ALAMEDA
County Transportation
Commission

CENTRAL ALAMEDA COUNTY COMPREHENSIVE MULTIMODAL CORRIDOR PLAN

Draft Final

November 2022

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Central Alameda County
Comprehensive Multimodal Corridor Plan

APPROVED BY:

__________________________________ ___________________

TESS LENGYEL DATE
Executive Director
Alameda County Transportation Commission

I accept this Comprehensive Multimodal Corridor Plan for Central Alameda County as a document informing the regional transportation planning process.

ACCEPTED BY:

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1. Introduction and Executive Summary

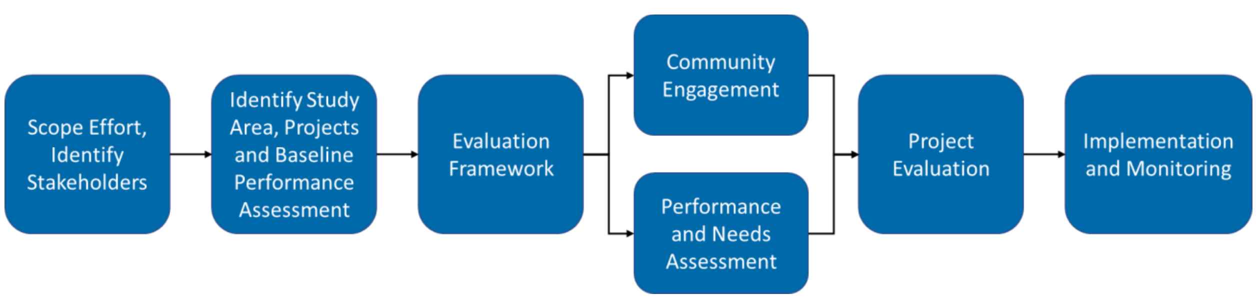
The Central Alameda County Comprehensive Multimodal Corridor Plan (CACCMCP) presents a holistic approach for managing congestion, improving safety, promoting multimodal transportation, and incorporating measures to reduce air pollution and greenhouse gases.

The Alameda County Transportation Commission (Alameda CTC) developed the CACCMCP pursuant to the statutory mandate for Caltrans to conduct long-range corridor planning, as well as in response to the Road and Repair Accountability Act of 2017, also known as Senate Bill 1 (SB 1), that was passed in April 2017. Among the multiple programs established by SB 1 is the Solutions for Congested Corridors Program (SCCP). This program provides $250 million annually on a competitive basis to Caltrans and regional agencies for projects designed to achieve a balanced set of transportation, environmental, and community access improvements within highly congested travel corridors throughout the State. Eligible projects must be included in a Comprehensive Multimodal Corridor Plan (CMCP).

1.1 CACCMCP Approach

The CACCMCP is structured to address the corridor scale, levels of complexity, and community needs. A significant amount of planning has been underway along the corridor, including multimodal corridor planning and project development along key segments of the corridor. As such, the CACCMCP involves an integration of existing plans, studies, and project-specific information with targeted new analysis and enhanced community engagement. **Figure 1-1** illustrates our approach to the development of the CACCMCP. The CACCMCP was developed by referencing various documents such as the Caltrans Corridor Planning Process Guide[1], CMCP Guidelines[2] and through discussions with stakeholders.

Figure 1-1: CACCMCP Approach



[1] Caltrans, *Corridor Planning Process Guide*, February 2020, accessed April 7, 2022, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/system-planning/systemplanning/corridor-planning-process-guide-12-24-2019-a11y.pdf.

[2] California Transportation Commission, Comprehensive Multimodal Corridor Plan Guidelines, December 2018, accessed April 7, 2022, https://catc.ca.gov/-/media/ctc-media/documents/120518-approved-cmcp-guidelines-a11y.pdf.

1. **Scope Effort and Identify Stakeholders:** The CACCMCP scope framed the overall corridor planning effort and identified key stakeholders. The key stakeholders included representatives from the California Department of Transportation, local governments, transit agencies, park districts, and advocacy groups. A Technical Advisory Committee (TAC) was formed and met regularly to collaborate on Plan development and provide strategic guidance at key decision points.
2. **Identify Study Area, Projects, and Baseline Performance Assessment**: The CACCMCP study area was identified in conjunction with the TAC. TAC members provided the list of projects and associated documents that were included in the CACCMCP. The project team collected and organized corridor information to understand the corridor context and conducted a baseline performance assessment. Potential projects and strategies are identified at sufficient levels of detail for analysis and evaluation based on existing plans and studies, as well as the performance assessment, gaps identification, and diagnosing the causes of congestion, safety, and reliability issues. The study area overview is provided in Chapter 3, and the range of existing facilities, services and programs are listed in Chapter 4.
3. **Evaluation Framework**: The goals, objectives, and performance measures were developed through a collaborative process with Alameda CTC and the TAC. Some of these performance metrics are required for SCCP as listed in the California Transportation Commission's (CTC) SB1 Technical Performance Measurement Methodology Guidebook.[3] Chapter 2 describes the evaluation framework along with relevant policies and guidelines.
4. **Community Engagement**: Although significant outreach had already been conducted along the Central Alameda County corridor, additional outreach for the CACCMCP served to supplement existing work with targeted outreach to fill in known gaps. Engagement efforts included a series of in-person and online community meetings in partnership with Community Based Organizations (CBOs) that represented underserved communities, as well as an interactive online map survey. The stakeholder and community engagement efforts are described in Chapter 6.
5. **Performance and Needs Assessment**: A performance assessment was conducted to outline the system performance and trends. An assessment of existing and future (no build) conditions was conducted for the CACCMCP study area that compiled and organized the information in safety, mobility, reliability, sustainability, and equity profiles. The needs assessment includes gap identification and diagnosing the causes of congestion, safety, and reliability issues. Chapter 5 of the CACCMCP provides information on the performance and needs assessment.
6. **Project Evaluation**: The projects were evaluated based on their potential to address the identified goals, objectives, and performance measures. The project evaluation list and maps are presented in Chapter 7.
7. **Implementation and Monitoring**: A preliminary implementation plan is prepared that outlines the planning-level cost estimates and implementation term for the CACCMCP (Chapter 7).

[3] California Transportation Commission, *Senate Bill 1 (SB1) Technical Performance Measurement Methodology Guidebook*, https://catc.ca.gov/-/media/ctc-media/documents/ctc-workshops/2022/sb-1/performance-measurement-guidebook-final-draft.pdf.

1.2 Study Overview

Fruitvale BART Station
Photo Credits: Google Earth

The CACCMCP study area is located in Alameda County and within Caltrans District 4, with routes crossing through and along the East Oakland and Central Alameda County regions, including Oakland, San Leandro, Hayward, and the unincorporated communities of Ashland and Cherryland. It spans from the Lake Merritt Bay Area Rapid Transit (BART) Station to the South Hayward BART Station, including in total seven BART stations along the corridor as well as downtown areas, schools, and other major destinations. The entire corridor segment that follows the BART alignment is approximately 16 miles long and covers a total area of about 22.5 square miles. The study area includes freeways and arterials, a robust transit network inclusive of bus and regional rapid transit systems, trails, and other alternative modes of transportation. **Figure 1-2** shows the CACCMCP study area.

Transportation facilities within the CACCMCP study area serve local, regional, and interregional movement of people and goods across urban and suburban landscapes. The key corridors within the study area are major commute corridors that connect several important nodes of urban development including the downtown areas of San Leandro and Hayward.

Tempo BRT System
Photo Credits: Metro Magazine, 2020

International Boulevard/East 14th Street/Mission Boulevard is a major arterial corridor that runs along the length of the study area and parallels the alignment of Interstate 880 (I-880) within the study area. AC Transit's Tempo Bus Rapid Transit (BRT) runs on International Boulevard from 2nd Avenue to Garcia Avenue. East 14th Street connects from San Leandro Boulevard to the Bay Fair BART Station. The mix of land uses (commercial and high density residential) adjacent to sections of this corridor are preferred locations for walking and bicycling. San Leandro Street, from Fruitvale Station to San Leandro Boulevard at its intersection with East 14th Street, provides vital connections along the study area. The segment of International Boulevard and East 14th Street between 42nd Avenue in Oakland and Bayfair Drive in San Leandro, referred to as SR 185, is owned and operated by Caltrans.

COVID-19 IMPACTS

The COVID-19 pandemic affected Alameda County's health, economy, and travel patterns in 2020 and 2021. While long-term impacts are uncertain, the needs identified in this CACCMCP are likely to be broadly relevant as Alameda County emerges from the crisis. Pandemic impacts highlight the importance of a resilient multimodal transportation system that meets all resident and worker needs, especially the most vulnerable.

BART is a heavy-rail public transit system that connects the San Francisco Peninsula with communities in the East Bay and South Bay. BART provides a frequent, reliable, and safe transportation alternative for the businesses and communities within the study area. By providing convenient means to access jobs throughout the Bay Area, the BART system reduces overall traffic congestion on freeways and arterial streets. BART stations can encourage higher density development (i.e., Transit-Oriented Development) around BART stations, which in turn provides congestion relief and associated environmental benefits. Multimodal improvements near BART stations will help in achieving the CACCMCP goal of providing a transportation system that improves health and the environment.

Primary Corridors and Major Connections

Primary corridors are north-south links between the termini of the corridor (Lake Merritt BART Station and South Hayward BART Station). These corridors include International Boulevard/East 14th Street/Mission Boulevard, and Bay Area Rapid Transit (BART)/San Leandro Street/San Leandro Boulevard, and the BART rail transit line.

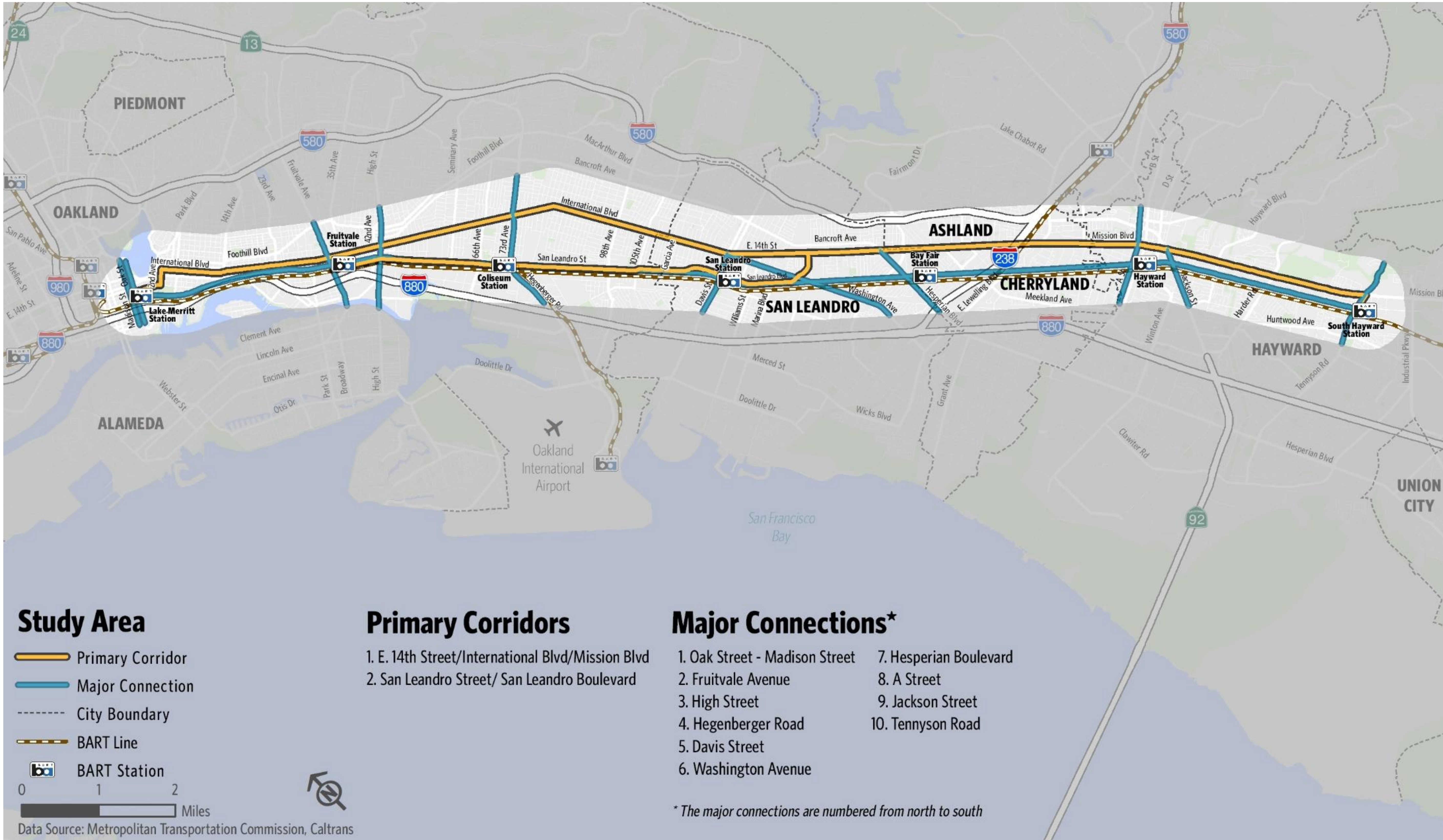
The term major connection refers to the corridors that facilitate north-south movement and provide access to east-west connections throughout the study area. Major connections accommodate shorter trips and provide access to BART stations and to multimodal facilities, such as transportation centers and park-and-ride lots within the study area. These facilities enable important local circulation and provide access to job centers and commercial districts, as well as to residential neighborhoods.

Safety is an important aspect of the Central Alameda County CMCP and as such, any roadway segment that is part of the Alameda County pedestrian or bicycle High Injury Network (HIN) would qualify a roadway as part of the major connections within the study area among if it also meets the following criteria below:

- Designated as an arterial roadway under the California Road System (CRS) Functional Classification
- Located within a half-mile of a BART station

The list of major connections was adjusted based on comments and suggestions from TAC members.

Figure 1-2: CACCMCP Study Area



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1.3 CACCMCP Goals

The CACCMCP has the following six goals:

1. **Safety:** Provide a safe and convenient transportation system for all users.
2. **Equity:** Address mobility needs by providing an accessible, affordable, and equitable transportation network.
3. **Travel Reliability:** Enhance travel reliability and improve corridor efficiency.
4. **Land Use Planning:** Support efficient land use planning that encourages active lifestyles. **Public Health and Environment:** Provide a transportation system that improves health and the environment.
5. **Community Revitalization:** Consider the multimodal network as a tool for community revitalization and economic growth.

1.4 Project List

A total of 94 projects were compiled and categorized for evaluation using the evaluation framework presented in Chapter 2. The projects are grouped into the following four major categories:

1. Active Transportation
2. Safety
3. Transit
4. Multimodal

Figure 1-3 through **Figure 1-6** Illustrate the locations of the identified projects along with their associated project numbers. **Table 1-1** includes the list of projects with cost estimates, implementation time frames and responsible agencies.

Table 1-1: List of Projects

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
A1	10th Street Improvement Project	10th Street between Webster St and the 10th Street bridge is slated for repaving. Additionally, Oakland Department of Transportation (OakDOT) received a Safe Routes to School (SRTS) grant to make sidewalk and pedestrian safety improvements around Lincoln Recreation Center and Lincoln Elementary.	Short-term	$416	OakDOT
A2	Lake Merritt Bikeway Improvement Project	Extend the existing two-way protected cycle track around Lake Merritt from Madison Street southward and over the estuary bridge to International Blvd. Add a one-way protected bike lane in Eastbound direction on Lake Merritt Boulevard between Lakeside Drive and 1st Avenue. Additional improvement includes protected intersections and signal improvements.	Short-term	$1,870	OakDOT
A3	East Bay Greenway Multimodal (Phase 1)	Improvements for construction within 3-5 years, including: one-way cycle tracks along East 12th Street, a Class I pathway along San Leandro Street, one-way separated bike lanes along San Leandro Blvd and East 14th Street, and Mission Boulevard, and pedestrian amenities.	Shovel ready	$174,250	Alameda CTC
A4	East Bay Greenway Urban Trail (Phase 2)	East Bay Greenway Phase 2 - Rails-to-Trail or Rails-with-Trail facility in a 10+ year horizon pending collaboration with Union Pacific Railroad for necessary right of way. The project will connect the seven BART station between Lake Merritt to South Hayward that will generally follow the BART rail line.	Long-term	$501,100	Alameda CTC
A5	Lake Merritt Bay Trail	Improve the safety and comfort of cyclists and pedestrian along the Lake Merritt Channel by closing trail gaps between San Francisco Bay Trail and Lake Merritt Channel Trails by adding an off-street Class I bike path.	Long-term	TBD	OakDOT
A6	San Francisco Bay Trail	Improve the safety and comfort of cyclists and pedestrian along the San Francisco Bay by closing trail gaps at multiple locations by adding an off-street Class I bike path.	Long-term	TBD	EBRPD, OakDOT
A7	International Blvd Pedestrian Lighting and Sidewalk Improvement Project	City of Oakland has received $9.9 million dollars in Clean California funds and $1.5 million dollars in Affordable Housing and Sustainable Communities (AHSC) grant funds for The International Boulevard Pedestrian Lighting and Sidewalk Improvement Project.	Long-term	$10,400	OakDOT, AC Transit
A8	14th Ave from Foothill Blvd to E 19th St	Improve the safety and comfort of cyclists on 14th Avenue from Foothill Boulevard to East 19th Street by lane reduction from 4 to 2 lanes and adding a painted Class II bike lane.	Shovel ready	$45	OakDOT
A9	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St	Improve the safety and comfort of cyclists on 14th Avenue from East 8th Street to International Boulevard and on 14th Avenue from East 19th Street to East 27th Street by lane reduction from 4 to 2 lanes and adding	Shovel ready	$6,000	OakDOT

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
		a painted Class II bike lane. Additionally, the project will extend sidewalks and install multiple RRFBs for pedestrian safety.			
A10	22nd Ave from Foothill Blvd to E 12th St	Improve the safety and comfort of cyclists on 22nd Avenue from Foothill Boulevard to East 12th Street by adding a painted Class II bike lane.	Shovel ready	$36	OakDOT
A11	AHSC Camino 23 International Blvd Pedestrian Improvements	Pedestrian improvements, including sidewalk repair, street lighting, and crosswalk improvements, along International Blvd between 11th Ave and 38th Ave	Short-term	$2,000	OakDOT
A12	Fruitvale Alive Project	Improve the safety and comfort of pedestrians and cyclists on Fruitvale Avenue between Alameda Avenue and East 16th Street by widening sidewalks to install a bike lane at sidewalk level, slowing traffic with bulb-outs, repairing pavement, upgrading lighting, and enhancing crosswalks.	Shovel ready	$4,134	OakDOT
A13	Clement Ave and Tilden Way Complete Streets	Reuse the abandoned railroad right-of-way along the eastern terminus of Clement Ave and Tilden Way to extend the Cross Alameda Trail between Broadway and the Miller-Sweeney/Fruitvale Rail Bridges, while considering ways to improve truck and bus routes.	Shovel ready	$12,442	ACPWA
A14	East 12th Street Bikeway Project: Fruitvale-Melrose Gap Closure	The project proposes: • A neighborhood bike route along 54th Avenue between International Boulevard and E 12th Street where the street is too narrow for bike lanes • A neighborhood bike route along E 12th Street between 54th Avenue and 44th Avenue where the street is too narrow for bike lanes • Protected bike lanes along E 12th Street between 44th Avenue and 40th Avenue to accommodate bi-directional bike travel along the one-way stretch of E 12th Street • Buffered bike lanes along E 12th Street between 35th Avenue and 40th Avenue to minimize on-street parking removal and disruptions to school pick-up and drop-off	Shovel ready	TBD	OakDOT
A17	High St from Courtland Ave to E 12th St	Improve the safety and comfort of cyclists on High Street from Courtland Avenue to East 12th Street by adding a painted Class II bike lane.	Short-term	$155	OakDOT
A18	Foothill Complete Streets	Engage the various communities along Foothill Blvd (a high injury corridor) to plan for capital improvements to address safety concerns and promote active mobility options on this corridor.	Short-term	TBD	OakDOT
A19	54th Ave from E 12th St to San Leandro St	Improve the safety and comfort of cyclists on 54th Avenue from East 12th Street to San Leandro Street by adding signage to designate a Class III bike route.	Shovel ready	$66	OakDOT

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
A20	54th Ave from International Blvd to E 12th St	Improve the safety and comfort of cyclists on 54th Avenue from International Boulevard to East 12th Street by adding signage to designate a Class III bike route.	Shovel ready	$110	OakDOT
A21	62nd Ave from South end of 62nd Ave to Avenal Ave	Improve the safety and comfort of cyclists on 62nd Avenue from Tevis Street to Avenal Avenue by adding signage to designate a Class III bike route.	Shovel ready	$462	OakDOT
A22	66th Ave from Oakport St to San Leandro St (MLK Shoreline to Coliseum BART connection)	Improve the safety and comfort of cyclists along 66th Avenue from Oakport Street to San Leandro Street by adding an off-street Class I bike path. Additionally, the project includes new AC Transit stops at 66th Avenue and Oakport Street	Long-term	$22,000	OakDOT
A23	Coliseum BART Parking Lot Rd from Snell St to Coliseum BART Parking Lot Access	Improve the safety and comfort of cyclists on Coliseum BART Parking Lot Road from Snell Street to Coliseum BART Parking Lot Access by adding a protected Class IV bike lane	Short-term	$50	OakDOT
A24	Hegenberger Rd from International Boulevard to San Leandro Street	Improve the safety and comfort of cyclists on Hegenberger Road from International Boulevard to Hawley Street by adding a protected Class IV bike lane	Long-term	TBD	OakDOT
A25	75th Ave from International Blvd to Rusdale Ave	Improve the safety and comfort of cyclists on 75th Avenue from International Boulevard to Rusdale Avenue by adding signage to designate a Class III bike route.	Shovel ready	$87	OakDOT
A27	75th Ave from Hamilton St to Snell St	Improve the safety and comfort of cyclists on 75th Avenue from Hamilton Street to Snell Street by adding signage to designate a Class III bike route.	Shovel ready	$193	OakDOT
A28	75th Ave from Rusdale Ave to Hamilton St	Improve the safety and comfort of cyclists on 75th Avenue from Rusdale Avenue to Hamilton Street by adding signage to designate a Class III bike route	Shovel ready	$66	OakDOT
A29	81st Ave from San Leandro St to Bancroft Ave	This project is a part of the East Oakland Neighborhood Bike Routes that will provide safer and calmer neighborhood streets designed to prioritize people walking and biking to local destinations.	Short-term	$4,325	OakDOT
A30	85th Ave from International Blvd to San Leandro St	This project is a part of the East Oakland Neighborhood Bike Routes that will provide safer and calmer neighborhood streets designed to prioritize people walking and biking to local destinations.	Short-term	$4,325	OakDOT
A31	90th Ave from G St to International Blvd	Improve the safety and comfort of cyclists on 90th Avenue from G Street to International Boulevard by adding signage to designate a Class III bike route.	Shovel ready	$264	OakDOT

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
A32	Plymouth Street between 79th Avenue and 104th Avenue	Oakland is repaving 1.5 miles of Plymouth St from 79th Ave to 104th Ave in Fall 2019 with concrete work in Spring 2020. Plymouth St's proximity to schools and residences makes it a priority for paving and transportation safety improvements. Improvement	Shovel ready	$792	OakDOT
A33	103rd Ave from Royal Ann St to International Blvd	Improve the safety and comfort of cyclists on 103rd Avenue from Royal Ann Street to International Boulevard by adding signage to designate a Class III bike route.	Shovel ready	$137	OakDOT
A34	105th Ave from Pippin St to International Blvd - buffered	Improve the safety and comfort of cyclists on 105th Avenue from Pippin Street to International Boulevard by adding signage to designate a Class III bike route.	Shovel ready	$92	OakDOT
A35	San Leandro Boulevard between Creekside Plaza and Park Street	Improve the safety and comfort of cyclists on San Leandro Boulevard from Creekside Plaza to Park Street by adding a painted Class II bike lane.	Shovel ready	TBD	City of San Leandro
A36	San Leandro Creek Trail	Multi-use Trail along San Leandro Creek	Short-term	$6,400	Alameda County Flood Control
A37	Dan Niemi Way Creek Trail	Narrow Dan Niemi Way and construct a multipurpose trail along the bank of San Leandro Creek, consistent with the San Leandro Creek Trail Master Plan and in coordination with future development on the triangular block of E. 14th St, Hays St and Davis St.	Short-term	$2,000	City of San Leandro
A38	East 14th Street between Chumalia Street and Estudillo Avenue	Improve the safety and comfort of cyclists on East 14th Street from Chumalia Street to Estudillo Avenue by adding a painted Class II bike lane.	Shovel ready	$11	City of San Leandro
A39	East 14th Street/Davis Street Intersection Improvements	Intersection Improvements	Shovel ready	TBD	City of San Leandro
A40	San Leandro Airport Access Rd - Davis St Corridor Improvement - Class IV	Improve the safety and comfort of cyclists on HWY 61 from Airport Access Road to Davis Street by adding a protected Class IV bike lane.	Short-term	$1,500	City of San Leandro
A41	Williams Street/Washington Avenue Intersection Improvements	Intersection Improvements	Shovel ready	TBD	City of San Leandro

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
A42	E. 14th Street Streetscape Improvements	Recommended changes to E. 14th St in San Leandro south of Maud Ave/ Thornton St include a new center median, lane reconfiguration, new crosswalk locations, design guidelines for new development, and streetscape improvements.	Short-term	$4,000	City of San Leandro
A43	San Leandro Boulevard/Williams Street Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A44	Davis Street/Orchard Avenue Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A45	Davis Street/San Leandro Boulevard Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A46	San Leandro Boulevard/East 14th Street Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A47	San Leandro Boulevard/Washington Avenue Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A48	Davis St Bike Lanes Orchard to SLB	Remove and replace medians and restripe Davis St from Orchard to San Leandro Blvd to add bicycle lanes in both directions as described in the San Leandro BART Pedestrian and Bicycle Improvement Study.	Shovel ready	$800	City of San Leandro
A49	Washington Avenue Streetscape Improvements	Improve the safety and comfort of pedestrians Washington Avenue in San Leandro by adding a landscaped center street median to slow traffic and provide pedestrian refuges at intersections. Learn more.	Short-term	$1,000	City of San Leandro
A50	Washington Avenue/Halcyon Drive & Floresta Boulevard crosswalks	Intersection Improvements	Short-term	$40	City of San Leandro
A51	Washington Avenue between Caliente Drive and 143rd Avenue	Improve the safety and comfort of cyclists on Washington Avenue from Caliente Drive to 143rd Avenue by adding a protected Class IV bike lane.	Short-term	$237	City of San Leandro

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
A52	Hesperian Boulevard/150th Avenue Intersection Improvements	Intersection Improvements	Shovel ready	$100	City of San Leandro
A53	Hesperian Boulevard between Lewelling Boulevard and East 14th Street	The Hesperian Boulevard Study Corridor will construct Class IV protected bike lane and connect to the existing Class III bike route in San Lorenzo. This route is also included on the Alameda Countywide bicycle network.	Short-term	$617	City of San Leandro
A54	Hesperian Boulevard/Halycon Drive/Fairmont Drive Intersection Improvements	Intersection Improvements	Shovel ready	TBD	City of San Leandro
A55	Fairmont Drive Road Diet & Class IV Bicycle Lanes	Restripe Fairmont Drive from Hesperian Boulevard to E. 14th Street to change the roadway from three lanes to two lanes in each direction, allow for installation of bicycle lanes protected by concrete medians interspaced with delineators.	Shovel ready	TBD	City of San Leandro
A56	E. 14th Street Class IV protected bike lanes	Class IV protected bike lanes: E. 14th Street from Hesperian Boulevard to South Hayward BART station	Short-term	$1,589	City of Hayward
A57	East Lewelling Boulevard Complete Streets (Phase 2)	Close sidewalk gaps, install Class IV bikeways, ADA Ramps, enhance crosswalks, and bulb-outs along East Lewelling Blvd between Meekland Avenue and Langton Way in the Ashland Community, Unincorporated Alameda County	Shovel ready	$15,000	ACPWA
A58	San Lorenzo Creekway Trail	Improve the safety and comfort of cyclists along the San Lorenzo Creek between the San Francisco Bay Trail and Don Castro Regional Park by adding an off-street Class I bike path.	Short-term	$33,000	HARD, ACPWA
A59	Mission Boulevard	Improve the safety and comfort of cyclists on Mission Boulevard by adding a separated Class IV bike lane.	Short-term	$4,040	City of Hayward
A60	C St between BART and Mission Blvd	Increase the safety and comfort of cyclists on C Street between the Hayward BART Station and Mission Boulevard by adding a combination of painted Class II and separated Class IV bike lanes.	Shovel ready	TBD	City of Hayward
A61	Main Street Complete Street	Main St from Mc Keever to D St: Reduce roadway from 4 to 2 lanes, construct bike lanes, widen sidewalks and add complete street elements	Short-term	$5,000	City of Hayward
A62	A Street	Improve the safety and comfort of cyclists on A Street by adding a separated Class IV bike lane.	Long-term	$1,459	City of Hayward

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
A63	Jackson Street	Improve the safety and comfort of cyclists on Jackson Street by adding a separated Class IV bike lane.	Long-term	TBD	City of Hayward
A64	Mission Blvd single lane reduction and two-way cycle track	Improve the safety and comfort of cyclists on Mission Boulevard from A Street to D Street by adding a protected Class IV bike lane and removing a vehicular lane.	Short-term	TBD	City of Hayward
A65	Downtown Hayward PDA Multimodal Complete Streets	Improve safety and transit quality through multimodal corridors	Short-term	TBD	City of Hayward
A66	Tennyson Rd. Corridor PDA Complete Streets	Improve safety and transit quality through multimodal corridors	Short-term	TBD	City of Hayward
A67	Tennyson Road	Improve the safety and comfort of cyclists on Tennyson Road by adding a separated Class IV bike lane.	Short-term	TBD	City of Hayward
A68	Winton Ave Complete Street	On Winton Ave from Hesperian Blvd to Santa Clara St: Rehabilitate pavement, upgrade curb ramps and streetlights; On Winton Ave just east of Santa Clara St: Landscape median	Shovel ready	$604	City of Hayward
S1	Foothill Blvd Corridor Improvements (Phase 1)	Safety improvements along Foothill Blvd between Harrington and Cole Streets, including bulb-outs; pedestrian median refuge islands; crosswalk enhancements; rectangular rapid flashing beacons; speed cushions; signage; and refreshed roadway striping.	Shovel ready	$15,000	OakDOT, AC Transit
S2	East Oakland Lighting Study	International Blvd and Bancroft Ave	Short-term	TBD	OakDOT
S3	International Boulevard BRT crossing safety improvement	Improve the safety and comfort for pedestrians on International Boulevard from Seminary Avenue to the southern border of the City of Oakland by adding crosswalk safety improvements.	Short-term	TBD	OakDOT
S4	69th Avenue Safety Improvements	Improve the safety and comfort of pedestrians, cyclists, and drivers on 69th Avenue between International and San Leandro Boulevards by paving the roadway, reducing vehicle speeds using speed humps, and adding high visibility crosswalks.	Shovel ready	TBD	OakDOT
S5	73rd Avenue/ Hegenberger Rd Improvements	Improve the safety and comfort of transit users, pedestrians, and cyclists on 73rd Ave / Hegenberger Road to connect both the Eastmont Transit Center and the Coliseum BART Station by improving connections to the BRT on International Boulevard.	Shovel ready	$20,000	OakDOT
S6	E. 14th Street and Ashland Avenue Intersection	Re-align the east leg of the intersection so that Ashland Avenue connects to E. 14th Street at a 90-degree angle.	Shovel ready	TBD	ACPWA

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
S7	Mission Boulevard and E. Lewelling Boulevard	Eliminate the large channelized right-turn from southbound Mission to westbound Lewelling. To the extent feasible re-align the east leg of the Mission/Lewelling intersection so that Lewelling connects to Mission at a 90-degree angle.	Short-term	TBD	ACPWA
S8	D Street Traffic Calming & Implementation	In response to concerns expressed by the community, staff will soon be developing a feasibility study to identify opportunities to improve pedestrian and bike safety, as well as reduce excessive vehicle speeds, along the D Street corridor.	Short-term	TBD	City of Hayward
T1	Capitol Corridor South Bay Connect Rail	Relocate Capitol Corridor service between Oakland Coliseum and Newark from the Niles Subdivision to the Coast Subdivision, including one new rail station, one new in-line intermodal bus facility, and enhanced park-and-ride facilities.	Long-term	$305,000	Capitol Corridor Joint Powers Authority
T3	East Bay BRT Corridor Safety Improvements	BRT will run the 9.5-mile corridor from downtown Oakland to San Leandro BART.	Shovel ready	$34,000	OakDOT; AC Transit
T4	Fruitvale Avenue/Park Street Transit Improvements	An Enhanced Bus strategy is proposed for 2020 for the Fruitvale Ave/Park Street corridor, with upgrades being made to those improvements by 2040 to keep pace with changing technologies.	Short-term	$61,000	OakDOT
A69	Fruitvale: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	OakDOT; BART
A70	Coliseum: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	OakDOT; BART
T7	Mobility Hubs at BART Stations	Mobility Hub at San Leandro, Bay Fair, Hayward and South Hayward BART stations	Long-term	$200,000	City of San Leandro, and Hayward; BART
A71	San Leandro: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	City of San Leandro; BART
T9	San Leandro Blvd Bus Only Lanes	Bus-only lanes: San Leandro Blvd. from San Leandro BART south to E. 14th St. and E. 14th St./Mission Blvd. from San Leandro Blvd. south to South Hayward BART	Long-term	$350,000	AC Transit
T10	E 14th St/Mission St/Fremont Blvd Rapid Bus | Modernization	New rapid bus service along E 14th St/Mission Blvd/Fremont Blvd between the San Leandro and Warm Springs BART stations, include more frequent service, dedicated lanes and mobility hubs at BART stations.	Long-term	$330,000	AC Transit

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Agency
T11	BRT Service on E. 14 St. from San Leandro BART to Bay Fair BART	East 14th Street in San Leandro Extend the AC Transit BRT service from San Leandro BART to Bay Fair BART.	Long-term	$81,600	AC Transit
T12	Bay Fair Connection	BART: At and near Bay Fair Station: Modify station and approaches to add one or more additional tracks and one or more passenger platforms for improved train service and operational flexibility	Long-term	$23,400	BART
A72	Hayward: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	City of Hayward; BART
A73	South Hayward: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	City of Hayward; BART
M1	Oak Street and Madison Street - Conversion of One-way traffic to two-way traffic	Conversion of one-way traffic to two-way traffic. Additionally, sidewalk widening to add to the pedestrian realm.	Long-term	TBD	OakDOT
M2	SHOPP Mobility - TMS	SR 185 between Post Miles 3.205 - 10.519 E2 FY 23020 26/27	Shovel ready	$15	Caltrans
M3	SHOPP Mobility - ADA	SR 185 between Post Miles 3.205 - 5.0 E2 FY 20459 29/30	Shovel ready	$7	Caltrans
M4	San Leandro Street repaving along railroad tracks	Seminary Ave to South City Limit Repaving	Shovel ready	TBD	OakDOT
M5	SHOPP Pavement	SR 185 between Post Miles 3.205 -5.7 E2 FY 13654 21/22	Shovel ready	$22	Caltrans
M6	SHOPP Mobility - ADA	SR 185 between Post Miles 9.08 - 10.1 E2 FY 16381 21/22	Shovel ready	$6	Caltrans
M7	SHOPP Pavement	SR 238 between Post Miles 13.96 - 16.7 E2 FY 23035 26/27	Short-term	$15	Caltrans
M8	Mission Blvd and Foothill Blvd - St. 2-way conversion	Converting Foothill and Mission Boulevards to two-way streets and reconstructing the intersection at Foothill Boulevard, Mission Boulevard and D Street to support two-way movements.	Long-term	$4,591	City of Hayward

Note: TBD - To be determined.

Figure 1-3: Recommended Projects (1 of 4)

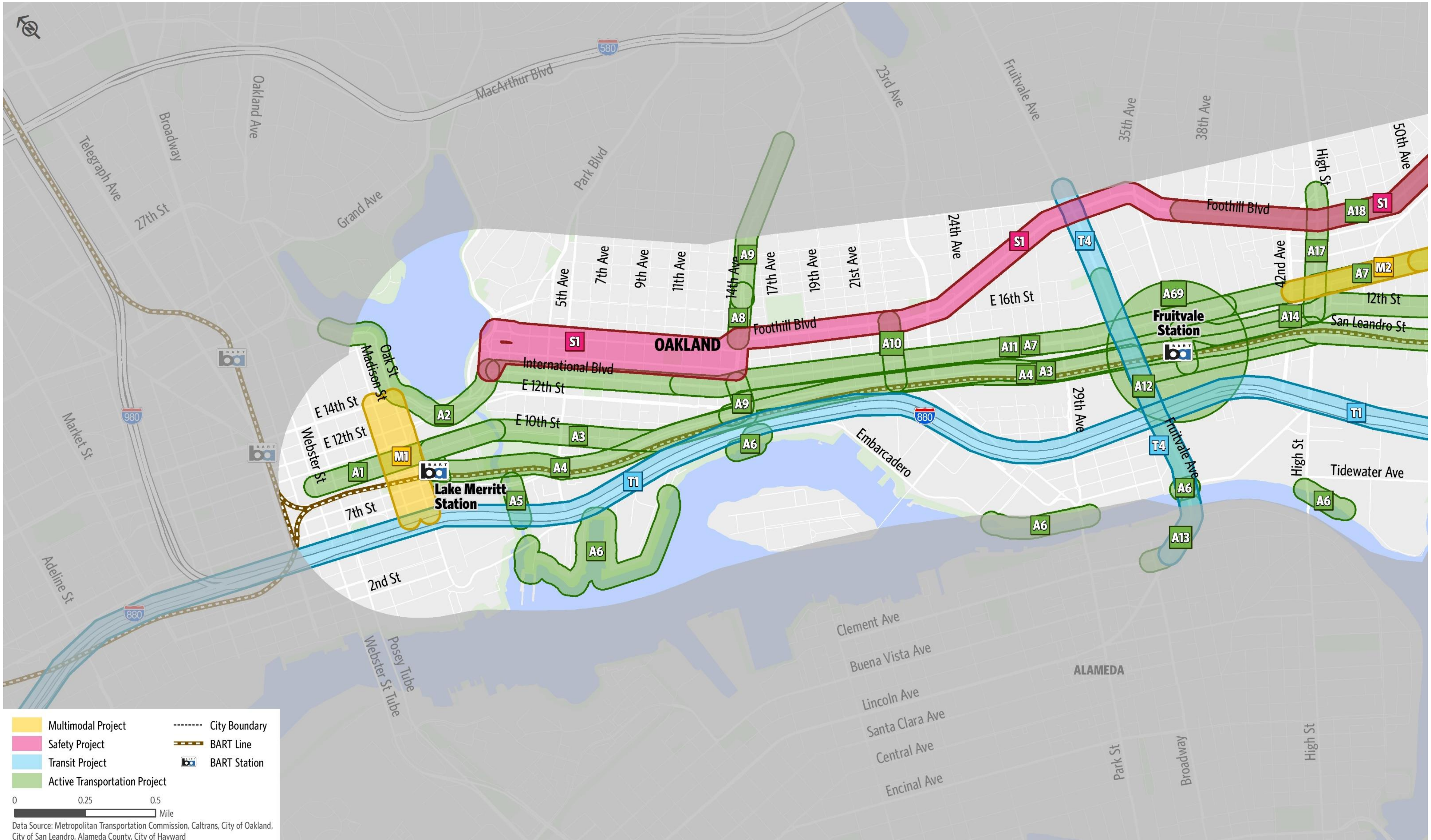

Figure 1-4: Recommended Projects (2 of 4)

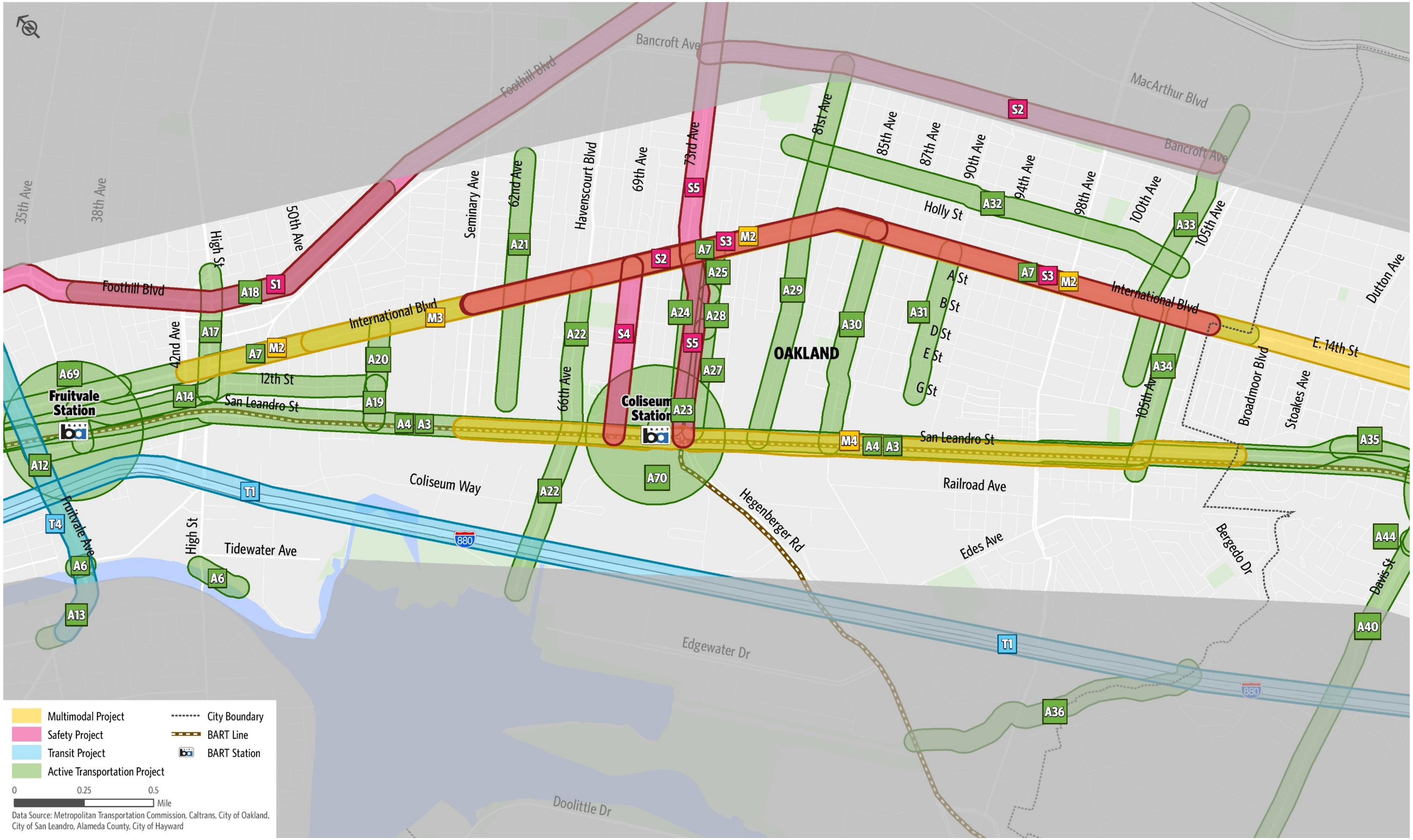

Figure 1-5: Recommended Projects (3 of 4)

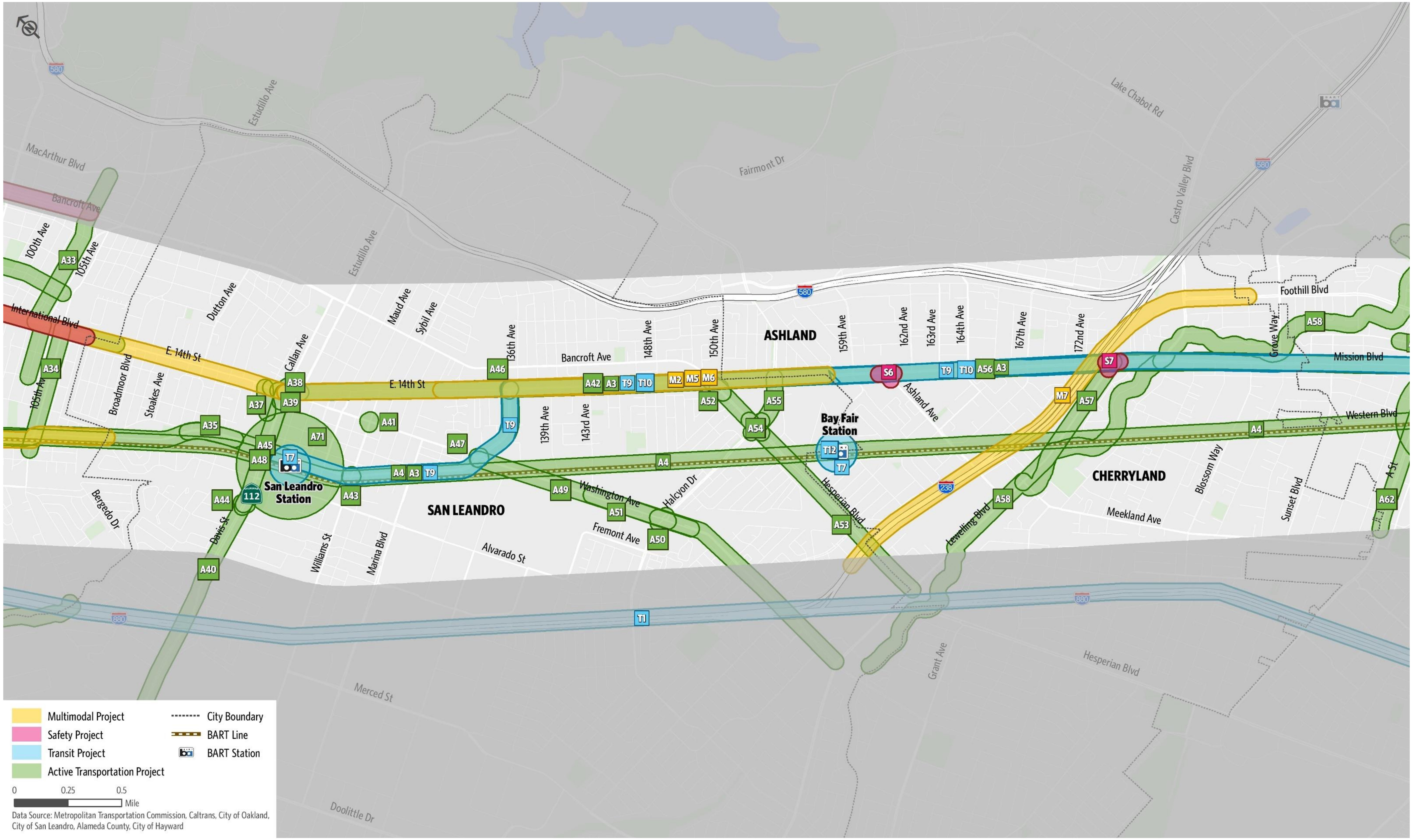

Figure 1-6: Recommended Projects (4 of 4)

1.5 Major Concerns and Key Findings

The state of safety, mobility, reliability, and sustainability from the performance and needs assessment are listed below by topic. The detailed analysis is presented in Chapters 5 and 7.

Safety

Safety is a priority goal of the CMCP and a critical issue in the study area. Pedestrian-involved collisions resulted in the highest number of fatalities and serious injuries of any mode within the study area. The majority of bicycle and pedestrian fatalities and serious injuries within the CACCMCP study area have occurred in Equity Priority Communities (EPCs) or Disadvantaged Communities (DACs).

Clusters of fatalities and serious injuries appear near Lake Merritt, Bay Fair and Hayward BART Stations and along International Boulevard, suggesting that transit riders within the study area face barriers to accessing transit stops safely.

The CACCMCP study area contains a high percentage of the Alameda County High Injury Network (HIN). Nearly 34 percent of the CACCMCP corridors are classified as part of the HIN. The HIN represents roughly the top 20 percent of streets with the worst outcomes (i.e., most collision and/or most severe collisions over a five-year period countywide).[4]

International Boulevard between 1st Avenue and 42nd Avenue had the highest number of fatalities and serious injuries within the CACCMCP study area from 2015 to 2019, with half of them related to non-motorized transportation. The safety analysis period (2015-2019) does not include the improvements related to AC Transit's Tempo BRT service that began operation in August 2020.

The implementation of recommended projects will help in reducing fatalities and severe injuries within the CACCMCP study area.

Mobility

Forecast Year 2040 (no project) traffic volumes for the CACCMCP study area show a 30 percent traffic growth with corresponding declines in vehicle speeds. With the increase in traffic volumes, both freeways in the study area (I-880 and I-238) will operate under worsening congested conditions with speeds further decreasing by a range of 15 to 30 percent.

With the implementation of recommended CACCMCP projects, both the Oakland and San Leandro Subareas of the study area would have a minor increase of average auto speeds (0.1 percent), and the Unincorporated Subarea would have no change in speed. The Hayward Subarea is projected to have a 4.4 percent reduction in overall speeds due to the conversion of Downtown one-way loops to two-way streets (Project M8). In total, the CACCMCP study area would have a 0.9 percent decrease in average auto speeds.

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[4] Alameda CTC, Countywide Active Transportation Plan, June 2019, https://www.alamedactc.org/planning/countywide-bicycle-and-pedestrian-plans/.

With the increase in traffic volumes, the study area under 2040 No Project conditions will add roughly 29,000 hours (79 percent increase) of daily vehicle delay by 2040. Implementation of recommended projects would result in a further increase in daily vehicle hours of delay by 3,000 hours (4.7 percent). Consequently, this would increase the person hours of travel time delayed by 4,312 hours (5.1 percent). As with the auto speed measures, the implementation of CACCMCP projects would decrease delay in the Oakland and San Leandro Subareas, but auto delays would increase in the Hayward Subarea with the proposed conversion of one-way streets.

Within study area freeways, a bottleneck forms on I-880 near Edes Avenue and Hegenberger Road in the southbound direction at approximately 4:00 PM and does not dissipate until 7:00 PM. On I-238, bottlenecks are observed near the I-880 interchange during the morning peak period and near the I-580 interchange during the evening peak period.

BART stations are accessible for 11 percent of the geographical CACCMCP study area by a 10-minute walk and for 83 percent of the CACCMCP study area by a 10-minute bike ride.[5] However, due to the lack of bicycle and pedestrian facilities, only 20 percent of the commute trips are made using non-automobile modes. This is comparable to Alameda County as a whole, where about 23 percent of commute trips are done by non-auto modes, but the county includes large rural and suburban communities that are not close to BART stations. Implementation of active transportation projects will shorten the commute distance for bicyclists and pedestrians. For instance, the cycling distance between Lake Merritt BART Station to South Hayward Station via Bancroft Avenue (recommended route) is 18.5 miles. After implementing the East Bay Greenway Urban Trail (Phase 2), the distance will be reduced to 16 miles (reduction by 14 percent and of 10 minutes).

Within the broader community, there is a spectrum of types of bicyclists with varying levels of comfort and skill. Improvements such as Class I multi-use paths and Class IV separated bikeways will result in a low-stress bikeway network that encourages all types of bicycle riders. Presently, there are approximately 9 miles of Class I facilities and 3 miles of Class IV facilities within the CACCMCP study area. Local and regional planning documents indicate that additional 18 miles of Class I and 17 miles of Class IV facilities are planned within the CACCMCP study area, contributing to developing a bike network that is suitable to all ages and abilities.

Reliability

Both freeways (I-880 and I-238) within the CACCMCP study area are among the Alameda County's top 10 least reliable roadway segments. With some exceptions, both freeways have frequent and recurring congestion within the CACCMCP study area.

AC Transit buses are frequently delayed. The on-time performance of routes 14, 28, 34, 40, 93 and 96 is less than 72 percent, which is a goal set by AC Transit for its service. The schedule-based daily delay for transit routes serving the CACCMCP study area is 462 minutes, and the speed-based delay is 4,820 minutes.

[5] ABAG, Transit Rich PDAs, https://mtc.ca.gov/planning/land-use/priority-development-areas-pdas.

Sustainability

Without the recommended projects, the CACCMCP study area will observe a 15 percent increase in Vehicle Miles Traveled (VMT) and a 26 percent increase in Vehicle Hours of Travel (VHT) by 2040. Consequently, the CACCMCP study area will generate an increase in CO_2 emissions by 19 percent.

With implementation of CACCMCP projects, the study area would have a reduction of 0.9 percent in VMT including a reduction of 1.7 percent within the Hayward Subarea. The implementation of CACCMCP projects is projected to cause a small increase (110 hours) in total VHT, with reductions in Oakland and San Leandro and increases in Hayward.

In terms of air quality, VMT reductions are directly related to Greenhouse Gas emissions, and would proportionally reduce the amount of nitrogen dioxide (NOx), sulfur oxides (SOx), particulate matter 2.5 (PM 2.5), and carbon dioxide (CO2) similar to the reductions in VMT.

Currently, 5.9 percent of all trips within the CACCMCP study area are walkable (within 0.5 miles) and 52.1 percent are bikeable (within 3 miles) under existing conditions. These trips are expected to grow to 6 percent walkable trips and 53.9 percent bikeable trips in 2040. The increase in number of walkable and bikeable trips in the future is partially explained by more planned in-fill and mixed-use development.

1.6 Strategies

A total of 94 projects were compiled including 70 active transportation, 8 safety, 8 transit, and 8 multimodal projects. Projects were assessed based on their ability to satisfy the goals, objectives, and performance metrics established by the Alameda CTC and TAC and others as recommended in CMCP guidelines. Each project was gauged for the selected criteria and assigned a “HIGH,” “MEDIUM,” or “LOW” score on each project’s ability to address each criterion.

Project Evaluation Methodology and Results

Safety

The safety evaluation rated projects on their ability to reduce severe and fatal injuries and reduce collisions for those outside of vehicles (i.e., pedestrians and cyclists). Projects that provide high-quality facilities for pedestrians and cyclists such as Class I shared-use paths or Class IV separated bike lanes along high injury network (HIN) received a “HIGH” score; nearly half, or 47 percent of all projects received this designation. Thirty-four percent of the projects received a “MEDIUM” score which was assigned to all projects that contributed to the safety of cyclists or pedestrians but were not on HIN streets. All others received a “LOW” score. In total, 68 percent of all projects recommended in the CACCMCP would contribute to the safety of pedestrians and cyclists.

Equity

Projects were evaluated on their ability to improve connections of residents in Equity Priority Communities (EPCs) and Disadvantaged Communities (DACs) by their ability to provide accessible, affordable, and equitable transportation. Projects that invest in both types of underserved areas received a “HIGH” score. Projects that would improve transportation in one of these types of areas but not both received a "MEDIUM" score. One hundred percent of projects proposed serve either an EPC or DAC with 62 percent of projects overlapping with both types.

Travel Reliability

Travel Reliability considers the ability for projects to enhance corridor efficiency by reducing street delays and improving transit reliability. Transit projects were deemed the best to meet these goals and were the only projects that scored as "HIGH," making up 15 percent of all projects. Other projects that would provide a high-quality active transportation alternative were given a score of "MEDIUM" and make up 20 percent of projects. All other projects received a "LOW" score. In total, 35 percent of the projects would increase travel reliability.

Land Use

Residents who live in areas of denser urban forms with diverse land uses and access to safe and convenient car alternatives are less likely to drive. Projects that help support efficient land uses by investing in transit, active transportation, or multimodal projects within transit-rich Priority Development Areas (PDAs) are rated "HIGH." Projects that help provide access to transit-rich PDAs are ranked as "MEDIUM." Eighty-two percent of all CACCMCP projects would either be located in or help connect people to transit-rich PDAs.

Public Health and Environment

Projects were evaluated for their ability to reduce greenhouse gas (GHG) emissions and/or pollution that negatively impacts health outcomes. Transportation projects can help reduce such emissions by limiting the overall vehicle miles traveled (VMT) by cars. Projects that promote non-motorized forms of transportation such as active transportation or transit projects scored "HIGH" in this category. Those that would reduce vehicle congestion scored "MEDIUM" (assuming emissions are related to queued vehicles). All other projects were assigned a "LOW" score. Eighty-nine percent of the projects promote alternative form of transportation and received a "High" score. One SHOPP project on the list will directly reduce vehicle congestion and received a "Medium" score.

Community Revitalization Evaluation

Community revitalization is intended to measure the degree of community support and ability of a project to contribute to placemaking. It is important to note that there is no way to definitively reach a singular "community voice," but community outreach provides a general sense of how a subset of the public reacted positively or negatively to the projects proposed or if the projects aligned with some of their expressed concerns. Extensive outreach was done to try to collect as many viewpoints and perspectives as possible and is fully discussed in Chapter 6. Projects that received significant support—as expressed through comments on an online feedback tool—received a "HIGH" score. During public outreach, there was consistently significant concern about the safety of pedestrians and bicyclists. Projects that would directly contribute to the safety of pedestrians and bicyclists or contribute to placemaking (such as streetscape improvements) were rated "MEDIUM". In total, 56 percent of projects either received significant community support or directly addressed community concerns.

2. Evaluation Framework

The goals, objectives, and performance measures for the Central Alameda County Comprehensive Multimodal Corridor Plan (CACCMCP) form the basis of an evaluation framework that lays the groundwork for project evaluation and prioritization in the study area. The CACCMCP's goals and objectives are informed by state and regional policies and plans. This chapter provides a policy overview followed by the CACCMCP evaluation framework.

2.1 State Guiding Documents and Policies

Several key state plans, policies, and guidelines pertaining to multimodal infrastructure development provide a foundation for the CACCMCP evaluation framework. These include California Transportation Commission (CTC) guidelines, California Department of Transportation (Caltrans) plans and policies, and other state policies.

Caltrans Policy Development

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) (Gov. Code §65086) by identifying deficiencies and proposing improvements to the SHS. Through System Planning, Caltrans focuses on developing System Planning products that address integrated multimodal transportation system needs and help advance Caltrans' mission, vision and goals. Over the past several years, especially with the passage of county-level sales tax measures for transportation funding, Caltrans has worked closely with local agencies such as the Alameda County Transportation Commission (Alameda CTC) and the Metropolitan Transportation Commission (MTC) to conduct system planning for the SHS.

This CACCMCP was developed in alignment with the goals, objectives and performance targets outlined in Caltrans Strategic Management Plan 2020-2024[6]. It is consistent with recommendations from the System Planning to Programming (SP2P) study and the Planning for Operations (P4Ops) Strategic Work Plan, both developed in 2017 by Caltrans Headquarters to help redefine System Planning's roles and products. It also follows the corridor planning process described in Caltrans Corridor Planning Process Guide, adopted in 2020[7].

Solutions for Congested Corridors Program Guidelines, 2022

The Road and Repair Accountability Act of 2017, also known as Senate Bill 1 (SB 1), provides the first significant, stable, and on-going increase in State-directed transportation funding in more than two decades. SB 1 presents a balance of new resources and reasonable reforms to ensure efficiency, accountability, and performance from each dollar invested to improve California's transportation system.

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[6] *Caltrans 2020-2024 Strategic Plan*, Retrieved From: https://dot.ca.gov/-/media/dot-media/programs/risk-strategic-management/documents/sp-2020-16p-web-a11y.pdf

[7] 2020. *Corridor Planning Process guide*. Retrieved From: https://dot.ca.gov/programs/transportation-planning/multi-modal-system-planning/system-planning/corridor-planning-process-guide

Among the multiple programs established by SB 1 is the Solutions for Congested Corridors Program (SCCP).[8] This program provides $250 million annually on a competitive basis to Caltrans and regional agencies for projects designed to achieve a balanced set of transportation, environmental, and community access improvements within highly congested travel corridors throughout the State. In addition to be included in a CMCP, eligible projects should make specific performance improvements designed to reduce congestion in highly traveled corridors by providing multimodal transportation choices for residents, commuters and visitors to the area while preserving the character of the local community and creating opportunities for neighborhood enhancements.

SCCP-eligible projects include improvements to state highways, local streets and roadways, public transit facilities, bicycle and pedestrian facilities, and restoration or preservation work that protects critical local habitats or open spaces. To control increases in vehicle miles traveled (VMT), greenhouse gases (GHG) and air pollution, highway lane capacity-increasing projects funded by the program are limited to high occupancy vehicle (HOV) lanes, managed lanes, and other non-general purpose lane improvements such as auxiliary lanes, truck-climbing lanes and dedicated bicycle lanes.

Comprehensive Multimodal Corridor Plan Guidelines, 2018

The California Transportation Commission (CTC) adopted the 2018 Comprehensive Multimodal Corridor Plan Guidelines on December 5, 2018. The Guidelines prescribe a corridor planning process that largely mirrors what is outlined in the draft Caltrans Corridor Planning Guidebook. They include sections and topics a CMCP should consider as well as performance measures that are consistent with the 2022 Solutions for Congested Corridors Program Guidelines.

The guidelines provide some examples of state policies and goals that should be considered in the corridor planning process. Transportation planning goals relevant to the CACCMCP include increasing transportation safety for all users, preserving and enhancing existing infrastructure, improving multimodal mobility and accessibility, prioritizing transportation sustainability, and supporting economic development and the efficient movement of freight.[9] The guidelines also highlight overarching objectives of the corridor planning process:

- Defining multimodal transportation deficiencies and opportunities for optimizing system operations
- Identifying the types of projects necessary to reduce congestion, improve mobility, and optimize multimodal system operations along highly traveled corridors
- Identifying funding needs
- Furthering state and federal ambient air standards and greenhouse gas (GHG) emission reduction standards pursuant to the California Global Warming Solutions Act of 2006[10] and Senate Bill 375

[8] California Transportation Commission, Solutions for Congested Corridor Program Guidelines, https://catc.ca.gov/-/media/ctc-media/documents/programs/sccp/08-17-22-adopted-2022-sccp-guidelines.pdf , accessed on August 19, 2022

[9] California Transportation Commission, Comprehensive Multimodal Corridor Plan Guidelines, https://catc.ca.gov/programs/sb1/solutions-for-congested-corridors-program/comprehensive-multimodal-corridor-plan-guidelines, accessed on March 1, 2022.

[10] California Air Resource Board, AB 32 Global Warming Solutions Act of 2006, https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006

- Preserving the character of local communities and creating opportunities for neighborhood enhancement
- Identifying projects that achieve a balanced set of transportation, environmental, and community access improvements

The document also details five statutory requirements that all CMCPs must meet:

1. Be designed to reduce congestion in highly traveled corridors by providing more transportation choices for residents, commuters, and visitors to the area of the corridor while preserving the character of the local community and creating opportunities for neighborhood enhancement projects.
2. Reflect a comprehensive approach to addressing congestion and quality of life issues within the affected corridor through investment in transportation and related environmental infrastructure.
3. Be developed in collaboration with state, regional, and local partners.
4. Evaluate the following criteria, as applicable - safety, congestion, accessibility, economic development including job creation and retention, air quality and greenhouse gas emissions reduction, and efficient Land Use.
5. Be consistent with the goals and objectives of the Regional Transportation Plan.

State Plans and Policies

The following plans and policies provide guidance on transportation planning priorities at the state level.

2050 California Transportation Plan, 2021

The Caltrans California Transportation Plan 2050 (Caltrans CTP 2050), last updated in 2021, provides a blueprint for developing transportation infrastructure that prioritizes equity, safety, environmental sustainability, multimodal integration, and efficiency. The Caltrans CTP focuses on people-focused policies, strategies, and investments that help create a safe, resilient, and universally accessible transportation system supportive of vibrant communities, racial and economic justice, and improved public and environmental health. In addition to providing this broad framework for what multimodal transportation system planning should strive to achieve, the Caltrans CTP highlights key trends, challenges, and opportunities facing the state, as well as eight goals for the statewide transportation system. These goals are listed below:[11]

- Safety: Provide a safe and secure transportation system
- Climate: Achieve statewide GHG emissions reduction targets and increase resilience to climate change
- Equity: Eliminate transportation burdens for low-income communities, communities of color, people with disabilities and other disadvantaged groups
- Accessibility: Improve multimodal mobility and access to destinations for all users
- Quality of Life and Public Health: Enable vibrant, healthy communities
- Economy: Support a vibrant, resilient economy

[11] California State Transportation Agency, California Transportation Plan 2050, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf, accessed March 1, 2022.

- Environment: Enhance environmental health and reduce negative transportation impacts
- Infrastructure: Maintain a high-quality, resilient transportation system

Complete Streets Policy, 2014

Caltrans Complete Streets Policy, adopted in 2014 and revised in 2021, requires Caltrans to accommodate the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products of the State Highway System. It also requires Caltrans to develop integrated multimodal projects and facilitate bicycle, pedestrian, and transit travel by creating a network of "Complete Streets."[12] This policy guides multimodal planning along key corridors and state highways in the study area.

Smart Mobility Framework, 2020

The Caltrans Smart Mobility Framework (SMF) lays out a vision for how to achieve widely accessible multimodal travel choices, livable communities, and a robust and sustainable economy.

The SMF guides implementation of multimodal transportation strategies in a manner that supports development of compact and sustainable communities. It does so by linking development policies to transportation systems and housing choices. Caltrans' Smart Mobility 2010: A Call to Action for the New Decade,[13] developed in partnership with the US Environmental Protection Agency, the Governor's Office of Planning and Research, and the California Department of Housing and Community Development, provides concepts and tools that jurisdictions can use to incorporate smart mobility principles into all phases of transportation decision-making.

Caltrans Smart Mobility Framework Guide 2020, an update to Smart Mobility 2010, introduced revised strategies, performance measures, and analytical methods for implementing smart mobility. These are organized around five themes:

- Network management,
- Multimodal choices,
- Speed suitability,
- Accessibility and connectivity, and
- Equity.[14]

The guide also describes the application of five "place types" based on location, land use, density, and other characteristics to identify transportation planning and project development priorities across the state. These place types include:

1. Central Cities
2. Urban Communities

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[12] Caltrans, Deputy Directive DD-64-R2, Caltrans to Require 'Complete Streets' Features in Planning and Design of All New Projects, https://dot.ca.gov/news-releases/news-release-2021-039, accessed February 28, 2022.

[13] Caltrans, Smart Mobility 2010, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/smf-handbook-062210-a-a11y.pdf, accessed on May 28, 2022.

[14] Caltrans, Smart Mobility Framework Guide, https://www.localassistanceblog.com/2021/11/22/caltrans-smart-mobility-framework-guide/, accessed May 28, 2022.

3. Suburban Communities
4. Rural Areas
5. Protected Lands and Special Use Areas

Each of the place types corresponds to transportation planning priorities and serves as a guide, not a rule, for the development of recommendations. Planners consider the specific characteristics of a given planning area in addition to local, regional, and State plans when recommending strategic transportation system investments.

Caltrans District 4 Bike Plan, 2018

The Caltrans District 4 Bicycle Plan (D4BP) was completed in 2018. The overarching purpose of this plan is to implement the vision statement and four goals are described in Toward an Active California, the statewide bicycle and pedestrian plan published in 2017. These goals are:

1. Mobility – reduce dependency on motor vehicle travel through mode shift to bicycling, walking, and transit
2. Safety – facilitate safe travel for all users (modes) and abilities, as expressed through Toward Zero Deaths (Caltrans) and Vision Zero (local agencies) initiatives
3. Equity – promote active transportation solutions within the district by improving accessibility and healthy transportation options for disadvantaged communities
4. Preservation – ensure district active transportation strategies and actions adequately discuss the long-term maintenance needs and resources required to maintain a state of good repair for state highways.

Based on these goals, the D4BP identifies opportunities for complete streets investments by Caltrans and projects eligible for Active Transportation Program funding. The plan considers all bicycle trips but prioritizes utilitarian bicycle travel to work, school, shopping, connecting to transit, or other similar purposes. The plan also highlights stakeholder needs such as safety, comfort, intuitive highway crossings and interchanges as priorities. Furthermore, it addresses bicycle parking needs and other supporting infrastructure.

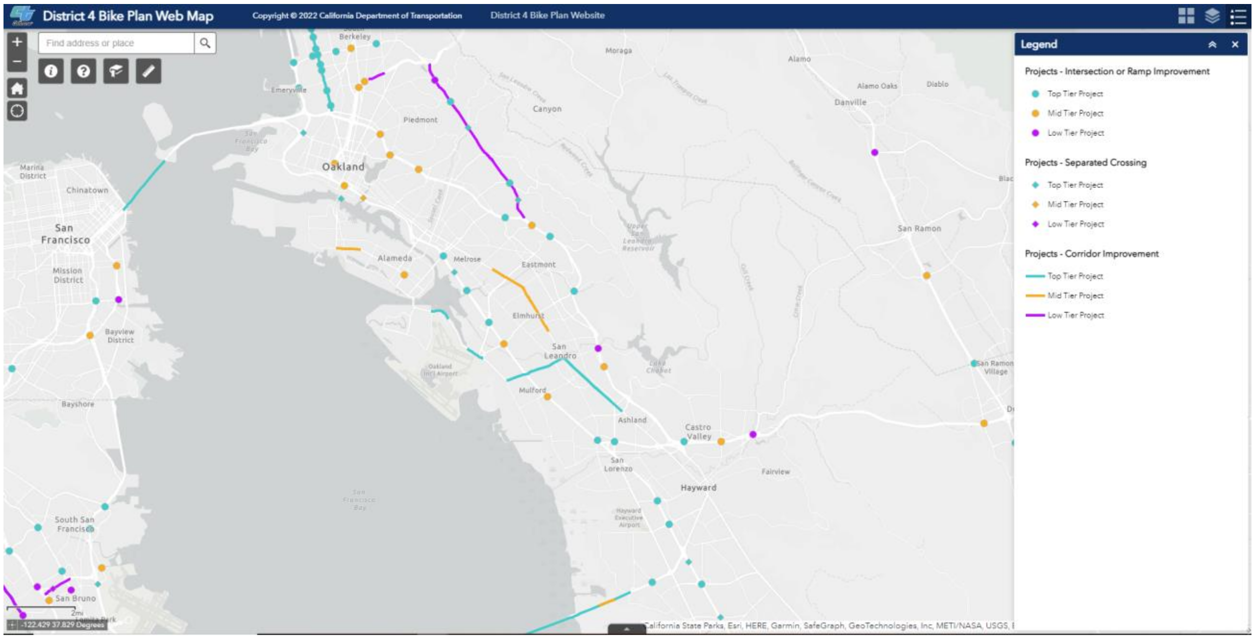
The bicycling need on the State Highway System (SHS) was identified by analyzing potential challenges and barriers using:

- State Safety Data using the Statewide Integrated Traffic Records System (SWITRS) which includes density of collisions weighted by severity.
- Level of Traffic Stress on each segment and crossing of the SHS, coded for its level of traffic stress.
- Community engagement

Figure 2-1 shows a screenshot from District 4 Bike Plan Web Map[15] that identifies projects in the CACCMCP study area.

[15] Caltrans. District 4 Bike Plan Web Map. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=91f1bb4eb7ff418092977b762b459d01 , accessed on July 1, 2022

Figure 2-1: District 4 Bike Plan Web Map



For the CACCMCP study area, International Boulevard between 69th Avenue and 95th Avenue has been identified as a high stress and high demand bicycle corridor.

Caltrans District 4 Pedestrian Plan, 2021

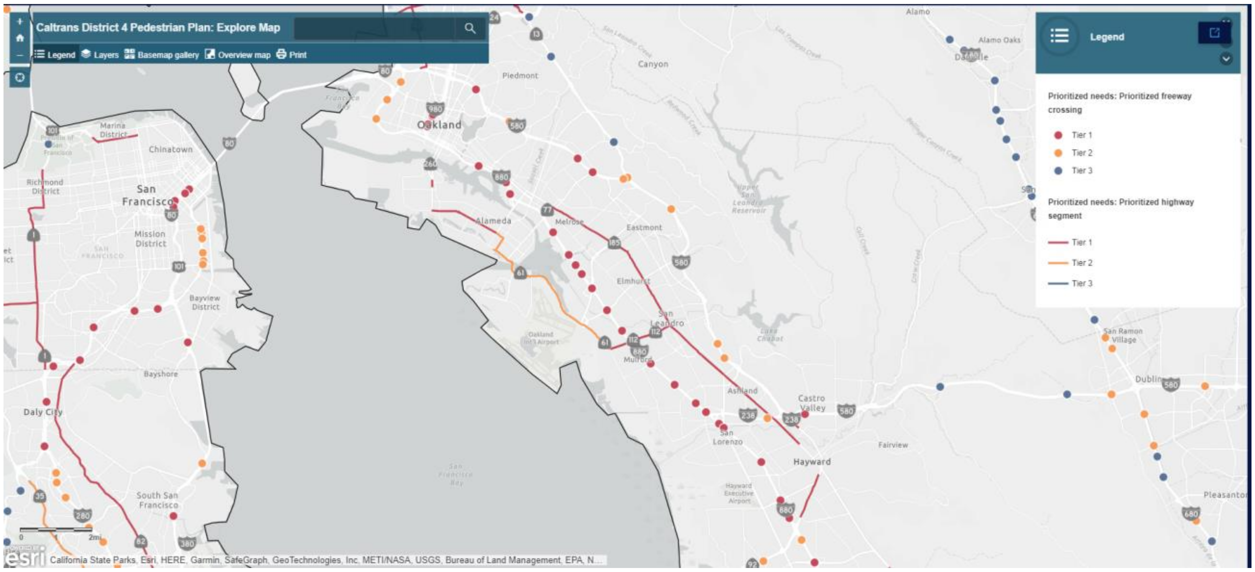
The Caltrans District 4 Pedestrian Plan, completed in 2021, is also structured around achieving the vision and goals laid out in Toward an Active California, described above. Based on these goals, the Pedestrian Plan identifies investments to support walking, connecting people with opportunities, and reconnecting previously divided communities. The plan addresses high priority needs along and across the State Transportation Network (STN), including the State Highway System (SHS) and all other multimodal facilities owned and operated by Caltrans, including parallel paths, frontage roads and other facilities not directly on an SHS mainline. During outreach, key deficiencies highlighted included missing sidewalks, intersections without marked crosswalks, and uncontrolled intersections.

Caltrans evaluated data about the highway system from its own inventories, from local and regional plans published prior to 2020, and from extensive public input to determine where gaps and barriers in walking infrastructure are present. Locations were identified as having needs if they met one or more of the following criteria.

- Main street sidewalk gaps
- Sidewalks in fair or poor condition
- Sidewalks along high-speed highways
- Stressful pedestrian crossings (accounting for absence of median islands and marked crossings, posted speed limits, and other factors)
- Infrequent opportunities to cross under or over freeways
- Freeway crossings requiring upgrades of various kinds to be more comfortable for people walking

Figure 2-2 shows the District 4 Pedestrian Plan Story Map[16] that identifies location-based pedestrian infrastructure needs in the Bay Area.

Figure 2-2: Caltrans District 4 Pedestrian Plan Story Map



The segments along International Boulevard/E. 14th Street/Mission Boulevard from 42nd Avenue in Oakland to Grove Way in Cherryland has been identified as the highest priority (Tier-1) pedestrian need.

North Alameda County Truck Access Management Study, 2021

The North Alameda County Truck Access Management Study (NACTAMS) describes freight truck operations in Northern Alameda County, with a focus on trucks between local destinations and the highway system. The NACTAMS assesses truck freight movement and provides specific recommendations on how to improve efficiency while minimizing negative impacts of trucks on residents of Northern Alameda County. Six goals included in the plan further highlight this direction:

1. Facilitate cross-jurisdictional freight planning
2. Review how freight route traffic interacts with residential and production areas
3. Identify limitations that cause trucks to leave highways and truck routes
4. Identify freight patterns and roadway performance
5. Evaluate future conditions for freight movement
6. Develop implementable strategies that can be adopted and make funding recommendations

Caltrans D4 SR 185 Transportation Concept Report, 2013

The purpose of a Transportation Concept Report (TCR) is to communicate Caltrans long range (25-year) vision for a State Route. The concept is based on current and projected operating conditions and acknowledges both programmed and planned transportation improvement projects along a route. A TCR may also recommend basic mobility strategies and conceptual

[16] Caltrans. District 4 Pedestrian Plan Story Map. https://storymaps.arcgis.com/stories/9a25b6f7dcf146328663b62660a0b6f9 , accessed on July 22, 2022

projects which warrant further analysis. The State Route 185 (SR 185) TCR, completed in partnership with local jurisdictions and Congestion Management Agencies (CMA), serves as one source of guidance for future development of a route. This TCR provides a long-term vision for the SR 185 Corridor, which entails relinquishment of the route in Hayward and the completion of the AC Transit BRT system in San Leandro and Oakland, over a 25-year planning horizon. The route relinquishment will shorten it by 3.3 miles and the BRT will alter the type and nature of transit demand and have a significant impact on the 25-year concept.[17].

Caltrans Adaption Priorities Report, 2020

The purpose of this report is to prioritize assets to climate hazards through detailed asset-level climate assessments. Since there are many potentially exposed assets in the district, work will need to be done sequentially according to their priority level. The detailed assessment prioritization considers, amongst other things, the timing of the climate impacts, their severity and extensiveness, the condition of each asset (a measure of the sensitivity of the asset to damage), the number of system users affected, and the level of network redundancy in the area. Prioritization scores are generated for each potentially exposed asset based on these factors and used to rank them. Though it is likely that climate change will cause a wide array of hazards that will impact many physical asset categories, this report is focused on bridges, large culverts, small culverts, and roadways[18].

Caltrans Climate Change Vulnerability Assessments - District 4, 2019

The report summarizes vulnerability assessments conducted for assets in Caltrans District 4. These assessments were developed to specifically identify the potential effects of climate change on the State Highway System in District 4. It is intended, in part, as a transportation practitioner's guide on how to include climate change into transportation decision-making[19].

2.2 Regional Plans and Policies

Similar to state level policies, regional transportation plans provide a policy framework for prioritizing projects in the study area. Descriptions of the regional and county plans are provided below.

2050 Plan Bay Area, 2021

Plan Bay Area 2050, adopted in 2021, is a long-range (30-year) $1.4 trillion plan developed by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) focused on creating a more affordable, connected, diverse, healthy, and

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[17] Caltrans. District 4. Transportation Concept Reports (TCRs). Retrieved from https://dot.ca.gov/caltrans-near-me/district-4/d4-programs/d4-transplanning-local-assistance/d4-office-of-system-and-regional-planning/d4-osrp-documents

[18] Caltrans. District 4. 2020 Adaptation Priorities Reports. Retrieved from https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/air-quality-and-climate-change/2020-adaptation-priorities-reports , accessed on May 22, 2022

[19] Caltrans District 4. 2019 Climate Change Vulnerability Assessments. Retrieved from https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/air-quality-and-climate-change/2019-climate-change-vulnerability-assessments , accessed on May 22, 2022

vibrant Bay Area. This plan is based on five guiding principles that provide a framework for its policies and implementation strategies[20]. These principles consist of the following:

1. Affordable – ensure all Bay Area residents and workers have sufficient access to housing options they can afford and that households are economically secure
2. Connected – provide an expanded, well-functioning, safe and multimodal transportation system that connects the Bay Area, and provide infrastructure supporting fast, frequent and efficient intercity trips, complemented by a suite of local transportation options, connecting communities and creating a cohesive region
3. Diverse – ensure the Bay Area is an inclusive region where people from all backgrounds, abilities and ages can remain in place with access to the region's assets and resources
4. Healthy – ensure the region's natural resources, open space, clean water and clean air are conserved and that the region actively reduces its environmental footprint and protects residents from environmental impacts
5. Vibrant – ensure the Bay Area region is an innovation leader by creating job opportunities for all and ample fiscal resources for communities.

A core set of 35 strategies translate these plan principles into actionable steps that can be employed throughout the Bay Area’s nine counties to support sustainable housing, economic, transportation and environmental planning. The plan calls to support community-led transportation enhancements in Equity Priority Communities, which will require public agencies to dedicate funding specifically for these projects and build trusting, collaborative relationships with these communities.

While Plan Bay Area 2050 uses a year 2050 analysis for future conditions, the CACCMCP uses a 2040 analysis year. This is because the CACCMCP analysis uses the Alameda Countywide Model, which has a year 2040 horizon, to allow for analyzing local bicycle and street network improvements. Use of the Alameda Countywide Model also allows for the analysis of CACCMCP transportation projects separately from the regional land use policies and assumptions that are included in the Plan Bay Area 2050 analysis.

East Bay Regional Park District Plan, 2013

The East Bay Regional Park District (EBRPD) provides and manages the regional parks for Alameda and Contra Costa counties, a 1,400 square mile area that is home to 2.6 million people and forms the eastern shoreline of San Francisco Bay. The Master Plan defines the overall mission and vision for the Park District. It contains the policies and descriptions of the programs in-place for achieving the highest standards of service in resource conservation, management, interpretation, public access and recreation. The policies contained in this plan guide the stewardship of the parks. The goal is to maintain a careful balance between the need to provide opportunities for recreational use of the parklands, both now and in the future. . The plan identifies the San Francisco Bay Trail and East Bay Greenway Trail as potential regional trails[21].

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[20] Metropolitan Transportation Commission. 2050 Plan Bay Area. https://www.planbayarea.org/finalplan2050, accessed May 28, 2022.

[21] East Bay Regional Park District. Master Plan (2013). Retrieved from https://www.ebparks.org/master-plan

Bay Area Rapid Transit (BART) Walk and Bicycle Network Gap Study, 2020

The BART Walk and Bicycle Network Gap Study documents a planning process that took place in 2017-2020. It identifies conceptual access improvements to make walking and biking to and from the 17 BART stations safer and easier. The following five BART stations (out of seven within the study area) were included in this study:

- Coliseum
- Fruitvale
- San Leandro
- Hayward
- South Hayward

This study is not meant to substitute for station access or station area plans, which typically address all modes of transportation to, from and within the station area. Rather, this study set out to identify the highest impact, near-term walk and bike improvements to station access[22].

Alameda County Plans

The following plans led by the Alameda County Transportation Commission (Alameda CTC) set countywide transportation goals, as well as goals specific to North Alameda County.

Alameda Countywide Transportation Plan, 2020

The Countywide Transportation Plan (CTP), adopted by Alameda CTC in 2020, established near-term projects, programs, and strategic priorities for the area. It also detailed a 30-year transportation vision for Alameda CTC which is to serve county residents, businesses, and visitors by a premier transportation system that supports a vibrant and livable Alameda County through a connected and integrated multimodal transportation system promoting sustainability, access, transit operations, public health, and economic opportunities. Four goals provide support for this vision and deliver a framework for Alameda CTC decision making:

1. Accessible, affordable, and equitable - improve and expand connected multimodal choices that are available for people of all abilities, affordable to all income levels and equitable
2. Safe, healthy, and sustainable - create safe multimodal facilities to walk, bike and access public transportation to promote healthy outcomes and support strategies that reduce reliance on single-occupant vehicles and minimize impacts of pollutants and greenhouse gas emissions
3. High quality and modern infrastructure - deliver a transportation system that is of a high quality, well-maintained, resilient, and maximizes the benefits of new technologies for the public
4. Economic vitality - support the growth of Alameda County's economy and vibrant local communities through a transportation system that is safe, reliable, efficient, cost-effective, high-capacity and integrated with sustainable transit-oriented development facilitating multimodal local, regional, and interregional travel.

[22] BART Walk and Bicycle Network Gap Study (2020). Retrieved from https://www.bart.gov/about/planning/station-access/network-gap-study

Updated regularly, this plan is intended to emphasize projects, programs, and strategies the county intends to pursue over a 10-year horizon to achieve this vision and goals for Alameda County.[23]

Alameda Countywide Active Transportation Plan, 2020

The Alameda County Active Transportation Plan, completed in 2019, details Alameda CTC's priorities for improving walking and biking throughout the county's 15 diverse jurisdictions. The plan is meant to guide Alameda CTC in planning, funding, and delivering pedestrian and bicycle facilities and programs throughout Alameda County, and guides local agencies in delivering projects, particularly with respect to funding applications. The core vision of the plan is to inspire people of all ages and abilities to walk and bike for everyday transportation, recreation, and health, by providing a safe, comfortable, and interconnected network that links to transit and major activity centers, and by supporting programs and policies that encourage biking and walking. Achievement of this vision is guided by four goals which serve as priority criteria for capital investment. These criteria consist of the following:

1. Safety – increase the safety of people bicycling and walking in Alameda County
2. Multimodal Connectivity – create connected networks of streets and trails that enable people of all ages and abilities to walk and bike to meet their daily needs
3. Encouragement – increase walking and biking in Alameda County
4. Impactful Investment – invest public monies in projects and programs that maximize benefits for Alameda County's transportation system.

Based on this framework and contributions from public engagement, the plan identified essential active transportation needs and systemic gaps, including facilities lacking on high vehicle volume streets[24].

Table 2-1 shows the roadway segments that were identified as part of the Bicycle and Pedestrian High Injury Network (HIN) within the CACCMCP study area.

Table 2-1: Bicycle and Pedestrian HIN within the Study Area

Jurisdiction	Bicycle HIN	Pedestrian HIN
Oakland	• International Boulevard between 1st Avenue and 105th Avenue • San Leandro Street between 37th Avenue to 47th Avenue	• International Boulevard between 1st Avenue and 105th Avenue • San Leandro Street, between 66th Avenue and Hegenberger Road
San Leandro	• East 14th Street between 105th Avenue and Fairmont Drive • East 14th Street between Belleview Drive and Hesperian Boulevard	• East 14th Street between Durant Avenue and Castro Street • East 14th Street between Hesperian Boulevard and Plaza Drive • San Leandro Boulevard between Best Avenue and Hudson Lane

[23] Alameda CTC. 2020 Countywide Transportation Plan. https://www.alamedactc.org/planning/countywidetransportationplan/ , accessed on July 22, 2022

[24] Alameda CTC. 2019 Active Transportation Plan (CATP). https://www.alamedactc.org/planning/countywide-bicycle-and-pedestrian-plans/ , accessed on July 22, 2022

Jurisdiction	Bicycle HIN	Pedestrian HIN
	• San Leandro Street between Broadmoor Boulevard to Estudillo Avenue	
Ashland	• East 14th Street between 150th Avenue and 164th Avenue	• East 14th Street between 150th Avenue and Mattox Road
Cherryland	None noted	• East 14th Street between Mattox Road and Grove Way
Hayward	• Mission Boulevard between Grove Way and Berry Avenue	• Mission Boulevard between Grove Way and Jackson Street

Source: Alameda Countywide Active Transportation Plan, 2020.

Alameda County Community Based Transportation Plan, 2020

The Alameda County Community Based Transportation Plan (CBTP), completed in 2020, identified transportation needs within Alameda County's low-income and minority communities as required by MTC. The plan highlighted ways to improve access and mobility for low-income and minority communities across the county and provided recommendations that were incorporated into the 2020 update of the Countywide Transportation Plan (CTP). As noted in the Plan, key concerns for equity-priority residents include active transportation safety and transit service.[25] The Plan highlights impacts on communities from truck traffic and parking.

Alameda Countywide Multimodal Arterial Plan, 2016

The Alameda Countywide Multimodal Arterial Plan provides a roadmap for a future with superior mobility on a continuous and connected network for each mode of transportation that better supports adjacent land uses. This Plan was developed to improve the existing and future role and function of the countywide arterial system and to provide a framework for designing, prioritizing, and implementing improvements in the context of surrounding land use. This plan provides a basis for the integrated management of major arterial corridors and identifies a priority list of short- and long-term improvements and strategies.[26]

Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas, 2019

The Alameda County Bicycle and Pedestrian Master Plan (BPMP) developed by the Alameda County Public Works Department promotes pedestrian safety and access to create more walkable communities in the unincorporated areas of Alameda County. The BPMP identifies project that will form the Bicycle and Pedestrian Network, recommends safety and education elements that complement active infrastructure, and develops project implementation

[25] Alameda CTC. 2020 Community Based Transportation Plan (CBTP). Retrieved from https://www.alamedactc.org/planning/countywidetransportationplan/community-based-transportation-plans/ , accessed on July 22, 2022

[26] Alameda CTC. 2016 Countywide Multimodal Arterial Plan. Retrieved from https://www.alamedactc.org/planning/countywide-multi-arterial-plan/ , accessed on July 22, 2022

strategies. The plan also recommends actions for General plan update.[27] The BPMP goals consist of the following:

- Connectivity: Develop and maintain a connected and continuous bicycle and pedestrian network
- Access: Provide access for all users
- Safety: Improve safety for all modes of transportation
- Comfort: Consider the whole walking and biking experience through the provision of supporting facilities
- Awareness: Build community awareness of walking and biking as an alternative to driving plus an understanding of the safety responsibilities of all users
- Supportive Land Uses: Ensure that land uses support and promote walking and bicycling

Multimodal Monitoring, 2020

Alameda CTC monitors and documents multimodal performance on major roads throughout Alameda County every two years as a part of its Congestion Management Program (CMP), pursuant to CMP State Statute 65089. For the 2020 cycle, the COVID-19 pandemic and shelter-in-place orders substantially changed travel demand and the economy in Alameda County. International Boulevard from 42nd Avenue to Foothill Boulevard (SR 185) is under the jurisdiction of Caltrans. The document reported more than 50 percent increase in speed at certain segments of the highway and overall increase in speed throughout the corridor during 2020.[28]

East 14th Street/Mission Boulevard and Fremont Boulevard Multimodal Corridor Project (2020)

The East 14th Street/Mission Boulevard and Fremont Boulevard Multimodal Corridor Project evaluated current conditions and future needs to develop goals and objectives that shaped the long-term vision for the Project Corridor. This Project traverses jurisdictions within Central and South Alameda County, including unincorporated Alameda County and the cities of San Leandro, Hayward, Union City and Fremont. The long-term vision is a response to the future mobility needs of the Project Corridor's various communities and reflects the Project's goals of increasing use of alternate modes; addressing the range of mobility needs for those living and working in the Study Area; providing a safe and convenient environment for pedestrians, bicyclists, and transit users; and providing flexibility for future changes in transportation technology. To achieve this vision, specific near-, medium-, and long-term multimodal mobility improvements have been identified for implementation.[29]

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[27] Alameda County Public Works Agency. Alameda County Bicycle and Pedestrian Plan for Unincorporated Areas (2019). Retrieved from https://www.acpwa.org/programs-services/transportation/bike.page?

[28] Alameda CTC. Multimodal Monitoring (2020). Retrieved from https://www.alamedactc.org/planning/congestion-management-program/

[29] Alameda CTC. East 14th Street/Mission Boulevard and Fremont Boulevard Multimodal Corridor Project (2020). Retrieved from https://www.alamedactc.org/programs-projects/multimodal-arterial-roads/e14th-st-mission-blvd-and-fremont-blvd-multimodal-corridor/

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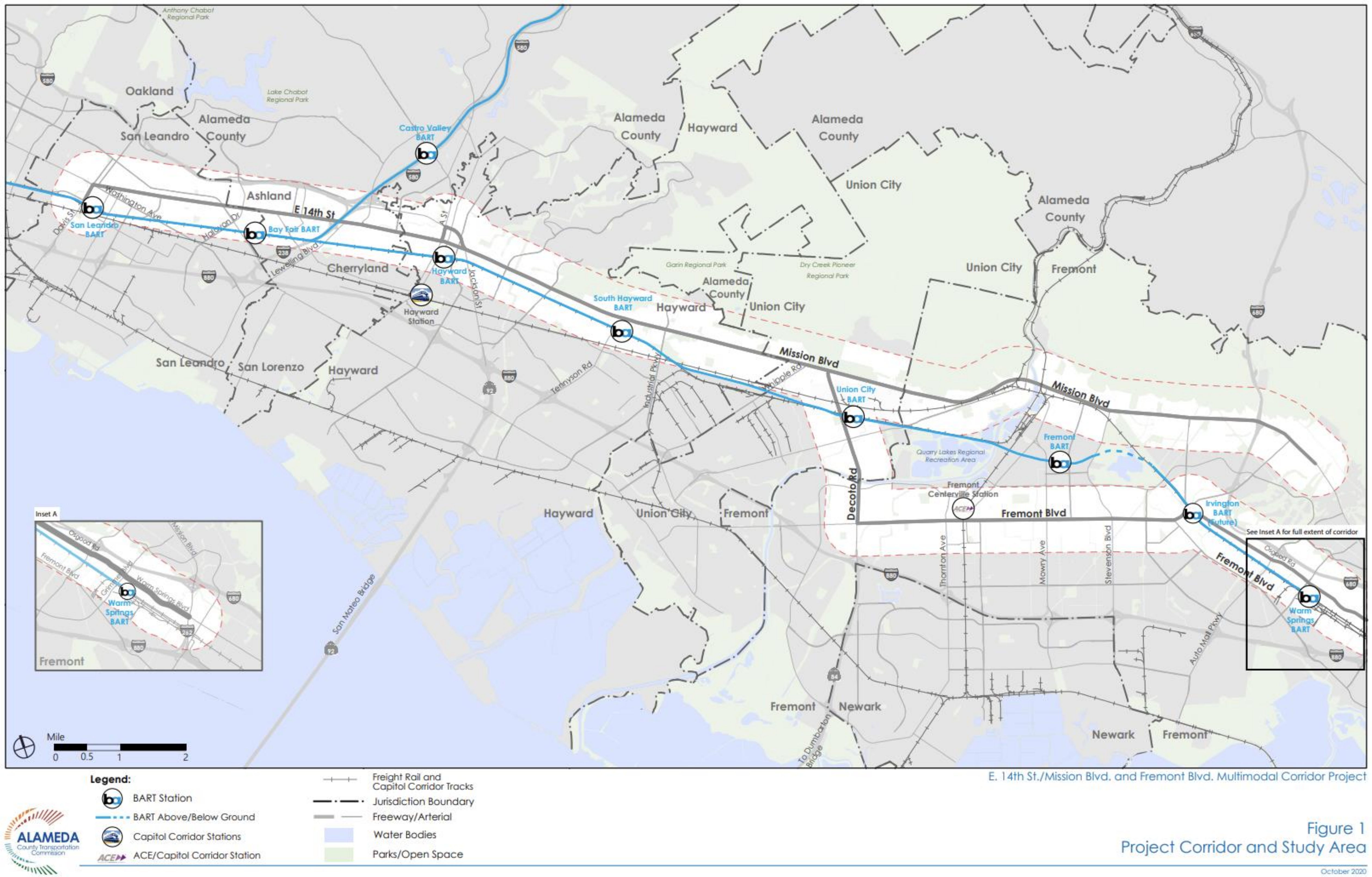
Figure 2-3: East 14th Street/Mission Boulevard and Fremont Boulevard Multimodal Corridor Project Study Area



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The East 14th Street/Mission Boulevard and Fremont Boulevard Multimodal Corridor Project near-term improvements have been combined with the East Bay Greenway (EBGW Multimodal Project given the synergies between the two projects. A detailed description of the EBGW project is provided below.

