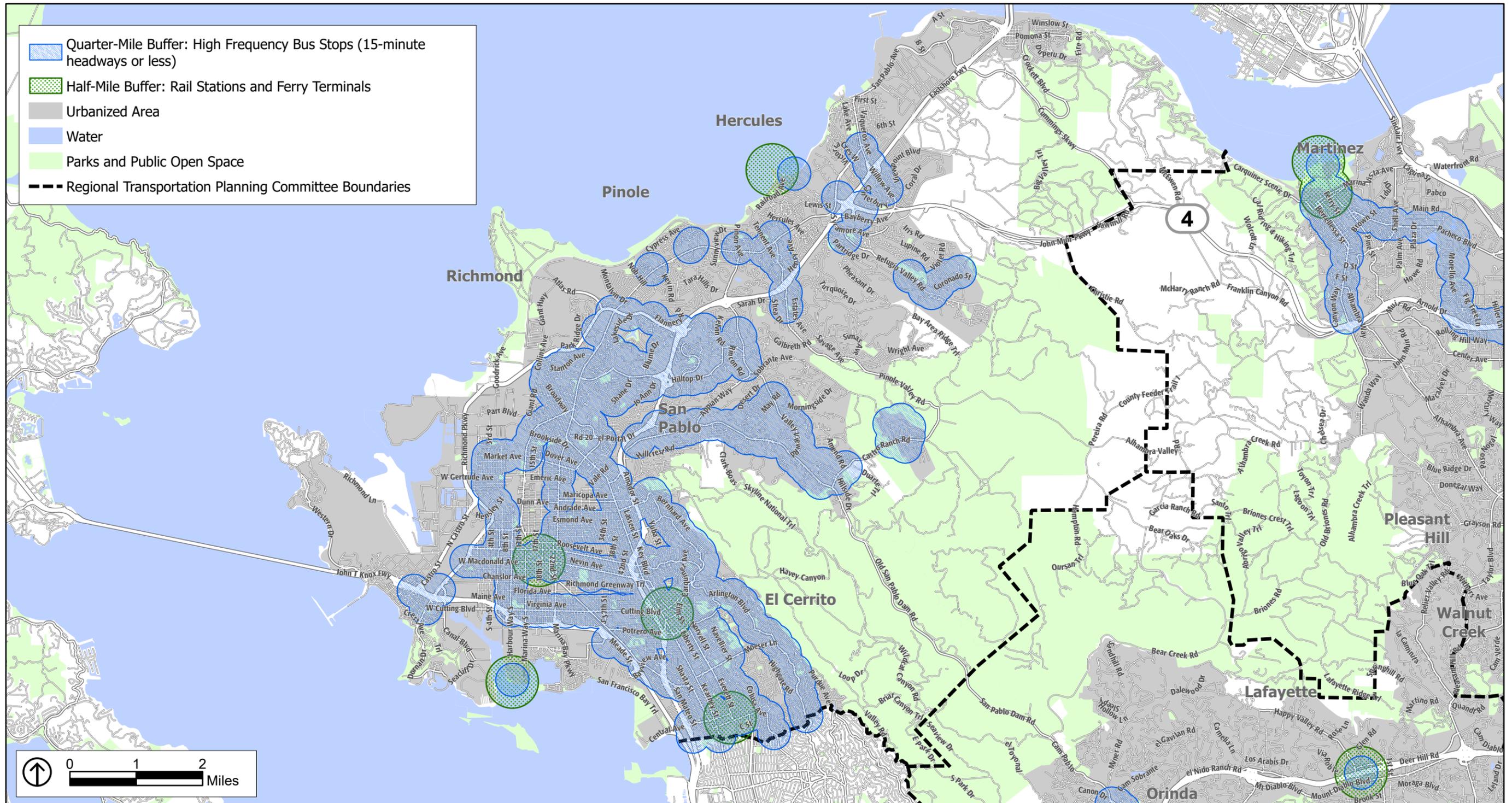
Table 5-4: Proportion of Urbanized Land in West County with Access to High-Quality Transit

| | Acres | Proportion of Total Acres |
|---|--------|---------------------------|
| Urbanized area in subregion with access to high-quality transit | 15,223 | 46% |
| Total urbanized area in subregion | 32,954 | |

Note: "Access to high quality transit" is defined as within a quarter mile of bus stops served by bus routes with headways of 15 minutes or less, or within a half-mile of rail or ferry terminals.



Figure 5-2: West County High Quality Transit



Source: CCTA, 2021; ESRI, 2021; PlaceWorks, 2022.

WEST CONTRA COSTA COUNTY HIGH-QUALITY TRANSIT

Transit RTO-5: Paratransit Access

Increase the Number of Rides by Paratransit Programs

This metric tracks annual rides from the seven paratransit and other accessible transportation programs that conduct operations in a portion, or the entirety, of the West County subregion. These programs serve a variety of customers, from those with disabilities to the elderly. These accessible transportation operators and the number of rides provided in calendar year 2019 are listed in Table 5-5.

This Action Plan sets the goal that the number of rides provided among these seven West County providers should increase by 5 percent by 2027 to 847,373 rides, and by 40 percent by 2050 to 1,129,830 rides.

Table 5-5: Number of Calendar Year 2019 Rides Provided by West County Accessible Transportation Providers

| Provider | 2019 Rides |
|--|----------------|
| East Bay Paratransit ^{a,b} | 734,359 |
| WestCAT Dial-A-Ride ^a | 3,194 |
| Easy Ride Paratransit Service | 2,355 |
| R-Transit | 4,530 |
| San Pablo Senior and Disabled Transportation | 4,270 |
| Vistability ^b | 54,940 |
| Mobility Matters ^b | 3,374 |
| Total Rides | 807,022 |

a) These programs are ADA-mandated programs.

b) These providers operate in areas throughout the East Bay and therefore the number of rides includes all rides, not only those in the West County subregion.

Actions

The following actions are needed to achieve the RTO targets and to implement other goals and policies of this Plan, the Countywide Transportation Plan, and other regional long range planning documents with shared priorities:

- Transit-1: Work with local transit providers and regional funding agencies to identify funding for improvements for mobility (e.g., via bus) services in West County, including operations and maintenance and supporting infrastructure, such as bus yards.
- Transit-2: Pursue plans, programs, and projects that implement transit-oriented development with pedestrian and bicycling access in existing and new development areas.
- Transit-3: Work with CCTA to develop new or expanded mobility hubs along major activity centers and along freeways and other important corridors and work with partners to address issues related to ownership, acquisition, and oversight of operations and maintenance.
- Transit-4: Work with the Water Emergency Transportation Authority (WETA), CCTA, and other partners to support Richmond Ferry Service to and from Richmond.
- Transit-5: Work with passenger rail operators in countywide and regional efforts to implement passenger rail improvements in West County, such as providing higher frequency of service on the Capitol Corridor and San Joaquin Altamont Corridor Express (ACE) Corridor, and planning for the Link 21 program.
- Transit-6: Pursue projects and programs that improve the passenger experience, upgrade systems, modernize stations, and expand the passenger capacity of BART stations in West County.
- Transit-7: Improve the reliability, efficiency, frequency, and travel time of transit (e.g., bus) service along San Pablo Avenue.
- Transit-8: Continue to work with CCTA and local jurisdictions to improve circulation and multimodal access near the El Cerrito del Norte BART station.
- Transit-9: Implement the recommendations of the Contra Costa Accessible Transportation Strategic Plan, including the establishment of a new coordinating entity and a new, ongoing, and dedicated funding source.
- Transit-10: Implement plans and support ongoing plans that promote regional express buses and enhance bus rapid transit along transit corridors and RRS.
- Transit-11: Implement the recommendations of the West County High-Capacity Transit Study.
- Transit-12: Plan and implement enhanced railroad crossings to improve the safety of pedestrian and bicycle access and to reduce noise and quality-of-life impacts throughout West County; enhancements may involve implementing quiet zones, grade separations, train-traffic signal preemption systems, or other measures.
- Transit-13: Work with the City of Hercules and their project stakeholders to support completion of the Regional Intermodal Transportation Center.
- Transit-14: Work with local jurisdictions to study and fund options for improving curb management and commercial and public bus, truck, and van passenger loading on key public streets.

- Transit-15: Participate in current and future studies regarding rail options for the West County area and continue exploring development of new rail stations.
- Transit-16: Work with CCTA, local jurisdictions, and local public transit operators to:
 - Link transit service within the West County subregion, more directly to communities outside the West County subregion, between BART stations, and between adjacent counties.
 - Leverage MTC's effort to standardize operations, regional mapping, and wayfinding.
 - Implement traffic signal management and bus prioritization technology on transit RRS routes to improve bus speed and reliability.
 - Implement the recommendations identified in the Integrated Transit Study.
- Transit-17: Evaluate systemwide bus stop improvements; make it safer and easier for people to access transit stations; and ensure that transit, and its related pedestrian access and connectivity, is safe and attractive.
- Transit-18: Provide educational awareness of public transportation options through outreach, education, incentive and support programs, and advertising, particularly in local schools.
- Transit-19: Work with CCTA and local transit operators to explore financial incentives and reduced fares for public transportation, including a feasibility study to explore a subregional or countywide Universal Basic Mobility program.
- Transit-20: Work with CCTA and MTC to promote Safe Routes to Transit projects and programs, and submit applications for funding for construction of local Safe Routes to Transit projects and programs.
- Transit-21: Work with local jurisdictions and transit service providers to reinstate halted neighborhood bus lines.
- Transit-22: Adopt local policies that prioritize safety for the most vulnerable users at all stages of project planning and delivery.
- Transit-23: Work with CCTA and local transit providers to ensure real-time online transit information for all routes.
- Transit-24: Explore designating transit as the primary mode on San Pablo Avenue.
- Transit-25: Assist local jurisdictions in the development of design guidelines and objective design standards to support transit-oriented development in downtowns, priority development areas (PDAs), transit priority areas, and other areas well-served by transit.
- Transit-26: Work with CCTA and public transit agencies to identify and prioritize a network of transit corridors for transit signal priority, part-time transit lanes, transit-only lanes, and other transit-focused improvements.

West County Action Plan

Chapter 6: Active Transportation



Active transportation in Contra Costa includes a variety of different activities—walking, pedal-/human-powered bicycling and electric-assist biking, rolling, micromobility, and others. An increase in active transportation mode share of all trips can help West County reach broad transportation, environmental, and public health goals that are shared by all of Contra Costa and the Bay Area. Though active transportation modes can legally use all streets, a dedicated active transportation network called the Low Stress Bike Network (LSBN) is planned and published as part of the CCTA 2018 *Countywide Bicycle and Pedestrian Plan* (CBPP). This chapter describes the network and explains the metrics used to complete and track progress toward implementation of a contiguous low-stress network of bikeways with Level of Traffic Stress 1 or 2 (of four).

Table 6-1: Summary of Active Transportation Regional Transportation Objectives

| RTO Name | Definition | Existing Target | Proposed 2027 Target | Proposed 2050 Target |
|---|---|-----------------|---|---------------------------------------|
| Active Transportation RTO-1: Active Transportation Mode Share | Increase active transportation mode share | None | 8% all trips ^a 4% commute trips | 10% all trips 7% for commute trips |
| Active Transportation RTO-2: Low-Stress Bike Network | Increase contiguity and completeness of the LSBN | None | 55% | 100% |
| Active Transportation RTO-3: Unprotected Trail Crossings | Eliminate unprotected crossings of the LSBN intersections with roadways | None | None | None |

a) "All trips" refers to all trips with an origin or destination in West County.

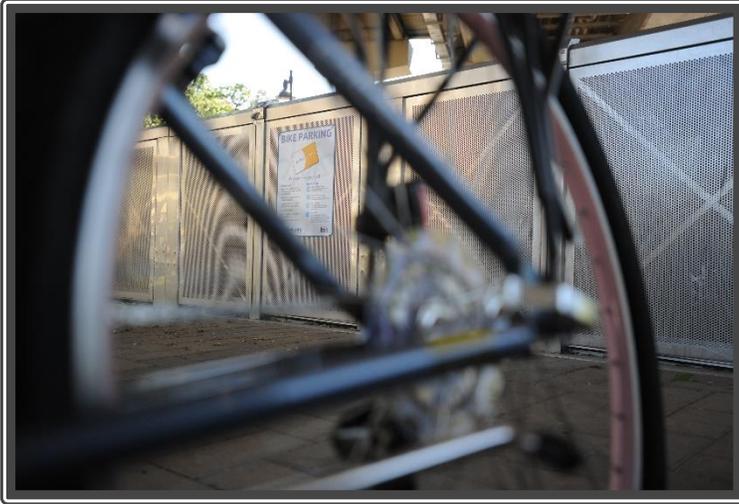
RTOs

Active Transportation RTO-1: Active Transportation Mode Share

Increase the Mode Share of Bicycling and Walking in the Subregion

As shown in Table 2-2 in Chapter 2, less than 2 percent of West County residents commute to work through active transportation such as biking or walking. Table 2-2 and Table 2-3 illustrate that these shares will increase to over 2 percent of home-to-work trips based on residence location as well as job location by 2050. As shown in Table 2-4, 2050 projections predict that about 7 percent of all trips (not strictly commute trips) would be by walking or biking in 2019 and 7.5 percent in 2050.

This Action Plan includes active transportation mode share targets for the West County subregion that would see an increase in the combined mode share for all trips for bikes and walking to 10 percent by



2050. As an interim target, the performance target for 2027 is to increase mode share to 8 percent. Further, this Action Plan includes bicycling and walking mode share performance targets for commute trips, which include school and work trips. The proposed biking and walking performance targets for commute trips are 5 percent by 2027 and 8 percent by 2050. These goals are ambitious but necessary to meet goals to minimize VMT, transportation-related GHG emissions, and traffic congestion.

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Active Transportation RTO-2: Low-Stress Bike Network

Increase the Proportion of the Countywide Low Stress Bike Network Completed in the Subregion

The CBPP introduced a new way of evaluating a facility's level of traffic stress in which roadways are evaluated on several factors, including speed and number of vehicles and presence and width of bicycle facilities. Facilities are given a rating from one (least stressful) to four (most stressful) to evaluate the stress a bike rider will experience. The goal of the 2018 CBPP is to ensure the LSBN is complete and rated either Level of Traffic Stress 1 (most people of all ages and abilities can feel safer bicycling on these facilities physically separated from vehicular traffic) or Level of Traffic Stress 2 (the "interested but concerned" adult population will feel safer bicycling on these facilities). Ultimately, construction of the entire LSBN would result in an increase in active transportation mode share and a reduction in Killed or Severely Injured (KSI) collisions.

The status of the entire West County portion of the LSBN is shown on Figure 6-1. If the entire LSBN in the West County subregion were completed, it would have 144.6 miles of Class I and Class IV facilities.

Table 6-2 shows that 37 percent of West County's LSBN is constructed. A further 17 percent of low-stress facilities are incomplete, but have a locally adopted plan to construct the facility toward a more contiguous countywide LSBN. Projects proposing improvements that would not result in low-stress facilities comprise an additional 16 percent of the LSBN, and one additional percent is designated "under study." A total of 29 percent of the total LSBN miles are incomplete and do not have a plan to complete them or to study them further.

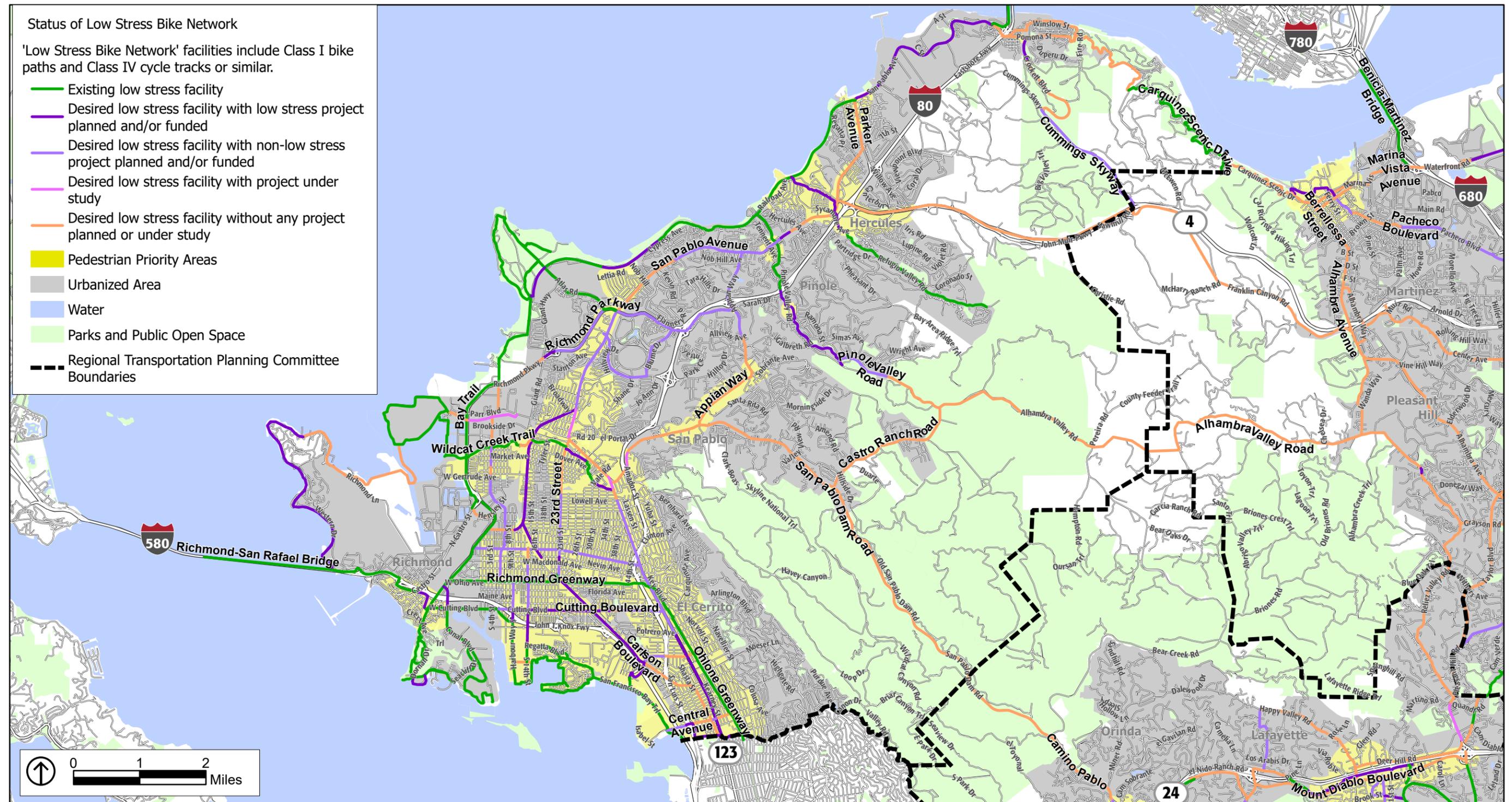
This Action Plan proposes that the subregion aim to achieve 100 percent completion of the LSBN by 2050 with an interim target of 55 percent (80.25 miles) completion by 2027. This is the sum of existing completed facilities (37 percent) and 150 percent of the already proposed low-stress additions to the network. This would require completion of the low-stress projects that already have an adopted plan.

