TRANSPLAN Technical Advisory Committee

Participating entities: Cities of Antioch, Brentwood, Oakley and Pittsburg • Contra Costa County
Tri Delta Transit • 511 Contra Costa • Contra Costa Transportation Authority (CCTA) • Caltrans District 4 • BART
TRANSPLAN • State Route 4 Bypass Authority • East Contra Costa Regional Fee & Financing Authority (ECCRFFA)

October 18, 2022 – 1:30 to 3:30 p.m.

Virtual meeting call-in/log-in information:
Please join my meeting from your computer, tablet or smartphone.
Please click the link below to join the webinar:
https://cccounty-us.zoom.us/j/84726492684

Or Telephone:
Dial:
USA 214 765 0478 US Toll
USA 888 278 0254 US Toll-free
Conference code: 841892

AGENDA

NOTE: The Technical Advisory Committee ("TAC") agenda/packet is only distributed digitally, ***no paper copies will be sent.*** *If you need a printed copy, please contact TRANSPLAN staff.*

Action/Discussion Items (see attachments where noted [♦])

Item 1: Public Comment: The public will have an opportunity to comment on items not on the agenda**.**

Item 2: RECEIVE update on the East County Action Plan. Contra Costa Transportation Authority staff and its consultants will present the Draft East County Action Plan for TAC review and comment before it is brought to the TRANSPLAN Committee for adoption. ♦ **Page 2**

Item 3: Adjourn to Tuesday, November 15, 2022, at 1:30PM, or other date/time as deemed appropriate by the Committee.

The TAC will meet on the third Tuesday of each month, 1:30 p.m. Meetings are currently held via video conference in response to Contra Costa County Health Services Health Orders related to the COVID-19 pandemic: https://www.coronavirus.cchealth.org/health-orders. Otherwise, the TAC meets at the third floor conference room at Antioch City Hall. The TAC serves the TRANSPLAN Committee, the East Contra Costa Regional Fee & Financing Authority, and the State Route 4 Bypass Authority.

Persons needing a disability-related accommodation should contact Robert Sarmiento, TRANSPLAN staff person, at least 48 hours prior to the starting time of the meeting.

CONNECT CONTRA COSTA

Planning for Tomorrow's Transportation

East County Action Plan

Draft | October 2022

CONTRA COSTA
transportation
authority

CONNECT CONTRA COSTA

Planning for Tomorrow's Transportation

East County Action Plan

Draft | October 2022

TRANSPLAN Committee

Member Jurisdictions:

Pittsburg California

Antioch California

City of Oakley

The City of Brentwood

Heritage • Vision • Opportunity

East 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]

TRANSPLAN Policy Board Members

- Lamar Thorpe, City of Antioch
- Kerry Motts, City of Antioch
- Joel Bryant, City of Brentwood
- Anita Roberts, City of Brentwood
- Aaron Meadows, City of Oakley
- Shannon Shaw, City of Oakley
- Holland White, City of Pittsburg
- Sarah Foster, City of Pittsburg
- Diane Burgis, Contra Costa County
- Bob Mankin, Contra Costa County

TRANSPLAN TAC Representatives

- Carlton Thompson, City of Antioch
- Steve Kersevan, City of Brentwood
- Jason Kabalin, City of Oakley
- Nhat Phan, City of Pittsburg
- John Cunningham, Contra Costa County
- Robert Sarmiento, Contra Costa County, TRANSPLAN Administrator

[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, TRANSPLAN, member jurisdictions, and the TRANSPLAN Policy Board in plan preparation.

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East County Action Plan

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Figures

Abbreviations

BART	Bay Area Rapid Transit
CBPP	Countywide Bicycle and Pedestrian Plan
CCTA	Contra Costa Transportation Authority
CTP	Countywide Comprehensive Transportation Plan
EB	eastbound
EIR	Environmental Impact Report
EPC	Equity Priority Communities
EV	electric vehicle
GHG	greenhouse gas
GMP	Growth Management Program
GPAs	General Plan amendments
HOV	high occupancy vehicle
HOT	high occupancy toll
KSI	Killed or Seriously Injured
LOS	Level of Service
LSBN	Low Stress Bike Network
MPH	miles per hour
MTSO	Multimodal Transportation Service Objectives
NOC	Notice of Completion
NOP	Notice of Preparation
PBT	Pedestrian-Bicycle-Transit
PCI	Pavement Condition Index
PDA	Priority Development Areas
RRS	Routes of Regional Significance
RTOs	Regional Transportation Objectives
RTMP	Regional Transportation Mitigation Program

RTPCs	Regional Transportation Planning Committees
SB	State Bill
SOV	Single-Occupant Vehicle
STMP	Subregional Transportation Mitigation Program
TDM	Transportation Demand Management
TEP	Transportation Expenditure Plan
TIMS	Transportation Injury Mapping System
TLC	Transportation for Livable Communities
TRANSPAC	Transportation Planning and Cooperation Advisory Committee
TSM	Transportation Systems Management
ULL	Urban Limit Line
VMT	vehicle miles traveled
WB	westbound
ZEV	zero-emission vehicles

East County Action Plan

Chapter 1: Introduction

This document is the Action Plan covering the incorporated and unincorporated communities throughout the East 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 formulaic share of 18 percent local street maintenance and improvement funds and to become eligible for competitive Transportation for Livable Communities (TLC) funds,[2] 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 or 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,

[2] The Contra Costa TLC Program funds transportation projects in communities to facilitate, support, and/or catalyze affordable housing, transit-oriented or mixed-use development, and encourage traffic-calming and the use of non-vehicular modes of transportation to minimize single occupancy vehicle trips, and make Contra Costa's communities more pedestrian- bicycle- and transit-friendly.

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."[3]

A separate Action Plan is prepared and adopted for each of the five subregions in Contra Costa. The East County subregion, which is the subject of this Action Plan, encompasses the incorporated jurisdictions of Pittsburg, Antioch, Oakley, and Brentwood as well as unincorporated portions of eastern 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.

Action Plan Purpose

The purpose of the Action Plan is for each local jurisdiction in Contra Costa to participate in the multi-jurisdictional, cooperative planning process envisioned in Measure C/J to address regional transportation issues that span jurisdictional boundaries. The basic framework for this process is established through the Regional Transportation Planning Committees (RTPCs), which are defined in Measure C/J. As described above, TRANPLAN is the Authority-designated RTPC for East County. The Action Plans are intended to establish overall goals, identify RRS, create a set of performance

[3] Measure J: Contra Costa's Transportation Sales Tax Expenditure Plan, Contra Costa Transportation Authority, July 21, 2004, pp. 24–25.

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 by Measure J 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.

Action Plan Contents

The East 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 looks at 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, goals, and policies of the Action Plan.
- **Routes of Regional Significance (Chapter 4)** maps and describes the multimodal corridors that make up the Routes of Regional Significance in East 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 East County Action Plan has been prepared simultaneously with updates to the other four subregional Action Plans and utilizes a comprehensive update approach that ensures the critical components of each Action Plan will be similar to one another, with modifications as needed due to the unique needs of East County and the other subregions. All five Action Plans will determine the policies and actions that the Authority can adopt into the 2023 CTP Update. The Authority will incorporate the policies and actions from all five action plans provided that consensus has been achieves among the affected jurisdictions and RTPCs.

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 East 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 East 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 East County subregion focused on providing safe and adequate roadways, transit improvements and extension of BART service, active transportation improvements, and the general safety of all modes. Specific comments included:

- More frequent BART service and extension to Brentwood
- Increased BART connections and access, including parking, carpooling, or commuter buses from outlying communities
- Deploy High-Occupancy Vehicle (HOV) commuter buses to job centers and BART stations
- Increase off-street bikeways and connections to BART and railroads
- Increase first and last mile connections from residential areas to public transportation
- Increase lighting and shade on trails
- Ensure adequate ADA accessibility on all modes
- Reduce frequency of automobile speeding

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

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.

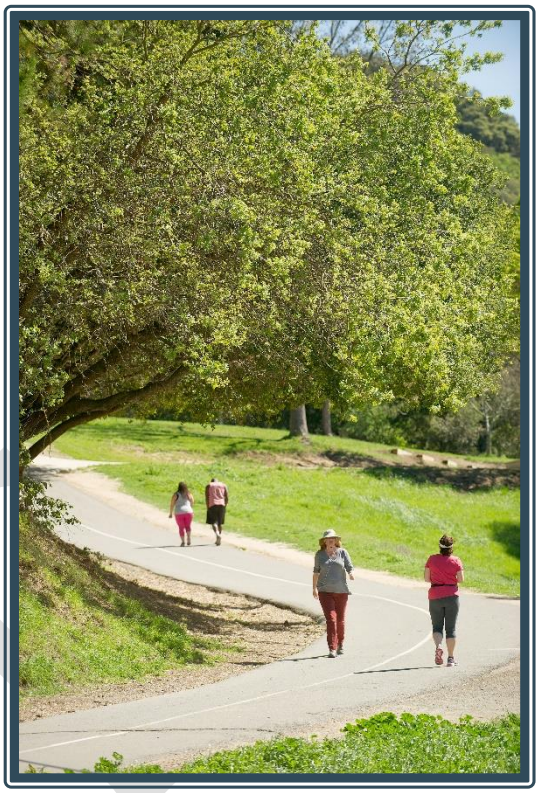
Regional Transportation Objectives

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.

Chapter 2: Current Conditions, Trends, and Travel Patterns

This chapter documents existing transportation conditions in East County; these conditions are the basis for formulation of this Action Plan and include description of baseline and projected transportation conditions for East 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 East County, as well as projections of future travel demand on major East 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 of the Tri-Valley area. The transportation network assumptions for the Baseline 2050 scenario is 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. These shifts in travel demand are important to acknowledge in the Action Plan update due to the uncertainties that the pandemic has produced.

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.

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-

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

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.

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 renewed 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 crashes 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.

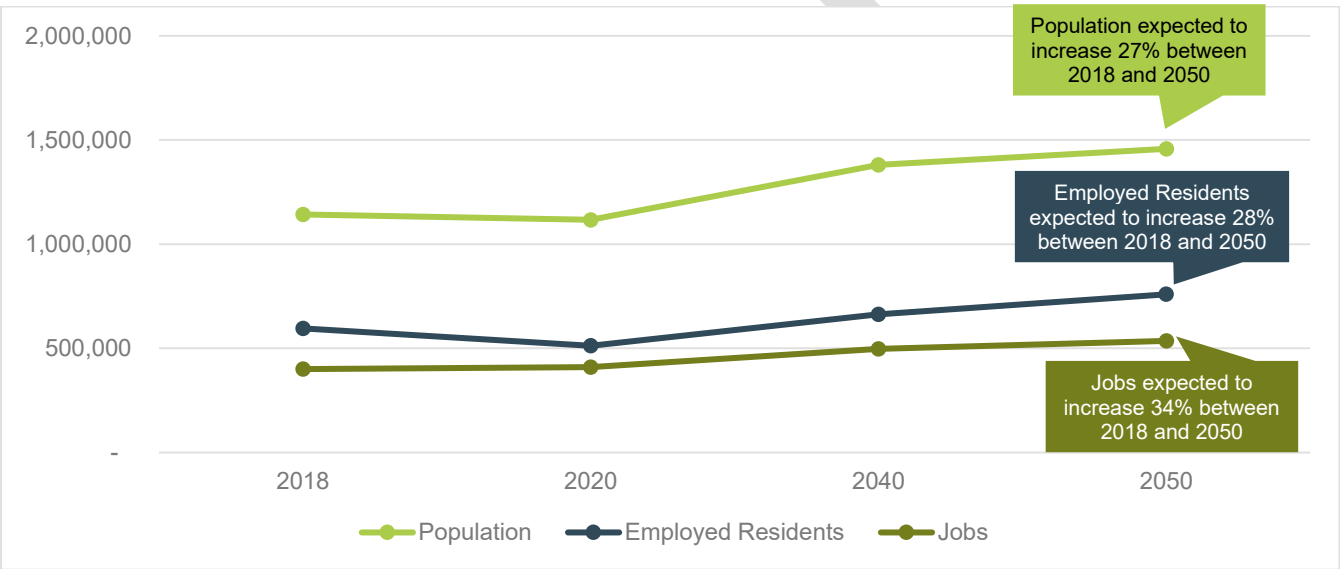
[5] BART, Monthly Ridership Report, July 2022, https://www.bart.gov/sites/default/files/docs/202207%20MRR.pdf.

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.

Population and Employment

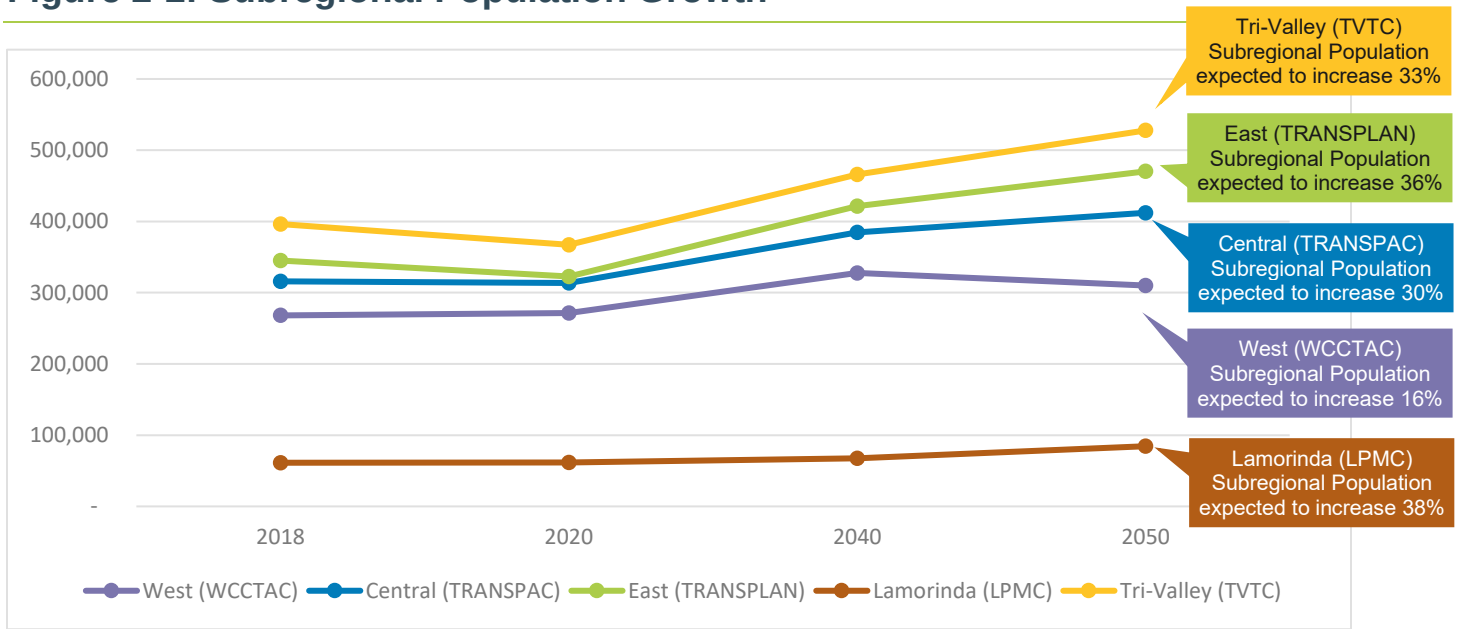
Countywide forecasts for population, employed residents, and jobs condition are shown in Figure 2-1, which shows a downward trend of population and employed residents occurred between 2018 and 2020 due to the COVID-19 pandemic. Projecting beyond 2020, all three categories are expected to follow fairly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

Figure 2-1: Contra Costa County Demographic Growth



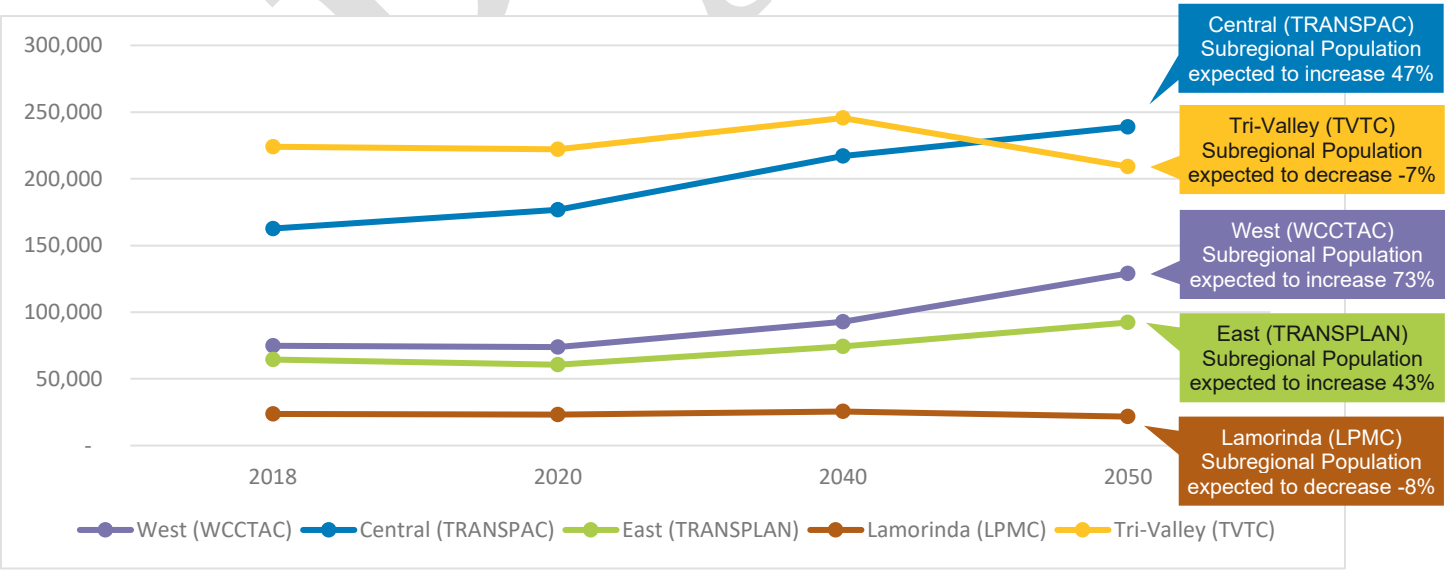
The five subregional forecasts for population growth are shown in Figure 2-2. East County population, represented by the green line, is projected to grow at a rate of 16 percent between 2018 and 2040; by 2050, East County is anticipated to be home to about 470,334 people, the second highest Contra Costa population, only behind the Tri-Valley area.

