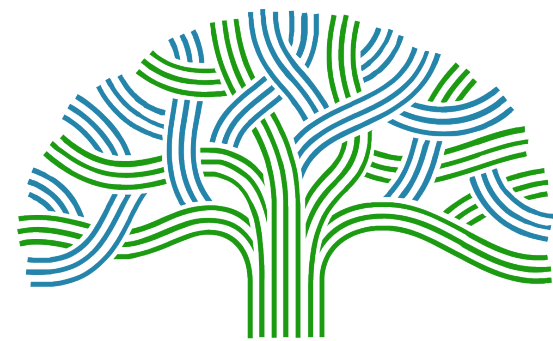


Oakland 2045

Map Atlas

October 2024



OAKLAND 2045
GENERAL PLAN



Prepared by:

DYETT & BHATIA
Urban and Regional Planners

With Contributions from:



Table of Contents

1. INTRODUCTION AND OVERVIEW 1

1.1 Purpose of the Map Atlas..... 2

1.2 Setting and Planning Boundaries..... 3

1.3 Existing Plans and Other Areas..... 3

2. LAND USE.....9

2.1 Existing (On the Ground) Land Use..... 10

2.2 Existing Land Use and Zoning Designations.....11

2.3 Completed/Approved Development..... 28

2.4 Existing Densities and Intensities.....31

3. MOBILITY.....41

3.1 Context 42

3.2 Street Network44

3.3 Transit..... 47

3.4 Planned Regional Improvements.....51

3.5 Bicycle and Pedestrian Facilities Network.....53

3.6 Goods Movement55

4. PUBLIC RESOURCES AND FACILITIES 59

4.1 Educational and Institutional Resources..... 60

4.2 Emergency Services..... 60

4.3 Water Supply, Wastewater, and Stormwater 63

5. NATURAL SETTING AND OPEN SPACE 69

5.1 Topography and Slope..... 70

5.2 Biological Resources..... 70

5.3 Watersheds.....76

5.4 Urban Forest76

5.5 Open Space and Recreation 80

6. ENVIRONMENTAL HAZARDS.....69

6.1 Geology 70

6.2 Flooding, Dam Inundation, and Sea Level Rise73

6.3 Air Quality78

6.4 Wildfires 83

6.5 Airport Hazards 88

6.6 Noise 88

6.7 Hazards and Hazardous Materials.....95

7. HISTORIC RESOURCES 115

7.1 Introduction 116

7.2 Oakland’s Historic Properties 116

7.3 Potential Designated Historic Properties..... 119

7.4 The moving ‘Age-Eligibility’ Threshold.....120

7.5 Neighborhood and Specific Plans.....120

Figures

Figure 1-1: Regional Setting 4

Figure 1-2: Planning Area5

Figure 1-3: Area Plans and Priority Development Areas 8

Figure 2-1: Existing (On the Ground) Land Use 12

Figure 2-1A: West Oakland PDA13

Figure 2-1B: Downtown/Jack London Square PDA.....14

Figure 2-1C: MacArthur Transit Village PDA 15

Figure 2-1D: North Oakland/Golden Gate PDA.....16

Figure 2-1E: San Antonio PDA17

Figure 2-1F: Fruitvale and Dimond PDA.....18

Figure 2-1G: MacArthur Boulevard Corridor PDA.....19

Figure 2-1H: Coliseum BART PDA20

Figure 2-1I: Eastmont Town Center and International Blvd PDA.....21

Figure 2-2: Current General Plan Land Use Designations22

Figure 2-3: Current Zoning Designations.....24

Figure 2-3A: Residential Zones.....25

Figure 2-3B: Commercial Zones26

Figure 2-3C: Industrial Zones.....27

Figure 2-4: Pipeline Projects.....29

Figure 2-5: Projects with Affordable Housing Units, Constructed 2015-202030

Figure 2-6: Existing Residential Density32

Figure 2-7: Oakland Core Density.....33

Figure 2-8: Existing Non-Residential Intensity35

Figure 2-9A: Existing Building Heights37

Figure 2-9B: Existing Building Heights Distribution38

Figure 2-10: Maximum Building Heights Near Airport.....39

Figure 3-1: Street Network and Roadway Classification 46

Figure 3-2: Transit Network50

Figure 3-3 : Proposed Regional Transportation Improvements.....52

Figure 3-4: Existing and Proposed Bike Network 54

Figure 3-6: Goods Movement Network55

Figure 4-1: Educational and Institutional Resources..... 61

Figure 4-2: Emergency Services62

Figure 4-3: Sanitary Sewer System 65

Figure 4-4: Completed Green Stormwater Improvement Projects..... 66

Figure 4-5: Planned and Potential Green Stormwater Infrastructure Projects 67

Figure 5-1: Topography and Slope..... 71

Figure 5-2A: Vegetation Communities and Aquatic Figures73

Figure 5-2B: CNDDDB Wildlife Observations and Critical Habitat within the
Project Vicinity.....74

Figure 5-2C: CNDDDB Plant Observations within the Project Vicinity75

Figure 5-3A: Watersheds 77

Figure 5-3B: Creeks..... 78

Figure 5-4: Urban Forest..... 79

Figure 5-5: Parks and Open Space 81

Figure 6-1A: Seismic Hazards 85

Figure 6-1B: Landslide Hazards..... 86

Figure 6-2A: Flood Hazard Zones 88

Figure 6-2B: Dam Breach Inundation Area 89

Figure 6-2C: 100-Year Coastal Flood + 0.5 ft SLR..... 90

Figure 6-2D: 100-Year Coastal Flood + 5.5 ft SLR.....91

Figure 6-3A: PM_{2.5} Concentrations..... 95

Figure 6-3B: Cancer Risk..... 96

Figure 6-4A: Fire Threat and Historic Fire Boundaries 99

Figure 6-4B: Collaborative Fire Threat Management..... 100

Tables and Charts

Figure 6-4C: Areas for Evacuation Analysis- Hazard Areas and Residential
Zones101

Figure 6-5: Airport Safety Compatibility Zones.....103

Figure 6-6A: Highway Noise Contours.....105

Figure 6-6B: Railway Noise Contours..... 106

Figure 6-6C: Airport Noise Contours.....107

Figure 6-6D: Noise Measurement Locations..... 108

Figure 6-7A: Hazardous Materials..... 111

Figure 6-7B: Hazardous Material Ranking.....112

Figure 6-7C: CalEnviroScreen based on DTSC Cleanup Sites113

Figure 7-1: Historic Resources107

Figure 7-2: Year Built.....121

Table 2-1: Existing Land Use Summary Table11

Table 2-2: Projects with Affordable Units, 2015-2021..... 28

Chart 2-1: Percent Land Acreage by Residential Density31

Chart 2-2: Percent Units by Residential Density31

Chart 2-3: Percent Land Acreage by Intensity 34

Table 3-1: Mode Share for Trips Beginning or Ending in Oakland 42

Table 3-2: Trip Destinations for Trips Beginning in Oakland 42

Table 3-3: Traditional Traffic Safety Approach vs. Safe Oakland Streets Approach..... 43

Table 3-4: Average Daily Traffic Volume and Ownership for Major Roadways30

Table 3-5: Total Mileage of Streets by Roadway Classification 47

Table 3-6: AC Transit Schedule and Day of Operation 47

Table 3-7: BART Schedule and Day of Operation48

Table 3-8: WETA Schedule and Day of Operation48

Table 3-9: Transit Street Mileage Categorization 49

Table 3-10: Existing Bikeway Types.....53

Table 5-1: Terrestrial Vegetation Communities and Aquatic Features60

Table 5-2: Wildlife and Plant Species and Rare Plants Observed in Oakland 72

Table 6-1: Air Quality Statistics for Alameda County94

Table 6-2: Monitored Noise Environments within the City of Oakland104

Table 6-3: Hazardous Materials Site Ranking.....110

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01

INTRODUCTION

- 1.1 Purpose of the Map Atlas
- 1.2 Setting and Planning Boundaries
- 1.3 Existing Plans and Other Areas

1. Introduction and Overview

From its beginning as a small town in an oak grove, Oakland has grown into a unique city with distinct and eclectic neighborhoods, commercial districts, a thriving Downtown, and rich cultural and recreational amenities. It is a city that has continually been defined by its location at a transportation crossroads-- a major sailing and trading port, the original terminus of the first transcontinental railroad, and a postwar industrial powerhouse. Oakland's landscape has been influenced by past aspirations to be an "industrial garden"¹ and a metropolitan "City Beautiful", as well as by forces that have lead to a crushing housing crisis and a geography of inequity, shaped by environmental racism and discriminatory policies, such as redlining, urban renewal, and exclusionary zoning.² Oakland is a city defined by its people, founded on land historically occupied by the Ohlone, one of the most racially and ethnically diverse cities in the country, but with a long way to overcome systemic racism that gives opportunity to some, but not all. Oakland is a city with a history of social justice movements and community leaders who have fought and continue to fight against oppression, for the right to thrive, to create, to preserve history, culture, and art.

What should the future of Oakland look like? The City is undertaking an update of its General Plan – its "constitution for development". The current General Plan was adopted over 20 years ago, and the City and the broader context have changed dramatically since. The General Plan Update is an opportunity for all Oaklanders to work together to create a visionary blueprint for the future of the City over the next two decades. As a start, the City must acknowledge the burden of past practices on today's Oakland, particularly on communities of color. This is an opportunity to begin the work to eliminate the root causes of inequity and undo the harms of the past.

¹ McClintock, N. (2008). From Industrial Garden to Food Desert: Unearthing the Root Structure of Urban Agriculture in Oakland, California. UC Berkeley: Institute for the Study of Societal Issues. Retrieved from <https://escholarship.org/uc/item/1wh3v1sj>

² For more on history of racial disparities in Oakland, please see the accompanying Environmental Justice and Racial Equity Baseline Report and General Plan Technical Memo.

The project is occurring in two phases. Phase 1 focuses on the Housing Element and Safety Element update, as well as the preparation of a new Environmental Justice Element, Industrial Lands Policy, Environmental Impact Report, and zoning code and map update, and is slated to be completed by early 2023. Phase 2 will update the Land Use and Transportation (LUTE), Estuary Policy Plan (the Land Use Element for much of the land below Interstate 880 along the Oakland Estuary), Open Space, Conservation and Recreation (OSCAR), Noise, and preparation of a new Infrastructure and Facilities Element. Phase 2 is slated to be completed in 2025. A Racial Equity Impact Analysis (REIA) conducted before and during the development of General Plan elements will help ensure that policies, programs, and actions will prioritize historically marginalized communities and maximize equitable outcomes. More information on the General Plan can be found at the City's website: <https://www.oaklandca.gov/topics/general-plan-update>.



Photo: Greg Linhares, City of Oakland

1.1 Purpose of the Map Atlas

This Map Atlas provides baseline spatial data on existing conditions and mappable resources, trends, and critical concerns that will frame choices for the long-term physical development of Oakland. The Atlas includes information about land uses, natural and community resources, urban form, and transportation infrastructure. The Atlas will be used as a basis for:

- Facilitating community input on planning issues, priorities, and vision for the future;
- Understanding opportunities;
- Identifying constraints;
- Evaluating policy issues and options, including for housing sites (as part of Phase 1) and for preparing alternative land use and transportation concepts (as part of Phase 2);
- Formulating policies and implementation actions for the General Plan Update; and
- Conducting mapping and baseline assessment needed for the environmental setting portion of environmental impacts reports (currently anticipated for each of the two phases) for the General Plan Update.

This Map Atlas is one of several reports documenting and analyzing background conditions, trends, and opportunities to lay the groundwork for community deliberations and policy-making. Companion reports prepared include:

- Environmental and Racial Equity Baseline; and
- Economic Development: Trends and Prospects Report
- In addition, analysis of housing sites and needs is underway as part of the 2023-2031 Housing Element update.



1.2 Setting and Planning Boundaries

REGIONAL SETTING

Oakland is located on the eastern shore of the San Francisco Bay and is the county seat of Alameda County and geographic center of the Bay Area. The City is defined by the Bay and Estuary on the southwest, the crest of the Berkeley-Oakland Hills on the north-east and east, the city boundaries of Berkeley and Emeryville to the north, and the City of San Leandro boundary to the south. San Francisco is located just west across the Bay Bridge. Oakland is at the crossroads of a significant portion of the Bay Area's transportation network. Four interstates (I-80, I-880, I-980, I-580) pass through the City. All Bay Area Rapid Transit (BART) lines traverse the City, serving eight stations. The City is also served by Amtrak, San Francisco Bay Ferry, and AC Transit. Oakland is the third most populous city in the Bay Area, and the eighth largest in the state; it is also the fastest growing of the state's dozen largest cities, with the population growing nearly 13 percent since 2010. Oakland International Airport connects the City and the region to the rest of the world. The Oakland Port is the fourth largest container port in the western US, with 99 percent of the containerized goods in Northern California flowing through the port. The City is a regional employment center as well, and home to major corporations, institutions, and numerous small businesses. Lake Merritt, the country's oldest wildlife refuge, serves as a central landmark and popular recreational attraction for residents. **(Figure 1-1)**

PLANNING BOUNDARIES

As shown in **Figure 1-2**, Oakland's Planning Area is bounded by: Tilden Regional Park, the City of Berkeley, and the City of Emeryville to the north; the Port of Oakland and the Oakland Estuary, with the City of Alameda on the opposite side of the Estuary, to the west; the City of San Leandro to the south; and Siesta Valley Recreation Area, Sibley Volcanic Regional Preserve, Reinhardt Redwood Regional Park, and Anthony Chabot Regional Park to the east. The City also abuts the City of Piedmont, which is bounded entirely by Oakland. The City's General Plan Planning Area encompasses an area of 78 square miles, including approximately 56 square miles of land. There are no unincorporated areas within the City's sphere of influence.

Certain parts of the Planning Area fall under jurisdictions aside from the City of Oakland. The Port of Oakland is given responsibility by the Oakland City Charter to own, develop and manage lands along the Oakland Estuary, including but not limited to the Oakland International Airport, within the specified area of Port jurisdiction. The land within the Port jurisdiction is subject, like the rest of the city, to the General Plan and is included within the City's General Plan Planning Area. Additionally, the San Francisco Bay Conservation and Development Commission (BCDC) oversees sites that lie within a 100-foot 'Shoreline Band' surrounding the San Francisco Bay, ensuring development within this area is consistent with the San Francisco Bay Plan and the San Francisco Bay Area Seaport Plan. BCDC reviews and has permit authority over all individual waterfront projects that are developed within the Shoreline Band, to ensure that they maximize public access

to the Bay and minimize the amount of bay fill that is used. The United States Army Corps of Engineers (USACE) governs the federally owned Inner Harbor Tidal Canal, which extends 1,800 feet northwest of the Park Street Bridge to the mouth of the San Leandro Bay. Work permits for any bridges, piers, and other properties that touch the canal must be reviewed by USACE to ensure compliance with Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, in addition to review by the City and BCDC.

1.3 Existing Plans and Other Areas

EXISTING CITY OF OAKLAND GENERAL PLAN

The current City of Oakland General Plan Elements were last updated and adopted at different dates. The OSCAR was adopted in 1996, the LUTE was adopted in 1998, the Estuary Policy Plan was adopted in 1999 and amended in 2013, the Safety Element was adopted in 2004 and amended in 2012, the Noise Element was adopted in 2005, and the current Housing Element was adopted in 2014. Some key topics addressed in the General Plan include the attraction and retention of businesses, accommodating a growing population, and meeting the transportation needs for the subset of the population without cars (25 percent at the time of publication). The Oakland Bike Plan (2019) and Pedestrian Plan (2017) were later adopted as part of the Circulation Element contained within the LUTE.

Figure 1-1: Regional Setting

Regional Location

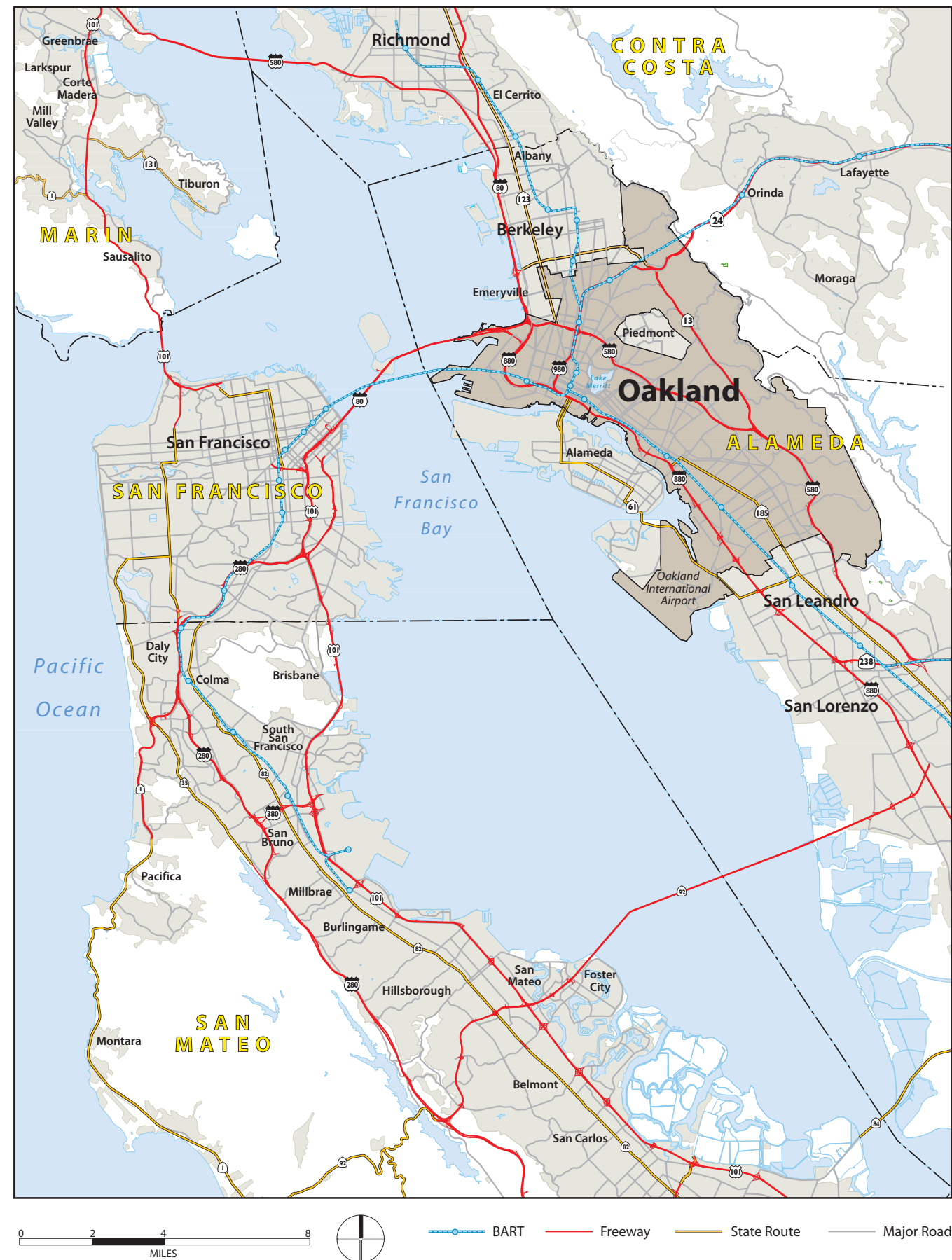
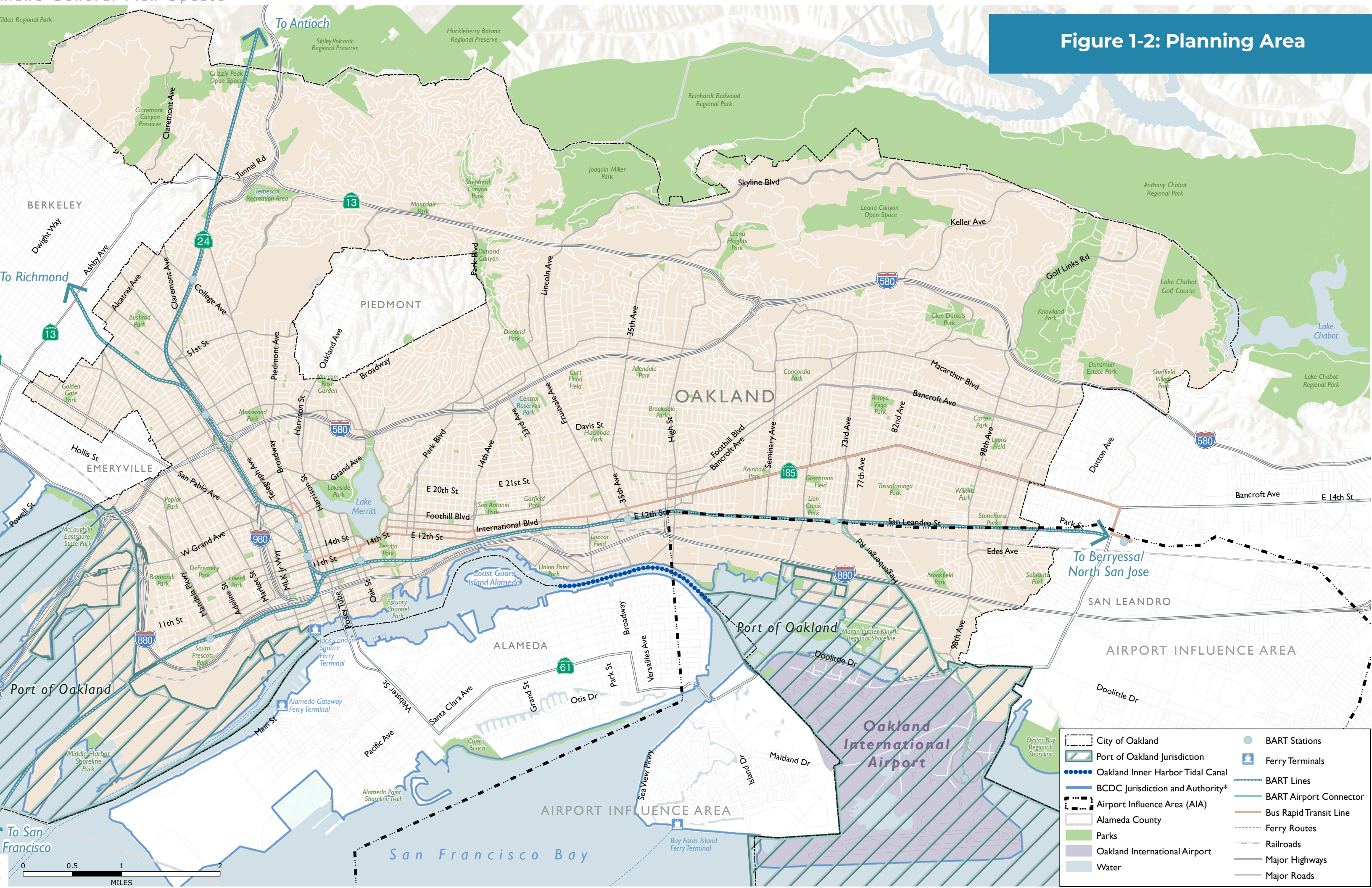


Figure 1-2: Planning Area



Oakland's city limits extend to approximately midway along the Oakland Estuary that lies between Oakland and the City of Alameda. The Estuary Policy Plan (1999), the Land Use Element for much of the land along the Oakland Estuary, guides development along Oakland's waterfront between Adeline Street, I-880, 66th Avenue, and the estuary shoreline. The Estuary Policy Plan preserves existing industrial areas while furthering Jack London Square as a dining and entertainment district, expanding open space access along the shoreline, and planning for mixed-use residential districts. The estuary area includes both City of Oakland and Port of Oakland jurisdictional areas, so the Estuary Policy Plan is a key document in balancing the roles of these agencies.

SPECIFIC PLANS

Five adopted Specific Plans provide greater specificity for future development and public improvements for several neighborhoods within Oakland. In addition, the City is currently completing the Downtown Oakland Specific Plan. These plans are summarized below, and the plan areas are shown on Figure 1-3. The General Plan Update provides an opportunity to revisit specific plans as needed to reflect the updated community vision.

Downtown Oakland Specific Plan (In Progress)

The Downtown Oakland Specific Plan encompasses 930 acres of land bounded by the Oakland Estuary to the south, Lake Merritt to the east, I-980 to the west, and 27th Street/Grand Avenue to the north. This plan seeks to create policy guidance as Downtown Oakland continues to redevelop, focusing on economic opportunity, housing needs and homelessness, transportation, cultural arts, public space, and social equity.

Coliseum Area Specific Plan (2015)

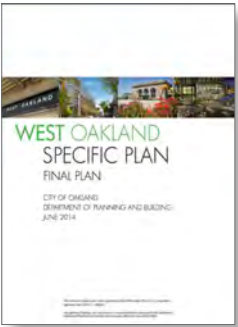
The Coliseum Area Specific Plan seeks to transform 800 acres of underutilized land around the Oakland-Alameda County Coliseum (centered around I-880, north of Hegenberger Road) into a state-of-the-art district with a sports, entertainment, and science and technology focus.



In tandem with this goal, the plan seeks to expand employment opportunities, create a pedestrian-friendly environment, and provide housing. At the time this plan was prepared, the area was home to the Oakland Raiders and Golden State Warriors, both of which have since departed to locations outside Oakland, and the Oakland A's, future plans for which are currently in flux.

West Oakland Specific Plan (2014)

The West Oakland Specific Plan is a comprehensive approach to developing vacant or underutilized commercial and industrial parcels in West Oakland, a 1,900-acre area bounded by I-580 to the north, I-980 to the east, and I-880 wrapping around the south and west. It additionally identifies necessary transportation improvements and seeks to improve the quality of life for residents by reducing blight and creating 22,000 living-wage jobs through the development of commercial, office, and industrial space. It also supports transit-oriented, mixed-use development around the West Oakland BART station to supply 1,325-2,300 new housing units.



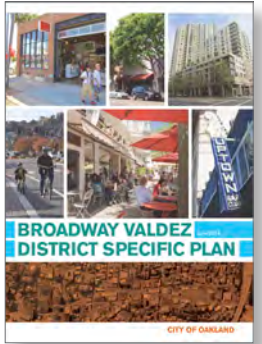
Lake Merritt Station Area Specific Plan (2014)

The Lake Merritt Station Area Specific Plan encompasses generally a half-mile radius around the Lake Merritt BART Station. This includes Chinatown, Laney College, the channel connecting Lake Merritt to the Oakland Estuary, and Oakland and Alameda County civic buildings. This plan seeks to: reduce auto use and increase multimodal transportation use (transit, biking, walking); increase housing near the BART station; streamline the real estate development process; increase jobs, services, and retail; support existing businesses; and increase recreational space.



Broadway Valdez District Specific Plan (2014)

The Broadway Valdez District Specific Plan includes approximately 95 acres, encompassing the Broadway corridor between West Grand Avenue and Interstate 580, including stretches of 27th and Valdez streets, where many of the City's auto dealers were formerly located. The goal of this plan is to transform this area, located directly north of Downtown and near two BART stations, into a pedestrian-friendly retail and employment destination for the region. Additionally, the plan seeks to promote a diverse array of housing, medical services, and dining options.



Central Estuary Area Plan (2013)

The Central Estuary Area Plan includes 416 acres and is composed of the estuary shoreline and surrounding neighborhoods, roughly from 19th Avenue south to 54th Avenue between the estuary (west) and I-880 (east). This plan was developed in response to increased development interest. The Plan addresses conflicting land use priorities and infrastructure deficiencies with the goal of developing a vibrant destination that supports a mix of uses. It recommends several transportation improvements and street redesigns for safer, pedestrian-oriented streets, and many objectives focus on public space and public access to the shoreline.



OTHER PLANS

International Boulevard Transit-Oriented Development (TOD) Plan (2011)

The International Boulevard TOD Plan is a transportation-focused plan that seeks to revitalize the once-bustling (during the early 20th century) International Boulevard corridor from 14th Avenue to the Oakland/San Leandro boundary. The impetus for the plan was the receipt of funding for a Bus Rapid Transit system along the corridor, which opened in 2020. The Plan includes assessing and realizing TOD projects for the corridor in tandem with citywide commercial and residential zoning code updates allowing for higher density development near transit hubs.



PLAN BAY AREA 2050

Plan Bay Area 2050 is the Association of Bay Area Government's (ABAG) and Metropolitan Transportation Commission's (MTC) long-range strategic plan focused on housing, the economy, transportation, and the environment. The Plan highlights four types of "Growth Geographies", including Priority Development Areas (PDAs) and Priority Production Areas (PPAs). Areas designated as PDAs will support future housing and job growth in the region, while areas designated as PPAs will support middle wage job growth in the region. The Plan also highlights Priority Conservation Areas (PCAs), which are regionally significant open spaces which have broad agreement for long-term protection.

PDA and PCA designations make Oakland eligible for targeted investment grants, such as the Federally funded One Bay Area Grant (OBAG). These grants may support a variety of projects, such as sustainable transportation improvements or enhancement of PCAs.

Priority Development Areas

The PDA program was created to meet regional housing needs in an equitable and sustainable way. PDAs are areas located near transit that are prioritized for developing new homes, jobs, and community amenities. This infill development minimizes impacts to the environment and enables future residents to take advantage of existing infrastructure, particularly transit. The areas were nominated by local governments for ABAG adoption.

Oakland has nine PDAs, which are shown on **Figure 1-3**:

- North Oakland/Golden Gate
- MacArthur Transit Village
- West Oakland
- Downtown & Jack London Square
- San Antonio
- MacArthur Blvd Corridor
- Fruitvale & Dimond Areas
- Eastmont Town Center/International Blvd TOD
- Coliseum BART Station Area

Priority Production Areas

PPAs are nominated for ABAG adoption by the local city council or board of supervisors to retain industrial land in key locations to support networks of production, advanced manufacturing, distribution, and repair services. The goal is to expand the number of middle wage jobs located near affordable housing. Oakland has two PPAs, shown on Figure 1-3: the Port of Oakland and Oakland Airport.

Priority Conservation Areas

Priority Conservation Areas (PCAs) are areas of regional significance that have an urgent need for protection. These areas provide important agricultural, natural resource, historical, scenic, cultural, recreational, and/or ecological values and ecosystem functions. PCAs are designated to accelerate protection of key natural lands in the San Francisco Bay Region through purchase or conservation easements. The areas were nominated by local jurisdictions and non-profit conservation groups for ABAG adoption. Oakland has 13 PCAs, which are shown on **Figure 1-3**:

- Potential Oakland Gateway Area
- Oakland Priority Estuaries
- Oakland Priority Creek Trails
- Oakland Priority Creeks
- East Bay Greenway
- Oakland Urban Greening
- Temescal Creek/North Oakland
- Oakland Natural Landscapes
- Oakland Recreational Trails
- Butters Canyon/Headwaters of Peralta Creek
- Ridgemont West
- Leona Canyon Creek Tributaries
- South Hills/San Leandro Creek

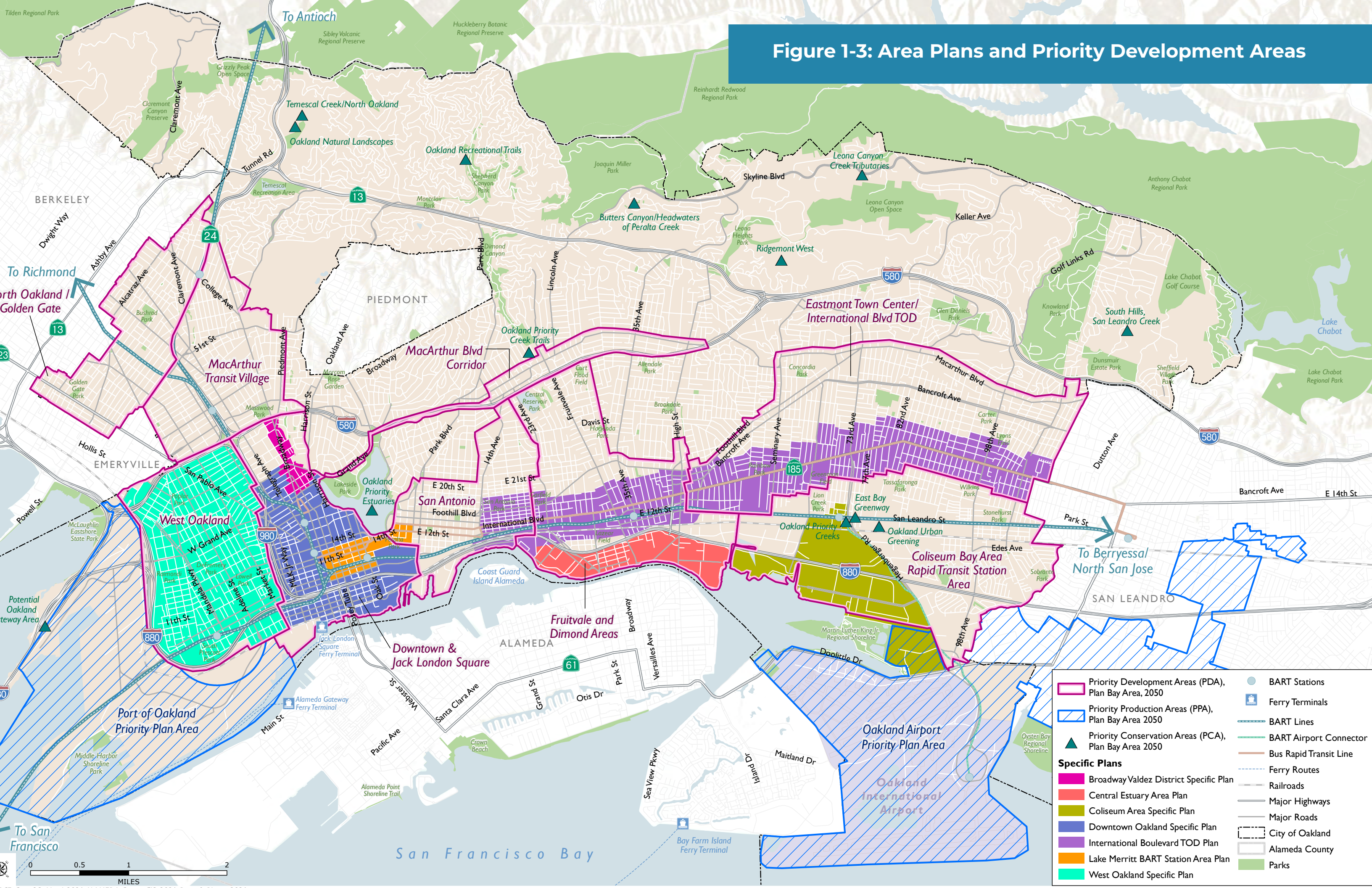


Photo: Greg Linhares, City of Oakland



Photo: Greg Linhares, City of Oakland

Figure 1-3: Area Plans and Priority Development Areas



02

LAND USE

- 2.1 Existing (On the Ground) Land Use
- 2.2 Existing Land Use and Zoning Designations
- 2.3 Recently Approved Development
- 2.4 Existing Densities and Intensities

2. Land Use

2.1 Existing (On the Ground) Land Use

Existing (on the ground) land uses were identified from City and County data and aerial photography. Oakland encompasses approximately 78 square miles (49,910 acres), including about 55.8 square miles of land and 22.2 square miles of water.

Figure 2-1 shows the pattern of existing (on the ground) land use in the City based on 2021 Alameda County Assessor data. **Table 2-1** shows the breakdown of existing land uses. “Mixed Use – Residential” includes any mixed-use parcel that is partly residential. “Mixed Use – Commercial” does not include any parcels with residential uses. The majority land use category is Residential (38 percent), particularly Single-Family Residential (28.3 percent), followed by Recreation and Open Space (29.9 percent), and then by Industrial (16.5 percent).

Oakland’s existing land use and development pattern reflects the City’s history and evolution. The City was incorporated in 1852, and the earliest development areas were Downtown and West Oakland. These areas have a strong grid pattern of streets. Downtown has a diverse mix of uses, including office and general

commercial uses, City and County administrative offices, court-houses and facilities such as the Main Library. Downtown features many entertainment venues, and while it was once a destination for department store shopping, it is now home to several vibrant restaurants and smaller retail shops. Downtown also includes a thriving Chinatown.

Soon after incorporation, Oakland was chosen as the western terminus of the Transcontinental Railroad, resulting in development of a major port and manufacturing establishments. The Port of Oakland, at the northern end of the waterfront, is the fourth largest container shipping port on the West Coast. The Oakland International Airport is at the southern end of the coastline. In between these two nodes, much of the estuary waterfront is lined with industrial establishments, with the exception of the Jack London District, where formerly industrial areas have been converted to retail, residential and entertainment uses, and Brooklyn Basin, a new master-planned residential development east of Estuary Park. Large concentrations of industrial uses extend inland in both West and East Oakland.

Commercial uses line the City’s major corridors, such as Telegraph Avenue and International Boulevard, many of which were previously streetcar lines. The former auto row along Broadway, proximate to Downtown, is being redeveloped with mid-rise residential and neighborhood commercial uses, facilitated by the Broadway-Valdez Specific Plan. As of March 2020, 1,605 units have been built. Downtown has also recently seen several new high-rise residential buildings.

Outside of Downtown, industrial areas, and the corridors, the dominant use is residential, arranged in many diverse neighborhoods, together with neighborhood commercial uses, parks and open spaces, and facilities such as schools. Oakland has significant concentration of high-density, mid-rise (three to five stories) residential uses around Lake Merritt, with the largest extent in the Adams Point area extending between Lake Merritt and Piedmont. 29 percent of the city’s population lives within a 1.5-mile radius centered on Children’s Fairyland next to Lake Merritt.



Oakland has several thriving neighborhood main streets and commercial areas with restaurants and cafés, neighborhood shopping, and small-scale retail uses. These include College Avenue in Rockridge, Lakeshore and Grand Avenues near Lake Merritt, Fruitvale Avenue, Chinatown, Montclair Village, and Jack London Waterfront District, as well as extensive neighborhood retail extending across multiple neighborhoods along East 12th Street, Telegraph and San Pablo avenues; Macarthur, Foothill, Park, and International boulevards. Commercial areas currently benefitting from focused investment include the 7th Street Corridor in West Oakland and the Seminary Point Shopping Center in East Oakland.

Across Oakland, many neighborhoods balance single- and multi-family buildings, while some are predominantly multi-family (such as Adams Point) and others are predominantly single-family (such as Maxwell Park). Densities are generally lower in areas of the hills because of the challenging topography and the substandard road network. There are several regional parks in the hills, as well as the Oakland Zoo and a municipal golf course (Lake Chabot).

Existing land uses for Oakland’s nine PDAs are shown in Figures 2.1A through 2.12-1I.



Table 2-1: Existing Land Use Summary Table, 2023

Existing Use Categories	Acres
RESIDENTIAL	12552.2
Single Family Residential	9341.4
Single Family Residential - Attached	181.1
Multi Family Residential	2774.8
Mobile Homes	4.0
Mixed Uses - Residential	250.9
COMMERCIAL	1101.5
Mixed Uses - Commercial	23.3
Service Stations	37.1
Hotel, Motel, Lodging Commercial	104.4
General Commercial	642.2
Office	294.5
INDUSTRIAL	5481.8
General Industrial	1221.7
Heavy Industrial	134.0
Port	4126.1
PUBLIC AND COMMUNITY FACILITIES	9063.6
School/College/Educational Facility	1798.6
Public Facility	5443.8
Hospitals	69.6
Religious/Institutional	298.6
Assisted Living/Nursing Facility	40.8

Cemetery/Mortuary	300.0
Marina	164.6
Utilities	947.6
RECREATION AND OPEN SPACE	4429.2
Parks, Recreation & Open Space	4429.2
PARKING LOT/GARAGE	82.6
Parking Garage	14.7
Parking Lot	67.8
VACANT	1246.0
Vacant	1232.0
Vacant - Public	13.9
SUB TOTAL	33956.8

Source: 2023 Alameda County Assessor, Dyett & Bhatia



2.2 Existing Land Use and Zoning Designations

EXISTING GENERAL PLAN LAND USE DESIGNATIONS

Figure 2-2 shows the land use designations per the current LUTE (Inland area) and Estuary Policy Plan (Waterfront area). Downtown Oakland is primarily designated as Central Business District. Urban Residential and Community Commercial designations are found along major corridors throughout the flatlands. Lake Merritt to the north and east is surrounded by Urban Residential, and the Broadway Valdez District is primarily Community Commercial. North Oakland is largely Mixed Housing Type Residential, while West Oakland is a mix of Mixed Housing Residential, Business Mix, Urban Residential, and Housing and Business Mix. Much of East Oakland northeast of International Boulevard is Detached Unit Residential or Mixed Housing Type Residential. East Oakland southwest of International Boulevard is primarily a mix of Detached Unit Residential, Mixed Housing Type Residential, General Industry and Transportation, and Business Mix. The Oakland Hills are primarily designated Hillside Residential, Detached Unit Residential, Resource Conservation, and Urban Park and Open Space. Most of the Waterfront is designated General Industry and Transportation, Business Mix, and other industrial categories per the Estuary Policy Plan. The Port of Oakland and Oakland International Airport are designated General Industry and Transportation, while the Coliseum Area is primarily designated Regional Commercial.