Table 6-2: Proportion of West County LSBN Completed

| Status of Facility | Miles | Percentage |
|--|-------|------------|
| Existing Low-Stress Facility | 53.5 | 37% |
| Desired Low-Stress Facility with Low Stress Project Planned and/or Funded | 23.9 | 17% |
| Desired Low-Stress Facility with Non-Low Stress Project Planned and/or Funded ^a | 23 | 16% |
| Desired Low-Stress Facility with Project Under Study | 1.7 | 1% |
| Desired Low-Stress Facility without any Project Planned or Under Study | 42.5 | 29% |

a) *This category means that there is a project planned and/or funded in an existing plan that would complete a Class II or Class III facility but not a Class I or Class IV facility which are considered low stress.*

Figure 6-1: Status of the West County LSBN



Source: ABAG/MTC, 2021, 2019; CCTA, 2022; ESRI, 2021; PlaceWorks, 2022.

Note: The status of specific segments on this map is taken from the CCTA 2018 Countywide Bicycle and Pedestrian Plan (CBPP) project list, the revised 2022 CBPP project list, adopted Bike and Pedestrian Master Plans from individual jurisdiction, and consultation with local staff. “Desired Low Stress Network” refers to what the entire Low Stress Bike Network would look like upon completion, per the 2018 CBPP.

WEST CONTRA COSTA COUNTY LOW-STRESS BIKE NETWORK

Active Transportation RTO-3: Unprotected Trail Crossings

Eliminate the Number of Locations Where the Low-Stress Bike Network Has an Unprotected Crossing of a Heavily Traveled Vehicle Route

This metric maps and tracks the status of intersections between the LSBN and heavily traveled roadways,¹¹ illustrated on Figure 6-2. The level of protection at each intersection is classified as:

- **Fully protected** by grade separation or a signalized intersection with bicycling protections such as a waiting bay or concrete barriers.
- **Semi-protected** at an at-grade crossing with a beacon system, or with a signal but without pedestrian or cyclist protections through a grade separation.
- **Unprotected** at an at-grade crossing which includes none of the improvements listed above.

As illustrated on Figure 6-2, there are 3 study intersections in the West County subregion that are currently unprotected and 12 that are considered semi-protected. The unprotected intersections are:

- Ohlone Greenway crossing at Manila Avenue
- Pinole Valley Creek facility crossing San Pablo Avenue
- Pinole Valley Creek facility crossing Henry Avenue

This Action Plan sets a target to modify the three (3) existing unprotected intersections to become fully protected by 2027. Further, this Action Plan sets a target that the additional 12 semi-protected crossings receive improvements to become fully protected by 2050. These facilities include:

- Atlas Road and Giant Highway
- Richmond Greenway crossing Harbor Way South
- Richmond Parkway and West Barrett Avenue
- Richmond Parkway and West Macdonald Avenue
- Richmond Parkway and Goodrick Avenue
- Richmond Parkway and Parr Boulevard
- Ohlone Greenway at Moeser Lane
- Ohlone Greenway at Potrero Avenue
- Wildcat Creek Trail at Fred Jackson Way
- Richmond Parkway at San Pablo Avenue
- Richmond Parkway at Atlas Road

¹¹ Roadways included in this analysis labeled “heavily traveled” include all roadways except for routes designated as minor connectors, and local or residential routes. Routes that were analyzed include interstates, freeways, expressways, other principal arterials, minor arterials, and major collectors.

- Pinole Creek bike facility at Tennant Avenue

As the LSBN is completed, new locations where the LSBN crosses a heavily traveled vehicle route will be added. Local jurisdictions should install fully protected intersection treatments for bicyclists and pedestrians at these locations listed above and shown on Figure 6-2.

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Actions

The following actions are needed to achieve the RTO targets and to implement other goals and policies of this Plan, the Countywide Transportation Plan, and other regional long-range planning documents with shared priorities:

- Active Transportation-1: Work with local and regional jurisdictions to adopt and update bicycle and pedestrian plans to expand and/or improve facilities to ensure a seamless, safe, and contiguous active transportation network that provides a positive user experience for people traveling for the daily-average distance/duration trip.
- Active Transportation-2: Require land-use development projects' scopes to include any change-of-use, to provide lockers and secure short-term bicycle parking and long-term storage options at appropriate locations, and to seek funding first at key activity centers throughout West County.
- Active Transportation-3: Improve people access and safety, including micromobility, bicyclists, and pedestrians, through and near highway interchange areas. Reduce the maximum potential vehicle speeds, by using the Vision Zero Toolbox and Safe System Approach.
- Active Transportation-4: Conduct a planning and engineering/design feasibility study along Richmond Parkway to reduce impacts from development; manage and balance truck traffic in mixed-flow travel lanes; and overall, recommend bicycle and pedestrian improvements to close gaps and improve safety and connectivity to the Richmond-San Rafael Bridge Bay Trail.
- Active Transportation-5: Construct gap closure projects in the countywide low-stress bicycle facilities network to establish a safe and contiguous network.
- Active Transportation-6: Develop local bicycle facilities network links to the regional San Francisco Bay Trail and Richmond and Ohlone Greenways to facilitate contiguous longer-distance bicycle travel through West County and to/from neighboring regions.
- Active Transportation-7: Develop a program to bi-annually provide funds for implementation of the Complete Streets policies of the regional and local jurisdictions.
- Active Transportation-8: Implement the recommendations from the Appian Way Alternatives Analysis and Complete Streets Study.
- Active Transportation-9: Implement recommendations from and update the findings of the countywide Safe Routes to School needs assessment and seek funding for bicycle and pedestrian improvements in West County school areas.
- Active Transportation-10: Work with CCTA, Contra Costa Health Services, and Street Smarts Diablo Region to facilitate a countywide coordinated approach to Safe Routes to Schools programs, and to identify continuous multi-year funding sources to encourage students, employees, visitors, and residents at private and public K-12 schools, technical schools, and college sites to use non-vehicle modes to get to/from school.

Parking Electric Devices

Long-term secure e-bike and e-scooter parking and storage facilities are important to encourage active transportation and modal shift. These facilities can take the form of on-demand lockers that replace month-to-month rental lockers or entire bicycle rooms.

- Active Transportation-11: Work with local jurisdictions to promote 511 Contra Costa's active transportation programs that increase awareness of multimodal travel options, travel behavior incentives, and safety through outreach, events, education, social media, marketing, and advertising.
- Active Transportation-12: Continue programs that reduce the cost of using electric bicycles and pursue new programs to reduce the cost of conventional (pedal) bicycle use for Contra Costa residents.
- Active Transportation-13: Work with CCTA, the East Bay Regional Park District, and other public facilities management agencies to develop a method of tracking the Pavement Condition Index (PCI) of bicycle facility segments along the low-stress bike network, and implement rehabilitation, repair, and replacement modifications where and as needed.
- Active Transportation-14: Construct bicycle and pedestrian crossing improvements at the following intersections:
 - Ohlone Greenway crossing at Manila Avenue
 - Pinole Valley Creek facility crossing San Pablo Avenue
 - Pinole Valley Creek facility crossing Henry Avenue
 - Atlas Road and Giant Highway
 - Richmond Greenway crossing at Harbor Way South
 - Richmond Parkway and West Barret Avenue
 - Richmond Parkway and West Macdonald Avenue
 - Richmond Parkway and Goodrick Avenue
 - Richmond Parkway at Parr Boulevard
 - Ohlone Greenway at Moeser Lane
 - Ohlone Greenway at Potrero Avenue
 - Wildcat Creek Trail at Fred Jackson Way
 - Richmond Parkway at San Pablo Avenue
 - Richmond Parkway at Atlas Road
 - Pinole Creek bike facility at Tennent Avenue

- Active Transportation-15: Work with CCTA to conduct, update, and implement a comprehensive countywide Pedestrian Needs Assessment.
- Active Transportation-16: Work with CCTA and local jurisdictions to explore installation of e-bike charging infrastructure in publicly accessible and convenient places, including trails, shared mobility hubs, existing and planned EV charging locations, and near commercial/retail establishments.



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West County Action Plan

Chapter 7: Roadways



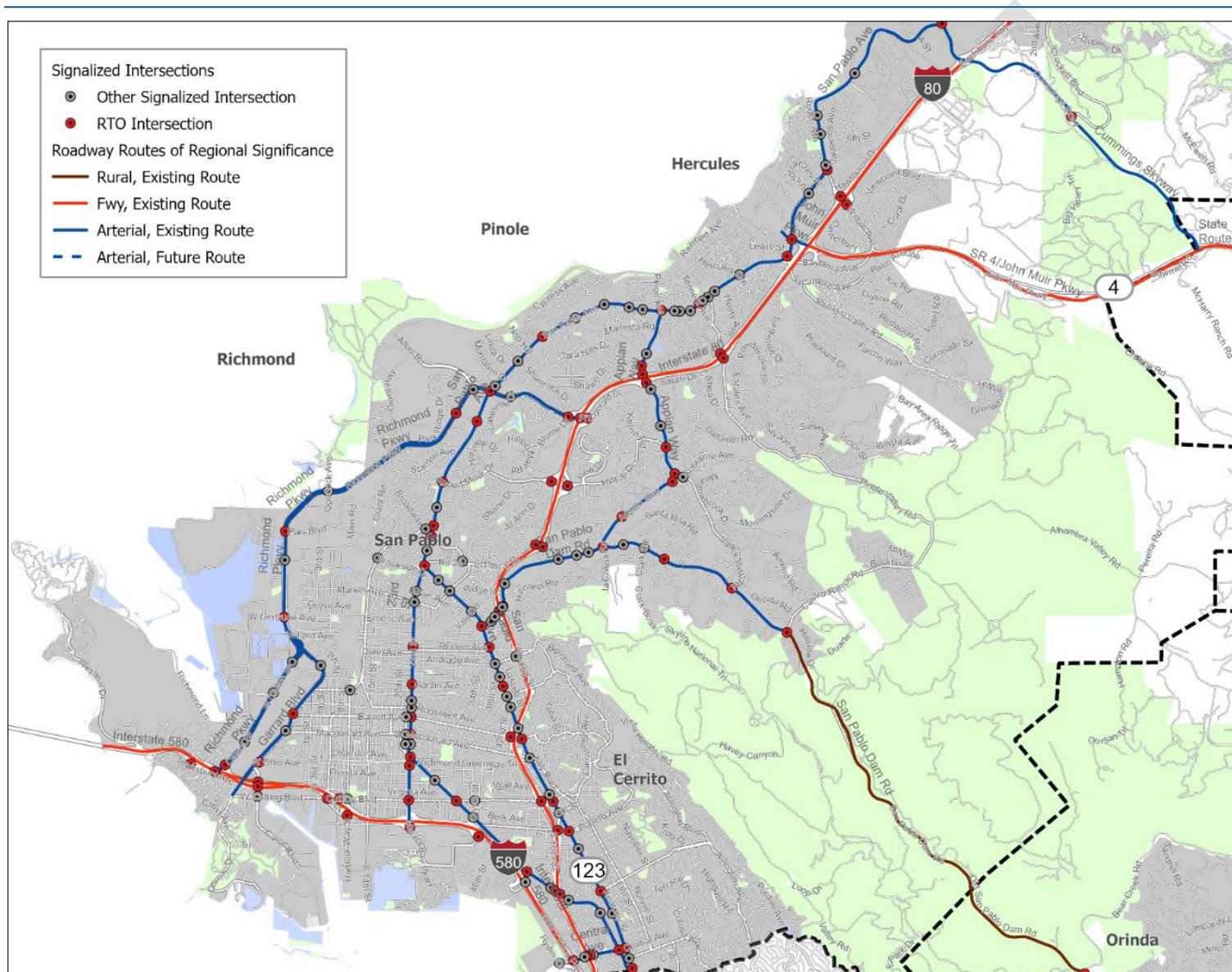
The transportation system in Contra Costa, much like the rest of the United States, is built for and around the automobile. While all modes can use them, roadways are primarily geared to the personal automobile and vehicle traffic. This Action Plan monitors roadway and vehicles to ensure service on Contra Costa roadways is adequate. However, it is the intention of this Action Plan that the share of personal automobile travel decreases, particularly single-occupant vehicles, and that Contra Costa roadways become more multimodal over time. Refer to other chapters in this Action Plan to see RTOs and Actions to achieve these goals. It may be the case that some actions in this chapter conflict with the actions in other chapters of this Action Plan. If such a conflict occurs, it will be up to the individual jurisdiction to weigh project or program benefits against one another and the goals of this Action Plan, the subregion, and Contra Costa as a whole. Figure 7-1 shows the West County roadway segments and intersections evaluated in this chapter.

Table 7-1: Summary of Roadway and Vehicle Regional Transportation Objectives

| RTO Name | Definition | Existing Target | Proposed 2027 Target | Proposed 2050 Target |
|---|--|--|---|--|
| Roadways RTO-1: Freeway Delay Index | Maintain current delay index | Delay index: I-580: 2.5 or less I-80: 3.0 or less SR-4: 2.0 or less | Delay index: I-580: 2.5 or less I-80: 3.5 or less SR-4: 2.0 or less | Delay index: I-580: 2.5 or less I-80: 3.5 or less SR-4: 2.0 or less |
| Roadways RTO-2: Freeway Buffer Index | Maintain current buffer index | None | Buffer index: 0.5 | Buffer index: 0.5 |
| Roadways RTO-3: Intersection Level of Service (LOS) | Maintain LOS at select intersections | LOS D LOS E on San Pablo Avenue and San Pablo Dam Road | LOS D In all areas except for downtowns, key school sites, and freeway ramps; LOS E at freeway ramps; no LOS standards for downtowns, key school sites, or Transit Priority Areas (TPAs) | LOS D In all areas except for downtowns, key school sites, and freeway ramps; LOS E at freeway ramps; no LOS standards for downtowns, key school sites, or TPAs |
| Roadways RTO-4: Roadway Segment LOS | Maintain LOS on two-lane roadways outside of urban areas | None | LOS E (≤40mph) | LOS E (≤40mph) |



Figure 7-1: Summary of Roadway and Vehicle Regional Transportation Objectives



Freeway RTOs

Freeway Routes of Regional Significance (RRS) in the West County subregion include:

- Interstate 580 from the Alameda County Line to the Marin County Line.
- Interstate 80 from the Alameda County Line to the Solano County Line.
- State Route 4 from I-80 to Cummings Skyway.

Roadways RTO-1: Freeway Delay Index

Maintain Peak-Hour Delay Index on Select Freeway Segments

The delay index is a measure of delay experienced by motorists on a roadway segment during a peak commute hour in a single direction. The delay index is calculated by measuring the time it takes to travel a segment of road during peak-period congested conditions and comparing it to the time it takes to travel the same segment during uncongested, free-flow conditions. The delay index may also be calculated as the ratio of congested speed to uncongested speed, given that the distance is fixed on any given corridor.

The observed baseline and modeled results for freeway delay index on the freeway RRS are shown in Table 7-2. As shown, freeway corridors with especially high levels of delay (greater than 1.5 delay index) include I-80 (westbound in the morning and eastbound in the afternoon) and I-580, where the delay index is greater than 3.0 in the westbound direction in the morning (this result likely reflects delay at the Richmond Bridge toll plaza).

Based on current performance and the future modeled performance, this Action Plan carries forward the delay index standards in the 2017 West County Action Plan, which are 2.5 or less for I-580 and 2.0 or less for SR-4. This Action Plan sets a new target for I-80 of 3.5 or less, which is 0.5 higher than the 2017 West County Action Plan.

Roadways RTO-2: Freeway Buffer Index

Maintain Peak-Hour Freeway Segment Buffer Index on Select Freeway Segments

The buffer index represents the buffer time (or time cushion) that most travelers add to their average travel time when planning trips to ensure on-time arrival. This extra time is added to account for any unexpected delay. The buffer index is expressed as a percentage, and its value increases as reliability gets worse. For example, a buffer index of 40 percent means that, for a 20-minute average travel time, a traveler should budget an additional 8 minutes (20 minutes × 40 percent = 8 minutes) to ensure on-time arrival most of the time. In this example, the 8 extra minutes are called the buffer time. The buffer index is computed as the difference between the 95th percentile travel time and average travel time, divided by the average travel time.

Observed baseline and modeled results are shown in Table 7-2. The observed buffer index for existing conditions and peak direction of travel ranges from 0.04 to 0.85, reflecting a high degree of travel-time variability in some of the corridors. In particular, the I-580 morning a.m. operations seem especially variable.

This Action Plan sets a performance target for the buffer index at 0.50, which means that the extra travel time that must be considered for travelers would be no more than half of the average travel time over the corridor.

Table 7-2: Observed and Baseline Modeled Conditions: Freeways

| Route of Regional Significance | 2019 Observed | | | 2050 Baseline Modeled | |
|--------------------------------|------------------------------|-------------|--------------|------------------------------|-------------|
| | Avg Speed (Mph) ^a | Delay Index | Buffer Index | Avg Speed (Mph) ^a | Delay Index |
| Interstate 580 | | | | | |
| Eastbound – a.m. | 50.9 | 1.28 | 0.44 | 58.3 | 1.11 |
| Eastbound – p.m. | 58.8 | 1.10 | 0.09 | 44.3 | 1.47 |
| Westbound – a.m. ^b | 19.8 | 3.28 | 0.85 | 28.3 | 2.29 |
| Westbound – p.m. | 60.6 | 1.07 | 0.08 | 29.2 | 2.23 |
| Interstate 80 | | | | | |
| Eastbound – a.m. | 60.8 | 1.07 | 0.04 | 43.6 | 1.49 |
| Eastbound – p.m. | 28.8 | 2.26 | 0.51 | 17.0 | 3.82 |
| Westbound – a.m. | 38.2 | 1.70 | 0.45 | 16.8 | 3.86 |
| Westbound – p.m. | 61.5 | 1.06 | 0.17 | 43.7 | 1.49 |
| State Route 4 | | | | | |
| Eastbound – a.m. | 56.6 | 1.15 | 0.11 | 54.5 | 1.19 |
| Eastbound – p.m. | 59.3 | 1.10 | 0.15 | 54.9 | 1.18 |
| Westbound – a.m. | 60 | 1.08 | 0.12 | 54.2 | 1.20 |
| Westbound – p.m. | 63 | 1.03 | 0.09 | 54.9 | 1.18 |

a) Average speed over corridor as a whole.

b) The observed average speed, delay index, and buffer index for westbound a.m. commute is attributed to the slowdown at the Richmond-San Rafael Bridge Toll Plaza.

Surface Roadway RTOs

Roadways RTO-3: Intersection LOS

Maintain Peak-Hour LOS at Selected Intersections in Urban Areas



This RTO is applied to signalized intersections along specific defined arterial RRS. Signalized Intersection LOS is a delay-based qualitative measure of traffic conditions at a signalized intersection. LOS is expressed in ratings from “A” through “F,” with “A” meaning that all traffic clears the intersection in every cycle and “F” meaning that drivers must wait through multiple cycles to clear the intersection. Signalized intersection LOS is determined based on intersection turning movement counts (also called turning/traffic volumes), intersection geometry, and signal timing data. The CCTA Technical Procedures specify that methods documented in the latest edition of the *Highway Capacity Manual* be used to measure signalized intersection LOS.¹² The relationship between average control delay and LOS is shown in Table 7-3, and the key arterial intersections analyzed for LOS are shown in Table C-1 in Appendix C, Transportation Modeling Results.