Figure 2-2: Subregional Population Growth[6]



Subregional forecasts for jobs are shown in Figure 2-3. Again, East County is represented by the green line. Countywide, jobs are expected to grow faster than population, and East County is projected to experience significant job growth of 43 percent between 2018 and 2050, the third fastest growth when compared to other subregions, behind West County and Central County.

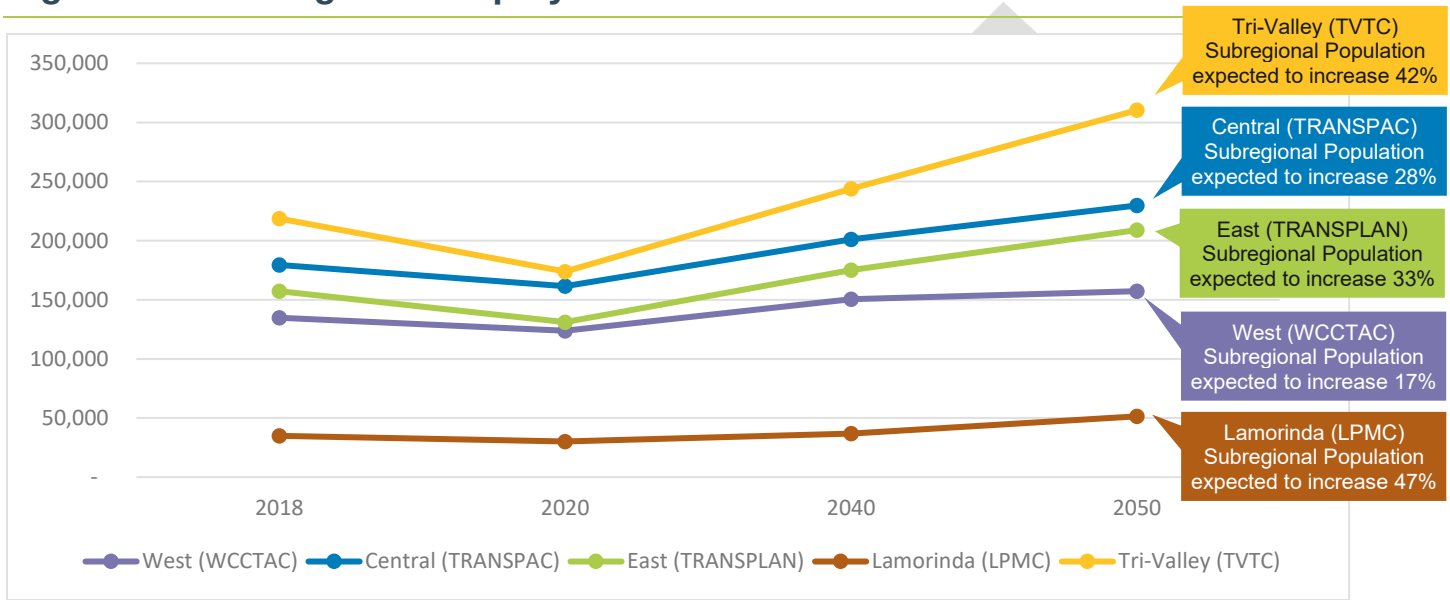
Figure 2-3: Subregional Job Growth



[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, East County is represented by the green line. Countywide, the percentage of employed residents is expected to grow more similar to population than to jobs, with East County projected to experience 33 percent growth of employed residents of between 2018 and 2050, the third highest when compared to other subregions, behind the Lamorinda and Tri-Valley areas.

Figure 2-4: Subregional Employed Residents



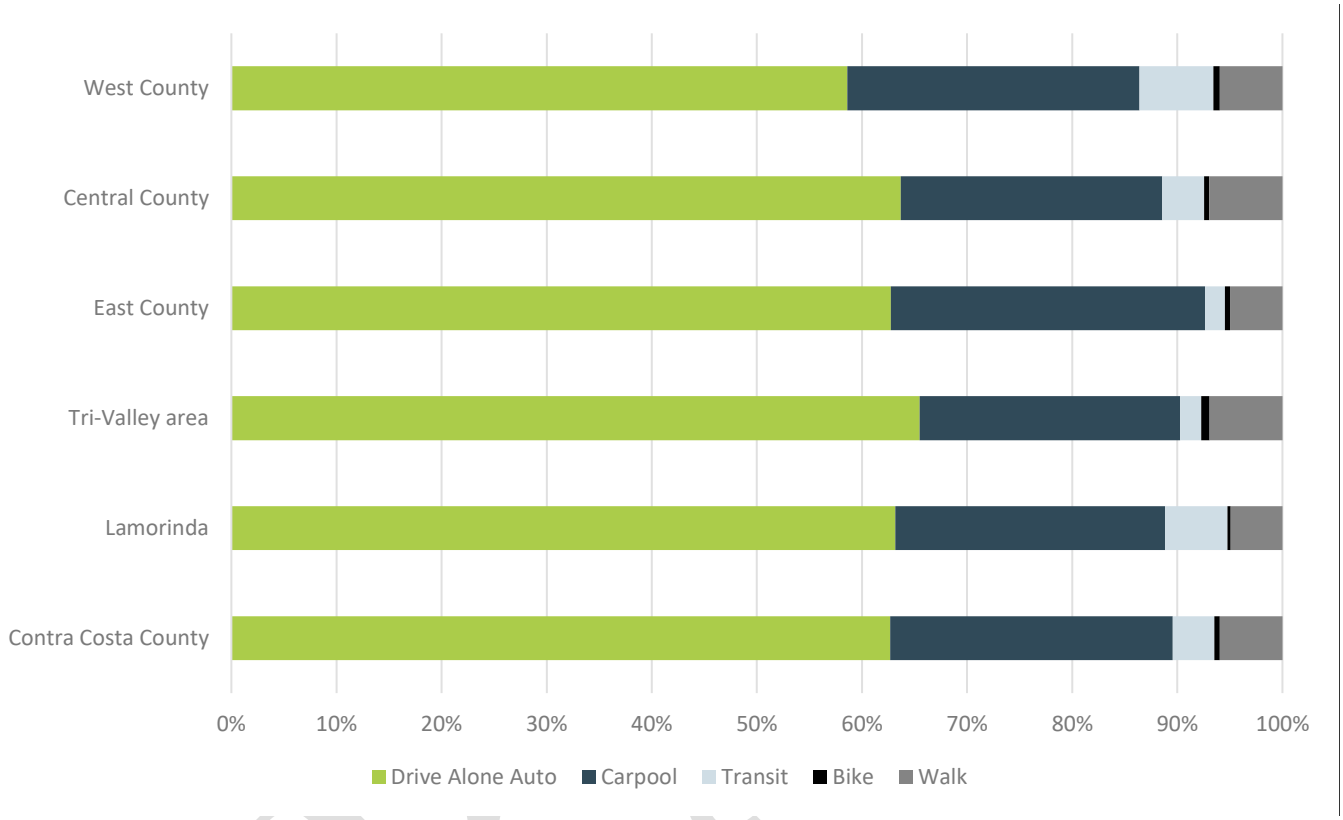
Commute Patterns and Traffic Forecasts

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 East County are anticipated to increase each year as the local population continues to grow. (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.)

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, East County is relatively flatter than the Lamorinda subregion. Further, East County jurisdictions are less urban than subregions like West County. Therefore, the mode share for each form of transportation varies between subregions, as illustrated in Figure 2-5.

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



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.[7] 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.

[7] 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 East 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 East 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 85 percent by automobile in the East County subregion, which shows a higher share accounted for by carpooling in East County than the entire county.

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

Mode	Contra Costa County			East County Subregion		
	Estimate	Margin of Error	Percentage Mode Share	Estimate	Margin of Error	Percentage Mode Share
Total:	**544,376**	**±3,447**		**155,348**	**±3,655**	
Car, truck, or van - drove alone	367,467	±3,409	68%	109,339	±2,977	70%
Car, truck, or van - carpooled	62,385	±2,486	11%	23,924	±1,563	15%
Public transportation (excluding taxicab)	59,068	±1,981	11%	9,939	±903	6%
Taxicab, motorcycle, bicycle, walked, or other means	19,344	±2,462	4%	4,804	±691	3%
Worked from home	36,112	±1,310	7%	7,340	±713	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 East County and Contra Costa County as a whole. The modeling results show that most work trips by East County residents are made by automobile, specifically driving alone. East County's transit mode share for work trips is lower than the county's, reflecting the lack of available BART service in the eastern and southern portions of the subregion. Active transportation trips account for a very small portion of commute trips made by East 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 East County commuters are projected to remain relatively similar to existing, with modest decreases in the drive-alone auto and an increase in transit mode shares and the projected population and employment distribution of 2050.

As shown in Table 2-3, commuters to jobs in East 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: East County Residents

	Contra Costa County		East County	
	2019	2050 Baseline	2019	2050 Baseline
Drive Alone Auto	72%	70%	75%	73%
Carpool	14%	15%	17%	16%
Transit	12%	13%	6%	10%
Bike	0.3%	0.5%	0.1%	0.2%
Walk	1.4%	2%	0.8%	0.9%

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 East County

	Contra Costa County		East County	
	2019	2050 Baseline	2019	2050 Baseline
Drive Alone Auto	83%	79%	84%	83%
Carpool	12%	13%	11%	11%
Transit	3%	4%	2%	4%
Bike	0.4%	0.7%	0.3%	0.5%
Walk	2%	3%	2%	2%

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 10 percent of all trips.

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

Table 2-4: Mode Share for all Trips: East County Subregion Residents[8]

	Contra Costa County		East County	
	2019	2050 Baseline	2019	2050 Baseline
Drive Alone Auto	63%	63%	63%	63%
Carpool	27%	28%	30%	28%
Transit	4%	3%	1.9%	2%
Bike	0.5%	1%	0.5%	1.2%
Walk	6%	6%	5%	6%

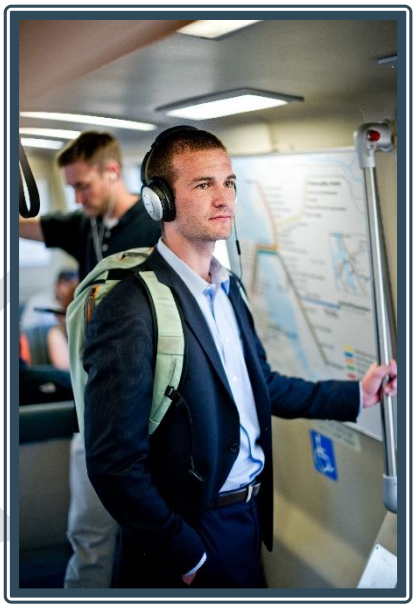
Source: CCTA travel demand model and DKS Associates.

Note: Totals may not sum due to rounding.

[8] 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 East County jurisdictions to be higher than reported in Table 2-4.

Transit

East County is heavily connected via public transportation along the Bay shoreline in the northern portions of the subregion. Forms of public transportation include Amtrak rail and BART rail, two proposed ferry stations, and about a dozen bus routes. Several bus services transport residents and workers into and out of the subregion and the county. A major transportation project, the East County Integrated Transit Study Express Bus, is planned to further connect the City of Brentwood to existing BART facilities. See Chapter 5, Transit, Figure 5-1 for a map depicting these routes and facilities.



The existing 2017 East County Action Plan and the CTP resulted in several positive transit system programs and developments. These include but are not limited to the BART extension to Bay Point and Antioch, study of BART access between existing stations and Brentwood, electrification of Tri-Delta Transit buses, and Antioch eBART station parking improvements.

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, East County transit trips accounted for just over 1.9 percent of all trips in the 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 East County active transportation network includes abundant low stress facilities, Class I or IV, adjacent to some major thoroughfares and on multi-use paths. 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 East County Action Plan and the CTP resulted in several successful bike and pedestrian projects, including but not limited to completion of gaps in several multi-use trails and the construction of the Mokelumne Trail Overcrossing.

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.

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

Roadways

The East 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 SR-4 that links East County to Central and West County subregions, SR-160 that links East County to Solano County, and various roads that serve local and regional traffic. The Authority has helped fund approximately $1 billion in East County roadway improvements, including to SR-4, extension of eBART, and various other improvements.

However, 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 93 percent of trips in East County are made by vehicle, either solo or as a carpool. This percentage translates to 33.5 VMT per capita in the subregion. The roadway and vehicle goals in this Action Plan aim to decrease both the mode share of single-occupant 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

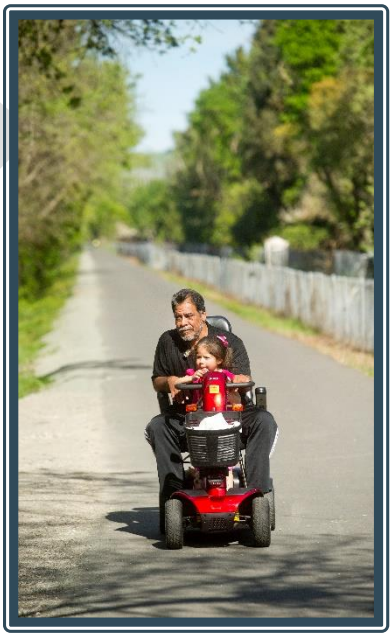
Safety is a foundational consideration of the transportation system, which affects the lives and well-being of all East County residents, and for all modes of transportation, because collision and severe injury can happen if a Safe System Approach to redundancy in infrastructure design is not constructed. 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.[9] Vision Zero is a strategy to eliminate all fatalities and severe injuries that result from traffic

[9] 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.

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 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" designated by MTC. They are places in East 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 system resilient to these changes. Air pollution from mobile sources, especially diesel engines, 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 East Contra Costa Transportation Advisory Committee (TRANSPLAN) 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 East 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), and 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 entire nation, East 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 East County.

