OCTA Commuter Bikeways Strategic Plan

Prepared for:
Orange County Transportation Authority

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Prepared by Alta Transportation Consulting

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Chapter 1 Introduction

Introduction

The Orange County Transportation Authority recognizes that a safe and effective bikeway network enhances the quality of life for residents and visitors to Orange County. Orange County and its residents have called for a comprehensive Commuter Bikeways Strategic Plan (CBSP) that will create the foundation for a bicycle friendly environment to serve commuter and recreational riders.

This CBSP serves as a policy document to guide the development and maintenance of a bicycle network, support facilities and other programs for Orange County over the next 20 years. These policies address important issues related to Orange County's bikeways such as planning, community involvement, utilization of existing resources, facility design, multi-modal integration, safety and education, support facilities as well as specific programs, implementation, maintenance and funding.

The success of the plan will only be assured by continued support of the OCTA Staff, the bicycling community and other residents who recognize the benefits of cycling in their community.

Setting

At 2,846,289 people (2000 U.S. Census), the County of Orange is the third largest county in California. Most of its history has been influenced by the growth of urban Southern California. The most rapid growth in Orange County occurred after World War II. Most of the northern portion of the County was developed before the 1980s. Over the past two decades, rapid growth has been occurring in the southern portion of the County. In the post-war period, the County became known for its theme park tourist destinations and it's beautiful beaches and

vacation amenities. During the 1980s and 90s, the County has become a major destination for employers as more and more companies locate here to take advantage of a skilled and diverse workforce.

The County has become a diverse representation of the ethnic fabric of Southern California and the state as a whole. Ethnic populations of all kinds can be found in different areas of the County. For example, a very large center of the Vietnamese community has been established in the Westminster area. As the County grows, so does its diversity.

Today, residents and visitors of Orange County enjoy access to beaches, parks, harbors, and riverbeds and exposure to diverse cultural amenities centered on the local schools, colleges, and cultural communities themselves. They also enjoy a healthy business economy, lively retail districts, marinas, the popular Disney Resort and other tourist destination sites, and ethnic business districts that cater to the needs of local communities.

Existing Transportation

As part of the greater Los Angeles region's transportation network, Orange County includes major transportation corridors that link with Los Angeles, Riverside, and San Diego counties. Major links to Los Angeles County include the San Diego (I-5 and I-405), Santa Ana (I-5), Orange (SR-57), and Artesia (SR-91) freeways. The San Diego (I-5 and I-405) Freeway links with San Diego County to the south, and the Riverside (SR-91) Freeway links with Riverside County to the east. Several other intra-county freeways and toll roads traverse the County, including the Costa Mesa (SR-55) and Garden Grove (SR-22) freeways and the San Joaquin Hills (SR-73) and Eastern (SR-241, SR-261, SR-133) Transportation Corridor Toll Roads. The inter-county corridors carry the heaviest volumes of commuter and truck traffic during most periods of the day. The scenic Pacific Coast Highway provides for scenic drives and also serves as a major coastal transportation corridor for inter-regional travel.

Orange County Transportation Authority (OCTA) buses provide public transit services in the County. Commuter rail service is also provided to and from Los Angeles, Riverside, and San Diego counties by Metrolink. Amtrak provides intercity rail service. Rail service predominantly follows the central alignment of the I-5 Freeway through the County as well as along the Riverside (SR-91) Freeway to the east. There are currently eight Metrolink stations with four more in the planning stages. Amtrak also serves six of these existing stations. Greyhound provides intercity bus service from stations located in the cities of Anaheim, Santa Ana, and San Clemente.

The John Wayne/Orange County Airport is used primarily for domestic flights on several major commercial air carriers. Private aviation crafts also use the airport for destination flights throughout the country.

Commuter Bikeways Strategic Plan Needed

The economic vitality of Orange County brings with it traffic congestion for residents and visitors. If there were more attractive alternatives, more people would likely choose bicycling in the County's temperate climate to reach their destination. In order to achieve this goal, the bicycling environment in Orange County must be enhanced. Having a planning document such as the CBSP that identifies bicycle policies, routes, programs and facility priorities will enable the County and its cities to foster an attractive alternative.

Another reason to have a Commuter Bikeways Strategic Plan is the enjoyment and quality of life for the residents of Orange County. Since bicycling is one of the most popular forms of recreational activity in the United States (46% of Americans bicycle for pleasure as found in a national survey), we can assume that out of the County's 2,828,400 residents, approximately 1,301,000 would bicycle at least occasionally in Orange County purely for pleasure.

Safety is a primary reason to improve bicycling conditions in the County. Concern over safety is the single greatest reason people don't commute by bicycle, according to a 1991 Lou Harris Poll. Addressing those concerns for bicyclists through physical and program improvements is a major objective of the CBSP.

Safety, access, quality of life, and effective implementation are imperative elements for Orange County's success as a bicycle-friendly environment.

Safety is the number one concern of citizens, whether they are avid or casual recreational cyclists or bicycle commuters. Streets in the northern cities of the County are older and narrower. Although some streets have wide curb lanes and many have bike lanes, they typically do not provide enough space for bicyclists to ride. Newer areas of the County, especially in the southern cities of the County, have newer and wider streets, many of which have been built with bike lanes in their original construction.

Access improvements for bicyclists are important to help improve the ability to take utilitarian trips to destinations such as work, shops and schools. The County's freeways and toll roads involve busy on and off ramps, forcing bicyclists to negotiate difficult interchanges. The most common access problem in Orange County is the lack of continuous and connected bikeways to the County's numerous destinations, including schools, parks, employment, and shopping areas.