Figure 2-1: Existing (On the Ground) Land Use

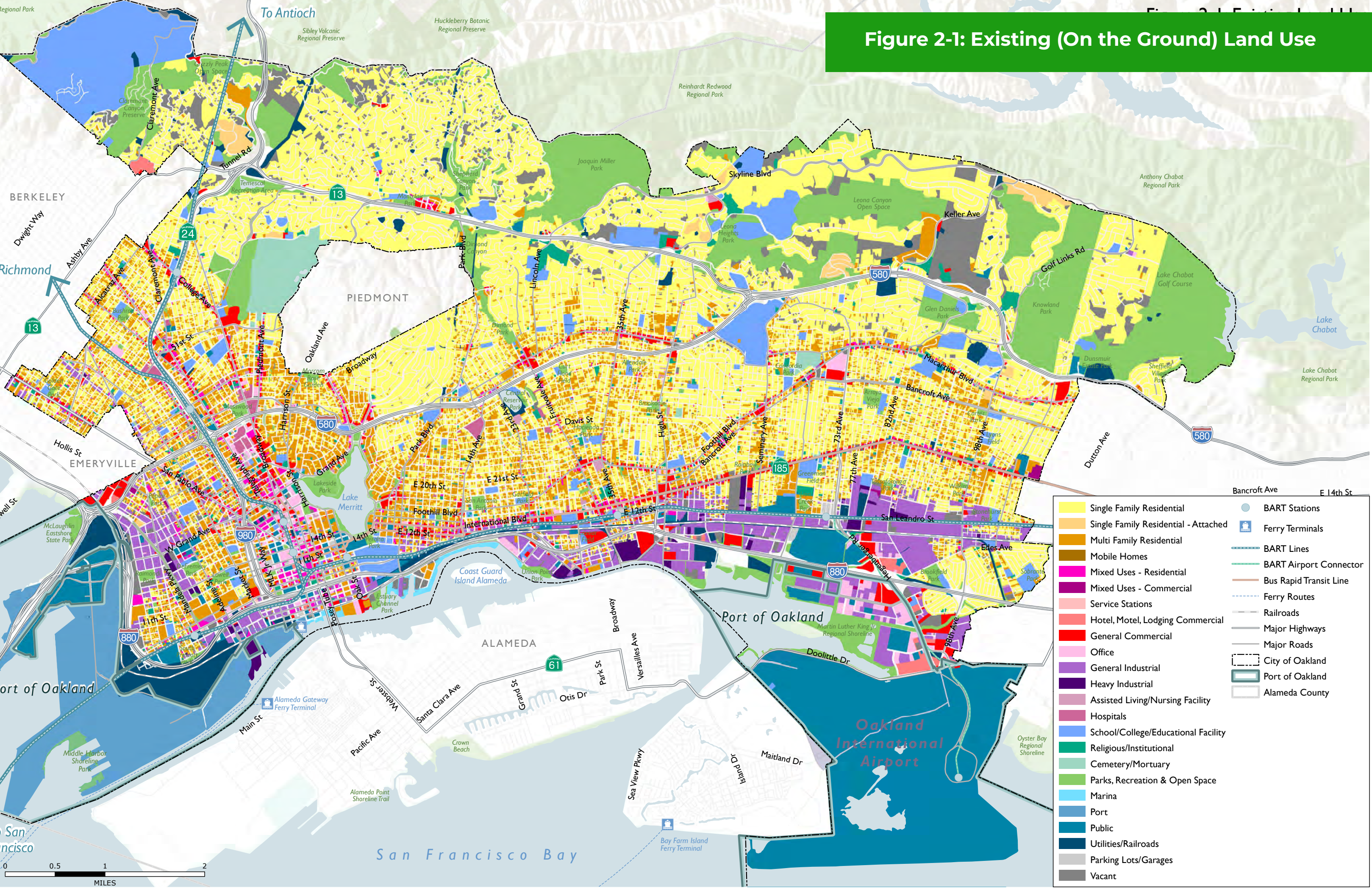


Figure 2-1A: West Oakland PDA

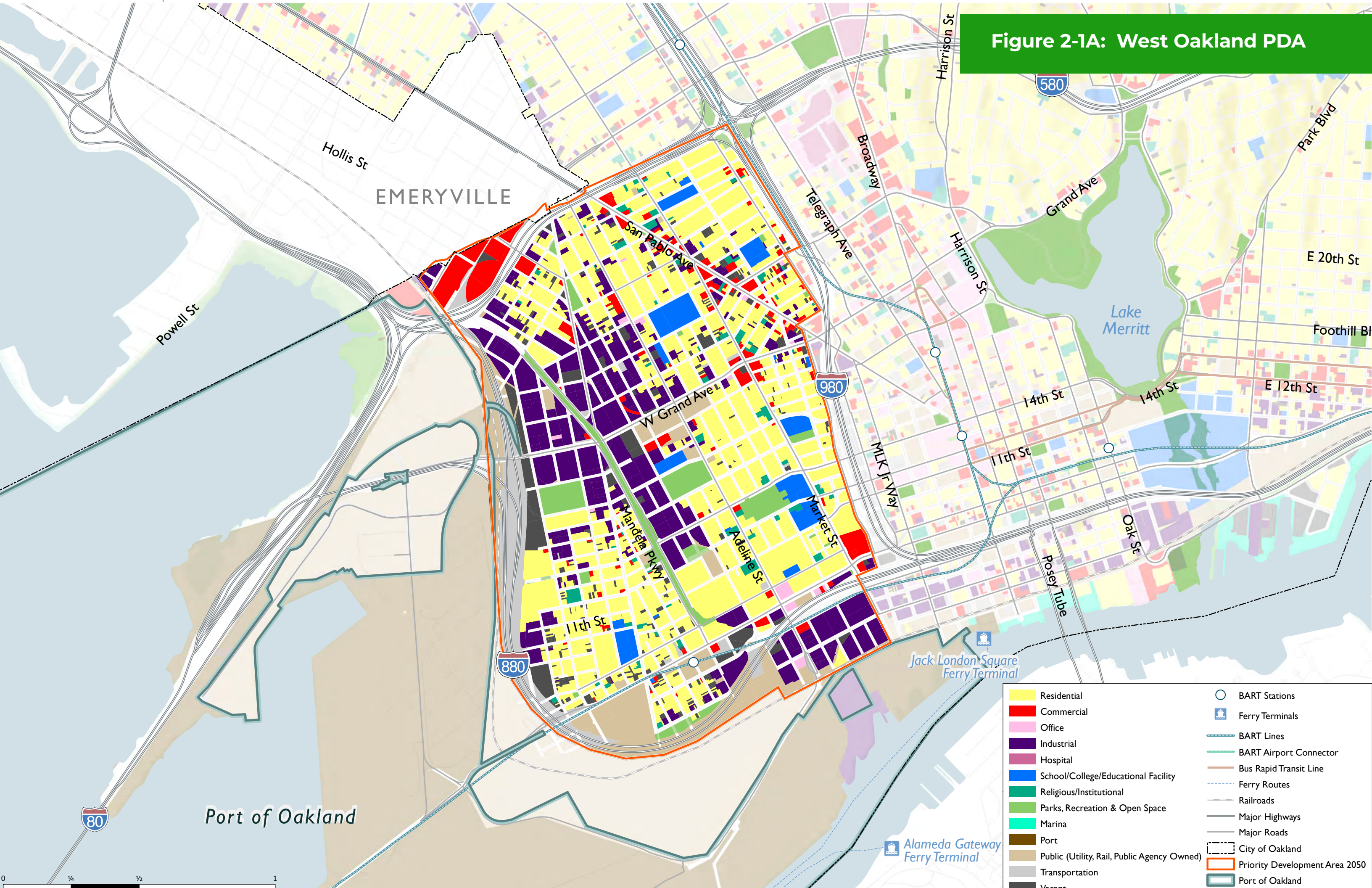


Figure 2-1B: Downtown/Jack London Square PDA

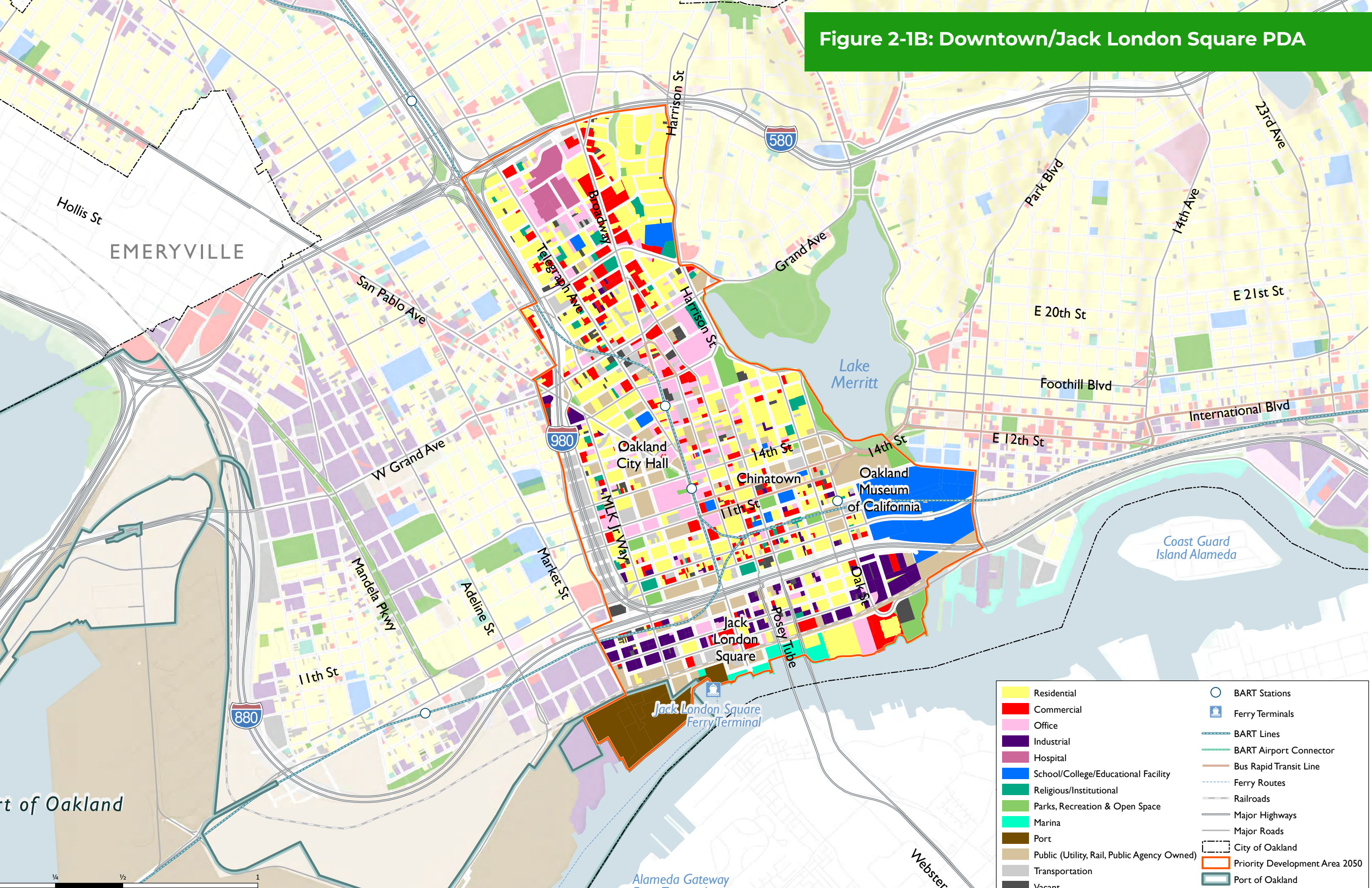


Figure 2-1C: MacArthur Transit Village PDA

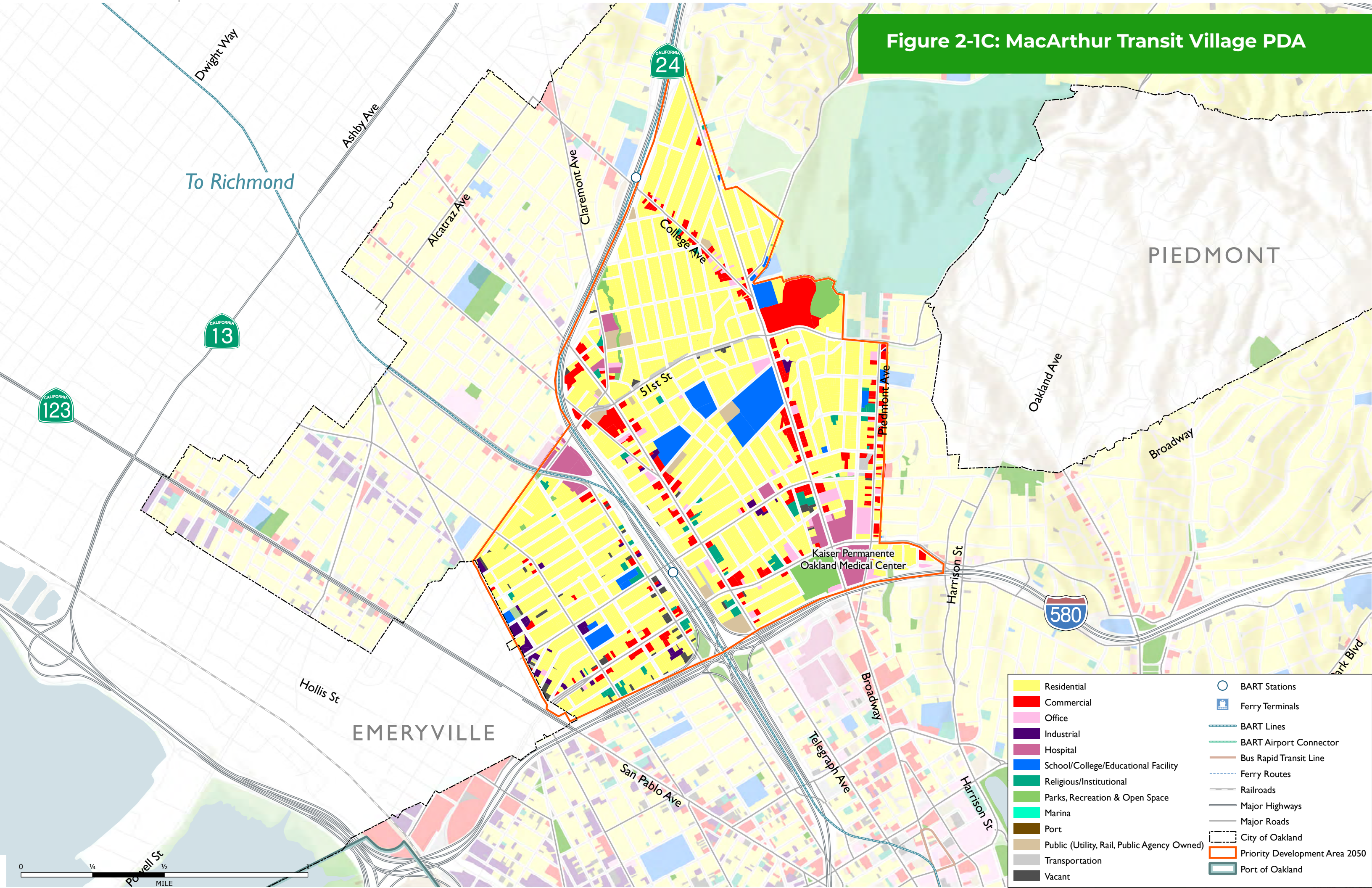


Figure 2-1D: North Oakland/Golden Gate PDA

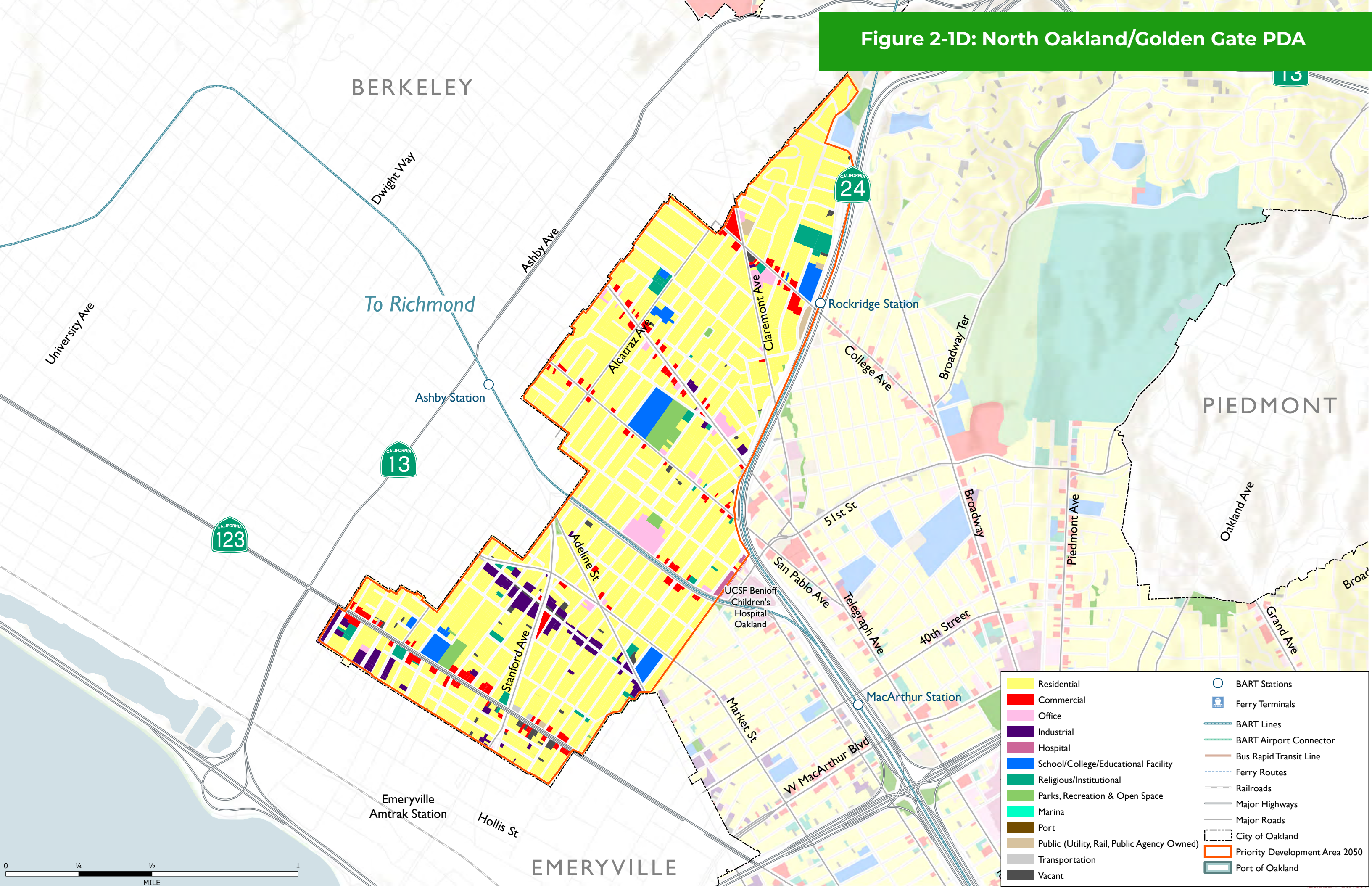


Figure 2-1E: San Antonio PDA

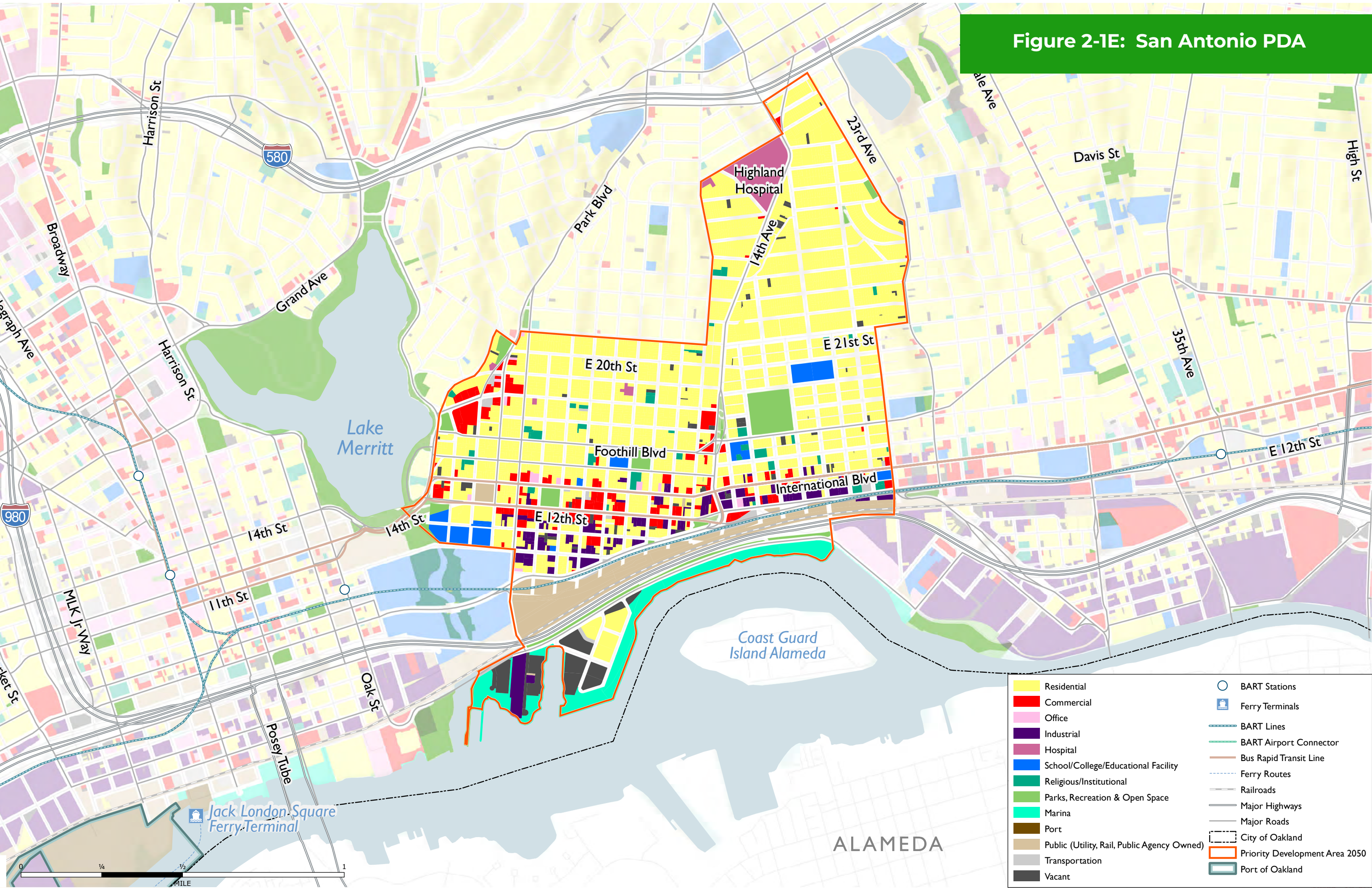


Figure 2-1F: Fruitvale and Dimond PDA

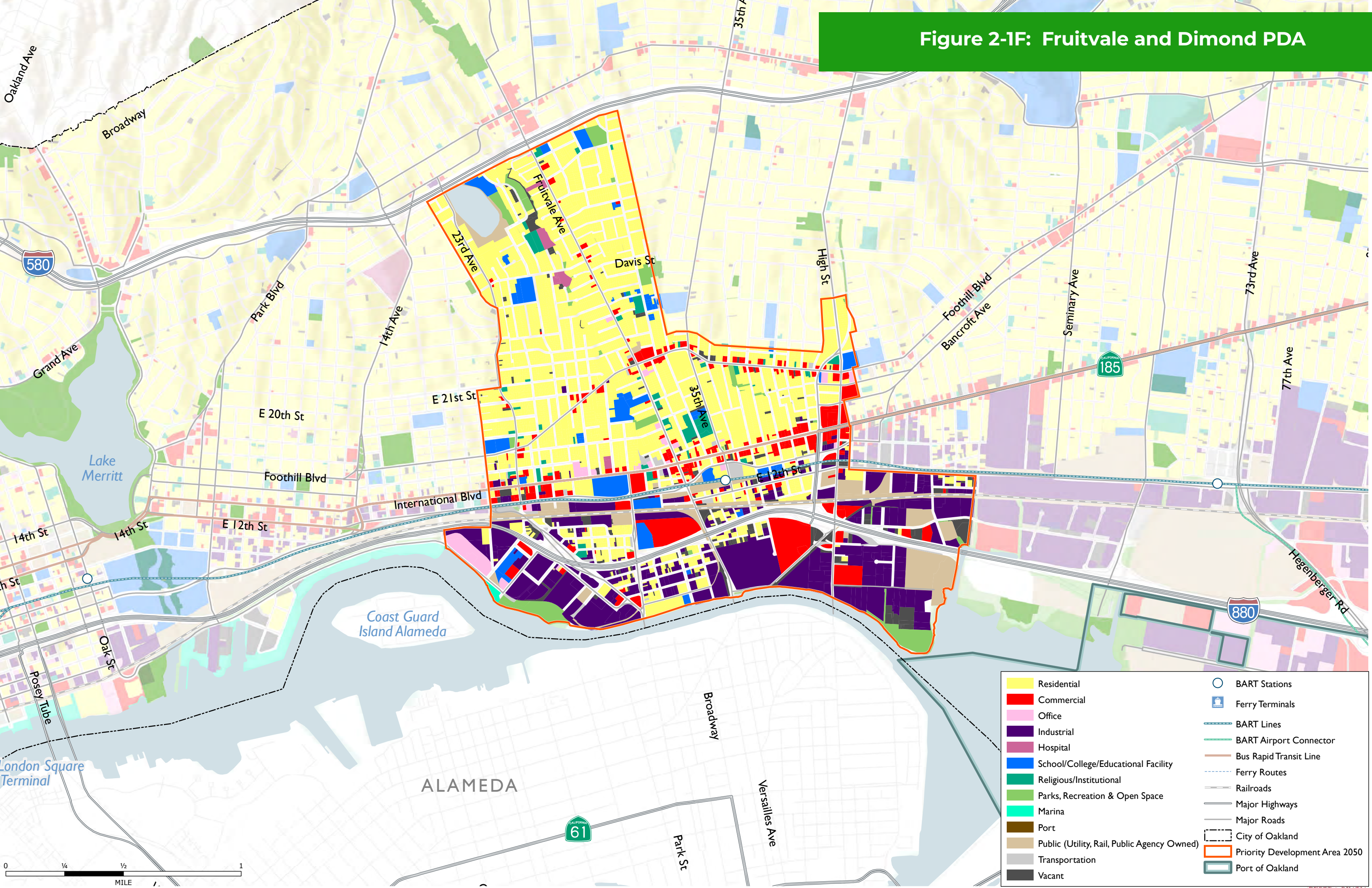


Figure 2-1G: MacArthur Boulevard Corridor PDA

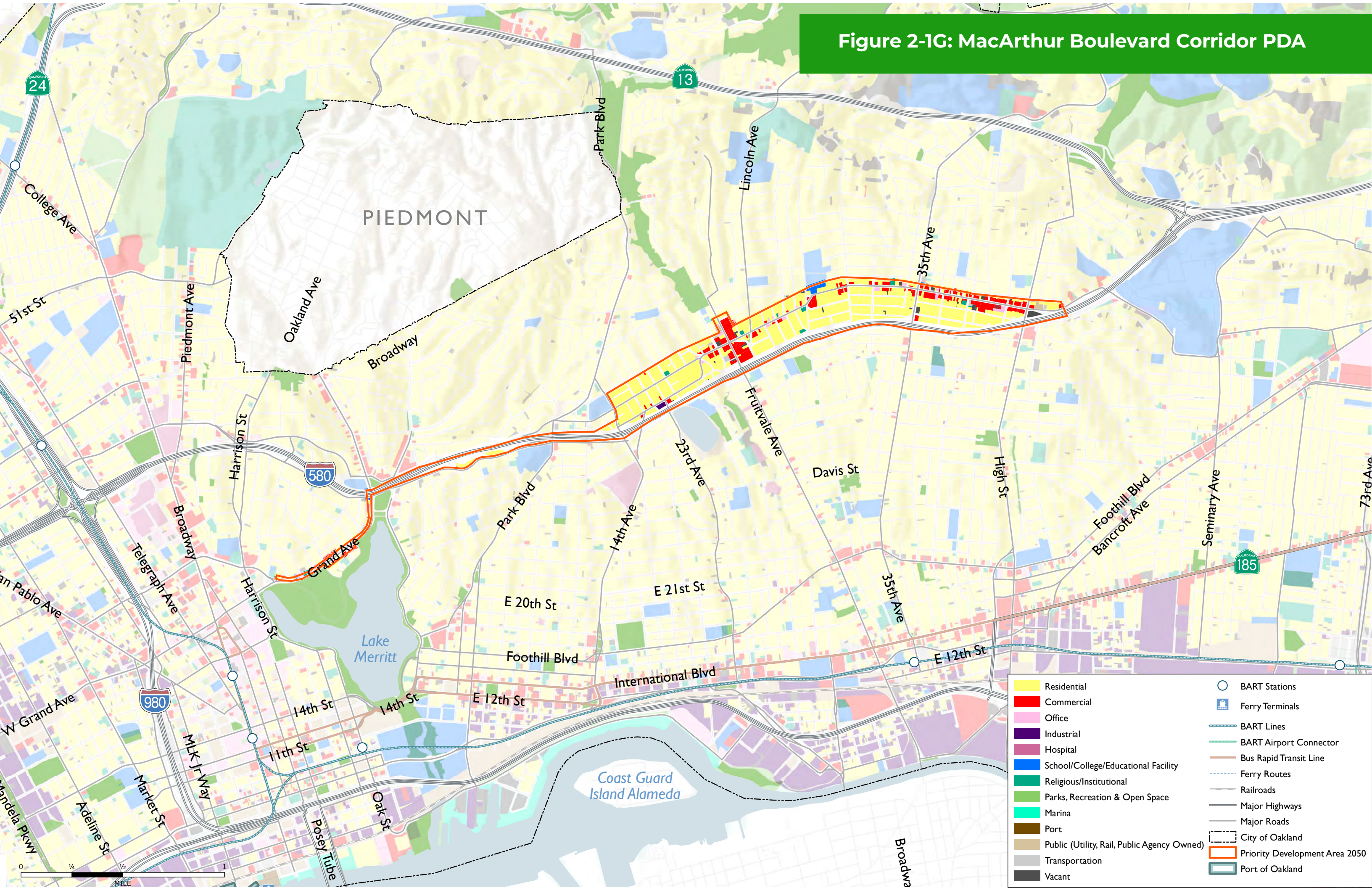


Figure 2-1H: Coliseum BART PDA

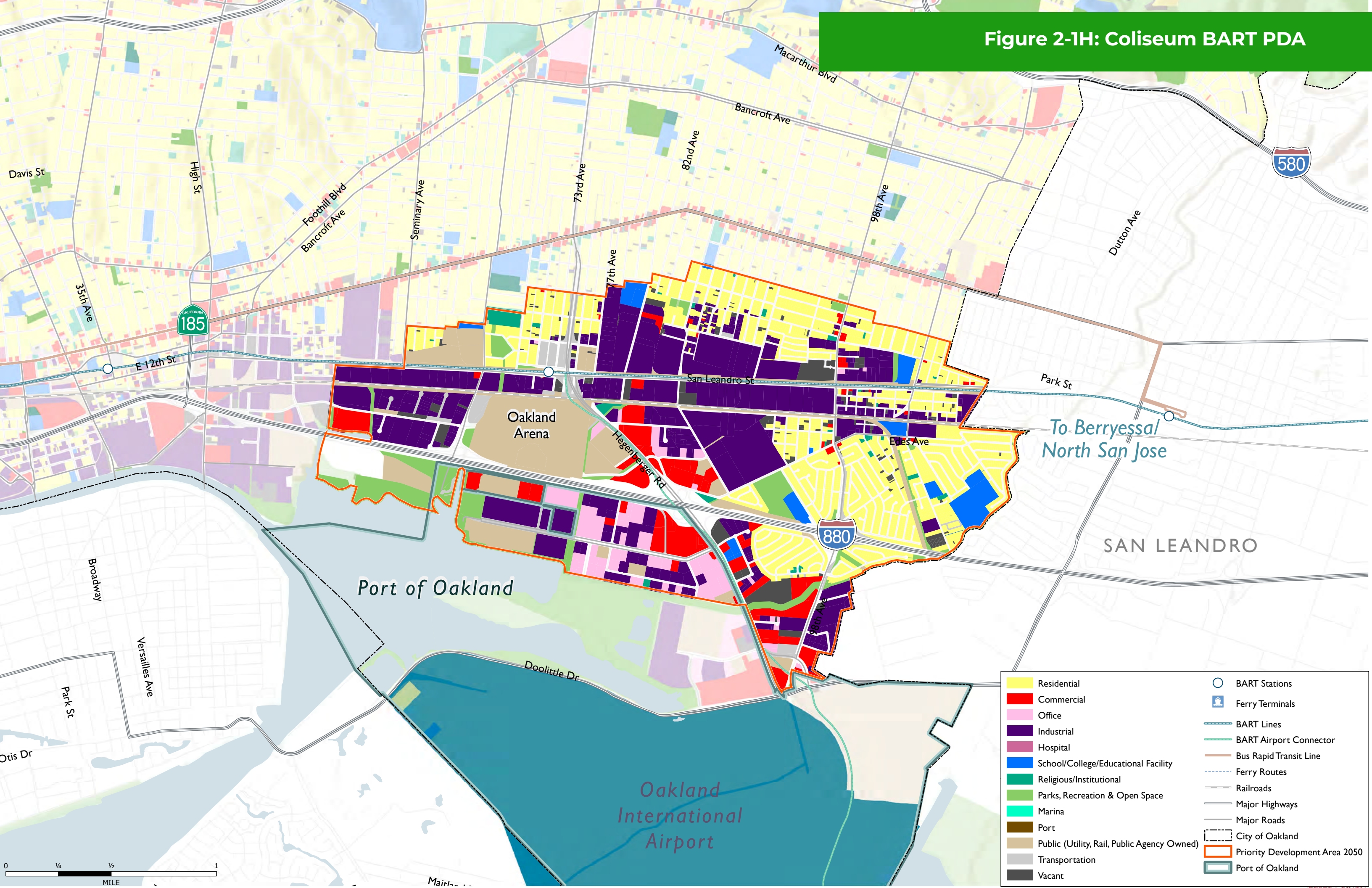


Figure 2-11: Eastmont Town Center and International Blvd PDA

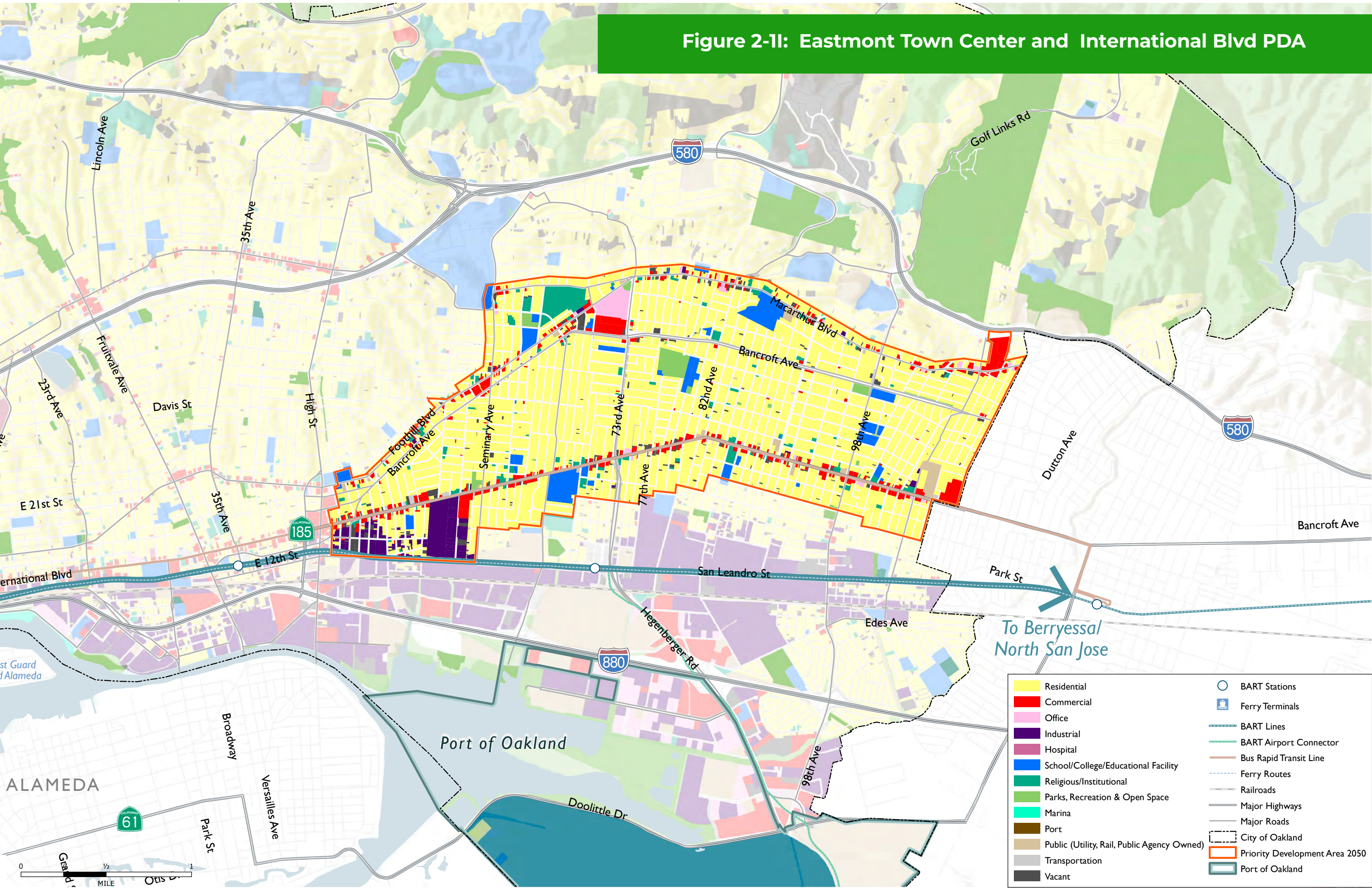


Figure 2-2: Current General Plan Land Use Designations

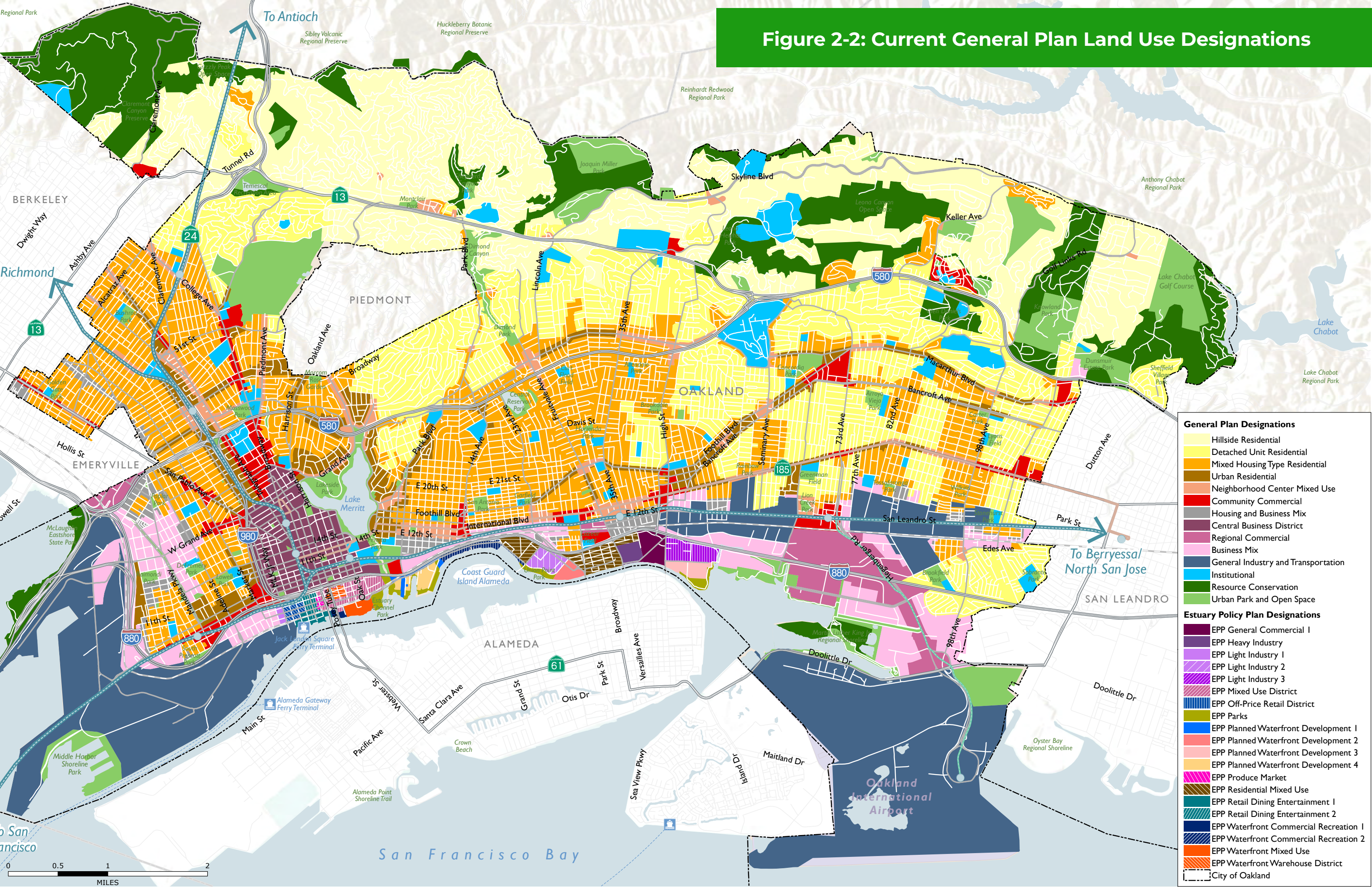




Photo: Greg Linhares, City of Oakland

ZONING

Zoning implements the policies put forth in the General Plan, as well as area and specific plans, through detailed development regulations. Zoning also regulates the form that development may take, and the land uses that are permitted in Oakland. **Figure 2-3** is a simplified zoning map for Oakland, and subsequent figures focus on residential, commercial, and industrial zoning gradation, respectively. While much of the City's zoning falls under "residential", "commercial", or "industrial", the first two categories sometimes allow for interchangeable uses. For instance, many commercial zones allow for residential on upper floors, while some residential uses permit or conditionally permit certain commercial uses.

Most of the City is zoned as Residential, with stretches of Commercial Zoning that also allows residential uses along its major corridors, and pockets of Open Space Zoning throughout, particularly in the hills. Zoning is more varied along Oakland's southwestern, waterfront edge. While a large portion of this area is zoned as Industrial to serve the Port, various area and specific plans guide the zoning in their corresponding districts: Central Estuary District, Lake Merritt Station Area District, and Coliseum Area District. Downtown Oakland is primarily designated as Central Business District. The Broadway Valdez District. Zoning has an emphasis on commercial retail with housing above and is explored in further detail below.

Figure 2-3A illustrates the gradation of residential density. High-Rise (mixed-use) and Urban Residential (also mixed-use, ranging from low-rise to high-rise) can be found along major corridors and streets in the flatlands, as well as clustered in denser areas, such

as around Lake Merritt. Similar mixed-use and high-rise residential zoning can also be found within the special zoning districts of the Central Business District, Broadway-Valdez District, and Lake Merritt Station Area District. Mixed Housing Type is found in many of the neighborhoods of the flatlands; this zoning allows for a mix of residential types, ranging from single-family homes to small-unit multi-family buildings, as well as neighborhood businesses. Detached Unit Residential zoning can be found throughout much of East Oakland, as well as in residential neighborhoods bordering Piedmont and the Oakland Hills. While all Detached Unit Residential zoning categories allow for limited non-residential activities in existing older non-residential facilities that are scattered throughout the area, Detached Unit Residential zoning is primarily Single-Family, with Two-Family structures allowed in the RD-2 zone. Finally, Hillside Residential, which is large-lot, single-family zoning, characterizes most of the Oakland Hills.

Figure 2-3B shows the clusters of commercial zones across Oakland. Regional commercial uses are located near shipping ports, the airport, and railway. The Central Estuary District and Housing and Business Mix zones in Fruitvale/Jingletown and West Oakland are also located close to shipping and railway and support heavy commercial activities (mixed with other uses, such as residential, industrial, and office). In Downtown Oakland, Central Business District and Lake Merritt Station Area District zoning supports pedestrian-oriented, ground-floor commercial uses with residential and office above. In the Jack London District, Community Shopping/Thoroughfare zones allow for pedestrian-oriented wholesale and retail commercial activities, typically clustered along major thoroughfares. Community Commercial zoning is found primarily along major corridors in the flatlands,

with CC-1 supporting shopping malls/centers and CC-2 allowing for businesses with direct frontage and access along major corridors. Neighborhood Center zoning can be found in pedestrian-oriented commercial districts meant to serve the nearby residents with daily needs. The Temescal District, Fruitvale District, areas along International Boulevard, and the Laurel District are a few examples.

Figure 2-3C illustrates the gradation of industrial intensity. The most intensive industrial uses are located primarily along Oakland's waterfront, near shipping terminals at the Port of Oakland, the I-880 freeway corridor, and along San Leandro Street. These areas are in Oakland's most permissive industrial zone "IG" General Industrial; example permitted activities include heavy/high impact manufacturing, recycling, and hazardous materials activities. The San Leandro Street industrial zones are located directly adjacent to residential and community uses (including elementary schools, libraries and parks), underscoring environmental justice issues that must be addressed. The companion Environmental and Racial Equity Baseline report explores these issues in depth. General manufacturing and warehousing activities are permitted in portions of the Fruitvale waterfront, Central Estuary, Coliseum area, and along the International Boulevard and 14th Street area. Zones allowing light manufacturing maker/production uses (such as incubator spaces and art facilities) can be found in neighborhoods that also support residential uses, such as Jack London Square and West Oakland. Although the zoning currently prohibits heavy/high impact from the West Oakland neighborhood, significant "grandfathered" industrial businesses continue to operate today particularly north of West Grand Avenue.

Figure 2-3: Current Zoning Designations

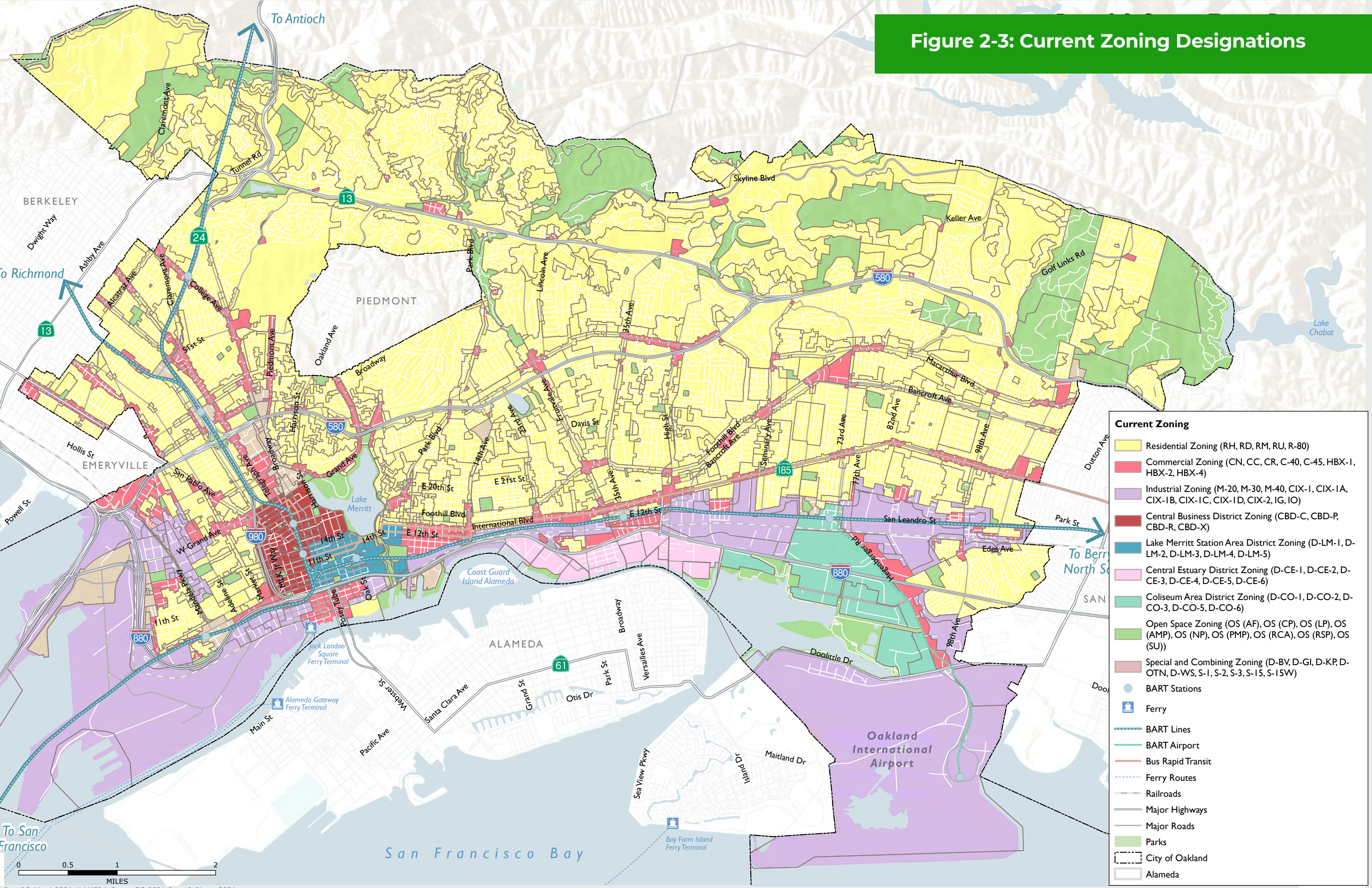


Figure 2-3A: Residential Zones

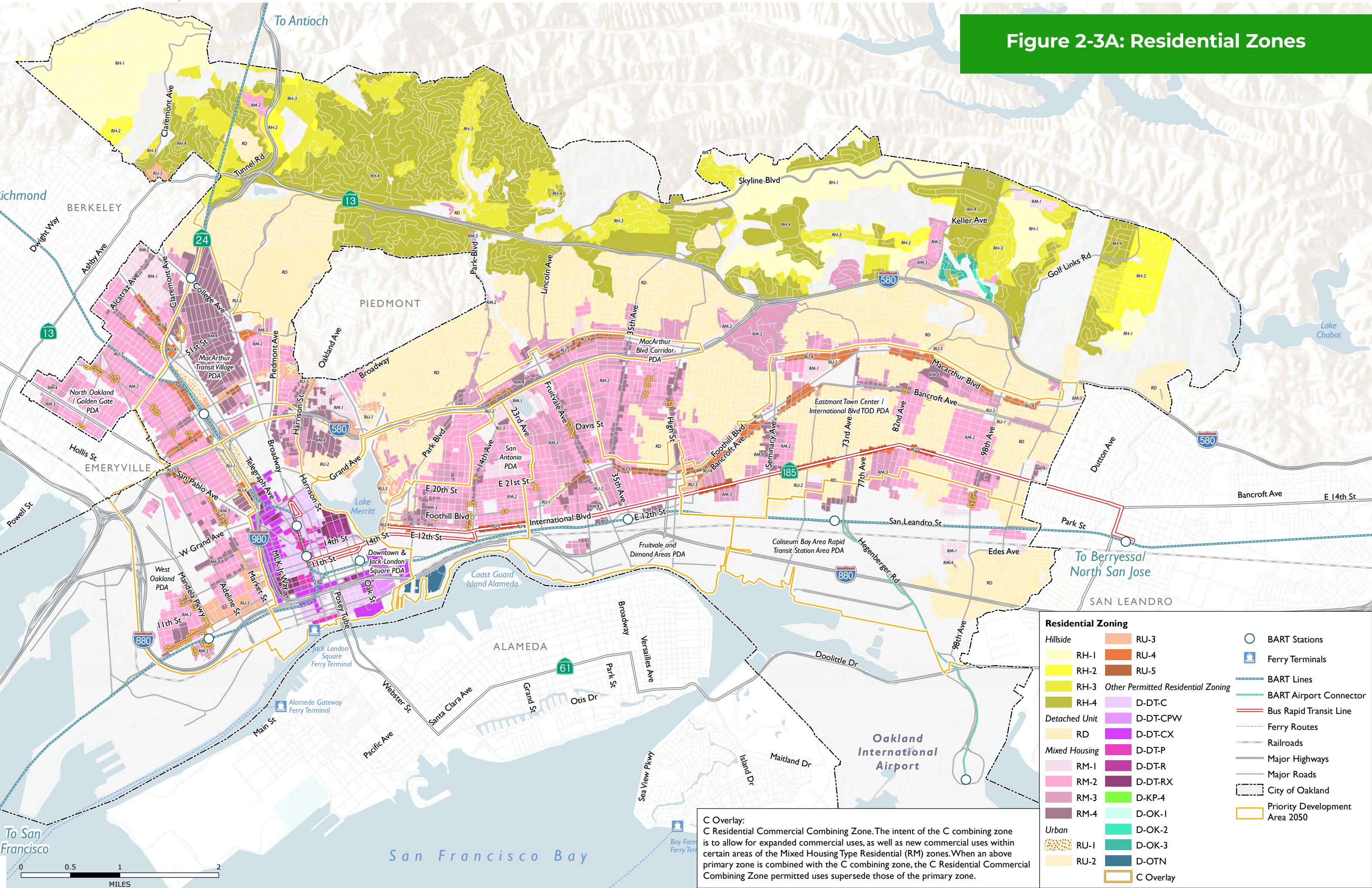


Figure 2-3B: Commercial Zones

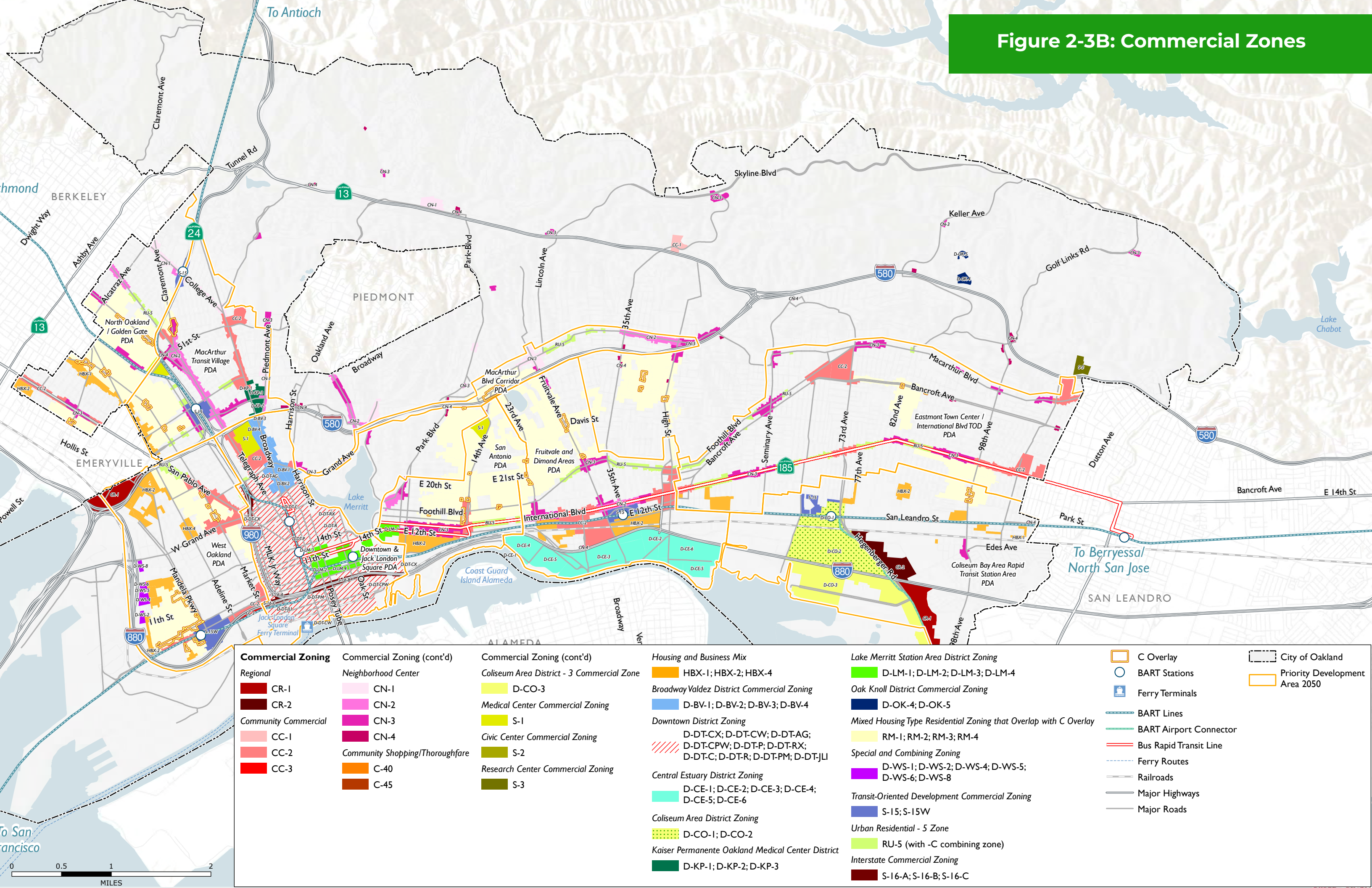
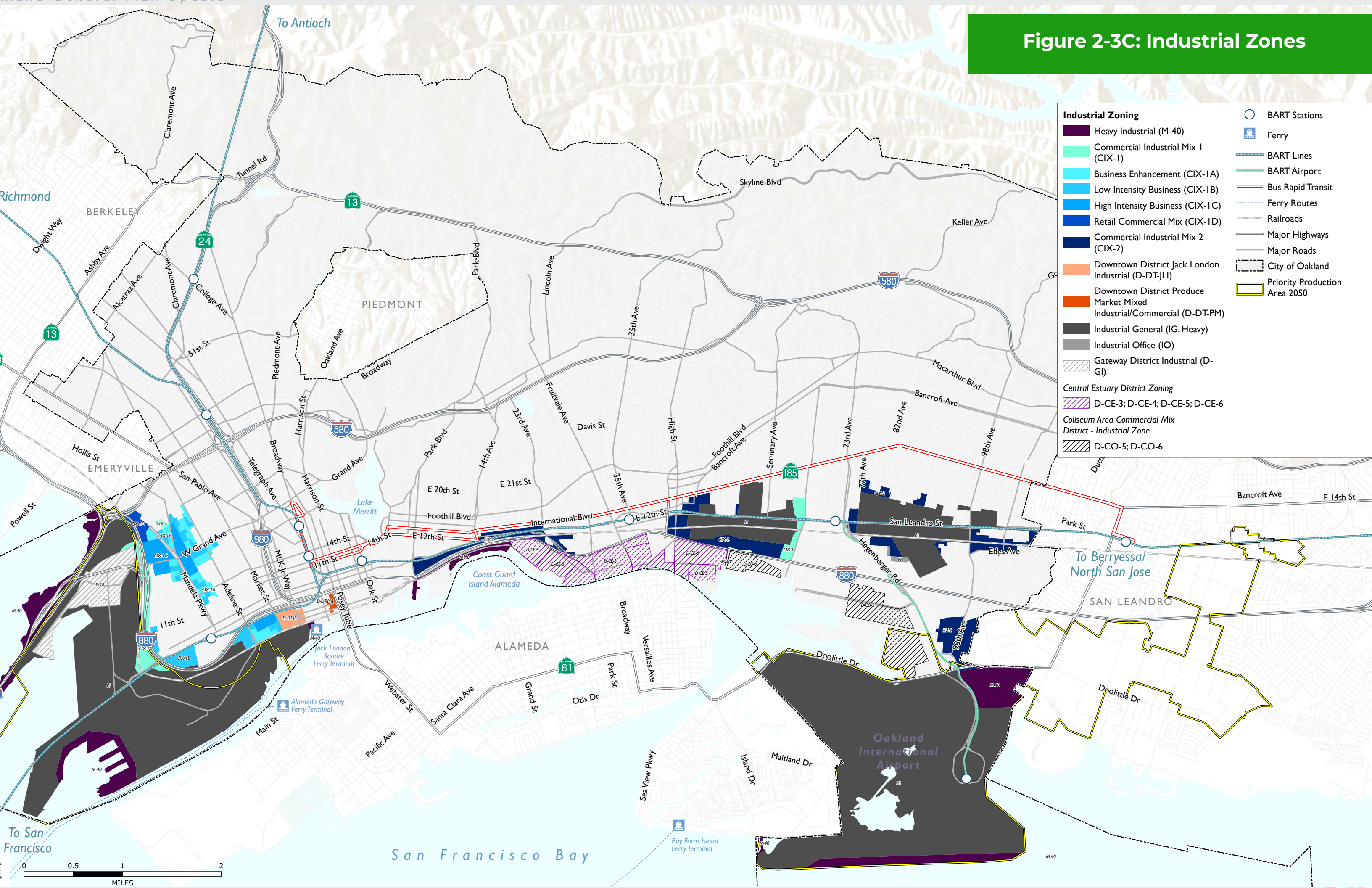


Figure 2-3C: Industrial Zones



2.3 Completed/Approved Development

Figure 2-4 shows the locations of Oakland’s completed and pipeline projects from 2013-2024. Most recently completed projects are found in the Broadway Valdez and Downtown areas. Brooklyn Basin, near the Estuary Channel Park, is another area where buildings are complete or underway as of 2024. Approved projects can also be found across West Oakland, Temescal, and the Bus Rapid Transit corridor running through East Oakland, particularly near the Coliseum. In the southern foothills, Oak Knoll is a large residential project in the hills that will include a mix of single-family homes and townhouses.

From 2015 to 2021, 22 new projects with affordable housing were completed, totaling approximately 1038 affordable units. These projects are shown in Figure 2-5, and details for each project are shown in **Table 2-2**.