East Bay Greenway

The East Bay Greenway is a proposed regional trail which would link BART stations throughout the inner East Bay. Alameda CTC is the project sponsor for the East Bay Greenway: Lake Merritt BART to South Hayward BART Project. The Project proposes to construct a bicycle and pedestrian facility that will generally follow the BART alignment for a distance of 16 miles and traverse the cities of Oakland, San Leandro, and Hayward as well as the unincorporated communities of Ashland and Cherryland. The Project will connect seven BART stations as well as downtown areas, schools, and other major destinations.

Implementation of the East Bay Greenway from Lake Merritt to South Hayward is being pursued in two phases:

- The ***East Bay Greenway Multimodal Project (Phase 1***) consists of a regional bikeway with pedestrian, transit, and placemaking improvements along city streets parallel to the BART alignment and connecting the BART stations between Lake Merritt and South Hayward. The project will include shared use paths, separated bikeways, pedestrian crossing enhancements, bus stop improvements, intersection safety improvements (protected intersections), new and modified traffic signals, and urban design treatments. As mentioned in the previous study description, the E14th Street/Mission Blvd segment, which comprises the near-term of the E14th Street/Mission and Fremont Multimodal Corridor Project has been merged with the EBGW Multimodal Project. **Figure 2-4** shows the proposed alignment for Phase 1.
- The ***East Bay Greenway Urban Trail Project (Phase 2)*** is a longer-term project which would provide an off-street trail facility along the BART corridor with linear park enhancements but requires significant funding and right-of-way acquisition from the Union Pacific Railroad.

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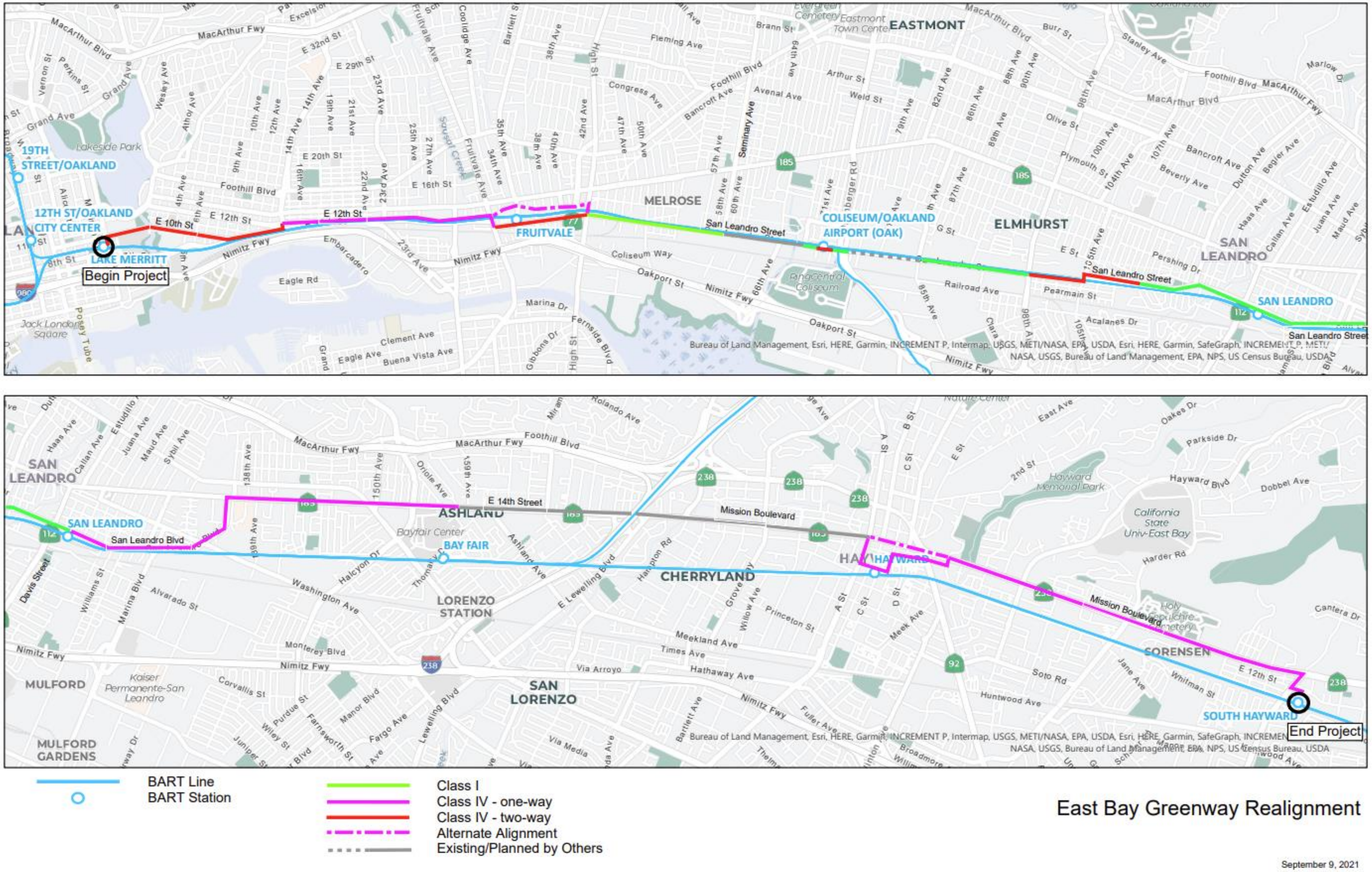
Figure 2-4: East Bay Greenway Multimodal Project (Phase 1)



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2.3 Local Plans and Policies

City of Oakland

Oakland Bike Plan, 2019

Oakland's Bicycle Plan is part of the Land Use and Transportation Element of the Oakland General Plan. It identifies projects and programs for the City of Oakland Bicycle Network. In the Plan, the Vision for the City is that *"Oakland will be a bicycle-friendly city where bicycling provides affordable, safe and healthy mobility for all Oaklanders. New projects and programs will work to enhance existing communities and their mobility needs."*[30]

Oakland Pedestrian Plan, 2017

In 2017, the City of Oakland completed an update of the Pedestrian Plan that reflects Oakland's changing conditions, needs and priorities. An update to the plan adopted in 2002, the 2017 Pedestrian Plan:

- Incorporated up-to-date information on existing conditions
- Refined the City's pedestrian vision and goals; and
- Outlined a five-year work plan of specific, high-priority and cost-effective improvements, programs, and policies[31]

East Oakland Mobility Action Plan, 2021

The East Oakland Mobility Action Plan (MAP) provides the policy foundation for achieving a transportation system that recognizes and balances the needs of all road users. East Oaklanders have faced historical inequity, environmental constraints, public health issues, and safety concerns. Below is the plan's mission statement:

"All East Oaklanders have access to, and choices within, a local and regional transportation system that is safe, efficient, and affordable, and connects them to the places they need to thrive. The City will partner with local residents, community groups, and small businesses to prevent displacement and gentrification and acknowledge historical injustices."

The MAP identifies an action plan that serves as a guide for making sound transportation decisions in East Oakland and to make its mission statement a reality.

The East Oakland MAP is intended to guide the City and other partner agencies in allocating resources for future mobility improvements in East Oakland and identifying ways in which transportation projects can be done differently, preventing undesired planning practices of the past.[32]

Lake Merritt Station Area Plan, 2014

The Lake Merritt Station Area Plan provides policies that guide development within a half-mile radius of the Lake Merritt BART station, located on the southeastern edge of the Chinatown/

[30] City of Oakland. Oakland Bike Plan (2019). Retrieved from https://www.oaklandca.gov/resources/bicycle-plan

[31] City of Oakland. Oakland Pedestrian Plan – Oakland Walks (2017) Retrieved from https://www.oaklandca.gov/resources/pedestrian-plan-update

[32] City of Oakland. East Oakland Mobility Action Plan (2021). Retrieved from https://www.oaklandca.gov/projects/eastoakmap

Central Oakland district. The plan proposes projects to improve the pedestrian environment by narrowing or reducing traffic lanes, extending curbs, adding pedestrian countdown signals and pedestrian-scaled lighting, restoring streets to two-way and improving five of the six I-880 under crossings.[33]

City of San Leandro

San Leandro 2035 General Plan, 2017

The San Leandro General Plan is a comprehensive blueprint that lays out the community's approach to growth and development activities through the year 2035. The most significant changes are envisioned around the city's two BART stations, in its industrial districts, and along some of its major arterial streets such as East 14th Street and Marina Boulevard. Development around the BART stations will redefine San Leandro's image while creating dynamic new neighborhoods, workplaces, and destinations.[34]

San Leandro Bicycle and Pedestrian Master Plan, 2018

The Bicycle and Pedestrian Master Plan is the official policy document guiding the development of policies and facilities to enhance bicycling and walking as practical, efficient, and safe transportation choices for San Leandro residents, workers, and visitors.[35]

San Leandro Climate Action Plan, 2021

The 2021 Climate Action Plan (CAP) is San Leandro's comprehensive strategy to reduce greenhouse gas (GHG) emissions and to adapt to changing climate conditions. This CAP demonstrates that community members and the City are taking a leadership role on sustainability and climate action. San Leandro's General Plan directs the preparation, ongoing implementation, and update of the CAP, providing the framework for San Leandro to reduce its community wide GHG emissions in a manner consistent with State reduction targets for 2020 and 2030 and the longer-term goal for 2050. This document outlines both the City's successes to date in promoting environmental responsibility and provides a blueprint for continued sustainability.[36]

Bay Fair Station Area TOD Specific Plan, 2018

The Specific Plan sets a vision for the Bay Fair area to become a walkable, transit-oriented community hub, with public gathering spaces and a mix of retail, neighborhood services, housing, and office spaces. To be consistent with this vision, the City of San Leandro is updating the Zoning Code to add new design and development regulations for the Bay Fair area, as recommended under the approved Plan.[37]

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[33] City of Oakland. Lake Merritt Station Area Plan (2014). Retrieved from https://www.oaklandca.gov/topics/lake-merritt-station-area-plan

[34] City of San Leandro 2035 General Plan (2017). Retrieved from https://www.sanleandro.org/332/General-Plan

[35] City of San Leandro Bike and Pedestrian Master Plan (2018). Retrieved from https://www.sanleandro.org/255/Bicycles-Pedestrians

[36] City of San Leandro. Climate Action Plan (2021). Retrieved from https://www.sanleandro.org/984/Climate-Action-Plan

[37] City of San Leandro. Bay Fair Station Area TOD Specific Plan (2018). Retrieved from https://www.sanleandro.org/348/Bay-Fair-Transit-Oriented-Development-TO

Ashland and Cherryland CDPs

Ashland/Cherryland Business District Specific Plan, 2015

The Ashland/Cherryland Business District Specific Plan provides direction for development and urban design and seeks to support community and economic development by capitalizing on the area's unique assets and character.[38]

Ashland and Cherryland Parking Demand and Management Strategy Study, 2020

The Ashland and Cherryland Parking Demand and Management Study is a comprehensive parking study to further the planning and transportation goals and policies outlined in the Ashland Cherryland Business District Specific Plan.[39]

City of Hayward

Hayward Bike and Pedestrian Master Plan, 2020

The City of Hayward's Bicycle and Pedestrian Master Plan establishes the City's vision and comprehensive approach to improving walking and biking in Hayward. The City of Hayward has promoted biking and walking throughout its history. The first bicycle plan was adopted in 1979, and the prior update was completed in 2007. Since then, the City has created various citywide and neighborhood-specific plans to promote these modes of transportation. The Plan builds on this work and is consistent with the City's General Plan and Complete Street policies, which emphasize a comprehensive, integrated, and connected network of transportation facilities and services for all modes of travel.[40]

Downtown Hayward Specific Plan, 2019

The Downtown Specific Plan provides a strategy to achieve the community's vision of a resilient, safe, attractive, and vibrant historic Downtown by clearly outlining an implementation plan, delineating an inclusive, multi-modal circulation system, integrating public open spaces, and establishing new regulations that clearly establish Downtown Hayward as the heart of the City and a destination for visitors and residents.[41]

Hayward Climate Action Plan, 2009

The Hayward Climate Action Plan (CAP) provides a roadmap for achieving a measurable reduction in GHG emissions. Adopting the CAP is a discernible step towards emission reductions. The CAP recommends GHG emission targets that will align Hayward's reduction targets with those of the State of California and presents several strategies that will make it possible for the

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[38] Alameda County Community Development Agency. Ashland and Cherryland Business District Specific Plan (2015). Retrieved from https://www.acgov.org/cda/planning/generalplans/documents/LWC_ACBD_Adopted_SP-Code_Dec2015.pdf

[39] Alameda County Community Development Agency. Ashland and Cherryland Parking Demand and Management Strategy Study (2020). Retrieved from http://www.acgov.org/board/bos_calendar/documents/CDAMeetings_10_05_20/2AshlandCherrylandBusDistParkingStudy.pdf

[40] City of Hayward. Bike and Pedestrian Master Plan (2020). Retrieved from https://www.hayward-ca.gov/content/bike-and-pedestrian-master-plan-update

[41] City of Hayward. Downtown Specific Plan (2019). Retrieved from https://www.hayward-ca.gov/downtown-specific-plan

City to meet these targets. The CAP also suggests best practices for implementing the Plan and makes recommendations for measuring progress.[42]

[42] City of Hayward. Climate Action Plan (2009). Retrieved from https://www.hayward-ca.gov/services/city-services/climate-action

2.4 Evaluation Framework

The evaluation framework for the CACCMCP, shown in **Table 2-2,** represents a synthesis of the core goals applicable to the study area from the sources described above. They were developed through a collaborative process with Alameda CTC and the CACCMCP Technical Advisory Committee. The projects in the CACCMCP are evaluated both quantitatively and qualitatively in Chapter 7.

Table 2-2: Goals, Objectives and Performance Measures

Goals	Objectives	Performance Measures
1. Provide a safe and convenient transportation system for all users	1.1 Reduce severe and fatal injury collisions 1.2 Reduce non-motorized collisions 1.3 Provide high-quality active transportation options	• Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT) • Rate of Serious Injuries per 100 million VMT • Number of Non-motorized Fatalities and Non-motorized Serious Injuries • Miles of High Injury Network
2. Address mobility needs by providing accessible, affordable, and equitable transportation networks	2.1 Increase the number of multimodal options in the corridor and reduce gaps 2.2 Improve connections in Equity Priority Communities (EPCs) 2.3 Provide affordable alternatives to driving alone	• Miles of Active Transportation Network Improvements • First-/Last-Mile Connections to Major Transit Stations • Transit Frequency • Miles of Multimodal Corridor Improvements in EPCs • Transit Ridership
3. Enhance travel reliability and improve corridor efficiency	3.1 Reduce recurring delays 3.2 Improve transit reliability 3.3 Increase travel time reliability	• Vehicle Hours of Delay • Peak Period Vehicle Volumes • Transit on-time performance • Travel time reliability (e.g., buffer index or planning time index)
4. Support efficient land use planning that encourages active lifestyle	4.1 Promote multimodal travel that supports efficient land use 4.2 Increase of Mixed-Use Transit-Oriented Development	• Population in Priority Development Areas
5. Provide a transportation system that improves health and environment	5.1 Reduce Vehicle Miles Traveled (VMT) 5.2 Reduce GHG Emissions 5.3 Reduce Criteria Air Pollutants	• Vehicle Miles Traveled per capita • Miles of First-/Last-Mile Connections to Major Transit Stops • Air Quality
6. Consider multimodal network as a tool for community revitalization and economic growth	6.1 Support placemaking and existing communities	• Percent of Resident Trips Within Neighborhood (TAZ)

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3. Study Area Overview

This chapter presents the CACCMP study area overview, which includes roadway and transit facilities, land use, and environmental considerations to provide context for the operational conditions and development of proposed solutions discussed in later chapters. **Figure 3-1** through **Figure 3-4** show the CACCMCP study area.

3.1 Description

The study area is located in Central Alameda County and includes the southern portion of the City of Oakland, the Cities of San Leandro and Hayward, and the unincorporated communities of Ashland and Cherryland. It spans from Lake Merritt Bay Area Rapid Transit (BART) station to South Hayward BART station and traverses seven BART stations in total as well as downtown areas, schools, and other major destinations. As shown in **Figure 3-1** through **Figure 3-4**, the entire corridor segment is about 16 miles long and covers a total area of about 22.5 square miles. The study area includes freeways and arterials, a robust transit network of bus and regional rapid transit systems, trails, and other alternative modes of transportation. The key facility types are summarized in the following sections.

Study Area at a Glance

16 Miles from Lake Merritt BART to South Hayward BART

22.5 Square Miles including downtown areas, schools, and other major destinations

5 Jurisdictions: Oakland, San Leandro, unincorporated communities of Ashland and Cherryland, and Hayward

7 BART stations

305,000 Residents

Primary Corridors

Primary corridors are the north-south links between the north and south termini of the corridor (Lake Merritt BART station and South Hayward BART station). These corridors include International Boulevard, East 14th Street, Mission Boulevard, 12th Street, San Leandro Street, San Leandro Boulevard and Bay Area Rapid Transit (BART).

International Boulevard/East 14th Street/Mission Boulevard runs nearly parallel to Interstate 880 and connects Oakland, East 14th Street in San Leandro, and Mission Boulevard in Hayward. International Boulevard in Oakland spans from 2nd Avenue to Durant Avenue in San Leandro. The East 14th Street segment begins at Durant Avenue in San Leandro to 172nd Avenue in Cherryland. The Mission Boulevard segment runs from 172nd Avenue to Tennyson Road in Hayward. International Boulevard/East 14th Street/Mission Boulevard is one of a limited number of north-south travel options in the central part of Alameda County serving local, regional and interregional trips.

Significant land development and growth along this corridor that has been planned is currently occurring and anticipated to continue in the future.[43]

The segment of International Boulevard and East 14th Street between 42nd Avenue in Oakland and Bayfair Drive in San Leandro, referred to as SR 185, is owned and operated by Caltrans.[44] East 14th Street and Mission Boulevard from Bayfair Drive and Rose Street are under the jurisdiction of Alameda County and span the communities of Ashland and Cherryland. Mission Boulevard in Hayward, from Rose Street to south of Industrial Parkway, has been relinquished by Caltrans to the City of Hayward.[45]

San Leandro Street/San Leandro Boulevard is an arterial roadway that connects the Fruitvale, Coliseum, and San Leandro BART stations. This is a four-lane roadway with a raised median and posted speed limit of 35 mph. This segment further connects the San Leandro BART station and terminates at East 14th Street. Along the BART line, the roadway is surrounded by industrial sites, while the adjoining land-uses near East 14th Street are commercial and residential. The segment of San Leandro Boulevard, between Park Street and East 14th Street is a two-lane roadway with a center-turn lane, dedicated bike lanes, and on-street parking.


East Bay Greenway
Photo Credits: Alameda CTC

The segment between 75th Avenue and 85th Avenue features the recently completed East Bay Greenway Urban Trail (Phase II), an off-street trail facility along the BART corridor with linear park enhancements.

Major Connections (East-West)

Major connections (East-West) refer to the corridors that facilitate north-south movement further by providing east-west connections throughout the study area. These connections were identified within one-mile from the north-south running primary corridors and the projects as identified are located within this buffer area. Major connections accommodate shorter trips and provide access to BART stations and to multimodal facilities such as transportation centers and park-and-ride lots within the study area. These facilities provide important local circulation, including access to job centers and commercial districts, as well as to residential neighborhoods.

A roadway within the study area was declared a major connection if it met each of the three criteria listed below, with a couple of exceptions:[46]

[43] East 14th Street/Mission Boulevard and Fremont Boulevard Multimodal Corridor Project: https://www.alamedactc.org/programs-projects/multimodal-arterial-roads/e14th-st-mission-blvd-and-fremont-blvd-multimodal-corridor/

[44] Caltrans D4 Maps on Demand, Operating Right of Way, accessed July 28, 2022, https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=04efb9a9f14c4da2aabd9ce36b7dda48/.

[45] Caltrans District 4, SR 185 Transportation Concept Report (2013).

[46] Based on recommendations from the TAC members, we added Oak and Madison Streets, which did not meet the Functional Classification criteria, and Davis Street, which was not studied as a part of the Alameda County Active Transportation Plan.

- Designated as an arterial roadway under the California Road System (CRS) as Functional Classification
- Located within a half mile of a BART station
- Included as part of the Alameda Countywide Bicycle and Pedestrian High Injury Network

Additional major connections were identified by the Central Alameda County Comprehensive Multimodal Corridor Plan (CACCMCP) Technical Advisory Committee (TAC)[47], which consists of representatives from all partner agencies. The following roadways were identified as major connections in the study area.

Oak Street/Madison Street are local streets traversing from Lakeside Drive to 2nd Street in Oakland. Within the study area, these streets are two-lane roadways with a buffered bike lane and on-street parking on both sides of the street. Oak Street/Madison Street are one-way streets with a posted speed limit of 25 mph. The Lake Merritt BART station is located at the intersection of 8th Street and Oak Street.


Fruitvale Avenue
Photo Credits: Amanda Leahy

Fruitvale Avenue is an arterial roadway traversing from the boundary of the city of Alameda to Foothill Boulevard in Oakland. This is a two-lane roadway with on-street parking, a bike lane, and a posted speed limit of 25 mph. This street provides direct access to the Fruitvale BART station, as well as a parking lot facilitating Park and Ride for daily commuters.

High Street is a local roadway traversing from Marina Drive in Alameda to San Carlos Avenue in Oakland, facilitating east-west connectivity between the cities of Alameda and Oakland. This is a four-lane roadway with a posted speed limit of 25 mph surrounded by industrial and commercial land use. This roadway also provides direct transit connectivity to the Fruitvale BART station and provides access to I-880.

73rd Avenue/Hegenberger Road is an arterial roadway traversing from Coliseum Way to MacArthur Street in Oakland, facilitating east-west connectivity. This is a six-to-eight lane roadway with a posted speed limit of 40 mph, and it provides direct connectivity to the Oakland International Airport. The surrounding land uses include commercial, industrial, and residential neighborhoods.

Davis Street (State Route 112) runs between State Route 61 (Doolittle Drive) and State Route 185 (East 14th Street) in San Leandro. This is a four-lane roadway with a raised median, a bike lane, and posted speed limit of 30 mph. This street provides direct transit connectivity to the San Leandro BART station, which has a park and ride facility for daily commuters.

Washington Avenue is an arterial traversing north-south from West Juana Avenue to Bradrick Drive in San Leandro. This is a four-lane roadway with a posted speed limit of 35 mph, a raised

[47] Alameda CTC identified Technical Advisory Committee (TAC) members for the development of this CMCP. Members of the TAC consisted of E. 14th St./Mission Blvd, San Leandro, Alameda County, Hayward, AC Transit, Caltrans, and BART, with one additional TAC member representing the City of Oakland.

median, and a dedicated bike route. This segment connects Downtown San Leandro with San Leandro Boulevard, which is one of the primary corridors providing north-south connectivity for the study area.

Hesperian Boulevard is a north-south arterial roadway traversing from East 14th Street to Spring Lake Drive in San Leandro. This is a six-lane roadway with a raised median, dedicated bike lanes, and a posted speed limit of 35 mph from College Street to Springlake Drive and 40 mph from Springlake Drive to East 14th Street. This segment provides direct transit connectivity to the Bay Fair BART station with a parking lot facilitating Park and Ride for daily commuters. This segment is surrounded by commercial and residential land uses.

A Street is a local street traversing east-west from Walnut Street to 3rd Street in Hayward. This is a four-lane roadway with a raised median, dedicated bike lanes, and a posted speed limit of 30 mph. A Street provides direct connectivity to the Hayward BART station via Montgomery Avenue. The surrounding land uses are a mix of residential and commercial uses.

Jackson Street is an arterial roadway traversing from Santa Clara Street to Mission Boulevard in Hayward. This is a six-lane roadway with a raised median and a posted speed limit of 40 mph. This segment is surrounded by commercial and residential land uses.


Jackson Street/Downtown Hayward
Photo Credits: Google Earth

Tennyson Road is an arterial roadway from Huntwood Avenue to Mission Boulevard in Hayward, while the remaining roadway further to the east is a local street. This segment is a four-lane roadway with a raised median and bike lanes. It connects Mission Boulevard to Industrial Avenue, providing access to I-880 at a full-access interchange. This segment provides direct transit connectivity to the South Hayward BART station via Dixon Street.

Figure 3-1: CACCMCP Study Area (1 of 4)

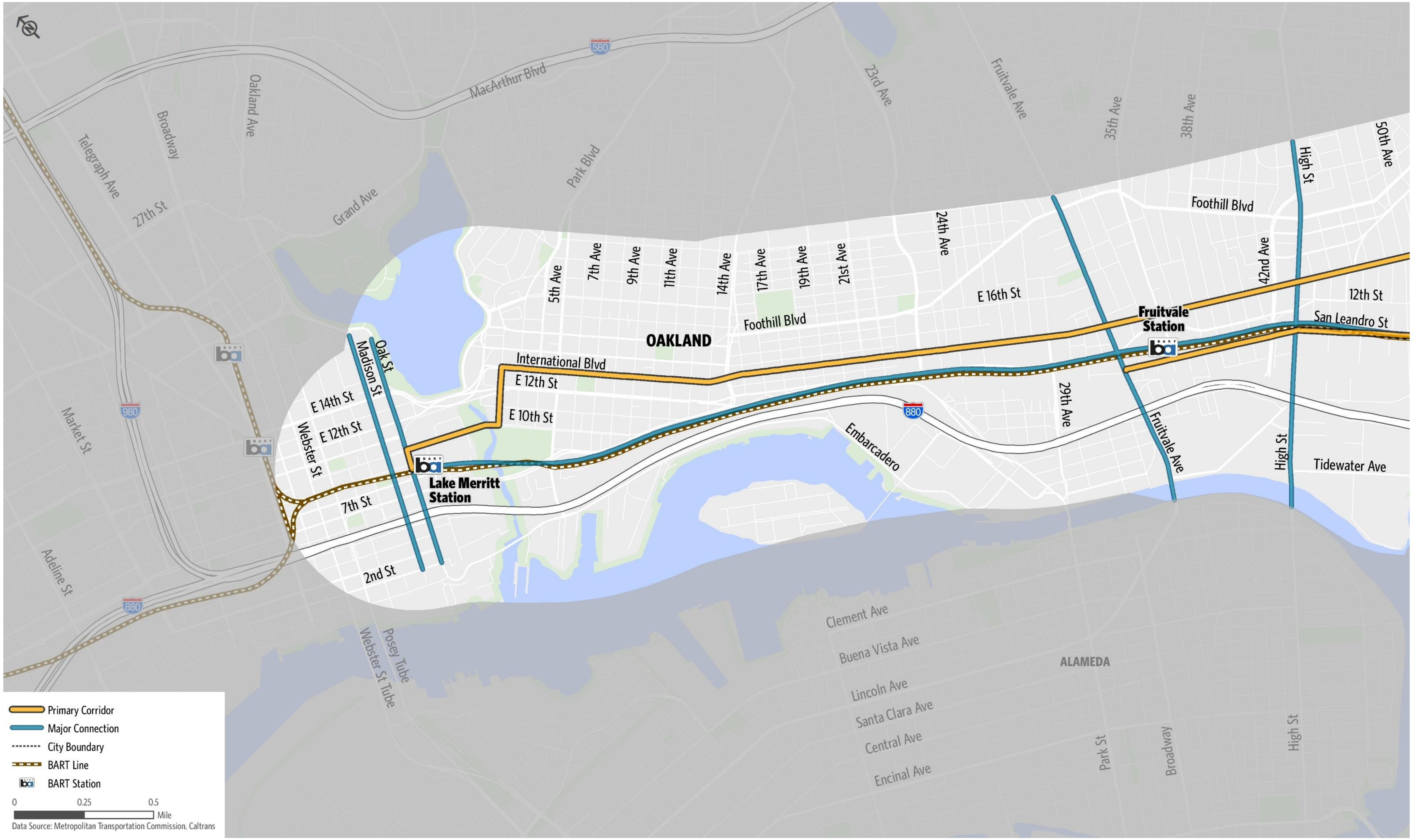


Figure 3-2: CACCMCP Study Area (2 of 4)

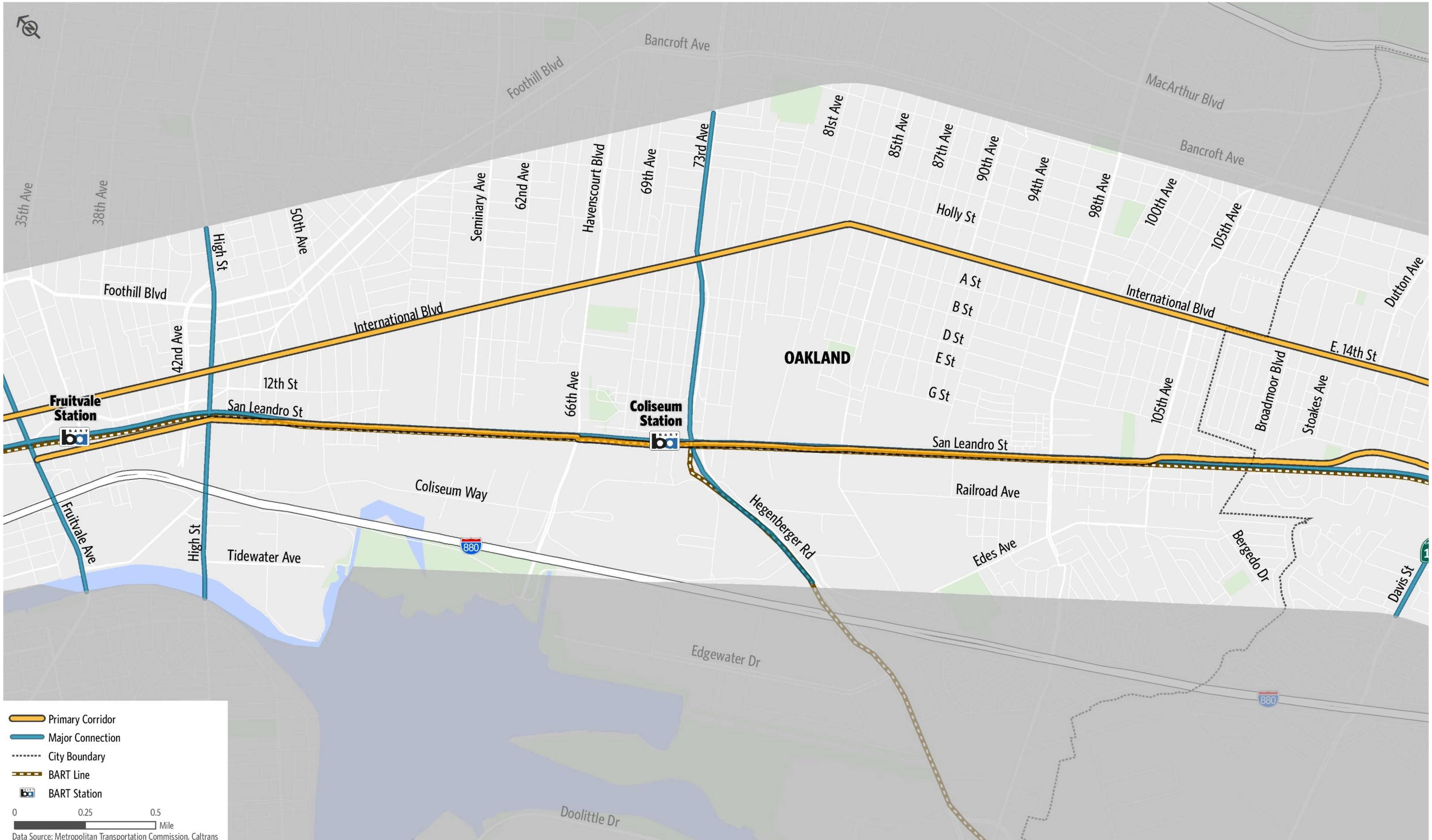
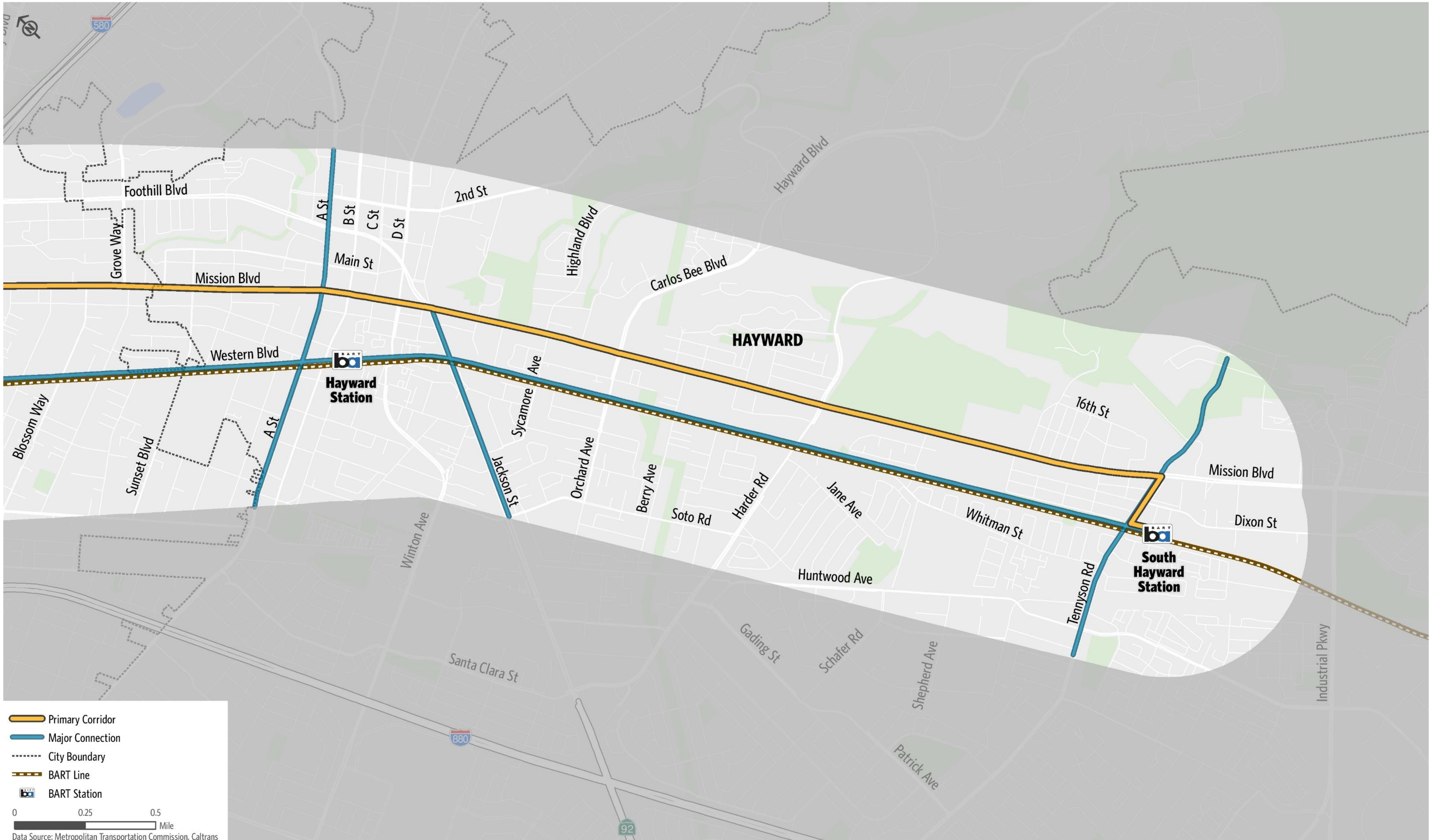


Figure 3-3: CACCMCP Study Area (3 of 4)

Figure 3-4: CACCMCP Study Area (4 of 4)



3.2 Demographics

CMCP transportation planning priorities and projects must align with the needs of the resident population and users of the area's transportation services. The following discussion highlights Alameda County and study area demographic factors relevant to CMCP development.

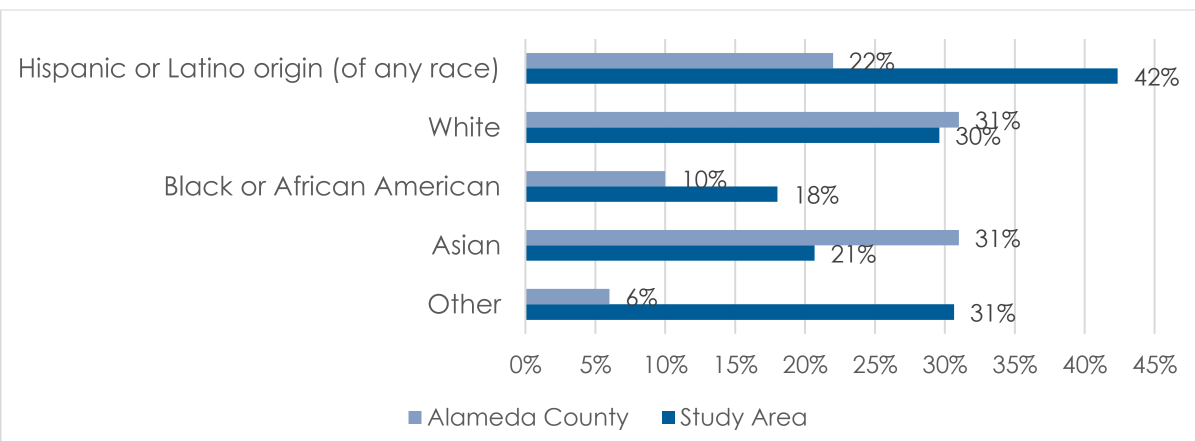
Alameda County

Alameda County has the second-largest population among Bay Area counties, estimated at 1.67 million people in 2019. As shown in **Figure 3-5**, the four largest ethnic groups in Alameda County are Asian (30.9 percent), White (30.4 percent), Hispanic or Latino (22.3 percent), and Black or African American (10.3 percent), with individuals of other or mixed-race representing six percent of the population. A large portion of the resident population is foreign-born (32 percent), and nearly half of them speak languages other than English at home (45.7 percent). In 2019, the median income in Alameda County was approximately $108,322, and slightly more than half of the households own their own home (53 percent) with an average owner-occupied household size of 2.95 persons. **Table 3-1** summarizes the demographics for Alameda County.

Study Area

The study area is 22.5 square miles and has an estimated population of 348,227 (2019), which is 21 percent of Alameda County's population. As shown in **Figure 3-5**, the study area's five largest ethnic groups by population are Hispanic or Latino (42 percent), other or mixed-race (31percent), White (30 percent), Black or African American (18 percent), and Asian (21 percent). English is the only language spoken at home in a greater portion of households (57 percent) relative to the overall county (54 percent). In 2019, the median income in the study area was lower than that of the county at approximately $64,796, however, more households owned their own home (63 percent) with an average owner-occupied household size of 3.19 persons. **Table 3-1** summarizes the demographics for the study area.

Figure 3-5: Study Area and Alameda County Population by Race



Notes: Other: Includes American Indian and Alaska Native alone, Native Hawaiian and Other Pacific Islander alone, some other race alone, and two or more races.
Sources: Data compiled from the American Community Survey (2019), accessed July 4, 2022; Kittelson & Associates, 2022.

Table 3-1: Study Area and Alameda County Demographics

Demographic	Study Area	Alameda County
Total Population	305,693	1,671,329
Speak Only English	57%	54%
Population Density (people/square mile)[1]	13,586	2,036
Number of Households	101,884	585,632
Average Household Size (Owner)	3.19	2.95
Average Household Size (Renter)	3.00	2.63
Renter-Occupied Housing Units	37%	47%
Owner-Occupied Housing Units	63%	53%
Median Household Income[2]	$64,796	$108,322

Notes:

1. Population density: Calculated from Total Population based on geographies' respective square mileage. Alameda County = 821 square miles. Study area = 22.5 square miles.
2. Median Household Income: Calculated for the study area as the weighted average (arithmetic mean) of the median household income for area census tracts.

Sources: Data compiled from the American Community Survey (2019), accessed August 5, 2022; Kittelson & Associates, 2022.

3.3 Land Use

Land use strongly influences the transportation system as well as travel behavior. Increased density tends to encourage people to utilize other modes of transportation such as walking, bicycling and using public transit.

The availability of quality alternative travel options ultimately leads to a reduction in vehicle miles traveled (VMT).[48] The land use observed within the study corridor is shown in **Figure 3-6** through **Figure 3-9** and summarized in relation to Caltrans's Smart Mobility Framework (SMF) place types.[49] SMF is a planning framework that helps guide and assess how well plans and programs meet the definition of smart mobility and is also used as a guide to inform transportation decisions. Together, they provide an understanding of the existing and future transportation planning priorities for the study area and guide the development of recommendations.

[48] California Air Pollution Control Officers Association. *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf

[49] Caltrans, *Smart Mobility Framework* (SMF), https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/active-transportation-and-complete-streets/smart-mobility-framework.

Place Types

Caltrans's SMF land-use place types are determined by three metrics: population density, transit mode share, and road density. Population density and transit mode share are defined as persons per square mile and percentage of transportation trips in the study area made by transit, respectively. Road density is calculated as the ratio of the total length of all roads to the land area within the specified area. The SMF guide identifies five place types: central cities, urban communities, suburban communities, rural areas, and protected lands and special use areas.

The Caltrans SMF Guide 2020 identifies Oakland, San Leandro, and Hayward as urban communities, whereas Ashland and Cherryland are identified as suburban communities.[50] Therefore, it is assumed that most of the corridor study area is representative of these two place types. **Table 3-2** lists and describes the place type descriptions found within the study area.

Table 3-2: Place Type Examples within the Study Area

Place Type	Place Type Description	Jurisdictions within the Study Area[51]
Urban Communities	Moderately dense places, mostly residential but with mixed-use centers. Housing is varied in density and type. Transit is available to connect neighborhoods to multiple destinations. Fine-grained network of streets with good connectivity for pedestrians and bicyclists.	Oakland, San Leandro, Hayward
Suburban Communities	Primarily lower density residential with a high proportion of detached housing. Some interspersed retail and services, but little mixing of housing with commercial uses. Street networks often have poor connectivity. Low levels of transit service, large amounts of surface parking, and inconsistent pedestrian networks.	Unincorporated communities of Ashland and Cherryland

Sources: Caltrans, *Smart Mobility Framework*; Kittelson & Associates, 2022.

Transportation Investment Recommendations

Place types help determine transportation needs. The SMF identifies transportation strategies for each place type so that a greater location efficiency can be achieved, and more smart mobility benefits can be realized in the future. **Table 3-3** lists place types in the corridor study area and identifies examples of planning considerations and transportation strategies for each place type.

[50] Caltrans, *Smart Mobility Framework Guide* (2020), 107.
[51] Caltrans, Smart Mobility Calculator, accessed June 28, 2022, https://smartmobilitycalculator.netlify.app/#.

Table 3-3: Examples of Transportation Strategies for Place Types within the Study Area

Place Type	Transportation Strategies[52]
Urban Communities	• Designate urban community locations, distinguishing those that have achieved the full range of characteristics described for centers, corridors, or neighborhoods. In these places, maintenance and enhancement of appropriate community design characteristics are the long-term goals. • Designate locations evolving to urban communities from suburban communities or rural places, identifying land use, urban design, and transportation characteristics to be introduced or developed to create centers, corridors, and neighborhoods with essential community design elements such as multimodal network connectivity, strong presence of local-serving retail and service uses, and well-integrated public facilities. • Designate locations for new development with the location-efficient features of urban communities. • Identify locations where multimodal connectivity to urban centers can be improved. • Adopt and apply performance and development standards that encourage moderate density, mixed-use infill development, such as multimodal LOS and reduced parking requirements. • Use a flexible approach to design and operations of state highways operating as Main Streets, as described in Caltrans' Main Streets, California guide. • Consider cordon pricing to manage vehicle travel demand and reduce emissions. • Address social equity and environmental justice concerns in part through equitable and comprehensive coverage and quality of transportation services.
Suburban Communities	• Improvements to network connectivity to reduce route/trip lengths and opportunities to encourage non-SOV trips • Complete street facility treatments near schools and areas with an opportunity to transition to Urban Community place types • Transit, on-demand transit, or rideshare implementation attached to employment centers where appropriate • Access management and speed management on arterial streets

Sources: Caltrans, *Smart Mobility Framework*; Kittelson & Associates, 2022.

Residential land uses (54 percent of the land area) are the most common use found in the study area. Commercial uses (16 percent of the study area) are the next most common type. The remainder of the study area consists of parks/open space, and institutional and industrial land uses. Part of the California State University, East Bay, Hayward campus lies within the study area, along with several schools. **Table 3-4** lists the land use distribution for the study area.

[52] Caltrans, *Smart Mobility Framework Guide* (2020), 111, 113.

Table 3-4: Study Area Existing Land Use

Type	Area (sq. mi.)	Area (percentage)
Residential	10.5	47%
Commercial	3.2	14%
Transportation and Utilities	3.0	13%
Parks/Open Space	2.1	9%
Industrial	1.8	8%
Education/Public/Semi-Public	0.9	4%
Mixed Use	0.9	4%
Other/Unknown	0.1	0%
Total	**22.5**	**100%**

Sources: Kittelson and Associates, 2022; MTC, 2009.
Note: Total may not sum to 100% due to rounding

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Figure 3-6: Study Area Land Use (Page 1 of 4)

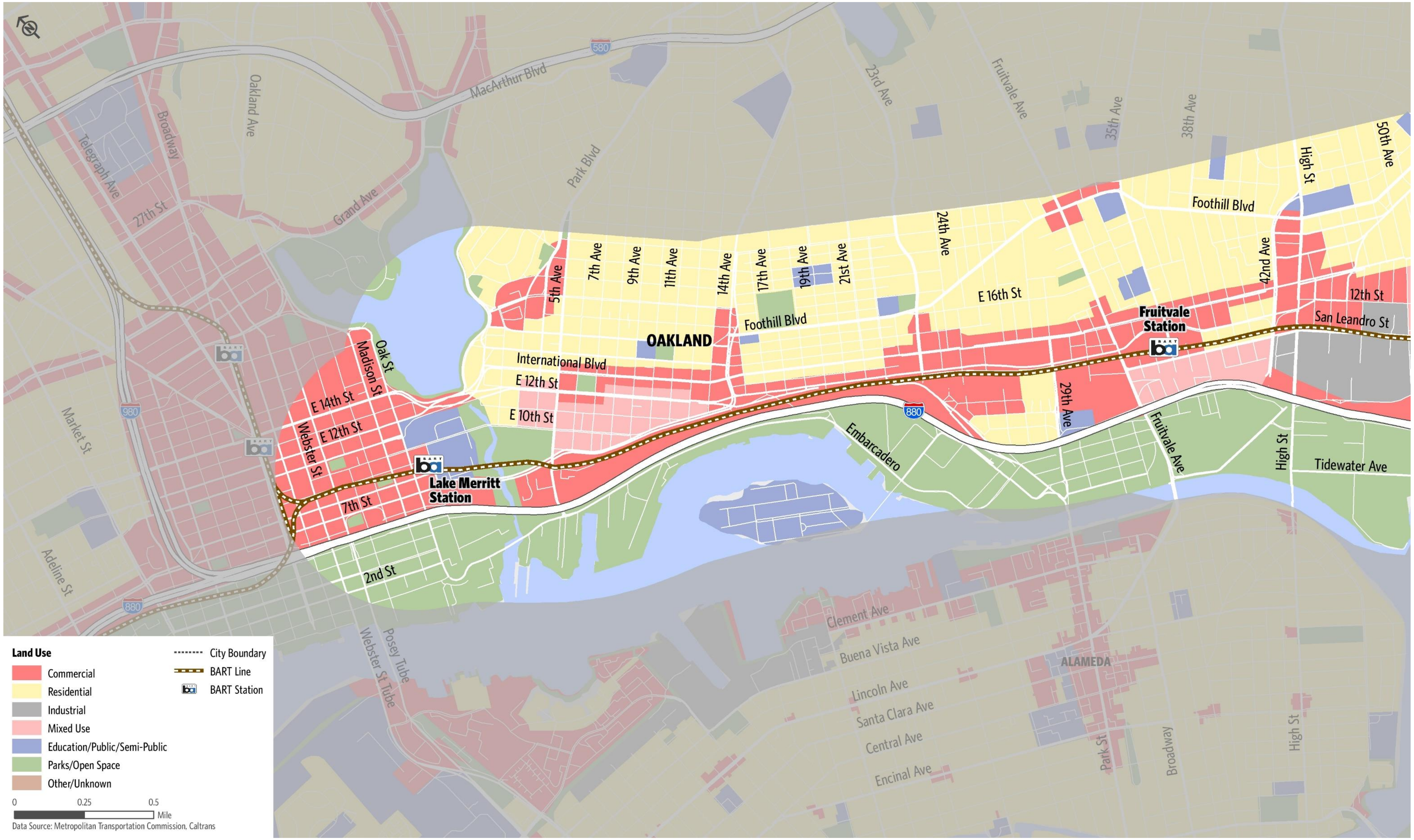


Figure 3-7: Study Area Land Use (Page 2 of 4)

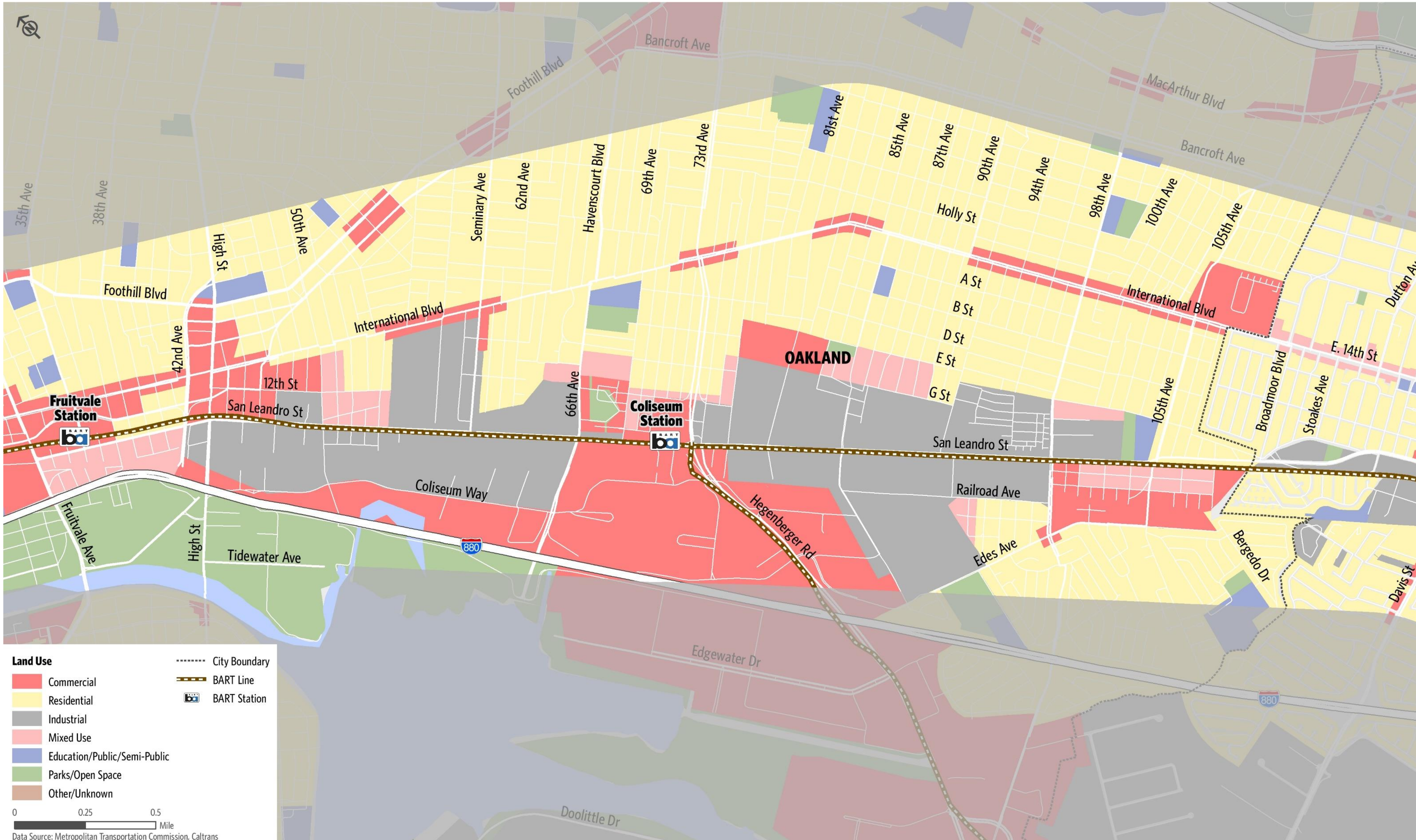


Figure 3-8: Study Area Land Use (Page 3 of 4)

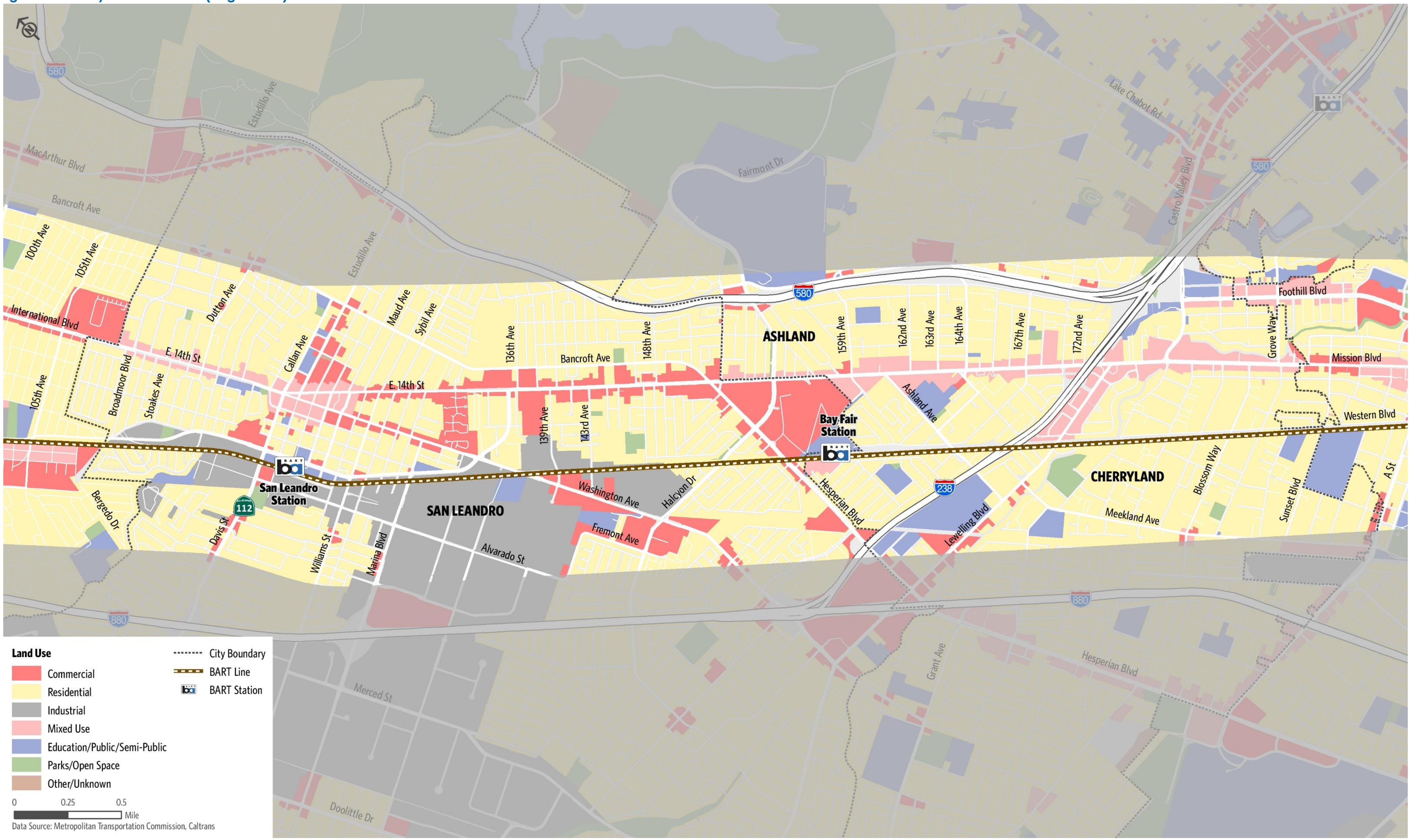
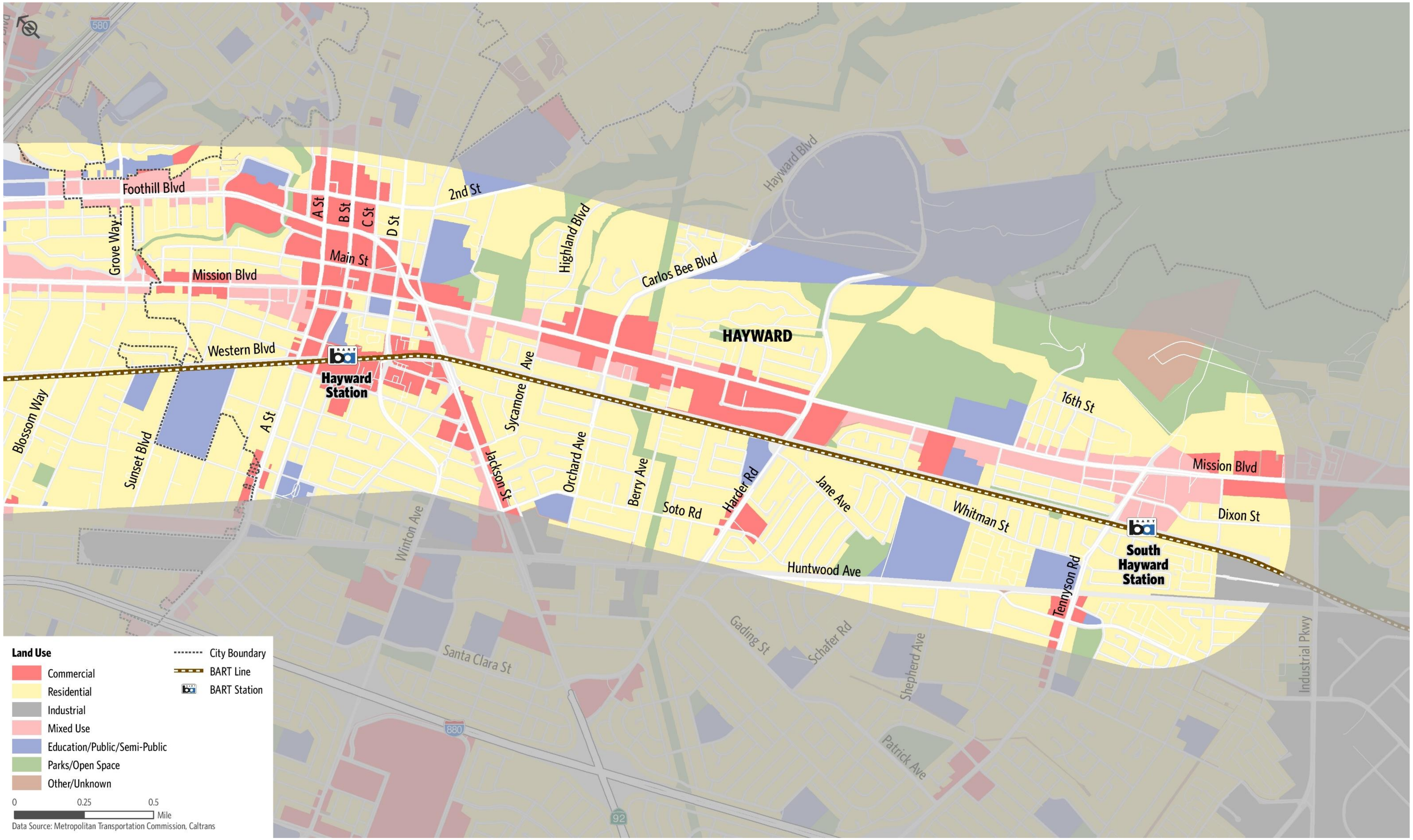


Figure 3-9: Study Area Land Use (Page 4 of 4)



3.4 Commute Patterns and Trip Generators

Central Alameda County residents have numerous options for traveling to and from work, ranging from walking or riding bicycles to using transit or carpooling as well as single occupant vehicle trips. Commute mode choice impacts road congestion levels, air pollution levels, and what types of programs and initiatives could help relieve the strain on the transportation infrastructure in the study region and Central Alameda County as a whole.

Commute Choice by Mode

As shown in **Table 3-5**, automobile travel is the dominant mode of commuting in the study area, accounting for 74 percent of commute trips. This is higher than the rates for both Alameda County and the Bay Area. Approximately 16 percent of study area residents take transit to work, which is lower than the rate for Alameda County as a whole (18 percent). For walking and biking, study area residents also tend to use these modes at slightly lower rates compared to residents in Alameda County and the Bay Area region..[53] Immediately after shelter-in place orders were issued in March 2020, total auto travel fell 30 percent while traffic delay fell 94 percent compared to just a month earlier. By the fall of 2020, traffic delay was still down about 70 percent, however total travel was down just 8 percent from before the pandemic.[54]

Table 3-5: Commute Choice by Mode

Commute Mode[1]	Study Area[2]	Alameda County[2]	Bay Area[2]
Auto[4]	74%	70%	74%
Transit	16%	18%	12%
Walk	3%	3%	4%
Bike	1%	2%	2%
Other[5]	2%	2%	2%
Work from Home	4%	7%	6%

Notes:

1. All statistics presented here are calculated by place of residence.
2. Data compiled from American Community Survey 5-Year Estimates (2019), accessed August 5, 2022.
3. Auto: Includes carpool and drive-alone vehicle trips.
4. Other: Includes motorcycle, taxicab, and other non-auto, non-transit modes.

Sources: ACS 5-Year, 2019; Kittelson & Associates, 2022.

Trip Generators

The CACCMCP study area serves local and regional travel by linking commuters to major employment centers of economic significance. **Table 3-6** provides a list of major trip generators

[53] B08141: MEANS OF TRANSPORTATION TO... - Census Bureau Table

[54] Alameda CTC. 2020 Multimodal Monitoring Report, accessed September 28, 2022, https://www.alamedactc.org/wp-content/uploads/2021/05/2020_Multimodal_Monitoring_Report.pdf

within the CACCMCP study area which includes major employers,[55] commercial centers, and educational and medical facilities. Most of the trip generators are located along East 14th Street/International Boulevard/Mission Boulevard and near the Lake Merritt BART station, Downtown San Leandro, and Hayward. Apart from the trip generators listed in the following table, there are many industrial sites and small commercial shopping centers within the study area that generate a considerable number of trips.

[55] Employment Development Department, List of Major Employers within the County of Alameda, accessed July 28, 2022, https://www.labormarketinfo.edd.ca.gov/majorer/countymajorer.asp?CountyCode=000001.

Table 3-6: Trip Generators in the Study Area

City	Oakland	San Leandro	Ashland	Cherryland	Hayward
Major Employers	• Alameda County Law Enforcement • Alameda County Sheriff's Office	• San Leandro City Hall • Alameda County Superior Court			• Hayward City Hall
Commercial Centers	• Eastmont Town Center	• Bayfair Center • Marina Square Center • Downtown San Leandro • Pelton Shopping Center • Greenhouse Marketplace • Windsor Square	• Gateway Shopping Center	• Creekside Center	• Downtown Hayward • Plaza Center Shops and Office Tower
Colleges and Universities	• Laney College • Oakland Unified School District	• Carrington College • San Leandro Unified School District	• San Lorenzo High school • Hesperian Elementary School • Edendale Middle School • Hillside Elementary School	• Cherryland Elementary School • KEY Academy Charter School	• California State University-East Bay • Hayward's Silver Oak High School • Bret Harte Middle School Hayward Campus • Hayward Public Library • Tennyson High School • Hayward Unified School District
Hospitals and Clinics	• Highland Hospital • Gladman Mental Health Rehabilitation Center	• San Leandro Hospital • Fairmont Hospital	• Kaiser Permanente Post-Acute Care Center (KPPACC)		

Source: Kittelson & Associates, 2022.

3.5 Priority Development Areas and Equity Priority Communities

Plan Bay Area 2050, adopted by the Metropolitan Transportation Commission and Association of Bay Area Governments in October 2021, is a long-range plan for the future of the nine-county San Francisco Bay Area and focuses on four key issues: economy, environment, housing, and transportation.[56] Per California Transportation Commission CMCP requirements, this CACCMCP must be consistent with the goals and objectives of Plan Bay Area 2050, including the forecasted development pattern. Therefore, CMCP projects must align with Plan Bay Area goals for reducing per-capita greenhouse gas emissions by promoting the development of compact, mixed-use residential and commercial neighborhoods near transit.

Priority Development Areas

Plan Bay Area 2050 updated the designation of Priority Development Areas (PDAs) in line with the revised regional growth framework.[57] PDAs are areas within existing communities that local city or county governments have identified and approved for future housing and job growth due to the existence of public transit infrastructure. Development in such areas makes the most of public investments and limits development impacts on communities and the environment. PDAs are shown in **Figure 3-10** through **Figure 3-13**. **Table 3-7** shows the amount of land area in transit rich PDAs by jurisdiction within the CACCMCP study area.

Table 3-7: Priority Development Areas and Priority Production Areas

Jurisdiction	Transit Rich PDA within Study Area Land Area (sq. mi.)	Priority Production Areas within the Study Area Land Area (sq. mi.)
Oakland	8.45	0
San Leandro	1.30	0.52
Ashland	0.94	0
Cherryland	0.43	0
Hayward	0.86	0

Source: MTC, Priority Development Areas, 2022.

Priority Production Areas

Plan Bay Area 2050 debuted Priority Production Areas (PPAs) as a new growth geography.[58] PPAs, also shown in **Figure 3-10** through **Figure 3-13**, are clusters of industrial businesses prioritized for economic development investments and protection from competing land uses. These districts are already well-served by the region's goods movement network. Typical businesses in

[56] Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), Plan Bay Area 2050, accessed July 4, 2022, p. vi, https://www.planbayarea.org/finalplan2050.

[57] MTC, Priority Development Areas, accessed July 11, 2022, https://mtc.ca.gov/planning/land-use/priority-development-areas-pdas.

[58] MTC, Priority Production Areas, accessed July 4, 2022, https://mtc.ca.gov/planning/land-use/priority-production-areas-ppas.

PPAs include manufacturing, distribution, warehousing, and supply chains. PPAs are nominated by local governments and adopted by Association of Bay Area Governments (ABAG). PPAs must be zoned for industrial use or have predominantly industrial uses, located outside of Priority Development Areas and other areas within walking distance of a major rail commute hub, and located in jurisdictions with a certified housing element. The study area is in proximity to the Airport PPA which encompasses the Oakland International Airport and industrial areas west and east of I-880.[59] **Table 3-7** shows the amount of land area in PPA by jurisdiction within the CACCMCP study area. The only PPA area is in San Leandro southwest of BART line and Marina Boulevard.

Priority Conservation Areas

Plan Bay Area 2050 features another growth geography of consequence to the study area - Priority Conservation Areas (PCAs). Also shown in **Figure 3-10** through **Figure 3-13** these are regionally significant open spaces which have broad agreement for long-term protection. These are lands that are being pressured by urban development, among other factors, and are supported through local government consensus. PCAs are categorized by four designations related to the Bay Area's natural systems, rural economy and the health of all residents: natural landscapes, agricultural lands, urban greening, and regional recreation.[60]

The study area includes multiple PCAs located within the CACCMCP study area[61] [62]:

1. Oakland Priority Estuaries, Oakland
2. East Bay Greenway, Oakland
3. Oakland Urban Greening, Oakland
4. Oakland Priority Creeks, Oakland

[59] MTC, Priority Production Areas (Plan Bay Area 2050), accessed June 30, 2022, https://opendata.mtc.ca.gov/datasets/priority-production-areas-current/explore?location=37.795635percent2C-122.167933percent2C9.81.

[60] MTC, Priority Conservation Areas, accessed July 4, 2022, https://abag.ca.gov/our-work/land-use/pca-priority-conservation-areas.

[61] ABAG, Plan Bay Area Priority Conservation Areas in Alameda County, accessed January 12, 2022, https://abag.ca.gov/sites/default/files/alameda_pcas_11x17.pdf.

[62] MTC, Priority Conservation Areas Points (Plan Bay Area 2050), accessed June 30, 2022, https://opendata.mtc.ca.gov/datasets/priority-conservation-areas-points-plan-bay-area-2050/explore?location=37.812615percent2C-122.272123percent2C12.13.

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Figure 3-10: Priority Development, Production, and Conservation Areas (Page 1 of 4)

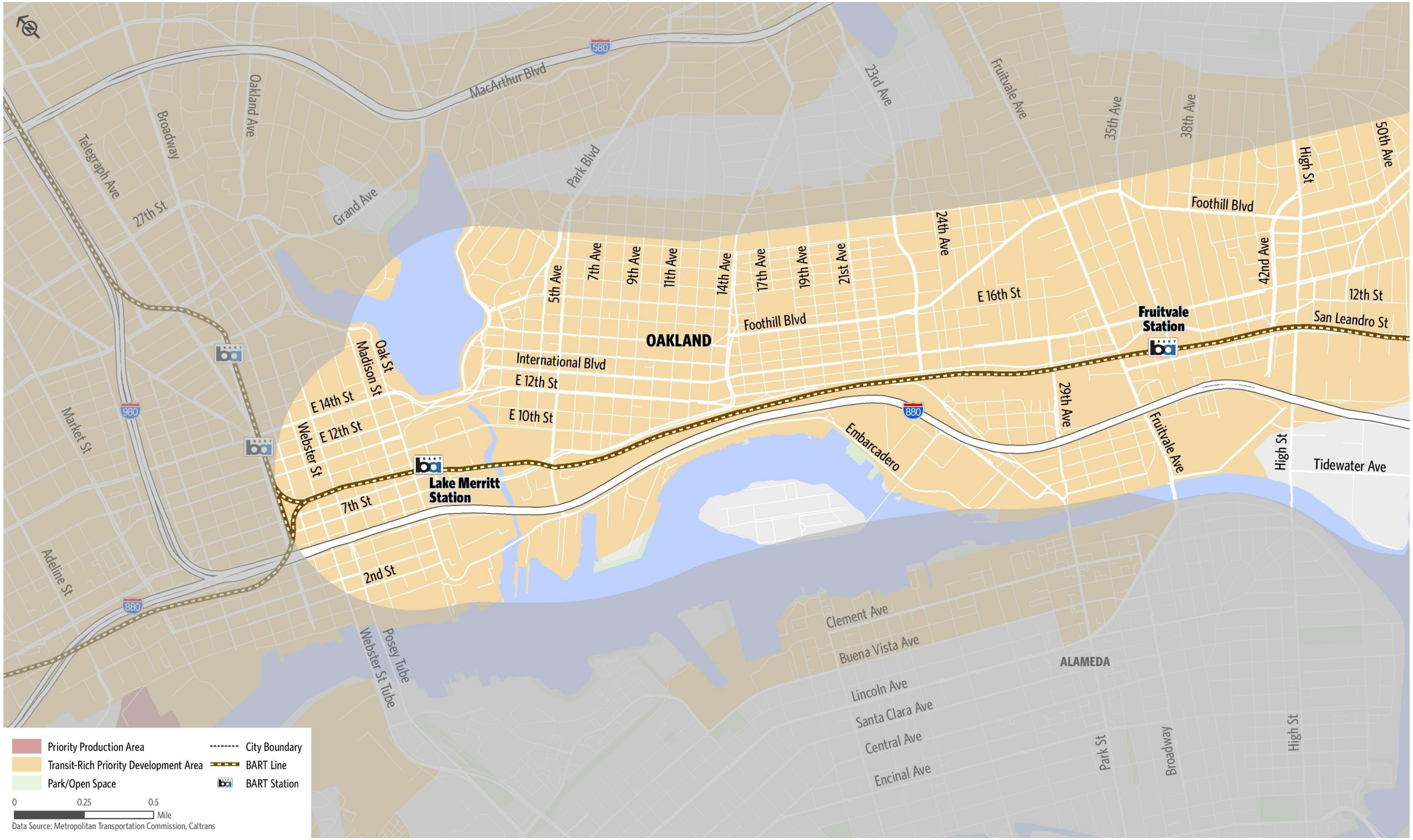


Figure 3-11: Priority Development, Production, and Conservation Areas (Page 2 of 4)

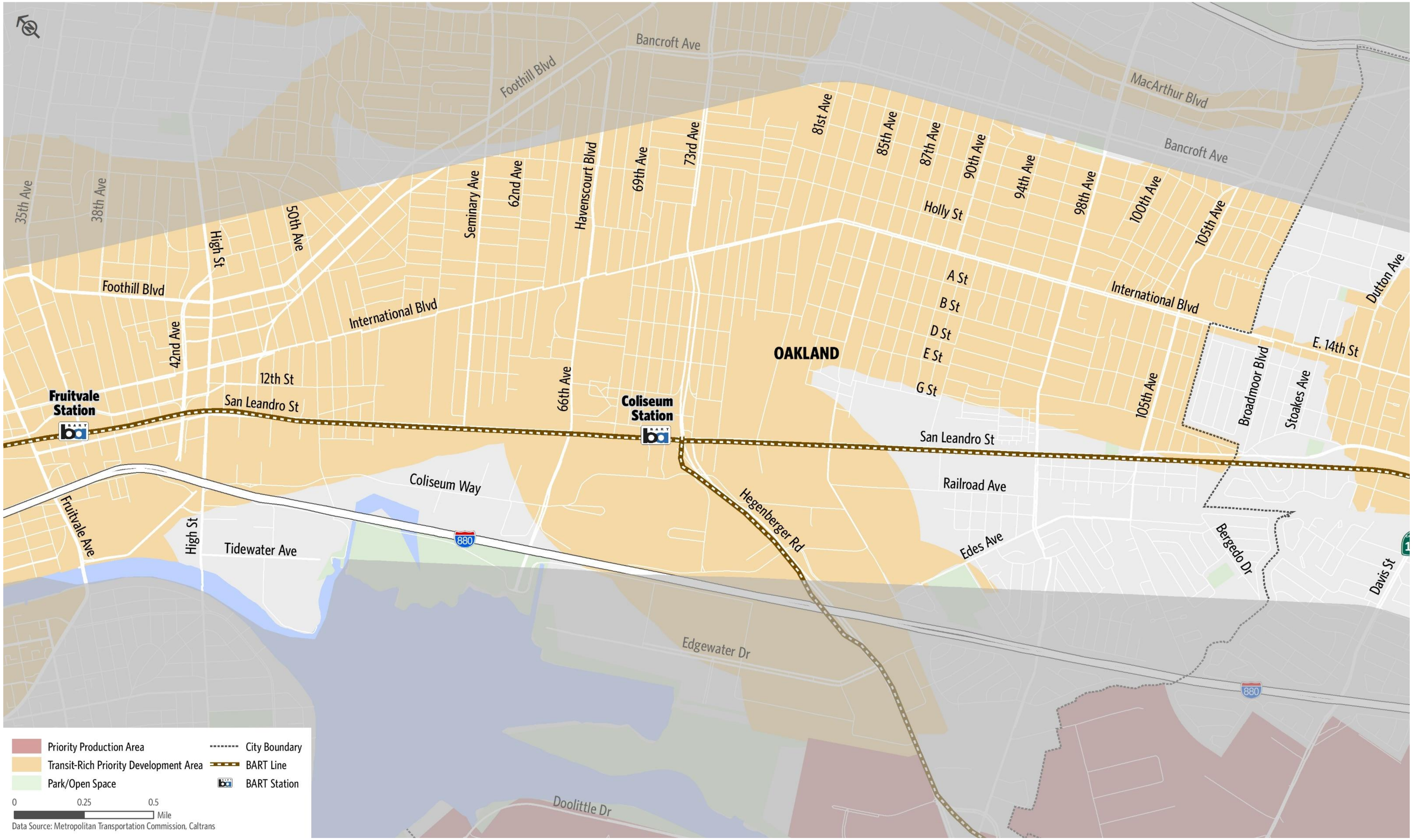


Figure 3-12: Priority Development, Production, and Conservation Areas (Page 3 of 4)

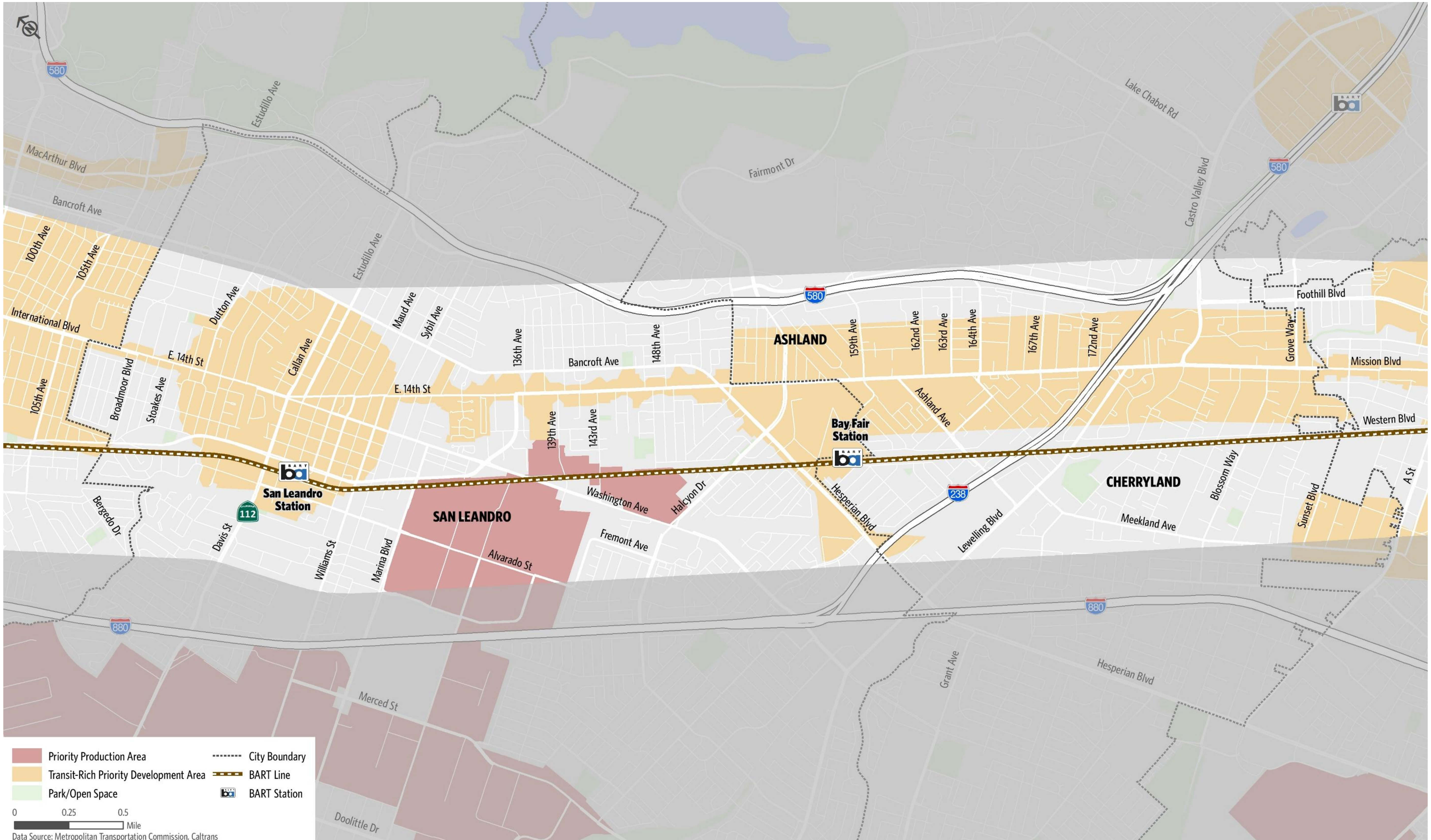


Figure 3-13: Priority Development, Production, and Conservation Areas (Page 4 of 4)

Equity Priority Communities

Plan Bay Area 2050 identifies Equity Priority Communities (EPCs), formerly called "Communities of Concern," which are census tracts that have a significant concentration of underserved populations, such as households with low incomes and people of color. EPCs are identified based on the concentration of the census tract population meeting the following demographic factors: [63]

- People of Color (70 percent threshold)
- Low-Income (28 percent threshold)
- Limited English Proficiency (12 percent threshold)
- Seniors 75 Years and Over (8 percent threshold)
- Zero-Vehicle Households (15 percent threshold)
- Single Parent Families (18 percent threshold)
- People with a Disability (12 percent threshold)
- Rent-Burdened Households (14 percent threshold)

A census tract is identified as an EPC if it exceeds both threshold values for Low-Income and People of Color, or if the tract meets or exceeds the threshold value for Low-Income and exceeds the threshold values for three or more of the remaining factors.

Since 2001, MTC has used data from the American Community Survey to identify communities (i.e., census tracts) that historically may have faced disadvantage and underinvestment due to their background or socioeconomic status. MTC then directs funding towards these communities to help ensure that historically underserved communities have equitable access to housing and transportation that is within reach of jobs, services, and amenities. There are numerous EPCs within the study area, including Oakland within the study area border, and areas within San Leandro, Cherryland, Ashland and Hayward. **Table 3-8** provides information about the population and land area with the EPCs.

Table 3-8: EPCs in the Study Area

Jurisdiction	Land Area within the EPCs (sq. mi)
Oakland	9.43
San Leandro	2.87
Ashland	0.78
Cherryland	0.96
Hayward	2.95
Total	**16.99**

[63] MTC, MTC Plan Bay Area 2050 Equity Priority Communities, accessed July 4, 2022, https://bayareametro.github.io/Spatial-Analysis-Mapping-Projects/Project-Documentation/Equity-Priority-Communities/#equity-priority-communities-framework-plan-bay-area-2050.

Disadvantaged Communities

Additional analysis has been conducted to identify Disadvantaged Communities (DACs) via CalEnviroScreen 4.0,[64] a screening methodology used to identify communities burdened by multiple sources of pollution. The tool utilizes various sources of data as shown below to determine the level of risk to a community:

- Pollution Burden – Exposure Indicators: presence of ozone, fine particulate matter (PM2.5), diesel emissions, drinking water contaminants, children's lead risk from housing, pesticide use, toxic releases from facilities, and traffic impacts.
- Pollution Burden – Environmental Effects Indicators: presence of environmental cleanup sites, groundwater quality threats, hazardous waste generators and facilities, pollution-impaired water bodies, and solid waste sites and facilities.
- Population Characteristics – Sensitive Population Indicators: asthma, cardiovascular disease, and low birth weight infants.
- Population Characteristics – Socioeconomic Factor Indicators: educational attainment, housing-burdened low-income households, linguistic isolation, poverty and unemployment.

Table 3-9 provides information about the population and land area within the CACCMCP study area with disadvantaged communities.

Table 3-9: DACs in the Study Area

Jurisdiction	Land Area within the DACs (sq. mi.)
Oakland	6.52
San Leandro	0.30
Ashland	0
Cherryland	0
Hayward	0
Total	**6.82**

EPCs and DACs in the study area are displayed in **Figure 3-14** through **Figure 3-17,** which show significant overlap of high pollution burden in EPCs.

[64] California Office of Environmental Health Hazard Assessment, SB 535 CalEnviroScreen, https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40, accessed on June 29th, 2022.

Figure 3-14: Equity Priority Communities/Disadvantaged Communities (Page 1 of 4)

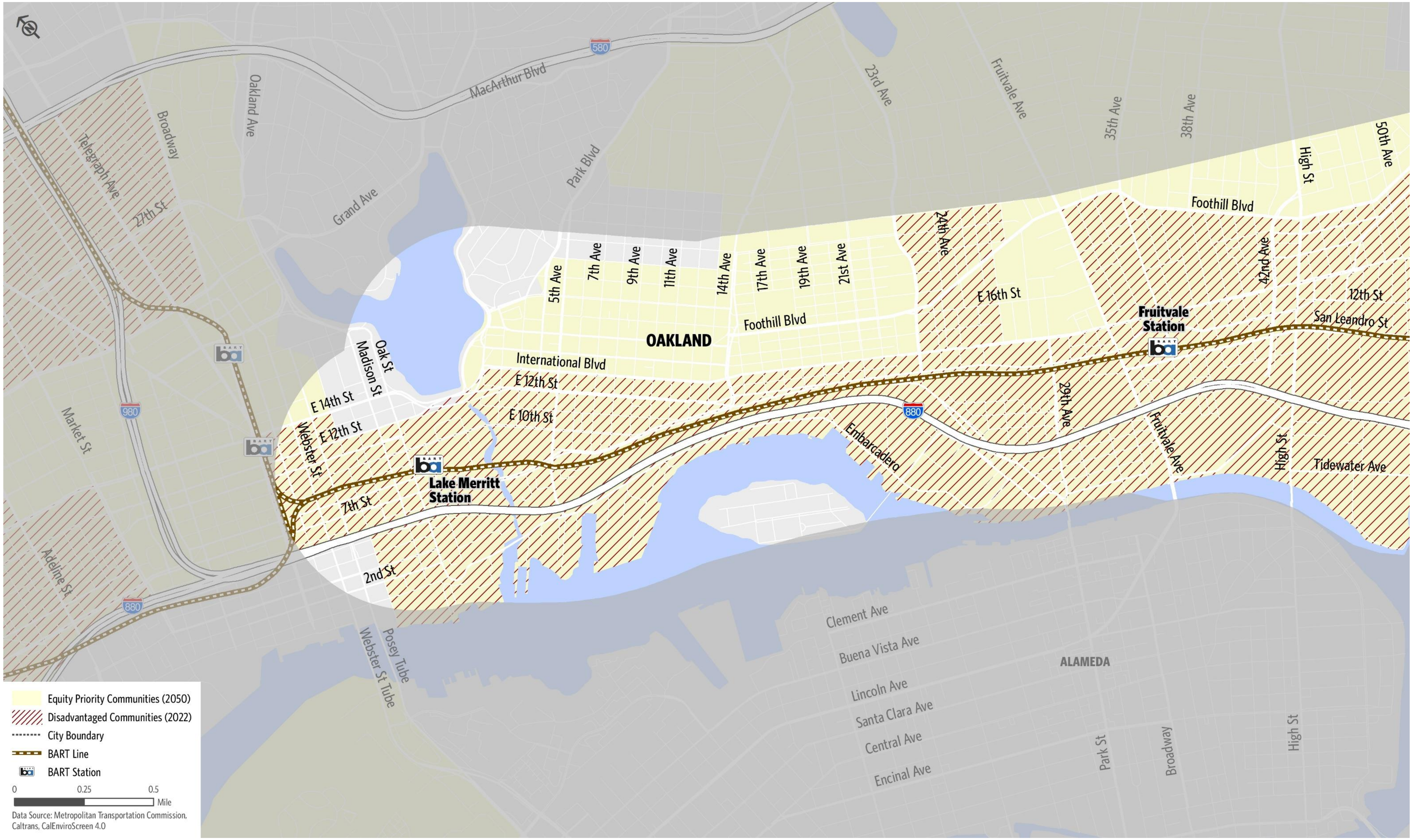


Figure 3-15: Equity Priority Communities/Disadvantaged Communities (Page 2 of 4)

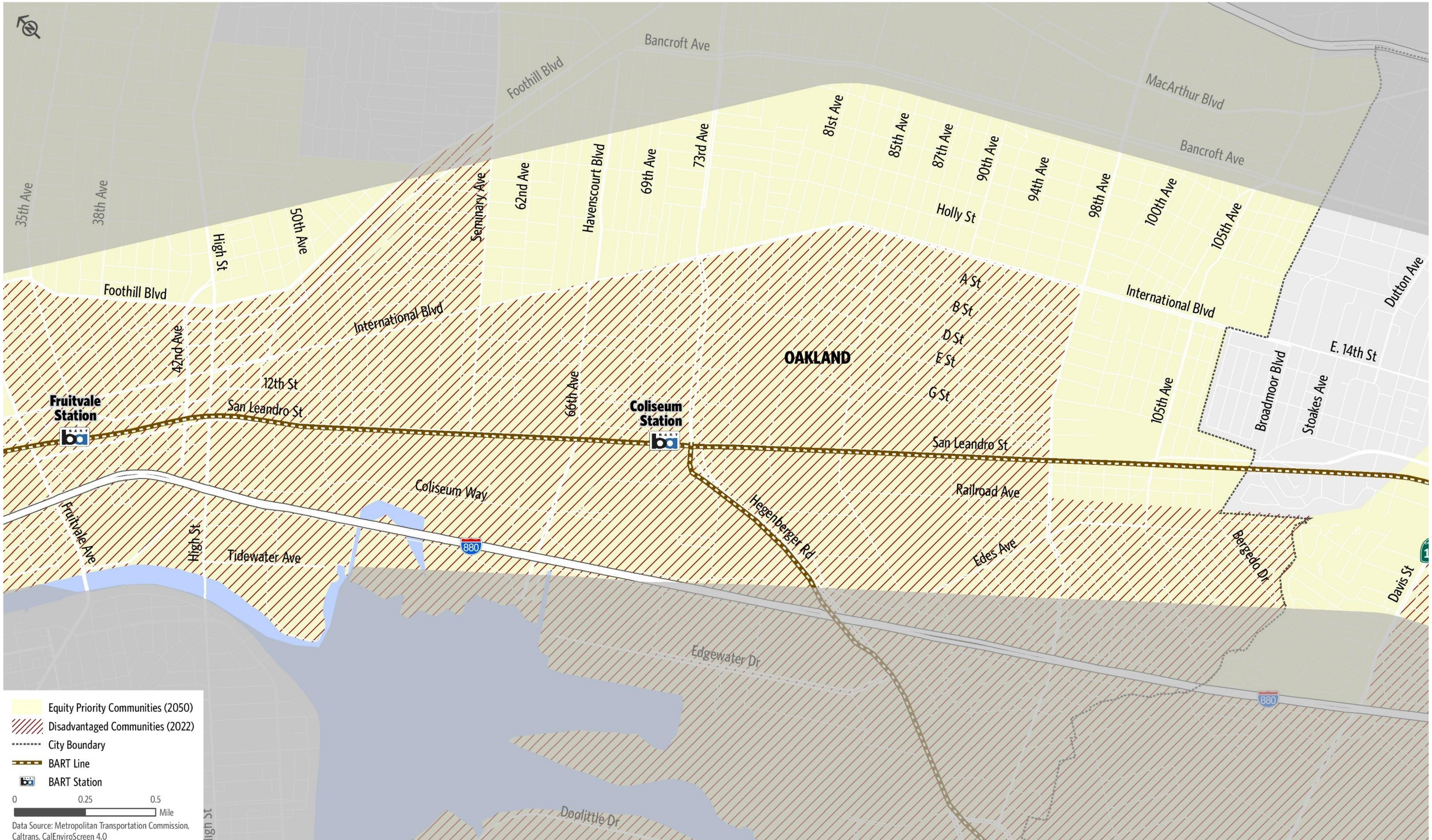


Figure 3-16: Equity Priority Communities/Disadvantaged Communities (Page 3 of 4)

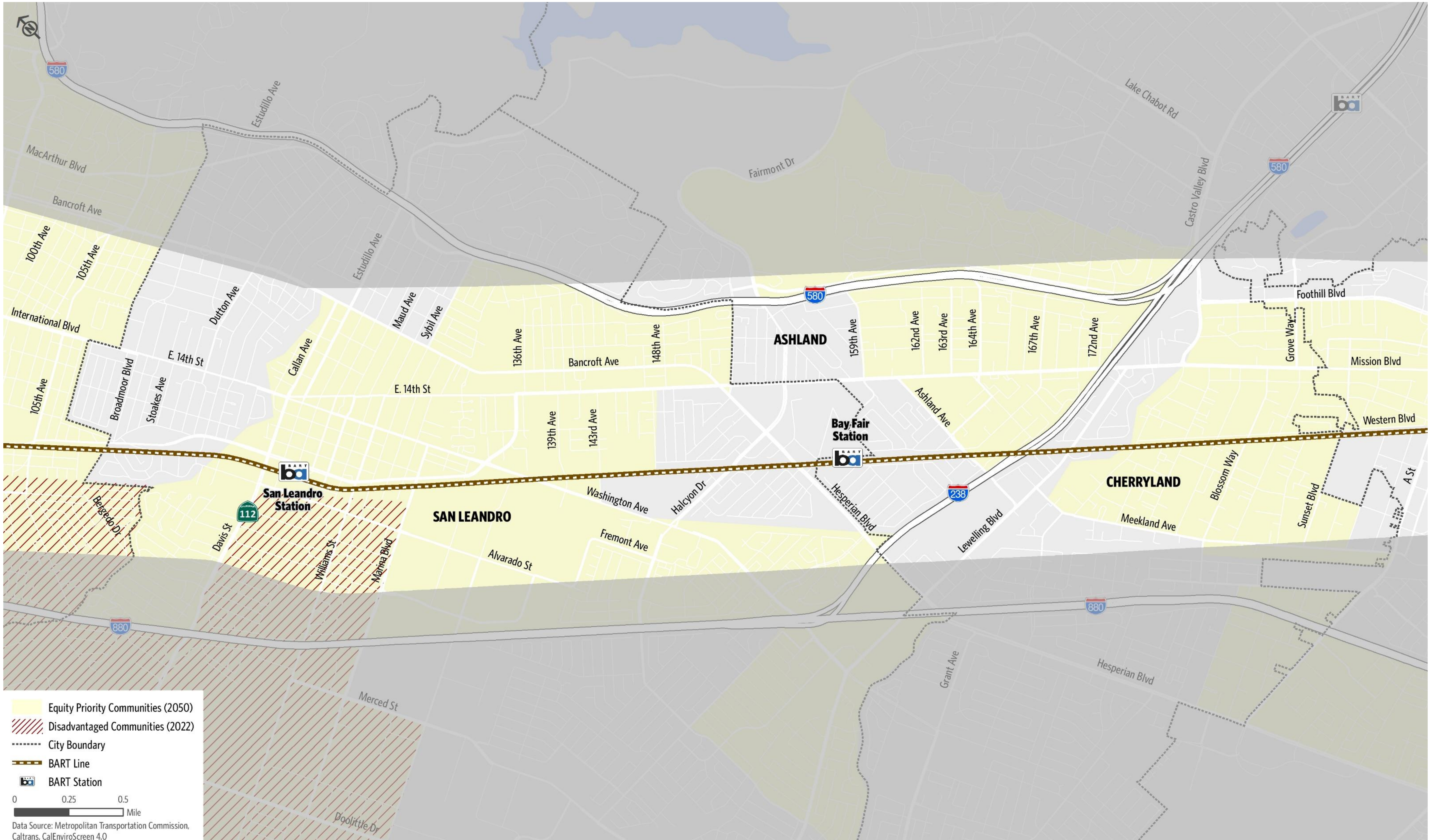


Figure 3-17: Equity Priority Communities/Disadvantaged Communities (Page 4 of 4)

3.6 Environmental Considerations

Environmental factors, particularly effects of climate change, are important considerations in the development of the CACCMCP projects. This environmental scan provides high-level identification of select environmental considerations present within the study area.