This Plan urges cities in the County to take measurable steps toward the goal of improving every citizen's **quality of life**, creating a more sustainable environment, reducing traffic congestion, vehicle exhaust emissions, noise, and energy consumption. The importance of developing a bicycle system that is attractive and inviting is a key element in preserving Orange County as a place where people want to live, work, and play. The attractiveness of the environment not only invites bicyclists to explore the County, but more importantly, a beautiful environment helps to improve the quality of life in Orange County.

Education, enforcement, engineering, and funding are the basic components of an **effective implementation** program for the CBSP. Education must be targeted to the bicyclist as well as to motorists regarding the rights and responsibilities of the bicyclists and automobile drivers. Comprehensive enforcement of existing traffic and parking laws coupled with implementation of sound design and engineering principles for bike corridors is also critical. This plan proposes a systematic review of all new development projects, including public works efforts, to assure compliance with planning and building codes and the goals of the CBSP. Finally, this plan proposes an aggressive strategy for obtaining grants and competing for other funding sources in order to realize the physical improvements identified as the highest priorities.

Major Recommendations

The plan contains recommendations that, if implemented over the next 20 years, will make Orange County a model for bicycling in the Southern California region. The cities as well as the public have asked for a bold vision for Orange County that will improve conditions for those who choose to ride a bicycle for commuter and recreational purposes. The end result of this effort will be to dramatically increase the number of people bicycling for utilitarian trips such as work, school or shopping, as well as for recreation.

- The specific recommendations of the CBSP include the completion of a comprehensive bikeway network and implementation of new educational and safety programs to be implemented over the 20-year life of the Plan.

- Recommendations are made for placing parking at all rail transit stations and park-and-ride lots.

- Recommendations also offer cities guidance in providing bicycle parking in public places, as well as amenities at work sites.

- Bicycle safety programs that teach children and adults how to ride in traffic are also recommended.

Planning Process

The Orange County Transportation Authority (OCTA) has developed this plan during late 2000 and early 2001. A Bikeways Steering Committee (TAC) comprised of OCTA and representatives of some cities and bicycling organizations was established to oversee the project. Alta Transportation Consulting was contracted to prepare the plan.

Public Process

In addition, the public has been involved in the planning process. Two public workshops were held at OCTA. Additional information from the public was collected through bicycle surveys. The workshops are discussed and the survey results are presented in Chapter 3.

Consistency with Other Transportation and Air Quality Plans

This Commuter Bikeway Strategic Plan (CBSP) is an update of the previous Plan adopted in 1995. It is intended to fill in gaps in the bikeway network, update the existing bikeway system, and add local routes based on input from each of the cities in the County. The recommendations derived from that input comprise the central components of the CBSP. The CBSP is also intended to quality each city and the unincorporated areas of the County for California Bicycle Transportation Account funds, as well as other funding sources.

The CBSP is consistent with other regional transportation and air quality plans. This Plan is regional in scope since it is countywide and compiles all local plans into one document. Plans in the adjacent counties of Los Angeles, Riverside, and San Diego were reviewed to ensure consistency and that linkages were made to other regions. Some of these linkages include the Santa Ana River bikeway into Riverside County, the coastal route bikeway into San Diego County, and the Coyote Creek bikeway into Los Angeles County.

Moreover, this plan will fit into Orange County's portion of the Regional Mobility Plan (RMP) prepared by the Southern California Association of Governments (SCAG). The RMP is the regional transportation plan. It is also the transportation element of the South Coast Air Quality Management District's Air Quality Master Plan.

This Plan was produced from the gathering of information from each city in the County. Bicycle elements from each city in Orange County are included in this Plan and provide for consistency with the local plans. Thus, all the locally

planned routes are included. Cities sent lists of routes and maps of routes to be included into this plan.

Projects in the CBSP were planned in coordination with land use planning and were intended to link destinations such as colleges and universities, employment centers, shopping centers, and other existing and proposed activity centers. This Plan attempts to coordinate with existing and proposed land use patterns in the County by proposing that bikeway and support facilities be developed as development occurs and as future projects are built.

The future bikeway system is based upon future growth patterns as projected by each city through their land use and zoning sections of their general plans as shown in Appendix B. Most of the growth in the County is expected to take place in the southern portions of the County and in some of the foothill areas over the next twenty years. Although much of the new development will be residential, there is expected to be a significant increase in the number of jobs created in the all areas of the County, especially toward the south.

Chapter 2
Existing Conditions

Bikeways

Bikeways can be classified into three types:

Class I Bikeway – Typically called a bike path, this provides for bicycle travel on a paved right-of-way completely separated from any street or highway. These are particularly popular with novice cyclists and avoided by experienced cyclists because they can become overly popular and crowded.

Class II Bikeway – These are often referred to as a bike lane. It provides a striped and stenciled lane for one-way travel on a street or highway. When properly designed, bike lanes help improve the visibility of bicyclists.

Class III Bikeway – Generally referred to as a bike route, it provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing. This is recommended when there is enough right-of-way for bicyclists and motorists to safely pass.

These bikeway types are depicted in Figure 2 on page 134.

Parking

Parking must not be overlooked when planning bicycle facilities and encouraging widespread use. Bicycles are one of the top stolen items in all communities, with components being stolen even when a bicycle is securely locked. Because today's bicycles often cost between $350 to over $2,000, parking issues simply cannot be overlooked.

In California, parking facilities are classified as follows:

Class I Bicycle Parking Facilities – accommodate employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location. Class I bicycle parking will be either a bicycle locker or a secure area like a 'bike corral' that may be accessed only by bicyclists.

Class II Bicycle Parking Facilities – are best used to accommodate visitors, customers, messengers, and others expected to depart within two hours. Bicycle racks provide support for the bicycle but do not have locking mechanisms. Racks are relatively low-cost devices that typically hold between two and eight bicycles, allow bicyclists to securely lock their frames and wheels, are secured to the ground, and are located in highly visible areas. They are usually located at schools, commercial locations, and activity centers such as parks, libraries, retail locations, and civic centers.

