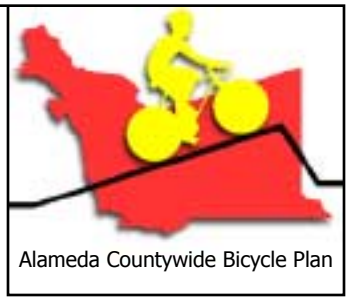
Chapter 3: Proposed Facility Improvements



CROSS-COUNTY BICYCLE CORRIDORS

This chapter describes the recommended cross-county bicycle corridors for Alameda County. The countywide network includes trails of regional transportation significance, as well as spur routes to regional attractors.

The purpose of the countywide bicycle network is to connect local jurisdictions and or/countywide attractions by maximizing existing bicycle facilities and planning for new or upgraded facilities. The proposed bicycle network also provides connections to adjacent counties.

The Bicycle Task Force, in conjunction with the Alameda County Congestion Management Agency and Alameda County Public Works Department, developed the alignments for the cross-county bicycle corridors. Preliminary alignments were determined by assembling information from discussions with city staff, route maps provided by others and data collected by the consultant. Input was received from the following: the Alameda County Technical Advisory Committee (ACTAC), the cities of San Leandro, Emeryville, Oakland, Pleasanton, Berkeley, and Union City, as well as from the EBRPD, the Association of Bay Area Governments (ABAG) and the East Bay Bicycle Coalition (EBBC).

Two keys to a successful bicycle network:

1. **Match the type of facility with the needs of the users.**
2. **Improve the safety of all facilities.**

The cross-county corridors tend to parallel the County's major geographic features, such as the San Francisco Bay and the coastal range, due to the landscape and geography of the County and the regional attractors. West of the Berkeley Hills, the predominant travel direction is north-south, so the north-south corridors are spaced quite closely together whereas the east-west corridors are several miles apart. In the Tri-Valley area, there is significant east-west as well as north-south travel demand, so the corridors are more evenly spaced.

The bikeway types recommended in the cross-county system utilize five bikeway categories (the three types of bicycle facilities described by the Caltrans *Highway Design Manual* Chapter 1000 and some refinement of Class III categories).

The five categories are:

1. **Class I** - Bike *trail/shared-use path* (Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians)
2. **Class II** - Bike *lanes* (Provides a five-foot striped lane adjacent to the vehicular travel lane for one-way bicycle travel)
3. **Class III** - Arterial *signed bike route* (Provides for shared use with pedestrians/motor vehicles)
4. **Class III** - Arterial with *wider shoulders*, preferably 4 feet minimum in width
5. **Class III** - *Local Roadways* and Bicycle Boulevards

A more detailed description of these categories and how they are used in the plan is presented in Appendix C-1.

Route alignments considered the needs of the bicycle users, safety, ease of implementation, compatibility with local bike plans, and regional transportation significance. These cross-county corridors utilized some or all of the following options: arterial and collector roadways, local streets, connecting pathways, rail rights-of way.

CRITERIA FOR INCLUSION ON THE COUNTYWIDE NETWORK

Some of the roadways chosen for inclusion in the countywide network have existing Class II bike lanes. Other roadways or trails are depicted on existing city and/or regional plans, and bike lanes or paths are either under development or not yet built. While one of the primary criteria for inclusion on the countywide network was consistency with local plans, this was not always possible. Therefore, in some cases, the cross county bicycle route is not on an existing city plan but was chosen because it provides the most logical connection between other route segments and/or directly serves a regional attractor.

In some instances there were few practical choices to serve a corridor, while in other cases there were many. The most feasible route alignments were rated based on screening criteria that included **Connectivity** (Bicycle use, serves attractors, gap closure, serves commuters); **Safety** (traffic volumes, bicycle collisions history, number of obstacles); and **Feasibility** (ease of implementation and project support). The specific screening criteria are contained in Appendix C-2. The preliminary ratings were presented to the Bicycle Task Force, and the preferred alignment for a specific corridor was chosen. In the case of the Bay Trail, the route alignment has been determined as a result of an ongoing process than began over 12 years ago.

The recommended cross-county routes are depicted in Figure 3-1 and listed in Table 3-1. The 18 routes were subdivided into 53 projects which are described in more detail in Appendix C-3. The cross-county routes have been numbered odd for north-south routes and even for east-west routes based on the interstate highway route numbering system.

Redwood Road Before Bike Lane

Redwood Road With Bike Lane

Table 3-1
CROSS-COUNTY BICYCLE ROUTES

North-South Routes	**Location**
Route 5-Bay Trail	Albany, Berkeley, Emeryville, Alameda, Oakland, San Leandro, San Lorenzo, Hayward, Union City, Newark, Fremont
Route 15-Alameda –Doolittle Road	Alameda, Oakland, San Leandro
Route 25-Highway 880	Albany, Berkeley, Emeryville, Oakland, San Leandro, San Lorenzo, Hayward, Union City, Fremont, Newark
Route 35-Highway 580/MacArthur	Albany, Berkeley, Oakland, San Leandro, Castro Valley, San Lorenzo, Hayward, Union City, Fremont
Route 45-Highway 13	Emeryville, Berkeley, Oakland
Route 55-Skyline – Palomares Road	Berkeley, Oakland, Unincorporated County, Castro Valley
Route 65-Highway 680/Foothill Road	Fremont, Pleasanton, Dublin, Unincorporated County
Route 75-Dougherty Road	Dublin, Pleasanton, Unincorporated County
Route 85-Tassajara Road	Dublin, Pleasanton, Unincorporated County
Route 95-Vasco Road	Livermore, Unincorporated County
East–West Routes	**Location**
Route 10-Fruitvale/Joaquin Miller	Oakland, Alameda
Route 20-73rd/Hegenberger	Oakland
Route 30-Estudillo/Crow Canyon	San Leandro, Unincorporated County, Castro Valley
Route 40-Highway 92/Dublin Blvd.	Hayward, Castro Valley, Unincorporated County, Pleasanton, Dublin, Livermore
Route 50-Stoneridge/Jack London Blvd.	Pleasanton, Unincorporated County, Livermore
Route 60-Stanley/East Avenue	Pleasanton, Unincorporated County, Livermore
Route 70-Vineyard/Tesla	Pleasanton, Livermore
Route 80-SR 84 -Niles Canyon Road/ Vallecitos	Newark, Fremont, Union City, Unincorporated County, Livermore
Note: The East Bay Regional Park District (EBRPD) and city trails which parallel on-street segments of these cross-county bicycle routes are listed in Table 3-2.	
Source: Wilbur Smith Associates, July 2001	

BIKEWAY RECOMMENDATIONS

Each corridor is composed of roadway and trail segments of varying geometries and traffic conditions. The most appropriate bikeway type for each corridor segment that does not have existing bike lanes or a bike path was determined based on field reviews, input from local jurisdictions and

the Bicycle Task Force. The recommendations for those roadways that do not have existing bike facilities are presented in Appendix C-3. It should be noted that recommendations for specific bikeway types are based on standard bicycle planning principles and data known to the consultant at this point in time. The specific recommendations may change as detailed engineering studies are done to determine the feasibility of implementing a particular project.