Environmental Considerations

Table 3-10 summarizes key environmental considerations within the CACCMCP study area with factors categorized based on a scale of a Low-Medium-High probability of the study area experiencing a given issue. Environmental factors may require future analysis in the project development process and may significantly affect project cost and schedule. For the purposes of the CACCMCP, important environmental considerations for project funding include "mitigation," restoration costs, and protection of critical habitats and open space.

A portion of the I-880 corridor is located in the low-lying tidal lands near Embarcadero where it meets the San Francisco Bay Shoreline. Additionally, the I-880 segment between Oak Street and 5th Avenue is in the vicinity of the tributaries, marshlands, and wetlands leading to Lake Merritt in Oakland.

Potential Section 4(f) lands in the study area include parks and recreational areas, publicly owned wildlife and waterfowl refuges, and historic sites of national, state, or local significance.[65] Lake Merritt -Oakland Estuary Channel is an example of a protected area near the I-880 freeway. Other notable lands include Arroyo Viejo Park and Hayward Library Park. Impacts on these locations should be a consideration during operational activities and/or design and construction of transportation projects within the segment.

Table 3-10: Environmental Considerations for the Study Area

	Study Segment		
Environmental Factors	**SR-185**	**I-880**	**I-238**
Section 4(f) Land[66]	Low	Low	Low
Farm/Timberland[67]	No	No	No
Floodplain[68]	100-year	100-year	100-year
Climate Change/Sea Level Rise	Low-Med	Low-Med	Low
Waters and Wetlands	Low	Low	Low

[65] California Protected Areas Database (CPAD), accessed December 29, 2021, http://www.calands.org.
[66] California Department of Fish and Wildlife (CDFW), Biogeographic Information and Observation System (BIOS) Viewer – CDFW Owned and Operated Lands and Conservation Easements, accessed December 29, 2021, https://apps.wildlife.ca.gov/bios/.
[67] California Department of Conservation, California Important Farmland Finder, accessed December 29, 2021, https://maps.conservation.ca.gov/DLRP/CIFF/.
[68] CDFW, BIOS Viewer – NFHL 1percent (100 year) Flood, accessed December 29, 2021.

Air Quality

In Alameda County, ozone and fine particle pollution, or PM2.5, are the major regional air pollutants of concern. For much of the study area, ozone rarely exceeds health standards because the area is near the San Francisco Bay which keeps temperature levels below those conducive to ozone formation. PM2.5 is a more significant issue due to cool temperatures, industrial activity at and adjacent to the Port of Oakland, and the presence of wood smoke.[69]

Ozone concentrations are a function of the quantity and spatial distribution of ozone precursor (ROG and NOx) emissions, the ratio of ROG to NOx, meteorological conditions (e.g., temperature, wind speed and direction, etc.), and other factors. Since temperatures over 80°F are typically required for its formation, the CACCMCP study area ozone season tends to run from April to October. During these months, there are roughly 94 days over 80°F, increasing the threat of ozone.[70]

Air quality in the region has improved significantly over the past four decades, but transportation emissions still result in ozone and particulate levels that exceed state and federal standards.[71] From 2003 to 2014, Oakland and surrounding areas succeeded in meeting both targets for annual and 24-hour PM2.5. More recently, however, PM2.5 levels have been increasing. Aside from typical automobile and industrial emissions, Oakland and surrounding areas are also affected by the unpredictable wildfires, which have become increasingly frequent and severe.

Several factors make it difficult to predict when the Bay Area will attain state and national ambient ozone standards[72]:

- Emissions of ozone precursors are projected to continue decreasing in response to existing Air District and Air Resources Board (ARB) regulations and programs. However, it is difficult to predict future emissions with precision.
- Normal fluctuations in weather cause ozone levels to vary from year to year.
- Higher temperatures related to climate change may cause increased ozone formation in future years.
- Wildfires and other hazardous events that could increase in ozone formation

For the Bay Area to fully attain state and national standards, the region must continue its efforts to further reduce emissions of ozone precursors. The efforts may include encouraging walking, bicycling and transit use, that will reduce emissions of ROG and NO_x. The main sources of ROG emissions in the Bay Area are motor vehicles (23 percent) and other mobile sources (19 percent), as well as evaporation of petroleum and solvents (26 percent). The main sources of NOx emissions in the region are motor vehicles (43 percent) and other mobile sources (41 percent), as well as combustion at industrial and other facilities. More information on Air Quality is provided in Chapter 5.

[69] Bay Area Air Quality Management District, Alameda County, accessed July 4, 2022, https://www.baaqmd.gov/about-the-air-district/in-your-community/alameda-county.
[70] Air Quality in Oakland, accessed September 28, 2022, https://www.iqair.com/us/usa/california/oakland
[71] Bay Area Air Quality Management District, Clean Air Plan (2017).
[72] Nonattainment Areas for Criteria Pollutants. https://www.epa.gov/green-book

Sea Level Rise

The CACCMCP study area includes Lake Merritt Estuary and Tidal Canal, which are vulnerable to the effects of rising sea levels. Current projections published by the Ocean Protection Council in 2018 suggest that sea levels at the San Francisco tide gauge could rise by 1.9 feet by 2050 and 6.9 feet by 2100.[73] The segment of I-880 near the Lake Merritt Estuary is elevated and unlikely to be impacted by sea level rise.

The Caltrans D4 Adaptation Priority Report identifies vulnerable assets statewide based on asset classes, namely, at-grade roadways, bridges, large culverts and small culverts. Below is a list of the identified assets in the study area:

- At-grade roadways: Segments of I-880 between Lake Merritt and 29th Avenue and I-880 between 42nd Avenue and Davis Street (SR 112)Bridges: Bridges along I-880 between Oakland and Hayward. The bridge structure over San Leandro Creek and Union Pacific rail line has been identified in the list of California's 25 most traveled bridges that are rated "structurally deficient"[74]

Additional sea level rise mapping data from the Bay Conservation and Development Commission (BCDC) suggests transportation operations throughout the study area will not be impacted by sea level rise by 2050. **Figure 3-18** through **Figure 3-21** illustrates the impacts of sea level rise in the study area.

Sea level rise is perhaps the best documented and most accepted impact of climate change, which can be directly tied to increased levels of greenhouse gas (GHG) emissions, and therefore, transportation operations. The Governor's Executive Order B-30-15 (April 29, 2015) has directed state agencies to reduce GHG emissions 40 percent below 1990s levels by 2030. Caltrans is seeking to partner with local and regional stakeholders to address climate change by adjusting operations on the State Highway System (SHS) and local streets and roads to reduce GHG emissions.[75]

Temperature

Temperature rise is an important facet of climate change. Summer temperatures are projected to continue rising, and a reduction of soil moisture, which exacerbates heat waves, is projected for much of California. Materials like pavement can be deteriorated by exposure to high temperatures. The Caltrans Vulnerability Assessment Report[76] analyzed changes in the average minimum temperature for the years 2025, 2050, and 2085. Under a high-emissions scenario

[73] California Ocean Protection Council, State of California Sea-Level Rise Guidance, 2018, accessed July 4, 2022, http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf.

[74] California Highways. Interstate I-880, accessed from https://www.cahighways.org/ROUTE880.html

[75] Governor Brown Executive Order Greenhouse Gas Reduction Target (April 29, 2015), accessed July 4, 2022,
https://www.ca.gov/archive/gov39/2015/04/29/news18938/index.html.

[76] Caltrans, & WSP, *Caltrans Climate Change Vulnerability Assessments: District 4* (2018), 1-73, Tech., accessed July 4, 2022, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/2019-climate-change-vulnerability-assessments/ada-remediated/d4-summary-report-a11y.pdf

Representative Concentration Pathways (RCP) 8.5[77], Alameda County is expected to see an increase of up to 3.9 degrees Fahrenheit by 2025 and up to 5.9 degrees Fahrenheit by 2055 compared to the 1990 base year temperatures. By 2085, Alameda County could see an increase of 6 to 9.9 degrees Fahrenheit. This indicates that increasing temperatures would need to be considered as a part of pavement design for any projects planned for the study area, and more frequent maintenance of the existing pavement facilities may be needed.

The consideration of climate change effects can differ for pavement design when compared to other Caltrans assets. Many assets, including roadways, bridges, and culverts will likely be in place for many decades or longer than asphalt pavement. Asphalt pavement is replaced approximately every 20-25 years, or sooner if quality degrades more rapidly depending on the traffic type and volumes.

Precipitation

Increasing temperatures are expected to result in changing precipitation events due to an increase in energy and moisture in the atmosphere. Increased precipitation levels, combined with other changes in land use and land cover, can increase the risk of damage or loss from flooding. Transportation assets in California are affected by precipitation in a variety of ways, such as inundation/flooding due to heavy rainfall events, landslides and washouts, or structural damage from heavy rain events. Many of these impacts may lead to disruptions of key transportation infrastructure and services.

The Caltrans District 4 Vulnerability Assessment Report used RCP 8.5 to analyze a 100-year storm event, defined as a storm event that has a 1 percent annual chance of occurring in any given year. Most of Alameda County is expected to see a zero to 4.9 percent increase in precipitation by 2025. The primary concern regarding transportation assets is not the overall volume of rainfall observed over an extended period, but rather the expectation of changing future conditions for heavy precipitation and the potential for increasing damage to the State Transportation Network. The impact of changing precipitation events highlights the need for resilient design, regular monitoring, and maintenance.

[77] The IPCC represents future conditions through a set of Representative Concentration Pathways (RCPs) that reflect four separate scenarios of changes in greenhouse gas emission concentrations given different global economic forces and/or government policies. These RCPs include four scenarios – RCP 2.6, RCP 4.5, RCP 6.0 and RCP 8.5 – which assume that emissions would start to decline in the near term, by 2040, by 2080, or will continue unabated to the end of the century.

Figure 3-18: Potential Impacts of Sea Level Rise (Page 1 of 4)

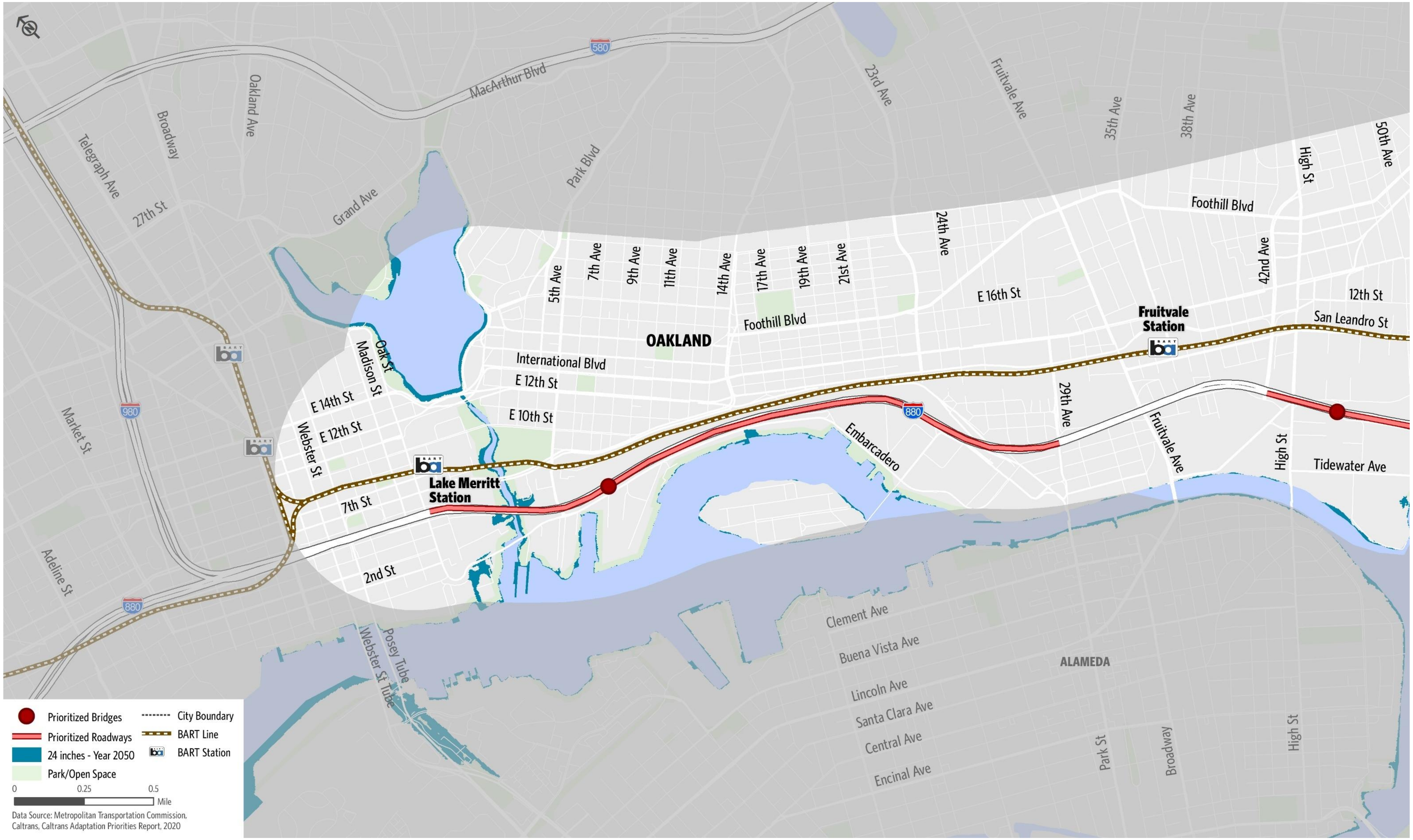


Figure 3-19: Potential Impacts of Sea Level Rise (Page 2 of 4)

Figure 3-20: Potential Impacts of Sea Level Rise (Page 3 of 4)

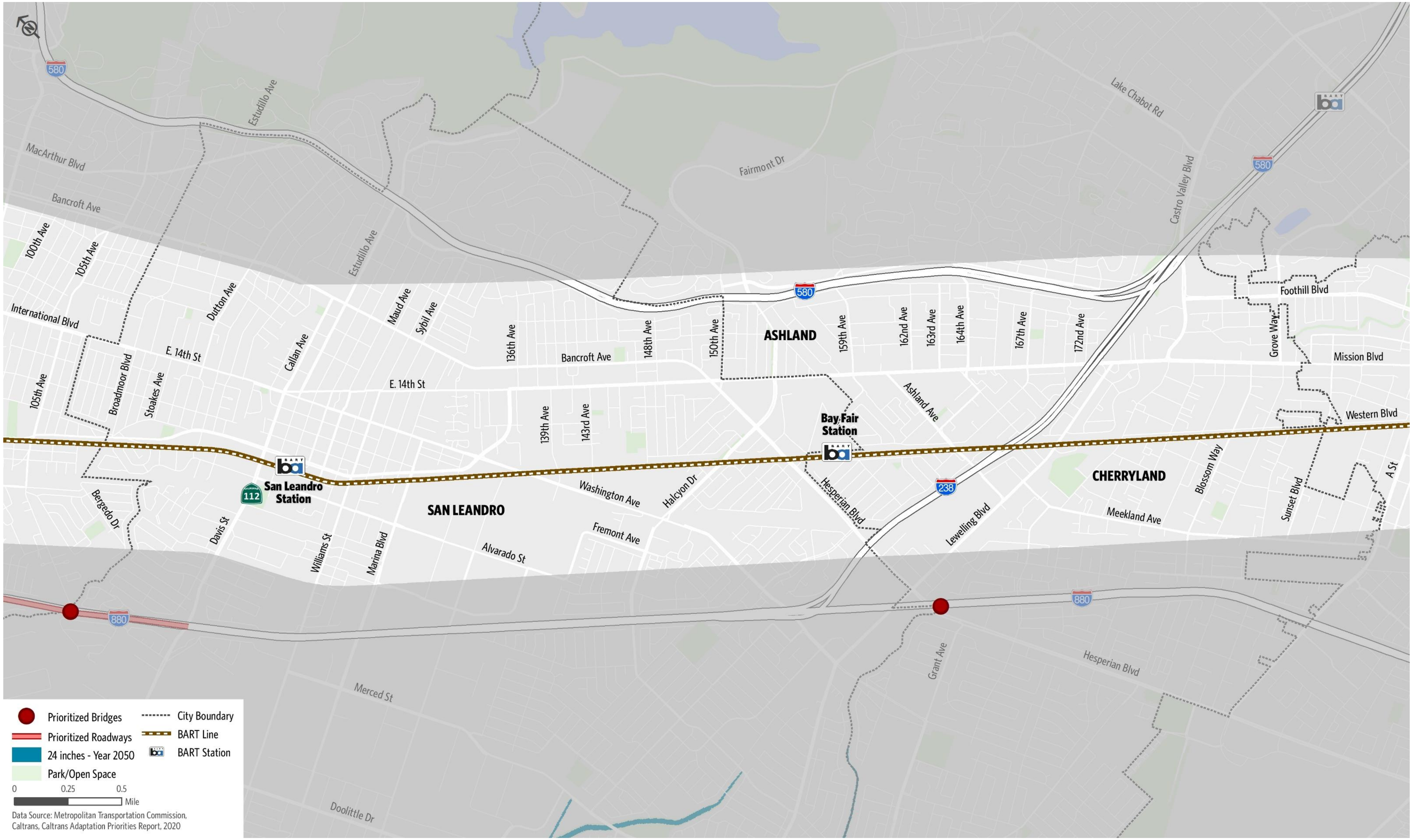
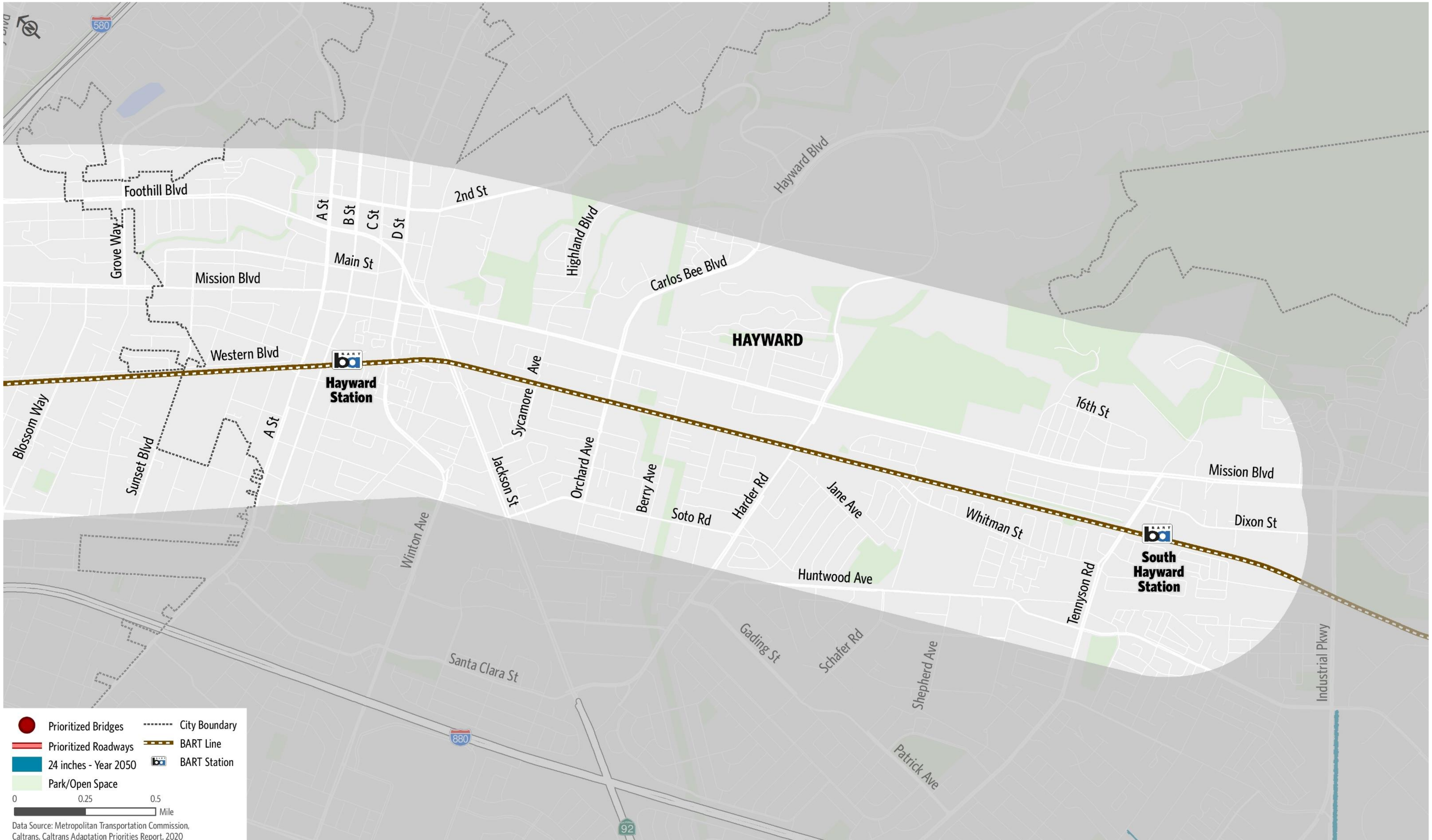


Figure 3-21: Potential Impacts of Sea Level Rise (Page 4 of 4)



4. Multimodal Facilities, Services, and Programs

This chapter describes a range of existing facilities, services, and programs related to public transit, active transportation, and freight facilities within the CACCMCP study area.

4.1 Transit Services

Central Alameda County is served by several public transit agencies including BART, Alameda–Contra Costa Transit District (AC Transit), and Amtrak. Approximately 16 percent of study area residents take transit to work, which is less than the average percentage (18 percent) for Alameda County residents. **Figure 4-1** through **Figure 4-4** show transit services within the study area by frequency.

AC Transit

The AC Transit system is California's third-largest public bus system and serves 13 cities and adjacent unincorporated areas in Alameda and Contra Costa counties, and encompassing a 364-square-mile service area with over 1.5 million residents. As of September 2019, AC Transit operated 128 bus lines, including 60 local lines in the East Bay, 18 Transbay lines connecting the East Bay to San Francisco and the Peninsula, 6 All Nighter late night service lines, 6 FLEX on-demand service vans, and 44 supplementary lines.[78] In the 2020-2021 fiscal year, AC Transit served over 21 million annual riders, including approximately 199,800 paratransit riders. The average weekday ridership was approximately 63,000 per day. As part of its transit network, AC Transit currently operates multiple bus routes within the CACCMCP study area, including the urban crosstown, trunk, major corridor, rapid, supplementary school, and late-night service. AC Transit began Line 1T Tempo Bus Rapid Transit (BRT) service in August 2020 on International Boulevard/East 14th Street from Uptown Oakland to Downtown San Leandro.

Table 4-1 summarizes AC Transit services in the CACCMCP study area with frequencies and major destinations served by the route during weekdays and weekends. These routes provide circulation along local streets and access to major destinations.

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[78] AC Transit, Ridership, Buses and Service, accessed July 25, 2022, https://www.actransit.org/ridership.

Table 4-1: AC Transit Local Bus Routes, Frequency and Major Destinations

Route	Study Area Jurisdictions Served	Frequency	Major Destinations/BART Connection
1T (TEMPO)	Oakland and San Leandro	Weekdays – 10 mins Weekends – 30 mins	Uptown Oakland, Civic Center, Downtown San Leandro and San Leandro BART
14	Oakland	Weekdays – 17 mins Weekends – 30 mins	Downtown Oakland and Fruitvale BART
62	Oakland	Weekdays – 19 mins Weekends – 30 mins	Lake Merritt BART
96	Oakland	Everyday – 30 mins	Alameda Point, Dimond District and Lake Merritt BART
45	Oakland	Weekdays – 20 mins Weekends – 40 mins	Eastmont Transit Center, Foothill Square and Coliseum BART/Amtrak
34	Oakland, San Leandro, Ashland, Cherryland, and Hayward	Everyday – 1 hour	Hayward BART
35	Oakland, San Leandro and Ashland	Everyday – 1 hour	Bay Fair BART and San Leandro BART
28	San Leandro, Ashland and Hayward	Everyday – 1 hour	Hayward BART
10	San Leandro, Ashland, Cherryland and Hayward	Weekdays – 17 mins Weekends – 20 mins	Hayward BART
801	San Leandro, Ashland, Cherryland, and Hayward	Everyday – 1 hour (until 7 A.M & 8 A.M)	San Leandro BART & Fremont BART
40	Oakland, San Leandro and Ashland	Weekdays – 20 mins Weekends – 30 mins	Eastmont Transit Center and Bay Fair BART
99	Hayward	Weekdays – 20 mins Weekends – 30 mins	Hayward BART and South Hayward BART
41	Hayward	Everyday – 1 hour	Hayward BART and South Hayward BART
93	San Leandro, Ashland, Cherryland and Hayward	Everyday – 1 hour	Bay Fair BART and Hayward BART

Source: AC Transit, 2022.

Figure 4-1: Local Bus Routes in the Study Area (Page 1 of 4)

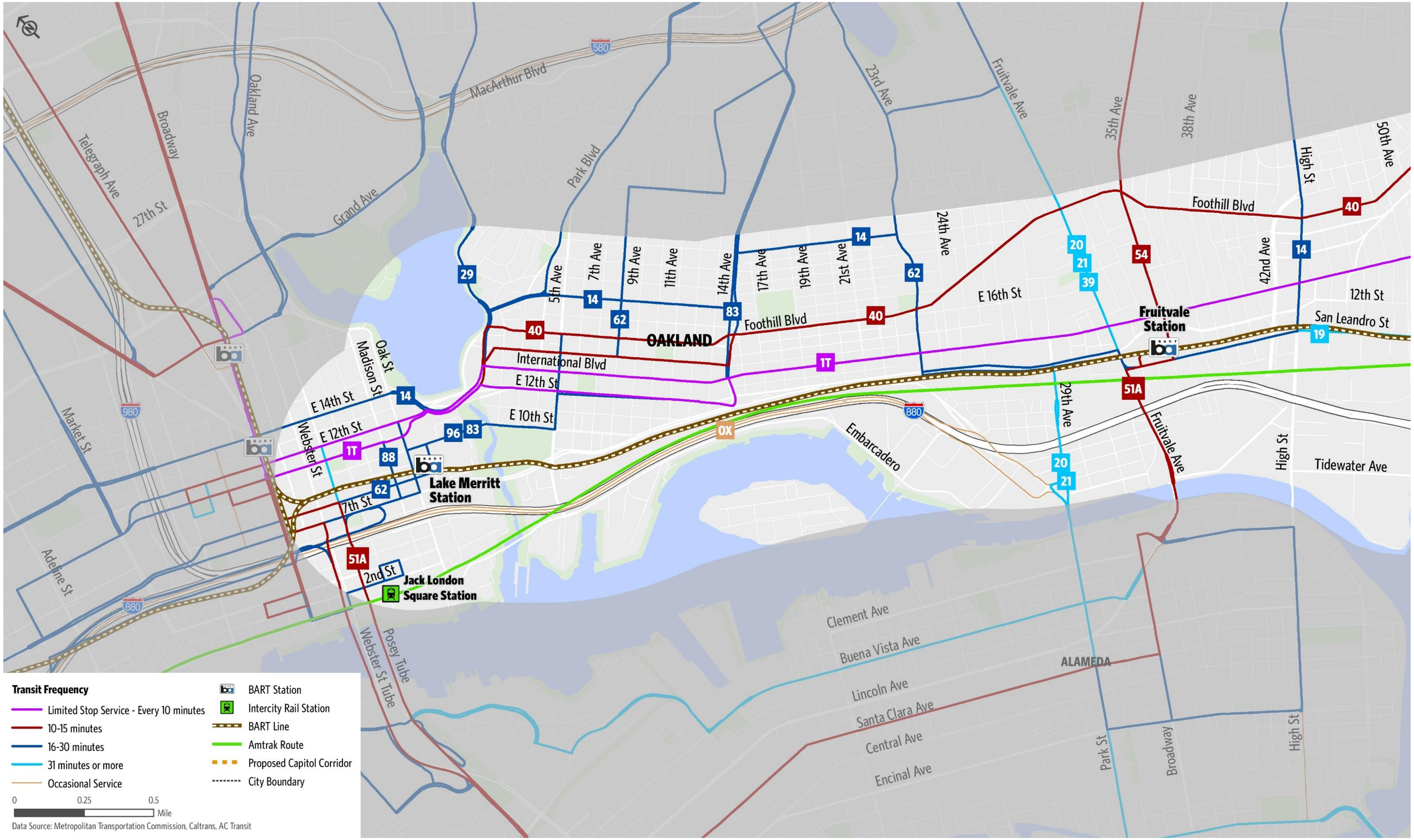


Figure 4-2: Local Bus Routes in the Study Area (Page 2 of 4)

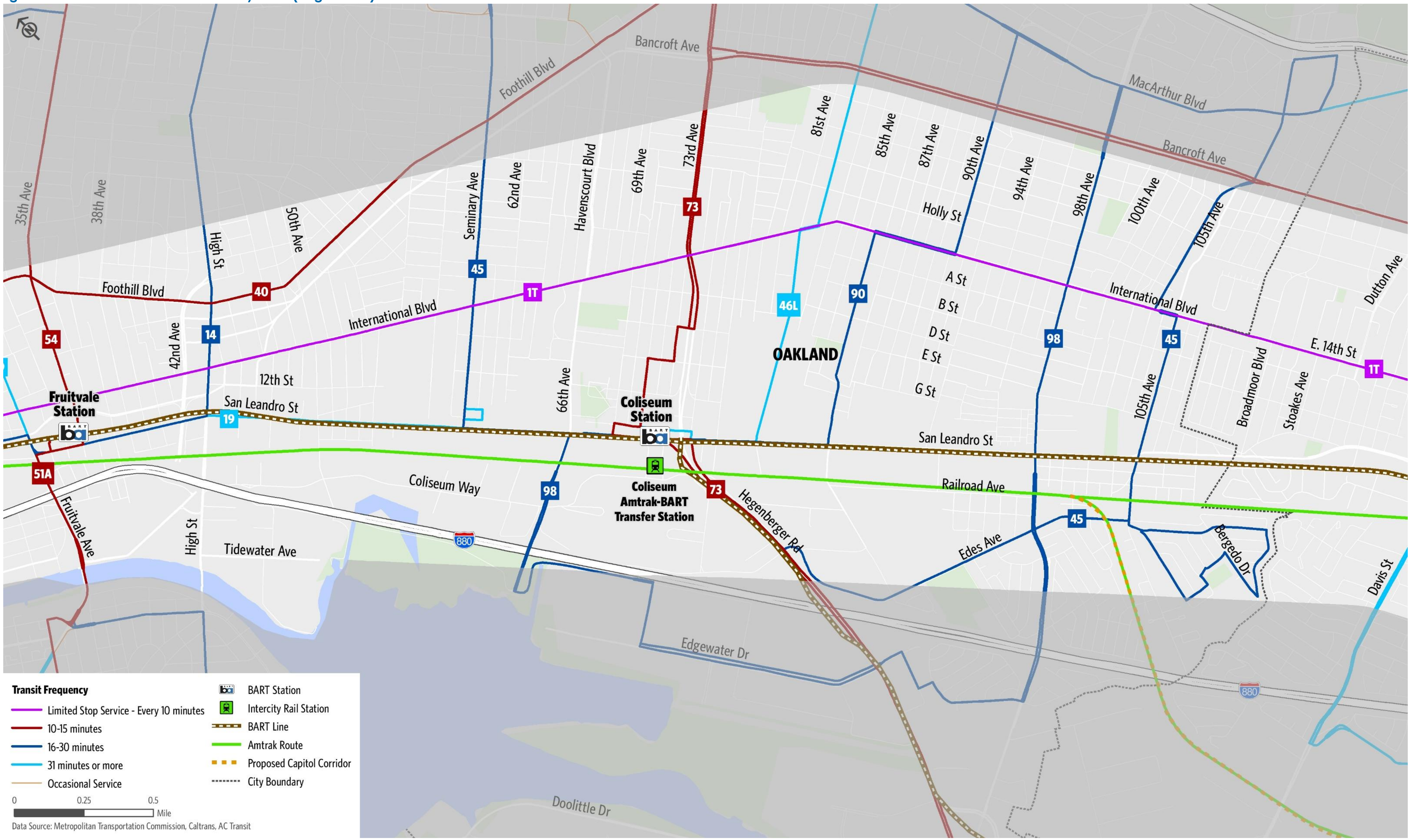


Figure 4-3: Local Bus Routes in the Study Area (Page 3 of 4)

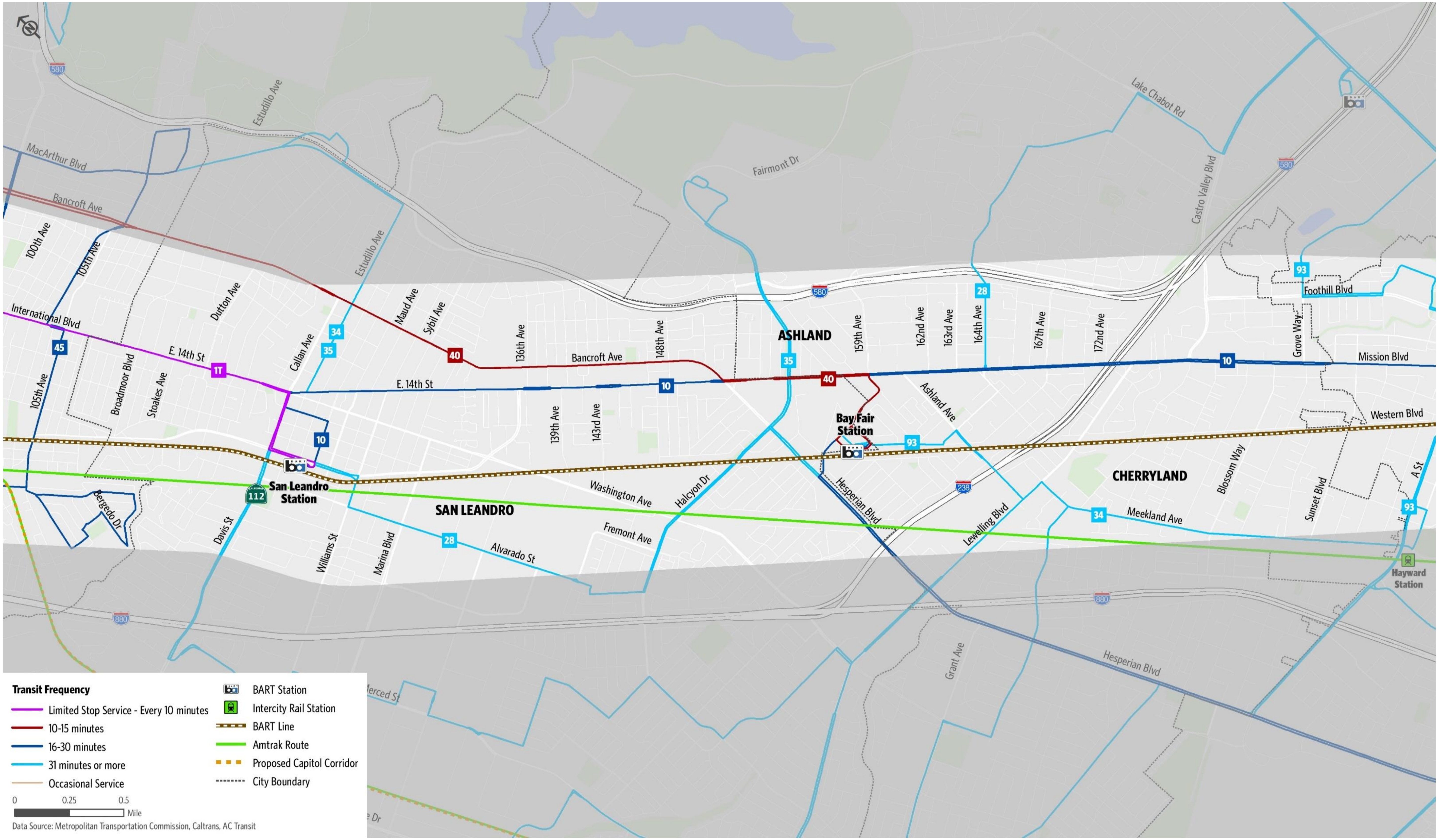
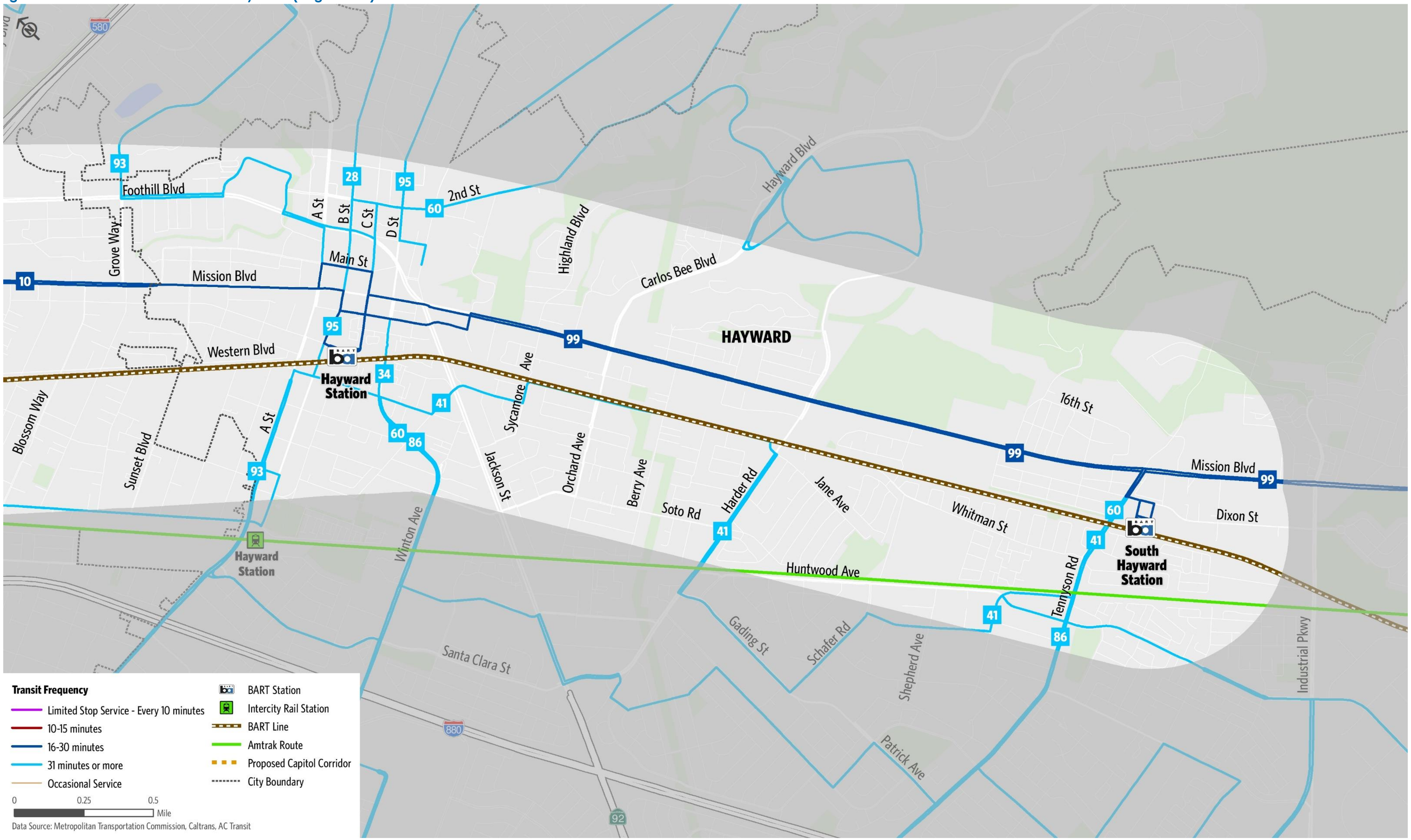


Figure 4-4: Local Bus Routes in the Study Area (Page 4 of 4)



BART

The BART system consists of 131.4 miles of heavy rail and 50 stations located in Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara counties. BART offers service on weekdays and weekends, with an average of 411,000 rides per week in 2019.[79]

Coliseum BART Station
Photo Credits: Amaya Lim

BART connects the San Francisco Peninsula with communities in the East Bay and South Bay. Within the study area, BART provides key north-south connectivity and connects the following seven BART stations.

- **Lake Merritt Station** is located near Oakland Chinatown, Laney College, and the Oakland Museum of California.
- **Fruitvale Station** is located near the vibrant Fruitvale Village, an important commercial destination in Oakland.
- **Coliseum Station** is located near the Oakland Arena and provides a transfer to the Oakland International Airport (OAK) BART station.
- **San Leandro Station** is located within walking distance of Downtown San Leandro.
- **Bay Fair Station** is located in San Leandro and provides access to Bayfair Center and the community of Ashland.
- **Hayward Station** is located near Hayward City Hall and Downtown Hayward.
- **South Hayward Station** is located south of Tennyson Road and west of Mission Boulevard.

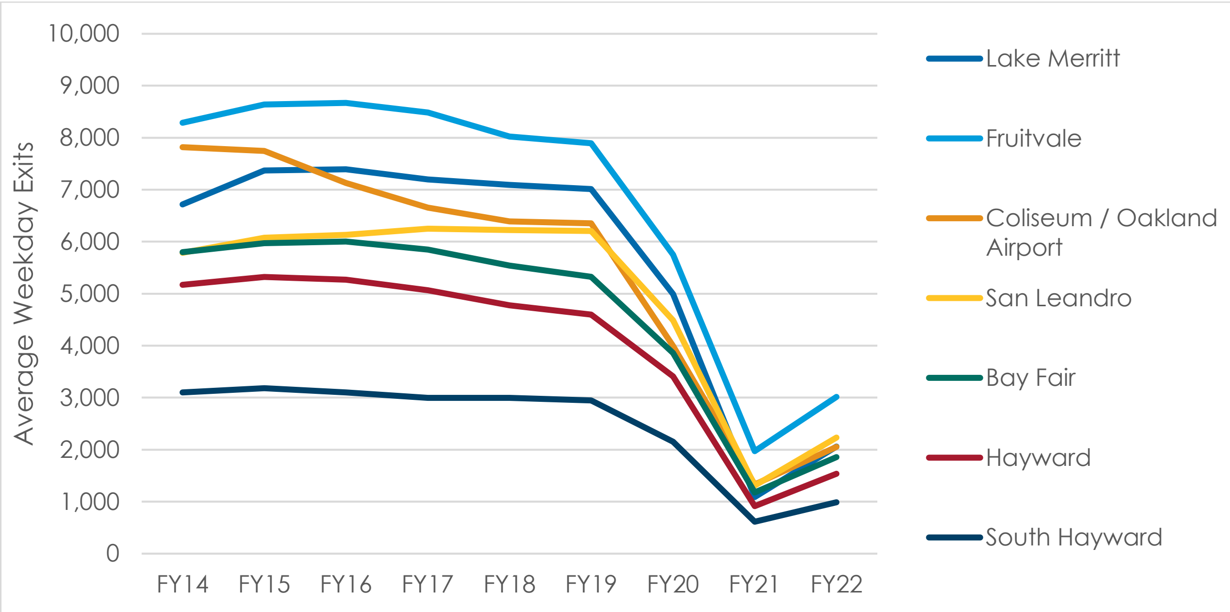
In 2019, Fruitvale Station served over 8,000 passengers daily. Under post-COVID-19 pandemic conditions, ridership at the Fruitvale Station was the sixth highest compared to all BART stations.[80] **Figure 4-5** shows the trend and a significant drop in ridership during the COVID-19 pandemic.

[79] BART, BART Facts 2020, accessed January 11, 2022, https://www.bart.gov/sites/default/files/docs/BARTFacts2020_Final.pdf.

[80] BART, BART Facts 2021, accessed January 11, 2022, https://www.bart.gov/sites/default/files/docs/BARTFacts2021_0.pdf.

[4] BART, BART Facts 2022, accessed July 25, 2022, https://www.bart.gov/sites/default/files/docs/BARTFacts2022.pdf.

Figure 4-5: BART Ridership Trend (FY14-22)



Source: BART Ridership Reports, FY14-22.

Amtrak/Capitol Corridor

Amtrak/Capitol Corridor is a 170-mile intercity passenger railroad providing rail service to several counties in Northern California. Capitol Corridor service is operated by a joint powers authority (JPA) comprising six local transit agencies from the eight-county service area.

Three Amtrak stations - Jack London Square and Coliseum, in Oakland; and Hayward Station – are in the study area. Trains serving these locations connect Sacramento and San Jose and provide opportunities for transfers to transit service that extends to San Francisco, Vallejo, and other areas of Northern California and the Central Valley. Transfer opportunities to BART occur within the study area at Coliseum Station. In 2019, Capitol Corridor celebrated a record-high ridership totaling 1.77 million passengers.[81] In the same year, Jack London Oakland to Sacramento trains were observed as one of the highest ridership origin-destination pairs. **Table 4-2** summarizes the Amtrak/Capitol Corridor schedule for service within the study area.

[81] Capitol Corridor Joint Powers Authority, Performance Report FY19, accessed January 11, 2022, https://images.capitolcorridor.org/wp-content/uploads/2020/03/CCJPA_Report2019.pdf.

Table 4-2: Amtrak Routes in the Study Area

Route	Description	Weekday		Weekend	
		Hours of Operations	Headways	Hours of Operations	Headways
Capitol Corridor	Auburn – Sacramento – Emeryville (San Francisco) – Oakland – San Jose	5:30 AM - 9:50 PM	1 hour	7:15 AM- 10:50 PM	1-2 hours
Coast Starlight	Seattle - Tacoma - Portland - Sacramento - San Francisco area - Los Angeles	9:30 PM departure, 9:00 AM arrival	1 departure per day	9:30 PM departure, 9:00 AM arrival	1 departure per day

Source: Amtrak Train Schedule, 2022.

The Capitol Corridor South Bay Connect project proposes to relocate the Capitol Corridor passenger rail service between the Oakland Coliseum and Newark from the Union Pacific Railroad (UP) Niles Subdivision to the Coast Subdivision for a faster, more direct route. The relocation would facilitate the separation of passenger and freight rail, resulting in improved rail operations, efficiency, and reliability while minimizing rail congestion within the corridor.[82]

[82] Capitol Corridor Joint Powers Authority, South Bay Connect, accessed August 2, 2022, https://www.southbayconnect.com/.

4.2 Park & Ride Facilities

The Caltrans Park-and-Ride (P&R) Program facilitates access to transit and ride-sharing services along freeway corridors with the goal of reducing congestion and vehicle miles traveled. In the Bay Area, there are 50 P&R lots with a combined capacity of 5,218 parking spaces and 105 bike lockers. In Alameda County, there are eight P&R lots with a combined capacity of 1,097 parking spaces and 24 bike lockers.[83]

Bike Parking at Lake Merritt Station
Photo Credits: Amaya Lim

On the north side of Foothill Boulevard at John Drive in Castro Valley, there is one park and ride lot in the study area. This lot has approximately ten parking spaces and is operated by Caltrans and served by AC Transit.

BART owns and operates more than 47,000 parking spaces at 36 stations. The seven BART stations in the study area provide additional P&R facilities for BART users. BART charges parking fees typically on weekdays from 4:00 AM to 3:00 PM. Pricing varies by station. **Table 4-3** provides information on the number of parking spaces at P&R facilities.

In addition to the traditional P&R facility, BART has initiated the BART Bike Station program, designed to encourage biking to BART for local transportation. One of the BART Bike Stations is located near the Fruitvale Station, providing a safe and convenient way to park bikes as well as services such as free valet parking, bike repairs, and sales. [84]

Fruitvale Bike Station
Photo Credits: bikehub.com

[83] Caltrans D4, Park and Ride Lots, accessed August 2, 2022, https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/park-and-ride-lots.
[84] BikeHub. Easier Bicycle Commuting. Fruitvale BART Station, accessed August 14, 2022, https://bikehub.com/bart/#toggle-id-2.

Table 4-3: Park and Ride Facilities

Park and Ride Facility Name	Address	Number of Parking Spaces	Number of Bike Lockers	No. of Spaces at Bike Racks (Inside & Outside Station)
John Drive Park and Ride	North side of Foothill Blvd. at John Drive (Near I-580)	10	-	-
Lake Merritt BART Station	800 Madison St., Oakland, CA 94607	210	84	212
Fruitvale BART Station	3401 East 12th St., Oakland, CA 94601	893	28	249
Coliseum BART Station	7200 San Leandro St., Oakland, CA 94621	888	16	63
San Leandro BART Station	1401 San Leandro Blvd., San Leandro, CA 94577	898	96	91
Bay Fair BART Station	15242 Hesperian Blvd., San Leandro, CA 94578	1,658	28	52
Hayward BART Station	699 'B' St., Hayward, CA 94541	1,468	40	70
South Hayward BART Station	28601 Dixon St., Hayward, CA 94544	1,302	16	86

Note:
Fruitvale BART Station includes 200 bicycle spaces at the Bike Station.
Sources: Caltrans District 4 Park and Ride Lots; BART Parking Snapshot, March 2022; Kittelson & Associates, 2022.

4.3 Bicycle and Pedestrian Facilities

The CACCMCP study area currently features various bicycle and pedestrian facilities such as multi-use paths and buffered bike lanes. Several local and regional plans document the existing and planned active transportation network in the study area. Chapter 2 of the CACCMCP includes brief descriptions of such plans.

Bicycle Facilities

There are gaps in the bicycle network throughout the study area. Along primary corridors, portions of International Boulevard and San Leandro Street have no existing on-street bicycle facilities. Portions of major connections, such as High Street, Hegenberger Road, Davis Street, Hesperian Boulevard, Washington Avenue, and Jackson Street, have no or limited bicycle facilities. **Figure 4-6** through **Figure 4-9** show bicycle network throughout the study area. This information was collected from the most recent active transportation plans developed by the local jurisdictions. For illustration purposes, bicycle facilities have been classified into four types, namely, bike paths (Class I), bike lanes (Class II), bike routes (Class III), and cycle tracks (Class IV). Local jurisdictions such as the City of San Leandro have further classified these facilities into sub-types such as bike lanes (Class II) and buffered bike lanes (Class IIB).

Planned projects, such as the East Bay Greenway regional trail, will provide north-south bicycle improvements along the primary corridors. The East Bay Greenway segment between 75th Avenue and 85th Avenue in Oakland near the Coliseum BART station is already completed, as shown in **Table 4-4**.

Table 4-4: Existing and Planned Bicycle Facilities in the Study Area

Primary Corridors/Major Connections	Segment Limit	Existing Facilities	Planned Facilities
Oakland			
International Boulevard	From 1st Ave. to 53rd Ave.	None	None
International Boulevard	From 53rd Ave. to 81st Ave.	Class II Bike Lanes	None
International Boulevard	From 81st Ave. to 85th Ave.	Class III Shared Lanes	None
International Boulevard	From 85th Ave. to Broadmoor Blvd.	None	None
San Leandro Street	From Fruitvale Ave. to 69th Ave.	None	Class I Shared Use Path (East Bay Greenway- Off Street Trail)

Primary Corridors/Major Connections	Segment Limit	Existing Facilities	Planned Facilities
San Leandro Street	From 75th Ave. to 85th Ave.	Class I Shared Use Path (East Bay Greenway- Off Street Trail)	None
San Leandro Street	From 85th Ave. to Broadmoor Blvd.	None	Class I Shared Use Path (East Bay Greenway- Off Street Trail)
Oak Street	From Lakeside Dr. to 2nd St.	Class II Bike Lanes	None
Madison Street	From Lakeside Dr. to 2nd St.	Class II Bike Lanes	None
San Leandro			
East 14th Street	From Broadmoor Blvd. to Chumalia St.	Class II Bike Lanes	None
East 14th Street	Chumalia Street to 150th Ave.	None	None
San Leandro Boulevard	From Broadmoor Blvd. to Davis St.	Class II Buffered Bike Lanes	None
San Leandro Boulevard	Davis St. to Coburn Ct.	Class II Bike Lanes	None
San Leandro Boulevard	Coburn Ct. to East 14th St.	Class IV Bike Lane	None
Davis Street	Alvarado St. to Bancroft Ave.	Class II Bike Lanes	Class IV Protected Bike Lanes
Washington Avenue	Caliente Dr. to 143rd Ave.	Class III	Class II Bike Lane
Ashland			
East 14th Street	150th Ave. to 162nd Ave.	None	Class II Bike Lanes
East 14th Street	162nd Ave. to I-238	Southbound - Class II Buffered Bike Lanes; Northbound – Class IV Protected Bike Lanes	None

Primary Corridors/Major Connections	Segment Limit	Existing Facilities	Planned Facilities
Hesperian Boulevard	East 14th St. to Spring Lake Dr.	Class II Bike Lanes	Class IV Protected Bike Lanes
Hesperian Boulevard	Spring Lake to College St.	Class III Shared Lanes	Class IV Protected Bike Lanes
Cherryland			
Mission Boulevard	I-238 to Rose St.	None	Class IV Protected Bike Lanes
Hayward			
Mission Boulevard	Rose St. to A St.	None	Class IV Protected Bike Lanes
Mission Boulevard	A St. to Tennyson Rd.	None	Class IV Protected Bike Lanes
A Street	3rd St. to Montgomery Ave.	Class III Shared Lanes	Class IV Protected Bike Lanes
A Street	Montgomery Ave. to Meekland Ave.	Class II Bike Lanes	Class IV Protected Bike Lanes
Jackson Street	Soto Rd. to Mission Blvd.	None	Class IV Protected Bike Lanes
Tennyson Road	Mission Blvd. to Baldwin St.	Class II Bike Lanes	Class IV Protected Bike Lanes

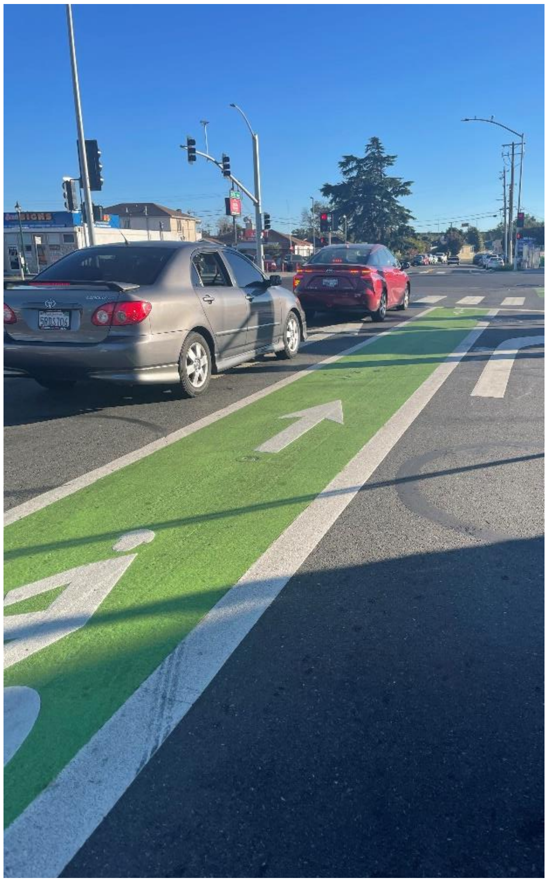
Sources: Oakland Bike Plan, 2019; San Leandro Bicycle and Pedestrian Plan, 2018; Alameda County Bicycle and Pedestrian Plan for Unincorporated Areas, 2019; Hayward Bike and Pedestrian Plan, 2020; Kittelson & Associates, 2022.

Pedestrian Facilities

Pedestrian facilities comprise various accommodations such as sidewalks, crosswalks, street furniture, and trails. At a regional level, information related to pedestrian facilities is limited. Hence, to understand the relative walkability within the CACCMCP study area, the United States Environmental Protection Agency's (EPA) National Walkability Index is utilized to develop **Figure 4-10**. EPA's National Walkability Index provides walkability scores based on a simple formula that ranks selected indicators such as land use, diversity, population density, availability of cars, and employment from the Smart Location Database that have been demonstrated to affect the propensity for walk trips. The dataset covers every block group in the nation, providing a basis for comparing walkability from community to community.[85]

Within the CACCMCP study area, communities in Ashland, Cherryland, and South Hayward along East 14th Street/Mission Boulevard have below-average walkability scores.

[85] US EPA, Smart Location Mapping, National Walkability Index, 2021, accessed August 15, 2022, https://www.epa.gov/smartgrowth/smart-location-mapping#walkability.



High Visible Colored Bicycle Pavement Markings at Mission Boulevard near 167th Avenue
Photo Credits: Amaya Lim

Class IV Bikeway at San Leandro Boulevard near East 14th Street
Photo Credits: Google Earth

Class I Shared Use Path at San Leandro Boulevard near 85th Avenue (East Bay Greenway)
Photo Credits: Google Earth

East 14th Street - Street Benches
Photo Credits: Google Earth

Bicycle Rack in Downtown Hayward
Photo Credits: Amaya Lim

Figure 4-6: Existing and Planned Bicycle Facilities (Page 1 of 4)

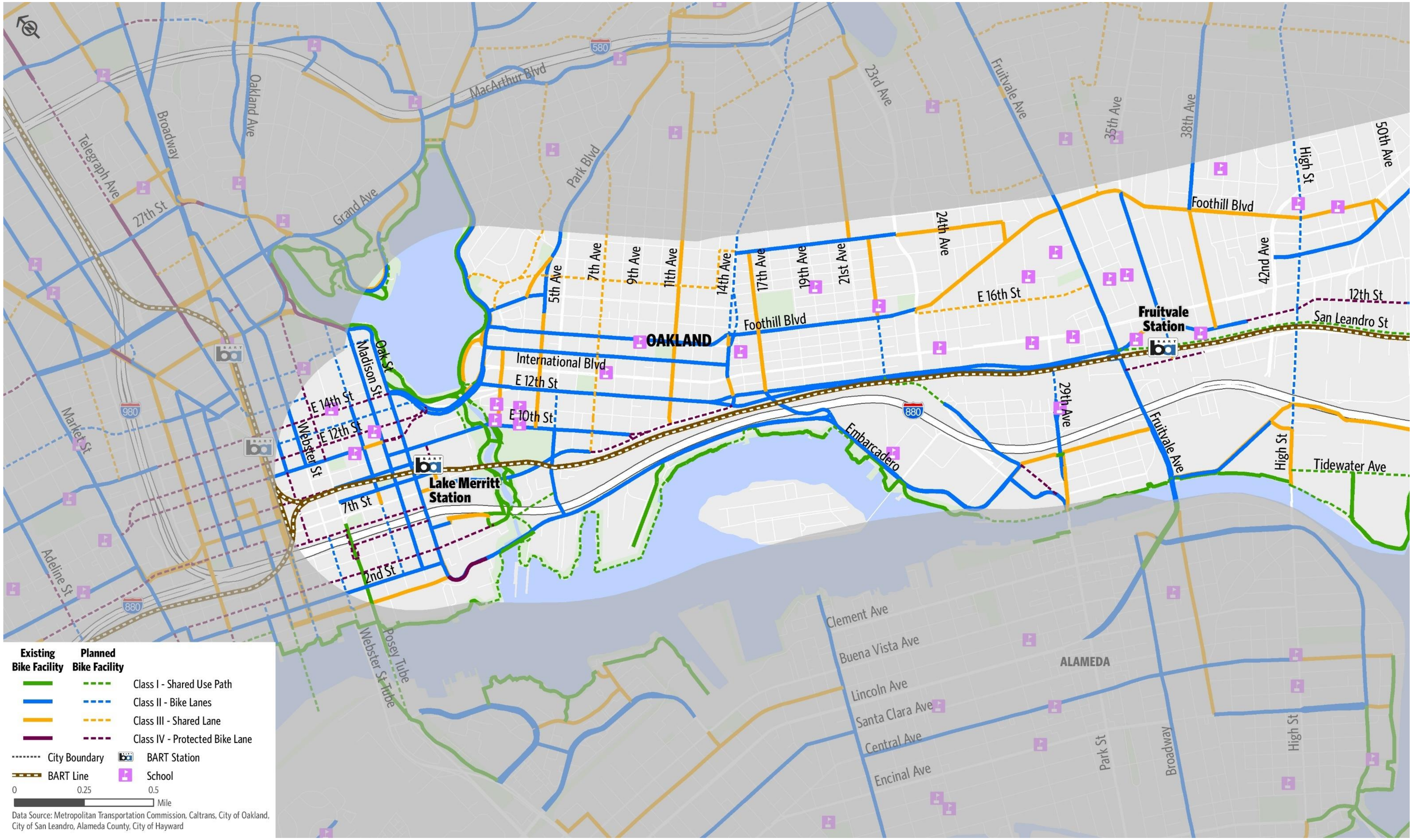


Figure 4-7: Existing and Planned Bicycle Facilities (Page 2 of 4)

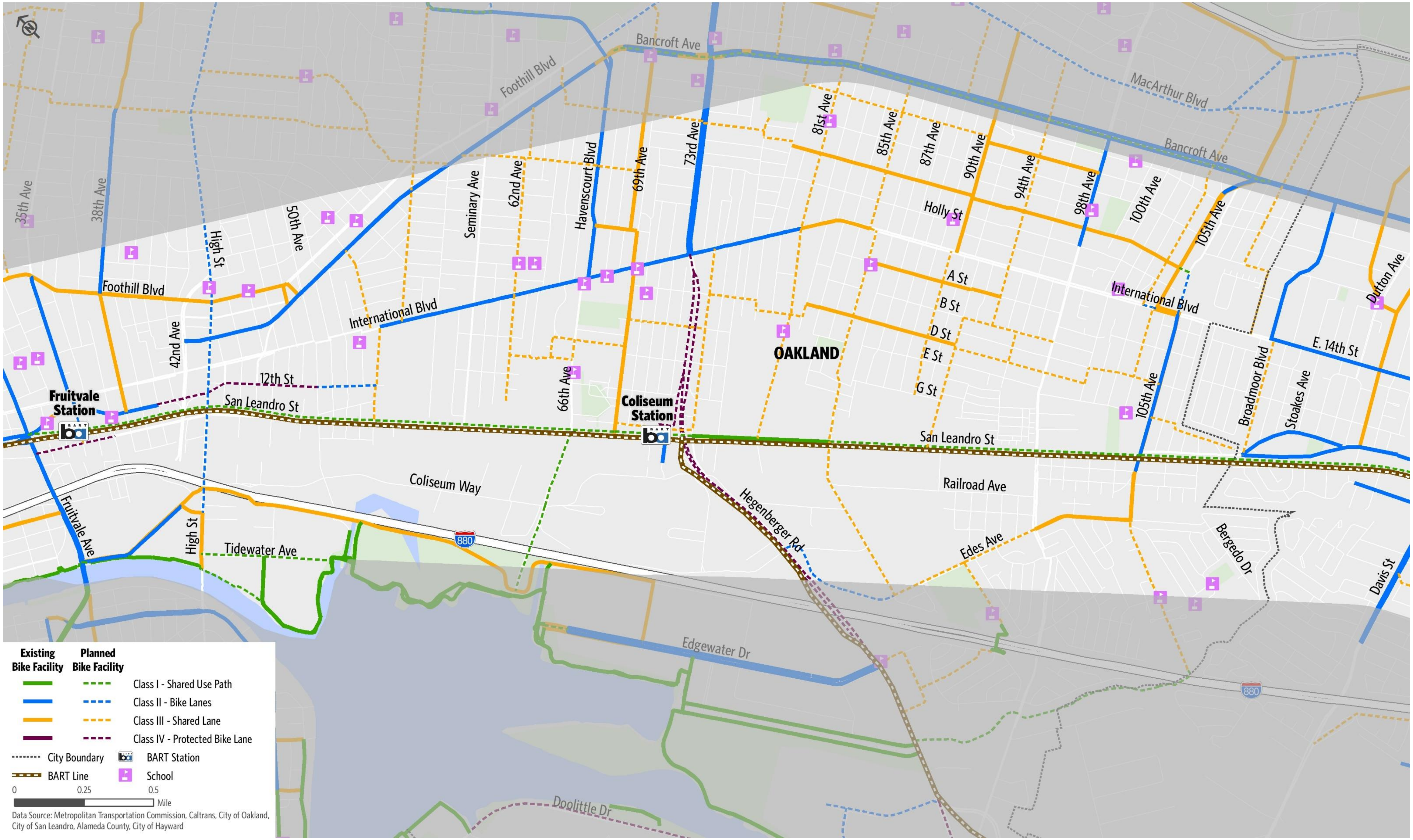


Figure 4-8: Existing and Planned Bicycle Facilities (Page 3 of 4)

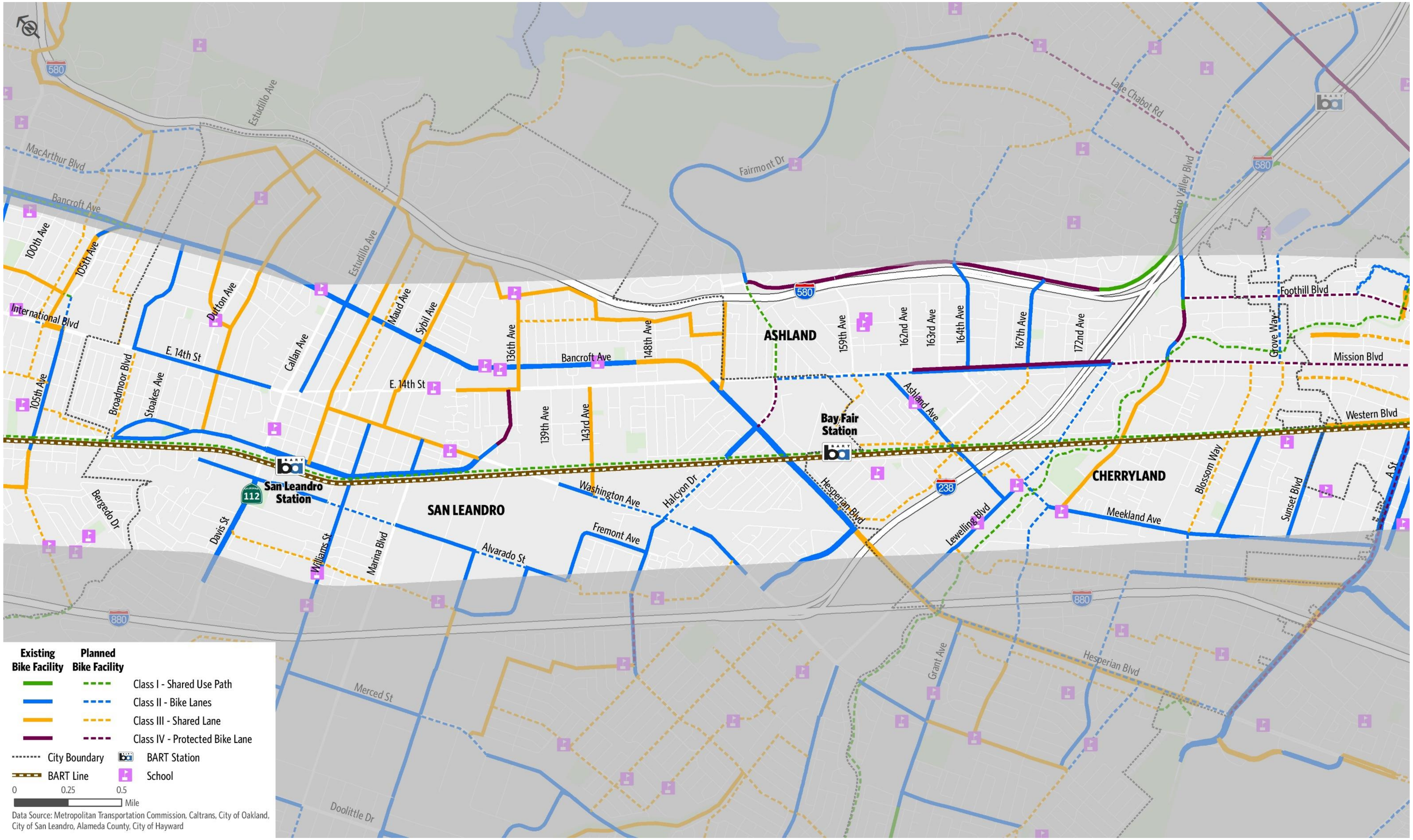


Figure 4-9: Existing and Planned Bicycle Facilities (Page 4 of 4)

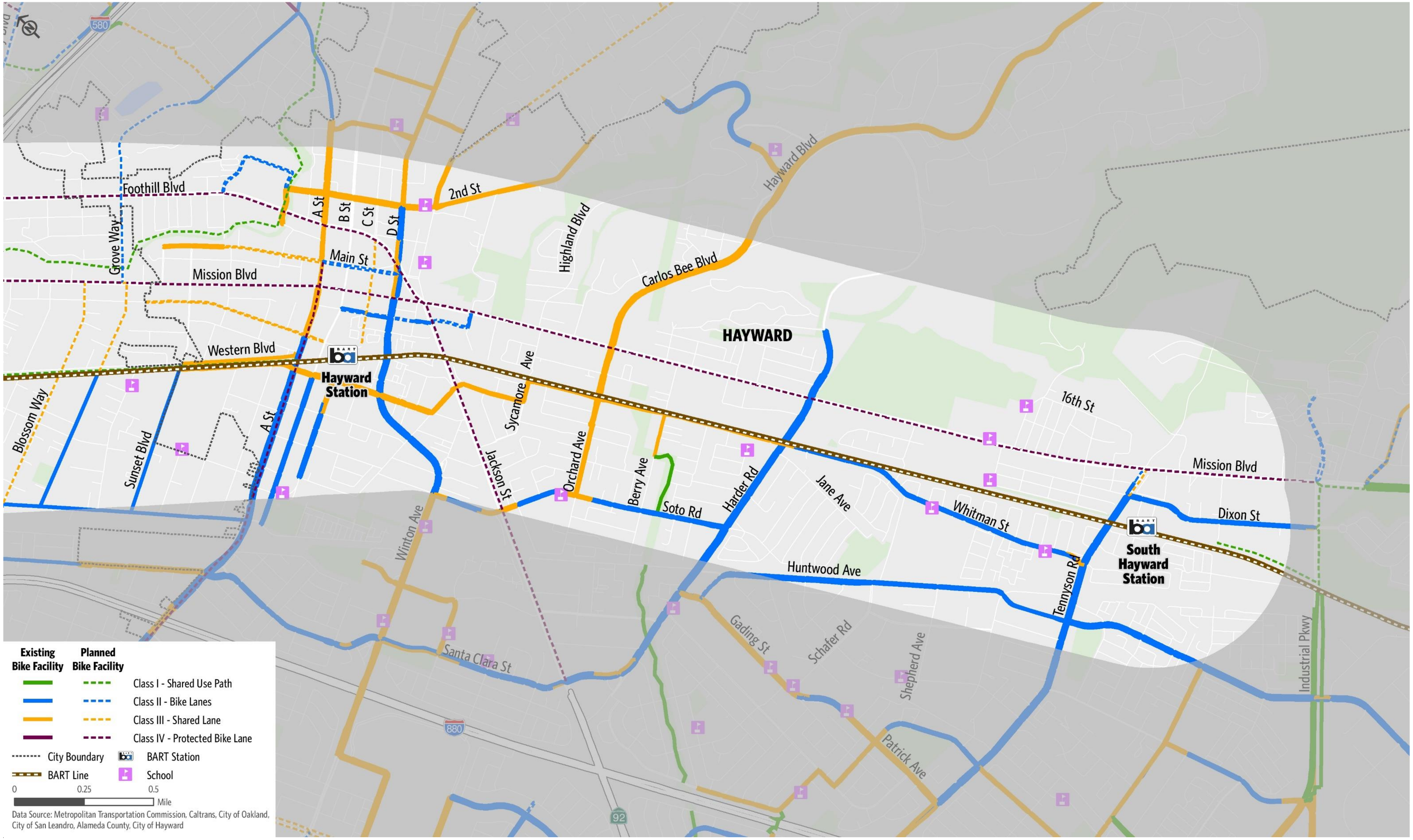


Figure 4-10: Walkability Index (Page 1 of 4)

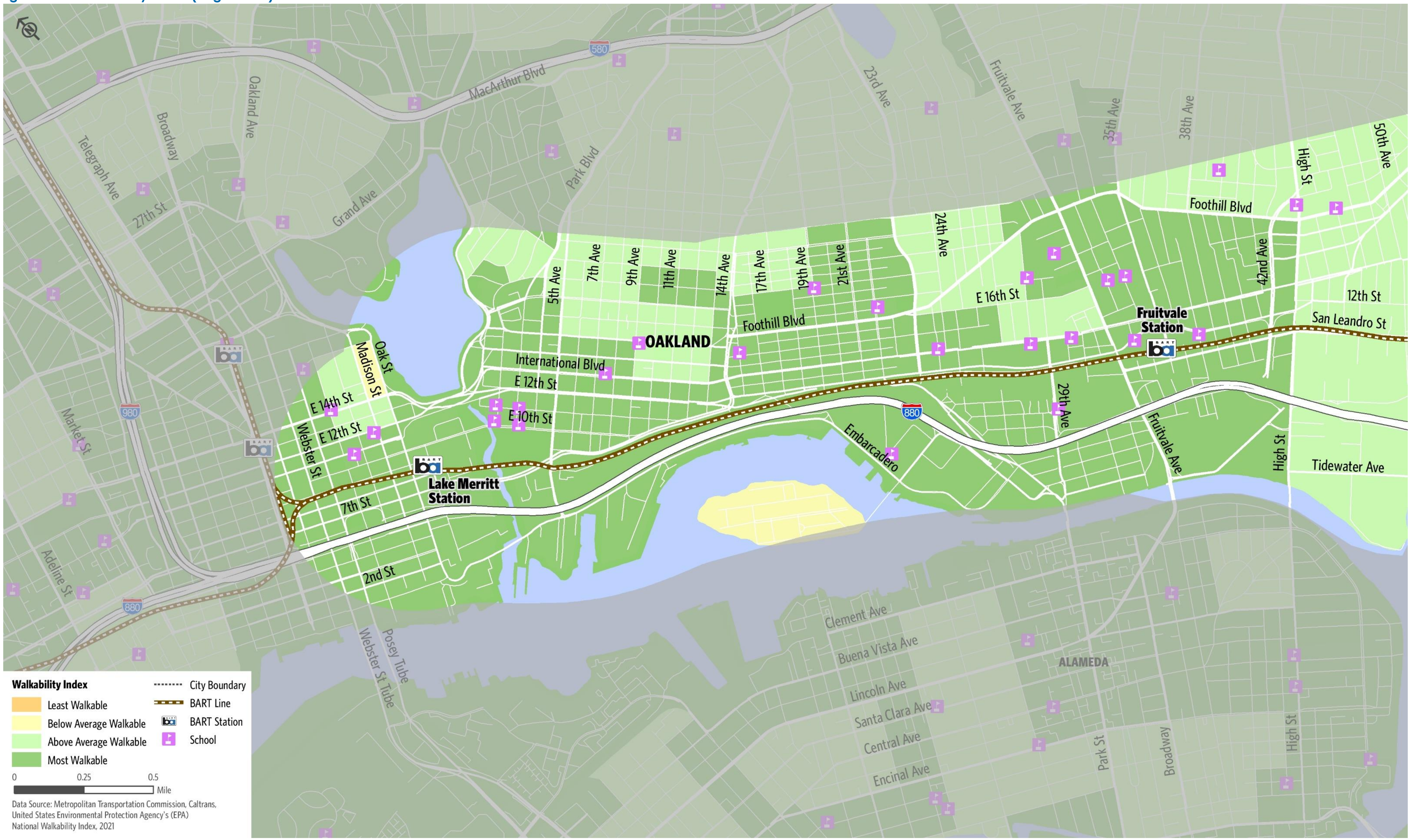


Figure 4-11: Walkability Index (Page 2 of 4)

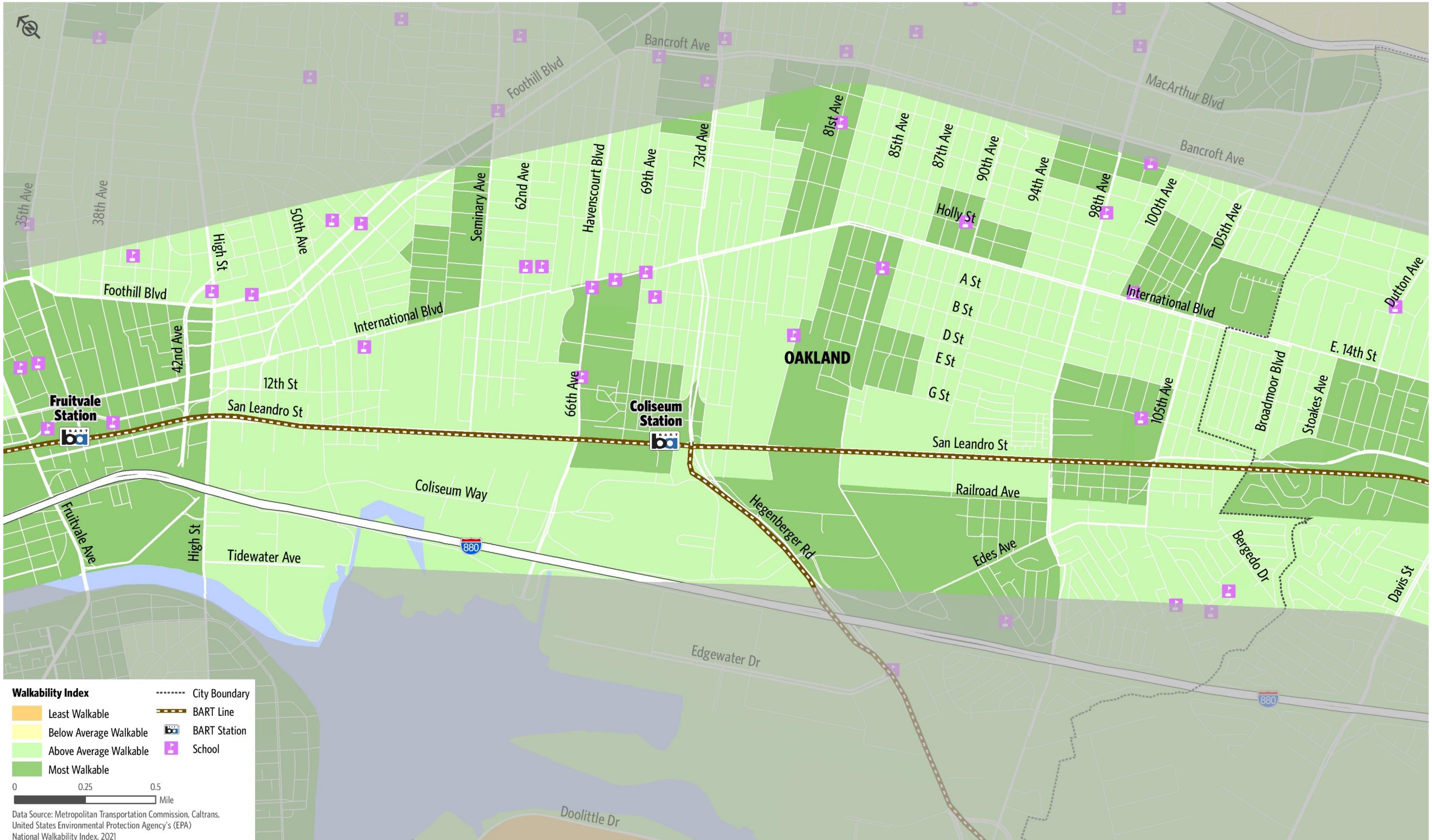


Figure 4-12: Walkability Index (Page 3 of 4)

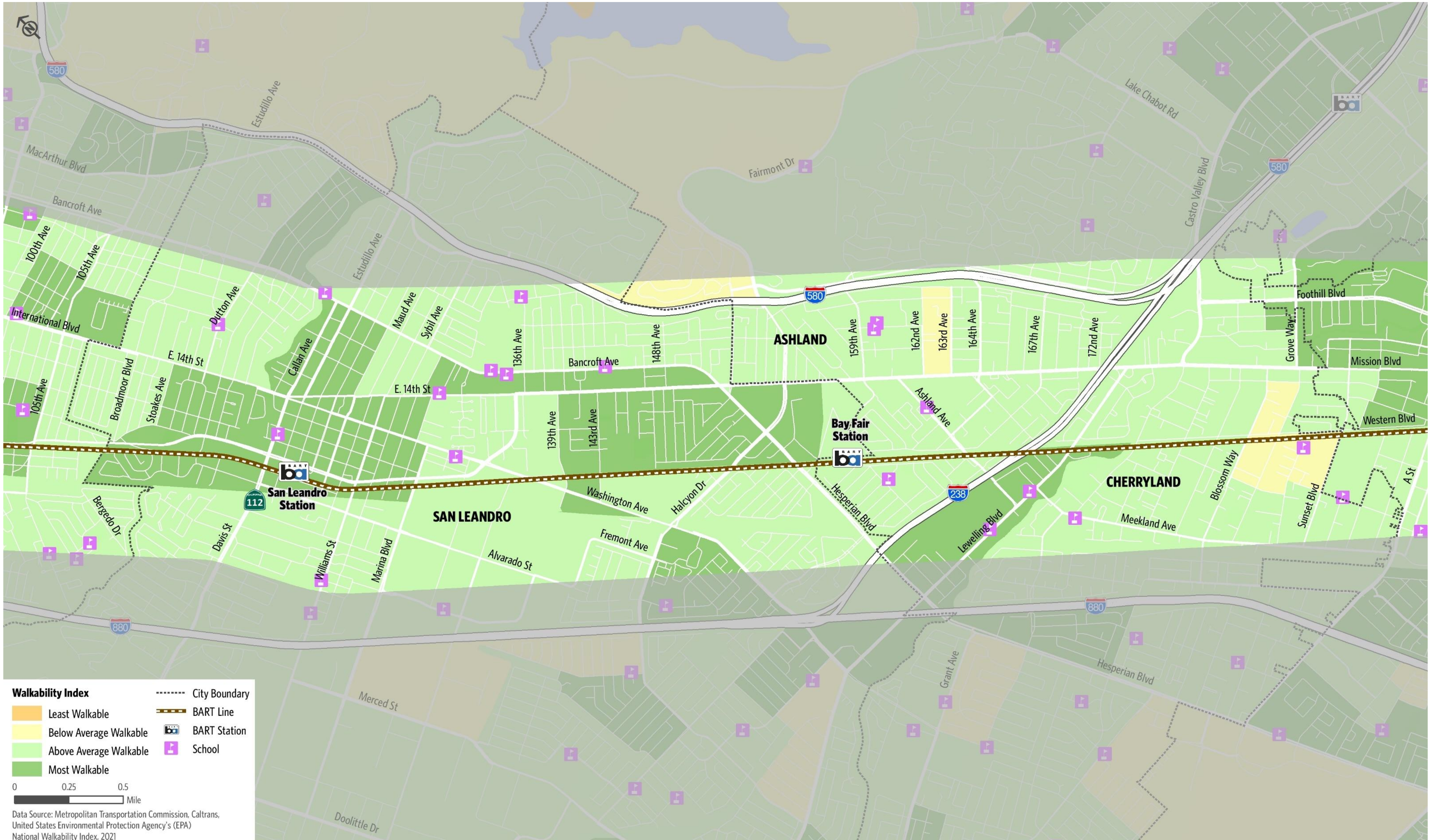
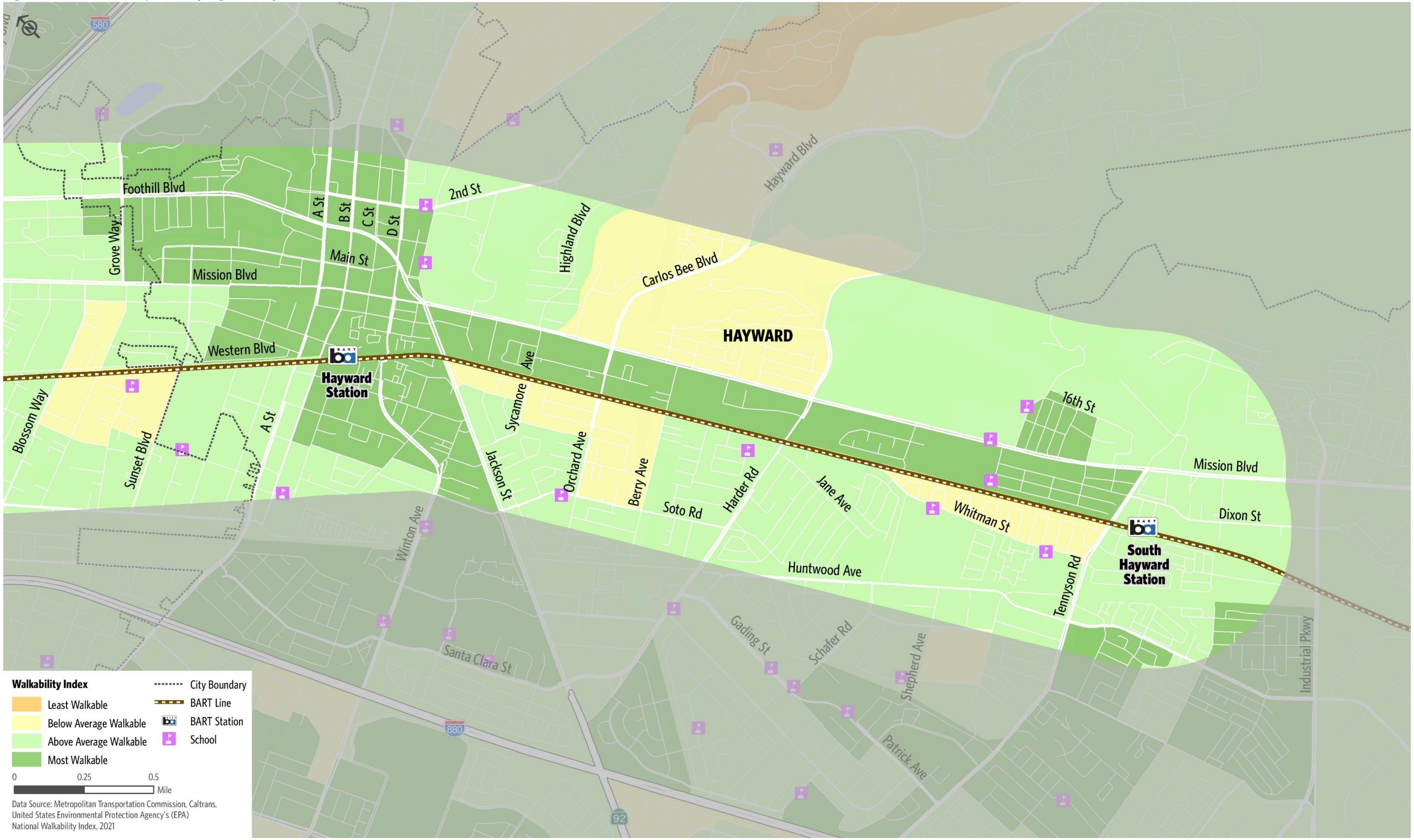


Figure 4-13: Walkability Index (Page 4 of 4)



Active Transportation Programs

The Alameda CTC Bicycle and Pedestrian Program funds and delivers bicycling and walking projects and programs throughout the county. Programs include Safe Routes to Schools, BikeMobile, Bicycle Safety Education, Bicycling and Bike to Work Day Promotions, and Technical Assistance.[86]

Alameda County Safe Routes to Schools (SR2S) Program

The Alameda County Safe Routes to Schools (SR2S) Program prioritizes safe walking and biking to schools. SR2S is a comprehensive and proven approach to increase safe walking and biking to and from schools with the goals of reducing congestion and harmful pollutants around schools and increasing the safety and physical activity of students. What began as a grant-funded pilot at two schools in Oakland has expanded to serve over 260 public elementary, middle, and high schools throughout the county. Over 172,000 students and their families benefit from educational programs that teach traffic safety and safe rolling and walking behaviors, as well as countywide events that encourage walking, rolling, carpooling, and transit use. The program includes efforts such as the BikeMobile, which visits schools to deliver no-cost bicycle repair and safety training, walking school buses, bicycle and pedestrian safety education for students, and encouragement events.[87]

Crossing Guard near School
Photo Credits: Port Washinton-news.com

Mobility Hubs

Mobility hubs are centers where transit, shared, mobility, walking, and biking come together to offer convenient transfers and first- and last-mile non auto connections to transit and other services. Several efforts within the CACCMCP study area address mobility hubs, as follows:

MTC has an ongoing program focused on the screening, prioritization, and implementation of mobility hubs within the Bay Area. The MTC screening and prioritization process has identified the following BART stations and areas as top locations for potential mobility hubs within the CACCMCP study area:

- Lake Merritt BART
- Fruitvale BART
- San Leandro BART
- Mills College
- Acalanes Drive and Catron Drive (opportunity hub within Community of Concern)
- East 14th Street and Blossom Way (opportunity hub within Community of Concern)

[86] Alameda CTC, Projects and Programs, accessed January 26, 2022, https://www.alamedactc.org/programs-projects/.