Table 2-2: Projects with Affordable Units, 2015-2021

PROJECT NAME	ADDRESS	YEAR BUILT ¹	TOTAL UNITS	AFFORDABLE UNITS ²	% AFFORDABLE
Prosperity Place	188 11th St	2015	71	70	99%
Acts Cyrene Apartments	9400 International Blvd	2015	59	58	98%
Embark Apartments	2126 MLK Jr Way	2017	62	62	100%
-	1680 14th Street	2017	26	2	8%
Alta Waverly	1680 Valdez St	2017	234	25	11%
Estrella Vista	3706 San Pablo Ave	2017	33	33	100%
Redwood Hill Homes	4856-68 Calaveras Ave	2017	28	27	96%
Civic Center 14 TOD	632 14th St	2017	40	39	98%
Maya Apartments	4045 Broadway	2018	47	4	9%
Casa Arabella	3611 E 12th St	2019	94	92	98%
Coliseum Connections	805 71st Ave	2020	110	55	50%
Camino 23	1245 23rd Ave	2020	37	36	97%
Inn @ Temescal (Homekey Project)	3720 Telegraph Ave	2021	22	21	95%
Skylyne at Temescal	3883 Turquoise Way	2021	402	45	11%
The Logan	5110 Telegraph Ave	2017	204	17	8%
Brooklyn Basin 2 (Vista Estero)	285 8th Ave	2021	110	109	99%
Brooklyn Basin 1 (Paseo Estero)	255 8th Ave	2021	101	100	99%
NOVA Apartments (aka Oak Hill)	445 30th St	2021	57	56	98%
Monarch Homes (aka 3268 San Pablo)	3268 San Pablo Ave	2021	51	50	98%
Aurora Apartments	3737 MLK Jr Way	2021	44	43	98%
-	1233 23rd Ave	2021	37	36	97%
Coliseum Place	3300 Hawley St	2021	59	58	98%
TOTAL			1,928	1,038	

Notes:
1 "Year Built" refers to date of project completion as recorded in 2015-2017 Annual Progress Reports Table A and 2018-2021 Annual Progress Reports Table A2.
2 Affordable Units = Very Low (30-50% of Area Median Income) and Low-Income (50-80% of Area Median Income) Units

Source: City of Oakland Annual Progress Reports, 2015, 2016, 2017 (Table A); 2018, 2019, 2020, 2021 (Table A2)

Figure 2-4: Pipeline Projects (2024)

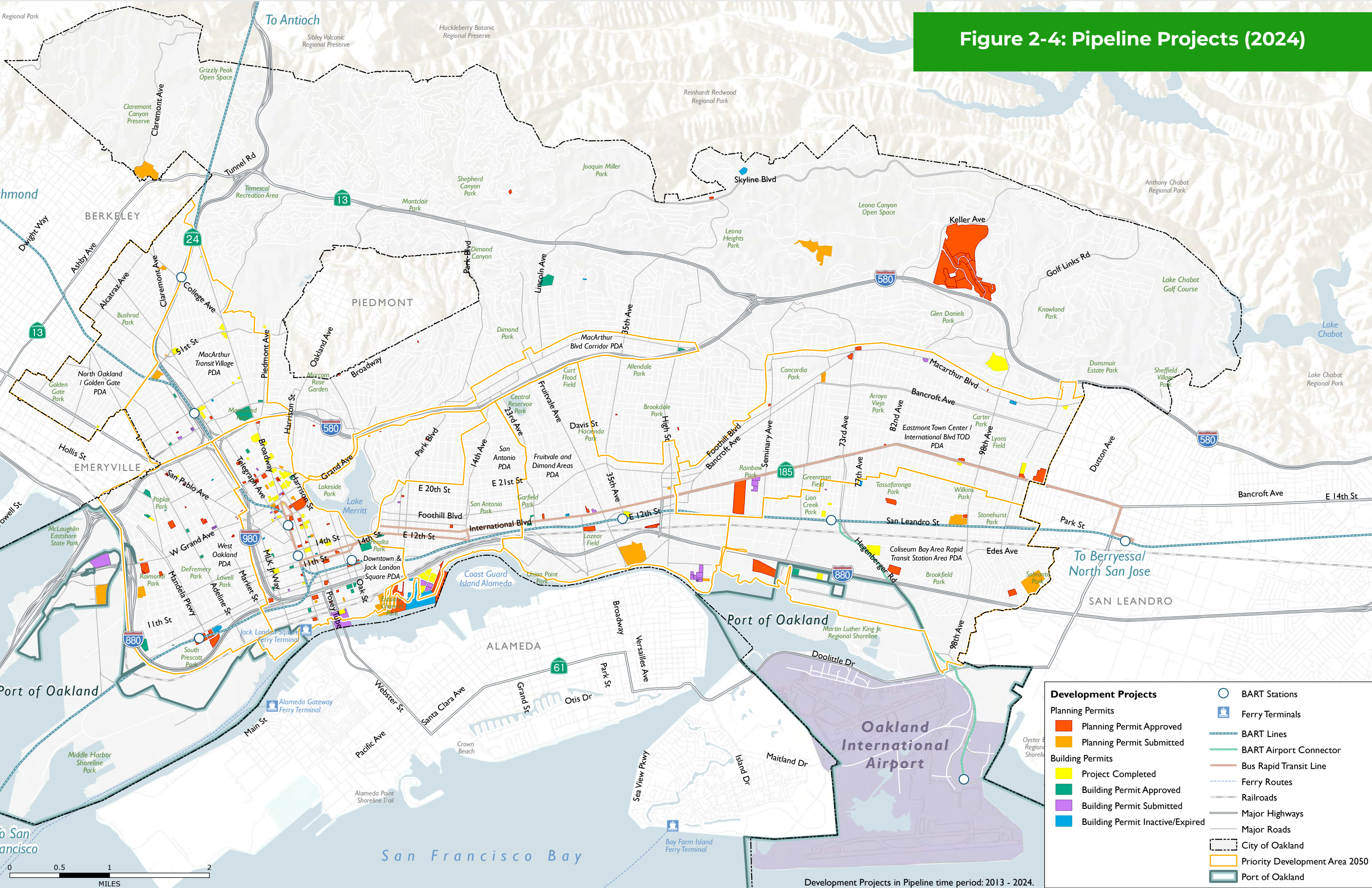
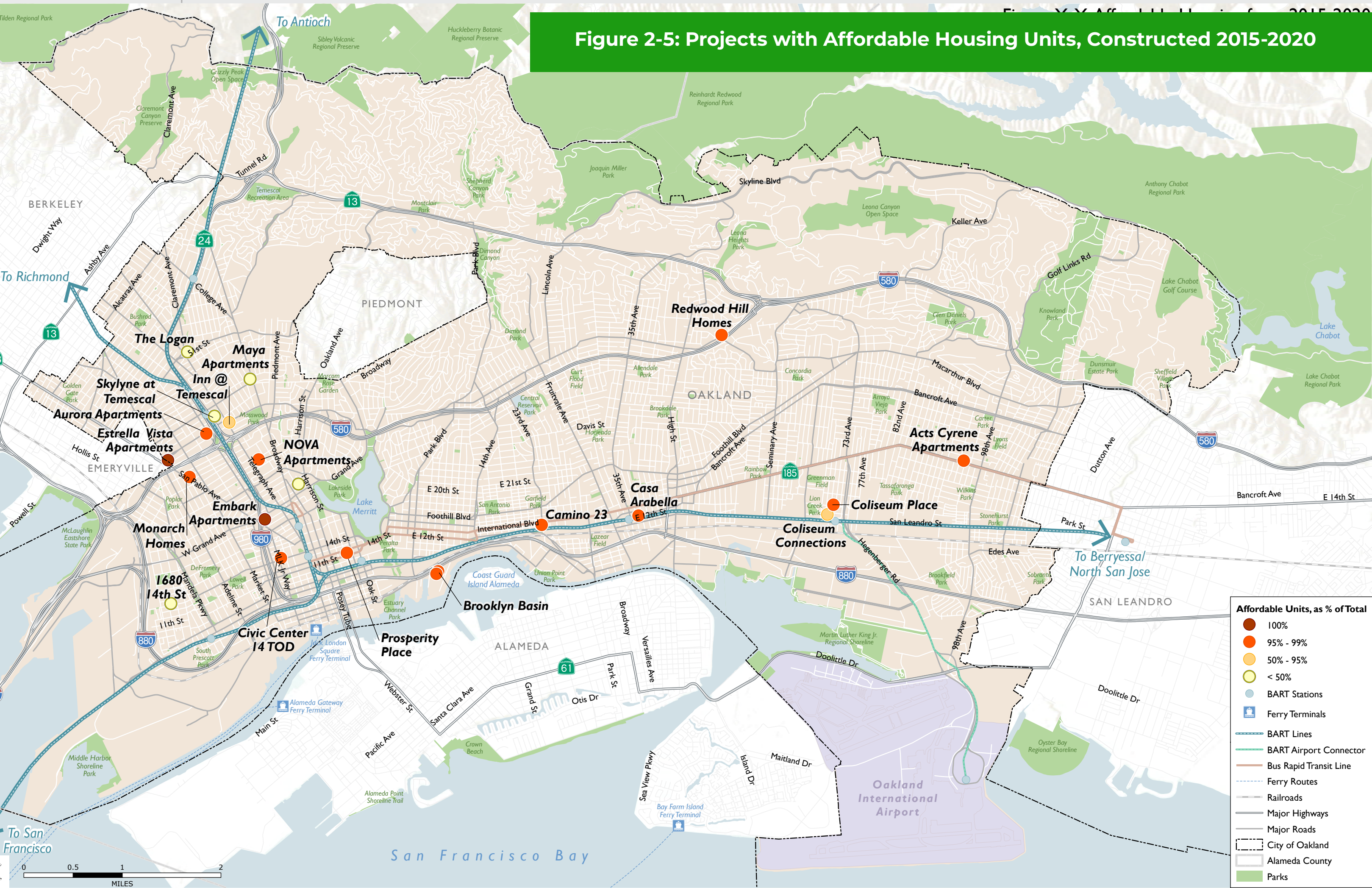


Figure 2-5: Projects with Affordable Housing Units, Constructed 2015-2020



2.4 Existing Densities and Intensities

RESIDENTIAL DENSITY

Figure 2-6 shows the currently existing residential density across the City. For residential uses, density is expressed as the number of dwelling units per acre. The highest residential densities are concentrated within a 2.5-mile radius of the City’s core. Downtown has recently experienced some of the tallest residential building developments in the City and has many buildings with densities above 200 units/acre. The Jack London and Broadway Valdez districts both feature many new mid-rise residential buildings, including some in the 100-200 units/acre category, and Adams Point and other neighborhoods around Lake Merritt feature older mid-rise residential buildings, with many between 40 and 100 units/acre. Thirty-six percent of Oakland’s total housing units are found within a one and a half mile radius of Lake Merritt, as shown in **Figure 2-7**. North Oakland, West Oakland and East Oakland are primarily mid-low density at 8-20 units/acre, with clusters of denser buildings, and densities gradually decrease towards the Hills. Most of the southern Oakland Hills, east of I-580, is characterized by the lowest density (up to four units/acre), while most of the northern Oakland Hills, east of Highway 13, is 4-8 units/acre.

Chart 2-1 summarizes the City’s land acreage by density, while **Chart 2-2** summarizes the City’s units by density. While the lowest density category (up to 4 units/acre; found only in Hills and adjacent neighborhoods) comprises 20.49 percent of the City’s residential acreage, it supplies only 2.91 percent of the City’s units; similarly, while nearly a quarter of the City’s residential land is 4-8 units/acre (primarily in the Hills) this category supplies only 10.56 percent of the City’s units. The largest portion of residential land (37.87 percent) falls into the 8-20 units/acre category, consistent with the fact that this category is abundant in North, West, and East Oakland; 31.02 percent of the City’s units fall into this density category. The highest-density category (above 200 units/acre; found primarily in Downtown) only comprises 0.24 percent of the City’s residential land yet it supplies nearly five percent of the City’s units.

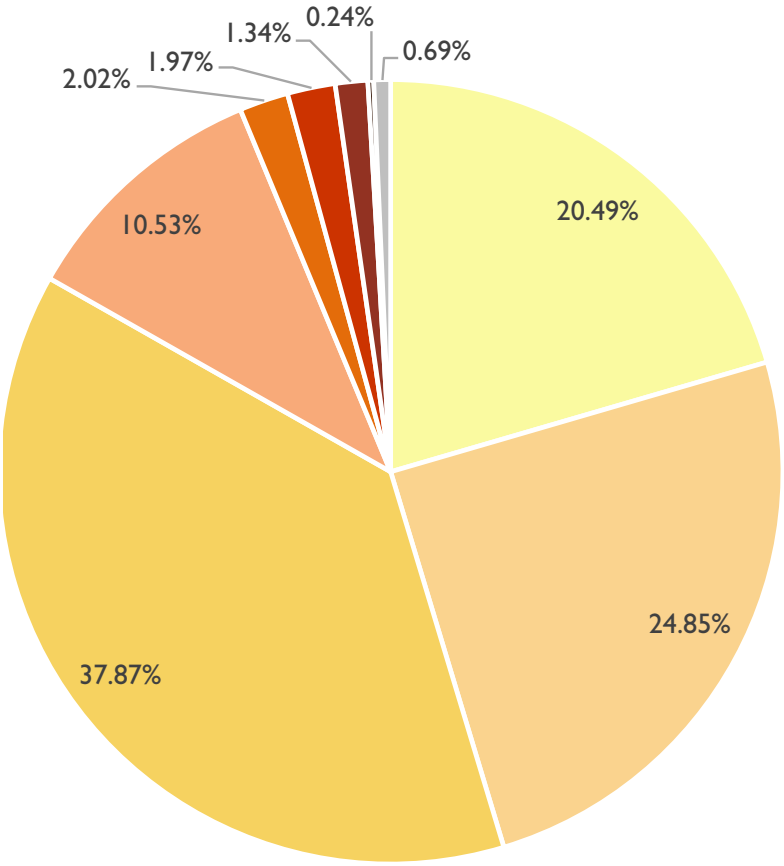


Chart 2-1: Percent Land Acreage by Residential Density

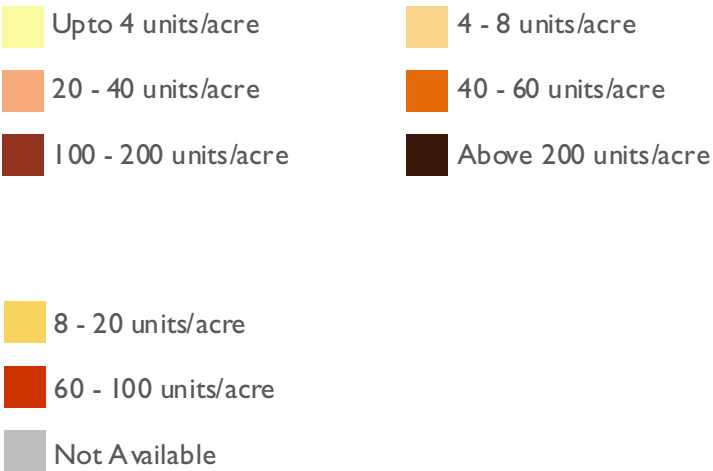


Chart 2-2: Percent Units by Residential Density

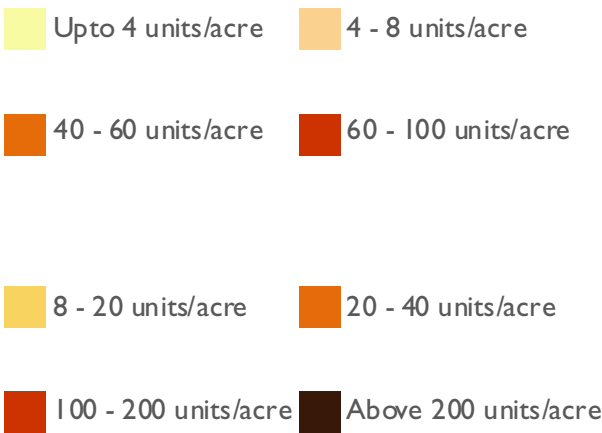


Figure 2-6: Existing Residential Density

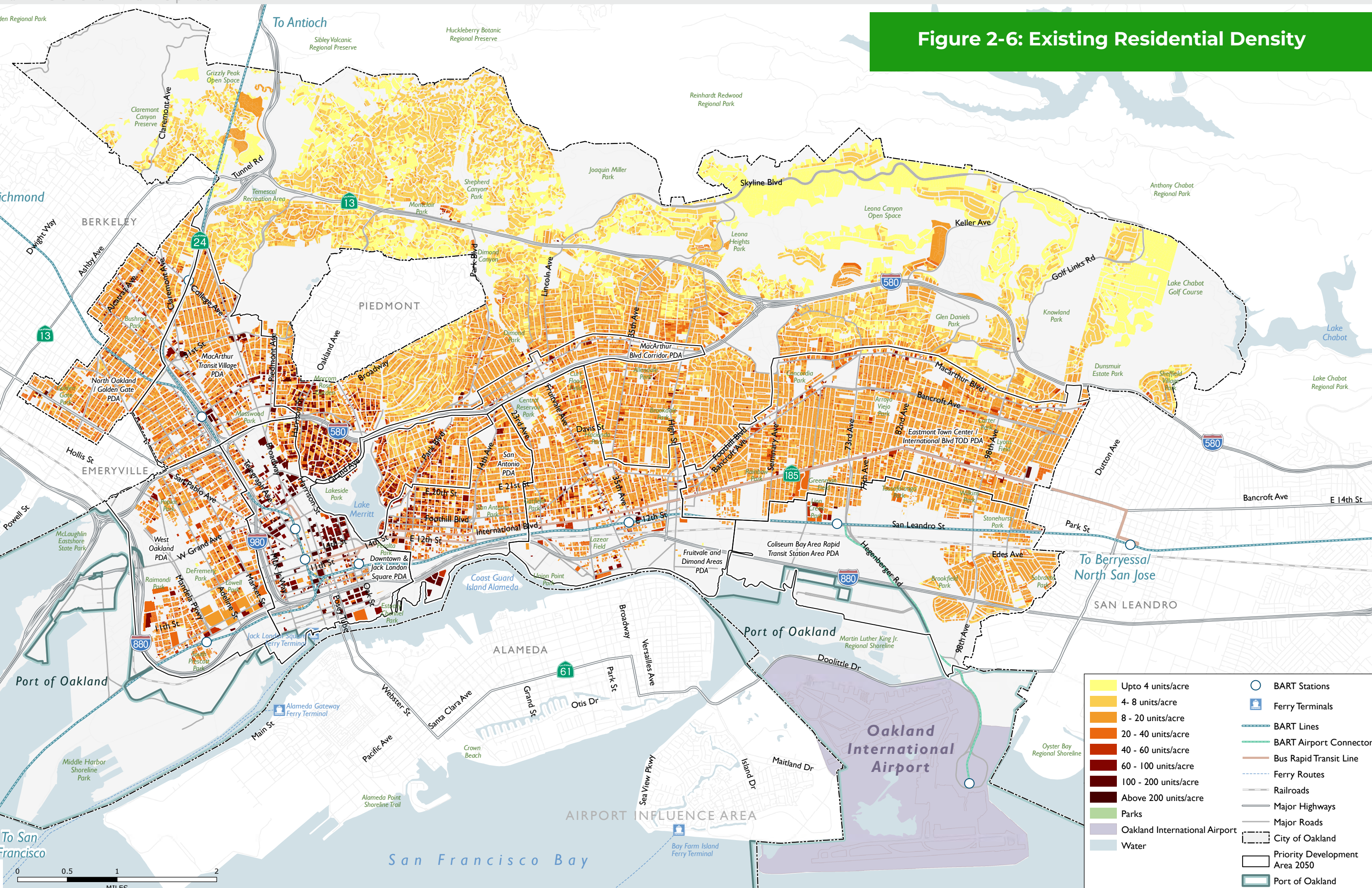
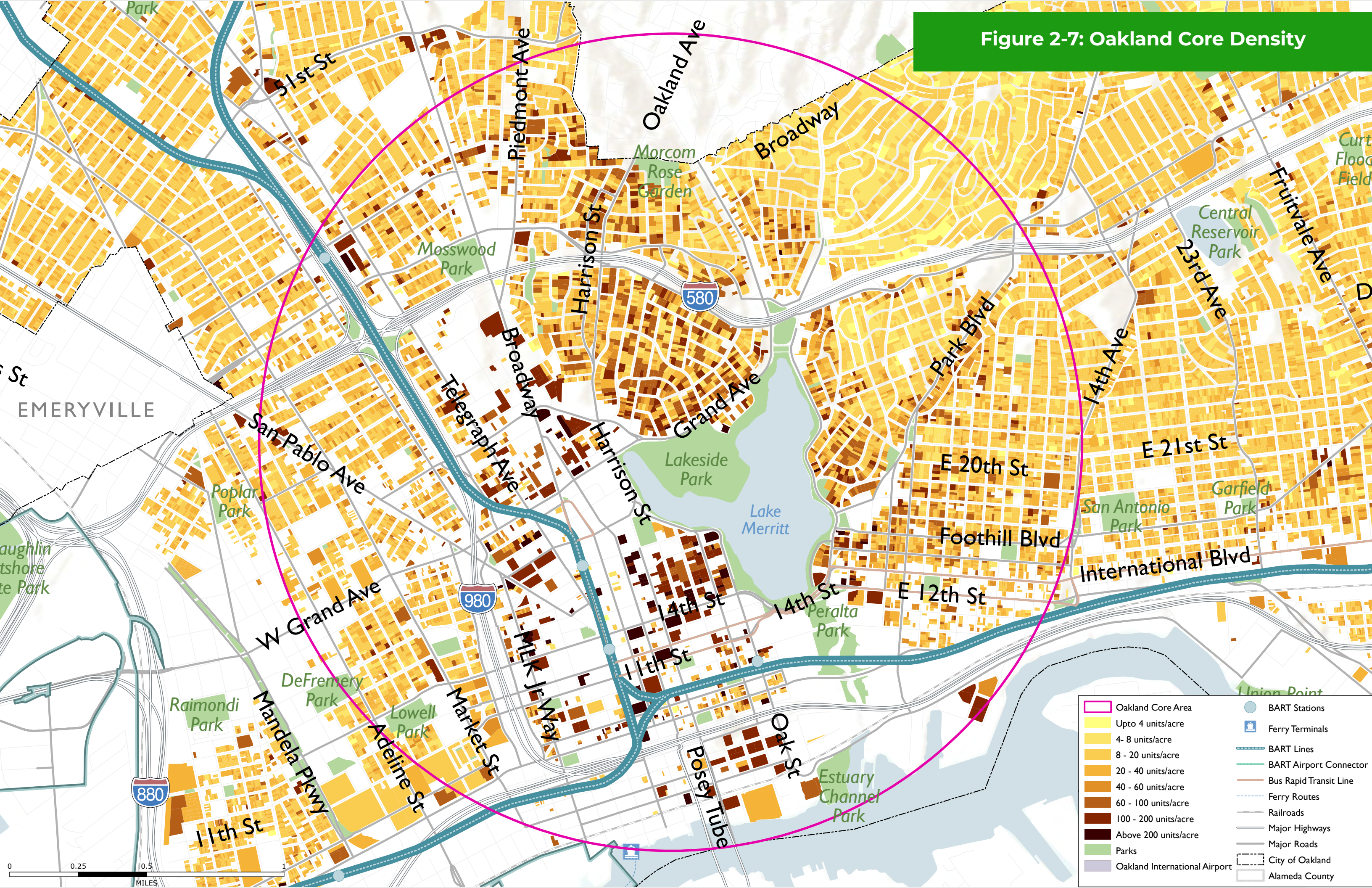


Figure 2-7: Oakland Core Density



NON-RESIDENTIAL INTENSITY

The intensity of non-residential development (office, commercial, and industrial) in Oakland is shown in **Figure 2-8**. Development intensity is expressed as Floor Area Ratio (FAR), which refers to the ratio between a building’s total floor area and the total area of the site (excluding any area devoted to parking). For instance, a one-story building occupying half of a parcel has an FAR of 0.5; a two-story building occupying the same half of a parcel has an FAR of 1.0. In Oakland, the highest intensity uses (5.0 FAR and greater) are in Downtown and Uptown. Mid-high level intensities (0.5-10.0 FAR) can be found in the Jack London District and Broadway Valdez District. Mid-low level intensities (0.3-2.0 FAR) can be found in West Oakland, Jingletown, southwest of San Leandro Street around the Coliseum, and clustered around San Leandro Street between 77th and 98th avenues. Lowest intensity uses (0.15-1.0 FAR) are located primarily along major commercial corridors in North and East Oakland.

Chart 2-3 below summarizes the City’s land acreage by intensity. Nearly a third of the City’s land used for non-residential purposes falls within a FAR of 0.5-1.0 and a fifth falls within a FAR of 0.30-0.50, suggesting much of Oakland’s land is dedicated to low intensity uses. There are 1,333 parcels (approximately 15 percent of the City’s non-residential building acreage) for which the building square footage is not reported in the County Assessor’s data.

Chart 2-3: Percent Land Acreage by Intensity

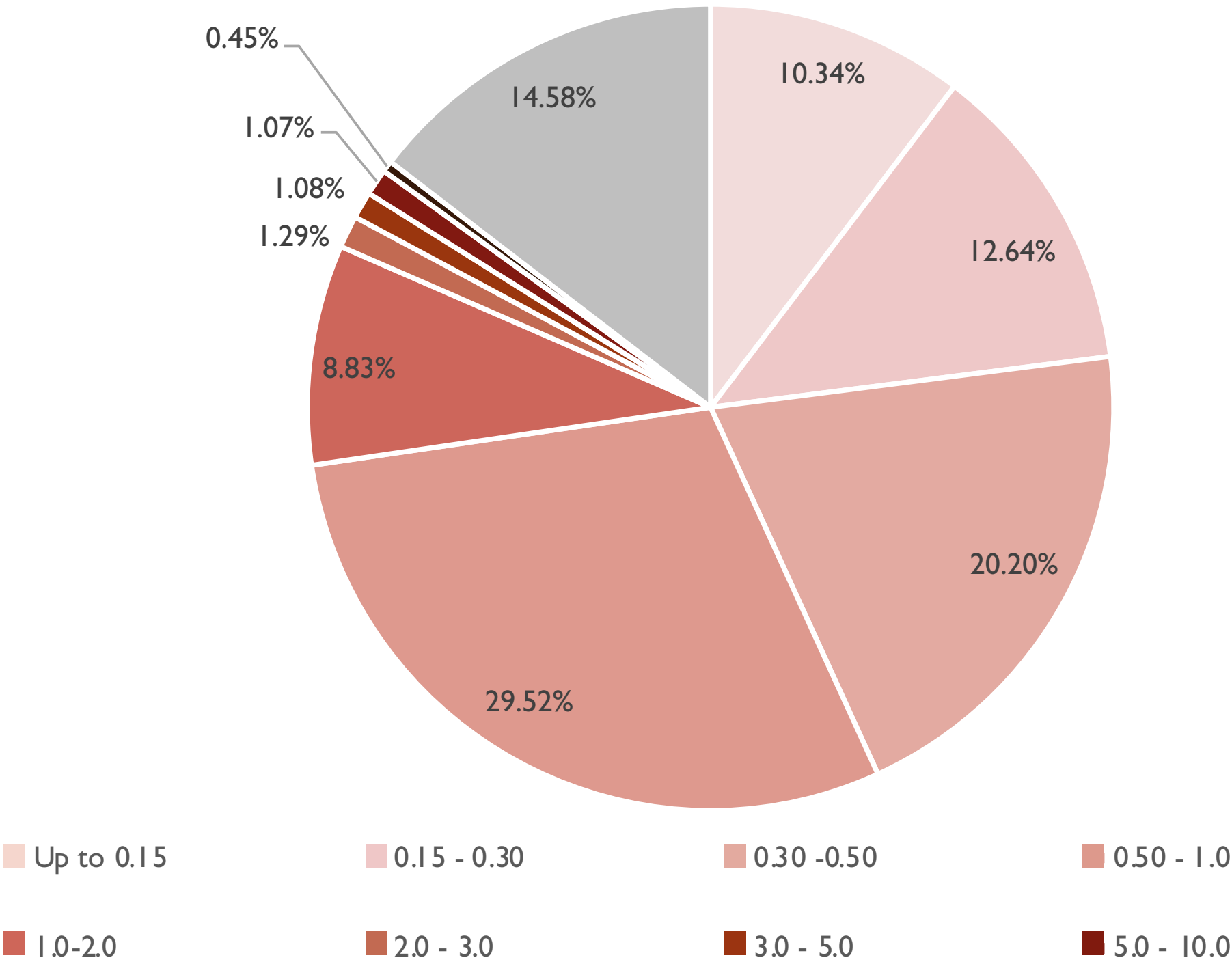
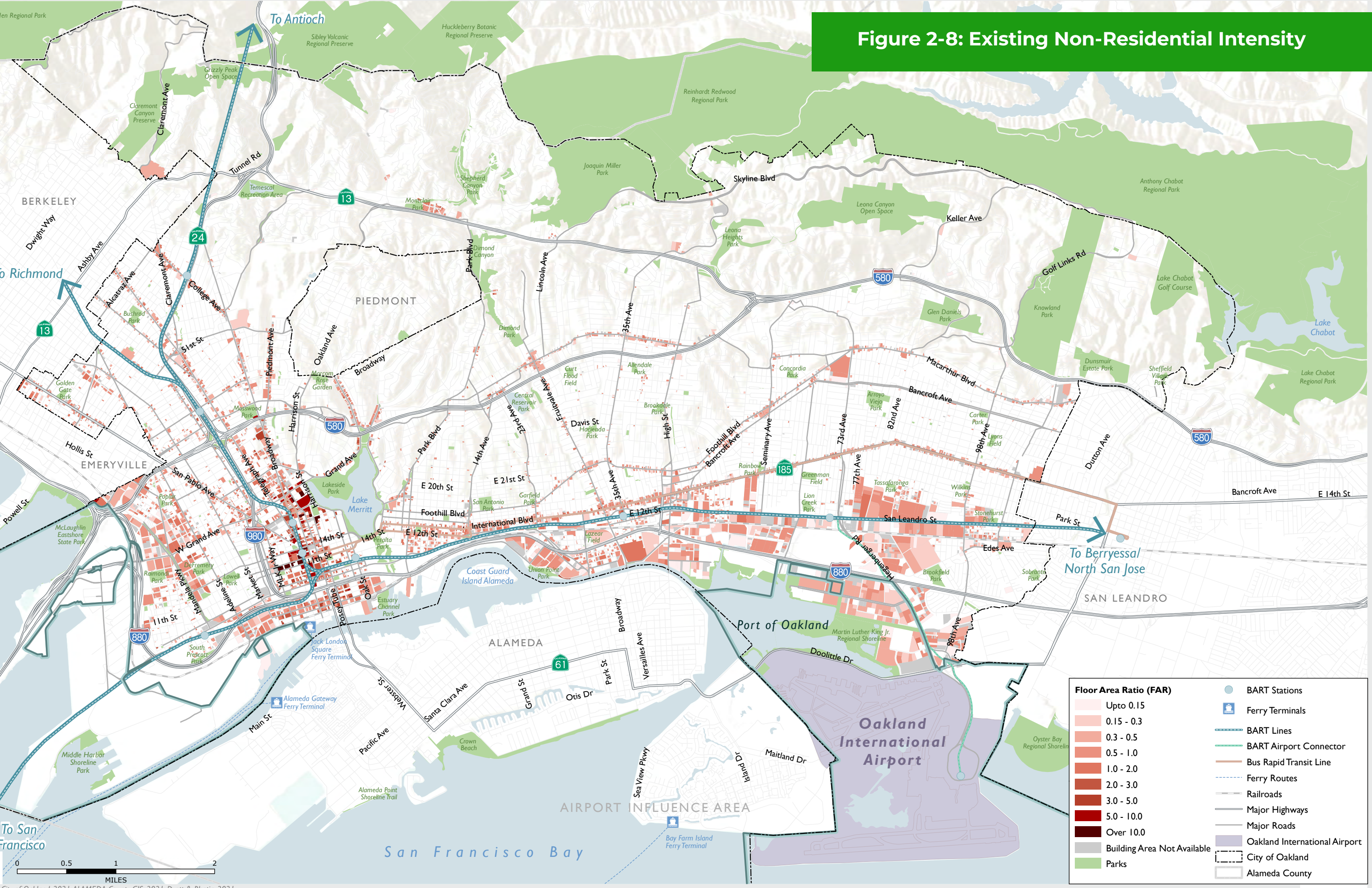


Figure 2-8: Existing Non-Residential Intensity



BUILDING HEIGHTS

Figure 2-9a shows the distribution of building heights for privately owned buildings throughout the city. Most of the buildings in Oakland are one to three stories.

A ‘heat map’ of these building height trends is shown in **Figure 2-9b**. The tallest buildings are found in the Downtown and Jack London Square PDA, followed by mid- and higher-rise buildings in Adams Point, and along Harrison Street bordering Lake Merritt.

Figure 2-10 shows airspace boundaries and allowable building heights around the Oakland International Airport. Part 77 surfaces are imaginary boundaries set by the Federal Aviation Administration (FAA) to keep the airspace around airports safe for airplanes. These boundaries, shaped by the layout of the runways, include zones that protect areas where planes take off, land, and fly nearby. If tall buildings or natural features (like trees) go past these limits, they could create safety risks.



Figure 2-9A: Existing Building Heights

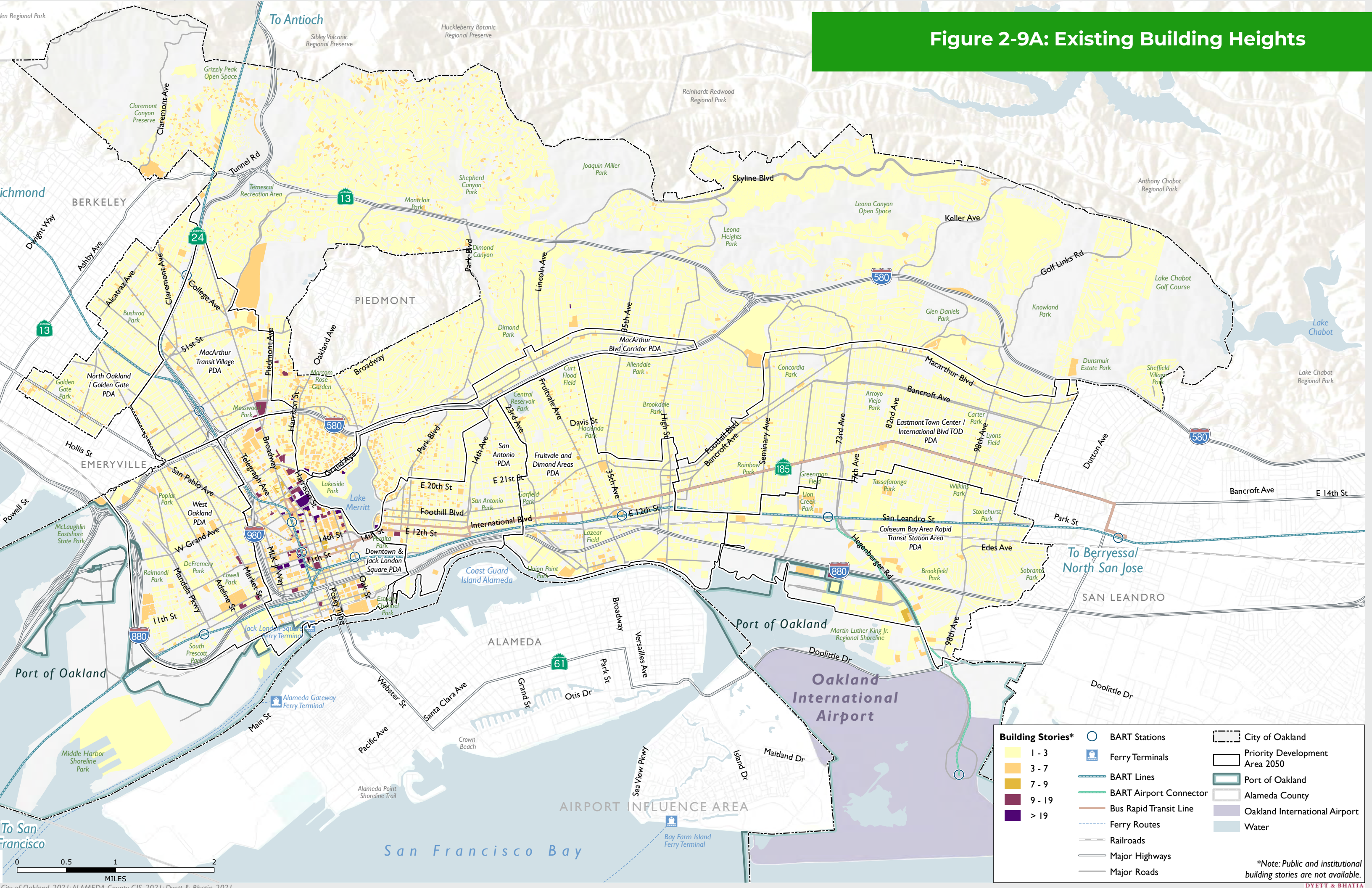


Figure 2-9B: Existing Building Heights Distribution

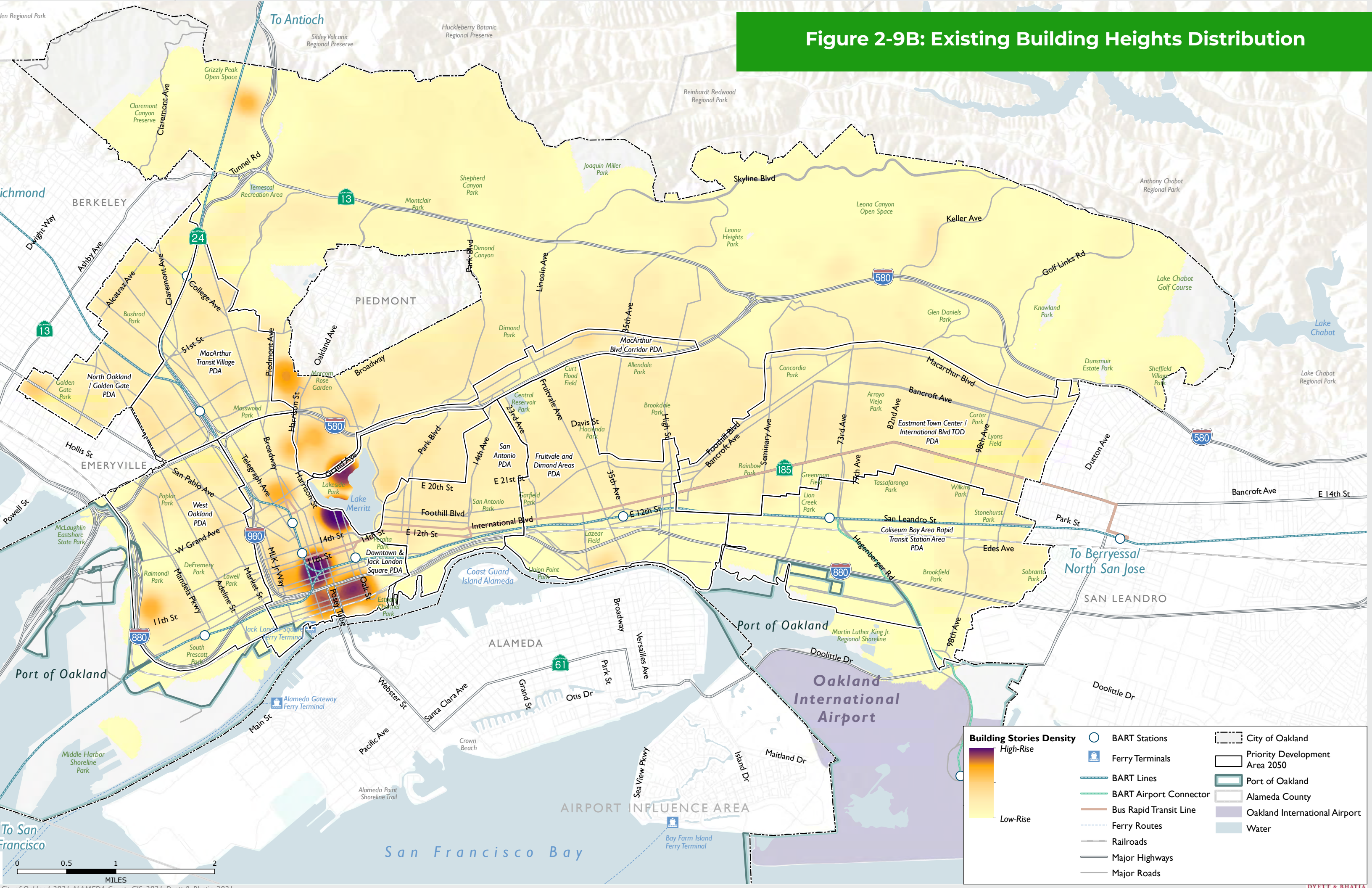
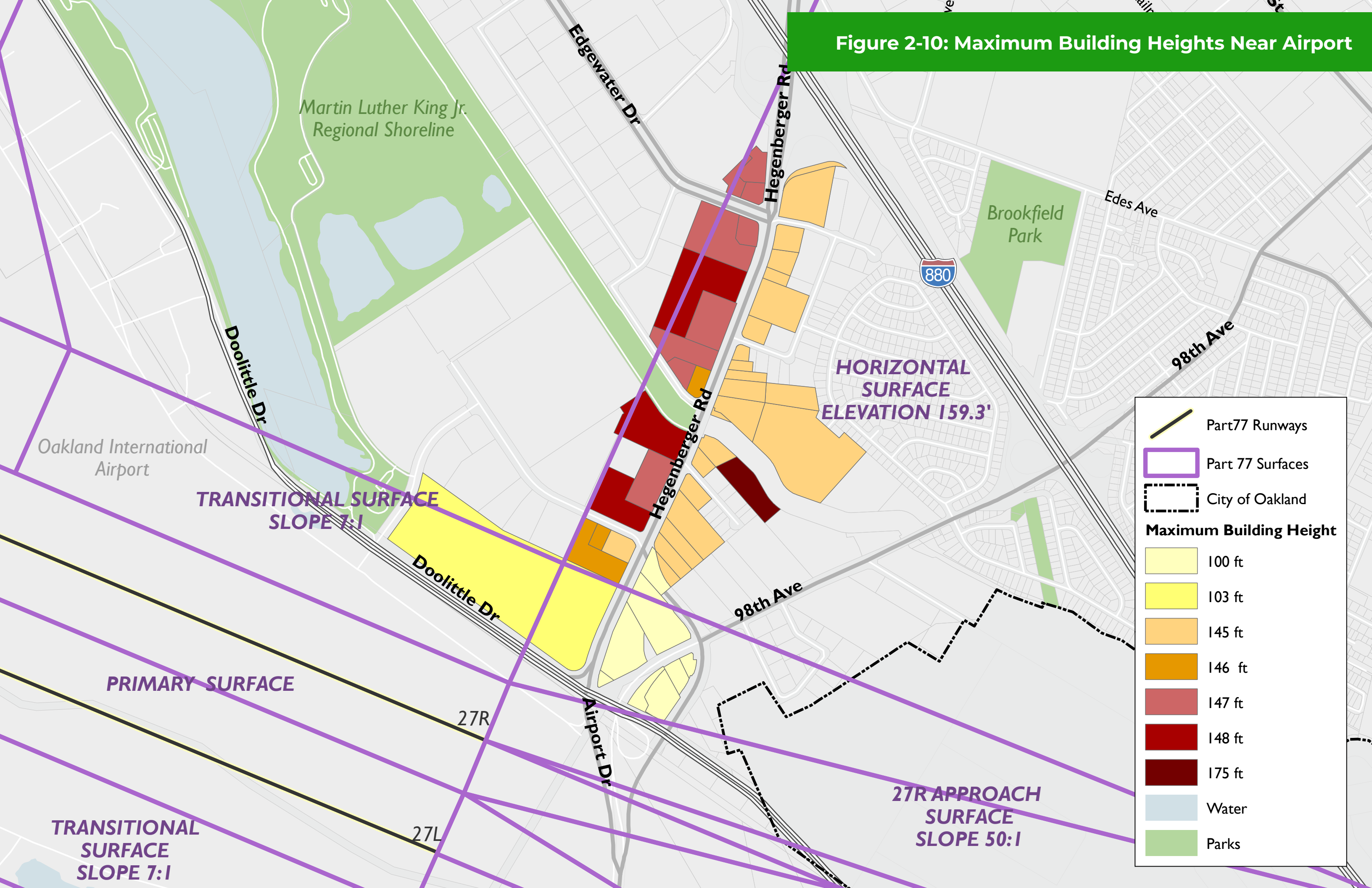


Figure 2-10: Maximum Building Heights Near Airport



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03

MOBILITY

- 3.1 Context**
- 3.2 Street Network**
- 3.3 Transit**
- 3.4 Planned Regional Improvements**
- 3.5 Bicycle and Pedestrian Facilities Network**
- 3.6 Goods Movement**

3. Mobility

3.1 Context

TRAVEL PATTERNS

Travel patterns for trips to and from Oakland were analyzed to understand existing travel characteristics and to inform needs and priorities that will shape General Plan policies. The analysis was completed using the Alameda Countywide Model¹ to estimate Year 2020 non-pandemic trip patterns.

MODE SHARE

Table 3-1 summarizes the estimated mode split for trips beginning or ending in Oakland in 2020 under pre-pandemic conditions. The analysis was completed separately for High Equity Priority Neighborhoods (defined by Oakland Department of Transportation, “OakDOT”, as neighborhoods with higher percentages of people of color, low-income households, people with disabilities, seniors, single-parent families, severely rent-burdened households, and low educational attainment) and the rest of Oakland to identify equity-related differences in travel patterns. OakDOT has classified the Priority Neighborhoods into five levels of priority between lowest and highest. For the purpose of this analysis, High Equity Priority Areas refers to the neighborhoods classified as high or highest in the Oakland Equity Map.²

Drive alone trips make up almost half of all travel within Oakland, with trips by auto (drive alone and shared ride) making up approximately three quarters of all trips. Transit, biking, and walking make up slightly less than a quarter of all trips.

¹ Alameda Countywide Transportation Model was developed in 2015 (prior to the Covid-19 pandemic). The Year 2020 refers to the forecast horizon year for the model. More information can be found here: https://www.alamedactc.org/wp-content/uploads/2018/12/AlamedaCTC_ModelDocumentation_FinalReport_20151109-2.pdf

² Oakland Equity Map: <https://oakgis.maps.arcgis.com/apps/MapSeries/index.html?appid=fd47784582294d7b87cfb3ee1b047ea8>

For High Equity Priority Areas within Oakland, there are fewer drive alone trips and a higher share of shared ride trips. However, there is no significant difference in mode split between these areas and other areas of Oakland.

TRIP DESTINATIONS

Trips to and from Oakland were analyzed to understand existing travel patterns for those who live, work, and visit Oakland. **Table 3-2** summarizes trip destinations for trips beginning in Oakland in 2020 under pre-pandemic conditions. The analysis was completed separately for High Equity Priority Areas and rest of Oakland to identify equity-related differences in travel patterns.

For non-work travel, roughly two-thirds of trips that begin in Oakland also end within the City limits. For work trips made by Oakland residents, less than half remain in Oakland, reflecting travel to San Francisco and other Bay Area destinations.

Table 3-1: Mode Share for Trips Beginning or Ending in Oakland

TRAVEL MODE	HIGH EQUITY PRIORITY AREAS	REST OF OAKLAND
Drive Alone	40%	46%
Shared Ride	34%	30%
Transit	12%	11%
Bike	2%	2%
Walk	12%	11%
Total	100%	100%

Source: Alameda Countywide Travel Model, Plan Bay Area 2040 version, May 2019; Kittelson & Associates, Inc.



Table 3-2: Trip Destinations for Trips Beginning in Oakland

DESTINATION	HOME TO WORK TRIPS		NON-WORK TRIPS	
	HIGH EQUITY PRIORITY AREAS	REST OF OAKLAND	HIGH EQUITY PRIORITY AREAS	REST OF OAKLAND
Oakland	41.90%	39.20%	67.50%	62.20%
Alameda County Other	29.40%	27.10%	19.40%	20.00%
San Francisco	16.10%	21.20%	7.40%	10.30%
San Mateo County	2.80%	2.80%	0.50%	0.40%
Santa Clara County	1.90%	1.80%	0.40%	0.30%
Contra Costa County	4.00%	4.80%	3.30%	5.30%
North Bay	3.90%	3.20%	0.70%	0.80%
Outside Bay Area	0.10%	0.10%	0.80%	0.60%
Total	100%	100%	100%	100%

Source: Alameda County Model, 2020



integrated safety and equity-driven approach. The Safe Oakland Streets Initiative was launched in 2021 as a partnership between Oakland Department of Transportation, Oakland Police Department, Department of Race and Equity, and the City Administrator’s Office; more information can be found at www.oaklandca.gov/SOS.

Table 3-3: Traditional Traffic Safety Approach vs. Safe Oakland Streets Approach

TRADITIONAL APPROACH	SAFE OAKLAND STREETS (SOS) APPROACH
Focus on all crashes	Focus on fatal and severe injury crashes, and eliminating inequities
Individual responsibility	Safe System that Protects the Most Vulnerable
Perfecting human behavior	Anticipate that people make mistakes and have a range of abilities
Agencies working in silos	Interdepartmental coordination is a valuable asset
Community engagement is too time consuming	We must engage with communities most impacted
Complaint-driven improvements	Strategic investments where sever injuries are concentrated, in areas of historic underinvestment

Source: City of Oakland, 2021

The High Equity Priority Areas show more travel within Oakland and Alameda County compared to the rest of Oakland, suggesting the importance of mobility options for shorter-distance trips.

ACTIVE TRANSPORTATION AND MICROMOBILITY

Planning for people walking and bicycling has changed significantly since the adoption of Oakland’s Land Use and Transportation Element in 1998. More recent planning efforts have been shaped by a new focus on health, equity, and safety.

The following summarizes these changes by discussing Oakland’s Bicycle and Pedestrian Plans, shifting local and state policy priorities, and the emergence of micromobility.

Oakland Walks (2017)

Oakland’s Pedestrian Plan, Oakland Walks, centers pedestrian planning, policy, and programming around safety and equity. Acknowledging the racial disparities in pedestrian-involved collisions and the importance of safe pedestrian facilities for youth, older adults, people with disabilities, and low-income residents to access vital services, the Plan offers context-appropriate goals, policies, and programming to transform Oakland into a “walker’s paradise.”



Let’s Bike Oakland (2019)

Let’s Bike Oakland situates bicycle planning around supporting the City’s most vulnerable groups to live their “desired condition of well-being”. The plan applies a new approach that focuses on equity, partnering with community-based organizations, meeting people where they’re at, and applied research to recommend bicycle infrastructure, policy, and programming with the following goals in mind:



- **Access** to neighborhood destinations
- **Health & Safety** related to traffic safety, police interactions, and pollution-burden
- **Affordability** by reducing household transportation costs
- **Collaboration** through an increased role for the community in the planning process

Safe Oakland Streets Approach

Safe Oakland Streets (SOS) is a Citywide initiative to prevent serious and fatal traffic crashes and eliminate crash inequities on Oakland’s streets by prioritizing safety over speed on our streets with a focus on historically underserved communities. In Oakland, 60 percent of severe and fatal crashes occur on 6 percent of the total street network; 95 percent of which are in medium to high priority equity communities. Every week, two Oaklanders are killed or severely injured in traffic crashes on our streets. These crashes disproportionately harm people in Black, Indigenous, and people of color (BIPOC) communities, people with disabilities, seniors, and low-income communities. Crashes are also a leading cause of death among Oakland youth. The SOS approach recognizes that all severe and fatal traffic crashes are preventable. The SOS approach integrates the “Safe Systems” approach to traffic safety in which roadways are designed to anticipate human error and prevent severe and fatal collisions by designing a system that protects those who are most vulnerable. This differs from a more traditional traffic safety approach, which often relies on perfecting individual human behavior (Table 3-3).

Safe Oakland Streets is working across departments and building partnerships with the community to implement the most effective and equitable strategies. Previous planning efforts have laid the foundation for SOS, including Oakland Department of Transportation’s 2016 Strategic Transportation Plan, Oakland’s 2017 Pedestrian Plan, Oakland Walks, and Oakland’s 2019 Bicycle Plan, Let’s Bike Oakland, which prioritize taking an

3.2 Street Network

Oakland’s streets connect neighborhoods, services, and employment opportunities both locally and regionally. Streets also support adjacent land uses and travel by bus, walking, and biking. **Figure 3-1** shows the street network, which is classified as follows:

FUNCTIONAL CLASSIFICATION

Freeways

The freeways within Oakland consist of Interstates 80, 880, 580, and 980, along with State Routes 24 and 13. These freeways are owned and maintained by California Department of Transportation (“Caltrans”) and provide regional connectivity to and through Oakland. Freeways are limited-access routes with no direct access to adjacent land uses.