The needed improvements are generally self-explanatory, such as "construct new bike path." However for some, there are several approaches to implementation. For example bike lanes can be implemented by restriping existing lanes or may require the removal of motor vehicle travel or parking lanes or in some cases roadway widening. If a travel lane or parking lane is to be eliminated, then a method for determining the traffic impacts to the CMP and MTS networks must be developed.

REGIONAL TRAIL SYSTEM

Some cross-county corridors use bike trails as the preferred alignment, such as on Route 35 where the Ohlone Greenway in Berkeley was chosen. Most routes, however, are composed of roadways. Segments of these routes may parallel existing or proposed bike trails. Those trails that serve the same corridor as a cross-county route are considered part of the Countywide Bicycle Network and projects that are necessary to complete these trails are included in the capital project list. This is consistent with the goals and objectives of the Countywide Transportation Plan and the Year 2000 Measure B Expenditure Plan, the latter of which states: High priority will be given to EBRPD projects included in the Countywide Bicycle Plan. These trails are listed in Table 3-2.

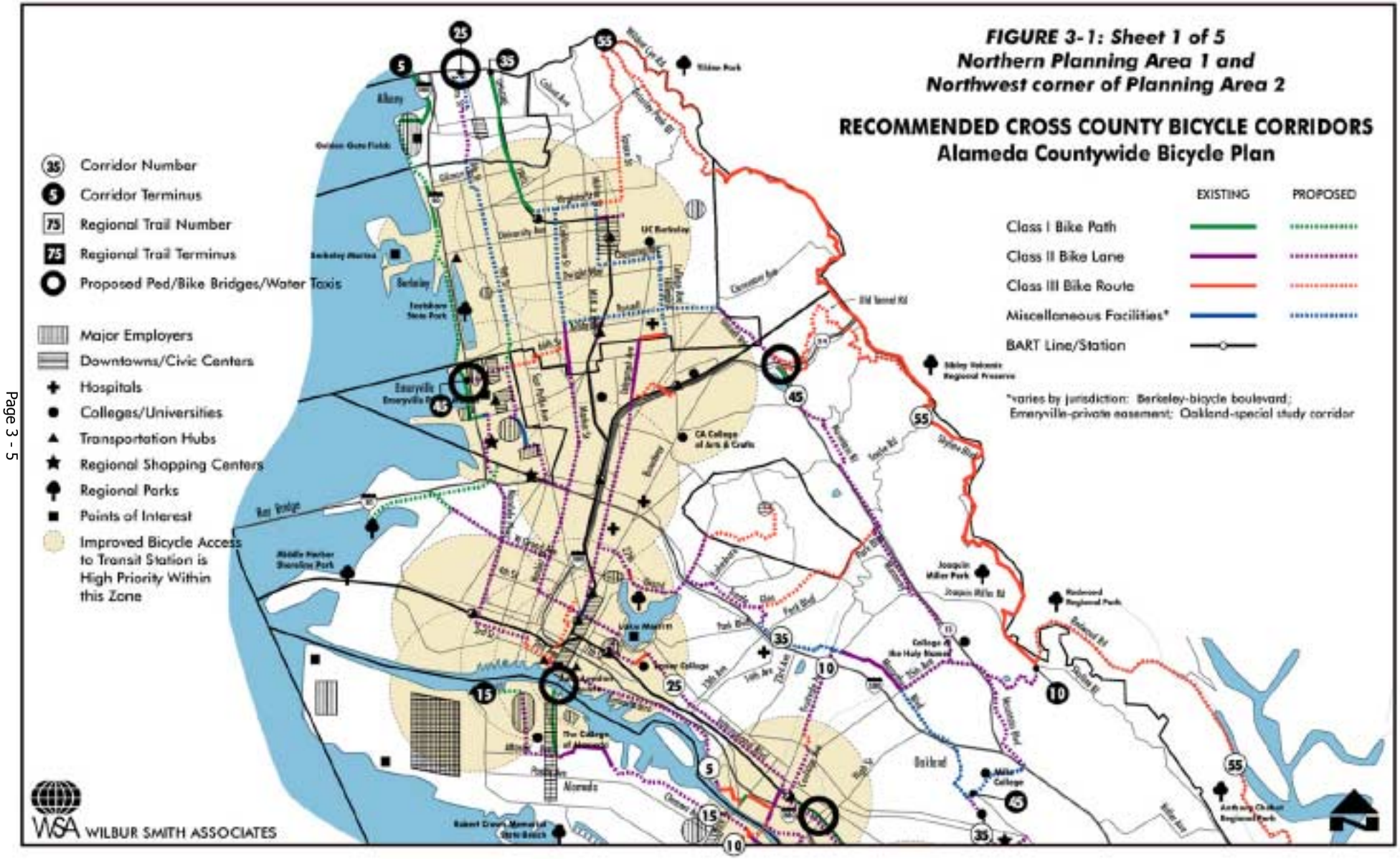


FIGURE 3-1: Sheet 1 of 5
Northern Planning Area 1 and
Northwest corner of Planning Area 2
RECOMMENDED CROSS COUNTY BICYCLE CORRIDORS
Alameda Countywide Bicycle Plan
EXISTING
PROPOSED
Class I Bike Path
Class II Bike Lane
Class III Bike Route
Miscellaneous Facilities*
BART Line/Station
*varies by jurisdiction: Berkeley-bicycle boulevard; Emeryville-private easement; Oakland-special study corridor
Corridor Number
Corridor Terminus
Regional Trail Number
Regional Trail Terminus
Proposed Ped/Bike Bridges/Water Taxis
Major Employers
Downtowns/Civic Centers
Hospitals
Colleges/Universities
Transportation Hubs
Regional Shopping Centers
Regional Parks
Points of Interest
Improved Bicycle Access to Transit Station is High Priority Within this Zone
WILBUR SMITH ASSOCIATES

