



Chapter 3: Bicycle Network

This chapter describes the bicycle network for the Unincorporated Areas of Alameda County which includes both the network of bikeways and bicycle support facilities, such as bicycle parking and signage. The bicycle network was developed following the goals and objectives presented in **Chapter 2**. The primary considerations were to serve all existing and potential users, to improve safety, and to connect all attractors and generators with direct and convenient routes.

An important aspect to serving attractors and generators is the ability to access key destinations in neighboring communities through links to the bikeway networks of adjacent jurisdictions. Since much of the Unincorporated Areas abuts the incorporated cities of San Leandro, Hayward, Dublin, Pleasanton, and Livermore, and, to a lesser extent, Union City and Oakland, these connections are critical to providing connectivity in the region. The bikeways in adjacent communities and regional bikeways designated through the Unincorporated Areas are discussed at the end of this chapter.

The bikeway network was developed based upon:

- Types of Bicyclists:** This plan recognizes that there are many types of bicyclists with varying skills and levels of comfort in terms of riding in traffic. While they can be loosely categorized as experienced adults, casual adults, and child cyclists, there are many gradations of cycling competency and just as many opinions as to what makes an ideal bikeway. Some experienced cyclists eschew bike lanes; some cyclists will ride on busy roads only if bike lanes are provided; some will ride in bike lanes all the time; and some will ride in bike lanes only if parallel residential roads are unavailable. Child cyclists often do not have the motor skills nor experience to safely navigate the busier streets. The proposed network should consider the needs of all types of bicyclists providing of combination of arterial routes, bike lanes, local streets, and bike paths. The trip purpose is also a key factor in determining route selection. Bicycle trips are generally categorized as utilitarian, such as for commuting to work or school, or as recreational trips.
- Major versus Minor Roads:** Recognizing that some cyclists prefer the most direct route regardless of its official status as a bikeway, this plan includes all major arterials in the study area. Some of these roads have or are proposed to have bike lanes, while others have severe right-of-way restrictions making it very difficult to provide bike lanes, at least in the short-term. All of these roads, however, are included as part of the bicycle network. By being a part of the bikeway network, the roads may be eligible for minor improvements that will improve bicycle safety, convenience, and/or travel time. Minor improvements might include upgrading drainage grates,

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providing signal detectors sensitive to bicycles, signal retiming for safe bicycle clearance intervals, restriping for wider curb lanes, construction of paved shoulders, and wayfinding. In addition, as part of the bikeway network, roadways will be prioritized for funding opportunities as well as for routine County maintenance.

This plan also identifies routes that traverse the study area and have lower speeds and traffic volumes. These routes will be more attractive to casual or novice cyclists who are intimidated by roadways with high traffic volumes and/or high speeds.

- **Continuity and Connectivity:** In some areas of the County, there is more than one parallel roadway which provides nearly equal access through that section of the County. Rather than including all these parallel roads, they were evaluated based upon their ability to provide a continuous facility for bicyclists and provide access to key destinations. In addition, alternative routes were evaluated based upon their potential to meet funding criteria as described in **Appendix B**. In other areas of the County, particularly the rural and hilly areas to the east, there is only one road between Point A and Point B. All such roads were included in the bicycle network.

Bikeway Classifications

The bikeway classifications described below were used in building the bikeway network. These include both Caltrans standard bikeway classifications and bikeway categories customized for this plan.

The bikeway classifications do not necessarily distinguish between routes used primarily for transportation and those used for recreation. Many routes that may seem to be primarily recreational are indeed used for commuting or other transportation purposes. Just as roadways are built and maintained for motorists without regard to trip purpose, the recommended routes described in this plan will undoubtedly be used for both transportation and recreation. It is acknowledged that some routes may be more often used by transportation than recreation or vice versa. The importance of this distinction between transportation and recreational routes lies in the matching of proposed projects to the funding sources appropriate to the type of project; some funding sources are limited only for bicycle transportation projects while others are designated for recreational facilities. The discussion of prioritization criteria and funding sources in **Chapter 6** will consider these funding criteria.

Standard Classifications

Chapter 1000 of the Caltrans Highway Design Manual (HDM) describes the three types of bicycle facilities. The HDM definition is presented in italics.

Class I Bike Path. *Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross-flow minimized.*

Bike paths are an important component of every bikeway network. Some are long enough and well-located enough to provide a car-free environment for a large portion of a bicycling trip. Other bike paths are used to close gaps in a route such as connecting two dead-end roads or traversing parks.

Bike paths are popular with casual bicyclists and families with children, and they can be popular with experienced bicyclists if well-designed and located convenient to their route. However, their popularity with slow cyclists and non-bicyclists such as joggers, parents with baby strollers, people walking their dogs, etc., limits the usefulness of the bike path to the cyclists who ride over 15 mph. Serious bicyclists can rarely ride as fast on a bike path as they can on city roads due both to the design of the bike path and the high

numbers of slower users. The width of the bike path should be increased depending on the number and stratification of the users.

Class II Bike Lane. *Provides a striped lane for one-way bike travel on a street or highway.*

The bike lane is for the exclusive use of bicycles with certain exceptions. For instance, right-turning vehicle must merge into the bike lane prior to turning and pedestrians are allowed to use the bike lane when there is no adjacent sidewalk.

Bike lanes should be used when Average Daily Traffic Volumes (ADTs) exceed a certain threshold, e.g., 4,000 vehicles per day (vpd). Below this traffic volume, if there is not adequate width for lane sharing, there should be adequate gaps in oncoming traffic for motor vehicles to pass bicyclists by crossing over the centerline.

The HDM specifies the minimum width for bike lanes under three conditions: next to a curb where on-street parking is allowed; next to a curb where on-street parking is prohibited; and on roadways without curb and gutter where infrequent parking is handled off the pavement. It also states that widths wider than the minimums should be provided “wherever possible for greater safety.” Bike lanes are marked with striping, signage (R81 (CA)), and pavement markings as shown in **Figure 3-1**.

Colored Bike Lanes: Colored bike lanes are considered a way to guide bicyclists through complex intersections as well as to make motorists aware that they are crossing a bike lane. Studies of colored bike lane applications in Portland, Oregon⁹ have shown that the colored bike lanes have a positive effect in the number of motorists yielding to bicyclists and bicyclists following the path marked by the colored bike lanes. On the downside, it was also reported that bicyclists were less vigilant while traveling along the colored bike lanes, perhaps signifying an increased ‘false’ sense of security. Colored bike lanes are being used by many jurisdictions and have recently received an interim approval by the Federal Highway Administration (FHWA).



Figure 3-1: Class II bike lane (above); Colored bike lane (below)



⁹ Portland’s Blue Bike Lanes, City of Portland, Office of Transportation, 1999
<http://www.portlandonline.com/transportation/index.cfm?a=58842&c=34772>.

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Class III Bike Route. *Provides for shared use with pedestrian or motor vehicle traffic.*

Class III bike routes have traditionally been used to designate anything from low volume residential roads that have no need for bike lanes to arterials with heavy traffic volumes where widening to provide bike lanes would be infeasible. For planning purposes, this plan has developed subcategories to more accurately describe the conditions on the “Bike Route”. Bike routes are marked with signage (D11-1) as shown in **Figure 3-2**.



Figure 3-2: Class III bike route signage (left) and Sharrow (right)

In addition, the “Shared Lane” or “Sharrow” marking is a recent tool available for use on Class III facilities¹⁰. Its purpose is to reinforce to motorists that bikes belong on the roadway, encourage safe passing of

bicyclists by motorists, to indicate to bicyclists the appropriate place to ride in the lane next to parked cars to avoid being hit by a car door, and to discourage wrong-way bicycling. Sharrows are not recommended for use on roadways with speed limits above 35 mph except where there is bicycle travel and the right-hand traffic lane is too narrow to allow automobiles to safely pass bicyclists. Sharrows should not be used on shoulders or designated bike lanes. Sharrows are often used to mitigate the transition from a Class II bike lane to Class III bike route or for getting bicycles through short narrow segments of roadway or complicated intersections.

Bikeway Categories for Alameda County Unincorporated Areas

The following bikeway categories are included in this plan to expand on the standard Caltrans bikeway classifications. They provide greater detail on the roadway conditions and types of improvement envisioned for the designated bicycle facilities. The following categories are used to describe the bikeway network for this plan:

- **Class I - Bike path (paved):** *Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross-flow minimized.* (Standard Caltrans definition)
- **Class IA - Unpaved trail with bikes allowed:** In the Unincorporated Areas, particularly in the eastern part of the County, there are many unpaved trails that are open to bicycling even though they are not built to Caltrans Class I standards. The Bay Area Ridge Trail and trails within the East Bay Regional Park District (EBRPD) and Livermore Area Recreation & Park District (LARPD) generally fall into this category.
- **Class II - Bike lane:** *Provides a striped lane for one-way bike travel on a street or highway.* (Standard Caltrans definition)
- **Class III- Bike route:** *Provides for shared use with pedestrian or motor vehicle traffic.* (Standard Caltrans definition)

¹⁰ In the FHWA MUTCD 2009 Edition, the “Shared Lane” marking can also be used on roadways without on-street parking to assist bicyclists with lateral positions in lanes that are too narrow for a motor vehicle and bicycle to travel side by side in the same traffic lane. This addition was also adopted in the California MUTCD January 2012.

- **Class IIIA - Bike route with low traffic volumes and slow traffic (Rideway):** Many of the roadways that have been included in the bikeway network are predominately residential roads. They generally make excellent bike routes because traffic volumes are low and vehicle speeds are slow.

Class IIIA bike routes may also be used on residential streets with higher traffic volumes or travel speeds greater than 25 mph, but where there is no room to widen the road to provide a Class II bike lane or Class IIIB wide curb lane. In these cases, bicycling conditions are improved significantly if the vehicular traffic is slowed via traffic calming measures. Traffic calming would benefit not only the bicyclists but also the residents of these roads. For example, unwarranted STOP signs can be removed and replaced by traffic calming techniques to slow traffic such as roundabouts or speed humps. Re-orienting STOP signs to require stopping by cross-traffic, thereby giving right-of-way to travel on the bike route also helps to encourage bicycling. Slower traffic speeds makes the street much more attractive to casual bicyclists and child bicyclists. Palo Alto and Berkeley have implemented such roads as Bicycle Boulevards. Specific traffic calming measures will not be identified for proposed bike routes as part of this study. The Alameda County Neighborhood Traffic Calming Program report should be referenced for appropriate strategies and procedures for implementing these techniques.

- **Class IIIB - Bike Route with Wide Curb Lanes:** On multi-lane arterials and collector roadways with high traffic volumes, there may not be room to provide bike lanes. Still, conditions for bicyclists can be improved significantly by allocating extra width to the curb lane where bicyclists primarily ride. A wide curb lane (14 to 16 feet of width with no parking in the curb lane and 22 to 24 feet with on-street parking) allows a vehicle to pass bicyclists with at least 2 feet of clearance without changing lanes. This improves the comfort levels of both the bicyclists and the motorists and will also benefit large vehicles such as trucks and buses. To provide the wide curb lane, it may be necessary to narrow inner travel lanes. If parking is allowed, it is also preferable to stripe the parking lane or add parking T's.
- **Class IIIC - Rural Bike Route with Wide Shoulders:** The Unincorporated Areas have many miles of rural roadway, particularly in East County; rural roads are generally two-lane without curb and gutter, have little demand for on-street parking, and travel through areas with agricultural uses, park lands, and with little or no development. Paved shoulders generally provide good riding surfaces for bicyclists on these rural roads when they are kept clear of debris and are of adequate width. In fact, some bicyclists prefer shoulders to official bike lanes. Shoulders of at least four feet in width are recommended.

While it is the goal of the County to provide 4-foot minimum shoulders on all rural roads, it may take many years to find the funds to retrofit all the existing miles of roadway. In the short-term, where traffic volumes are below 2,000 vpd, roads with narrow shoulders (i.e., only an edge line) are generally acceptable from a bicyclist's point of view since the amount of oncoming and passing traffic is minimal. According to research by others, a road with 24 feet of pavement including shoulders could accommodate traffic volumes of up to 1,760 vpd and still be compatible with bicycle travel. Still, others suggest that 12-foot shared lanes on rural roads are acceptable to experienced bicyclists if traffic volumes are under 2,000 vpd and sight distance is adequate. Therefore, it is suggested that low volume rural roads can be implemented as Class IIIC rural bike routes with only the addition of signage. As traffic volumes increase on these roadways to levels above 2,000 vpd, 4-foot minimum shoulders should be provided.