Major Arterial and Minor Arterial Streets

The City of Oakland has designated arterial streets that provide mobility for longer-distance travel by transit, driving, and biking. Major arterial streets carry higher traffic volumes than minor arterial streets. Major arterial and minor arterial streets often support adjacent commercial or community-serving land uses. Some arterial streets are under Caltrans’ jurisdiction, while the remainder are owned and maintained by the City. **Table 3-4** provides the list of major arterial streets segments along with information on average daily traffic volumes (ADT) and ownership.

Collector and Local Streets

Collector and local streets prioritize access to adjacent land uses. Local streets provide circulation within neighborhoods, while collector streets provide for connections between neighborhoods.

Table 3-4: Average Daily Traffic Volume and Ownership for Major Roadways

ROADWAY	LIMITS	FUNCTIONAL CLASSIFICATION	OWNERSHIP	DATA YEAR	ADT
I-80	Between Bay Bridge and W Grand Avenue	Interstate/Other Freeway	Caltrans	2019	227,000
I-880	Between W Grand Avenue and Adeline Street	Interstate/Other Freeway	Caltrans	2019	95,000
I-880	Between Adeline Street and I-980	Interstate/Other Freeway	Caltrans	2019	109,000
I-880	Between I-980 and Webster Street	Interstate/Other Freeway	Caltrans	2019	81,000
I-880	Between Webster Street and Embarcadero	Interstate/Other Freeway	Caltrans	2019	176,000
I-880	Between Embarcadero and Kennedy Street	Interstate/Other Freeway	Caltrans	2019	194,000
I-880	Between Kennedy Street and Hegenberger Road	Interstate/Other Freeway	Caltrans	2019	197,000
I-880	Between Hegenberger Road and 105th Avenue	Interstate/Other Freeway	Caltrans	2019	195,000
I-580	Between Ashby Avenue and 40th Street	Interstate/Other Freeway	Caltrans	2019	217,000
I-580	Between Mandela Pkwy and I-980	Interstate/Other Freeway	Caltrans	2019	148,000
I-580	Between I-980 and Grand Avenue	Interstate/Other Freeway	Caltrans	2019	154,000
I-580	Between Grand Avenue and 13th Street	Interstate/Other Freeway	Caltrans	2019	168,000
I-580	Between 13th Street and 35th Street	Interstate/Other Freeway	Caltrans	2019	143,000
I-580	Between SR 13 and 98th Avenue	Interstate/Other Freeway	Caltrans	2019	153,000
I-980	Between I-880 and I-580	Interstate/Other Freeway	Caltrans	2019	103,000
SR 24	Between I-580 and Broadway	Interstate/Other Freeway	Caltrans	2019	127,000
SR 24	Between Broadway and SR -13	Interstate/Other Freeway	Caltrans	2019	140,000
SR 24	Between SR-13 and Camino Pablo	Interstate/Other Freeway	Caltrans	2019	142,000
SR 13	Between SR -24 and Moraga Avenue	Interstate/Other Freeway	Caltrans	2019	71,000
SR 13	Between Moraga Avenue and Lincoln Avenue	Interstate/Other Freeway	Caltrans	2019	59,000
SR 13	Between Lincoln Avenue and I-580	Interstate/Other Freeway	Caltrans	2019	53,000
International Boulevard	Between 1st Avenue and 42nd Avenue	Major Arterial	City of Oakland	2013	12,680
International Boulevard	Between 42nd Avenue and Seminary Avenue	Major Arterial	Caltrans	2019	20,700
International Boulevard	Between Seminary Avenue and 86th Avenue	Major Arterial	Caltrans	2019	24,100
International Boulevard	Between 86th Avenue and Durant Avenue	Major Arterial	Caltrans	2019	21,600
Doolittle Drive	Between Hegenberger Road and Harbor Bay Pkwy	Major Arterial	Caltrans	2019	20,500
San Pablo Avenue	Between 67th and 53rd Street	Major Arterial	Caltrans	2019	17,800
42nd Avenue	Between I-880 and International Boulevard	Major Arterial	Caltrans	2019	12,100
E 14th Street	Between Mandela Pkwy and Magnolia Street	Major Arterial	City of Oakland	2016	8,990
E 14th Street	Between Magnolia Street and Brush Street	Major Arterial	City of Oakland	2016	10,230
14th Street	Between Brush Street and Clay Street	Major Arterial	City of Oakland	2016	11,660
14th Street	Between Clay Street and Webster Street	Major Arterial	City of Oakland	2016	8,840
14th Street	Between Webster Street and Lakeside Dr	Major Arterial	City of Oakland	2016	8,840
1st Avenue	Between International Boulevard and E 18th Street	Major Arterial	City of Oakland		NA
3rd Avenue	Between E 18th Street and Park Boulevard	Major Arterial	City of Oakland	2013	2,380

Table 3-4: Average Daily Traffic Volume and Ownership for Major Roadways

ROADWAY	LIMITS	FUNCTIONAL CLASSIFICATION	OWNERSHIP	DATA YEAR	ADT
42nd Avenue	Between San Leandro and International Boulevard	Major Arterial	City of Oakland	2013	10,890
4th Avenue	Between E 12 Street and Park Boulevard	Major Arterial	City of Oakland		NA
73rd Avenue	Between International Boulevard and Simson Street	Major Arterial	City of Oakland	2017	26,412
Adeline Street	Between 3rd Street and W Grand Avenue	Major Arterial	City of Oakland	2013	6,730
Airport Drive	Between Doolittle Drive and Neil Armstrong Way	Major Arterial	City of Oakland		NA
Broadway	Between 5th Street and Keith Avenue	Major Arterial	City of Oakland		NA
E 18th Street	Between 1st Avenue and 3rd Avenue	Major Arterial	City of Oakland		NA
MacArthur Boulevard	Between Hollis Street and Grand Avenue	Major Arterial	City of Oakland	2013	3,980
MacArthur Boulevard	Between Grand Avenue and Park Boulevard	Major Arterial	City of Oakland	2013	5,980
MacArthur Boulevard	Between Park Boulevard and Oakland Avenue	Major Arterial	City of Oakland	2013	11,095
Edgewater Drive	Between Hegenberger Road and Garretson Point Trail	Major Arterial	City of Oakland		NA
Fruitvale Avenue	Between Lyman Road and Blanding Avenue	Major Arterial	City of Oakland		NA
Harrison Street	Between W Grand Avenue and MacArthur Boulevard	Major Arterial	City of Oakland	2013	23,940
Hegenberger Road	Between International Boulevard and Doolittle Drive	Major Arterial	City of Oakland		NA
High Street	Between Tidewater Avenue and Brookdale Avenue	Major Arterial	City of Oakland	2016	16,650
Hillmont Drive	Between Overdale Avenue and Simson Street	Major Arterial	City of Oakland		NA
Lake Merritt Drive	Between Lakeside Drive and 1st Avenue	Major Arterial	City of Oakland		NA
Lakeshore Drive	Between 1st Avenue and E 18th Street	Major Arterial	City of Oakland	2013	13,850
Martin Luther King Jr. Way	Between 47th Street and 62nd Street	Major Arterial	City of Oakland		NA
Middle Harbor Road	Between Adeline Street and Maritime Street	Major Arterial	City of Oakland	2013	12,060
Oakland Avenue	Between W Grand Avenue and W MacArthur Avenue	Major Arterial	City of Oakland	2013	11,250
Park Boulevard	Between International Boulevard and Mountain Boulevard	Major Arterial	City of Oakland		NA
Webster Street	Between 6th Street and Embarcadero West	Major Arterial	City of Oakland	2016	10,670
Webster Posey Tube	Between Marina Village Parkway and Embarcadero West	Major Arterial	City of Oakland		NA
Telegraph Avenue	Between 16th Street and 66th Street	Major Arterial	City of Oakland		NA
W Grand Avenue	Between Bay Place and Park View Terrace	Major Arterial	City of Oakland	2020	15,260
W Grand Avenue	Between Euclid Avenue and MacArthur Boulevard	Major Arterial	City of Oakland	2020	16,670
Foothill Boulevard	Between 24th Avenue and Irving Avenue	Minor Arterial	City of Oakland	2019	10,140
Foothill Boulevard	Between Mitchell Street and 28th Street	Minor Arterial	City of Oakland	2019	9,730
Foothill Boulevard	Between Rosedale Avenue and 41st Street	Minor Arterial	City of Oakland	2019	8,630

Source: Interstate and Other Freeway - Caltrans 2019; Major Arterial from previous traffic counts



SUMMARY OF ROADWAY MILEAGE

Table 3-5 on page 7 summarizes the total mileage by roadway classification, both for the City of Oakland as a whole and for the High Equity Priority Areas within the City. As shown in the table, local streets make up most of the roadway mileage in the City, both citywide and within High Equity Priority Areas. Arterial streets make up a higher percentage of roadway miles in High Equity Priority Areas (23 percent) versus citywide (17 percent). Since arterial streets carry higher traffic volumes and also serve pedestrians, bicyclists, and transit users, the design and management of arterial streets is an especially important element of transportation equity.

FREEWAY TRAFFIC CONGESTION

The Alameda County Transportation Commission, as part of its Congestion Management Program, completes a Performance Monitoring Report every two years, with the last analysis completed for Fall 2020 conditions. Since these conditions were atypical due to the COVID-19 pandemic, the 2018 report was used instead.

The Year 2018 analysis reflects pre-pandemic travel patterns, showing congestion along segments of I-80, I-580, I-880, SR 13, and SR 24 within Oakland. The Year 2020 analysis reflects pandemic travel conditions with reduced congestion across these segments and throughout the region.

Figure 3-1: Street Network and Roadway Classification

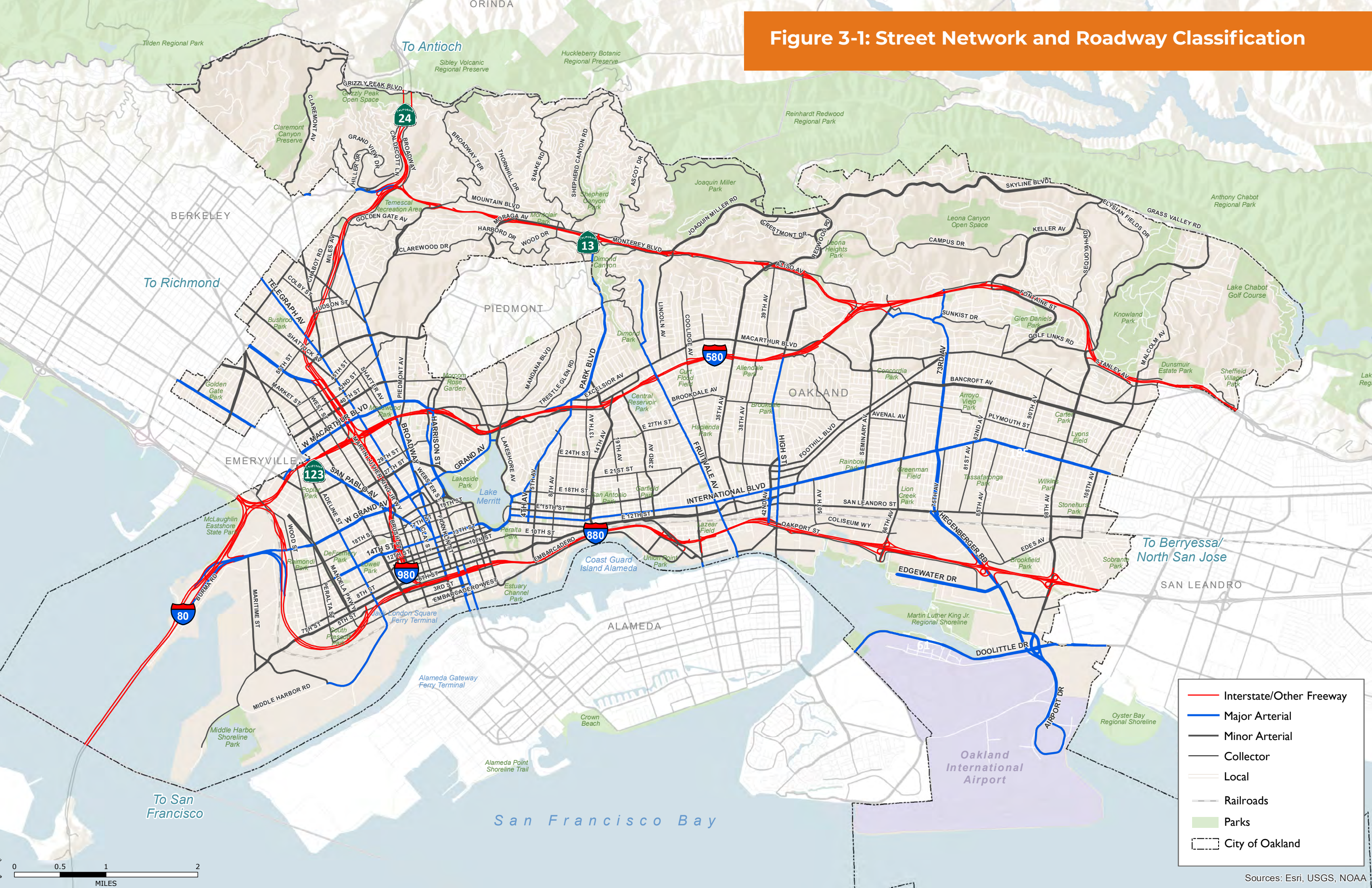


Table 3-5: Total Mileage of Streets by Roadway Classification

ROADWAY CLASSIFICATION	CITYWIDE		HIGH EQUITY PRIORITY AREAS	
	ROADWAY MILES	PERCENT OF TOTAL	ROADWAY MILES	PERCENT OF TOTAL
Freeways	133	12%	63.7	12%
Major and Minor Arterial Streets	188.7	17%	117.2	22%
Collector Streets	106.9	10%	41.2	8%
Local Streets	663.6	61%	305.2	58%
Total	1092.2	100%	527.3	100%

Source: Caltrans, 2022; Alameda CTC, 2021

Table 3-6: AC Transit Schedule and Day of Operation

SERVICE TYPE	DAYS OF OPERATION	HOURS OF OPERATIONS	FREQUENCY
Trunks and Major Corridors	Every day	19 to 24 hours per day, for example, 5:00 a.m. to at least midnight	Every 15 - 20 mins
Rapids		14 to 16 hours per day, for example, 6:00 a.m. to at least 8:00 p.m.	Every 10 - 14 mins
Urban Crosstowns	Some or portion of the routes are suspended during the weekend	14 to 16 hours per day, for example, 5:00 a.m. to at least 7:00 p.m.	Every 15 -20 mins
Suburban Crosstowns		14 to 16 hours per day, for example, 7:00 a.m. to at least 9:00 p.m	Every 21 - 30 mins
Very-Low Density Lines		14 to 16 hours per day, for example, 6:00 a.m. to at least 8:00 p.m.	Every 31 - 60 mins
Transbay	Mondays through Fridays except holidays	Peak Commute Periods Only	Every 21 - 30 mins

Source: AC- Transit Short Range Transit Plan, 2019

3.3 Transit

Oakland is served by a variety of transit options. **Figure 3-2** shows the primary transit services and routes, which are summarized below:

PRIMARY TRANSIT SERVICES

AC Transit

Alameda Contra-Costa Transit (AC Transit) provides bus transit services for portions of the East Bay in Alameda and Contra Costa Counties. AC Transit bus routes serve almost all Oakland’s neighborhoods. AC Transit operates several types of services within Oakland, including local bus routes, routes serving schools, routes for early morning and late-night periods (Early Bird and All Nighter), and Transbay routes connecting Oakland to San Francisco. In 2021, AC Transit initiated the Tempo bus rapid transit service along International Boulevard; this service includes bus-only lanes and other features to improve bus speeds, reliability, and quality of travel. **Table 3-6** shows service frequency and hours of operations by service type.



Photo: Greg Linhares, City of Oakland



Photo: Greg Linhares, City of Oakland

Table 3-7: BART Schedule and Day of Operation

SERVICE NAME	DAYS OF OPERATION	HOURS OF OPERATIONS	FREQUENCY
Antioch - SFO + Millbrae (Yellow Line)	Every day	Weekdays (5:00 am - Midnight)	Every 15 mins
		Saturday (6:00 am - Midnight)	Every 15 mins
		Sunday (8:00 am - Midnight)	Every 30 mins
Dublin/Pleasanton - Daly City (Blue Line)	Every day	Weekdays (5:00 am - Midnight)	Every 15 mins
		Saturday (6:00 am - Midnight)	Every 15 mins
		Sunday (8:00 am - Midnight)	Every 30 mins
Berryessa/North San Jose - Richmond (Orange Line)	Every day	Weekdays (5:00 am - Midnight)	Every 15 mins
		Saturday (6:00 am - Midnight)	Every 15 mins
		Sunday (8:00 am - Midnight)	Every 30 mins
Berryessa/North San Jose - Daly City (Green Line)	Weekdays Only	Weekdays (5:00 am - Midnight)	Every 15 mins
Richmond - Millbrae + SFO (Red Line)	Weekdays Only	Weekdays (5:00 am - Midnight)	Every 15 mins
Oakland International Airport (OAK)	Every day	Weekdays (5:00 am - Midnight)	Every 15 mins
		Saturday (6:00 am - Midnight)	Every 15 mins
		Sunday (8:00 am - Midnight)	Every 30 mins

Source: BART, 2022 (<https://www.bart.gov/schedules>)

Table 3-8: WETA Schedule and Day of Operation

DAYS OF OPERATION	HOURS OF OPERATIONS	FREQUENCY
Weekdays	6:30 am - 10:15 pm	Every 25 mins during peak commute period (directional)
Weekends	8:30 am - 9:30 pm	Every 60 mins during peak hours and 75 mins during off peak

Source: WETA, 2022 (sanfranciscobayferry.com)

BART

Bay Area Rapid Transit (BART) operates regional rail transit services connecting Oakland with the Bay Area. BART serves portions of Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara Counties, and Downtown Oakland serves as the center of the BART system. There are nine BART stations within Oakland. The headway (service intervals) on all Oakland BART stations is below five minutes throughout the hours of operations, with West Oakland having the shortest headways of about three minutes. **Table 3-7** shows the service frequency and hours of operations by service route.

WETA

The Water Emergency Transportation Authority (WETA) operates the San Francisco Bay Ferry, which connects San Francisco with Oakland and other destinations around the Bay. There is one WETA ferry terminal within Oakland located at Jack London Square. This location provides ferry service to San Francisco, Alameda, and South San Francisco. **Table 3-8** shows the WETA schedule and days of operations.

Capitol Corridor

Capitol Corridor is a passenger rail service operated by Amtrak that extends from San Jose to the Sacramento region. There are two Capitol Corridor stations in Oakland: one at Jack London Square and the other at Oakland Coliseum. There are 11 round-trip trains running during the weekdays and nine round trip trains during the weekends.

Table 3-9: Transit Street Mileage Categorization

TRANSIT STREET CATEGORIES	HIGH EQUITY PRIORITY AREAS		REST OF OAKLAND	
	ROADWAY MILES	PERCENT OF TOTAL	ROADWAY MILES	PERCENT OF TOTAL
Low-Frequency	50.81	48%	74.15	48%
Medium-Frequency	38.83	37%	38.80	25%
High-Frequency	15.90	15%	41.39	27%
Grand Total	105.55	100%	154.34	100%

Source: Oakland Transit Action Strategy, 2020

TRANSIT STREETS

According to the Oakland Transit Action Strategy, any street that has bus service can be thought of as a “transit street.” Transit streets are further categorized based on frequency of buses as listed below:

- **High Frequency Transit Streets** serve over 20 buses per hour, or a bus passing a stop at least every three minutes.
- **Medium-Frequency Transit Streets** have between 10 to 20 buses per hour or a bus passing a stop every three to six minutes.
- **Low-Frequency Transit Streets** have fewer than 10 buses per hour or a bus passing a stop less frequently than every six minutes.

Table 3-9 summarizes the total street mileage by transit service frequency, both for the High Equity Priority Areas and the rest of the City. As shown in the table, high-frequency transit streets are less prevalent in High Equity Priority Areas (27 percent of total miles) than compared to the rest of the City (15 percent of total miles). This highlights the need for an equity-focused approach to transit policies and investments.

OTHER TRANSIT SERVICES

Other transit services not shown on the figure are East Bay Paratransit, private shuttles, transportation network companies, and car sharing services.

East Bay Paratransit

East Bay Paratransit is a public transit service for those who are unable to use regular buses or trains due a disability or a disabling health condition. East Bay Paratransit provides door-to-door service and meets Americans with Disabilities Act (ADA) requirements.

Private Shuttles

Numerous privately-operated shuttles run throughout the city to serve individual employers, developments, and/or business districts. Some services connect to BART stations and employment destinations within Oakland, while others provide access to regional employment outside of Oakland.

Transportation Network Companies (TNCs)

TNCs, such as Uber and Lyft, provide last-mile connections using smartphone applications. While data on TNC use (especially for commute trips) is still limited, these services are becoming a significant part of the transportation system. The City of Oakland is exploring the concept of mobility hubs – providing multiple modes of transportation in the same location. The hubs may include designated white curb space for passenger pickup and drop off for ride share services and taxis.³

Car Sharing Services

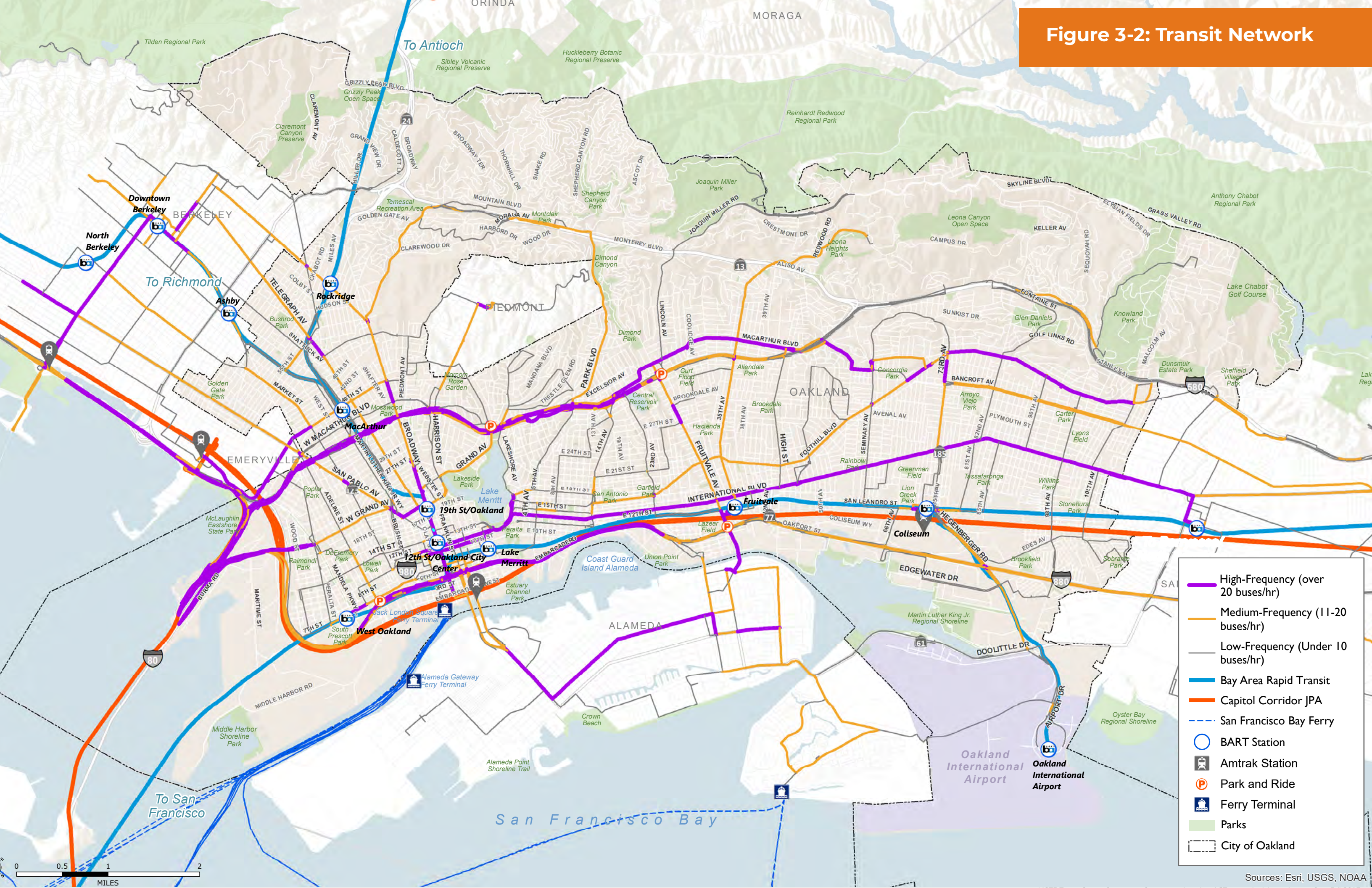
Car sharing services such as Gig car and Zipcar provides an alternative to car rental and ownership. These services are membership-based and are available to all qualified drivers in a community. The services allow members to rent out vehicles for hourly or daily at a fraction of the cost of owning a personal car or moped. The City adopted its first formal car share policy in 2015, which provided a regulatory framework for car share in the public right-of-way and municipal lots and garages.

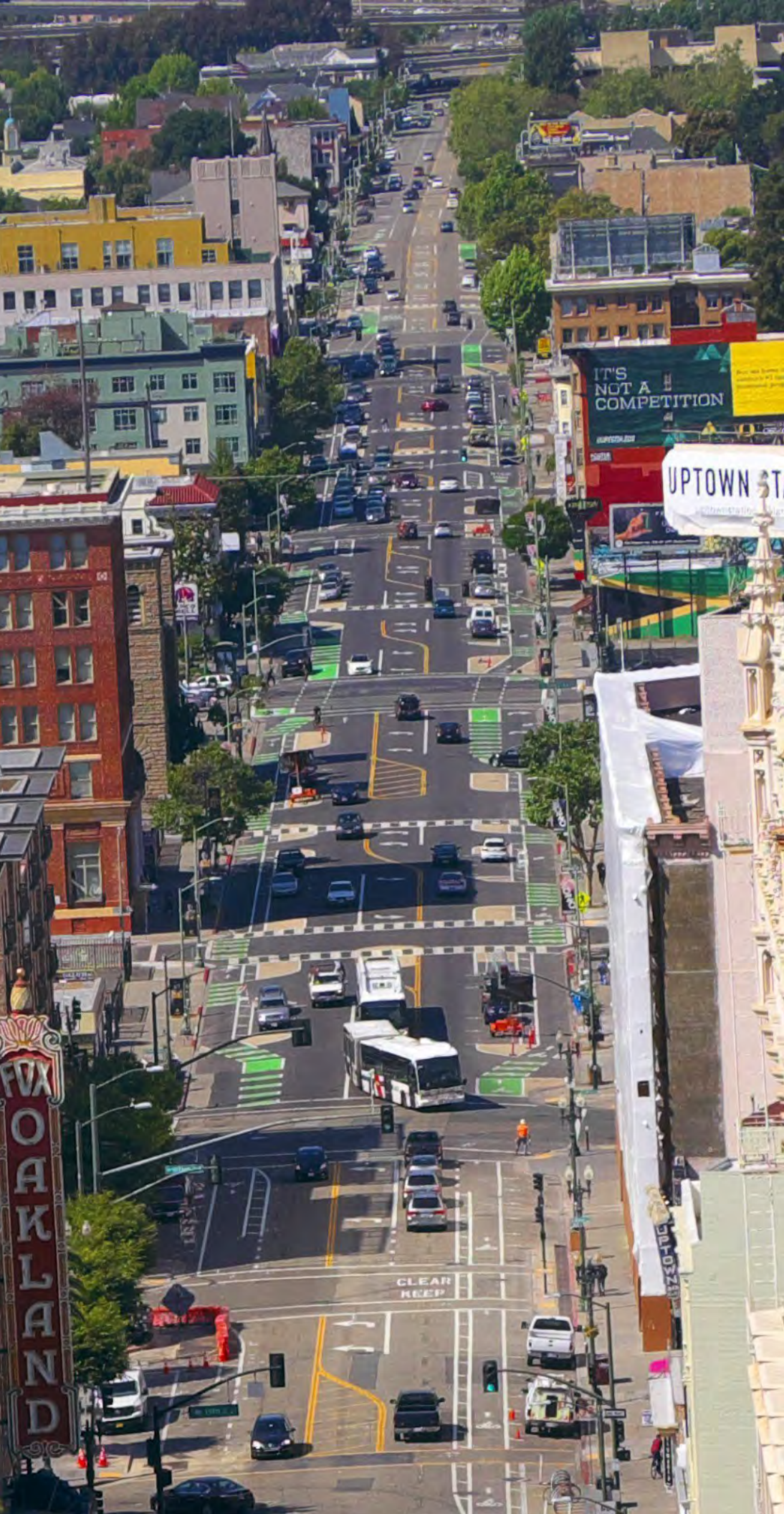
The Parking and Mobility Division is implementing two separate car share pilot programs: the Free-Floating Car Share Pilot and the Dedicated Space Car Share Pilot. Each of the pilot programs, allow “qualified car share organizations” to purchase permits from the City.⁴

3 City of Oakland. (2016). *Oakland Smart + Equitable City*. Retrieved From: <https://www.transportation.gov/sites/dot.gov/files/docs/CA%20Oakland.pdf>

4 More information is available at: <https://www.oaklandca.gov/topics/car-share-program>

Figure 3-2: Transit Network





3.4 Planned Regional Improvements

Figure 3-3 shows planned regional transportation improvements within and through Oakland. These improvements cover all modes of transportation and have been identified through several countywide and regional transportation efforts, as summarized below.

PLAN BAY AREA 2050

Plan Bay Area 2050 is a long-range plan completed by the Metropolitan Transportation Commission and the Association of Bay Area Governments (MTC/ABAG) for the nine-county Bay Area. It focuses on the importance of availability of transportation choices and its interrelatedness with housing and employment. It also recognizes the impact of transportation sector on climate change, being the largest contributor (over 40%) of California's greenhouse gas emissions. The plan has adopted a set of 35 strategies to weather uncertain future conditions and advance equity, that fall into the following three themes:

- Maintain and Optimize the Existing System
- Create Healthy and Safe Streets
- Build a Next-Generation Transit Network

ALAMEDA COUNTYWIDE TRANSPORTATION PLAN

The 2020 Alameda Countywide Transportation Plan (CTP) covers transportation projects, policies, and programs out to the year 2050 for Alameda County. The CTP includes both near-term priorities and long-term projects and is updated every four years. For Oakland, 31 projects are prioritized for implementation over the next decade. These regional improvements include four Greenways and Trails, 12 Multimodal Corridors, four interchange and Freeway Safety projects, seven Transit Access and Operations

projects, three goods movement projects, and one Sea Level Rise Resiliency project. The CTP has identified following six strategies and several sub-strategies to advance the vision and goals of the plan:

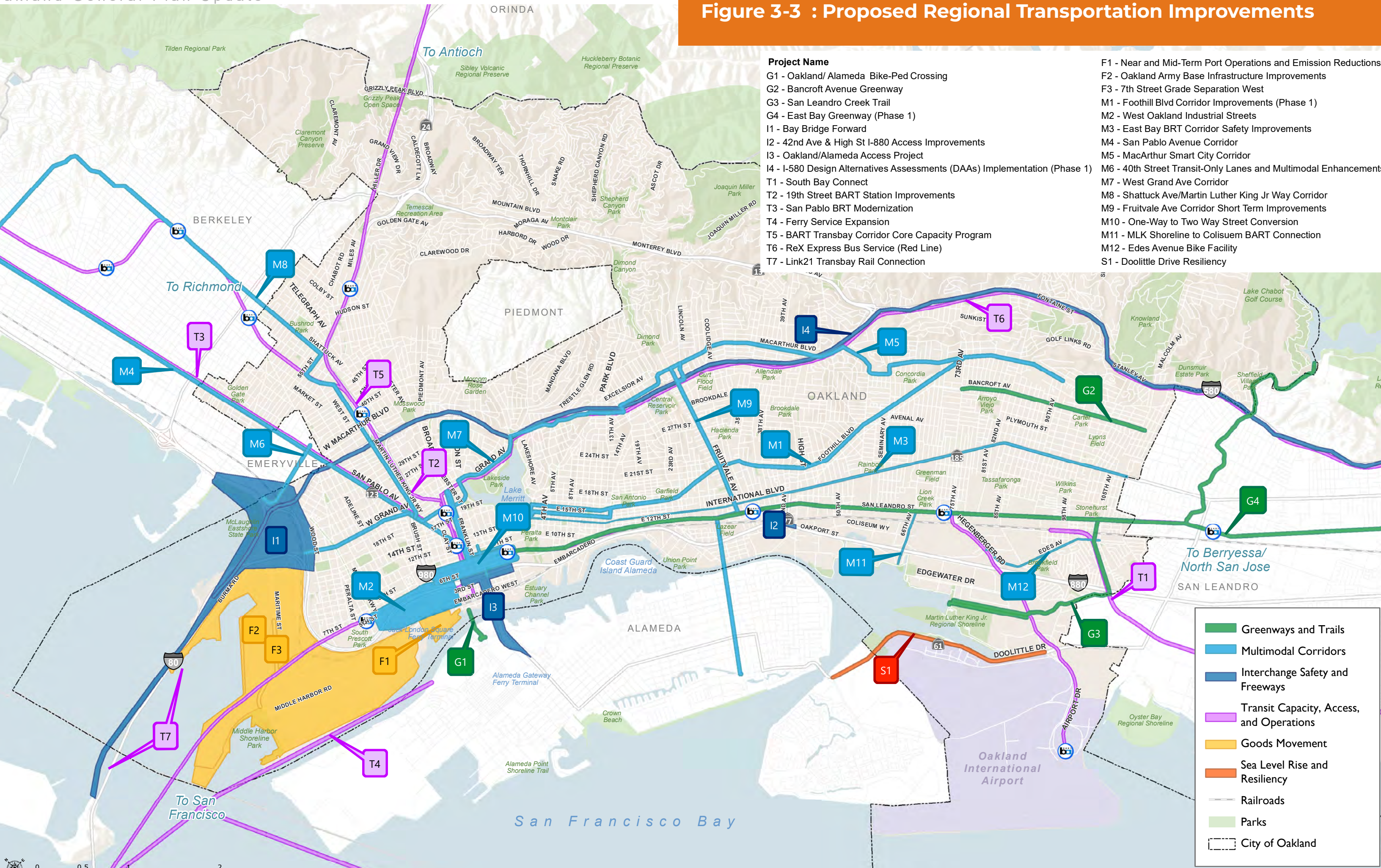
- Advance Equity
- Safe System Approach
- Complete Corridors Approach
- Partnerships to Address Regional & Megaregional Issues
- Transit Accessibility & Transportation Demand Management (TDM)
- New Mobility and an Automated, Low-Emission, and Shared Future

The 2020 CTP was adopted in 2020.

LINK21

The Link21 program is a partnership between BART and Capitol Corridor to plan for an integrated passenger rail network in Northern California. The key component of Link21 is a new transbay passenger rail crossing between Oakland and San Francisco. The alignment and location for this crossing have not been defined.

Figure 3-3 : Proposed Regional Transportation Improvements



3.5 Bicycle and Pedestrian Facilities Network

BICYCLE AND PEDESTRIAN NETWORK

Safer, comfortable, and convenient pedestrian and bicycle facilities can connect people to local destinations, support neighborhood businesses, cultivate culture, and protect the environment. Oakland has made significant investments in recent decades to build a comprehensive and connected bicycle and pedestrian network. However, many of these investments mirror historic patterns of disinvestment, resulting in significant gaps in spaces for walking and biking in West and East Oakland, as noted in both Oakland Walks and Let’s Bike Oakland.

Oakland is home to 1,120 miles of sidewalks, with 31 miles of gaps in the sidewalk network. Oakland’s sidewalk gaps are concentrated in parts of West Oakland and scattered across East Oakland. According to Oakland Walks, sidewalks in East and West Oakland are more likely to be damaged and to be missing critical amenities such as curb ramps. Unfortunately, East and West Oakland neighborhoods are disproportionately burdened by roadway fatalities and serious injuries involving people walking. Moreover, the neighborhoods along International Boulevard and parts of West Oakland north of Adeline Street are less likely to have sufficient tree coverage, exposing people walking to an uncomfortable environment characterized by extreme heat and pollution.

Oakland is also home to 183 miles of bikeways with an additional 339 miles of planned bikeways (**Figure 3-4**). Prior to the 2000s, much of Oakland’s bicycle infrastructure was located along the shoreline or in the hills. Since 2000, Oakland has constructed nearly 130 miles of bikeways. Existing bikeway types are listed in **Table 3-10**.

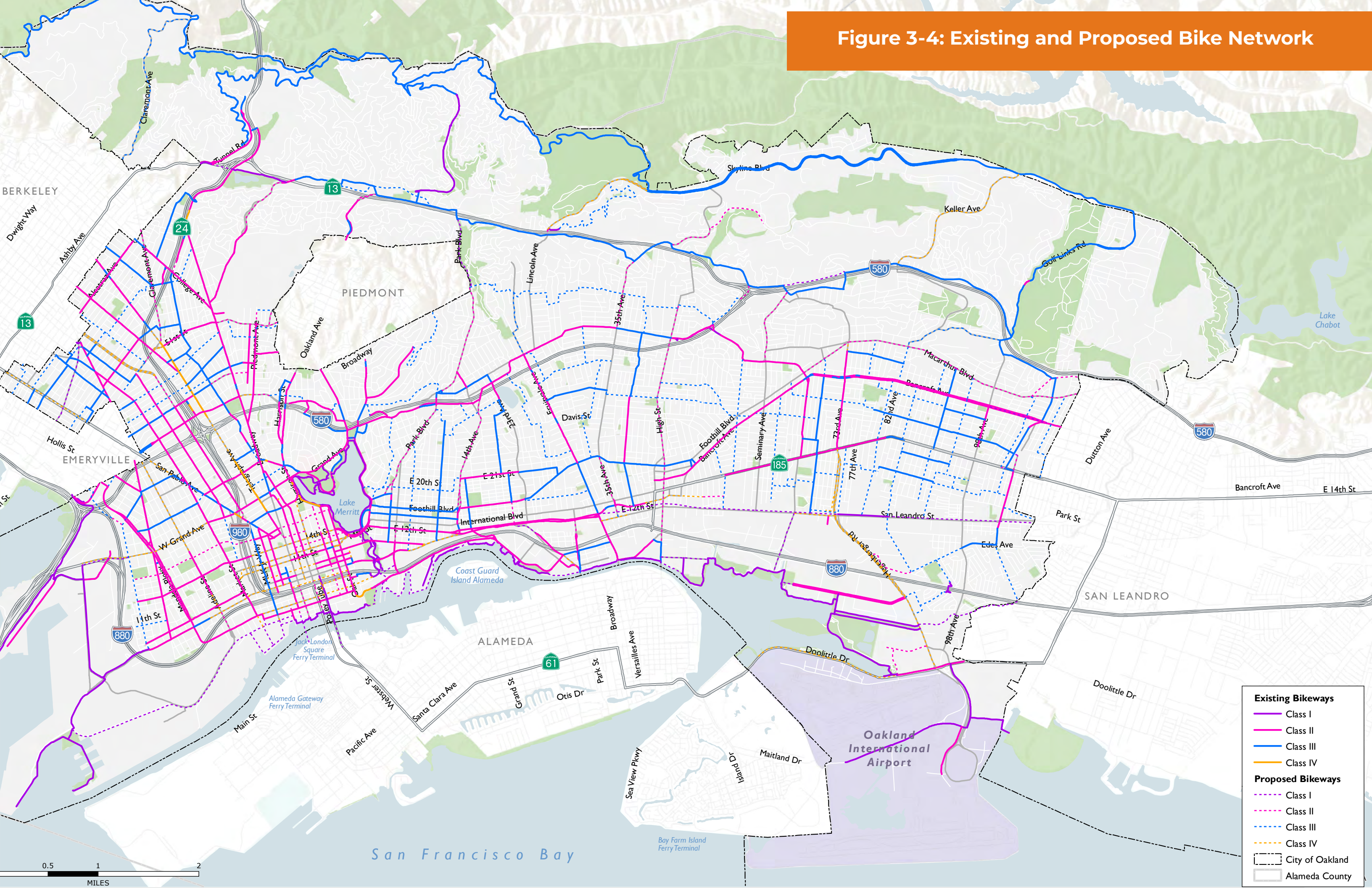
Table 3-10: Existing Bikeway Types

BIKEWAY TYPE	DESCRIPTION
Shared-use Paths (Class I)	Mileage: 29.8 Description: Paved rights-of-way completely separated from streets; shared with pedestrians. Examples in Oakland: Lake Merritt Boulevard, SF Bay Trail
Rapids Bike Lanes (traditional) (Class II)	Mileage: 82.4 Description: On-street bikeways that are delineated by painted pavement markings such as stripes and stencils. Examples in Oakland: Howe Street, Mandela Parkway, E 12th Street
Buffered Bike Lane (Class IIB)	Mileage: 40.09 Description: Buffer striping to provide greater separation between bicyclists and parked or moving vehicles. Examples in Oakland: Madison Street, Oak Street, Clay Street
Bicycle Routes (Class III)	Mileage: 14 Description: Streets designated for bicycle travel and shared with motor vehicles. Examples in Oakland: 90th Avenue, 40th Street
Neighborhood Bike Routes / Slow Streets / Bicycle Boulevards (Class IIIB)	Mileage: 14.3 Description: Bike routes on residential streets that prioritize people walking and biking with traffic calming treatments. Examples in Oakland: Webster Street, 32nd Street, 11th Avenue, Plymouth Street
Separated Bike Lanes (Class IV)	Mileage: 2.3 Description: Space for bicyclists separated by parked cars, curbs, bollards, or planter boxes. Examples in Oakland: Telegraph Avenue

Sources: Oakland Department of Transportation, Bikeway Types, 2021; Oakland Department of Transportation, Existing and Proposed Bikeways, 2021; The forthcoming AASHTO Guide for the Development of Bicycle Facilities discourages implementation of bicycle routes a because of the lack of protection they provide for bicyclists.



Figure 3-4: Existing and Proposed Bike Network



MICROMOBILITY

Micromobility has emerged in cities throughout the United States and across the world since the middle of the 2010s. The term “micromobility” encompasses bikeshare, electric bikes (e-bikes), scootershare, electric scooters, mopeds, and other personal mobility devices.

Today, the following companies operate shared micromobility services in Oakland:

- Lime (Electric Scootershare)
- VeoRide (Electric Scootershare)
- LINK (Electric Scootershare)
- Lyft (Bikeshare)

Shared micro mobility services tend to be used more in areas that have a high density of jobs, homes and public transit, and a low rate of auto ownership. In Oakland, the areas that get the highest level of use are downtown and neighborhoods bordering Lake Merritt. All of the shared micromobility services in Oakland are operated by private companies, without public subsidy, and with business models that leave little margin for loss. Therefore, the operators tend to deploy vehicles where they will be used the most and generate enough revenue to sustain the service.

The City mandates minimum levels of service coverage to help ensure equitable distribution of vehicles. For the bike share program, staff worked to ensure that ten percent of stations were located east of 14th Avenue. The scooter share program mandates that, for operators with fleets over 250 vehicles, ten percent of vehicles be located in the Fruitvale neighborhood and ten percent in East Oakland.

3.6 Goods Movement

The City of Oakland is the transportation and logistics center for the Bay Area. The Bay Area is the midpoint of Interstate Highway 5, which traverses the west coast from Canada to Mexico, and the western terminus of Interstate 80, connecting Oakland to New York. The spurs and beltways radiating from these two interstate highways form a grid that connects the entire Bay Area – with Oakland as the region’s hub.⁵ Thus, Oakland plays an important role in sustaining supply chains.

Figure 3-5 shows the primary goods movement network within Oakland. The network can be classified into global gateways and regional corridors to serve global, national, regional, and local needs. It consists of the following:

GLOBAL GATEWAYS

Port of Oakland

Located in West Oakland, the Port of Oakland is the largest container port in Northern California and the fifth busiest container port in the U.S. The Port is an important global gateway for moving high volumes of trade goods between the U.S. and other countries.

Oakland International Airport

Oakland International Airport, located in East Oakland, is the second busiest domestic air freight airport in the State, home to a major FedEx hub, and is critical for high-value goods movement shipments and the growing e-commerce sector. It is owned by the Port of Oakland.

⁵ Oct. 16, 2001 Oakland City Council Agenda Report (related to “Extra Legal Load Transportation Permits”)





Photo: Greg Linhares, City of Oakland

REGIONAL CORRIDORS

Caltrans State Designated Truck Routes

Caltrans state legal truck routes include both grade-separated freeways and at-grade state routes such as San Pablo Avenue/State Route 123. Commercial trucks are authorized to use Caltrans state legal truck routes, consistent with the California Vehicle Code, except where specific restrictions have been adopted.

In addition to restrictions that are specific to individual roadways, trucks are restricted from using any Caltrans state legal truck route if the vehicle exceeds 80,000 pounds or is longer than 65 feet. The weight limit is implemented to manage the impact of trucks on roadway surfaces and safety concerns of other roadway users.

I-580 Truck Route Restriction

A specific truck route restriction exists on I-580 between Grand Avenue and the Oakland/San Leandro border where trucks exceeding 4.5 tons (9,000 pounds) are not allowed to use the roadway. The restriction was implemented when I-580 was constructed in the 1960s and was adopted into the California Vehicle Code in 1999.

Oakland residents living near I-880 and on 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 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.

Heavy Weight Truck Routes

Many shippers maximize the loading of heavy commodities that move through the Port. The City of Oakland and the Port maintain the joint Port-City of Oakland Heavyweight Container Permit Program, which allows vehicles up to 95,000 pounds (versus the 80,000-pound limit for Caltrans state legal truck routes) to travel between the Port of Oakland and East Oakland on designated city roads.

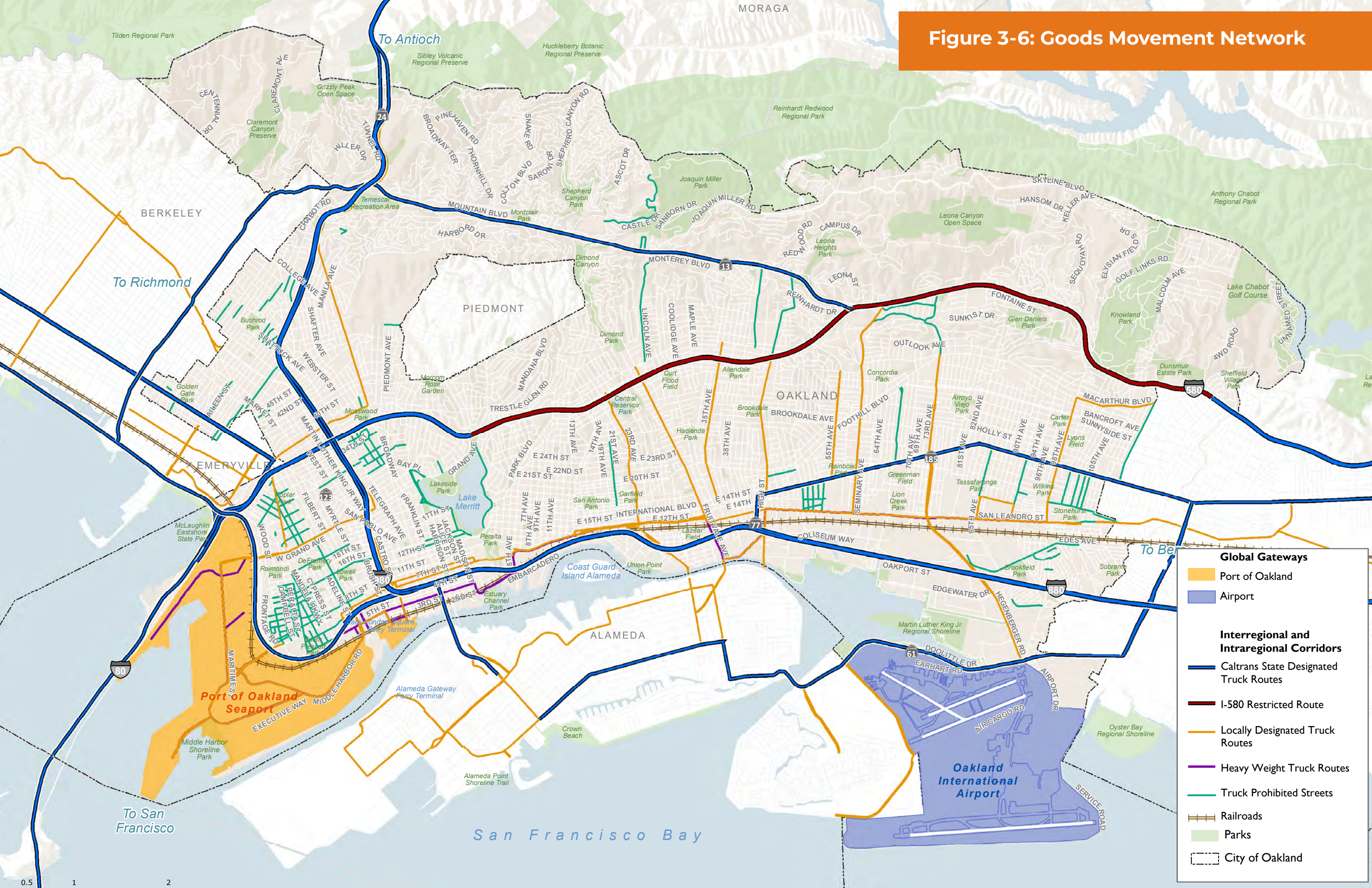
Locally Designated Truck Routes and Truck Prohibited Streets

Truck routes and truck prohibited streets describe specific classification of streets as defined in the Oakland Municipal Code. Oakland uses these designations as a primary method for regulating truck movement. Truck routes are the designated routes for commercial vehicles to travel through and within the City. Truck prohibited streets are streets, or parts of streets, that are designated as prohibited to trucks.

Rail Corridors

Railway service that is part of the goods movement system includes freight corridors operated by Union Pacific (UP) and Burlington Northern Santa Fe Railway (BNSF) Railway. Unlike the highway and port elements of the goods movement network, freight rail corridors are privately owned and operated.

Figure 3-6: Goods Movement Network



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04

PUBLIC RESOURCES & FACILITIES

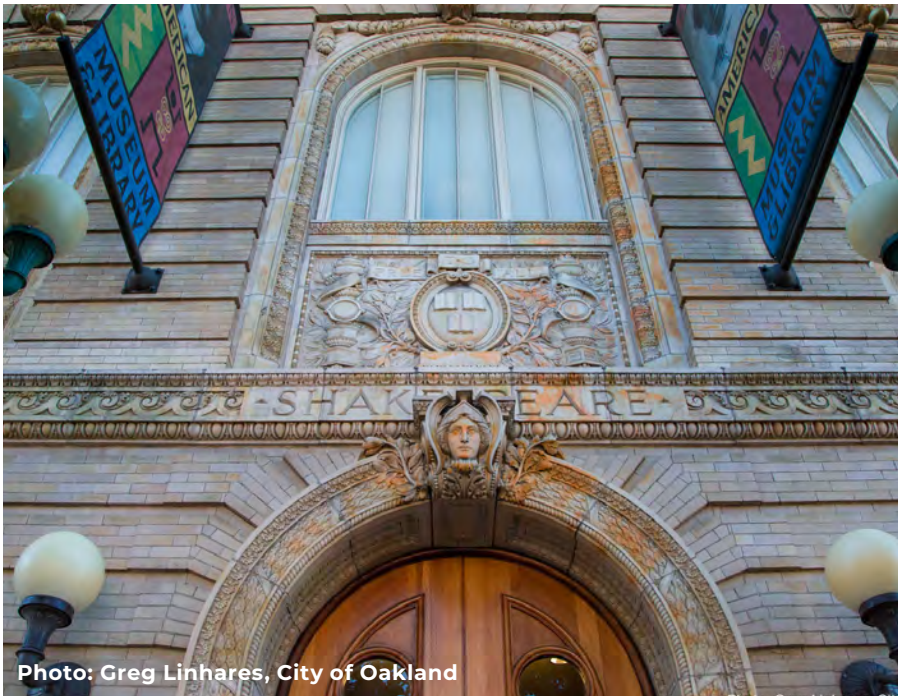
- 4.1 Educational and Institutional Resources
- 4.2 Emergency Services
- 4.3 Water Supply, Wastewater, and Stormwater

4. Public Resources and Facilities

4.1 Educational and Institutional Resources

Well-distributed access to educational, institutional and community resources is essential for healthy communities and ensuring community quality of life. **Figure 4-1** illustrates the distribution of these resources throughout Oakland. The Oakland Unified School District (OUSD) includes 51 elementary schools, 11 middle schools, and 15 high schools, distributed throughout the City. The figure does not reflect the very recent (February 2022) school closures announced by the OUSD. There are also a number of charter schools located throughout the City. Most private schools, particularly those with larger campuses, are in or near the hills; there are none in West Oakland and few in East Oakland beyond Fruitvale. Childcare/School Age Care facilities are well-distributed throughout the City, with gaps in more sparsely populated areas (parts of the hills and areas adjacent to or within industrial zones). Oakland is home to three colleges – Merritt, Laney, and Mills-Northeastern.