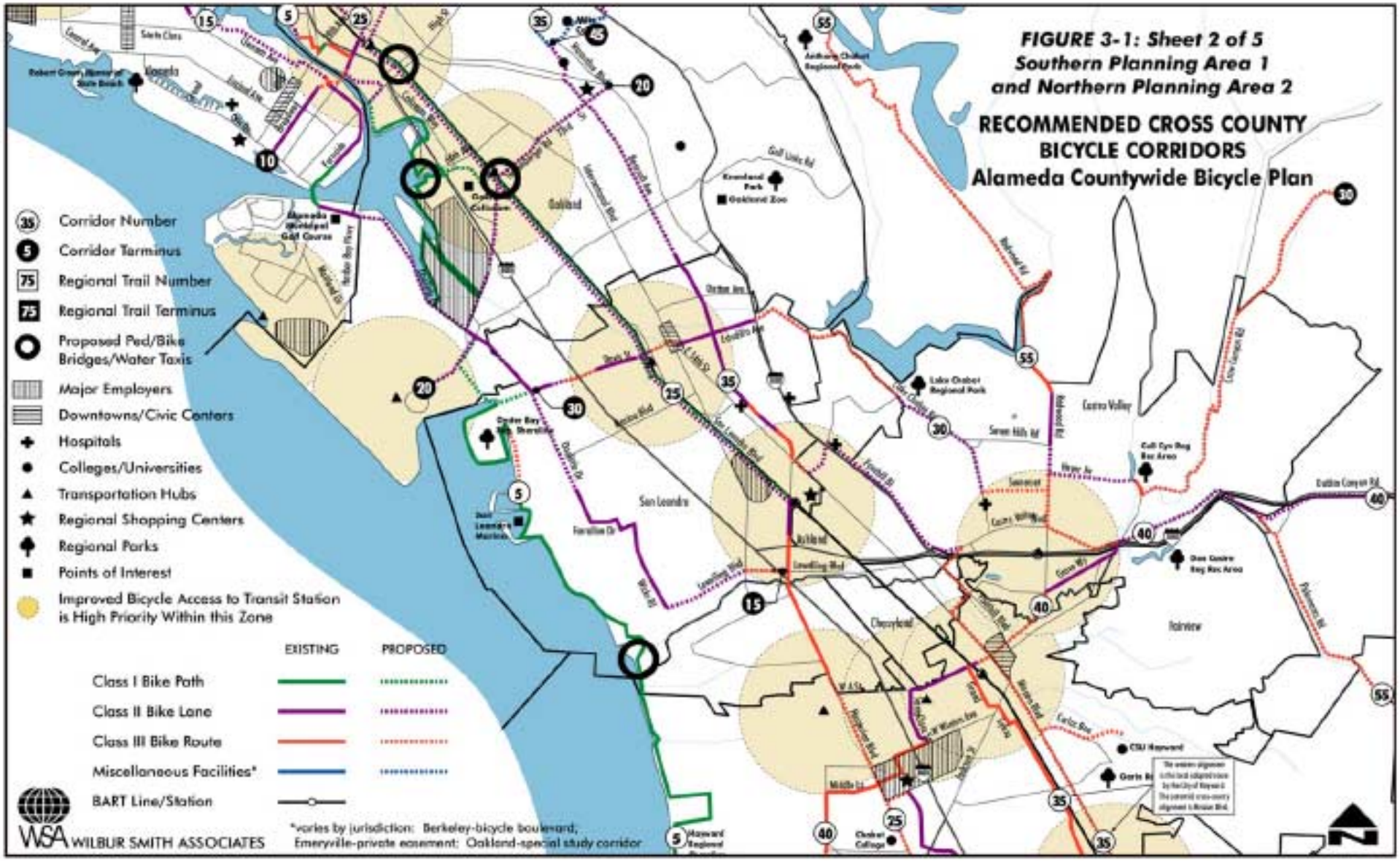


FIGURE 3-1: Sheet 2 of 5
Southern Planning Area 1
and Northern Planning Area 2
RECOMMENDED CROSS COUNTY
BICYCLE CORRIDORS
Alameda Countywide Bicycle Plan
Corridor Number
Corridor Terminus
Regional Trail Number
Regional Trail Terminus
Proposed Ped/Bike Bridges/Water Taxis
Major Employers
Downtowns/Civic Centers
Hospitals
Colleges/Universities
Transportation Hubs
Regional Shopping Centers
Regional Parks
Points of Interest
Improved Bicycle Access to Transit Station is High Priority Within this Zone
EXISTING
PROPOSED
Class I Bike Path
Class II Bike Lane
Class III Bike Route
Miscellaneous Facilities*
BART Line/Station
WSA WILBUR SMITH ASSOCIATES
*varies by jurisdiction: Berkeley-bicycle boulevard; Emeryville-private easement; Oakland-special study corridor
Oakland
San Leandro
Hayward
Castro Valley
Ashland
Cherryland
Fairview