Congestion in downtown areas often results from economically- and socially positive increased activity, so it is considered acceptable. Congestion at freeway ramps is often unavoidable since large numbers of trips are concentrated in areas where motorists get onto freeways. Therefore, this Action Plan sets performance targets for signalized intersection LOS for the West County subregion as follows:

- LOS D in all areas except downtowns, at key schools, and freeway ramps.
- LOS E at freeway ramps.
- No LOS standard for downtowns, key schools, or TPAs.

This Action Plan carries forward LOS flexibility in Pedestrian-Bicycle-Transit (PBT) zones as outlined in the existing West County Action Plan. Within specific PBT zones, the RTOs specified in this document will not be applied; instead, the performance standards defined in the relevant jurisdiction’s general plan and/or specific plan covering that area will govern. PBT zones shall be within a PDA and are typically areas where transit and active transportation modes are given priority over passenger vehicles.

¹² The 7th edition of the *Highway Capacity Manual* was published by the Transportation Research Board in January 2022.

Table 7-3: Intersection LOS Definitions

| Control Delay (Seconds/Vehicle) | Level of Service (LOS) |
|---------------------------------|------------------------|
| ≤10 | A |
| >10–20 | B |
| >20–35 | C |
| >35–55 | D |
| >55–80 | E |
| >80 | F |

Source: *Highway Capacity Manual, 6th edition, Exhibit 19-8*

Roadways RTO-4: Roadway Segment LOS

Maintain Peak-Hour Segment LOS on Selected Two-Lane Roadways Outside of Urban Areas

Roadway segment LOS is a measure of traffic efficiency and smoothness of flow along roadway segments that are not constrained by a nearby traffic signal. This has been calculated in accordance with the methods specified in the 2010 *Highway Capacity Manual* using average speed for Class I highways (Class I highways are two-lane facilities in largely rural areas that motorists expect to traverse at relatively high speed).

For the West County subregion, this metric is applied only to San Pablo Dam Road from Castro Ranch Road to Bear Creek Road. The segment LOS is related to average speed, as shown in Table 7-4. Table 7-5 lists the two-lane roadway corridors analyzed for the West County subregion and reports the existing and forecasted LOS. The observed average speed for existing conditions varies between 41 and 49 mph, corresponding to LOS C and D. The modeled average speeds for 2050 are lower than the observed 2019 average speeds.

This Action Plan sets a performance target for this metric at LOS E on San Pablo Dam Road, which appears to be achievable through 2050, and which corresponds to an average speed across the corridor of under 40 mph.¹³

¹³ Note that a speed of 40 mph is modeled for portions of San Pablo Dam Road that are outside of urban areas and it is possible that speeds decrease in more urbanized portions of the roadway.

Table 7-4: LOS for Two-Lane Roadways

| LOS | Average Speed (MPH) |
|-----|---------------------|
| A | >55 |
| B | >50-55 |
| C | >45-50 |
| D | >40-45 |
| E | ≤40 |
| F | >55 |

Source: Highway Capacity Manual 2010, Exhibit 15-3

Table 7-5: Roadway Corridor LOS for Two-Way Roadways Outside Urban Areas

| Route of Regional Significance | Time of Day | Direction | 2019 | | 2050 | |
|--------------------------------|-------------|-----------|-----------------|-----|-----------------|-----|
| | | | Avg Speed (MPH) | LOS | Avg Speed (MPH) | LOS |
| San Pablo Dam Rd | A.M. | EB | 41.6 | D | 39.5 | E |
| San Pablo Dam Rd | P.M. | EB | 49.4 | C | 39.8 | E |
| San Pablo Dam Rd | A.M. | WB | 47.3 | C | 39.8 | E |
| San Pablo Dam Rd | P.M. | WB | 46.3 | C | 30.5 | E |

Source: Inrix Roadway Analytics, CCTA Travel Demand Model

Actions

The following actions are needed to achieve the RTO targets and to implement other goals and policies of this Plan, the Countywide Transportation Plan, and other regional long range planning documents with shared priorities:

- Roadways-1: Complete necessary operational improvements (e.g., protected turn lanes, synchronized signal timing, auxiliary lanes) on freeways, at intersections and on roadway segments that are needed to maintain the RTOs in this Action Plan, while balancing these improvements against the objectives and actions regarding other modes and issues covered by this Action Plan.
- Roadways-2: Complete the reconstruction of the I-80/San Pablo Dam Road interchange.
- Roadways-3: Complete the improvements associated with the I-80/Central Avenue interchange.
- Roadways-4: Implement transit priority improvements in the West County service area, and continue to work with Caltrans on refinement and monitoring of the ICM program.
- Roadways-5: Reconstruct part or all of the SR-4 and I-80 interchange to improve transit access to the Hercules Transit Center, and work with local jurisdictions to identify any other ramp reconfiguring projects.
- Roadways-6: Implement the recommended actions in the I-80 Corridor System Management Plan.
- Roadways-7: Work with CCTA to complete a countywide goods movement plan that promotes greater use of technology for communications and scheduling, funding for equipment upgrades for air quality improvements with cleaner technology, and an advocacy platform for goods movement and guidance for local jurisdictions.
- Roadways-8: Improve the operational efficiency of freeways and arterial streets through effective corridor management strategies, such as ramp metering, traffic operations systems, Intelligent Transportation Systems improvements, HOV/HOT lane and bypass lanes, and others to support a cohesive transportation system for all modes.
- Roadways-9: Work with CCTA, Caltrans, California Highway Patrol, and local jurisdictions to continue studying the feasibility of pilot and long-term programs for bus on shoulder, which may include examining legislation that should change.
- Roadways-10: Work with CCTA, Caltrans, and California Highway Patrol to develop a program to track HOV/HOT and toll lane violators.
- Roadways-11: Work with CCTA and local jurisdictions to develop a program to discourage diversion from freeways and cut-through travel on surface roadways by developing traffic management programs, increasing trip capacity on freeways, completing freeway operational improvements, implementing traffic-calming measures on surface roadways, and exploring surface roadway redesign to support active and public transit modes.
- Roadways-12: Develop a program to establish, operate, and maintain existing and additional public or private park-and-ride facilities at appropriate locations, including shared-use agreements at activity centers with underutilized parking spaces.

- Roadways-13: Participate in evaluations of West County freeways that may involve proposed changes to managed lanes, such as HOV lane modifications, special-purposes lanes, or HOT/Express Lanes.
- Roadways-14: Maintain pavement management systems and schedules, and continue to seek additional funding for local roadway maintenance.
- Roadways-15: Conduct a study to consider modifications to 23rd Street to convert it to a balanced multimodal corridor that emphasizes transit and active transportation over vehicles, building on the concepts that are already in the City of San Pablo's 23rd Street Specific Plan and the Richmond Bay Specific Plan
- Roadways-16: Work with WCCTAC, local jurisdictions, and CCTA to seek funding to implement recommendations of the North Richmond Truck Route Study (or other mutually agreed-upon implementation measures) to improve connectivity to designated truck routes, discourage nonlocal heavy truck traffic on local streets, and improve public health and safety in West County communities.
- Roadways-17: Explore options to extend the truck-climbing lane on Cummings Skyway and to implement a Class II bike lane on Cummings Skyway between San Pablo Avenue and Franklin Canyon Road.
- Roadways-18: Participate in the San Pablo Avenue Multimodal Corridor Study with the goal of enhancing the street as a multimodal corridor, and implement the recommendations from the study once it is approved.
- Roadways-19: Develop one or more subregional corridor plans for key streets such as 23rd Street and Richmond Parkway to provide adequate roadway capacity for local and subregional travel while also including both public transit and active transportation modes and nonmodal transportation issues such as equity, climate change, safety, and technology.

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West County Action Plan

Chapter 8: Safety



The safety of the transportation system affects each person that lives, works, or recreates in Contra Costa, regardless their age or the mode by which they travel. Whether someone is traveling in a vehicle or using active transportation, there is risk of collision on any transportation facility. It is the goal of Contra Costa, in conjunction with many jurisdictions around the world, to eliminate the number of collisions that occur, particularly collisions between vehicles and those using active transportation modes. CCTA has published the *Vision Zero & Systemic Transportation Safety "How To" Policy and Implementation Guide* and encourages local jurisdictions to adopt and implement Vision Zero action plans. In addition, an objective in the Contra Costa Countywide Bicycle and Pedestrian Plan is to "reduce the rate of pedestrian and bicycle fatalities and injuries per capita". In alignment with the Vision Zero philosophy, this Action Plan sets performance targets at zero fatalities and severe injuries for all collisions.

Table 8-1: Summary of Regional Transportation Objectives: Safety

| RTO Name | Definition | Existing Target | Proposed 2027 Target | Proposed 2050 Target |
|--|--|-----------------|---|----------------------|
| Safety RTO-1: KSI Collisions | Eliminate collisions that result in fatality or severe injury | None | Zero fatality and severe injury collisions ^a | |
| Safety RTO-2: Active Transportation Collisions | Eliminate KSI collisions involving users of active transportation | None | | |
| Safety RTO-3: Active Transportation Collisions near Schools ^b | Eliminate active transportation-involved KSI collisions occurring within 500 feet of schools | None | | |

a) CCTA codified Vision Zero work through Resolution 21-40-G which adopts the Contra Costa Countywide Transportation Safety Policy and Implementation Guide for Local Agencies.

b) Schools in this analysis refer to all public and private K-12 schools.

RTOs

The RTOs in this section are based on the injury and fatality collisions reported by the Transportation Injury Mapping System (TIMS).¹⁴ TIMS collision records represent cleaned and geocoded data compiled by the Statewide Integrated Traffic Records System maintained by the California Highway Patrol. The statistics reflect the most recent four years of available data but exclude data from 2020 due to pandemic conditions (include January 1, 2016, through December 31, 2019). CCTA and the West County jurisdictions understand that there have been collisions since this time and that they may occur in locations that are not captured in these point-in-time data. However, these data are intended to be a sampling and do not represent all KSI collisions. The number of collisions reported in this chapter are recognized to represent an undercount of total collisions because not all collisions, especially minor ones, are reported to the police.



¹⁴ Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center, University of California, Berkeley, 2022.

Safety RTO-1: KSI Collisions

Eliminate Killed or Severely Injured (KSI) Collisions in the Subregion

This RTO tracks the number of severe injury or fatality collisions from the TIMS data set. The collision locations are depicted on Figure 8-1, and Table 8-2 summarizes the collisions by type.

During the analysis time frame, there were 413 severe injury or fatality collisions throughout West County—76 fatal collisions and 337 severe injury collisions. The most common types of collision were vehicle/pedestrian, hit object, and broadside collisions.

Safety RTO-2: Active Transportation Collisions

Eliminate Collisions in the Subregion that Involve Users of Active Transportation

This RTO tracks the number of bicycle- or pedestrian-involved collisions from the TIMS data set. The collision locations for the West County subregion are depicted on Figure 8-1 and summarized by severity in Table 8-3. During this time frame, there were 588 bicycle- or pedestrian-involved collisions, including about 14 percent of all injury and fatality collisions. Thirty of the bicycle or pedestrian collisions resulted in fatalities and 102 resulted in severe injury.

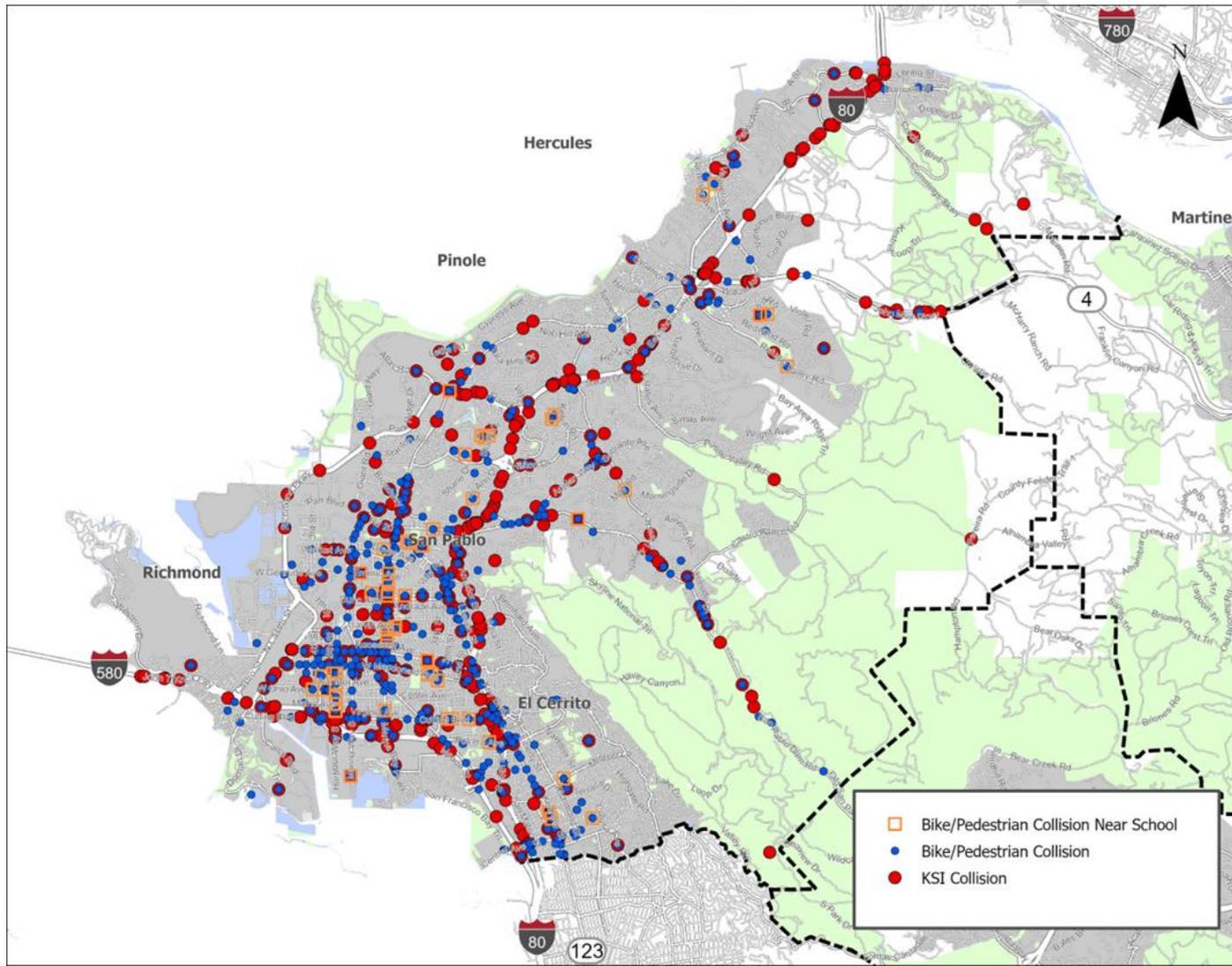
Safety RTO-3: Active Transportation Collisions Near Schools

Eliminate Active Transportation Collisions Within 500 Feet of a School

This RTO tracks the number of bicycle- or pedestrian-involved collisions that occur within 500 feet of school campuses. These collision locations are also depicted on Figure 8-1. A total of 68 collisions occurred near school campuses, 48 of which involved collision with a pedestrian and 21 with a bicyclist, including one involving both a pedestrian and bicyclist. These collisions also include one fatal crash.



Figure 8-1: KSI And Bicycle or Pedestrian-Involved Collisions (2016-2019)¹⁵



¹⁵ Note that KSI collisions involving a bicycle or pedestrian are shown with both a blue and red dot.

Table 8-2: KSI Collisions by Type: West County Subregion, January 1, 2016, through December 31, 2019

| Collision Type | 2016 | 2017 | 2018 | 2019 | Number of Collisions |
|--------------------|-----------|-----------|------------|------------|----------------------|
| Not Stated | 2 | 1 | | 1 | 4 |
| Head-On | 10 | 6 | 11 | 10 | 37 |
| Sideswipe | 10 | 11 | 8 | 10 | 39 |
| Rear-End | 13 | 6 | 20 | 15 | 54 |
| Broadside | 13 | 11 | 22 | 23 | 69 |
| Hit Object | 23 | 17 | 18 | 23 | 81 |
| Overtaken | 3 | 5 | 3 | 10 | 21 |
| Vehicle/Pedestrian | 18 | 25 | 28 | 26 | 97 |
| Other | 2 | 2 | 3 | 4 | 11 |
| Total | 94 | 84 | 113 | 122 | 413 |

Source: Transportation Injury Mapping System and DKS Associates.

Table 8-3: Bike and Pedestrian Collisions by Severity: West County Subregion, January 1, 2016, through December 31, 2019

| Severity | 2016 | 2017 | 2018 | 2019 | Total Bike and Pedestrian Collisions |
|----------------------------|------------|------------|------------|------------|--------------------------------------|
| Fatal | 6 | 6 | 8 | 10 | 30 |
| Injury (Severe) | 22 | 23 | 29 | 28 | 102 |
| Injury (Other Visible) | 53 | 54 | 37 | 61 | 205 |
| Injury (Complaint of Pain) | 44 | 60 | 83 | 64 | 251 |
| Total | 125 | 143 | 157 | 163 | 588 |

Source: Transportation Injury Mapping System and DKS Associates.

Actions

The following actions are needed to achieve the RTO targets and to implement other goals and policies of this Plan, the Countywide Transportation Plan, and other regional long range planning document with shared priorities:

- Safety-1: Work with regional and local agencies to increase the level of multimodal public awareness about bicycle and pedestrian safety and to reduce injuries due to vehicle-involved collisions.
- Safety-2: Work with CCTA to develop a program to coordinate the collection and analysis of safety data, identify areas of concern, and propose safety-related improvements and user awareness so as to support state and federal safety programs and performance measures.
- Safety-3: Work with CCTA, California Highway Patrol (CHP), and Caltrans to prepare an incident management plan for West County freeways.
- Safety-4: Work with CCTA to implement the Countywide Vision Zero Framework and Safe System Approach to project scoping and delivery.
- Safety-5: Conduct a study, led by WCCTAC, to identify all safety-related transportation improvements needed within 500 feet of schools.
- Safety-6: Work with CCTA, MTC, and East Bay Regional Park District (EBRPD) to study and mitigate the safety impacts of electric bicycles and other micromobility devices on local trails and streets, with the aim of eventually allowing electric bicycles, e-scooters, and other micromobility devices on all of these facilities.
- Safety-7: Improve the safety of high-incident local roadways through physical changes, signage, technology, education, enforcement, or other tools.



Project Highlight!

East Bay Regional Park District Board of Directors approved a one-year pilot program in 2017 to allow e-bikes on three regional trails.

West County Action Plan

Chapter 9: Equity



All members of the Contra Costa community should have equal access to various transportation options, jobs, and services. The West County subregion has several Equity Priority Communities (EPC) whose residents are documented to have lower socioeconomic status than the Bay Area as a whole. Therefore, this Action Plan looks at several components of the transportation system in terms of access to mobility, jobs, and services.