[87] Alameda CTC, Safe Routes to Schools, accessed August 14, 2022, https://www.alamedactc.org/programs-projects/safe-routes-to-schools/#:~:text=Safe%20Routes%20to%20Schools%20is,and%20physical%20activity%20of%20students.

- Meekland Avenue and Grove Way (opportunity hub within Community of Concern)

Caltrans D4 is undertaking the Bay Area Mobility Hub Study to identify opportunities to implement mobility hub improvements on Caltrans-controlled properties. Specfic recommendations for the CACCMCP study area have not yet been developed.

The East 14th Street/Mission Boulevard and Fremont Boulevard Multimodal Corridor Project[88] identifies Mobility Hubs in the study area. The potential mobility hub components entail infrastructure, mobility services and travel information and data. Potential mobility hub infrastructure improvements include projects at the transit station/stop as well as supportive facilities within a surrounding radius of ½ mile to one mile. Mobility services would serve the transit station and one-to-two mile radius may include car-share, bike-share, scooters, electric mopeds, microstransit, and private employer shuttles. Traveler information and data components address seamless transfers between modes.

Following is the list of recommended locations for mobility hubs within the study area:

- San Leandro BART
- Bay Fair BART
- Hayward BART
- South Hayward BART

[88] East 14th St./Mission Blvd. and Fremont Blvd. Multimodal Corridor Project Scoping Phase Recommendations Report, https://www.alamedactc.org/wp-content/uploads/2021/02/Final_Report_E14_Mission_Fremont_ScopingPhase_RPT_20210127.pdf, accessed on October 5th, 2022

4.4 Transportation Demand Management

Transportation demand management (TDM) is a broad application of programs and services aimed at reducing peak period single occupancy auto travel demand or shifting it to other modes and/or times of day. TDM strategies include the following:

- Alternative mode travel incentives
- Carpool/vanpool incentives
- Subsidized transit passes
- Parking management programs
- Guaranteed ride-home programs
- Alternate mode trip planning websites and applications

Comprehensive TDM programs can also include multimodal infrastructure and operational projects, including, but not limited to, shuttle services, paratransit services, high occupancy vehicle/toll (HOV/HOT) lanes, secure bicycle parking, bicycle and car sharing services, and preferential parking for carpools.

Local TDM Initiatives

Alameda CTC incorporates TDM measures into multimodal planning by statutory requirement of the Congestion Management Program (Section 65089 (b)(3) of the California Government Code) and its role as a congestion management agency. The County implements explicit TDM programs (e.g., the Guaranteed Ride Home Program) as well as other activities that promote reducing or managing demand for automobile travel (e.g., Bike Safety Education, the SR2S Program). Alameda CTC supports local governments' TDM efforts and monitors compliance with the TDM Element in Alameda CTC's Congestion Management Program. Private and public shuttle services bolster TDM measures by facilitating multimodal access to key destinations and transit hubs.

Transportation Demand Management: Bicycle Travel Promotion and Bike Safety Education

Alameda CTC also encourages bicycling through promotions such as the county's annual Bike to Work Day and Bike to School Day events held in May of each year. These promotions encourage bicycling in Alameda County. In addition, Alameda CTC funds bike safety education, providing free bicycle classes throughout the county that include classroom and on-road instruction for new and experienced cyclists, classes oriented towards adults, teenagers and children, and multilingual options in English, Spanish and Cantonese.

4.5 Freight Facilities

Given its proximity to the Port of Oakland seaport complex and Oakland International Airport, Central Alameda County plays an important role in goods movement throughout the Bay Area and the surrounding Northern California mega-region. I-880 is identified as part of the Primary Highway Freight System.[89] SR 185 in Oakland and San Leandro, SR 112 in San Leandro, SR 77 (42nd Avenue) in Oakland, and Jackson Street in Hayward serve as local truck routes.

Trucks exceeding 4.5 tons (9,000 pounds) are restricted from using I-580 in Oakland between Grand Avenue and the Oakland/San Leandro border. The restriction was implemented when I-580 was constructed in the 1960s at the request of Alameda County and the Cities of Oakland, Piedmont and San Leandro. In 1999, the restriction was adopted into the California Vehicle Code.[90]

East Oakland residents living near I-880 and truck routes between MacArthur Boulevard and I-880 have raised concerns that the restriction shifts truck traffic and impacts away from wealthier areas near I-580 and onto historically underserved communities in the Oakland Flats. For example, trucks traveling to commercial businesses on Foothill Boulevard and MacArthur Boulevard likely travel a greater distance on at-grade roads from I-880 through underserved communities rather than taking a more direct route using I-580. Caltrans is initiating a study of the truck restrictions in 2023.

Figure 4-14 through **Figure 4-17** show existing freight facilities in the study area. Trucking is the predominant mode of goods movement in Alameda County, accounting for 81 percent of tonnage moved and 60 percent of value moved in 2012.[91] In comparison, carload rail and container rail combined account for approximately 8 percent of tonnage moved in the county, making rail the second most significant goods movement mode.

[89] FHWA, National Highway Freight Network Map and Tables, accessed January 6, 2022, https://ops.fhwa.dot.gov/Freight/infrastructure/ismt/state_maps/states/california.htm.

[90] Caltrans, Special Route Restriction History- Route 580, accessed August 14, 2022, https://dot.ca.gov/programs/traffic-operations/legal-truck-access/restrict-route-580.

[91] Alameda CTC, Alameda County Goods Movement Plan, p. 32, https://www.alamedactc.org/wp-content/uploads/2018/11/AlamedaCTC_GoodsMovementPlan_FINAL.pdf.

Figure 4-14: Freight Facilities (Page 1 of 4)

Figure 4-15: Freight Facilities (Page 2 of 4)

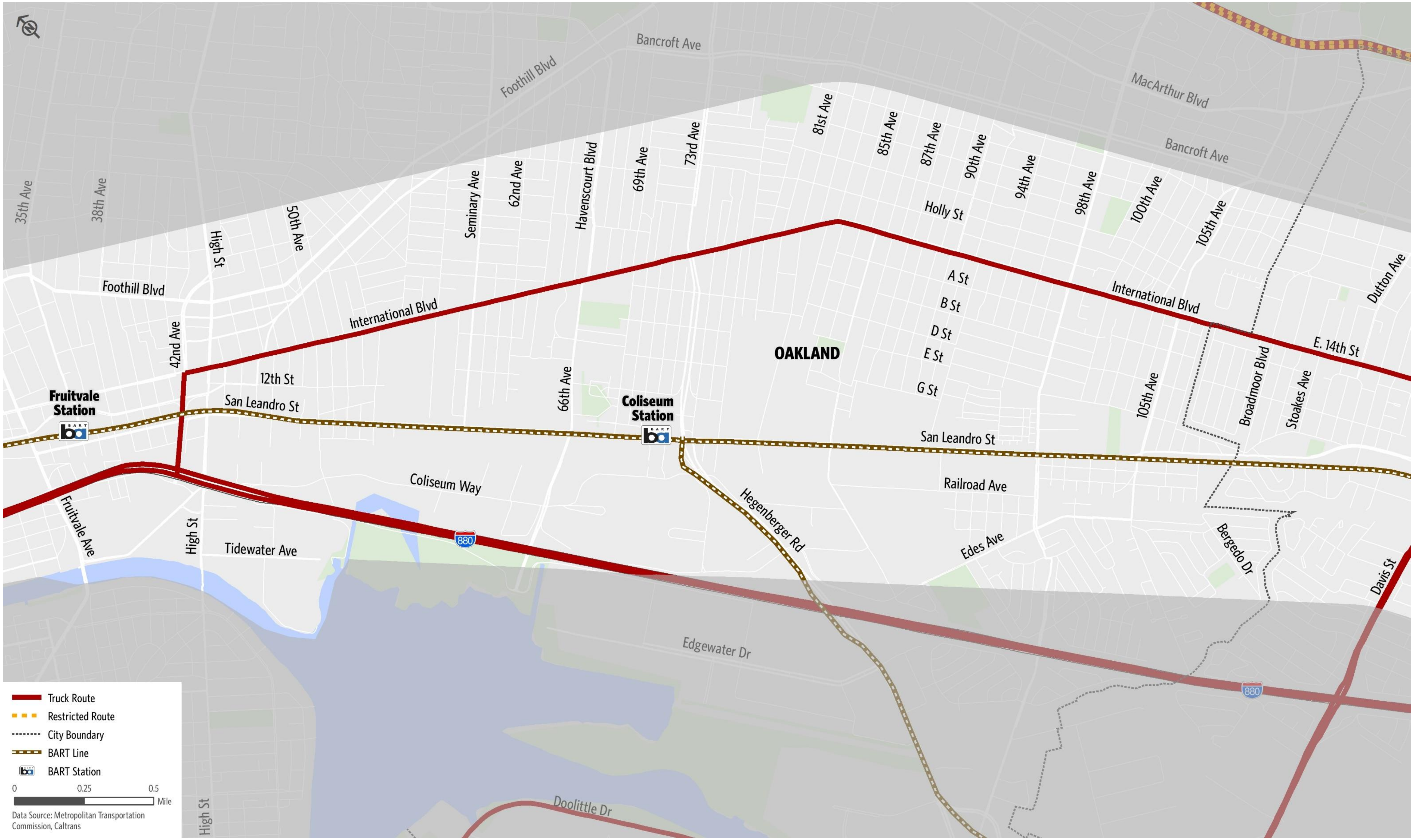


Figure 4-16: Freight Facilities (Page 3 of 4)

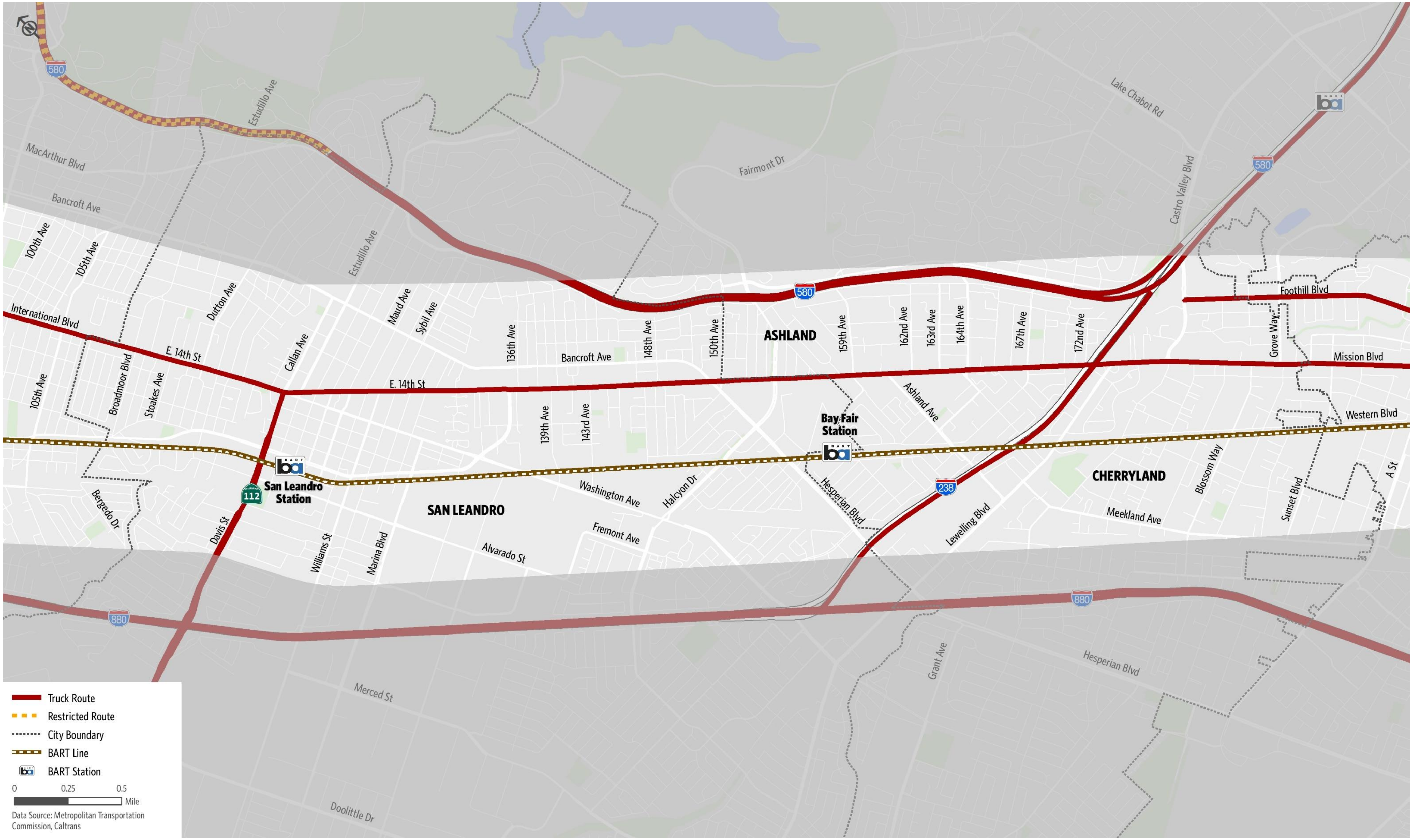


Figure 4-17: Freight Facilities (Page 4 of 4)

5. Performance and Needs Assessment

An existing (2020) and future (2040) conditions assessment was conducted for the CACCMCP study area. The assessment compiles and organizes the information into the following profiles, each discussed in this chapter:

- **Safety Profile** focuses on documenting the Countywide High Injury Network along the study area arterial corridors, with an emphasis on safety for bicyclists and pedestrians.
- **Mobility Profile** focuses on traffic volumes, auto speeds, vehicle delays, and bottlenecks.
- **Reliability Profile** focuses on travel time reliability for autos and on-time performance for transit.
- **Sustainability Profile** focuses on documenting performance related to multimodal accessibility, connectivity, pollution, and vehicle miles traveled (VMT).
- **Equity Profile** presents how the performance of the transportation system impacts MTC Equity Priority and state defined (SB 535) Disadvantaged Communities.

The performance assessment is based on a combination of existing documentation review and modeling of existing and future project conditions. The existing conditions data was obtained from a variety of sources, generally representing pre-COVID conditions. Where data was unavailable from observed conditions through previous studies, the Alameda CTC 2040 Countywide Travel Demand Model was used for existing (2020) and future (2040) conditions. The future conditions were obtained from the model's 2040 no project scenario. The needs assessment is combined with the equity profile that further investigates safety, mobility, reliability, and sustainability.

For the CACCMCP, the intent is to show quantitative differences between future no project and future with the project. While MTC has updated the regional model to Plan Bay Area 2050 (PBA 2050), the reason behind not using this model is it would incorrectly capture major land use policies and assumptions (e.g., significant TOD, ALT by 2035) that drive the majority of PBA2050 outcomes. The PBA2050 does not have a scenario that shows the impacts of only projects without policies. Chapter 7 presents the benefits of planned projects according to the listed performance measures.

Table 5-1 summarizes the list of performance measures reviewed for this assessment with associated geography for evaluation and source of data. Some of these performance metrics are required for the Solutions of Congested Corridor Program (SCCP) as listed in the California Transportation Commission's (CTC) Senate Bill 1 (SB1) Technical Performance Measurement Methodology Guidebook. [92]

[92] California Transportation Commission, *Senate Bill 1 (SB1) Technical Performance Measurement Methodology Guidebook*, https://catc.ca.gov/-/media/ctc-media/documents/ctc-workshops/2022/sb-1/performance-measurement-guidebook-final-draft.pdf.

Table 5-1: List of Performance Measures

Profile	Performance Measure	Study Limits	Data Source	SCCP Required/ Optional
Safety	Rate of fatalities per 100 million VMT	Primary corridors/ major connections	TIMS 2014-19, ADT from various sources	**Required**
	Rate of serious injuries per 100 million VMT	Primary corridors/ major connections	TIMS 2014-19, ADT from various sources	**Required**
	Number of non-motorized fatalities	Primary corridors/ major connections	TIMS 2014-19	Optional
	Non-motorized serious injuries	Primary corridors/ major connections	TIMS 2014-19	Optional
	Countywide High Injury Network	Primary corridors/ major connections	Alameda Countywide Active Transportation Plan 2019	Optional
Mobility	Daily and peak period vehicle volumes	Primary corridors/ major connections	Various sources	Optional
	Daily and peak period truck volumes	Primary corridors/ major connections	Caltrans Traffic Census Program and Northern Alameda County Truck Access Management Study	Optional
	Transit frequency	Transit routes	AC Transit	Optional
	Average vehicle delay (LOS)	Primary corridors/ major connections	Alameda CTC 2018 Congestion Management Program (CMP) Multimodal Monitoring Report and Alameda CTC Countywide Travel Demand Model	Optional
	Vehicle hours of delay	Areawide	Alameda CTC Countywide Travel Demand Model	Optional
	Bottlenecks	Primary corridors/ major connections	INRIX 2019	Optional
Reliability	Travel time reliability (planning time index or buffer time index)	Freeways only	Alameda CTC 2018 CMP Multimodal Monitoring Report	**Required**
	Level of transit delay	Transit routes	California Integrated Travel Project (Cal-ITP)	**Required**
	Transit on-time performance	Transit routes	BART and AC Transit	Optional

Profile	Performance Measure	Study Limits	Data Source	SCCP Required/ Optional
Sustainability	Changes in daily VMT	Primary corridors/ major connections	Alameda CTC Countywide Travel Demand Model	**Required**
	Air quality	Jurisdictions	Alameda CTC Countywide Travel Demand Model	**Required**
	Miles of bikeway network facilities	Jurisdictions	Active transportation planned projects	Optional
	Miles of first/last mile connections to major transit stations (qualitative evaluation)	Transit stations	10-minute walk and bike shed around a major transit stop and bicycle facilities	Optional
	Population in Priority Development Areas	Jurisdictions	Association of Bay Area Governments and U.S. Census Bureau	Optional
	Percent of short trips	Jurisdictions	Alameda CTC Countywide Travel Demand Model	Optional

Source: Kittelson & Associates, Inc., 2022.

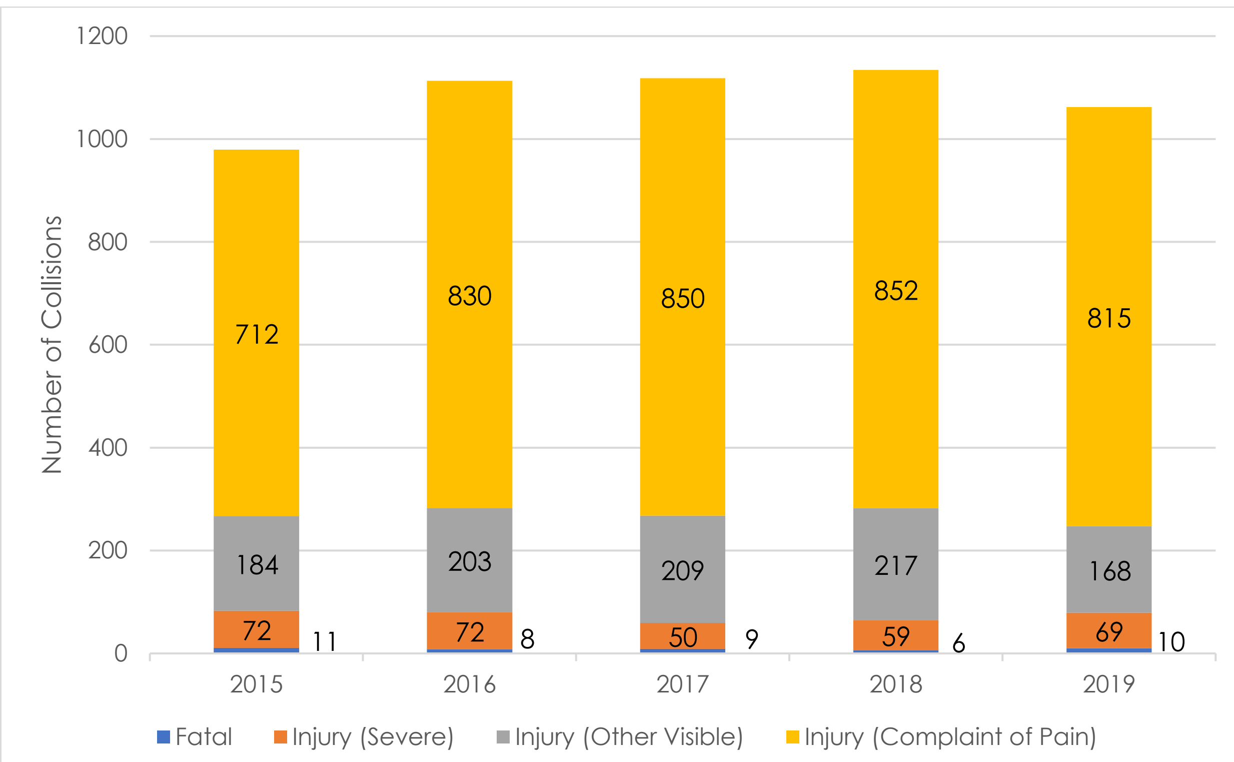
5.1 Safety Performance

The safety profile focuses on documenting the Countywide High Injury Network along the study area arterial corridors, with an emphasis on safety for bicyclists and pedestrians. The five most recent years (2015-2019) of reported crash data from the University of California, Berkeley, Transportation Injury Mapping System (TIMS) database was utilized to develop the safety profile for the study area.

Collisions by Severity

Approximately 1 percent of the total study area (44 out of 5,406) collisions resulted in fatalities and 6 percent (322 out of 5,406) resulted in serious injuries. As per the collision data, the highest number of collisions occurred in 2018 with 1,134 collisions. While auto travel fell during the COVID-19 pandemic, the Fatality Analysis Reporting System (FARS) data shows there has been an increase (1 percent) in fatalities in Alameda County (7 percent nationwide).[93] **Figure 5-1** illustrates the collision trend by severity for the CACCMCP study area. **Figure 5-2** through **Figure 5-5** show study area maps for collisions by severity.

Figure 5-1: Collision Trend by Severity (2015-2019)



Sources: Data compiled from the University of California, Berkeley, Transportation Injury Mapping System (2015-19), accessed July 4, 2022; Kittelson & Associates, Inc., 2022.

[93] National Highway Traffic Safety Administration. Fatality Analysis Reporting System (FARS), accessed from https://www-fars.nhtsa.dot.gov/Main/index.aspx

Figure 5-2: Collisions by Severity (2015-19) and High Injury Network (2012-16) (Page 1 of 4)

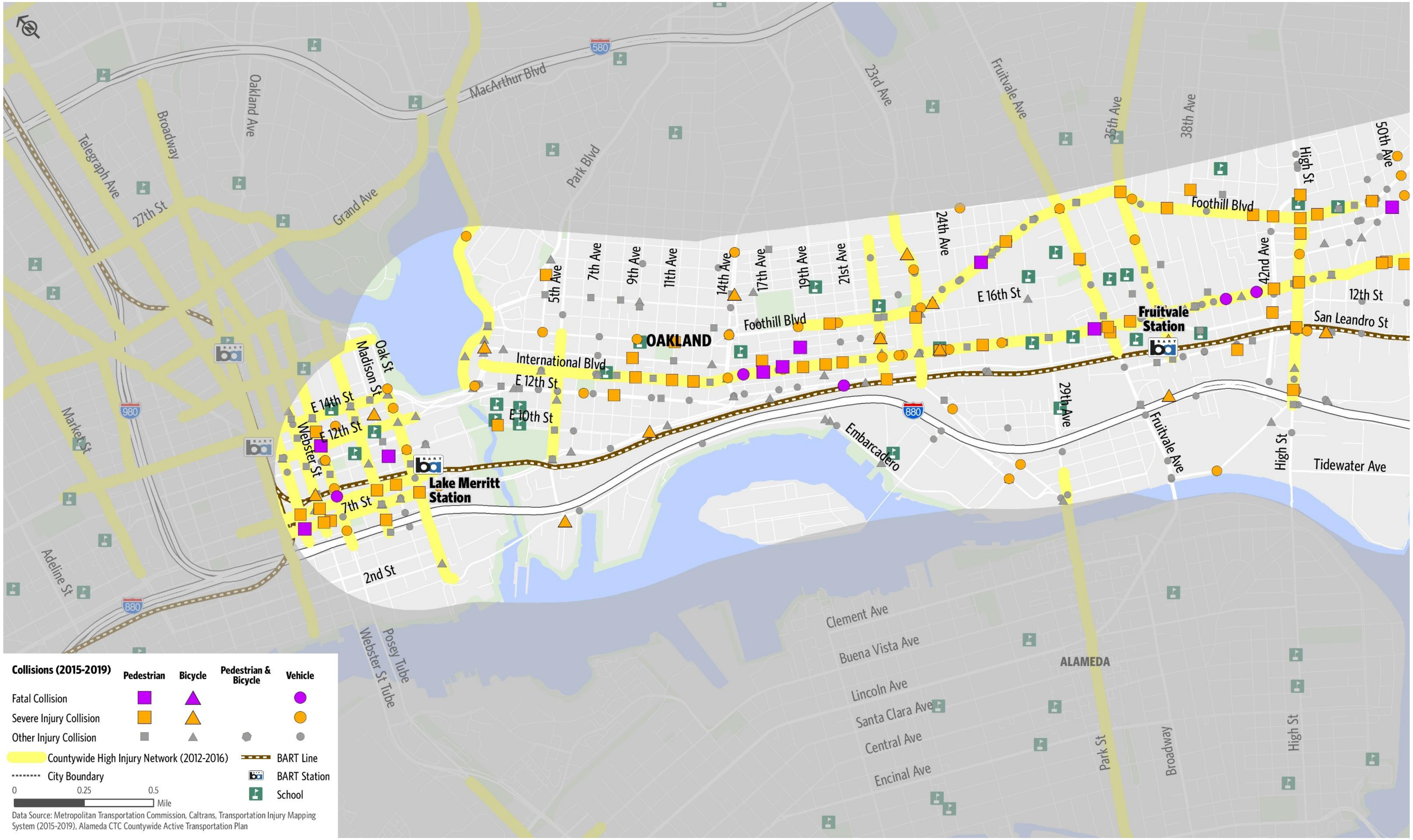


Figure 5-3: Collisions by Severity (2015-19) and High Injury Network (2012-16) (Page 2 of 4)

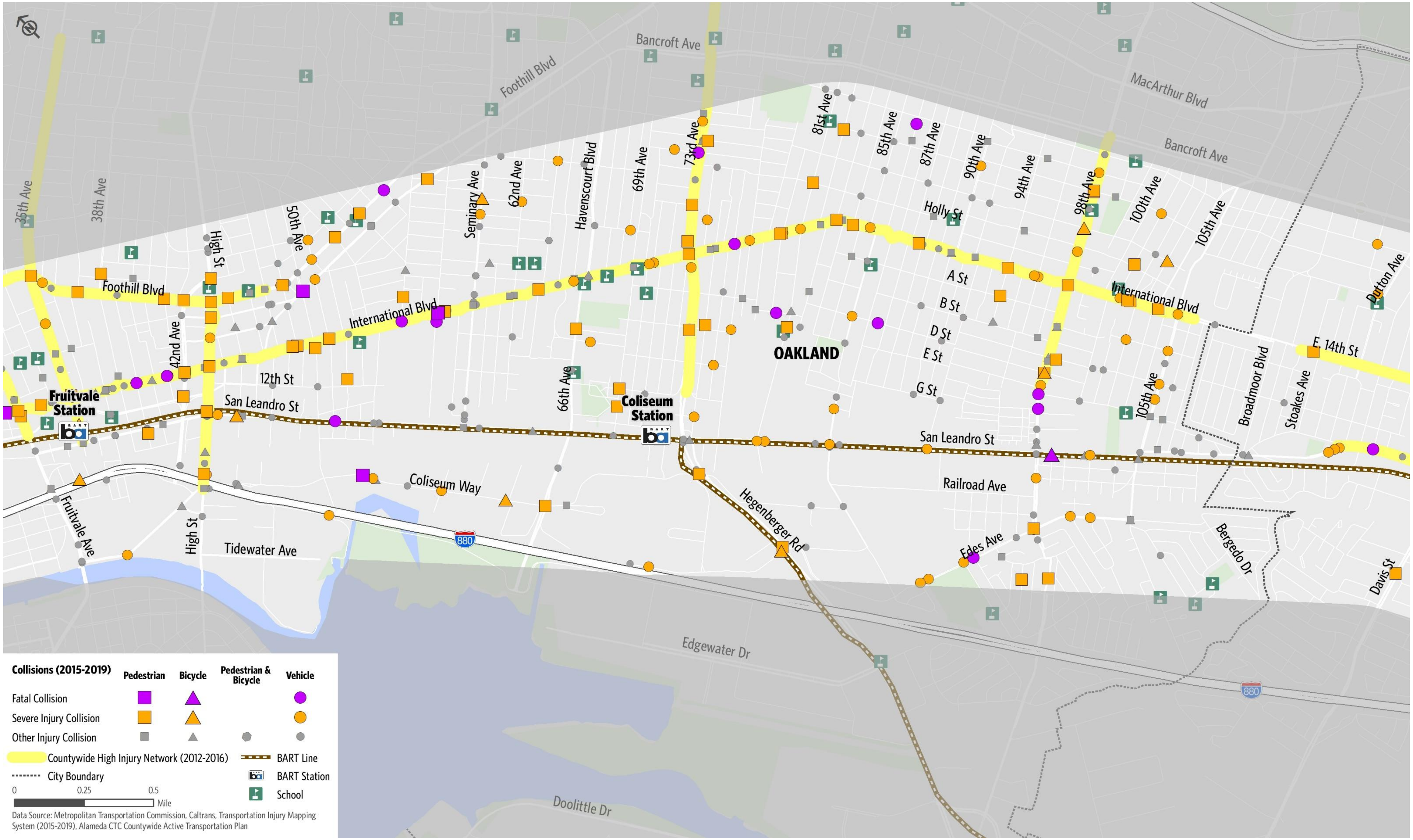


Figure 5-4: Collisions by Severity (2015-19) and High Injury Network (2012-16) (Page 3 of 4)

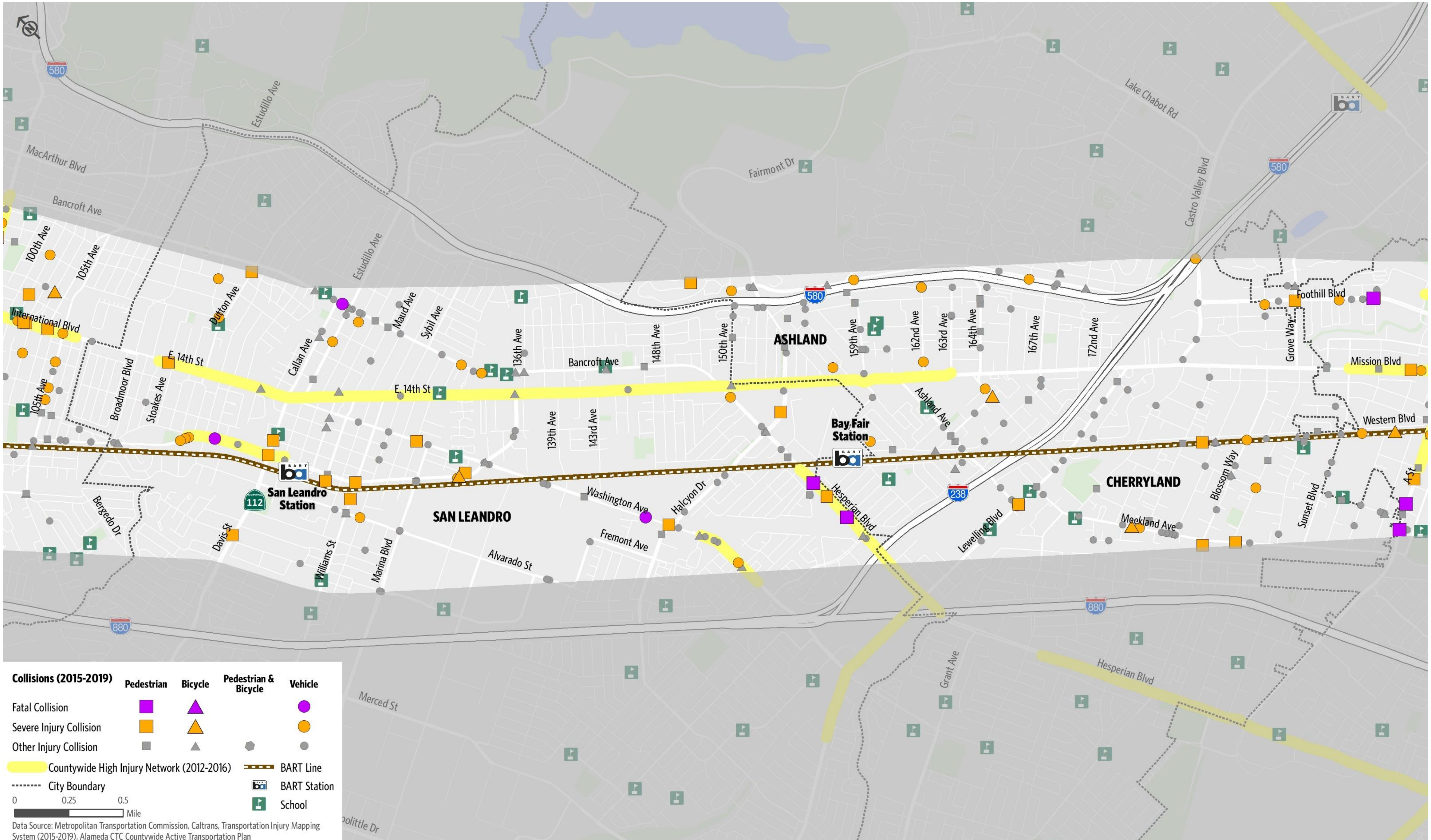
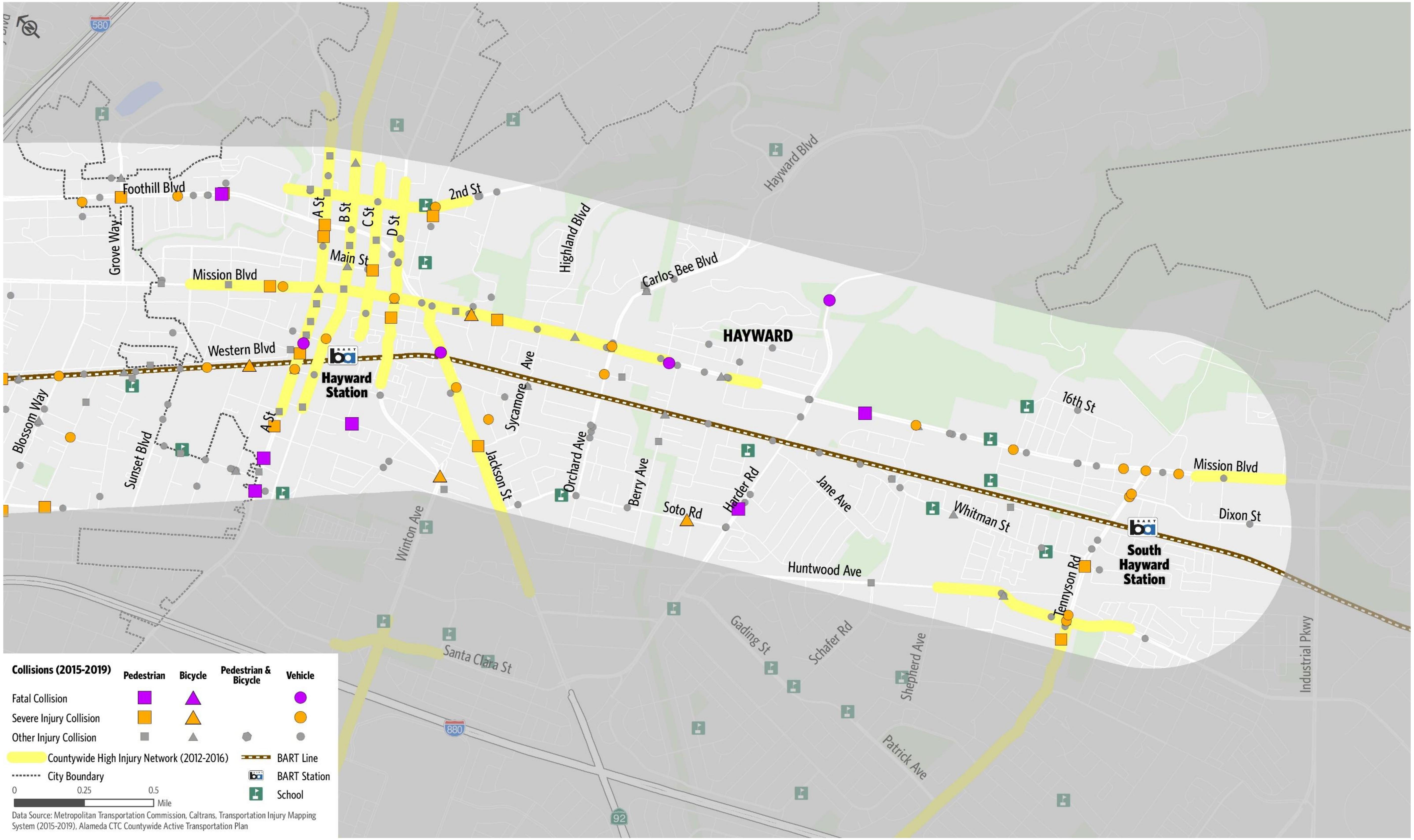


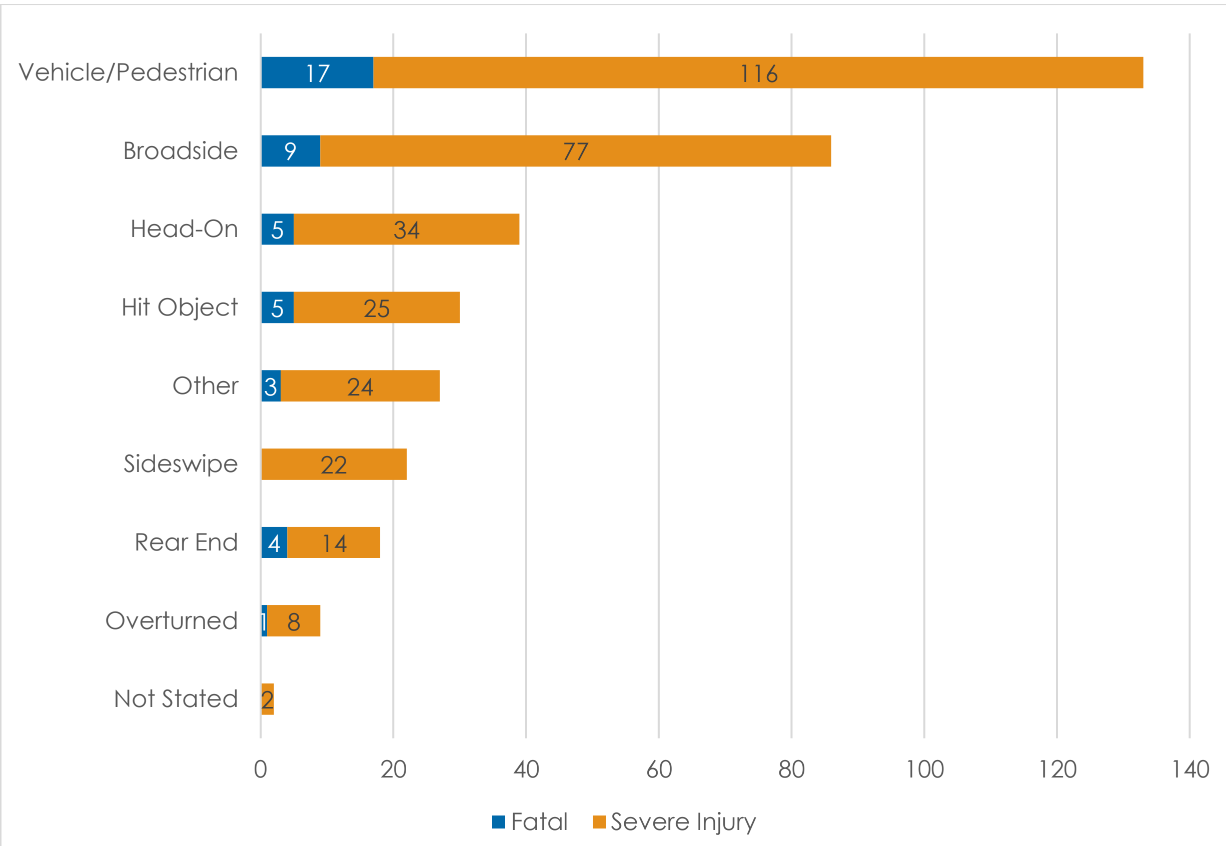
Figure 5-5: Collisions by Severity (2015-19) and High Injury Network (2012-16) (Page 4 of 4)



Collisions by Type

The top three collision types resulting in a fatality or serious injury were vehicle/pedestrian (37 percent, 133 out of 366), broadside (24 percent, 86 out of 366), and head-on (11 percent, 39 out of 366). These three types of collisions collectively accounted for 71 percent of the total collisions (258 out of 366) that resulted in fatality and severe injury. Collisions by type and severity are shown in **Figure 5-6**.

Figure 5-6: Collisions by Type and Severity (2015-2019)



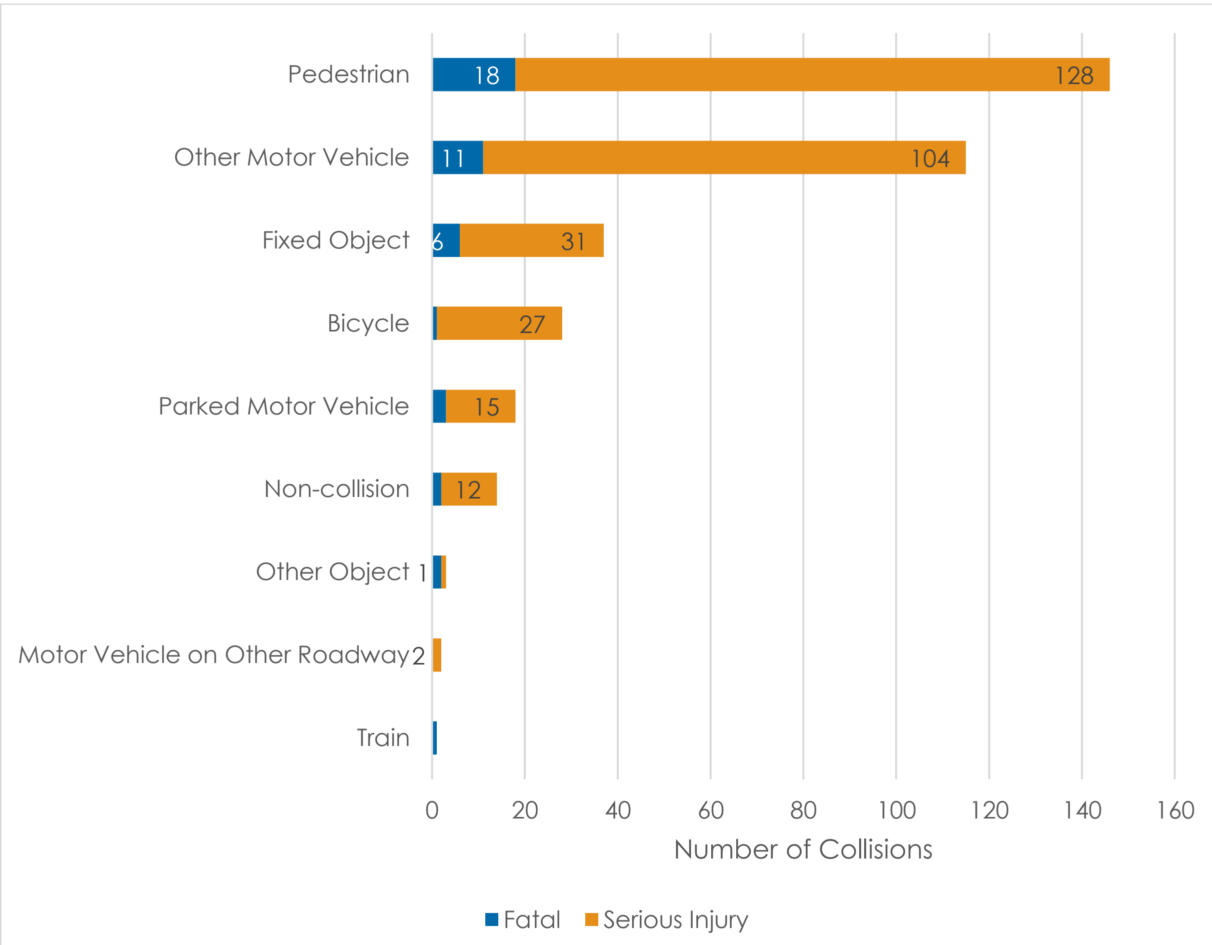
Sources: Data compiled from the University of California, Berkeley, Transportation Injury Mapping System (2015-19), accessed July 4, 2022; Kittelson & Associates, Inc., 2022.

Collisions by Mode of Transportation

Pedestrians and bicyclists are typically considered the most vulnerable users of the street. When involved in a collision, the extent of injuries suffered by these users is typically greater and increases exponentially with the speed of the roadway. For the study area, about 40 percent (146 out of 366) of the total fatal and severe injury collisions involved a pedestrian and about 8 percent (28 out of 366) involved a bicyclist.

Figure 5-7 shows the mode of transportation involved in collisions that resulted in a fatality or severe injury.

Figure 5-7: Collisions by Mode and Severity (2015-2019)

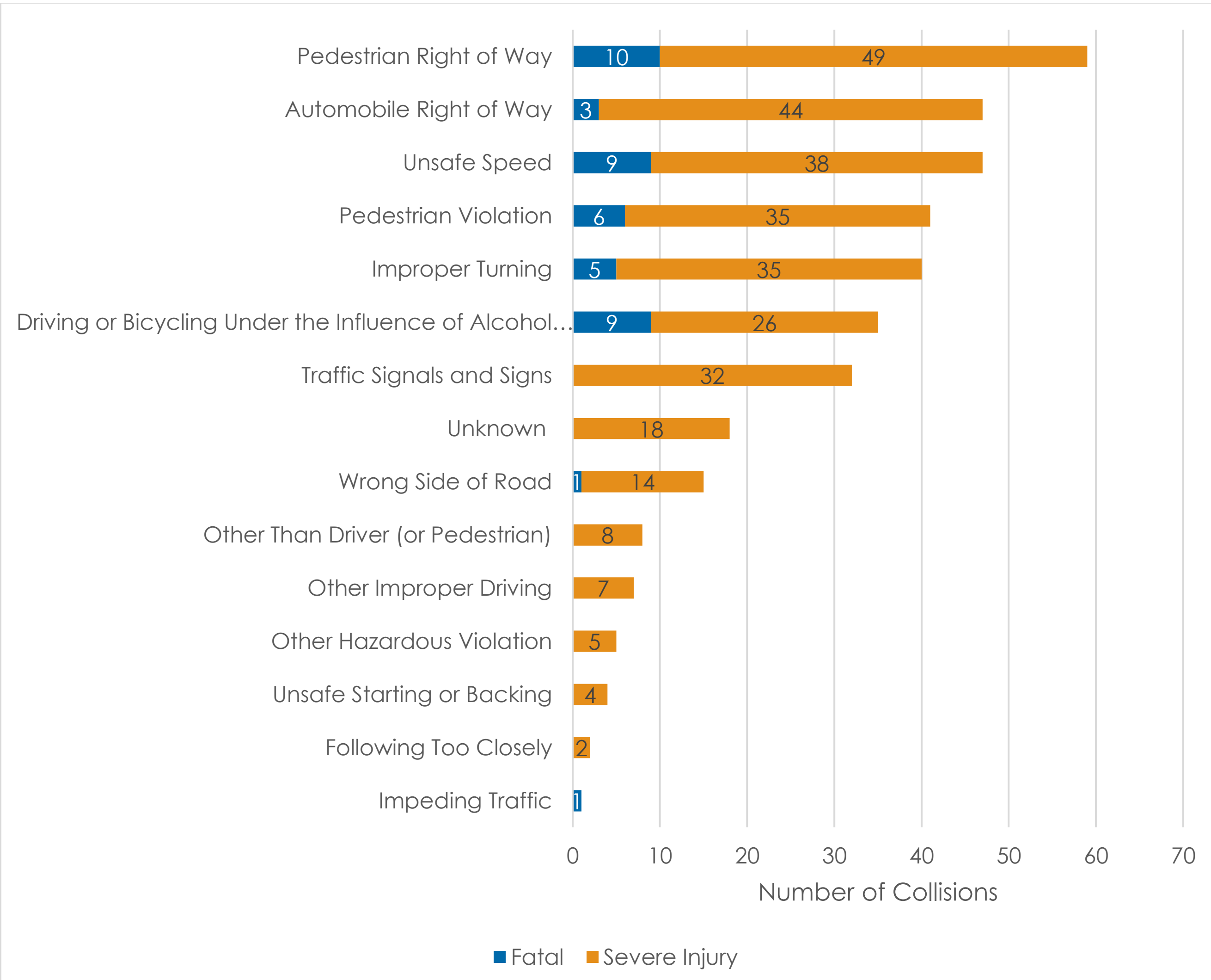


Sources: Data compiled from the University of California, Berkeley, Transportation Injury Mapping System (2015-19), accessed July 4, 2022; Kittelson & Associates, Inc., 2022.

Collisions by Violation Factor

Based on the collision data, pedestrian right-of-way violation[94] (16 percent, 59 out of 366) and pedestrian violation[95] (11 percent, 41 out of 366) are important contributors to the high number of fatal and severe injuries. Other factors, such as automobile right-of-way violation (13 percent, 47 out of 366) and unsafe speed violations (13 percent, 47 out of 366), are among the top violation factors, as shown in **Figure 5-8**.

Figure 5-8: Collisions by Primary Violation Factor (2015-2019)



Sources: Data compiled from the University of California, Berkeley, Transportation Injury Mapping System (2015-19), accessed July 4, 2022; Kittelson & Associates, Inc., 2022.

[94] Pedestrian right-of-way violation: Driver was cited as at fault for violating pedestrian legal right of way.
[95] Pedestrian violation: Pedestrian was cited as at fault by the reporting officer.

Countywide High Injury Network

The Alameda 2019 Countywide Active Transportation Plan (CATP) identifies a countywide high injury pedestrian and bicycle network by analyzing the TIMS collision data from 2012 to 2016. The countywide High Injury Network (HIN) represents the top 20 percent of streets with the highest number of collisions based on severity or frequency, weighted based on reported severity (i.e., most collisions and/or most severe collisions over a five-year period countywide).[96] For the CACCMCP study area, of the total pedestrian and bicyclist collisions between 2015 and 2019, the highest number of collisions occurred in Oakland (978), followed by Hayward (150). **Table 5-2** shows the bicycle and pedestrian HIN on Primary Corridors with the CACCMCP study area. **Figure 5-2** through **Figure 5-5** show the combined bicycle and pedestrian HIN within the study area.

Table 5-2: Countywide Bicycle and Pedestrian HIN on Primary Corridors within the Study Area

Jurisdiction	Bicycle HIN	Pedestrian HIN
Oakland	• International Boulevard between 1st Avenue and 105th Avenue • San Leandro Street between 37th Avenue to 47th Avenue	• International Boulevard between 1st Avenue and 105th Avenue • San Leandro Street, between 66th Avenue and Hegenberger Road
San Leandro	• East 14th Street between 105th Avenue and Fairmont Drive • East 14th Street between Belleview Drive and Hesperian Boulevard • San Leandro Street between Broadmoor Boulevard to Estudillo Avenue	• East 14th Street between Durant Avenue and Castro Street • East 14th Street between Hesperian Boulevard and Plaza Drive • San Leandro Boulevard between Best Avenue and Hudson Lane
Ashland	• East 14th Street between 150th Avenue and 164th Avenue	• East 14th Street between 150th Avenue and Mattox Road
Cherryland	• None noted	• East 14th Street between Mattox Road and Grove Way
Hayward	• Mission Boulevard between Grove Way and Berry Avenue	• Mission Boulevard between Grove Way and Jackson Street

Source: Alameda Countywide Active Transportation Plan, 2020.

[96] The analysis used a scoring metric of annualized equivalent property damage only (EPDO). EPDO represents the relative societal cost of a location's collision history in terms of property damage only collisions (e.g., a location with a score of 12 has experienced on average the equivalent of 12 property damage collisions per year) through a combination of collision frequency and severity.

Safety Performance Measures

The evaluation framework provided in Chapter 2 identifies the following performance measures related to safety:

- **Rate of fatalities per 100 million vehicle miles traveled (VMT):** The ratio of total number of fatalities to the number of VMT (in million VMT) in a calendar year.

$$Fatal\ Crash\ Rate = \frac{(Number\ of\ Fatal\ Crashes\ 2015-19)\ X\ (100{,}000{,}000)}{Average\ Daily\ Traffic\ (ADT)\ X\ Length\ of\ segment\ X\ 5\ X\ 365}$$

- **Rate of serious injuries per 100 million VMT:** The ratio of total number of serious injuries to the number of VMT (in 100 million VMT) in a calendar year.

$$Serious\ Injuries\ Crash\ Rate = \frac{(Number\ of\ Serious\ Injuries\ Crashes\ 2015-19)\ X\ (100{,}000{,}000)}{Average\ Daily\ Traffic\ (ADT)\ X\ Length\ of\ segment\ X\ 5\ X\ 365}$$

- **Number of non-motorized fatalities:** The combined total number of bicycle and pedestrian fatalities involving a motor vehicle during a calendar year.
- **Number of non-motorized serious injuries:** The combined total number of bicycle and pedestrian serious injuries involving a motor vehicle during a calendar year.

Safety in Numbers (2015-19)

5406 Injury collisions in the CACCMCP study area

366 Fatal and severe injury collisions

174 Injury fatal or severe injury collisions involving a pedestrian or a bicyclist

100 Fatal or severe injury collisions due to pedestrian right-of-way or pedestrian violation

International Boulevard between 1st Avenue and 42nd Avenue was found to have the highest number of fatalities and severe injuries amongst all primary corridors and major connections within the study area. The highest number of non-motorized fatalities and severe injuries also occurred on this segment.

The relatively short segment of 73rd Avenue between Arthur Street and International Boulevard has the highest fatality rate of 17.16 fatalities per 100 million VMT. This is more than 15 times higher than the statewide 5-year average fatality rate, which was 1.078 in the year 2019.[97] This segment was also found to have the highest serious injuries rate of 137.25 serious injuries per 100 million VMT. This is 33 times higher than the statewide 5-year average severe injury rate, which was 4.123 in the year 2019. Despite the high number of fatality and severe injury collisions on this segment, the high fatality rates could be attributed to the short roadway segment length. A total of three non-motorized serious injuries occurred on this segment.

The results of the performance measure evaluation for the primary corridors and major connections within the CACCMCP study area are shown in **Table 5-3**.

[97] https://dot.ca.gov/-/media/dot-media/programs/federal-liaison/documents/2021-spmt-a11y.pdf

Table 5-3: Safety Performance Measures

Roadway Segments	Segment Limit	Miles	ADT[1]	Number of Fatalities	Number of Serious Injuries	Fatalities per 100M VMT[2]	Serious Injuries per 100M VMT	Number of Non-motorized Fatalities	Number of Non-motorized Serious Injuries
International Boulevard	Between 1st Avenue and 42nd Avenue	2.87	12,680	6	34	9.02	51.13	3	15
A Street	Between 3rd Street and Martin Luther King Drive	1.34	15,500	3	9	7.93	23.78	2	5
International Boulevard	Between 42nd Avenue and Seminary Avenue	1.06	26,800	3	13	5.76	24.96	1	6
Washington Avenue	Between Juana Avenue and Monterey Boulevard	2.04	9,800	2	3	5.48	8.23	-	2
Hesperian Boulevard	Between East 14th Street and College Street	1.15	20,800	2	2	4.59	4.59	2	1
Mission Boulevard	Between Jackson Street and Tennyson Street	2.66	27,000	2	19	1.53	14.50	1	5
73rd Avenue	Between Arthur Street and International Boulevard	0.47	6,750	1	8	17.16	137.25	-	3
Madison Street	Between Lakeside Drive and 2nd Street	0.90	10,350	1	2	5.89	11.79	1	2
San Leandro Street	Between 85th Avenue and Broadmoor Blvd	1.49	8,500	1	2	4.34	8.68	1	-
Jackson Street	East 14th Street and Soto Road	0.80	16,800	1	2	4.10	8.20	-	1
San Leandro Boulevard	Between Broadmoor Boulevard and Davis Street	0.74	22,100	1	7	3.36	23.50	-	-
San Leandro Street	Between Fruitvale Avenue and 69th Avenue	2.09	13,000	1	4	2.02	8.06	-	1

Roadway Segments	Segment Limit	Miles	ADT[1]	Number of Fatalities	Number of Serious Injuries	Fatalities per 100M VMT[2]	Serious Injuries per 100M VMT	Number of Non-motorized Fatalities	Number of Non-motorized Serious Injuries
International Boulevard	Between Seminary Avenue and 86th Avenue	1.53	24,100	1	22	1.48	32.62	-	6
International Boulevard	Between 86th Avenue and Broadmoor Blvd	1.42	24,300	-	13	-	20.63	-	6
East 14th Street	Between Broadmoor Avenue and Davis Street	0.73	23,300	-	1	-	3.24	-	1
East 14th Street	Between Davis Street and Sybil Avenue	0.54	17,700	-	-	-	-	-	-
East 14th Street	Between Sybil Avenue and Hesperian Boulevard	1.46	22,800	-	-	-	-	-	-
East 14th Street	Between Hesperian Boulevard and 150th Avenue	0.05	23,300	-	-	-	-	-	-
East 14th Street	Between 150th Avenue and 168th Avenue	1.49	20,600	-	-	-	-	-	-
East 14th Street/Mission Boulevard	Between 168th Avenue and Mattox Road	0.58	21,500	-	-	-	-	-	-
Mission Boulevard	Between Mattox Road and Rose Street	0.66	18,100	-	-	-	-	-	-
Mission Boulevard	Between Rose Street and A Street	0.57	22,000	-	2	-	8.81	-	1
Mission Boulevard	Between A Street and Jackson Street	0.39	16,550	-	2	-	17.14	-	-
San Leandro Street	Between 69th Avenue and 85th Avenue	0.78	9,250	-	10	-	76.34	-	2

Roadway Segments	Segment Limit	Miles	ADT[1]	Number of Fatalities	Number of Serious Injuries	Fatalities per 100M VMT[2]	Serious Injuries per 100M VMT	Number of Non-motorized Fatalities	Number of Non-motorized Serious Injuries
San Leandro Boulevard	Between Davis Street and Marina Boulevard	0.70	19,500	-	3	-	12.06	-	1
San Leandro Boulevard	Between Marina Boulevard and East 14th Street	0.71	11,300	-	4	-	27.17	-	2
Oak Street	Between Lakeside Drive and 2nd Street	0.64	2,720	-	3	-	94.83	-	1
Fruitvale Avenue	Between Foothill Boulevard and Fernside Boulevard	1.28	22,250	-	6	-	11.53	-	5
High Street	Between Carrington Street and Fernside Boulevard	1.31	18,200	-	12	-	27.66	-	7
Hegenberger Road	Between International Boulevard and Coliseum Way	1.22	26,400	-	8	-	13.65	-	4
Davis Street	Between East 14th Street and Preda Street	0.69	23,650	-	4	-	13.51	-	4
Tennyson Road	Between Huntwood Avenue and Vista Grande Drive	1.13	5,900	-	7	-	57.77	-	1

Sources: ADT- Caltrans Traffic Census Program, 2019; Highway Performance Monitoring System, 2018; City of Oakland General Plan Update, 2022; Alameda CTC Countywide Travel Demand Model; and various traffic studies.

5.2 Mobility Performance

The mobility performance assessment focuses on existing and future roadway volumes, travel speeds and times, level of service (LOS), delay, and bottlenecks.

Every two years, Alameda CTC monitors the performance of 553 miles of major roads throughout Alameda County under its Congestion Management Program (CMP). The CMP network includes five types of facilities: freeways, highways, principal arterials, major arterials, and major roads. There is less data available on minor local roads which are not included in the CMP network.

The CMP network has historically been divided into Tier 1 and Tier 2 networks. The CMP network's Tier 1 roadways were initially adopted in 1991 and updated in 1992, and include all freeways, highways, selected principal arterials and freeway ramp connectors. Tier 2 roadways were added to the CMP network in 2011 and included additional principal and major arterials not already part of the CMP network. Alameda CTC added 225 miles of Tier 2 roads for the 2018 monitoring cycle. For mobility performance, automobile speeds are referred from the 2018 CMP multimodal monitoring report.

Table 5-4 shows the segments from the CACCMCP study area that have been included in this program. Data for segments not included in the CMP network are collected directly from the INRIX tool.

Table 5-4: CMP Network Included in the Study Area

Tier	CMP Route	From	To	Jurisdiction
1	SR 77/42nd Avenue	I-880	SR 185 /East 14th Street	Oakland
1	SR 185 /International Boulevard	SR 77/42nd Avenue	San Leandro City Limit	Oakland
1	Hegenberger Road	I-880	Hawley Street	Oakland
1	Hegenberger Road	Hawley Street	SR 185 /East 14th Street	Oakland
1	I-880	I-980	Hegenberger Road	Oakland
1	SR 185/East 14th Street	Oakland City Limit	SR 61/112/ Davis Street	Oakland
1	SR 61/112/ Davis Street	SR 61 (Doolittle Drive)	SR 185 /East 14th Street	Oakland
1	150th Avenue	Hesperian Boulevard	I-580	Oakland
1	SR 185/East 14th Street	Oakland City Limit	Ashland	Oakland
1	Hesperian Boulevard	SR 185 /East 14th Street	San Lorenzo City Limit	Oakland
1	I-880	Hegenberger Avenue	I-238	Oakland
1	East 14th Street	San Leandro City Limit	172nd Avenue	Ashland

Tier	CMP Route	From	To	Jurisdiction
1	Mission Boulevard	172nd Avenue	Hayward City Limit	Cherryland
1	Hesperian Boulevard	San Leandro City Limit	Hayward City Limit	Ashland
1	SR 185/Mission Boulevard	Ashland	SR 92/Jackson Street	Hayward
1	SR 92	I-880	Mission Boulevard	Hayward
1	SR 238 (Foothill Boulevard)	Ashland	SR 185 (Mission Boulevard)	Hayward
1	Mission Boulevard	SR 92/Jackson Street	Union City Limit	Hayward
1	A Street	I-880	SR 238 (Foothill Boulevard)	Hayward
1	Tennyson Road	Hesperian Boulevard	Mission Boulevard	Hayward
2	Fruitvale Avenue	Tilden Way	MacArthur Boulevard	Oakland
2	International Boulevard	1st Avenue	42nd Avenue	Oakland
2	San Leandro Street	Fruitvale Avenue	San Leandro City Limit	Oakland
2	73rd Avenue	International Boulevard	I-580	Oakland
2	High Street	Otis Drive	I-580	Oakland
2	San Leandro Boulevard	East 14th Street	San Leandro City Limit	San Leandro
2	Washington Avenue	Juana Avenue	Lewelling Boulevard	San Leandro

Source: Alameda CTC Congestion Management Program (CMP), 2018.

Volumes

Vehicle and truck volumes on the CACCMCP primary corridors and major connections are described in the following sections. Volume data was collected from several sources presented in a variety of formats.

Vehicle Volumes

Existing volumes were collected from various sources such as the Caltrans Traffic Census Program (2019), Highway Performance Monitoring System (2018), City of Oakland General Plan Update, and various traffic studies. The future 2040 traffic volumes are drawn from the Alameda CTC Countywide 2040 Travel Demand Model. **Table 5-5** provides a directional summary for daily, AM (7 am - 9 am), and PM (4 pm - 6 pm) peak hour traffic volumes.

Table 5-5: Existing and Future Peak Travel Volumes

Roadway Segments	Segment Limit	Direction	Miles	Average Daily			AM Peak			PM Peak		
				Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
I-880	Between I-980 and Hegenberger Road	SB	6.7	196,000	206,300	5.3%	6,360	6,760	6.3%	8,060	8,960	11.2%
I-880	Between I-980 and Hegenberger Road	NB	6.7				7,430	8,220	10.6%	7,230	7,870	8.9%
I-880	Between Hegenberger Road to I-238	SB	4.7	288,000	295,400	2.6%	9,230	10,380	12.5%	7,340	7,970	8.6%
I-880	Between Hegenberger Road to I-238	NB	4.7				12,800	12,680	-0.9%	7,640	8,050	5.4%
I-238	Between I-580 and I-880	EB	1.6	167,000	177,400	6.2%	3,140	3,080	-1.9%	4,870	5,270	8.2%
I-238	Between I-580 and I-880	WB	1.6				7,880	8,570	8.8%	3,570	4,210	17.9%
International Boulevard	Between 1st Avenue and 42nd Avenue	NB	2.87	12,680	18,700	47.5%	510	690	35.3%	960	980	2.1%
International Boulevard	Between 1st Avenue and 42nd Avenue	SB	2.87				580	620	6.9%	750	920	22.7%
International Boulevard	Between 42nd Avenue and Seminary Avenue	NB	1.06	26,800	31,200	16.4%	630	810	28.6%	1,030	1,040	1.0%
International Boulevard	Between 42nd Avenue and Seminary Avenue	SB	1.06				1,270	1,280	0.8%	630	810	28.6%
International Boulevard	Between Seminary Avenue and 86th Avenue	NB	1.53	24,100	29,900	24.1%	590	830	40.7%	1,040	1,050	1.0%
International Boulevard	Between Seminary Avenue and 86th Avenue	SB	1.53				1,240	1,240	0.0%	680	920	35.3%
International Boulevard	Between 86th Avenue and Broadmoor Blvd	NB	1.42	24,300	30,400	25.1%	890	1,260	41.6%	550	740	34.5%
International Boulevard	Between 86th Avenue and Broadmoor Blvd	SB	1.42				870	960	10.3%	600	930	55.0%

Roadway Segments	Segment Limit	Direction	Miles	Average Daily			AM Peak			PM Peak		
				Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
East 14th Street	Between Broadmoor Avenue and Davis Street	NB	0.73	23,300	28,700	23.2%	1,120	1,450	29.5%	440	730	65.9%
East 14th Street	Between Broadmoor Avenue and Davis Street	SB	0.73				700	930	32.9%	840	980	16.7%
East 14th Street	Between Davis Street and Sybil Avenue	NB	0.54	17,700	28,100	58.8%	480	880	83.3%	1,470	2,010	36.7%
East 14th Street	Between Davis Street and Sybil Avenue	SB	0.54				980	1,480	51.0%	830	1,260	51.8%
East 14th Street	Between Sybil Avenue and Hesperian Boulevard	NB	1.46	22,800	28,400	24.6%	740	950	28.4%	1,380	1,930	39.9%
East 14th Street	Between Sybil Avenue and Hesperian Boulevard	SB	1.46				1,220	1,770	45.1%	710	910	28.2%
East 14th Street	Between Hesperian Boulevard and 150th Avenue	NB	0.05	23,300	29,100	24.9%	710	800	12.7%	2,880	3,180	10.4%
East 14th Street	Between Hesperian Boulevard and 150th Avenue	SB	0.05				970	1,370	41.2%	1,680	1,570	-6.5%
East 14th Street	Between 150th Avenue and 168th Avenue	NB	1.49	20,600	26,700	29.6%	460	610	32.6%	1,760	2,090	18.8%
East 14th Street	Between 150th Avenue and 168th Avenue	SB	1.49				1,600	2,260	41.3%	550	740	34.5%
East 14th Street/Mission Boulevard	Between 168th Avenue and Mattox Road	NB	0.58	21,500	26,600	23.7%	1,040	1,400	34.6%	980	1,540	57.1%
East 14th Street/Mission Boulevard	Between 168th Avenue and Mattox Road	SB	0.58				900	1,230	36.7%	970	1,270	30.9%
Mission Boulevard	Between Mattox Road and Rose Street	NB	0.66	18,100	27,500	51.9%	1,740	1,800	3.4%	890	1,450	62.9%

Roadway Segments	Segment Limit	Direction	Miles	Average Daily			AM Peak			PM Peak		
				Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
Mission Boulevard	Between Mattox Road and Rose Street	SB	0.66				300	520	73.3%	1,690	2,140	26.6%
Mission Boulevard	Between Rose Street and A Street	NB	0.57	22,000	30,600	39.1%	2,400	2,820	17.5%	600	1,070	78.3%
Mission Boulevard	Between Rose Street and A Street	SB	0.57				200	320	60.0%	1,080	2,070	91.7%
Mission Boulevard	Between A Street and Jackson Street	NB	0.39	16,550	21,000	26.9%	1,290	1,190	-7.8%	4,110	4,170	1.5%
Mission Boulevard	Between Jackson Street and Tennyson Street	NB	2.66	27,000	33,600	24.4%	1,300	1,330	2.3%	2,090	2,140	2.4%
Mission Boulevard	Between Jackson Street and Tennyson Street	SB	2.66				1,260	1,330	5.6%	2,090	2,210	5.7%
San Leandro Street	Between Fruitvale Avenue and 69th Avenue	NB	2.09	13,000	27,100	108.5%	520	1,200	130.8%	1,050	2,000	90.5%
San Leandro Street	Between Fruitvale Avenue and 69th Avenue	SB	2.09				540	1,340	148.1%	530	1,420	167.9%
San Leandro Street	Between 69th Avenue and 85th Avenue	NB	0.78	9,250	16,800	81.6%	240	480	100.0%	1,540	2,090	35.7%
San Leandro Street	Between 69th Avenue and 85th Avenue	SB	0.78				920	1,670	81.5%	310	660	112.9%
San Leandro Street	Between 85th Avenue and Broadmoor Blvd	NB	1.49	8,500	17,100	101.2%	210	420	100.0%	660	1,680	154.5%
San Leandro Street	Between 85th Avenue and Broadmoor Blvd	SB	1.49				760	1,620	113.2%	440	830	88.6%
San Leandro Boulevard	Between Broadmoor Boulevard and Davis Street	NB	0.74	22,100	32,700	48.0%	650	940	44.6%	640	1,690	164.1%
San Leandro Boulevard	Between Broadmoor Boulevard and Davis Street	SB	0.74				1,760	2,680	52.3%	510	1,160	127.5%

Roadway Segments	Segment Limit	Direction	Miles	Average Daily			AM Peak			PM Peak		
				Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
San Leandro Boulevard	Between Davis Street and Marina Boulevard	NB	0.70	19,500	27,100	39.0%	990	1,360	37.4%	870	1,430	64.4%
San Leandro Boulevard	Between Davis Street and Marina Boulevard	SB	0.70				970	1,310	35.1%	1,340	1,660	23.9%
San Leandro Boulevard	Between Marina Boulevard and East 14th Street	EB	0.71	11,300	16,200	43.4%	220	420	90.9%	860	1,320	53.5%
San Leandro Boulevard	Between Marina Boulevard and East 14th Street	WB	0.71				910	1,150	26.4%	330	450	36.4%
Oak Street	Between Lakeside Drive and 2nd Street	EB	0.64	2,720	3,300	21.3%	150	230	53.3%	260	250	-3.8%
Madison Street	Between Lakeside Drive and 2nd Street	WB	0.90	10,350	12,400	19.8%	760	970	27.6%	800	970	21.3%
Fruitvale Avenue	Between Foothill Boulevard and Fernside Boulevard	EB	1.28	22,250	29,200	31.2%	920	730	-20.7%	2,200	3,400	54.5%
Fruitvale Avenue	Between Foothill Boulevard and Fernside Boulevard	WB	1.28				1,590	1,970	23.9%	370	420	13.5%
High Street	Between Carrington Street and Fernside Boulevard	EB	1.31	18,200	20,900	14.8%	570	710	24.6%	1,000	1,000	0.0%
High Street	Between Carrington Street and Fernside Boulevard	WB	1.31				1,000	1,010	1.0%	690	880	27.5%
73rd Avenue	Between Arthur Street and International Boulevard	EB	0.47	6,750	14,700	117.8%	180	300	66.7%	2,640	3,460	31.1%

Roadway Segments	Segment Limit	Direction	Miles	Average Daily			AM Peak			PM Peak		
				Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
73rd Avenue	Between Arthur Street and International Boulevard	WB	0.47				420	760	81.0%	1,060	1,010	-4.7%
Hegenberger Road	Between International Boulevard and Coliseum Way	EB	1.22	26,400	34,800	31.8%	600	790	31.7%	3,140	3,990	27.1%
Hegenberger Road	Between International Boulevard and Coliseum Way	WB	1.22				1,880	2,180	16.0%	1,140	1,230	7.9%
Davis Street	Between East 14th Street and Preda Street	EB	0.69	23,650	29,400	24.3%	660	910	37.9%	1,640	1,710	4.3%
Davis Street	Between East 14th Street and Preda Street	WB	0.69				1,060	960	-9.4%	1,080	1,250	15.7%
Washington Avenue	Between Juana Avenue and Monterey Boulevard	EB	2.04	9,800	12,200	24.5%	330	410	24.2%	720	990	37.5%
Washington Avenue	Between Juana Avenue and Monterey Boulevard	WB	2.04				410	570	39.0%	290	420	44.8%
Hesperian Boulevard	Between East 14th Street and College Street	EB	1.15	20,800	26,300	26.4%	680	900	32.4%	2,190	2,480	13.2%
Hesperian Boulevard	Between East 14th Street and College Street	WB	1.15				800	1,010	26.3%	1,620	1,780	9.9%
A Street	Between 3rd Street and Martin Luther King Drive	EB	1.34	15,500	19,500	25.8%	940	1,060	12.8%	750	1,140	52.0%
A Street	Between 3rd Street and Martin Luther King Drive	WB	1.34				1,120	1,260	12.5%	1,090	1,560	43.1%
Jackson Street	East 14th Street and Soto Road	EB	0.80	16,800	16,300	-3.0%	520	600	15.4%	3,000	2,840	-5.3%
Jackson Street	East 14th Street and Soto Road	WB	0.80				470	500	6.4%	2,050	2,080	1.5%

Roadway Segments	Segment Limit	Direction	Miles	Average Daily			AM Peak			PM Peak		
				Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
Tennyson Road	Between Huntwood Avenue and Vista Grande Drive	EB	1.13	5,900	7,200	22.0%	390	490	25.6%	50	90	80.0%
Tennyson Road	Between Huntwood Avenue and Vista Grande Drive	WB	1.13				110	130	18.2%	130	250	92.3%

Sources: Caltrans Traffic Census Program, 2019; Highway Performance Monitoring System, 2018; City of Oakland General Plan Update; Alameda CTC Countywide Travel Demand Model, various traffic studies; and Kittelson & Associates, Inc., 2022.
Note: Tempo service, opened in August 2020, is not included in this analysis.

Truck Volumes

Existing and future truck volume data was collected from the Caltrans Traffic Census Program[98] and the Northern Alameda County Truck Access Management Study, respectively, and is described below.

Existing

Within the CACCMCP study area, I-880 is identified as part of the Primary Highway Freight System.[99] SR 185, SR 112, 42nd Avenue, and Jackson Street serve as local truck routes. **Table 5-6** shows the average daily truck traffic for the major truck routes within the study area. Expectedly, I-880 carries the most truck traffic, with more than 21,000 daily trips within the CACCMCP study area (10.3 percent share of the total traffic). SR 185 near 44th Avenue sees more than 600 daily trips (2.44 percent share of the total traffic), followed by 42nd Avenue with more than 200 daily trips (2.17 percent share of the total traffic). Jackson Street near Mission Boulevard observes approximately 600 daily trips (1.46 percent share of the total traffic).

Table 5-6: Existing Truck Traffic Volumes for Study Area Freight Routes

Roadway	Location	Daily Truck Traffic (AADTT)	Truck Share of Total Traffic (% of AADT)
I-880	Near High Street, Oakland	21,609	10.3%
I-880	Near Davis Street, San Leandro	20,268	8.6%
I-880	Near I-238, Cherryland	16,150	8.5%
SR 185	Near 44th Avenue, Oakland	654	2.44%
42nd Avenue	Near International Boulevard, Oakland	265	2.17%
Jackson Street	Near Mission Boulevard, Hayward	613	1.46%

Sources: Caltrans Traffic Census Program-Truck Traffic, 2019; Kittelson & Associates, Inc., 2022.
Notes: AADT = Average Annual Daily Traffic, AADTT = Average Annual Daily Truck Traffic

[98] Caltrans, Traffic Census Program, accessed September 8, 2022, https://dot.ca.gov/programs/traffic-operations/census.

[99] FHWA, National Highway Freight Network Map and Tables, accessed January 6, 2022, https://ops.fhwa.dot.gov/Freight/infrastructure/ismt/state_maps/states/california.htm.

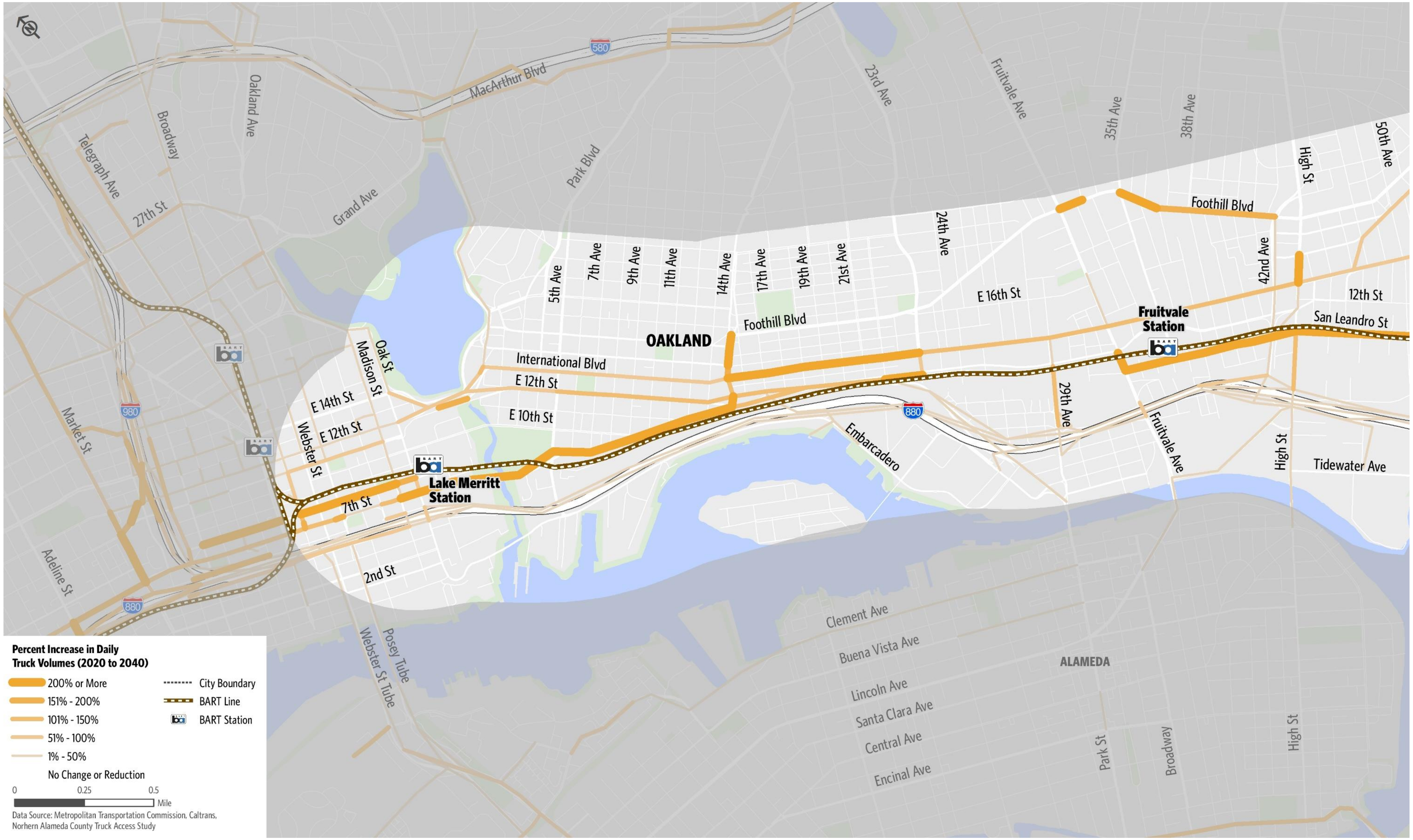
Future

Forecast truck volumes for the CACCMCP primary corridors and major connections were extracted from the Northern Alameda County Truck Access Management Study. The study used the Alameda Countywide Travel Demand Model 2040 to identify corridors where truck traffic is expected to grow. The model was also used in the study to identify locations where predicted changes in truck or total vehicle volume may disrupt truck freight movement or may lead to undesirable changes in truck patterns that increase conflicts between trucks, other road users, and residents.

According to the model, land use changes anticipated in Alameda County between 2020 and 2040 will prompt an increase in truck freight traffic. The model projects an increase in truck traffic concentrated in and around the Port of Oakland, with I-880 being the most impacted. Roadway segments parallel to the highway are projected to see the greatest overall percentage increase in truck trips due to diversion of truck traffic seeking to avoid congestion.

Figure 5-9 through **Figure 5-12** show the forecasted net and percent change in freight traffic expected between 2020 and 2040 on Northern Alameda County roads.

Figure 5-9: Percent Increase in Daily Truck Volumes (2020 to 2040) (Page 1 of 4)



Sources: Kittelson & Associates, Inc; Alameda CTC, Northern Alameda County Truck Access Management Plan, 2021, p. 63.
Note: These figures focus only on segments with at least 50 existing daily truck trips to avoid highlighting low-volume segments that have a high percentage increase when adding only one or two trucks.

Figure 5-10: Percent Increase in Daily Truck Volumes (2020 to 2040) (Page 2 of 4)

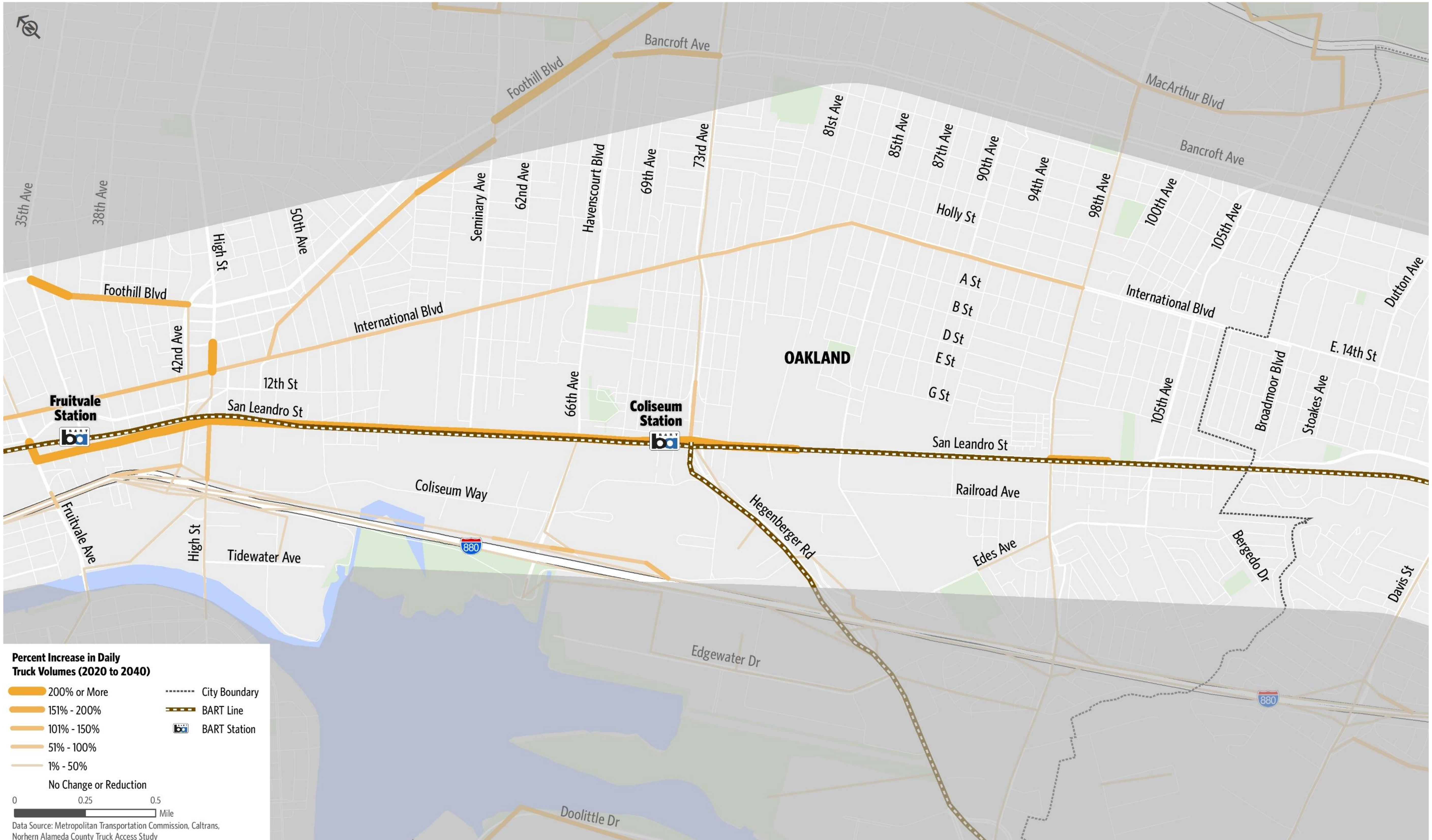


Figure 5-11: Percent Increase in Daily Truck Volumes (2020 to 2040) (Page 3 of 4)

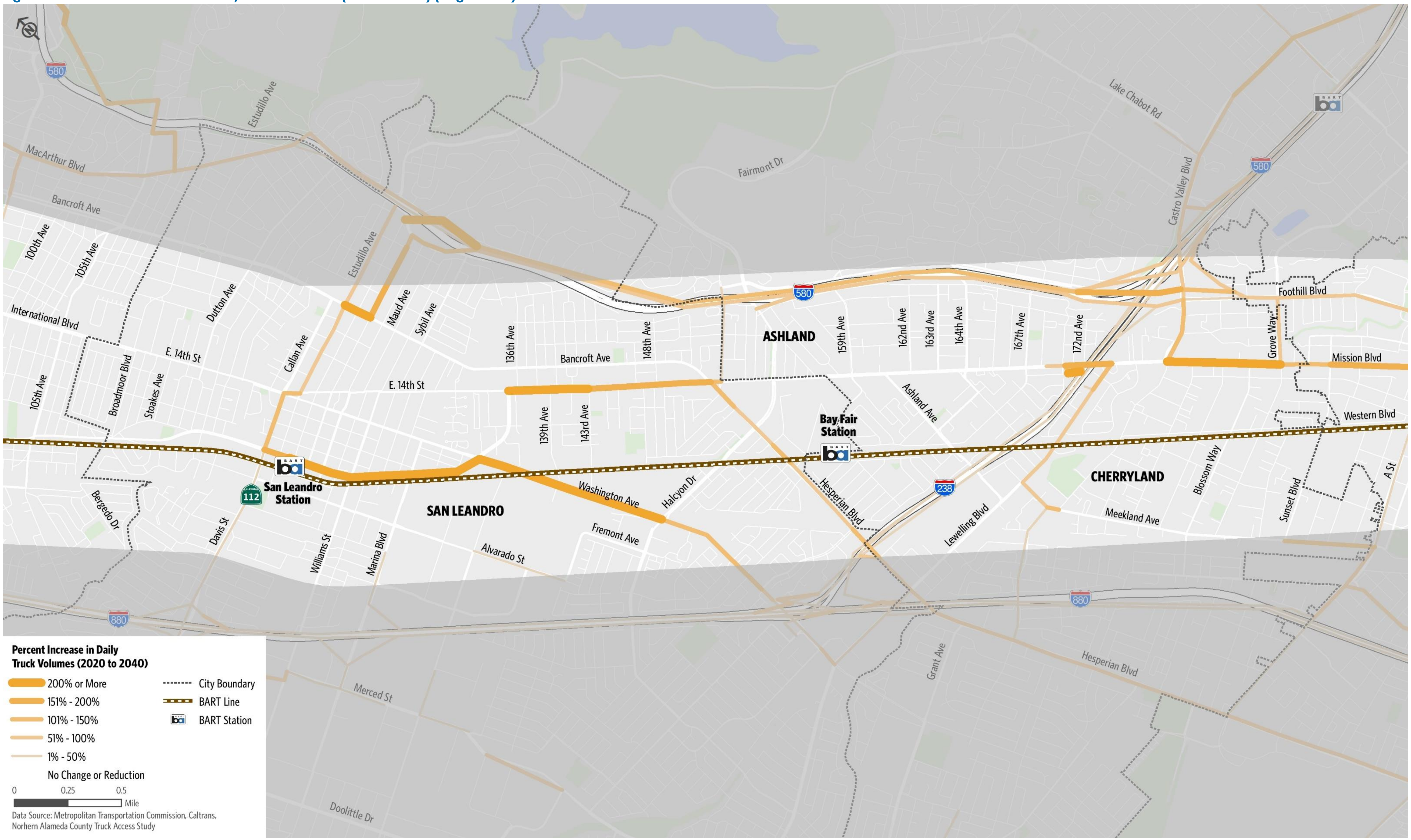


Figure 5-12: Percent Increase in Daily Truck Volumes (2020 to 2040) (Page 4 of 4)

Sources: Kittelson & Associates, Inc; Alameda CTC, Northern Alameda County Truck Access Management Plan, 2021, p. 64.
Note: These figures focus only on segments with at least 50 existing daily truck trips to avoid highlighting low-volume segments that have a high percentage increase when adding only one or two trucks.

Auto Speeds

Existing and future speeds for each of CACCMCP study area corridors are presented in **Table 5-8**. Speed data was sourced from the Alameda CTC 2018 CMP Multimodal Monitoring Report (Observed Speeds) and Countywide Travel Demand Model. The model speeds presented are averaged over the hours of each time period, which are defined in the model as 6:00-10:00 AM for the AM peak period, 3:00-7:00 PM for the PM peak period. **Figure 5-13** to **Figure 5-20** show existing peak period vehicle operating conditions. The thresholds used in the figures are defined based on roadway segment operating speeds as shown in **Table 5-7** Existing and projected speeds are listed for both peak AM and PM time periods and for each travel direction for each segment in **Table 5-8** Segments that currently or are projected to experience significant delays or forced delays are marked in **red**.

Table 5-7: Relationship between Speed and Operating Thresholds

Roadway Classification	Freeway	Tier I Arterial	Tier II Arterial	Others
Range of Free Flow Speed (mph)	65	45 to 35	35 to 30	35 to 25
Free Flow / Underutilized	≥ 60	≥ 35	≥ 30	≥ 25
Minimal Delays / Somewhat Utilized	≥ 55	≥ 28	≥ 24	≥ 19
Stable Flow / Optimal Utilization	≥ 49	≥ 22	≥ 18	≥ 13
Tolerable Delays / Optimal Utilization	≥ 41	≥ 17	≥ 14	≥ 9
Significant Delays / Somewhat Overutilized	≥ 30	≥ 13	≥ 10	≥ 7
Forced Flow / Overutilized	< 30	< 13	< 10	< 7

Sources: Alameda CTC CMP Multimodal Monitoring Report, 2018; Kittelson & Associates, Inc.

Under existing conditions, International Boulevard between Seminary Avenue and 86th Avenue is the only arterial found to be operating under congested (forced flow) conditions. Both freeway I-880 and I-238 are also operating under congested conditions in at least one of the peak periods, whereas Mission Boulevard south of Jackson Street, Hegenberger Road, and Hesperian Boulevard are operating in underutilized (free flow) conditions. Typically, roadways operating under stable flow or tolerable delay conditions are considered to be optimally utilized and not considered to encourage unsafe speeds.