Amenities

In addition to parking accommodations, many local employers and colleges and universities provide shower and clothing locker facilities that may be used by bicyclists at the end of their trips to work or school. These amenities make bicycle commuting a viable option for many bicyclists and contribute to the viability of bicycling as a commute option. No official sites have been identified that have showers and clothing locker facilities at this time.

Multi-Modal Connections

Improving the bicycle-transit link is an important part of making bicycling a part of daily life in Orange County. Linking bicycles with mass transit (train, bus and ferry) overcomes such barriers as lengthy trips, personal security concerns, and riding at night, in poor weather, or up hills. Additionally, bicycling to transit instead of driving benefits communities by reducing taxpayer costs, air pollution, and demand for park-and-ride land, energy consumption, and traffic congestion with relatively low cost investments.

There are four main components of bicycle-transit integration:

- Allowing bicycles on transit
- Offering bicycle parking at transit locations
- Improving bikeways to transit
- Encouraging usage of bicycle and transit programs

Currently, all OCTA buses are equipped with state-of-the-art bicycle racks located on the front of each bus. These racks can carry up to two bicycles at a time. All existing Amtrak and Metrolink stations currently have bicycle-parking facilities available.

Additionally, cyclists may ride to a park-and-ride lot, then park and become a passenger in a carpool, vanpool or on a bus. The following table shows the 11 locations with bicycle parking at park-and-ride lots.

Table 1: Park-and-Ride Lots with Bicycle Parking

CITY	NAME	LOCATION
Irvine	Jeffrey Road Park-and-Ride	I-5 @ Jeffrey Road
San Juan Capistrano	Junipero Serra Road	I-5 @ Junipero Serra Road
Brea	Brea Park-and-Ride	SR 57 @ Lambert Road
Fullerton	Fullerton Park-and-Ride	Orangethorpe Avenue @ Magnolia Avenue
Huntington Beach	Golden West Transportation Center	Gothard Street @ Center Avenue
Laguna Hills	Laguna Hills Transportation Center	Paseo de Valencia @ Los Caballeros
Newport Beach	Newport Beach Transportation Center	Avocado Avenue @ San Joaquin Hills Road
Costa Mesa	South Coast Plaza	3333 Bear Street
Fountain Valley	Mile Square Park	16400 Brookhurst Street
Irvine	Heritage Park	Walnut Avenue @ Yale Avenue
Mission Viejo	Alicia Park	23682 Via Linda @ Alicia Parkway

Existing Conditions in Each Jurisdiction

The County of Orange is often conceptualized into two distinct regions. These include the northern and southern portions of the County. The North County area includes communities that are typically older and established and were primarily developed in the post-World War II era. South County is relatively newer with development having occurred primarily since the 1970s. Older streets that are relatively narrow and typically are not wide enough to accommodate bicycle lanes typically characterize North County cities. South County cities typically have newer and wider streets, many of which have bicycle lanes that were included when the streets were constructed. Bicycle parking facilities accommodations vary by city and are typically located at shopping centers, city halls, civic centers, and transit centers.

Maps showing the locations of existing bikeways and bicycle parking facilities are provided on pages 26-36. The maps show the entire County starting in the northwest, across to the northeast, then more southerly parts of the county from west to east.

Following these maps are descriptions of each city's existing bikeway facilities. The year 2000 population figures for each city are estimates that were obtained from the State of California Department of Finance.

Anaheim

With a year 2000 population of 310,700, Anaheim is the second largest city in Orange County. It is also home to several tourist destinations, most notably the two Disney theme parks Disneyland and Disney's California Adventure. Anaheim is a tourist destination for people from around the world. The area surrounding the Disney theme

parks has been developed primarily with the tourist in mind. Numerous destinations geared toward the tourist industry are located there. Anaheim is also home to the Anaheim Stadium and Arrowhead Pond sporting and entertainment centers. The western portion of the City is older and well established with a developed grid network of arterial streets. The eastern portion of the City, called Anaheim Hills, is relatively newer and is largely comprised of suburban subdivisions of single- and multi-family housing. Anaheim is also home to several industrial and commercial centers, including those located along Orangethorpe and La Palma Avenues.

The City of Anaheim does not currently have a well-developed network of bikeway facilities. There is currently a short Class III bikeway segment in the City located along Western Avenue and totaling 0.5 miles. There are several Class II facilities located along portions of the arterial street network, mostly in the Anaheim Hills area. Class II bikeways can be found along portions of Sunkist Street, Santa Ana Canyon Road, Weir Canyon Road, Imperial Highway, Orangewood Avenue, and Oak Canyon Drive. Class II facilities total 14 miles in Anaheim. There are two Class I bikeways. One in the western portion of the City is short and is located along Carbon Creek near Brookhurst Street. The other Class I facility is the San Ana River Bikeway, which runs from the City of Yorba Linda in Anaheim Hills southwesterly to the City of Orange near the Block at Orange shopping center. The total mileage of Class I facilities in Anaheim totals 8.25 miles.

Several bicycle parking facilities have been identified by the City, including those found at Anaheim Amtrak/Metrolink and Anaheim Canyon Metrolink Stations, and two near the intersection of Lincoln Avenue and Anaheim Boulevard. The City has identified six park-and-ride facilities, including those at the transit centers. Anaheim has two transit centers. They are located at the Anaheim Amtrak/Metrolink Station near Anaheim Stadium and the Anaheim Canyon Metrolink Station located near the intersection of La Palma and Lakeview Avenues.