Eighteen libraries are distributed across Oakland, primarily in the flatlands plus one in the hills. Community Centers, which include senior-focused, arts and culture-focused, educational, and environmental programming, are concentrated around downtown and Lake Merritt. Two community centers are located in West Oakland, two are located in North Oakland, three are located in East Oakland, and three are located in the Oakland Hills.



4.2 Emergency Services

Community health also depends on access to emergency services. First responders should be well distributed throughout the City to respond promptly to emergency situations. Health care facilities that are accessible via public transit means that medical care is more readily accessible to those who do not drive or own cars.

Figure 4-2 shows the distribution of fire stations, police stations, and hospitals in Oakland. Twenty-five fire stations are distributed throughout the City. Hospitals are clustered around freeways: Kaiser system's flagship hospital is located close to the junction of I-580 and I-980/State Route 24, Summit Hospital in "Pill Hill" and UCSF Benioff Children's Hospital are located along State Route 24 in the north, and Highland Hospital, Alameda Health System's flagship and a renowned trauma center, is located in central Oakland adjacent to I-580. The first three hospitals are accessible from the MacArthur BART Station, and all four are located along AC Transit bus routes. Additionally, three hospitals in the adjacent City of San Leandro serve East Oakland residents; of those three, only San Leandro Hospital is accessible by public transit (AC Transit bus). Aside from the Police Administration Building downtown, there are two police stations, one located in Fruitvale and one located in the southeastern part of the City in Eastmont. The City Council in February 2022 passed a resolution to move the Police headquarters to the Coliseum, and develop the present site with housing, retail and other uses.

Figure 4-1: Educational and Institutional Resources

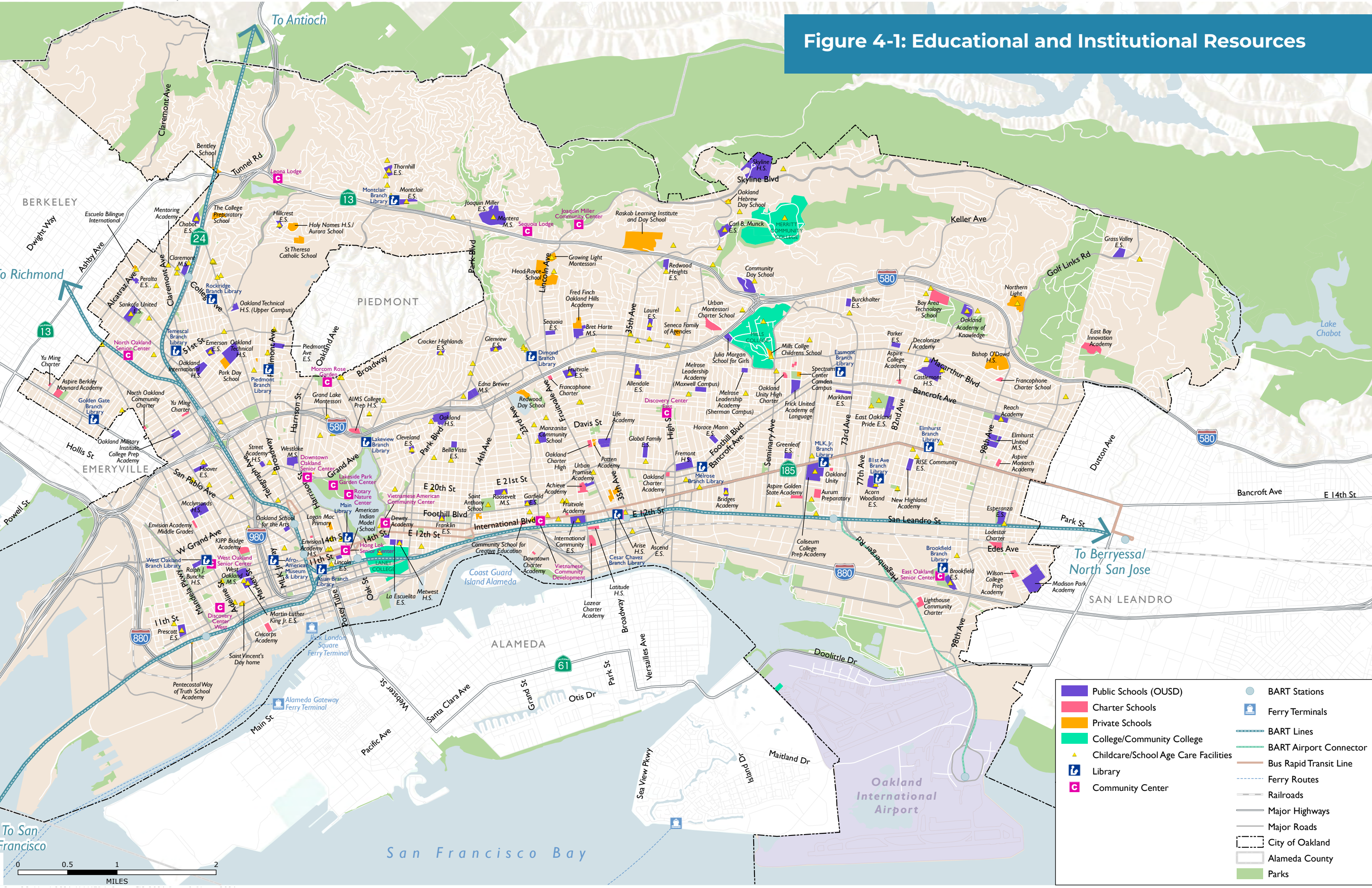
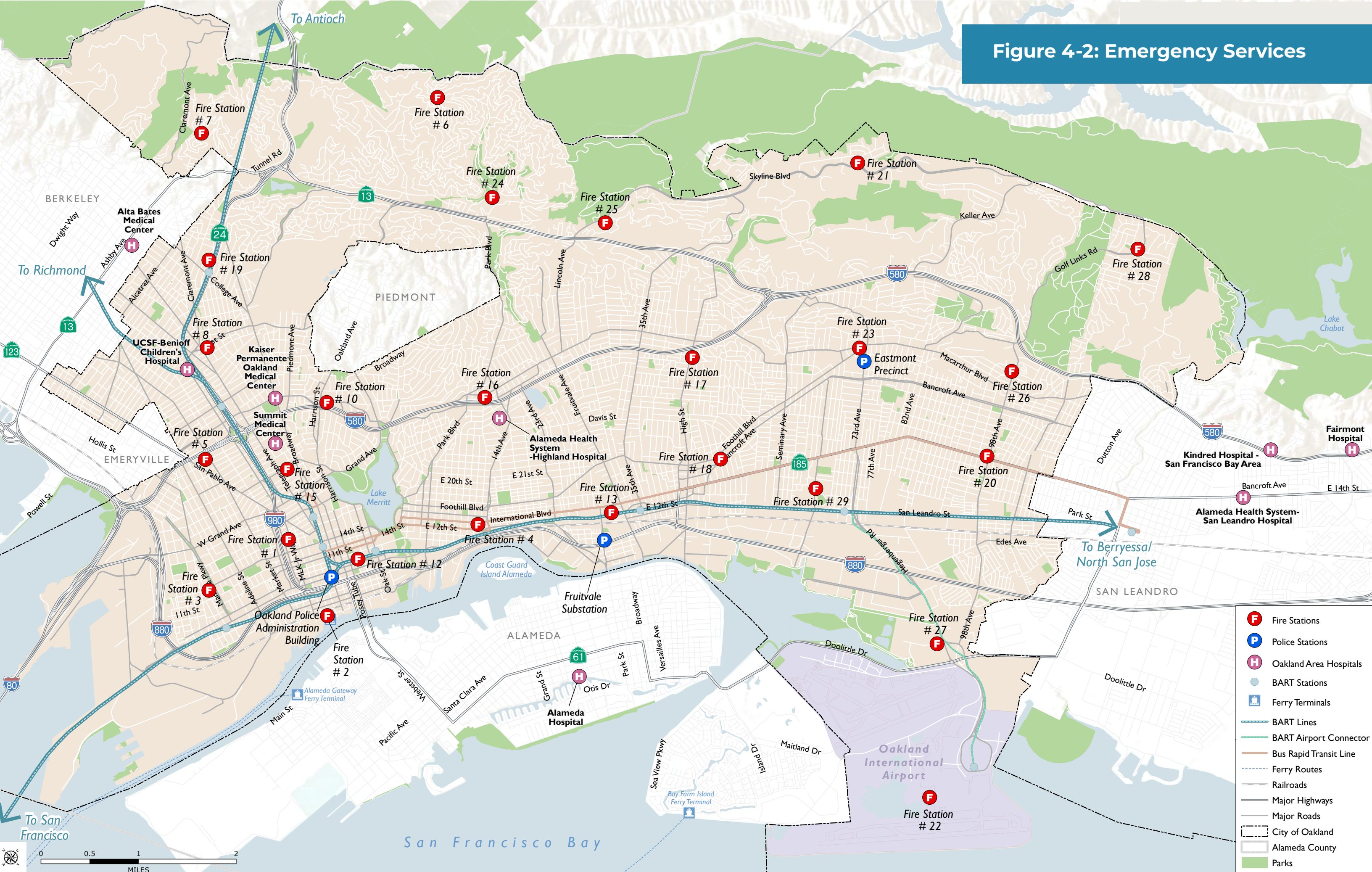


Figure 4-2: Emergency Services





4.3 Water Supply, Wastewater, and Stormwater

WATER SUPPLY

Oakland is served by existing water supplies, treatment facilities, and distribution systems, which are operated and managed by the East Bay Municipal Utility District (EBMUD). EBMUD provides potable water to approximately 1.4 million people throughout portions of Alameda and Contra Costa counties, including the City of Oakland. EBMUD obtains approximately 90 percent of its water from the Mokelumne River watershed and transports it through pipe aqueducts to temporary storage reservoirs in the East Bay hills. EBMUD has water rights and facilities to divert up to a daily maximum of 325 million gallons per day (mgd).

EBMUD's water supply system consists of a network of reservoirs, aqueducts (pipelines), water treatment plants (WTP), pumping plants, and other distribution facilities and pipelines that convey Mokelumne River water from Pardee Reservoir to EBMUD customers. While the number of accounts has increased steadily since 1970, the average daily water demand has not increased correspondingly; outside of droughts, demand remains relatively stable. The average daily water demand was approximately 155 mgd in 2020. This figure represents potable water demand only and does not include recycled water. Total domestic demand is projected to increase to 201 mgd in 2040 and to 218 mgd by 2050; these figures are adjusted to account for water conservation and recycled water. Despite EBMUD's aggressive conservation and water recycling programs, Mokelumne River and the local watershed supply are not enough to meet the projected 2040 customer demands during multi-year droughts without achieving potentially significant water use reductions.

To meet projected water needs and address deficient supply during severe droughts, EBMUD is working to identify supplemental water supplies and additional recycled water programs. New water supplies will come from water transfers, groundwater storage, and regional supply projects. In dry years, EBMUD may use Sacramento River water (up to 100 mgd) via the Freeport Regional Water Facility, located south of Sacramento on the Sacramento River. There are six water treatment plants in the EBMUD water supply and distribution system which have a treatment capacity of over 375 mgd.

Recycled water treatment facilities have been constructed at EBMUD's wastewater treatment plant, located at the foot of the San Francisco-Oakland Bay Bridge. EBMUD stores the recycled water in a 1.5-million-gallon storage tank at the wastewater treatment plant and uses another 2.4 mgd at the plant for various industrial processes as well as landscape irrigation. EBMUD's 2019 Updated Recycled Water Master Plan identifies additional implementation programs including planned expansions of the San Ramon Valley recycled water project, the East Bayshore recycled water project, and a satellite recycled water project at the Diablo Country Club. These are expected to increase production use by approximately 1mg in 2025.

WASTEWATER

The City provides citywide sanitary sewer collection services to the Plan Area, while EBMUD provides sewage transport, treatment, and discharge services. Sewer discharge from buildings

within Oakland flows through lateral lines to the City's sewer network, which is mostly gravity fed. Currently, the City operates and maintains approximately 930 miles of sewer lines, 29,000 structures, and 7 pump/lift stations. Figure 4-4 maps the sewer lines and shows the locations of the sewer pump stations. The City's wastewater collection system is approximately 50 years old, with some of the existing infrastructure dated over 100 years. The sewer network is connected directly to trunk lines that convey sewage flows to EBMUD wastewater interceptors and finally to the Municipal Wastewater Treatment Plant located in West Oakland. EBMUD wastewater interceptors consist of 29 miles of reinforced concrete pipes ranging from 1 to 9 feet in diameter.

Groundwater infiltration and stormwater inflow into the aging sanitary sewer system from misconnections, cracks, and other imperfections in system pipes, joints, and manholes can cause a 10-fold increase in the volume of wastewater that reaches EBMUD's sewer interceptor pipes and the Municipal Wastewater Treatment Plant. In the 1980s, EBMUD began building large tanks to prevent raw sewage overflow into the Bay as a result of storms. In conjunction with this, Oakland's infiltration/inflow (I/I) correction program began in the 1980s to rehabilitate 25 percent of the sewer system sub-basins, work which was completed in 2014. However, in 2009 the U.S. Environmental Protection Agency filed a complaint against EBMUD, Stege Sanitary District, and the Cities of Oakland, Berkeley, Alameda, Emeryville, Piedmont and Albany, prohibiting them from dumping wastewater into the Bay. To settle the complaint, a 2014 Consent Decree required all the involved parties to repair and replace all sewer lines by 2036 to

drastically reduce I/I and discharge into the Bay. The City of Oakland's wastewater rehabilitation program rehabilitates approximately 13 miles of sewer pipeline yearly to meet the compliance requirements. Additionally, the City of Oakland participates in the Regional Private Sewer Lateral Ordinance which requires property owners to validate compliance when selling, building, or remodeling properties. Over time, these programs will reduce the non-wastewater components flowing into the system.

EBMUD provides domestic, commercial, and industrial wastewater treatment services to approximately 685,000 people in a service district known as Special District No.1, an 83-squaremile area of Alameda and Contra Costa counties. EBMUD owns and operates a network of 15 wastewater pumping stations (with 0.5- to 54.7-mgd capacity) and 8 miles of force mains that convey wastewater to the Municipal Wastewater Treatment Plant located at 2020 Wake Avenue in Oakland. The City's collection system connects with EBMUD's sewer interceptor system that transports sewage to the EBMUD Municipal Wastewater Treatment Plant. The Municipal Wastewater Treatment Plant provides both primary and secondary treatment of wastewater.

The Municipal Wastewater Treatment Plant provides primary treatment for up to a peak flow of 320 mgd and secondary treatment for a maximum flow of 168 mgd. Storage basins provide plant capacity for a short-term hydraulic peak of 415 mgd. The average dry weather flow into the treatment plant from 2010-2019 was approximately 54 mgd.

EBMUD recycles water at its main wastewater treatment facility and has done so since the early 1970s. Recycled water is suitable for land uses that do not require potable water sources, such as industrial uses and certain landscaped areas. According to the Urban Water Management Plan, EBMUD provided approximately 8.3 mgd of recycled water to customers in 2020 and aims to meet the 2040 projected demand of 20 mgd.

STORMWATER

Stormwater systems within Oakland are comprised of an assortment of creeks, ditches, culverts, and pipelines. The ownership and maintenance of the systems varies based on right of way and easement. While the City maintains local drainage facilities, Alameda County Flood Control & Water Conservation District is responsible for the overall and regional flood control provision in major creeks and channels.

The Alameda County Flood Control & Water Conservation District was created in 1949 by the State Legislature to provide flood control and conservation services to Alameda County. The District's flood control infrastructure includes hundreds of miles of pipelines, channels, creeks, erosion control measures, and pump stations. Oakland is located within Zone 12, which also includes the City of Emeryville, and is the largest of the Alameda County Flood Control & Water Conservation District's zones. Zone 12 has approximately 50 miles of closed conduit, approximately 12 miles of earthen and concrete channels, as well as 18 miles of existing natural waterways.

The Plan Area spans across three watersheds: Glen Echo Creek Watershed in the north, West Oakland Watershed in the western central portion of the Plan Area, and Oakland Estuary Watershed covering a majority of the central and southern portion of the Plan Area. Most of the stormwater runoff collected within the area flows through underground pipes and culverts to creeks that eventually drain into the San Francisco Bay. Five Pump stations, within Zone 12 (Lake Merritt, Ettie, McKillop, Hardy, and Temescal) lift stormwater to enable it to drain to the Bay.

Oakland is responsible for the operation and maintenance of the local storm drainage system in the Plan Area. The City's storm drainage system consists of more than 300 miles of storm drain pipes, over 100 miles of open creeks, and 15,000 structures (including inlets, manholes, and catch basins). These facilities are both publicly and privately owned. City-owned drainage systems are typically located within easements and rights-of-way. In 2019, the City of Oakland developed a Green Stormwater



Infrastructure Plan to comply with the California Regional Water Quality Control Board's Municipal Regional Stormwater Permit (MRP), work within the local Alameda County Clean Water Program, and to protect and restore watersheds within the City. "Green Stormwater Infrastructure" refers to a variety of practices and engineered facilities designed to detain and clean, capture and reuse, or infiltrate stormwater runoff to reduce the volume of runoff and improve water quality. In accordance with the City's Resilient Oakland Playbook, Oakland will use green infrastructure to manage stormwater and reduce flooding risks, as well as provide urban greening benefits, such as improved air quality and reduced urban heat island effects, especially for neighborhoods that have limited access to parks and green space. Completed green stormwater infrastructure projects are shown in Figure 4-4; planned and potential green stormwater infrastructure projects are shown in Figure 4-5.

In 2021, the City began developing an updated Storm Drainage Master Plan that will provide recommendations for the rehabilitation of the existing storm drainage system, construction of new improvements, and the maintenance and care of the City's existing drainage assets. The City intends to use this study to establish and prioritize storm drainage capital improvement projects, identify permitting requirements, and develop improved maintenance and management practices and standards that address water quality issues consistent with the MRP and other associated stormwater management guidelines and regulations.

Figure 4-3: Sanitary Sewer System

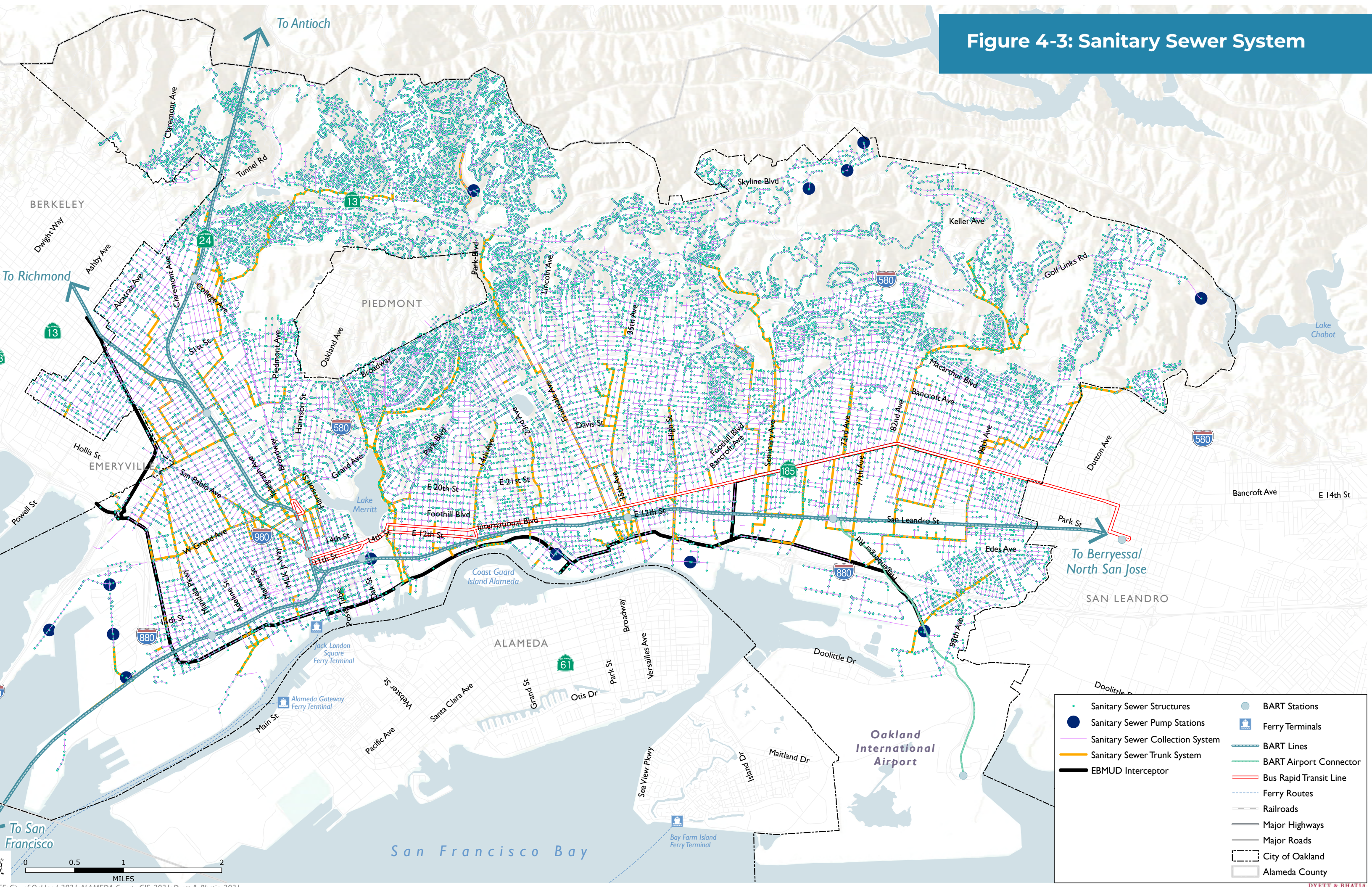


Figure 4-4: Completed Green Stormwater Improvement Projects

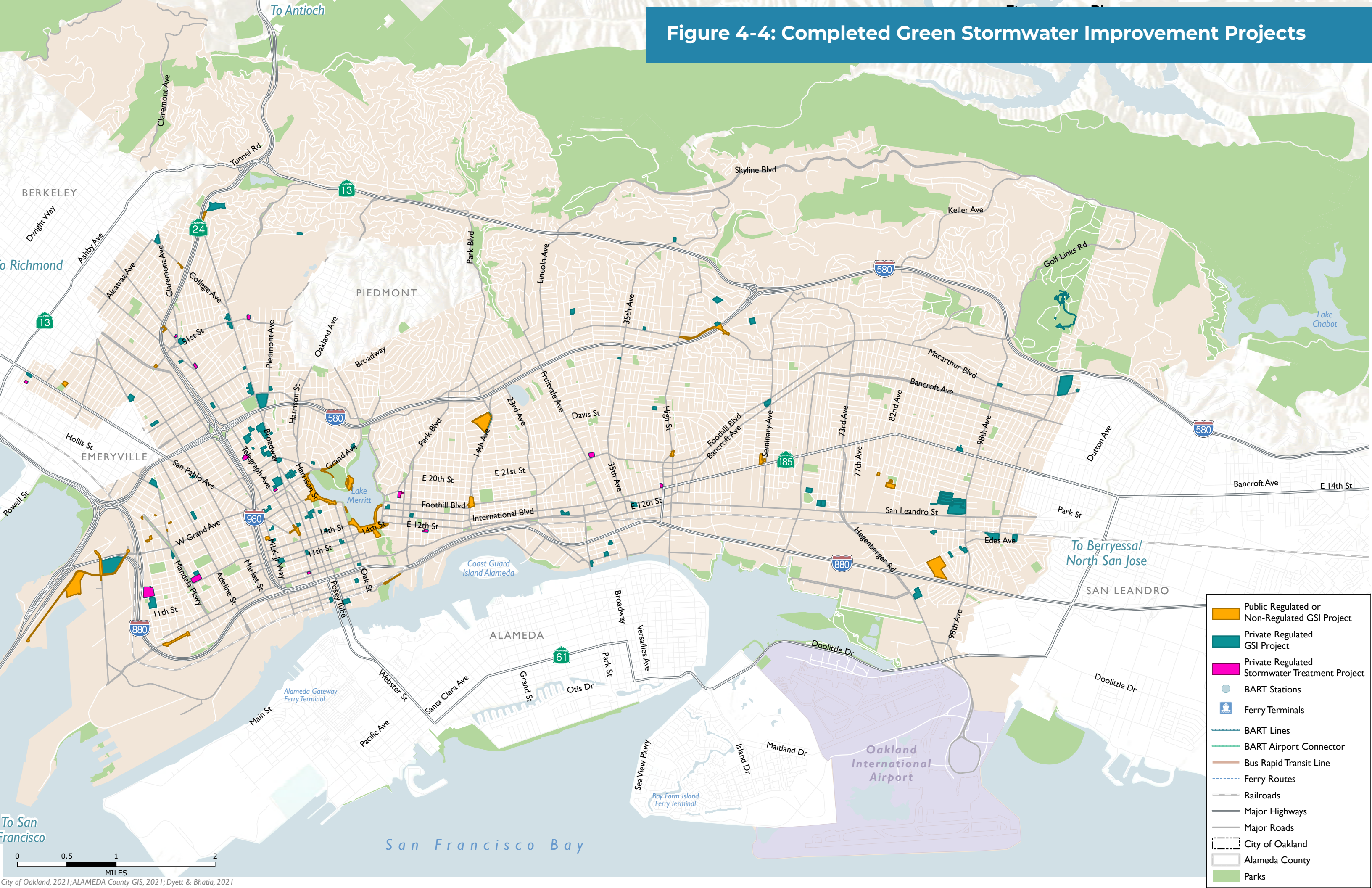
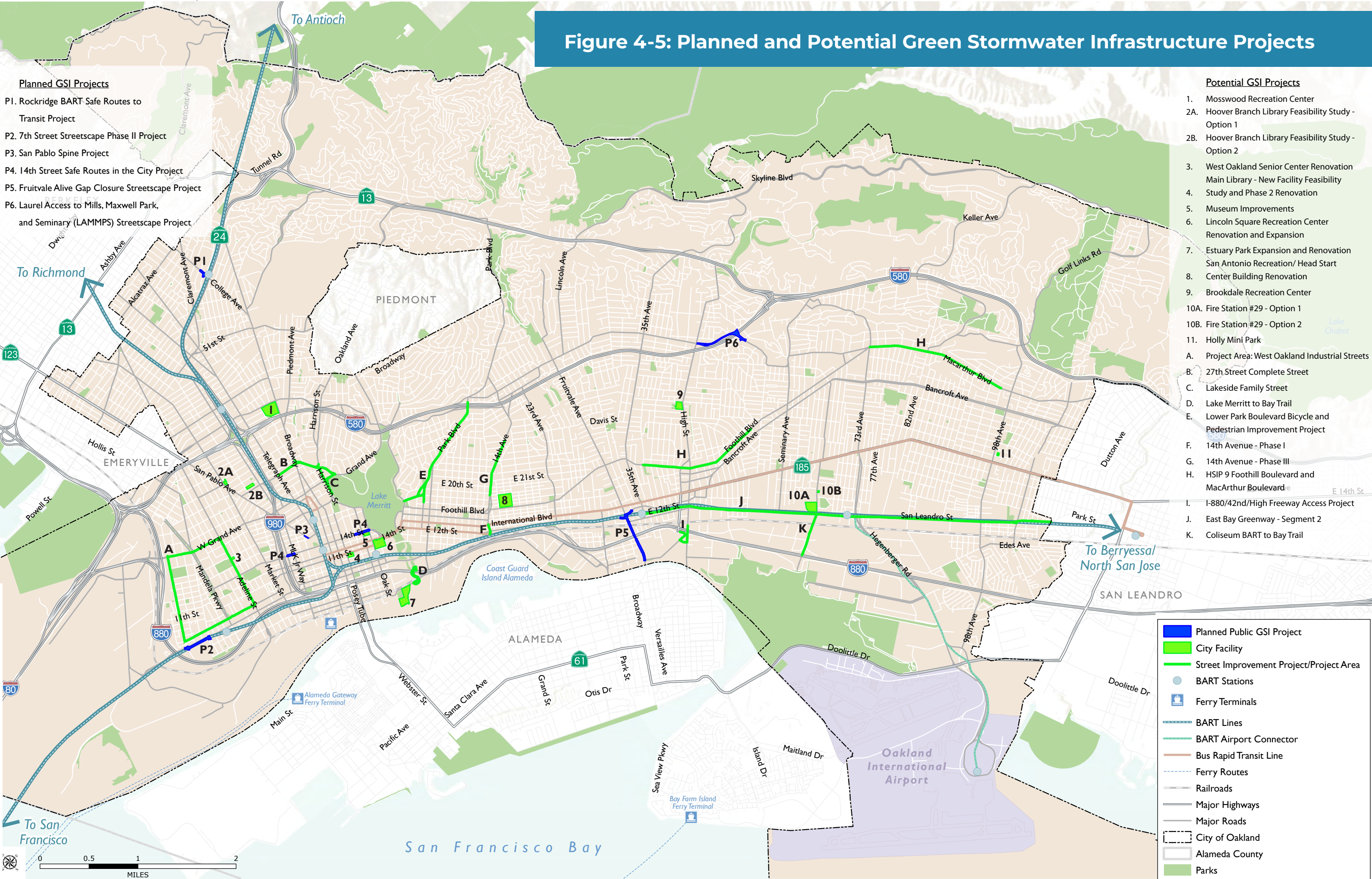


Figure 4-5: Planned and Potential Green Stormwater Infrastructure Projects



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05

NATURAL SETTING AND OPEN SPACE

- 5.1 Topography and Slope
- 5.2 Biological Resources
- 5.3 Watersheds
- 5.4 Urban Forest
- 5.5 Open Space and Recreation

5. Natural Setting and Open Space

5.1 Topography and Slope

Oakland’s topography is shown in **Figure 5-1**. The City rises from an elevation of sea level at its western edge to approximately 1,760 feet in the northeast Oakland Hills. Slopes are generally steeper in the hills and gradually decrease toward the flatlands, with slopes in the Oakland Hills, especially areas east of Highway 13/I-580, exceeding 30 percent. Significant portions of neighborhoods northeast of Lake Merritt, such as Grand Lake, as well as Hills-adjacent parts of East Oakland have slopes exceeding 15 percent. The terrain flattens out toward the western and south-western parts of the City as well as north of I-980; these relatively flat areas include Downtown, West Oakland, most of North Oakland, the Port and Airport, and most of East Oakland.

5.2 Biological Resources

REGIONAL AND LOCAL SETTING

Oakland is in the San Francisco Bay Bioregion, which has a mild Mediterranean climate with generally warm, dry summers and cool, wet winters. This region includes marine, freshwater, and terrestrial resources from Point Arena to the Santa Cruz Mountains and extends from the continental shelf to the delta of the Sacramento and San Joaquin Rivers.^{1,2} Oakland is bordered to the west by the San Francisco Bay and to the east by the San Pablo Ridge Range, one of the Southern Coast Ranges running from the East San Francisco Bay Area south to Santa Barbara County.

1 U.S. Geological Survey (USGS). 2017. Western Ecological Research Center (WERC). Bioregions of the Pacific U.S. Available at <https://www.usgs.gov/centers/werc/science/bioregions-pacific-us>. Accessed December 22, 2021.

2 There are numerous sources for bioregions. The USGS Western Ecological Research Center defined their Bioregions of the Pacific U.S. by adopting a slightly modified version of the Forest Service’s National Hierarchical Framework of Ecological Units.

Table 5-1: Terrestrial Vegetation Communities and Aquatic Features

CATEGORY	ACREAGE	PERCENTAGE OF CITY OF OAKLAND
TERRESTRIAL		
Annual Grassland	1,182	2
Blue Oak Forest / Woodland	102	<1
California Bay Forest	32	<1
Central Coast Riparian Forests	17	<1
Chamise Chaparral	50	<1
Coast Live Oak Forest / Woodland	2,314	5
Coastal Salt Marsh / Coastal Brackish Marsh	220	<1
Coastal Scrub	559	1
Eucalyptus	913	2
Mixed Chaparral	25	<1
Montane Hardwoods	5	<1
Monterey Pine Forest	33	<1
Non-native / Ornamental Conifer	73	<1
Non-native / Ornamental Grass	479	1
Non-native / Ornamental Hardwood	129	<1
Non-native / Ornamental Conifer / Hardwood Mixture	354	1
Redwood Forest	310	1
Semi-Desert Scrub / Desert Scrub	284	1
Serpentine Conifer	23	<1
Serpentine Grassland	6	<1
Serpentine Hardwoods	34	<1
Serpentine Scrub	3	<1
Valley Oak Forest / Woodland	82	<1

AQUATIC		
Estuarine Marine Wetland	329	1
Freshwater Forested / Shrub Wetland	2	<1
Freshwater Pond	152	<1
Lake	365	1
Permanent Freshwater Marsh	128	<1
Riverine	200	<1
Water	192	<1
OTHER		
Developed / Disturbed	41,310	83

Sources: City of Oakland, 2021; Alameda County GIS, 2021; Dyett & Bhatia, 2021; Conservation Lands Network, 2021; US Fish and Wildlife Service National Wetlands Inventory, 2021.

VEGETATION AND AQUATIC HABITAT

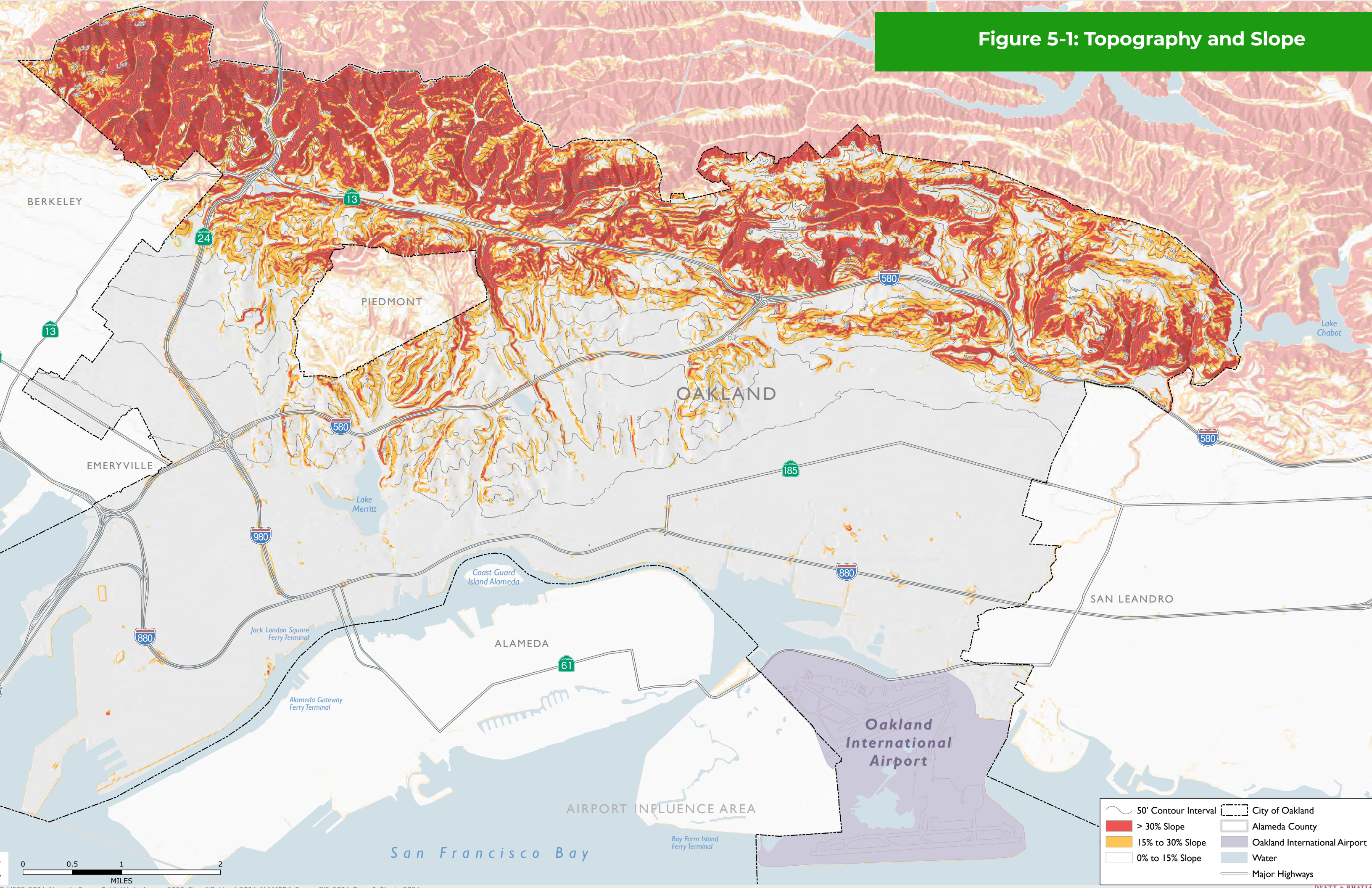
Oakland is a highly urbanized environment and most of its lands are disturbed or developed areas, which are the areas not designated as a vegetation community or aquatic feature (Figure 5-2A). However, Oakland has 19 miles of shoreline, 13 creeks, a muted tidal lake, and over 100,000 acres of parks and trails (City of Oakland, 2022; NWI, 2022).^{3,4} These natural areas include coastal salt marsh along the San Francisco Bay shoreline, riparian forest along the City’s many creeks, extensive grassland, oak woodland, coastal scrub in the Oakland hills, and many other vegetation communities as shown in **Figure 5-2A** and **Table 5-1**.



3 City of Oakland. 2022. City of Oakland website. <https://www.visitoakland.com/things-to-do/sports-and-outdoors/parks-open-spaces/>. Accessed in January, 2022.

4 National Wetlands Institute. 2022. NWI Wetland Mapper. <https://www.fws.gov/wetlands/data/mapper.html>. Accessed in January 2022.

Figure 5-1: Topography and Slope



SPECIAL STATUS SPECIES

The term special-status species refers to plant and wildlife species that are considered sufficiently rare that they require special consideration and/or protection and should be, or currently are, listed as rare, threatened, or endangered by the federal and/or state governments. Such species are legally protected under the federal and/or state Endangered Species Acts or other regulations. According to records maintained by the California Natural Diversity Database (CNDDDB), there are observations of the following federal and/or state listed wildlife and plant species, as well as non-listed rare plant species, occurring in the City of Oakland within the last 50 years: Alameda whipsnake, California Ridgway’s rail, California black rail, western snowy plover, least tern, salt marsh harvest mouse, tidewater goby, longfin smelt, pallid manzanita, Presidio clarkia, most beautiful jewelflower, and Tiburon buckwheat (**Table 5-2**). **Figures 5-2B** and **5.2C** illustrate all special-status species observations within Oakland that have been submitted to the CNDDDB, as well as critical habitat for Alameda whipsnake, which is present in the scrub and grass-land habitat in the hills at the eastern edge of Oakland.



Table 5-2: Wildlife and Plant Species and Rare Plants Observed in Oakland^a

COMMON NAME	FEDERAL LISTING	STATE LISTING	CNPS CRPR RANK ^b
WILDLIFE			
Alameda whipsnake	Threatened	Threatened	n/a
California Ridgway’s rail	Endangered	Endangered	n/a
California black rail	None	Threatened	n/a
Western snowy plover	Threatened	None	n/a
California least tern	Endangered	Endangered	n/a
Salt marsh harvest mouse	Endangered	Endangered	n/a
Tidewater goby	Endangered	None	n/a
Longfin smelt	Candidate	Threatened	n/a
PLANTS			
Pallid manzanita	Threatened	Endangered	1B.1
Presidio clarkia	Endangered	Endangered	1B.1
Most beautiful jewelflower	None	Rare	1B.2
Tiburon buckwheat	None	None	1B.2
Western leatherwood	None	None	1B.2

Notes:

a Observations submitted to the CNDDDB within the past 50 years.

b California Native Plant Society (CNPS) California Rare Plant Rank (CRPR)
1A = Presumed extirpated in California; Rare or extinct in other parts of its range.
1B = Rare, threatened, or endangered throughout range; Most species in this rank are endemic to California.

2A = Extirpated in California, but common in other parts of its range.
2B = Rare, threatened, or endangered in California but common in other parts of its range.

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

.1 = Seriously endangered in California
.2 = Fairly endangered in California

Sources: City of Oakland, 2021; Alameda County GIS, 2021; Dyett & Bhatia, 2021; CDFW, 2021; USFWS, 2021.

Figure 5-2A: Vegetation Communities and Aquatic Figures

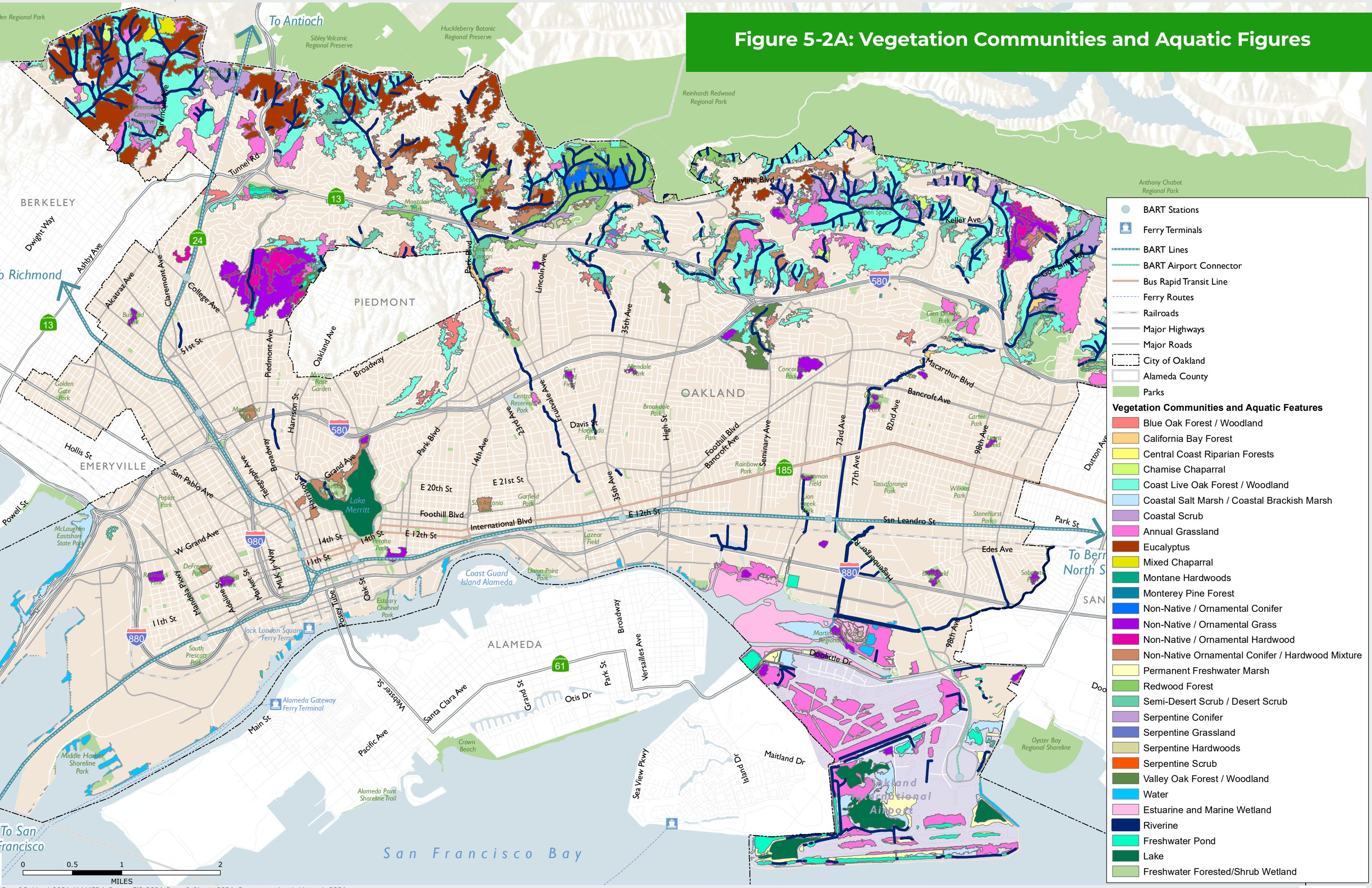


Figure 5-2B: CNDDDB Wildlife Observations and Critical Habitat within the Project Vicinity

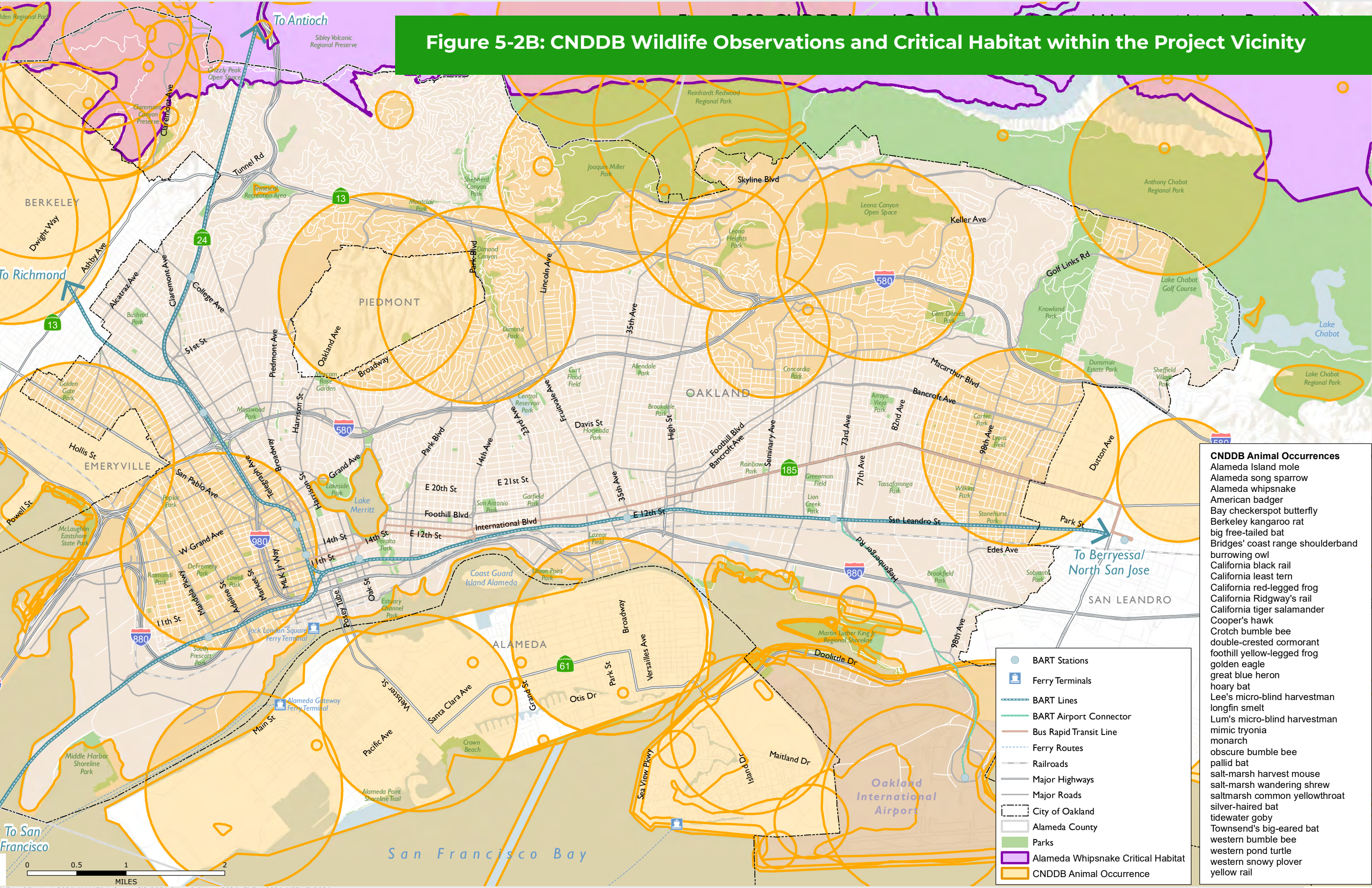
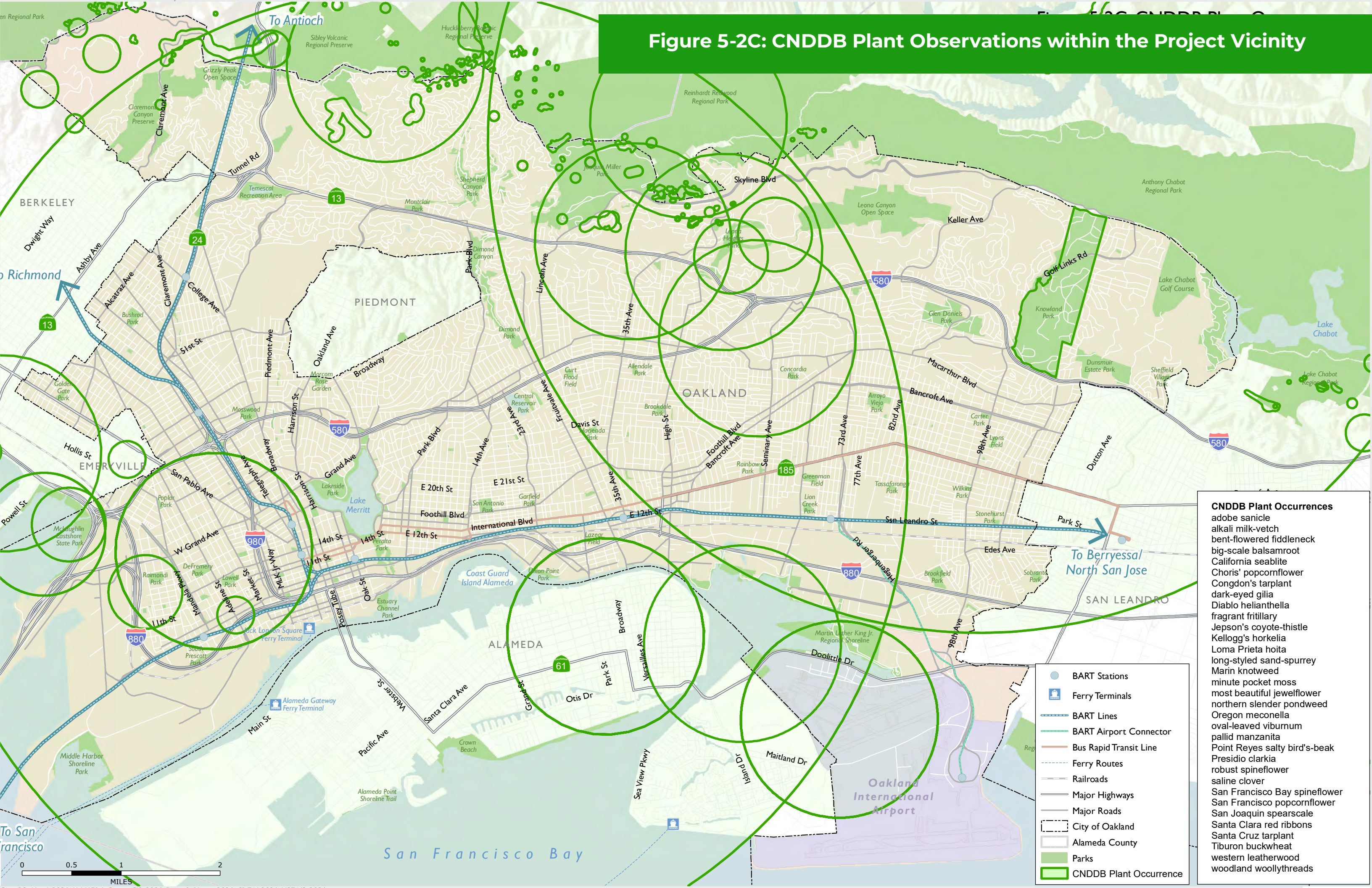


Figure 5-2C: CNDDDB Plant Observations within the Project Vicinity



5.3 Watersheds

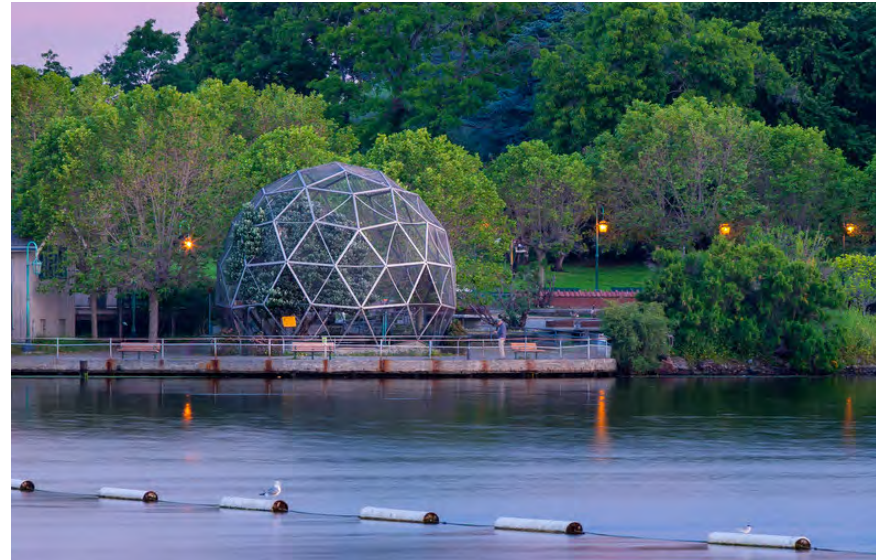
Oakland is bordered to the west by the San Francisco Bay, the Oakland Estuary, and the San Leandro Bay. There are 26 individual watersheds within the City, as shown and labeled on Figure 5-3A. Surface water bodies within the City include: Lakes Merritt and Temescal; and Arroyo Viejo, Courtland, Elmhurst, Glen Echo, Lion, Indian Gulch, Palo Seco, Peralta, Pleasant Valley, San Antonio, San Leandro, Sausal, Temescal, and Wildwood creeks (**Figure 5-3B**).