Figure 5-21 to **Figure 5-28** show future peak period vehicle operating conditions. Under no project future conditions, both freeways (I-880 and I-238) continue to operate under congested conditions with speeds decreasing by 15 to 30 percent. International Boulevard/East 14th Street/Mission Boulevard is likely to observe a decrease in speed by 50 percent on certain segments. All other corridors will likely observe a slight decrease in speeds within the CACCMCP study area.

Table 5-8: Existing and Projected Speeds

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
I-880	Between I-980 and Hegenberger Road	F	EB	65	61.8	52.2	-16%	**37.5**	**24.5**	-35%
I-880	Between I-980 and Hegenberger Road	F	WB	65	**19.1**	**12.8**	-33%	55.1	41.3	-25%
I-880	Between Hegenberger Road to I-238	F	EB	65	65.2	42.2	-35%	55.7	**39.4**	-29%
I-880	Between Hegenberger Road to I-238	F	WB	65	**24.5**	**23.9**	-2%	57.3	49.9	-13%
I-238	Between I-580 and I-880	F	EB	65	43.3	43.3	0%	**39.7**	**37.2**	-6%
I-238	Between I-580 and I-880	F	WB	65	**19.6**	**15.4**	-21%	43.9	**40.7**	-7%
International Boulevard	Between 1st Avenue and 42nd Avenue	2	WB	30	19.0	18.9	-1%	18.5	14.8	-20%
International Boulevard	Between 1st Avenue and 42nd Avenue	2	EB	30	16.7	16.7	0%	18.1	17.6	-3%
International Boulevard	Between 42nd Avenue and Seminary Avenue	1	EB	25	20.7	20.6	0%	17.6	**15.8**	-10%
International Boulevard	Between 42nd Avenue and Seminary Avenue	1	WB	25	**16.6**	**15.1**	-9%	**15.1**	**15.0**	-1%

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
International Boulevard	Between Seminary Avenue and 86th Avenue	1	EB	25	**13.1**	**13.1**	0%	**7.9**	**6.3**	-20%
International Boulevard	Between Seminary Avenue and 86th Avenue	1	WB	25	**13.8**	**13.0**	-6%	**13.4**	**13.3**	-1%
International Boulevard	Between 86th Avenue and Broadmoor Boulevard	1	EB	25	19.3	19.2	-1%	**15.5**	**15.5**	0%
International Boulevard	Between 86th Avenue and Broadmoor Boulevard	1	WB	25	**15.9**	**15.9**	0%	**15.0**	**14.9**	-1%
East 14th Street	Between Broadmoor Avenue and Davis Street	1	EB	25	19.3	19.0	-2%	17.4	17.3	0%
East 14th Street	Between Broadmoor Avenue and Davis Street	1	WB	25	19.9	19.9	0%	**16.3**	**16.0**	-2%
East 14th Street	Between Davis Street and Sybil Avenue	1	EB	25	19.1	19.1	0%	**15.7**	**15.3**	-2%
East 14th Street	Between Davis Street and Sybil Avenue	1	WB	25	**15.4**	**15.3**	0%	**13.7**	**13.7**	0%
East 14th Street	Between Sybil Avenue and Hesperian Boulevard	1	EB	35	21.8	21.8	0%	17.9	17.6	-2%

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
East 14th Street	Between Sybil Avenue and Hesperian Boulevard	1	WB	35	19.6	19.5	0%	20.1	20.1	0%
East 14th Street	Between Hesperian Boulevard and 150th Avenue	1	EB	35	19.8	19.8	0%	**16.6**	**8.3**	-50%
East 14th Street	Between Hesperian Boulevard and 150th Avenue	1	WB	35	20.1	20.0	0%	**14.7**	**14.7**	0%
East 14th Street	Between 150th Avenue and 168th Avenue	1	EB	35	20.0	20.0	0%	18.6	**12.9**	-31%
East 14th Street	Between 150th Avenue and 168th Avenue	1	WB	35	19.8	18.3	-8%	**16.6**	**16.6**	0%
East 14th Street/Mission Boulevard	Between 168th Avenue and Mattox Road	1	EB	35	21.3	21.3	0%	19.3	19.3	0%
East 14th Street/Mission Boulevard	Between 168th Avenue and Mattox Road	1	WB	35	25.2	25.2	0%	22.0	22.0	0%
Mission Boulevard	Between Mattox Road and Rose Street	1	EB	35	20.3	**10.4**	-49%	19.9	19.9	0%
Mission Boulevard	Between Mattox Road and Rose Street	1	WB	35	23.2	23.2	0%	21.2	**10.6**	-50%

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
Mission Boulevard	Between Rose Street and A Street	1	EB	25	**16.7**	**16.5**	-1%	**16.9**	**16.9**	0%
Mission Boulevard	Between Rose Street and A Street	1	WB	25	20.4	20.4	0%	19.9	17.0	-15%
Mission Boulevard	Between A Street and Jackson Street	NA	EB	25	20.8	20.8	0%	19.5	11.2	-43%
Mission Boulevard	Between Jackson Street and Tennyson Street	1	EB	35	24.1	18.1	-25%	22.8	20.9	-8%
Mission Boulevard	Between Jackson Street and Tennyson Street	1	WB	35	23.7	**16.7**	-29%	19.7	**11.7**	-41%
San Leandro Street	Between Fruitvale Avenue and 69th Avenue	2	EB	30	21.2	21.1	0%	19.3	18.3	-5%
San Leandro Street	Between Fruitvale Avenue and 69th Avenue	2	WB	30	16.5	16.4	-1%	19.4	19.3	0%
San Leandro Street	Between 69th Avenue and 85th Avenue	2	EB	30	21.2	21.2	0%	19.3	14.1	-27%
San Leandro Street	Between 69th Avenue and 85th Avenue	2	WB	30	16.5	16.2	-2%	19.4	19.4	0%
San Leandro Street	Between 85th Avenue and Broadmoor Blvd	2	EB	30	21.2	21.2	0%	19.3	19.1	-1%

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
San Leandro Street	Between 85th Avenue and Broadmoor Blvd	2	WB	30	16.5	15.9	-3%	19.4	19.4	0%
San Leandro Boulevard	Between Broadmoor Boulevard and Davis Street	2	EB	30	20.9	20.9	0%	20.7	20.6	-1%
San Leandro Boulevard	Between Broadmoor Boulevard and Davis Street	2	WB	30	19.1	18.8	-2%	20.5	20.5	0%
San Leandro Boulevard	Between Davis Street and Marina Boulevard	2	EB	30	20.9	20.9	0%	20.7	20.6	0%
San Leandro Boulevard	Between Davis Street and Marina Boulevard	2	WB	30	19.1	19.1	0%	20.5	20.4	0%
San Leandro Boulevard	Between Marina Boulevard and East 14th Street	2	NB	40	20.9	20.9	0%	20.7	20.6	0%
San Leandro Boulevard	Between Marina Boulevard and East 14th Street	2	SB	40	19.1	19.1	0%	20.5	20.5	0%
Oak Street	Between Lakeside Drive and 2nd Street	NA	NB	25	10.9	10.9	0%	11.5	11.5	0%
Madison Street	Between Lakeside Drive and 2nd Street	NA	SB	25	11.9	11.9	0%	11.5	11.5	0%

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
Fruitvale Avenue	Between Foothill Boulevard and Fernside Boulevard	2	NB	25	**13.1**	**13.1**	0%	14.0	**7.0**	-50%
Fruitvale Avenue	Between Foothill Boulevard and Fernside Boulevard	2	SB	25	**13.3**	**6.7**	-50%	**11.7**	**11.7**	0%
High Street	Between Carrington Street and Fernside Boulevard	2	NB	30	**11.1**	**11.1**	0%	**10.2**	**11.3**	11%
High Street	Between Carrington Street and Fernside Boulevard	2	SB	30	**13.5**	**11.7**	-13%	**10.3**	**10.2**	-1%
73rd Avenue	Between Arthur Street and International Boulevard	2	NB	30	19.7	19.7	0%	19.1	19.1	0%
73rd Avenue	Between Arthur Street and International Boulevard	2	SB	30	19.9	19.9	0%	20.2	20.2	0%
Hegenberger Road	Between International Boulevard and Coliseum Way	1	NB	35	27.6	27.6	0%	24.4	24.4	0%
Hegenberger Road	Between International Boulevard and Coliseum Way	1	SB	35	30.5	30.5	0%	31.0	31.0	0%

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
Davis Street	Between East 14th Street and Preda Street	1	NB	30	**14.6**	**14.6**	0%	**13.1**	**13.1**	0%
Davis Street	Between East 14th Street and Preda Street	1	SB	30	**12.3**	**12.3**	0%	**12.0**	**12.0**	0%
Washington Avenue	Between Juana Avenue and Monterey Boulevard	2	NB	25	17.7	17.7	0%	16.6	16.6	0%
Washington Avenue	Between Juana Avenue and Monterey Boulevard	2	SB	25	19.5	19.5	0%	17.5	17.5	0%
Hesperian Boulevard	Between East 14th Street and College Street	NA	NB	40	19.8	19.8	0%	16.4	16.4	0%
Hesperian Boulevard	Between East 14th Street and College Street	NA	SB	40	20.5	20.5	0%	16.3	16.3	0%
A Street	Between 3rd Street and Martin Luther King Drive	1	NB	25	**12.2**	**12.2**	0%	**10.8**	**10.8**	0%
A Street	Between 3rd Street and Martin Luther King Drive	1	SB	25	**16.3**	**16.3**	0%	**14.1**	**14.1**	0%
Jackson Street	East 14th Street and Soto Road	1	NB	30	24.5	24.5	0%	**16.1**	**16.3**	1%

Roadway Segments	Segment Limit	CMP Tier	Direction	Posted Speed	AM Peak			PM Peak		
					Existing (2018)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
Jackson Street	East 14th Street and Soto Road	1	SB	30	22.3	**16.0**	-28%	20.8	**10.4**	-50%
Tennyson Road	Between Huntwood Avenue and Vista Grande Drive	1	NB	25	17.9	17.9	0%	18.1	18.1	0%
Tennyson Road	Between Huntwood Avenue and Vista Grande Drive	1	SB	25	18	18.0	0%	18.2	18.2	0%

Sources: Alameda CTC Countywide Travel Demand Model; Alameda CTC CMP Multimodal Monitoring Report, 2018; Kittelson & Associates, Inc., 2022.
Notes: Tempo service, opened in August 2020, is not included in this analysis.
Red text represents significant delays and forced flow conditions.

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Figure 5-13: Existing 2018 AM Vehicle Operations (1 of 4)

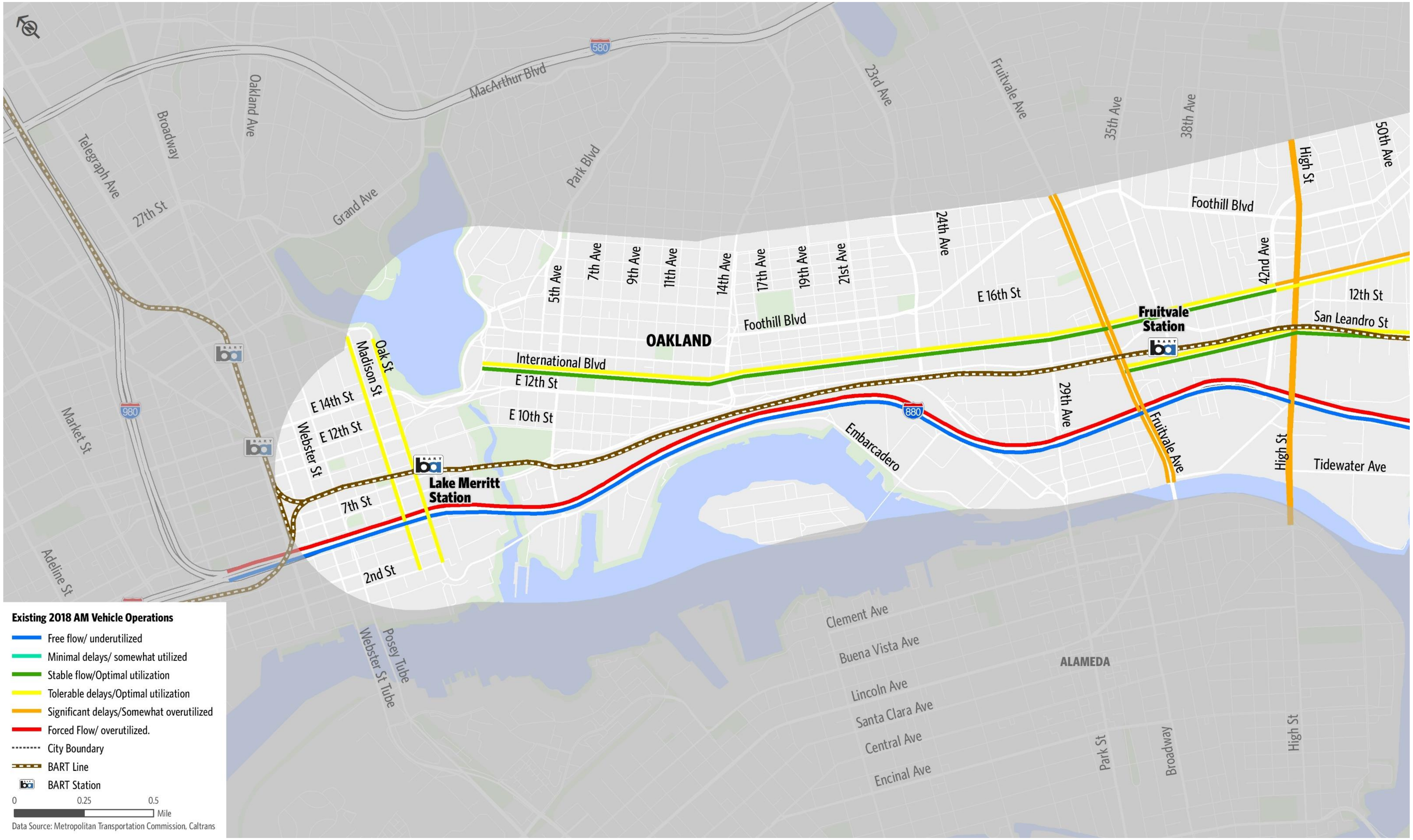


Figure 5-14: Existing 2018 AM Vehicle Operations (2 of 4)

Figure 5-15: Existing 2018 AM Vehicle Operations (3 of 4)

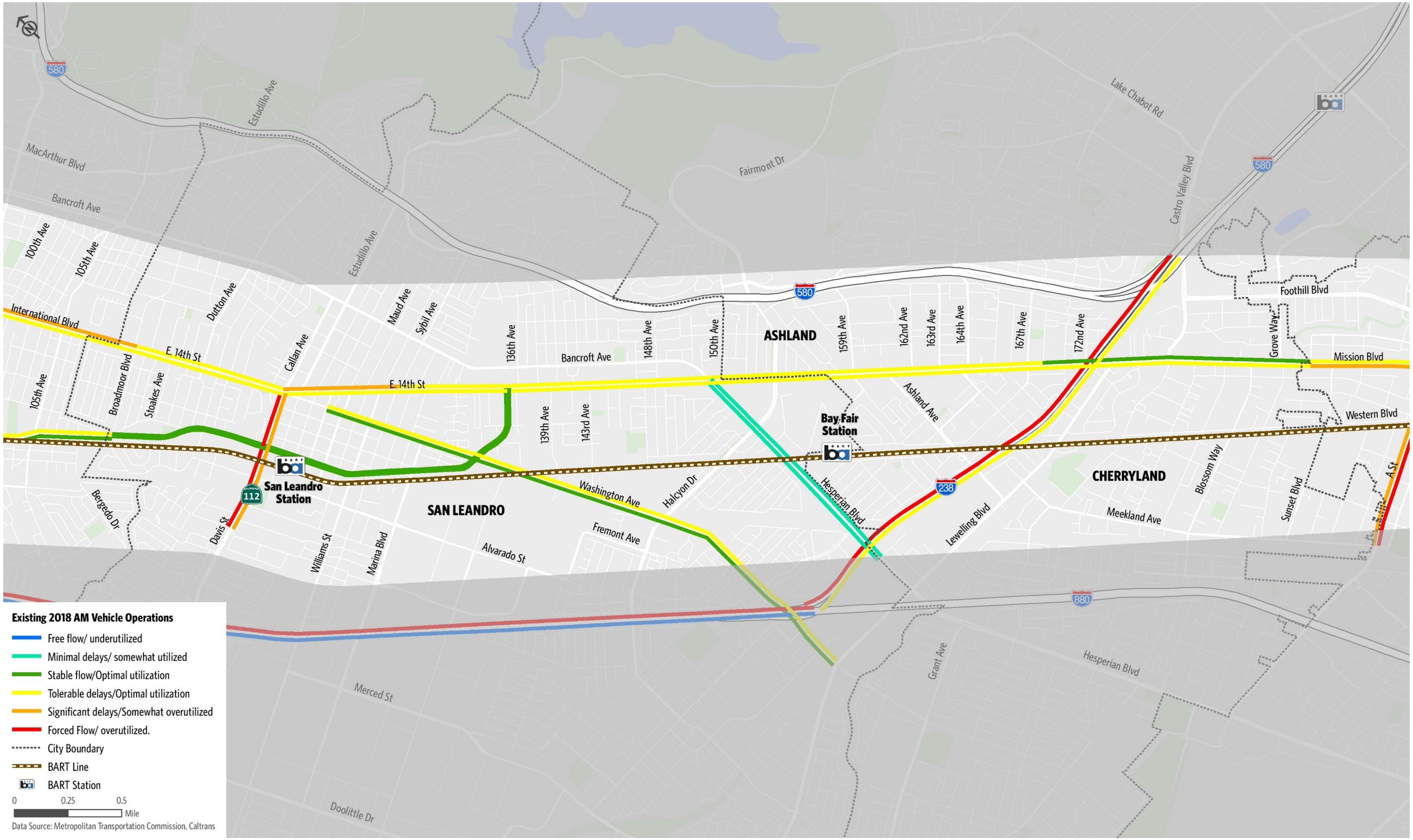


Figure 5-16: Existing 2018 AM Vehicle Operations (4 of 4)

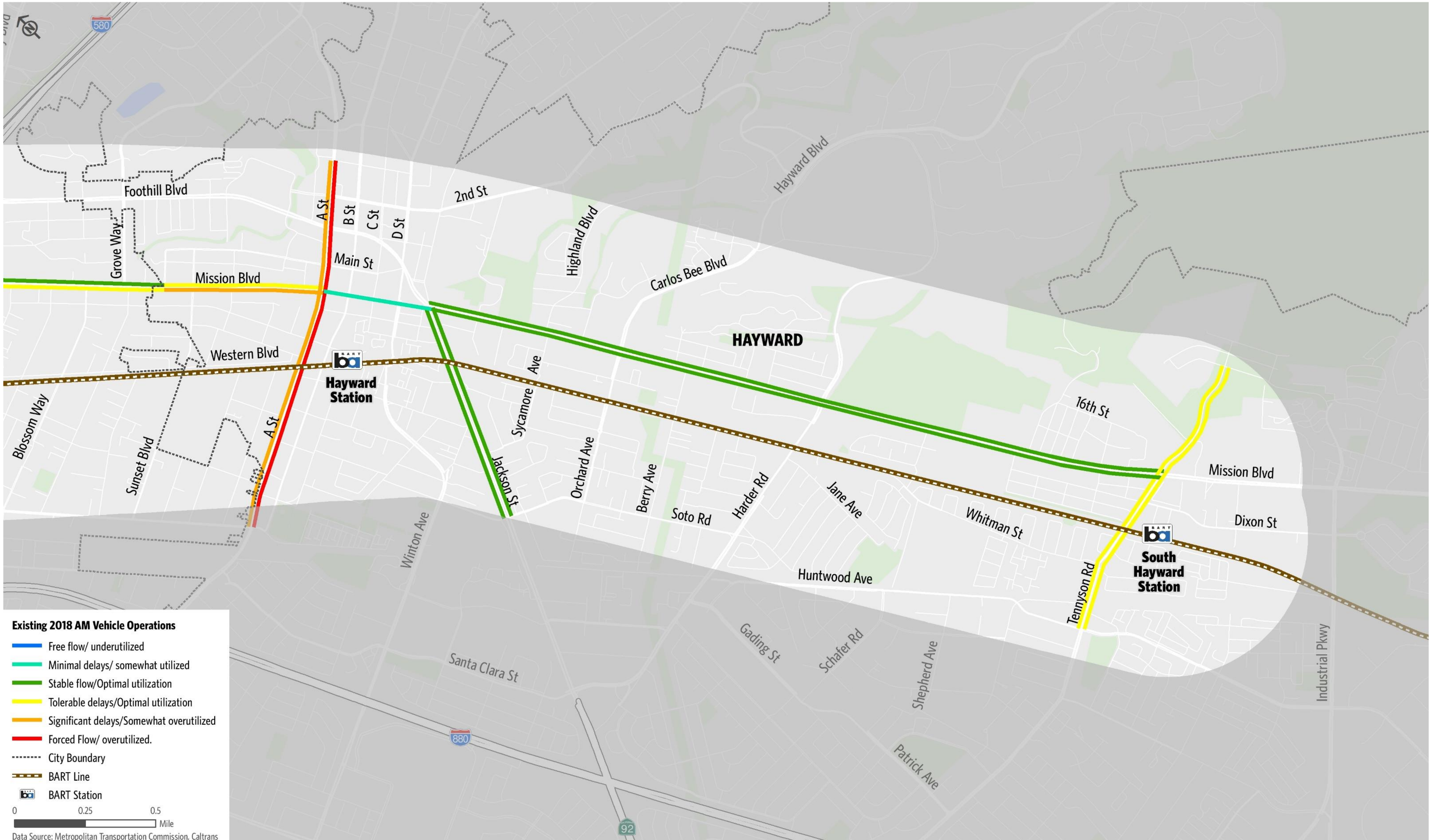


Figure 5-17: Existing 2018 PM Vehicle Operations (1 of 4)

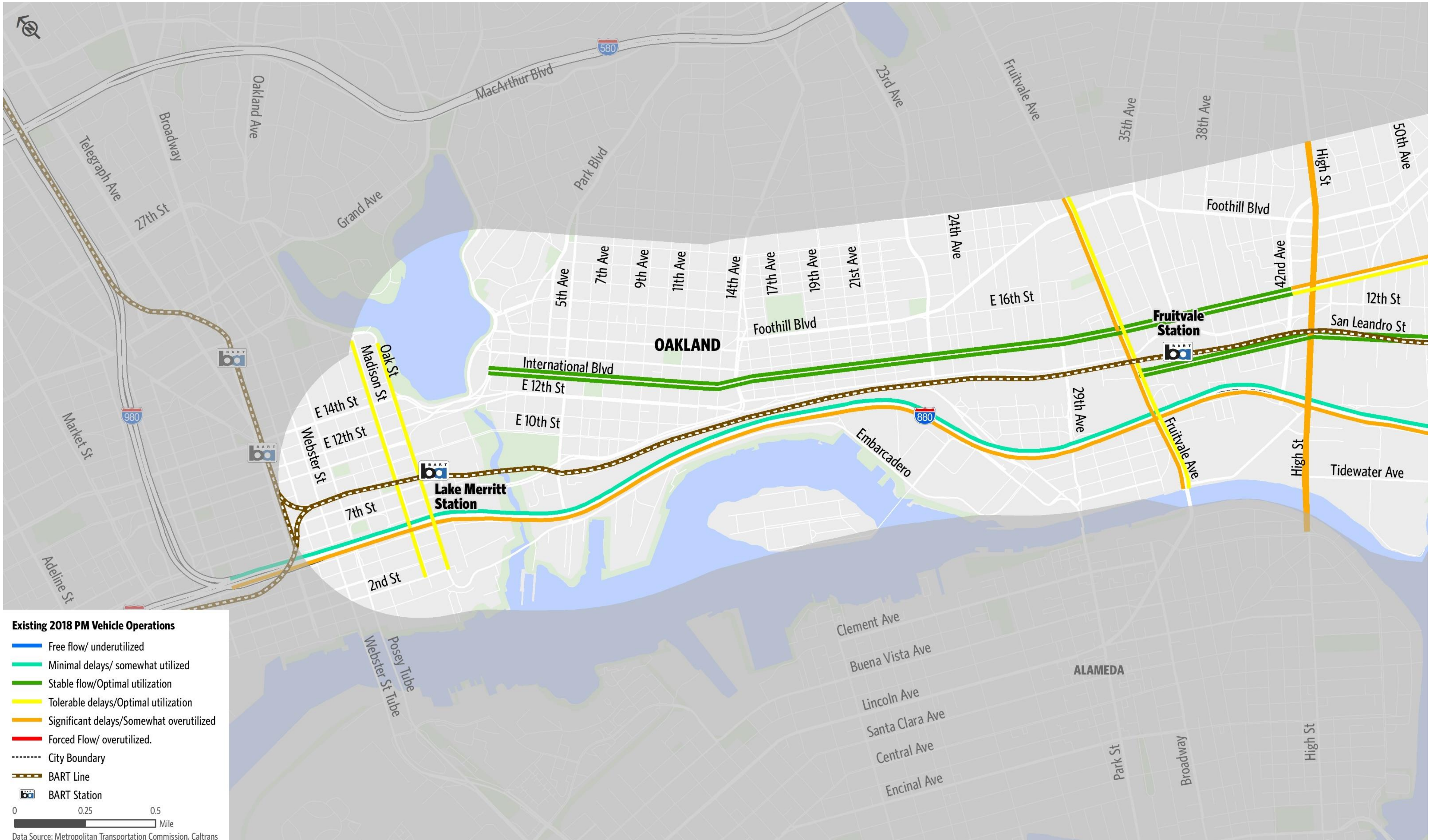


Figure 5-18: Existing 2018 PM Vehicle Operations (2 of 4)

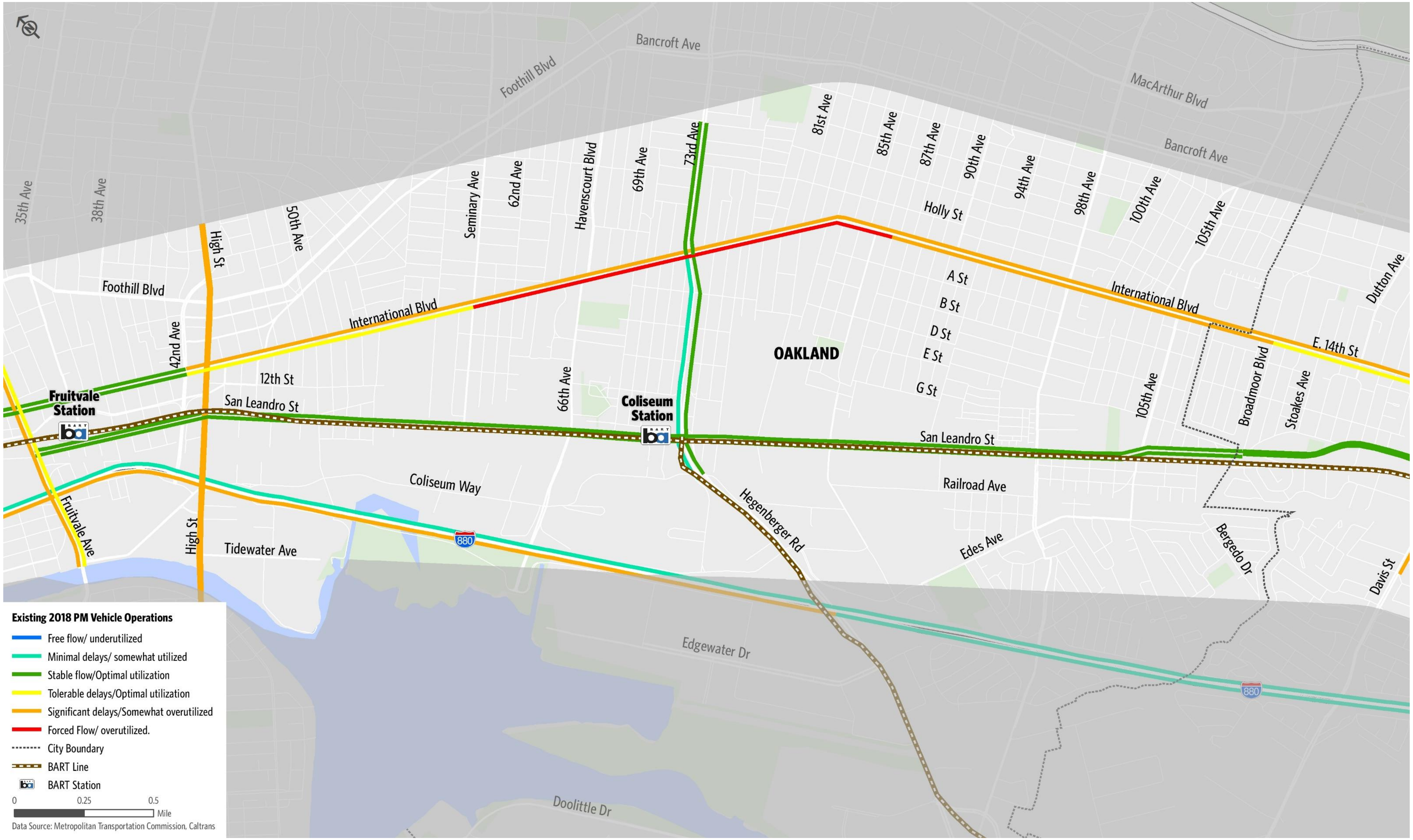


Figure 5-19: Existing 2018 PM Vehicle Operations (3 of 4)

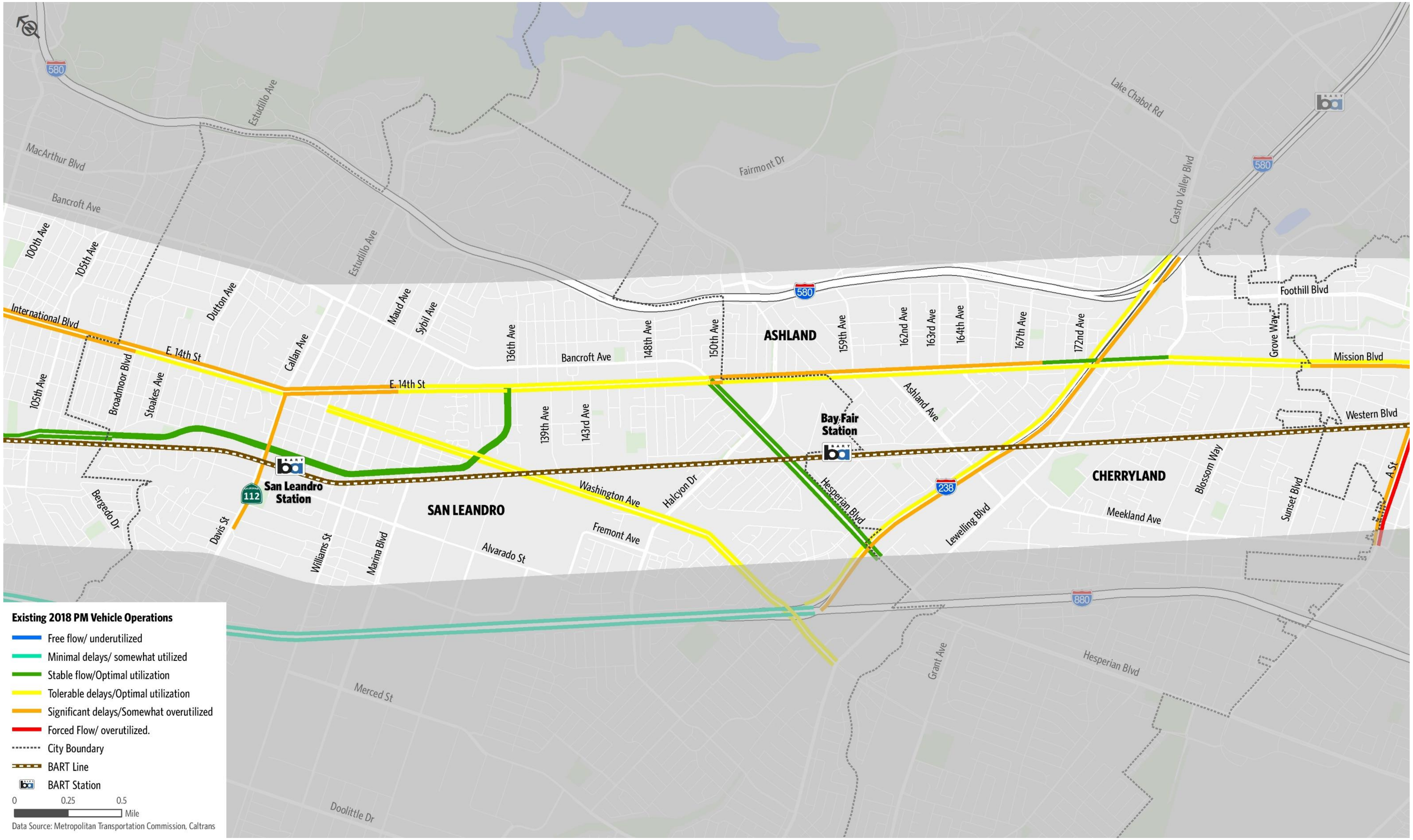


Figure 5-20: Existing 2018 PM Vehicle Operations (4 of 4)

Figure 5-21: 2040 Future AM Vehicle Operating Conditions (1 of 4)

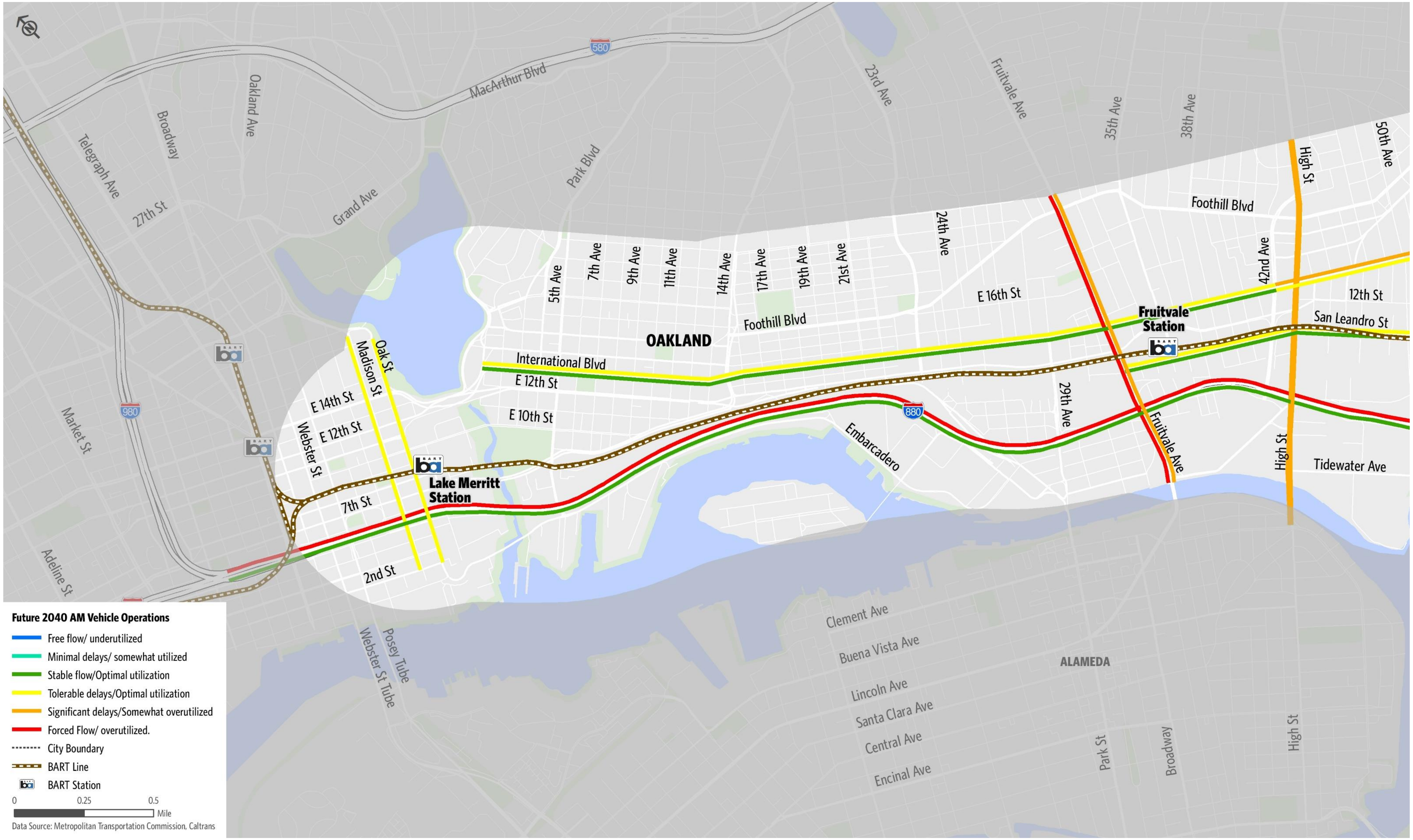


Figure 5-22: 2040 Future AM Vehicle Operating Conditions (2 of 4)

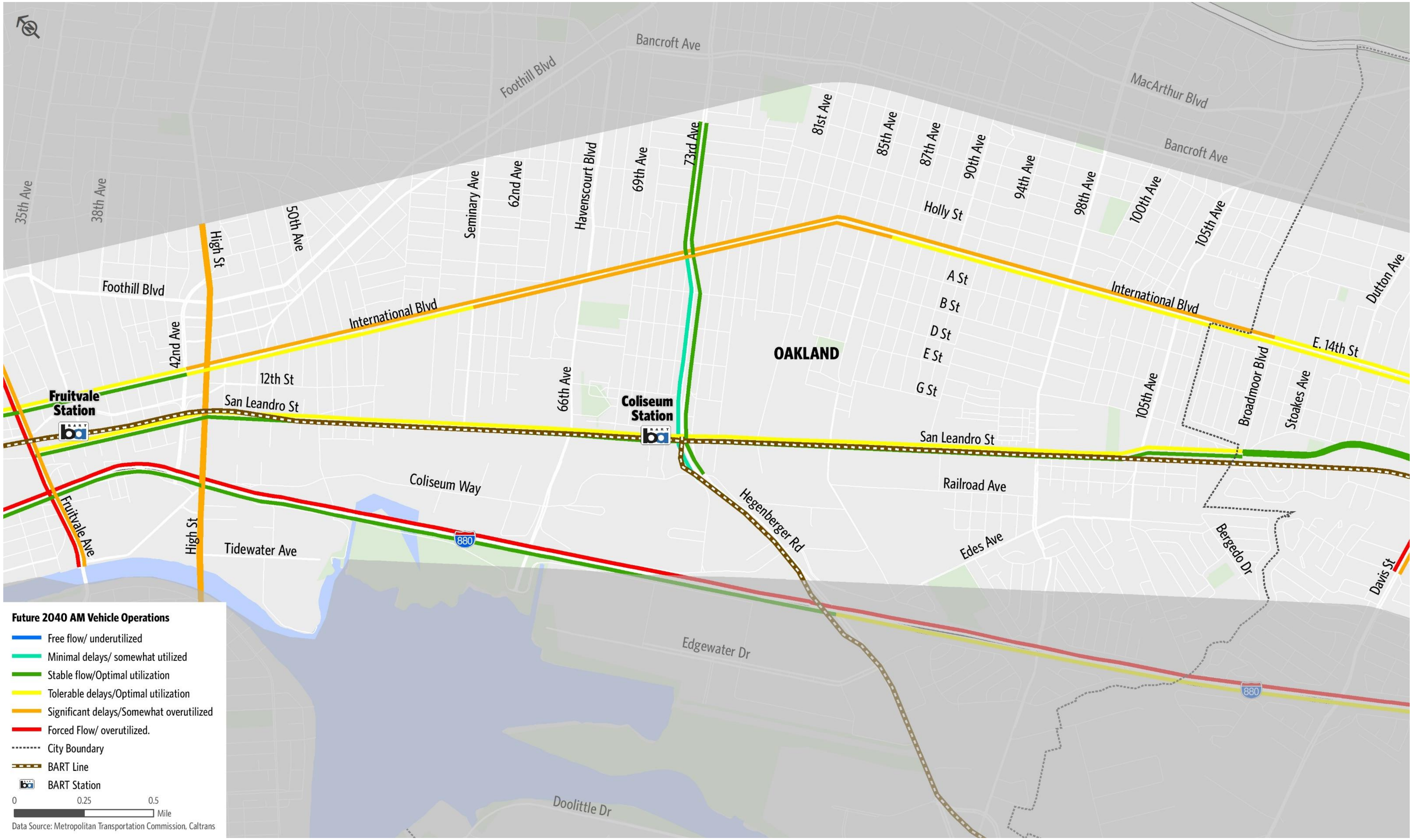


Figure 5-23: 2040 Future AM Vehicle Operating Conditions (3 of 4)

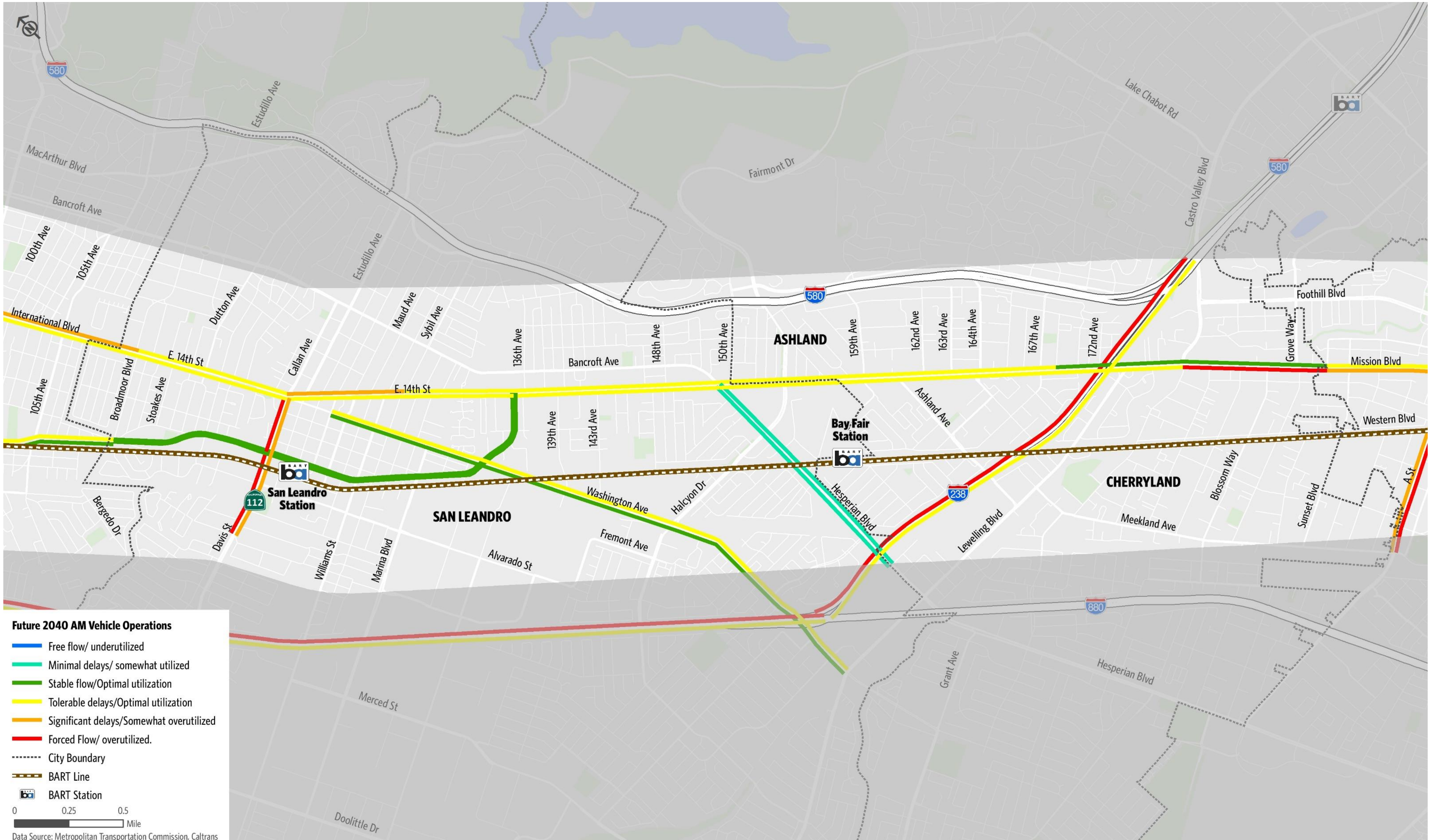


Figure 5-24: 2040 Future AM Vehicle Operating Conditions (4 of 4)

Figure 5-25: 2040 Future PM Vehicle Operating Conditions (1 of 4)

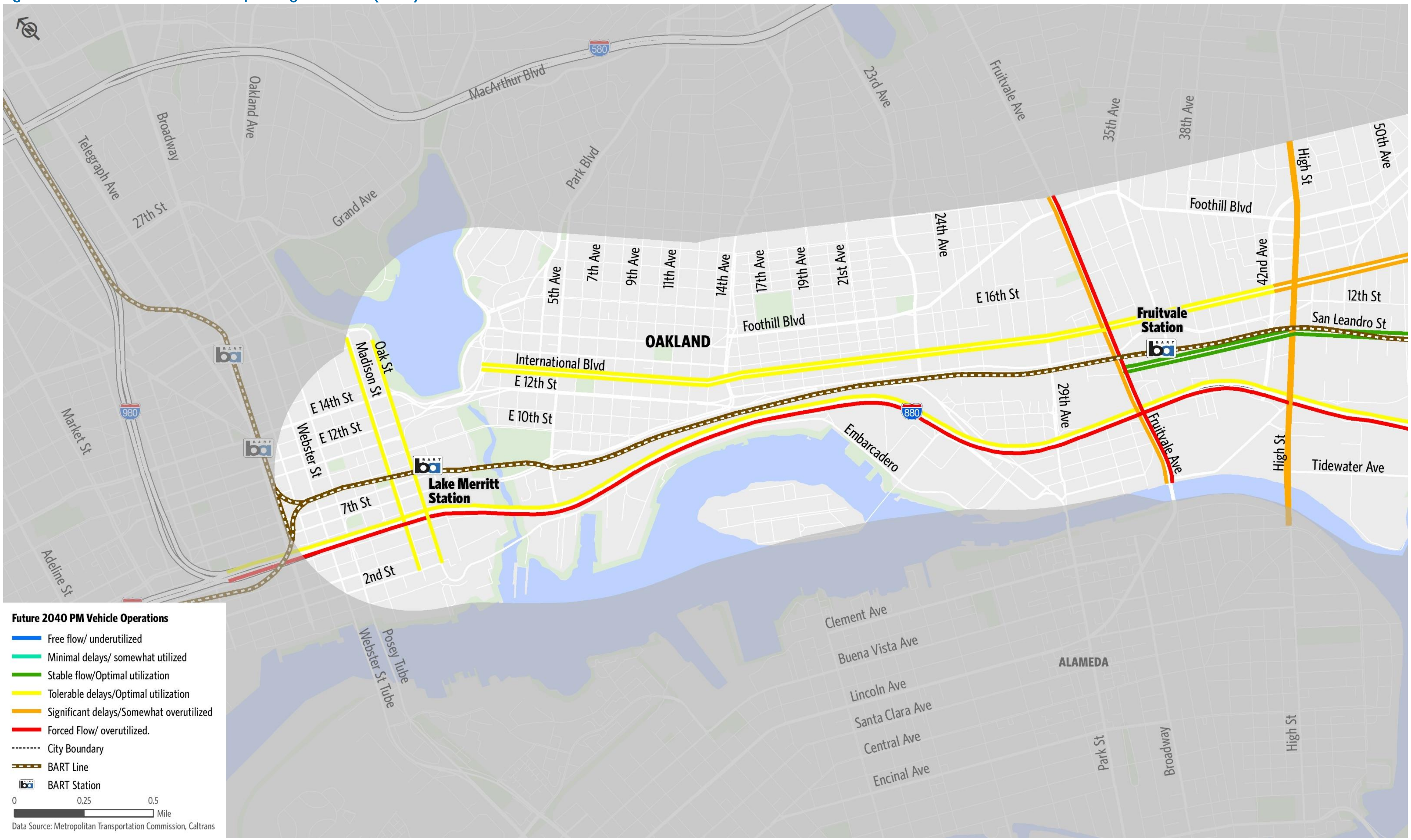


Figure 5-26: 2040 Future PM Vehicle Operating Conditions (2 of 4)

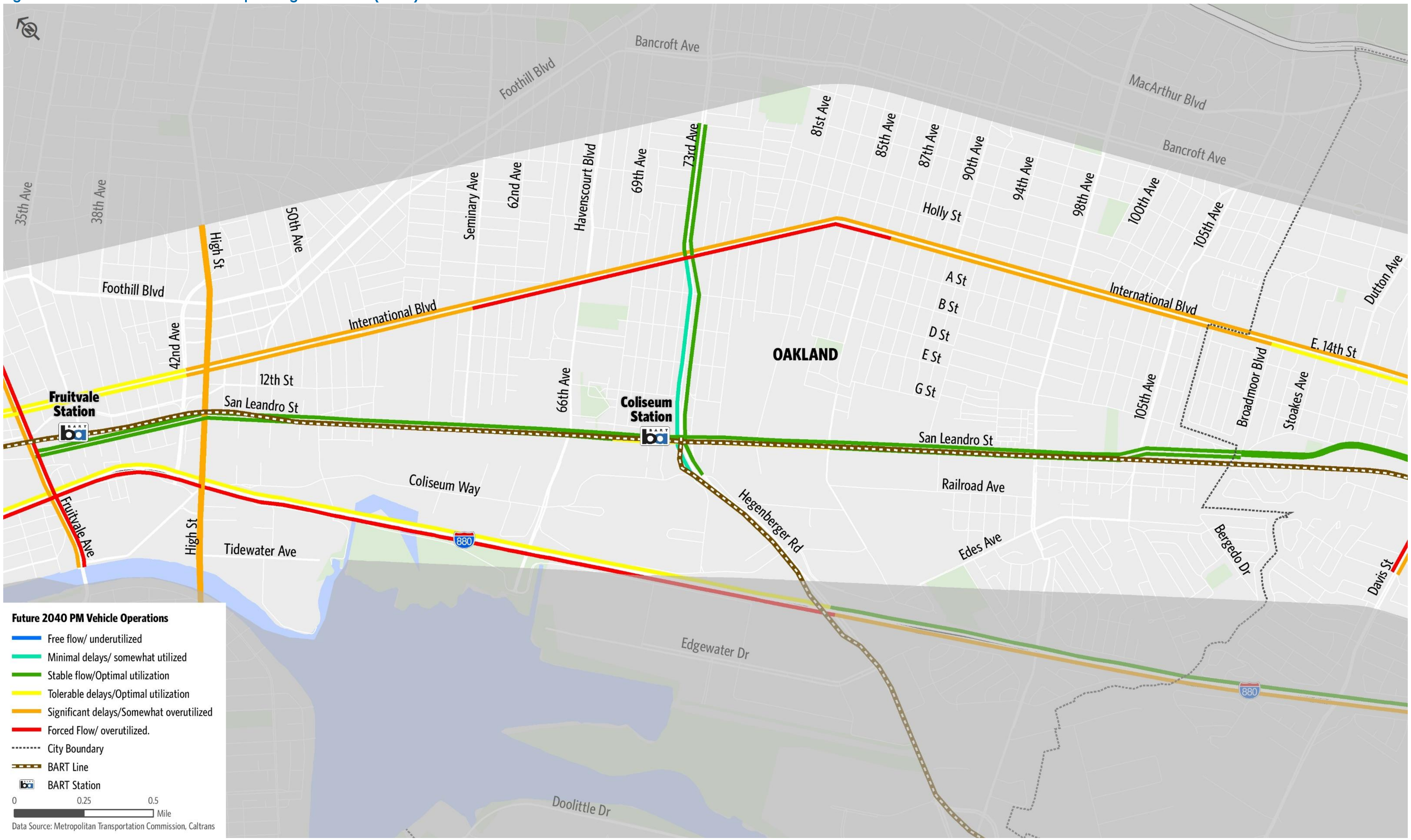


Figure 5-27: 2040 Future PM Vehicle Operating Conditions (3 of 4)

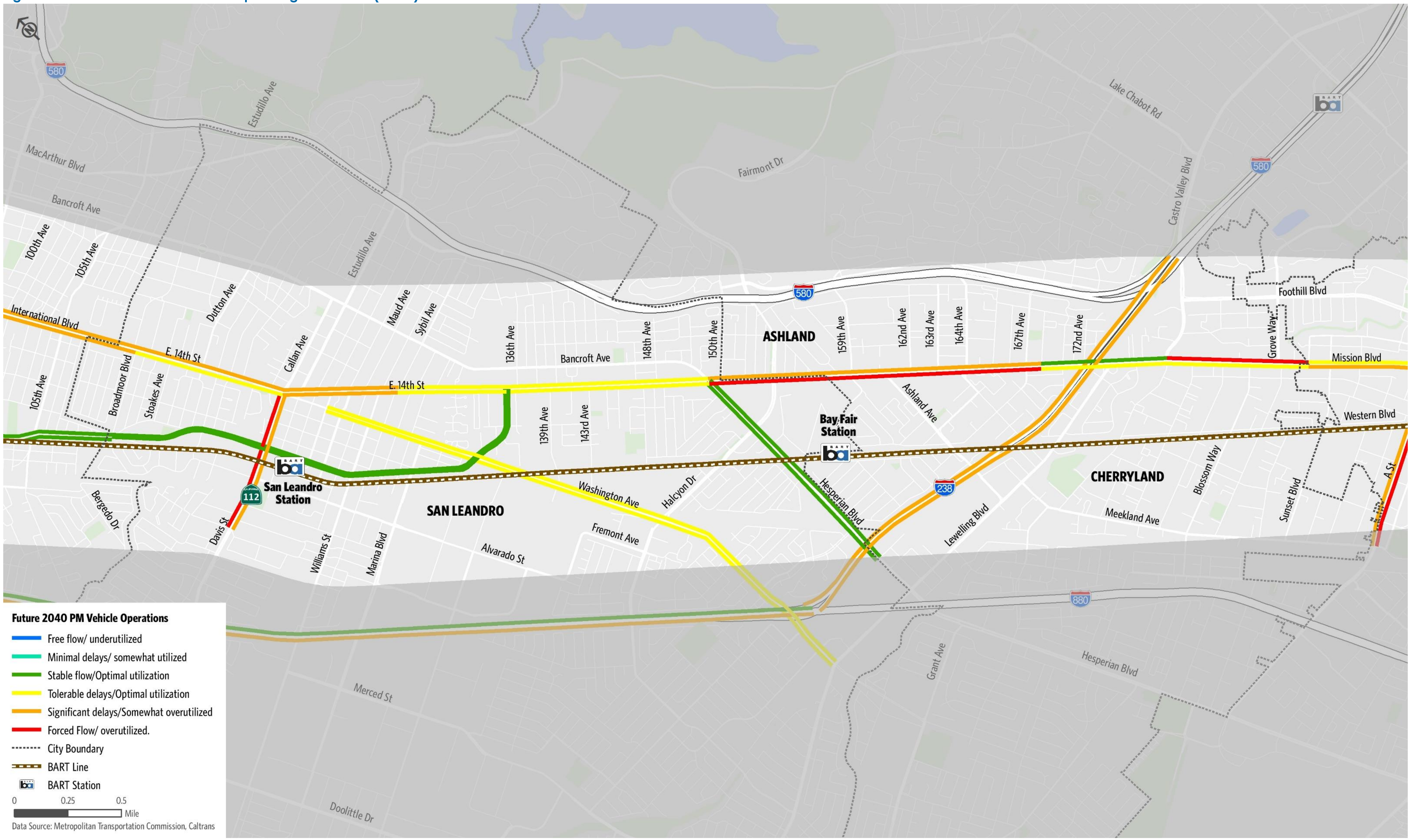
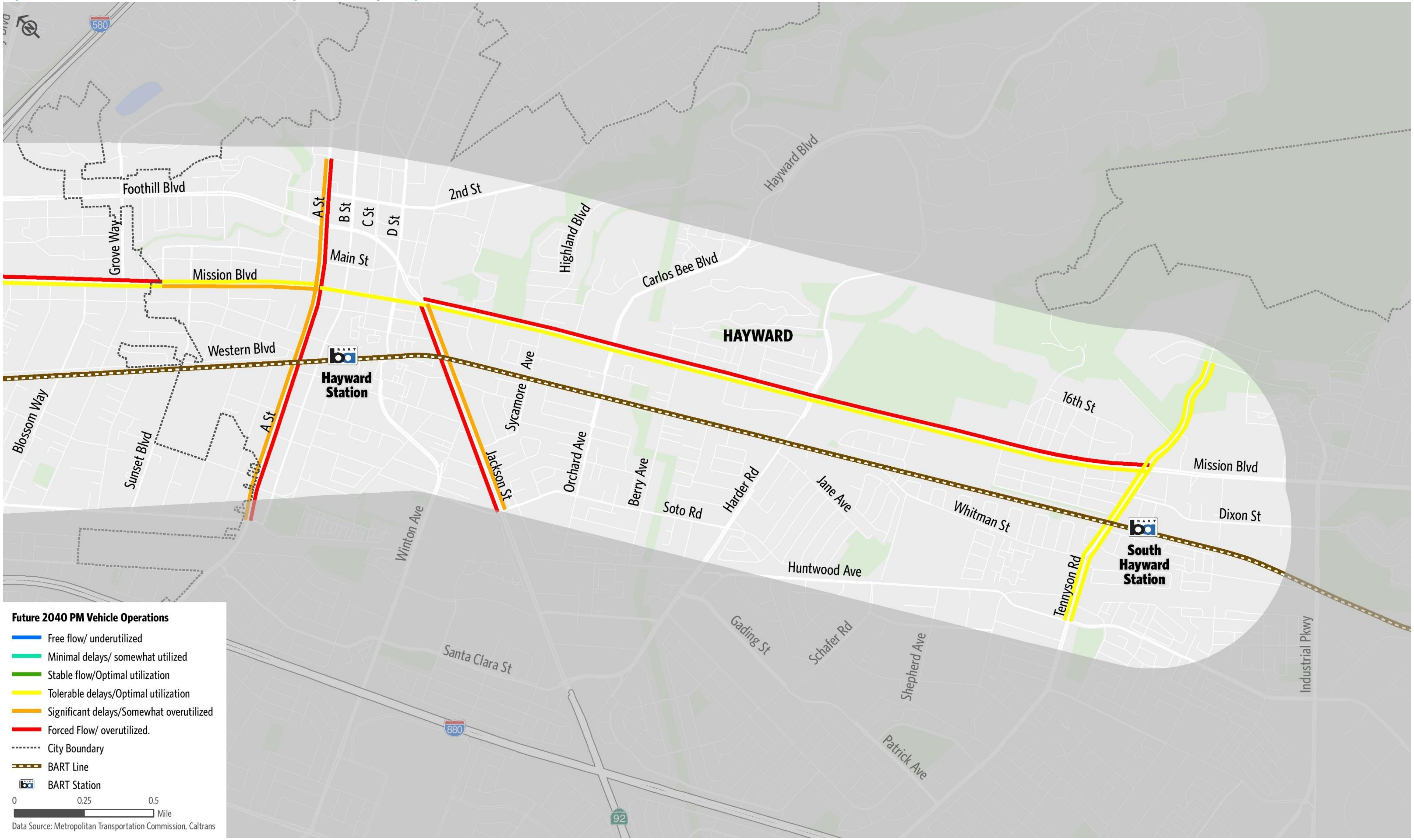


Figure 5-28: 2040 Future PM Vehicle Operating Conditions (4 of 4)



Vehicle Hours of Delay

Average weekday vehicle hours of delay were calculated for subareas of the CACCMCP study area as shown in **Table 5-9** and **Figure 5-29**. The Hayward and Unincorporated subareas are projected to see the largest increases in vehicular hours of delay, increasing 101.4 percent and 88.8 percent respectively. The overall CACCMCP study area is forecast to experience a 79.4 percent increase in vehicular hours of delay, just under the 81.3 percent expected increase for Alameda County as a whole.

Table 5-9: Areawide Vehicle Hours of Delay

Study Area Classification	Existing (2020)	Future (2040)	Change
Oakland Subarea	15,660	27,828	77.7%
San Leandro Subarea	7,970	12,166	52.7%
Unincorporated Subarea	3,178	6,000	88.8%
Hayward Subarea	9,602	19,339	101.4%
Subtotal CACCMCP Study Area	***36,409***	***65,333***	***79.4%***
Total Alameda County	*320,505*	*581,062*	*81.3%*
Total Bay Area	1,111,349	2,166,707	95.0%

Sources: Alameda CTC Countywide Travel Demand Model, 2020; Kittelson & Associates, Inc., 2022.

Bottlenecks

Bottlenecks occur at roadway locations with persistent and significant drops below free flow speed. Recurring bottlenecks impacting the CACCMCP corridors are described below, including their location, direction, and queue characteristics. The bottleneck analysis is conducted for freeways only. Bottleneck information was collected from INRIX for October 2019. INRIX detects bottlenecks based on comparisons of observed speeds to reference speeds (design speed), which are the proxy of free flow or uncongested speed.[100] A potential bottleneck is detected when speeds on a segment drop to 65 percent of the reference speed. A bottleneck is published if speeds stay below 65 percent and causes 120 seconds of delay. As long as the speed remains below 75 percent of the reference speed, the bottleneck will not be cleared. **Table 5-10** provides the bottleneck summary for the freeways within the CACCMCP study area. The bottleneck for I-880 forms near Edes Avenue and Hegenberger Road in the eastbound direction at approximately 4:00 PM and does not dissipate until 7:00 PM. Similarly, the westbound bottleneck occurs around 7:30 AM and could last until 10:00 AM.

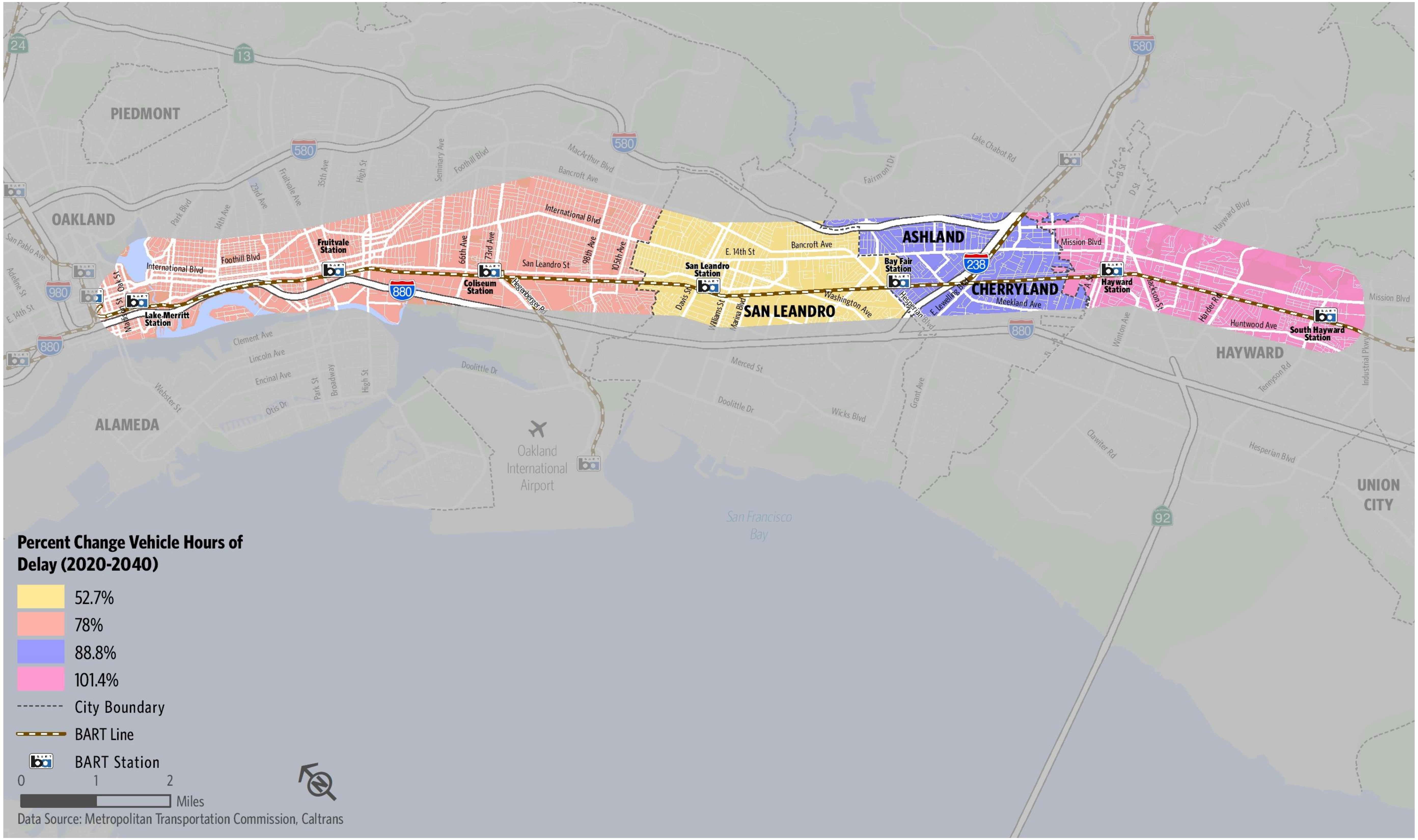
[100] INRIX Performance Measures, https://inrix.com/wp-content/uploads/2016/11/INRIX_Performance_Measures_Brochure.pdf.

Table 5-10: I-880 and I-238 Bottleneck Summary

Roadway Segments	Segment Limit	Direction	Intersection Location	Time Period	Average Congested Time (mins)[1]
I-880	Between I-980 and Hegenberger Road, Oakland	SB	I-880 Exit 36 / Edes Avenue / Hegenberger Road	4:00-7:00 PM	39
I-880	Between I-980 and Hegenberger Road, Oakland	SB	I-880 Exit 38 / CA-77 42nd Avenue / Coliseum Way	4:00-7:00 PM	59
I-880	Between I-980 and Hegenberger Road, Oakland	NB	I-880 Exit 40 / Embarcadero / 10th Avenue	7:30-10:00 AM	125
I-880	Between Hegenberger Road and I-238, Oakland	SB	I-880 Exits 31, 31A, 31B / I-238 Exits 16A, 17A / Washington Avenue	5:00-7:00 PM	14
I-880	Between Hegenberger Road and I-238, Oakland	NB	I-880 Exit 35 / 98th Avenue	7:00-8:30 AM; 4:00-7:00 PM	30
I-238	Between I-580 and I-880, Ashland	EB	I-580 and I-238 Interchange	4:00-7:00 PM	52
I-238	Between I-580 and I-880, Ashland	WB	I-880 Exits 31, 31A,3 1B / I-238 Exits 16A,17A / Beatrice Street	7:30-10:00 AM	30

Sources: [1]INRIX platform data collected in October 2019; Kittelson & Associates, Inc., 2022.

Figure 5-29: Percent Change in Vehicle Hours of Delay (2020-2040)



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5.3 Reliability Performance

The reliability performance assessment focuses on vehicle and transit facility characteristics (e.g., recurring significant variations in travel time and issues like bus bunching that lead to not meeting schedules) that make travel times unpredictable for users of the system.

Peak Period Travel Time Reliability Index

Reliability is a measure of the impact of one-time, unexpected events, such as construction activities and collisions. Therefore, the travel time reliability index is calculated only for the existing conditions due to the challenges in estimating future reliability. Additionally, the SB 1 Technical Performance Measurement Methodology Guidebook only requires this measure to be calculated for highways.

In the 2018 Level of Service Monitoring Report, Alameda CTC evaluated reliability using the Planning Time Index (PTI) and Buffer Time Index (BTI) for its corridor segments for the AM and PM peak periods.

Vehicle Planning Time Index

Planning Time Index (PTI) is computed as the 95th percentile travel time divided by the free-flow travel time (i.e., 95 percent of the surveyed trips will be shorter than planning time). The PTI represents the total travel time that should be planned when an adequate buffer time is included. The planning time index differs from the buffer index (which only measures the impacts of congestion) in that it includes typical delay as well as unexpected delay. [101]

To allow for comparison across different routes and different trip lengths, the PTI is a ratio of the 95th percentile travel time to the free-flow travel time. For example, if a trip takes 20 minutes in free-flow conditions, a planning time of 30 minutes will ensure on-time arrival in 95 percent of the cases, then the planning time index is 1.5.

$$Planning\ Time\ Index\ (PTI) = \frac{95th\ Percentile\ Travel\ Time}{Free\ Flow\ Travel\ Time}$$

Vehicle Buffer Time Index

BTI is used to express the extra travel time cushion that travelers must add to the average travel time when planning trips to ensure on-time arrival based on their knowledge of recurring variations like congestion. BTI is represented as a ratio of average travel time, calculated as follows:

$$Buffer\ Time\ Index = \frac{95th\ Percentile\ Travel\ Time - Average\ Travel\ Time}{Average\ Travel\ Time}$$

A higher BTI implies a greater departure of the 95th percentile travel time from the average travel time, and therefore, worse travel time reliability. The least reliable corridor segments are shown in **Table 5-12** using BTI as the primary metric categorized as follows:

[101] Federal Highway Administration. *Travel Time Reliability: Making It There On Time, All The Time, accessed from https://ops.fhwa.dot.gov/publications/tt_reliability/ttr_report.htm#:~:text=Thus%2C%20the%20planning%20time%20index,%C3%97%201.60%20%3D%2024%20minutes).*

Table 5-11: Reliability Index

Reliability	BTI Index
Reliable	< 25%
Mostly Reliable	25 – 50%
Less Reliable	50 – 100%
Unreliable	> 100%

Source: North Alameda County Core Connections Plan (NACCCP), 2022.

Table 5-12: Freeway Least Reliable Segments Planning Time Index and Buffer Time Index

Reliability Segment ID	Peak Period	Description	Segment Length (mile)	Planning Time Index	Buffer Time Index
N5	AM	I-238 EB from I-880 to I-580	2.6	2.9	0.9
N26	PM	I-880 SB from I-80 to SR 92	18.8	4	0.9
N6	AM	I-238 WB from I-580 to I-880	2.5	5.8	0.7

Source: Alameda CTC, Level of Service Monitoring Report, 2018.

I-238 westbound between I-580 and I-880 has a PTI of 5.8 during the AM peak period, which shows potential for significant delays as a result of non-recurring congestion and means that it can take up to 12 minutes to travel two miles. With a BTI of 0.7, this roadway segment is less reliable and will require an additional 70 percent buffer time to ensure on-time arrival.

Level of Travel Time Reliability

Level of travel time reliability (LOTTR) refers to the ratio of the 80th percentile travel time to the normal travel time (i.e., the 50th percentile occurring throughout a full calendar year) using data from FHWA's National Performance Management Research Data Set (NPMRDS). NPMRDS includes travel time data on the National Highway System (NHS), and LOTTR is used to assess the performance of the NHS. LOTTR data was obtained from Caltrans Travel Time Metrics.[102]

$$LOTTR = \frac{80th\ percentile\ travel\ time}{50th\ percentile\ travel\ time}$$

LOTTR is available for four time periods. However, for the CACCMCP, information for the morning (6:00 AM – 10:00 AM) and evening (4:00 PM – 8:00 PM) periods is included. The LOTTR is compared to the value to 1.5 (a federal threshold). If both morning and evening period LOTTR values are below the 1.5 threshold, the reporting segment is deemed to be reliable; if not, it is deemed to be unreliable. **Table 5-13** provides the LOTTR for CACCMCP freeway segments. It should also be noted that a value of closer to one (1) could also mean that the roadway segment observes regular congestion.

[102] Caltrans, Travel Time Metrics, accessed September 8, 2022, https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=0f811efc3ff344408d2c8fc36c922a89.

Table 5-13: Freeway Level of Travel Time Reliability

Roadway Segments	Segment Limit	Direction	LOTTR AM	LOTTR PM
I-880	Between I-980 and Hegenberger Road	EB	1.13	1.06
I-880	Between I-980 and Hegenberger Road	WB	**1.72**	1.3
I-880	Between Hegenberger Road and I-238	EB	1.05	1.14
I-880	Between Hegenberger Road and I-238	WB	**3.03**	1.1
I-238	Between I-580 and I-880	EB	1.14	1.32
I-238	Between I-580 and I-880	WB	1.16	1.24

Source: Caltrans Travel Time Metrics, 2019.
Notes: **Bold** represents unreliable segments.

Transit On-time Performance

On-time performance is the most common way for transit agencies to measure the reliability of their service. It is defined as the percentage of buses/trains that arrive at the transit stop no more than one minute before or five minutes after the scheduled time.

BART on-time performance data was obtained through the BART strategic plan indicators webpage and is shown in **Table 5-14**. BART's 2015 Strategic Plan had a target to increase customer on-time performance—or the percentage of riders who arrive at their destination no more than one minute before or five minutes after the scheduled time—to 92 percent.[103]

Within the study area, there are seven BART stations: Lake Merritt Station, Fruitvale Station, Coliseum Station, San Leandro Station, Bay Fair Station, Hayward Station, and South Hayward Station. On-time performance at each individual station is not available.

Table 5-14: BART On-time Performance

Route	Days	Trains Arriving On Time	Riders Arriving On Time
Systemwide	Weekdays	84%	90%
	Weekends	88%	94%

Sources: BART System Performance, 2017; Kittelson & Associates, Inc., 2022.

AC Transit bus on-time performance data was obtained through automated passenger counter (APC) and automatic vehicle location (AVL) for October 2019. Route 1T (Tempo) began service in August 2020, and therefore only limited data is available.

Table 5-15 provides on-time performance data for the AC Transit routes that serve the CACCMCP study area.

[103] BART *2015 Strategic Plan Framework* accessed September 7, 2022, https://www.bart.gov/kpi/performance.

Table 5-15: AC Transit On-time Performance

Route	Study Area Jurisdictions Served	Frequency	Major Destinations/BART Connection	On-time Performance
1T	Oakland and San Leandro	Weekdays – 10 mins	Uptown Oakland, Civic Center, Downtown San Leandro, and San Leandro BART	NA[1]
		Weekends – 30 mins		NA[1]
14	Oakland	Weekdays – 17 mins	Downtown Oakland and Fruitvale BART	62%
		Weekends – 30 mins		70%
62	Oakland	Weekdays – 19 mins	Lake Merritt BART	75%
		Weekends – 30 mins		74%
96	Oakland	Everyday – 30 mins	Alameda Point, Dimond District, and Lake Merritt BART	61%
45	Oakland	Weekdays – 20 mins	Eastmont Transit Center, Foothill Square, and Coliseum BART/Amtrak	74%
		Weekends – 40 mins		77%
34	Oakland, San Leandro, Ashland, Cherryland, and Hayward	Everyday – 1 hour	Hayward BART	50%
35	Oakland, San Leandro, and Ashland	Everyday – 1 hour	Bay Fair BART and San Leandro BART	80%
28	San Leandro, Ashland, and Hayward	Everyday – 1 hour	Hayward BART	55%
10	San Leandro, Ashland, Cherryland, and Hayward	Weekdays – 17 mins	Hayward BART	81%
		Weekends – 20 mins		81%
40	Oakland, San Leandro, and Ashland	Weekdays – 20 mins	Eastmont Transit Center and Bay Fair BART	62%
		Weekends – 30 mins		71%
99	Hayward	Weekdays – 20 mins	Hayward BART and South Hayward BART	74%
		Weekends – 30 mins		82%
41	Hayward	Everyday – 1 hour	Hayward BART and South Hayward BART	80%
93	San Leandro, Ashland, Cherryland, and Hayward	Everyday – 1 hour	Bay Fair BART and Hayward BART	64%

Sources: AC Transit, 2019; Kittelson & Associates, Inc., 2022.
Notes: [1] Tempo service, opened in August 2020, is not included in this analysis.

Level of Transit Delay

The level of transit delay performance metric is required if a transit agency identified in the list of transit agencies with General Transit Feed Specification Realtime (GTFS-RT) access is located within the CACCMCP study area.[104] To help attain this performance metric, the project team reached out to California Integrated Travel Project (Cal-ITP)[105] as suggested in the SB 1 Technical Performance Measurement Methodology Guidebook.

To calculate which routes would be considered within the CACCMCP study area, the routes with at least half of their stops within the corridor are filtered first. The data is then filtered for those trips to the subset of each trip from the last stop before entering the study area to the first stop after leaving the study area. As a result of this analysis, the following routes were identified: 801, 73, 10, 41, 45, 1T, 90, 840, and 40.

Schedule-Based Metric

The schedule-based metric is a daily average of the sum of median trip stop delays along the transit route. For each route trip for which the data is available, Caltrans examined the delay in comparison to the schedule at each stop, after subtracting any delay present as the trip entered the study area. Caltrans then took the median delay of all stops along the area and summed these medians to create the metric for each day. The final metric is a simple daily average of the daily metric for a nine-day period (April 30, 2022, to May 8, 2022). The schedule-based metric for the CACCMCP study area is **462 minutes**.

Speed-Based Metric

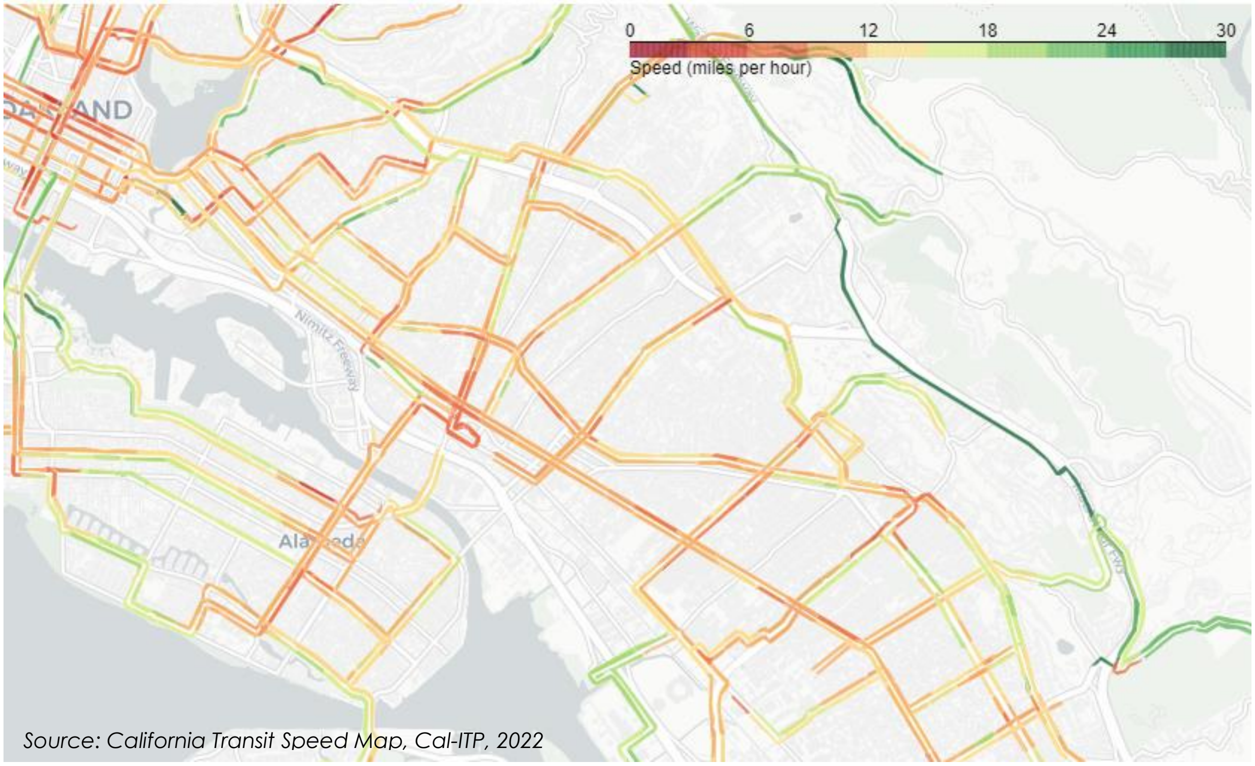
The speed-based metric is a daily average of the sum of delays for each trip traversing the transit route as compared to a reference speed of 16 miles per hour. For each corridor trip for which the data is available, Caltrans calculated the hypothetical time it would take for that trip to traverse the corridor at a speed of 16 miles per hour. The difference between the actual time it took for the trip to traverse the corridor and the hypothetical time is the speed-based delay for that trip and summed those delays to create the metric for each day. The final metric is a simple daily average of the daily metric for a nine-day period (April 30, 2022, to May 8, 2022). The speed-based metric for the CACCMCP study area provided is **4,820 minutes,** more than ten times the scheduled-based metric**.**

Figure 5-30 through **Figure 5-37** show AC Transit bus speeds with a map for both the morning peak and evening peak periods on June 1, 2022 (Wednesday). The routes are split into segments corresponding to the distance between two stops.

Route 1T (Tempo), the bus rapid transit system on International Boulevard/East 14th Street, currently operates at a speed ranging from 6 to 12 miles per hour. Tempo is equipped with bus-only lanes, transit priority signals, and pay before riding.

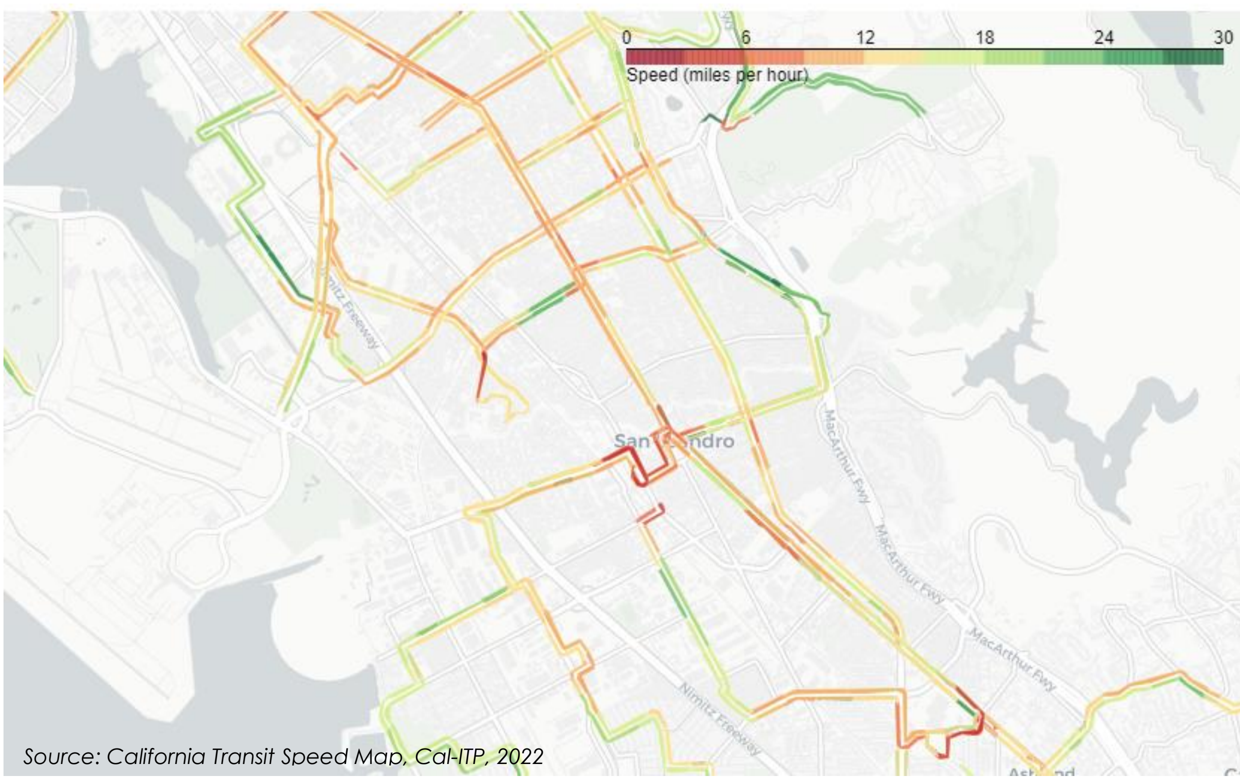
[104] List of agencies with GTFS-RT, accessed September 13, 2022, https://github.com/cal-itp/data-infra/blob/main/airflow/data/agencies.yml.
[105] Cal-ITP, https://dot.ca.gov/cal-itp.