Brea

The City of Brea had a year 2000 population of 36,950. Many of the neighborhoods and streets in the western part of the city are older, but many in the eastern part of the city are relatively newer. Some of the most heavily traveled streets along which are located many desirable destinations include Lambert Road, Imperial Highway, and Brea and State College Boulevards. Only one Class III bikeway facility currently exists. It is located along Elm Street and is approximately 1 mile in length. There are several Class II facilities located in Brea. These are located along Central Avenue, State College Boulevard, Birch Street, Associated Road and Rose Drive. Class II bikeways total 6.5 miles. The Class II facility along State College Boulevard serves the Brea Mall and the eastern downtown area. There is one Class I facility that is located near Carbon Creek in the eastern part of the City. It is 1.5 miles in length.

The City identified only two bicycle parking facilities. These were located in the vicinity of the Brea Mall, which is a regional shopping center in the downtown area. Only one

park-and-ride facility was identified, and it is located near the intersection of State College Boulevard and Lambert Road. The City has no established transit centers.

Buena Park

The City of Buena Park is also a well-established community within Orange County. With its year 2000 population of 77,300, Buena Park has is host to many tourist destinations, including Knott's Berry Farm and Medieval Times. The City contains a developed network of older, grid arterial streets that typically do not provide enough space to accommodate bicycle lanes. Some of the arterials that serve many of the City's destinations include Beach Boulevard and La Palma and Orangethorpe Avenues. A regional shopping center is located at the intersection of Beach Boulevard and La Palma Avenue. Buena Park does not currently have a developed network of bikeways. There are only two Class III facilities that exist in the City at this time. They are located along Western Avenue and Franklin Street. The total bikeway mileage for the City totals 4.5 miles.

Buena Park currently has no bicycle parking facilities identified and there exist no park-and-ride facilities. A Metrolink commuter rail station is planned with no opening date set in Buena Park near Beach Boulevard and Malvern Avenue in the downtown area. Commuter rail service to Los Angeles, Riverside, and Oceanside will be available when the station opens.

Costa Mesa

With a year 2000 population of 106,600, Costa Mesa is located where north and south Orange County meet. The City is home to Orange Coast College, Southern California College, Whittier Law School, the Orange County Fairgrounds, and the South Coast Metroplex. The South Coast Metroplex is a regional center in the northern portion of the City near the San Diego (I-405), Costa Mesa (SR-55), and SR-73 Freeways. It is home to South Coast Plaza, a major regional shopping and entertainment center, the Orange County Performing Arts Center, numerous hotels, and a large employment center. Most of the residential neighborhoods are older and established with most of the commercial destinations being located along the arterial streets, including Newport and Harbor Boulevards, Bristol and Victoria Streets, Fairview Road, and South Coast Drive.

Currently, Costa Mesa has a network of bikeways that serves many of the destinations in the City. There exist no Class III bikeway facilities at this time. Class II facilities can be found on portions of many of the City's streets, including Fairview Road, Adams, Placentia, Santa Ana, and Sunflower Avenues, South Coast Drive, Victoria and Baker Streets, and Newport Boulevard. Class II bikeways total 28.50 miles in Costa Mesa. There are also several Class I facilities that exist in the City. Some of these include bikeways along Gisler Avenue, Fair Drive, Anton and Harbor Boulevards, Victoria Street, a connector between Placentia Avenue and the Santa Ana River Bikeway through Fairview Park, and a path parallel to Joann Street. Class I facilities total 5.75 miles in Costa Mesa. The Santa Ana River Bikeway is located in the unincorporated

portion of Orange County along the riverbed and is not technically within the limits of the City of Costa Mesa.

No bicycle parking facilities have been identified at this time. Two park-and-ride location have been identified—one near Bear Street and Sunflower Avenue and one near Red Hill Avenue on Kalmus Drive. Costa Mesa has no transit centers.

Cypress

The City of Cypress had a year 2000 population of 49,050. Located in the northwest of Orange County, Cypress is host to the Los Alamitos Racetrack, Cypress College, and many other local destinations. The major arterials through the City along which many of these destinations are located include Valley View, Katella, and Lincoln Avenues, Moody Street, and Ball Road. Although having an established grid network of arterial streets, the City has a developed network of bikeways. There are 5 miles of Class III bikeways located along streets such as Orange Avenue, Bloomfield Avenue, and Cerritos Avenue. Class II facilities are located on portions of many arterial roadways including Moody Street, Bloomfield Avenue, Ball Road, and Valley View Avenue. Class II bikeways total 9.5 miles in Cypress. The City has several Class I facilities, including the Coyote Creek Bikeway, which skirts the western boundary of the City. Other Class I facilities are located along streets such as Golden West Street, and Valley View, Katella, and Orangewood Avenues. Class I facilities total 4.5 miles in Cypress.

The City has identified no bicycle parking facilities at this time. Cypress also has neither transit centers nor any park-and-ride facilities.

Dana Point

With a year 2000 population of 38,000, Dana Point is probably known best for its marina, Dana Point Harbor. The City also has a small downtown commercial district and Capistrano Beach, which is popular with residents and visitors during the summer months. Many of Dana Point's destinations are located along the arterial streets, such as Pacific Coast Highway, Street of the Golden Lantern, Del Obispo Street, and Doheny Park Road. Dana Point has many bikeways, including many short Class III facilities. Totaling 3.5 miles in length, some of these Class III facilities can be found along Street of the Golden Lantern, La Cresta Drive, and Camino Capistrano. Totaling 9.5 miles in length, Class II bikeway facilities can be found along streets such as Camino del Avion, Del Obispo Street, Street of the Golden Lantern, Pacific Coast Highway, Selva Road, and Dana Point Harbor Drive. Two Class I bikeway facilities exist in Dana Point. Totaling 2 miles in length, they are located along San Juan Creek and the Salt Creek Corridor Regional Park and Monarch Beach Golf Links.