Existing Conditions

Existing and Future Bicycle Commuter Population

According to journey to work data from the 1990 and 2000 U.S. census and the 2005-2009 American Community Survey, less than 0.5 percent of residents in the unincorporated western Alameda County commute to work by bicycle¹¹. This is significantly lower than the Bay Area average of 1.8 percent¹². As shown in **Table 3-1**, the community with the highest bicycle commute percentage is Ashland at 0.8 percent.

There are many factors that will influence a person's decision to commute by bicycle with the availability of safe and convenient facilities and distance to the workplace ranking among the most important. Communities that have made significant investments in their bicycle infrastructure have been rewarded with an increased bicycle commute mode share. For example, the City of Berkeley has experienced an increase in the bicycle mode share from 5.2 percent to 6.0 percent from the 1990 U.S. census to the 2000 U.S. census (an increase of almost 15 percent). Further increases for Berkeley to 7.2 percent are estimated in the 2005-2009 American Community Survey (another 20 percent increase from year 2000 data).

Since census data does not specify how far people travel to their jobs, distance to the workplace can perhaps be best defined by commute time. A reasonable commute time regardless of mode is about 30 minutes. A nine-minute car trip is approximately equivalent to a 30 minute bike ride; this translates into about 6 miles for a bike trip. The 2000 U.S. census data indicates that an average of 7.2 percent of residents in the unincorporated western Alameda County live within nine minutes of their workplace. Assuming that 25 percent of those living within a comfortable bike riding distance would actually bicycle if this plan were fully implemented, the bicycle commute percentage would potentially increase to an average of 1.8 percent representing a significant increase in the bicycle commute mode share. See **Table 3-1**.

What the U.S. census does not measure is the number of people who use their bicycle for other transportation trips such as shopping, errands, or visiting friends. The 2000 Metropolitan Transportation Commission (MTC) Bay Area Travel Survey revealed that in the Bay Area, 1.3 percent of home-based shopping trips are also made by bicycle, as are 2.5 percent of social/recreational trips and 3.8 percent of school trips. Overall, 22 percent of all bicycle trips are work trips, 26 percent of bike trips are shopping trips, 12 percent are school trips, and 40 percent are social/recreational trips or family/personal business trips.

	Percent Bike to Work	Percent Live within Nine Minutes of Work	Potential Percent of Bicycle Commuters
Ashland	0.8%	7.6%	1.9%
Castro Valley	0.1%	7.9%	2.0%
Cherryland	0.5%	6.5%	1.6%
Fairview	0.1%	3.6%	0.9%
San Lorenzo	0.5%	6.9%	1.7%
Average	0.3%	7.2%	1.8%

¹¹ U.S. Census Bureau, *Census 2000, Means of Transportation to Work for Workers 16 Years and Over*

¹² 2000 Metropolitan Transportation Commission (MTC) Bay Area Travel Survey

Existing Bikeway Network

Since the 2007 Bicycle Master Plan for Unincorporated Areas was adopted, several bicycle facilities have been implemented. There are now almost 42 miles of bicycle facilities in the Unincorporated Areas. These are predominantly Class II bike lanes. A summary of existing facility types is shown below in **Table 3-2** and illustrated in **Figures 3-3a to 3-3f**.

A listing of existing bikeway facilities by location is presented in **Table 3-3**. Shaded entries denote new or improved facilities since the 2007 Plan. Bike lanes on parts of East Castro Valley Boulevard and on Five Canyons Parkway were constructed as part of the Centex Homes development in Five Canyons. Other bike lanes were installed as part of the roadway improvements associated with the Castro Valley BART Station. Other bikeway projects were completed with grant funds or as part of normal public works roadway resurfacing projects.

Appendix C includes the complete inventory of existing and proposed bikeways sorted alphabetically by roadway and again by location. The bikeways are described in detail by facility length, specific recommended improvements needed for implementation, attractors served, implementation priority, and estimated conceptual cost. The geographical areas used to locate the bikeway projects include:

- Ashland
- Castro Valley (includes El Portal Ridge and Hillcrest Knolls)
- Cherryland
- Fairview
- San Lorenzo
- East County-Sunol
- East County-North of Livermore
- East County-West of Livermore
- East County-East of Livermore
- East County-South of Livermore

	Western County	Eastern County	Total
Class 1 Bike Path	0.6	2.7	3.3
Class 2 Bike Lane	16.9	17.3	34.2
Class 3 Bike Route	0.7	3.6	4.3
TOTAL	18.2	23.6	41.8

Spot Improvements

Most of the bicycle facilities in the Unincorporated Areas meet or exceed the standard Caltrans design requirements for Class II bike lanes and Class III bike routes. However, some of the bikeways would benefit from low cost, minor improvements to meet the design standards as well as to better define the bikeway network and improve its effectiveness. The majority of the spot improvements require exchanging the D11-1 Bike Route signs for the R81 (CA) Bike Lane signs on designated bike lanes. The recommended spot improvements by facility are noted in **Table 3-3**.

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Roadway	Limits	Community	Length	Bikeway Type	Spot Improvements
164th Ave	East 14th St to Foothill Blvd	Ashland	0.5	Class II	√
167th Ave	East 14th St to Foothill Blvd	Ashland	0.4	Class II	√
Castro Valley Blvd	Westbound-Foothill Blvd (SR 238) to John Dr/Strobridge Ave	Castro Valley	0.4	Class II	
East Castro Valley Blvd	Crow Canyon Rd to Five Canyons Pkwy	Castro Valley	0.5	Class II	√
East Castro Valley Blvd	Five Canyons Pkwy to Villareal Dr	Castro Valley	0.7	Class IIIB	
East Castro Valley Blvd	Villareal Dr to Dublin Canyon Rd	Castro Valley	1.1	Class II	
Center St	Grove Way to San Lorenzo Creek	Castro Valley	0.3	Class II	
Crow Canyon Rd	Cull Canyon Rd to Castro Valley Blvd	Castro Valley	0.5	Class II	
Cull Canyon Rd	Briar Ridge Rd to Crow Canyon Rd	Castro Valley	0.6	Class II	√
Dublin Canyon Rd	Eden Canyon Rd/Palo Verde Rd to Pleasanton C.L.	East County-Sunol	3.7	Class II	
East Ave	Vasco Rd to Greenville Rd	East County-E of Livermore	1.2	Class II	
Five Canyons Pkwy	E Castro Valley Blvd to Fairview Ave	Castro Valley	2.2	Class II	
Foothill Blvd	164th Ave/Miramar Ave to John Dr	Castro Valley	1.0	Class II	√
Grant Ave	500 ft east of road end to Washington Ave/Via Alamos	San Lorenzo	2.0	Class II	√
Grant Ave Pathway	Railroad tracks to Via Seco	San Lorenzo	0.6	Class I	
Greenville Rd	Altamont Pass Rd to National Dr	East County-E Livermore	1.0	Class II	√
Greenville Rd	Patterson Pass Rd to Tesla Rd	East County-E Livermore	2.1	Class II	
Grove Way	Redwood Road to Castro Valley Blvd	Castro Valley	1.0	Class II	√
Hathaway Ave	Hacienda Ave to Mero St (Hayward C.L.)	San Lorenzo	0.5	Class II	
John Dr	Foothill Blvd to Castro Valley Blvd	Castro Valley	0.3	Class II	√

Roadway	Limits	Community	Length	Bikeway Type	Spot Improvements
Lewelling Blvd	Hesperian Blvd to Meekland Ave	Ashland/San Lorenzo	0.7	Class II	
Mattox Rd	Mission Blvd to Foothill Blvd (SR 238)	Ashland	0.3	Class II	√
Meekland Ave	Paseo Grande to A Street	San Lorenzo	1.5	Class II	
Mines Rd	0.3 miles south of Tesla Rd to Del Valle Rd	East County-S of Livermore	3.1	Class II	√
N Livermore Ave	Manning Rd to I-580 (Livermore C.L.)	East County-N of Livermore	3.6	Class IIIB	
Norbridge Ave	Tyee Ct to Castro Valley Blvd	Castro Valley	0.8	Class II	
Redwood Rd	Camino Alta Mira to Seven Hills Rd	Castro Valley	0.6	Class II	√
Redwood Rd	Castro Valley Blvd to Knox St	Castro Valley	0.9	Class II	√
S Livermore Ave	Concannon Blvd to Tesla Rd	East County-S of Livermore	0.5	Class II	
Stanley Blvd	Pleasanton C.L. to Isabel Ave (Livermore C.L.)	East County-W of Livermore	2.7	Class II	
Stanley Blvd path (Iron Horse Trail)	Pleasanton C.L. to Isabel Ave (Livermore C.L.)	East County-W of Livermore	2.7	Class I	
Sunset Blvd	Meekland Ave to Western Blvd	Cherryland	0.5	Class II	
Tesla Rd	S Livermore Ave to Greenville Rd	East County-S of Livermore	2.5	Class II	
Washington Ave	San Leandro C.L. to Grant Ave	San Lorenzo	0.3	Class II	
Wente St	Livermore C.L. to Marina Ave	East County-S of Livermore	0.5	Class II	

Shaded entries denote new or improved facilities since the 2007 Plan.

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Needs Assessment

The purpose of reviewing the needs of bicycle users is threefold: (1) planning a system that must serve all user groups; (2) quantifying future usage and benefits to justify expenditures of limited resources; and (3) pursuing competitive funding. Below is an overview of some of the issues and needs to be addressed to make the Unincorporated Areas more bicycle-friendly. The comments in this chapter are based on review of existing conditions and support the goals and objectives established in **Chapter 2**.

Although the Unincorporated Areas differ greatly in demographics, land use density, and topography, there is a great potential for bicycling trips because of the:

- Favorable climate throughout most of the year;
- Sections of the study area that are densely developed and provide numerous destinations within the bicycle trip length;
- Numerous parks, rural areas, and some water channels that have potential for Class I bike paths; and
- Availability of transit to extend the bicycle trip length.

Bicycle trip purposes can generally be broken down into utilitarian or recreational trips. The biggest difference between these user groups is that while recreational riders may be more interested in the routes leading to parks or other areas of interest, utilitarian riders are looking for the shortest and safest route between two points.

Utilitarian Bicyclists

Utilitarian bicyclists typically fall into one of three categories: (1) adults commuting to work; (2) children riding to school; and (3) persons shopping or running other errands. The millions of dollars that have been spent nationwide to increase the number of people bicycling to make these trips has been met with some success. The needs of utilitarian bicyclists are summarized below.

- Utilitarian bicyclists typically seek most the direct and fastest route available; regular adult commuters often preferring to ride on arterials rather than side streets.
- Destinations for utilitarian trips are generally located on arterial streets. Consequently, most utilitarian cyclists would prefer to be given bike lanes or wider curb lanes on these arterial streets rather than be directed to lower volume side streets.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles.
- Places to safely store bicycles are of paramount importance to all utilitarian cyclists. Bicycle commuters will prefer long-term secure parking while shoppers and those running errands will happily utilize bicycle racks for short-term parking.
- Major concerns include changes in weather (rain), riding in darkness, personal safety, and security.
- Utilitarian bicyclists generally prefer routes where they are required to stop as few times as possible, thereby, minimizing delays.

- Many younger students (ages 7-11) use sidewalks for riding to schools or parks, which is acceptable in areas where pedestrian volumes are low and driveway visibility is high. Older students (ages 12-14) who consistently ride at speeds over 10 mph should be directed to riding on streets whenever possible.
- Signal controls that function for bicyclists are a significant concern for bicyclists.
- Facilities maintenance has also been identified numerous times as a significant concern, for bicyclists.

Recreational Bicyclists

The needs of recreational bicyclists in the Unincorporated Areas must be considered in planning the bicycle network as their needs often differ from utilitarian cyclists. Currently, Alameda County is attractive for recreational cycling in the East County area, but strong potential exists for increasing this activity in the Western County area as well. A large number of children, adults, and retired people enjoy cycling for its own sake. Additionally, during tourist season, many tourists enjoy bicycling to enjoy the pleasant weather and beautiful scenery that the area has to offer. Recreational bicycling typically falls into one of four categories: (1) bicycling for exercise; (2) bicycling to non-utilitarian destinations such as parks, entertainment centers, or to meet with friends; (3) touring on long distance treks or to events; or (4) general sightseeing.

Specific needs and patterns for recreational bicyclists are:

- Directness of the route is typically less important than routes with fewer traffic conflicts.
- Many recreational riders are less experienced at riding in traffic and generally prefer lower volume roadways. Consequently, adjacent vehicle speeds and traffic volumes are important factors to be considered, especially along Class III bike routes.
- Visual interest, shade, protection from weather, benches, restrooms, drinking fountains, moderate gradients or other “comfort” features can elevate the experience for recreational cyclists.
- Recreational bicyclists may not be local to the area and can benefit from wayfinding to nearby attractions and to follow the more circuitous routes.
- People exercising or touring often prefer a circular routes rather than having to retrace their steps.