Figure 5-30: Morning Peak Period Transit Speed (1 of 4)



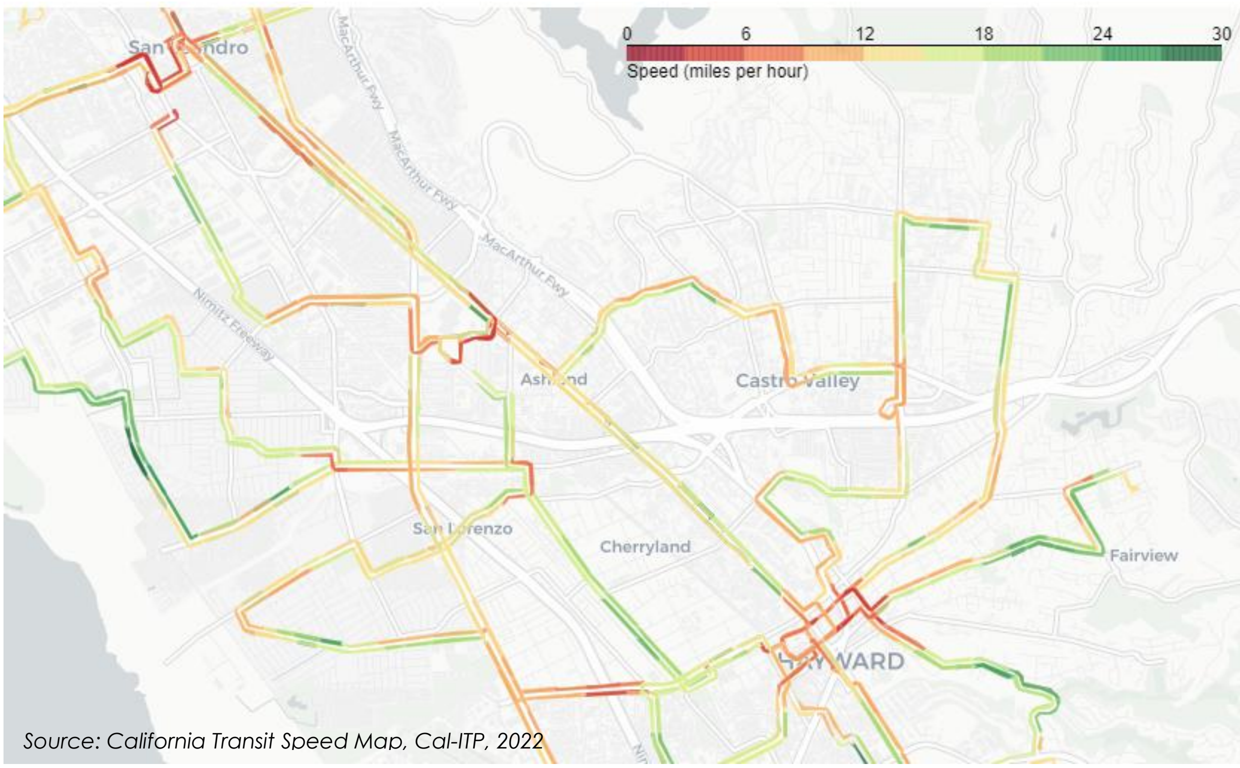
Source: California Transit Speed Map, Cal-ITP, 2022

Figure 5-31: Morning Peak Period Transit Speed (2 of 4)



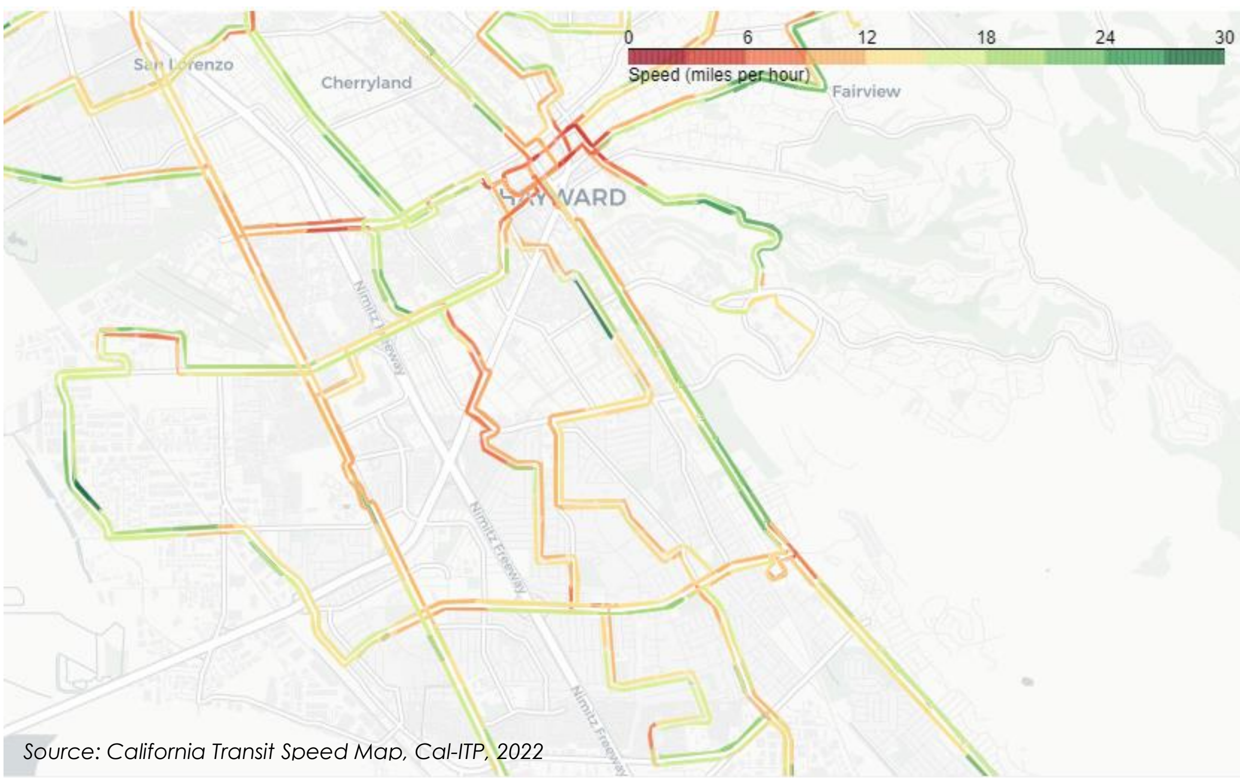
Source: California Transit Speed Map, Cal-ITP, 2022

Figure 5-32: Morning Peak Period Transit Speed (3 of 4)



Source: California Transit Speed Map, Cal-ITP, 2022

Figure 5-33: Morning Peak Period Transit Speed (4 of 4)



Source: California Transit Speed Map, Cal-ITP, 2022

Figure 5-34: Evening Peak Period Traffic Speed (1 of 4)

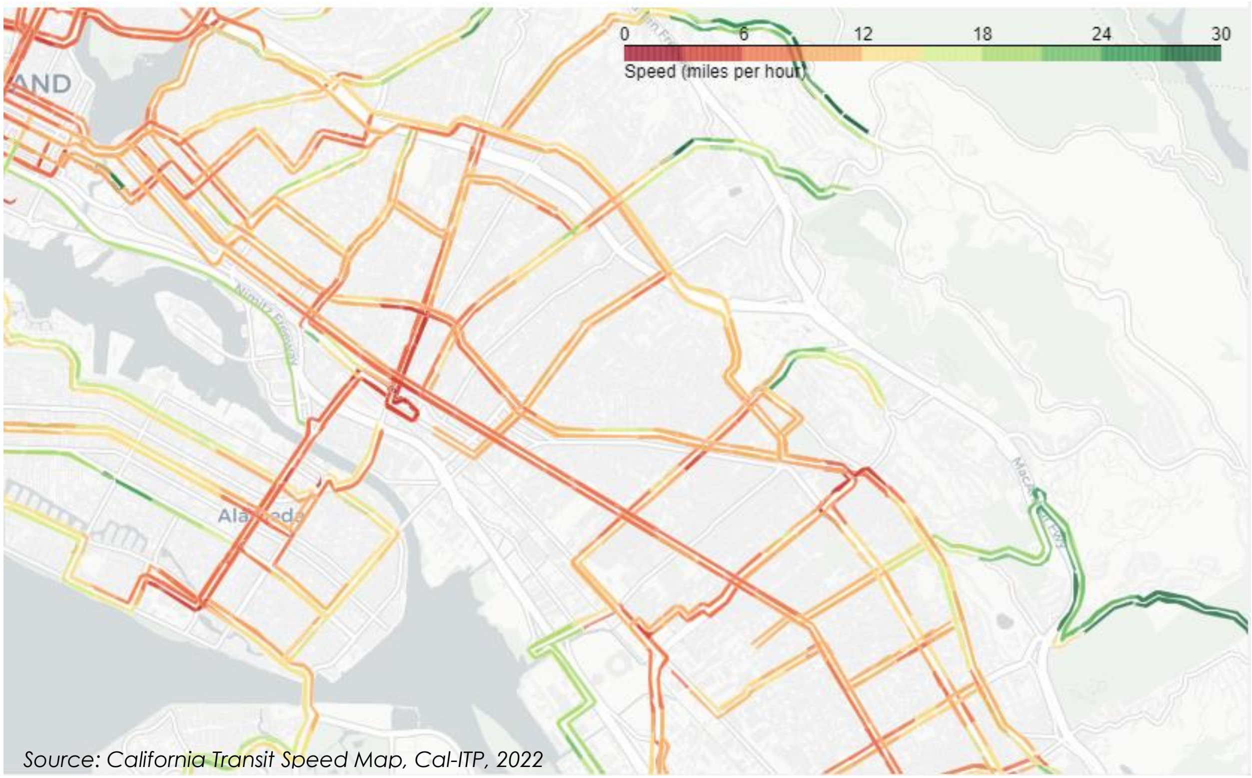


Figure 5-35: Evening Peak Period Traffic Speed (2 of 4)

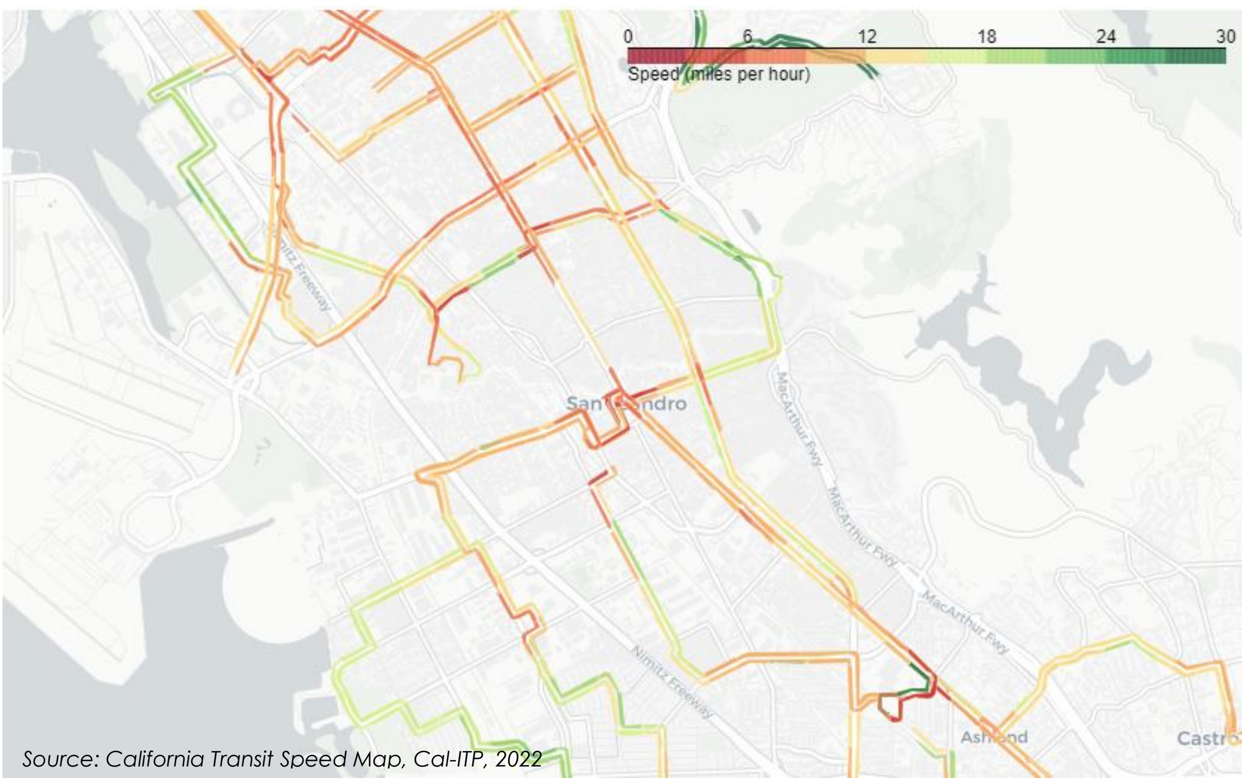
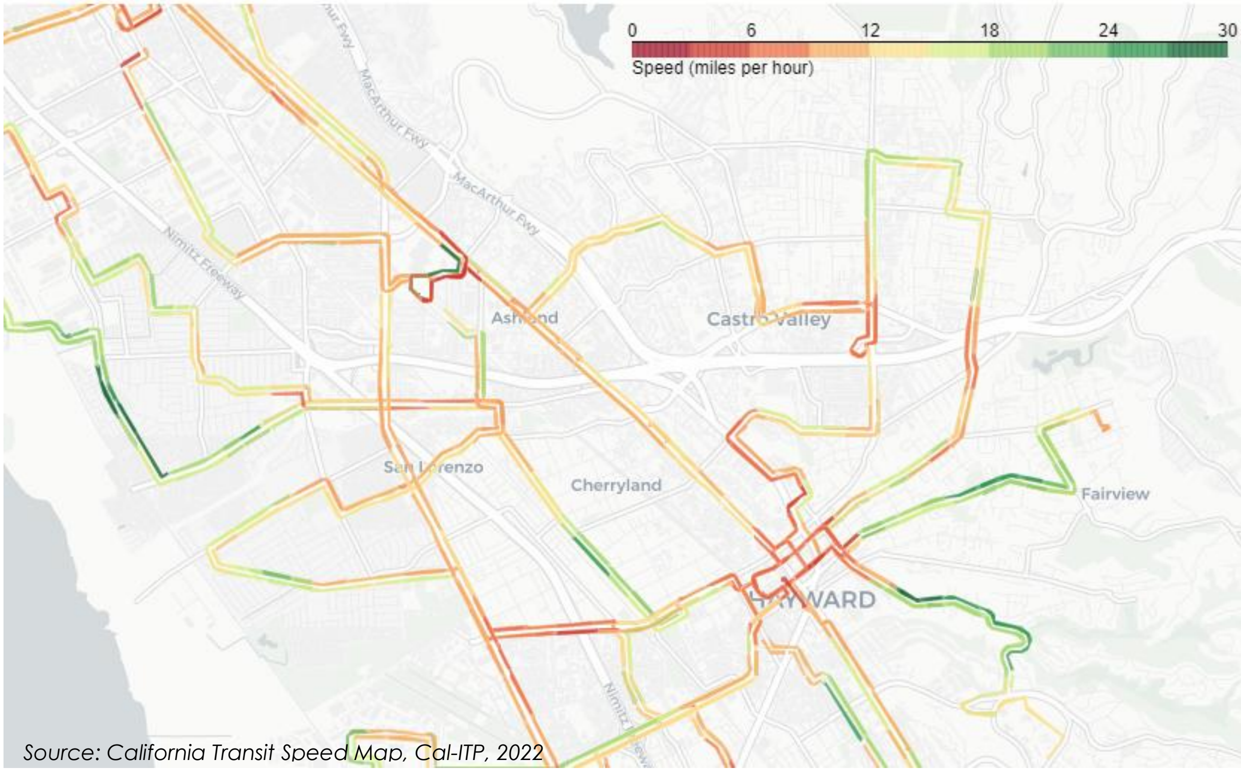
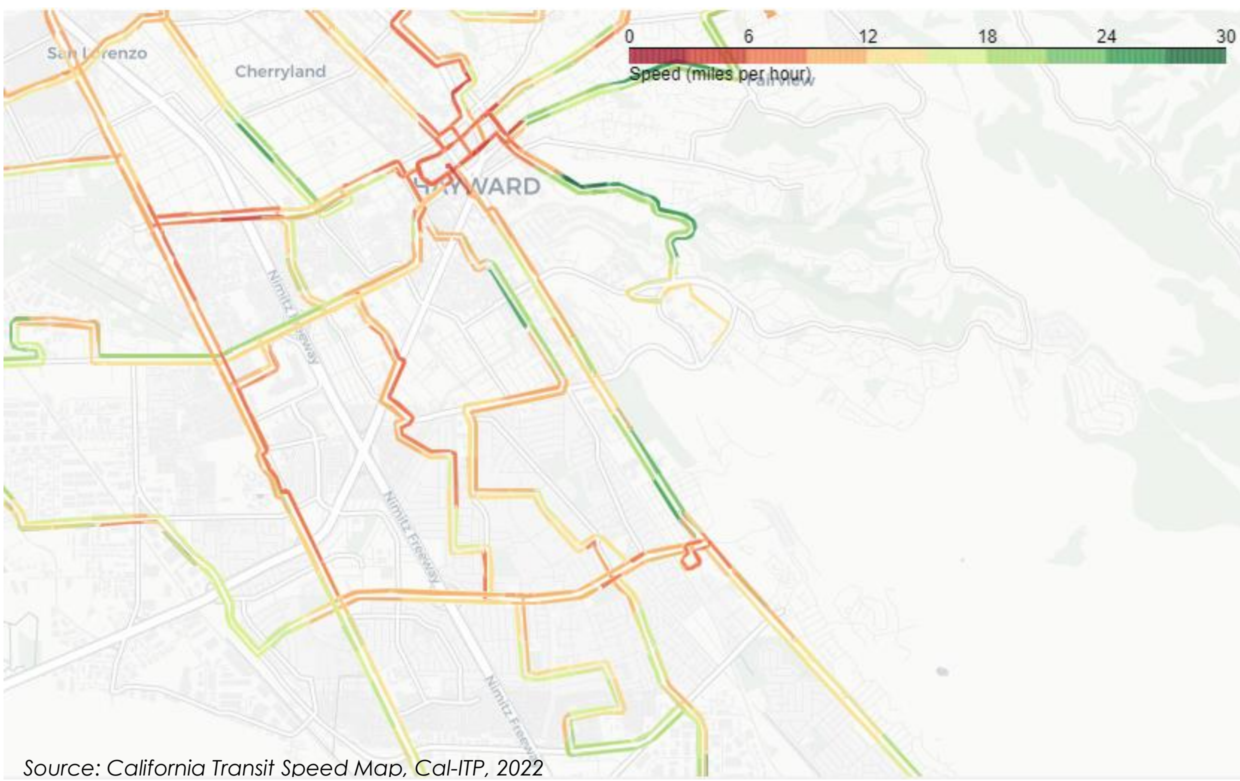


Figure 5-36: Evening Peak Period Traffic Speed (3 of 4)



Source: California Transit Speed Map, Cal-ITP, 2022

Figure 5-37: Evening Peak Period Traffic Speed (4 of 4)



Source: California Transit Speed Map, Cal-ITP, 2022

5.4 Sustainability Performance

The sustainability profile focuses on several performance measures intended to assess a transportation network's impact on the environment. Analysis includes car usage within the CACCMCP study area using vehicle miles traveled and vehicle hours traveled as measures. Access to alternative forms of transportation was assessed by evaluating the miles of first- and last-mile connections to major transit stops, the miles of bikeway facilities within the study area, the percentage of trips taken by residents within the neighborhood, and the total population within priority development areas. Finally, the impact of existing and future emissions was evaluated.

Vehicle Miles Traveled (VMT)

VMT is directly related to greenhouse gas emissions. It is calculated by summating the number of miles traveled by each vehicle throughout each area and regardless of direction. VMT was analyzed for the subareas, CACCMCP study area, Alameda County, and Bay Area using the Alameda CTC Countywide Travel Demand Model. The results of these calculations are shown **Table 5-16** and **Figure 5-38**.

It is expected that VMT will increase for the CACCMCP study area by 15 percent from 2020 to 2040. Of the subareas, the Oakland subarea increases the most by 17 percent. The study area overall is expected to increase less than the projected increases of Alameda County and the entire Bay Area, which are estimated to increase VMT by 17 percent and 18 percent, respectively.

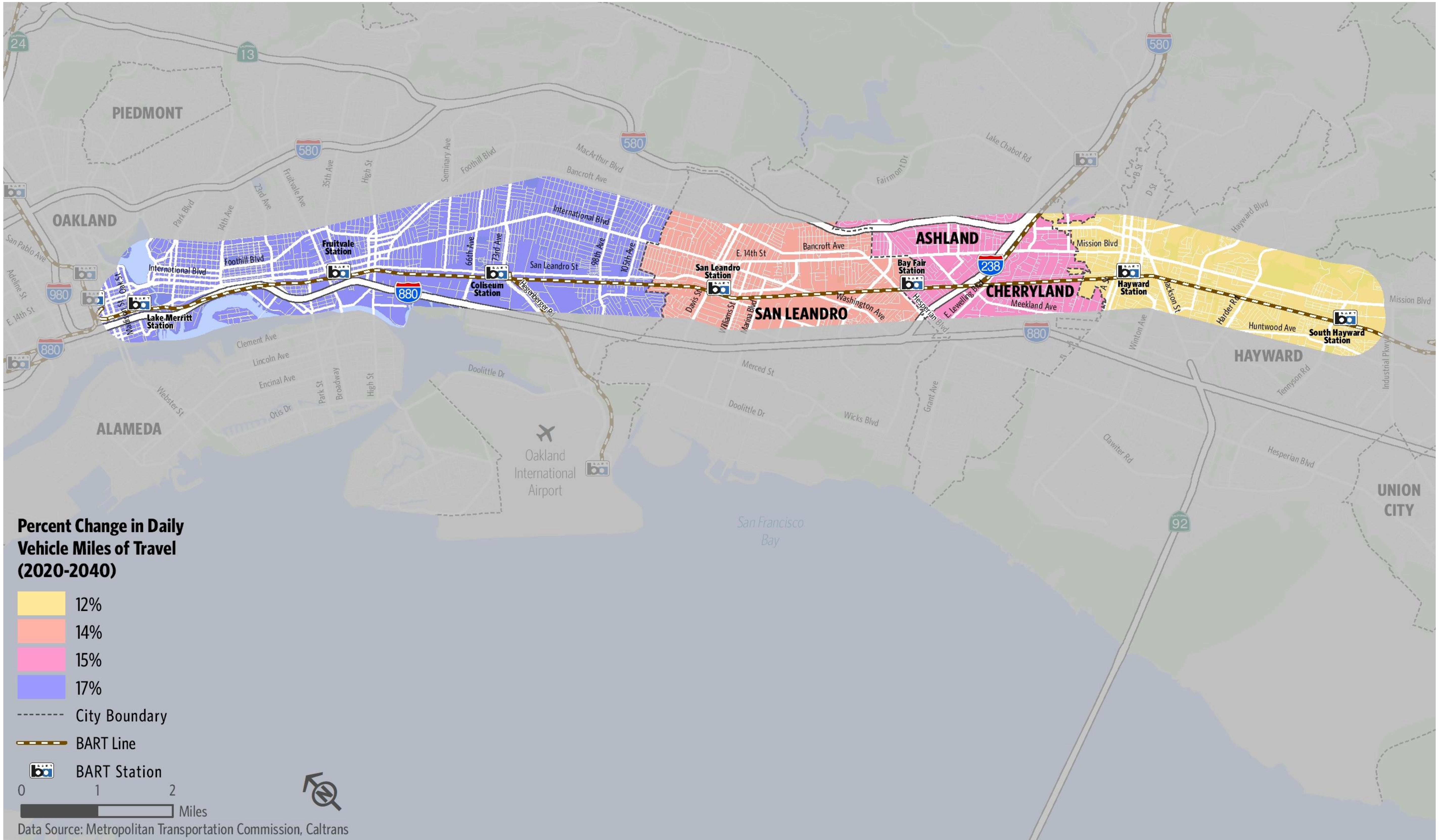
Table 5-16: Areawide Daily Vehicle Miles Traveled

Area Classification	Existing (2020)	Future (2040)	Change
Oakland Subarea	4,326,211	5,062,499	17%
San Leandro Subarea	1,846,670	2,102,105	14%
Unincorporated Subarea	1,212,915	1,400,301	15%
Hayward Subarea	1,910,689	2,131,348	12%
Subtotal CACCMCP Study Area	***9,296,484***	***10,696,251***	**15%**
Other Alameda County	31,118,245	36,893,493	19%
Total Alameda County	*49,711,214*	*58,285,996*	17%
Total Bay Area	184,046,641	217,598,345	18%

Sources: Alameda CTC Countywide Travel Demand Model; Kittelson & Associates, Inc., 2022.

As stated above, this analysis presents a comparison between year 2020 and year 2040 conditions. Plan Bay Area 2050 analyzes year 2050 land use and transportation networks and includes a number of strategies that are not included in this analysis.

Figure 5-38: Percent Change in Daily Vehicle Miles of Travel (2020-2040)



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Vehicle Hours of Travel

While VMT is a measure of distance, vehicle hours traveled (VHT) is the sum of the total number of hours traveled by each vehicle within a given area and can be an indicator of increasing traffic congestion. Likewise, VHT calculates data from the Alameda CTC Countywide Travel Demand Model. As shown in **Table 5-17**, the CACCMCP study area is projected to increase the VHT by 26 percent from 2020 to 2040, with both the Oakland and Hayward subareas having the highest increases among subareas at 28 percent. The increase in VHT for the study area is forecast to be 10 percent less compared to Alameda County and 8 percent less compared to the entire Bay Area.

Table 5-17: Areawide Vehicle Hours of Travel

Area Classification	Existing (2020)	Future (2040)	Change
Oakland Subarea	112,605	143,715	28%
San Leandro Subarea	47,657	57,669	21%
Unincorporated Subarea	26,398	33,052	25%
Hayward Subarea	55,979	71,659	28%
Subtotal CMCP Study Area	***242,639***	***306,096***	**26%**
Other Alameda County	927,663	1,263,450	36%
Total Alameda County	*1,412,941*	*1,875,642*	33%
Total Bay Area	5,373,739	7,225,628	34%

Sources: Alameda CTC Countywide Travel Demand Model; Kittelson & Associates, Inc., 2022.

Miles of Bikeway Network Facilities

The total number of miles of bikeway is a metric that evaluates how much bike infrastructure is available and contributes to cycling becoming a realistic alternative to driving. Within the CACCMCP study area, bike facilities are built and maintained by several agencies including the Cities of Oakland, San Leandro and Hayward, Alameda County, Metropolitan Transportation Commission and Caltrans. Together, these agencies have developed an existing network that comprises a total of 138 miles of bikeways as shown in **Table 5-18** and **Figure 5-39** to **Figure 5-42**.

Planned facilities within the study area, such as the East Bay Greenway Urban Trail, will help expand the network, while there are plans for other facilities to upgrade existing facilities to increase the safety and comfort of cyclists. Planned facilities are also shown in **Figure 5-39** to **Figure 5-42**.

Within the broader community, there is a spectrum of types of bicyclists with varying levels of comfort and skill. One method for categorizing bicyclists is based on bicyclist confidence and tolerance of traffic stress, but due to the data limitation, this analysis was not completed as a part of the CACCMCP. However, local bicycle and pedestrian plans include level of traffic stress analysis. The planned facilities should be designed to make cycling on the CACCMCP study area less stressful.

Table 5-18: Miles of Existing and Planned Bikeway Facilities

Bikeway Classification	Existing (miles)	Planned (miles)
Class I – Multi-use Path	9.25	17.91
Class II – Bike Lane	77.36	10.09
Class III – Bike Route	48.79	27.11
Class IV – Separated Bike Lane	2.95	17.36
Total	**138.35**	**72.47**

Sources: Alameda Countywide Active Transportation Plan, 2019; Oakland Bike Plan, 2019; San Leandro Bicycle and Pedestrian Master Plan, 2018; Hayward Bike and Pedestrian Master Plan, 2020; and Alameda County Bicycle and Pedestrian Plan for Unincorporated Areas, 2019; Kittelson & Associates, Inc., 2022.

Miles of First/Last Mile Connections to Major Transit Stations

To encourage the use of transit, riders must be able to access multimodal transportation options to and from the station safely and comfortably. Many transit trips start as walking and biking trips to the station—these first- and last-mile connections are critical for the vitality of the transit network. To spatially understand these connections to the BART Station within the CACCMCP study area, 10-minute walk and bike sheds were analyzed and are shown in **Figure 5-39** to **Figure 5-42**.

Although walk sheds represent reasonable walking distances, they do not necessarily represent areas that are comfortable or safe to walk through. The Alameda Countywide Active Transportation Plan (2019) uses additional designations and considers, for instance, Lake Merritt Station to be a “Walker’s Paradise” while the Coliseum Station is considered “Somewhat Walkable,” noting the car-centric design surrounding that station.

Most of the CACCMCP study area is within biking distance to a BART Station (see **Figure 5-39** to **Figure 5-42**). However, bike network quality and access to these stations vary. The Lake Merritt Station has several direct connections to the surrounding dense bike network of existing Class II bikeways, with additional upgrades and connections planned in the surrounding area. Fruitvale Station also has several existing bikeways connecting to the bike network, but the network is less dense compared to Lake Merritt Station in Downtown Oakland. The Coliseum, San Leandro, Bay Fair, Hayward, and South Hayward Stations all lack direct bike connections to the surrounding bike network even though they all have a bikeway within proximity to the station. All stations within the study area have at least one plan to add a direct connection to the surrounding bike network—one being the East Bay Greenway, which will install bike infrastructure between the main corridor (East 12th Street, International Boulevard, East 14th Street. and Mission Boulevard) to the main streets accessing all BART stations within the study area.

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Figure 5-39: 10-minute Walking and Biking Sheds to BART Stations within CACCMCP Study Area (Page 1 of 4)

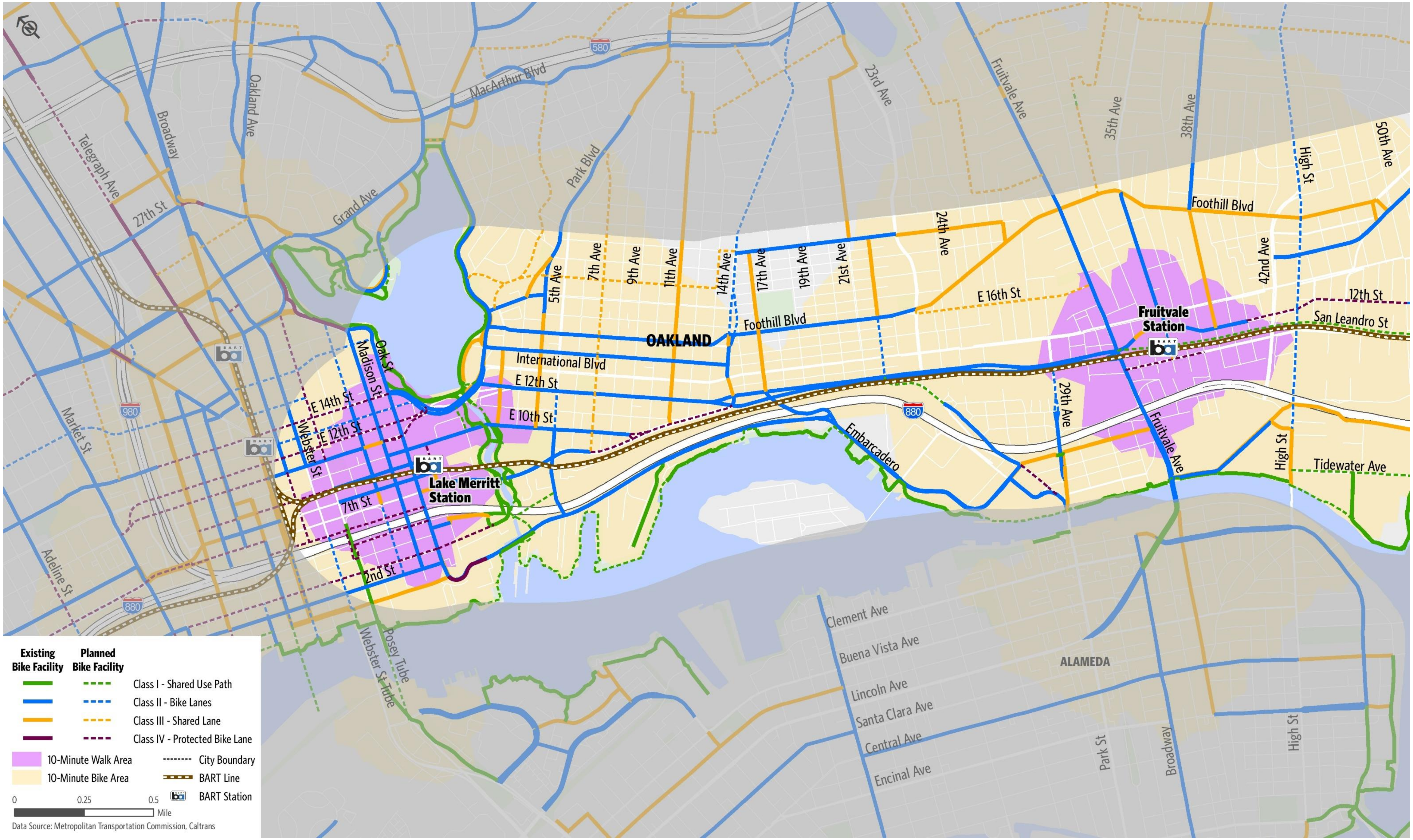


Figure 5-40: 10-minute Walking and Biking Sheds to BART Stations within CACCMCP Study Area (Page 2 of 4)

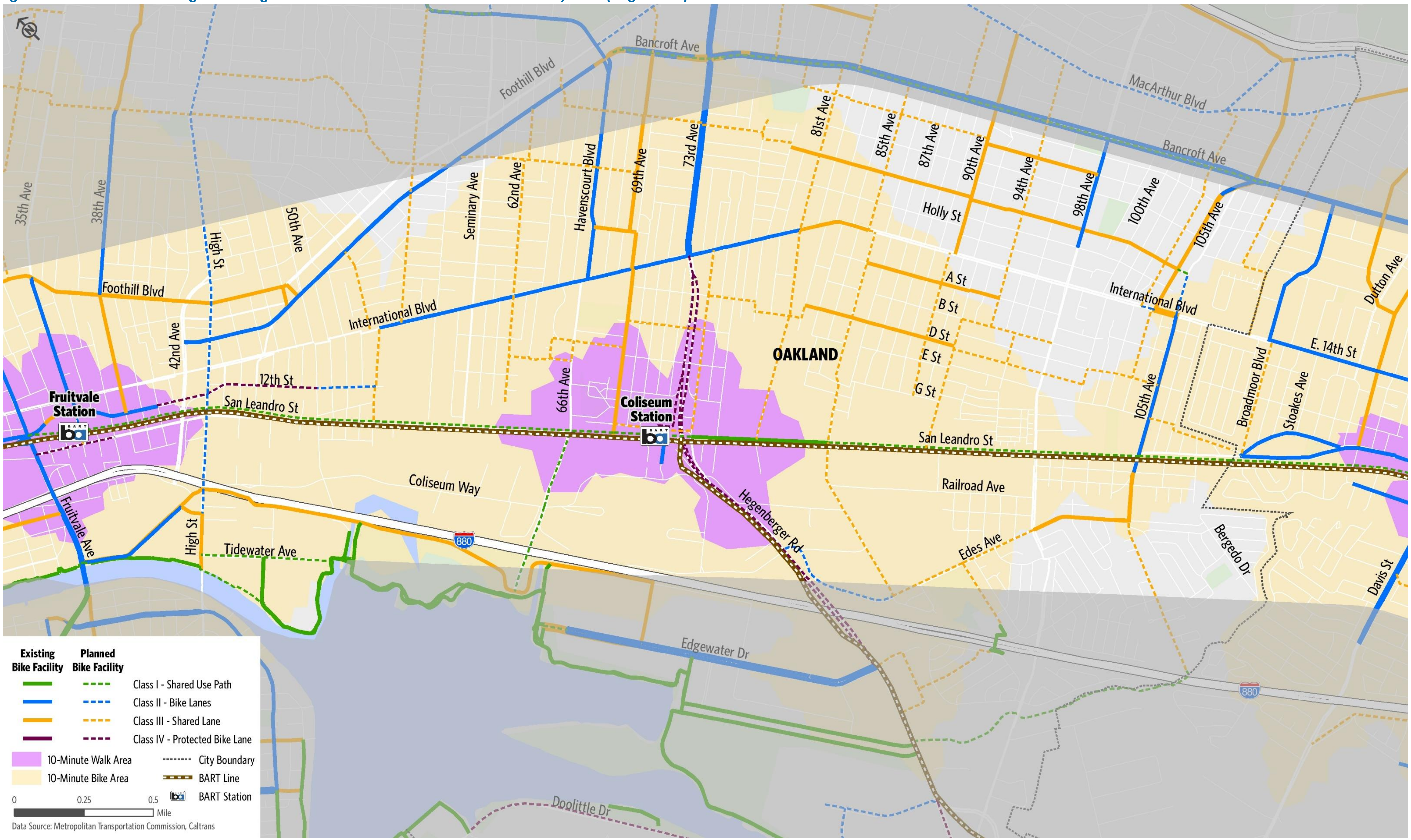


Figure 5-41: 10-minute Walking and Biking Sheds to BART Stations within CACCMCP Study Area (Page 3 of 4)

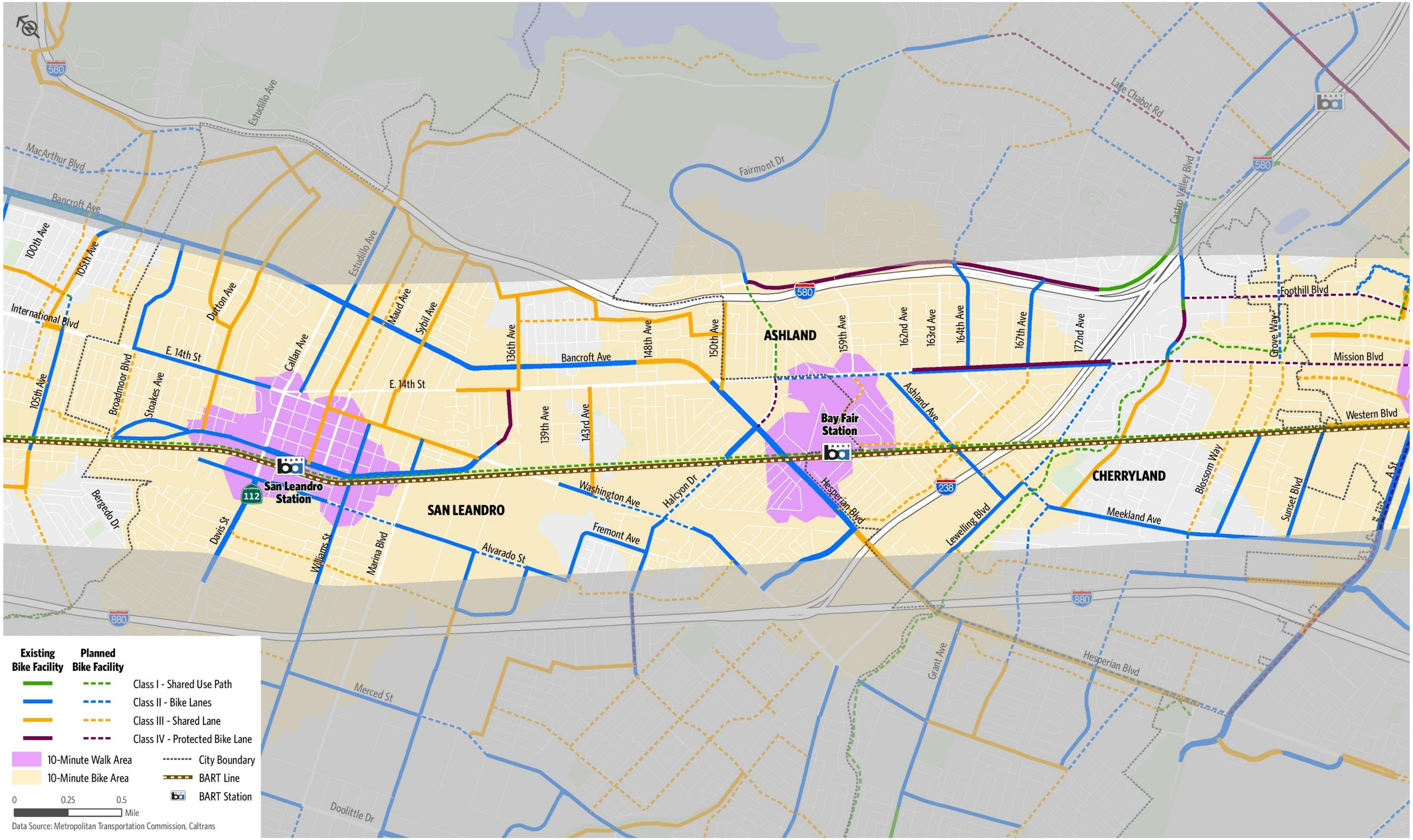
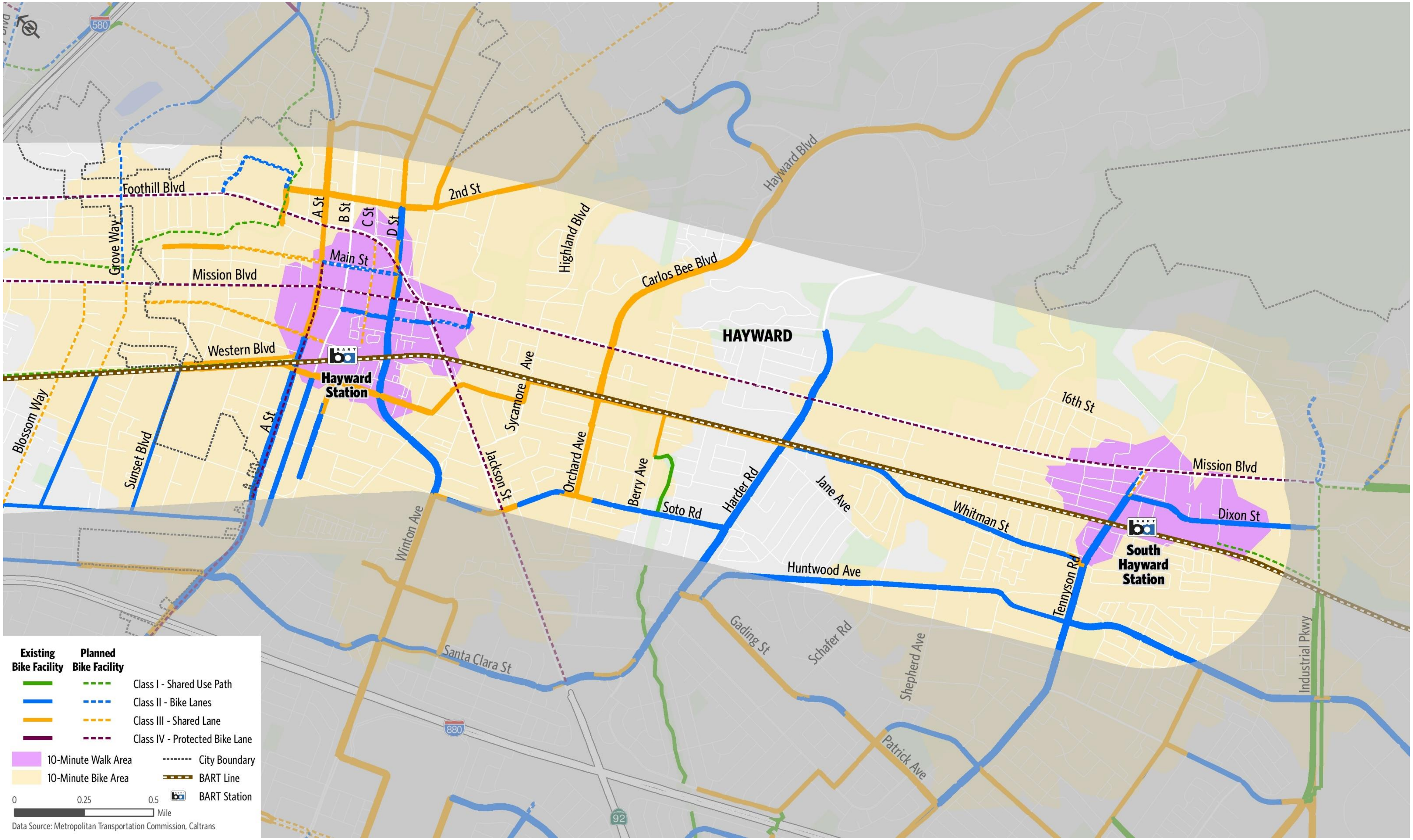


Figure 5-42: 10-minute Walking and Biking Sheds to BART Stations within CACCMCP Study Area (Page 4 of 4)



Population in Priority Development Areas

Transit-rich Priority Development Areas (PDAs) are defined as locations within a half-mile of a rail station, a ferry terminal with bus or rail service, or a bus stop with service frequencies of 15 minutes or less. They can also be areas with a planned rail, ferry, or bus stop that would meet the aforementioned criteria. Transit-rich PDAs are planned for new mixed-use developments that help residents' shift from car-use to walking, biking, and transit. The more residents who live in these developing areas, the greater the number of trips that can be realistically shifted to alternative modes. The following analysis considers the existing population in the CACCMCP study area and Alameda County that live within transit-rich PDAs as a sustainability measure.

To estimate the population within transit-rich PDAs, Census Block Groups were spatially joined with 2019 American Communities Survey (ACS) population data. If the Census Block Group overlapped with transit-rich PDAs that are within the area of inquiry, its population was added to the total population. This process was completed both for the CACCMCP and Alameda County with results shown in **Table 5-19**. 62.8 percent of the population of the CACCMCP study area live within a transit-rich PDA, whereas 45.9 percent of Alameda County's population actually lives within one.

Table 5-19: Population within Transit-rich PDAs

Area Classification	Total Population	Population in Transit-rich PDAs	Share of Population in Transit-rich PDAs
CACCMCP Study Area	**348,227**	**218,833**	**62.8%**
Total Alameda County	*1,671,329*	*766,572*	*45.9%*

Note: Total population for the CACCMCP study area was estimated by adding the ACS populations from Census Block Groups that intercepted with the study area and manually adjusting to provide the best coverage. To estimate the population in Transit Rich PDAs, Census Block Groups were selected whose centroid was in the CACCMCP study area and Transit Rich PDAs.

Neighborhood Trips

The purpose of this neighborhood trips performance assessment is to find the number of potential short trips that could be transferred to walking (less than a half-mile) and bicycling (less than three miles). The information was extracted from the Alameda CTC Countywide Travel Demand Model.

Table 5-20 shows that around 123,000 out of over 2 million total trips (5.9 percent) within the CACCMCP study area are walkable, and over 1 million out of over 2 million total trips (52.1 percent) are bikeable under existing conditions. Under future (2040) conditions, over 147,000 out of nearly 2.5 million total trips (6 percent) are walkable, and over 1.3 million out of nearly 2.5 million total trips (53.9 percent) are bikeable. The increase in number of walkable and bikeable trips in the future is potentially due to more in-fill and mixed-use development.

Table 5-20: Areawide Potential Walkable and Bikeable Trips

	Oakland Subarea	San Leandro Subarea	Unincorporated Subarea	Hayward Subarea	Corridor Study Area	Alameda County
Existing (2020)						
All Trips	1,160,385	351,125	191,836	367,302	2,070,647	9,269,039
Walkable Trips <= 0.5 miles	63,945	21,035	12,918	25,277	123,175	579,486
Percent	**5.5%**	**6.0%**	**6.7%**	**6.9%**	**5.9%**	**6.3%**
Bikeable Trips <= 3.0 miles	614,054	181,177	99,516	185,055	1,079,803	4,411,134
Percent	**52.9%**	**51.6%**	**51.9%**	**50.4%**	**52.1%**	**47.6%**
Future (2040)						
All Trips	1,436,890	407,008	211,026	402,648	2,457,572	10,762,743
Walkable Trips <= 0.5 miles	80,035	26,013	14,346	27,481	147,875	700,325
Percent	**5.6%**	**6.4%**	**6.8%**	**6.8%**	**6.0%**	**6.5%**
Bikeable Trips <= 3.0 miles	790,461	220,608	109,703	203,292	1,324,064	5,224,595
Percent	**55.0%**	**54.2%**	**52.0%**	**50.5%**	**53.9%**	**48.5%**

Sources: Alameda CTC Countywide Travel Demand Model; Kittelson & Associates, Inc., 2022.

Air Quality and Emissions

Greenhouse gas (GHG) emissions and pollutants were calculated using the California Air Resources Board Emission Factor (EMFAC 2021). Emissions are calculated using VMT and speed data where lower speeds and vehicle delay can lead to higher GHG emissions even though travel distances may be short. The criteria pollutants evaluated include nitrogen dioxide (NOx), sulfur oxides (SOx), and particulate matter 2.5 (PM 2.5), while carbon dioxide (CO2) is the only GHG evaluated. The reduction observed in the future (2040) conditions is mostly due to more fuel-efficient vehicles.

Table 5-21: Existing and Future Pollutants

Area Classification	CO2 Tons			NOx (pounds)			SOx (Pounds)			PM 2.5 (Pounds)		
	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change	Existing (2020)	Future (2040)	% Change
Oakland Subarea	2,096,965	1,721,902	-18%	2,619,452	886,646	-66%	129,890	105,553	-19%	82,985	29,555	-64%
San Leandro Subarea	895,102	714,987	-20%	1,118,129	368,163	-67%	55,444	43,829	-21%	35,423	12,272	-65%
Unincorporated Subarea	587,914	476,283	-19%	734,401	245,249	-67%	36,417	29,196	-20%	23,266	8,175	-65%
Hayward Subarea	926,133	724,933	-22%	1,156,891	373,284	-68%	57,367	44,439	-23%	36,651	12,443	-66%
Subtotal CACCMCP Study Area	4,506,113	3,638,104	-19%	5,628,873	1,873,341	-67%	279,118	223,017	-20%	178,325	62,445	-65%
Other Alameda County	15,083,373	12,548,544	-17%	18,841,600	6,461,526	-66%	934,294	769,229	-18%	596,910	215,384	-64%
Total Alameda County	24,095,599	19,824,753	-18%	30,099,345	10,208,209	-66%	1,492,529	1,215,263	-19%	953,561	340,274	-64%
Total Bay Area	89,209,531	74,011,492	-17%	111,437,297	38,110,174	-66%	5,525,816	4,536,925	-18%	3,530,383	1,270,339	-64%

Sources: Alameda CTC Countywide Travel Demand Model; California Air Resources Board, EMFAC, 2021; Kittelson & Associates, Inc., 2022.

5.5 Equity Performance

The purpose of this section is to analyze the existing conditions for equity communities in the CACCMCP study area with the intention of shedding light on key equity issues and helping Alameda CTC work toward a corridor where everyone has equitable and safe access to transportation options that connect them to opportunities like jobs, healthcare, education, and community resources. Equity communities are defined in this CACCMCP using two designations – Equity Priority Communities (EPCs) and Disadvantaged Communities (DACs), as explained in Chapter 3.

This equity profile analyzes the outputs from the safety, mobility, sustainability, and reliability performance indicators in the EPC census tracts, DAC census tracts, and the census tracts that are designated as both EPCs and DACs. EPCs and DACs differ in their derivations: EPCs are designated based on demographic information, and DACs are designated based mostly on the presence of pollution in communities. Previous CMCPs have relied on the DAC designations for their equity profile so it is included here for consistency. MTC's EPC designation presents a new opportunity to bring a more detailed and localized dataset to the CACCMCP effort and was included in this analysis to ensure all potential equity issues were taken into consideration through the CMCP process. **Figure 5-43** through **Figure 5-46** show where those designations are located within the CACCMCP study area at the census tract level.

Figure 5-43 through **Figure 5-46** and **Table 5-22** reveal that almost the entire CACCMCP study area (76.34 percent) is designated as an EPC, while communities that are widely recognized as disadvantaged locally—Ashland and Cherryland—are left out of the DAC designation, illustrating one of the key reasons that the equity profile includes both designations in its analysis.

Table 5-22: Study Area Census Tracts Designated as EPC, DAC, Both EPC and DAC, and Total EPC/DAC

	EPC Census Tracts	DAC Census Tracts	Both EPC and DAC Census Tracts	Total EPC/DAC Census Tracts
Percent of CACCMCP study area	76.34%	37.28%	36.84%	76.78%

Source: HNTB, 2022.

Figure 5-43: Census Tracts Designated as Both EPCs and DACs (1 of 4)

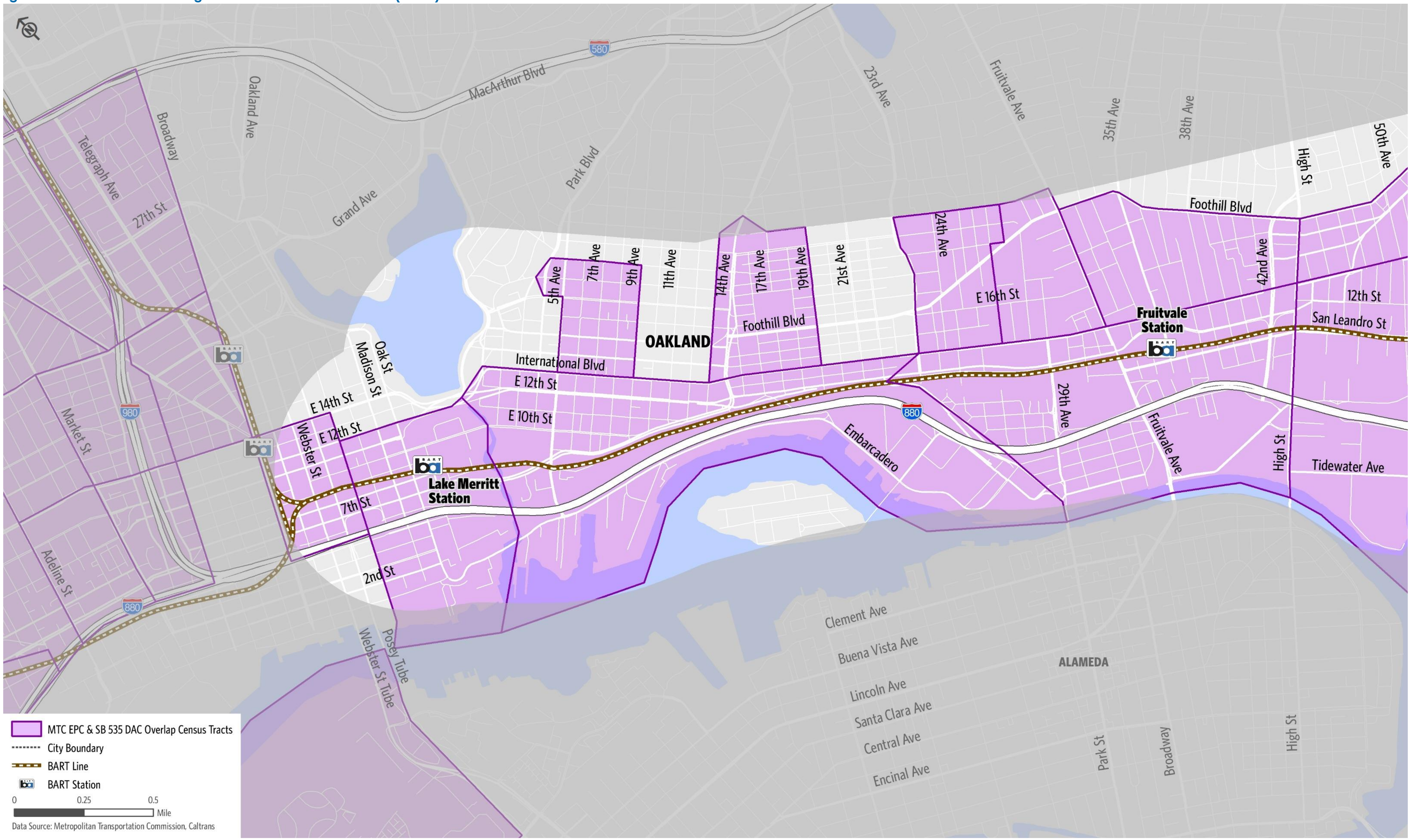


Figure 5-44: Census Tracts Designated as Both EPCs and DACs (2 of 4)

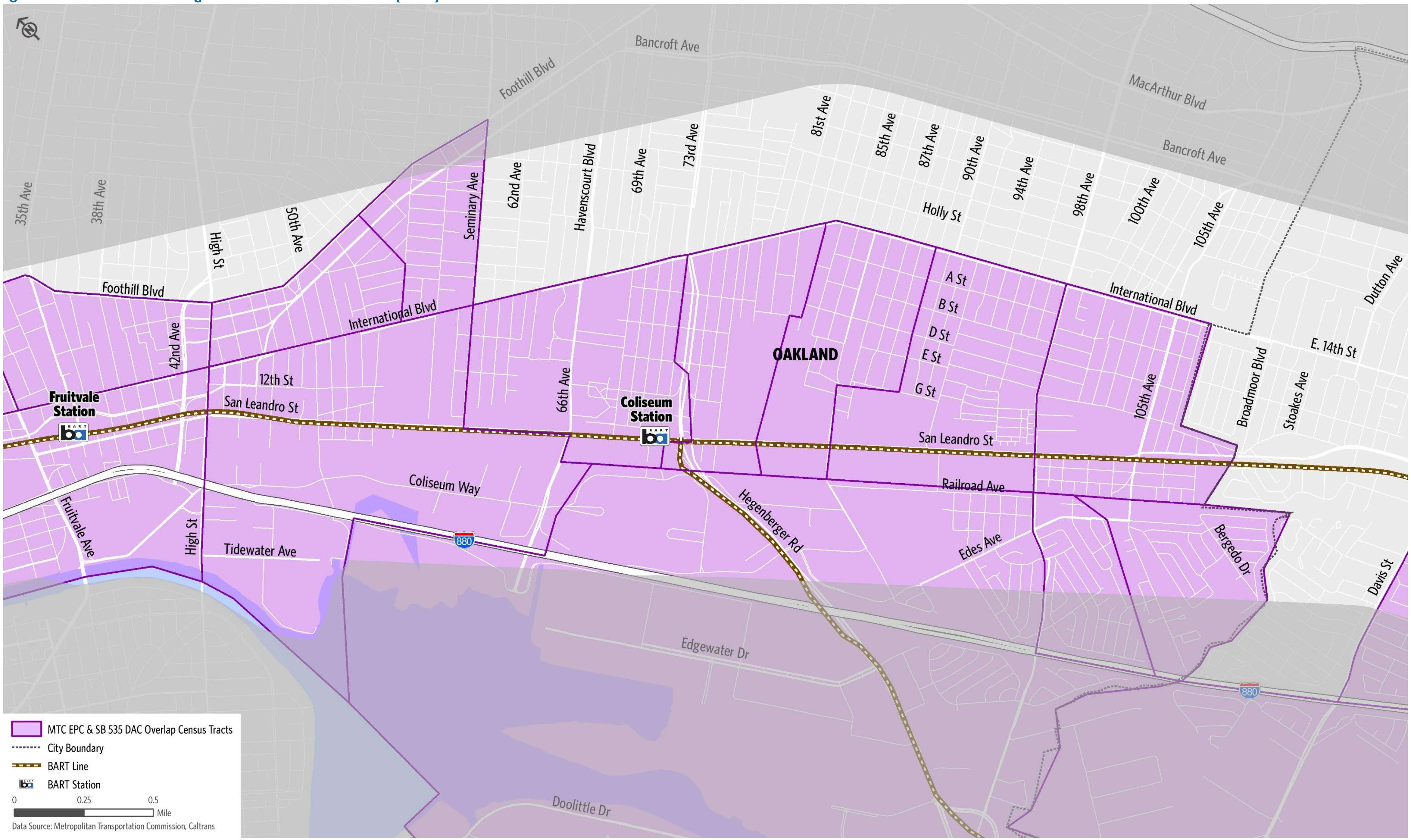


Figure 5-45: Census Tracts Designated as Both EPCs and DACs (3 of 4)

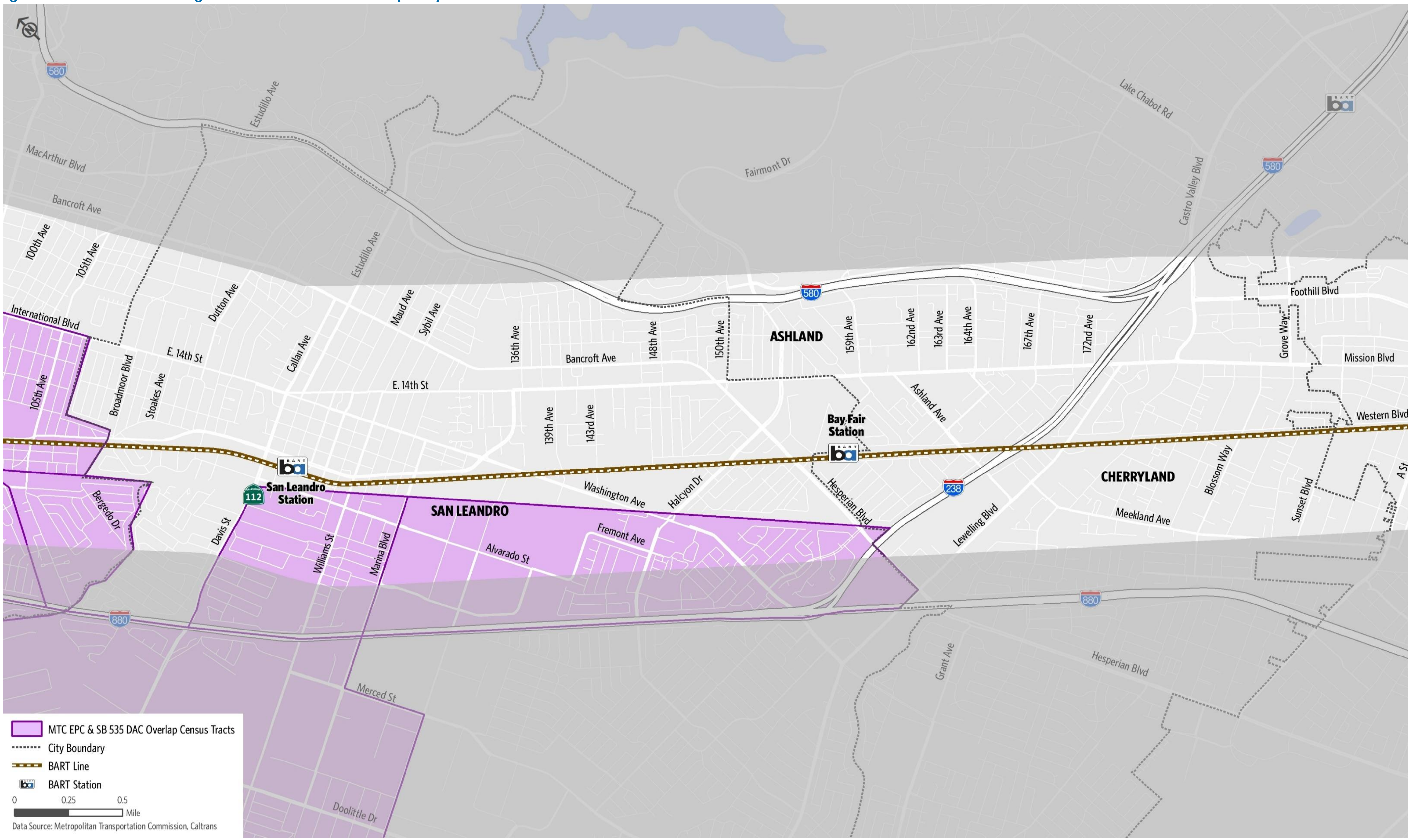
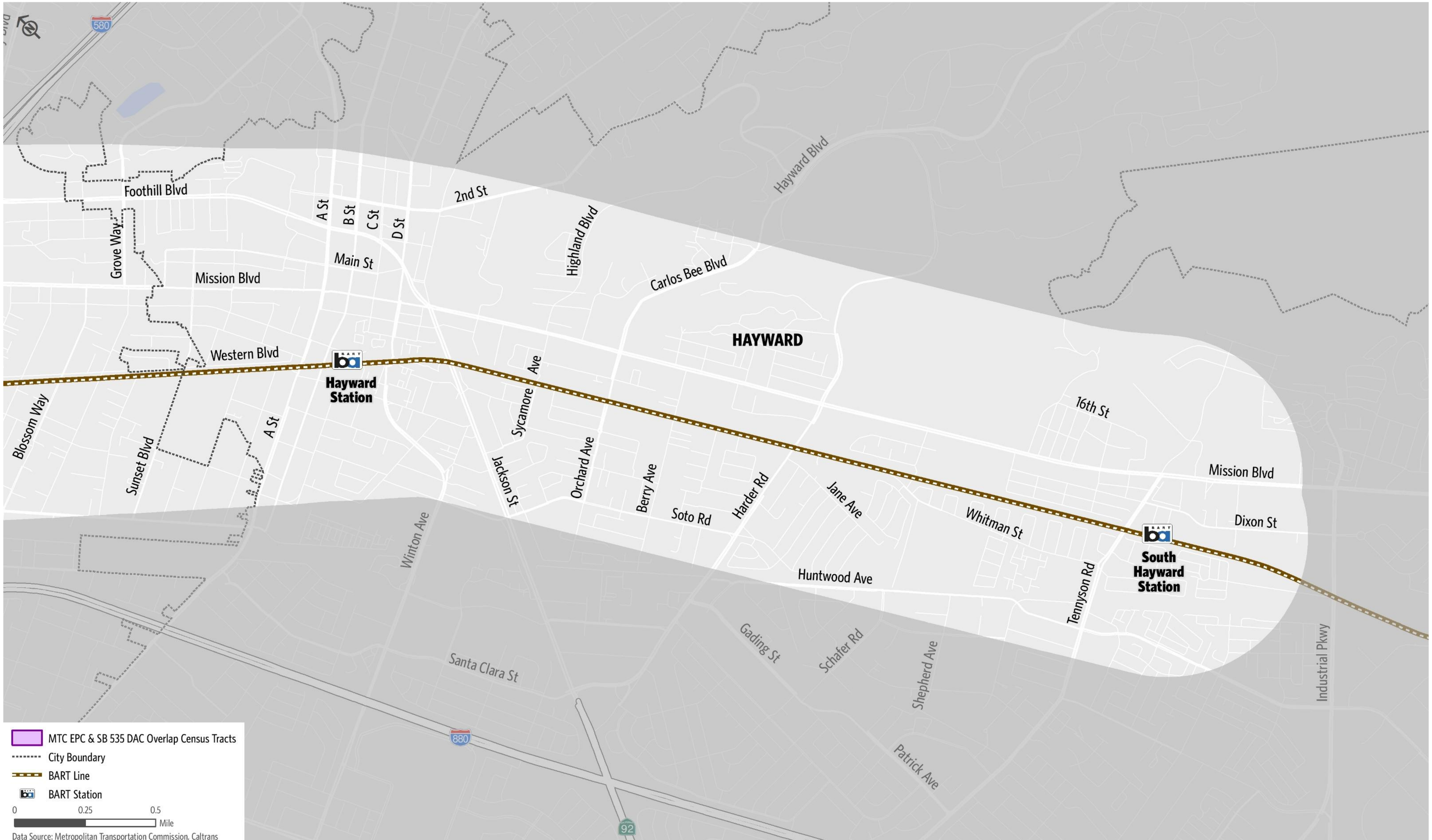


Figure 5-46: Census Tracts Designated as Both EPCs and DACs (4 of 4)



Safety Performance

Safety within transportation systems is a critical indicator of quality of life in communities. This section explores the existing safety conditions for equity communities in the study area. Collision analysis concluded that pedestrians are the most vulnerable users in the CACCMCP study area, with the highest rates of fatalities and severe injuries. These results support prioritizing safety projects.

The High Injury Network (HIN) dataset is an important tool for understanding which communities are facing disproportionate burdens related to active transportation safety. **Table 5-23** details where the HIN network intersects with the CACCMCP study area and the EPCs and DACs. The analysis shows that most of the CACCMCP study area falls within the HIN, and a high percentage of HIN segments are located in EPCs (34 percent) and DACs (39 percent).

Table 5-23: CACCMCP Primary Corridors and Major Connections within the HIN

	Study Area Overall	EPC Census Tracts	DACs Census Tracts	Both EPC and DAC Census Tracts	Total EPC/DAC Census Tracts
Percent of CACCMCP primary corridors and major connections that are part of HIN	34%	34%	39%	39%	35%

Sources: HNTB, 2022; Kittelson & Associates, Inc., 2022.

Understanding where fatalities and serious injuries occur among bicyclists and pedestrians can help guide appropriate planning interventions to address challenges in the built environment that may be contributing to these issues. **Figure 5-47** through **Figure 5-50** show locations of bicycle and pedestrian fatalities and serious injuries within the CACCMCP study area. Clusters of fatalities appear around Hayward, Bay Fair, and Lake Merritt BART Stations, suggesting the need for access-related projects. With few exceptions, all bicycle and pedestrian fatalities within the study area have occurred in an EPC or a DAC. A disproportionate number of pedestrian serious injuries have occurred along East 14th Street/International Boulevard, particularly within the Oakland subarea. Almost all serious injuries within the study area are located in an EPC or DAC.

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Figure 5-47: Bicycle and Pedestrian Fatality and Serious Injuries Locations within the CACCMCP Study Area (1 of 4)

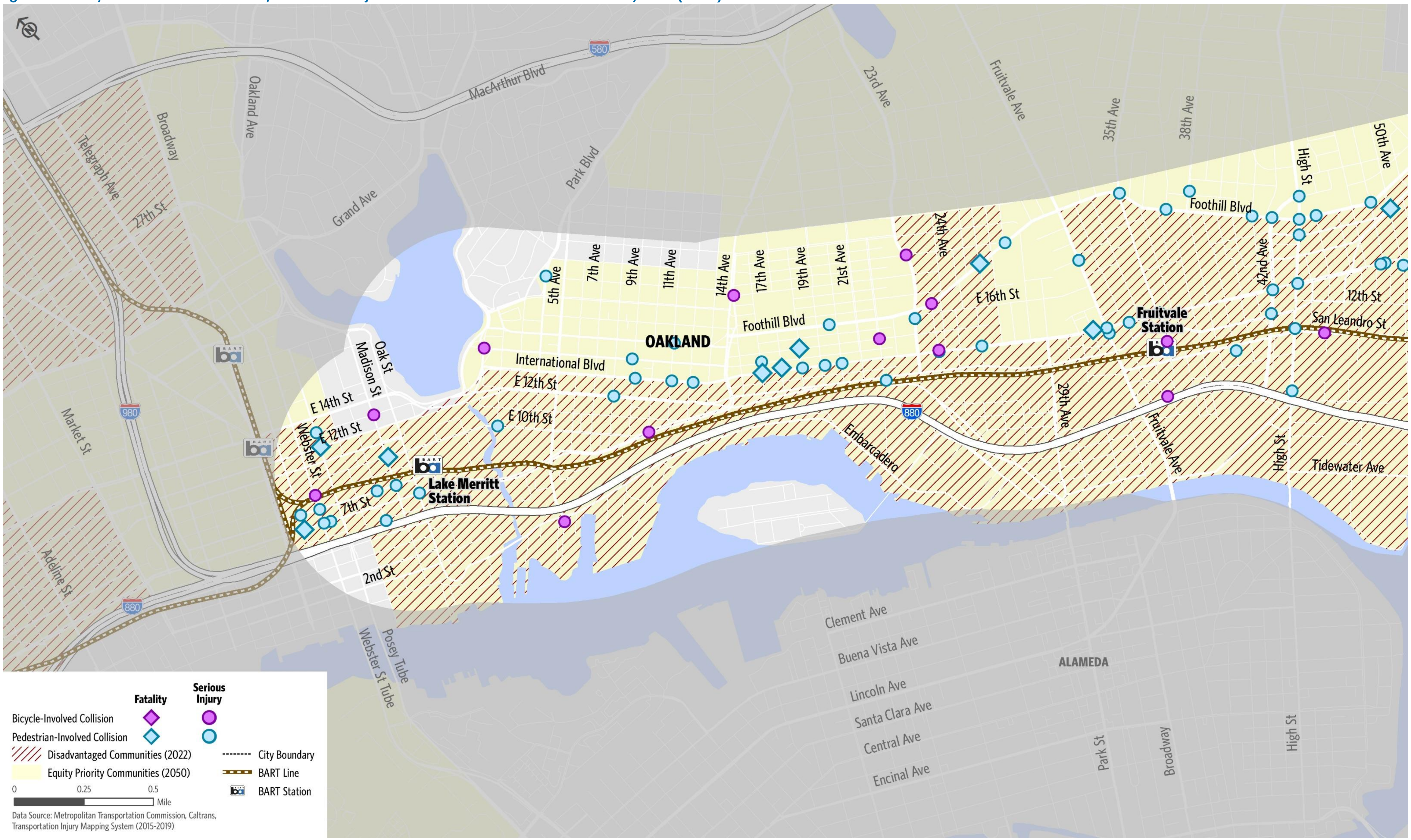

Figure 5-48: Bicycle and Pedestrian Fatality and Serious Injuries Locations within the CACCMCP Study Area (2 of 4)

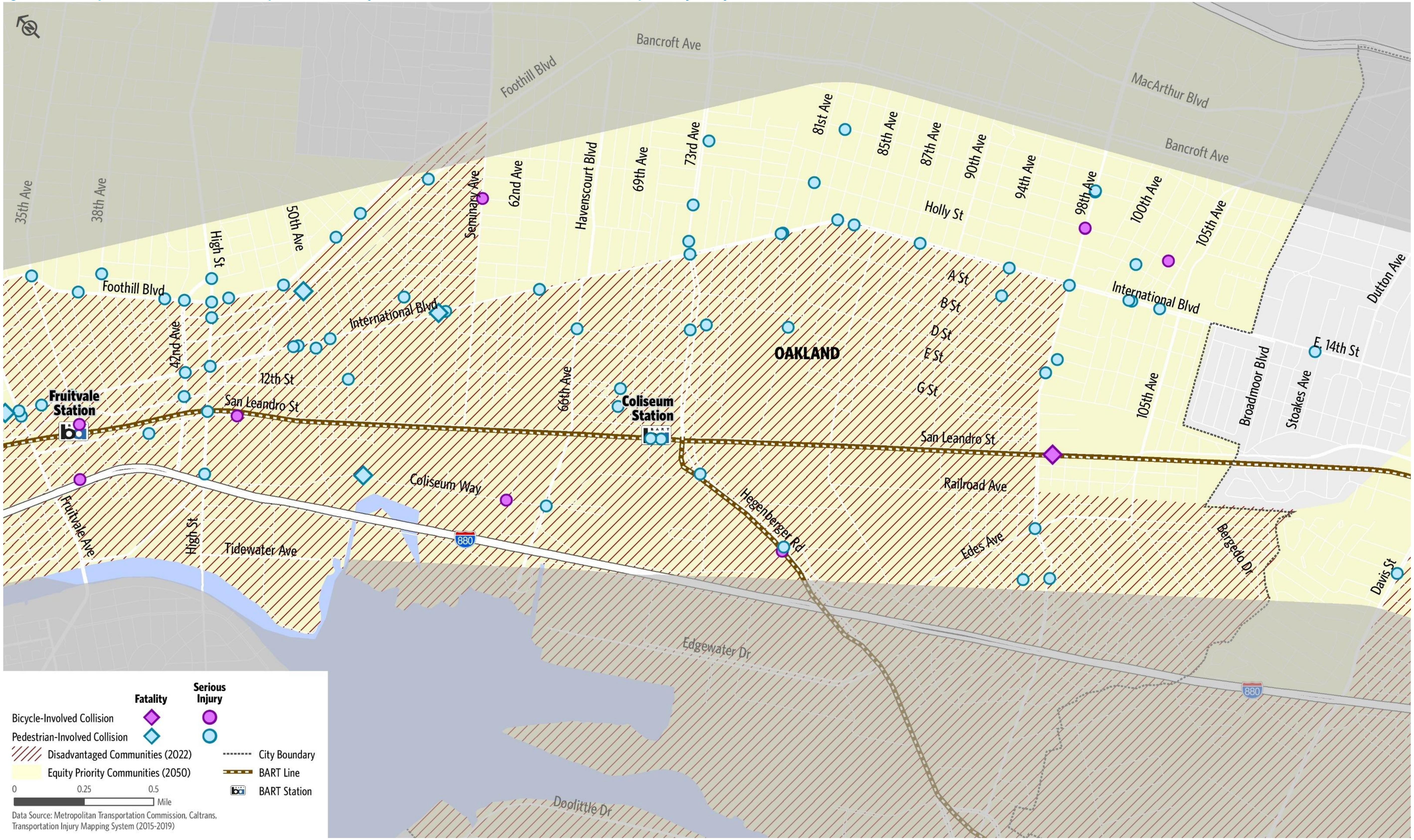

Figure 5-49: Bicycle and Pedestrian Fatality and Serious Injuries Locations within the CACCMCP Study Area (3 of 4)

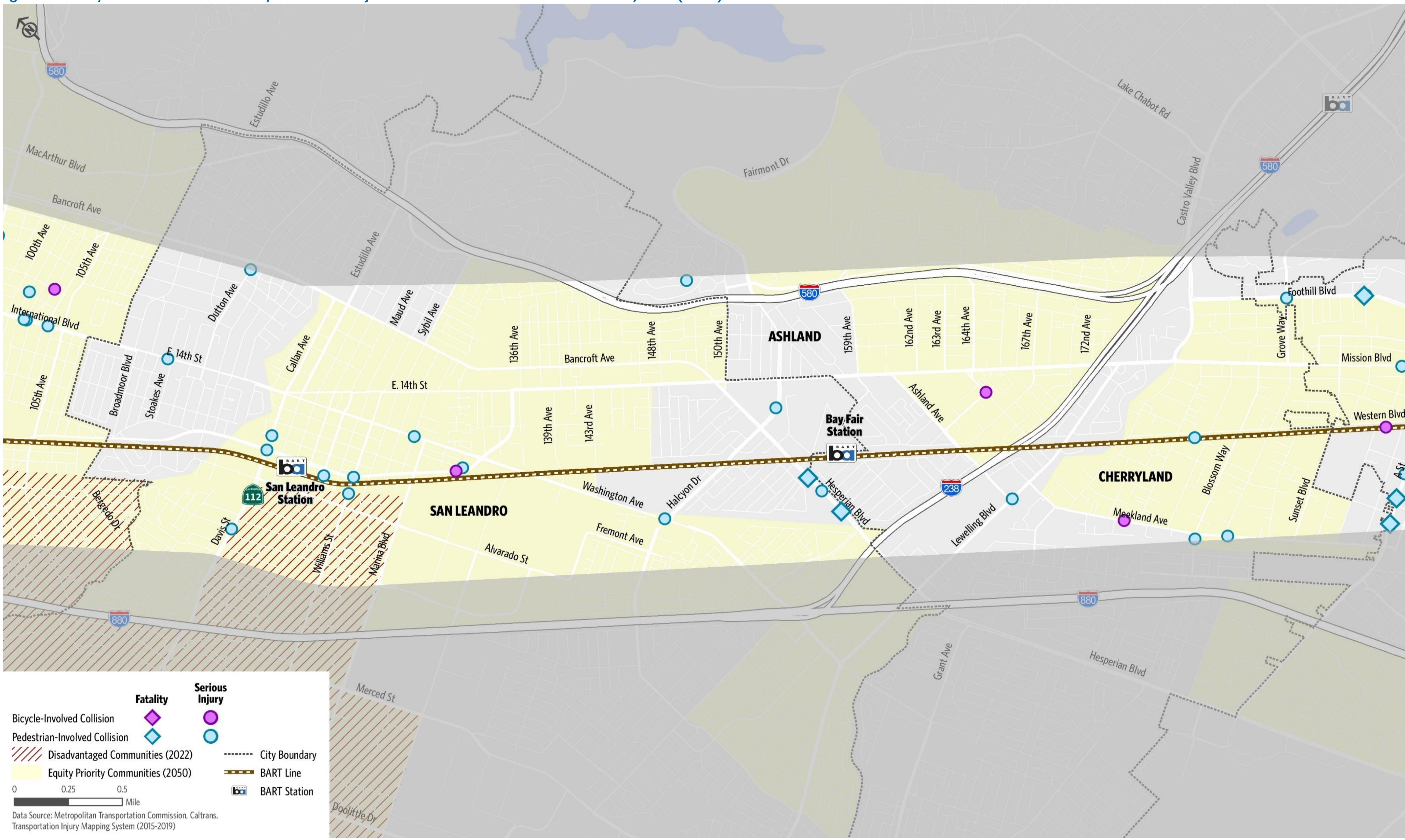

Figure 5-50: Bicycle and Pedestrian Fatality and Serious Injuries Locations within the CACCMCP Study Area (4 of 4)

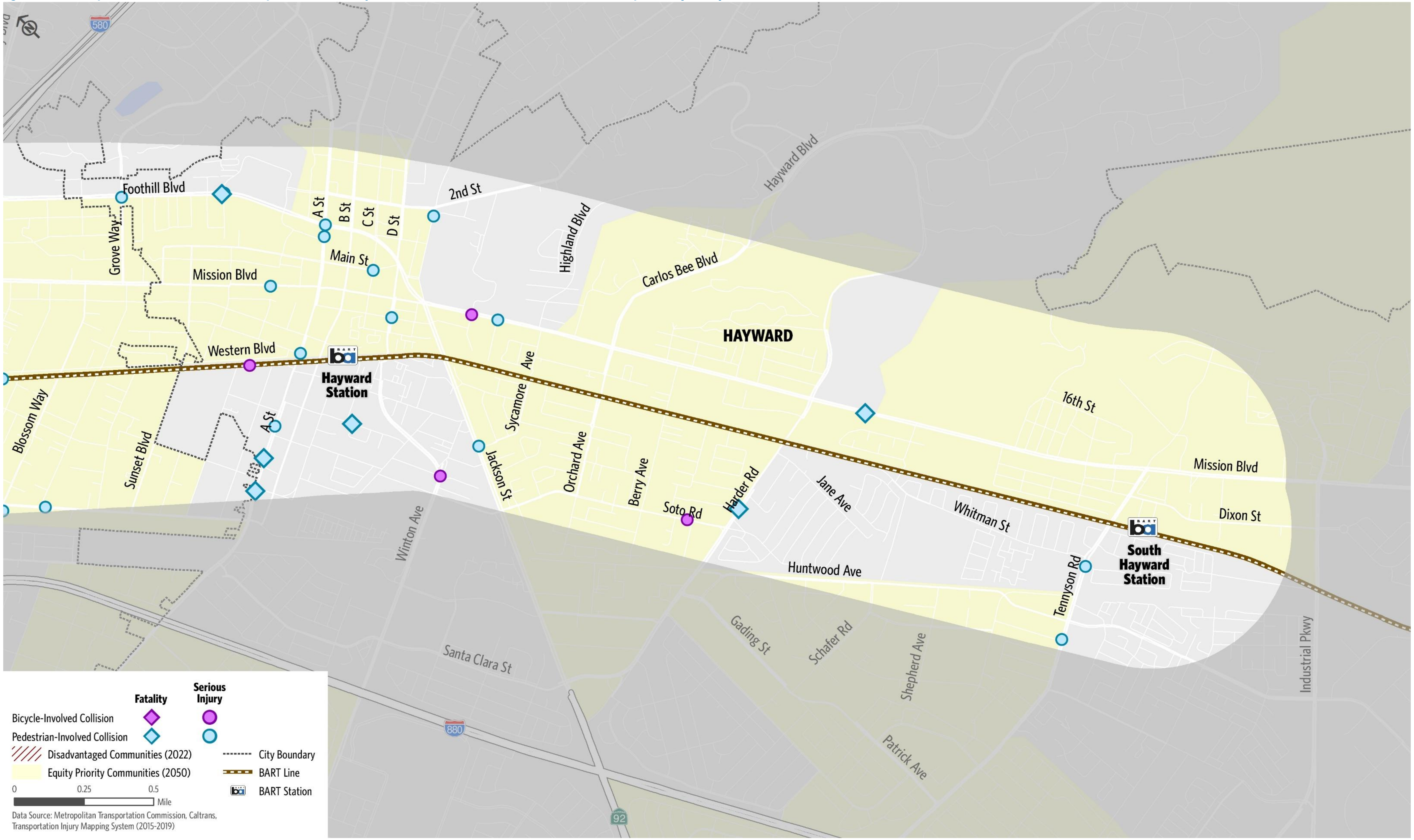

Table 5-24 presents the percentage of CACCMCP study area roadways located within EPCs and DACs compared to the percentage of study area bicycle and pedestrian fatalities and serious injuries. The data show that DACs are especially burdened by bicycle and pedestrian fatalities, containing less than half of CACCMCP study area roadways (43 percent), but 61 percent of the fatalities and 61 percent of the serious injuries. EPCs experience burdens as well, with 84 percent of the study area roadways, and 90 percent of the study area's serious injuries.

Table 5-24: Fatalities and Serious Injuries in Study Area EPCs and/or DACs

	EPC Census Tracts	DAC Census Tracts	Both EPCs and DACs Census Tracts	Total EPCs/DACs Census Tracts
Percent of CACCMCP study area roadways	84%	43%	43%	85%
Percent of CACCMCP study area fatalities	79%	61%	61%	80%
Percent of CACCMCP study area serious injuries	90%	61%	60%	89%

Source: HNTB, 2022.

Mobility Performance

Truck traffic can have a disproportionate impact on equity communities, including reduced safety on roadways, increased congestion, and exposure to pollutants and noise.

Figure 5-51 shows where truck routes intersect with the CACCMCP study area. The routes are gradated to show volume, with darker segments having the highest volume of truck traffic. The map illustrates that most streets in the study area are used for freight operations and truck travel and that routes within the CACCMCP study area by and large are located within EPCs and DACs. DACs and EPCs in the Oakland subarea between Lake Merritt and Fruitvale BART Stations and EPCs in Ashland and Cherryland experience the highest volume of truck travel within their communities. EPCs near the Hayward BART Station also experience impacts from truck travel, but at a lower volume compared to the previously mentioned communities.

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Figure 5-51: Trucking Routes and Volumes in the Study Area

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Table 5-25 further describes the impact of truck travel in the CACCMCP study area overall, and in EPC, DACs and census tracts designated as both EPCs and DACs. The length represents the total miles of truck routes within each of the geographies. EPCs bear a disproportionate burden of the total miles within the study area, hosting 277.7 miles out of the total 353.7 miles of truck routes within the study area.

Table 5-25: Length of Truck Travel in EPCs and/or DACs

	Study Area Overall	EPC Census Tracts	DAC Census Tracts	Both EPC and DAC Census Tracts	Total EPC/DAC Census Tracts
Length (Miles)	352.7	277.4	149.8	149.2	278.4

Sources: HNTB, 2022; Kittelson & Associates, Inc., 2022.

The Northern Alameda County Truck Access Management Study (2021) found that among residential communities, Equity Priority Communities represent a high proportion of communities likely to be impacted by proximity to truck routes. Conversely, higher income areas, including areas along I-580 where trucks are restricted, tend to be located further from both truck generating areas and truck routes. There are significant ongoing efforts, such as community led work conducted through Assembly Bill 617 to comprehensively plan for improving air quality and reducing community pollution exposure.[106]

This analysis is consistent with findings from the study, signaling the opportunity to consider truck restrictions and other mitigation strategies to reduce the burden of truck travel on equity communities in the CACCMCP study area.

[106] California Air Resources Board. Community Air Protection Program (CAPP). East Oakland, accessed from https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/communities/east-oakland

Reliability Performance

Transit ridership and on-time performance are two critical metrics for understanding reliability of a transit system. For those who are transit dependent—many who live in EPCs and DACS—transit reliability is deeply important, sometimes making the difference in keeping a job. **Figure 5-52** through **Figure 5-55** illustrate transit ridership on AC Transit and on-time performance of AC Transit buses in the CACCMCP study area, separated by weekday and weekend daily averages and overlaid with the EPC/DAC designations. The maps reveal high levels of both weekday and weekend transit riders on the transit lines that run through EPCs and DACs in the study area, with most lines averaging between 250 and 1,100 daily riders on weekdays and 166 and 555 daily riders on weekends. The ridership levels are highest on the main arterials, such as East 14th Street/International Boulevard, and in the Oakland subarea. The existing bus lines serve EPCs and DACs equally.

Weekday and weekend on-time performance rates are low in the Oakland subarea which have high levels of ridership. Weekday on-time performance rates for bus routes in the San Leandro and Hayward subareas are higher but have lower levels of transit ridership outside of the main arterials. This finding highlights the need for additional investments that create improved on-time performance for those AC Transit lines with high ridership, bringing more transit benefits to more people who live and work in the study area.