Dana Point currently does not have any bicycle parking facilities that have been identified. There also exist no park-and-ride locations or transit centers in the City.

Fountain Valley

Located in the central portion of the County, Fountain Valley had a year 2000 population of 56,900. Primarily a city of residential neighborhoods, Fountain Valley is home to Coastline College, Orange Coast Memorial Medical Center, and Mile Square Regional Park. The City's destinations are located along the grid of arterial streets, including Brookhurst and Euclid Streets, and Edinger, Warner, and Talbert Avenues. Fountain Valley has a developed network of bikeways. There are no Class III bikeway facilities that currently exist. Totaling 21.75 miles in length, Class II facilities are located along portions of arterials such as Magnolia, Ward, and Newhope Streets and Edinger, Heil, Slater, and Ellis Avenues. Class I bikeway facilities can be found in and around the perimeter of Mile Square Regional Park. These facilities total approximately 5 miles.

Currently, no bicycle parking facilities have been identified in the City. Fountain Valley has one park-and-ride facility located near Slater Avenue and Brookhurst Street. No transit centers are located in Fountain Valley.

Fullerton

In the year 2000, Fullerton had a population of 128,300. The City is one of the most established communities in Orange County and has a busy downtown shopping and business district. The City is home to Fullerton College, California State University at Fullerton, Southern California College of Optometry, Hope International University, and Western States University College of Law. Most of the main thoroughfares in the City serve the downtown district. These include Harbor Boulevard, Chapman and Commonwealth Avenues. Other streets that serve many destinations include Euclid Street, Brea Boulevard, Orangethorpe Avenue, and State College Boulevard. Fullerton has several Class III facilities along streets such as Valencia Drive, Malvern, Commonwealth, Richman, and Orangethorpe Avenues. Total Class III bikeway mileage totals 20 miles. With total citywide mileage of 12 miles, Class II bikeway facilities can be found along many streets, including Harbor and Brea Boulevards, Acacia Avenue, and Dorothy Lane. One Class I bikeway facility is located on the CSU Fullerton campus and is 1.5 miles in length.

Fullerton has three identified bicycle parking facilities, two in the downtown area and one at Fullerton Airport. A regional transit center is located in the downtown area near the intersection of Harbor Boulevard and Commonwealth Avenue. The Fullerton Transportation Center is served by Metrolink commuter rail service to Los Angeles, Riverside, and San Diego counties. Amtrak rail service as well as commuter bus service is also provided at this station. Two park-and-ride facilities are located in Fullerton: one at the Fullerton Transportation Center downtown and one near Orangethorpe and Magnolia Avenues (near the interchange of the Riverside and Santa Ana Freeways).

Garden Grove

With a year 2000 population of 158,300, the City of Garden Grove is a well-established community whose downtown area developed along the former Pacific Electric Railway's Santa Ana route. Garden Grove is primarily composed of single-family residential neighborhoods. Numerous arterial streets cross the City along which many businesses and services are located. Some of the major arterials include Valley View, Knott, Katella, and Chapman Avenues, Garden Grove and Harbor Boulevards, and Magnolia and Euclid Streets. Currently, there exist several segments of Class III bikeway in Garden Grove. Located along portions of Lampson and Trask Avenue, Class III facilities total 3 miles. Class II facilities, located along portions of Lampson and Trask Avenues and Ward and 9th Streets, total 13.75 miles. One very short Class I bikeway is located along Knott Avenue and totals 0.5 miles in length.

No existing bicycle parking facilities have been identified in the City. There is one park-and-ride facility located near the intersection of Euclid Street and Trask Avenue. No transit centers currently exist in Garden Grove.

Huntington Beach

The third largest city in Orange County with 199,300 people in the year 2000, Huntington Beach is home to some of Orange County's most popular beaches. The City hosts a number of regional destinations, including Huntington State Beach, the downtown are, the Huntington Beach Mall, Golden West College, and Huntington Harbour. The City contains a grid network of arterial streets along which are located most of the City's destinations. Huntington Beach has a developed network of bikeways with Class II facilities along portions of several of its arterial streets, including Edinger, Slater, Garfield, Lake, and Hamilton Avenues and Edwards, Gothard, Newland, and Bushard Streets. Class II facilities constitute 51.5 miles of bikeways in the City. Huntington Beach also has one Class I bikeway facility along the beachfront. This facility is 8.5 miles in length within the City. The Santa Ana River bikeway is technically in the unincorporated portion of Orange County and not in the City of Huntington Beach.

No bicycle parking facilities have been identified at this time. Two park-and-ride facilities are located in the city, near the Huntington Beach Mall and Golden West College. The Golden West Transportation Center is located on Gothard Street adjacent to Golden West College.

Irvine

Irvine had a population of 144,600 in the year 2000. Irvine is a relatively new city with most of its development having occurred during the last three decades. Development is currently advancing at a modest pace in line with the City's focus on master-planned communities that feature neighborhood amenities, which include bicycle facilities. Irvine is home to the University of California at Irvine, Concordia University, Irvine Valley College, and two very large employment centers—one located on the west side of the

City and one located on the east. The central portion of the City is primarily residential with supporting commercial uses. Irvine is a major destination in the County for employment. The City has an extensive arterial roadway network which carries a large volume of traffic on a daily basis. Some of these major arterials include Jamboree and Jeffrey Roads, Culver, University, Irvine Center, and Campus Drives, Irvine Boulevard, and Alton and Barranca Parkways. Commercial centers are located along the arterial streets of Irvine.