Table 9-1: Summary of Equity Regional Transportation Objectives

| RTO Name | Definition | Existing Target | Proposed 2027 Target | Proposed 2050 Target |
|---|---|-----------------|--|----------------------|
| Equity RTO-1: EPC Low-Stress Bike Network | Proportion of the LSBN that is contiguous and complete in EPCs, as compared to West County as a whole | None | Maintain level of contiguous LSBN completion to match or exceed that of West County as a whole | |
| Equity RTO-2: Collisions in EPCs | Proportion of KSI collisions that occur in EPCs, as compared to West County as a whole | None | Lower collision rates to match West County as a whole | |
| Equity RTO-3: EPC Job Access: Driving | Share of jobs accessible by EPCs residents with a 30-minute drive, as compared to West County as a whole | None | Increase job access to match West County as a whole | |
| Equity RTO-4: EPC Job Access: Transit | Share of jobs accessible by EPCs residents with a 45-minute transit trip, as compared to West County as a whole | None | Maintain existing job access to match or exceed that of West County as a whole | |
| Equity RTO-5: EPC Access to High-Quality Transit | Total number of EPC acres within a high-quality transit buffer, as compared to West County as a whole | None | Maintain access to high quality transit to match or exceed that of West County as a whole | |

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Equity RTO-1: EPC Low-Stress Bike Network Completion

Ensure that the Proportion of the Countywide LSBN That Has Been Completed in the Subregion Is Equal To or Greater Than the Proportion Completed in the Subregion as a Whole

The status of the entire West County portion of the LSBN is shown on Figure 9-1. If the entire LSBN in the West County subregion were completed, it would result in 144.6 miles of Class I and Class IV facilities.

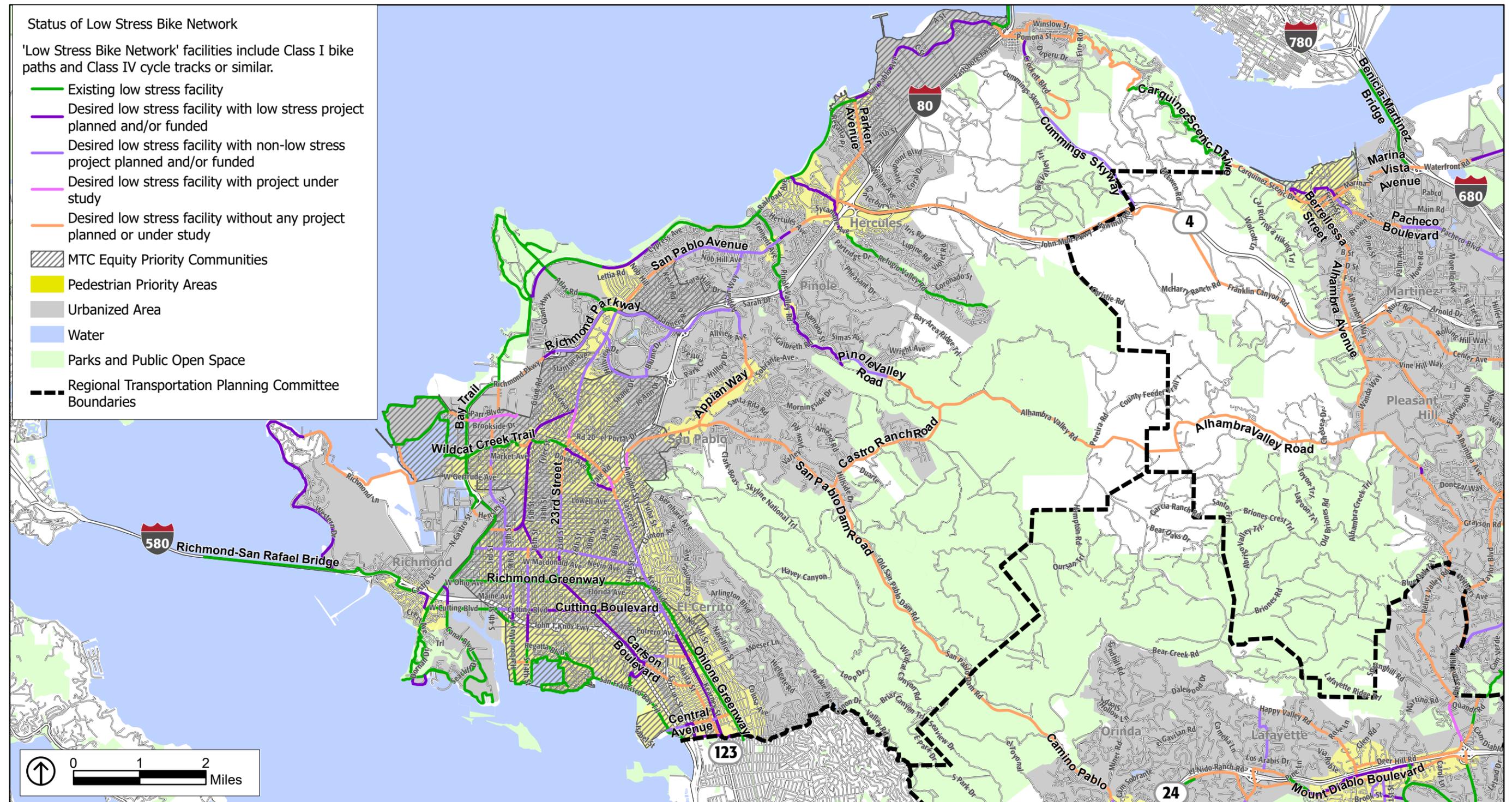
Table 9-2 breaks down the portions of the LSBN that are at varying stages of completeness in both the entire subregion and in EPC areas. Table 9-2 shows that 37 percent of the LSBN is already complete for both the entire subregion and within EPCs. A slightly larger proportion of the LSBN has a project planned and/or funded to complete a low stress facility, with 23 percent in EPCs compared to 17 percent subregion-wide. The case is similar for portions of the LSBN in EPCs that have a non-low stress facility planned and/or funded—22 percent in EPCs compared to 16 percent subregion-wide. EPC areas also have a slightly higher proportion of the LSBN under study—3 percent compared to 1 percent for non-EPC areas. The proportion of the LSBN with no low stress facility planned or under study is higher for the subregion—29 percent subregion-wide compared to only 16 percent in EPCs. Therefore, EPCs are generally better off in terms of having LSBN projects planned and/or funded and having other active transportation improvements (non-low stress) proposed or under study.

This Action Plan sets a performance target for the subregion to maintain the level of LSBN completion to either match or exceed that of the entire West County subregion. As shown in Table 9-2 and described above, West County EPCs already fare better than non-EPCs in West County in regard to LSBN completion.

Table 9-2: Proportion of the West County LSBN That Is Complete in EPCs

| Status of Facility | Entire Subregion Miles | Entire Subregion Percentage | EPC Miles | EPC Percentage |
|---|------------------------|-----------------------------|-----------|----------------|
| Existing Low-Stress Facility | 53.5 | 37% | 19.1 | 37% |
| Desired Low-Stress Facility with Low Stress Project Planned and/or Funded | 23.9 | 17% | 11.8 | 23% |
| Desired Low-Stress Facility with Non-Low Stress Project Planned and/or Funded | 23 | 16% | 11.5 | 22% |
| Desired Low-Stress Facility with Project Under Study | 1.7 | 1% | 1.7 | 3% |
| Desired Low-Stress Facility without any Project Planned or Under Study | 42.5 | 29% | 8.1 | 16% |

Figure 9-1: Status of the West County LSBN in EPCs



Source: ABAG/MTC, 2021, 2019; CCTA, 2022; ESRI, 2021; PlaceWorks, 2022.

Note: The status of specific segments on this map is taken from the CCTA 2018 Countywide Bicycle and Pedestrian Plan (CBPP) project list, the revised 2022 CBPP project list, adopted Bike and Pedestrian Master Plans from individual jurisdiction, and consultation with local staff. "Desired Low Stress Network" refers to what the entire Low Stress Bike Network would look like upon completion, per the 2018 CBPP.

WEST CONTRA COSTA COUNTY LOW-STRESS BIKE NETWORK

Equity RTO-2: Collisions in EPCs

Ensure that the Proportion of KSI and Active Transportation-Involved Collisions in EPCs in the Subregion Is Equal To or Less Than the Proportion of the Subregion’s Population Living in EPCs

This metric tracks the rate of collisions that occur within EPCs compared to the rate for the entire West County subregion. As shown in Table 9-3, the collision rates in EPCs in West County are far higher (1.39 collisions per 1,000 population) than the rate in West County as a whole (0.39 collisions per 1,000 population). Actions in this plan are intended to improve roadway safety in West County’s EPC so as to address this disparity.

Table 9-3: KSI and Bike- or Pedestrian-Involved Collision Rates

| Collision Type | Number of Collisions (2016-2019) | | 2019 Population ^a | | Avg. Annual Collisions (1,000s) per Population | |
|-----------------------|----------------------------------|------------------|------------------------------|------------------|--|------------------|
| | West County | West County EPCs | West County | West County EPCs | West County | West County EPCs |
| KSI | 413 | 211 | 266,824 | 38,086 | 0.39 | 1.39 |
| Bike- or Ped-Involved | 588 | 419 | 266,824 | 38,086 | 0.55 | 2.75 |

a) Population from American Community Survey 2019 Five Year Estimates Table B01003.

Equity RTO-3: EPC Job Access: Driving

Ensure That the Number of Jobs That Can Be Reached by EPC Residents with a 30-Minute Drive Is Equal To or Greater Than the Number of Jobs That Can Be Reached with a 30-Minute Drive by All Residents in the Subregion

This metric conveys the average number of jobs per capita within a 30-minute peak period drive for all West County TAZs compared to all TAZs within West County EPCs. The number of jobs corresponds to those used in the travel demand model demographic inputs. As shown in Table 9-4, within a 30-minute drive, there are on average 491 accessible jobs per West County subregion resident and 465 accessible jobs per West County subregion resident within an EPC. By 2050, the averages are projected to increase to 620 and 644, respectively. This means that there was an average of 26 fewer jobs per capita accessible by driving to West County residents that live inside of an EPC in 2019 when compared to West County as a whole. 2050 projections predict that this gap will close, and EPC residents will end up with 24 more jobs per capita accessible by a 30 minute drive than those living in West County as a whole.

The Action Plan sets a performance target for this RTO that the average number of jobs per capita within the EPCs that are accessible by a 30-minute drive should be at least equivalent to that for the subregion as a whole. As noted above, this target is not currently being met, but it is predicted to be met by 2050.

Table 9-4: Average Auto Accessible Jobs per Capita (30-Minute Time Shed)

| Geography | 2019 Average Jobs per Capita | 2050 Average Jobs per Capita |
|---------------------|------------------------------|------------------------------|
| West Subregion | 491 | 620 |
| West Subregion EPCs | 465 | 644 |

Equity RTO-4: EPC Job Access: Transit

Ensure That the Number of Jobs That Can Be Reached by EPC Residents with a 45-Minute Transit Trip Is Equal To or Greater Than the Number of Jobs That Can Be Reached with a 45-Minute Transit Trip by All Residents in the Subregion

This metric conveys the average number of jobs per capita within a 45-minute peak period transit ride for all West County TAZs compared to all TAZs within West County EPCs. The number of jobs corresponds to those used in the travel demand model demographic inputs. As shown in Table 9-5, there are, on average, 672 jobs per West County resident and 749 jobs per West County resident within an EPC that are accessible with a 45-minute transit ride. By 2050, the averages are projected to increase to 727 and 873, respectively. This means that more jobs are already accessible via a 45-minute transit ride for EPC residents than is the case for West County residents as a whole.

This Action Plan sets a performance target for this RTO that the average number of jobs per capita within a 45-minute transit ride for EPC residents should be at least equivalent to that of the subregion. The West County subregion currently meets this target and is projected to maintain it through 2050.

Table 9-5: Average Transit Accessible Jobs per Capita (45-Minute Time Shed)

| Geography | 2019 Average Jobs per Capita | 2050 Average Jobs per Capita |
|---------------------|------------------------------|------------------------------|
| West Subregion | 672 | 727 |
| West Subregion EPCs | 749 | 873 |

Equity RTO-5: EPC Access to High Quality Transit

Ensure That the Proportion of Urbanized EPC Land Area in the Subregion Served by High-Quality Transit Is Equal To or Greater Than the Urbanized Land Area Served by High-Quality Transit in the Subregion as a Whole

As shown on Figure 9-2 and in Table 9-6, approximately half of EPC areas in West County are not within a quarter mile of high frequency bus stops with 15-minute headways or less, or within a half mile of rail or ferry terminals. Table 9-6 indicates that only 55 percent of EPC acreage is within the high-quality transit buffer. However, this figure is better when compared to the urbanized portions of West County as a whole, which have 46 percent of their land area with good access to high-quality transit. High quality transit is generally more accessible (by 9 percent) in EPCs than in West County as a whole.

The Action Plan sets a performance target that the subregion should aim to maintain EPC access to high quality transit at or above the levels that exist for West County as a whole.

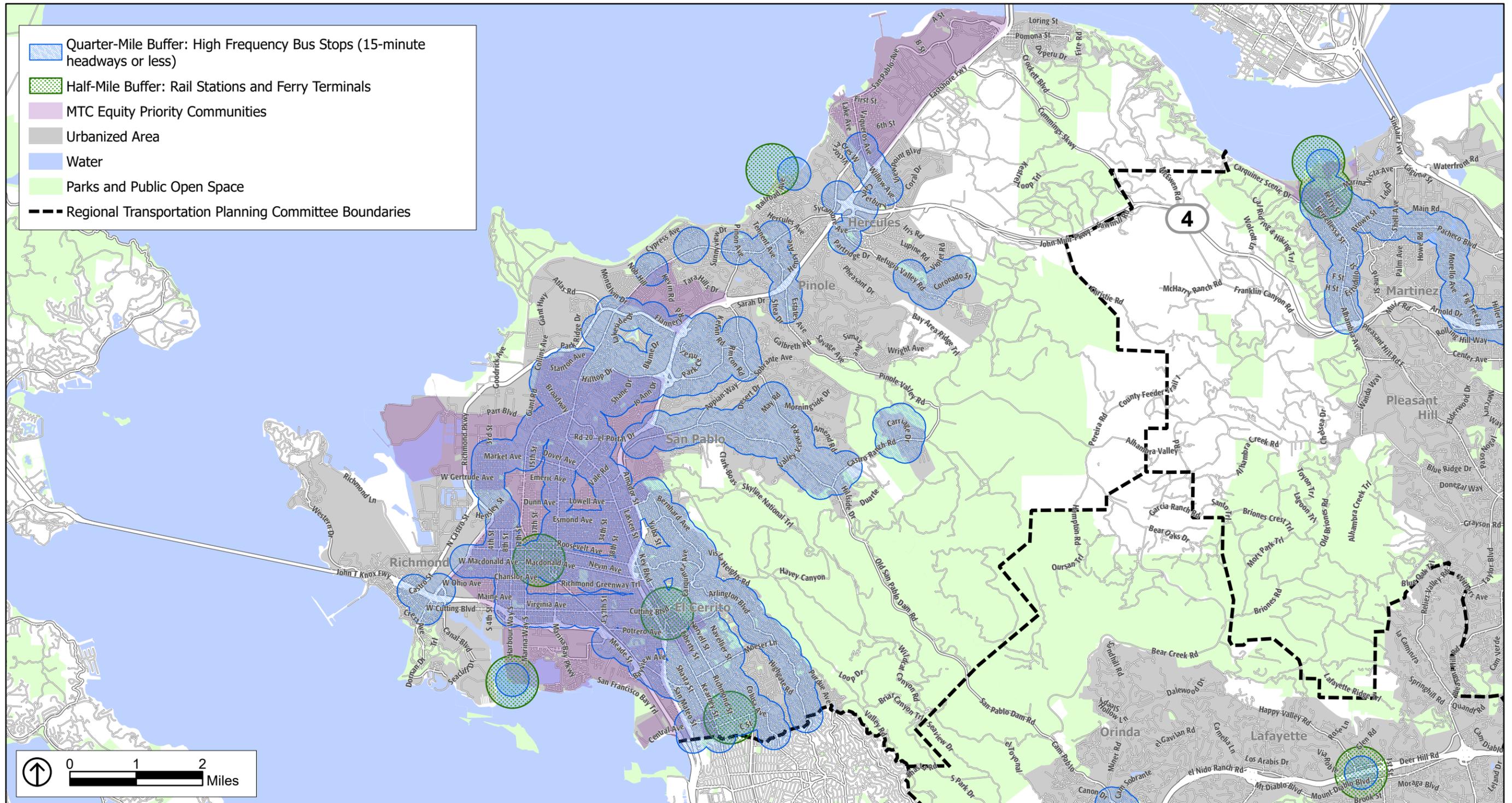
Table 9-6: West County EPC Acres in Relation to High-Quality Transit

| | Non-EPC Acres | Proportion of Non-EPC Acres | EPC Acres | Proportion of Total EPC Acres |
|--|---------------|-----------------------------|---------------|-------------------------------|
| Within high-quality transit buffer | 15,223 | 46% | 6,134 | 55% |
| Not within high-quality transit buffer | 17,731 | 54% | 4,982 | 45% |
| Total acres | 32,954 | 100% | 11,116 | 100% |

All figures are for urbanized areas only



Figure 9-2: West County EPC and High Quality Transit



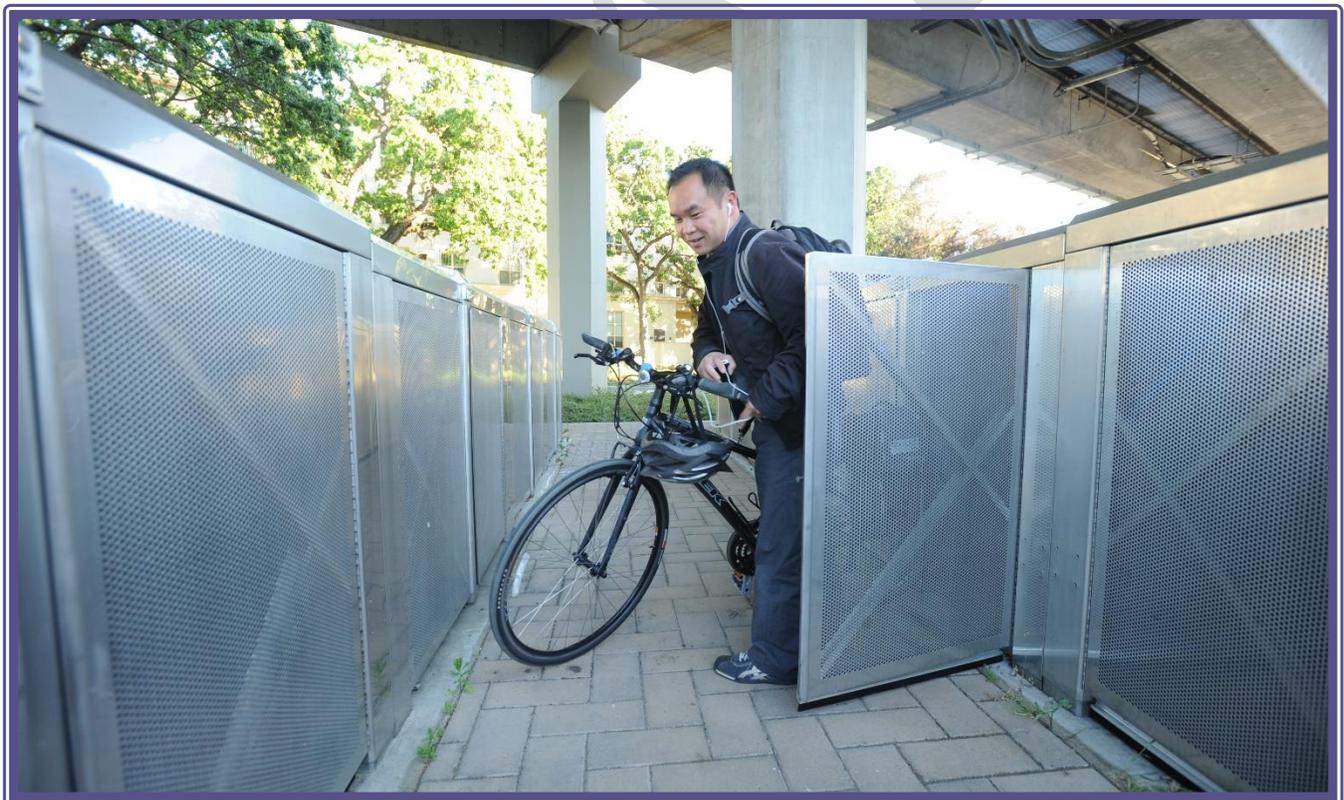
Source: CCTA, 2021; ESRI, 2021; PlaceWorks, 2022.