Chapter 3: Bicycle Network**Recommended Bicycle Network**

This section describes the recommended bikeway network for the Unincorporated Areas of Alameda County. At full build-out, this network would provide a total of 250 miles of bikeway. This includes a total of almost 213 miles of new bikeway facilities in addition to the 42 miles currently in place. **Table 3- 4** shows the number of existing and proposed miles for each bikeway classification. The network is shown in **Figures 3-3a to 3-3f**.

The bikeway network for the Unincorporated Areas is designed to connect the neighborhoods where people live to the places they work, shop, recreate, or go to school. An emphasis is placed on regional bikeway and transit connections centered around the major activity centers found in or adjacent to the Unincorporated Areas including:

- Major employment centers
- Schools
- Major retail center
- District centers
- Civic buildings such as libraries, community centers
- Neighborhood parks and regional recreational areas
- BART, ACE, and Amtrak stations
- Major bus routes and stops

Bikeway Classification	Existing	Proposed	Total
Class I Bike Path	3.3	5.3	8.6
Class II Bike Lane	34.2	35.1	69.8
Class IIIA Rideway	0	37.4	36.9
Class IIIB Wide Curb Lane/Shoulder	4.3	5.0	5.0
Class IIIC Rural Route	0.0	129.8	129.8
Total	41.8	212.6	250.1

Note: The discrepancy in total mileage for Class IIIB is due to recommendation to convert existing Class IIIB to Class 2.

The recommended bikeway projects are listed below by improvement type. These projects are further described in **Appendix C** by roadway segment including facility length, specific recommended improvements needed for implementation, attractors served, implementation priority, and estimated conceptual cost.

Spot Improvements

The spot improvements listed below in **Table 3-5** identify the existing bike lanes that need low cost, minor improvements such as additional signing or striping. The majority of these spot improvements entail exchanging the existing D11-1 Bike Route signs for the appropriate R81 (CA) Bike Lane signs.

Roadway	From	To	Community	Spot Improvement
164th Ave	East 14th St	Foothill Blvd	Ashland	Add bike lanes from Liberty St to Foothill Blvd
167th Ave	East 14th St	Foothill Blvd	Ashland	Add bike lanes from Liberty St to Foothill Blvd; replace D11-1 with R81 (CA) signs
Castro Valley Blvd (E)	Crow Canyon Rd	Five Canyons Pkwy	Castro Valley	Replace D11-1 with R81 (CA) signs
Crow Canyon Rd	Cull Canyon Rd	Castro Valley Blvd	Castro Valley	Replace D11-1 with R81 (CA) signs
Cull Canyon Road	Briar Ridge Rd	Crow Canyon Road	Castro Valley	Replace D11-1 with R81 (CA) signs
Foothill Blvd	164th Ave/Miramar Ave	John Dr	Castro Valley	Replace D11-1 with R81 (CA) signs
Grant Ave	500 ft east of road end	Washington Ave/Via Alamos	San Lorenzo	Replace D11-1 with R81 (CA) signs
Greenville Rd	Altamont Pass Rd	National Dr	East County-E of Livermore	Add signs and pavement markings-shoulder lane
Grove Way	Redwood Road	Castro Valley Blvd	Castro Valley	Replace D11-1 with R81 (CA) signs
John Dr	Foothill Blvd	Castro Valley Blvd	Castro Valley	Replace D11-1 with R81 (CA) signs
Mattox Rd	Mission Blvd	Foothill Blvd (SR 238)	Cherryland	Add sharrows or other treatment on approach to Mission Blvd
Mines Rd	0.3 miles south of Tesla Rd	Del Valle Rd	East County-S of Livermore	Add R81 (CA) signs and maintenance
Redwood Rd	Castro Valley Blvd	Knox St	Castro Valley	Replace D11-1 with R81 (CA) signs
Redwood Rd	Camino Alta Mira	Seven Hills Rd	Castro Valley	Replace D11-1 with R81 (CA) signs

Chapter 3: Bicycle Network**New Class 1 Bike Paths**

The new Class 1 Bike Paths listed below in **Table 3-6** are recommended to provide bicycle access to otherwise underserved areas.

Roadway	From	To	Length	Community
North Canyons Pkwy	Livermore C.L.	Livermore C.L. (Lorraine St)	2.2	East County-N of Livermore
John Kennedy Park Trail	Via Arriba	Golf Course Dr	0.1	San Lorenzo
Union Pacific Railroad Oakland Subdivision Pathway	Bay Fair BART Station	A Street	3.0	Ashland/Cherryland

New Class 2 Bike Lanes

At minimum, the Class II Bike Lane projects listed below in **Table 3-7** will require the addition of signage, striping, and pavement markings. More significant improvements may include roadway restriping and/or narrowing of travel lanes or shoulder widening.

Roadway	From	To	Length	Community
150 th Ave	Foothill Blvd	Freedom Ave	0.1	Castro Valley
Ashland Ave	East 14th St	Lewelling Blvd	1.2	Ashland
Castro Valley Blvd	Eastbound-Foothill Blvd	John Dr/Strobridge Ave		Castro Valley
Castro Valley Blvd	John Dr/Strobridge Ave	Redwood Rd	1.0	Castro Valley
Castro Valley Blvd	Five Canyons Pkwy	Villareal Dr	0.7	Castro Valley
Center St	Castro Valley Blvd	Grove St	0.2	Castro Valley
Center St	Creek	Kelly St (Hayward C.L.)	0.2	Castro Valley
Crow Canyon Rd	Contra Costa county line	Cull Canyon Rd	7.0	Castro Valley
Dublin Blvd	Dublin C.L.	Livermore C.L.	0.8	East County-W of Livermore
East 14 th St/Mission Blvd	Lewelling Blvd	Rose St (Hayward C.L.)	0.9	Cherryland
Fairmont Dr	East 14th St	Lake Chabot Rd	2.2	Castro Valley
Foothill Blvd	150th Ave	164th Ave/Miramar Ave	1.1	Castro Valley
Foothill Rd	Pleasanton C.L. (north of Castlewood Dr)	Castlewood Dr	0.4	East County-Sunol
Greenville Rd	National Dr	Patterson Pass Rd	0.7	East County-E of Livermore
Grove Way	Meekland Ave	Western Blvd	0.5	Cherryland
Hacienda Ave	Ricardo Ave	Hathaway Ave	0.2	San Lorenzo
Hesperian Blvd	Lewelling Blvd	A Street	1.6	San Lorenzo

Roadway	From	To	Length	Community
Highland Rd	Contra Costa county line	Manning Rd	0.1	East County-N of Livermore
I-238 frontage (new road)	Castro Valley Blvd	Norbridge Ave	0.3	Castro Valley
Lake Chabot Rd	Fairmont Dr	Castro Valley Blvd	1.9	Castro Valley
Lewelling Blvd	Meekland Ave	Mission Blvd	0.7	Ashland
Manning Rd	Highland Rd	N Livermore Ave	1.4	East County-N of Livermore
Meekland Ave	Lewelling Blvd	Paseo Grande	0.2	San Lorenzo
Mines Rd	Tesla Rd	0.3 miles south	0.3	East County-S of Livermore
Norbridge Ave	Stanton Ave/Castro Valley Blvd	Tyee Ct	0.3	Castro Valley
N Livermore Ave	Manning Rd	I-580 (Livermore C.L.)	3.6	East County-N of Livermore
Northfront Rd	Laughlin Rd	Greenville Rd	0.6	East County-N of Livermore
Redwood Rd/A St	Knox St	4th St (Hayward C.L.)	0.3	Castro Valley
Tesla Rd	Greenville Rd	Cross Rd	0.8	East County-S of Livermore
Vasco Rd	Contra Costa county line	Dalton Rd-(Livermore C.L.)	4.3	East County-N of Livermore
Villareal Dr	E Castro Valley Blvd	Greenville Pl	1.5	Castro Valley

New Class IIIA Bike Routes with Low Traffic Volumes and Slow Traffic (Rideway)

The Class IIIA Bike Route projects presented below in **Table 3-8** can be implemented with the addition of bike route signage. In some locations, the addition of sharrows is also recommended.

Roadway	From	To	Length	Community
159th Ave	East 14th St	Coelho Dr	0.7	Castro Valley
Arcadian Dr	Lake Chabot Rd	Lake Chabot Regional Park	0.4	Castro Valley
Arcadian Dr	Ewing Rd	west terminus	0.3	Castro Valley
Bandoni Ave	Via Catherine	Bockman Rd	1.0	San Lorenzo
Bartlett Ave	Hesperian Blvd	Royal Ave	0.3	San Lorenzo
Blossom Way	Hathaway Ave	Mission Blvd	1.0	Cherryland
Bockman Rd	Grant Ave	Hesperian Blvd	1.7	San Lorenzo
Center St	Ray Ave	Castro Valley Blvd	1.2	Castro Valley
Channel St	Bockman Rd	Grant Ave	0.6	San Lorenzo
Christensen Lane	Lake Chabot Rd	Parsons Ave	0.5	Castro Valley
Coehlo Dr	159th Ave	Bay Fair BART	0.2	Castro Valley
Crest Ave	Stanton Ave	Miramar Ave	0.7	Castro Valley

Chapter 3: Bicycle Network

Roadway	From	To	Length	Community
D Street	Hayward C.L.	Fairview Ave/Maud Ave	0.8	Fairview
East Ave	Hayward C.L.	Hackamore Dr	1.7	Fairview
Elgin St	Bay Fair BART	East 14th St	1.0	Castro Valley
Ewing Dr	Proctor Rd	Arcadian Dr	0.5	Castro Valley
Fairview Ave	D St	Hayward C.L. (Woodstock Rd)	2.3	Fairview
Forest Ave	Heyer Ave	Castro Valley Blvd	0.7	Castro Valley
Grant Ave	Washington Ave/Via Alamitos	Hesperian Blvd	0.5	San Lorenzo
Grove Way	Western Blvd	Redwood Rd	1.6	Castro Valley
Hacienda Ave	Via Alamitos	Ricardo Ave	0.8	San Lorenzo
Hampton Rd	Meekland Ave	Mission Blvd	0.8	Cherryland
Hansen Rd	Fairview Ave	East Ave	0.7	Fairview
Kelly St	Hayward C.L.	Henry Lane	0.7	Fairview
Madison Ave	Seven Hills Rd	Heyer Ave	0.3	Castro Valley
Maud Ave	Kelly St	D St	0.5	Fairview
Miramar Ave	Foothill Blvd	Stanton Ave	0.6	Castro Valley
Parsons Ave	Seven Hills Rd	Somerset Ave	0.6	Castro Valley
Paseo Grande	Via Alamitos	Meekland Ave	1.2	San Lorenzo
Paseo Larga Vista	Grant Ave	Paseo Grande	0.3	San Lorenzo
Proctor Rd	Ewing Rd	Redwood Rd	0.6	Castro Valley
Royal Ave	Bartlett Ave	A Street	0.3	San Lorenzo
Santa Maria Ave	Seven Hills Rd	Castro Valley Blvd	1.0	Castro Valley
Seven Hills Rd	Lake Chabot Rd	Madison Ave	1.7	Castro Valley
Somerset Ave	Stanton Ave	Redwood Rd	1.0	Castro Valley
Stanton Ave	Crest Ave	Castro Valley Blvd	1.1	Castro Valley
Sydney Way	Stanton Ave	Lake Chabot Rd	0.6	Castro Valley
Via Alamitos	Grant Ave	Via Nube	1.1	San Lorenzo
Via Arriba	Paseo Grande	John Kennedy Park	0.7	San Lorenzo
Via Catherine	Bockman Rd	San Lorenzo Park	0.8	San Lorenzo
Via Granada	Lewelling Blvd	Via Toledo	0.2	San Lorenzo
Via Toledo	Via Granada	Hacienda Ave	0.7	San Lorenzo
Walnut Rd	Proctor Rd	Seven Hills Rd	0.7	Castro Valley
Western Blvd	Hampton Rd	Sunset Blvd	1.0	Cherryland
Wilson Ave	Parsons Ave	Redwood Rd	0.5	Castro Valley
Woodroe Ave	North terminus	Kelly St	0.3	Castro Valley

New Class IIIB Bike Routes with Wide Curb Lanes/Shoulders

To provide the wide curb lanes or wide shoulders for the Class IIIB Bike Route projects, shown below in **Table 3-9**, would generally require either widening or restriping of the roadway or shoulder to gain the width needed for implementation of a wide curb lane or shoulder. In all cases, the projects would require signage.