The City of Irvine has a very extensive network of existing Class II and III bikeways. Virtually every arterial street in the City incorporates Class II bike lanes. Class II facilities can also be found along portions of the collector street network, including along Walnut, Deerfield, and Yale Avenues, the Yale Loop, Turtlerock Drive, and Park Place. Class II facilities make up 109.75 miles of the existing Irvine bikeway network. Irvine also has a developed network of Class I bikeway facilities. Totaling 27.5 miles in length, Class I facilities include those along Peters Canyon Wash, San Diego Creek, the SCRRA rail corridor, the San Diego Freeway, through Mason Regional Park, and along Sand Canyon Avenue.

Only one secured public bicycle parking facility has been identified, and it is located at the Irvine Transportation Center. Four park-and-ride locations exist in the City. They are located near the following intersections: Walnut and Yale Avenues, Walnut Avenue and Jeffrey Road, Alton Parkway and Irvine Center Drive, and Michelson Culver Drives. One transit center, the Irvine Transportation Center, is located at Ada and Barranca Parkway. Amtrak and Metrolink services are available at this transit center.

La Habra

The City of La Habra had a year 2000 population of 56,800 and is one of the older cities in the County. Many of its streets are of a standard width that does not include provision for bicycle lanes. Some of the most heavily traveled streets for automobile traffic include Imperial Highway and Beach and Harbor Boulevards. There are several Class III facilities that total 12.75 miles in total length. Many of these Class III routes are along neighborhood streets, but portions of the Class III network can be found along Idaho Street and Lambert Road. Several Class II facilities totaling 4 miles can be found along portions of Lambert Road, Whittier Boulevard, Euclid and Palm Streets, and La Habra Boulevard. The facility along Lambert Road serves the downtown area of the City. One Class I facility also serves the downtown area along the Union Pacific rail corridor. The length of this facility is approximately 0.5 miles.

Although it is often difficult to inventory all existing bicycle parking facilities, the City officially identified none. There are no transit centers within the City, and one park-and-ride facility exists near the intersection of Whittier Boulevard and Idaho Street.

La Palma

With a year 2000 population of 16,550, La Palma is one of the smallest cities in Orange County. It is also one of the oldest. The City is built out with an older arterial grid of streets. Despite the existence of an older street network, La Palma has a network of existing Class II bikeways. These are located along most of the arterial streets such as, La Palma, Crescent, and Valley View Avenues, and Moody and Walker Streets. The mileage of La Palma's Class II bikeways totals 4.25 miles. The City also has small portions of the Coyote Creek Class I Bikeway in its jurisdiction. The total mileage of the Coyote Creek bikeway within the city limits is approximately 0.5 miles. This path straddles the Los Angeles County boundary and runs in the cities of La Palma and Cerritos in the City's vicinity.

La Palma currently has no bicycle parking facilities identified. Nor does the City have any park-and-ride facilities or transit centers.

Laguna Beach

Laguna Beach had a year 2000 population of 25,300 and is a very popular destination for people from throughout Southern California. The relatively small seaside community is home to many arts and other festivals throughout the year and offers residents and visitors alike a quaint downtown shopping area that is bustling with activity. Aside from the downtown commercial district, Laguna Beach is primarily residential. It is a well-established city and does not have an extensive circulation network. The two arterials in the City are Laguna Canyon Road (SR-133) and Coast Highway (SR-1). Both of these arterials are designated Class III bikeways totaling 9.25 miles in length within the City. One short Class II facility totaling 1.5 miles in length is located along El Toro Road in the northern part of the City. No Class I facilities currently exist in Laguna Beach.

Laguna Beach has no documented existing bicycle parking facilities, nor any park-and-ride locations. The City has a transit center located on Broadway north of Beach Street.

Laguna Hills

With a year 2000 population of 31,000, Laguna Hills is primarily composed of residential neighborhoods. The City's main destination is the Laguna Hills regional shopping center.
Many portions of the City are suitable for equestrian uses, and these activities have been long established. Laguna Hills has several smaller shopping centers located along some of the arterial streets, including Moulton and Alicia Parkways, El Toro and La Paz Roads, Paseo de Valencia, and Lake Forest Drive. Currently, Laguna Hills has a developed network of bikeways, including Class III facilities along portions of El Toro and Cabot Roads, Moulton Parkway, and Avenida De La Carlota. These Class III facilities total 1.5 miles in length. Class II bikeway facilities, totaling 9 miles, can be found along streets such as Moulton and Oso Parkways, Paseo de Valencia, Ridge Route and Laguna Hills Drives, Los Alisos Boulevard, and La Paz and Cabot Roads.

Class I facilities can be found along portions of Aliso Creek, the San Diego Freeway, Oso and Alicia Parkways, Paseo de Valencia, and through Veeh Ranch Park. Class I facilities total 5 in Laguna Hills.

No bicycle parking facilities have been identified in the City. Laguna Hills has two park-and-ride facilities located near the Laguna Hills Mall. One transit center, the Laguna Hills Transportation Center, is located at the Laguna Hills Mall.

Laguna Niguel

With a year 2000 population of 60,100, Laguna Niguel is primarily a city of newer residential developments and scattered commercial centers located near the intersections of major arterial streets. Some of these streets include Crown Valley, Alicia, and Moulton parkways, Street of the Golden Lantern, La Paz and Niguel Roads, and Pacific Island Drive. Laguna Niguel is home to the Chet Holifield Federal Building and the Orange County Natural History Museum. The City has a developed network of bikeways with two Class III facilities totaling 0.75 miles in length located along portions of Niguel Road and Camino del Avion. Class II facilities are located along portions of streets such as Street of the Golden Lantern, Crown Valley, Moulton, and Alicia Parkways, La Paz and Niguel Roads, Highlands Avenue, Pacific Island and Marina Hills Drives, and Camino del Avion. Class II facilities total 32.75 miles in Laguna Niguel. Totaling 7.5 miles in length, Class I bikeways are located along Sulphur Creek and the Laguna Niguel Regional Park, Crown Valley Parkway, and through the Salt Creek Corridor Regional Park.