WEST CONTRA COSTA COUNTY EQUITY PRIORITY COMMUNITIES AND HIGH-QUALITY TRANSIT

Actions

The following actions are needed to achieve the RTO targets and to implement other goals and policies of this Plan, the Countywide Transportation Plan, and other regional long range planning documents with shared priorities:

- Equity-1: Conduct a study to identify strategies to increase low-income residents' access to transit hubs, jobs, and areas with goods and services (for example, in West County, the study could explore enhancing existing transit hubs, constructing new transit hubs, and first/last mile solutions).
- Equity-2: Increase express bus service to regional job centers, particularly those with low-income workers, inside and outside of the subregion.
- Equity-3: Increase access to car sharing services for low-income residents and support financial incentives for using them.
- Equity-4: Increase high frequency transit lines and stops in EPC areas.
- Equity-5: Conduct a study of KSI hotspots in low-income areas to identify needed safety improvements, then implement the identified improvements.



West County Action Plan

Chapter 10: Climate Change



As described in Chapter 2, climate change is one of the greatest challenges facing the planet, and transportation is one of the largest contributors of greenhouse gas (GHG) emissions. The transportation system not only contributes to climate change, but is vulnerable to its impacts, such as extreme weather and sea level rise. This chapter includes several RTOs aimed at reducing the impact that the transportation system has on climate change.

Table 10-1: Summary of Climate Change Regional Transportation Objectives

| RTO Name | Definition | Existing Target | Proposed 2027 Target | Proposed 2050 Target |
|--|---------------------------------------|-----------------|------------------------|-----------------------------|
| Climate Change RTO-1: Single-Occupant Vehicle (SOV) Mode Share | Decrease SOV mode share per capita | None | 48% for commute trips | 33% for commute trips |
| Climate Change RTO-2: Carpool Mode Share | Increase carpool mode share | None | 17% for commute trips | 20% for commute trips |
| Climate Change RTO-3: Vehicle Miles Traveled | Decrease VMT per capita | None | 22.7 VMT | 21 VMT |
| Climate Change RTO-4: Greenhouse Gas (GHG) Emissions | Decrease GHG emissions per capita | None | 15 lbs per capita | Zero transportation related |
| Climate Change RTO-5: Zero Emission Vehicles | Increase registered electric vehicles | None | 50% market penetration | 100% market penetration |

RTOs

Climate Change RTO-1: SOV Mode Share

Reduce the Mode Share of Single-Occupant Vehicles in the Subregion

As shown in Table 2-2 in Chapter 2, 64 percent of total West County work trips were by single-occupant vehicles, compared to 68 percent of total Contra Costa work trips. Table 2-2 and Table 2-3 illustrate that the 2050 projections predict that this number will decrease to 62 percent of home-to-work mode share based on residence location and 72 percent based on job location by 2050. Meanwhile, 2050 projections predict that 62 percent of all trips made by West County residents (not strictly commute trips) will be taken by single-occupant vehicles by 2050.

This Action Plan sets a performance target for single-occupant vehicle work commute mode share in the West County subregion—48 percent for home-to-work trips in 2027 and 33 percent in 2050. These numbers have been derived by reducing future single-occupant vehicle mode share by the targeted increases in transit, bike, and walk trip mode share, and also by assuming an increase in carpooling (multiple-occupant vehicle) mode share to 20 percent.



Climate Change RTO-2: Carpool Mode Share

Increase the Mode Share of Carpooling in the Subregion

As discussed above, reducing the single-occupant vehicle mode share will require increases in the other modes, including carpooling. Therefore, this Action Plan sets a target of 20 percent of commute trips to be made by carpooling by 2050, with an interim target of 18 percent by 2027.

Climate Change RTO-3: Vehicle Miles Traveled

Reduce Vehicle Miles Traveled per Capita in the Subregion

This Action Plan considers total VMT for county and subregion residents. The 2020 VMT study conducted for CCTA by consultant Fehr & Peers found that 2018 VMT per service population in the West County subregion was 23.5, and for Contra Costa County was 30.3 VMT per service population.

The California Air Resources Board’s *2017 Scoping Plan: Identified VMT Reductions and Relationship to State Climate Goals*¹⁶ states that California needs to reduce daily per capita VMT to 21 to achieve carbon neutrality, which is the State’s goal for 2045. Based on this recommendation and the finding of the Action Plan Update, this Action Plan sets a goal for 2050 to reduce VMT per capita to 21 VMT per service population in the West County area. Using a straight-line projection for reductions from 2018 until 2050, this would mean a reduction of 4 percent to 22.7 VMT per capita by 2027.

Table 10-2: VMT per Service Population

| | 2018 | 2050 |
|---------------------|------|------|
| West County | 23.5 | 22.7 |
| Contra Costa County | 30.3 | 28.2 |

Sources: Fehr and Peers, 2020; DKS and CCTA Travel Demand Model, 2022.

¹⁶ California Air Resources Board, *2017 Scoping Plan: Identified VMT Reductions and Relationship to State Climate Goals*, January 2019, https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf.

Climate Change RTO-4: Greenhouse Gas Emissions

Reduce Transportation Greenhouse Gas Emissions per Capita in the Subregion

This metric reflects the total daily VMT occurring on roadways within the planning area, including commercial vehicle trips and through traffic, but does not include estimates of VMT occurring outside the travel demand model boundaries. The EMFAC emissions model has been used to translate this total daily roadway VMT into GHG emissions (specifically, CO₂).¹⁷ The emissions outputs also reflect assumptions about the future vehicle fleet.

The target for this metric is zero tons of transportation related emissions by 2050 or about a one-third reduction in GHG per capita by 2027. With the currently estimated 23 pounds of GHG per capita, this translates to a 2027 target of about 15 pounds per capita. Although transportation-related CO₂ emissions are projected to fall by 2050, more work is needed to reach the target of zero.

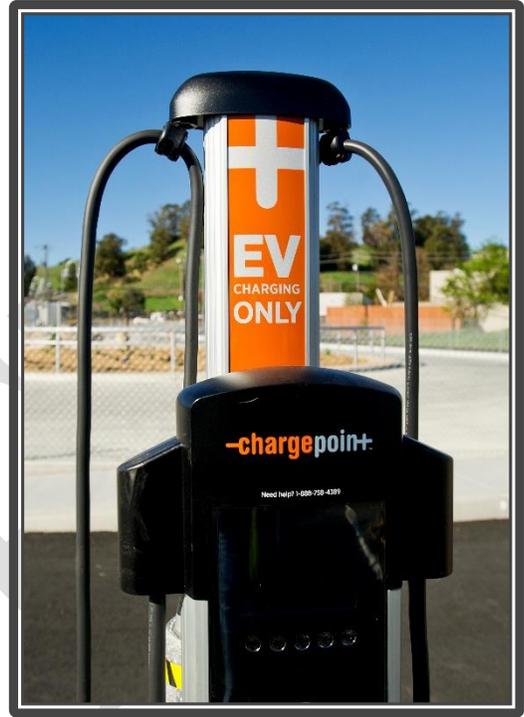


Table 10-3: Average Daily Transportation-Related GHG per Capita

| | 2019 | | | 2050 | | |
|---------------------|------------|----------------------------------|--|------------|----------------------------------|--|
| | Population | CO ₂ Emissions (Tons) | CO ₂ Emissions Per Capita (Lbs) | Population | CO ₂ Emissions (Tons) | CO ₂ Emissions Per Capita (Lbs) |
| West County | 268,649 | 3,038 | 22.62 | 309,913 | 1,927 | 12.43 |
| Contra Costa County | 1,148,922 | 13,734 | 23.91 | 1,457,615 | 8,737 | 11.99 |

Sources : DKS Associates ; EMFAC 2021 ; CCTA Travel Demand Model.

¹⁷ California Air Resources Board, EMFAC, v1.0.2, Scenario Analysis, 2021.

Climate Change RTO-5: Zero Emission Vehicles

Increase Ownership of Zero-Emission Vehicles in the Subregion

This RTO tracks the number of battery electric vehicles “on the road,” with the goal of increasing total electric vehicle (EV) penetration. Data as of April 2021, the most recent report date, are shown in Table 10-4 for West County as well as all of Contra Costa County for comparison. West County currently has 4,258 EVs compared to 21,609 in the county overall.

Under a regulation approved by the California Air Resources Board, 35 percent of new passenger vehicles sold in the state must be powered by batteries or hydrogen by 2026, and 100 percent by 2035.¹⁸ Currently, 12.4 percent of new vehicles sold in California are zero-emission vehicles (ZEV), and ZEVs make up about 2 percent of the light duty vehicle fleet in Contra Costa County.

By executive order, California has set a target of one million ZEVs on the road by 2025 and five million ZEVs by 2030.¹⁹ Since West County accounts for about 0.7 percent of the state’s population, this suggests that the subregion should have about 6,800 ZEVs by 2025 and 34,000 ZEVs by 2030. A straight-line extrapolation of this number through 2050 suggests about 162,000 ZEVs in West County by 2050.

With all the above factors in mind, this Action Plan sets a target of 100 percent of the fleet (vehicles on the road), contrasted to the estimated existing EV fleet penetration of about 2 percent. The estimated number of light duty vehicles currently based in West County is about 218,000.

Table 10-4: Electric Vehicles by Subregion as of April 2021

| Area | Battery Electric Vehicles |
|--------------------------------------|---------------------------|
| Central County | 4,879 |
| East County | 2,926 |
| Lamorinda | 3,141 |
| Tri-Valley ^a | 15,262 |
| West County | 4,258 |
| Contra Costa County (unincorporated) | 21,609 |

Source: California Energy Commission (2022). California Energy Commission Zero Emission Vehicle and Infrastructure Statistics. Data last updated April 2022. Retrieved June 29, 2022 from <http://www.energy.ca.gov/zevstats>.

Note: Correspondence of zip codes to RTPC boundaries is approximate.

a) Includes both the Contra Costa and Alameda County portions of the Tri-Valley.

¹⁸ California Air Resources Board, Advanced Clean Cars II.

¹⁹ Executive Order B-16-2012 and Executive Order B-48-18.

Actions

The following actions are needed to achieve the RTO targets and to implement other goals and policies of this Plan, the Countywide Transportation Plan, and other regional long range planning documents with shared priorities:

- Climate Change-1: Work with 511 Contra Costa to expand Transportation Demand Management (TDM) programs, adopt local TDM plans, and conduct regular monitoring and reporting for program effectiveness.
- Climate Change-2: Continue to implement a program to support deployment of high-quality, fast, and diverse electrical vehicle and bus chargers in the subregion.
- Climate Change-3: Continue to promote electric vehicle ownership by offering financial incentives and providing educational programs and demonstrations.
- Climate Change-4: Work with regional agencies, local employers, and schools to increase tele-work, compressed work weeks, alternative work locations, and flex schedules, and provide pretax employer transportation benefit programs.
- Climate Change-5: Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.
- Climate Change-6: Coordinate with impacted jurisdictions, property owners, and other applicable agencies that own or maintain Routes of Regional Significance that would be impacted by sea level rise, to coordinate and plan for inundation mitigation.
- Climate Change-7: Enable regional agencies and local jurisdictions to refer to the Adapting to Rising Tides Adaptation Roadmap when planning for sea level rise.
- Climate Change-8: Study and explore parking management and curb and policy options that would address parking minimums and maximums curbside usage.
- Climate Change-9: Adopt local policies that prioritize mobility for GHG-reducing modes of transportation.

511 Contra Costa

511 Contra Costa is a countywide transportation demand management program that strives to reduce traffic congestion and improve air quality through public education, resources, and tools that promote mobility options other than solitary driving. Some of its incentives and programs are Safe Routes to School, E-bike Rebates, Guaranteed Rides Home, and Free Bus Pass for Students. In 2021, 511 Contra Costa helped eliminate 50 million pounds of pollution by shifting drive-alone trips to transit, shared rides, biking, and walking.

West County Action Plan

Chapter 11: Innovation and Technology



As discussed in Chapter 2, innovation and technology, coupled with current projects and programs, will reduce congestion, improve air quality, and provide new mobility options for all West County residents. RTOs and actions in this chapter are created to ensure that CCTA and West County jurisdictions are leveraging various transportation technologies and will adopt new ones as they emerge to ensure the region stays at the forefront of technological innovation in the transportation system. New technology can be difficult to track because there are so many unknowns, so this Action Plan only includes one Innovation and Technology RTO. However, several actions are in this chapter to ensure that innovation and technology are key components of the work that will be implemented for the Action Plan, with the ultimate goal to expand Innovation and Technology RTOs in the next Action Plan update.

Autonomous Vehicles

Though it is not yet available to all consumers, full vehicle autonomy could increase safety by removing human error from chains of events that can lead to an accident and by detecting an oncoming threat faster than a human. Other prospective benefits of autonomous vehicles are increased accessibility for underserved communities, reduced need for parking space when used for car share, and reduced traffic through improved communication technology like Connected Autonomous Vehicles (CAVs).

Table 11-1: Summary of Innovation and Technology Regional Transportation Objective

| RTO Name | Definition | Existing Target | Proposed 2027 Target | Proposed 2050 Target |
|---|----------------------------|-----------------|----------------------|-------------------------|
| Innovation and Technology RTO-1: Signal Interconnection Project | Increase connected signals | None | To be determined | To be completed by 2027 |

RTOs

Innovation and Technology RTO-1: Signal Interconnection Project

Complete the Project to Upgrade Traffic Signals to Regional Ethernet and/or Fiber Optic Interconnection

Traffic signal interconnection establishes a connection among individual traffic signals and a central management system, enabling remote access to the signals from a traffic management or operations center. Interconnections allow signal timings to be adjusted remotely during regular day-to-day operations, major incidents, and special events. Regional interconnection also enables cross-jurisdiction communications, coordination, and data exchange to respond to varying traffic conditions.

CCTA is currently working on a new project to identify and implement improvements to traffic signals in each subregion. CCTA will work with West County’s jurisdictions to interconnect selected signals in El Cerrito, Hercules, Pinole, Richmond, and San Pablo, using funding primarily from MTC’s One Bay Area Grant Cycle 3 program. Since this effort is already underway, the target for this RTO is the completion of signal interconnection improvements by 2027. There is no additional target for 2050 because there are no plans for a further interconnection program.

Actions

The following actions are needed to achieve the RTO targets and to implement other goals and policies of this Plan, the Countywide Transportation Plan, and other regional long range planning documents with shared priorities:

- Innovation and Technology-1: Promote the investigation and development of transportation-related innovations that reduce emissions and improve air quality and public health.
- Innovation and Technology-2: Interconnect the West County signal system to enable remote access to the signals from a traffic management or operations center. These signals to be interconnected are yet to be identified, but will be selected based the following criteria:
 - On Routes of Regional Significance
 - In or providing access to a PDA, downtown or commercial district
 - Presence of bus routes at the intersection
 - Connection to BART
 - Presence of bicycle facilities at the intersection
 - High number of bicycle and pedestrian collisions
 - Geographic distribution across the County and the subregion
 - Connection to shared mobility hubs
 - High traffic volume
- Innovation and Technology-3: Examine the feasibility of implementing a pilot automated driving system or other modal technologies (such as an autonomous shuttle) somewhere in the West County area.
- Innovation and Technology-4: Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.
- Innovation and Technology-5: Implement micromobility recommendations from the Countywide Bicycle and Pedestrian Plan, including those related to ordinances and RFPs, and work with operators to deploy micromobility systems built with industry best management practices.
- Innovation and Technology-6: Work with CCTA to determine a method for tracking the availability of EV charging stations.
- Innovation and Technology-7: Work with CCTA to mediate adoption and implementation of emerging technologies to ensure that they are feasible and do not cause adverse effects on the transportation system.
- Innovation and Technology-8: Work with BART to expand the on-demand bicycle parking program for e-bikes and scooters at BART stations throughout Contra Costa County.

Smart Signals Frequently Asked Questions

1. What are the specific goals of the Smart Signal program?

The program will upgrade traffic signal systems, interconnect signal systems throughout the county, and share real-time information with agencies and the public. A unified system will enable the region to prepare for emerging transportation technologies and future Smart Cities initiatives. The project includes cloud-based transit signal priority technologies to reduce delay and travel times for transit vehicles and promote transit usage. It also includes video analytics that can identify "near miss" situations and a proactive approach to prevent future occurrences.

2. What specific features of the hardware and software system will be installed under the Smart Signal program?

Upgrade traffic signal controllers and signal system software, including peripheral equipment; install closed circuit television cameras; install vehicle and bicycle detection software to provide signal control and prioritization capabilities such as transit signal priority and/or emergency vehicle preemption; and upgrade communication between signals controllers from existing twisted copper pair or signal interconnect cabling through installation of fiber optics or enabling wireless cellular applications.

3. How do this program's features compare to and improve on interconnected signals that are already installed in jurisdictions in both Contra Costa and Alameda Counties?

Currently, certain signals are connected with adjacent signals or a series of signals along a corridor, either by twisted copper pair or fiber. This project will interconnect signals on major arterials identified as routes of regional significance across all 19 cities, towns, and the unincorporated county. The project will update or install communication with the ultimate goal of installing fiber optics. The project will coordinate with Alameda County as necessary to ensure continuity and compatibility along corridors that cross both counties.

4. Could existing interconnected signals be connected to the Smart Signal signals and realize at least some of the benefits of the program?

Yes, existing interconnected signals will be utilized in the interim until fiber optics are installed.