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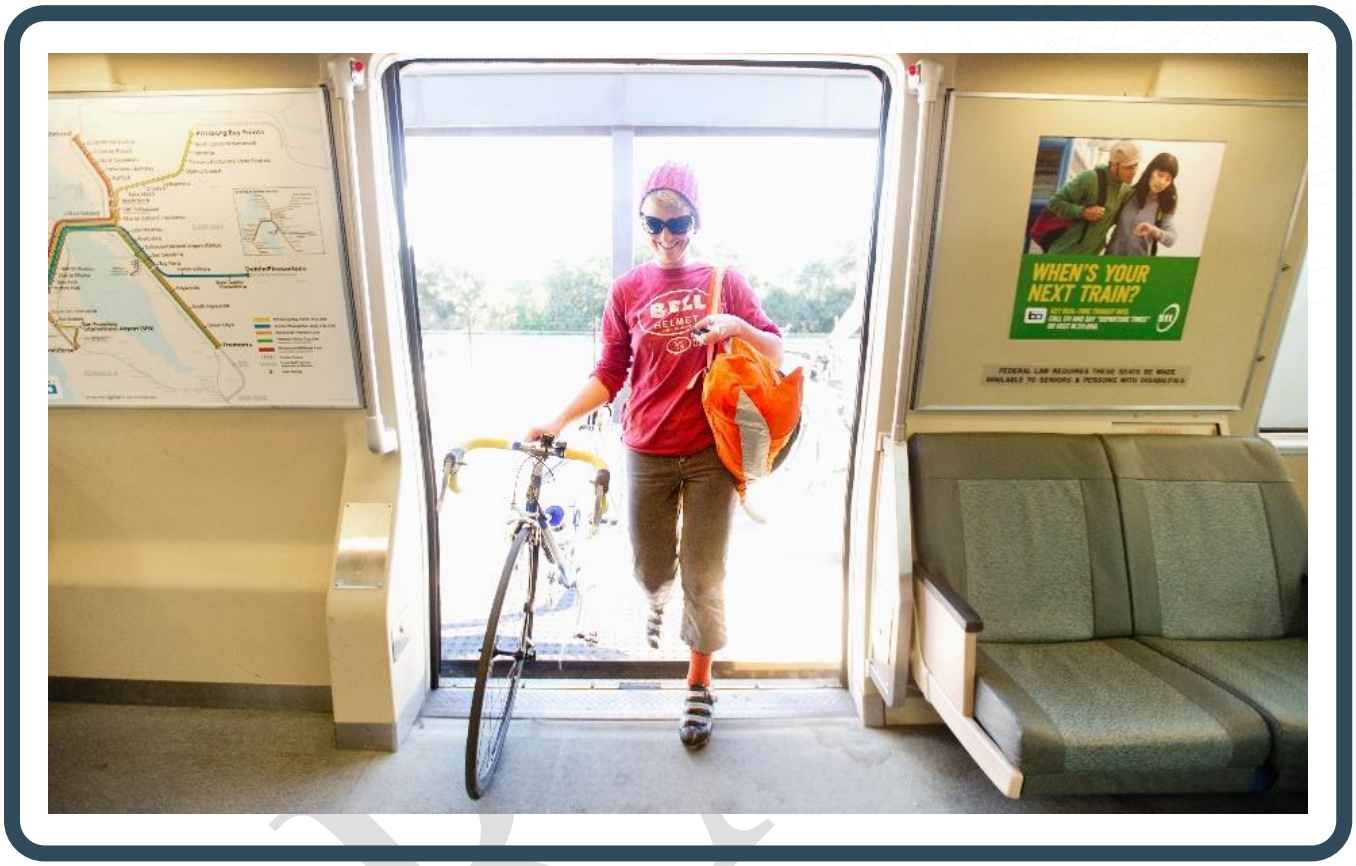
Chapter 3: Vision, Goals, and Policies



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 East 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 East County jurisdictions are working holistically, tapping into various modes, and using new technology and innovation.

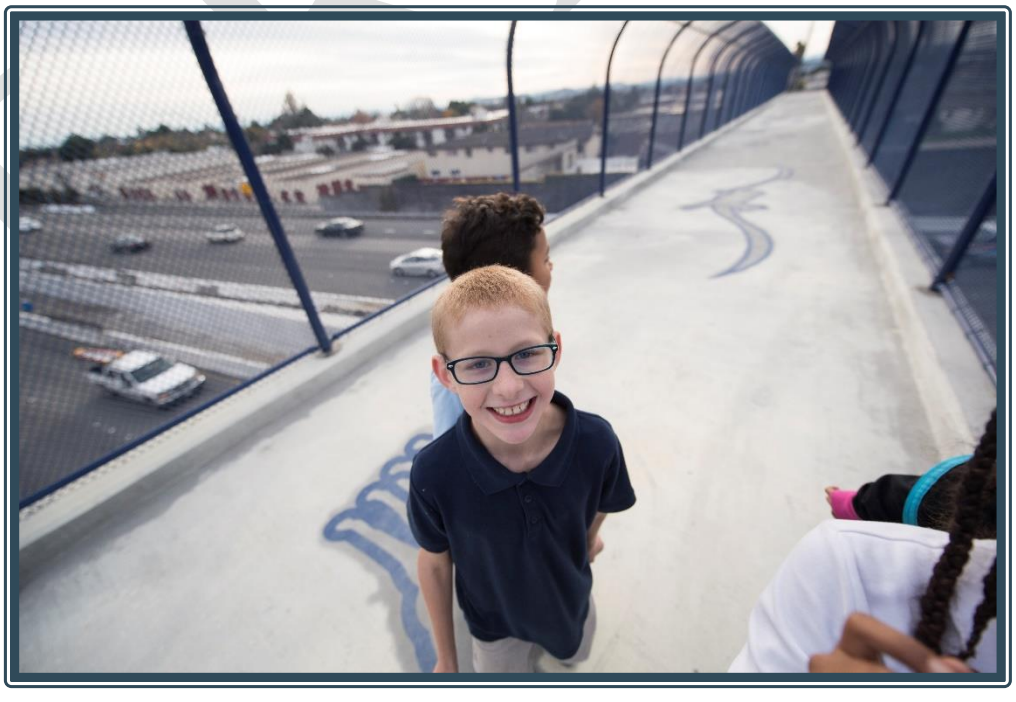
Long-range transportation planning in East County and greater Contra Costa County requires a holistic, multimodal planning approach based on cooperation among all jurisdictions, partner agencies, and the community. This approach must consider all components of the transportation system simultaneously, 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 11 goals for the transportation system in East County. Some goals pertain to one mode or Action Plan topic, while others are multimodal and/or cover more than one topic.

1. Maintain and improve the efficiency of freeway and arterial corridors through a holistic planning approach that considers shared mobility and prioritizes non-SOV transportation.
2. Support an efficient and effective transit system.
3. Improve bicycle and pedestrian mobility.
4. Decrease single-occupant vehicle travel and VMT.
5. Maintain the existing transportation network to support safety and efficiency.
6. Manage the effects of new growth on the transportation system.
7. Ensure a safe and low stress transportation system for all modes of travel.
8. Minimize transportation impacts on the climate.
9. Ensure the transportation system is resilient in the face of climate change.
10. Support equitable mobility for all incomes, racial and ethnic groups, ages, and abilities across all modes of transportation.
11. Continue the process of innovation and the development of new technologies in 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.

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Chapter 4: Routes of Regional Significance

Regional Multimodal Corridors 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, TRANSPLAN, 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 TRANSPLAN.

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 nonautomobile 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.

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 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.

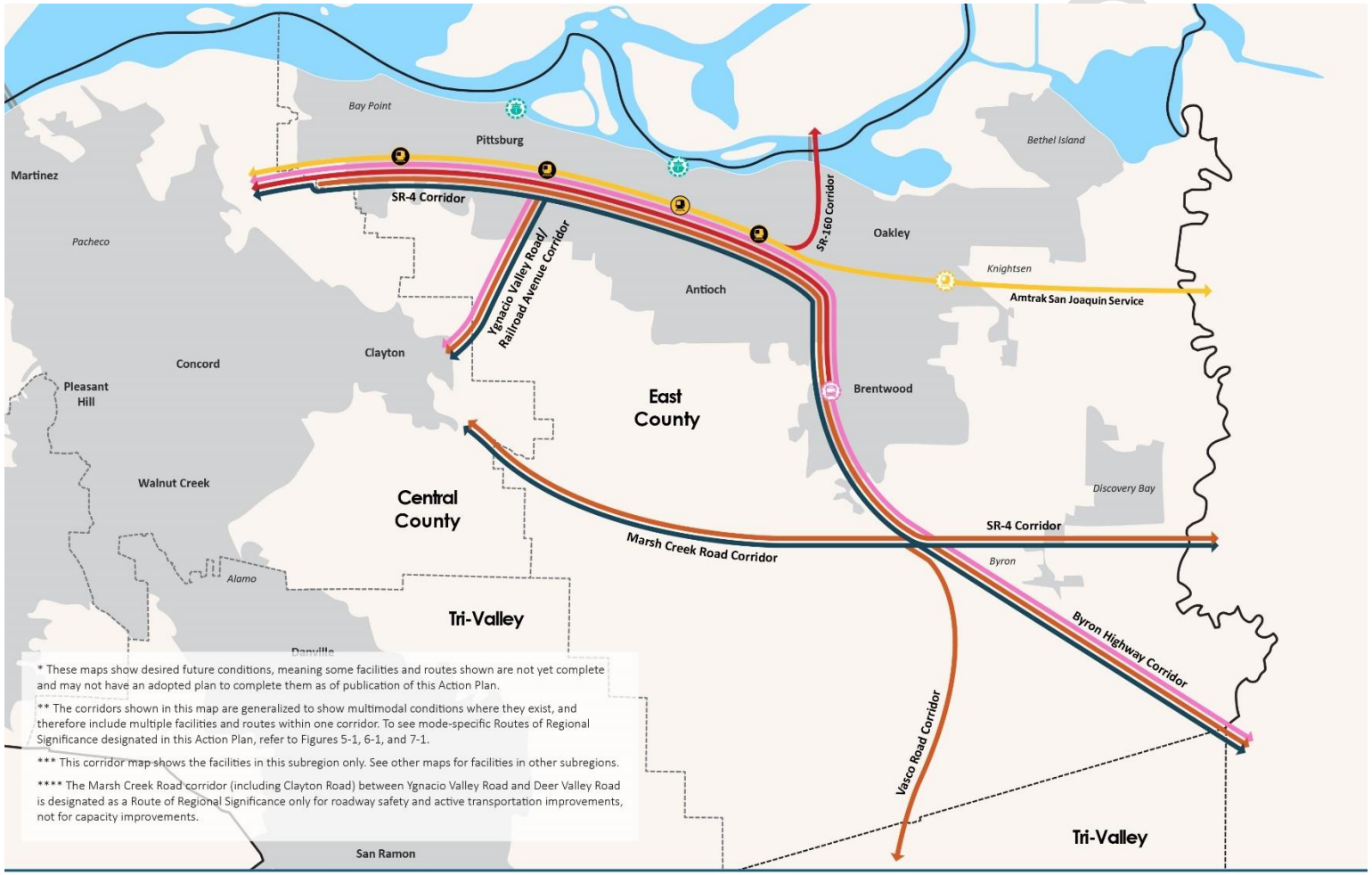
Multimodal Corridor Maps of Routes of Regional Significance

In order to characterize the multimodal nature of Routes of Regional Significance, CCTA has worked with TRANSPLAN 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: East County Multimodal Corridor Map



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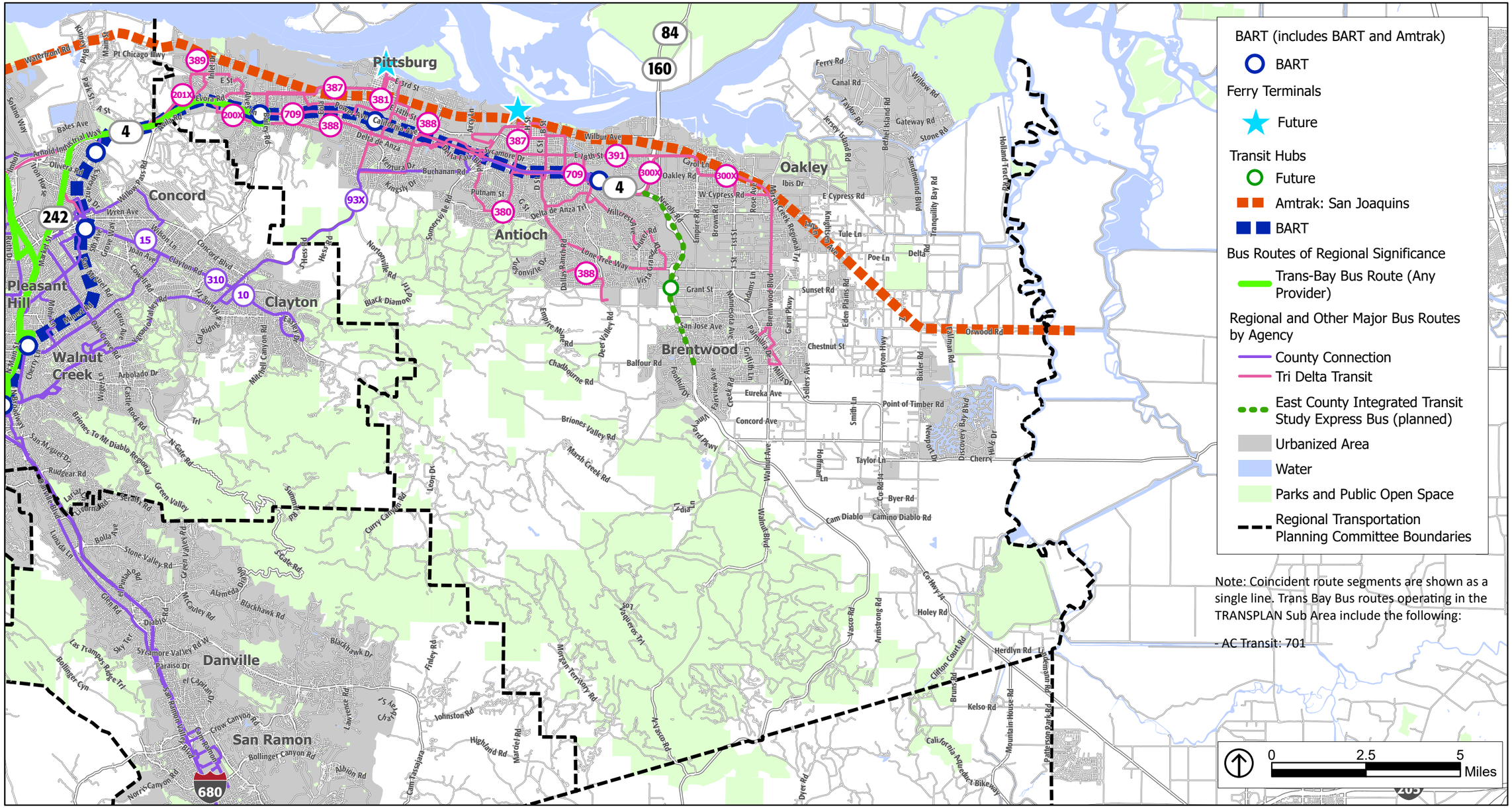
Chapter 5: Transit

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 service for the elderly or residents with disabilities. Many of the routes and facilities vital to the Contra Costa transit system are shown on 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	6% commute trips 5% of all trips	12% of commute trips 8% of all trips
Transit RTO-2: Mode Share to/from BART	Increase mode share of people accessing BART with non-vehicle modes	None	37%	53%
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	15%	30%
Transit RTO-5: Paratransit Access	Increase rides through paratransit programs	None	Increase by 5%	Increase by 40%

Figure 5-1: Important Transit Routes in East County



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

EAST CONTRA COSTA COUNTY TRANSIT FACILITIES AND ROUTES

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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, 6 percent of East County residents commute to work using transit, compared to 11 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 increase to 10 percent mode share of home-to-work based on residence location but increase from 2 percent in 2019 to 4 percent in 2050 based on job location. Meanwhile, 2050 projections shown in Table 2-4 predict that around 2 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 East County subregion to return to pre-pandemic levels of 6 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 12 percent by 2050. Further, this Action Plan proposes a target transit mode share of 8 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 East 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 28 percent of BART riders in East County used non-vehicle modes to access BART stations in 2015, as compared to 53 percent systemwide.

The performance target for this RTO is to increase East County's BART access modes – including modes used to get to eBART stations that were not included in the 2015 survey -- toward 2015 systemwide performance. For 2027, the target is to add 8 percent non-vehicle access trips, for a total of 37 percent. For 2050, the goal is to increase the share at the same rate as through 2027, by an additional 16 percent. This would result in a 53 percent non-vehicle mode share, equal to the 2015 systemwide non-vehicle access percentage.