Although no existing bicycle parking facilities have been identified, one is planned with the future opening of the Laguna Niguel/Mission Viejo Metrolink Station in the northeastern part of the City. No park-and-ride facilities are located in Laguna Niguel. One transit center will be located at the planned Laguna Niguel/Mission Viejo Metrolink Station. This station will be located on Forbes Road south of Crown Valley Parkway with commuter rail service to Oceanside and Los Angeles.

Laguna Woods

Laguna Woods has a year 2000 population of 20,250. Laguna Woods primarily consists of the Leisure World retirement community. All of the City's neighborhoods are gated, and commercial establishments are located along the arterial streets outside the neighborhoods. These streets include Moulton Parkway, El Toro Road, Paseo de Valencia, and Ridge Route Drive. Bikeway facilities are located only along portions of the arterial street network, including Class II facilities along Ridge Route Drive, El Toro Road, Moulton Parkway, and Paseo de Valencia. These total 2.75 miles in length. Class I bikeway facilities, totaling 0.75 miles, are located along El Toro Road, Laguna Hills Drive, and Paseo de Valencia.

Laguna Woods does not have any identified bicycle parking facilities. The City has no park-and-ride facilities nor transit centers.

Lake Forest

With a year 2000 population of 76,655, Lake Forest is also primarily a city of residential neighborhoods. Adjacent to one of Irvine's large employment centers, Lake Forest is also developing an employment center of its own near the SR-241 Foothill Toll Road. Recent development has been focused in the northern part of the City near the relatively new toll road facility. Foothill Ranch Towne Center is located there, and other smaller shopping centers are located along some of the City's arterial roadways, including Lake Forest Drive, Bake and Portola Parkways, El Toro and Trabuco Roads, and Muirlands Boulevard. Currently, Lake Forest has a developed network of bikeways. Class III facilities can be found along portions of Los Alisos Boulevard, Portola Parkway, and Lake Forest Drive. These total 4.5 miles in length. Class II bikeway facilities can be found on portions of several arterial streets, including Bake Parkway, Los Alisos, Rockfield, and Muirlands Boulevards, Lake Forest and Ridge Route Drives, Jeronimo and Trabuco Roads, Portola Parkway, and Toledo Way. Class II facilities comprise 21.75 miles of Lake Forest's bikeway network. One Class I bikeway currently exists in the City. Located along Aliso Creek, this Class I facility is 6.5 miles in length.

No bicycle parking facilities have been identified in the City. Lake Forest currently has two park-and-ride facilities located near Portola Parkway and El Toro Road and near Trabuco Road and Aliso Creek. The City does not have any transit centers.

Los Alamitos

Los Alamitos is a small city with a year 2000 population of 12,150. The Armed Forces Reserve Air Station occupies a large portion of the City. Some of the major arterials along which are located many destinations include Los Alamitos Boulevard, Katella Avenue, and Cerritos Avenue. The City has two Class III bikeway facilities along Cerritos Avenue and Walnut Street. These total 1 mile. Two Class II facilities along Bloomfield and Lampson Avenues total 1.25 miles, and two Class I bikeway facilities constitute 1.25 miles. These are along the Coyote Creek, San Gabriel River, and as a western extension of Catalina Street.

The City has not identified any bicycle parking facilities, and there are no transit centers within the City. Los Alamitos has one park-and-ride facility located near Lampson Avenue and Rose Street.

Mission Viejo

One of the largest South County cities with a year 2000 population of 98,500, Mission Viejo is home to Saddleback College, Mission Viejo Regional Medical Center, and the Shops at Mission Viejo regional shopping center. Significant recreational amenities include Lake Mission Viejo and the adjacent O'Neill Regional Park, which is just outside the city limits to the east. Primarily a city comprised of residential neighborhoods, Mission Viejo's activity centers and key destinations are located along the City's well

developed network of arterial streets, including Santa Margarita, Oso, Alicia, and Marguerite Parkways, Los Alisos and Muirlands Boulevards, La Paz, Jeronimo, and Olympiad Roads.

Mission Viejo has a developed network of bikeways. Totaling 3 miles in length, Class III facilities are location along portions of Santa Margarita, Crown Valley, and Marguerite Parkways, Olympiad, Trabuco, and La Paz Roads, and Los Alisos Boulevard. Class II facilities can be found along virtually every other portion of the arterial street network in Mission Viejo. Class II bikeway facilities total 39.5 miles in the City. Four Class I facilities are located in Mission Viejo, including along Aliso Creek, Los Alisos Boulevard and Entidad, through the Jeronimo Open Space and Oso Viejo Community Park, and through Cordova Park. Class I facilities total 4 miles in the City.

Mission Viejo currently does not have any bicycle parking facilities that have been identified. The City has four park-and-ride locations, including those near Alicia Parkway and Muirlands Boulevard, Marguerite Parkway and Felipe Road, Oso and Marguerite Parkways, and Alicia Parkway and Via Linda. Mission Viejo has no transit centers within its limits.

Newport Beach

The City of Newport Beach is a popular upscale beach community with a year 2000 population of 75,600. Although popular for its miles of beaches and two fishing piers, the City is also home to a large bay and the Upper Newport Bay Ecological Reserve. The City has two large employment centers, the Fashion Island regional shopping center, and several small shopping districts, such as Balboa Island. Because of its geography, the City does not have an extensive arterial street network. The major arterials include Coast Highway, Newport and MacArthur Boulevards, and Jamboree Road.