5. What are the cost of these signals?

The cost per signal or per intersection will vary depending on the equipment upgrades needed and can cost between \$70,000 to \$100,000.

6. Will the Smart Signals meet the needs for Connected Autonomous Vehicles (CAV) to communicate at intersections?

One of the project's purposes is to establish the infrastructure needed for future implementation and deployment of CAVs.

7. What signals in Contra Costa County could become Smart Signals?

The following criteria can be used to determine if a signal can become a Smart Signal.

- On Routes of Regional Significance
- In Priority Development Area (PDA) or access to PDA Downtown and Commercial Districts
- Presence of transit routes and connection to BART
- Presence of bicycle lanes
- High number of bicycle and pedestrian collisions
- Equity component (spreading intersections throughout the county)
- Connection to Shared Mobility Hubs
- High traffic volumes
- Innovate 680 (Non-Caltrans intersections)

West County Action Plan

Chapter 12: Financial Outlook



The Measure J ballot measure requires that local jurisdictions develop a program of regional traffic mitigation fees, assessments, or other mitigations, as appropriate, to fund regional and subregional transportation projects. In developing these fee programs, local jurisdictions are required to consider such issues as jobs/housing balance, carpool and vanpool programs, and proximity to transit service in the establishment of the regional traffic mitigation program.

This Action Plan is not financially constrained; it includes both funded and unfunded projects and programs. The identified projects qualify for inclusion in the Authority's Comprehensive Transportation Project List, which will be revised in the 2023 CTP Update.

Subregional Transportation Mitigation Program

WCCTAC makes ongoing efforts to identify its major capital investment priorities for inclusion in local, regional, state, and federal funding plans. WCCTAC provides input to the Authority on the development of financial strategies that, if successful, result in the allocation of funds to projects in West County. West County traffic is heavily impacted by through-traffic from other regions in Contra Costa and other counties. The West County Subregional Transportation Mitigation Program (STMP) was developed with

the participation and concurrence of local jurisdictions in determining the most feasible methods of mitigating regional traffic impacts.

WCCTAC's member cities (El Cerrito, Hercules, Pinole, Richmond, and San Pablo) and the County of Contra Costa have each adopted an ordinance implementing the STMP. These jurisdictions share a desire to ensure that new development in West County pays its fair share for regional circulation and transit improvements, proportional to the traffic impact the new development will generate. The local fees collected in West County provide congestion relief to mitigate traffic on Routes of Regional Significance and through improved transit service.

Participating jurisdictions are responsible for collecting the STMP fee and forwarding it to WCCTAC. The STMP fee amounts are to be listed on each individual jurisdiction's published fee schedule. Staff from participating jurisdictions calculate the fee due based on the type and scale of the proposed project.

Local jurisdictions are required to submit a quarterly reporting form showing STMP payments whether or not STMP fees were collected during a given reporting period. The forms are due to WCCTAC no later than 30 days after the end of a quarter.

WCCTAC is empowered by its joint powers authority and master cooperative agreement to coordinate and administer revenue for the regional transportation improvements funded with these fees. Measure J also requires that all Contra Costa County jurisdictions participate in the regional transportation mitigation program. If any jurisdiction fails to participate in these programs, it risks losing its annual Measure J local street maintenance and improvement funds.

Actions Related to Funding

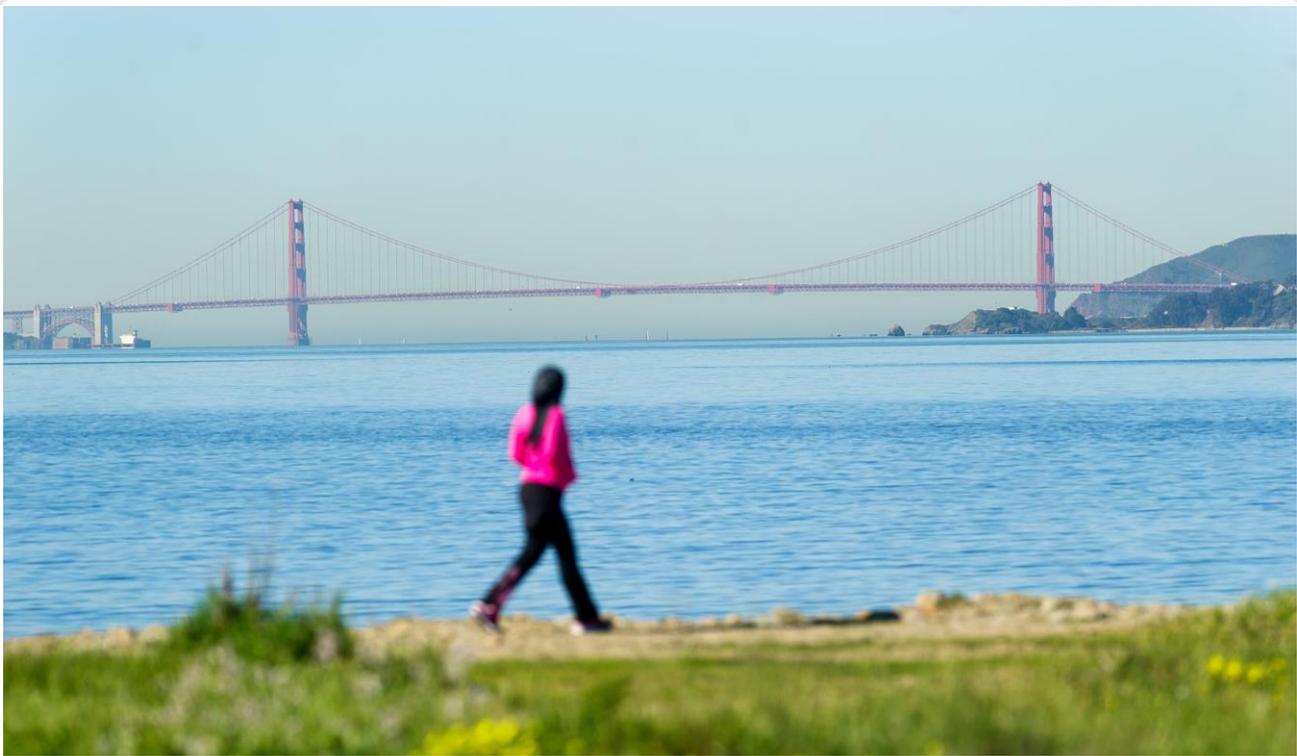
- Financial-1: Seek new sources of funding to maintain roads, transit facilities, trails, and all associated transportation infrastructure.
- Financial-2: Continue to participate and periodically update the West County Subregional Transportation Mitigation Program to ensure it will produce sufficient funds in light of current and anticipated growth rates and construction costs.

Shared Facilities

Implementation of many of the transportation system improvements in this Action Plan will benefit multiple jurisdictions. Each of these improvements needs a negotiated agreement about cost sharing between jurisdictions. The cost-sharing approach could be based on which jurisdiction's traffic is expected to use the facility, on the boundaries within which the facility lies, or a combination. These agreements should be negotiated in advance so that when development takes place, the responsibility for improvements is clear.

West County Action Plan

Chapter 13: Procedures for Notification, Review, and Monitoring



Action Plans are required to include a set of procedures to share environmental documents, review general plan amendments, and monitor progress in attaining the traffic service objectives. The procedures for notification, monitoring, and review are described below.

Role of Regional Transportation Planning Committees

The RTPC for each subregion is made up of elected and appointed representatives from each jurisdiction within that subregion. Officials from transit agencies and planning commissions also serve on some of the RTPCs, either as voting or *ex officio* nonvoting members. The RTPCs are groups that engage in multi-jurisdictional and collaborative planning work to improve the transportation system in Contra Costa and build consensus for projects and programs over the whole subregion. Each RTPC oversees one Action Plan like this one, except for Southwest Area Transportation Committee, which oversees two.

In addition to their responsibilities for preparing and updating the Action Plans, the RTPCs are involved in various transportation planning efforts. Central Contra Costa Transportation Committee, also known as the Transportation Planning and Cooperation Advisory Committee (TRANSPAC), for example, is involved in the Innovate I-680 project and has completed improvements to the Iron Horse Trail, and WCCTAC started Richmond ferry service and completed over- and undercrossing projects. In East County, TRANSPLAN is continuing to plan for a link to Pittsburg/Antioch BART, and in the Southwest Area, work underway includes several bicycle and pedestrian overcrossings of major thoroughfares.

Circulation of Environmental Documents and Transportation Impact Studies

The Action Plan is required to have a set of procedures to share environmental documents and transportation impact studies. This notification is to occur through the CEQA analysis process (assuming it occurs for a project) at the following two junctures: first, upon issuance of a Notice of Preparation (NOP), and second, at the stage of Notice of Completion (NOC) of the draft EIR.

The Action Plan sets the threshold for circulating transportation impact studies and/or EIRs to neighboring jurisdictions. Any project that generates at least 100 net new peak hour vehicle trips triggers preparation of a transportation impact study and notification of neighboring jurisdictions. Examples of projects that could generate more than 100 net peak hour vehicle trips are:

- A single-family residential development of more than 100 units
- A condominium development of more than 180 units
- A retail center of at least 14,000 square feet
- A general office building of at least 44,000 square feet

The following procedures are to be followed by the jurisdictions of WCCTAC regarding circulation of environmental documentation:

- For any proposed project or general plan amendment that generates more than 100 net new vehicle trips during the peak hour and for which an environmental document is being prepared (Negative Declaration or Environmental Impact Report or Environmental Impact Statement), the lead agency shall issue a “notice of intent” to issue a negative declaration or NOP for an EIR to WCCTAC staff, all Regional Transportation Planning Committee chairs or designated staff persons, and to each member jurisdiction of WCCTAC.
- For any proposed project or general plan amendment that generates more than 100 net new vehicle trips during the peak hour and for which an environmental will not be prepared, the lead agency shall complete a transportation impact study and alert WCCTAC staff, all Regional Transportation Planning Committee chairs or designated staff persons, and each member jurisdiction of WCCTAC of the study’s preparation.
- WCCTAC shall notify its member jurisdictions of receipt of such notices from jurisdictions in other subregions.

- When the environmental document and/or transportation impact study described under points #1 and #2 are completed, the lead agency shall notify WCCTAC staff, all Regional Transportation Planning Committee chairs or designated staff persons, and each member jurisdiction of WCCTAC.
- WCCTAC staff shall review development projects for compliance with the technical procedures regarding evaluation of new development proposals.

Note that these requirements apply to all projects generating 100 trips or more, regardless of whether a CEQA document is prepared. Further, the transportation impact study required under CCTA regulations is to cover congestion impacts and VMT, and hence will meet and exceed the requirements of CEQA, which no longer requires assessment of congestion impacts since the implementation of SB 743.

Review of General Plan Amendments

This Action Plan was developed using land use forecasts that generally reflect future land development allowed within the framework of the adopted general plans for jurisdictions in West County. General plan amendments enacted after adoption of the Action Plan could therefore adversely affect the ability to meet this Action Plan's goals, policies, and objectives.

The CCTA Implementation Guide requires that each Action Plan contain a process for notification and review of the impact of proposed general plan amendments that exceed a specified threshold size. Accordingly, the process outlined below has been adopted by WCCTAC.

In addition to the project review procedures described above, the following procedures are to be followed for general plan amendments that generate more than 100 net new peak hour vehicle trips:

- Through its participation in WCCTAC, the jurisdiction preparing the general plan amendment shall notify WCCTAC and its member jurisdictions of the proposed GPA in accordance with the above notification and circulation requirements for environmental documents and transportation impact studies.
- Upon request by WCCTAC, the jurisdiction considering the amendment shall confer with WCCTAC staff and/or attend a meeting of either the WCCTAC and/or the WCCTAC policy board, to discuss the impacts of the proposed GPA on the adopted Action Plan. During these discussions:
 - The lead agency proposing the GPA should demonstrate that the amendment will not adversely affect the WCCTAC jurisdictions' ability to implement this Action Plan, or should propose amendments to the GPA to allow this to be the case.
 - Alternatively, the lead agency proposing the GPA can propose modifications to this Action Plan for consideration by WCCTAC.

The lead agency and WCCTAC will participate in these discussions with the intent of arriving at a consensus for the proposed GPA that will not adversely affect the ability to implement this Action Plan (as it may be amended). If this does not occur, approval of the GPA by the lead jurisdiction may lead to compliance issues with the CCTA GMP.

Schedule for Action Plan Review

This Action Plan should be periodically reviewed for effectiveness and updated if there are significant changes in local or regional conditions. See the CCTA GMP Implementation Guide for guidance on the development and updates of Action Plans.

In general, the Action Plan review process involves:

- Regular monitoring of transportation conditions on Routes of Regional Significance and reporting to WCCTAC on RTO performance.
- If any of the RTOs are not being met, WCCTAC may consider preparing a focused revision to the Action Plan.
- A complete review of the Action Plan should be made on a four- to five-year cycle, coordinated with updates to the CTP.
- Individual corridors, RTOs, and other Action Plan components may be reviewed as deemed appropriate by WCCTAC.

Implications for Compliance with the Measure J Growth Management Program (GMP)

The CCTA Implementation Guide describes the conditions for GMP compliance that relate specifically to Action Plans. As per the Implementation Guide, each member jurisdiction must:

- Participate in the preparation and adoption of Action Plans.
- Implement actions to attain RTOs.
- Place conditions on project approvals consistent with the growth management strategy.
- Circulate environmental documents and transportation impact studies as specified in this Action Plan and consistent with CCTA policy.
- Participate in the GPA review procedure.

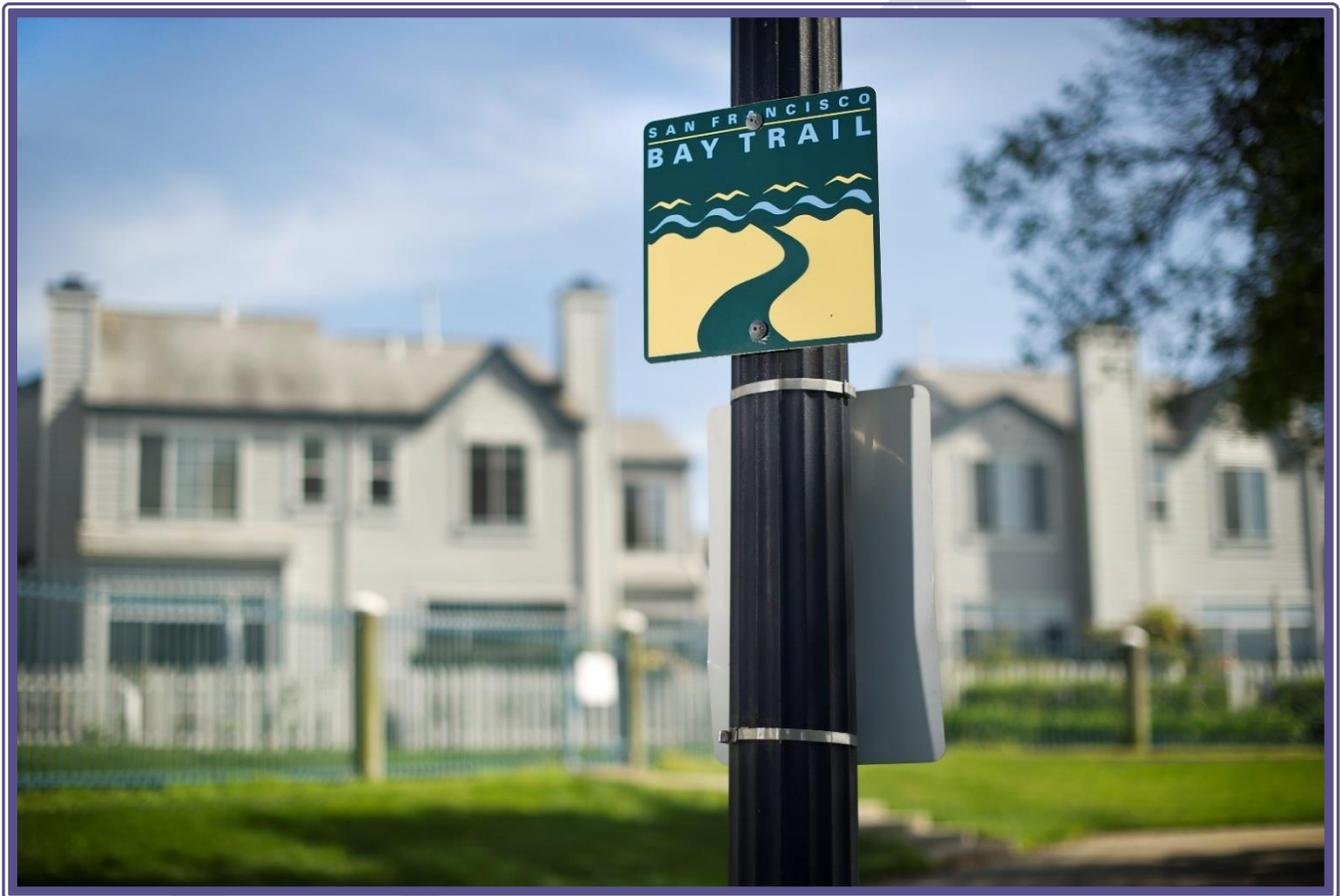
Process for Addressing RTO Exceedances

CCTA will monitor transportation conditions in West County and all of Contra Costa County to determine whether the RTOs in this and other Action Plans are being achieved. Under adopted CCTA policy, exceedance of an RTO does not constitute a compliance issue with the GMP.

If it is determined through CCTA's monitoring program that any RTOs are not being met, CCTA will convey this information to WCCTAC for consideration in its ongoing monitoring of the Action Plan. The Implementation Guide states that if satisfactory progress is observed, then implementation of the Action Plan will continue. If progress has not been satisfactory, a revision to the Action Plan may be necessary.

Given the level of expected growth in West County and elsewhere throughout Contra Costa and the constraints on adding new capacity to the system, it should not be surprising if some RTOs are not attained, either today or in the future. If nonattainment occurs, the only required action required is for WCCTAC to document the condition and continue to monitor and address the RTOs in future updates to the Action Plan every four to five years, as established in this chapter.

In the case where a proposed development project or GPA causes an exceedance or exacerbates a situation where an already exceeded RTO is worsened, then the procedures in this chapter regarding development application review and GPAs shall apply.



West County Action Plan

Appendix A: Topics Considered but not Recommended for RTOs

Throughout the Action Plan update, several topics for evaluation were mentioned and pursued, but ultimately CCTA recommended not to include them in the Action Plan. These topics mainly regard potential metrics and RTOs, like those in Chapters 5 through 11, that CCTA and its consultants determined were not feasible to track in the Action Plan but could potentially be tracked in the future.