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 East County BART Stations (2015)

Station	Active Transportation	Transit	Total for Non-Vehicle Modes
Pittsburg/Bay Point	15%	13%	28%
Total East County	**15%**	**13%**	**28%**
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 East 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 in the morning westbound direction between Antioch and Oakland than driving that same distance. However, the commute trip is faster for the reverse commute in the afternoon going eastbound from Oakland to Antioch BART stations. However, both peak hour trips are anticipated to be faster by BART than by driving by 2050.

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

				Transit/Drive Alone Time	
Corridor	**Median Drive Time (Minutes)[a]**	**Scheduled Transit Time (Minutes)[b]**	**2050 Drive Alone [c]**	**Existing**	**2050**
Antioch BART Station and 12th Street Oakland BART Station					
Morning – Westbound	56:53	61	103:7	1.07	0.59
Afternoon - Eastbound	66:15	56	95	0.85	0.58

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 9 percent of East 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 30 percent of urbanized acres served by high-quality transit by 2050. This Action Plan also includes an interim target of 15 percent completion by 2027, which is roughly a 50 percent increase over the current condition.

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

	Acres	Proportion of Total Acres
Urbanized area in subregion with access to high-quality transit	5,269	9%
Total urbanized area in Subregion	55,492	

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.

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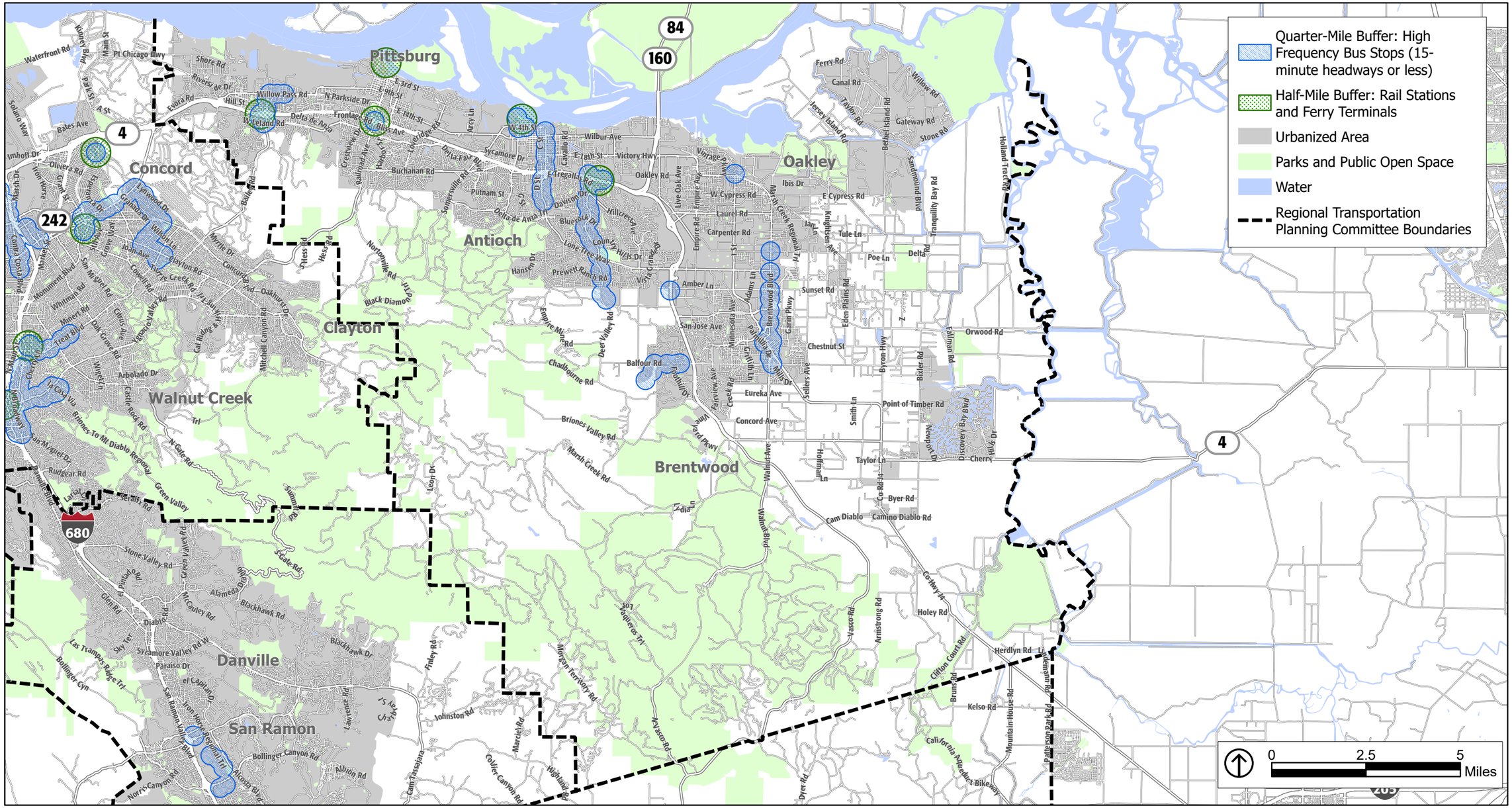
Figure 5-2: East County High Quality Transit



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

EAST CONTRA COSTA COUNTY HIGH-QUALITY TRANSIT

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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 East 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 three East County providers should increase by 5 percent by 2027 to 182,756 rides, and by 40 percent by 2050 to 243,675 rides.

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

Provider	2019 Rides
Tri-Delta Transit[a]	115,740
Vistability[b]	54,940
Mobility Matters[b]	3,374
Total Rides	**174,054**

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 that in the East 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: Support the ongoing study and future construction of the eBART Next Phase Study Alignment.
- Transit-2: Work with relevant parties to improve rail infrastructure, access, and service through the following actions:
  - Participate in any future studies regarding rail options or stations for East County that may be conducted by the Capitol Corridor Joint Powers Authority, Caltrans, Altamont Commuter Express (ACE) and/or AMTRAK, the San Joaquin Joint Powers Authority, or other groups.
  - Develop BART, eBART, and other rail stations as major transportation and business hubs for East County.
  - Continue exploring development of new rail station sites as appropriate with rail corridor proposals.
  - Identify and plan for future rail grade separations where feasible.
  - Plan and implement enhanced railroad crossings to improve pedestrian and bicycle access and to reduce noise and quality-of-life impacts throughout East County; enhancements may involve implementing quiet zones, grade separations, train-traffic signal preemption systems, or other measures.
- Transit-3: Work with CCTA, local jurisdictions, and local public transit operators to:
  - Develop a TRANSPLAN Transit Plan to identify future community transit needs and set a shared vision for viable, sustainable public transit service for all.
  - Work with the region's bus transit operators to increase and improve coordination where possible, particularly in linking East and Central County bus services.
  - Standardize operations, regional mapping, and wayfinding.
  - Implement traffic signal management and bus prioritization technology on regionally significant transit routes to improve bus speed and reliability.
- Transit-4: Work with local jurisdictions to evaluate systemwide bus stop design and safety improvements, including making it safer and easier for people to access transit stations and ensuring that transit is safe and attractive (such as crosswalks, bus bulbs, bus pullouts, and Americans with Disabilities Act improvements).
- Transit-5: Work with local jurisdictions to develop intermodal transportation facilities ("Mobility Hubs") that serve major activity centers and connect transit, pedestrian, bicycle facilities, and car/ride share in their planning documents, and site park and ride facilities, where needed and feasible.
- Transit-6: Conduct a study to explore the feasibility and development of ferry service to East County.

- Transit-7: Complete a feasibility study to explore feasibility of a Regional Express Bus Program and implementation of Bus Rapid Transit along key roadways.
- Transit-8: Work with MTC to provide funding to maintain and enhance local transit facilities and to purchase replacement of rolling stock.
- Transit-9: Implement the recommendations of the Contra Costa Accessible Transportation Strategic Plan, including the establishment of a new Coordinating Entity and establishing a new, ongoing, and dedicated funding stream source.
- Transit-10: Work with CCTA and local transit operators to explore financial incentives and reduced fares for public transit, including a feasibility study to explore a subregional or countywide Universal Basic Mobility program.
- Transit-11: Provide educational awareness of public transit options through outreach, education, and advertising, particularly in local schools.
- Transit-12: Assist local jurisdictions in reviewing and considering options for improving curb management and commercial and public bus, truck, and van passenger loading on key public streets.
- Transit-13: 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-14: Work with CCTA to fund and develop a regional mapping data services digital platform to enable the standardization and routine updating of digital and paper maps across all transit services.
- Transit-15: Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.
- Transit-16: Adopt local policies that prioritize safety for the most vulnerable users.
- Transit-17: Work with CCTA and local transit providers to ensure real-time online transit information for all routes.
- Transit-18: Assist local jurisdictions in the development of design guidelines and objective design standards to support transit-oriented development in downtowns, priority development areas (PDA), transit priority areas, and other areas well served by transit.
- Transit-19: 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 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 East 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 tend to be used on more than just bicycle and pedestrian faiclities, 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

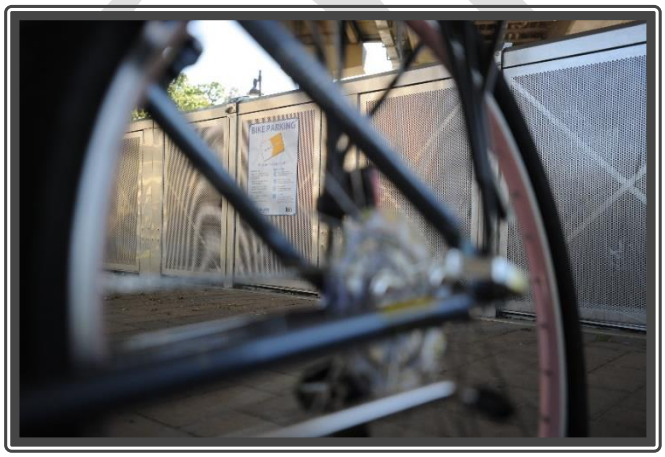
RTO Name	Definition	Existing Target	Proposed 2027 Target	Proposed 2050 Target
Active Transportation RTO-1: Active Transportation Mode Share	Increase active transportation mode share	None	4% all trips 4% commute trips	7% all trips 8% for commute trips
Active Transportation RTO-2: Low Stress Bike Network	Increase completeness of the LSBN	None	33%	100%
Active Transportation RTO-3: Unprotected Trail Crossings	Eliminate unprotected crossings of the LSBN intersections with roadways	None	None	None

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 1 percent of East 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 about 1 percent of home-to-work trips based on residence location as well as job location by 2050. As shown in Table 2-4, about 5.5 percent of all trips (not strictly commute trips) were conducted by walking or biking in 2019 with a projected increase to approximately 7 percent in 2050.



This Action Plan includes active transportation mode share targets for the East County subregion that would see an increase in the combined mode share for all trips for bikes and walking to 7 percent by 2050. As an interim target, the performance target for 2027 is to increase mode share to 4 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 4 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.

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 East County portion of the LSBN is shown on Figure 6-1. If the entire LSBN in the East County subregion were completed, it would have 212 miles of Class I and Class IV facilities.

Table 6-2 shows that 22 percent of East County's LSBN is constructed. A further 24 percent of low stress facilities are incomplete, but have a locally adopted plan to construct the facility toward a more contiguous countywide LSBN. There are projects proposing improvements that would not result in low-stress facilities on an additional 6 percent of the LSBN, and less than one additional percent is designated "under study." A total of 48 percent of the total LSBN miles are incomplete and do not have a plan to complete them or to study them further.

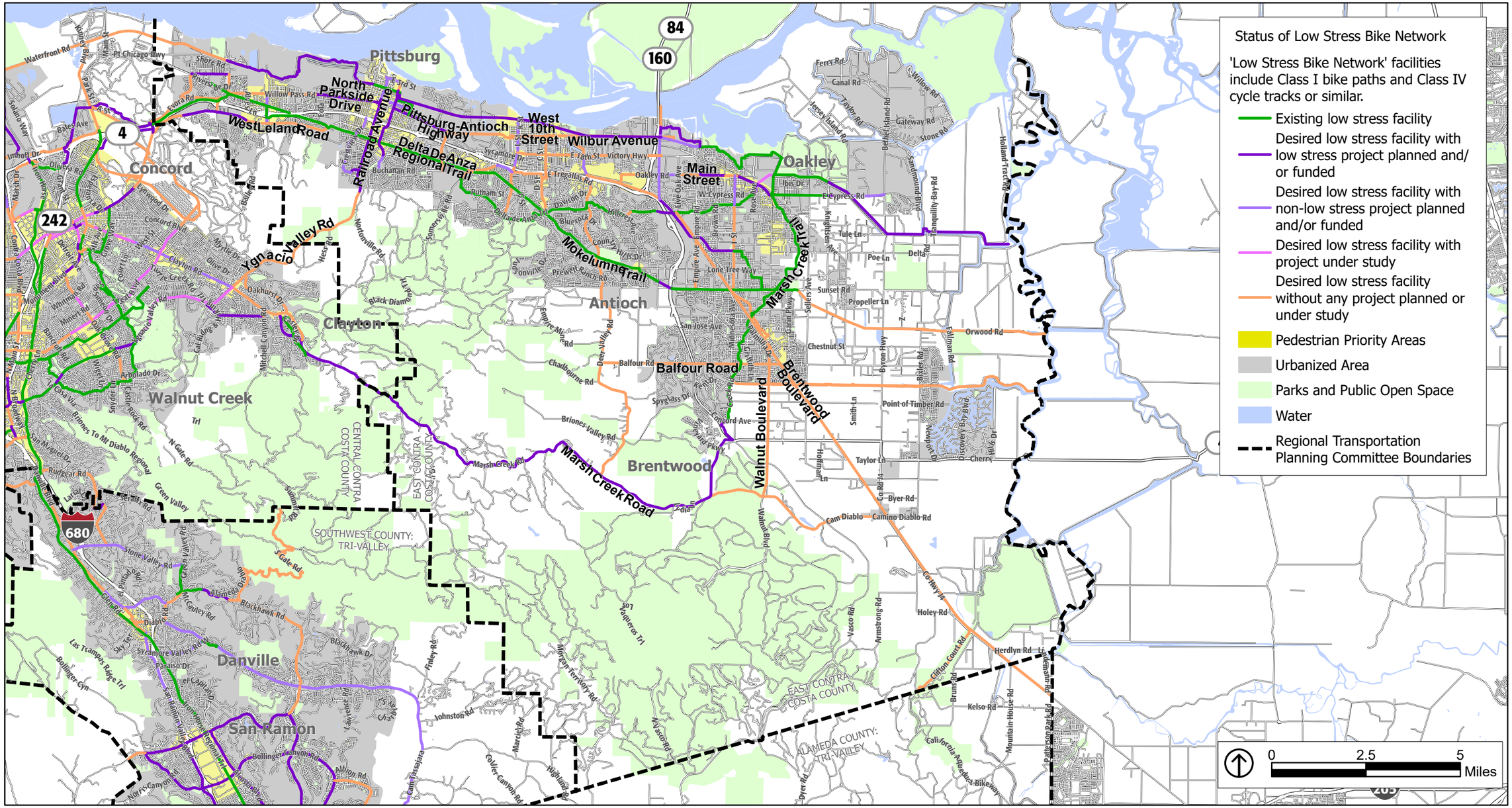
This Action Plan proposes that the subregion aim to achieve 100 percent completion of the LSBN by 2050 with an interim target of 57 percent (123 miles) completion by 2027. This is the sum of existing completed facilities (22 percent) and 150 percent of the already proposed low-stress additions to the network. This would require completion of the low-stress projects that already have an adopted plan.

Table 6-2: Proportion of East County LSBN Completed

Status of Facility	Miles	Percentage
Existing Low Stress Facility	46	22%
Desired Low Stress Facility with Low Stress Project Planned and/or Funded	51	24%
Desired Low Stress Facility with Non-Low Stress Project Planned and/or Funded[a]	12	6%
Desired Low Stress Facility with Project Under Study	0.5	0.3%
Desired Low Stress Facility without any Project Planned or Under Study	103	48%

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 East County LSBN



EAST CONTRA COSTA COUNTY LOW-STRESS BIKE NETWORK

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.