Roadway	From	To	Length	Community
Castro Valley Blvd	Redwood Rd	Crow Canyon Rd	1.1	Castro Valley
East 14th St/Mission Blvd	150th Ave (San Leandro C.L.)	Lewelling Blvd	1.8	Ashland
Heyer Ave	Redwood Rd	Cull Canyon Rd	1.1	Castro Valley
Redwood Rd	Seven Hills Rd	Castro Valley Blvd	1.0	Castro Valley

New Class IIIC Rural Bike Routes

The improvements needed to implement the Class IIIC Bike Routes included in **Table 3-10** range from signage only for the lower volume roadways to widening for 4-foot minimum shoulders on the roads with higher traffic volumes.

Roadway	From	To	Length	Community
Altamont Pass Rd	Greenville Rd	County line	8.0	East County-E of Livermore
Arroyo Rd	Wetmore Rd	Lake Del Valle	2.9	East County-S of Livermore
Calaveras Rd	Paloma Rd	Santa Clara county line	9.3	East County-Sunol
Castlewood Dr	Foothill Rd	Pleasanton-Sunol Rd	0.3	East County-Sunol
Collier Canyon Rd	Contra Costa county line	Livermore C.L.	3.7	East County-N of Livermore
Cross Rd	Patterson Pass Rd	Tesla Rd	2.2	East County-E of Livermore
Cull Canyon Rd	Contra Costa county line	Briar Ridge Dr	4.2	Castro Valley
Dagnino Rd/ Raymond Rd	May School Rd	Ames St	1.3	East County-N of Livermore
Del Valle Rd	Mines Rd	Lake Del Valle	2.9	East County-S of Livermore
Foothill Rd	Castlewood Dr	Kilkare Rd	3.5	East County-Sunol
Grant Line Rd	Altamont Pass Rd	San Joaquin county line	2.1	East County-E of Livermore
Hartford Ave	N Livermore Ave	Lorraine St	1.0	East County-N of Livermore
Kilkare Rd/Main St	Foothill Rd	Niles Canyon Rd	0.2	East County-Sunol
Lake Chabot Rd	San Leandro C.L.	Fairmont Dr	1.8	Castro Valley
Laughlin Rd	Brushy Peak Regional Park	Northfront Rd	2.4	East County-N of Livermore

Chapter 3: Bicycle Network

Roadway	From	To	Length	Community
Marina Ave	Arroyo Rd	Wente St	1.0	East County-S of Livermore
May School Rd	N Livermore Ave	Dagagnino Rd	1.3	East County-N of Livermore
Mines Rd	Del Valle Rd	Santa Clara county line	16.3	East County-S of Livermore
Mountain House Rd	Contra Costa county line	Grant Line Rd	4.3	East County-E of Livermore
Niles Canyon Rd	Pleasanton-Sunol Rd	Fremont C.L.	6.7	East County-Sunol
Norris Canyon Rd	Contra Costa county line	Crow Canyon Rd	2.1	East County-Sunol
North Flynn Rd	I-580	South Flynn Rd	1.3	East County-E of Livermore
Palo Verde Rd	Castro Valley Blvd	Dublin Canyon Rd	0.7	Castro Valley
Paloma Rd	Pleasanton-Sunol Rd	Calaveras Rd	0.8	East County-Sunol
Palomares Rd	Palo Verde Rd	Niles Canyon Road	9.5	East County-Sunol
Patterson Pass Rd	Greenville Rd	San Joaquin county line	5.0	East County-E of Livermore
Pinehurst Rd	Contra Costa county line	Redwood Rd	1.7	Castro Valley
Pleasanton-Sunol Rd	Castlewood Dr	Paloma Rd	3.6	East County-Sunol
Redwood Rd	Skyline Rd	Camino Alta Mira	10.5	Castro Valley
South Flynn Rd	North Flynn Rd	Patterson Pass Rd	2.5	East County-E of Livermore
Tesla Rd	Cross Rd	San Joaquin county line	8.9	East County-S of Livermore
Vallecitos Rd	Wetmore Rd	Paloma Rd	6.7	East County-Sunol
Vineyard Ave	Isabel Ave	Vallecitos Rd	1.1	East County-SE Livermore

Major Bike Paths and Trail Connections

These proposed projects are being developed by the Alameda County Public Works Agency in conjunction with other agencies to enhance bicycling and walking in the Unincorporated Areas.

- Coliseum BART to Bay Trail Connector:** The Bay Trail is a planned 550+ mile continuous biking and hiking path encircling San Francisco Bay. This project would fill a gap in the City of Oakland between the Coliseum/Oakland Airport BART Station and the Martin Luther King, Jr. Regional Shoreline connecting bicyclists and pedestrians with BART, Amtrak, AC Transit, and the Oakland Coliseum complex, as well as increase public access to the Bay Trail.

The Public Works Agency will continue to work with the Alameda County Transportation Commission (Alameda CTC), ABAG, the City of Oakland, UPRR, and the Alameda County Flood Control and Water Conservation District on the advancement of this project.

- Union Pacific Railroad Corridor:** A Union Pacific (Oakland Subdivision) Railroad Corridor Improvement Study was recently completed to develop and examine future transportation alternatives (pedestrian, bicycle, transit, and rail) along the Union Pacific Railroad Corridor between the Fruitvale BART Station in the City of Oakland and the Union City BART Station in the City of Union City. The corridor is approximately 18 miles long.

This Project provides an opportunity to convert the railway corridor into a multi-use pathway that would link these communities. The pathway would greatly benefit area residents enhancing transportation options for the local communities. It would also provide specific connections to Cherryland and Hesperian Elementary schools in the Unincorporated Area; Brenkwitz High School, Hayward Adult School, and Hayward BART Station in Hayward; and the Bay Fair Mall and Bay Fair BART Station in San Leandro. The estimated project cost is \$102.5 million including land acquisition. By maximizing existing funding opportunities, a shortfall of \$36.5 million remains to complete the funding plan and leverage other available funding sources.

The Alameda County Public Works Agency, Alameda County Transportation Commission (Alameda CTC), San Francisco Bay Area Rapid Transit District (BART) and the Cities of Oakland, San Leandro, Hayward, and Union City are closely working in consortium to improve transportation access along this Corridor (long-term project).

- **East Bay Greenway:** The East Bay Greenway is a proposed multi-use trail that would run along the BART corridor from East Oakland to the Hayward BART Station. It will include safe paths for pedestrians and bicyclists in addition to well-designed recreational facilities such as parks, exercise equipment, and picnic areas. This twelve mile long greenway will connect many neighborhoods in the East Bay. By linking together the many smaller parks, schoolyards, bike trails, and community destinations, the East Bay Greenway will create new opportunities for recreation, public health, sustainability, and community pride.

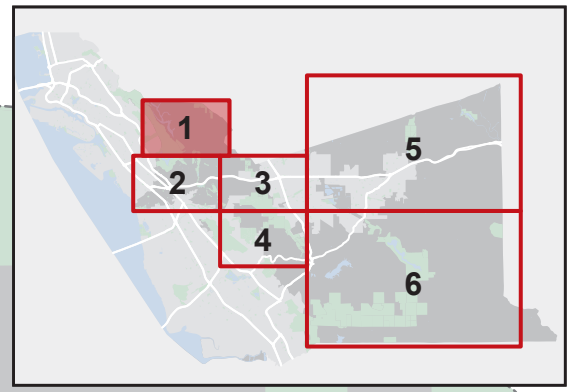
The East Bay Greenway will transform this section of the BART corridor into an attractive bike and pedestrian corridor with landscaping, benches, play areas, lighting, landscaping, art work, and other services and amenities. The plan will convert the BART right-of-way underneath the elevated tracks into a public amenity that positively influences the neighborhoods it now cuts through and divides. The centerpiece of the Greenway will be a bike and pedestrian path running the length of the elevated BART tracks. The corridor will be transformed into a space that connects East Bay area residents in healthier, safer, more accessible, more vibrant, and stronger communities.

- **San Lorenzo Creek Greenway:** The San Lorenzo Creek Greenway will provide parks, open space, and recreational opportunities connecting the San Francisco Bay Trail, the Bay Area Ridge Trail, and the Iron Horse Trail via a 17-mile connector trail and parkway along natural and engineered portions of San Lorenzo Creek. The Greenway would provide a pedestrian and bicycle route, link regional resources, restore natural elements of the riparian corridor, create parks and rest areas, reestablish viable anadromous fisheries, provide opportunities for education, and improve water quality by inspiring community stewardship of the creek and watershed.

A bike path along San Lorenzo Creek would provide a good recreation facility as well as provide transportation potential to those bicyclists more comfortable on off-street facilities. The San Lorenzo Creek corridor was considered as a pedestrian trail; however, due to community opposition, the project is on hold and may be revisited at a later date. While there is a service road parallel to the creek on some sections, there are severe right-of-way constraints on other sections.

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FIGURE 3-3a: MAP 1
Alameda County
Public Works Agency
Unincorporated Areas
Bicycle Plan
2012



Attractors & Generators

Amtrak Station	Hospital/Medical Center
BART Station	Senior/Community Center
ACE Station	Library
School/University	Other Major Employer (with 300+ employees)

Unincorporated Areas Bicycle Network

Existing	Proposed	Class I
Existing	Proposed	Class II
Existing	Proposed	Class IIIA - Rideway
Existing	Proposed	Class IIIB - Wide Curb Lane
Existing	Proposed	Class IIIC - Rural Route
Existing	Proposed	Bikeways & Trails By Others
Existing	Proposed	ACTC 2006 Countywide Bicycle Network

Major Retail/Commercial Area

Unincorporated Areas

Incorporated Areas

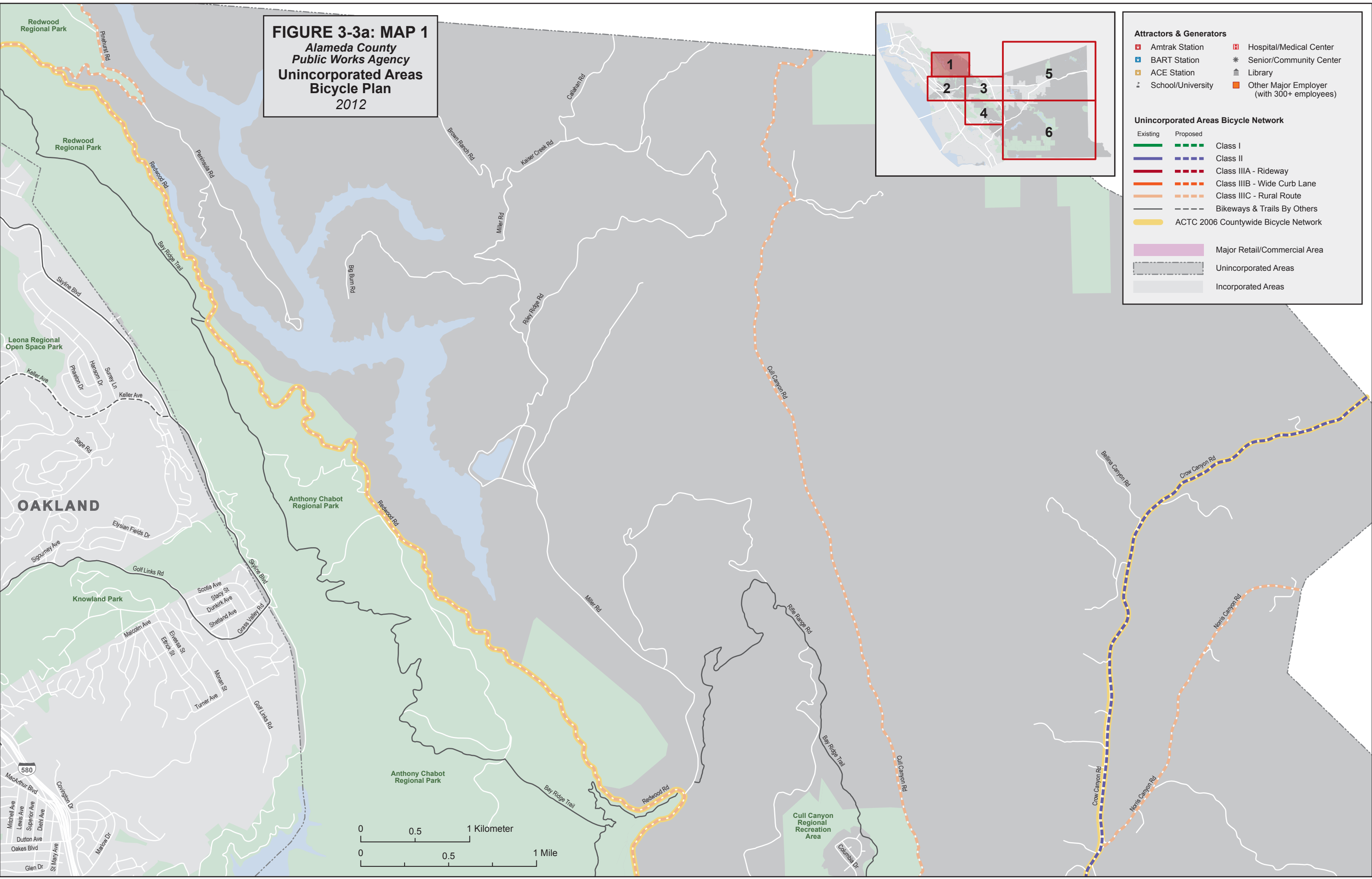


FIGURE 3-3b: MAP 2
Alameda County
Public Works Agency
Unincorporated Areas
Bicycle Plan
2012