5.4 Urban Forest

Urban trees balance the natural with the built environment and provide both shade and beauty. Trees play a key role in the climate as they absorb carbon dioxide and help manage stormwater runoff. They also help fight pollution by improving air quality. Oakland's commitment to maintaining a substantial tree canopy is recognized by its Tree City USA status, which it has held for over 34 years. The City has its own Tree Services unit that maintains over 200,000 trees, but in 2008 it lost funding for its tree planting, pruning, and watering services.

In 2019, the City commissioned Davey Resource Group to study Oakland's existing urban forest resources. The first step was to use aerial imagery to understand the City's primary land cover and its relationship with the existing tree canopy. Based on the Tree Canopy and Land Cover Assessment (2020), Oakland's tree canopy coverage is 21.5 percent (about 7,800 acres), including trees and woody shrubs on both public and privately owned land. Most of the tree canopy is on privately owned property, though the highest canopy cover occurs in areas zoned for open space, while industrial zones have the lowest average canopy cover.

The second step was to conduct an inventory of community trees in parks, along City streets with sidewalks, and at City facilities. Although the community tree inventory includes almost



69,000 trees along streets with sidewalks, medians, and landscaped parks, the Urban Forest Resource Analysis (2021) is not a conclusive inventory of every tree in Oakland such as those in open space parks (e.g., Joaquin Miller Park), trees in undeveloped rights-of-way without sidewalks (i.e., in the Oakland hills), and trees on private properties or properties outside the City of Oakland's jurisdiction. The report analyzes the benefits of Oakland's community trees, which have a quantifiable effect on air quality, stormwater runoff reduction, and carbon sequestration. Because Oakland has a mild climate with reduced need for air conditioning in the summer months, annual energy reductions from community trees were not calculated; nevertheless, trees in Oakland contribute to electric and natural gas savings through shading and climate buffering effects. The report also identifies key recommendations regarding risk, maintenance, diversity, and overall management to maximize potential benefits of the City's trees over time.

As **Figure 5-4** indicates, tree canopy coverage in the City varies with topography, elevation, and density of development. The greatest percent canopy coverage is found in the Oakland Hills, with most the area exceeding 25 percent and large sections exceeding 42 percent. Canopy coverage decreases towards the denser flatlands. North Oakland includes some neighborhoods with 15-24 percent coverage, including Rockridge and Grand



Lake, while the rest of North Oakland has 0-14 percent coverage. East Oakland includes some neighborhoods with 15-24 percent coverage, such as Bella Vista and Reservoir Hills, but the vast majority of East Oakland has 0-14 percent coverage. Nearly all of West Oakland has 0-14 percent coverage, except for a few blocks adjacent to Old Oakland with 15-24 percent coverage. Downtown, aside from a few blocks in Old Oakland with 15-24 percent coverage, and the Jack London District have 0-14 percent coverage. The industrial areas in the City have very sparse tree canopy coverage. These findings emphasize the inequitable distribution of tree canopy across Oakland neighborhoods. Recommendations from the assessment include targeted zoning strategies to increase tree canopy cover.

The Tree Canopy and Land Cover Assessment and the community tree inventory will inform development of the City's upcoming Urban Forest Master Plan, which has just begun its planning process in December 2021. The master plan will be an equity-focused guide on how the urban forest will be planned, managed, and protected for the next generation of Oaklanders over the next 50 years. The planning process will also include a forthcoming Socioeconomic and Public Health Analysis.

Figure 5-3A: Watersheds

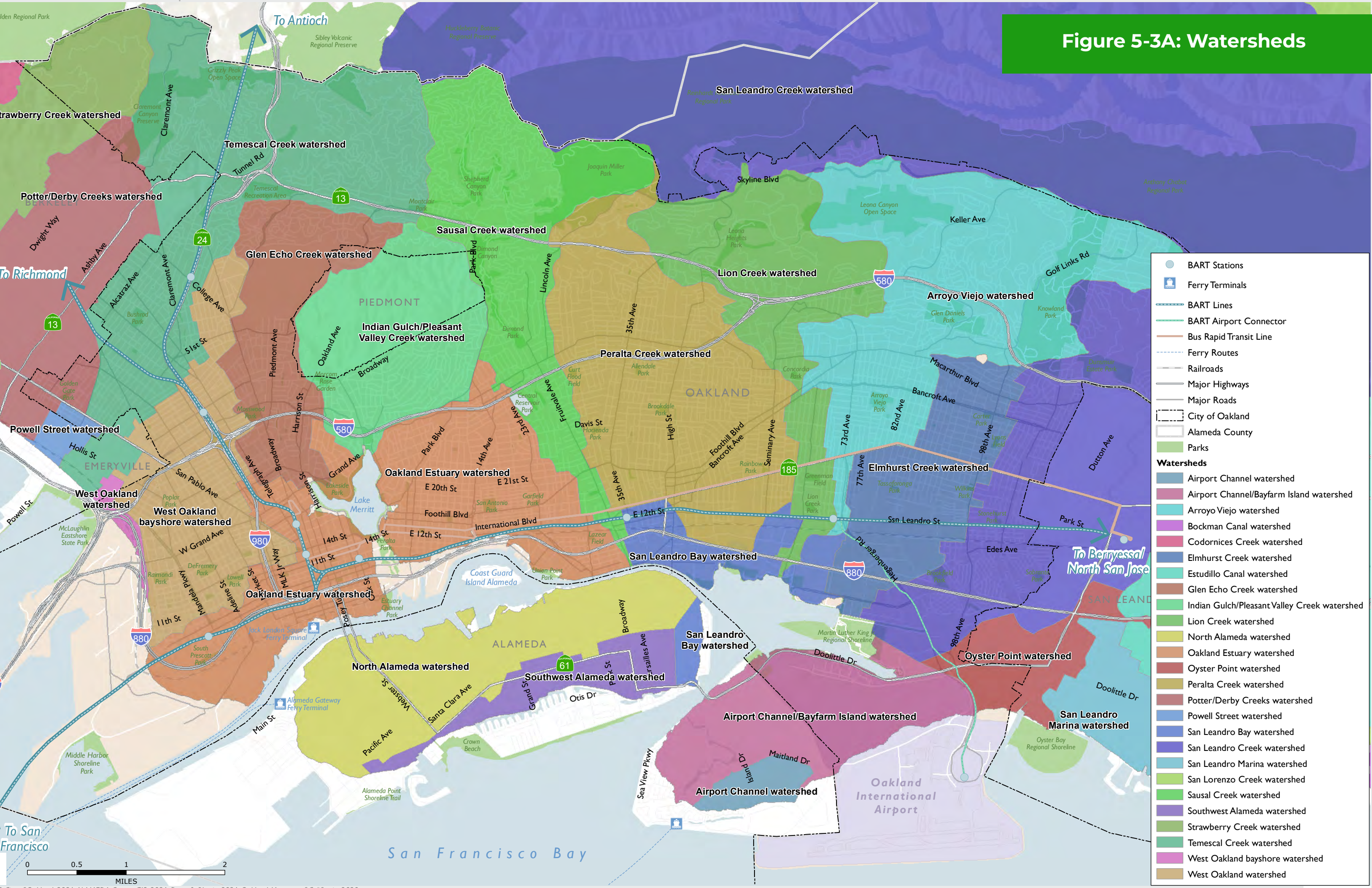
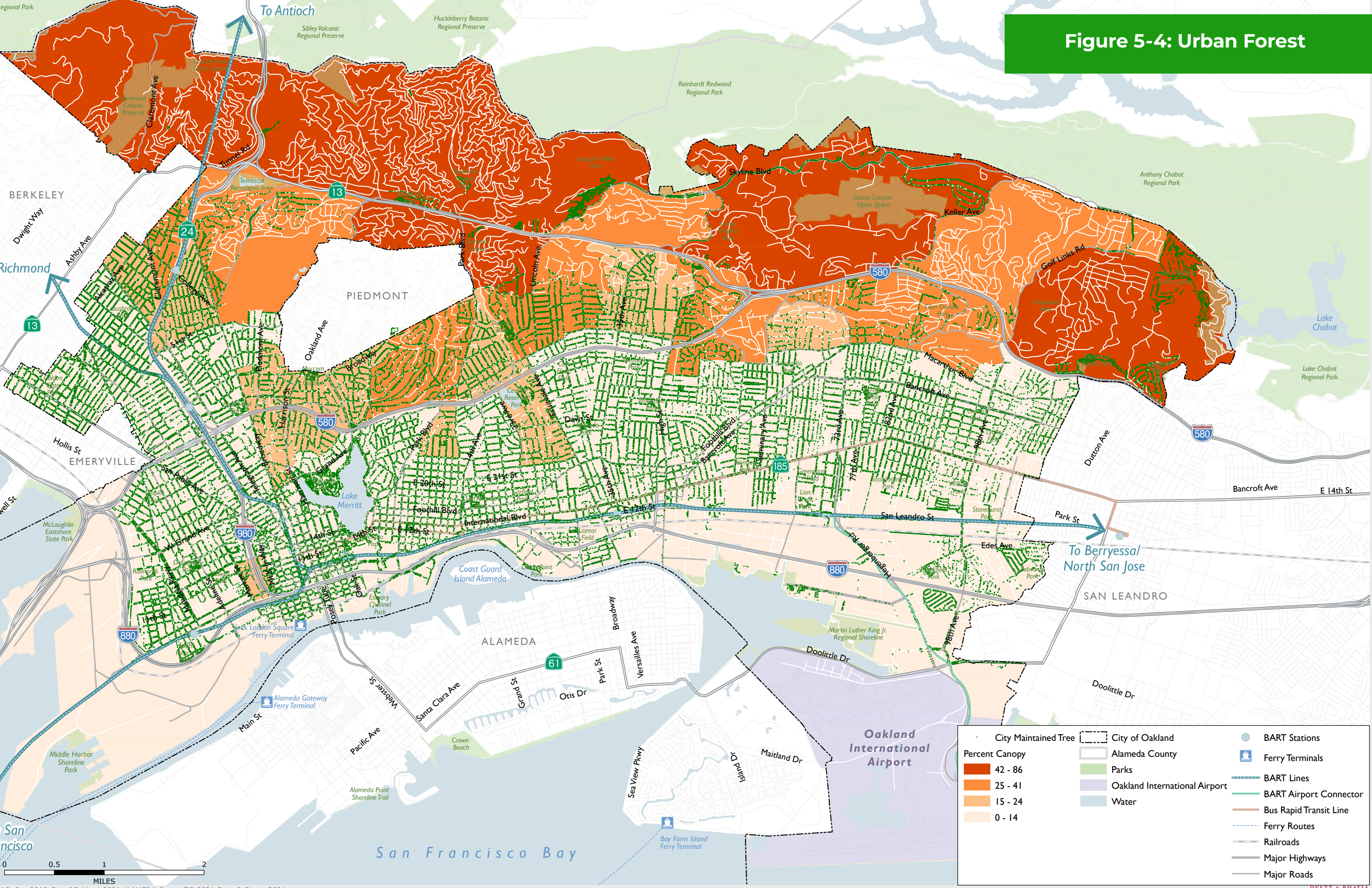


Figure 5-3B: Creeks



Figure 5-4: Urban Forest



5.5 Open Space and Recreation

Green spaces in parks and natural areas are valuable public assets that can greatly improve community livability, support healthy and active lifestyles, and provide ecological benefits. Oakland features over 3,865 acres of parkland but most of it is not easily accessible to residents without cars. **Figure 5-5** shows that the Oakland Hills are almost entirely bordered by and includes some regional parks. The Hills also include some large resource conservation areas and open spaces. The Oakland flatlands contain a much smaller total area of the City's parkland, with most parks being small neighborhood parks. Lake Merritt is the exception as it is surrounded by substantial community parkland; however, a significant share of the City population lives within close proximity, resulting in heavy use of these spaces. Recreation centers are distributed throughout the City, with the greatest concentration around densely populated Downtown and Lake Merritt. Section 4.3 of the companion Environmental and Racial Equity Baseline report explores issues around park equity in more detail.

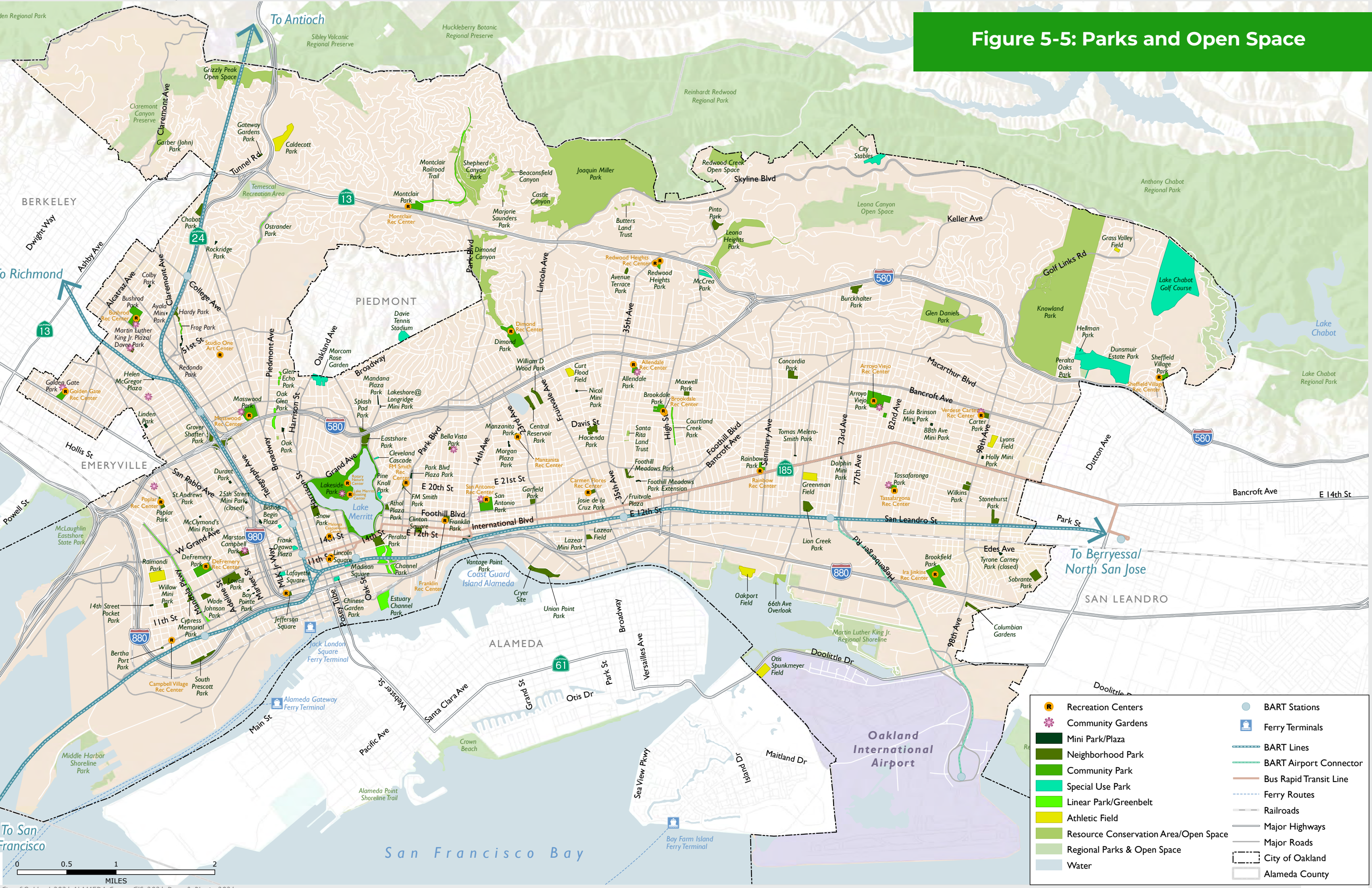
Community gardens and urban farms can help address limited access to healthy food in some communities, as well as provide opportunities to get outdoors and help fight climate change by increasing local food production. A study conducted by Urban Institute for the Alameda County Community Food Bank showed that the most food insecure census tracts in Oakland are concentrated in West Oakland, Downtown, and the East Peralta neighborhood, with up to 40 percent of the population in these census tracts experiencing food insecurity; marginal food security, where households sometimes experience anxiety around accessing adequate food, occurs in up to 18 percent of a census tract's population in West Oakland, and up to 16 percent of a census tract's population in Downtown and East Oakland.⁵

⁵ Elaine Waxman, et. al. Unmet Charitable Food Need in Alameda County: A Report to the Alameda County Community Food Bank. December 16, 2019. Urban Institute. https://www.urban.org/sites/default/files/publication/101443/unmet_charitable_food_need_report_in_alameda_county_1.pdf. Accessed February 2022.

Oakland updated its zoning regulations for urban agriculture in 2014 to reduce barriers to opening community gardens and urban farms in the City. Community gardens and limited agriculture (i.e. agriculture that does not include keeping animals aside from bees) is permitted outright in many zones, while extensive agriculture (involving animals other than bees) requires a conditional use permit. Starting a community garden or farm outside of the permitted zones requires a permit. As shown in Figure 5-5, community gardens, including urban farms, can be found in West Oakland, North Oakland, East Oakland and one at Lake Merritt. Section 4.2 of the companion Environmental and Racial Equity Baseline report explores healthy food access in more detail.



Figure 5-5: Parks and Open Space



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ENVIRONMENTAL HAZARDS

- 6.1 Geology**
- 6.2 Flooding, Dam Inundation, and Sea Level Rise**
- 6.3 Air Quality**
- 6.4 Wildfires**
- 6.5 Airport Hazards**
- 6.6 Noise**
- 6.7 Hazards and Hazardous Materials**

6. Environmental Hazards

6.1 Geology

Oakland is located between two known active fault zones – Hayward and San Andreas. The Hayward Fault Zone extends north-northwest to south-southeast approximately 55 miles from San Jose to Point Pinole along the eastern side of Oakland, as shown on Figure 6-1A. The fault is active, producing large historic earthquakes, and is designated as an Alquist-Priolo Earthquake Fault Zone (EFZ).^{1,2} The San Andreas Fault Zone is a system of faults trending northwest for approximately 600 miles, from the Gulf of Mexico to Cape Mendocino. It also has been designated an EFZ. There have been numerous large and destructive earthquakes generated from the San Andreas Fault Zone, including the 1906 San Francisco earthquake and the 1989 Loma Prieta earthquake. The Working Group on California Earthquake Probabilities has estimated that the entire San Francisco Bay Area has a 72 percent chance of experiencing an earthquake of magnitude 6.7 or higher over the next 30 years, with the Hayward and San Andreas Faults being the most likely to cause such an event.

1 In accordance with the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) of 1972, the State Geologist established regulatory zones, called "Earthquake Fault Zones," around the surface traces of active faults and published maps showing the earthquake fault zones. Within the fault zones, buildings for human occupancy cannot be constructed across the surface trace of active faults.

2 Working Group on California Earthquake Probabilities, 2015a. Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Rupture Forecast (UCERF3). Bulletin of the Seismological Society of America, Vol. 105, No. 2A, pp. 511-543. April 2015. doi: 10.1785/0120140093

Strong seismic ground shaking, due to Oakland's proximity to the Hayward and San Andreas fault zones, and earthquake-induced liquefaction and/or landslides are the primary geologic hazards of concern in Oakland in the event of an earthquake. The Probabilistic Seismic Hazard Assessment reveals that most of Oakland is at risk for violent shaking, while part of the port, including Oakland International Airport, is at risk for severe shaking (Figure 6-1A). Liquefaction is the rapid loss of shear strength experienced in saturated soils below groundwater level during strong earthquake shaking. Liquefaction can move blocks of soil, placing strain on buried pipelines that can lead to leaks or pipe failure. Liquefaction susceptibility is generally highest in the low-lying coastal areas of Oakland, and around Lake Merritt and the channel that connects it to the Estuary (Figure 6-1A). Earthquake-induced landslides are a particular type of landslide in which rocks and soil are displaced due to strong ground shaking. Figure 6-1B shows that landslides are most likely in the hillier parts of Oakland.



Photo: Greg Linhares, City of Oakland

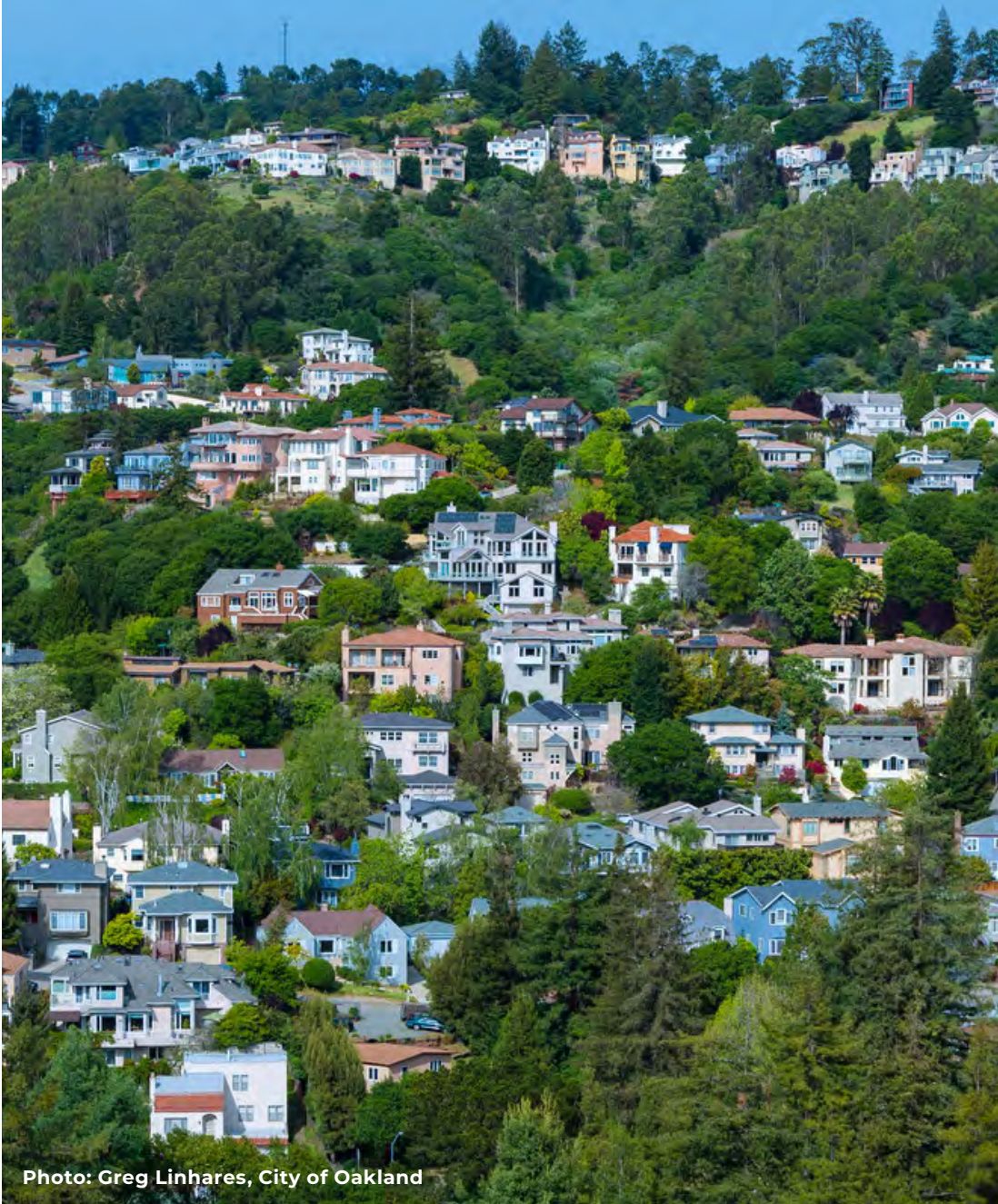


Photo: Greg Linhares, City of Oakland

Figure 6-1A: Seismic Hazards

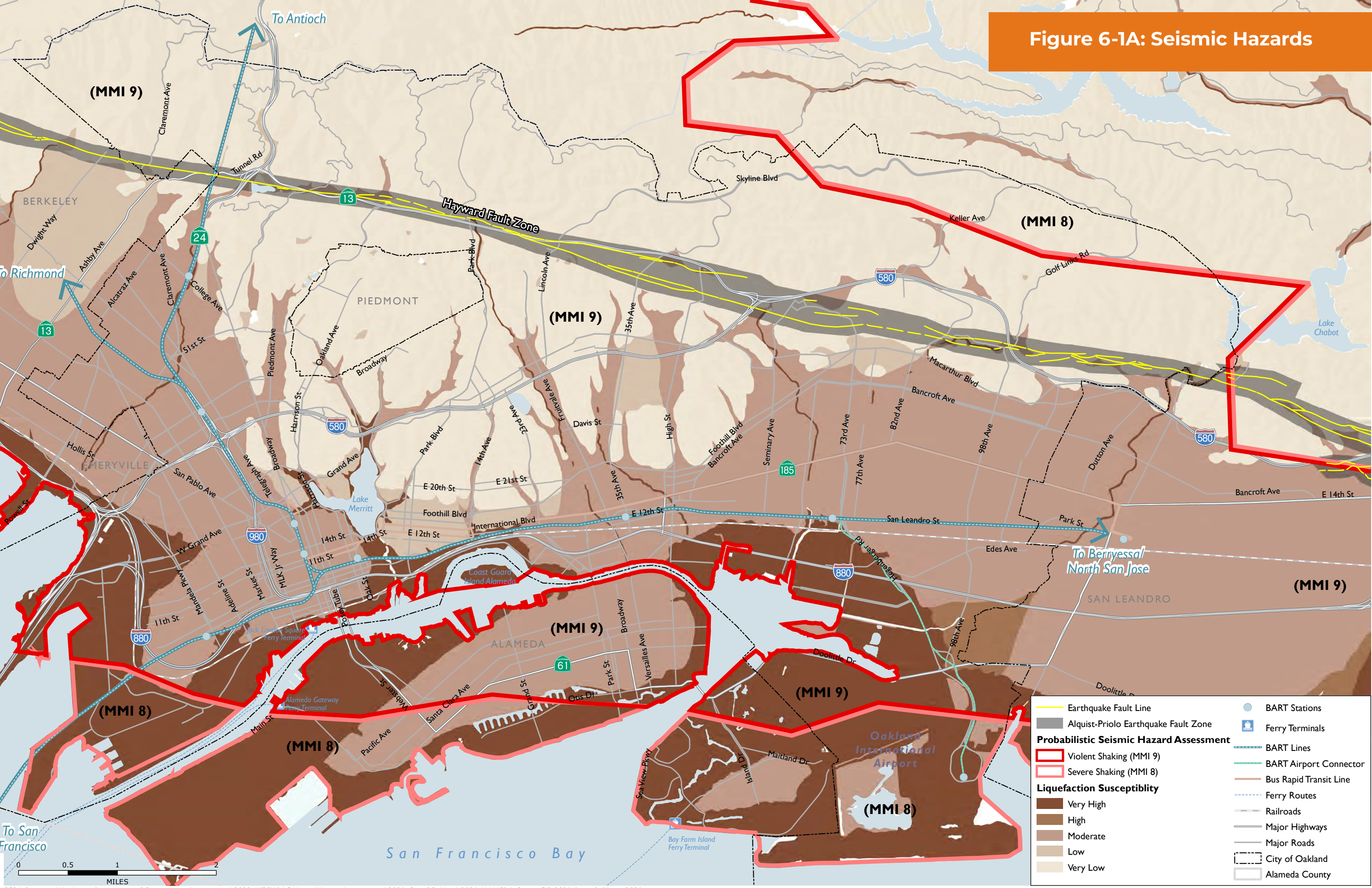


Figure 6-1B: Landslide Hazards

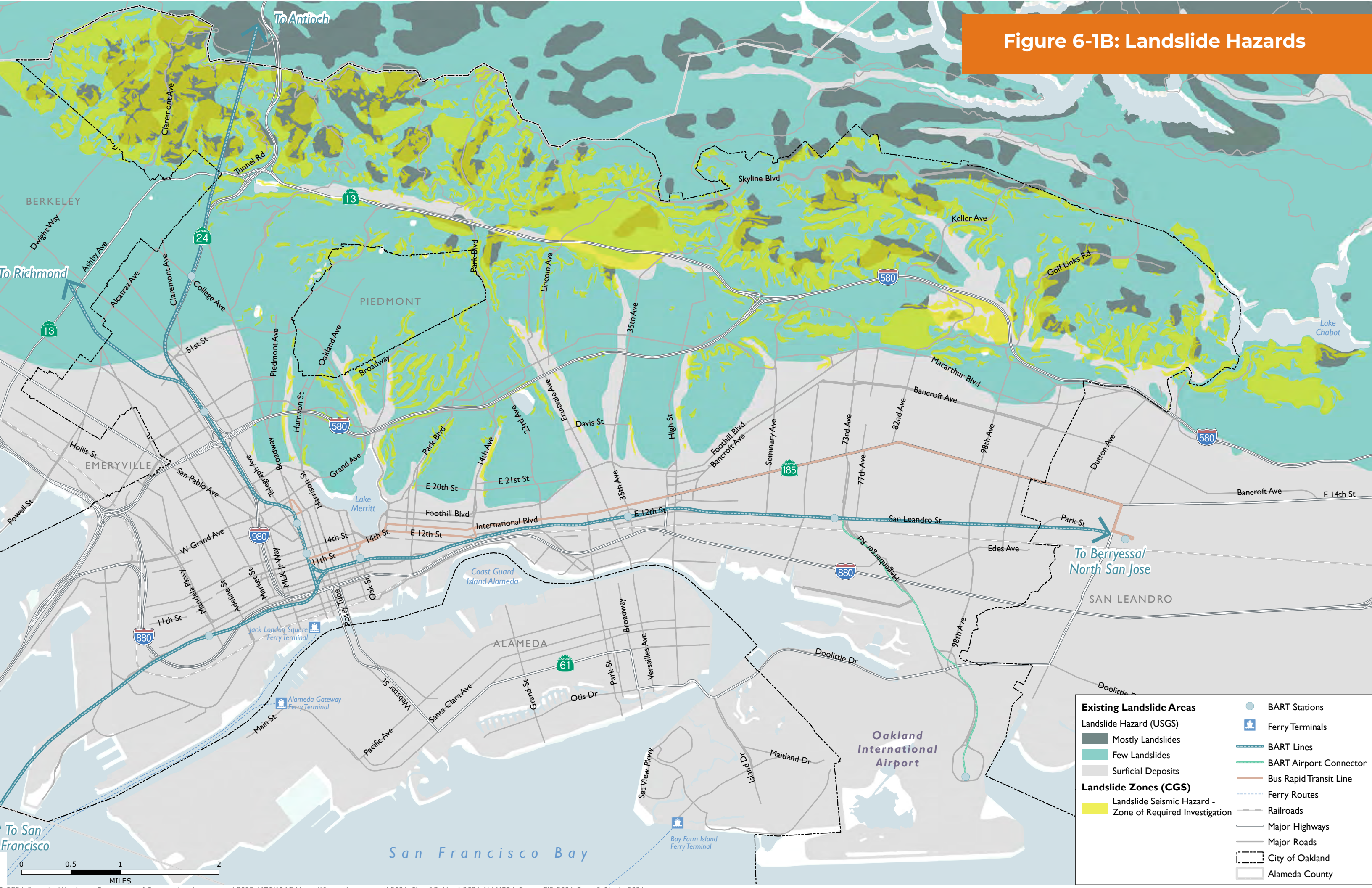




Photo: Greg Linhares, City of Oakland

6.2 Flooding, Dam Inundation, and Sea Level Rise

Flood hazards are mapped by the Federal Emergency Management Agency (FEMA) as part of the National Flood Insurance Program. The 100-year Flood Zone, which has a 1 percent annual chance flood risk, and 500-year Flood Zone, which has a 0.2 percent annual chance flood risk, are depicted in Figure 6-2A. The primary areas of flooding in Oakland are along the shoreline of the San Francisco Bay, Oakland Estuary, and San Leandro Bay. There is also flooding associated with Lake Merritt and Glen Echo Creek, as well as Arroyo Viejo, Lion, Sausal, and Peralta creeks. The areas near these bodies of water are at the most risk of being impacted during flood events. Most of the City's developed shoreline is not within the current 100-year Flood Zone, except the north part of the Oakland International Airport.³

The California Department of Water Resources' Division of Safety of Dams reviews and approves inundation maps for extremely

high, high, and significant hazard dams. There are four dams in Oakland that are considered extremely high hazard dams: Lake Temescal, Central, Dunsmuir Reservoir, and Chabot. Piedmont and Seneca dams are also in the vicinity, but they are considered a low hazard and do not have associated inundation maps. Figure 6-2B depicts the inundation areas for Lake Temescal, Central, Dunsmuir Reservoir, and Chabot dams.

A rise in average global temperatures due to an increase in human-induced greenhouse gas (GHG) emissions has led to rising global sea level. In the last century, San Francisco Bay water levels have risen nearly eight inches.⁴ Following from the sea-level rise (SLR) projections used in the City's 2021-2026 Local Hazard Mitigation Plan, the 100-year coastal flood with 0.5 foot of SLR and 5.5 feet of SLR, respectively, provide a near-term and

long-term indication of future flood hazards. For 0.5 foot of SLR (Figure 6-2C), the City's exposure to 100-year coastal flooding remains similar to present day, with Oakland International Airport being most at risk. A few other small sections of the City shoreline are also exposed to 100-year flood hazards. For 5.5 ft of SLR (Figure 6-2D), which is estimated to have a 1-in-200 chance of occurring by 2090, the City's entire shoreline is threatened by coastal flooding during a 100-year event.

This understanding of future sea-level rise hazards will be used for adaptation planning to increase the City's resilience. Current state guidance calls for preparing for at least 3.5 feet of sea-level rise.⁵ These adaptation strategies will be incorporated into the General Plan update. Should in the long-term future a regional SLR adaption solution, such as water lock near the Golden Gate Bridge, be pursued, this would affect Oakland as well.

³ The portion of the airport designated by FEMA as Zone X indicates an area that is determined to be outside the 500-year flood and is protected by levee from 100-year flood.

⁴ National Oceanic and Atmospheric Administration (NOAA), 2018. Center for Operational Oceanographic Products and Services (CO-OPS), NOAA Sea-Level Trends 1987-2018, 2018. tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=9414290.

⁵ California Ocean Protection Council, 2020. Strategic Plan to Protect California's Coast and Ocean 2020-2025

Figure 6-2A: Flood Hazard Zones

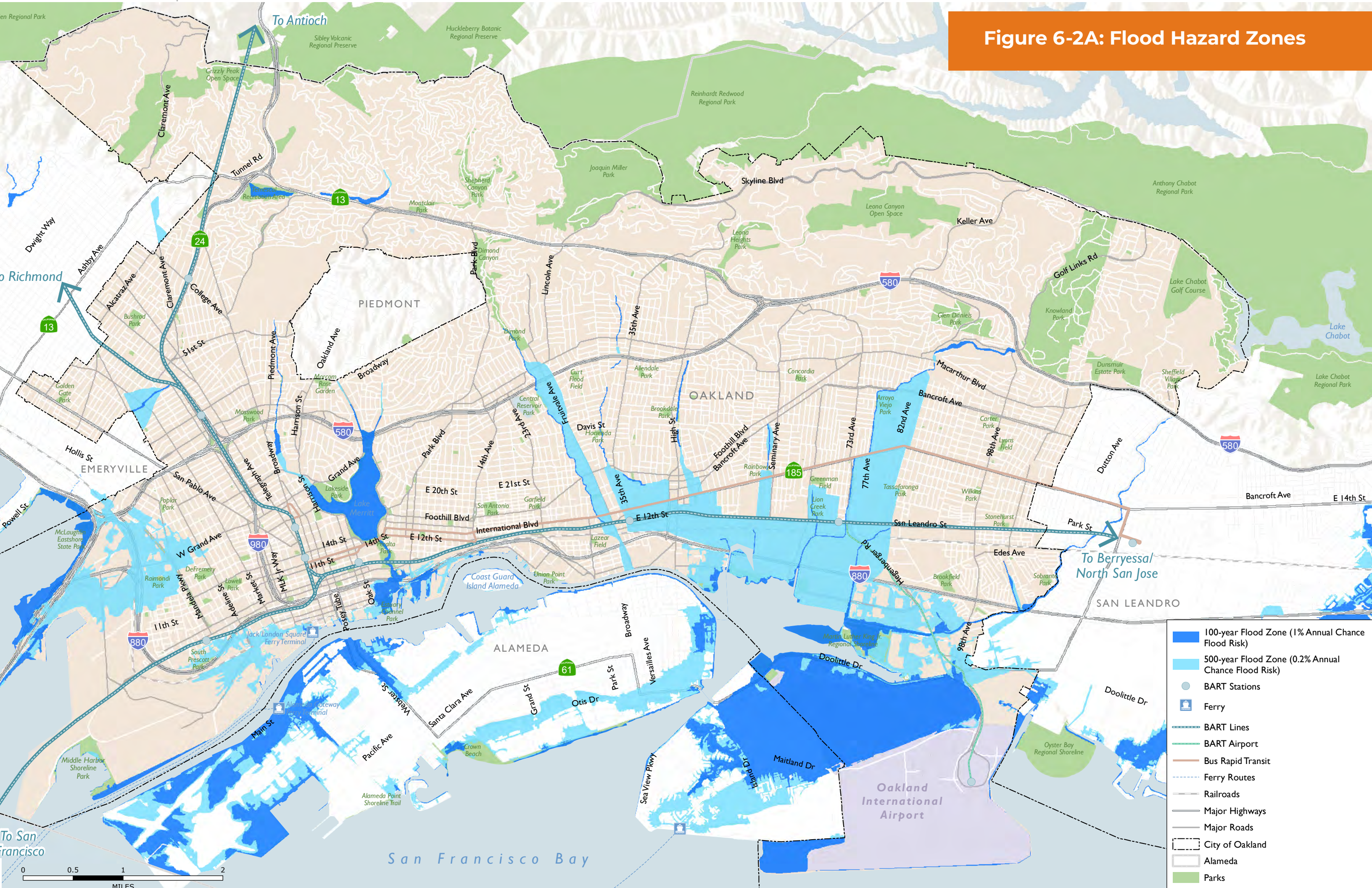


Figure 6-2B: Dam Breach Inundation Area

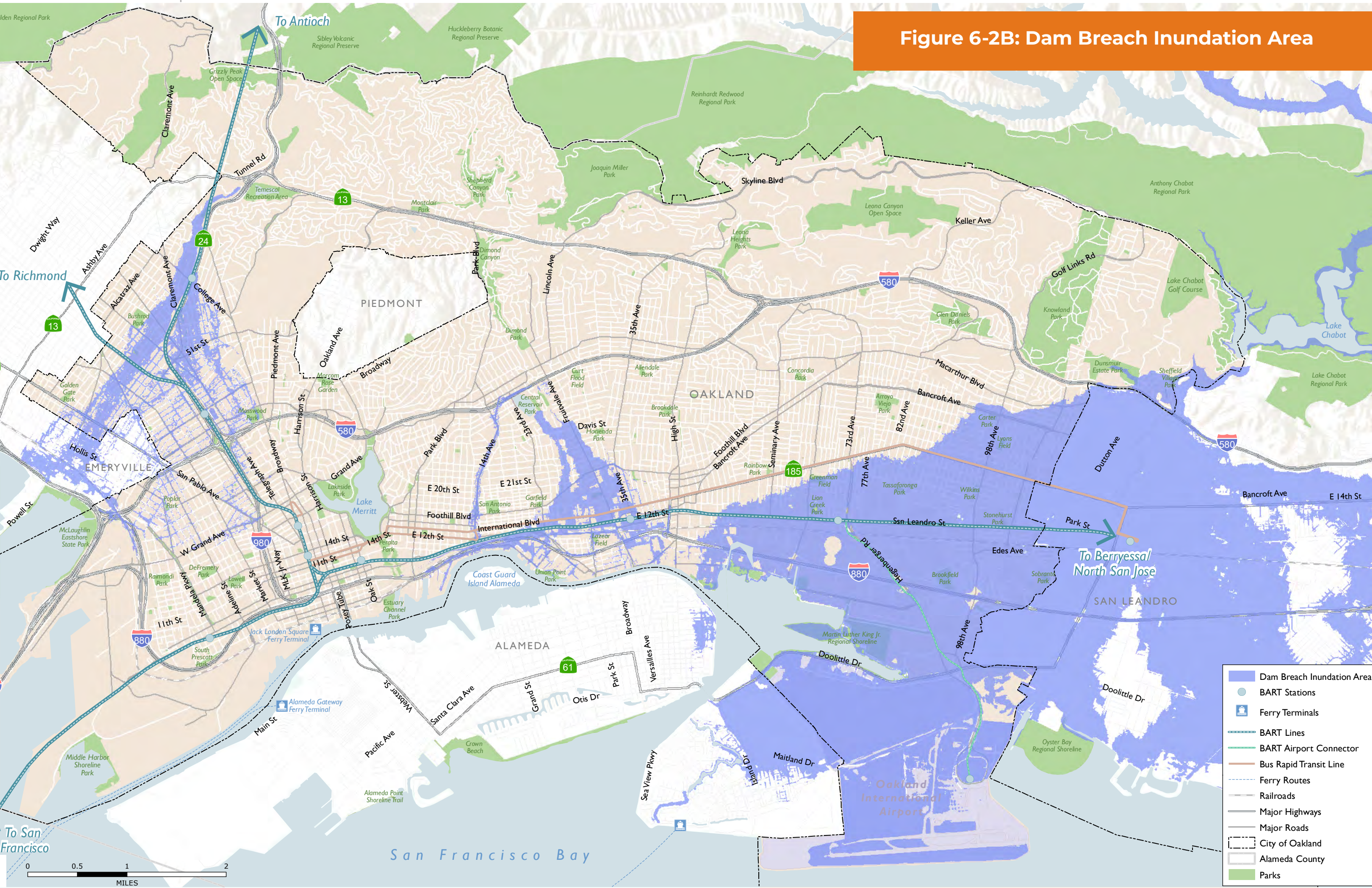


Figure 6-2C: 100-Year Coastal Flood + 0.5 ft SLR

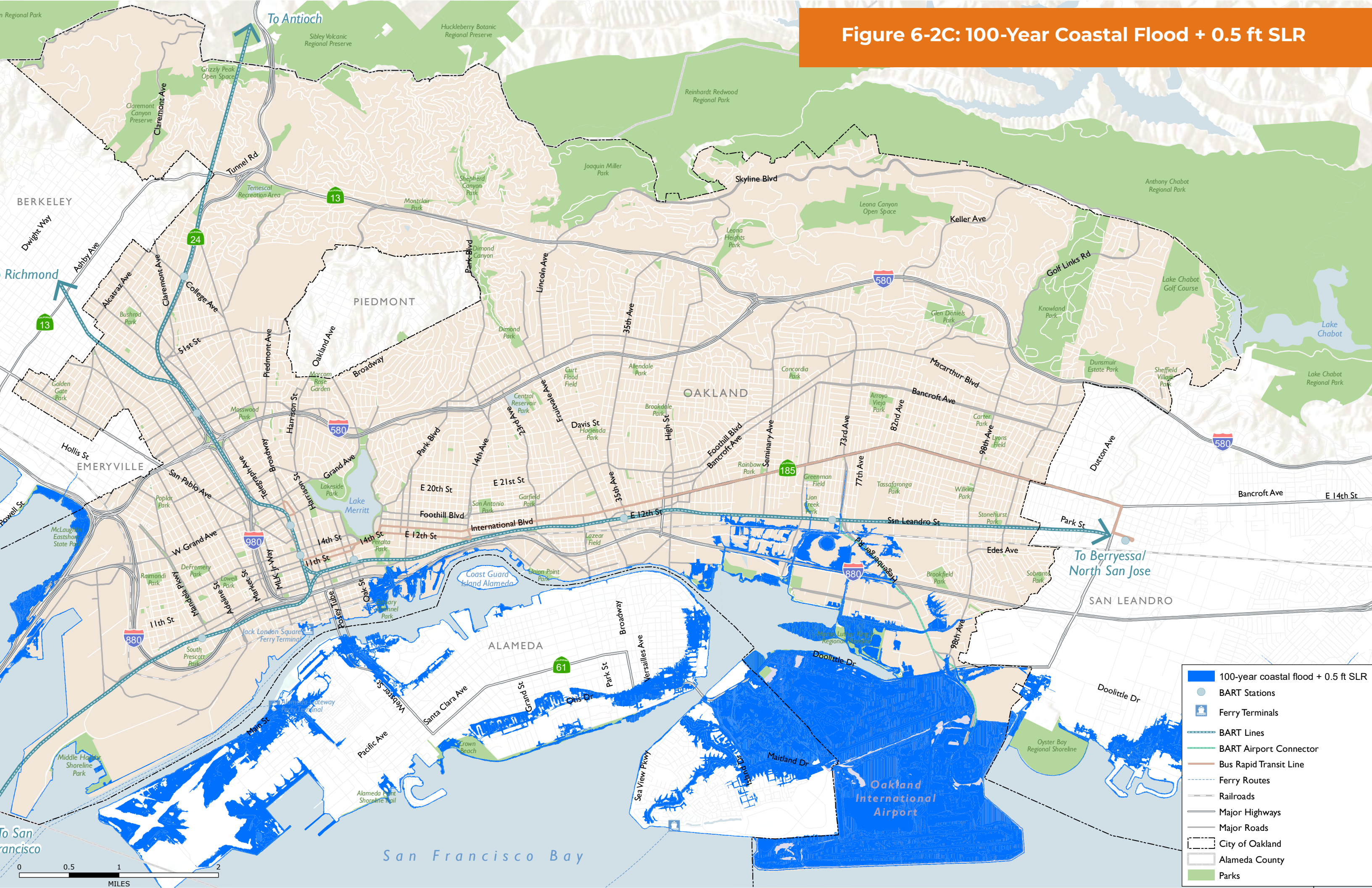
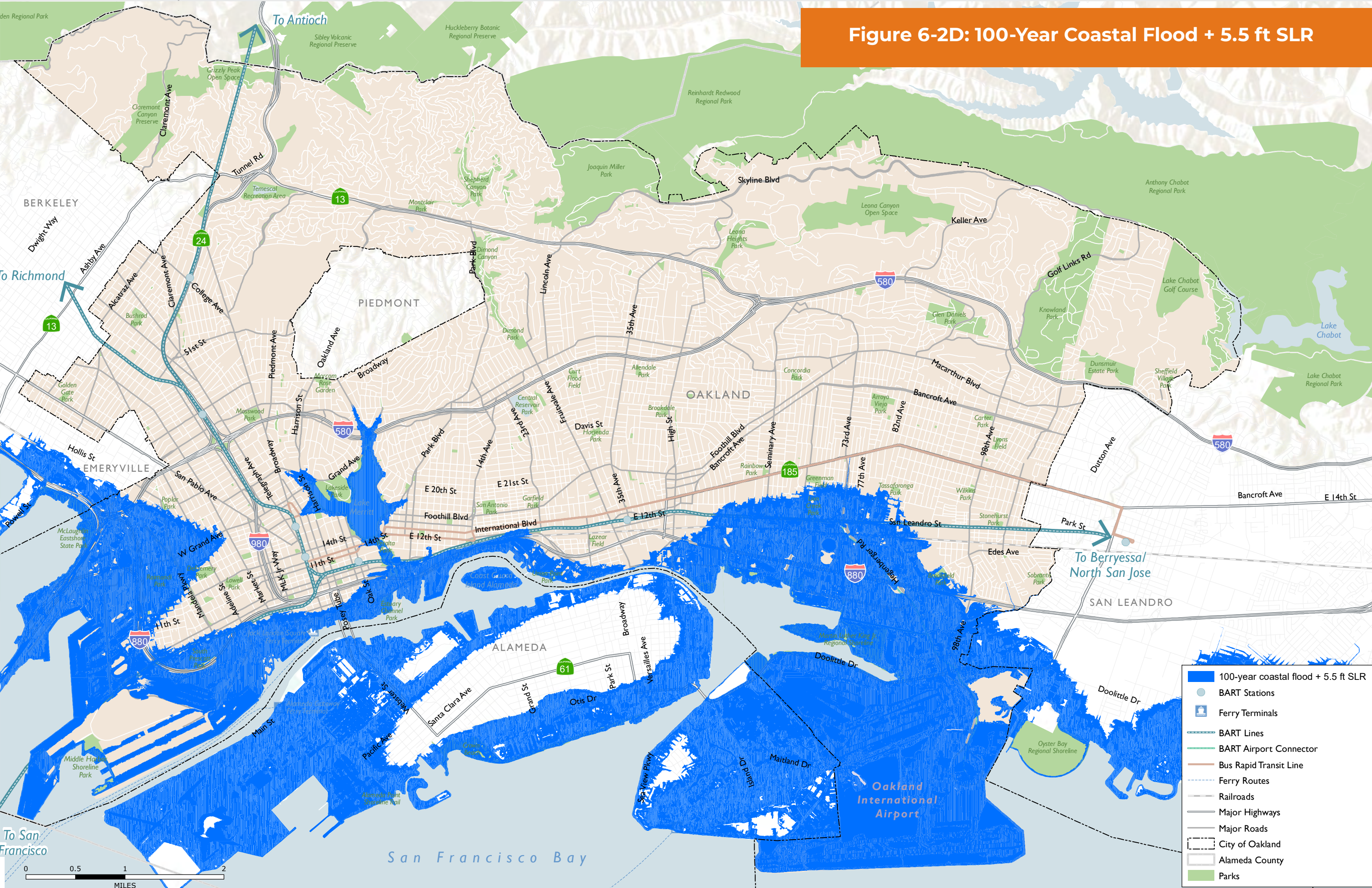


Figure 6-2D: 100-Year Coastal Flood + 5.5 ft SLR



6.3 Air Quality

Air pollution adversely affects human health, reduces visibility, and damages the natural environment. Exposure to poor air quality can contribute to school absences, medication use, visits to doctors, emergency room visits, and the number of hospital admissions. This is the result of the proximity of people to polluting facilities, heavily traveled roads, and other sources of air pollution. Understanding the risks of air pollution will help identify and reduce impacts to the existing and future population. This section summarizes existing air quality in Oakland and includes air quality regulations, sources of air pollution, current conditions, and adopted improvement strategies.