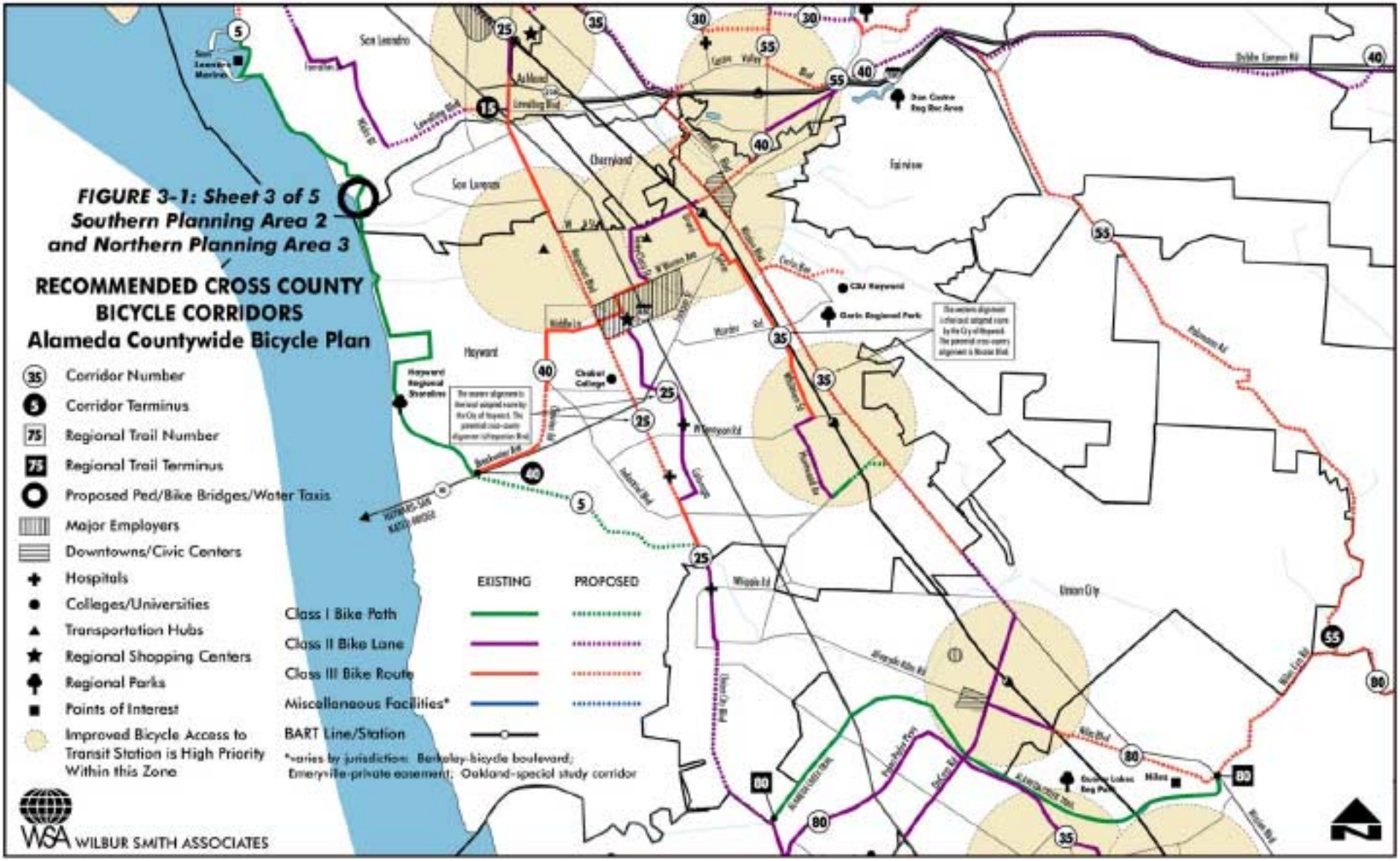


FIGURE 3-1: Sheet 3 of 5
Southern Planning Area 2
and Northern Planning Area 3
RECOMMENDED CROSS COUNTY
BICYCLE CORRIDORS
Alameda Countywide Bicycle Plan
Corridor Number
Corridor Terminus
Regional Trail Number
Regional Trail Terminus
Proposed Ped/Bike Bridges/Water Taxis
Major Employers
Downtowns/Civic Centers
Hospitals
Colleges/Universities
Transportation Hubs
Regional Shopping Centers
Regional Parks
Points of Interest
Improved Bicycle Access to Transit Station is High Priority Within this Zone
EXISTING
PROPOSED
Class I Bike Path
Class II Bike Lane
Class III Bike Route
Miscellaneous Facilities*
BART Line/Station
*varies by jurisdiction: Berkeley-bicycle boulevard; Emeryville-private easement; Oakland-special study corridor
WSA WILBUR SMITH ASSOCIATES
San Leandro
Hayward
Cherryland
Fairview
Union City