- Attractors & Generators**
- Amtrak Station
 - BART Station
 - ACE Station
 - School/University
 - Hospital/Medical Center
 - * Senior/Community Center
 - Library
 - Other Major Employer (with 300+ employees)

- Unincorporated Areas Bicycle Network**
- | | | |
|--|--|--------------------------------------|
| Existing | Proposed | |
| — | - - - | Class I |
| — | - - - | Class II |
| — | - - - | Class IIIA - Rideway |
| — | - - - | Class IIIB - Wide Curb Lane |
| — | - - - | Class IIIC - Rural Route |
| - - - | | Bikeways & Trails By Others |
| — | | ACTC 2006 Countywide Bicycle Network |
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- | | |
|---|------------------------------|
| | Major Retail/Commercial Area |
| | Unincorporated Areas |
| | Incorporated Areas |

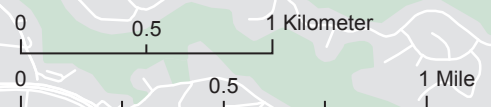
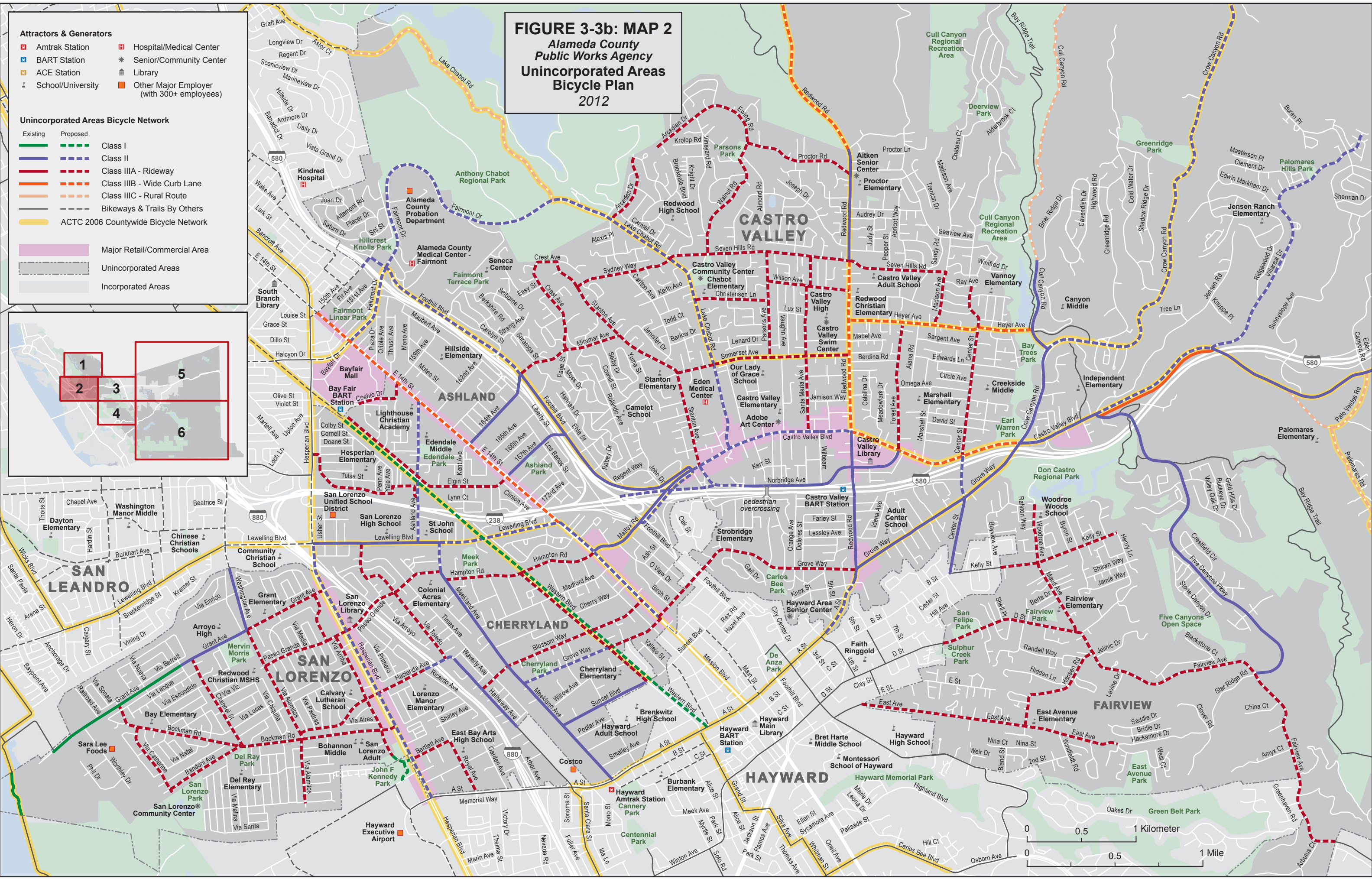
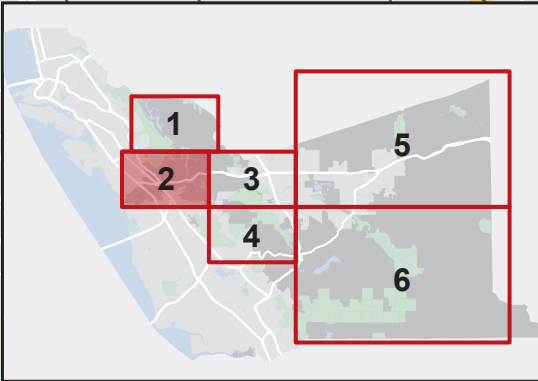
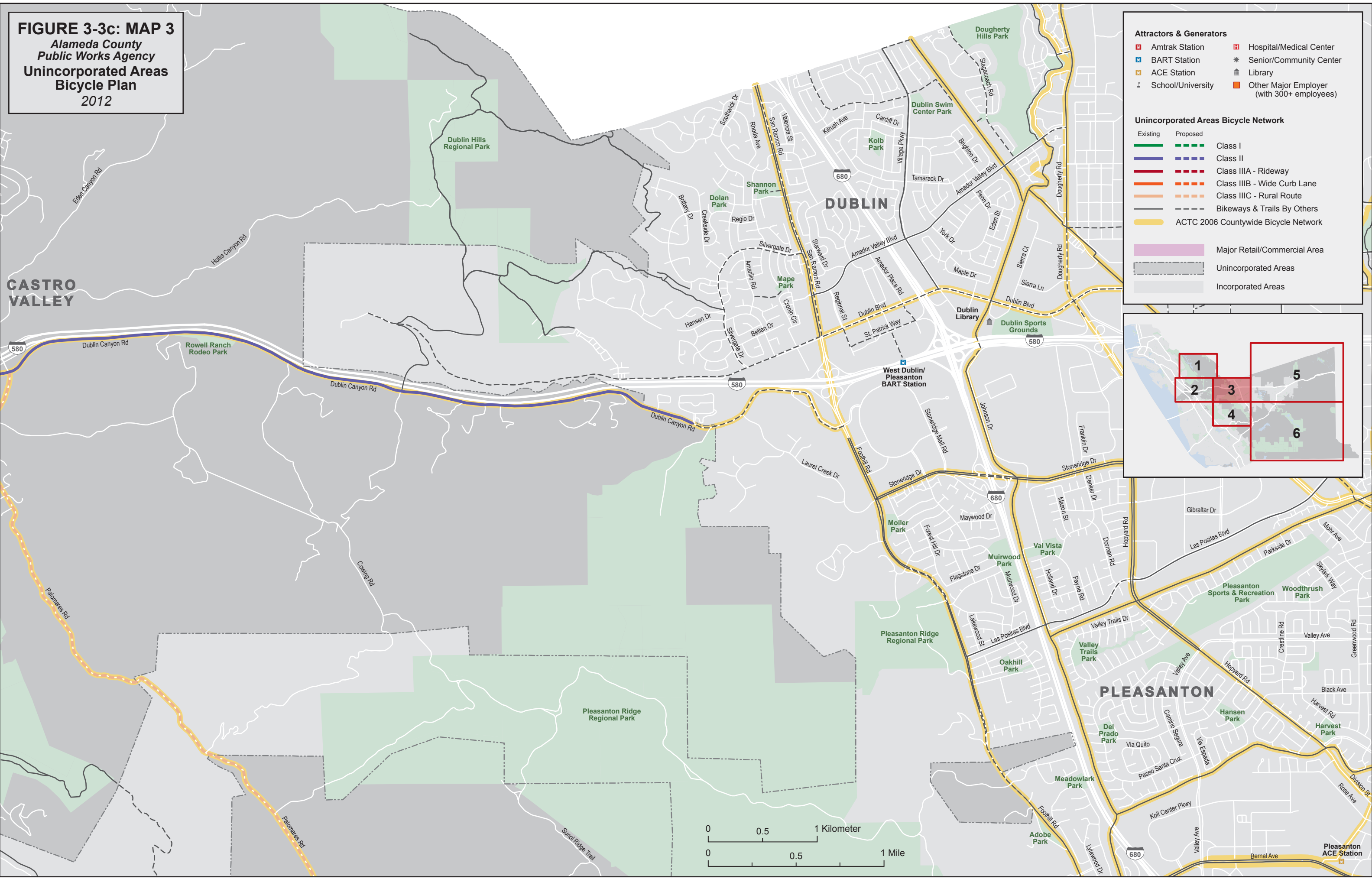


FIGURE 3-3c: MAP 3
Alameda County
Public Works Agency
Unincorporated Areas
Bicycle Plan
2012



Attractors & Generators

Amtrak Station	Hospital/Medical Center
BART Station	Senior/Community Center
ACE Station	Library
School/University	Other Major Employer (with 300+ employees)

Unincorporated Areas Bicycle Network

		Class I
		Class II
		Class IIIA - Rideway
		Class IIIB - Wide Curb Lane
		Class IIIC - Rural Route
		Bikeways & Trails By Others
		ACTC 2006 Countywide Bicycle Network
		Major Retail/Commercial Area
		Unincorporated Areas
		Incorporated Areas