Climate and meteorological conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. Exposure to air pollution occurs daily in virtually every community, and Oakland is no exception. However, health outcomes related to poor air quality are unequally distributed throughout the City and are likely related to the proximity to sources of air pollution. Air pollution, health, and equity issues are explored in greater detail in the Environmental and Racial Equity Baseline.

AIR POLLUTION CATEGORIES AND STANDARDS

Oakland is within the boundaries of the San Francisco Bay Area Air Basin (“air basin”), which encompasses the nine-county region including all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa counties, and the southern portions of Solano and Sonoma counties. There are national and state standards for “criteria air pollutants” to protect public health and welfare.⁶ The federal standards, identified by the

6 Criteria air pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (PM_{10} and $PM_{2.5}$), and lead. The U.S. EPA and the state call these pollutants “criteria air pollutants” because the agencies have regulated them by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Reactive organic gases (ROG) and nitrogen oxides (NO_x) are considered ozone precursors.

United States Environmental Protection Agency (U.S. EPA), are called the National Ambient Air Quality Standards (NAAQS or “national standards”); the state standards are called the California Ambient Air Quality Standards (CAAQS).

For each criteria air pollutant, air basins are classified as in “attainment” when the federal and state standards have been achieved, or “nonattainment” when the pollutant exceed permissible levels and does not meet standards. As described below, criteria air pollutants of concern in the Bay Area include ozone and particulate matter; the air basin is in non-attainment status with respect to the federal and state standards for these pollutants. The air basin is in attainment for all other pollutants. The BAAQMD has a plan, called the 2017 Clean Air Plan, to bring the air basin into attainment for ozone and particulate matter.⁷ The 2017 Clean Air Plan is a regional strategy to protect public health and protect the climate, and eliminate health risk disparities from exposure to air pollution among Bay Area communities.⁸

In addition to criteria air pollutants, air pollution includes Toxic Air Contaminants (TACs). TACs are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations.⁹ The main TACs of concern are diesel particulate matter (DPM) and fine particulate matter ($PM_{2.5}$). Particulate matter is a complex mixture of solids and aerosols composed of small droplets of liquid, dry solid fragments, and

7 Bay Area Air Quality Management District, 2017. *2017 Clean Air Plan: Spare the Air, Cool the Climate*. <https://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans>, accessed March 2022

8 Federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans (SIPs). SIPs are comprehensive plans that describe how an area will attain the NAAQS.

9 Air pollution is measured as concentrations, which are expressed as mass per unit volume of atmospheric air, or the density of each pollutant (e.g., micrograms per cubic meter of air or parts per million mg/m³, µg/m³, etc.).



Photo: Greg Linhares, City of Oakland

solid cores with liquid coatings.¹⁰ DPM is exhaust particulate emissions from diesel fuel combustion. $PM_{2.5}$ is fine particulate matter from combustion sources of all fuel types, including diesel, along with particulates such as from road dust. $PM_{2.5}$ is considered by far to be the most harmful air pollutant in the air basin in terms of the associated impact on public health and can result in a wide range of health effects.¹¹

The BAAQMD regulates TACs by using a risk-based approach as opposed to establishing a concentrations standard. This risk-based approach utilizes a health risk assessment to determine the specific sources and TACs to control as well as the level of control necessary to reduce risk to acceptable levels. A health risk assessment analyzes exposure to toxic substances and human health risks based on the dose and potency of the toxic substances. In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB, 2000). Subsequent regulations apply to new trucks and diesel fuel.

10 Particles vary widely in size, shape and chemical composition, and may contain inorganic ions, metallic compounds, elemental carbon, organic compounds, and compounds from the earth's crust. Particles are defined by their diameter for air quality regulatory purposes. Those with a diameter of 10 microns or less (PM_{10}) are inhalable into the lungs and can induce adverse health effects. Fine particulate matter is defined as particles that are 2.5 microns or less in diameter ($PM_{2.5}$). Therefore, $PM_{2.5}$ is a subset of PM_{10} .

11 Bay Area Air Quality Management District (BAAQMD), 2017. *California Environmental Quality Act Air Quality Guidelines*, May. https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed January 2021.



HEALTH RISKS

Potential human health effects of criteria pollutants include aggravation of existing respiratory diseases such as asthma, bronchitis, and emphysema, and can contribute to premature death, premature birth, cardiopulmonary effects, decreased lung function growth in children, acute and chronic bronchitis, asthma, cancer, respiratory symptoms, and intensified allergic responses. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. As noted above, the main TACs of concern are DPM and PM_{2.5}. A large body of scientific evidence indicates that both long-term and short-term exposure to PM_{2.5} can cause a wide range of health effects, including aggravating asthma and bronchitis, causing visits to the hospital for respiratory and cardiovascular symptoms, and contributing to heart attacks and deaths. , Air pollution, health, and equity issues are explored in greater detail in the Environmental and Racial Equity Baseline.

AIR POLLUTION SOURCES

Sources of air pollution in the City are generally categorized as mobile sources, stationary sources, and area sources. Mobile sources of air pollution include on-road motor vehicles (cars and trucks) and off-road vehicles and equipment (such as aircraft, trains, and ocean-going vessels) and are Oakland's leading source of air pollution. Mobile sources are responsible for nearly 90 percent of the City's total nitrogen oxide emissions in 2018 and over 98 percent of the city's total DPM emissions.¹² Emission standards for mobile sources are established by state and federal agencies, such as the California Air Resources Board (CARB) and the U.S. EPA. The State of California has developed statewide programs to encourage cleaner cars and cleaner fuels.

In addition to mobile sources, stationary sources also contribute to air pollution in the air basin. Stationary sources include industrial facilities, gasoline stations, power plants, dry cleaners, waste disposal, and other commercial and industrial processes.

¹² Reid, Stephen, 2021. Bay Area Air Quality Management District, Senior Advanced Projects Advisor, email correspondence with Brian Schuster, ESA. December 10, 2021.

Stationary sources resulted in 26 percent of the City's total PM_{2.5} emissions in 2018.¹³ The Bay Area Air Quality Management District (BAAQMD or "air district"), which is the local air pollution control district for the air basin and the City of Oakland, regulates stationary sources of air pollution.

Area sources are also a major contributor to air pollution in the City. Area sources include solvent evaporation (such as from aerosol consumer products and paints), residential fuel combustion (such as natural gas heating and cooking), road dust from on-road and off-road vehicles and equipment, and fires. In 2018, area sources produced nearly 40 percent of the City's ROG emissions, over half of the City's PM_{2.5} emissions, and over 70 percent of the City's PM₁₀ emissions.¹⁴

The main sources of DPM emissions in the City are heavy-duty truck activity along Interstates 80, 580, 880, and 980 (42%); ocean-going vessels and commercial harbor craft at the Port of Oakland (26%); off-road equipment (25%); and diesel locomotives (3%). The main sources of PM_{2.5} in the City are residential fuel combustion (24%), industrial processes (22%), road dust from on-road vehicle travel (11%), on-road vehicle exhaust (11%), and cooking (9%). Permitted stationary sources of TACs within the City include industrial facilities, gasoline stations, power plants, dry cleaners, waste disposal facilities (such as landfills and wastewater treatment plants), and other commercial and industrial processes (such as metal processing and chemical manufacturing).

CURRENT CONDITIONS

The BAAQMD operates a regional monitoring network that measures the ambient concentrations of the six criteria air pollutants. Existing and probable future levels of air quality in Oakland can generally be inferred from historical ambient air quality data based on measurements conducted by the BAAQMD at its nearby monitoring stations. There are two monitoring stations

¹³ *ibid.*

¹⁴ *Ibid.*

Table 6-1: Air Quality Statistics for Alameda County

STATISTICS FOR ALAMEDA COUNTY	NUMBER OF DAYS BY YEAR					
	2016	2017	2018	2019	2020	2021
Unhealthy for Sensitive Groups (Orange)	13	9	5	8	8	9
Unhealthy (Red)	2	4	10	0	11	1
Very Unhealthy (Purple)	0	1	2	0	1	0

Source: United States Environmental Protection Agency, 2021. Outdoor Air Quality Data: Air Quality Index Report. <https://www.epa.gov/outdoor-air-quality-data/air-quality-index-report>, accessed January 2021.

in the City: the Oakland West station at 1100 21st Street and the Oakland-9925 station at 9925 International Blvd. In recent years, the following standards were exceeded at these monitoring stations:

- Ozone. The national eight-hour standard was exceeded on one day in 2019. The stricter state standard was also exceeded on one day in 2019, as was the state one-hour standard.
- PM_{2.5}. The national 24-hour standard was exceeded on 14 days in 2018 and nine days in 2020. The state annual average standard was exceeded in 2018. There is no separate 24-hour state standard.

The U.S. EPA also developed the Air Quality Index scale to make the public health impacts of air pollution concentrations easily understandable.¹⁵ The Air Quality Index, much like an air quality “thermometer,” translates daily air pollution concentrations into a number on a scale between 0 and 500. The scale is based on the federal air quality standards for ozone, CO, NO₂, SO₂, PM₁₀, and PM_{2.5}. If the concentration of any of these pollutants rises above its respective standard, it can be unhealthy for the public. Readings below 100 on the Air Quality Index scale would not typically affect the health of the general public (although readings of 50 to 100 may affect unusually sensitive people). Table 6-1 presents historical U.S. EPA Air Quality Index data for Alameda

County. Recent elevated Air Quality Index values, with specific exacerbation to PM_{2.5} and CO levels, are likely attributed to wildfires and their impact on regional air quality in California.^{16, 17}

Figure 6-3A shows total annual average PM_{2.5} concentrations throughout the City for the year 2018 in terms of micrograms per cubic meter (μ/m³).¹⁸ The grid squares shown in the map are 1-by-1-kilometer squares, which is the modeling resolution of the BAAQMD’s regional pollutant transport model. Concentrations range from 6.2 μ/m³ in the Oakland Hills east of Interstate 13 to 13.6 μ/m³ near Interstate 880 at 29th Avenue. Concentrations of PM_{2.5} are generally correlated with emissions sources since direct PM_{2.5} disperses with distance from a source. However, it is important to understand that this figure shows total cumulative PM_{2.5} concentrations from *all emissions sources within the air basin*, not just sources located within the City. For example, emissions from San Francisco and Richmond contribute to these concentrations.

Figure 6-3B shows the total estimated cancer risk within Oakland from all TACs modeled and inventoried by the BAAQMD.¹⁹ Like for PM_{2.5} concentrations above, this figure shows total cumulative cancer risk from *all TAC emissions sources within the air basin*, not just sources located within the City. Cancer risk ranges from 133 per million in the Oakland Hills east of Interstate 13 to 1,117 per million near Jack London Square, Howard Terminal, and the Port of Oakland. The cancer risk values in Figure 6-3B represent the chance of contracting cancer per million individuals. For example, a cancer risk value of 1,000 per million (such as near Jack London District) means exposure to TACs at this location increases an individual’s risk of contracting cancer by 1 in 1,000 (or 0.1 percent). These numbers can be compared to the rate of new cancer cases per year from all causes in the air basin of 4,280 per million for men and 3,820 per million for women, and the lifetime risks of contracting cancer in the United States of 387,000 per million for women and 401,400 per million for men.^{20, 21, 22, 23}

19 Total cancer risk is shown in the figure because it represents the major negative health effect of exposure to all TACs within the City of Oakland. Although other pollutants like ozone contribute to additional negative health effects, such as asthma and other respiratory illnesses, the BAAQMD was unable to provide ozone mapping data or related health outcome data for the City of Oakland.

20 This is the *rate* of new cancer cases per year per million individuals, not the lifetime risk of an individual to develop cancer

21 These numbers are average lifetime risks for the overall U.S. population. An individual’s risk may be higher or lower than these numbers, depending on particular risk factors. In addition to exposure to ambient airborne sources of carcinogenic substances, individuals’ lifetime risks of contracting cancer vary based on a wide number of factors, such as genetics, sex, age, diet, lifestyle (e.g., obesity, tobacco use, alcohol use), exposure to carcinogens, and pre-existing conditions.

22 Cancer Prevention Institute of California, 2019. The Greater Bay Area Cancer Registry Annual Report: Incidence and Mortality Review, 1988–2016. Available at https://cancerregistry.ucsf.edu/sites/g/files/tkssra1781/f/wysiwyg/Cancer%20Incidence%20and%20Mortality%20in%20the%20Greater%20Bay%20Area%202019_v6.21.2019.pdf. Accessed March 2020.

23 American Cancer Society, 2020. Lifetime Risk of Developing or Dying from Cancer, last updated January 13, 2020. Available at <https://www.cancer.org/cancer/cancer-basics/lifetime-probability-of-developing-or-dying-from-cancer.html>. Accessed March 2020.

15 United States Environmental Protection Agency (USEPA), 2014. *Air Quality Index, A Guide to Air Quality and Your Health*, February 2014. www.epa.gov/airnow/airnow_brochure_02_14.pdf, accessed April 2019.

16 Bay Area Air Quality Management District (BAAQMD), 2017. *Extremely High Levels of PM_{2.5}: Steps to Reduce Your Exposure*. <http://www.baaqmd.gov/about-air-quality/current-air-quality/extreme-pm2-5>. Accessed May 2019.

17 California Air Resources Board (CARB), 2019. *Wildfire Smoke and Health*, 2019. <https://ww2.arb.ca.gov/index.php/wildfire-smoke-health>, accessed May 2019.

18 PM_{2.5} is shown in the figure because it is considered by far to be the most harmful air pollutant in the air basin.

Figure 6-3A: PM_{2.5} Concentrations

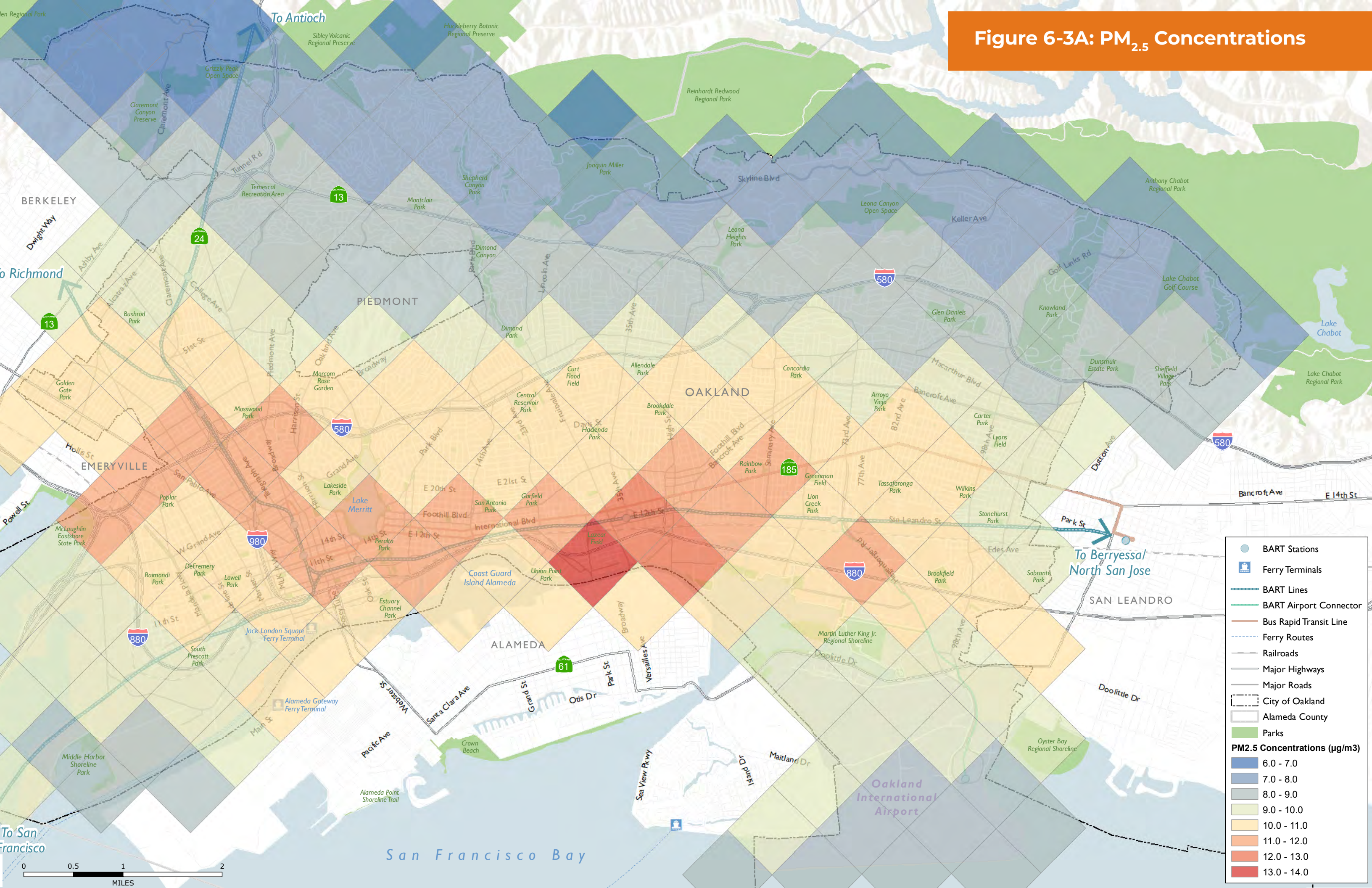
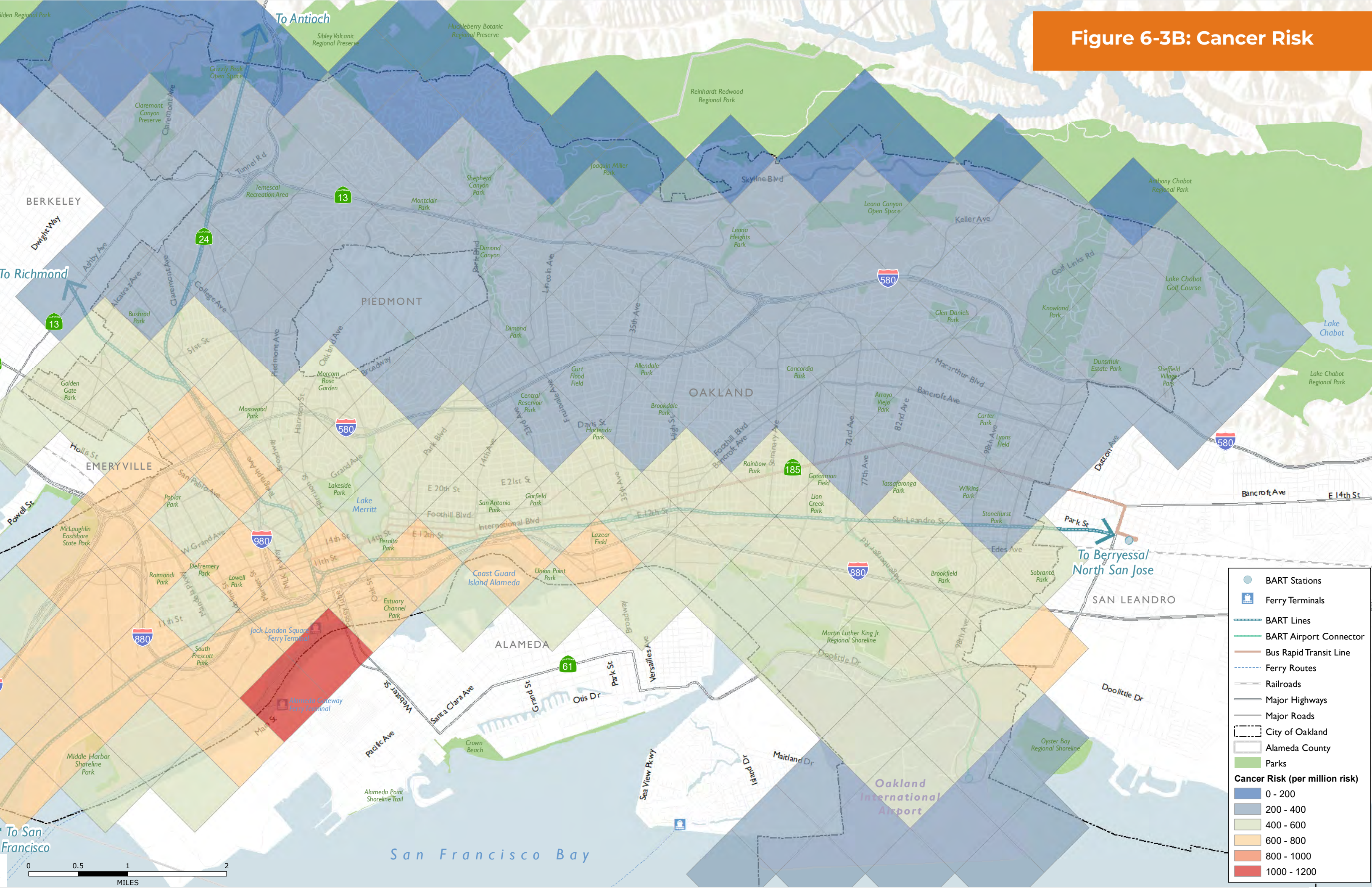


Figure 6-3B: Cancer Risk



IMPROVEMENT STRATEGIES

There are numerous federal, state, and regional regulations that have been implemented over the past 50 years to reduce air pollution in California and the Bay Area. For example, California's cleaner-burning gasoline regulation has reduced smog-forming emissions from motor vehicles by 15 percent and cancer risk from exposure to motor vehicle toxics by about 40 percent since the regulation was implemented in 1996.²⁴ The Bay Area has also benefited from dramatic reductions in public exposure to TACs. The estimated lifetime cancer risk from all TACs for Bay Area residents declined 83 percent from 4,100 cases per million in 1990 to 690 cases per million people in 2014. This reduction is due in part to CARB regulations and air district programs to reduce emissions from diesel engines.

Both East and West Oakland are areas with high air pollution burdens due to numerous existing sources of air pollution in the community. West Oakland is identified as an area with disproportionate impacts from air quality under the Community Air Protection Program (Assembly Bill [AB] 617). Pursuant to AB 617, CARB adopted the West Oakland Community Action Plan (WOCAP) action plan on December 5, 2019. The WOCAP identifies 89 potential community-level strategies and control measures intended to reduce criteria pollutant and TAC emissions and decrease West Oakland residents' exposure to these TAC emissions, with the goal of improving community health by eliminating disparities in exposure to local air pollution. Specifically, the plan sets forth equity-based targets for cancer risk, and DPM and PM_{2.5} concentrations in seven "impact zones" with the highest pollution levels in the City.²⁵

²⁴ California Air Resources Board (CARB), 2019. *Cleaner Burning Gasoline: An Update*, 2019. Available at <https://ww2.arb.ca.gov/resources/fact-sheets/cleaner-burning-gasoline-update/printable/print>. Accessed January 2022.

²⁵ Bay Area Air Quality Management District and West Oakland Environmental Indicators Project, 2019. *Owning Our Air: The West Oakland Community Action Plan – Volume 1: The Plan*, October. Available at <http://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan>, accessed January 2021.

On February 10, 2022, the California Air Resources Board designated East Oakland for the development of an AB 617 Community Emission Reduction Plan which will begin in Spring/Summer and continue for a year-long planning process followed by implementation. Community leaders in East Oakland had been bringing attention to air pollution issues in the community for decades prior to this designation.



Photo: Greg Linhares, City of Oakland

6.4 Wildfires

A wildfire is any uncontrolled fire on undeveloped land that requires fire suppression. The wildland-urban interface (WUI) is a zone where structures and other human development meets or intermingles with undeveloped wildlands. The Oakland Hills area is largely defined as part of the WUI. Additionally, the area is designated by CALFIRE as a Very High Fire Hazard Severity Zones (VHFHSZ). This designation is based on the fuel load, weather and terrain factors that influence fire likelihood and fire behavior. While many of these fires are small and can be controlled, the proximity of dense residential communities to areas that are fire prone increases the hazard of wildfire in Oakland. Larger fires in this ecosystem should be anticipated every 10-20 years.²⁶ Wildfire in the urban interface is a growing concern in the Bay Area. In the past 60 years, the region has experienced over 500 wildfires which have threatened public safety, property, infrastructure, air quality, water quality, and natural environments.²⁷ Wildfire conditions are influenced by ignitions sources (which can be either natural or human-caused), slope and topography, and fuels which can be natural fuels such as grasses and trees or manmade, such as buildings.

REGULATIONS

State Responsibility Areas (SRAs) are lands which, based on land ownership, population density, and land use, CALFIRE has legal responsibility for fire protection. California Public Resources Code, Section 4201-4204 requires that CALFIRE classify areas within SRAs into fire hazard severity zones including moderate, high, and very high fire hazard severity zones based on factors

²⁶ City of Oakland, 2017. City of Oakland General Plan Update, Safety Element. Available online: <https://www.oaklandca.gov/resources/safety-element>

²⁷ Association of Bay Area Governments (ABAG), 2021. Wildfires. Available online: <https://abag.ca.gov/our-work/resilience/data-re-search/wildfire#:~:text=Wildfire%20Risk%20and%20Resources,destroyed%20more%20than%208%2C000%20structures.>

such as fuel, terrain, and weather.²⁸ This mapping provides the basis for the application of fire mitigation strategies. CALFIRE has created maps for Local Responsibility Areas (LRAs) with recommended designations of Very High Fire Hazard Severity Zones (VHFHSZ).

Title 24 of the California Code of Regulations is the California Fire Code which establishes regulations to protect life and property from the hazards of fires in new and existing buildings and structures. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout the State of California. Public Resources Code 4291 includes regulations and defensible space requirements for areas located in SRAs. The City adopted and amended the 2019 California Fire Code and regulates fire safety in Chapter 15 of its Municipal Code. Additionally, the Oakland Municipal Code includes a vegetation management inspection program to inspect properties in VHFHSZs for proper vegetation management and includes a chapter of special construction requirements in fire hazard areas in the areas damaged by the 1991 Tunnel Fire.

CURRENT CONDITIONS

As described above, much of the fire hazard that the City faces is due to the proximity of dense, residential communities and urban areas to areas with high fire risk due to steep slopes, vegetation that can act as fuel for fires, and seasonal winds which can spread fire. As shown in **Figure 6-4A**, the eastern portion of the City in the Oakland Hills is an LRA designated as a VHFHSZ. This portion of the City is adjacent to SRAs also designated as VHFHSZ. The mapped Wildland Urban Interface includes these areas mapped as VHFHSZ and includes additional land area further west in the more developed areas of the City. Tree mortality increases the level of dead wood that can act as fuel. Increased fuel loading due to tree mortality increases the level

of fire hazard for adjacent communities.²⁹ As shown on **Figure 6-4B**, tree die-back in East Bay Regional Parks (e.g., Reinhardt, Anthony Chabot) puts adjacent areas of Oakland at risk for wild-fire impacts, including secondary impacts of air and water pollution, erosion, and landslides.

The California Department of Forestry and Fire Protection last updated its fire hazard severity zone maps in 2007, well before recent record-breaking megafires swept across California. Past mapping focused on geographic hazards such as forests and canyons where fire spreads. New mapping is underway and is expected to be released by summer of 2022. In these updated maps, “climate hazards are front and center”³⁰ with greater attention to extreme wind events, which carry embers into areas that historically were not designated with a fire hazard level. The fire severity hazard zones are likely to be larger in the updated maps.

EVACUATION ROUTES

State law requires California communities with general plans to address evacuation routes in the safety element of the general plan, including identification of residential developments in hazard areas that do not have at least two routes. Information on evacuation routes and their capacity, safety and viability under a range of emergency scenarios also must be provided. Hazard areas, their overlap with residential development, and current evacuation routes are shown in **Figure 6-4C**. Detailed analysis of evacuation route capacity will come as the Safety Element is developed. Recent investigations utilizing modeling software have shown that current road and intersection capacity is not adequate for the existing population in the event of a mass evacuation. Additionally, city infrastructure surveys have shown that many streets in VHFHSZs are not built to current Municipal Code Standards, have narrow streets with dead ends that only allow for one route of escape.



Photo: Greg Linhares, City of Oakland

Many streets in the hills are in steep areas without off-street parking; therefore, residents park on the street making the streets even narrower and less accessible for emergency responders.³¹ Considering these factors, conditions related to emergency response and evacuation are currently not adequate to serve the population living in the VHFHSZ.

28 CAL FIRE, 2021. Fire Hazard Severity Zones. Available online at <https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildfire-prevention-engineering/fire-hazard-severity-zones/>. Accessed December 27, 2021.

29 CAL FIRE, 2022. Tree Mortality. Available online at <https://frap.fire.ca.gov/frap-projects/tree-mortality/>. Accessed January 10, 2022.

30 <https://www.caprado.org/articles/2021/12/20/after-years-of-delays-calfire-says-updated-and-expanded-wildfire-hazard-maps-are-on-their-way/>. Accessed February 18, 2022.

31 City of Oakland Planning Commission, 2021. Case File Number ZA21006 Staff Report. June 2, 2021. Available online: https://oaklandside.org/wp-content/uploads/2021/06/02-Staff-Report-020621_CPC_Staff_Report-Updated-signed.pdf

Figure 6-4A: Fire Threat and Historic Fire Boundaries

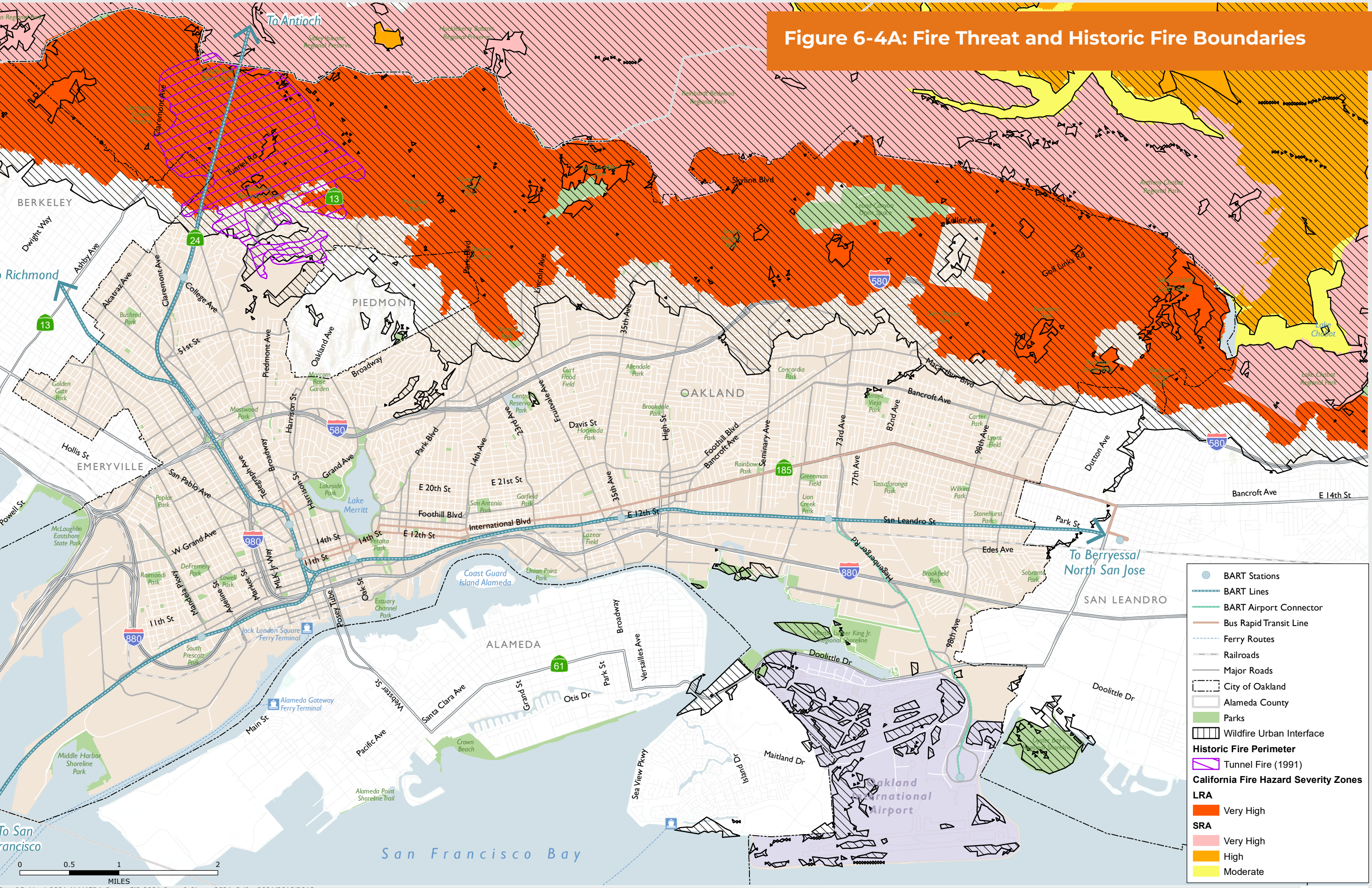
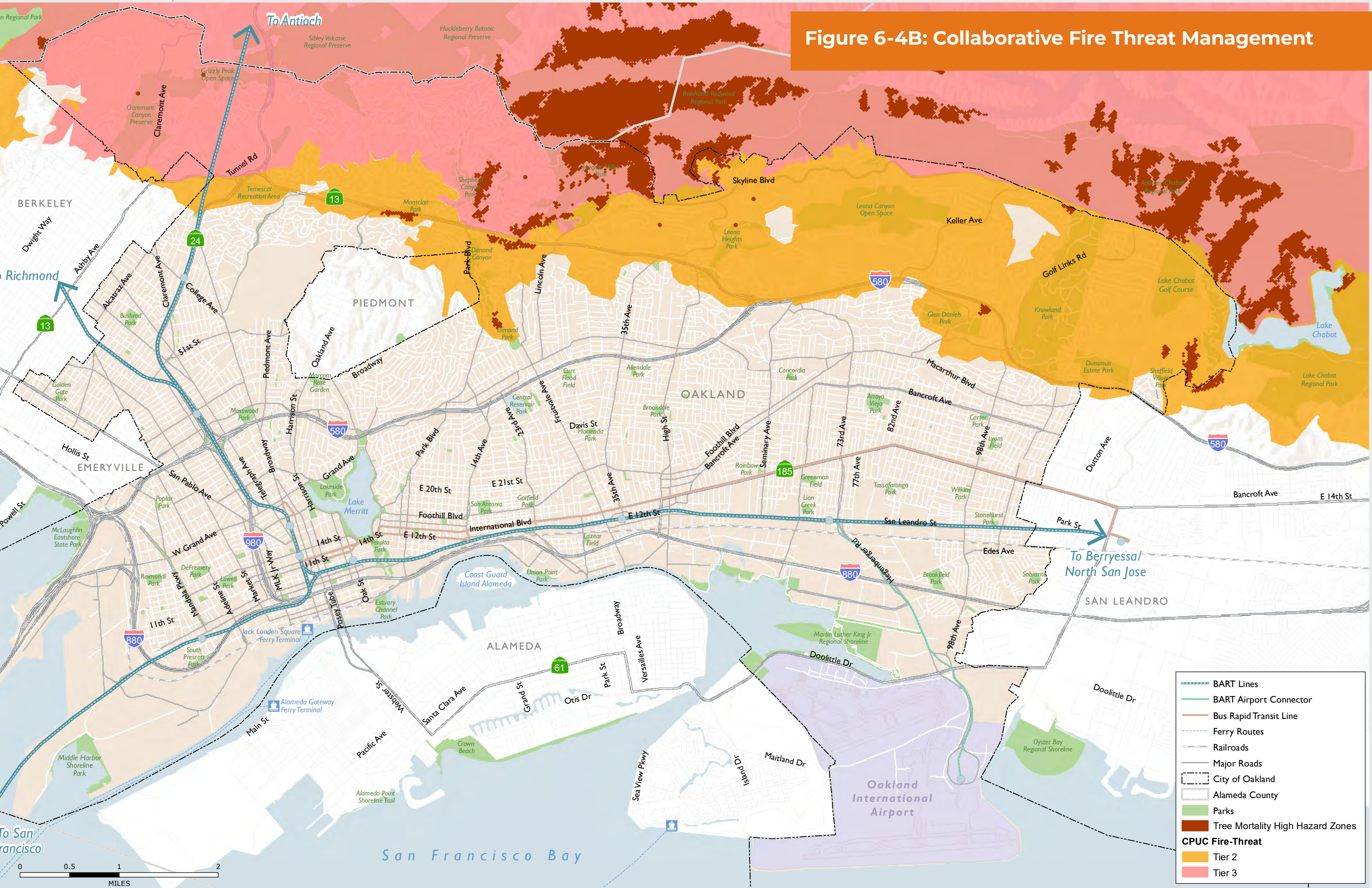


Figure 6-4B: Collaborative Fire Threat Management



6.5 Airport Hazards

To depict the relative risks of aircraft accidents, the California Airport Land Use Planning Handbook (Caltrans, 2002) provides a set of safety zones, and the risk contours upon which they are based. The risk contours are derived from the accident location database described in the Handbook and show the relative concentrations of accidents near the ends of runways of different lengths. The safety zones are developed upon this data and are created for varying runway lengths and operational characteristics, while accounting for aeronautical factors that affect where aircraft accidents are most likely to occur. (For ease of application to land use compatibility planning, safety zones are depicted in regular geometric shapes, as opposed to the risk contours, and assume an equal distribution of arrivals and departures at each runway end.) A total of seven different safety zones are shown in **Figure 6-5**. The choice of safety zone criteria appropriate for a particular zone is largely a function of risk acceptability. For example, some land uses represent unacceptable risks when located near aircraft operation areas and are prohibited (e.g., schools and hospitals). Where the risks associated with a particular land use are considered significant but tolerable, restrictions may be established to reduce the risk to an acceptable level.



Photo: Wikimedia Commons

6.6 Noise

Noises are undesirable sounds that vary widely in their scope, source, duration, and volume. Within Oakland, they range from individual occurrences, such as leaf blowers or sirens, to regular though intermittent disturbance by aircraft overflights and passenger and freight rail pass by events, to the fairly constant noise generated by traffic on freeways and roadways. Noise is primarily a concern for sensitive land uses. The California General Plan Guidelines identify noise-sensitive receptors as residential developments, schools, hospitals, and places of worship.

REGULATIONS AND SOURCES

Federal noise standards include transportation-related noise sources related to interstate commerce (i.e., aircraft, trains, and trucks) for which there are no more stringent state standards. State noise standards are set for automobiles, light trucks, and motorcycles.

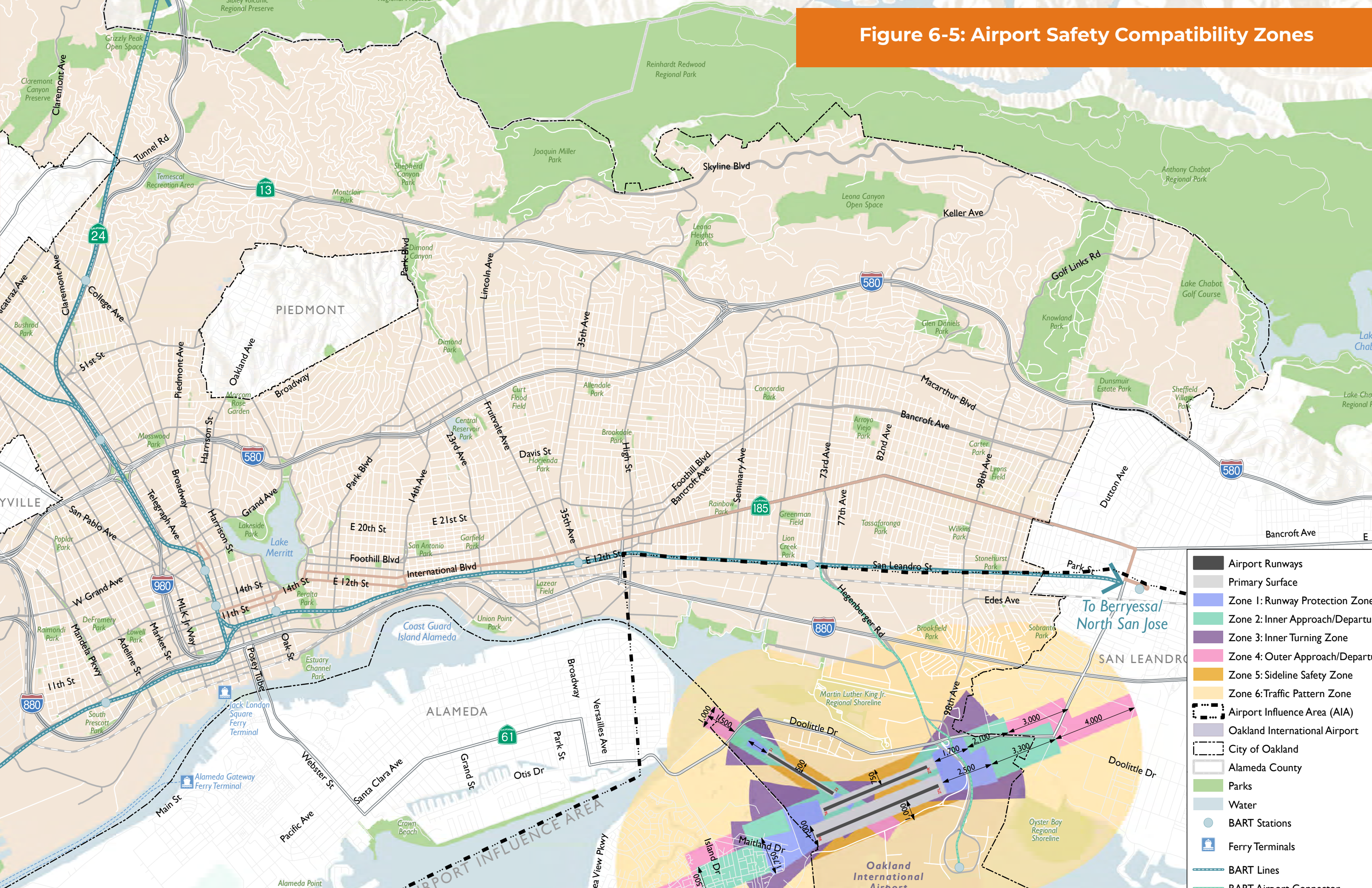
The existing Oakland General Plan Noise Element contains guidelines for determining the compatibility of various land uses with different outdoor noise environments (City of Oakland, 2005). The Noise Element recognizes that some land uses are more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of typical activities. The City uses State noise guidelines to judge the compatibility of various land uses and their noise environments. The Oakland Noise Element identifies maximum interior noise levels generally considered acceptable for various common land uses (with windows closed). For example, an interior noise level of 45 dB is the maximum level acceptable for residential or classroom uses. Interior building noise is also regulated by the California Building Code, which states that interior noise levels should not exceed 45 dB in any habitable room.



The City also regulates noise through enforcement of its noise ordinance, which can be found in Section 8.18.020 of the Health and Safety Code, Section 17.120 of the Planning Code, and Chapter 12.56 of the Municipal Code. The noise ordinance within the Planning Code regulates construction noise and only operational noise from stationary sources which are addressed at the federal and state level.

Noise sources are typically categorized as mobile or stationary. Most mobile sources are transportation-related from vehicles operating on roadways, fixed railways, and aircraft and airport operations. Off-road construction equipment is also considered a mobile source. Stationary noise sources typically include machinery; fabrication; heating, ventilation, and air conditioning systems; compressors and generators; and landscape maintenance equipment. Stationary noise sources generated by light industrial and commercial activities can result in noise-related land use conflicts when these operations (e.g., loading docks or equipment operations) are adjacent to residential land uses (collocation).

Figure 6-5: Airport Safety Compatibility Zones



CURRENT CONDITIONS

The dominant noise source within Oakland is vehicle traffic on its roadways, primarily freeways, highways, and arterial roadways. Noise contours for the freeways and major state routes within the City are presented in **Figure 6-6A**. The noise contours shown in **Figure 6-6A** represent the predicted noise level based on roadway volumes, the percent of trucks, speed, and other factors. Rail transit is also a major mobile noise source throughout the City with multiple above-ground BART lines and the Amtrak/freight rail corridor that runs through the southern extent of the City. Noise contours for railways within the City are presented in **Figure 6-6B**. The noise contours shown in **Figure 6-6B** represent the predicted noise level based on operational Amtrak/freight frequencies monitored for the Waterfront Ballpark District at Howard Terminal Draft EIR and account for the required sounding of horns at at-grade crossings. In this figure, the noise contours reflect the attenuating effects of structures for distances in excess of 300 feet from the tracks. The Oakland International Airport also generates noise that is demonstrated in the noise contours developed for its Airport Land Use Compatibility Plan and presented in **Figure 6-6C**. As shown in the figure, existing noise levels often exceed 65 CNEL/DNL within the City. This is considered a threshold for a generally acceptable level of noise when outdoors.

Ambient noise levels are frequently measured within the City to establish the existing environment for projects undergoing environmental review. **Table 6-2** presents the monitored DNL noise level (where available) and the daytime ambient equivalent noise level for a range of locations throughout the City. These monitoring locations are presented in **Figure 6-6D**.

Table 6-2: Monitored Noise Environments within the City of Oakland

NOISE MONITORING LOCATION	DAY-NIGHT NOISE LEVEL (DNL)	DAYTIME HOURLY AVERAGE (LEQ ¹)
OAK-1 Telegraph Avenue at 51st Street	N/A	60
OAK-2 Mandela Parkway adjacent and north of I-580	78	70
OAK-3 Martin Luther King Jr. Way adjacent to SR 24	68	62
OAK-4 Mosswood Recreation Center, Webster Street adjacent to I-580	69	67
OAK-5 2515 Adeline Street	72	71
OAK-6 Northgate Avenue at 25th Street	N/A	62
OAK-7 San Pablo Avenue at 18th Street	N/A	59
OAK-8 Webster Street at 15th Street	66	64
OAK-9 15th Street between Jackson and Madison	N/A	50
OAK-10 8th Street and Jefferson Street	N/A	63
OAK-11 North side of 737 2nd Street	72	68
OAK-12 Terminus of Clay Street adjacent to Port Offices	77	73
OAK-13 222 Broadway	N/A	67
OAK-14 3rd Street at Madison Street	N/A	56
OAK-15 Embarcadero and 9th Avenue	N/A	65
OAK-16 1321 Leimert Boulevard	N/A	63
OAK-17 2245 International Boulevard	76	71
OAK-18 1045 Derby Street	84	76
OAK-19 5441 International Boulevard	N/A	70
OAK-20 Mountain Boulevard at Sequoyah Road	75	71
OAK-21 701 105th Avenue	80	79
Notes:		
¹ The equivalent noise level (Leq), also referred to as the time-average sound level, is the equivalent steady state sound level over a stated period of time.		

Source: Data compiled from CEQA documents within the city of Oakland, available at <https://www.oaklandca.gov/resources/current-environmental-review-ceqa-eir-documents-2011-2021>. All data was measured after 2016.