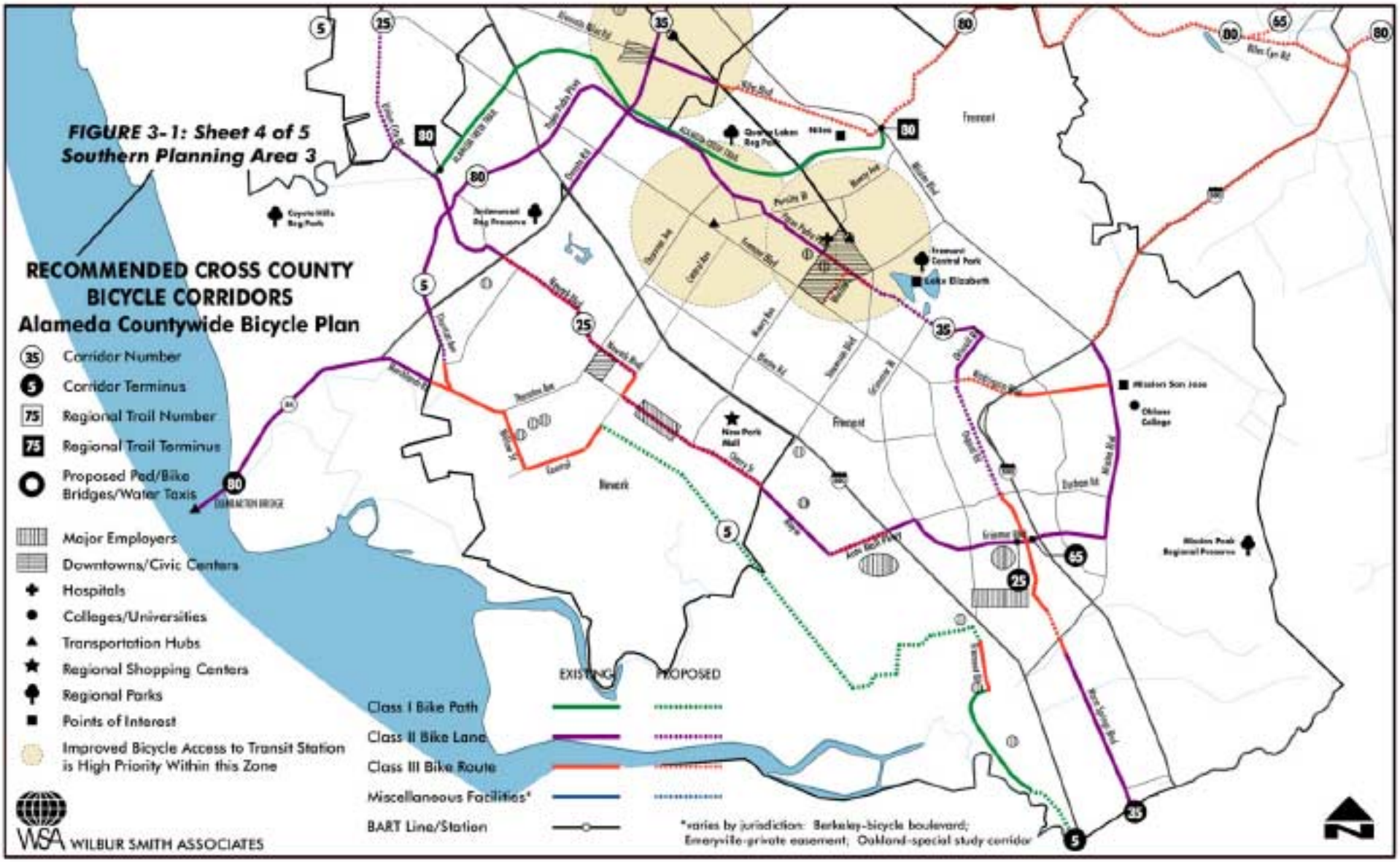


FIGURE 3-1: Sheet 4 of 5
Southern Planning Area 3
RECOMMENDED CROSS COUNTY BICYCLE CORRIDORS
Alameda Countywide Bicycle Plan
Corridor Number
Corridor Terminus
Regional Trail Number
Regional Trail Terminus
Proposed Ped/Bike Bridges/Water Taxis
Major Employers
Downtowns/Civic Centers
Hospitals
Colleges/Universities
Transportation Hubs
Regional Shopping Centers
Regional Parks
Points of Interest
Improved Bicycle Access to Transit Station is High Priority Within this Zone
EXISTING
PROPOSED
Class I Bike Path
Class II Bike Lane
Class III Bike Route
Miscellaneous Facilities*
BART Line/Station
*varies by jurisdiction: Berkeley-bicycle boulevard; Emeryville-private easement; Oakland-special study corridor
WSA WILBUR SMITH ASSOCIATES
Fremont
Newark
Union City
Milpitas
San Jose
Ohlone College
Coyote Hills Reg Park
Quarry Lakes Reg Park
Niles
Central Park
Lake Elizabeth
New Park Mall
Mission Peak Regional Preserve
Dumbarton Br
San Mateo Br
Bay Bridge
Richmond-San Rafael Br
Carquinez Br
Benicia-Martinez Br
Alameda Creek
Coyote Creek
Niles Canyon Rd
Mowry Ave
Fremont Blvd
Stevenson Blvd
Grimmer Blvd
Decoto Rd
Dyer St
Paseo Padre Pkwy
Warm Springs Blvd
Ardenwood Reg Preserve

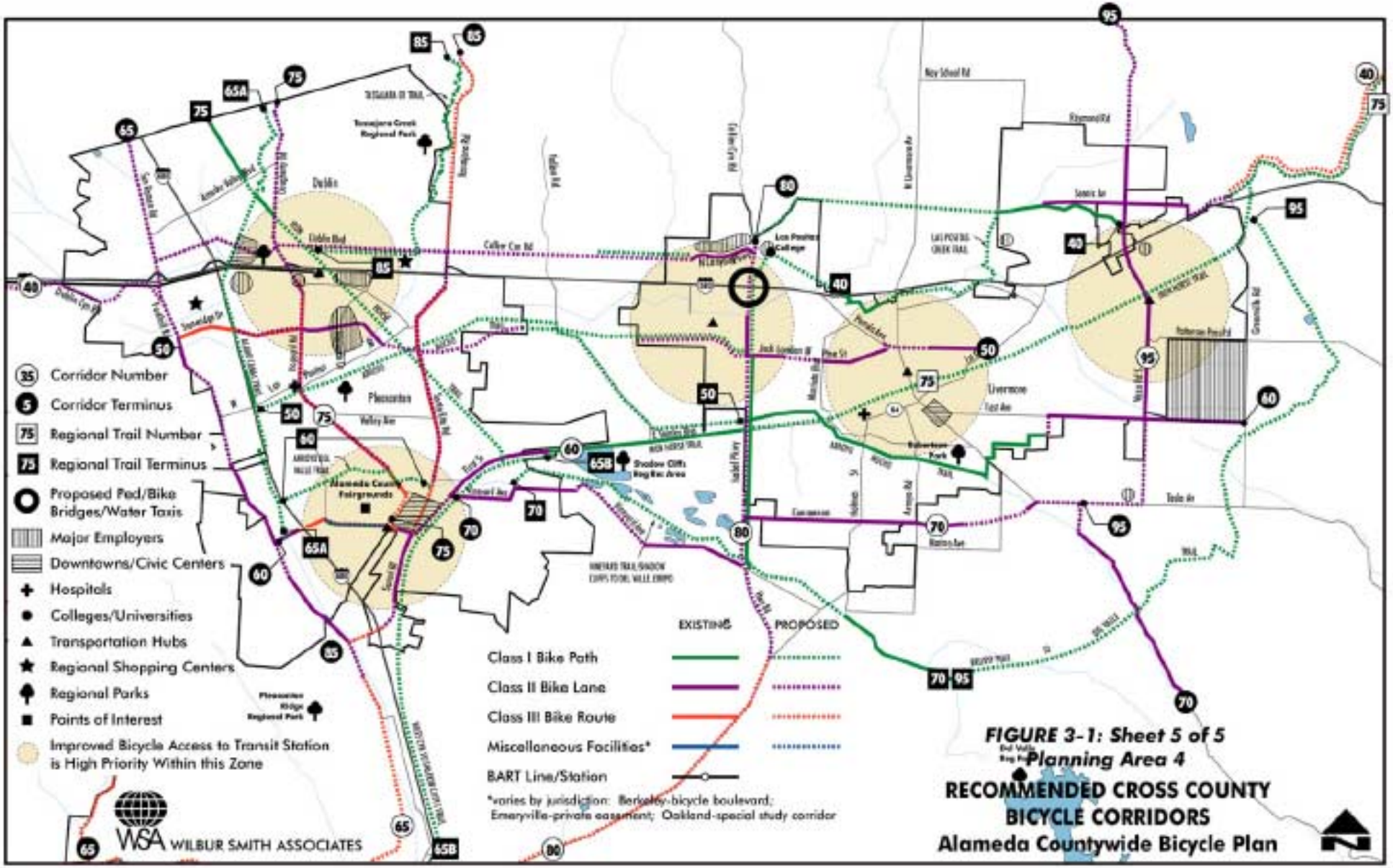

Corridor Number
Corridor Terminus
Regional Trail Number
Regional Trail Terminus
Proposed Ped/Bike Bridges/Water Taxis
Major Employers
Downtowns/Civic Centers
Hospitals
Colleges/Universities
Transportation Hubs
Regional Shopping Centers
Regional Parks
Points of Interest
Improved Bicycle Access to Transit Station is High Priority Within this Zone
EXISTING
PROPOSED
Class I Bike Path
Class II Bike Lane
Class III Bike Route
Miscellaneous Facilities*
BART Line/Station
*varies by jurisdiction: Berkeley-bicycle boulevard; Emeryville-private easement; Oakland-special study corridor
WILBUR SMITH ASSOCIATES
FIGURE 3-1: Sheet 5 of 5
Planning Area 4
RECOMMENDED CROSS COUNTY BICYCLE CORRIDORS
Alameda Countywide Bicycle Plan