Figure 5-52: Average AC Transit Ridership During Weekdays (1 of 4)

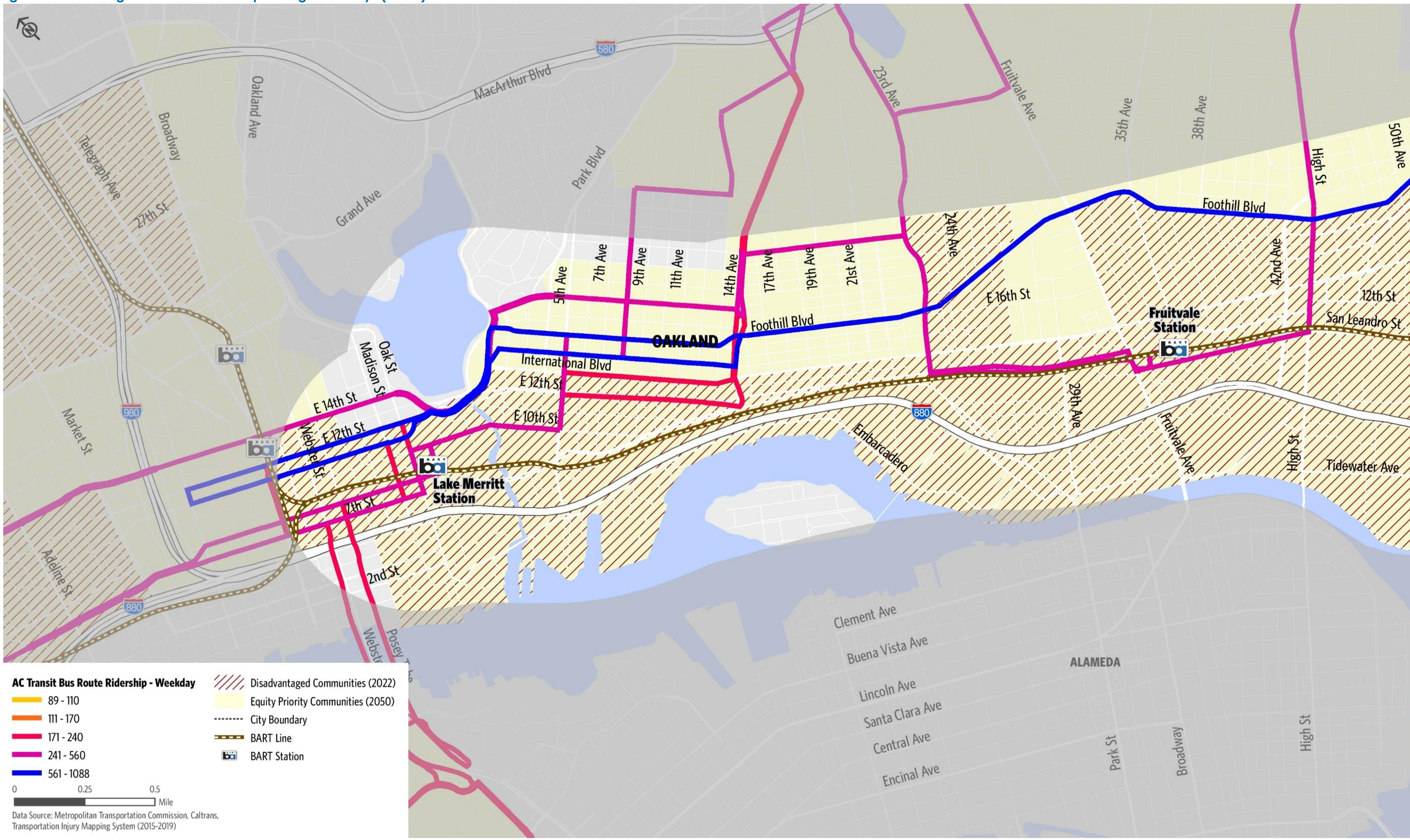


Figure 5-53: Average AC Transit Ridership During Weekdays (2 of 4)

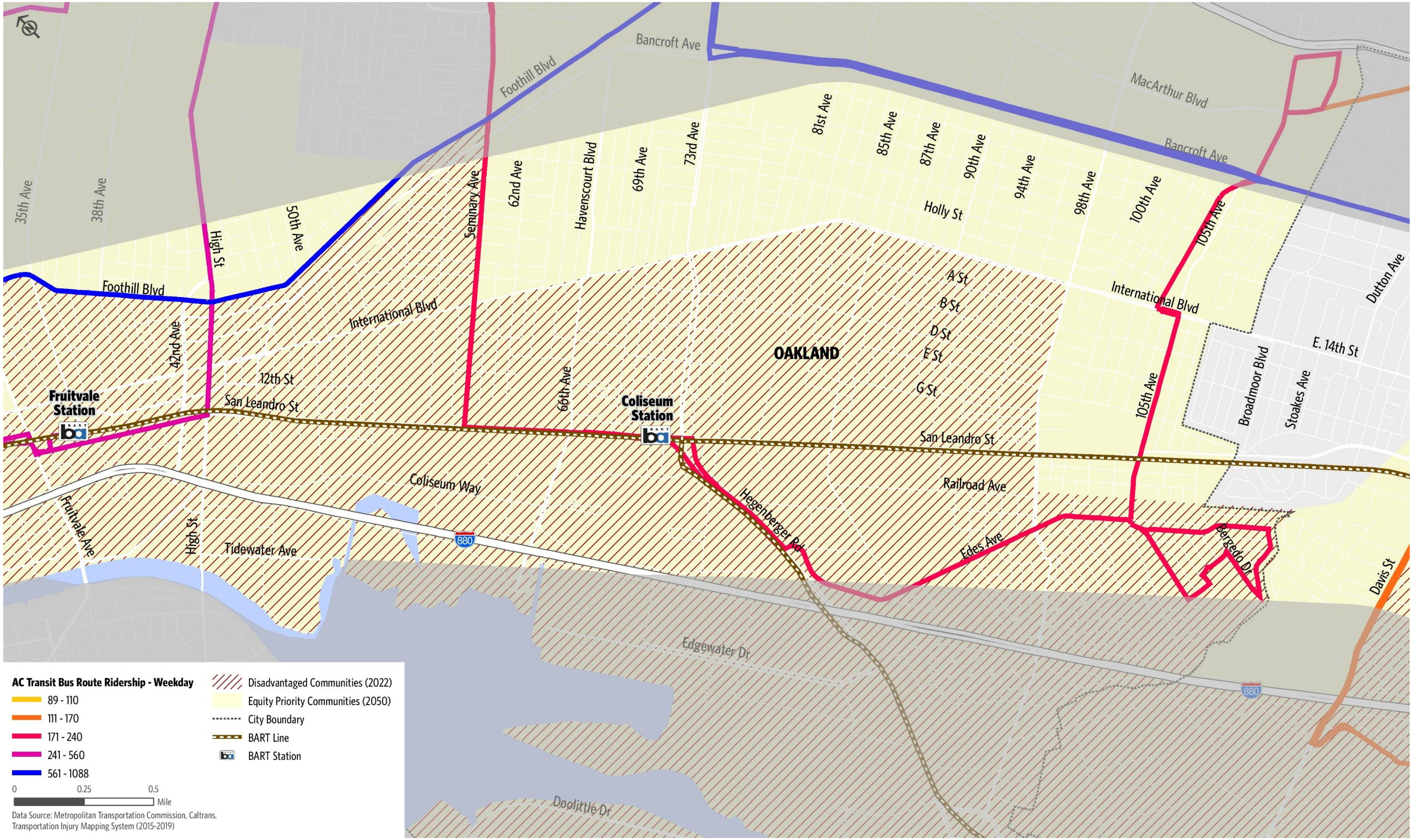


Figure 5-54: Average AC Transit Ridership During Weekdays (3 of 4)

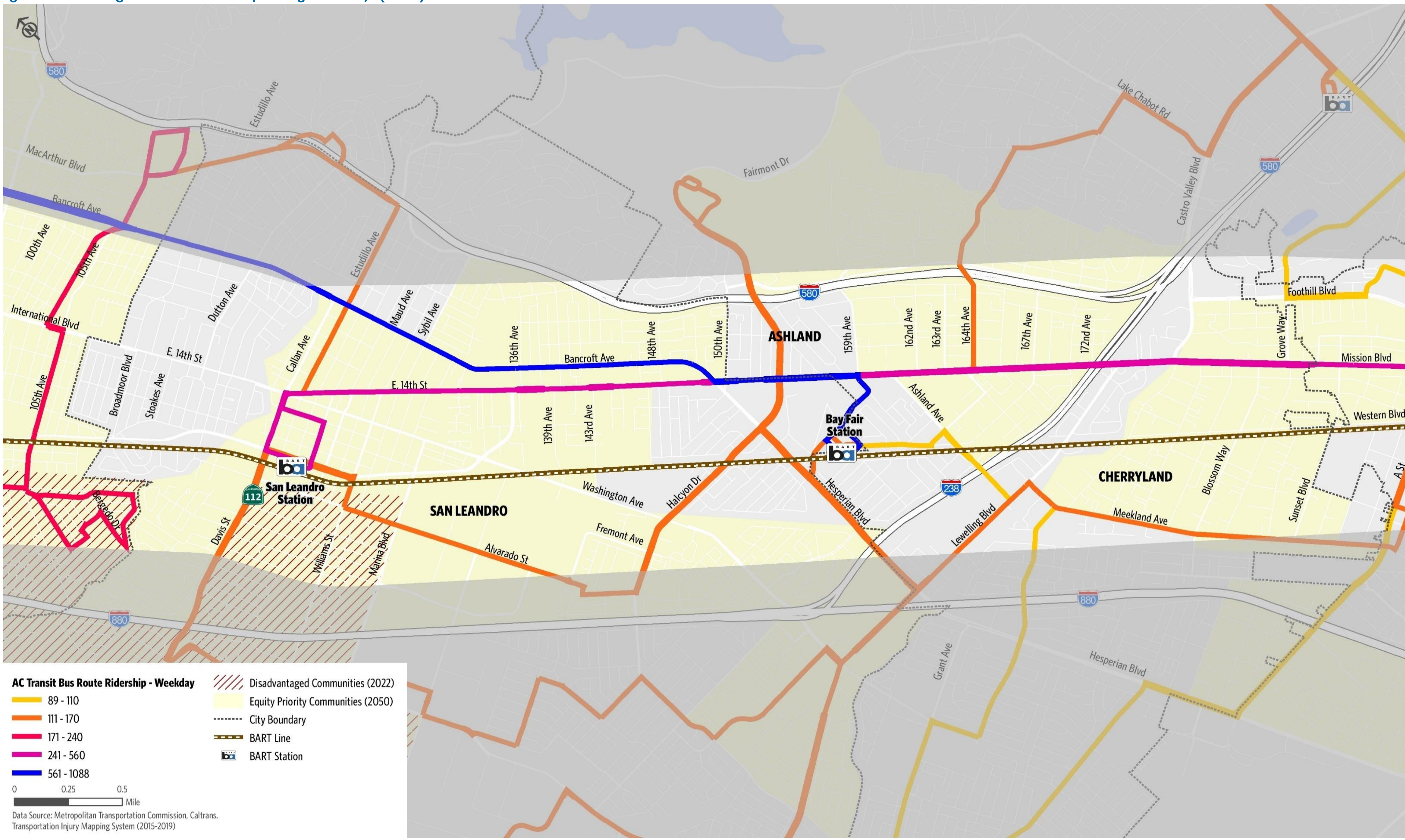


Figure 5-55: Average AC Transit Ridership During Weekdays (4 of 4)

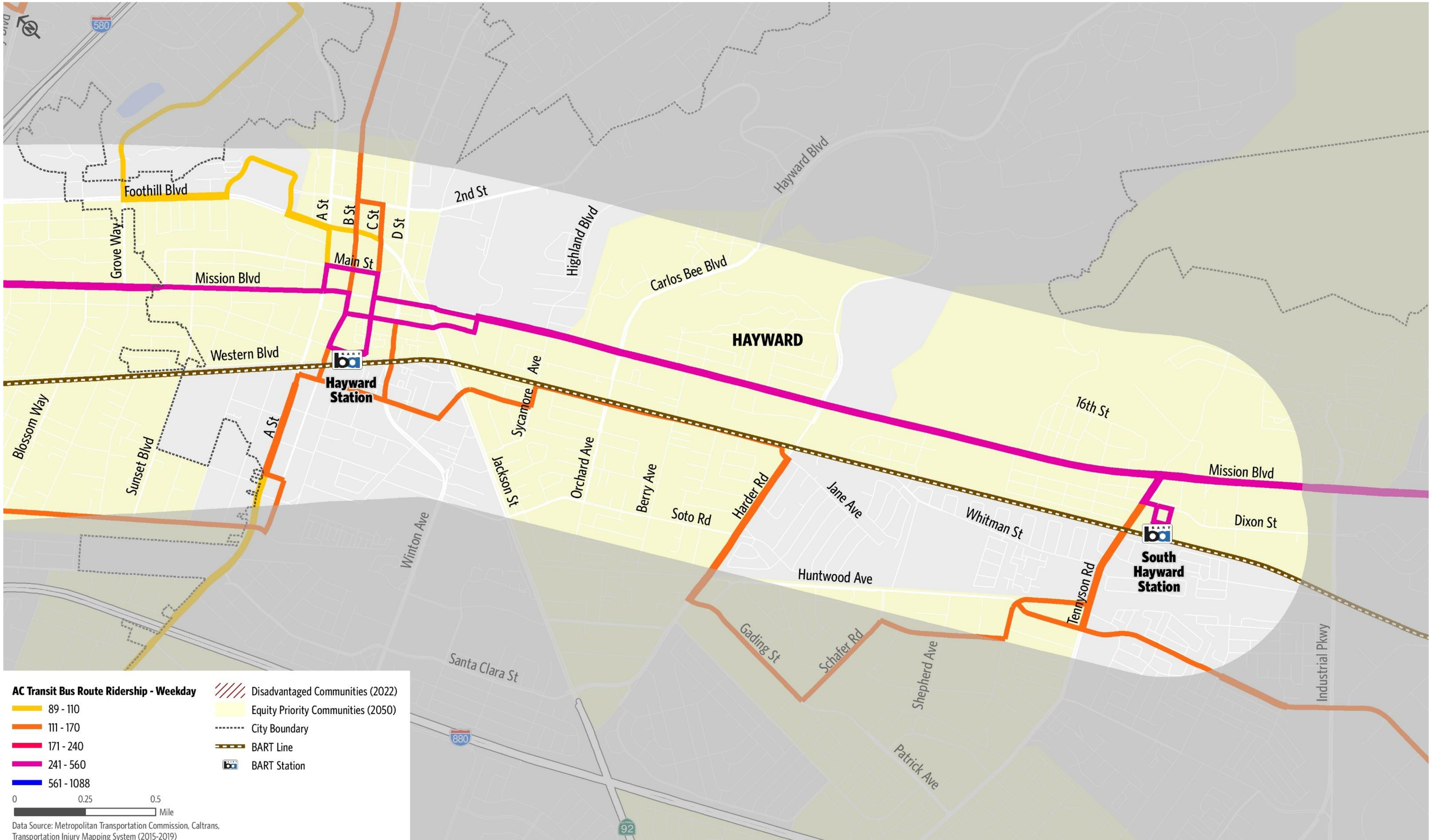


Figure 5-56: Average AC Transit On-time Performance During Weekdays (1 of 4)

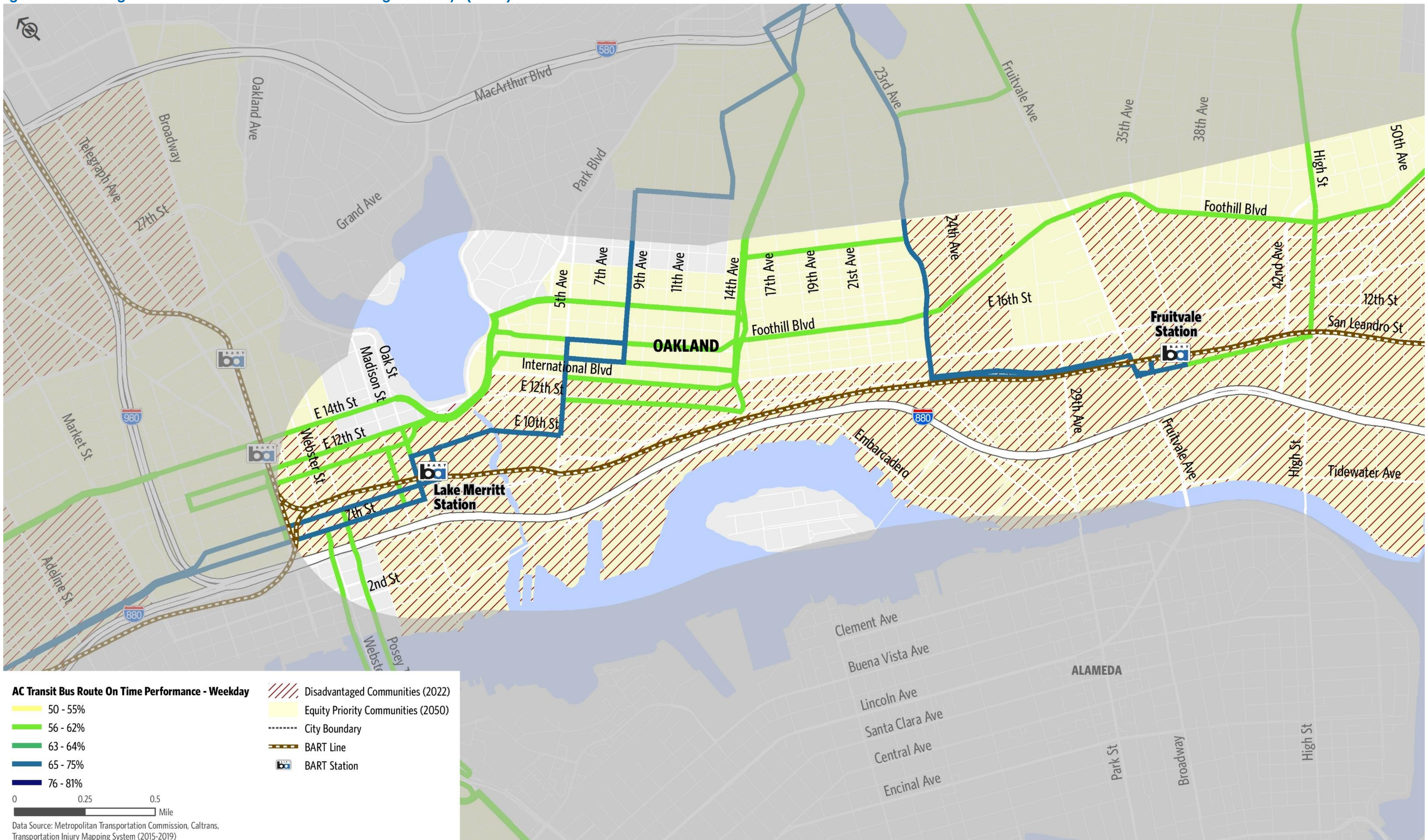


Figure 5-57: Average AC Transit On-time Performance During Weekdays (2 of 4)

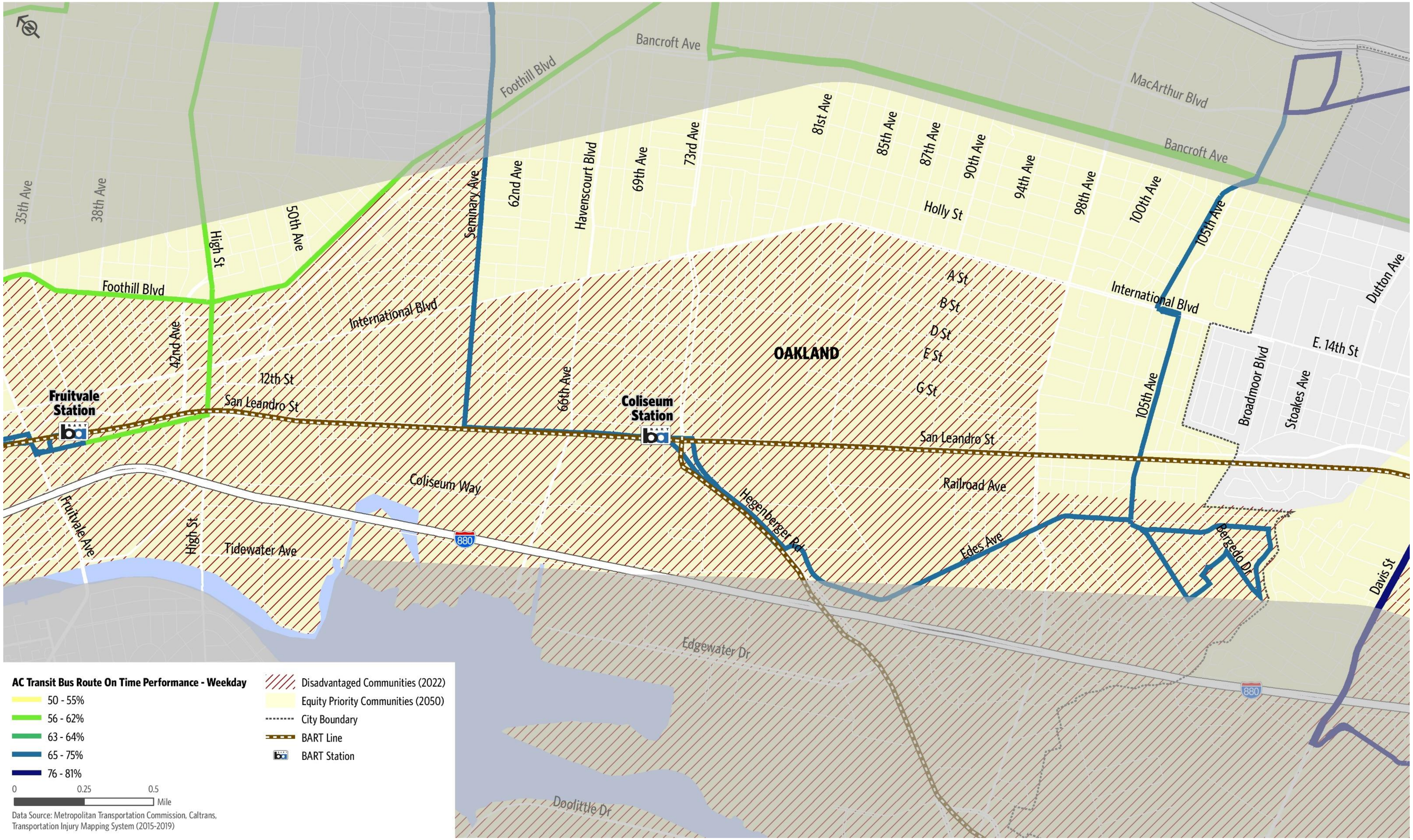


Figure 5-58: Average AC Transit On-time Performance During Weekdays (3 of 4)

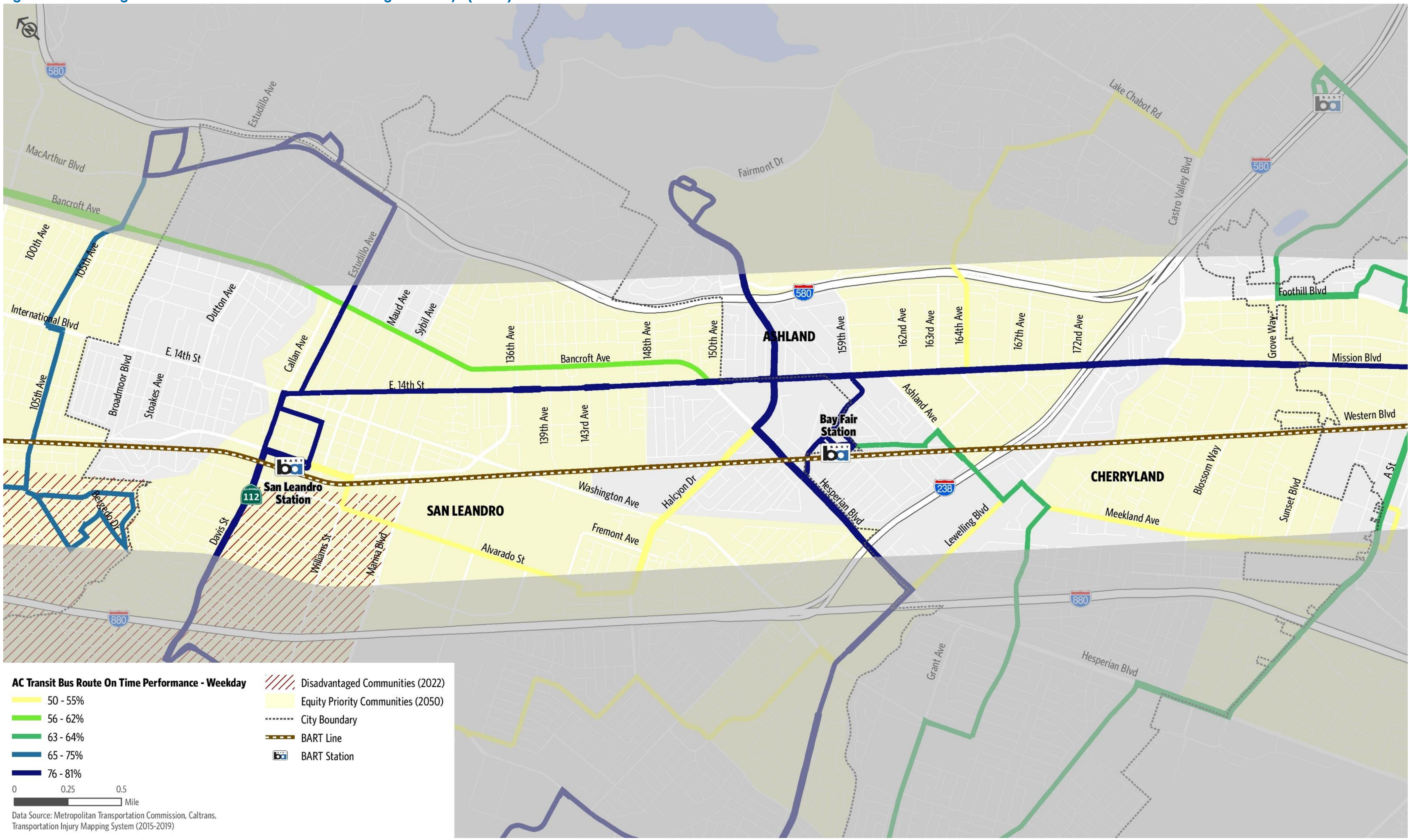
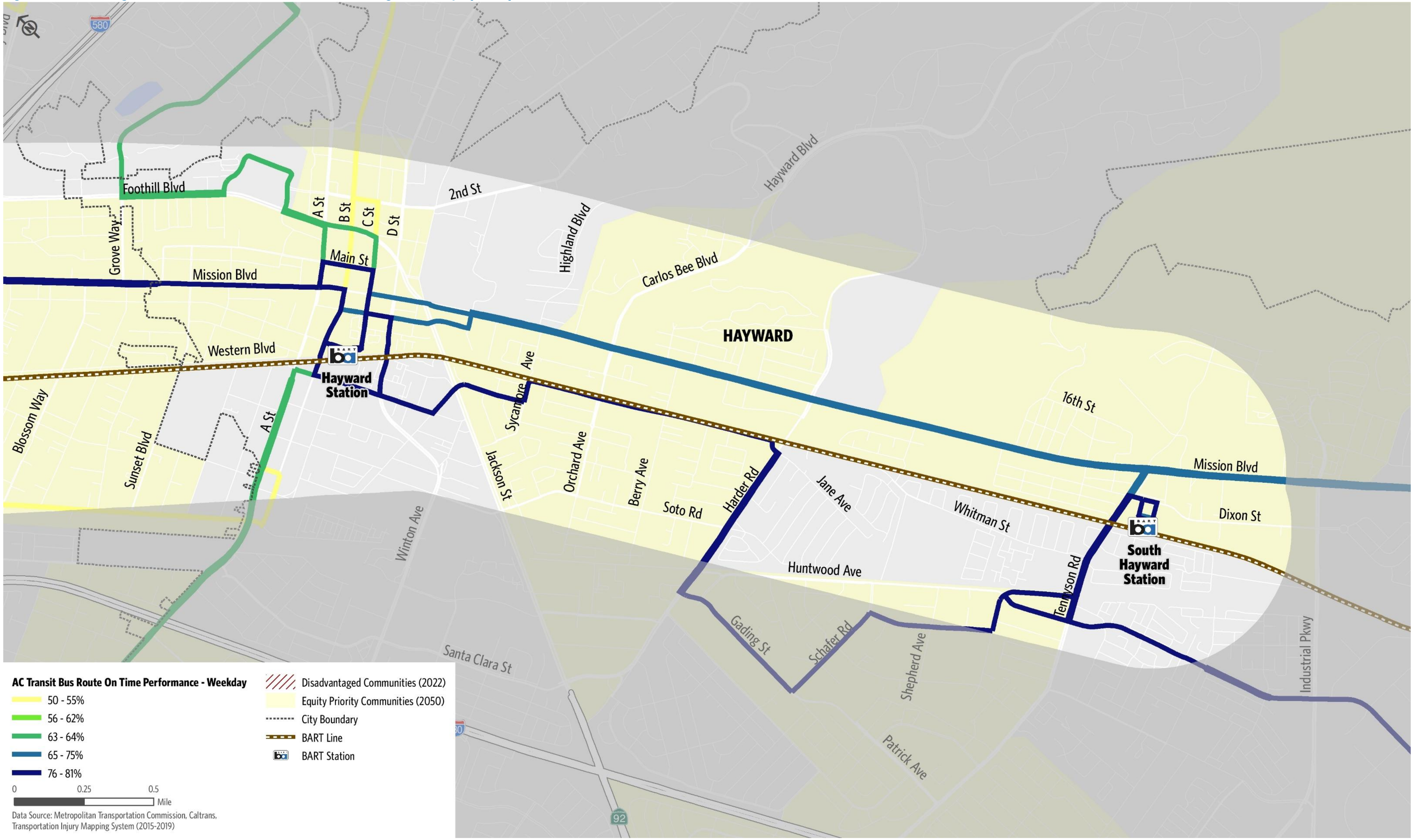


Figure 5-59: Average AC Transit On-time Performance During Weekdays (4 of 4)



Sustainability Performance

Bicycle and pedestrian access to transit is critical to supporting multimodal travel within the CACCMCP study area. For households without access to a vehicle—as is the case for some who live in EPCs and DACs—bicycle and pedestrian access to transit is a lifeline to reach opportunities like work, education and healthcare, and to perform other daily household errands. **Figure 5-60** illustrates 10-minute walk- and bike-sheds (in green), and 10-to-30-minute walk- and bike-sheds (in purple) around the BART Stations within the study area. Lake Merritt, Fruitvale, and Coliseum BART Stations serve EPCs and DACs communities equally within the 10-minute walk- and bike-shed. San Leandro, Bay Fair, Hayward, and South Hayward BART Stations all serve EPCs within a 10-minute walk- and bike-shed. All 10-30-minute walk- and bike-sheds around BART Stations fully or partially contain an EPC and/or a DAC. Broadly, these EPC and DAC communities enjoy high levels of bicycle and pedestrian access to BART Stations within the study area, notwithstanding the need for improvements in specific spots.

The map does not show presence and quality of active transportation infrastructure. The high percentage of serious injuries and fatalities on the roadways within the EPCs and DACs in the study area, as outlined in the Safety Performance section of this chapter, suggests that multimodal investments in the study area could help EPC and DAC communities by creating safer routes to access transit and other opportunities.

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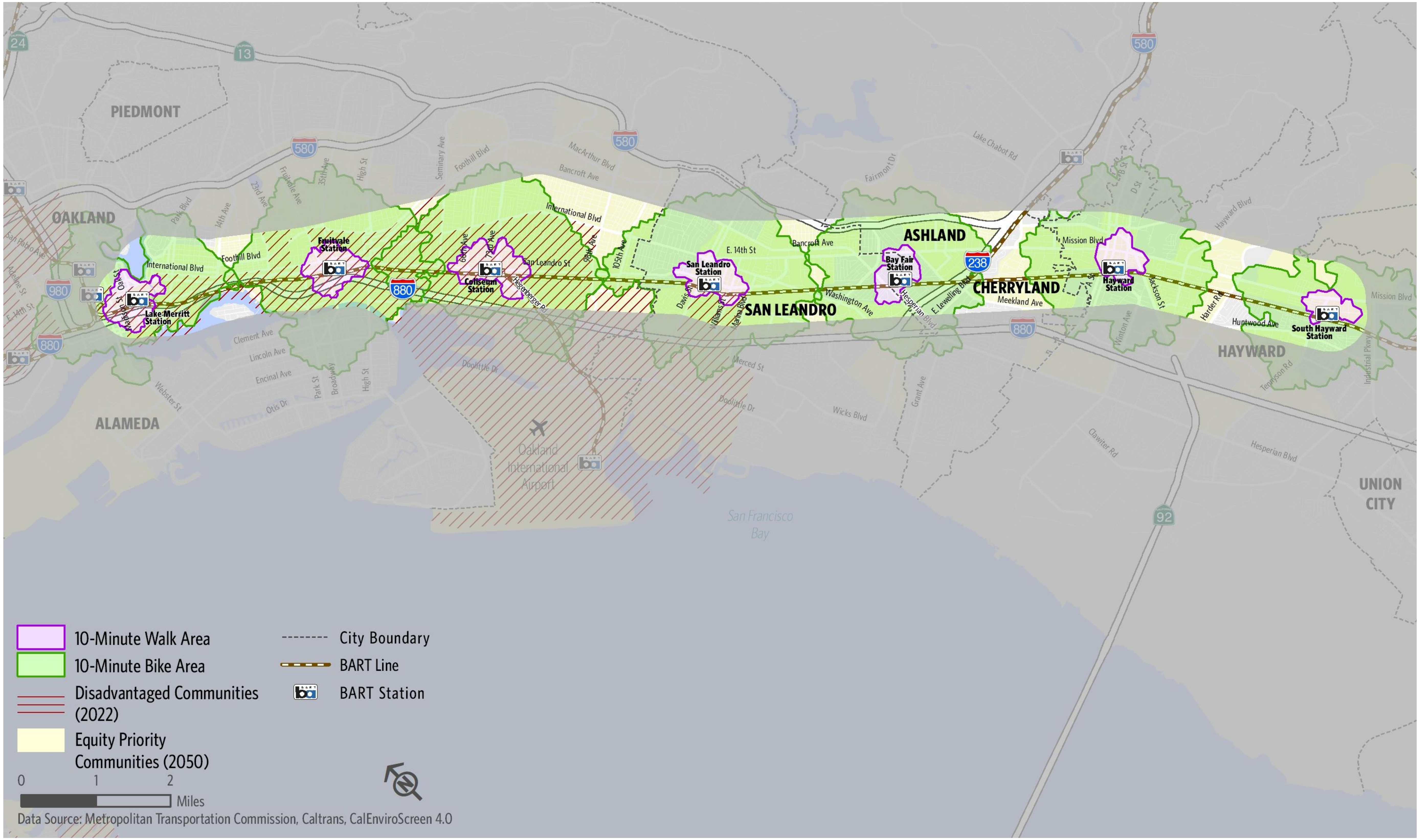
Figure 5-60: Bicycle and Pedestrian Access within the Study Area



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6. Stakeholder and Community Engagement

Significant public outreach and engagement have already been conducted along the Central Alameda County corridor for the different projects and plans that have been developed for the study area. The public outreach and engagement conducted for the CACCMCP served to supplement and update existing work with targeted equitable outreach focused on underserved and underrepresented communities. The public outreach and engagement also served to fill in known gaps for communities and populations not engaged through prior efforts. Results from the CACCMCP outreach are presented in this chapter with summaries of pertinent findings from other regional, local, and project-specific plans. Existing plans and relevant studies, many of which include community outreach efforts, are summarized in Chapter 2.

The following section includes a review of community engagement efforts and activities related to transportation planning efforts in the CACCMCP study area. **Table 6-1** lists the plans and studies with relevant stakeholder and community engagement that inform the development of the project evaluation methodology presented in Chapter 7. The engagement processes performed to support these plans and studies are described below.

Table 6-1: Previous Recent Plans that Included Community Engagement

Plan Type	Source
Regional Plans	• Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas, 2019 • Community Based Transportation Plan, 2020
Local Plans	• East Oakland Mobility Action Plan, 2021 • Hayward Bicycle and Pedestrian Master Plan, 2020 • San Leandro Bicycle and Pedestrian Plan, 2018
Project-Specific Engagement	• E. 14th St./Mission Blvd. and Fremont Blvd. Multimodal Corridor Project • East Bay Greenway Multimodal Project (Phase 1)

6.1 Regional Plans

Alameda County Bicycle and Pedestrian Master Plan (BPMP) for Unincorporated Areas, 2019 (led by Alameda County Public Works Department)

The development of the Alameda County BPMP for the unincorporated areas of Alameda County was guided by strategic input from advisory committees, including a Technical Advisory Committee (TAC), a Citizens Advisory Committee (CAC), and the Castro Valley Bicycle and Pedestrian Advisory Committee (CVBPAC). The committees met regularly throughout the process and provided input on stakeholder priorities, feedback from the community, and preferred types of bicycle and pedestrian improvements.

Community engagement for the Alameda County BPMP included two rounds of open house meetings (August 2017 and January 2018) to solicit input from the public. Each open house included multiple meetings to reach as many people as possible.

Outreach efforts also included an online interactive map developed by the Alameda County Public Works Agency (ACPWA) to gather feedback on the existing bicycle and pedestrian network. The outreach attracted over 200 users who provided valuable input about the state of walking and biking in the unincorporated areas of Almeda County.

Residents cited the need for more direct bike routes and greater separation from traffic as top priorities. Of particular concern were bike lanes in the Ashland area, many of which are located on higher-speed, higher-volume streets where bicyclists do not feel comfortable or safe.

Community Based Transportation Plan (CBTP), 2020

Extensive community outreach was conducted for the Alameda County CBTP. Outreach included 14 phone and email interviews with Community-Based Organizations (CBOs) and a countywide phone poll on residents' transportation needs and priorities. Pop-up events were held throughout the county featuring display boards in English, Spanish, and Cantonese. These pop-up events distributed printed fact sheets about the CBTP and invited visitors to take a digital survey. Additional presentations and workshops were held in areas of the county with underserved populations.

The following key concerns were identified in the CBTP:

Transit

The need for higher transit frequency during the weekdays, nights, and weekends was identified as a key theme. There was also a focus on better access to transit, improving connections within East Oakland and more affordable transit. Bus shelters and stops were identified as a priority in North Alameda County (Fruitvale and East Oakland). Safety while using public transit was also identified as a key issue in the north and central areas.

Active Transportation

Residents offered extensive feedback on active transportation (riding scooter, biking, and walking) needs. Residents throughout the county voiced the need for better facilities for walking, with an emphasis on safer crossings, traffic calming, and better sidewalks. There was widespread support for better facilities for bicycling, including high-quality bike lanes (separated bike lanes), trails that are separated from roads, and more bike parking.

Driving

Concern was expressed about the cost of driving and the duration of vehicle trips. In North Alameda County, survey respondents commented on truck traffic and a lack of parking availability. Residents voiced concerns about pavement conditions and the quantity and speed of traffic on city streets, especially during peak hours. Portions of Central County observe a high level of congestion during peak periods and residents highlighted their concerns about cut-through movements from their neighborhood.

6.2 Local Plans

East Oakland Mobility Action Plan (MAP), 2021

Due to impacts from the COVID-19 pandemic, engagement for the East Oakland MAP included a mixture of in-person and online outreach: focus groups (two in-person events and one virtual focus group), pop-ups (two events), virtual engagement (via Instagram), and surveys that focused on anti-displacement efforts, public safety, and infrastructure conditions.

Over the course of engagement efforts, safety was identified as a paramount concern for East Oakland residents. Residents cited a range of improvements that would make them feel safer on East Oakland streets, including protected bike lanes, ADA-compliant sidewalks, traffic calming, more shelters and seating at transit stops, and safe spaces for youth to skate or bicycle.

Hayward Bicycle and Pedestrian Master Plan, 2020

Public engagement for the Hayward BPMP occurred in three phases and was supplemented by a Technical Advisory Committee (TAC), which met four times during plan development. The TAC included staff from Hayward Public Works, Traffic Engineering, Development Services, Hayward Unified School District, transit agencies, and local advocacy groups.

Phase I of outreach was conducted from May through October 2018 and focused on increasing community awareness of the plan and soliciting initial feedback on the plan's priorities. Engagement efforts for this phase included a project website launch, an online map-based survey, and pop-up events.

Phase II, conducted from September 2018 through March 2019, solicited community input regarding recommended projects. Engagement efforts included three community walkabout events.

Phase III was conducted from April through November 2019 and sought community feedback on initial project recommendations, including the draft bicycle and pedestrian networks. Feedback was collected through pop-up events and an online map-based survey.

Hayward residents cited a lack of crosswalks and curb ramps, a lack of street lighting, unsafe conditions at intersections, and cars parking in bike lanes as key priorities. Pedestrian safety was identified as a primary concern, especially along downtown corridors and on Jackson Street. Additionally, survey participants cited improved pedestrian access to BART, downtown Hayward, and Amtrak as key concerns.

San Leandro Bicycle and Pedestrian Plan, 2018

San Leandro's Bicycle and Pedestrian Advisory Committee (BPAC) supported the development of the San Leandro Bicycle and Pedestrian Plan over the course of four BPAC meetings. Two of these meetings were combined with public open houses, allowing both BPAC members and the public to interact with project consultants and provide comments and feedback.

An online survey was conducted to gather additional public feedback. Almost 1,100 responses were recorded. Additional feedback was collected through the City's Virtual City Hall and from comments received on Nextdoor.

Most of the input received from the public focused on a need for additional bike lanes and greater separation from traffic, concerns about the quantity and speed of traffic (especially on narrow streets), and concerns about poor sidewalk quality and pedestrian crosswalks. Residents reported feeling unsafe walking at night and expressed concerns about crime.

6.3 Project-Specific Engagement

E. 14th St./Mission Blvd. and Fremont Blvd. Multimodal Corridor Project (East Bay Greenway)

The East Bay Greenway project is a key component of the overall E. 14th St./Mission Blvd. and Fremont Blvd. Multimodal Corridor Project. Engagement activities for the East Bay Greenway included two TAC meetings, an online survey, online workshops, and in-person focus groups and open house events. Outreach efforts also included a project Facebook page to disseminate project information and event invitations.

Focus groups were held between January and March 2019 and were attended by a total of 48 community members. Geographical focus groups were held for San Leandro, Ashland/Cherryland, and Hayward/Union City. Engagement efforts also included two additional focus groups targeting bicyclists and transit riders, respectively. Finally, a community workshop was held by the City of Fremont where members of the project team presented information and spoke with community members.

An online survey was conducted between May 22 and July 15, 2019. The survey used a map-based online platform that allowed users to identify barriers to multimodal access and active transportation.

Outreach efforts identified faster bus service and improved bicycle facilities as key priorities. Residents of Hayward and Ashland/Cherryland identified a preference for Class IV protected bike lanes over Class II. There was strong support for implementation of the East Bay Greenway, although maintenance, landscaping, and safety (especially at intersections on busy streets) were identified as areas of concern.

East Bay Greenway Multimodal Project (Phase 1)

Alameda CTC approved a near-term project implementation in December 2021 focusing on arterial improvements for an all ages and abilities facility for pedestrians, cyclists, and transit users. The Project incorporates near-term implementation strategies developed as part of Alameda CTC's East 14th Street/Mission Blvd/Fremont Boulevard Multimodal Project. The Project also evaluates placemaking elements and economic development elements.

Beginning in February 2022 Alameda CTC staff has been actively involved in public outreach and engagement efforts along the project area, with a focus on equity priority communities. The ongoing engagement efforts include popup events, focus groups, one-on-one business surveys, and a residential mailer with an online survey. The initial efforts focused on Hayward and San Leandro. At the time of writing this document, there are pop-up events scheduled in Oakland and San Leandro along with an online survey. The one-on-one business outreach took place during the first two weeks of September 2022 and focused on receiving feedback on how businesses use street parking and their loading/unloading needs. The focus group outreach included transit riders, cyclists and pedestrians, and minority-owned business associations.

6.4 Central Alameda County CMCP Engagement Process

Stakeholder Engagement

Technical Advisory Committee (TAC)

A technical advisory committee was formed for the CACCMCP and was composed of the following agencies and jurisdictions:

- Caltrans
- Metropolitan Transportation Commission (MTC)
- City of Oakland
- City of San Leandro
- City of Hayward
- Alameda County
- Bay Area Rapid Transit
- AC Transit
- East Bay Regional Park District (EBPRD)
- Hayward Area Recreation and Park District (HARD)
- Rails-to-Trails Conservancy

TAC *Meeting #1*

The first TAC meeting was held on April 12, 2022, and included presentations on funding, project overview, purpose and schedule, and stakeholder and community engagement. TAC members discussed options for youth outreach, multilingual translation/interpretation, and CBO identification.

TAC Meeting #2

The second TAC meeting was held on June 2, 2022, and included project schedule updates and presentations on the community outreach strategy, the boundaries of the study area, and draft goals and objectives.

TAC Meeting #3

The third and last TAC meeting was held on August 29, 2022, and included presentations on the community outreach events, performance and needs assessment, and draft project evaluation methodology. TAC members provided feedback on the draft project evaluation methodology during and following the meeting.

Public Engagement Summary

Public engagement for the CACCMCP was conducted in summer 2022. Outreach included a series of in-person and online community meetings and an interactive online map survey.

Community Events

Between July 19 and August 3, 2022, the project team hosted five outreach events targeting areas of Central Alameda County, including in-person community-based organization (CBO) meetings, online events, and a pop-up event. The project team adopted an equitable approach and reached out to historically impacted and marginalized groups through these events which included disabled, unhoused, and youth on probation. Community members were invited to provide feedback during the meetings as well as encouraged to submit feedback on the interactive online map.

Online focus groups included an interactive Zoom poll to collect feedback and drive conversation, while in-person events were supported by posterboards that allowed community members to rank the improvements and facilities that were the most important to them.

Table 6-2: Summary of Community Events

Date	Community / CBOs	Location	# Attended
7/19/22	Unincorporated County Areas • Cherryland Community Association	Online (Zoom)	50
7/19/22	Hayward • Bay Area Community Services (BACS)	BACS Hedco Center, Hayward	18
7/27/22	San Leandro • Building Opportunities for Self-Sufficiency	Fairmont Campus Navigation Center, San Leandro	14
8/02/22	Unincorporated County areas • Eden Ashland • Cherryland Food • Basic Needs	Online (Zoom)	27
8/03/22	Oakland • Black Cultural Zone[1]	Liberation Park, Oakland (Pop-up event)	28

Note: [1]Not a formal partnership

Interactive Online Map Survey

The interactive online map survey (**Figure 6-1**) was developed using the Social Pinpoint platform and utilized GeoJSON shapefiles to represent each project. Projects were categorized as Active Transportation, Transit, Multimodal, or Safety. Upon opening the map page, users were shown a welcome message containing project background information and detailed instructions for how to use the map.

Figure 6-1: Interactive Map Tool

The interactive map survey allowed users to view and learn about projects included in the study area. Users were able to drag and drop a pin to submit location-based comments or feedback. Location-based comments were categorized as either walking, biking, driving, transit, or "other." (**Figure 6-2**). Users were also able to submit project-specific comments. Individual projects, location-based comments, and project-specific comments could be "like/disliked" by other users (**Figure 6-3**). The interactive map survey was active from July 15 to September 2, 2022 and received 128 unique comments from users, summarized in **Table 6-3.**

Figure 6-2: Pin-Drop Method

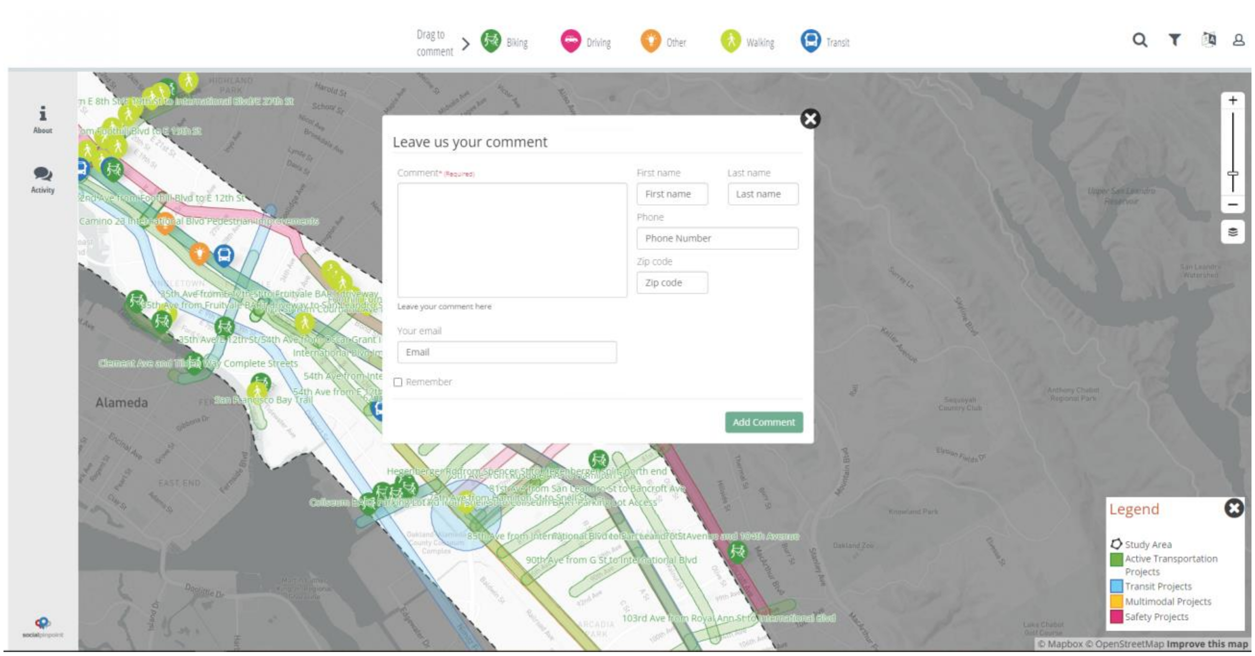
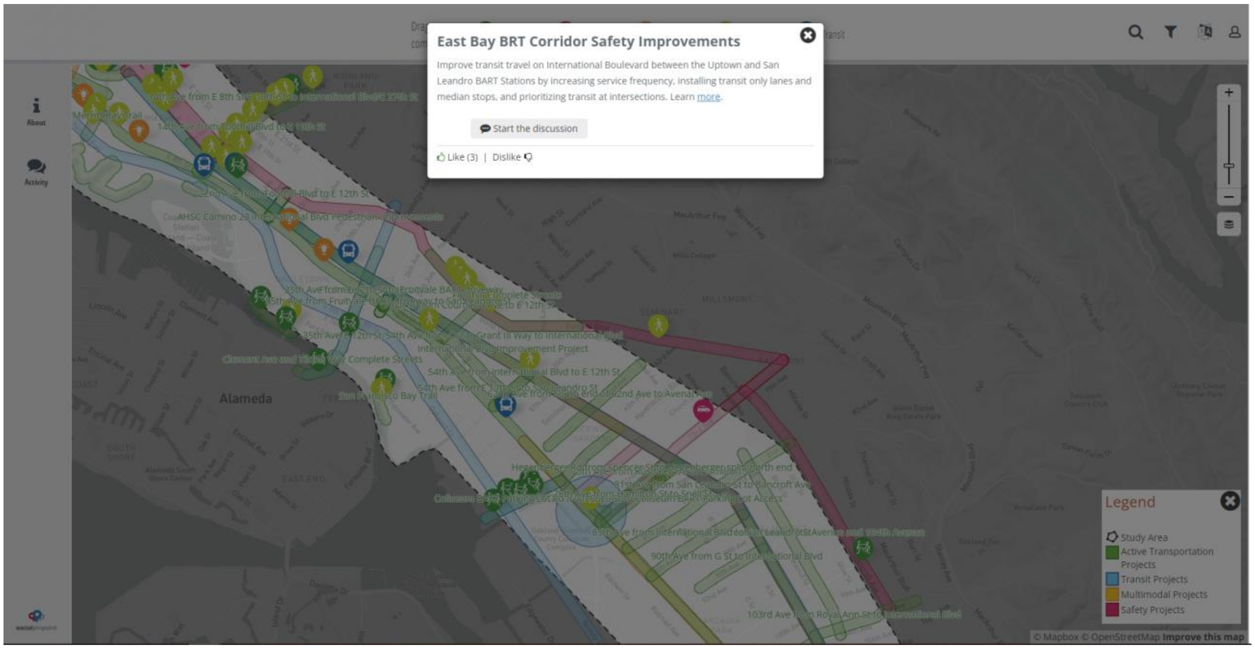


Figure 6-3: Discussion Forum and Like/Dislike Buttons



The Foothill Blvd Corridor Improvements Project received the most engagement, followed by the East Bay Greenway. Strong enthusiasm was shown for the East Bay Greenway and San Lorenzo Creekway Trail projects—particularly from Cherryland residents, who cited a lack of sidewalks and bike lanes around Mission Boulevard..

Table 6-3 summarizes input received via the interactive map, focusing on 10 projects (or project areas) that received the most engagement. The interactive map observed a total of 66 unique visitors and received a total of 107 comments. A map and spreadsheet containing all user-submitted comments is provided in **Appendix 6-1.**

Table 6-3: Summary of Interactive Map Engagement

Project / Project Area	# of Comments	Themes
Foothill Blvd Corridor Improvements (Phase 1)	18	• Desire for bidirectional protected bike lanes • Concerns about wide vehicle lanes and unsafe crosswalks
East Bay Greenway Urban Trail (Phase 2)	13	• Overall strong support for project • "Urgently needed [...] In Cherryland, this is an underused area that would be wonderful if transformed into a greenway" • Support for access to/from affordable housing
San Francisco Bay Trail	10	• Strong support for project, with concerns about project funding and delivery time • "There are some very nice spots to walk along the Oakland Estuary […] Would be great to be able to

Project / Project Area	# of Comments	Themes
		safely and comfortably walk and bike along this entire waterfront."
14th Ave. from E 8th St./E 19th St. to International Blvd./E 27th St.	9	• Concerns about vehicle speeds and pedestrian/bicyclist safety
East Bay BRT Corridor Safety Improvements	9	• Desire for physical separation of bus lanes • Dangerous crosswalks with vehicles not abiding by stoplights
Lake Merritt Bikeway Improvement Project	9	• Dangerous intersections and unsafe pedestrian crossings • Desire for protected bike lanes
San Lorenzo Creekway Trail	8	• Support for project, concerns about sidewalk quality in Cherryland
MLK Shoreline to Coliseum BART connection	7	• Strong preference for Class IV protected bike lanes
Fruitvale Avenue Park Street Transit Improvements	7	• Support for Class IV bike lanes • Concerns about vehicles speeding and running red lights • "Fruitvale from the High St. bridge to the BART station is bad. It's dangerous, it's unattractive, it's scary. Only [thing] worse is biking through the tunnel. "
Clement Ave. and Tilden Way Complete Streets	5	• Support for Class IV bike lanes • Bicyclist safety as a top priority • Concerns about speeding vehicles around slip lanes

Feedback by Region

The following is a summary of needs and gaps identified through online and in-person outreach conducted for the CACCMCP, organized by region.

Oakland

Pedestrian/Bicyclist Feedback

- Unsafe crosswalks due to speeding and long distances
- Desire for more bike lanes and greater separation from drivers
- Reckless behavior from drivers was cited as a major concern. For example, car sideshows and drivers doing donuts on residential streets


Pop-up event in Oakland
Photo Credit: Dhawal Kataria

Specific Project Feedback

- East Bay Greenway: Participants recognized an urgent need for the EBGW but expressed concerns about the amount of time it would take to complete the project.
- 73rd Ave. and Hegenberger Road Improvements: Desire for lane reduction along 73rd Avenue

San Leandro

Pedestrian/Bicyclist Feedback

- Many participants cited a life-threatening experience as a pedestrian.
- Close proximity and lack of separation between bike and car lanes
- Dangers from driver blind spots on right turns
- Specific concerns:
    - Bayfair Mall and Fairmont Drive were cited as especially unsafe roadways for bicyclists.


In-person event in San Leandro
Photo Credit: Iris Osorio-Villatoro

Transit Feedback

- Concerns about transit accessibility for the unhoused and the disabled
- Desire for expanded service hours
- Prohibitively expensive fares
- Lack of First Mile, Last Mile options

Specific Project Feedback

- East Bay Greenway: Participants liked the idea of EBGW connecting "tiny homes" to public service areas such as hospitals. Concerns were expressed about the project's impact on the unhoused.

Unincorporated Areas (Ashland and Cherryland)

Pedestrian/Bicyclist Feedback

- More bike-ped facilities, wider sidewalks, pavement improvements, and safety were a high priority.
- Specific concerns:
    - Lack of walking paths on East 14th Street
    - Lack of street lighting, specifically around schools such as Colonial Acres Elementary and Edendale Middle School
    - Concern about safety at crossings near San Lorenzo High School
    - Concern about safety and lighting on sidewalks around Edendale Middle School
    - Streets along Grove Way near Mission Boulevard lack sidewalks and bike lanes. Children use this path to and from school and often walk on the road.
    - Desire for a bridge and bike lane going over El Paso and Grand
    - Concern about vehicles parking in bike lanes in North Ashland

Transit Feedback

- Desire for free shuttles to BART

Specific Project Feedback

- East Bay Greenway: Participants supported the EBGW.

Hayward

Pedestrian/Bicyclist Feedback

- Lack of bike lanes leading makes bicyclists feel unsafe
- Pedestrian traffic signals change too quickly.
- Specific concerns:
    - Concerns about safety while crossing streets around City Hall
    - Concerns about safety on the corner of Jackson and Grand Street
    - Pedestrians feel unsafe walking around the Mission Foothill loop.
    - Difficulty placing bikes on and off bike racks on AC Transit buses

> *"They need to extend the pedestrian phase of the traffic light because when you are halfway on the street, it changes, and cars are already honking at you."*
>
> — Edited comment from Community member from Bay Area Community Services.

Transit Feedback

- Desire for AC Transit E Line to be extended to Hayward and Fremont
- Desire for phone charging and restroom facilities by bus stations
- Positive response to AC Transit bus schedules

Other Concerns

- Creating streets that are friendlier for the unhoused communities and prevents displacement.

Summary of Feedback

From extensive public outreach and engagement conducted throughout the Central Alameda County corridor study area, the following core themes can be identified:

- Across all outreach and engagement efforts, improved facilities and increased safety for bicyclists and pedestrians were core themes, especially in Alameda County's unincorporated areas.
- Support for the East Bay Greenway Project and support for San Lorenzo Creekway Trail were remarkably high, although concerns were expressed about the EBGW's project delivery time and potential impacts to the unhoused.
- Increased access to transit and expanded service hours were also identified as key concerns in San Leandro and Hayward.
- Expressed the desire for creating streets that are friendlier for the unhoused communities by providing basic facilities such as restrooms and phone charging stations.

Input collected from the CACCMCP is broadly consistent with priorities and needs identified through the regional and local plans described above. The efforts also promoted transparency and allowed members of the community to understand more about Alameda CTC and Caltrans. The projects and priorities informed the project evaluation methodology, further explained in Chapter 7.

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7. Summary of Strategies

This section summarizes the summary of projects within the CACCMCP study area along with information about their selection.

7.1 Developing the Project List

The CACCMCP project list was developed with the help of the planning documents listed in Chapter 2. Projects were also added from the Caltrans State Highway Operations and Protection Program (SHOPP)[107] and local Capital Improvement Programs.[108] A total of 94 projects were compiled and categorized for evaluation using the evaluation framework presented in Chapter 2. Partner agencies and community members were requested to submit their feedback on the list of projects, as covered in Chapter 6.

7.2 Project List

This section presents CACCMCP projects grouped into four major categories:

1. Active Transportation
2. Safety
3. Transit
4. Multimodal

Projects were grouped based on the overriding transportation focus of the project, although there are commonalities between active transportation, safety, and transit access projects. In cases where the implementing agency clearly defined a project within a particular group, that categorization was maintained in the list. For example, BART Walk, and Bicycle Network Gap Studies are placed under the Transit category as that is how BART chooses to define them.

Projects are listed in separate tables along with detailed descriptions and information about their respective construction timelines. Projects are grouped into near-term and long-term implementation time frames based on the following criteria:

- Shovel ready: Project can be ready for construction by December 2025
- Near-term: Project can be ready for construction within the next 10 years
- Long-term: Project will be ready for construction after 10 years

A number of projects that are in early stages of development are included here but do not yet have cost estimates or final cost descriptions.

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[107] Caltrans, SHOPP and Minor Program, https://dot.ca.gov/programs/financial-programming/state-highway-operation-protection-program-shopp-minor-program-shopp.

[108] City of Oakland, Capital Improvement Program, https://www.oaklandca.gov/topics/capital-improvement-program.

City of San Leandro, Capital Improvement Program, https://www.sanleandro.org/276/Capital-Improvement-Program-CIP

City of Hayward, Capital Improvement Program, https://www.hayward-ca.gov/your-government/documents/capital-improvement-program.

Active Transportation

The active transportation projects include projects that increase the safety and comfort of cyclists, pedestrians, and those using mobility assistive devices, boosting the likelihood that vehicular trips will be replaced with active transportation alternatives.

All trips fundamentally begin and end as pedestrian trips. Infrastructure for those who walk or use assistive mobility devices is critical for providing local connections within the CACCMCP study area and provide regional access to high-quality transit. Projects such as "Fruitvale Alive!"[109] will help increase the safety and comfort of pedestrians by closing unnecessary slip lanes, installing new curb bulb-outs, planting new landscaping and greenery, installing new pedestrian lighting, and upgrading sidewalks to the latest ADA standards. Fruitvale Alive will help connect pedestrians to the Bay Trail and to local businesses along the corridor. This project, and projects similar to this, will help create a network of trails and on-street pedestrian facilities that together provide a viable alternative to the car.

Providing greater opportunities for cycling within the study area will help reduce VMT, reduce congestion, and build community. Compared to walking, cycling substantially increases the distance that can be reached within a 10-minute trip (**Figure 5-39** through **Figure 5-42**). BART Stations within the CACCMCP study area can be reached by a 10-minute bike ride from nearly anywhere within the corridor, which also means the businesses and destinations that exist in between the 10-minute bike ride. The East Bay Greenway Multimodal (EBGWMM) project (Phase 1)[110] will create a separated bike lane along East 14th Street and Mission Boulevard, connecting riders to the BART Stations in the CACCMCP study area and acting as a spine to the bike network. Larger projects like the EBGW, and the smaller bike projects that connect to it, will help provide a network of safe and comfortable facilities that cyclists of all ages and abilities will be able to utilize throughout the corridor.

Table 7-1 includes the list of active transportation projects as well as their implementation timeframes. Active transportation project locations are shown in **Figure 7-1** through **Figure 7-4** by their project number. A total of 70 active transportation projects have been evaluated; this includes 22.9 miles of Class I trails, 2.7 miles of Class II bike lanes, 6.2 miles of bike boulevards, and 25 miles of Class IV separated bike lanes. In addition, there are over 20.8 miles of pedestrian improvements, including 4.7 miles of Complete Streets projects which consider the safety of all road users. Finally, there are a total of 10 intersection improvement projects to ensure safe pedestrian crossings.

[109] City of Oakland, Fruitvale Alive, https://www.oaklandca.gov/projects/fruitvale-alive.

[110] Alameda CTC, East Bay Greenway Multimodal project, https://www.alamedactc.org/programs-projects/bicycle-and-pedestrian/eastbaygreenway/.

Table 7-1: CACCMCP Active Transportation Projects

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A1	10th Street Improvement Project	10th Street between Webster St and the 10th Street bridge is slated for repaving. Additionally, OakDOT received a Safe Routes to School (SRTS) grant to make sidewalk and pedestrian safety improvements around Lincoln Recreation Center and Lincoln Elementary.	Short-term	$416	OakDOT
A2	Lake Merritt Bikeway Improvement Project	Extend the existing two-way protected cycle track around Lake Merritt from Madison Street southward and over the estuary bridge to International Blvd. Add a one-way protected bike lane in Eastbound direction on Lake Merritt Boulevard between Lakeside Drive and 1st Avenue. Additional improvement includes protected intersections and signal improvements.	Short-term	$1,870	OakDOT
A3	East Bay Greenway Multimodal (Phase 1)	Improvements for construction within 3-5 years, including: one-way cycle tracks along East 12th Street, a Class I pathway along San Leandro Street, one-way separated bike lanes along San Leandro Blvd and East 14th Street, and Mission Boulevard, and pedestrian amenities.	Shovel ready	$174,250	Alameda CTC
A4	East Bay Greenway Urban Trail (Phase 2)	East Bay Greenway Phase 2 - will continue to work with the Union Pacific Railroad to implement a Rails-to-Trail or Rails-with-Trail facility in a 10+ year horizon. The project will connect the seven BART station between Lake Merritt to South Hayward that will generally follow the BART rail line.	Long-term	$501,100	Alameda CTC
A5	Lake Merritt Bay Trail	Improve the safety and comfort of cyclists and pedestrian along the Lake Merritt Channel by closing trail gaps between San Francisco Bay Trail and Lake Merritt Channel Trails by adding an off-street Class I bike path.	Long-term	TBD	OakDOT
A6	San Francisco Bay Trail	Improve the safety and comfort of cyclists and pedestrian along the San Francisco Bay by closing trail gaps at multiple locations by adding an off-street Class I bike path.	Long-term	TBD	EBRPD, OakDOT

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A7	International Blvd Pedestrian Lighting and Sidewalk Improvement Project	City of Oakland has received $9.9 million dollars in Clean California funds and $1.5 million dollars in Affordable Housing and Sustainable Communities (AHSC) grant funds for The International Boulevard Pedestrian Lighting and Sidewalk Improvement Project.	Long-term	$10,400	OakDOT, AC Transit
A8	14th Ave from Foothill Blvd to E 19th St	Improve the safety and comfort of cyclists on 14th Avenue from Foothill Boulevard to East 19th Street by lane reduction from 4 to 2 lanes and adding a painted Class II bike lane.	Shovel ready	$45	OakDOT
A9	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St	Improve the safety and comfort of cyclists on 14th Avenue from East 8th Street to International Boulevard and on 14th Avenue from East 19th Street to East 27th Street by lane reduction from 4 to 2 lanes and adding a painted Class II bike lane. Additionally, the project will extend sidewalks and install multiple RRFBs for pedestrian safety.	Shovel ready	$6,000	OakDOT
A10	22nd Ave from Foothill Blvd to E 12th St	Improve the safety and comfort of cyclists on 22nd Avenue from Foothill Boulevard to East 12th Street by adding a painted Class II bike lane.	Shovel ready	$36	OakDOT
A11	AHSC Camino 23 International Blvd Pedestrian Improvements	Pedestrian improvements, including sidewalk repair, street lighting, and crosswalk improvements, along International Blvd between 11th Ave and 38th Ave	Short-term	$2,000	OakDOT
A12	Fruitvale Alive Project	Improve the safety and comfort of pedestrians and cyclists on Fruitvale Avenue between Alameda Avenue and East 16th Street by widening sidewalks to install a bike lane at sidewalk level, slowing traffic with bulb-outs, repairing pavement, upgrading lighting, and enhancing crosswalks.	Shovel ready	$4,134	OakDOT
A13	Clement Ave and Tilden Way Complete Streets	Reuse the abandoned railroad right-of-way along the eastern terminus of Clement Ave and Tilden Way to extend the Cross Alameda Trail between Broadway and the Miller-Sweeney/Fruitvale Rail Bridges, while considering ways to improve truck and bus routes.	Shovel ready	$12,442	ACPWA

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A14	East 12th Street Bikeway Project: Fruitvale-Melrose Gap Closure	The project proposes: • A neighborhood bike route along 54th Avenue between International Boulevard and E 12th Street where the street is too narrow for bike lanes • A neighborhood bike route along E 12th Street between 54th Avenue and 44th Avenue where the street is too narrow for bike lanes • Protected bike lanes along E 12th Street between 44th Avenue and 40th Avenue to accommodate bi-directional bike travel along the one-way stretch of E 12th Street Buffered bike lanes along E 12th Street between 35th Avenue and 40th Avenue to minimize on-street parking removal and disruptions to school pick-up and drop-off	Shovel ready	TBD	OakDOT
A17	High St from Courtland Ave to E 12th St	Improve the safety and comfort of cyclists on High Street from Courtland Avenue to East 12th Street by adding a painted Class II bike lane.	Short-term	$155	OakDOT
A18	Foothill Complete Streets	Engage the various communities along Foothill Blvd (a high injury corridor) to plan for capital improvements to address safety concerns and promote active mobility options on this corridor.	Short-term	TBD	OakDOT
A19	54th Ave from E 12th St to San Leandro St	Improve the safety and comfort of cyclists on 54th Avenue from East 12th Street to San Leandro Street by adding signage to designate a Class III bike route.	Shovel ready	$66	OakDOT
A20	54th Ave from International Blvd to E 12th St	Improve the safety and comfort of cyclists on 54th Avenue from International Boulevard to East 12th Street by adding signage to designate a Class III bike route.	Shovel ready	$110	OakDOT
A21	62nd Ave from South end of 62nd Ave to Avenal Ave	Improve the safety and comfort of cyclists on 62nd Avenue from Tevis Street to Avenal Avenue by adding signage to designate a Class III bike route.	Shovel ready	$462	OakDOT
A22	66th Ave from Oakport St to San Leandro St (MLK Shoreline to Coliseum BART connection)	Improve the safety and comfort of cyclists along 66th Avenue from Oakport Street to San Leandro Street by adding an off-street Class I bike path. Additionally, the project includes new AC Transit stops at 66th Avenue and Oakport Street	Long-term	$22,000	OakDOT

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A23	Coliseum BART Parking Lot Rd from Snell St to Coliseum BART Parking Lot Access	Improve the safety and comfort of cyclists on Coliseum BART Parking Lot Road from Snell Street to Coliseum BART Parking Lot Access by adding a protected Class IV bike lane	Short-term	$50	OakDOT
A24	Hegenberger Rd from International Boulevard to San Leandro Street	Improve the safety and comfort of cyclists on Hegenberger Road from International Boulevard to Hawley Street by adding a protected Class IV bike lane	Long-term	TBD	OakDOT
A25	75th Ave from International Blvd to Rusdale Ave	Improve the safety and comfort of cyclists on 75th Avenue from International Boulevard to Rusdale Avenue by adding signage to designate a Class III bike route.	Shovel ready	$87	OakDOT
A27	75th Ave from Hamilton St to Snell St	Improve the safety and comfort of cyclists on 75th Avenue from Hamilton Street to Snell Street by adding signage to designate a Class III bike route.	Shovel ready	$193	OakDOT
A28	75th Ave from Rusdale Ave to Hamilton St	Improve the safety and comfort of cyclists on 75th Avenue from Rusdale Avenue to Hamilton Street by adding signage to designate a Class III bike route	Shovel ready	$66	OakDOT
A29	81st Ave from San Leandro St to Bancroft Ave	This project is a part of the East Oakland Neighborhood Bike Routes that will provide safer and calmer neighborhood streets designed to prioritize people walking and biking to local destinations.	Short-term	$4,325	OakDOT
A30	85th Ave from International Blvd to San Leandro St	This project is a part of the East Oakland Neighborhood Bike Routes that will provide safer and calmer neighborhood streets designed to prioritize people walking and biking to local destinations.	Short-term	$4,325	OakDOT
A31	90th Ave from G St to International Blvd	Improve the safety and comfort of cyclists on 90th Avenue from G Street to International Boulevard by adding signage to designate a Class III bike route.	Shovel ready	$264	OakDOT
A32	Plymouth Street between 79th Avenue and 104th Avenue	Oakland is repaving 1.5 miles of Plymouth St from 79th Ave to 104th Ave in Fall 2019 with concrete work in Spring 2020. Plymouth St's proximity to schools and residences makes it a priority for paving and transportation safety improvements. Improvement	Shovel ready	$792	OakDOT

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A33	103rd Ave from Royal Ann St to International Blvd	Improve the safety and comfort of cyclists on 103rd Avenue from Royal Ann Street to International Boulevard by adding signage to designate a Class III bike route.	Shovel ready	$137	OakDOT
A34	105th Ave from Pippin St to International Blvd - buffered	Improve the safety and comfort of cyclists on 105th Avenue from Pippin Street to International Boulevard by adding signage to designate a Class III bike route.	Shovel ready	$92	OakDOT
A35	San Leandro Boulevard between Creekside Plaza and Park Street	Improve the safety and comfort of cyclists on San Leandro Boulevard from Creekside Plaza to Park Street by adding a painted Class II bike lane.	Shovel ready	TBD	City of San Leandro
A36	San Leandro Creek Trail	Multi-use Trail along San Leandro Creek	Short-term	$6,400	Alameda County Flood Control
A37	Dan Niemi Way Creek Trail	Narrow Dan Niemi Way and construct a multipurpose trail along the bank of San Leandro Creek, consistent with the San Leandro Creek Trail Master Plan and in coordination with future development on the triangular block of E. 14th St, Hays St and Davis St.	Short-term	$2,000	City of San Leandro
A38	East 14th Street between Chumalia Street and Estudillo Avenue	Improve the safety and comfort of cyclists on East 14th Street from Chumalia Street to Estudillo Avenue by adding a painted Class II bike lane.	Shovel ready	$11	City of San Leandro
A39	East 14th Street/Davis Street Intersection Improvements	Intersection Improvements	Shovel ready	TBD	City of San Leandro
A40	San Leandro Airport Access Rd - Davis St Corridor Improvement - Class IV	Improve the safety and comfort of cyclists on HWY 61 from Airport Access Road to Davis Street by adding a protected Class IV bike lane.	Short-term	$1,500	City of San Leandro
A41	Williams Street/ Washington Avenue Intersection Improvements	Intersection Improvements	Shovel ready	TBD	City of San Leandro

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A42	E. 14th Street Streetscape Improvements	Recommended changes to E. 14th St in San Leandro south of Maud Ave/ Thornton St include a new center median, lane reconfiguration, new crosswalk locations, design guidelines for new development, and streetscape improvements.	Short-term	$4,000	City of San Leandro
A43	San Leandro Boulevard/Williams Street Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A44	Davis Street/Orchard Avenue Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A45	Davis Street/San Leandro Boulevard Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A46	San Leandro Boulevard/East 14th Street Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A47	San Leandro Boulevard/Washington Avenue Intersection Improvements	Intersection Improvements	Short-term	TBD	City of San Leandro
A48	Davis St Bike Lanes Orchard to SLB	Remove and replace medians and restripe Davis St from Orchard to San Leandro Blvd to add bicycle lanes in both directions as described in the San Leandro BART Pedestrian and Bicycle Improvement Study.	Shovel ready	$800	City of San Leandro
A49	Washington Avenue Streetscape Improvements	Improve the safety and comfort of pedestrians Washington Avenue in San Leandro by adding a landscaped center street median to slow traffic and provide pedestrian refuges at intersections. Learn more.	Short-term	$1,000	City of San Leandro

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A50	Washington Avenue/ Halcyon Drive & Floresta Boulevard crosswalks	Intersection Improvements	Short-term	$40	City of San Leandro
A51	Washington Avenue between Caliente Drive and 143rd Avenue	Improve the safety and comfort of cyclists on Washington Avenue from Caliente Drive to 143rd Avenue by adding a protected Class IV bike lane.	Short-term	$237	City of San Leandro
A52	Hesperian Boulevard/ 150th Avenue Intersection Improvements	Intersection Improvements	Shovel ready	$100	City of San Leandro
A53	Hesperian Boulevard between Lewelling Boulevard and East 14th Street	The Hesperian Boulevard Study Corridor will construct Class IV protected bike lane and connect to the existing Class III bike route in San Lorenzo. This route is also included on the Alameda Countywide bicycle network.	Short-term	$617	City of San Leandro
A54	Hesperian Boulevard/ Halycon Drive/Fairmont Drive Intersection Improvements	Intersection Improvements	Shovel ready	TBD	A54
A55	Fairmont Drive Road Diet & Class IV Bicycle Lanes	Restripe Fairmont Drive from Hesperian Boulevard to E. 14th Street to change the roadway from three lanes to two lanes in each direction, allow for installation of bicycle lanes protected by concrete medians interspaced with delineators.	Shovel ready	TBD	City of San Leandro
A56	E. 14th Street Class IV protected bike lanes	Class IV protected bike lanes: E. 14th Street from Hesperian Boulevard to South Hayward BART station	Short-term	$1,589	City of Hayward
A57	East Lewelling Boulevard Complete Streets (Phase 2)	Close sidewalk gaps, install Class IV bikeways, ADA Ramps, enhance crosswalks, and bulb-outs along East Lewelling Blvd between Meekland Avenue and Langton Way in the Ashland Community, Unincorporated Alameda County	Shovel ready	$15,000	ACPWA

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A58	San Lorenzo Creekway Trail	Improve the safety and comfort of cyclists along the San Lorenzo Creek between the San Francisco Bay Trail and Don Castro Regional Park by adding an off-street Class I bike path.	Short-term	$33,000	HARD, ACPWA
A59	Mission Boulevard	Improve the safety and comfort of cyclists on Mission Boulevard by adding a separated Class IV bike lane.	Short-term	$4,040	City of Hayward
A60	C St between BART and Mission Blvd	Increase the safety and comfort of cyclists on C Street between the Hayward BART Station and Mission Boulevard by adding a combination of painted Class II and separated Class IV bike lanes.	Shovel ready	TBD	City of Hayward
A61	Main Street Complete Street	Main St from Mc Keever to D St: Reduce roadway from 4 to 2 lanes, construct bike lanes, widen sidewalks and add complete street elements	Short-term	$5,000	City of Hayward
A62	A Street	Improve the safety and comfort of cyclists on A Street by adding a separated Class IV bike lane.	Long-term	$1,459	City of Hayward
A63	Jackson Street	Improve the safety and comfort of cyclists on Jackson Street by adding a separated Class IV bike lane.	Long-term	TBD	City of Hayward
A64	Mission Blvd single lane reduction and two-way cycle track	Improve the safety and comfort of cyclists on Mission Boulevard from A Street to D Street by adding a protected Class IV bike lane and removing a vehicular lane.	Short-term	TBD	City of Hayward
A65	Downtown Hayward PDA Multimodal Complete Streets	Improve safety and transit quality through multimodal corridors	Short-term	TBD	City of Hayward
A66	Tennyson Rd. Corridor PDA Complete Streets	Improve safety and transit quality through multimodal corridors	Short-term	TBD	City of Hayward
A67	Tennyson Road	Improve the safety and comfort of cyclists on Tennyson Road by adding a separated Class IV bike lane.	Short-term	TBD	City of Hayward
A68	Winton Ave Complete Street	On Winton Ave from Hesperian Blvd to Santa Clara St: Rehabilitate pavement, upgrade curb ramps and streetlights; On Winton Ave just east of Santa Clara St: Landscape median	Shovel ready	$604	City of Hayward

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
A69	Fruitvale: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	OakDOT; BART
A70	Coliseum: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	OakDOT; BART
A71	San Leandro: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	City of San Leandro; BART
A72	Hayward: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	City of Hayward; BART
A73	South Hayward: BART Walk and Bicycle Network Gap Study	The Study identifies conceptual active access improvements on City/County and BART property.	Short-term	TBD	City of Hayward; BART

Safety

Regardless of age, ability, or transportation mode, everyone should be able to move through space comfortably and safely. A common theme expressed by the public during outreach was the need for improved safety in the study area—especially for pedestrians and cyclists. The following projects aim to provide safety for all road users using a variety of treatments such as reducing vehicular speeds by adding speed bumps or medians, upgrading or installing high visibility crosswalks, and improving lighting, among others.

Table 7-2 includes the list of safety projects as well as implementation timeframes. Safety project locations are shown in **Figure 7-1** through **Figure 7-4** by their project number. A total of eight safety projects have been included for evaluation.

Table 7-2: CACCMCP Safety Projects

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
S1	Foothill Blvd Corridor Improvements (Phase 1)	Safety improvements along Foothill Blvd between Harrington and Cole Streets, including bulb-outs; pedestrian median refuge islands; crosswalk enhancements; rectangular rapid flashing beacons; speed cushions; signage; and refreshed roadway striping.	Shovel ready	$15,000	OakDOT, AC Transit
S2	East Oakland Lighting Study	International Blvd and Bancroft Ave	Short-term	TBD	OakDOT
S3	International Boulevard BRT crossing safety improvement	Improve the safety and comfort for pedestrians on International Boulevard from Seminary Avenue to the southern border of the City of Oakland by adding crosswalk safety improvements.	Short-term	TBD	OakDOT
S4	69th Avenue Safety Improvements	Improve the safety and comfort of pedestrians, cyclists, and drivers on 69th Avenue between International and San Leandro Boulevards by paving the roadway, reducing vehicle speeds using speed humps, and adding high visibility crosswalks.	Shovel ready	TBD	OakDOT
S5	73rd Avenue/ Hegenberger Rd Improvements	Improve the safety and comfort of transit users, pedestrians, and cyclists on 73rd Ave / Hegenberger Road to connect both the Eastmont Transit Center and the Coliseum BART Station by improving connections to the BRT on International Boulevard.	Shovel ready	$20,000	OakDOT

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
S6	E. 14th Street and Ashland Avenue Intersection	Re-align the east leg of the intersection so that Ashland Avenue connects to E. 14th Street at a 90-degree angle.	Shovel ready	TBD	ACPWA
S7	Mission Boulevard and E. Lewelling Boulevard	Eliminate the large channelized right-turn from southbound Mission to westbound Lewelling. To the extent feasible re-align the east leg of the Mission/Lewelling intersection so that Lewelling connects to Mission at a 90-degree angle.	Short-term	TBD	ACPWA
S8	D Street Traffic Calming & Implementation	In response to concerns expressed by the community, staff will soon be developing a feasibility study to identify opportunities to improve pedestrian and bike safety, as well as reduce excessive vehicle speeds, along the D Street corridor.	Short-term	TBD	City of Hayward

Transit

Transit, when it is convenient, frequent, reliable, and safe, can provide a realistic alternative to car trips. The recommended projects in **Table 7-3** vary substantially in scope, but with a goal to increase transit's competitiveness compared to the car. The following projects help improve the reliability of transit by installing new bus-only lanes, increasing its convenience by adding a new rail station to the Capitol Corridor service, and increasing its safety by providing enhanced bike and pedestrian connections to stations.

Table 7-3: CACCMCP Transit Projects

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
T1	Capitol Corridor South Bay Connect Rail	Relocate Capitol Corridor service between Oakland Coliseum and Newark from the Niles Subdivision to the Coast Subdivision, including one new rail station, one new in-line intermodal bus facility, and enhanced park-and-ride facilities.	Long-term	$305,000	Capitol Corridor Joint Powers Authority
T3	East Bay BRT Corridor Safety Improvements	BRT will run the 9.5-mile corridor from downtown Oakland to San Leandro BART.	Shovel ready	$34,000	OakDOT; AC Transit
T4	Fruitvale Avenue/Park Street Transit Improvements	An Enhanced Bus strategy is proposed for 2020 for the Fruitvale Ave/Park Street corridor, with upgrades being made to those improvements by 2040 to keep pace with changing technologies.	Short-term	$61,000	OakDOT
T7	Mobility Hubs at BART Stations	Mobility Hub at San Leandro, Bay Fair, Hayward and South Hayward BART stations	Long-term	$200,000	City of San Leandro, and Hayward; BART
T9	San Leandro Blvd Bus Only Lanes	Bus-only lanes: San Leandro Blvd. from San Leandro BART south to E. 14th St. and E. 14th St./Mission Blvd. from San Leandro Blvd. south to South Hayward BART	Long-term	$350,000	AC Transit
T10	E 14th St/Mission St/Fremont Blvd Rapid Bus Modernization	New rapid bus service along E 14th St/Mission Blvd/Fremont Blvd between the San Leandro and Warm Springs BART stations, include more frequent service and mobility hubs at BART stations.	Long-term	$330,000	AC Transit
T11	BRT Service on E. 14 St. from San Leandro BART to Bay Fair BART	East 14th Street in San Leandro Extend the AC Transit BRT service from San Leandro BART to Bay Fair BART.	Long-term	$81,600	AC Transit

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
T12	Bay Fair Connection	BART: At and near Bay Fair Station: Modify station and approaches to add one or more additional tracks and one or more passenger platforms for improved train service and operational flexibility	Long-term	$23,400	BART

Multimodal

While projects have been grouped and listed based on their primary mode, many projects provide benefits to a combination of cyclists, pedestrians, drivers, and/or transit riders. The following projects benefit one or more modes of transportation. For instance, repaving of streets benefits both auto users as well as buses that traverse the same corridor. Paving can also benefit cyclists riding along on-street facilities.

Table 7-4 includes the list of multimodal projects, as well as their implementation timeframes. Multimodal project locations are shown in **Figure 7-1**through **Figure 7-4** by their project number.

Table 7-4: CACCMCP Multimodal Projects

Project ID	Project Name	Project Description	Implementation Term	Cost Estimates ('000)	Implementing Agency
M1	Oak Street and Madison Street - Conversion of One-way traffic to two-way traffic	Conversion of one-way traffic to two-way traffic. Additionally, sidewalk widening to add to the pedestrian realm.	Long-term	$0	OakDOT
M2	SHOPP Mobility - TMS	SR 185 between Post Miles 3.205 - 10.519 E2 FY 23020 26/27	Shovel ready	$15	Caltrans
M3	SHOPP Mobility - ADA	SR 185 between Post Miles 3.205 - 5.0 E2 FY 20459 29/30	Shovel ready	$7	Caltrans
M4	San Leandro Street repaving along railroad tracks	Seminary Ave to South City Limit Repaving	Shovel ready	TBD	OakDOT
M5	SHOPP Pavement	SR 185 between Post Miles 3.205 - 5.7 E2 FY 13654 21/22	Shovel ready	$22	Caltrans
M6	SHOPP Mobility - ADA	SR 185 between Post Miles 9.08 - 10.1 E2 FY 16381 21/22	Shovel ready	$6	Caltrans
M7	SHOPP Pavement	SR 238 between Post Miles 13.96 - 16.7 E2 FY 23035 26/27	Short-term	$15	Caltrans

M8	Mission Blvd and Foothill Blvd 2-way conversion	Converting Foothill and Mission Boulevards to two-way streets and reconstructing the intersection at Foothill Boulevard, Mission Boulevard and D Street to support two-way movements.	Long-term	$4,591	City of Hayward

Figure 7-1: CACCMCP Projects (1 of 4)

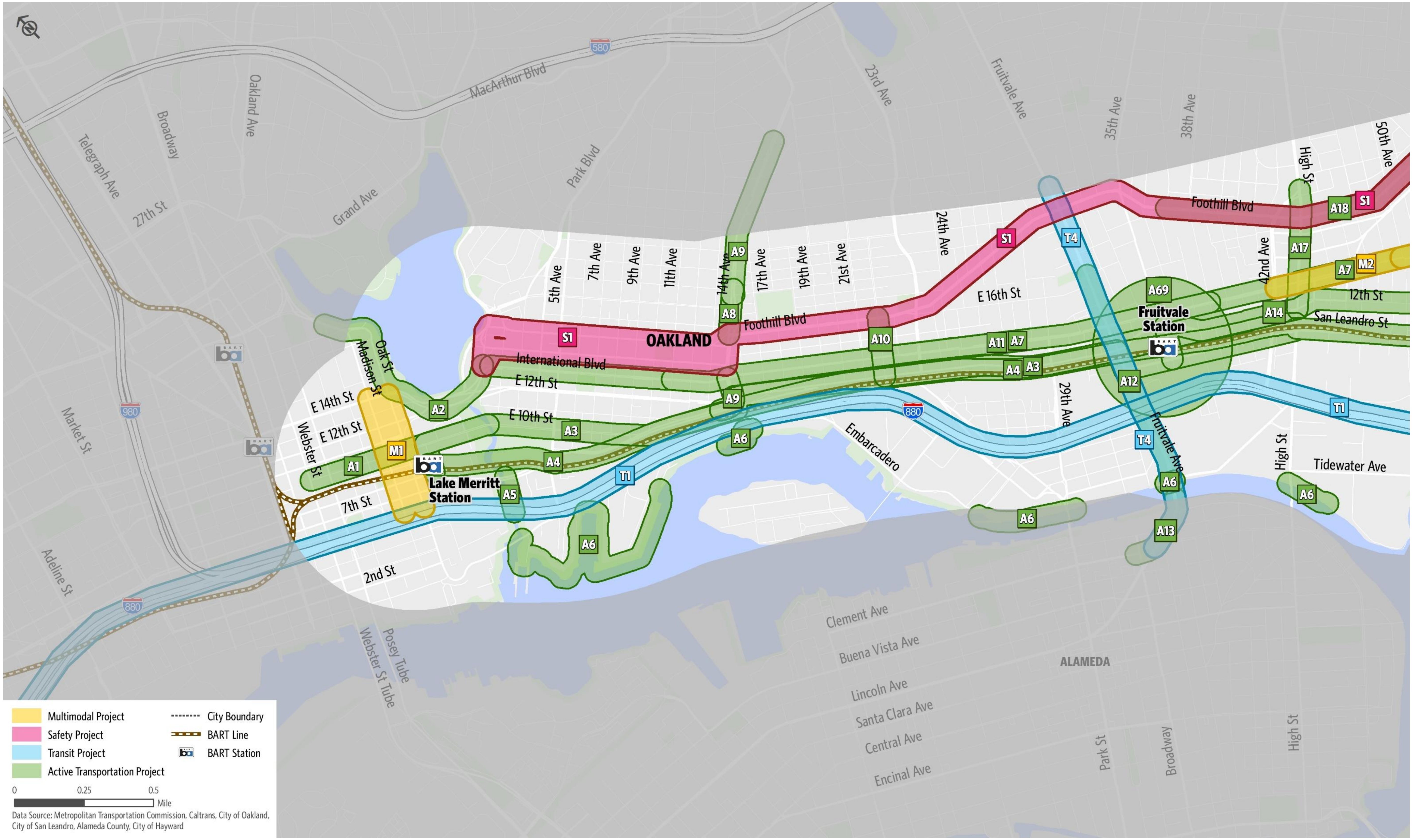

Figure 7-2: CACCMCP Projects (2 of 4)

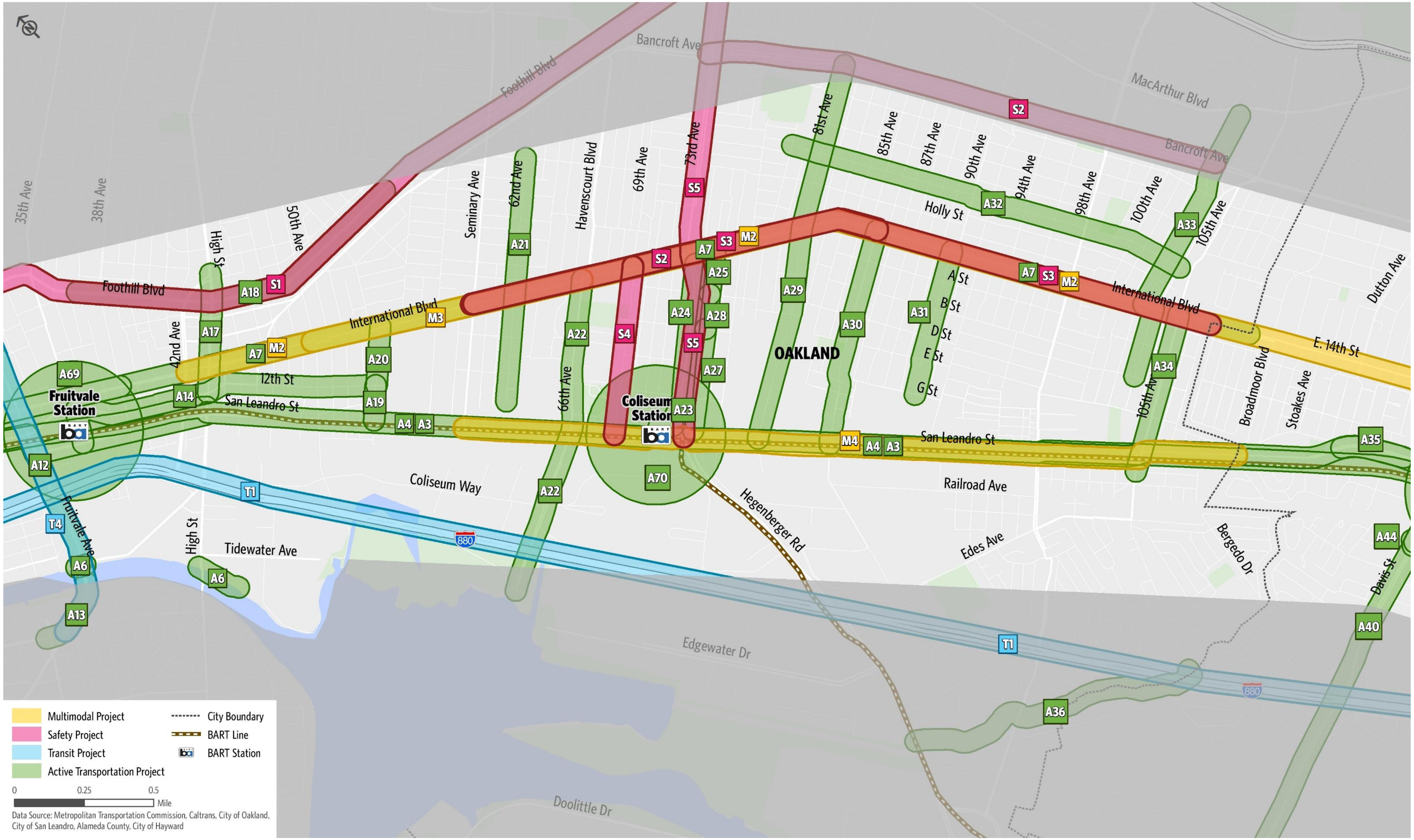

Figure 7-3: CACCMCP Projects (3 of 4)

Figure 7-4: CACCMCP Projects (4 of 4)

7.3 Project Evaluation Methodology

Project evaluation was conducted for each project based on the evaluation framework developed in Chapter 2. To evaluate the projects, a qualitative evaluation of LOW, MEDIUM, or HIGH is assigned to a project based on its alignment with plan goals and objectives.

Projects are not assigned an overall score, nor are they prioritized or ranked. Due to the differences in assumptions and evaluation methodologies, a numerical comparison between project types would not yield meaningful conclusions. Instead, the evaluation results mainly demonstrate how projects would likely advance the Corridor Goals. Ratings were developed in consultation with TAC members.

Safety Evaluation

The goal of the safety evaluation is to indicate which projects increase the safety for all transportation users—especially for the most vulnerable road users.

Class I bicycle facilities, or multi-use pathways, provide substantial safety for active transportation modes as they provide dedicated space for these modes eliminating conflicts with motorized vehicles.

Class IV, or separated bike lanes, are on-street facilities that provide a physical separation for cyclists from other modes when space is not available to create a dedicated path. Class IV bike lanes also offer pedestrians safety benefits as they can provide an additional buffer space between the sidewalk and car travel lanes. Installation of Class IV bike lanes can require the narrowing of existing roadways or removal of travel lanes which results in reducing the distance needed for pedestrians to cross at intersections or crosswalks. Some Class IV installation may require road narrowing or lane removal which also slows vehicular speeds, providing additional safety to all road users.

For these reasons, both Class I bike paths and Class IV separated bike lanes are considered high-quality safety projects. Projects that include high-quality safety projects and are part of the existing High Injury Network (HIN) (**Figure 5-5** through **Figure 5-8**) are scored as "HIGH." Projects that increase the comfort and safety for pedestrians and cyclists but are not on the HIN receive a score of "MEDIUM." All other projects are assigned a "LOW" score. The safety evaluation methodology is summarized in **Table 7-5** and project scoring is listed in **Table 7-11.**

Forty-four projects received a "HIGH" score, 32 received a "MEDIUM" score while 18 projects received a "LOW" score. Most projects that received a "LOW" score were transit or multimodal projects that did not include pedestrian or cyclist amenities that would directly increase the safety of those groups.

Table 7-5: Safety Evaluation Methodology

Goals	Objectives	Project Evaluation Methodology
1. Provide a safe and convenient transportation system for all users.	1.1 Reduce severe and fatal injury collisions 1.2 Reduce non-motorized collisions 1.3 Provide high-quality active transportation options	• **High score** for safety projects on HIN or new Class I/IV bike facility • **Medium score** for all other active transportation projects • **Low score** for all non-active transportation projects

Equity Evaluation

Two criteria were considered when evaluating a project's ability to meet equity goals. The overall score is determined based on whether a project is in either a Disadvantaged Community (DAC) or in an Equity Priority Community (EPC). As discussed in detail in Chapters 3 and 5, DAC and EPC are different measures that intend to identify populations that have experienced disproportionate systemic hardship. EPC is defined strictly using socioeconomic indicators. DAC considers socio-economic factors and disproportionate levels of pollution and poor health outcomes, among other factors. Both DACs and EPCs are fully defined in Chapter 3 and can be seen in **Figure 3-15** through **Figure 3-18**.

For scoring, if a project boundary intersects with both a DAC and EPC area, it is assigned a "HIGH" equity score. If the project intersects with either a DAC area or an EPC area, it is scored as "MEDIUM." If the project does not serve either a DAC or EPC area, it is given a "LOW" equity score. The equity evaluation methodology is summarized in **Table 7-6** and project scoring is listed in **Table 7-11.**

Each project evaluated was either in a DAC or EPC which is why no project received a "LOW" score. Fifty-eight projects were in both a DAC or EPC and received a "HIGH" score, while thirty-six projects were in either a DAC or EPC and received a "MEDIUM" score.

Table 7-6: Equity Evaluation Methodology

Goals	Objectives	Project Evaluation Methodology
2. Address the mobility needs by providing accessible, affordable, and equitable transportation network.	2.1 increased number of multimodal options in the corridor and reduce gaps 2.2 Improve connections in Equity Priority Communities 2.3 Provide affordable alternatives to driving alone	• **High score** if the project is in both a DAC and EPC • **Medium score** if the project is in either a DAC or EPC • **Low score** if the project is outside of a DAC and EPC

Travel Reliability Evaluation

Travel reliability is evaluated as the ability of a project to improve corridor efficiency by improving on-time performance of transit or reduce the buffer time drivers must add to ensure on-time arrival at their destinations. One method to increase reliability for drivers is to reduce the amount of congestion within the corridor by shifting car trips to alternative modes. Projects that include transit improvements received a travel reliability score of "HIGH," while high-quality active transportation that promotes mode shift (such as Class I bike paths and Class IV separated bikeways) or promotes pedestrian trails were assigned a "MEDIUM" score. Projects that did not meet either of these criteria received a "LOW" travel reliability score.

The reliability evaluation methodology is summarized in **Table 7-7** and project scoring is listed in **Table 7-11.** All transit projects and in total eight projects received a "HIGH" score. All 19 projects that received a "MEDIUM" score were awarded to active transportation projects, while the 61 remaining projects received a "LOW" score.

Table 7-7: Travel Reliability Evaluation

Goals	Objectives	Project Evaluation Methodology
3. Enhance travel reliability and improve corridor efficiency.	3.1 Reduce recurring delays 3.2 Improve transit reliability 3.3 Increase travel time reliability	• **High score** for transit improvement projects • **Medium score** for traffic operations projects OR projects that provide a high-quality modal alternative • **Low score** for all other projects

Land Use Planning Evaluation

Land use plays an integral role in shifting travel behavior and supporting higher adoption rates for alternative forms of transportation. Dense, mixed-use development patterns promote walkability and reduce the number of trips that require a car. Transit-rich Priority Development Areas (PDAs) are defined as locations within a half-mile of high-quality transportation and have been designated as locations for increased housing and mixed-use infill that promotes car-free and car-light lifestyles.[111] PDAs within the CACCMCP study area are shown in **Figure 3-11** through **Figure 3-14**. Projects within a PDA received a "HIGH" land use score. Projects that provide access to a PDA but are not within it received a "MEDIUM" score. Due to the CACCMCP study area location, most projects received a "HIGH" score.

Land use methodology is summarized in **Table 7-8** and project scoring is listed in **Table 7-11.** Seventy-one projects are either in or partially within a PDA and received a "HIGH" score. Seventeen projects were outside of the boundaries, did not connect to a PDA, and were thus assigned a "LOW" score. Six projects received a "MEDIUM" score for providing access to nearby PDAs.

[111] https://abag.ca.gov/our-work/land-use/pda-priority-development-areas

Table 7-8: Land Use Evaluation Criteria

Goals	Objectives	Project Evaluation Methodology
4. Support efficient land use planning that encourages active lifestyle.	4.1 Promote multimodal travel that supports efficient land use 4.2 Increase of Mixed-Use Transit-Oriented Development	• **High score** for local multimodal, active transportation, and transit projects in PDAs • **Medium score** for local multimodal, active transportation, and transit projects providing access to PDAs • **Low score** for all other projects

Public Health and Environment Evaluation

The intent of the public health and environmental evaluation is to determine which projects have the highest ability to reduce VMT and GHG emissions. Projects that promote the greatest modal shift from driving to alternative forms of transportation reduce VMT, and thus have the largest potential impact in reducing GHG emissions. While the shift to electric vehicles will play a critical role in reducing GHG emissions, electric vehicles still produce significant PM 2.5 emissions through brake and tire wear; therefore, it is important to reduce driving overall. In addition, walking and biking provide health benefits by introducing moderate exercise into daily routines. Active transportation and transit use also build a sense of trust and community which can improve health outcomes, while daily auto commuting may increase stress and can reduce life expectancy. Projects that improve transit, biking, or pedestrian amenities scored "HIGH" under the public health and environmental score. Projects that reduced emissions through the minimization of vehicular delay received a "MEDIUM" evaluations score. All other projects received a "LOW" score.

The health and environment evaluation methodology is summarized in **Table 7-9** and project scoring is listed in **Table 7-11.** Eighty-nine percent of all projects evaluated received a "HIGH" score. These projects were related to transit and active transportation as they would contribute directly to the reduction of VMT and GHG emissions. Nine projects received a "LOW" score. Most of these are multimodal projects that focus on vehicular benefits. Only one project, which is designed to reduce car congestion through traffic management systems, received a "MEDIUM" score in this evaluation.

Table 7-9: Public Health and Environmental Evaluation Criteria

Goals	Objectives	Project Evaluation Methodology
5. Provide a transportation system that improves health and environment	5.1 Reduce Vehicle Miles Traveled (VMT) 5.2 Reduce GHG Emissions	• **High score** for multimodal, active transportation, transit, or environmental projects. • **Medium score** for all other roadway projects that reduce delay (emissions) • **Low score** for all other projects

Community Revitalization Evaluation

The community revitalization evaluation is intended to score projects based on their level of support from communities as well as how much they would contribute to place making. As part of the community outreach efforts, an interactive map was developed using the Social Pinpoint platform, further explained in Chapter 6. This map allowed members of the community to review location and description of projects and leave comments as desired. Projects that received significant positive engagement (received five or more supportive comments) were assigned a "HIGH" community revitalization score. A major theme in both online and in-person feedback was the need for more safety—particularly for pedestrians. Projects that provide safety elements for pedestrians or placemaking (such as paseos or streetscape improvements) were ranked as "MEDIUM" for community revitalization. All other projects received a "LOW" score.

The community revitalization evaluation methodology is summarized in **Table 7-10** and project scoring is listed in **Table 7-11**. A nearly even number of projects received a "LOW" and "MEDIUM" count: 43 and 41 respectively. Only ten projects received a "HIGH" score as it is awarded only to projects that received multiple positive comments through public engagement platforms, while "MEDIUM" scores tried to account for the safety concerns for pedestrians expressed throughout multiple engagement forums.

Table 7-10: Community Revitalization Evaluation Criteria

Goals	Objectives	Project Evaluation Methodology
6. Consider multimodal network as a tool for community revitalization and economic growth.	6.1 Support placemaking and existing communities	• **High score** for project types that received significant support during engagement • **Medium score** for project types that received moderate support during engagement OR projects with placemaking or pedestrian safety elements • **Low score** for all other projects

Project Evaluation Results

The following combined evaluation is intended to determine whether projects should be included in the CACCMCP project list. The evaluation also indicates how much an individual project would contribute to the safety, public health and environment, or travel reliability of the CACCMCP. This evaluation also considers whether projects support existing land uses or would contribute to community revitalization and increase equity. Each criterion is scored as "HIGH" "MEDIUM" or "LOW" based on the evaluation criteria listed in **Table 7-5** through **Table 7-10** for each evaluation category with the results listed below in **Table 7-11**.