- **Wait time for paratransit.** CCTA and the RTPC transportation advisory committees (TAC) were interested in tracking wait time for paratransit to expand from the work in CCTA's Accessible Transportation Strategic Plan. The topic was not recommended for this Action Plan because paratransit scheduling and function are not conducive to such a metric. This Action Plan uses a different paratransit metric in Chapter 5, Transit, and includes actions that support implementation of the strategic plan.
- **Bicycle ownership.** The intent of a bike or e-bike ownership RTO would be to understand the proportion of a subregion's population that owns devices and therefore understands the availability of active transportation such as biking. However, there are no data sources that track the number of existing bikes or e-bikes or their ownership status, and there is no mechanism in place to track this moving forward.
- **Number of shared scooters, shared bicycles, and public autonomous vehicles that are deployed.** As of publication of this Action Plan, there is only one subarea in all of Contra Costa County with an active micromobility program and only one other subarea currently pursuing deployment of its own. CCTA and its consultants agreed that the most efficient way to incorporate shared mobility is to first support CCTA in a regional leadership role, similar to what the Transportation Authority of Marin and the Sonoma County Transportation Authority have done. This role could include working with operators and jurisdictions to create a draft ordinance and/or Request for Proposals or a set of model standards for the local jurisdictions to adopt locally.
- **Pavement condition on the countywide Low Stress Bike Network.** No programs currently track pavement condition on the entire countywide LSBN. Pavement condition is currently tracked in a few areas of the county, but such tracking is for roadway segments used for vehicles only and does not include the portions of roadways used for walking or biking. Further, data on pavement condition, such as tracked by East Bay Regional Parks, do not reflect true pavement conditions because they do not account for conditions resulting from tree uprooting, settling, or damage.
- **Use of shared (pooled) Transportation Network Companies.** Data assembled before the pandemic showed that Transportation Network Companies (TNC), such as Lyft and Uber, led to increases in VMT and congestion. However, shared TNC rides (or "pooled rides"), in which several unrelated riders share a vehicle for a trip, could reduce VMT and congestion. For this reason, shared TNC rides were as a metric in the Action Plan. However, the pandemic led to the cancellation of shared services by both Lyft and Uber in the greater Bay Area, so it is impossible to track such rides today. Moreover, data from Lyft and Uber are difficult to obtain.

- **Average commute time for low-income residents versus higher-income residents.** The Action Plan team was interested to know if there is a correlation between the time that commuters spend traveling to and from work and their income. Specifically, RTPC TAC members were curious to know if low-income commuters spend a disproportionately longer time traveling to work than higher-income commuters. Based on American Community Survey data, the project team found that the correlation value between income and commute time was 0.3 in 2019, indicating a weak correlation.
- **Miles of Routes of Regional Significance estimated to be vulnerable to sea-level rise.** The Action Plan team identified all key facilities subject to inundation through sea-level rise, which were limited to bay shore areas in West, Central, and East County. Through this exercise, the project team determined that the majority of Routes of Regional Significance or other infrastructure are in areas where private property owners and entities, such as Union Pacific Railroad, will likely work with local agencies to protect their infrastructure, thereby reducing the need for local intervention. In cases where local intervention or action would need to occur, sea-level rise adaptation planning will occur incrementally over time and is likely already being considered, such as through the current update to the Contra Costa County General Plan and Climate Action Plan and regional work through agencies such as the Association of Bay Area Governments and State working groups. Furthermore, it is difficult to know the true extent of infrastructure impacted by sea-level rise due to elevation of existing roadways (which may not be at sea level, such as the Carquinez Bridge) and unknowns related to vital infrastructure along these routes that may not be identified, such as bus storage lots or utility boxes.
- **Percentage of vulnerable RRSs for which remediation plans or a mitigation approach have been created.** Since the project team does not propose moving forward with the previous RTO, we recommend not moving forward with this RTO.
- **Speed reduction.** CCTA's Vision Zero effort includes speed reduction as a defined goal. The CCTA Vision Zero Implementation Guide for Local Jurisdictions points to encouraging safe speeds as a key priority. Mobile device data can be used to measure existing prevailing speeds on specific roadways; however, this mobile device data can be difficult to gather, especially in a large geographic area.

West County Action Plan

Appendix B: Summary of Actions

Actions are contained in chapters 5 through 11 of this Action Plan. This appendix repeats all actions from those chapters for ease of reference on a single list of actions.

CHAPTER 5, TRANSIT

- **Transit-1:** Work with local transit providers and regional funding agencies to identify funding for improvements for mobility (e.g., via bus) service in West County, including operations and maintenance and supporting infrastructure, such as bus yards.
- **Transit-2:** Pursue plans, programs, and projects that implement transit-oriented development with pedestrian and bicycling access to existing and new development areas.
- **Transit-3:** Work with CCTA to develop new or expanded mobility hubs along major activity centers and along freeways and other important corridors and work with partners to address issues related to ownership, acquisition, and oversight of operations and maintenance.
- **Transit-4:** Work with the Water Emergency Transportation Authority (WETA), CCTA, and other partners to support Richmond Ferry Service to and from Richmond.
- **Transit-5:** Work with passenger rail operators in countywide and regional efforts to implement passenger rail improvements in West County, such as providing higher frequency of service on the Capitol Corridor and San Joaquin Altamont Corridor Express (ACE) Corridor, and planning for the Link 21 program.
- **Transit-6:** Pursue projects and programs that improve the passenger experience, upgrade systems, modernize stations, and expand the passenger capacity of BART stations in West County.
- **Transit-7:** Improve the reliability, efficiency, frequency, and travel time of transit (e.g., bus) service along San Pablo Avenue.
- **Transit-8:** Continue to work with CCTA and local jurisdictions to improve circulation and multimodal access near the El Cerrito del Norte BART station.
- **Transit-9:** Implement the recommendations of the Contra Costa Accessible Transportation Strategic Plan, including the establishment of a new coordinating entity and a new, ongoing, and dedicated funding source.
- **Transit-10:** Implement plans and support ongoing plans that promote regional express buses and enhance bus rapid transit along transit corridors and RRS.
- **Transit-11:** Implement the recommendations of the West County High-Capacity Transit Study.
- **Transit-12:** Plan and implement enhanced railroad crossings to improve the safety of pedestrian and bicycle access and to reduce noise and quality-of-life impacts throughout West County; enhancements may involve implementing quiet zones, grade separations, train-traffic signal preemption systems, or other measures.

- **Transit-13:** Work with the City of Hercules and their project stakeholders to support completion of the Regional Intermodal Transportation Center.
- **Transit-14:** Work with local jurisdictions to study and fund options for improving curb management and commercial and public bus, truck, and van passenger loading on key public streets.
- **Transit-15:** Participate in current and future studies regarding rail options for the West County area and continue exploring development of new rail stations.
- **Transit-16:** Work with CCTA, local jurisdictions, and local public transit operators to:
 - Link transit service within the West County subregion, more directly to communities outside the West County subregion, between BART stations, and between adjacent counties.
 - Leverage MTC's effort to standardize operations, regional mapping, and wayfinding.
 - Implement traffic signal management and bus prioritization technology on transit RRS routes to improve bus speed and reliability.
 - Implement the recommendations identified in the Integrated Transit Study.
- **Transit-17:** Evaluate systemwide bus stop improvements; make it safer and easier for people to access transit stations; and ensure that transit, and its related pedestrian access and connectivity, is safe and attractive.
- **Transit-18:** Provide educational awareness of public transportation options through outreach, education, incentive and support programs, and advertising, particularly in local schools.
- **Transit-19:** Work with CCTA and local transit operators to explore financial incentives and reduced fares for public transportation, including a feasibility study to explore a subregional or countywide Universal Basic Mobility program.
- **Transit-20:** Work with CCTA and MTC to promote Safe Routes to Transit projects and programs, and submit applications for funding for construction of local Safe Routes to Transit projects and programs.
- **Transit-21:** Work with local jurisdictions and transit service providers to reinstate halted neighborhood bus lines.
- **Transit-22:** Adopt local policies that prioritize safety for the most vulnerable users at all stages of project planning and delivery.
- **Transit-23:** Work with CCTA and local transit providers to ensure real-time online transit information for all routes.
- **Transit-24:** Explore designating transit as the primary mode on San Pablo Avenue.
- **Transit-25:** Assist local jurisdictions in the development of design guidelines and objective design standards to support transit-oriented development in downtowns, priority development areas (PDAs), transit priority areas, and other areas well-served by transit.
- **Transit-26:** Work with CCTA and public transit agencies to identify and prioritize a network of transit corridors for transit signal priority, part-time transit lanes, transit-only lanes, and other transit-focused improvements.

CHAPTER 6, ACTIVE TRANSPORTATION

- **Active Transportation-1:** Work with local jurisdictions to adopting and update their bicycle and pedestrian plans to expand and/or improve their facilities to ensure a seamless active transportation network that provides a positive user experience.
- **Active Transportation-2:** Require new development projects to provide bike racks, lockers, and other secure bike parking options at appropriate locations, and seek funding to provide bike parking at key activity centers throughout West County.
- **Active Transportation-3:** Improve pedestrian and bicycle access and safety through freeway interchange areas.
- **Active Transportation-4:** Conduct feasibility study along Richmond Parkway to decrease development impacts; balance truck traffic with automobiles; and overall, recommend bicycle and pedestrian route improvements to close gaps and improve safety and connectivity to the new Richmond San Rafael Bridge Bay Trail.
- **Active Transportation-5:** Complete gaps in the countywide low stress bike network to establish a safe, contiguous network.
- **Active Transportation-6:** Develop local bike route links to the Bay Trail and Richmond and Ohlone Greenways to facilitate longer-distance bicycle travel through West County and to neighboring regions.
- **Active Transportation-7:** Develop a program to provide funds for implementation of Complete Corridors (including Complete Streets) policies of the local jurisdictions.
- **Active Transportation-8:** Implement the recommendations of the Appian Way Alternatives Analysis and Complete Corridors (or Complete Streets) Study.
- **Active Transportation-9:** Implement the findings of the countywide Safe Routes to School needs assessment, and seek funding for bicycle and pedestrian improvements in West County school areas.
- **Active Transportation-10:** Work with CCTA, Contra Costa Health Services, and Street Smarts Diablo Region to facilitate a countywide coordinated approach to Safe Routes to Schools programs, and to identify continual funding streams to encourage students, employees, and residents at K-12 schools, technical schools, and college sites to use nonvehicle modes to get to school.
- **Active Transportation-11:** Work with local jurisdictions to promote 511 Contra Costa's active transportation programs and incentives that provide educational awareness of active transportation options and safety through outreach, education, and advertising.
- **Active Transportation-12:** Continue programs that reduce the cost of electric bicycles and pursue new programs to reduce the cost of conventional bicycles for Contra Costa residents.
- **Active Transportation-13:** Work with CCTA and other regional agencies to develop a method of tracking the Pavement Condition Index (PCI) of bicycle facilities on the low-stress bike network, and implement rehabilitation improvements where needed.
- **Active Transportation-14:** Complete bicycle and pedestrian crossing improvements at the following intersections:
 - Ohlone Greenway crossing at Manila Avenue

- Pinole Valley Creek facility crossing San Pablo Avenue
 - Pinole Valley Creek facility crossing Henry Avenue
 - Atlas Road and Giant Highway
 - Richmond Greenway crossing at Harbor Way South
 - Richmond Parkway and West Barret Avenue
 - Richmond Parkway and West Macdonald Avenue
 - Richmond Parkway and Goodrick Avenue
 - Richmond Parkway at Parr Boulevard
 - Ohlone Greenway at Moeser Lane
 - Ohlone Greenway at Potrero Avenue
 - Wildcat Creek Trail at Fred Jackson Way
 - Richmond Parkway at San Pablo Avenue
 - Richmond Parkway at Atlas Road
 - Pinole Creek bike facility at Tennant Avenue
- **Active Transportation-15:** Work with CCTA to conduct and implement a countywide Pedestrian Needs Assessment.
 - **Active Transportation-16:** Work with CCTA and local jurisdictions to explore installation of e-bike charging infrastructure in publicly accessible places.

CHAPTER 7, ROADWAYS

- **Roadways-1:** Complete necessary operational improvements (e.g., protected turn lanes, synchronized signal timing, auxiliary lanes) on freeways, at intersections and on roadway segments that are needed to maintain the RTOs in this Action Plan, while balancing these improvements against the objectives and actions regarding other modes and issues covered by this Action Plan.
- **Roadways-2:** Complete the reconstruction of the I-80/San Pablo Dam Road interchange.
- **Roadways-3:** Complete the improvements associated with the I-80/Central Avenue interchange.
- **Roadways-4:** Implement transit priority improvements in the West County service area, and continue to work with Caltrans on refinement and monitoring of the ICM program.
- **Roadways-5:** Reconstruct part or all of the SR-4 and I-80 interchange to improve transit access to the Hercules Transit Center, and work with local jurisdictions to identify any other ramp reconfiguring projects.
- **Roadways-6:** Implement the recommended actions in the I-80 Corridor System Management Plan.
- **Roadways-7:** Work with CCTA to complete a countywide goods movement plan that promotes greater use of technology for communications and scheduling, funding for equipment upgrades for air quality improvements with cleaner technology, and an advocacy platform for goods movement and guidance for local jurisdictions.

- **Roadways-8:** Improve the operational efficiency of freeways and arterial streets through effective corridor management strategies, such as ramp metering, traffic operations systems, Intelligent Transportation Systems improvements, HOV/HOT lane and bypass lanes, and others to support a cohesive transportation system for all modes.
- **Roadways-9:** Work with CCTA, Caltrans, California Highway Patrol, and local jurisdictions to continue studying the feasibility of pilot and long-term programs for bus on shoulder, which may include examining legislation that should change.
- **Roadways-10:** Work with CCTA, Caltrans, and California Highway Patrol to develop a program to track HOV/HOT and toll lane violators.
- **Roadways-11:** Work with CCTA and local jurisdictions to develop a program to discourage diversion from freeways and cut-through travel on surface roadways by developing traffic management programs, increasing trip capacity on freeways, completing freeway operational improvements, implementing traffic-calming measures on surface roadways, and exploring surface roadway redesign to support active and public transit modes.
- **Roadways-12:** Develop a program to establish, operate, and maintain existing and additional public or private park-and-ride facilities at appropriate locations, including shared-use agreements at activity centers with underutilized parking spaces.
- **Roadways-13:** Participate in evaluations of West County freeways that may involve proposed changes to managed lanes, such as HOV lane modifications, special-purposes lanes, or HOT/Express Lanes.
- **Roadways-14:** Maintain pavement management systems and schedules, and continue to seek additional funding for local roadway maintenance.
- **Roadways-15:** Conduct a study to consider modifications to 23rd Street to convert it to a balanced multimodal corridor that emphasizes transit and active transportation over vehicles, building on the concepts that are already in the City of San Pablo's 23rd Street Specific Plan and the Richmond Bay Specific Plan
- **Roadways-16:** Work with WCCTAC, local jurisdictions, and CCTA to seek funding to implement recommendations of the North Richmond Truck Route Study (or other mutually agreed-upon implementation measures) to improve connectivity to designated truck routes, discourage nonlocal heavy truck traffic on local streets, and improve public health and safety in West County communities.
- **Roadways-17:** Explore options to extend the truck-climbing lane on Cummings Skyway and to implement a Class II bike lane on Cummings Skyway between San Pablo Avenue and Franklin Canyon Road.
- **Roadways-18:** Participate in the San Pablo Avenue Multimodal Corridor Study with the goal of enhancing the street as a multimodal corridor, and implement the recommendations from the study once it is approved.
- **Roadways-19:** Develop one or more subregional corridor plans for key streets such as 23rd Street and Richmond Parkway to provide adequate roadway capacity for local and subregional travel while

also including both public transit and active transportation modes and nonmodal transportation issues such as equity, climate change, safety, and technology.

CHAPTER 8, SAFETY

- **Safety-1:** Work with regional and local agencies to increase the level of multimodal public awareness and empathy about bicycle and pedestrian safety and to reduce injuries due to vehicle-involved collisions.
- **Safety-2:** Work with CCTA to develop a program to coordinate the collection and analysis of safety data, identify areas of concern, and propose safety-related improvements and user awareness to support countywide, state, and federal safety programs and performance measures.
- **Safety-3:** Work with CCTA, California Highway Patrol (CHP), and Caltrans to prepare an incident management plan for West County freeways.
- **Safety-4:** Work with CCTA to implement the Safe System Approach and Countywide Vision Zero to reduce and eliminate fatalities and severe injuries.
- **Safety-5:** Conduct a study, led by WCCTAC, to identify all safety-related transportation improvements needed within 500 feet of schools.
- **Safety-6:** Work with CCTA, MTC, and East Bay Regional Parks to study and mitigate the safety impacts of electric bicycles and other micromobility devices on local trails and streets, with the aim of eventually allowing electric bicycles, e-scooters, and other micromobility devices on all of these facilities.
- **Safety-7:** Improve the safety of high-incident local roadways through physical changes, signage, technology, education, enforcement, or other tools.

CHAPTER 9, EQUITY

- **Equity-1:** Conduct a study to identify strategies to increase low-income residents' access to transit hubs, jobs, and areas with goods and services (for example, in West County, the study could explore enhancing existing transit hubs, constructing new transit hubs, and first/last mile solutions).
- **Equity-2:** Increase express bus service to regional job centers, particularly those with low-income workers, inside and outside of the subregion.
- **Equity-3:** Increase access to car sharing services for low-income residents and support financial incentives for using them.
- **Equity-4:** Increase high frequency transit lines and stops in EPC areas.
- **Equity-5:** Conduct a study of KSI hotspots in low-income areas to identify needed safety improvements, then implement the identified improvements.

CHAPTER 10, CLIMATE RESILIENCE

- **Climate Resilience-1:** Work with 511 Contra Costa to expand Transportation Demand Management (TDM) programs, adopt local TDM plans, and conduct regular monitoring and reporting for program effectiveness.

- **Climate Change-2:** Continue to implement a program to support deployment of high-quality, fast, and diverse electrical vehicle and bus chargers in the subregion.
- **Climate Change-3:** Continue to promote electric vehicle ownership by offering financial incentives and providing educational programs and demonstrations.
- **Climate Change-4:** Work with regional agencies, local employers, and schools to increase telework, compressed work weeks, alternative work locations, and flex schedules, and provide pretax employer transportation benefit programs.
- **Climate Change-5:** Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.
- **Climate Change-6:** Coordinate with impacted jurisdictions, property owners, and other applicable agencies that own or maintain Routes of Regional Significance that would be impacted by sea level rise, to coordinate and plan for inundation mitigation.
- **Climate Change-7:** Enable regional agencies and local jurisdictions to refer to the Adapting to Rising Tides Adaptation Roadmap when planning for sea level rise.
- **Climate Change-8:** Study and explore parking management and curb and policy options that would address parking minimums and maximums curbside usage.
- **Climate Change-9:** Adopt local policies that prioritize mobility for GHG-reducing modes of transportation.

CHAPTER 11, INNOVATION AND TECHNOLOGY

- **Innovation and Technology-1:** Promote the investigation and development of transportation-related innovations that reduce emissions and improve air quality and public health.
- **Innovation and Technology-2:** Upgrade the signal system along certain Routes of Regional Significance, including the signals CCTA identified for interconnection. These signals are yet to be definitively identified, but will meet some/all of the following criteria:
 - On Routes of Regional Significance
 - In PDA or access to PDA + downtown and commercial districts
 - Presence of transit routes and connection to BART
 - Presence of bicycle lanes
 - High number of bicycle and pedestrian collisions
 - Equity component (spreading intersections throughout the county)
 - Connection to shared mobility hubs
 - High traffic volume
 - Innovate 680 (non-Caltrans intersections)
- **Innovation and Technology-3:** Examine the feasibility of implementing a pilot automated driving system or other modal technologies (such as an autonomous shuttle) somewhere in the West County area.
- **Innovation and Technology-4:** Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.