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Active Transportation RTO-3: Unprotected Trail Crossings

Eliminate the Number of Locations Where the Low Stress Bike Network Makes 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,[10] 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 6 study intersections in the East County subregion that are currently unprotected and 20 that are considered semiprotected. The unprotected intersections are:

- Delta de Anza Trail midblock crossing at Lone Tree Way between Clayburn Road and James Donlon Boulevard
- Marsh Creek Trail midblock crossing with Brentwood Blvd between Havenwood Avenue and Grant Street
- Unnamed path midblock crossing with Lone Tree Way between Tilton Lane and Anderson Lane
- Delta de Anza Trail crossing at Buchanan Road and Somersville Road
- Delta de Anza Trail crossing at Harbor Street near Atlantic Avenue
- Delta de Anza Trail crossing with Empire Avenue near the intersection with Laurel Road

This Action Plan sets a target to modify the 6 unprotected intersections to become fully protected by 2027. Further, this Action Plan sets a target that the additional 20 semiprotected crossings receive improvements to become fully protected by 2050. These facilities include:

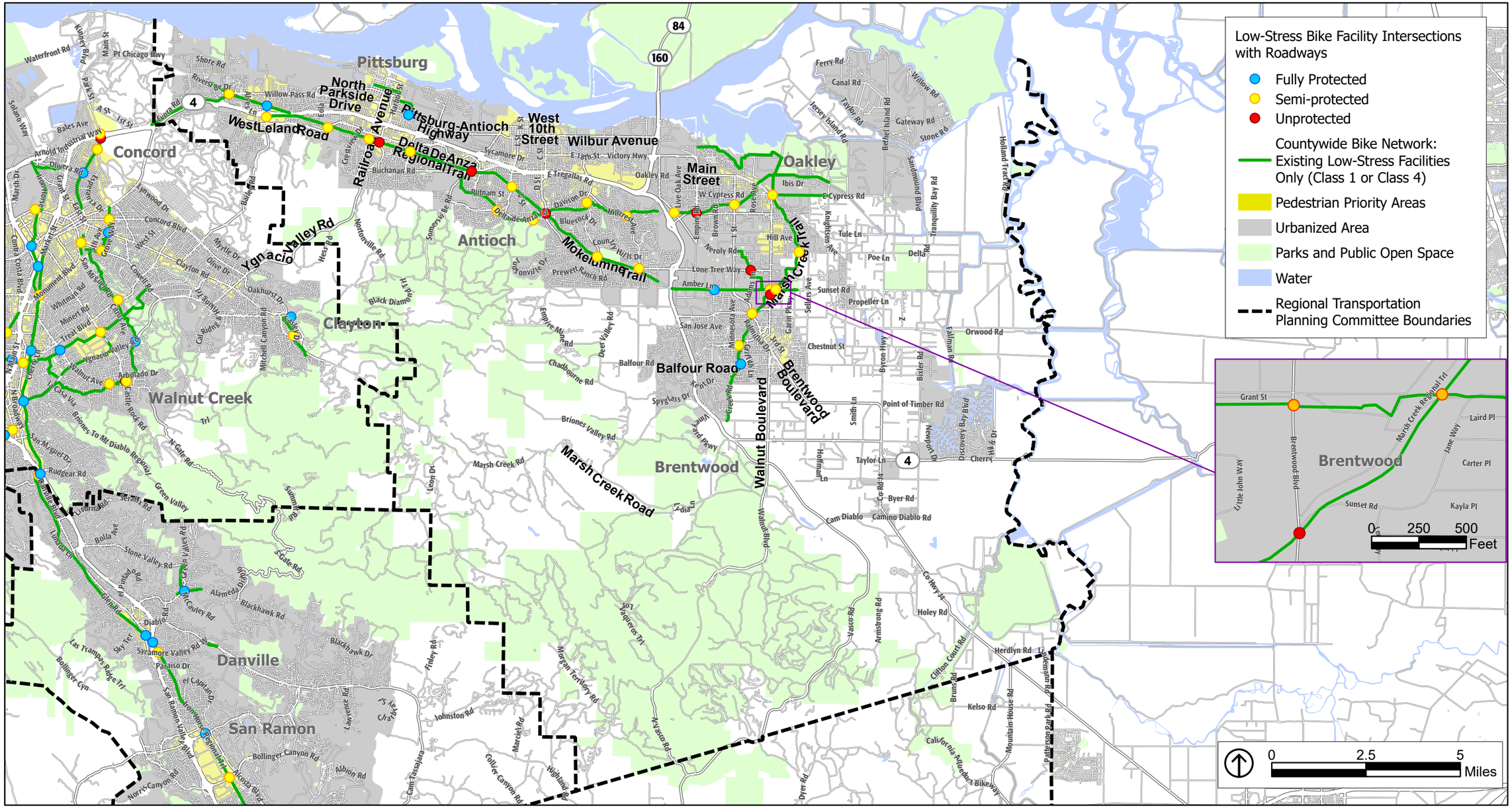
- Class 1 facility along south side of Sunset Road crossing Brentwood Boulevard
- Intersection of bike facility along Memorial Way with Bailey Road and SR-4 on/off ramps
- Contra Costa Canal trail south of Hillcrest Avenue intersection with Wild Horse Road
- Deer Valley Road and Lone Tree Way
- Mokelumne Trail crossings at:
  - Contra Loma Boulevard and Putnam Street

[10] 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.

- Lone Tree Way and Hillcrest Avenue
- Delta de Anza Trail crossings at:
  - Loveridge Road northeast of Stoneman Elementary School
  - West Leland Road and Range Road
  - Railroad Avenue at intersection with Alvarado Avenue
  - James Donlon Boulevard west of Rio Grande Drive intersection
  - Deer Valley Road at intersection with Wildflower Drive
  - James Donlon Boulevard east of intersection with G Street
  - Neroly Road west of intersection with Live Oak Avenue
  - Ohara Avenue north of intersection with Ohara Court
  - Willow Pass Road at intersection with Port Chicago Highway
- Marsh Creek Trail crossings at:
  - Sand Creek Road near Ohara Avenue
  - East Cypress Road between Main Street and Picasso Drive
  - Delta Road west of intersection with Crismore Drive
  - Dainty Avenue
  - Sunset Road

As the LSBN is constructed, 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.

Figure 6-2: Status of Crossings at Intersections of the LSBN and a Heavily Traveled Roadway



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

EAST CONTRA COSTA COUNTY LOW-STRESS BIKE NETWORK AND SIGNIFICANT ROADWAY INTERSECTIONS

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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: Continue to repair, maintain, and extend existing regional multipurpose trails.
- Active Transportation-3: Complete gaps in the Countywide Low Stress Bike Network to establish a safe, contiguous network, including, but not limited to:
  - Neroli Road between Live Oak Avenue and Wilbur Avenue
  - Mokelumne Aqueduct Trail that parallels the west side of the railroad tracks
  - Hillcrest Avenue between Deer Valley Road and SR-4
  - Contra Costa Canal trail through Military Ocean Terminal Concord between Bay Point and the East Bay Regional Park in Concord
- Active Transportation-4: Provide bike racks, lockers, and other secure bike parking options at key locations and activity centers throughout the county.
- Active Transportation-5: Enhance bicycle and pedestrian use in neighborhood planning and design to ensure that infrastructure such as sound walls do not create barriers to travel through neighborhoods on bicycle or on foot.
- Active Transportation-6: Maintain existing and provide new shoulders, bicycle lanes, and sidewalks on all streets and rural roads to provide for better bicycle and pedestrian connectivity and safety where feasible, with an emphasis on Class I and IV bicycle lanes where feasible.
- Active Transportation-7: Complete bicycle and pedestrian crossing improvements at the following intersections:
  - Delta de Anza Trail midblock crossing at Lone Tree Way between Clayburn Road and James Donlon Boulevard
  - Marsh Creek Trail midblock crossing with Brentwood Blvd between Havenwood Avenue and Grant Street
  - Unnamed path midblock crossing with Lone Tree Way between Tilton Lane and Anderson Lane
  - Delta de Anza Trail crossing at Buchanan Road and Somersville Road
  - Delta de Anza Trail crossing at Harbor Street near Atlantic Avenue
  - Delta de Anza Trail crossing with Empire Avenue near the intersection with Laurel Road

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-8: 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.
- Active Transportation-9: 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-10: 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 improvements where and as needed.
- Active Transportation-11: Work with CCTA, CCWD, and the Flood Control District, to identify new opportunities to transition previously private water distribution right-of-way to the Low Stress Bike Network.
- Active Transportation-12: Work with CCTA to conduct and implement a countywide Pedestrian Needs Assessment.
- Active Transportation-13: 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.

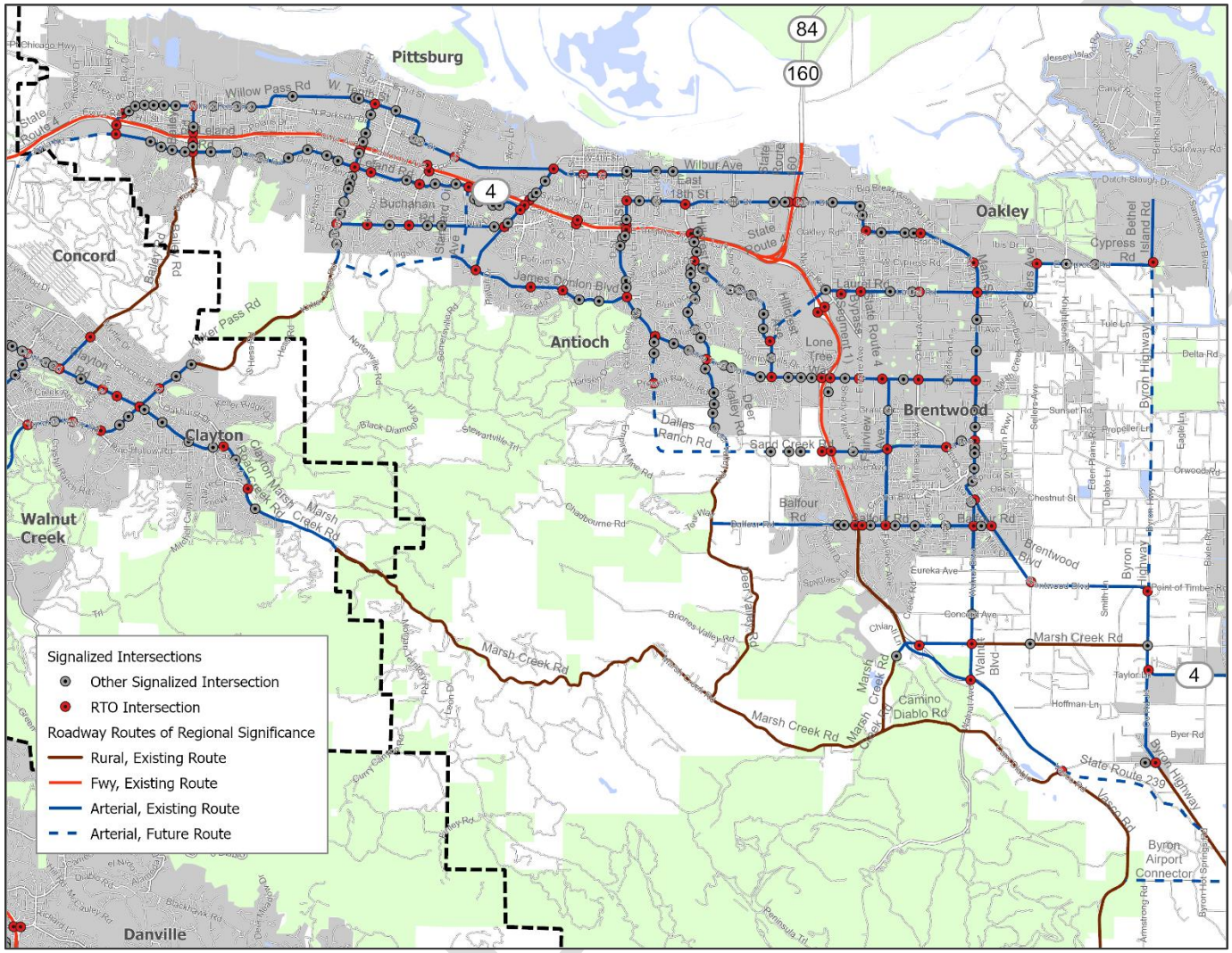
Chapter 7: Roadways

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 the 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 East 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: ≤2.5	Delay index: 2.0	Delay index: 2.0
Roadways RTO-2: Freeway Buffer Index	Maintain current buffer index	Buffer index: None	Buffer index: 0.5	Buffer index: 0.5
Roadways RTO-3: Intersection Level of Service (LOS)	Maintain LOS at select intersections	Maintain LOS D or better at all signalized intersections, except on Bailey Road, where LOS E will be acceptable; or, at Traffic Management Program (TMP) sites that use performance measures other than average intersection delay.	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 B for SR-4 (50-55 mph) LOS E for other facilities (<40 mph)	LOS B for SR-4 (50-55 mph) LOS E for other facilities (<40 mph)

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



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Freeway RTOs

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

- State Route 4 (SR-4) from Willow Pass Grade to Balfour Road
- State Route 160 (SR-160) from SR-4 to the Sacramento County Line

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, the observed delay index for existing conditions is high in the a.m. westbound direction for SR-4 and p.m. northbound direction for SR-160. The modeled condition for 2050 generally shows a moderate increase in delay index for SR-4 while SR-160 remains fairly consistent with existing conditions.

Based on current performance and the future modeled performance, this Action Plan proposes slightly lower delay index standards than in the 2017 East County Action Plan, at 2.0 or less for the freeway RRS.

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 0.05 to 0.81, reflecting a high degree of travel time variability, especially in the morning westbound direction on SR-4 and evening northbound direction on SR-160.

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
State Route 4					
Eastbound – a.m.	62.6	1.04	0.05	64.0	1.02
Eastbound – p.m.	37	1.76	0.75	38.8	1.67
Westbound – a.m.	60.8	1.07	0.19	43.1	1.51
Westbound – p.m.	63.8	1.02	0.06	58.9	1.10
State Route 160					
Eastbound – a.m.	48.1	1.35	0.27	50.7	1.28
Eastbound – p.m.	58.8	1.11	0.07	54.7	1.19
Westbound – a.m.	42.1	1.65	0.81	48.4	1.34
Westbound – p.m.	60.4	1.08	0.09	57.8	1.12

a) Average speed over corridor as a whole.

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.[11] 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 East 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.

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).

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

For the East County subregion, this metric is applied to Bailey Road, Byron Highway, Camino Diablo Road, Deer Valley Road, Marsh Creek Road, SR-4, and Vasco 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 East County subregion and reports the existing and forecast LOS. Most corridors are forecast to operate under 40 mph by 2050 with the exception of SR-4.

This Action Plan sets a performance target for this metric for SR-4 at LOS B, which corresponds to speeds of 50 to 55 mph. For all other corridors, the performance target set for this metric is LOS E, which corresponds to an average speed across the corridor of under 40 mph.

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
Bailey Road	A.M.	NB	36.0	E	38.0	E
Bailey Road	A.M.	SB	35.1	E	12.9	E
Bailey Road	P.M.	NB	36.8	E	11.2	E
Bailey Road	P.M.	SB	41.1	D	32.8	E
Byron Highway	A.M.	NB	42.2	D	23.8	E
Byron Highway	A.M.	SB	40.9	D	31.6	E
Byron Highway	P.M.	NB	42.6	D	35.0	E
Byron Highway	P.M.	SB	43.2	D	23.1	E
Camino Diablo Road	A.M.	EB	46.1	C	37.7	E
Camino Diablo Road	A.M.	WB	46.0	C	37.7	E
Camino Diablo Road	P.M.	EB	45.6	C	37.7	E
Camino Diablo Road	P.M.	WB	44.1	D	37.7	E
Deer Valley Road	A.M.	NB	45.6	C	35.0	E
Deer Valley Road	A.M.	SB	46.6	C	34.5	E
Deer Valley Road	P.M.	NB	47.5	C	34.4	E
Deer Valley Road	P.M.	SB	43.4	D	35.0	E
Marsh Creek Road	A.M.	EB	43.4	D	26.9	E
Marsh Creek Road	A.M.	WB	43.3	D	24.0	E
Marsh Creek Road	P.M.	EB	44.5	D	23.0	E
Marsh Creek Road	P.M.	WB	41.5	D	26.8	E
SR-4 S/O Balfour	A.M.	EB	52.6	B	55.0	B
SR-4 S/O Balfour	A.M.	WB	52.6	B	55.0	B
SR-4 S/O Balfour	P.M.	EB	51.3	B	55.0	B
SR-4 S/O Balfour	P.M.	WB	49.8	C	55.0	B
Vasco Road	A.M.	NB	54.7	B	28.8	E
Vasco Road	A.M.	SB	49.0	C	12.1	E
Vasco Road	P.M.	NB	34.5	E	11.3	E
Vasco Road	P.M.	SB	55.0	B	28.0	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 document with shared priorities:

- Roadways-1: 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-2: Work with Alameda County jurisdictions to determine the feasibility of a Route 84 extension into East County.
- Roadways-3: Study future needs along SR 160, including potential interchange improvements at SR 160 and Wilbur Avenue.
- Roadways-4: Pursue project to connect Vasco Road with Byron Highway.
- Roadways-5: 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, and continually promote awareness of park-and-ride lots for transit and ridesharing.
- Roadways-6: Work with CCTA, Caltrans, and California Highway Patrol to develop a program to track HOV/HOT and Fastrak lane violators, among other enforcement on East County freeways.
- Roadways-7: Work with CCTA and local jurisdictions to study the feasibility of pilot and long-term programs for bus on shoulder on subregional freeways.
- Roadways-8: 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 transportation modes.
- Roadways-9: Work with CCTA, Caltrans, and other applicable agencies to conduct Integrated Corridor Management (ICM) studies for subregional corridors to improve multimodal function of countywide facilities.
- Roadways-10: Complete the Kirker Pass Road Southbound Truck Lane Project.
- Roadways-11: Implement SR-4 Integrated Corridor Management techniques as studied and identified by CCTA.
- Roadways-12: Maintain and enhance local pavement management systems.