Table 3-2
REGIONAL TRAILS IN THE COUNTYWIDE BICYCLE NETWORK

Project #	Trail Name	Parallel Cross – County Route Number	Jurisdiction	Status
20	Las Positas Creek Trail	T-40	Livermore	Partially constructed segments
21	Arroyo Del Valle Trail	T-60	Livermore, Pleasanton, EBRPD	Planning underway
29	Shadow Cliffs to Iron Horse (includes Alamo Canal and Arroyo de la Laguna)	T-65A – Hwy 680/Foothill Road	Dublin, Pleasanton, EBRPD	Partially constructed segments
30	Niles Canyon to Shadow Cliffs Trail	T-65B – Hwy 680/Foothill Road	Sunol, Pleasanton, EBRPD	Planning underway
32	Shadow Cliffs to Del Valle Trail/Vineyard Trail	T-70 – Vineyard Avenue	Pleasanton, Livermore, EBRPD	Partially constructed segments
34	Iron Horse Trail (Alameda County line to Isabel Parkway)	T-75 – Dougherty Road	Dublin, Pleasanton, EBRPD	Complete to Amador Valley Blvd., Dublin. Alameda Co. designing segment to Pleasanton/ Dublin BART
35	Iron Horse Trail (Isabel Parkway to San Joaquin County line)	T-75 – Dougherty Road	Livermore, Alameda County, EBRPD	Planning underway
36	Alameda Creek Trail	T-80 – S.R. 84	Union City, Fremont, EBRPD	Completed
39	Tassajara Creek Trail	T-85 – Tassajara Road	Dublin, EBRPD	Partially constructed segments
52	Arroyo Mocho Trail	T-50 – Stoneridge Road	Pleasanton, Alameda County	Existing maintenance road
53	Brushy Peak to Del Valle Trail	T-95 – Vasco Road	Livermore, San Joaquin County, EBRPD	Planning underway

Source: Wilbur Smith Associates, July 2001

Spot Improvements

"Spot improvements" is a large category that includes many different types of safety and access improvements that significantly improve the safety, convenience, travel time, ambiance and/or overall utility of a bicycle route. A Spot Improvement is generally limited to a specific location or intersection, as opposed to the improvements described above, which are applied to an entire segment. Examples of spot improvements include:

- Improving site specific hazards such as railroad tracks or unsafe drainage grates
- Providing a signal or other device to help bicyclists cross an arterial (exact device to be determined during implementation phase)
- Bicycle/pedestrian overcrossings needed above a freeway or other barrier

Spur Routes

It was not always possible for the cross-county routes to directly serve all or even the most significant of the major regional attractors identified in Chapter 2. Those destinations with the most existing or potential bicycle traffic deserve a signed route (spur) from the nearest cross-county corridor to facilitate bicycle access. Specific locations not served by a cross-county route that are served by spur routes are:

- Shellmound to Maritime Bikeway (Corridor 5)
- Coliseum BART to the Bay Trail (Corridor 5, 20 and 25)
- Oakland to Alameda (Corridor 15)
- Alameda Ferry Terminal via Atlantic (Corridor 15)
- Corridor 25-35 Connector via Telegraph Avenue (Corridor 25 and 35)
- BART Stations: 19th Street, Rockridge and Ashby (Corridor 25, 35 and 45)
- South Berkeley to downtown Oakland connection via California Avenue (Corridor 25 and 35)
- Oakland Ferry Terminal via Clay Street (Corridor 25)
- Bay Bridge via West Grand Avenue (Corridor 25)
- Montclair via Trestle Glen/Park Boulevard (Corridor 35)
- UC Berkeley via Hillegass Avenue and Hearst Avenue (Corridor 35)
- Downtown Piedmont (Corridor 35)
- CSU Hayward via Carlos Bee Road (Corridor 35)
- Ohlone College, Fremont via Washington Blvd. (Corridor 35 and 65)
- Downtown Fremont (Corridor 35)
- Corridor 45-55 Connection via Old Tunnel Road (Corridor 45 and 55)
- Contra Costa County via Wildcat Canyon Road (Corridor 55)
- Contra Costa County via Pinehurst Road (Corridor 55)
- Downtown/UC Berkeley via Spruce Street (Corridor 55)

PEDESTRIAN FACILITIES

Introduction

While this study primarily focuses on developing a bikeway network, some pedestrian issues are compatible with bicycling and are addressed. However, it is also true that sometimes bicycling and pedestrian accommodation conflict with each other. The following section addresses ways to improve pedestrian safety along streets in general and ways to reduce the incidence of pedestrian-bicycle conflicts.

General Strategies

There are many design elements that improve pedestrian safety along streets and at intersections such as providing sidewalks and pathways, modifying signalized intersections to safely accommodate pedestrians and incorporating pedestrian-friendly design principles into new developments. In general, overpasses and underpasses increase pedestrian safety through complete separation from vehicular traffic. However, they can discourage pedestrian use if they are perceived as unsafe or involve extra effort. While they may be appropriate in special circumstances, more attention should be given to providing safe at-grade crossings. Grade separations should be primarily considered at freeways and other barriers.

Pedestrian accident data indicated that although Alameda County has a lower pedestrian collision rate per 1000 population than the nation, (0.18 compared to 0.22), Oakland and Berkeley have higher rates (0.27 to 0.40). Although these numbers do not account for the higher number of pedestrians present in Oakland and Berkeley, the accident rate analysis presented in Chapter 2 revealed that Oakland and Berkeley also have high collision rates per pedestrian mile of travel. Generally, pedestrian collision and fatality rates, adjusted for the number of pedestrians, tend to be higher where streets have fewer safe places for pedestrians to cross and where traffic speeds are higher. According to one study, the likelihood of a pedestrian surviving a collision with a car traveling 20 mph is 95 percent, whereas with speed of 40 mph the chance of survival drops to 15 percent.

Recommendations For Decreasing Pedestrian Accidents With Motor Vehicles

Dense Downtown or Urban Streets

1. Implement pedestrian-friendly signal timing and phasing, such as:
    a. Automatic recall for pedestrian phases
    b. Lead pedestrian intervals
    c. Countdown signals
    d. Pedestrian scramble phases
2. Prohibit Right-Turn-On-Red (RTOR) where pedestrian volumes exceed more than five pedestrians per signal cycle, or during peak hours.

Urban Arterials

1. Implement pedestrian-friendly signal timing and phasing at urban arterials through:
   a. Actuated pedestrian phases
   b. Lead pedestrian intervals
2. Install raised medians to help pedestrians cross streets both at intersections and midblock or reduce number of lanes.
3. Design channelized right-turn islands (pork chop islands) to slow the right-turning vehicles (Design speeds through the turn should be 10 mph maximum).
4. Shield pedestrians from traffic with a barrier, parked cars, planting strip, or setback. These protect pedestrians from direct contact with traffic lanes.

Suburban Arterials

1. Implement pedestrian-friendly signal timing and phasing, such as:
   a. Actuated pedestrian phases
   b. Lead pedestrian intervals
2. Prohibit Right-Turn-On-Red (RTOR) where pedestrian volumes exceed more than five pedestrians per signal cycle, or during peak hours.
3. Protect pedestrians from direct contact with fast traffic through barriers, parked cars, planting strips or setbacks.