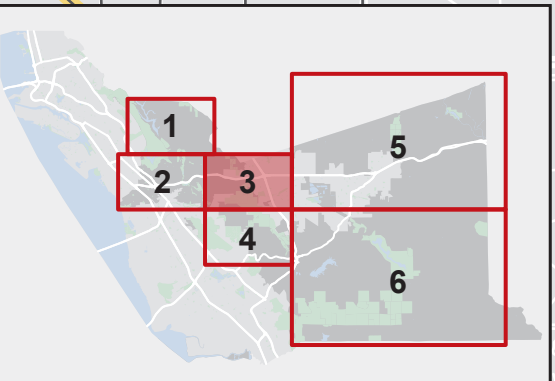
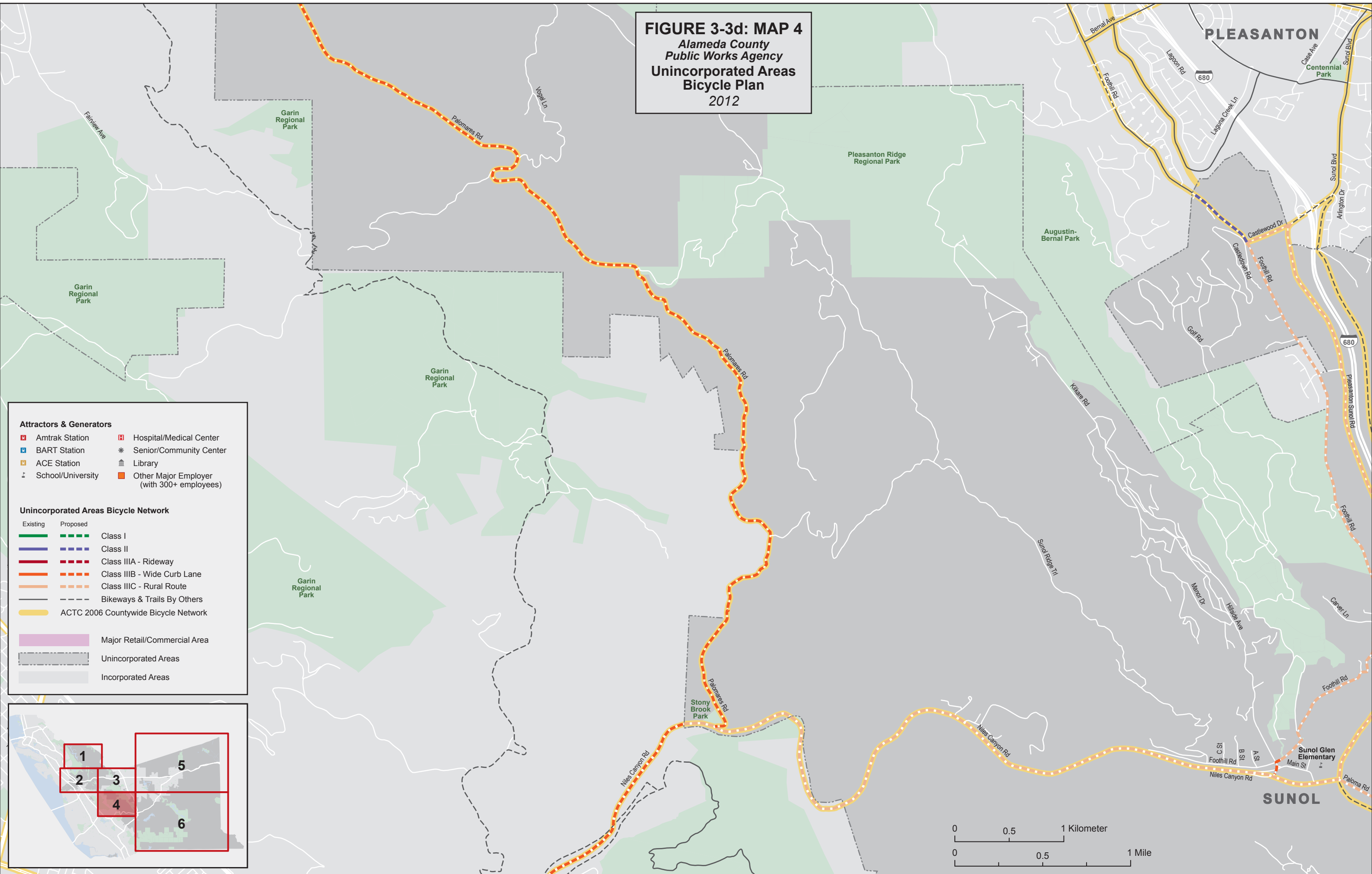


FIGURE 3-3d: MAP 4
Alameda County
Public Works Agency
Unincorporated Areas
Bicycle Plan
2012



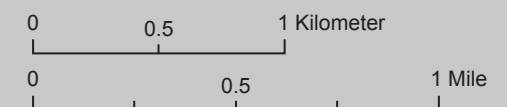
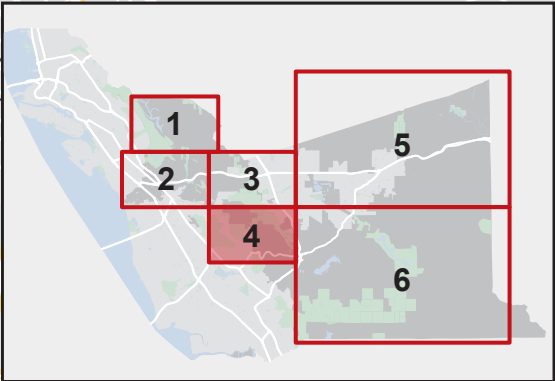
Attractors & Generators

Amtrak Station	Hospital/Medical Center
BART Station	Senior/Community Center
ACE Station	Library
School/University	Other Major Employer (with 300+ employees)

Unincorporated Areas Bicycle Network

Existing	Proposed	
		Class I
		Class II
		Class IIIA - Rideway
		Class IIIB - Wide Curb Lane
		Class IIIC - Rural Route
		Bikeways & Trails By Others
		ACTC 2006 Countywide Bicycle Network

	Major Retail/Commercial Area
	Unincorporated Areas
	Incorporated Areas



- Attractors & Generators**
- Amtrak Station
 - BART Station
 - ACE Station
 - School/University
 - Hospital/Medical Center
 - Senior/Community Center
 - Library
 - Other Major Employer (with 300+ employees)

- Unincorporated Areas Bicycle Network**
- | | | |
|----------|----------|--------------------------------------|
| Existing | Proposed | |
| | | Class I |
| | | Class II |
| | | Class IIIA - Rideway |
| | | Class IIIB - Wide Curb Lane |
| | | Class IIIC - Rural Route |
| | | Bikeways & Trails By Others |
| | | ACTC 2006 Countywide Bicycle Network |

- -
 -
- Major Retail/Commercial Area
Unincorporated Areas
Incorporated Areas

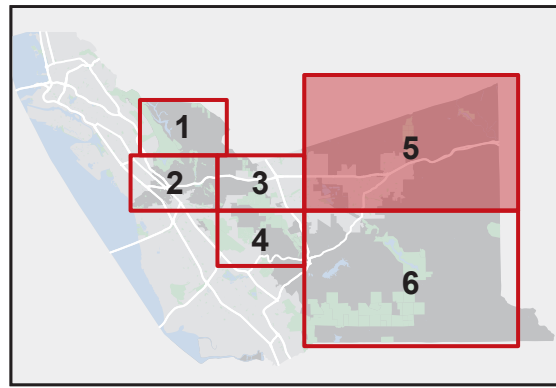
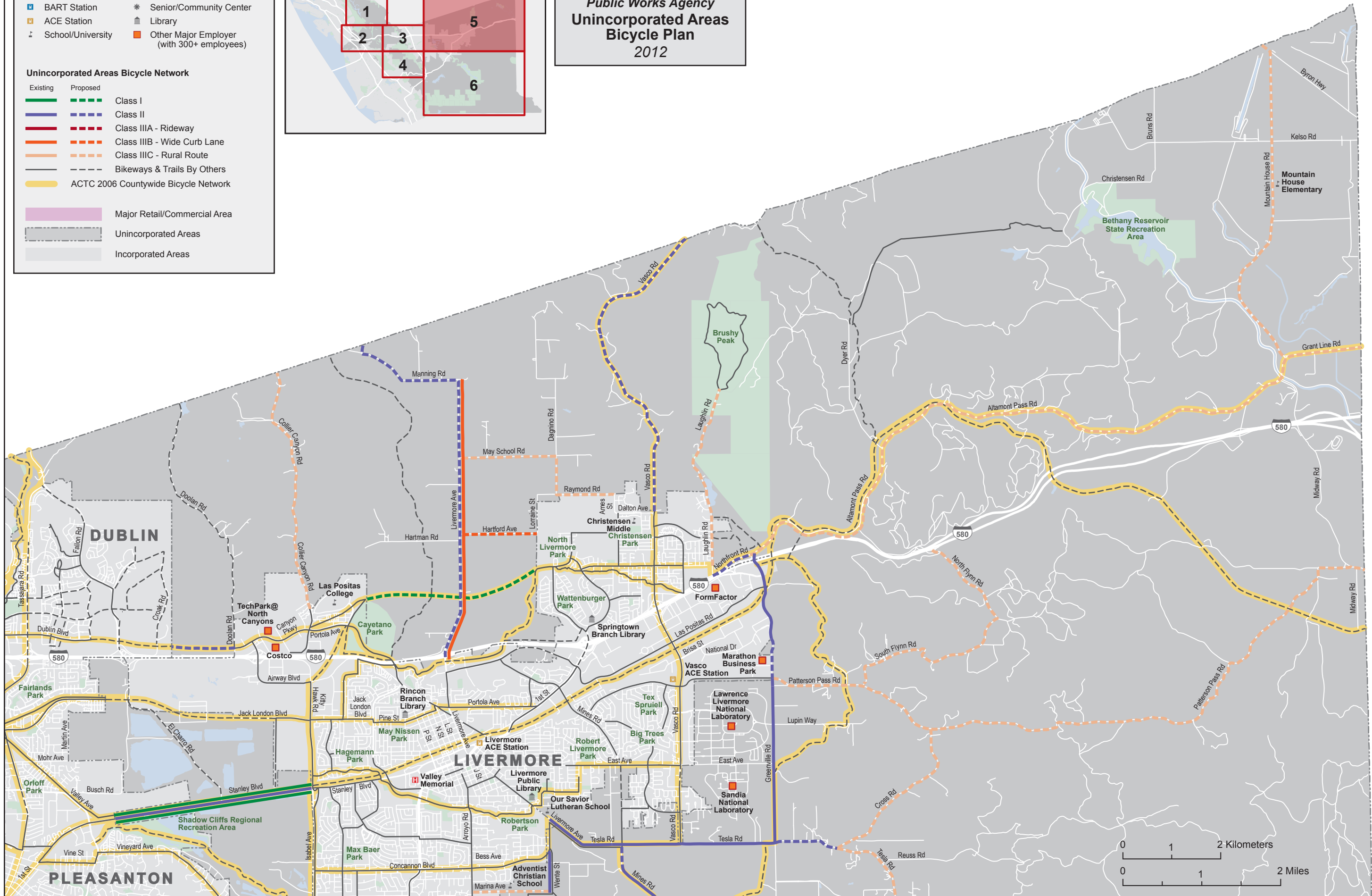


FIGURE 3-3e: MAP 5
Alameda County
Public Works Agency
Unincorporated Areas
Bicycle Plan
2012



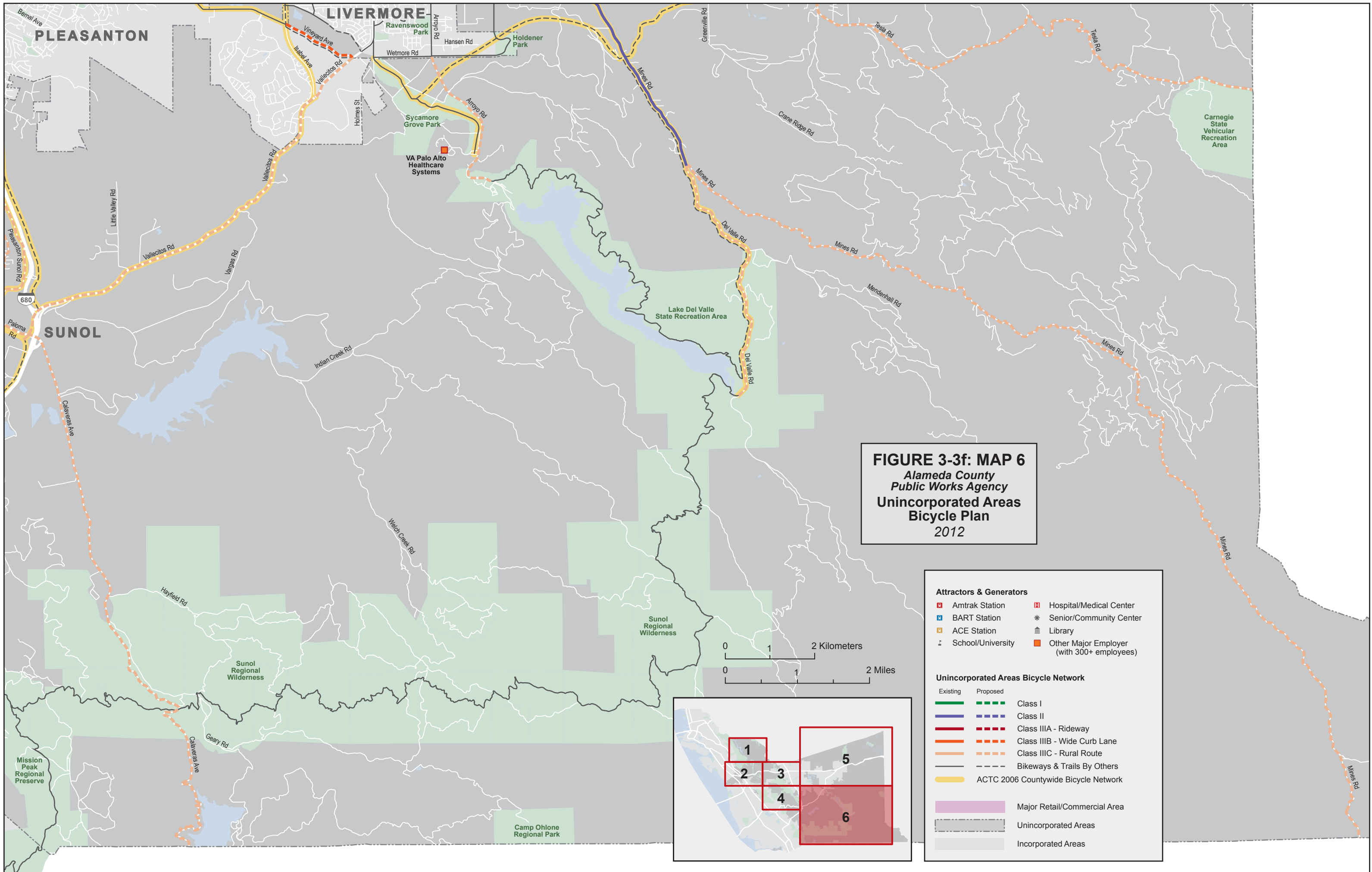
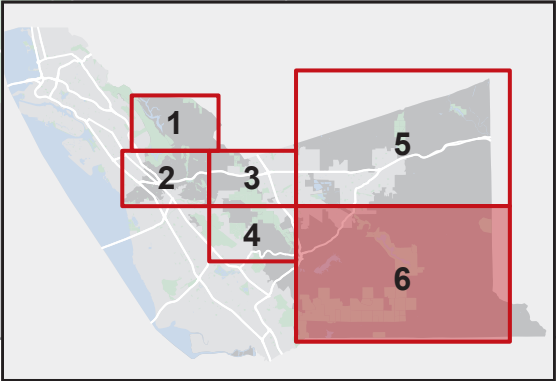