- Roadways-13: 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 ensuring balancing these improvements against the objectives and actions regarding other modes and issues covered by this Action Plan.
- Roadways-14: Develop subregional corridor management plans to provide adequate roadway capacity for local and subregional travel while also including both public and active transportation modes and nonmodal transportation issues such as equity, climate change, safety, and technology.
- Roadways-15: Implement the projects outlined on the Comprehensive Nexus Study Project List adopted by the East Contra Costa Regional Fee and Financing Authority.
- Roadways-16: Construct the Brentwood Intermodal Transit Station at the Mokelumne Trail Overcrossing of SR-4 in Brentwood.
- Roadways-17: Implement the SR-4 Operational Improvement Project.
- Roadways-18: Implement SR-4 Integrated Corridor Management techniques as studied and identified by CCTA.

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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 *Vison Zero & Systemic Transportation Safety "How To" Policy and Implementation Guide* and encourages local jurisdictions to adopt and implement Vison 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 Safety Regional Transportation Objectives

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).[12] 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 available data but exclude data from 2020 due to pandemic conditions (include January 1, 2016, through December 31, 2019). CCTA and the East 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.

[12] 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 467 severe injury or fatality collisions throughout East County—95 fatal collisions and 372 severe injury collisions. The most common types of collision were hit object, broadside collisions, then vehicle/pedestrian.

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 East County subregion are depicted on Figure 8-1 and summarized by severity in Table 8-3. During this time frame, there were 446 bicycle- or pedestrian-involved collisions, accounting for 10 percent of all injury and fatality collisions. Of the bicycle or pedestrian collisions, 29 resulted in fatalities and 71 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 55 collisions occurred near school campuses, 43 of which involved collision with a pedestrian and 12 with a bicyclist, including one involving both a pedestrian and bicyclist. These collisions also include three fatal crashes.

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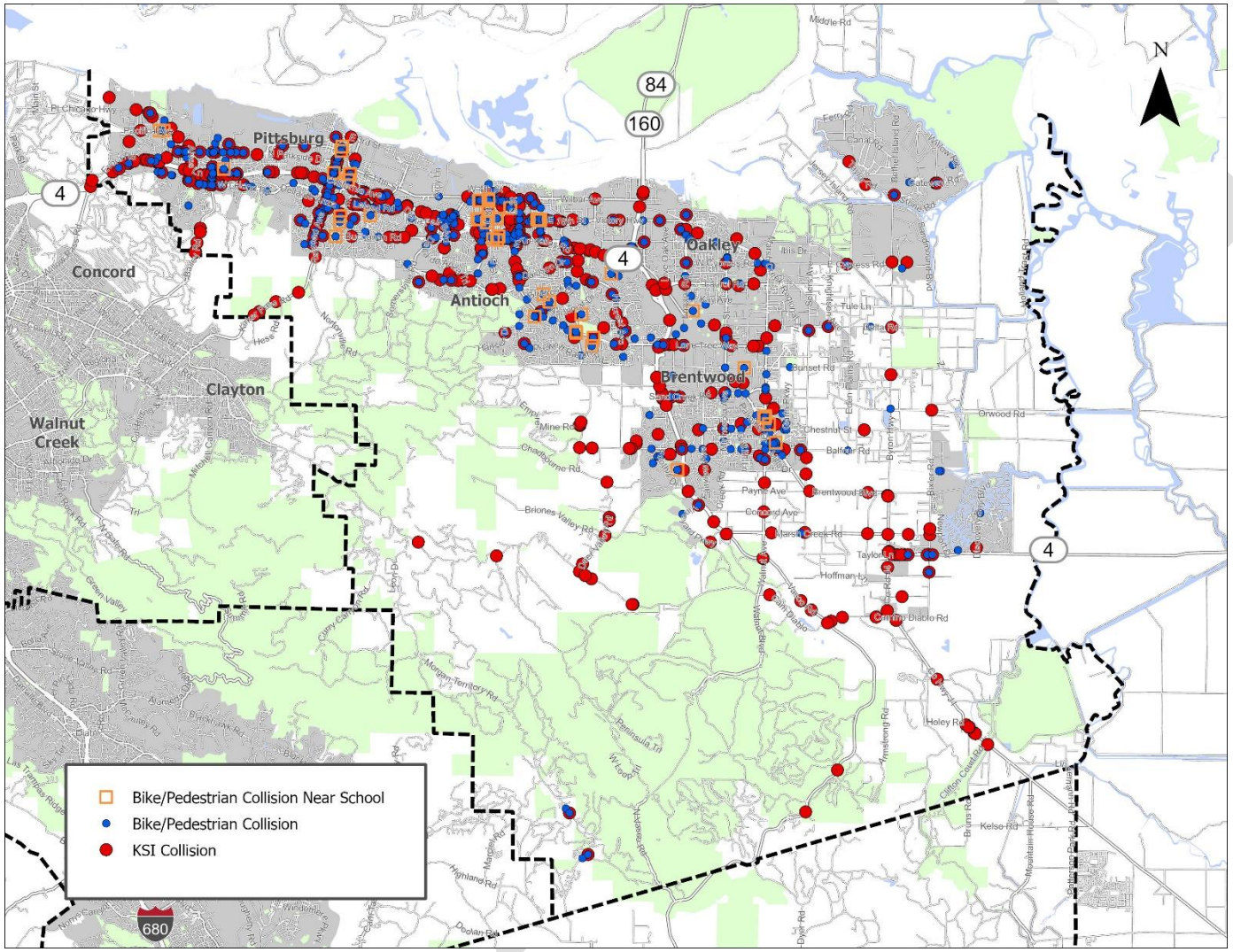
Figure 8-1: KSI and Bicycle- or Pedestrian-Involved Collisions (2016-2019)[13]



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

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

Collision Type	2016	2017	2018	2019	Number of Collisions
Not Stated			2		2
Head-On	15	12	18	18	63
Sideswipe	6	3	8	9	26
Rear-End	20	10	11	23	64
Broadside	17	21	28	18	84
Hit Object	25	24	26	34	109
Overturned	8	8	9	11	36
Vehicle/Pedestrian	17	18	23	16	74
Other	1	3	3	2	9
Total	109	**99**	**128**	**131**	**467**

Source: Transportation Injury Mapping System and DKS Associates.

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

Severity	2016	2017	2018	2019	Total Bike and Pedestrian Collisions
Fatal	10	7	8	4	29
Injury (Severe)	15	17	23	16	71
Injury (Other Visible)	45	44	37	51	177
Injury (Complaint of Pain)	40	46	46	37	169
Total	**110**	**114**	**114**	**108**	**446**

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 local jurisdictions to promote 511 Contra Costa's active transportation programs that increase educational awareness of multimodal travel options, travel behavior incentives, and safety through outreach, events, education, social media, marketing, and advertising.

Project Highlight!

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

- Safety-2: 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, and Caltrans to prepare an incident management plan for East 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: Work with CCTA, MTC, and East Bay Regional Parks (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-6: 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-7: Conduct a study to identify all safety-related transportation improvements needed within 500 feet of schools.
- Safety-8: Work with TVTC to implement the Vasco Road Safety Improvements Project.

Chapter 9: Equity

All members of the Contra Costa community should have equal access to various transportation options, jobs, and services. The East 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 complete in EPCs, as compared to East County as whole	None	Increase level of LSBN completion to match or exceed that of East County as a whole	
Equity RTO-2: Collisions in EPCs	Proportion of KSI collisions that occur in EPCs, as compared to East County as whole	None	Lower collision rates to match East County as whole	
Equity RTO-3: EPC Job Access: Driving	Share of jobs accessible by EPCs residents with a 30-minute drive, as compared to East County as whole	None	Increase job access to match East 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 East County as whole	None	Maintain existing job access to match or exceed that of East 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 East County as whole	None	Maintain access to high quality transit to match or exceed that of East County as a whole	

RTOs

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 East County portion of the LSBN is shown on Figure 9-1. If the entire LSBN in the East County subregion were completed, it would result in 212 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 22 percent of the LSBN is already complete in the entire subregion, with a smaller portion, 17 percent, completed in EPCs. A larger proportion of the LSBN has a project planned and/or funded to complete a low stress facility, with 36 percent in EPCs compared to 24 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—15 percent in EPCs compared to 12 percent subregion-wide. EPC areas do not have any portion of the LSBN under study, and the entire subregion has less than half of one percent under study. The proportion of the LSBN with no low stress facility

planned or under study is higher for the subregion—48 percent subregion-wide compared to only 32 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, whereas the entire subregion as a whole has more completed facilities.

This Action Plan sets a performance target for the subregion that the amount of LSBN network complete should meet or exceed that of the entire subregion. As shown in Table 9-2 and described above, East County EPCs already fare better than non-EPCs in planned and/or funded projects, but are generally less complete than in the entire subregion.

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

Status of Facility	Entire Subregion Miles	Entire Subregion Percentage	EPC Miles	EPC Percentage
Existing Low-Stress Facility	46	22%	9.8	17%
Desired Low-Stress Facility with Low Stress Project Planned and/or Funded	51	24%	21.4	36%
Desired Low-Stress Facility with Non-Low Stress Project Planned and/or Funded	12	6%	9.1	15%
Desired Low-Stress Facility with Project Under Study	0.5	0.3%	0	0%
Desired Low-Stress Facility without any Project Planned or Under Study	103	48%	18.8	32%

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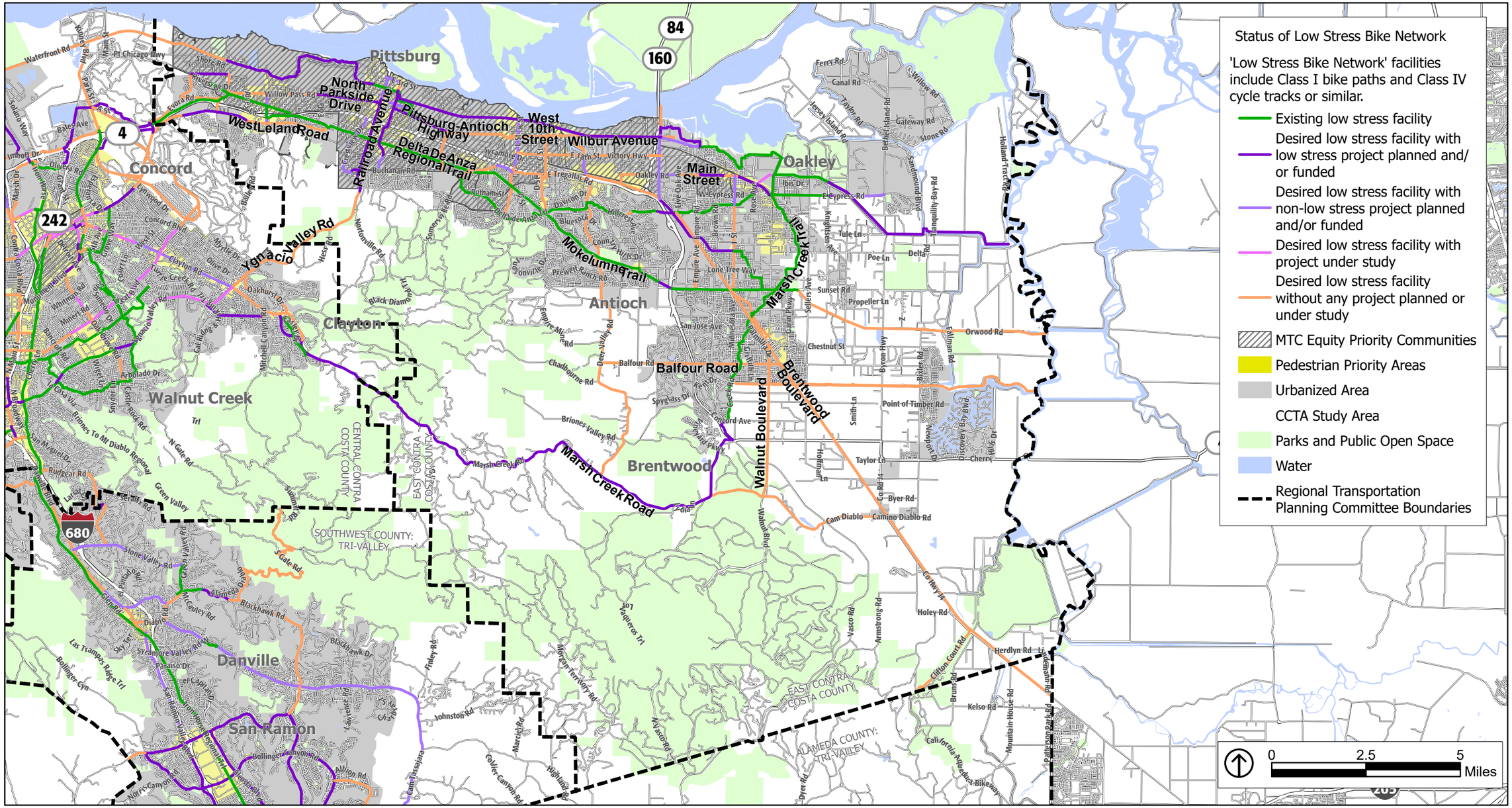
Figure 9-1: Status of the East County LSBN in EPCs



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

EAST CONTRA COSTA COUNTY LOW-STRESS BIKE NETWORK IN EQUITY PRIORITY COMMUNITIES

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.

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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 East County subregion. As shown in Table 9-3, the collision rates in EPCs in East County are far higher (1.09 collisions per 1,000 population) than the rate in East County as a whole (0.35 collisions per 1,000 population). Actions in this plan are intended to improve roadway safety in East County's EPCs 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	
	East County	East County EPCs	East County	East County EPCs	East County	East County EPCs
KSI	467	188	332,510	43,297	0.35	1.09
Bike- or Ped-Involved	446	239	332,510	43,297	0.34	1.38

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 East County TAZs compared to all TAZs within East 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 84 accessible jobs per East County subregion resident and 87 accessible jobs per East County subregion resident within an EPC. By 2050, the averages are projected to increase to 125 and 132, respectively. This means that there was an average of 3 fewer jobs per capita accessible by driving to East County residents that live inside of an EPC in 2019 when compared to East County as a whole. Projections for 2050 predict that this gap will stay mostly the same, and EPC residents will end up with 7 more jobs per capita accessible by a 30-minute drive than those living in East 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
East Subregion	84	125
East Subregion EPCs	87	132

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 East County TAZs compared to all TAZs within East 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, 109 jobs per East County resident and 149 jobs per East County resident within an EPC that are accessible with a 45-minute transit ride. By 2050, the averages are projected to increase to 116 and 157, respectively. This means that more jobs are already accessible via a 45-minute transit ride for EPC residents than is the case for East 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 East 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
East Subregion	109	116
East Subregion EPCs	149	157

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, 90 percent of EPC areas in East 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 10 percent of EPC acreage is within the high-quality transit buffer. However, this figure is slightly better when compared to the urbanized portions of East County as a whole, which have 9 percent of their land area with good access to high-quality transit. High quality transit is slightly more accessible (by 1 percent) in EPCs than in East 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 East County as a whole.