PEDESTRIAN-BICYCLE CONFLICTS

Roadway Design And Site Design

The following strategies would help alleviate collisions between bikes and pedestrians on roadways.

Designing for both modes along streets.

If there is sufficient right-of-way along an arterial, both a bike lane and sidewalk should be provided. However, along streets with limited rights-of-way where both sidewalks and bike lanes cannot fit, sidewalks should be provided and bicyclists would be accommodated on the roadway. Both modes share the shoulder when neither sidewalks nor bike lanes are available, although this situation is not common in Alameda County. Wider curb lanes and other improvements can improve bike safety on arterials.

Discouraging bicyclists from riding on the sidewalk.

This can be accomplished through improving conditions for bicyclists by providing an appropriate place to ride. For example, bike lanes on arterials

will discourage bicyclists from riding on the sidewalk. Providing parallel bike routes on calmer streets will also reduce the incidence of sidewalk riding.

Permit roller blades in bike lanes.
The legal status of roller blades is that of a pedestrian, but they are more similar to bicycles in speeds and other operational characteristics. Consequently, some communities have allowed their use in bike lanes. Other quasi-modes that fall into this gray area are motorized wheelchairs and non-motorized scooters.

Provide separate entrances for bicyclists and pedestrians.
At entrances to transit stations and other major attractors, pedestrians and bicyclists should have separate pathways, or bicyclists should be directed to enter via the roadways. Where possible, pedestrians should not be channeled in front of the Bike Parking.

Multiuse Trails

The following strategies would reduce pedestrian and bicycle conflicts on multi use trails.

- Shared-use pathways that will have significant volumes of both bicyclists and pedestrians should have a paved width of at least 12 to 16 feet, to allow for both pedestrians and bicyclists. Ideally there would be two pathways, one for each mode.
- Where the minimum standard of eight (or ten feet) is provided, signs should be posted advising cyclists to pass on the left and to call out when passing, and for pedestrians to keep to the right.
- Providing a graded shoulder will help reduce conflicts because many runners and walkers prefer to walk on the softer surface. This increases the effective width of the pathway by allocating more paved width to bicyclists.
- In some settings like college or business park campuses where there are few or no motor vehicles, pedestrians and bicycles share the same internal pathways. This can result in the same conflicts that arise on any other multi-use trail. It is recommended that a hierarchy still be adhered to with bicyclists on a roadway and pedestrians on an adjacent sidewalk or path, so that there is a clear differentiation between where bicyclists are expected and where pedestrians are expected. Where it is impossible to maintain separate facilities and bikes and pedestrians must share, similar strategies to those described above may be appropriate.

Bike Parking

Bicycle parking should be located so that it does not interfere with pedestrian circulation. Specifically:

- In parking lots and near building entrances, bike racks should not be placed in the pedestrian line of travel to the front door or placed such that the parked bicycle would encroach into the pedestrian pathway.
- On sidewalks, four feet of clear space should remain between the parked bicycle and other obstructions such as buildings, light poles and other street furniture.

RECOMMENDATIONS FOR BIKE/TRANSIT INTERFACE

There are three areas of concern to bicyclists at transit stations: on-board access to the transit service, bicycle storage, and station design and access, including integration with the surrounding neighborhood. Bicyclists should be able to safely and conveniently take their bicycle with them or store it at the station. In turn, bicyclists need to be aware of the needs of other transit users. The following recommendations address ways to improve bicycle access on transit vehicles and to transit stations in Alameda County.

Onboard Access

In general, Alameda County's transit providers have good onboard bicycle access. Both ferry services and four bus providers, Union City Transit, WHEELS (LAVTA), County Connection (serves Dublin BART Station), and Santa Clara VTA (serves Fremont BART Station), allow full onboard access; the remaining bus and rail service providers allow bicycles onboard with some restrictions. Ideally, transit providers would allow bicycles on all trains and bike racks on all buses. Achieving this goal would require providing more spaces for bicycles onboard and increasing the flexibility of policies about bicycles onboard when formal spaces are full. Recommendations include the following:

ACE Train

The ACE Train appears to provide sufficient bicycle space. However, the train could consider allowing bicycles on the train even when the formal spaces are filled.

AmtrakCalifornia/Capitol Corridor

All of Amtrak's Capital Corridor trains have bike racks. However, Amtrak trains are spacious and could consider a permit for unboxed bicycles on trains without racks or when the racks are full.

BART

BART permits bicycles on its trains with exceptions during the peak period. The current time restrictions were based on load factors identified by BART's Performance Research Staff as times when trains consistently

have several passengers standing and are too crowded to accommodate bicycles. The "black-out" periods were created using these load factors and adjusted to provide the most user friendly and consistent schedule possible. Recently BART has experienced unsurpassed ridership records. Ridership is about 15 percent greater than last year. BART is setting new ridership records each month and more riders during peak periods are expected as the new stations come on line. It is unlikely that the peak period ridership will decrease enough to allow less frequent bicycle restrictions or that BART will be able to increase train capacity to accommodate the ideal bicycle schedule of full bicycle access on all trains at all times.

The BART Bicycle Advisory Task Force (BBATF) provided input in the development of the current bicycle rules. The success of the rules is still under evaluation. Bicycle ridership at BART has increased with the implementation of the new "Bike-Friendly' policies. The overall policy is that bicycles are not permitted on crowded cars regardless of the time or route. Cyclists are expected to use good judgment even outside the "black-out" periods.

Providing additional cars for bikes during peak hours is not feasible since BART station platforms have a 10-car maximum. BART is currently testing two remodeled cars with expanded multi-use areas. This area will have had a seat removed to allow for more open space near the door that will accommodate a full bike length. This area will be tested to see how the space is utilized and for customer reaction. Wheelchair users will have first priority for this space and then it is recommended for bicyclists and passengers with luggage.

AC Transit

Most AC Transit buses have bicycle racks, but not all buses on all lines. The one line that does not have bike racks is the Transbay G line. However, even on buses with racks, when the racks are full bicyclists have no other options. AC Transit could consider providing racks on all remaining buses and implementing a policy to allow bikes on the bus when the racks are full and the bus has room. The current policy of allowing bikes on board at the discretion of the driver should be standardized, as many drivers do not know they have the discretion or do not apply it consistently.

Dumbarton Express

The Dumbarton Express has bicycle racks. However, when these are full, this service could explore ways to allow cyclists to bring their bikes on the bus.