Every project listed within the CACCMCP has received a score of "MEDIUM" for at least one evaluation category, indicating that each project evaluated is recommended for the final CACCMCP project list. It is worth emphasizing that the scores listed in **Table 7-11** are not intended to provide any recommendation for project prioritization or ranking. Due to the differences in assumptions and evaluation methodology, a comparison between project types would not yield a meaningful conclusion. Instead, the evaluation results mainly demonstrate how projects would likely advance the Corridor Goals. Ratings were developed in consultation with TAC members.

Table 7-11: Evaluation Results

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
A1	10th Street Improvement Project	Oakland	10th Street between Webster St and the 10th Street bridge is slated for repaving. Additionally, OakDOT received a Safe Routes to School (SRTS) grant to make sidewalk and pedestrian safety improvements around Lincoln Recreation Center and Lincoln Elementary.	MEDIUM	HIGH	LOW	HIGH	HIGH	MEDIUM
A2	Lake Merritt Bikeway Improvement Project	Oakland	Extend the existing two-way protected cycle track around Lake Merritt from Madison Street southward and over the estuary bridge to International Blvd. Add a one-way protected bike lane in Eastbound direction on Lake Merritt Boulevard between Lakeside Drive and 1st Avenue. Additional improvement includes protected intersections and signal improvements.	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH
A3	East Bay Greenway Multimodal (Phase 1)	Oakland, San Leandro, Ashland, Cherryland, Hayward	Improvements for construction within 3-5 years, including: one-way cycle tracks along East 12th Street, a Class I pathway along San Leandro Street, one-way separated bike lanes along San Leandro Blvd and East 14th Street, and Mission Boulevard, and pedestrian amenities.	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM
A4	East Bay Greenway Urban Trail (Phase 2)	Ashland, Cherryland, Oakland, San Leandro, Hayward	East Bay Greenway Phase 2 - will continue to work with the Union Pacific Railroad to implement a Rails-to-Trail or Rails-with-Trail facility in a 10+ year horizon. The project will connect the seven BART station between Lake Merritt to South Hayward that will generally follow the BART rail line.	HIGH	HIGH	LOW	HIGH	HIGH	HIGH
A5	Lake Merritt Bay Trail	Oakland	Improve the safety and comfort of cyclists and pedestrian along the Lake Merritt Channel by closing trail gaps between San Francisco Bay Trail and Lake Merritt	HIGH	HIGH	LOW	HIGH	HIGH	MEDIUM

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
			Channel Trails by adding an off-street Class I bike path.						
A6	San Francisco Bay Trail	Oakland	Improve the safety and comfort of cyclists and pedestrian along the San Francisco Bay by closing trail gaps at multiple locations by adding an off-street Class I bike path.	HIGH	HIGH	LOW	HIGH	HIGH	HIGH
A7	International Blvd Pedestrian Lighting and Sidewalk Improvement Project	Oakland	City of Oakland has received $9.9 million dollars in Clean California funds and $1.5 million dollars in Affordable Housing and Sustainable Communities (AHSC) grant funds for The International Boulevard Pedestrian Lighting and Sidewalk Improvement Project.	HIGH	HIGH	LOW	HIGH	HIGH	MEDIUM
A8	14th Ave from Foothill Blvd to E 19th St	Oakland	Improve the safety and comfort of cyclists on 14th Avenue from Foothill Boulevard to East 19th Street by lane reduction from 4 to 2 lanes and adding a painted Class II bike lane.	MEDIUM	HIGH	LOW	HIGH	HIGH	HIGH
A9	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St	Oakland	Improve the safety and comfort of cyclists on 14th Avenue from East 8th Street to International Boulevard and on 14th Avenue from East 19th Street to East 27th Street by lane reduction from 4 to 2 lanes and adding a painted Class II bike lane. Additionally, the project will extend sidewalks and install multiple RRFBs for pedestrian safety.	MEDIUM	HIGH	LOW	HIGH	HIGH	HIGH
A10	22nd Ave from Foothill Blvd to E 12th St	Oakland	Improve the safety and comfort of cyclists on 22nd Avenue from Foothill Boulevard to East 12th Street by adding a painted Class II bike lane.	MEDIUM	HIGH	LOW	HIGH	HIGH	MEDIUM
A11	AHSC Camino 23 International Blvd Pedestrian Improvements	Oakland	Pedestrian improvements, including sidewalk repair, street lighting, and crosswalk improvements, along	HIGH	HIGH	LOW	HIGH	HIGH	MEDIUM

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
			International Blvd between 11th Ave and 38th Ave						
A12	Fruitvale Alive Project	Oakland	Improve the safety and comfort of pedestrians and cyclists on Fruitvale Avenue between Alameda Avenue and East 16th Street by widening sidewalks to install a bike lane at sidewalk level, slowing traffic with bulb-outs, repairing pavement, upgrading lighting, and enhancing crosswalks.	HIGH	HIGH	LOW	HIGH	HIGH	MEDIUM
A13	Clement Ave and Tilden Way Complete Streets	Oakland	Reuse the abandoned railroad right-of-way along the eastern terminus of Clement Ave and Tilden Way to extend the Cross Alameda Trail between Broadway and the Miller-Sweeney/Fruitvale Rail Bridges, while considering ways to improve truck and bus routes.	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH
A14	East 12th Street Bikeway Project: Fruitvale-Melrose Gap Closure	Oakland	The project proposes: • A neighborhood bike route along 54th Avenue between International Boulevard and E 12th Street where the street is too narrow for bike lanes • A neighborhood bike route along E 12th Street between 54th Avenue and 44th Avenue where the street is too narrow for bike lanes • Protected bike lanes along E 12th Street between 44th Avenue and 40th Avenue to accommodate bi-directional bike travel along the one-way stretch of E 12th Street • Buffered bike lanes along E 12th Street between 35th Avenue and 40th Avenue to minimize on-street parking removal and disruptions to school pick-up and drop-off	HIGH	HIGH	MEDIUM	HIGH	HIGH	LOW

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
A17	High St from Courtland Ave to E 12th St	Oakland	Improve the safety and comfort of cyclists on High Street from Courtland Avenue to East 12th Street by adding a painted Class II bike lane.	HIGH	HIGH	LOW	HIGH	HIGH	LOW
A18	Foothill Complete Streets	Oakland	Engage the various communities along Foothill Blvd (a high injury corridor) to plan for capital improvements to address safety concerns and promote active mobility options on this corridor.	HIGH	HIGH	LOW	HIGH	HIGH	MEDIUM
A19	54th Ave from E 12th St to San Leandro St	Oakland	Improve the safety and comfort of cyclists on 54th Avenue from East 12th Street to San Leandro Street by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A20	54th Ave from International Blvd to E 12th St	Oakland	Improve the safety and comfort of cyclists on 54th Avenue from International Boulevard to East 12th Street by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A21	62nd Ave from South end of 62nd Ave to Avenal Ave	Oakland	Improve the safety and comfort of cyclists on 62nd Avenue from Tevis Street to Avenal Avenue by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A22	66th Ave from Oakport St to San Leandro St (MLK Shoreline to Coliseum BART connection)	Oakland	Improve the safety and comfort of cyclists along 66th Avenue from Oakport Street to San Leandro Street by adding an off-street Class I bike path. Additionally, the project includes new AC Transit stops at 66th Avenue and Oakport Street	HIGH	HIGH	LOW	HIGH	HIGH	LOW
A23	Coliseum BART Parking Lot Rd from Snell St to Coliseum BART Parking Lot Access	Oakland	Improve the safety and comfort of cyclists on Coliseum BART Parking Lot Road from Snell Street to Coliseum BART Parking Lot Access by adding a protected Class IV bike lane	HIGH	HIGH	MEDIUM	HIGH	HIGH	LOW
A24	Hegenberger Rd from	Oakland	Improve the safety and comfort of cyclists on Hegenberger Road from International	HIGH	HIGH	MEDIUM	HIGH	HIGH	LOW

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
	International Boulevard to San Leandro Street		Boulevard to Hawley Street by adding a protected Class IV bike lane						
A25	75th Ave from International Blvd to Rusdale Ave	Oakland	Improve the safety and comfort of cyclists on 75th Avenue from International Boulevard to Rusdale Avenue by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A27	75th Ave from Hamilton St to Snell St	Oakland	Improve the safety and comfort of cyclists on 75th Avenue from Hamilton Street to Snell Street by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A28	75th Ave from Rusdale Ave to Hamilton St	Oakland	Improve the safety and comfort of cyclists on 75th Avenue from Rusdale Avenue to Hamilton Street by adding signage to designate a Class III bike route	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A29	81st Ave from San Leandro St to Bancroft Ave	Oakland	This project is a part of the East Oakland Neighborhood Bike Routes that will provide safer and calmer neighborhood streets designed to prioritize people walking and biking to local destinations.	MEDIUM	HIGH	LOW	HIGH	HIGH	MEDIUM
A30	85th Ave from International Blvd to San Leandro St	Oakland	This project is a part of the East Oakland Neighborhood Bike Routes that will provide safer and calmer neighborhood streets designed to prioritize people walking and biking to local destinations.	MEDIUM	HIGH	LOW	HIGH	HIGH	MEDIUM
A31	90th Ave from G St to International Blvd	Oakland	Improve the safety and comfort of cyclists on 90th Avenue from G Street to International Boulevard by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A32	Plymouth Street between 79th Avenue and 104th Avenue	Oakland	Oakland is repaving 1.5 miles of Plymouth St from 79th Ave to 104th Ave in Fall 2019 with concrete work in Spring 2020. Plymouth St's proximity to schools and residences makes it a priority for paving and transportation safety improvements. Improvement	MEDIUM	MEDIUM	LOW	HIGH	HIGH	MEDIUM

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
A33	103rd Ave from Royal Ann St to International Blvd	Oakland	Improve the safety and comfort of cyclists on 103rd Avenue from Royal Ann Street to International Boulevard by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A34	105th Ave from Pippin St to International Blvd - buffered	Oakland	Improve the safety and comfort of cyclists on 105th Avenue from Pippin Street to International Boulevard by adding signage to designate a Class III bike route.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A35	San Leandro Boulevard between Creekside Plaza and Park Street	San Leandro	Improve the safety and comfort of cyclists on San Leandro Boulevard from Creekside Plaza to Park Street by adding a painted Class II bike lane.	HIGH	MEDIUM	LOW	MEDIUM	HIGH	LOW
A36	San Leandro Creek Trail	Oakland	Multi-use Trail along San Leandro Creek	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM
A37	Dan Niemi Way Creek Trail	San Leandro	Narrow Dan Niemi Way and construct a multipurpose trail along the bank of San Leandro Creek, consistent with the San Leandro Creek Trail Master Plan and in coordination with future development on the triangular block of E. 14th St, Hays St and Davis St.	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	MEDIUM
A38	East 14th Street between Chumalia Street and Estudillo Avenue	San Leandro	Improve the safety and comfort of cyclists on East 14th Street from Chumalia Street to Estudillo Avenue by adding a painted Class II bike lane.	HIGH	MEDIUM	LOW	HIGH	HIGH	LOW
A39	East 14th Street/Davis Street Intersection Improvements	San Leandro	Intersection Improvements	HIGH	MEDIUM	LOW	HIGH	HIGH	LOW
A40	San Leandro Airport Access	San Leandro	Improve the safety and comfort of cyclists on HWY 61 from Airport Access Road to	HIGH	HIGH	MEDIUM	HIGH	HIGH	LOW

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
	Rd - Davis St Corridor Improvement - Class IV		Davis Street by adding a protected Class IV bike lane.						
A41	Williams Street/ Washington Avenue Intersection Improvements	San Leandro	Intersection Improvements	MEDIUM	MEDIUM	LOW	HIGH	HIGH	LOW
A42	E. 14th Street Streetscape Improvements	San Leandro	Recommended changes to E. 14th St in San Leandro south of Maud Ave/ Thornton St include a new center median, lane reconfiguration, new crosswalk locations, design guidelines for new development, and streetscape improvements.	HIGH	MEDIUM	LOW	HIGH	HIGH	MEDIUM
A43	San Leandro Boulevard/ Williams Street Intersection Improvements	San Leandro	Intersection Improvements	MEDIUM	MEDIUM	LOW	HIGH	HIGH	LOW
A44	Davis Street/Orchard Avenue Intersection Improvements	San Leandro	Intersection Improvements	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A45	Davis Street/San Leandro Boulevard Intersection Improvements	San Leandro	Intersection Improvements	HIGH	MEDIUM	LOW	HIGH	HIGH	LOW
A46	San Leandro Boulevard/East 14th Street Intersection Improvements	San Leandro	Intersection Improvements	HIGH	MEDIUM	LOW	HIGH	HIGH	LOW

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
A47	San Leandro Boulevard/ Washington Avenue Intersection Improvements	San Leandro	Intersection Improvements	MEDIUM	MEDIUM	LOW	MEDIUM	HIGH	MEDIUM
A48	Davis St Bike Lanes Orchard to SLB	San Leandro	Remove and replace medians and restripe Davis St from Orchard to San Leandro Blvd to add bicycle lanes in both directions as described in the San Leandro BART Pedestrian and Bicycle Improvement Study.	MEDIUM	HIGH	LOW	HIGH	HIGH	LOW
A49	Washington Avenue Streetscape Improvements	San Leandro	Improve the safety and comfort of pedestrians Washington Avenue in San Leandro by adding a landscaped center street median to slow traffic and provide pedestrian refuges at intersections. Learn more.	MEDIUM	HIGH	LOW	MEDIUM	HIGH	MEDIUM
A50	Washington Avenue/ Halcyon Drive & Floresta Boulevard crosswalks	San Leandro	Intersection Improvements	MEDIUM	HIGH	LOW	MEDIUM	HIGH	MEDIUM
A51	Washington Avenue between Caliente Drive and 143rd Avenue	San Leandro	Improve the safety and comfort of cyclists on Washington Avenue from Caliente Drive to 143rd Avenue by adding a protected Class IV bike lane.	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	LOW
A52	Hesperian Boulevard/ 150th Avenue Intersection Improvements	San Leandro	Intersection Improvements	MEDIUM	MEDIUM	LOW	HIGH	HIGH	MEDIUM
A53	Hesperian Boulevard between	San Leandro	The Hesperian Boulevard Study Corridor will construct Class IV protected bike lane and connect to the existing Class III bike route in	HIGH	HIGH	HIGH	HIGH	HIGH	LOW

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
	Lewelling Boulevard and East 14th Street		San Lorenzo. This route is also included on the Alameda Countywide bicycle network.						
A54	Hesperian Boulevard/ Halycon Drive/Fairmont Drive Intersection Improvements	San Leandro	Intersection Improvements	MEDIUM	MEDIUM	LOW	HIGH	HIGH	MEDIUM
A55	Fairmont Drive Road Diet & Class IV Bicycle Lanes	San Leandro	Restripe Fairmont Drive from Hesperian Boulevard to E. 14th Street to change the roadway from three lanes to two lanes in each direction, allow for installation of bicycle lanes protected by concrete medians interspaced with delineators.	HIGH	MEDIUM	LOW	HIGH	HIGH	LOW
A56	E. 14th Street Class IV protected bike lanes	Hayward	Class IV protected bike lanes: E. 14th Street from Hesperian Boulevard to South Hayward BART station	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	LOW
A57	East Lewelling Boulevard Complete Streets (Phase 2)	Ashland and Cherryland	Close sidewalk gaps, install Class IV bikeways, ADA Ramps, enhance crosswalks, and bulb-outs along East Lewelling Blvd between Meekland Avenue and Langton Way in the Ashland Community, Unincorporated Alameda County	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	MEDIUM
A58	San Lorenzo Creekway Trail	Hayward	Improve the safety and comfort of cyclists along the San Lorenzo Creek between the San Francisco Bay Trail and Don Castro Regional Park by adding an off-street Class I bike path.	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	MEDIUM
A59	Mission Boulevard	Hayward	Improve the safety and comfort of cyclists on Mission Boulevard by adding a separated Class IV bike lane.	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	HIGH

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
A60	C St between BART and Mission Blvd	Hayward	Increase the safety and comfort of cyclists on C Street between the Hayward BART Station and Mission Boulevard by adding a combination of painted Class II and separated Class IV bike lanes.	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	MEDIUM
A61	Main Street Complete Street	Hayward	Main St from Mc Keever to D St: Reduce roadway from 4 to 2 lanes, construct bike lanes, widen sidewalks and add complete street elements	MEDIUM	MEDIUM	LOW	HIGH	HIGH	MEDIUM
A62	A Street	Hayward	Improve the safety and comfort of cyclists on A Street by adding a separated Class IV bike lane.	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	LOW
A63	Jackson Street	Hayward	Improve the safety and comfort of cyclists on Jackson Street by adding a separated Class IV bike lane.	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	LOW
A64	Mission Blvd single lane reduction and two-way cycle track	Hayward	Improve the safety and comfort of cyclists on Mission Boulevard from A Street to D Street by adding a protected Class IV bike lane and removing a vehicular lane.	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	LOW
A65	Downtown Hayward PDA Multimodal Complete Streets	Hayward	Improve safety and transit quality through multimodal corridors	HIGH	MEDIUM	LOW	HIGH	HIGH	MEDIUM
A66	Tennyson Rd. Corridor PDA Complete Streets	Hayward	Improve safety and transit quality through multimodal corridors	HIGH	HIGH	LOW	HIGH	HIGH	MEDIUM
A67	Tennyson Road	Hayward	Improve the safety and comfort of cyclists on Tennyson Road by adding a separated Class IV bike lane.	HIGH	HIGH	MEDIUM	HIGH	HIGH	LOW
A68	Winton Ave Complete Street	Hayward	On Winton Ave from Hesperian Blvd to Santa Clara St: Rehabilitate pavement, upgrade curb ramps and streetlights; On	HIGH	HIGH	LOW	LOW	HIGH	MEDIUM

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
			Winton Ave just east of Santa Clara St: Landscape median						
S1	Foothill Blvd Corridor Improvements (Phase 1)	Oakland	Safety improvements along Foothill Blvd between Harrington and Cole Streets, including bulb-outs; pedestrian median refuge islands; crosswalk enhancements; rectangular rapid flashing beacons; speed cushions; signage; and refreshed roadway striping.	HIGH	HIGH	LOW	LOW	HIGH	HIGH
S2	East Oakland Lighting Study	Oakland	International Blvd and Bancroft Ave	HIGH	HIGH	LOW	LOW	HIGH	MEDIUM
S3	International Boulevard BRT crossing safety improvement	Oakland	Improve the safety and comfort for pedestrians on International Boulevard from Seminary Avenue to the southern border of the City of Oakland by adding crosswalk safety improvements.	HIGH	HIGH	LOW	LOW	HIGH	MEDIUM
S4	69th Avenue Safety Improvements	Oakland	Improve the safety and comfort of pedestrians, cyclists, and drivers on 69th Avenue between International and San Leandro Boulevards by paving the roadway, reducing vehicle speeds using speed humps, and adding high visibility crosswalks.	MEDIUM	HIGH	LOW	LOW	HIGH	MEDIUM
S5	73rd Avenue/ Hegenberger Rd Improvements	Oakland	Improve the safety and comfort of transit users, pedestrians, and cyclists on 73rd Ave / Hegenberger Road to connect both the Eastmont Transit Center and the Coliseum BART Station by improving connections to the BRT on International Boulevard.	HIGH	HIGH	LOW	LOW	HIGH	MEDIUM
S6	E. 14th Street and Ashland Avenue Intersection	Ashland	Re-align the east leg of the intersection so that Ashland Avenue connects to E. 14th Street at a 90-degree angle.	HIGH	MEDIUM	LOW	LOW	LOW	MEDIUM
S7	Mission Boulevard and	Ashland	Eliminate the large channelized right-turn from southbound Mission to westbound Lewelling. To the extent feasible re-align the	MEDIUM	MEDIUM	LOW	LOW	LOW	MEDIUM

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
	E. Lewelling Boulevard		east leg of the Mission/Lewelling intersection so that Lewelling connects to Mission at a 90-degree angle.						
S8	D Street Traffic Calming & Implement-ation	Hayward	In response to concerns expressed by the community, staff will soon be developing a feasibility study to identify opportunities to improve pedestrian and bike safety, as well as reduce excessive vehicle speeds, along the D Street corridor.	HIGH	MEDIUM	LOW	LOW	HIGH	MEDIUM
T1	Capitol Corridor South Bay Connect Rail	Oakland and San Leandro	Relocate Capitol Corridor service between Oakland Coliseum and Newark from the Niles Subdivision to the Coast Subdivision, including one new rail station, one new in-line intermodal bus facility, and enhanced park-and-ride facilities.	LOW	HIGH	HIGH	HIGH	HIGH	LOW
T3	East Bay BRT Corridor Safety Improvements	Oakland	BRT will run the 9.5-mile corridor from downtown Oakland to San Leandro BART.	LOW	HIGH	HIGH	HIGH	HIGH	HIGH
T4	Fruitvale Avenue/Park Street Transit Improvements	Oakland	An Enhanced Bus strategy is proposed for 2020 for the Fruitvale Ave/Park Street corridor, with upgrades being made to those improvements by 2040 to keep pace with changing technologies.	LOW	HIGH	HIGH	HIGH	HIGH	HIGH
A69	Fruitvale: BART Walk and Bicycle Network Gap Study		The Study identifies conceptual active access improvements on City/County and BART property.	MEDIUM	HIGH	HIGH	HIGH	HIGH	MEDIUM
A70	Coliseum: BART Walk and Bicycle Network Gap Study	Oakland	The Study identifies conceptual active access improvements on City/County and BART property.	MEDIUM	HIGH	HIGH	HIGH	HIGH	MEDIUM
T7	Mobility Hubs at BART Stations	Ashland, Cherryland, San	Mobility Hub at San Leandro, Bay Fair, Hayward and South Hayward BART stations	LOW	MEDIUM	HIGH	HIGH	HIGH	MEDIUM

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
		Leandro and Hayward							
A71	San Leandro: BART Walk and Bicycle Network Gap Study	San Leandro	The Study identifies conceptual active access improvements on City/County and BART property.	LOW	HIGH	HIGH	HIGH	HIGH	MEDIUM
T9	San Leandro Blvd Bus Only Lanes	San Leandro	Bus-only lanes: San Leandro Blvd. from San Leandro BART south to E. 14th St. and E. 14th St./Mission Blvd. from San Leandro Blvd. south to South Hayward BART	LOW	MEDIUM	HIGH	HIGH	HIGH	LOW
T10	E 14th St/Mission St/Fremont Blvd Rapid Bus Modernization	Ashland, Cherryland, San Leandro and Hayward	New rapid bus service along E 14th St/Mission Blvd/Fremont Blvd between the San Leandro and Warm Springs BART stations, include more frequent service and mobility hubs at BART stations.	LOW	HIGH	HIGH	HIGH	HIGH	LOW
T11	BRT Service on E. 14 St. from San Leandro BART to Bay Fair BART	Ashland and San Leandro	East 14th Street in San Leandro Extend the AC Transit BRT service from San Leandro BART to Bay Fair BART.	LOW	MEDIUM	HIGH	HIGH	HIGH	LOW
T12	Bay Fair Connection	Ashland and San Leandro	BART: At and near Bay Fair Station: Modify station and approaches to add one or more additional tracks and one or more passenger platforms for improved train service and operational flexibility	LOW	MEDIUM	HIGH	HIGH	HIGH	LOW
A72	Hayward: BART Walk and Bicycle Network Gap Study	Hayward	The Study identifies conceptual active access improvements on City/County and BART property.	LOW	MEDIUM	HIGH	HIGH	HIGH	MEDIUM
A73	South Hayward: BART Walk and	Hayward	The Study identifies conceptual active access improvements on City/County and BART property.	LOW	MEDIUM	HIGH	HIGH	HIGH	MEDIUM

#	Project Name	Jurisdiction	Project Description	Safety	Equity	Travel Reliability	Land Use	Public Health and Environmental	Community Revitalization
	Bicycle Network Gap Study								
M1	Oak Street and Madison Street - Conversion of One-way traffic to two-way traffic	Oakland	Conversion of one-way traffic to two-way traffic. Additionally, sidewalk widening to add to the pedestrian realm.	MEDIUM	HIGH	LOW	LOW	LOW	MEDIUM
M2	SHOPP Mobility - TMS	Oakland and San Leandro	SR 185 between Post Miles 3.205 - 10.519 E2 FY 23020 26/27	LOW	HIGH	LOW	LOW	MEDIUM	LOW
M3	SHOPP Mobility - ADA	San Leandro	SR 185 between Post Miles 3.205 - 5.0 E2 FY 20459 29/30	LOW	HIGH	LOW	LOW	LOW	LOW
M4	San Leandro Street repaving along railroad tracks	Oakland	Seminary Ave to South City Limit Repaving	LOW	HIGH	LOW	LOW	LOW	LOW
M5	SHOPP Pavement	San Leandro	SR 185 between Post Miles 3.205 -5.7 E2 FY 13654 21/22	LOW	MEDIUM	LOW	LOW	LOW	LOW
M6	SHOPP Mobility - ADA	Oakland	SR 185 between Post Miles 9.08 - 10.1 E2 FY 16381 21/22	LOW	MEDIUM	LOW	LOW	LOW	LOW
M7	SHOPP Pavement	Ashland and San Leandro	SR 238 between Post Miles 13.96 - 16.7 E2 FY 23035 26/27	LOW	HIGH	LOW	LOW	LOW	LOW
M8	Mission Blvd and Foothill Blvd - St. 2-way conversion	Hayward	Converting Foothill and Mission Boulevards to two-way streets and reconstructing the intersection at Foothill Boulevard, Mission Boulevard and D Street to support two-way movements.	LOW	MEDIUM	LOW	LOW	LOW	MEDIUM

Source: Kittelson and Associates, Inc.

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7.4 Project Implementation Benefits

It is expected that when all 94 projects in the CACCMCP list are implemented, they would impact the transportation choices of those living within the study area and across the region. The following analysis incorporates the performance metrics from Chapter 5 and from the SCCP as listed in the CTC SB1 Technical Performance Measurement Methodology Guidebook to understand how implementation of the CACCMCP will impact the region.

Changes in Mobility Performance

The following mobility performance metrics were evaluated to understand how implementing the projects listed in the CACCMCP would impact vehicular driving experience including average vehicle speeds, vehicle hours traveled, and the number of person hours traveled.

Average Vehicle Speed

Average auto speeds are provided in **Table 7-12** for conditions where no CACCMCP projects are implemented and for conditions when every CACCMCP project is implemented. If every project is built, minor increases of average auto speeds (0.1 percent) are projected for both the Oakland and San Leandro Subareas and no change in auto speed is projected in the Unincorporated Subarea. An average auto speed reduction of 4.4 percent is projected for the Hayward Subarea. The net total change in average auto speed for the entire study area would be a 0.9 percent decrease. However, the CACCMCP projects, if implemented, would contribute to a 0.3 percent increase of average vehicular speeds in Alameda County. This is likely due to mode shifts induced by CACCMCP projects which would benefit road congestion and speeds in areas outside the CACCMCP study area.

Table 7-12: Projected Average Speed with CACCMCP Project List Implemented

Study Area	2040 No Project	2040 CACCMCP Project List	Change
Oakland Subarea	35.2	35.3	0.1%
San Leandro Subarea	36.5	36.5	0.1%
Unincorporated Subarea	42.4	42.4	0.0%
Hayward Subarea	29.7	28.4	-4.4%
Subtotal CACCMCP Study Area	***34.9***	***34.6***	***-0.9%***
Total Alameda County	*31.1*	*31.2*	*0.3%*
Total Bay Area	30.1	30.2	0.4%

Source: Kittelson and Associates, Inc.

Vehicle Hours of Delay

Vehicle hours of delay (VHD) is the measure of time vehicles spend in congestion relative to uncongested travel and is shown in **Table 7-13**. Implementation of the CACCMCP project list would reduce the number of vehicle hours delayed by 0.8 percent in both the Oakland and San Leandro Subareas. In contrast, VHD would increase in the Unincorporated Subarea by 0.9 percent and in the Hayward Subarea by 17.4 percent. While converting from one-way to two-way streets adversely impacts vehicle speeds, it encourages more walking, bicycling, and transit use. Slower travel speeds, landscaping, and wider sidewalks will make walking feel safer and create a better pedestrian experience. A well-connected bikeway network will help cyclists safely, directly, and comfortably navigate the Downtown Hayward.

In total, the CACCMCP study area is forecast to have an increase of 4.7 percent in VHD. However, the CACCMCP projects are projected to reduce average VHD by 0.9 percent in Alameda County. This indicates that the projects would have additional congestion relief benefits outside the immediate CACCMCP study area.

Table 7-13: Projected Vehicle Hours of Delay with CACCMCP Project List Implemented

Study Area	2040 No Project	2040 CACCMCP Project List	Change
Oakland Subarea	27,828	27,593	-0.8%
San Leandro Subarea	12,166	12,071	-0.8%
Unincorporated Subarea	6,000	6,052	0.9%
Hayward Subarea	19,339	22,696	17.4%
Subtotal CACCMCP Study Area	***65,333***	***68,413***	***4.7%***
Total Alameda County	*581,062*	*575,617*	*-0.9%*
Total Bay Area	2,166,707	2,138,806	-1.3%

Source: Kittelson and Associates, Inc.

Person Hours of Travel Time Delayed

Another measure of congestion is centered on the human experience—the number of hours spent by people in their cars. The average vehicle occupancy for Alameda County vehicle trips is estimated at 1.4 persons per vehicle—thus the amount of total time spent by people can be estimated by multiplying VHD by this factor. This performance metric is required for SCCP nomination as per the SB 1 Technical Performance Measurement Methodology Guidebook.[112] **Table 7-14** shows the total number of person hours of travel time if no project is implemented versus if all 94 CACCMCP projects are constructed.

[112] California Transportation Commission, SB 1 Technical Performance Measurement Guidebook, 2022, https://catc.ca.gov/-/media/ctc-media/documents/ctc-workshops/2022/sb-1/performance-measurement-guidebook-final-draft.pdf.

Table 7-14: Projected Person Hours of Travel Time Delayed with CACMCP Project List Implemented

Study Area	2040 No Project	2040 CACCMCP Project List	Change
Oakland Subarea	38,959	38,630	-0.8%
San Leandro Subarea	17,032	16,899	-0.8%
Unincorporated Subarea	8,400	8,473	0.9%
Hayward Subarea	27,075	31,774	21.9%
Subtotal CACCMCP Study Area	91,466	95,778	***5.1%***
Total Alameda County	*813,487*	*805,864*	*-1.0%*
Total Bay Area	3,033,390	2,994,328	-1.3%

Source: Kittelson and Associates, Inc.

Induced Demand

The proposed projects do not include any capacity-increasing transportation infrastructure improvements that would result in induced demand. Only Project M8 is designed to reduce car congestion through Traffic Management Systems (TMS). TMS are a broad class of technology assets on the highway system dedicated to improving operational efficiency and user interactions that FHWA defines TMS as complex, integrated amalgamations of hardware, technologies, and processes for performing an array of functions, including data acquisition, command and control, computing, and communications.[113] TMS assets help reduce traveler delay, enhance safety, improve communication, and collect data on traffic behavior. These assets are an integral part of the SHS, performing critical functions that keep people, vehicles and goods moving.

Changes in Sustainability Performance

If the CACCMCP project list is implemented, it will impact how many miles people choose to drive, the amount of delay they experience, and therefore, the total pollution that drivers emit. The following Sustainability Performance metrics are revisited from Chapter 5 to compare how building the projects in the CACCMCP list will impact the sustainability of the corridor.

Vehicle Miles Traveled

As considered in Chapter 5, VMT is calculated by summing the number of vehicles on each road segment multiplied by the segment distance regardless of direction. It is directly related to GHG emissions and other types of pollutants. VMT is a critical measure of sustainability performance and is shown in **Table 7-15**. If all 94 projects in the CACCMCP list were implemented, the entire CACCMCP study area would have a reduction of 0.9 percent in VMT. All the projects would reduce VMT by 95,132 VMT per day. With the Hayward Subarea is projected to have the greatest VMT reduction of 1.7 percent. If implemented, CACCMCP projects would have impacts

[113] California Transportation Asset Management Plan, https://catc.ca.gov/-/media/ctc-media/documents/032118-final-adpoted-tamp-a11y.pdf.

across the region contributing to a VMT reduction of 0.5 percent across Alameda County and a 0.3 percent total reduction in the nine-county Bay Area.

Table 7-15: Projected Vehicle Miles Traveled (VMT) with CACCMCP Project List Implementation

Study Area	2040 No Project	2040 CACCMCP Project List	Change
Oakland Subarea	5,062,499	5,026,088	-0.7%
San Leandro Subarea	2,102,105	2,089,099	-0.6%
Unincorporated Subarea	1,400,301	1,390,603	-0.7%
Hayward Subarea	2,131,348	2,095,329	-1.7%
Subtotal CACCMCP Study Area	***10,696,251***	***10,601,119***	***-0.9%***
Total Alameda County	*58,285,996*	*58,006,910*	*-0.5%*
Total Bay Area	217,598,345	216,885,927	-0.3%

Source: Kittelson and Associates, Inc.

A critical measure of sustainability is the air quality that results from the pollutants and greenhouse gases emitted from our transportation systems. VMT and emissions are closely related, and it is assumed that reductions in the amount of nitrogen dioxide (NOx), sulfur oxides (SOx), particulate matter 2.5 (PM 2.5), and carbon dioxide (CO2) would be proportional to the reductions in VMT for each Subarea.

Vehicle Hours Traveled

Another sustainability measure discussed in Chapter 5 was Vehicle Hours Traveled (VHT). VHT is the sum of the total number of hours traveled by each vehicle within a given area and can be an indicator of increasing traffic congestion as shown in **Table 7-16**. If every project in the CACCMCP were implemented, there would be a small increase (110 hours) in VHT in the CACCMCP study area. While the Oakland, San Leandro, and Unincorporated Subareas would have a reduction in VHT, it is projected that Hayward would see an increase of 3.0 percent in VHT. CACCMCP project implementation would result in regional reductions in VHT including a 0.8 percent reduction in Alameda County and 0.7 percent reduction in the Bay Area.

Table 7-16: Projected Vehicle Hours of Travel (VHT) with CACCMCP Project List Implementation

Study Area	2040 No Project	2040 CACCMCP Project List	Change
Oakland Subarea	143,715	142,488	-0.9%
San Leandro Subarea	57,669	57,230	-0.8%
Unincorporated Subarea	33,052	32,821	-0.7%
Hayward Subarea	71,659	73,666	3.0%
Subtotal CMCP Study Area	***306,096***	***306,206***	***0.0%***
Total Alameda County	*1,875,642*	*1,861,454*	*-0.8%*
Total Bay Area	7,225,628	7,174,897	-0.7%

Source: Kittelson and Associates, Inc.

Mode Shift

The personal choice of travel depends upon several factors, some particular to individuals and others are external environmental factors that are related to infrastructure and external conditions. Among the individual factors are the distance traveled, total travel time, affordability, and physical ability. The environmental factors include the variety of transportation modes available in the community, the type of spatial development patterns and the condition of multimodal infrastructure. The recommended projects in CACCMCP focus on the provision infrastructure improvements to promote active transportation and transit.

Table 7-17 shows that with the implementation of the CACCMCP project list, there will be a 7 percent increase in bicycling trips and a 2.5 percent increase in walking trips. Transit trips are expected to increase by 1.5 percent. The drive-alone and carpool trips which impact production of VMT the most, are expected to see a 2.4 percent decrease in overall trips. Of those, drive-alone trips will only observe a slight decrease in the trips by 0.3 percent.

Table 7-17: Projected Mode Shift with CACCMCP Project List Implementation

Mode	2040 No Project		2040 CACCMCP Project List		Change
	Trips	Percent	Trips	Percent	Trips
Drive Alone	1,048,955	42.0%	1,045,620	42.5%	-0.3%
Shared Ride 2	462,298	18.5%	461,025	18.8%	-0.3%
Shared Ride 3+	446,319	17.9%	404,571	16.5%	-9.4%
Transit - Walk Access	149,195	6.0%	152,742	6.2%	2.4%
Transit - Drive Access	48,725	2.0%	48,156	2.0%	-1.2%
Bike	49,531	2.0%	52,983	2.2%	7.0%
Walk	293,169	11.7%	293,481	11.9%	0.1%

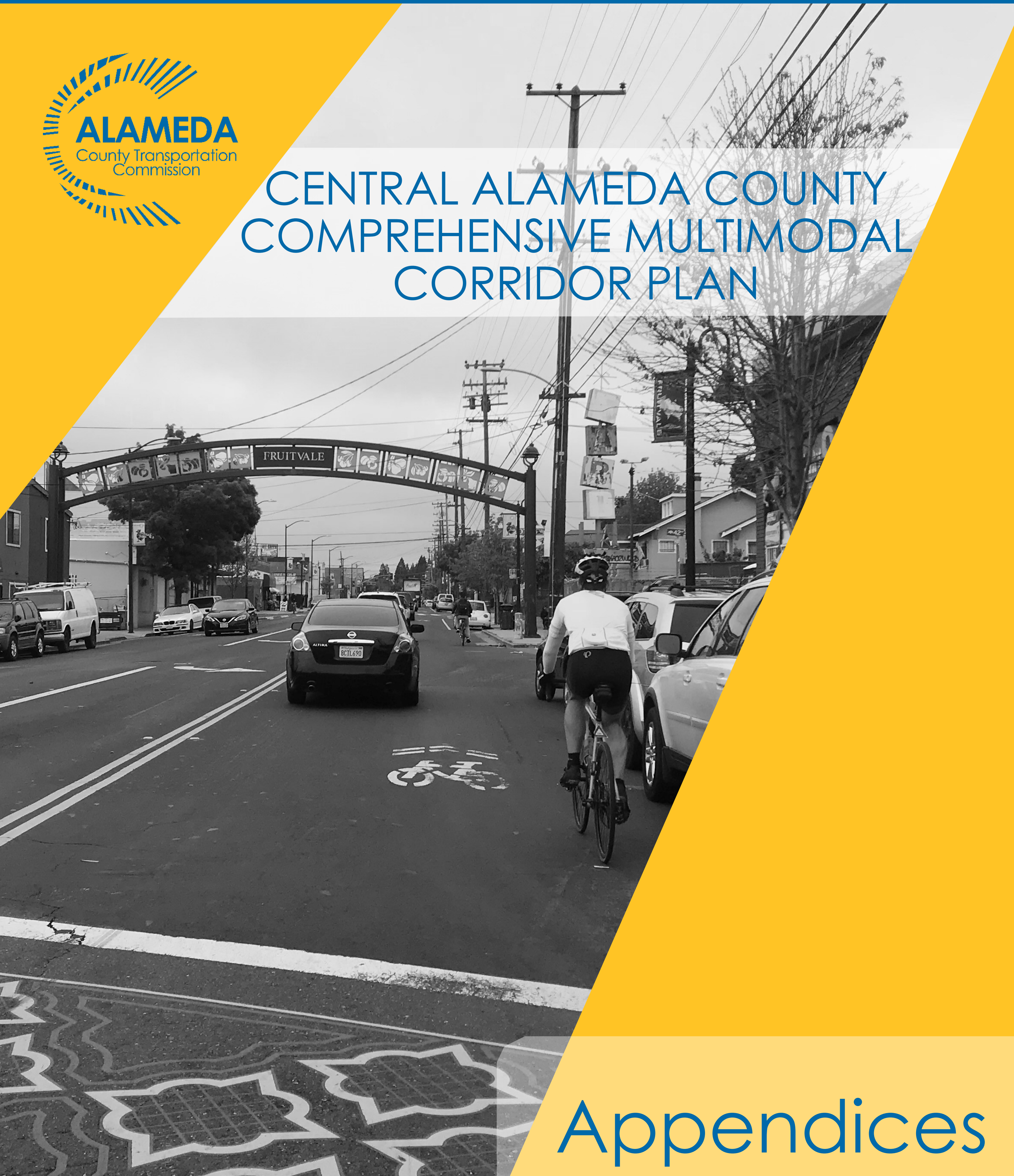
Source: Kittelson and Associates, Inc.

Implementation

The CACCMCP offers a roadmap to achieving its goals, but more work is necessary to make this plan a reality. The CACCMCP is a financially unconstrained document, meaning that recommendations are not tied to revenues. The identification of funding sources to implement this plan will be critical to ensuring its implementation. Most funding for the improvements recommended in this plan is likely to come from federal, state, and regional grant programs. These grant programs are often competitive and will require agencies to compete for funding. To help identify the eligible competitive grants, common federal, state, and regional grant funding programs have been summarized in **Appendix 7-1**.

ALAMEDA
County Transportation
Commission

CENTRAL ALAMEDA COUNTY COMPREHENSIVE MULTIMODAL CORRIDOR PLAN



Appendices

November 2022

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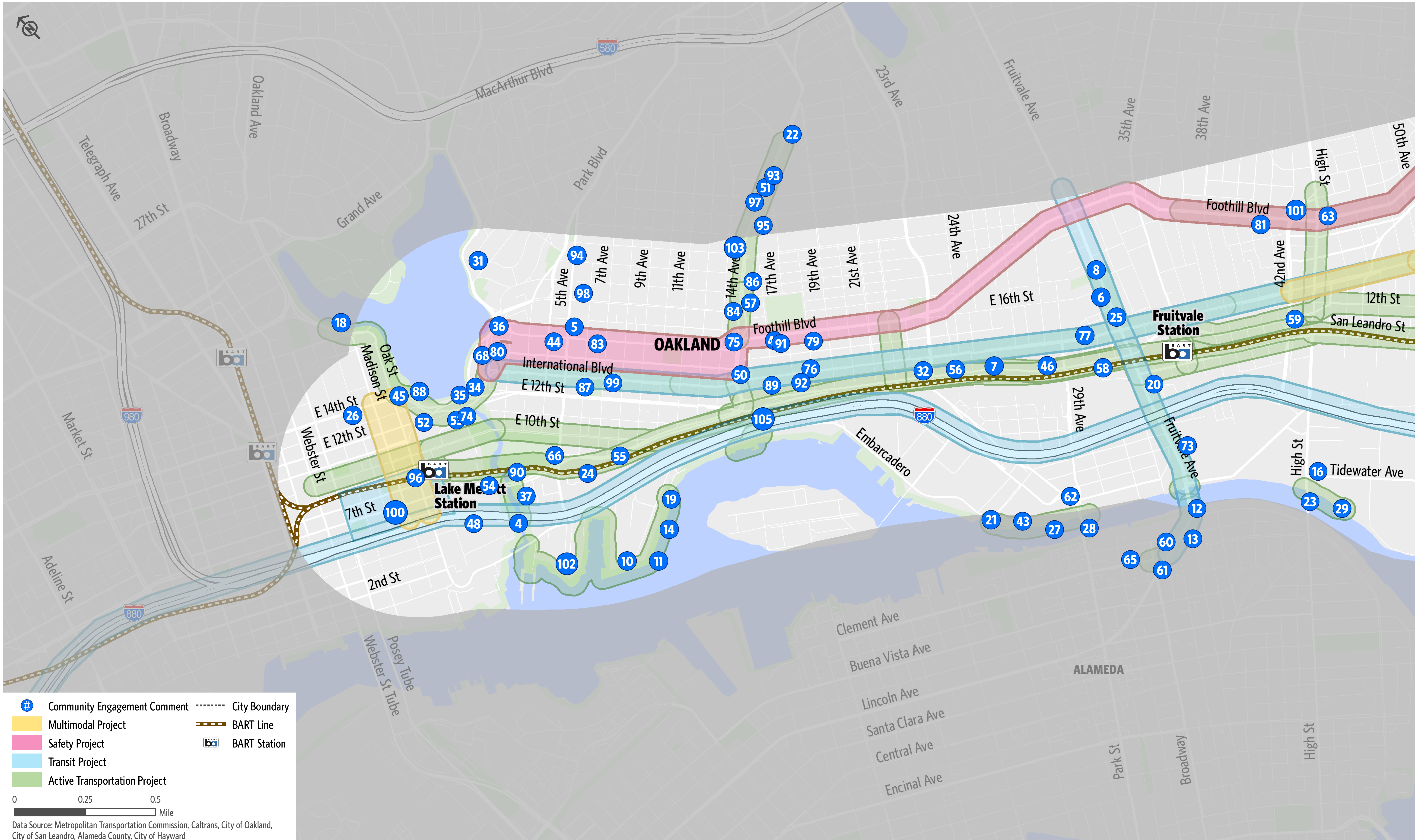
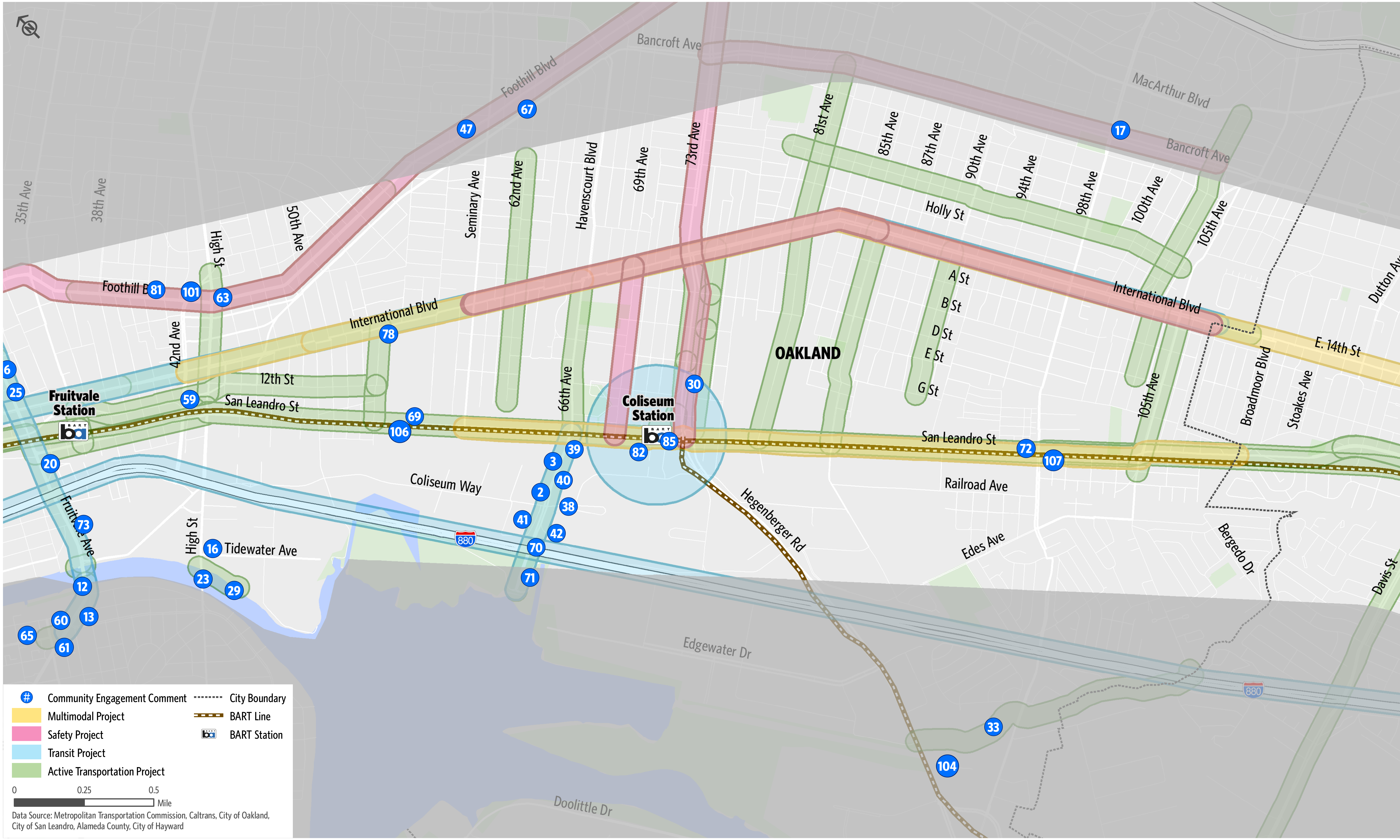


OAKLAND
ALAMEDA
Lake Merritt Station
Fruitvale Station
Foothill Blvd
International Blvd
E 12th St
E 10th St
E 14th St
E 16th St
San Leandro St
12th St
7th St
2nd St
Embarcadero
Tidewater Ave
MacArthur Blvd
Community Engagement Comment
Multimodal Project
Safety Project
Transit Project
Active Transportation Project
City Boundary
BART Line
BART Station
0
0.25
0.5
Mile
Data Source: Metropolitan Transportation Commission, Caltrans, City of Oakland, City of San Leandro, Alameda County, City of Hayward


Bancroft Ave
Foothill Blvd
MacArthur Blvd
Bancroft Ave
35th Ave
38th Ave
High St
50th Ave
Seminary Ave
62nd Ave
Havenscourt Blvd
69th Ave
73rd Ave
81st Ave
85th Ave
87th Ave
90th Ave
94th Ave
98th Ave
100th Ave
105th Ave
Holly St
Dutton Ave
Foothill Blvd
International Blvd
International Blvd
A St
B St
D St
E St
G St
E. 14th St
42nd Ave
12th St
OAKLAND
Fruitvale Station
San Leandro St
66th Ave
Coliseum Station
San Leandro St
105th Ave
Broadmoor Blvd
Stokes Ave
Coliseum Way
Railroad Ave
Fruitvale Ave
Hegenberger Rd
Edes Ave
Bergedo Dr
High St
Tidewater Ave
Davis St
Edgewater Dr
Doolittle Dr
880
Community Engagement Comment
Multimodal Project
Safety Project
Transit Project
Active Transportation Project
City Boundary
BART Line
BART Station
0
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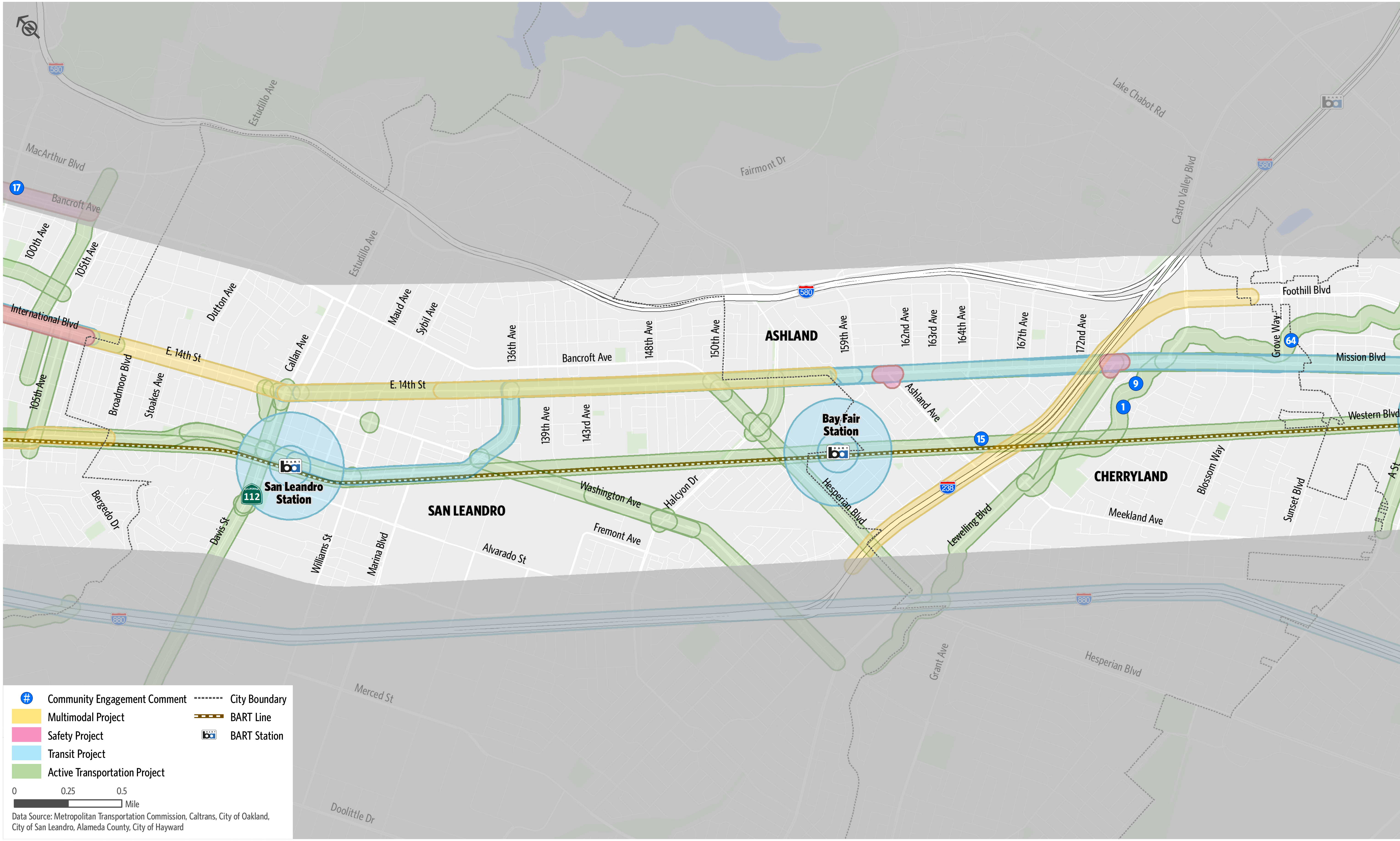
Data Source: Metropolitan Transportation Commission, Caltrans, City of Oakland, City of San Leandro, Alameda County, City of Hayward


MacArthur Blvd
Bancroft Ave
Estudillo Ave
Fairmont Dr
Lake Chabot Rd
Castro Valley Blvd
100th Ave
105th Ave
International Blvd
Dutton Ave
E. 14th St
Callan Ave
Maud Ave
Sybil Ave
136th Ave
Bancroft Ave
148th Ave
150th Ave
ASHLAND
159th Ave
162nd Ave
163rd Ave
164th Ave
167th Ave
172nd Ave
Foothill Blvd
Grove Way
Mission Blvd
Broadmoor Blvd
Stoakes Ave
105th Ave
E. 14th St
139th Ave
143rd Ave
Ashland Ave
Bay Fair Station
Western Blvd
San Leandro Station
112
SAN LEANDRO
Washington Ave
Halcyon Dr
Hesperian Blvd
CHERRYLAND
Blossom Way
Sunset Blvd
A St
Meekland Ave
Lewelling Blvd
Bergedo Dr
Davis St
Williams St
Marina Blvd
Alvarado St
Fremont Ave
Grant Ave
Hesperian Blvd
Merced St
Doolittle Dr
580
238
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64
9
1
15
Community Engagement Comment
Multimodal Project
Safety Project
Transit Project
Active Transportation Project
City Boundary
BART Line
BART Station
0
0.25
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Data Source: Metropolitan Transportation Commission, Caltrans, City of Oakland, City of San Leandro, Alameda County, City of Hayward


Foothill Blvd
Grove Way
64
Mission Blvd
A St
B St
C St
D St
2nd St
Main St
Highland Blvd
Carlos Bee Blvd
Hayward Blvd
HAYWARD
Western Blvd
Hayward Station
Blossom Way
Sunset Blvd
A St
Jackson St
Sycamore Ave
Orchard Ave
Berry Ave
Soto Rd
Harder Rd
Jane Ave
Whitman St
16th St
Mission Blvd
Dixon St
South Hayward Station
Tennyson Rd
Huntwood Ave
Winton Ave
Santa Clara St
Gading St
Schafer Rd
Shepherd Ave
Patrick Ave
Industrial Pkwy
580
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92
Community Engagement Comment
Multimodal Project
Safety Project
Transit Project
Active Transportation Project
City Boundary
BART Line
BART Station
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Data Source: Metropolitan Transportation Commission, Caltrans, City of Oakland, City of San Leandro, Alameda County, City of Hayward

Appendix 6-1: Community Engagement Comments from Interactive Map

Comment ID	Type	Project	Comment
1	Active Transportation	San Lorenzo Creekway Trail	The SLZ Creekway will open the only east-west mulit-use trail in the entire area, get people and bicycles off streets, provide for recreation and non-motorized transit, and build creek/watershed awareness. Costs to building the Creekway are low per mile because the right-of-way along the channel is already owned by Flood Control.
2	Active Transportation	34, MLK Shoreline to Coliseum BART connection, Active Transportation Project, Transit, 1, 22.5321610295, 66th Ave from Oakport St to San Leandro St, Study Area, greyout	It is imperative that this bike facility be a Class IV facility, rather than a Class II, providing protection for all types of uses and users connecting from East Oakland's neighborhoods to the beautiful park space along the Bay. There is no safe and dire
3	Active Transportation	MLK Shoreline to Coliseum BART connection	This should not connect the Bay to East Oakland merely with Class II (unprotected) bike lanes. These lanes need to be protected to ensure all users and user types can connect safely between their neighborhood and this essential park space. Even proposing Class II bike lanes here when other communities in the East Bay have bike/ped bridges and other safe/protected facilities connecting their neighborhoods in the Bay is an example of the inequities that persist in our region.
4	Active Transportation	Lake Merritt Bay Trail	The Bay Trail/ABAG/MTC team strongly supports completing the Lake Merritt to Bay Trail Connector Bridge. The completion of this bridge will create a critical connection across I-880 and a multitude of other infrastructure to create a safe, low stress, and unobstructed path to allow the majority of the population that lives north and east of I-880 to safely cross to the Bay's shoreline and the businesses and attractions along the Oakland Estuary.
5	Active Transportation	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	Foothill Blvd should have a bidirectional cycle track along it to make a seamless connection between the Lake Merritt Bike Path and the two-way bike lane on Foothill that continues east of 14th Ave. This facility is also important to provide a protected space for bicyclists directly connecting from Lake Merritt (a major destination and bike thoroughfare) to the future East Bay Greenway, which it connects to farther east (near Fruitvale BART).
6	Active Transportation	Fruitvale Avenue/Park Street Transit Improvements	The 20/21, 51A/O and other routes from Alameda to Fruitvale BART and further into Oakland deserve priority over cars so they can get around congestion. These streets also need improvements to be safer for cyclists. Drivers are very dangerous along Fruitvale and Park. Some will speed through red lights or into oncoming traffic. Paint can't fix these problems. Concrete and other harder infrastructure changes are needed.
7	Active Transportation	East Bay Greenway Urban Trail (Phase 2)	Whole heartedly believe there is the promise of " build it and they will come" from field of dreams philosophy. It is a connection and safety necessity, health and wellness opportunity which must not be missed. Better than insuring electric cars for all …electric bikes and safe well lighted pathways fair all first with autos and trucks being secondary. No reason not to! Every reason to….

8	Active Transportatior	Fruitvale Avenue/Park Street Transit Improvements	This corridor should have a protected bike lane that would represent the only safe bike access to Alameda from Oakland. The bike lane would also connect Alameda to the Fruitvale BART station to provide "last mile" connection to BART for commuters. Bikes are cheaper, faster and more reliable than bus service. They require protection from traffic to be truly inclusive and welcoming.
9	Active Transportatior	San Lorenzo Creekway Trail	The San Lorenzo Creekway Trail is the kind of project that is so important in addressing issues of racial, health, and economic equity in Unincorporated Alameda County and Hayward. Historic disinvestment coupled with physical barriers and dangerous conditions for pedestrians and bicyclists continue to result in extreme inequities!
10	Active Transportatior	San Francisco Bay Trail	There are some very nice spots to walk along the Oakland Estuary, but then there are frustrating gaps with fences and private proper. Also some of the existing portions are not maintained and are closed to the public. Would be great to be able to safely and comfortably walk and bike along this entire waterfront.
11	Active Transportatior	San Francisco Bay Trail	There has been existing Measure DD funding for 20 years to complete this significant Bay Trail gap, but Oakland still has not made significant progress on bringing this project close to construction. The resulting bike/walk connectivity gaps are very bad, this need to be taken seriously & expedited.
12	Active Transportatior	Clement Ave and Tilden Way Complete Streets, Clement Ave and Tilden Way Complete Street s	The Bay Trail/ABAG/MTC team strongly supports completing the Bay Trail through pedestrian and bicycle facility improvements along Clement and Tilden Way. Minimum Bay Trail facilities are either Class II or Class IV bikeways with sidewalks with the ideal facility being Class 1 offstreet trails.
13	Active Transportatior	Clement Ave and Tilden Way Complete Streets, Fruitvale Avenue/Park Street Transit Improvements, Active Transportation Project, Transit, Clement Ave and Tilden Way Complete Street s	This is a really dangerous corridor. PLEASE add fully protected bike lanes on the bridge and on the Alameda side approaching the bridge. The paint only bike lanes on Tilden just END and then there's nothing. This is our route to our closest BART station and it's also a high injury corridor!
14	Active Transportatior	San Francisco Bay Trail	Oakland has had Measure DD funding to complete these Bay Trail gaps along the waterfront and around the Alameda bridges since the bond was passed two decades ago, and yet these projects have languished. It's ridiculous and abhorrent. What can this process do to resolve this ASAP?
15	Active Transportatior	East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	Can you get a bike lane along this ROW? When riding to SL it gets tough when you have to cross this area - there's really no good options and along the rail would be a nice and straight path. In fact if you go around here the fence is cut a bunch and people use it for just that.
16	Active Transportatior	1, 22.5321610295, Study Area, greyout	Improve bike/ped conditions of High St leading to the Bay trail and improve the Bay Trail passive at-grade crossing at Tidewater/High St. The planned Bay Trail will cross at this existing crossing which is not sufficient given traffic volumes and conjestion.
17	Active Transportatior	East Oakland Lighting Study, Safety	The bike lane in the 90s and 100s is used as a passing lane. I have had to throw myself off my bike to bodily injury to avoid a vehicle speeding with doors open going down the bike lane. Please add k-rail/jersey barriers between bike lane and road.

Appendix 6-1: Community Engagement Comments from Interactive Map

18	Active Transportatior	Lake Merritt Bikeway Improvement Project, Active Transportation Project	Why did the bike lane go away? The bike lane looks more like a tech demo than anything functional - the bike lane needs to go all the way around the lake and be fully separated like it is for the demo section just to the north.
19	Active Transportatior	San Francisco Bay Trail	Closing the gap in the Bay Trail is a good idea. But more important is to extend a protected bike lane from Alameda to the Fruitvale BART station, creating access to Alameda from Oakland, and access to BART from Alameda.
20	Active Transportatior	Fruitvale Avenue/Park Street Transit Improvements	This could really use a protected bike lane. The car congestion during rush hour is crazy and so dangerous even for cars, not to mention on a bike. I dont like this intersection in a car and I really dislike it on a bike.
21	Active Transportatior	San Francisco Bay Trail	The Bay Trail/ABAG/MTC team strongly supports completing the Bay Trail along this and the entire stretch of the Oakland Estuary including a safe and low-stress bicycle and pedestrian crossing at Park Street Bridge.
22	Active Transportatior	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, Active Transportation Project	Widen the sidewalks along 14th Avenue and put in street trees between the cars and pedestrians. This is a terrible street to walk on for a variety of reasons, not least of which is the cars speeding at 50+ mph
23	Active Transportatior	1, 22.5321610295, San Francisco Bay Trail, Study Area, greyout	Please connect the greenway, not sure why the bike path and ped path here goes missing. We need to not have to do the crazy and unsafe swerve into traffic when bike commuting along this path across High St
24	Active Transportatior	East Bay Greenway Urban Trail (Phase 2)	This is urgently needed. In Cherryland, this is a blighted and underused area that would be a wonderful asset if transformed to a greenway and pedestrian pathway. We would definitely use it often!
25	Active Transportatior	Fruitvale Avenue/Park Street Transit Improvements	A safe and low-stress bicycle and pedestrian crossing needs to completed across Fruitvale connecting the existing Bay Trail on either side of Fruitvale in Oakland. - Bay Trail/ABAG/MTC Team
26	Active Transportatior	1, 22.5321610295, Study Area, greyout	Add a protected bike lane on 14th Street that the city of Oakland keeps delaying and refuses to treat it with urgency. Lot of empty promises from electeds who are generally incompetent.
27	Active Transportatior	San Francisco Bay Trail	Would love to see the Bay Trail connect Union Park to Park Street bridge. Also please consider a 2-way cycle track on Kennedy Street connecting Park Street East 7th.
28	Active Transportatior	San Francisco Bay Trail	Would love to see the Bay Trail connect Park St Bridge to Union Park. Would also love to see a 2-way cycle track along Kennedy connecting Park St Bridge to E 7th.
29	Active Transportatior	San Francisco Bay Trail	The Bay Trail/ABAG/MTC team strongly supports completing the Bay Trail in this area from Tidewater to High Street including the crossing of High Street.
30	Active Transportatior	73rd Avenue/ Hegenberger Rd Improvements	Is a lane reduction an option for 73rd? Traffic appears bunched up and then lots of no traffic at all. The route looks like a race track.
31	Active Transportatior	1, 22.5321610295, Study Area, greyout	Add a protected bike lane around the entire Lake Merritt not just a small stretch that was used for photo ops that was never completed.
32	Active Transportatior	East Bay Greenway Urban Trail (Phase 2)	This is by far the most important active transportation project in Alameda County. It is imperative from an equity perspective.
33	Active Transportatior	4, Active Transportation Project, San Leandro Creek Trail	bike and ped paths that link the waterfront along waterways into east oakland should be prioritized
34	Active Transportatior	Lake Merritt Bikeway Improvement Project, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	Close Lake Merritt loop to all car traffic. Get cars off our streets.

35	Active Transportatior	Lake Merritt Bikeway Improvement Project, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	Add a protected bike lane to lake Merritt the whole way around it
36	Active Transportatior	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	protected bike lane on both sides of this road please
37	Active Transportatior	1, 22.5321610295, Lake Merritt Bay Trail, Study Area, greyout	Can we get a ped connection to bklyn basin here?
38	Active Transportatior	1, 22.5321610295, Study Area, greyout	This is needed but please make this a class IV
39	Active Transportatior	MLK Shoreline to Coliseum BART connection	This should be Class IV bike facilities
40	Active Transportatior	MLK Shoreline to Coliseum BART connection	This should be a Class IV bike facility
41	Active Transportatior	MLK Shoreline to Coliseum BART connection	The bike facility should be Class IV
42	Active Transportatior	34, MLK Shoreline to Coliseum BART connection, Active Transportation Project, Transit, 1, 22.5321610295, 66th Ave from Oakport St to San Leandro St, Study Area, greyout	This facility should be Class IV
43	Multimodal	San Francisco Bay Trail	The work that was done recently on 23rd completely left out bicylists. This is the route that most of Alameda has to use because it's furthest west. There HAS to be a fully protected cycle lane from the bridge to the Embarcaderro. Also, the pavement at the end of the bridge is incredibly dangerous when you come off the sidewalk near the cement factory. There's plenty of room for a 2-way cycle-track from the bridge to the Embarcaderro on the west side of 29th and Kennedy. Fix this mess!!!
44	Multimodal	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	Foothill Boulevard should have a bidirectional protected bike lane from Lakeshore Ave to 14th Ave to connect cyclists seamlessly between the Lake Merritt Bike Path and the two-way bike lanes on Foothill Boulevard East of 14th Ave. This would have the added benefit of more directly connecting bicyclists from Lake Merritt to the proposed East Bay Greenway infrastructure, which does not connect directly to Lake Merritt, a major destination and bicycle thoroughfare.
45	Multimodal	Lake Merritt Bikeway Improvement Project	The Oakland fire department is watering down the plans for the Lakeside 20way cycletrack extension between 17th and 14th Streets to just a single northbound buffered bike lane, with no protection, due to their excessive demands for a 26-foot street width clearance. Meanwhile even SFFD is okay with a 20-foot clearance. This needs to be rectified ASAP, the downgrade will affect street safety & bike network connectivity.
46	Multimodal	East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	Why is 12th this overbuilt? Honestly. The 880 is right there. There is no need for this road to be this big. Pick one: keep this road ridiculously large and get rid of 880 or keep 880 and make this a normal sized road. Right now, the situation is actively violent to anyone who needs to walk, bike, live along it
47	Multimodal	Foothill Blvd Corridor Improvements (Phase 1), Foothill Blvd Corridor Improvements (Phase 1)	Oakland will be repaving a big section of Foothill soon but likely ignoring their own bike plan and not implementing a road diet and bike lanes as recommended. I know that infrastructure changes can be a difficult sell, but this is a critical safety and connectivity need.

48	Multimodal	Capitol Corridor South Bay Connect Rail, Transit, 1, 22.5321610295, Study Area, greyout	Tear down the Nimitz Freeway aka 880. It pollutes the city, kills residents, blocks neighborhoods from the waterfront, and is generally ugly and bad for Oakland. It was built by racist white men who didn't care about the health of the population.
49	Multimodal	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	16th is waayyy too wide for where it serves. this road has sharrows but could easily accomodate a bike only lake. make it protected - this is a central park! c'mon!
50	Multimodal	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, East Bay BRT Corridor Safety Improvements, AHSC Camino 23 International Blvd Pedestrian Improvements, International Blvd Improvement Project, Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	14th is over built. the south bound traffic lanes are excessive and need to be reduced. this is very dangerous to cross as a pedestrian in any direction
51	Multimodal	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, Active Transportation Project	move the median our to the sides and have the middle be a bus only lake w/ concrete on either side. drop street parking and have only 2 car lanes
52	Multimodal	Lake Merritt Bikeway Improvement Project, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	this intersection should not have been built to begin with. this is the connection between the museum and the lake for christs sake!!!
53	Multimodal	Lake Merritt Bikeway Improvement Project, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	This road is overbuilt. Super dangerous for bikes to ride over. It needs to have 2 lanes removed and given over to just buses.
54	Multimodal	1, 22.5321610295, Study Area, greyout	We should just eliminate this street and convert to public park. It is so wide
55	Multimodal	East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	Narrow E 8th Street and build affordable housing
56	Multimodal	East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	Narrow E 12th and build affordable housing
57	Multimodal	14th Ave from Foothill Blvd to E 19th St	paint is painfully insufficient for 14th
58	Safety	East Bay Greenway Urban Trail (Phase 2)	San Leandro Street/San Leandro Boulevard from Oakland through San Leandro is a disaster, even for cars and one of the most bike-unfriendly arterials in the county. It desperately needs a makeover so it is walkable and rideable by bike continuously across multiple jurisdictions. Repaving its entire length would be a godsend to those of us who drive it, too. Please widen the underpasses under the RR right-of-way so cyclists, walkers, and drivers are less at risk than they are now.
59	Safety	35th Ave/E 12th St/54th Ave from Oscar Grant III Way to International Blvd, East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	42nd st intersections from Int'l and NE are all collectively insane. Once again, please strip the engineers who designed there of their licenses. Then: - physically separate bus brt like the original ert said it would - road diet 42 - road diet San Leandro - wider sidewalks - bulb outs to slow down peel out rights - 42nd could have a bus only lane down the middle instead of a median - no left turns onto international

60	Safety	Clement Ave and Tilden Way Complete Streets, Clement Ave and Tilden Way Complete Street s	I walk through this area often. Drivers do not always stop for pedestrians. The intersections have slip lanes and other features that encourage drivers to go faster and increase the crossing distance for people on foot. A cyclist was killed by a motorist at Broadway and Tilden just a few years ago. Please improve safety and experience for people on foot and bike around here.
61	Safety	Clement Ave and Tilden Way Complete Streets, Clement Ave and Tilden Way Complete Street s	This corridor is really dangerous for people on bikes. PLEASE provide some fully protected bike facilities crossing this bridge. The Alameda side especially needs protection all the way to the bridge. It's disgraceful that there's 4 lanes dedicated to car traffic and nothing for people on bikes, especially since it's the route to our closest BART station.
62	Safety	1, 22.5321610295, Study Area, greyout	When I go to the Salvation Army store in Alameda (across the bridge from here), I sometimes walk into Oakland over the bridge to try to catch a bus going back home to downtown Oakland. It's not a good pedestrian or transit experience, especially on a really hot day. For example, the stop at 29th Ave and E 10th St doesn't have a shade shelter.
63	Safety	High St from Courtland Ave to E 12th St, Foothill Blvd Corridor Improvements (Phase 1), Foothill Complete Streets, Active Transportation Project, Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	where to begin with this suicidal intersection. i mean, this one isnt even safe for cars. high st should get road dieted to 2 lanes. there should be a bus only lane on foothill with physical concerete separation. and a protected bike lane. that means one lane of car traffic and no left hand turn lanes.
64	Safety	San Lorenzo Creekway Trail, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	This area lacks sidewalks and bike lanes which makes it extremely dangerous for walkers and bikers. Children use this path to and from school so early morning and afternoons are difficult to navigate as walkers are on the side of the road and kids on bikes usually have to be out on the street.
65	Safety	Clement Ave and Tilden Way Complete Streets, Clement Ave and Tilden Way Complete Street s	This area really needs better safety for bikes and pedestrians. It is a mess getting from Alameda to Oakland on a bike or walking. So many cars not stopping and in a rush. It is really dangerous. I do this on my bike, but I would never bring my kid with me this way- as it is too dangerous.
66	Safety	East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	You have to use this intersection to walk to Brooklyn Basin and the slip lanes are so dangerous! This road is so dangerous cross - wtf!! Please diet the road and make the crossing safer to people can get to Bklyn Basin with out near death experiences.
67	Safety	Foothill Blvd Corridor Improvements (Phase 1), Safety, Foothill Blvd Corridor Improvements (Phase 1)	3 people killed along parallel Bancroft just this year within a few blocks of here - both of these streets have vehicles speeding into oncoming traffic and blowing reds. There are few lights and little in the way of safe crossings. Please fix.
68	Safety	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	this is the safest way to bike to fruitvale from the lake as int'l is super unsafe. however, making a left from the ave onto 15th when heading south is super dangerous and needs to be addressed- we need to be able to make a safe left turn
69	Safety	East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	SL is so unsafe - the brief spurts of the central greenway have completely collapsed into decay and the riding on the road is wildly unsafe. This road needs to be dieted down to half the lanes it currently has at most.

70	Safety	Capitol Corridor South Bay Connect Rail, 34, MLK Shoreline to Coliseum BART connection, Active Transportation Project, Transit, 1, 22.5321610295, 66th Ave from Oakport St to San Leandro St, Study Area, greyout	If you are biking to MLK shoreline this section is SO DANGEROUS!!! Protected bike lanes in Deep East Oakland should have been built last decade. This is criminal that there is no connection to the water. My god!
71	Safety	34, MLK Shoreline to Coliseum BART connection, Active Transportation Project, Transit, 66th Ave from Oakport St to San Leandro St	this is a very unsafe approach to the mlk shoreline for peds and cyclists. a better and safer bike lane has been planned forever - why is this not prioritized? east oakland has no safe access to mlk shoreline!
72	Safety	San Leandro Street repaving along railroad tracks, East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, Vehicle, 1, 22.5321610295, Multimodal Projects, Study Area, greyout	SL should have had a greenway for bikes and peds like the Ohlone one in Berkeley years ago. Please finish this project. This road also needs to be reduced down to 2 lanes - it is too wide and too dangerous.
73	Safety	Fruitvale Avenue/Park Street Transit Improvements, Transit, 1, 22.5321610295, Fruitvale Alive Project, Study Area, greyout	Fruitvale from the High St bridge to the BART station is bad. It's dangerous, it's unattractive, it's scary. Only worse is biking through the tunnel. Alameda must have better bicycle access to BART.
74	Safety	Lake Merritt Bikeway Improvement Project, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	Peds should be able to easily cross this street from the ampitheater to OMCA or the new auditorium. Right now you cannot do that because this road is absurdly large. Nix 2+ lanes of car traffic now!
75	Safety	14th Ave from Foothill Blvd to E 19th St, Foothill Blvd Corridor Improvements (Phase 1), Active Transportation Project, Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	I mean where to begin with this intersection? Its hilariously dangerous. Just walk across it once and you will realize that every traffic engineer involved should have their PE license removed.
76	Safety	East Bay BRT Corridor Safety Improvements, AHSC Camino 23 International Blvd Pedestrian Improvements, International Blvd Improvement Project, Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	international is so dangerous to bike down but 15th is only one direction and 12th and fruitvale are maybe even more dangerous. why is there no safe way to bike nw from fruitvale to the lake?
77	Safety	East Bay BRT Corridor Safety Improvements, AHSC Camino 23 International Blvd Pedestrian Improvements, International Blvd Improvement Project, Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	Bus frequently caught behind other cars approaching Fruitvale. Please separate the bus lane. This was in the original EIR - please adhere to the plan you actually promised the community
78	Safety	35th Ave/E 12th St/54th Ave from Oscar Grant III Way to International Blvd, 54th Ave from International Blvd to E 12th St, SHOPP Mobility - ADA, SHOPP Mobility - TMS, East Bay BRT Corridor Safety Improvements, International Blvd Improvement Project, Active Transportation Project, Vehicle, Transit, 1, 22.5321610295, Multimodal Projects, Study Area, greyout	Someone was literally killed here. Red lights are not adhered to and the bus lane is used as a speeding runway. The BRT needs physical separation from the road. Pour concrete now.
79	Safety	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	vehicles do not yield, 15th st is safer as prostitution and related "pimps" actually enforce slower traffic speeds making it safe to walk, but 15th dead ends dangerously at 14th

80	Safety	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	Vehicles looping the lake regularly gun through this intersection - it's too wide for what it should be. Reduce to 2 thin lanes and get in a protected bike lane please.
81	Safety	Foothill Blvd Corridor Improvements (Phase 1), Foothill Complete Streets, Active Transportation Project, Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	Im willing to be a car has never actually stopped at this crosswalk for a ped in the entire history of this cross walk. I've never had luck myself. So dangerous.
82	Safety	Coliseum: BART Walk and Bicycle Network Gap Study	Walking over the connection between BART and Amtrak always feels kind of desolate and weird, like it's an afterthought. I'd love to see that improved somehow.
83	Safety	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	Vehicles regularly speed down these roads. We need more than speed limit signs - we need more bump outs - more physical concrete to address dangerous driving.
84	Safety	14th Ave from Foothill Blvd to E 19th St, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	this is not a park it is a glorified roundabout. what's the point. get rid of 15th ave completely. this is a dangerous road. make it a nice linear park
85	Safety	San Leandro Street repaving along railroad tracks, Coliseum: BART Walk and Bicycle Network Gap Study, East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, Vehicle, Transit, 1, 22.5321610295, Multimodal Projects, Study Area, greyout	The pedestrian environment on the ground around the coliseum is a joke. San Leandro is so unsafe - the road needs to be reduced to 2 lanes at most.
86	Safety	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	this street 20th is way to wide and cars can fly around the turn at high speeds. bulb outs for ped safety, a better xwalk, and a thinner road
87	Safety	East Bay BRT Corridor Safety Improvements, International Blvd Improvement Project, Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	this whole area should be raised to better connect clinton sq to the surrounding n'hood. the road here is too dangerous to calmly cross
88	Safety	Lake Merritt Bikeway Improvement Project, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	too many lanes. go houston and make 2 bus only with physical separation. then parking for a safe bike lane separated as well
89	Safety	East Bay BRT Corridor Safety Improvements, AHSC Camino 23 International Blvd Pedestrian Improvements, International Blvd Improvement Project, Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	there were bulb outs on fifteenth but none on 16th. why? vehicles gun around this corner and make the ped xing dangerous
90	Safety	1, 22.5321610295, Lake Merritt Bay Trail, Study Area, greyout	The ped xings here are a joke. No cars stop for the flashing beacons. Why are there so many lanes. It is way overbuilt.
91	Safety	Foothill Blvd Corridor Improvements (Phase 1), Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	foothill is a moat of death. SA park should be better connected to the community. the road needs to be dieted severely.
92	Safety	East Bay BRT Corridor Safety Improvements, AHSC Camino 23 International Blvd Pedestrian Improvements, International Blvd Improvement Project, Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	Bus lane needs physical separation. Cars use to speed and kill people (!!). An elderly woman literally died here!!!

93	Safety	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, Active Transportation Project	14th is a slalom. make cars move slower. give space for bikes. ill probably die here one day with this road design
94	Safety	1, 22.5321610295, Study Area, greyout	Stop sign and cross walk. This intersection has a prd stairway to the rec center and park and it is hard to cross
95	Safety	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, Active Transportation Project	these ped stairs are nice but then lead to a death trap at 14th st. how am i supposed to cross the st?!
96	Safety	Oak Street and Madison Street - Conversion of One way traffic to two way traffic, Lake Merritt TOD, Vehicle, Transit, 1, 22.5321610295, Multimodal Projects, Study Area, greyout	Why are these roads so wide. LIterally all of them could have their lane count halved
97	Safety	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, Active Transportation Project	this road 24th is absurdly wide. make it way thinner and give us some sidewalk
98	Safety	1, 22.5321610295, Study Area, greyout	Narrow 5th to same width as 6th Avenue. Traffic speeds through and is unsafe
99	Safety	East Bay BRT Corridor Safety Improvements, International Blvd Improvement Project, Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	vehicles do not adhere to the stop lights here. crosswalk is dangerous
100	Safety	Lake Merritt TOD, Transit, 1, 22.5321610295, Study Area, greyout	This slip lane will kill a ped or bike at some point. Remove.
101	Safety	Foothill Blvd Corridor Improvements (Phase 1), Foothill Complete Streets, Active Transportation Project, Safety, 1, 22.5321610295, Foothill Blvd Corridor Improvements (Phase 1), Study Area, greyout	also missing half your crosswalk, this isnt hard
102	Safety	San Francisco Bay Trail	Yes please do this and make this better/ safer!
103	Safety	14th Ave from E 8th St/E 19th St to International Blvd/E 27th St, Active Transportation Project, 1, 22.5321610295, Study Area, greyout	every since xwalk on 14th is a death trap
104	Transit		Infill station at Oakland Airport Connector midpoint - the City asked for this to provide access to jobs around Hegenberger but was ignored
105	Transit	Capitol Corridor South Bay Connect Rail, East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, Transit, 1, 22.5321610295, Study Area, greyout	San Antonio/Eastlake BART station should be included per BART's Metro Vision Study a few years ago
106	Transit	East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, 1, 22.5321610295, Study Area, greyout	55th Ave BART station should be included per BART's Metro Vision Study a few years ago
107	Transit	San Leandro Street repaving along railroad tracks, East Bay Greenway Urban Trail (Phase 2), Active Transportation Project, Vehicle, 1, 22.5321610295, Multimodal Projects, Study Area, greyout	98th Ave BART station should be included per BART's Metro Vision Study a few years ago

Appendix 7-1

Federal Funding Sources

Transportation Alternatives Set-Aside

The Transportation Alternatives (TA) Set Aside under the Fixing America's Surface Transportation (FAST) Act authorizes funding for programs and projects defined as transportation alternatives, including but not limited to on- and off-road pedestrian and bicycle facilities; infrastructure projects for improving non-driver access to public transportation and enhanced mobility; recreational trail projects, and safe routes to school projects.

Matching Requirements: Federal share is typically 88.5%; however, some safety projects allow for 100% federal share. Local match is about 11.5%.

Congestion Mitigation and Air Quality (CMAQ)

The CMAQ Improvement Program funds transportation projects to improve air quality and reduce traffic congestion in areas that do not meet air quality standards. The program has been a key mechanism for implementing non-motorized projects that reduce greenhouse gas emissions. The CMAQ program is administered jointly by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Funds are directed to transportation projects and programs which contribute to the attainment or maintenance of National Ambient Air Quality Standards (NAAQS). Funds may be used for transportation projects or programs that are likely to contribute to the attainment or maintenance of national ambient air quality standard. Please see MTC's current transportation plan and Federal Transportation Improvement Program (FTIP) for more details. About $2.5 Billion was allocated to the CMAQ program in 2020 under the federal Fixing America's Surface Transportation (FAST) Act. It is important to note that CMAQ operates on a reimbursement schedule; funds are not distributed until work is completed.

Matching Requirements: Federal share is typically 80%; however, some safety projects allow for 100% federal share.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) funds projects that reduce collisions and vehicular fatalities and improve road safety. Applicable projects include improvements for bicyclists and pedestrians, safety education, training, and traffic calming. Like CMAQ funds, HSIP funds are allocated to every state to carry out approved projects and programs. In California, HSIP is managed by the Caltrans Division of Local Assistance. In 2019, California programmed $14 million towards non-infrastructure safety projects with more than $6.5 million directed to the Pedestrian and Bicyclists improvement category. The maximum reimbursement for a single project is $10 million, and the minimum is $100,000. Federal refund is typically 90%, but in some scenarios can be the full project cost. Applications for Cycle 10 were due in Fall 2020, and the Cycle 11 call for projects is anticipated in April of 2022.

Matching Requirements: Federal share is typically 90%.

State Funding Sources

Active Transportation Program

In 2013, Governor Brown created the Active Transportation Program (ATP), which consolidated other existing federal and state active transportation funding programs to support infrastructure and non-infrastructure projects. The purpose of the ATP is to increase biking and walking trips, increase safety and mobility for non-motorized users, enhance air quality and public health, and ensure disadvantaged communities fully share the benefits of the program. Each year, the program allocates 50% of its funds to projects on a competitive basis, 40% to regional agencies, and 10% specifically to rural areas. Exact funding amounts fluctuate from cycle to cycle. Roughly $650 million was expected to be available for ATP Cycle 6 but the California Transportation Commission augmented the funds with a one-time adjustment of $1.049 billion, bringing the total funding available for the 2023 program to $1.707 billion. The minimum award amount is $250,000; there is no maximum award amount.

Matching Requirements: The Commission does not require a funding match for ATP.

Solutions for Congested Corridors Program

The purpose of the Solutions for Congested Corridors Program (SCCP) is to reduce congestion and expand transportation choices for road users. In addition to mitigating congestion, the program seeks to improve safety, improve air quality, and generate economic development and job creation opportunities. Projects include improvements to bicycle and pedestrian facilities, and updates to local streets and roads. $494 million was allocated for fiscal year 2021-2022 and 2022-2023, and seven projects received funding throughout the state. For more information about the program, visit the California Transportation Commission's program site.

Matching Requirements: None; leveraged funds are desirable.

Local Partnership Program

California Senate Bill 1 (SB 1) includes the Local Partnership Program (LPP), which is a funding source for local and regional transportation agencies that have passed a sales tax measure, developer fee, or other transportation fee for the purpose of improving transportation and mobility. $200 million of SB 1 funds are allocated to LLP annually and provides funding opportunities to improve active transportation, health, and safety benefits, as well as other opportunities related to aging infrastructure and road conditions. The program is two-pronged; 40% is through a statewide competitive process and 60% is through a formulaic program. 2020 applications were due in June of 2020; new funding cycles will be programmed every two years.

Matching Requirements: 1-to-1 match for both Formulaic and Competitive Program

Clean Mobility Options Voucher Pilot Program

The Clean Mobility Options Voucher Pilot sponsored by California Air Resources Board (CARB) distributes cap-and-trade dollars (up to $20 million) for shared mobility projects including car share, bike share, and on-demand programs to disadvantaged, low-income communities. Public agencies, tribal governments, and nonprofit organizations are eligible. Each new mobility project can receive up to $1,000,000; a project expanding an existing mobility service can receive up to $600,000, and community Transportation Needs Assessment projects could receive up to $50,000.

Matching Requirements: Varies; look for more details on CARB website (ww2.arb.ca.gov)

Office of Traffic Safety Grants

The California State Transportation Agency's Office of Traffic Safety (OTS) funds programs that promote safe behaviors and the use of roadways when walking or biking. Programs target all age groups to raise awareness about traffic rules, rights, and responsibilities for all roadway users. Specifically, programs are designed to teach safer driving, bicycling, and walking behaviors to high-risk populations, including youth and older community members. Grants for FY 2022 opened in December 2020 and were due by January 30, 2021.

Matching Requirements: No matching requirement

Sustainable Transportation Planning Grants

Caltrans' Sustainable Transportation Grants provide funding to support regional sustainable community strategies that can help to achieve the State's greenhouse gas reduction targets of 40 and 80 percent below 1990 levels by 2030 and 2050, respectively. The Sustainable Transportation Planning Grant Program is composed of two broad grant programs, within which there are two award and eligibility categories: Sustainable Communities Grants, and Sustainable Partnerships Grants. The projects recommended in this plan are likely to be eligible for Sustainable Communities Grants. The Sustainable Communities Grants encourage local and regional planning that furthers state goals, including, but not limited to, the goals and best practices cited in the Regional Transportation Plan Guidelines adopted by the California Transportation Commission.

Eligible projects include land use and transportation planning documents, feasibility studies for active transportation, complete streets and safe routes to school plans, and active transportation master plans. The latest cycle of funding opened in December 2020 and applications were due in February 2021.

Matching Requirements: 11.47% for Competitive, Formula, and SP – Transit; 20% for Strategic Partnerships

Sustainable Transportation Equity Project

The Sustainable Transportation Equity Program (STEP) is a new pilot in 2020. The intent is to address community residents' transportation needs and increase access to key destinations while reducing greenhouse gas emissions by funding, clean transportation and supporting projects. The pilot has two grant types: Planning and Capacity Grants ($1.75M) and Implementation Grants ($17.75M). Eligible programs include establishing bike share programs, implementing voucher programs, and increasing access to transit. Funding for the program is $19.5 million.

Matching Requirements: Applicants are required to contribute a minimum of 20% of the project cost.

Affordable Housing Sustainable Communities

The Affordable Housing Sustainable Communities (AHSC) Program gives grants and loans to affordable housing developers and transportation agencies to increase access between housing, employment centers, and essential services. Funded by auction proceeds from California's Cap-and-Trade emissions reduction program, AHSC is administered by the Strategic Growth Council and implemented by the California Department of Housing and Community Development. There are three project types: Transit-Oriented Development Project Areas, Integrated Connectivity Project Areas, and Rural Innovation Project Areas. Awarded projects have included improvements to the pedestrian environment, amenities like bus shelters and benches, and programs that encourage public transit use.

The AHSC program has invested more than $1 Billion in projects across the state, 70% of which have been allocated to disadvantaged communities. The maximum and minimum awards across all project types are $30 million and $1 million, respectively. The application deadline for the most recent round of AHSC (Round 6) funding was February 11, 2021. The estimated available funding is $375 million.

Matching Requirements: Project must have enough committed additional funding at time of application to meet 90% of the following formula: (AHSC funds requested + Enforceable Funding Commitments (EFCs) – Deferred Costs) / (Total Development Cost – Deferred Costs).

Regional Funding Programs

Measure BB

In 2014, Alameda County voters approved Measure BB, authorizing an extension and augmentation of the existing transportation sale tax (Measure B). Measure BB is projected to generate approximately $8 billion in revenues from April 2015 to March 2045 for transportation improvements for Alameda County. As part of the 2014 Transportation Expenditure Plan, local agencies and transit jurisdictions receive Measure BB direct local distributions to support these transportation investments. The direct local distributions amount to approximately $70 million annually and are prioritized for use locally by the recipient.

Regional Measure 3

In June 2018, voters in the nine county San Francisco Bay Area approved Regional Measure 3 (RM 3). The measure provides $4.45 billion in transportation funding, with an estimated $1 billion eligible for Alameda County projects. The measure includes a plan to build major roadway and public transit improvements funded by an increase in bridge tolls on all Bay Area toll bridges except the Golden Gate Bridge. With RM 3, the region’s state-owned toll bridges increased by $1 beginning January 1, 2019, and will increase another $1 in January 2022 and another $1 increase in January 2025.

Transportation Fund for Clean Air

The Transportation Fund for Clean Air (TFCA) County Program Manager (CPM) Fund is a local fund source of the Bay Area Air Quality Management District (Air District). As the TFCA County Program Manager for Alameda County, Alameda CTC is responsible for programming 40 percent of the $4 vehicle registration fee collected in Alameda County for this program.

Lifeline Transportation Program

The Lifeline Transportation Program is intended to support transportation projects that address mobility and accessibility needs in low-income communities throughout the region. The program was created by the Metropolitan Transportation Commission (MTC), the Regional Transportation Planning Agency for the nine-county Bay Area. Historically, MTC has funded the program with a combination of federal and state operating and capital funding sources.

Local Funding Programs

Local revenue sources to fund active transportation programs include development impact fees, the state gas tax, transit fares, and local transportation funds. Development impact fees collect funds from new developments to offset their construction impact. Fees are requested by the local government agency. Fees are often utilized towards improvement of bicycle and pedestrian facilities, lighting and street safety elements, and educational programs for residents, employees, and community members.

There are various other funding sources available in addition to those listed above, such as private/ foundation/ nonprofit funding opportunities. Nationally, organizations such as the American Association of Retired Persons (AARP), Safe Routes National Partnership, and America Walks have small grant programs supporting active transportation. Within California, organizations such as the California Endowment and the California Wellness Foundation have grant programs that focus on community health.

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