Table 9-6: East 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	5,269	9%	5,269	10%
Not within high-quality transit buffer	50,223	91%	50,223	90%
Total acres	**55,492**	**100%**	**55,594**	**100%**

All figures are for urbanized areas only

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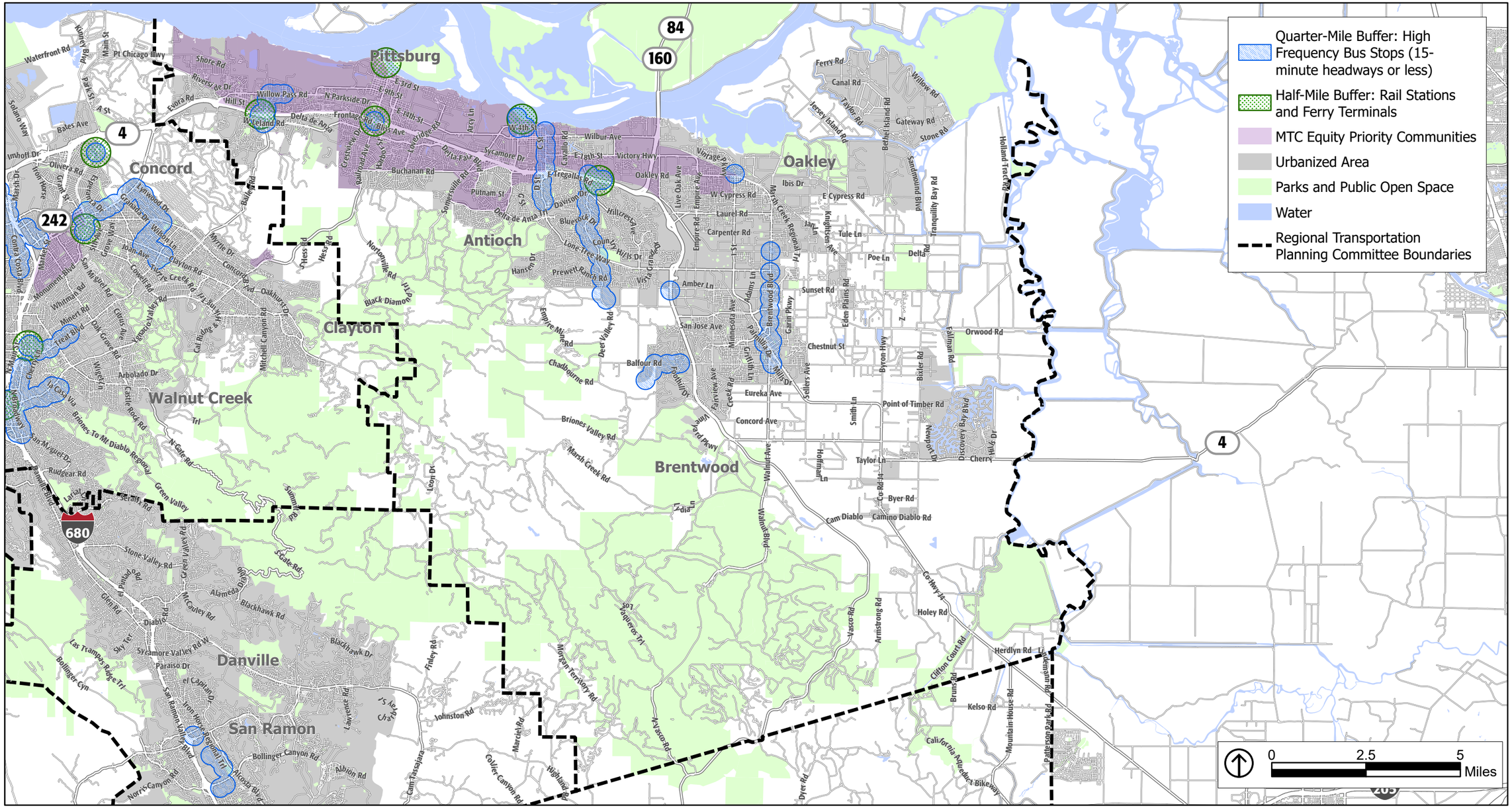
Figure 9-2: East County EPCs and High-Quality Transit



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

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

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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 document with shared priorities:

- Equity-1: Increase express bus service to regional job centers, particularly those with low-income workers, inside and outside of the subregion.
- Equity-2: 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 East County the study could explore enhancing existing transit hubs, constructing new transit hubs, and first/last mile solutions).
- 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 EPCs low-income areas to identify needed safety improvements, then implement the identified improvements.

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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	68% for commute trips	55% for commute trips
Climate Change RTO-2: Carpool Mode Share	Increase carpool mode share	None	21% for commute trips	25% for commute trips
Climate Change RTO-3: Vehicle Miles Traveled	Decrease VMT per capita	None	29.3 VMT	21 VMT
Climate Change RTO-4: Greenhouse Gas (GHG) Emissions	Decrease GHG emissions per capita	None	12 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, 75 percent of total East County work trips were by single-occupant vehicles, compared to 72 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 73 percent of home-to-work mode share based on residence location and increase to 83 percent based on job location by 2050. Meanwhile, 2050 projections predict that 63 percent of all trips made by East 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 East County subregion—65 percent for home-to-work trips in 2027 and 55 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 19 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 East County subregion was 33.5, 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*[14] 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 East County area. Using a straight-line projection for reductions from 2018 until 2050, this would mean a reduction to 29.3 VMT per capita by 2027.

Table 10-2: VMT per Service Population

	2018	2050
East County	33.5	25.8
Contra Costa County	30.3	25.6

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

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, CO_2).[15] The emissions outputs also reflect assumptions about the future vehicle fleet.

[14] 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.

[15] California Air Resources Board, EMFAC, v1.0.2, Scenario Analysis, 2021.

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 18 pounds of GHG per capita, this translates to a 2027 target of about 12 pounds per capita. Although transportation-related CO_2 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)
East County	346,047	3,130	18.09	470,334	2,003	8.52
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.

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 East County as well as all of Contra Costa County for comparison. East 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.[16] 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.[17] Since East County accounts for about less than one percent

[16] California Air Resources Board, Advanced Clean Cars II.

[17] Executive Order B-16-2012 and Executive Order B-48-18.

of the state's population, this suggests that the subregion should have about 8,800 ZEVs by 2025 and 44,000 ZEVs by 2030. A straight-line extrapolation of this number through 2050 suggests about 185,000 ZEVs in East 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 East County is about 272,300.

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.

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:

- 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: Encourage the funding and provision of alternative-fueled vehicles and related fueling stations for transit operators to improve air quality, as they expand their bus fleets.
- Climate Change-3: Work with regional agencies, local employers and schools to increase tele-work, compressed work weeks, alternative work location, and flex schedules, and provide pre-tax employer transportation benefit programs.
- Climate Change-4: Continue to implement a program to support deployment of high-quality, fast, and diverse electrical vehicle chargers in the subregion.
- Climate Change-5: Continue to promote electric vehicle ownership by offering financial incentives and providing educational programs and demonstrations.
- Climate Change-6: Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.
- Climate Change-7: 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-8: 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-9: Encourage regional agencies and local jurisdictions to refer to the Adapting to Rising Tides Adaptation Roadmap when planning for sea level rise.
- Climate Change-10: 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.

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 East County residents. RTOs and actions in this chapter are created to ensure that CCTA and East 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 East County's jurisdictions to interconnect selected signals in Pittsburg, Antioch, Oakley, Brentwood, and in unincorporated Contra Costa County portions of East County, 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 document with shared priorities:

- Innovation and Technology-1: In cooperation with CCTA, investigate new transportation-related technologies that have the potential to improve traveler safety, smooth traffic flow, reduce delay, and/or reduce the environmental or quality-of-life impacts associated with current travel modes.
- Innovation and Technology-2: Interconnect the East 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 East County area.
- Innovation and Technology-4: Coordinate with CCTA and local jurisdictions to identify solutions to the Intelligent Transportation System (ITS) communications needs during the development and implementation of a Regional ITS Communications Plan and/or regional communications infrastructure, including expanding fiber to link all traffic signals and bolster communications for signals, etc.
- 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 off industry best management practices.
- Innovation and Technology-6: Work with CCTA to determine a method of 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: Improve the safety of high-incident local roadways through physical changes, signage, technology, education, enforcement, or other tools.
- Innovation and Technology-9: 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)*

Chapter 12: Financial Outlook

The Measure J GMP requires that local jurisdictions participate in a Regional Transportation Mitigation Program (RTMP) to mitigate the impact of new development on the regional and subregional transportation system. The RTMP may include fees, assessments, or other mitigations, as appropriate, to ensure that new growth pays its fair share for the transportation impacts that it generates. The RTMPs are in addition to transportation impact fees that local jurisdictions may implement on new development as specified in each jurisdictions local fee program. Establishment of the RTMP may include not only the transportation impacts on existing facilities, but also jobs/housing balance, carpool and vanpool programs, and proximity to transit service.

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.

The East Contra Costa Regional Fee and Finance Authority (ECCRFFA)

East County jurisdictions and TRANSPLAN continually work cooperatively to implement its RTMP, which was established in 1994 with the CCTA's first CTP. This applies to Routes of Regional Significance, public transit vehicles and facilities, active transportation facilities, and park-and-ride lots.

The ECCRFFA administers the RTMP on behalf of the East County local jurisdictions. ECCRFFA is the regional planning agency charged with funding regional transportation improvement projects in eastern Contra Costa County with revenue from impact mitigation fees levied on new development. The boundaries of ECCRFFA align with the boundaries of TRANSLPLAN. It includes the cities of Antioch, Brentwood, Oakley, and Pittsburg, and the eastern portions of unincorporated Contra Costa County.

Since its inception in 1994, ECCRFFA has generated several hundred million dollars in revenues to fund over $2.5 billion in transportation projects including, but not limited to, the SR-4 bypass facility.

Funding for adequate transportation systems and services comes from a wide variety of sources, and resources are limited. East County is committed to advocating for increased transportation funding at the federal, State, and regional level.

Actions Related to Funding

- Financial-1: Periodically update the fee structure to ensure it will produce sufficient funds in light of current and anticipated growth rates and construction costs in East County.
- Financial-2: Continue to participate in the fee program through the East Contra Costa Regional Fee & Financing Authority.

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.

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 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 improvements to SR-239 with Alameda and San Joaquin Counties. 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 TRANSPLAN 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 TRANSPLAN staff, all Regional Transportation Planning Committee chairs or designated staff persons, and to each member jurisdiction of TRANSPLAN.
- 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 TRANSPLAN staff, all Regional Transportation Planning Committee chairs or designated staff persons, and each member jurisdiction of TRANSPLAN of the study’s preparation.
- TRANSPLAN 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 TRANSPLAN staff, all Regional Transportation Planning Committee chairs or designated staff persons, and each member jurisdiction of TRANSPLAN.
- TRANSPLAN 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 East 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 TRANSPLAN.

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 TRANSPLAN, the jurisdiction preparing the general plan amendment shall notify TRANSPLAN 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 TRANSPLAN, the jurisdiction considering the amendment shall confer with TRANSPLAN staff and/or attend a meeting of either the TRANSPLAN and/or the TRANSPLAN 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 TRANSPLAN 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 TRANSPLAN.

The lead agency and TRANSPLAN 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 TRANSPLAN on RTO performance.
- If any of the RTOs are not being met, TRANSPLAN 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 TRANSPLAN.

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 East 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 TRANSPLAN 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 East 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 TRANSPLAN 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.

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Appendix A:

Topics Considered but not Recommended for RTOs

Appendix A: Topics Considered but not Recommended for RTOs

Throughout the Action Plan update, a number of RTOs were introduced, discussed and explored, but not included in the Action Plan for a variety of reasons, including monitoring costs, data availability, and adherence to RTO feasibility criteria. These potential RTOs are similar to those in Chapters 5 through 11, and are listed here for possible re-consideration in future studies or Action Plan updates.

- **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.

Appendix B:

Summary of Actions

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.

Table B-1: Summary of Action and Applicable Detail [Table will be populated prior to LPMC Policy Board Meeting.]

Action	Lead Agency	Partner Agency	Timeline
CHAPTERS 5, TRANSIT			
◘ **Transit-1:** Support the ongoing study and future construction of the eBART Next Phase Study Alignment.			
◘ **Transit-2:** Work with relevant parties to improve rail infrastructure, access, and service through the following actions: • Participate in any future studies regarding rail options or stations for East County that may be conducted by the Capitol Corridor Joint Powers Authority, Caltrans, Altamont Commuter Express (ACE) and/or AMTRAK, the San Joaquin Joint Powers Authority, or other groups. • Develop BART, eBART, and other rail stations as major transportation and business hubs for East County. • Continue exploring development of new rail station sites as appropriate with rail corridor proposals. • Identify and plan for future rail grade separations where feasible. • Plan and implement enhanced railroad crossings to improve pedestrian and bicycle access and to reduce noise and quality-of-life			

Action	Lead Agency	Partner Agency	Timeline
impacts throughout East County; enhancements may involve implementing quiet zones, grade separations, train-traffic signal preemption systems, or other measures.			
◘ **Transit-3:** Work with CCTA, local jurisdictions, and local public transit operators to: • Develop a TRANSPLAN Transit Plan to identify future community transit needs and set a shared vision for viable, sustainable public transit service for all. • Work with the region's bus transit operators to increase and improve coordination where possible, particularly in linking East and Central County bus services. • Standardize operations, regional mapping, and wayfinding. • Implement traffic signal management and bus prioritization technology on regionally significant transit routes to improve bus speed and reliability.			
◘ **Transit-4:** Work with local jurisdictions to evaluate systemwide bus stop design and safety improvements, including making it safer and easier for people to access transit stations and ensuring that transit is safe and attractive (such as crosswalks, bus bulbs, bus pullouts, and Americans with Disabilities Act improvements).			

Action	Lead Agency	Partner Agency	Timeline
▫ **Transit-5:** Work with local jurisdictions to develop intermodal transportation facilities ("Mobility Hubs") that serve major activity centers and connect transit, pedestrian, bicycle facilities, and car/ride share in their planning documents, and site park and ride facilities, where needed and feasible.			
▫ **Transit-6:** Conduct a study to explore the feasibility and development of ferry service to East County.			
▫ **Transit-7:** Complete a feasibility study to explore feasibility of a Regional Express Bus Program and implementation of Bus Rapid Transit along key roadways.			
▫ **Transit-8:** Work with MTC to provide funding to maintain and enhance local transit facilities and to purchase replacement of rolling stock.			
▫ **Transit-9:** Implement the recommendations of the Contra Costa Accessible Transportation Strategic Plan, including the establishment of a new Coordinating Entity and establishing a new, ongoing, and dedicated funding stream source.			
▫ **Transit-10:** Work with CCTA and local transit operators to explore financial incentives and reduced fares for public transit, including a feasibility study to explore a subregional or countywide Universal Basic Mobility program.			

Action	Lead Agency	Partner Agency	Timeline
◘ **Transit-11:** Provide educational awareness of public transit options through outreach, education, and advertising, particularly in local schools.			
◘ **Transit-12:** Assist local jurisdictions in reviewing and considering options for improving curb management and commercial and public bus, truck, and van passenger loading on key public streets.			
◘ **Transit-13:** 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-14:** Work with CCTA to fund and develop a regional mapping data services digital platform to enable the standardization and routine updating of digital and paper maps across all transit services.			
◘ **Transit-15:** Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.			
◘ **Transit-16:** Adopt local policies that prioritize safety for the most vulnerable users.			
◘ **Transit-17:** Work with CCTA and local transit providers to ensure real-time online transit information for all routes.			

Action	Lead Agency	Partner Agency	Timeline
▫ **Transit-18:** Assist local jurisdictions in the development of design guidelines and objective design standards to support transit-oriented development in downtowns, priority development areas (PDA), transit priority areas, and other areas well served by transit.			
▫ **Transit-19:** 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.			
CHAPTERS 6, ACTIVE TRANSPORTATION			
▫ **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:** Continue to repair, maintain, and extend existing regional multipurpose trails.			
▫ **Active Transportation-3:** Complete gaps in the Countywide Low Stress Bike Network to establish a safe, contiguous network, including, but not limited to:			

Action	Lead Agency	Partner Agency	Timeline
• Neroli Road between Live Oak Avenue and Wilbur Avenue • Mokelumne Aqueduct Trail that parallels the west side of the railroad tracks • Hillcrest Avenue between Deer Valley Road and SR-4 • Contra Costa Canal trail through Military Ocean Terminal Concord between Bay Point and the East Bay Regional Park in Concord			
◘ **Active Transportation-4:** Provide bike racks, lockers, and other secure bike parking options at key locations and activity centers throughout the county.			
◘ **Active Transportation-5:** Enhance bicycle and pedestrian use in neighborhood planning and design to ensure that infrastructure such as sound walls do not create barriers to travel through neighborhoods on bicycle or on foot.			
◘ **Active Transportation-6:** Maintain existing and provide new shoulders, bicycle lanes, and sidewalks on all streets and rural roads to provide for better bicycle and pedestrian connectivity and safety where feasible, with an emphasis on Class I and IV bicycle lanes where feasible.			