BICYCLE STORAGE AT STATIONS

Transit riders who bike to the station need a variety of storage options depending on the purpose of their trip and the time they arrive and leave the station. Bike racks are ideal for riders who need maximum flexibility, but they are less secure than other storage options. Bike lockers provide both flexibility and security, but they usually require bicyclists to reserve lockers in advance, and at some stations all available lockers have been rented. Finally, the guarded storage at Bikestations provides the most security, but they are not open during all hours. Ideally, high volume stations should be equipped with Bikestations, and others should have a combination of good-quality racks and lockers that meets or exceeds the number of bicycle users. In addition, a number of lockers could be reserved for day-use only, in addition to monthly rentals.

Storage facilities are appropriate at rail and ferry stations due to the nature of their service. The ACE train, Amtrak, and ferries appear to provide ample bicycle storage at their termini for their passengers, and they should continue to monitor use and periodically survey passengers to determine whether more storage is needed. Buses generally travel shorter distances and provide more comprehensive service, so storage is recommended only for long-haul trips. Specific recommendations include the following:

BART

The attended bike parking facility at the downtown Berkeley Bikestation functions at or beyond capacity at all times. Some of the demand for the Bikestation could be alleviated if additional Bikestations were provided at other stations. A Bikestation is planned for the Fruitvale BART station as part of the Transit Village project. Based on existing bicycle rack and locker occupancy, Bikestations could be considered at the North Berkeley, Ashby, MacArthur, 12th Street, 19th Street, West Oakland, and Lake Merritt BART stations. BART stations in need of more racks include Berkeley, North Berkeley, Ashby, and Lake Merritt. Stations that would benefit from additional bike lockers include North Berkeley, Rockridge, MacArthur, West Oakland, Lake Merritt, Fruitvale and Coliseum.

Attended bike parking facilities have on-going operating costs. The current operating estimates are from $80,000 - $100,000/year. Depending on the number of bikes parked this can be a relatively high per bike cost which needs to be considered if recommending this type of facility. The ability to offset operating costs with revenue generating retail activities is only successful when located in strong retail areas.

Buses

AC Transit could consider additional bicycle storage facilities at the Transbay Terminal and along other heavily-traveled Transbay routes to serve long-haul passengers and at the Eastmont Town Center.

Station Access

Design Recommendations - Existing Transit Stations

Transit stations and their immediate vicinity should be designed to encourage bicycling. This includes creating bike lanes on approaching roads, designing bicycle entrances to reduce potential conflicts with automobiles and pedestrians, and providing signage to assist bicyclists in getting from the station to nearby bikeways. Specific design recommendations for existing stations include:

- Creating a designated bicycle entrance, with signage and separation from auto traffic
- Installing mid-block crosswalks where station entrances do not coincide with intersections along with appropriate traffic control devices. It is recommended that the visibility of these crosswalks to approaching motorists be enhanced with signs, pavement flashers and other methods per the judgement of the local traffic engineer
- Bicycle ramp adjacent to stairways
- Placing bike storage facilities in covered areas near station entrances

Design Recommendations - Future Transit Stations

- Creating station entrances directly on the street, so that stations are not surrounded entirely by parking (Castro Valley BART station is a good example of this)
- Incorporating Bikestations and other bike storage facilities in convenient locations
- Installing bicycle-friendly turnstiles and ramps
- Bicycle ramps adjacent to stairways; and
- Encouraging cities to install bikeways and provide safe pedestrian and bicycle routes on streets leading to transit stations.

Based on field review of pedestrian conditions, summarized in Appendix C-4, the following recommendations address improved pedestrian access at transit stations in Alameda County. While more specific recommended improvements would require additional field visits and cost estimates, this list gives some ideas as to the types of recommended changes and the stations at which they should be undertaken.

BART

BART stations vary in their degree of pedestrian accessibility, based on their location. In general, urban locations within Berkeley and Oakland have good pedestrian conditions - compact land uses, good sidewalk con-

nections and lighting - while outer suburban locations on the Dublin/ Pleasanton and Fremont lines tend to have both fewer destinations within walking distance and less direct access to those locations. Many stations have either confusing or minimal signage.

ACE

At Altamont Commuter Express (ACE) stations, pedestrian facilities need more signage as well as pedestrian-friendly walking areas.

AMTRAK

Alameda County's Amtrak stations are relatively pedestrian-friendly though additional signs are needed.

FERRY TERMINALS

The City of Alameda's two ferry terminals would be enhanced by improved sidewalk access and minimal signage. The ferry terminals also need direct pedestrian access to nearby locations. Oakland's ferry terminal at Jack London Square is well-designed for pedestrian access.

STATION RECOMMENDATIONS FOR PEDESTRIAN ACCESS

Pedestrian Access/transfers Between Transit Modes

- Crosswalks should be provided at stations that adjoin high-traffic streets. The Fremont BART station entrance at Mowry Avenue does not have a crosswalk; one should be provided
- Both sides of access roads to transit stations should have sidewalks, to facilitate pedestrian access
- Nearby destinations should be accessible by transit
- Rail stations and ferry terminals should have adequate pedestrian access to bus connections, to facilitate transfers
- New stations should be constructed so as to encourage pedestrian access whenever possible. This can be done by either shrinking the parking lot and providing higher density development near the stations, or by reconfiguring the station so that parking does not block access to nearby streets

Lighting/Signage

- Lighting should provide a sense of safety to passengers who use transit during the evening
- Directional signage within stations should point exiting passengers to nearby streets

SUMMARY OF FACILITY RECOMMENDATIONS

Countywide Bicycle Network

- The purpose of the countywide bicycle network is to connect local jurisdictions to countywide attractions and maximize existing bicycle facilities by planning for new, upgraded or linked facilities
- Updated information and maps depicting the countywide bicycle network can be accessed at the ACCMA's website at www.accma.ca.gov
- Bikeway facilities have been recommended under five categories
  - Bike trail/shared-use path
  - Bike lanes
  - Arterial - signed route
  - Arterial with wider shoulders
  - Local roadways and bicycle boulevards
- Roadways chosen for inclusion are either listed in a city bicycle plan or, if not, follow the most logical connection between other route segments or directly serves a regional attractor
- Route alignments considered the needs of bicycle user groups
  - Safety
  - Ease of implementation
  - Compatibility with local bike plans
  - Regional transportation significance
- Improvements to local streets and roads, including bike lanes and routes, are the prerogative of the affected jurisdiction, and no improvements can be made or funding applied for without the consent of the jurisdiction

Pedestrian Facilities and Transit Access

To improve transit access and pedestrian circulation and safety, this chapter presented recommendations on:

- Designs to reduce pedestrian/motor vehicle collisions
- Strategies to reduce pedestrian/bicycle conflicts
- Expanded bicycle access to transit stations and vehicles
- Improve pedestrian access to transit stations
- Providing lighting and signage