- **Innovation and Technology-5:** Implement micromobility recommendations from the Countywide Bicycle and Pedestrian Plan, including those related to ordinances and RFPs, and work with operators to deploy micromobility systems built with industry best management practices.
- **Innovation and Technology-6:** Work with CCTA to determine a method for tracking the availability of EV charging stations.
- **Innovation and Technology-7:** Work with CCTA to mediate adoption and implementation of emerging technologies to ensure that they are feasible and do not cause adverse effects on the transportation system.
- **Innovation and Technology-8:** Work with BART to expand the on-demand bicycle parking program for e-bikes and scooters at BART stations throughout Contra Costa County.

CHAPTER 12, FINANCIAL OUTLOOK

- **Financial-1:** Seek new sources of funding to maintain roads, transit facilities, trails, and all associated transportation infrastructure.
- **Financial-2:** Continue to participate and periodically update the West County Subregional Transportation Mitigation Program to ensure that it will produce sufficient funds to support current and anticipated growth rates and construction costs.

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Appendix C: Transportation Modeling Results

Table C-1: Signalized Intersection Peak-Hour LOS

| Intersection | 2019 A.M. | | 2019 P.M. | | 2050 A.M. | | 2050 P.M. | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay |
| 23rd St & Barrett Ave | <u>B</u> | <u>17</u> | <u>B</u> | <u>10</u> | <u>B</u> | <u>16</u> | <u>B</u> | <u>13</u> |
| 23rd St & Garvin Ave | <u>C</u> | <u>22</u> | <u>B</u> | <u>10</u> | <u>B</u> | <u>20</u> | <u>C</u> | <u>34</u> |
| 23rd St & Macdonald Ave | <u>A</u> | <u>10</u> | <u>B</u> | <u>17</u> | <u>A</u> | <u>10</u> | <u>B</u> | <u>17</u> |
| 23rd St & Ohio Ave | <u>B</u> | <u>13</u> | <u>B</u> | <u>11</u> | <u>B</u> | <u>12</u> | <u>B</u> | <u>11</u> |
| 23rd St & Rheem Ave | <u>B</u> | <u>11</u> | <u>A</u> | <u>10</u> | <u>A</u> | <u>9</u> | <u>C</u> | <u>25</u> |
| Appian Way & I-80 EB ramps | <u>B</u> | <u>19</u> | <u>A</u> | <u>9</u> | <u>B</u> | <u>17</u> | <u>A</u> | <u>8</u> |
| Appian Way & I-80 WB ramps | <u>C</u> | <u>22</u> | <u>C</u> | <u>22</u> | <u>C</u> | <u>23</u> | <u>C</u> | <u>25</u> |
| Appian Way & La Paloma Rd | <u>B</u> | <u>14</u> | <u>A</u> | <u>10</u> | <u>B</u> | <u>15</u> | <u>B</u> | <u>11</u> |
| Appian Way & Manor Rd | <u>C</u> | <u>24</u> | <u>B</u> | <u>14</u> | <u>B</u> | <u>17</u> | <u>B</u> | <u>14</u> |
| Appian Way & San Pablo Ave | <u>D</u> | <u>44</u> | <u>B</u> | <u>20</u> | <u>D</u> | <u>41</u> | <u>E</u> | <u>58</u> |
| Appian Way & San Pablo Dam Rd | <u>F</u> | <u>90</u> | <u>C</u> | <u>25</u> | <u>F</u> | <u>85</u> | <u>D</u> | <u>52</u> |
| Appian Way & Sobrante Ave | <u>C</u> | <u>24</u> | <u>B</u> | <u>15</u> | <u>C</u> | <u>22</u> | <u>B</u> | <u>15</u> |
| Appian Way & Tara Hills Dr/Canyon Dr | <u>E</u> | <u>56</u> | <u>D</u> | <u>40</u> | <u>D</u> | <u>53</u> | <u>D</u> | <u>49</u> |
| Appian Way & Valley View Rd | <u>A</u> | <u>8</u> | <u>A</u> | <u>9</u> | <u>A</u> | <u>8</u> | <u>A</u> | <u>9</u> |
| Bayview Ave & Carlson Blvd | <u>F</u> | <u>83</u> | <u>C</u> | <u>34</u> | <u>E</u> | <u>77</u> | <u>D</u> | <u>36</u> |
| Carlson Blvd & Broadway | <u>A</u> | <u>6</u> | <u>A</u> | <u>5</u> | <u>A</u> | <u>5</u> | <u>A</u> | <u>4</u> |
| Carlson Blvd & Central Ave | <u>B</u> | <u>12</u> | <u>C</u> | <u>26</u> | <u>B</u> | <u>12</u> | <u>C</u> | <u>30</u> |
| Carlson Blvd & Cutting Blvd | <u>C</u> | <u>24</u> | <u>C</u> | <u>20</u> | <u>C</u> | <u>23</u> | <u>C</u> | <u>26</u> |
| Carlson Blvd & I-80 EB Ramps | <u>B</u> | <u>12</u> | <u>B</u> | <u>11</u> | <u>B</u> | <u>12</u> | <u>B</u> | <u>19</u> |
| Carlson Blvd & I-80 WB Ramps | <u>C</u> | <u>25</u> | <u>B</u> | <u>11</u> | <u>C</u> | <u>23</u> | <u>B</u> | <u>11</u> |
| Central Ave & I-80 EB Ramps | <u>B</u> | <u>14</u> | <u>B</u> | <u>12</u> | <u>B</u> | <u>17</u> | <u>B</u> | <u>15</u> |
| Central Ave & I-80 WB Ramps | <u>C</u> | <u>32</u> | <u>A</u> | <u>9</u> | <u>C</u> | <u>35</u> | <u>A</u> | <u>7</u> |
| Cummings Skyway & Crockett Blvd | <u>A</u> | <u>6</u> | <u>A</u> | <u>6</u> | <u>A</u> | <u>3</u> | <u>A</u> | <u>6</u> |
| Cutting Blvd & 23rd St-Marina Bay Pkwy | <u>D</u> | <u>42</u> | <u>D</u> | <u>43</u> | <u>D</u> | <u>42</u> | <u>E</u> | <u>73</u> |
| I-580 EB Off Ramp & Cutting Blvd-Hoffman Blvd | <u>B</u> | <u>15</u> | <u>B</u> | <u>15</u> | <u>B</u> | <u>16</u> | <u>B</u> | <u>15</u> |

| Intersection | 2019 A.M. | | 2019 P.M. | | 2050 A.M. | | 2050 P.M. | |
|--|-----------|------------------|-----------|-------------------|-----------|------------------|-----------|-------------------|
| | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay |
| I-580 EB On Ramp & Harbour Way | <u>B</u> | <u>14</u> | <u>A</u> | <u>9</u> | <u>B</u> | <u>14</u> | <u>B</u> | <u>10</u> |
| I-580 EB Ramps & Canal Blvd | <u>C</u> | <u>26</u> | <u>D</u> | <u>37</u> | <u>C</u> | <u>27</u> | <u>D</u> | <u>44</u> |
| I-580 EB Ramps & Castro St | <u>C</u> | <u>20</u> | <u>B</u> | <u>13</u> | <u>C</u> | <u>20</u> | <u>B</u> | <u>11</u> |
| I-580 EB Ramps & Marina Pkwy | <u>A</u> | <u>6</u> | <u>A</u> | <u>7</u> | <u>A</u> | <u>7</u> | <u>A</u> | <u>8</u> |
| I-580 EB Ramps & Marine St | <u>A</u> | <u>1</u> | <u>A</u> | <u>1</u> | <u>A</u> | <u>1</u> | <u>A</u> | <u>1</u> |
| I-580 EB Ramps & Regatta Blvd | <u>A</u> | <u>9</u> | <u>B</u> | <u>11</u> | <u>A</u> | <u>9</u> | <u>B</u> | <u>15</u> |
| I-580 WB Ramps & Canal Blvd | <u>C</u> | <u>27</u> | <u>C</u> | <u>29</u> | <u>C</u> | <u>28</u> | <u>C</u> | <u>34</u> |
| I-580 WB Ramps & Castro St | <u>B</u> | <u>17</u> | <u>D</u> | <u>36</u> | <u>B</u> | <u>17</u> | <u>D</u> | <u>36</u> |
| I-580 WB Ramps & Central Ave | <u>B</u> | <u>12</u> | <u>B</u> | <u>15</u> | <u>B</u> | <u>12</u> | <u>B</u> | <u>12</u> |
| I-580 WB Ramps & Marina Pkwy | <u>A</u> | <u>9</u> | <u>A</u> | <u>8</u> | <u>A</u> | <u>9</u> | <u>A</u> | <u>8</u> |
| I-80 EB Ramps & El Portal Dr | <u>B</u> | <u>19</u> | <u>A</u> | <u>9</u> | <u>B</u> | <u>14</u> | <u>A</u> | <u>9</u> |
| I-80 EB Ramps & Fitzgerald Dr | <u>A</u> | <u>8</u> | <u>B</u> | <u>11</u> | <u>A</u> | <u>8</u> | <u>A</u> | <u>3</u> |
| I-80 EB Ramps & Hilltop Dr | <u>C</u> | <u>21</u> | <u>C</u> | <u>26</u> | <u>B</u> | <u>17</u> | <u>B</u> | <u>17</u> |
| I-80 EB Ramps & Pinole Valley Rd | <u>C</u> | <u>21</u> | <u>D</u> | <u>38</u> | <u>C</u> | <u>20</u> | <u>E</u> | <u>73</u> |
| I-80 EB Ramps & Willow Ave | <u>B</u> | <u>17</u> | <u>C</u> | <u>23</u> | <u>C</u> | <u>22</u> | <u>E</u> | <u>56</u> |
| I-80 HOV Ramps & Cutting Blvd | <u>C</u> | <u>22</u> | <u>A</u> | <u>6</u> | <u>D</u> | <u>40</u> | <u>A</u> | <u>1</u> |
| I-80 On/Off Ramps & Potrero Ave | <u>B</u> | <u>20</u> | <u>F</u> | <u>363</u> | <u>B</u> | <u>18</u> | <u>F</u> | <u>243</u> |
| I-80 WB off ramp & Cutting Blvd | <u>C</u> | <u>21</u> | <u>B</u> | <u>11</u> | <u>C</u> | <u>21</u> | <u>B</u> | <u>11</u> |
| I-80 WB off ramp & El Portal Dr | <u>C</u> | <u>33</u> | <u>C</u> | <u>23</u> | <u>C</u> | <u>28</u> | <u>B</u> | <u>19</u> |
| I-80 WB Off Ramp & Willow Ave | <u>B</u> | <u>16</u> | <u>B</u> | <u>13</u> | <u>B</u> | <u>20</u> | <u>B</u> | <u>14</u> |
| I-80 WB Ramps & Barrett Ave | <u>F</u> | <u>87</u> | <u>F</u> | <u>85</u> | <u>E</u> | <u>70</u> | <u>E</u> | <u>74</u> |
| I-80 WB Ramps & Hilltop Dr | <u>0</u> | <u>0</u> | <u>B</u> | <u>11</u> | <u>0</u> | <u>0</u> | <u>A</u> | <u>7</u> |
| I-80 WB Ramps & Pinole Valley Rd | <u>E</u> | <u>62</u> | <u>C</u> | <u>29</u> | <u>D</u> | <u>47</u> | <u>C</u> | <u>23</u> |
| Richmond Pkwy & Barrett Ave | <u>A</u> | <u>9</u> | <u>A</u> | <u>9</u> | <u>A</u> | <u>9</u> | <u>A</u> | <u>10</u> |
| Richmond Pkwy & Blume Dr/Ramps | <u>D</u> | <u>46</u> | <u>D</u> | <u>38</u> | <u>D</u> | <u>46</u> | <u>D</u> | <u>49</u> |
| Richmond Pkwy & Gertrude Ave | <u>D</u> | <u>51</u> | <u>C</u> | <u>32</u> | <u>D</u> | <u>40</u> | <u>B</u> | <u>11</u> |
| Richmond Pkwy & Hilltop Dr | <u>C</u> | <u>21</u> | <u>C</u> | <u>26</u> | <u>C</u> | <u>21</u> | <u>C</u> | <u>20</u> |
| Richmond Pkwy & Ohio Ave | <u>B</u> | <u>11</u> | <u>A</u> | <u>10</u> | <u>B</u> | <u>10</u> | <u>A</u> | <u>9</u> |
| Richmond Pkwy & Parr Blvd | <u>E</u> | <u>75</u> | <u>B</u> | <u>12</u> | <u>E</u> | <u>63</u> | <u>B</u> | <u>16</u> |
| Richmond Pkwy/Fitzgerald Dr & I-80 Ramps | <u>B</u> | <u>11</u> | <u>D</u> | <u>39</u> | <u>B</u> | <u>10</u> | <u>C</u> | <u>23</u> |
| San Pablo Ave & Barrett Ave | <u>C</u> | <u>24</u> | <u>D</u> | <u>37</u> | <u>C</u> | <u>27</u> | <u>C</u> | <u>28</u> |

| Intersection | 2019 A.M. | | 2019 P.M. | | 2050 A.M. | | 2050 P.M. | |
|---|-----------------|------------------|-----------------|------------------|-----------------|-------------------|-----------------|-------------------|
| | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay |
| San Pablo Ave & Broadway Ave/ El Portal Dr | <u>C</u> | <u>25</u> | <u>C</u> | <u>23</u> | <u>C</u> | <u>23</u> | <u>C</u> | <u>22</u> |
| San Pablo Ave & Carlson Blvd* | <u>F</u> | <u>89</u> | <u>D</u> | <u>47</u> | <u>F</u> | <u>92</u> | <u>F</u> | <u>96</u> |
| San Pablo Ave & Central Ave* | <u>E</u> | <u>65</u> | <u>D</u> | <u>43</u> | <u>E</u> | <u>62</u> | <u>D</u> | <u>47</u> |
| San Pablo Ave & College Ln | <u>C</u> | <u>31</u> | <u>C</u> | <u>34</u> | <u>C</u> | <u>27</u> | <u>F</u> | <u>99</u> |
| San Pablo Ave & Cummings Skyway | <u>A</u> | <u>8</u> | <u>A</u> | <u>7</u> | <u>A</u> | <u>7</u> | <u>A</u> | <u>6</u> |
| San Pablo Ave & Cutting Blvd | <u>C</u> | <u>26</u> | <u>C</u> | <u>34</u> | <u>C</u> | <u>26</u> | <u>C</u> | <u>22</u> |
| San Pablo Ave & Garvin Ave | <u>B</u> | <u>10</u> | <u>A</u> | <u>8</u> | <u>B</u> | <u>11</u> | <u>B</u> | <u>13</u> |
| San Pablo Ave & Hilltop Dr | <u>D</u> | <u>36</u> | <u>D</u> | <u>50</u> | <u>D</u> | <u>37</u> | <u>F</u> | <u>94</u> |
| San Pablo Ave & John Muir Pkwy | <u>F</u> | <u>92</u> | <u>E</u> | <u>73</u> | <u>F</u> | <u>109</u> | <u>F</u> | <u>83</u> |
| San Pablo Ave & Moeser Ln | <u>B</u> | <u>14</u> | <u>C</u> | <u>20</u> | <u>B</u> | <u>15</u> | <u>A</u> | <u>9</u> |
| San Pablo Ave & Portrero Ave | <u>C</u> | <u>25</u> | <u>C</u> | <u>32</u> | <u>C</u> | <u>25</u> | <u>E</u> | <u>63</u> |
| San Pablo Ave & Rd 20 | <u>D</u> | <u>54</u> | <u>C</u> | <u>31</u> | <u>D</u> | <u>42</u> | <u>C</u> | <u>32</u> |
| San Pablo Ave & Rheem Ave | <u>D</u> | <u>47</u> | <u>B</u> | <u>11</u> | <u>C</u> | <u>33</u> | <u>C</u> | <u>22</u> |
| San Pablo Ave & Richmond Pkwy | <u>E</u> | <u>59</u> | <u>D</u> | <u>43</u> | <u>E</u> | <u>56</u> | <u>D</u> | <u>39</u> |
| San Pablo Ave & Robert H Miller Dr | <u>B</u> | <u>19</u> | <u>C</u> | <u>31</u> | <u>B</u> | <u>17</u> | <u>F</u> | <u>90</u> |
| San Pablo Ave & San Pablo Dam Rd | <u>E</u> | <u>56</u> | <u>D</u> | <u>38</u> | <u>D</u> | <u>46</u> | <u>D</u> | <u>44</u> |
| San Pablo Ave & Sycamore Ave | <u>C</u> | <u>32</u> | <u>C</u> | <u>27</u> | <u>C</u> | <u>30</u> | <u>C</u> | <u>23</u> |
| San Pablo Ave & Tara Hills | <u>B</u> | <u>12</u> | <u>B</u> | <u>19</u> | <u>B</u> | <u>12</u> | <u>F</u> | <u>84</u> |
| San Pablo Ave & Tennant Ave | <u>B</u> | <u>13</u> | <u>E</u> | <u>65</u> | <u>B</u> | <u>12</u> | <u>F</u> | <u>154</u> |
| San Pablo Ave-Parker Ave & Willow Ave | <u>B</u> | <u>19</u> | <u>A</u> | <u>9</u> | <u>B</u> | <u>18</u> | <u>A</u> | <u>10</u> |
| San Pablo Dam Rd & Castro Ranch Rd | <u>A</u> | <u>9</u> | <u>A</u> | <u>6</u> | <u>A</u> | <u>9</u> | <u>B</u> | <u>10</u> |
| San Pablo Dam Rd & I-80 EB Ramps | <u>D</u> | <u>44</u> | <u>D</u> | <u>40</u> | <u>D</u> | <u>46</u> | <u>C</u> | <u>30</u> |
| San Pablo Dam Rd & I-80 WB Ramps | <u>C</u> | <u>25</u> | <u>B</u> | <u>12</u> | <u>F</u> | <u>156</u> | <u>C</u> | <u>25</u> |
| San Pablo Dam Rd & May Rd | <u>B</u> | <u>11</u> | <u>A</u> | <u>7</u> | <u>A</u> | <u>10</u> | <u>A</u> | <u>8</u> |
| San Pablo Dam Rd & Valley View Rd | <u>C</u> | <u>21</u> | <u>A</u> | <u>9</u> | <u>C</u> | <u>21</u> | <u>A</u> | <u>8</u> |

Notes: Delay is average control delay reported in seconds. Cells that are bolded indicate performance below target. Downtown areas, key schools, and TPAs indicated with asterisk.

West County Action Plan

Appendix D: RTO Measurement and Modeling Methodologies

[This section will include the RTO Methodology Memo presented to the WCCTAC TAC in Round 4 of the Action Plan meeting series. The Memo is currently being revised for tone and will be appended to this Action Plan prior to presentation to the WCCTAC Policy Board.]

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