Action	Lead Agency	Partner Agency	Timeline
◘ **Active Transportation-7:** Complete bicycle and pedestrian crossing improvements at the following intersections: • Delta de Anza Trail midblock crossing at Lone Tree Way between Clayburn Road and James Donlon Boulevard • Marsh Creek Trail midblock crossing with Brentwood Blvd between Havenwood Avenue and Grant Street • Unnamed path midblock crossing with Lone Tree Way between Tilton Lane and Anderson Lane • Delta de Anza Trail crossing at Buchanan Road and Somersville Road • Delta de Anza Trail crossing at Harbor Street near Atlantic Avenue • Delta de Anza Trail crossing with Empire Avenue near the intersection with Laurel Road			
◘ **Active Transportation-8:** 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			

Action	Lead Agency	Partner Agency	Timeline
sites to use non-vehicle modes to get to/from school.			
◘ **Active Transportation-9:** 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-10:** 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 improvements where and as needed.			
◘ **Active Transportation-11:** Work with CCTA, CCWD, and the Flood Control District, to identify new opportunities to transition previously private water distribution right-of-way to the Low Stress Bike Network.			
◘ **Active Transportation-12:** Work with CCTA to conduct and implement a countywide Pedestrian Needs Assessment.			
◘ **Active Transportation-13:** Work with CCTA and local jurisdictions to explore installation of e-bike charging infrastructure in publicly accessible, and convenient places including trails, shared mobility			

Action	Lead Agency	Partner Agency	Timeline
hubs, existing and planned EV charging locations, and near commercial/retail establishments.			
CHAPTERS 7, ROADWAYS			
◘ **Roadways-1:** 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-2:** Work with Alameda County jurisdictions to determine the feasibility of a Route 84 extension into East County.			
◘ **Roadways-3:** Study future needs along SR 160, including potential interchange improvements at SR 160 and Wilbur Avenue.			
◘ **Roadways-4:** Pursue project to connect Vasco Road with Byron Highway.			
◘ **Roadways-5:** 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, and continually promote awareness of park-and-ride lots for transit and ridesharing.			

Action	Lead Agency	Partner Agency	Timeline
◘ **Roadways-6:** Work with CCTA, Caltrans, and California Highway Patrol to develop a program to track HOV/HOT and Fastrak lane violators, among other enforcement on East County freeways.			
◘ **Roadways-7:** Work with CCTA and local jurisdictions to study the feasibility of pilot and long-term programs for bus on shoulder on subregional freeways.			
◘ **Roadways-8:** 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 transportation modes.			
◘ **Roadways-9:** Work with CCTA, Caltrans, and other applicable agencies to conduct Integrated Corridor Management (ICM) studies for subregional corridors to improve multimodal function of countywide facilities.			
◘ **Roadways-10:** Complete the Kirker Pass Road Southbound Truck Lane Project.			

Action	Lead Agency	Partner Agency	Timeline
◘ **Roadways-11:** Implement SR-4 Integrated Corridor Management techniques as studied and identified by CCTA.			
◘ **Roadways-12:** Maintain and enhance local pavement management systems.			
◘ **Roadways-13:** 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 ensuring balancing these improvements against the objectives and actions regarding other modes and issues covered by this Action Plan.			
◘ **Roadways-14:** Develop subregional corridor management plans to provide adequate roadway capacity for local and subregional travel while also including both public and active transportation modes and nonmodal transportation issues such as equity, climate change, safety, and technology.			
◘ **Roadways-15:** Implement the projects outlined on the Comprehensive Nexus Study Project List adopted by the East Contra Costa Regional Fee and Financing Authority.			
◘ **Roadways-16:** Construct the Brentwood Intermodal Transit Station at the Mokelumne Trail Overcrossing of SR-4 in Brentwood.			

Action	Lead Agency	Partner Agency	Timeline
◘ **Roadways-17:** Implement the SR-4 Operational Improvement Project.			
◘ **Roadways-18:** Implement SR-4 Integrated Corridor Management techniques as studied and identified by CCTA.			
CHAPTERS 8, SAFETY			
◘ **Safety-1:** Work with local jurisdictions to promote 511 Contra Costa's active transportation programs that increase educational awareness of multimodal travel options, travel behavior incentives, and safety through outreach, events, education, social media, marketing, and advertising.			
◘ **Safety-2:** 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, and Caltrans to prepare an incident management plan for East 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.			

Action	Lead Agency	Partner Agency	Timeline
▫ **Safety-5:** Work with CCTA, MTC, and East Bay Regional Parks (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-6:** 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-7:** Conduct a study to identify all safety-related transportation improvements needed within 500 feet of schools.			
▫ **Safety-8:** Work with TVTC to implement the Vasco Road Safety Improvements Project.			
CHAPTER 9, EQUITY			
▫ **Equity-1:** Increase express bus service to regional job centers, particularly those with low-income workers, inside and outside of the subregion.			
▫ **Equity-2:** 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 East County the study could explore			

Action	Lead Agency	Partner Agency	Timeline
enhancing existing transit hubs, constructing new transit hubs, and first/last mile solutions).			
◘ **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 EPCs low-income areas to identify needed safety improvements, then implement the identified improvements.			
CHAPTER 10, CLIMATE CHANGE			
◘ **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:** Encourage the funding and provision of alternative-fueled vehicles and related fueling stations for transit operators to improve air quality, as they expand their bus fleets.			
◘ **Climate Change-3:** Work with regional agencies, local employers and schools to increase tele-work, compressed work weeks, alternative work location, and flex schedules, and provide pre-tax employer transportation benefit programs.			

Action	Lead Agency	Partner Agency	Timeline
◘ **Climate Change-4:** Continue to implement a program to support deployment of high-quality, fast, and diverse electrical vehicle chargers in the subregion.			
◘ **Climate Change-5:** Continue to promote electric vehicle ownership by offering financial incentives and providing educational programs and demonstrations.			
◘ **Climate Change-6:** Work with local transit agencies, regional policymakers, and private entities to promote pooled regional ridesharing services.			
◘ **Climate Change-7:** 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-8:** 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-9:** Encourage regional agencies and local jurisdictions to refer to the Adapting to Rising Tides Adaptation Roadmap when planning for sea level rise.			

Action	Lead Agency	Partner Agency	Timeline
◘ **Climate Change-10:** Adopt local policies that prioritize mobility for GHG-reducing modes of transportation.			
CHAPTER 11, INNOVATION AND TECHNOLOGY			
◘ **Innovation and Technology-1:** In cooperation with CCTA, investigate new transportation-related technologies that have the potential to improve traveler safety, smooth traffic flow, reduce delay, and/or reduce the environmental or quality-of-life impacts associated with current travel modes.			
◘ **Innovation and Technology-2:** Interconnect the East 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			

Action	Lead Agency	Partner Agency	Timeline
• 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 East County area.			
◘ **Innovation and Technology-4:** Coordinate with CCTA and local jurisdictions to identify solutions to the Intelligent Transportation System (ITS) communications needs during the development and implementation of a Regional ITS Communications Plan and/or regional communications infrastructure, including expanding fiber to link all traffic signals and bolster communications for signals, etc.			
◘ **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 off industry best management practices.			
◘ **Innovation and Technology-6:** Work with CCTA to determine a method of tracking the availability of EV charging stations.			

Action	Lead Agency	Partner Agency	Timeline
▫ **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:** Improve the safety of high-incident local roadways through physical changes, signage, technology, education, enforcement, or other tools.			
▫ **Innovation and Technology-9:** 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:** Periodically update the fee structure to ensure it will produce sufficient funds in light of current and anticipated growth rates and construction costs in East County.			
▫ **Financial-2:** Continue to participate in the fee program through the East Contra Costa Regional Fee & Financing Authority.			

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Appendix C:

Transportation Modeling Results

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
10TH ST & G ST	C	28	F	86	C	29	F	110
10TH ST & L ST	E	62	F	282	F	129	F	509
A ST & 18TH ST	D	42	A	9	D	42	A	9
AUTO CENTER DR & W 10TH ST	D	37	C	31	C	34	D	37
BAILEY RD & SR-4 EB RAMPS	C	27	C	30	C	30	D	37
BAILEY RD & SR-4 WB ON-RAMP	C	30	C	30	F	93	F	155
BAILEY RD & W LELAND RD	C	33	D	36	D	46	E	62
BAILEY RD & WILLOW PASS RD	C	28	C	26	F	134	F	161
BALFOUR RD & FAIRVIEW AVE	B	14	B	14	C	25	C	21
BALFOUR RD & SR 4 EB	B	12	A	10	B	12	B	10
BALFOUR RD & SR 4 WB	D	53	D	47	F	115	F	105
BRENTWOOD BLVD & BALFOUR RD	C	21	C	30	C	24	F	200
BRENTWOOD BLVD & BYRON HIGHWAY (SOUTH)	B	19	C	21	B	19	C	22
BRENTWOOD BLVD & LONE TREE WAY	C	21	D	37	C	24	F	185
BRENTWOOD BLVD & OAK ST	C	31	C	32	F	191	F	115
BRENTWOOD BLVD & SAND CREEK RD	C	35	D	44	F	297	F	123

INTERSECTION	2019 A.M.		2019 P.M.		2050 A.M.		2050 P.M.	
	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
BRENTWOOD BLVD & SELLERS AVE	C	24	C	29	F	159	F	129
BUCHANAN RD & HARBOR ST	C	32	C	34	E	65	E	66
BYRON HIGHWAY & CAMINO DIABLO	A	7	B	10	A	7	B	10
BYRON HWY & SR 4	F	92	D	54	F	91	E	55
CAMINO DIABLO RD & VASCO RD	D	40	C	35	E	70	E	62
CYPRESS RD & BETHEL ISLAND RD	C	27	C	27	C	28	F	236
CYPRESS RD & SELLERS AVE	C	29	D	36	F	204	F	266
DALLAS RANCH RD & PREWETT RANCH DR	B	16	C	22	B	16	C	24
DEER VALLEY RD & LONE TREE WAY	B	17	C	24	B	17	C	25
E 10TH ST & RAILRD AVE	C	26	C	26	C	26	E	63
EAST 18TH ST & HILLCREST AVE	D	36	C	25	D	36	C	25
EMPIRE AVE & LONE TREE WAY	C	33	D	36	D	46	E	62
FAIRVIEW AVE & LONE TREE WAY	D	37	C	31	C	34	D	37
HILLCREST AVE & DAVIDSON DR	C	31	C	24	D	35	C	28
HILLCREST AVE & LAUREL RD	C	33	D	43	E	61	E	78
HILLCREST AVE & LONE TREE WAY	C	21	C	23	C	21	D	43
HILLCREST AVE & SR-4 EB RAMPS	C	22	C	22	C	22	C	23
HILLCREST AVE & SR-4 WB RAMPS	C	27	D	44	E	77	F	139
JAMES DONLON BLVD & CONTRA LOMA BLVD	B	20	C	22	B	20	C	22

INTERSECTION	2019 A.M.		2019 P.M.		2050 A.M.		2050 P.M.	
	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
JAMES DONLON BLVD & GENTRYTOWN DR	B	15	B	15	D	55	C	22
JAMES DONLON BLVD & LONE TREE WAY	C	28	C	26	F	>80	F	>80
LAUREL RD & EMPIRE AVE	E	67	F	270	F	131	F	350
LAUREL RD & LIVE OAK AVE	C	23	D	42	C	26	D	44
LAUREL RD & MAIN ST	C	24	C	32	C	24	D	37
LAUREL RD & NB SR 4 OFF RAMP	B	20	B	14	B	20	B	14
LAUREL RD & O'HARA AVE	C	35	C	35	D	35	D	35
LAUREL RD & SB SR 4 OFF RAMP	A	6	A	6	A	6	A	6
LELAND RD & HARBOR ST	C	32	C	23	D	39	C	26
LELAND RD & SAN MARCO BLVD	B	13	C	21	B	13	C	23
LELAND RD/DELTA FAIR BLVD & CENTURY BLVD	D	42	C	28	D	46	E	59
LONE TREE WAY & EAGLERIDGE DR	E	74	C	30	E	73	C	30
LONE TREE WAY & SR-4 EB RAMPS	C	26	B	19	F	174	F	186
LONE TREE WAY & SR-4 WB RAMPS	C	34	C	34	D	53	D	39
LOVERIDGE RD & BUCHANAN RD	C	26	B	19	F	>80	F	>80
LOVERIDGE RD & E LELAND RD	C	34	C	34	D	53	D	39
MAIN ST & EMPIRE AVE	C	30	C	33	C	30	D	37
MAIN ST & O'HARA AVE	B	16	B	16	C	23	B	16
MAIN ST & W CYPRESS RD	C	28	B	19	F	123	F	283
MARSH CREEK RD & SR-4	F	281	F	291	F	352	F	354
O'HARA AVE & LONE TREE WAY	D	42	F	391	D	42	F	369

INTERSECTION	2019 A.M.		2019 P.M.		2050 A.M.		2050 P.M.	
	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
PITTSBURG-ANTIOCH HWY & LOVERIDGE RD	B	17	B	19	C	22	C	23
RAILROAD AVE & BUCHANAN RD	C	28	D	41	D	43	F	84
RAILROAD AVE & LELAND RD	D	46	E	56	F	198	F	167
RAILROAD AVE & SR-4 EB RAMPS	C	35	D	38	E	74	F	120
RAILROAD AVE & SR-4 WB ON-RAMP	C	27	C	29	E	69	F	114
SAND CREEK RD & FARIVIEW AVE	D	40	F	91	D	46	F	143
SAND CREEK RD & O'HARA AVE	B	13	B	13	B	13	B	13
SOMERSVILLE RD & BUCHANAN RD	C	33	D	36	F	194	F	216
SOMERSVILLE RD & DELTA FAIR RD	C	24	C	33	C	28	F	307
SOMERSVILLE RD & JAMES DONLON BLVD	D	42	F	>80	D	42	F	>80
SOMERSVILLE RD & SR-4 EB RAMPS	C	21	D	37	C	24	F	>80
SOMERSVILLE RD & SR-4 WB RAMPS	D	41	D	41	E	57	D	49
SR-160 NB RAMPS & MAIN ST	C	32	C	25	F	226	E	66
SR-160 SB RAMPS & MAIN ST	F	85	D	51	F	265	F	236
SR-4 EB RAMPS & CONTRA LOMA BLVD	C	26	C	27	C	30	E	56
SR-4 EB RAMPS & LOVERIDGE RD	D	39	C	21	D	40	C	21
SR-4 EB RAMPS & WILLOW PASS RD	B	20	C	24	C	20	C	25
SR-4 NB ON RAMP & LONE TREE WY	B	20	B	19	C	24	C	29

INTERSECTION	2019 A.M.		2019 P.M.		2050 A.M.		2050 P.M.	
	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY
SR-4 NB RAMPS & SAND CREEK RD	D	52	D	40	F	173	F	175
SR-4 SB RAMPS & LONE TREE WY	B	15	B	15	D	55	C	22
SR-4 SB RAMPS & SAND CREEK RD	D	38	D	42	D	39	D	44
SR-4 WB RAMPS & CALIFORNIA AVE	F	139	B	19	F	474	C	24
SR-4 WB RAMPS & L STREET	E	59	E	74	E	69	F	123
SR-4 WB RAMPS & WILLOW PASS RD	B	17	B	18	B	17	B	18
VASCO RD & WALNUT BLVD	F	152	F	117	F	168	F	117
WALNUT BLVD & BALFOUR RD	C	29	C	22	C	27	D	37
WALNUT BLVD & MARSH CREEK RD	C	25	C	28	F	90	C	28

Notes: Delay is average control delay reported in seconds. Cells that are bolded indicate performance below target.

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Appendix D:

RTO Measurement and Modeling Methodologies

Appendix D: RTO Measurement and Modeling Methodologies

[This section will include the RTO Methodology Memo presented to the TRANSPLAN 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 TRANSPLAN Policy Board.]

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