FIGURE 3-3f: MAP 6
Alameda County
Public Works Agency
Unincorporated Areas
Bicycle Plan
 2012

Attractors & Generators	
	Amtrak Station
	BART Station
	ACE Station
	School/University
	Hospital/Medical Center
	Senior/Community Center
	Library
	Other Major Employer (with 300+ employees)

Unincorporated Areas Bicycle Network	
	Existing Class I
	Proposed Class I
	Existing Class II
	Proposed Class II
	Existing Class IIIA - Rideway
	Proposed Class IIIA - Rideway
	Existing Class IIIB - Wide Curb Lane
	Proposed Class IIIB - Wide Curb Lane
	Existing Class IIIC - Rural Route
	Proposed Class IIIC - Rural Route
	Bikeways & Trails By Others
	ACTC 2006 Countywide Bicycle Network

	Major Retail/Commercial Area
	Unincorporated Areas
	Incorporated Areas



Future Development-Induced Bicycle Network Revisions

The bicycle network described above was developed assuming today's traffic volumes, speeds, and development patterns. However, it is possible that over the next 10 to 50 years, major changes could take place that would affect the roadways and bicycling conditions. The frontage along a major arterial may be redeveloped resulting in an opportunity to acquire more right-of-way with which to provide bike lanes or at least wider curb lanes. Development projects may be approved within or adjacent to unincorporated roadways that would dramatically increase traffic volumes on roads such as Palomares Road. In this case, the existing shoulder widths would not be adequate and the development would need to provide wider shoulders to better accommodate bicyclists on the roadway. The following list identifies those routes that, at this point in time, seem the most likely to have long-term recommendations that are different from the recommendations described above:

- Center Street
- Crow Canyon Road
- Dublin Canyon Road/East Castro Valley Boulevard
- Fairview Avenue
- Hathaway Avenue
- Hesperian Boulevard
- Lake Chabot Road
- Mission Boulevard
- Meekland Avenue
- Palomares Road
- Redwood Road
- At-grade crossings of UPRR tracks
- New I-880 overpass for bicycles between Hacienda and A Street

Bicycle Support Facilities

This section describes the elements beyond the bikeway network that are essential for bicycling to be a successful and practical mode of transportation in the Unincorporated Areas: bicycle parking, showers, signage, mapping, and inter-modal connections. While often referred to as "support facilities," without them, bike usage is hampered. With these support facilities, bicycling is encouraged and the public's awareness of bicycling for transportation is increased. In some cases, such as lack of safe parking, may make the difference between making the trip by bicycle or not.

Bicycle Parking

Secure bicycle parking is a necessity for promoting bicycle use especially for utilitarian trips. People are less likely to cycle to work, school or shop without a safe place to store their bicycle. Currently, bicycle parking in the Unincorporated Areas is located at schools, libraries, BART stations, and recreational facilities. All of the schools in the San Lorenzo and Castro Valley Unified School Districts have bicycle racks for use by students and staff. Upgrades to the East Avenue Elementary School, part of the Hayward Unified School District, will include a bike cage with bicycle racks. Bicycle racks are also found at the Castro Valley library. Both the Castro Valley and Bay Fair BART stations have bicycle racks and lockers. The lockers are currently rented for individual use but expect to be upgraded to electronic lockers in the near future. Many recreational facilities also provide bicycle racks including:

- Adobe Art Center, Castro Valley
- Jack Holland Sr. Park, Ashland

Chapter 3: Bicycle Network

- Castro Valley Swim Center, Castro Valley
- Bay Trees Park, Castro Valley
- Kenneth C. Aitken Community Center, Castro Valley
- San Felipe Park, Fairview
- Ashland Community Center, Ashland
- Sulphur Creek Nature Center, Fairview

The type of bicycle parking provided at a destination should reflect the type of parking demand expected at the location, i.e. whether facilities are needed for short-term or long-term storage. For example, a shopping mall will need short-term parking for shoppers as well as long-term parking for employees. Bicycle parking facilities are described below and shown in **Figure 3-4**.

Class I Bicycle Parking: This is parking which protects the entire bicycle and its components from theft, vandalism, or inclement weather. It is suitable for a few hours use or up to a full working day and is usually found at employment centers or transit stations. Some installations of Class I bicycle parking can be used for overnight parking, if needed. Examples are bike lockers, bike cages or rooms (locked areas with key access for regular bike commuters generally for use by employees or tenants), guarded parking areas (such as bicycle racks within sight of a parking garage attendant), and valet parking (such as at a bike station). A common variation of guarded parking is found at elementary, middle, and high schools where racks are placed within a fenced compound; the compound is either locked during the day or unofficially guarded by the activity within the school.

Class II Bicycle Parking: This is defined as a bicycle rack to which the frame and at least one wheel can be secured with a user-provided U-lock or padlock and cable. This type of parking is appropriate for short-term parking such as at retail areas, libraries, and other places where the typical parking duration is about two hours. Examples of racks popular with bicyclists are the wave or ribbon racks and the inverted U-rack, or horse rail rack.

Older style bicycle racks that may still be in use only allow the bicycle to be secured by one wheel. These were quite popular in school yards and parks. Unfortunately, they do not provide the same security as the racks discussed above especially with the quick-release wheels that are found on many bicycles. In addition, there is potential for damage to the wheel if the bicycle is inadvertently knocked over. Consequently, this type of rack is not recommended and should be replaced where they are still being used.



Figure 3-4: Bicycle parking types - Class I (left) and Class II (right)

Provision of Bicycle Parking

Bicycle parking should be provided at the locations listed below. This would include a combination of Class I parking for employees and Class II parking for visitors.

- Grocery stores
- Cafes, delis, and restaurants
- Civic buildings
- Libraries
- Schools and colleges
- Parks
- Major employment centers including office buildings and hospitals
- Shopping centers, regional and neighborhood

The placement of bicycle parking, particularly bicycle racks, is very important for two reasons: (1) to ensure that they can be used to their maximum design capacity; and (2) to avoid adversely impacting pedestrian circulation.

Alameda County¹³, in the course of development review of commercial, office and residential projects in the western Unincorporated Areas, does require the provision of Class I and Class II bicycle parking. To provide bicycle parking, many cities, including Oakland and San Francisco, have instituted bicycle parking programs whereby the city purchases bicycle racks and installs them in the public right-of-way at locations requested by the public. These programs are funded by Bay Area Air Quality Management District Transportation Fund for Clean Air and State Transportation Development Act Article 3 funds and have been very successful in increasing the bicycle parking supply.

Recommendations for Bicycle Parking

Bicycle parking is an integral part of the bikeway network. Without secure and convenient bicycle parking, many cyclists will not choose to use their bicycle for trips where stops are made. More bicycle parking is needed within the Unincorporated Areas particularly at retail centers, employment centers, parks, transit stops, and other locations that attract bicycle trips. To meet this need, the following two programs are recommended.

Bicycle Rack Program: This program is recommended to provide the Alameda County Public Works Agency with the means and procedures for installing bicycle racks where they are needed. With this program, the County would install a bicycle rack(s) within the public right-of-way at the request of a community member. This could be a school, landowner, business owner, resident, or employer. Once the request has been received, County staff would visit the requested location to determine if a bicycle rack is feasible, contact adjacent property owners to inform them of the intent to install a bicycle rack, and, finally, install the bicycle rack. The program could also provide technical and/or financial support for property owners wishing to install bicycle racks on private property as well as serve as a clearinghouse for bicycle parking information.

Bicycle Parking Standards/Ordinance: The County does have bicycle parking guidelines for the provision of bicycle parking in the Unincorporated Communities of West Alameda County. This existing program could be extended to include the Unincorporated Communities in East Alameda County as well. It is recommended that these guidelines be revised as a standalone Bicycle Parking Ordinance.

¹³ Alameda County RESIDENTIAL DESIGN STANDARDS AND GUIDELINES DRAFT JULY 2010 For the Unincorporated Communities of West Alameda County, Alameda County Community Development Agency.

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Showers and Lockers

Showers and lockers for storage of clothing encourage bicycle commuting. Depending on the length of the commute, the availability of showers and lockers may make the difference as to whether biking to work is feasible. Showers and lockers also provide benefit to all employees as they can be used by those who run, walk, or cycle during lunch breaks. Showers are increasingly common in new office buildings and employment centers along with full fitness centers as they can attract tenants and employees. Clothes storage facilities can be individual lockers or a closet shared by all employees. Currently, there are no showers or storage lockers for public use located in the Unincorporated Areas; however, these facilities are available for members of fitness clubs located throughout the study area.

Recommendations for Showers and Lockers

Shower Ordinance: The County should consider the adoption of a shower ordinance that would encourage showers and lockers to be included in all new buildings. This may be combined with the Bicycle Parking Ordinance discussed above. As an alternative to an isolated shower ordinance, developers or companies that provide showers and lockers should be eligible for a reduction in the parking requirement, an increase in the floor area, or some other incentive included in an overall Travel Demand Management Program. Small businesses should be exempt from the ordinance. However, they should be encouraged to share shower facilities with other businesses or arrange for their employees to use other facilities. Retrofitting existing buildings is expensive and should not be mandated but should be encouraged.

Signage and Wayfinding

Signage is an important support system for the bikeway network providing guidance to bicyclists and alerting motorists to the potential for bicyclists on the roadway.

Bicycle signs, like highway signs, must be consistent throughout the system and easily recognizable to the bicyclist and motorist alike. Bikeway signage is mandated by the Manual on Uniform Traffic Control Devices (MUTCD). In many cases, California follows the federal standards of the FHWA MUTCD. In situations where the California MUTCD differs from federal standards, signage is designated with a ‘CA’ following the sign name. Bikeway and related signage is shown in **Figure 3-5**.

Key to the bikeway network are the ‘Bike Lane’ signs (R81 (CA)) and ‘Bike Route’ signs (D11-1) as shown in Figure 3-5. The other signs illustrated here can be used for special situations, as needed, both on the bikeway network and on other non-designated roadways. For example, ‘Bicycles May Use Full Lane’ (R4-11) sign is good for situations where no bicycle lanes or usable shoulders are available to bicyclists and where travel lanes are too narrow for bicyclists and motor vehicles to operate side by side. The ‘Begin Right Turn Lane Yield to Bikes’ (R4-4) sign is used where motor vehicles entering an exclusive right-turn lane must weave across bicycle traffic in bicycle lanes. The ‘Share the Road’ (W16-1P/W11-1) sign can be used in situations where



Figure 3-5: Bikeway and Bicycle Signage

there is a need to warn motorists to watch for bicyclists traveling along the highway. The 'No Parking Bike Lane' (R7-9) sign may be needed in locations where motorists continue to park in the bike lane. Finally, the 'Bicycle Parking (D4-3) sign may be installed where it is desirable to show the direction to a designated bicycle parking area. This is especially useful if the parking area is not readily visible from the roadway such as on a side street or in a plaza.