Figure 6-6A: Highway Noise Contours

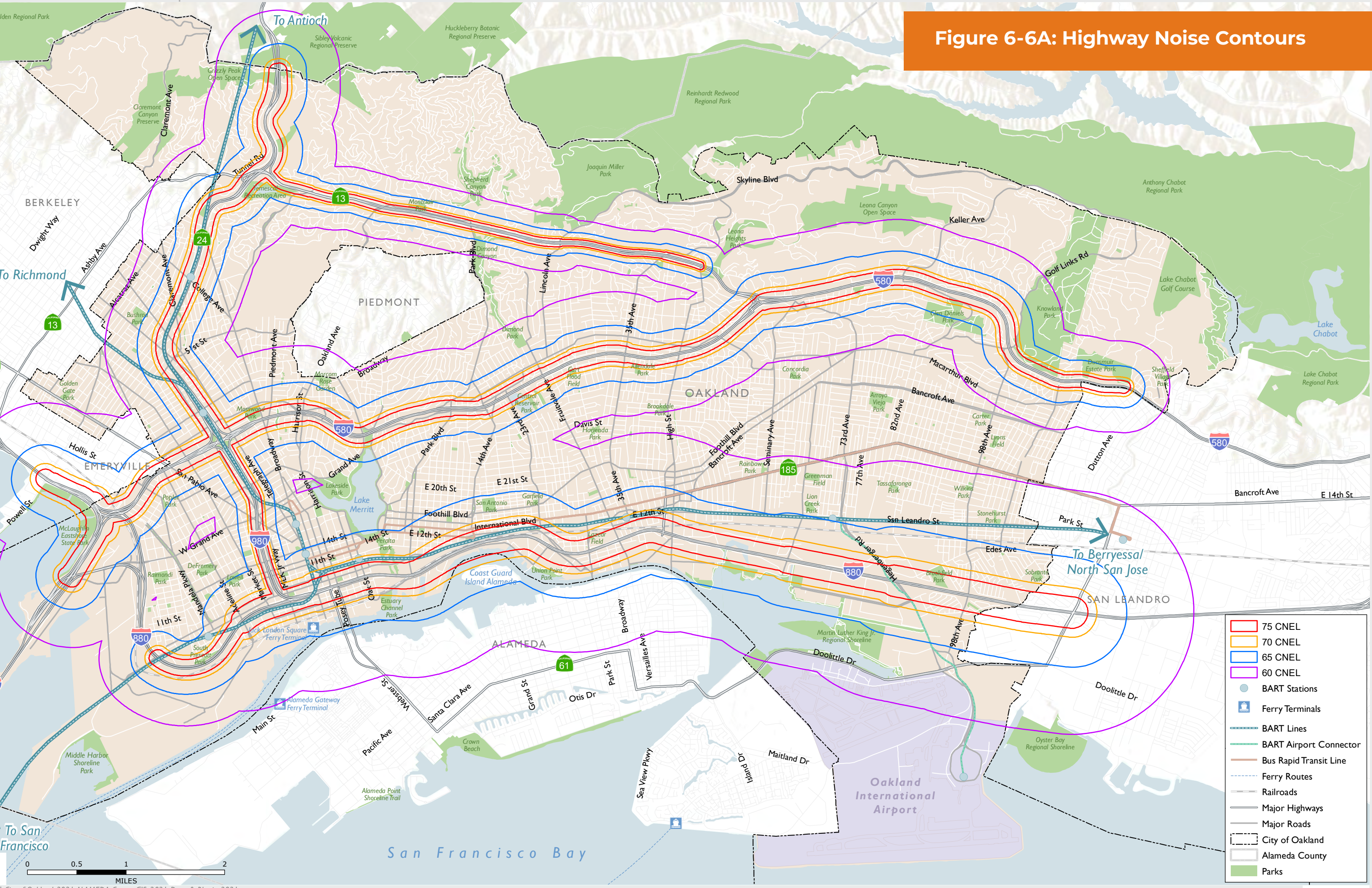


Figure 6-6B: Railway Noise Contours

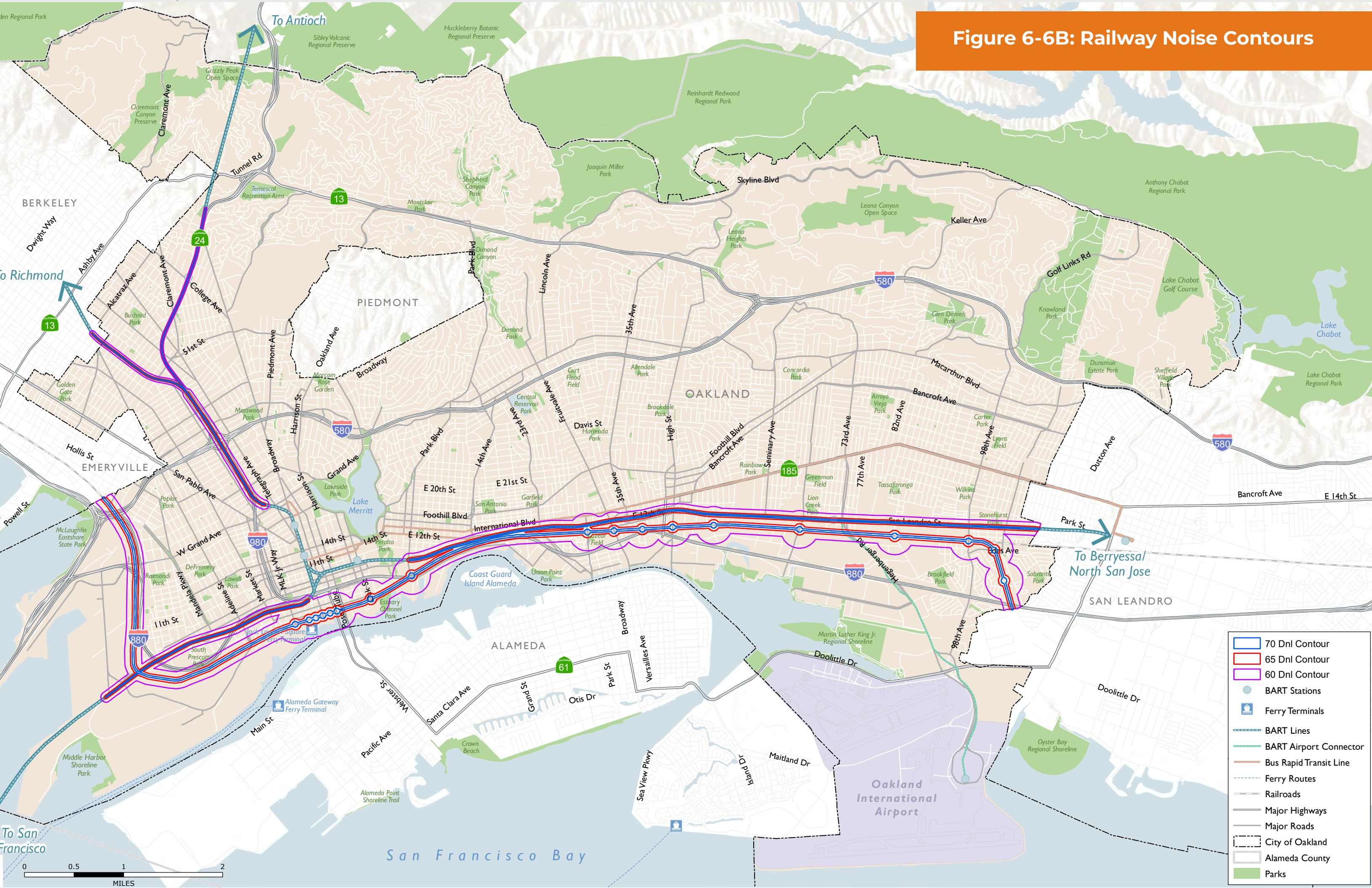


Figure 6-6C: Airport Noise Contours

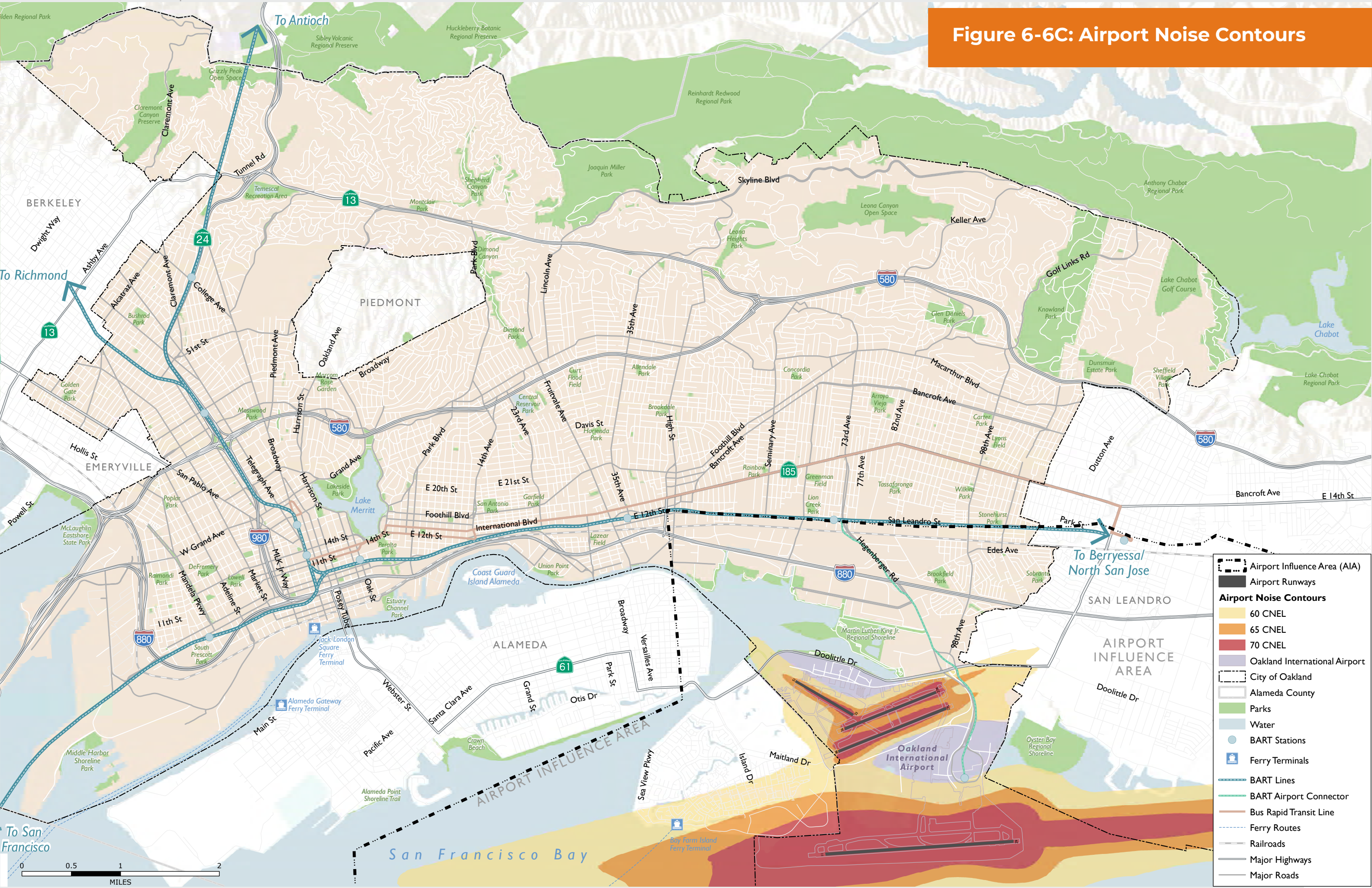
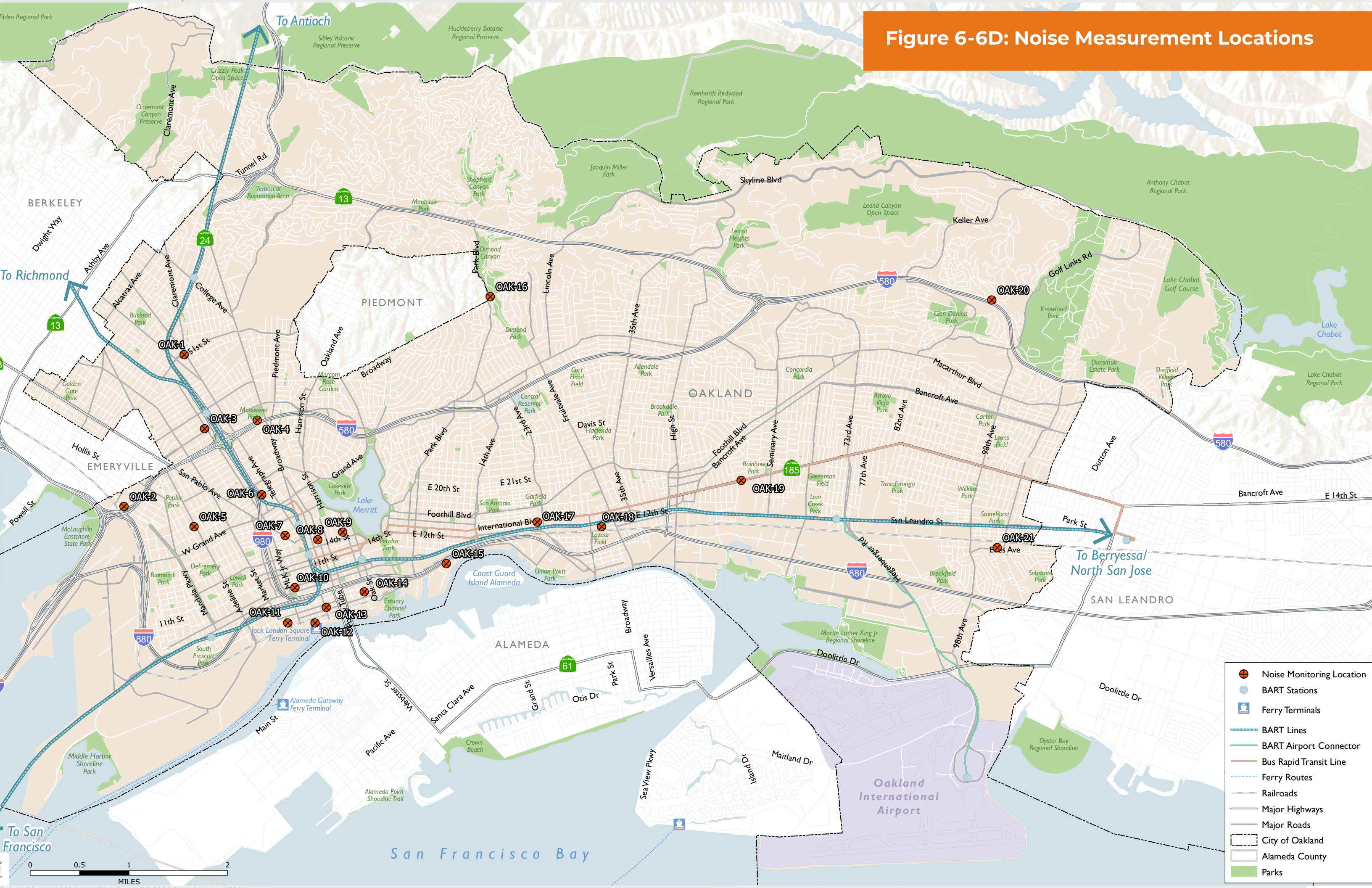


Figure 6-6D: Noise Measurement Locations



6.7 Hazards and Hazardous Materials

Industrial or commercial operations can result in spills or leaks of hazardous materials and/or petroleum products into the environment, resulting in soil and groundwater contamination. Exposure to hazardous materials can result in lung damage, cancer, cardiovascular disease, low birth weight infants, and other negative health outcomes that reduce life expectancy. The Department of Toxic Substances Control (DTSC) EnviroStor online database keeps records of facilities that are authorized to treat, store, dispose, or transfer hazardous waste and includes the following site types: Federal Superfund sites (National Priority List); state response, including military facilities and State Superfund; voluntary cleanup; and school sites that are being evaluated by the DTSC for possible hazardous materials contamination. The EnviroStor database also contains current and historical information relating to permitted and corrective action facilities. The State Water Resources Control Board (SWRCB) GeoTracker online database contains regulatory data about leaking underground storage tanks (LUST), Department of Defense, Cleanup Program Sites, spills-leaks-investigations-cleanups, and landfill sites. The GeoTracker database also contains information about public drinking water wells.

A review of the online regulatory databases (EnviroStor and GeoTracker) reveals that there are approximately 1,686 documented hazardous materials sites currently identified within the City (shown in **Figure 6-7A**). The figure also shows hazardous materials sites beyond the City boundaries because they may have the potential to affect areas within the City if the contaminants associated with those sites migrate. These identified sites met at least one of the following criteria:

- Sites with known unauthorized releases of hazardous chemicals or petroleum under regulatory oversight.
- Sites with subsurface impacts and residual chemicals in the City.

- Sites outside of the City but where contamination had the potential to migrate and impact soil and/or groundwater in the City.
- Regulatory status.

Based on the evaluation of the above criteria, the sites were qualitatively ranked from 5 (very high hazard) to 1 (very low hazard). A brief description of these rankings is provided below in **Table 6-3**. Of the 1,686 identified sites, 361 are assigned a 5 ranking, 60 are assigned a 4 ranking; 14 are assigned a 3 ranking, 152 are assigned a 2 ranking, and 1,099 are assigned a 1 ranking. Figure 6-7B shows sites ranked 3, 4, and 5.

These results indicate that there are numerous hazardous materials sites that have resulted in soil and/or groundwater contamination. The reporting and status of hazardous materials sites change as identification, monitoring and clean-up of hazardous sites progress, and these databases are updated periodically.

Typically, after hazardous releases are cleaned up (remediated), it needs to be demonstrated to the regulatory agency (i.e., DTSC or SWRCB) that the contamination has been either completely removed or no longer poses a threat to the public or the environment.

Once it is demonstrated that there is no significant risk human health or the environment, the regulatory agency in charge (i.e., DTSC and/or SWRCB) will issue an official closure or no further action letter and the site is considered closed. It is important to note that a closed site may contain residual amounts of contamination, but the amounts are so small that they do not pose a threat to human health or the environment.

While many of these sites have completed remediation and are considered closed, there are still numerous sites that may pose a threat to the public and the environment if contamination is encountered during new development. Further studies and additional remediation may be required for sites that show evidence for contamination.

CalEnviroScreen is a mapping tool created to identify California communities that are vulnerable to environmental impacts due to environmental, health, and socioeconomic factors. CalEnviroScreen produces scores for each census tract based on these factors, which are compared to other census tracts in the state. An area with a high score is one that experiences a much higher pollution burden than one with a low score. Based on these scores, census tracts are ranked based on their demographic vulnerability and existing pollution burden.



Figure 6-7C shows CalEnviroScreen data for DTSC Cleanup Sites within the City.³² The data depicted in **Figure 6-7C** represents DTSC EnviroStor records of active hazardous materials sites (represented on the figure as yellow points). The list of the different types of sites that EnviroStor considers when creating these data are listed below:

- Evaluation
- Historical
- Military Evaluation
- Corrective Action
- School Cleanup
- Voluntary Cleanup
- Tiered Permit
- State Response
- Superfund

As depicted in **Figure 6-7C**, each census tract is assigned a “Cleanup Site Percentile” (a score) based on the amount and types of Cleanup Sites present; each score fits into a range of percentiles. Each range of percentiles is assigned a corresponding color (shade of red), the darkest red representing the highest score (and highest hazard). As discussed above, a high score indicates that a census tract is more vulnerable than one with a lower score. In the case of Cleanup Sites, a high score indicates a census tract is more vulnerable to exposure to hazardous materials that can affect human health and the environment.

³² CalEnviroScreen 4.0 only takes into consideration hazardous materials sites that are listed in the EnviroStor database. This program does not account for active SWRCB regulated sites.

Table 6-3: Hazardous Materials Site Ranking

RANK	HAZARD	DESCRIPTION	CONSEQUENCES
5	Very High	Potentially acute threat to human health or environment.	Immediate action needed to mitigate existing threat.
4	High	Potentially significant risk to human health or environment	Investigation or remediation needed for existing risk. Or, new development will be subject to remedial measures.
3	Moderate	Potential threat/risk to human health or environment	Possible investigation needed for existing development. Residual contamination in soil and/or groundwater may necessitate re-opening of case based on human health (vapor intrusion pathway) or groundwater impacts and revised closure standards.
2	Low	Less than significant threat/risk to human health or environment.	Special management/notification in case of subsurface work. New development may necessitate verification of closure standards and possible vapor intrusion study.
1	Very Low	De minimis condition	No action or special management needed other than possible notification.



Photo: Greg Linhares, City of Oakland

Figure 6-7A: Hazardous Materials

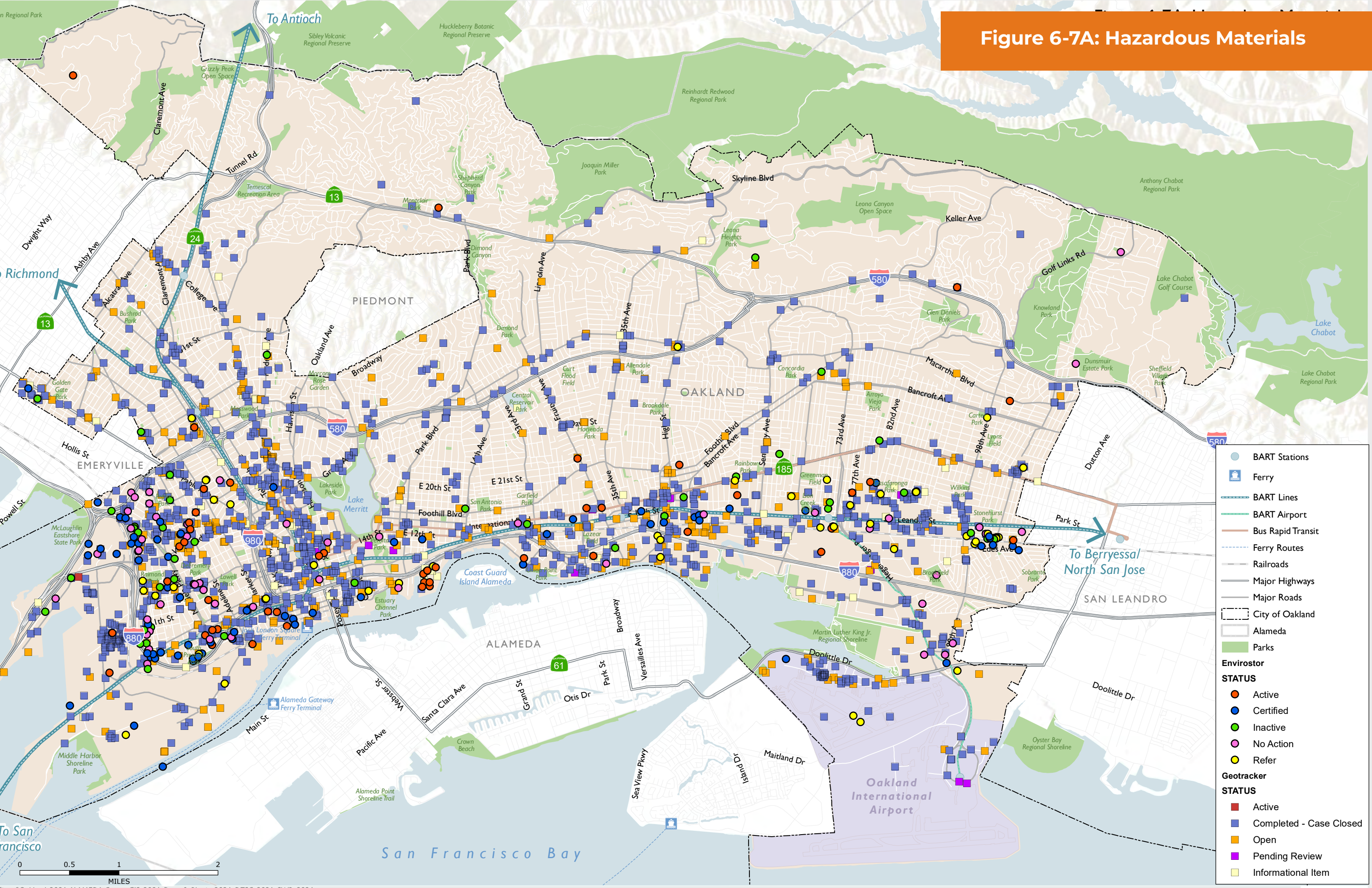


Figure 6-7B: Hazardous Material Ranking

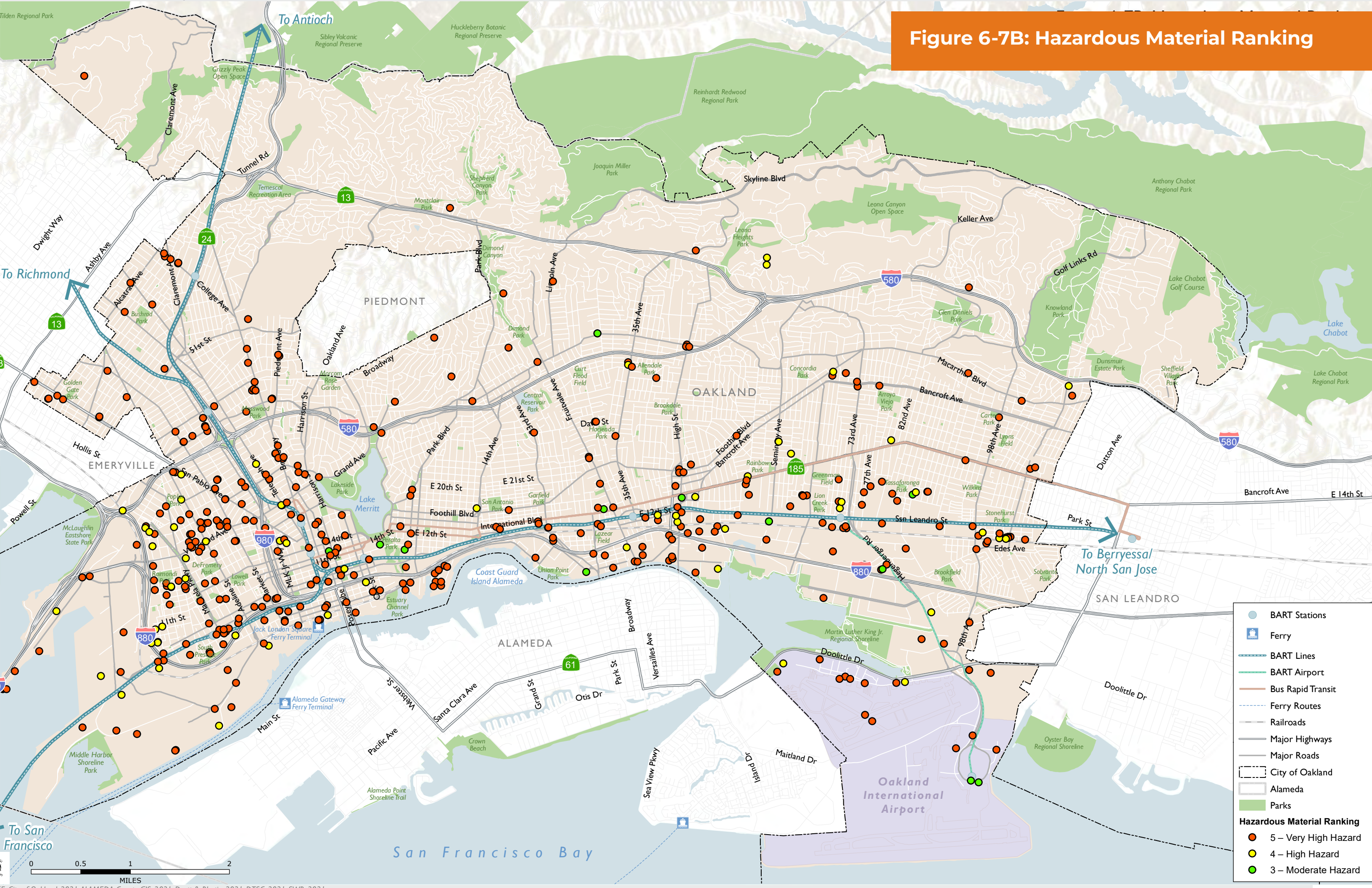
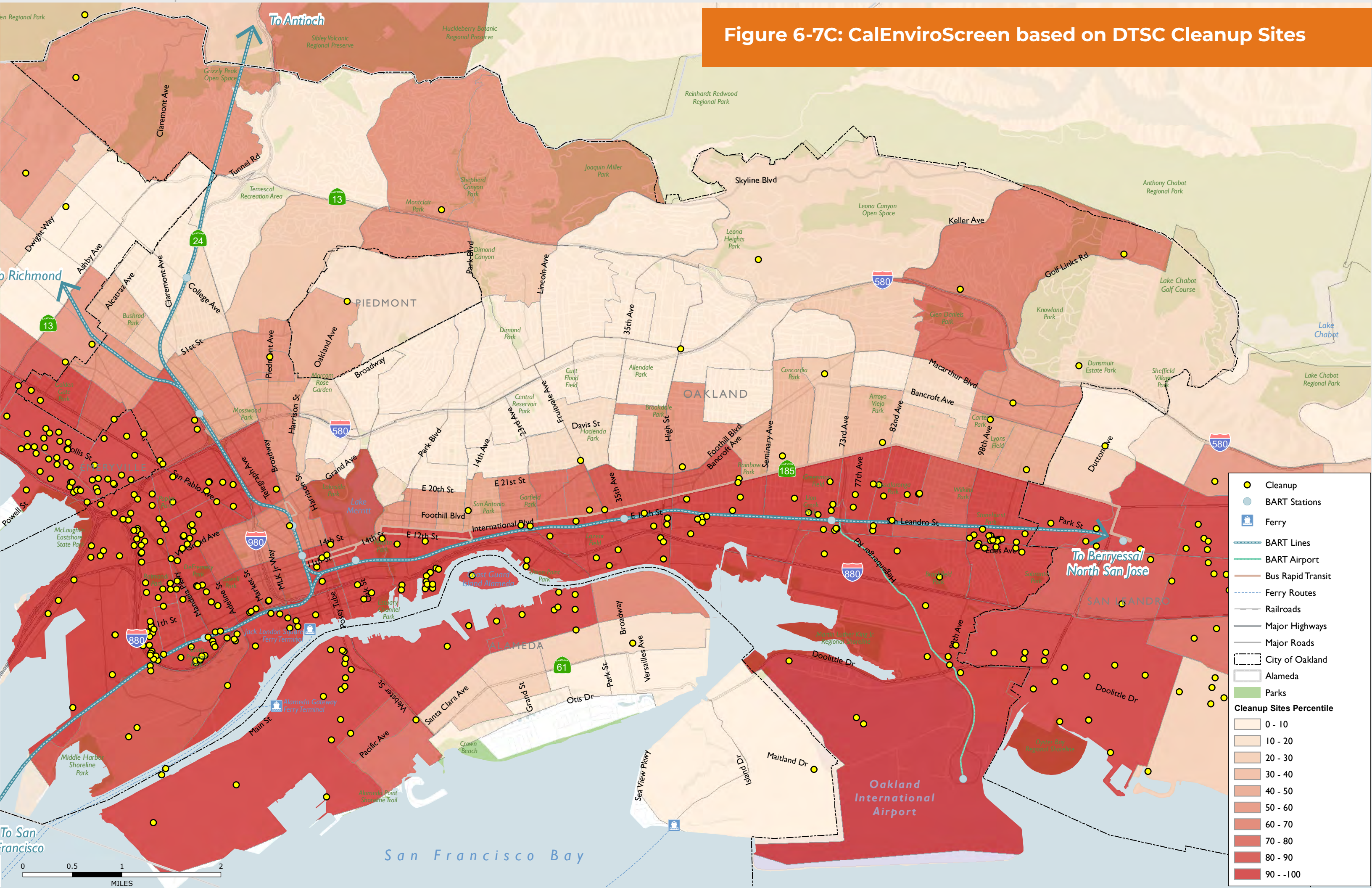


Figure 6-7C: CalEnviroScreen based on DTSC Cleanup Sites



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HISTORIC RESOURCE BACKGROUND

- 7.1 Introduction
- 7.2 Oakland's Historic Properties
- 7.3 Potential Designated Historic Properties
- 7.4 The Moving 'Age-Eligibility' Threshold
- 7.5 Neighborhood and Specific Plans

7.1 Introduction

Historic resources create a distinct sense of place for Oakland's communities. While the city's most prominent landmarks are located in and around downtown, significant resources and districts across the city represent a breadth of themes and periods in Oakland's civic, residential, commercial, and industrial development. Oakland's significant historic properties include a variety of resource types, including public parks, multi- and single-family residential buildings, churches, civic properties, commercial, institutional, and industrial properties dating from the 1850s on.¹

7.2 Oakland's Historic Properties

The City of Oakland maintains robust historic preservation and designation programs which provide a framework for planning decisions regarding the city's historic properties. The Historic Preservation Element (HPE) of the Oakland General Plan, adopted March 8, 1994 (Oakland City Council Resolution No. 70807 C.M.S.) with some policies amended July 21, 1998, "sets forth goals, objectives, policies and actions that encourage preservation and enhancement of Oakland's older buildings, districts and other physical environmental features having special historic, cultural, educational, architectural or aesthetic interest or value."² Future updates to the existing HPE, now in its third decade, should expand policies for protection of the City's valuable historic properties and streetscapes in the face of development pressures, climate change and other natural hazards.

¹ A summary of Oakland's historical development is provided in the Oakland General Plan: Historic Preservation Element (Oakland, October 1993), 1-2 through 1-9.

² City of Oakland, Oakland General Plan: Historic Preservation Element (Oakland, October 1993), 1-1.



The HPE sets out a broad hierarchy of historic property statuses, from "minor" to "highest" importance, "determining the relative importance of [...] properties so that preservation efforts may be appropriately gauged," with the strongest protections and incentives reserved for the most significant properties.³ Under the HPE, and as incorporated in the Oakland Planning Code, a property's level of designation, or eligibility for designation, often informs the type of review required for proposed projects that could alter its character. Designated properties are generally afforded the highest level of protection under local historic preservation regulations, and may be eligible for preservation incentives.

Figure 7-1 provides a visual summary of existing conditions at the time of its preparation. Designations and statuses change over time, however, as properties are demolished, lose integrity, become eligible and are nominated, or when new evaluations are conducted. Historic property lists are always works in progress, and always need to be checked against the physical resources on the ground.

³ Objective 1 of the City of Oakland, Oakland General Plan: Historic Preservation Element (Oakland, September 1993), 2-13.

LOCAL REGISTER OF HISTORIC RESOURCES

Approximately 3,400 historic properties are included in the City of Oakland's Local Register of Historic Resources (Local Register). Established through a 1998 amendment to the HPE to clarify the environmental review process, the Local Register includes all locally designated properties as well as the highest levels of Potential Designated Historic Properties (PDHPs) and some historic district contributors.

Properties designated as individual resources at the local level include Landmarks, Heritage Properties, Study List Properties, and the highest rated Potential Designated Historic Properties (PDHPs).⁴ City of Oakland Historic Landmarks (141 properties) are the most prominent designated historic properties in the city and may be designated by City Council for historical, cultural, educational, architectural, aesthetic, or environmental value.⁵ The category of Heritage Property (approximately 73 properties) is designated by the Landmarks Preservation Advisory Board (LPAB) and is typically less exclusive than the Landmark designation. It is most often used in conjunction with Mills Act contract applications. The Preservation Study List (approximately 335 properties) was initiated in the 1980s, and includes properties considered by the LPAB to be likely candidates for designation.⁶

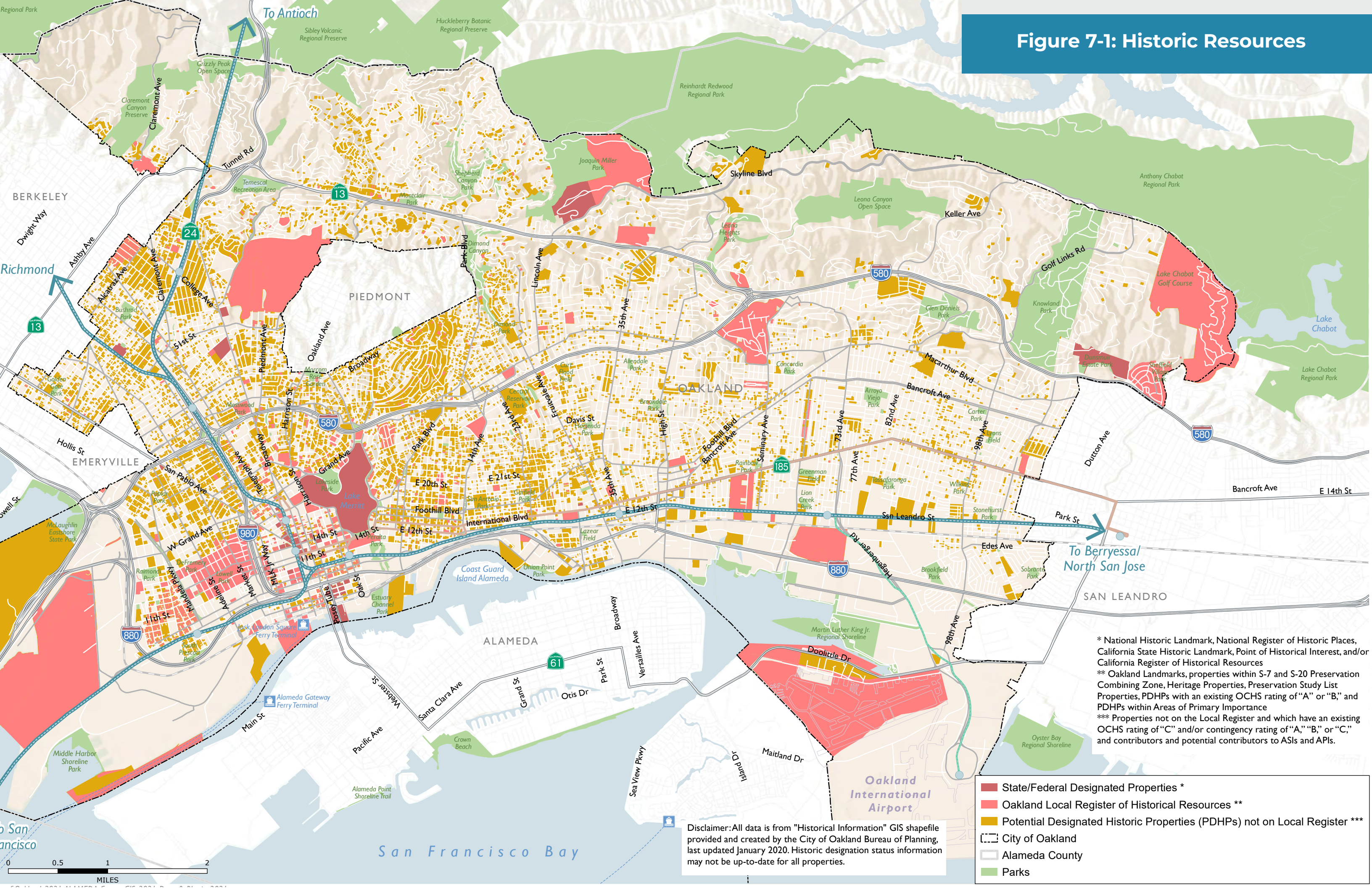
Properties included in the Local Register as district contributors include those located within S-7 and S-20 Preservation Districts or an Area of Primary Importance (API.) The City of Oakland's S-7 and S-20 Historic Preservation District Combining Zones comprise groupings of significant resources with similar designation

⁴ City of Oakland, California Planning Code Section 17.09.040 – Definitions. Electronic resource at https://library.municode.com/ca/oakland/codes/planning_code?nodeId=TIT17PL_CH17.09DE_17.09.040DE, accessed January 18, 2022.

⁵ City of Oakland, Oakland General Plan: Historic Preservation Element (Oakland, October 1993), Appendix D.

⁶ City of Oakland, Oakland General Plan: Historic Preservation Element (Oakland, September 1993), page 4-21. As part of its existing Historic Preservation Element, the City of Oakland established the goal of reviewing and reclassifying Preservation Study List properties as Heritage Properties.

Figure 7-1: Historic Resources



* National Historic Landmark, National Register of Historic Places, California State Historic Landmark, Point of Historical Interest, and/or California Register of Historical Resources
** Oakland Landmarks, properties within S-7 and S-20 Preservation Combining Zone, Heritage Properties, Preservation Study List Properties, PDHPs with an existing OCHS rating of "A" or "B," and PDHPs within Areas of Primary Importance
*** Properties not on the Local Register and which have an existing OCHS rating of "C" and/or contingency rating of "A," "B," or "C," and contributors and potential contributors to ASIs and APLs.

- State/Federal Designated Properties *
- Oakland Local Register of Historical Resources **
- Potential Designated Historic Properties (PDHPs) not on Local Register ***
- City of Oakland
- Alameda County
- Parks

Disclaimer: All data is from "Historical Information" GIS shapefile provided and created by the City of Oakland Bureau of Planning, last updated January 2020. Historic designation status information may not be up-to-date for all properties.



criteria and review procedures for Landmark properties.⁷ This category includes approximately 1,118 properties in eight districts. Areas of Primary Importance (APIs) are districts or groupings identified through survey and defined by the city's HPE as "historically or visually cohesive" areas that appear to meet eligibility requirements for listing as districts on the National Register.⁸ API contributors and potential contributors include approximately 1,660 properties in 57 districts.

The Local Register also includes properties which are not individually designated in the categories described above, but which have been assigned Oakland Cultural Heritage Survey (OCHS) Ratings of "A" or "B." This includes approximately 90 properties not designated in other categories).⁹ The five-tiered alphanumeric system rating system developed for OCHS denotes a property's significance at the local level in its existing condition, its potential significance if rehabilitated or studied further, and its

7 City of Oakland, Oakland California Planning Code Chapter 17.84, electronic resource at https://library.municode.com/ca/oakland/codes/planning_code?nodeId=TIT17PL_CH17.84PRCOZORE; and 17.100B, electronic resource at https://library.municode.com/ca/oakland/codes/planning_code?nodeId=TIT17PL_CH17.100BS-HIPRDICZORE, accessed December 17, 2021.

8 City of Oakland, Oakland General Plan: Historic Preservation Element (Oakland, August 1998), page A-3.

9 This figure excludes properties with "A" or "B" ratings which are also included in the Local Register under a different criterion.



relationship to preservation districts. Briefly, evaluated properties are assigned an Individual Property Rating between "A"(highest importance) and "F" corresponding to their ability to meet criteria related to visual quality and design, historical association, context, and integrity.¹⁰

OTHER HISTORIC PROPERTIES

Historic properties in Oakland also include those listed at the federal and state levels as National Historic Landmarks (five properties); on the National Register of Historic Places (51 individual properties and approximately 94 district contributors); as California Historical Landmarks (13 properties); and on the California Register of Historical Resources (159 individual properties and more than 900 district contributors). All properties that are listed at the state or federal level are also included in the California Register and are therefore CEQA resources; most are also on Oakland's Local Register.

Numerous properties in Oakland have been evaluated during local, state, and federal environmental review processes and identified as eligible for local, state, or federal designation, but

10 The OCHS rating system is described in detail in the Oakland General Plan: Historic Preservation Element and at <https://www.oaklandca.gov/topics/historical-and-architectural-rating-systems>.

have not been officially listed. The State of California Office of Historic Preservation Built Environment Resource Directory (BERD) for Alameda County lists more than 1,300 properties in Oakland which have been found eligible for, but are not formally listed in, the National Register, California Register, or Local Register.¹¹ Properties listed on the Local Register, and those which have been found eligible for listing on the National Register or California Register, are considered Historical Resources for the purposes of California Environmental Quality Act (CEQA) project review.

11 California State Office of Historic Preservation, Built Environment Resource Directory (BERD), Alameda County, updated March 2020. Full definitions of the Status Codes are available at: California Office of Historic Preservation. "California Historical Resource Status Codes." Current as of March 1, 2020, electronic resource at <https://ohp.parks.ca.gov/pages/1069/files/Resource-Status-Codes.pdf>, accessed January 19, 2022. These records may include duplicates and not all contributors to the local historic districts may have individual records in the BERD. Records may also include properties listed as having an Oakland address, but are outside the city limits.

7.3 Potential Designated Historic Properties

Many individual properties and areas in Oakland which are not formally designated or included in the Local Register contribute to the historic character and cultural fabric of the city's neighborhoods. The HPE recognizes historic and architectural and community value beyond designated properties (which are approximately three percent of all properties in Oakland) with the category called Potential Designated Historic Property (PDHP). As the name suggests, PDHPs are potentially eligible for designation, typically as Heritage Properties. The category includes individual properties with an OCHS existing or contingency rating of "C" or higher, or which contribute or potentially contribute to an API or Area of Secondary Importance (ASI). ASIs are distinct districts or groupings of properties which share architectural or historical significance. Unlike APIs, however, ASIs are not considered to meet the significance thresholds of the National Register.¹² PDHPs constitute about 20 percent of Oakland's properties.

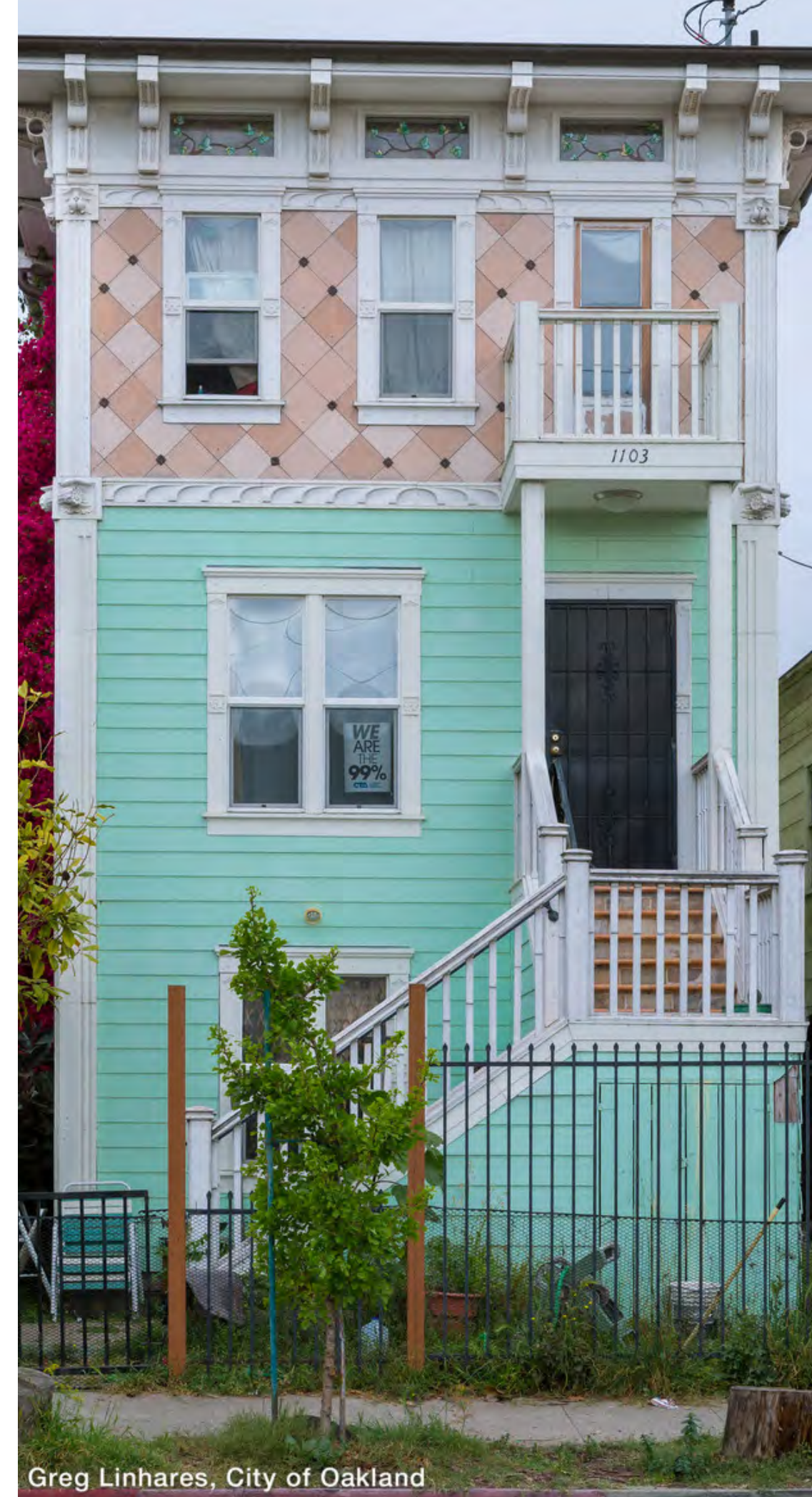
PDHP is not a designation, but rather a category of information adopted by the HPE and used for informing planning decisions and promoting awareness of preservation values. The status of Potential Designated Historic Property (PDHP) was designed to meet "specific minimum significance thresholds for properties which may warrant preservation effort by the City" and are "numerous enough to significantly influence the City's character."¹³

¹² City of Oakland, Oakland General Plan: Historic Preservation Element (Oakland, August 1998), page A-3.

¹³ Policy 1.2 of the City of Oakland, Oakland General Plan: Historic Preservation Element (Oakland, February 1994), 3-4.

Though the majority of PDHPs are not considered historical resources under CEQA, projects involving PDHPs may be subject to preservation-focused review requirements such as the Demolition Findings described under Section 17.136.075 of the City of Oakland Planning Code. A PDHP rating is one flag for planners to pay careful attention to possible effects on historic features during design review of proposed exterior alteration projects. Updated and publicly accessible context statements for historic districts and property types, particularly related to APIs and ASIs or new themes, would help inform the development of sensitive alterations and new construction projects. This would, in turn, help to preserve historic character while achieving vital neighborhoods that reflect a mix of old and new buildings. Neighborhood stakeholders should be involved in conversations about historic resource identification and designation in relation to community needs for housing and business development, particularly among underserved communities.

Whether for the purposes of CEQA compliance, review by the LPAB or Planning staff as part of the local design review process, or for determining eligibility for preservation incentives such as the Mills Act Property Tax Abatement Program, well-informed project design and review involving historic properties and districts relies on availability of clear information regarding properties' designation or survey status, significance, and character-defining features. Developing and updating publicly accessible documentation regarding the city's historic properties and districts at all levels should be a priority in working with the city's property owners and residents to advance preservation objectives.



Greg Linhares, City of Oakland

7.4 The moving ‘Age-Eligibility’ Threshold

According to GIS data available through the City of Oakland, more than 80,000 parcels citywide include buildings or structures that are 50 years of age or older (**Figure 7-2**). Based on historic preservation guidance provided by the National Park Service and State of California Office of Historic Preservation, these properties are currently eligible for evaluation as potential historic resources.¹⁴ Approximately 6,400 additional buildings will become 50 years old within the next 20 years, the typical planning horizon for general plans and updates.

Age-eligible properties across Oakland which have not yet been evaluated as historic resources include many older homes which may be eligible as part of expanded or new historic districts, as well as post-World War II residential subdivisions and commercial or institutional Modern Movement buildings. While few privately owned residential properties built in the later 20th century are likely to be individually historically or architecturally significant at the Local Register level (just as only a few from earlier periods are), some development tracts may possess significance as historic districts in association with an important local builder or developer, or as strong examples of the city’s changing planning approaches and priorities for housing. As increasing numbers of more recent historic buildings will become eligible for evaluation, conducting surveys, developing context statements, and establishing significance thresholds that address Modern architectural styles, diverse histories, and different ways of defining the significance of cultural sites and spaces should be prioritized.

¹⁴ Properties less than 50 years may be eligible for designation if they are of exceptional significance.

7.5 Neighborhood and Specific Plans

The City of Oakland has adopted several neighborhood and specific plans which include goals and policies related to preservation and adaptive reuse of older properties within plan areas, as well as design guidelines developed to encourage compatibility of new construction and alterations with existing historic character. Within a city as large and internally varied as Oakland, neighborhood-focused planning documents are invaluable for providing guidance relevant to distinct historic character. When incorporated into neighborhood and area planning documents, design guidelines such as those developed for the Lake Merritt Station Area Plan and West Oakland Specific Plan provide important guidance for property owners and planners in understanding Oakland’s buildings and developing and implementing alteration and new construction projects that respect and preserve historic character. Inclusion of design guidelines responsive to the existing historic character and types of development, as well as development of objective design standards for projects subject to streamlined review, should be a priority for neighborhood and specific plans developed in Oakland neighborhoods, particularly those that are not strongly represented by designated historic properties, districts, or PDHPs.

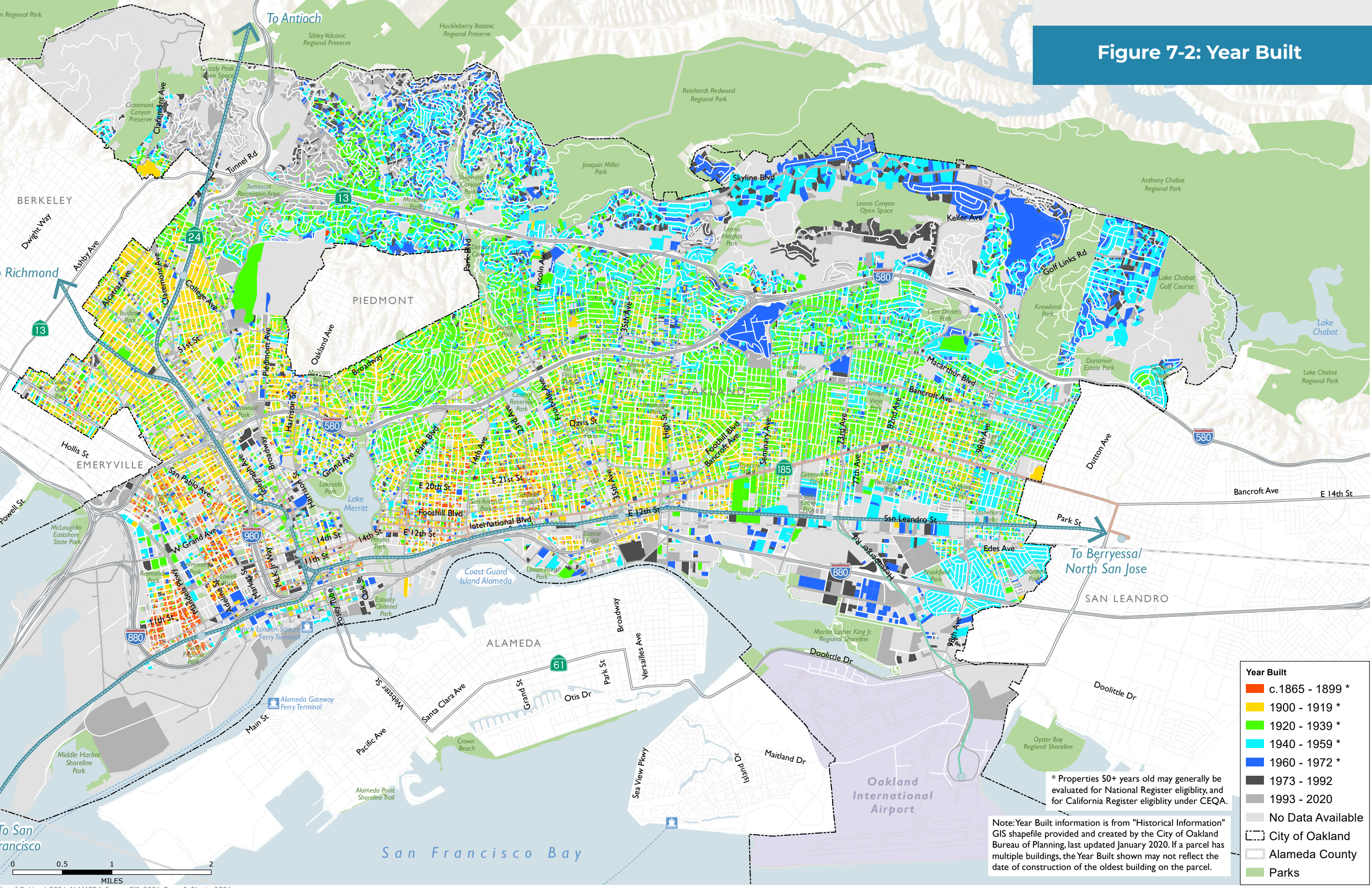


Photo: Greg Linhares, City of Oakland



Photo: Greg Linhares, City of Oakland

Figure 7-2: Year Built



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OAKLAND 2045

GENERAL PLAN