Wayfinding is another important function of bikeway signage, allowing bicyclists to follow the appropriate route to their destination whether it is located along the bikeway or close-by. Mileage to that destination is also helpful. The City of Oakland has implemented a program to combine wayfinding with the standard bike route signage as shown in **Figure 3-6**.



Figure 3-6: Bikeway wayfinding signage used in Oakland

Recommendations for Signage and Wayfinding

It is recommended that the Alameda County Public Works Agency continue to sign bikeways with the signage recommended by the CA MUTCD. It was found that several of the Class II bikeways are incorrectly signed with 'Bike Route' signs (D11-1). While these signs do provide guidance to bicyclists and motorists, it is suggested that these signs be substituted with the correct 'Bike Lane' signs (R81 (CA)) when the signs need to be replaced. In addition, it is recommended that a program for wayfinding be developed and implemented to better guide bicyclists to their destinations.

Bikeway Route Map for Public Use

A bikeway map distributed to the public can serve as a promotional and educational tool for the bikeway system. Such maps could include the location of transit stations, bike shops, bike parking, and other support facilities such as water fountains, public restrooms and picnic tables. Points of interest can be added to increase the usefulness of the map including the location of parks, grocery stores, restaurants, and wineries. These maps can be distributed at bike shops, libraries, schools and employment sites. They can also be posted on websites. The costs for producing such a map can be high but can be easily offset by revenues from advertising opportunities on the map. For example, many communities include the bikeway network on the city maps published by the local Chamber of Commerce. A bikeway map should include a brief synopsis of safe bicycling practices and an explanation of the rules of the road as they pertain to bicycling.

Recommendations for Bikeway Route Mapping

Given the small size and discontinuous nature of the study area, it may be prudent to work with adjacent jurisdictions to produce a map that includes both incorporated and Unincorporated Areas. Another option is to review maps published by others such as that produced by the East Bay Bicycle Coalition. This map is already used by thousands of cyclists in Alameda County; the County may decide that it may not be necessary for the County to produce their own bikeway map for public use, but instead, partner with others.

Chapter 3: Bicycle Network

Regional Bikeways, Trails, and Networks of Adjacent Jurisdictions

While bicycle and pedestrian connectivity within the Unincorporated Areas is the main focus of this plan, connections to regional bikeway and trail networks and networks of the adjacent communities are also important. This is particularly of interest for this plan since many of these networks overlap into the Unincorporated Areas. The Alameda County Public Works Agency coordinates with other agencies in the planning of these networks; however, design, operation and maintenance of these facilities are the responsibility of the other agencies. In particular, trail networks, including facilities for bicycle, pedestrian, and equestrian use, are provided by local and regional park districts (East Bay Regional Park District and Livermore Area Recreation & Park District). These facilities are discussed here in the interest of presenting a complete list of bicycling and walking opportunities in the Unincorporated Areas and to ensure that this plan includes connections to these facilities.

Regional Bikeways

MTC Regional Bicycle Plan for the San Francisco Bay Area

The Metropolitan Transportation Commission (MTC) is responsible for designating and, in a small part, funding the facilities designated on the regional bicycle network. The Regional Bicycle Plan for the San Francisco Bay Area 2009 Update has designated almost 50 miles of regional bikeways within the Unincorporated Areas. All of these bikeways are included in the Alameda Countywide Bicycle Network discussed below.

Alameda Countywide Bicycle Network

The Alameda County Transportation Commission (Alameda CTC) is responsible for designating and, in a small part, funding the facilities designated on the countywide bicycle network. Specific facilities are generally constructed and maintained by the local jurisdiction. The designated countywide network within the Unincorporated Areas, more than 100 miles in total, is shown on **Figures 3-3a to 3-3f**. This bikeway network is currently being updated.

Regional Trails

There are numerous paved Class I bike paths in the Unincorporated Areas. The Livermore area, in particular, has many such trails. There are also many hiking trails which permit bikes. These are generally not paved and are primarily in the major regional parks in both the western and eastern areas. The unpaved trails which permit bikes will be referred to as hiking/biking trails, while the paved bike trails will be referred to as bike paths. The major trails and agencies which develop and/or manage them are discussed below; the trails proposed by these jurisdictions are listed in **Table 3-11** at the end of this section.

San Francisco Bay Trail

The San Francisco Bay Trail is a continuous 500+ mile network of hiking and bicycling trails which when complete will circle the San Francisco and San Pablo Bays. It will connect the shorelines of all nine Bay Area counties and link 47 cities. Approximately 310 miles of the network have been implemented. The Association of Bay Area Governments (ABAG) assists with coordination and occasional grant support for the development of the Bay Trail network but the segments are built and maintained by the local jurisdiction. There is an existing segment of the Bay Trail in the western Unincorporated Area that provides an important connection in the Class I Bike Path between the Oakland/San Leandro border at Davis Street and

Highway 92 at the southern edge of the Hayward Shoreline Interpretive Center. It is an existing 8-foot wide multi-use paved asphalt trail. The trail includes two bridges, one over San Lorenzo Creek and the other over Bockman Channel. There is also a one-third mile spur trail (the San Lorenzo Creek Trail provided by the East Bay Regional Park District) to access the trailhead (at the foot of Grant Avenue approximately 500 feet west of Phil Drive). The trailhead has a parking lot with 28 parking spaces plus two designated handicapped spaces. There is an information display board, but no other amenities.

Alameda County Public Works Agency is the lead agency for the study, design, and construction of a trail that would connect the Bay Trail near the foot of 66th Avenue in the Martin Luther King Jr. Regional Shoreline to the Coliseum BART Station. The Coliseum BART to Bay Trail Project would also connect bicyclists and pedestrians with the adjacent Oakland Coliseum/Arena and Amtrak station as well as increase public access to the Bay Trail. The major barriers separating the shoreline from the Coliseum are the I-880 freeway, Damon Slough, the UPRR tracks, and the BART tracks. The Public Works Agency will continue to work with the Alameda County Transportation Commission (Alameda CTC), ABAG, the City of Oakland, UPRR, and the Alameda County Flood Control and Water Conservation District on the advancement of this project.

Bay Area Ridge Trail

The Bay Area Ridge Trail is a proposed 550+-mile long, multi-use trail for the use of hikers, bicyclists, and equestrians encircling the San Francisco Bay Area (see **Figure 3-7**). Begun in 1989, the Ridge Trail now includes over 330 miles of completed facility. In the Unincorporated Areas, completed segments of the Ridge Trail run from Redwood Regional Park south to North Garin Regional Park and through Mission Peak Regional Preserve. These segments are managed by the East Bay Municipal Utility District (EBMUD) and the East Bay Regional Park District (EBRPD).

East Bay Regional Park District (EBRPD)

The EBRPD has constructed and currently maintains many regional bike paths and hiking and biking trails in the study area. In the western Unincorporated Areas, these trails are primarily in three EBRPD parks: Lake Chabot Regional Park, Anthony Chabot Regional Park, and Cull Canyon Regional Recreation Area. They also operate and manage segments of the Bay Trail, which run through EBRPD regional shoreline park lands.

In the eastern Unincorporated Areas, EBRPD is planning three major regional trails:

- The Iron Horse Trail originates in northern Contra Costa County and runs through Dublin and Pleasanton and would eventually continue through Livermore into San Joaquin County. In the Unincorporated Areas, Alameda County owns much of the right-of-way, the former Southern Pacific Railroad ROW. The segment of the Iron Horse Trail along Stanley Boulevard in the Unincorporated Area is currently under construction.
- The Brushy Peak to Del Valle Trail is a proposed ten mile trail connecting south Livermore with Brushy Peak near I-580 and Greenville Road and is proposed to run along the South Bay Aqueduct. It is included in both the LARPD and EBRPD master plans.
- Shadow Cliffs to Del Valle Regional Trail is a proposed seven mile trail just outside the Livermore City Limits proposed by both EBRPD and LARPD. It would connect Isabel Parkway to Shadow Cliffs Regional Park and to the existing Del Valle Trail.

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Figure 3-7: Map of Bay Area Ridge Trail

Livermore Area Recreation & Park District (LARP)

Livermore Area Recreation & Park District (LARP) serves both the City of Livermore and the surrounding Unincorporated Areas. It has constructed and currently maintains many trails both within and outside the city limits of Livermore. Due to local land use and community desires, many of the trails in the LARP area are designed to accommodate equestrians as well as pedestrians and bicycles.

Hayward Area Recreation and Park District (HARP)

Hayward Area Recreation and Park District (HARP) has several existing and proposed unpaved hiking/biking trails in the western Unincorporated Area. The Greenbelt Trail is eight to ten feet in width and it begins at Memorial Park in Hayward and continues east with several prongs or spurs. The trail at the Hayward Shoreline connects to the EBRPD trails and is part of the San Francisco Bay Trail. These trails are six to ten feet in width.

Juan Bautista de Anza National Historic Trail

This 1,210-mile historic route from Nogales, Arizona to San Francisco, California passes through Alameda County; this trail commemorates the story of the Spanish Expedition (1775-1776) on their trek to Alta (upper) California. In West County, the Anza Trail follows the alignment of the Bay Area Ridge Trail from the Contra Costa County line to the north to the Santa Clara County line to the south. The trail also passes through the Sunol Regional Wilderness following the alignment of the Ohlone Wilderness Trail. In East County, the Anza Trail continues from the Ohlone Wilderness Trail through the Lake Del Valle State Recreation Area and follows the future Brushy Creek to Brushy Creek Regional Trail to the Contra Costa County border.

Connectivity to Adjacent Jurisdictions

The bicycle network for the Unincorporated Areas was designed to provide connection to adjacent communities and counties through coordination with the bicycle plans of these areas. A list of these plans is included in **Chapter 1**. As a result, the recommended bikeway network provides good connectivity with San Leandro, Hayward, Fremont, Oakland, Dublin, Pleasanton, and Livermore as well as Contra Costa, San Joaquin, and Santa Clara counties. This connectivity is important to provide the residents of and visitors to the Unincorporated Areas the opportunity to conveniently and safely connect to their destinations. The connections to adjacent cities and counties are included in the 'Attractors' list for each bikeway in **Appendix C**.

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Table 3-11: Proposed Trails in Unincorporated Alameda County		
Name	Responsible Agency	Status
Alameda Creek Trail	Union City, Fremont, EBRPD	Completed
Arroyo del Valle Trail	Pleasanton	Planning underway
Arroyo Mocho Trail	Pleasanton, Alameda County (Zone 7) Water Agency, Livermore	Complete in Pleasanton
BART to Bay Trail Connector	Alameda County, Oakland	Environmental Study underway
Brushy Peak to Del Valle Trail	Livermore, EBRPD, Dept. of Water Resources, LARPD	Feasibility study needed
East Bay Greenway	BART, Urban Ecology	Conceptual Plan underway
Greenbelt Trail	HARD	Partially constructed segments
Iron Horse Trail Extension (Alameda County line to Shadow Cliffs)	Dublin, Pleasanton, EBRPD, Alameda County	Complete to Dublin/Pleasanton BART Station
Iron Horse Trail Extension (Shadow Cliffs to San Joaquin County Line)	Livermore, Alameda County, EBRPD	Feasibility study needed
Isabel Trail (Shadow Cliffs to Morgan Territory Road)	EBRPD, Livermore	Partially constructed segments
Las Positas Creek Trail	Livermore	Partially constructed segments
Niles Canyon to Shadow Cliffs Trail	Alameda County, Pleasanton, EBRPD	In Adopted Trail Plans
San Lorenzo Creek Trail	Alameda County, HARD	Project on Hold
Shadow Cliffs to Iron Horse (includes Alamo Canal & Arroyo de la Laguna)	Dublin, Pleasanton, EBRPD, LARPD	Partially constructed segments. Feasibility study underway for Alamo Canal Trail gap closure at I- 580
Shadow Cliffs to Del Valle Trail/Arroyo Del Valle/Sycamore Grove Trail	Pleasanton, Livermore, EBRPD, LARPD	Partially constructed segments. Planning underway
Tassajara Creek Trail	Dublin, EBRPD	Partially constructed segments
Union Pacific Railroad	Alameda county, Oakland, San Leandro, Hayward	Feasibility Study needed