Newport Beach has a developed network of Class I and II bikeway facilities. Several Class II bikeways totaling 23.75 miles in length include those on portions of Coast Highway, Balboa Boulevard, Superior Avenue, Backbay Drive, and Birch Street. Class I facilities total 24.5 miles within the City. These include facilities along portions of streets including Jamboree, Ford, and San Joaquin Hills Roads, MacArthur Boulevard and Bristol Street, and the Buffalo Hills Park and Ocean Front Paths.

Currently, no bicycle parking facilities have been identified. One park-and-ride facility is located near Fashion Island at the OCTA transit center. The OCTA Fashion Island Transit Center is located near the intersection of Avocado Avenue and San Nicolas Drive. Bicycles are allowed on the Balboa Island Ferry, which connects Balboa Island with the Balboa Peninsula.

Orange

One of the oldest established cities in the County; Orange has a year 2000 population of 129,400. The City has a lively downtown area that is supported by numerous shopping and restaurant establishments. Orange is home to Chapman University and Santiago Canyon College. The City also home to Saint Joseph Hospital and the University of California Irvine Medical Center, two major regional medical facilities, and the Mall of Orange and the Block at Orange, two major regional shopping centers. The eastern portion of the City has many newer housing developments in the hills, while the western portion is older and more established. Many of the commercial and service destinations in the City are located along the major arterial streets, including Lincoln, Katella, Chapman, and Tustin Avenues, Ball Road, and Glassell Street.

The City of Orange has a developed network of bicycle facilities. Class III bikeways, totaling 2.25 miles, can be found along portions of Glassell Streets and Taft Avenue. Numerous Class II bikeway facilities are located along portions of many streets, including Chapman, and Walnut Avenues, Cambridge Street, and Santiago Boulevard. Class II facilities total 22 miles in Orange. There are several short Class I bikeway segments in Orange, including those along the Santiago Creek, Wanda Road, Rancho Santiago Boulevard, and Jamboree Road. The Santa Ana River Bikeway also runs through portions of the City. These Class I facilities total 7.8 miles.

The City has identified only one bicycle parking facility, and it is located at the Orange Metrolink Station. One park-and-ride facility currently exists near Lincoln and Tustin Avenues. The City has one transit center, the Orange Metrolink Station with commuter rail service to Riverside, Los Angeles, and Oceanside.

Placentia

With a year 2000 population of 50,200, Placentia has many older as well as newer neighborhoods. Many of the desired destinations in the City are located along Yorba Linda and Kraemer Boulevards, Rose Drive, and Orangethorpe and Chapman Avenues. Currently, the City has a developed network of Class III bikeways. These are located along most of the secondary arterial streets, some of which include Rose Drive, Chapman Avenue, Kraemer Boulevard, and Buena Vista Avenue. The total mileage of the Class III bikeway network is approximately 11.75 miles. The City also has several Class II facilities that are located along many streets including Bastanchury Road, Golden Avenue, Alta Vista Street, and Kraemer Boulevard. Class II facilities comprise a total of 7.25 miles in Placentia. The City currently has one Class I facility, which is a 0.75-mile-long loop in Tri-City Park in the northwest of the City.

Placentia identified no designated bicycle parking facilities, and the City has no park-and ride locations nor transit centers.

Rancho Santa Margarita

Rancho Santa Margarita, a recently incorporated city, has a population of 47,214. The City has one employment center and many newer housing developments. Rancho Santa Margarita has seen a lot of rapid development over the past fifteen years, primarily in the residential market. The City contains portions of O'Neill Regional Park, which runs along Trabuco Canyon through the City. Rancho Santa Margarita has several bikeway facilities, including Class II facilities along Santa Margarita, Alicia, Antonio, and Oso Parkways, and Avenida Empresa. These Class II facilities comprise 10.25 miles of the City's bikeway network. Totaling 2.75 miles in length, Class I bikeway facilities can be found along portions of Santa Margarita Parkway and Trabuco Canyon.

Currently, no bicycle parking facilities have been identified in the City. Rancho Santa Margarita has one park-and-ride location near Santa Margarita Parkway and Avenida Empresa. The City does not have a transit center.

San Clemente

With a year 2000 population of 50,300, San Clemente is the southernmost city in Orange County. The City is home to miles of beaches, which are popular in the summer months.
Many of the City's coastal neighborhoods are older, and many of the inland areas are newer, with recent new housing construction and construction planned in the future. Some of San Clemente's destinations are located along the arterial streets, including El Camino Real, Avenida Pico, and Camino de Los Mares. The City has several bikeways, including 4.25 miles of Class III facilities located along streets such as Avenida Pico, Calle Puente, and El Camino Real. Class II bikeway facilities are located along streets such as Camino de Los Mares, Avenidas Pico, Vaquero, and Vista Hermosa, El Camino Real, and Avenida del Presidente. Class II facilities total 11.75 miles in San Clemente.

Several bicycle parking facilities have been identified, including those located at most of the City's municipal parks. One is also located at the San Clemente Amtrak/Metrolink Station.
One park-and-ride facility is located on Avenida Pico near the San Diego Freeway. One transit center, the San Clemente Amtrak/Metrolink Station, is located on Avenida Estacion near El Camino Real and Avenida Pico.

San Juan Capistrano

San Juan Capistrano is an older established community in South County. With a year 2000 population of 32,500, the City is probably most famous for its Mission located in the downtown area of the City. The downtown area is popular with residents and visitors alike with its quaint restaurant and shopping district. Development in San Juan Capistrano has occurred less rapidly over the past two decades as in the rest of the

South County region. Most of its development has been residential with some commercial located in the downtown area. The City has a network of bikeways, including some Class III facilities located along streets such as La Zanja Street and Avenida de La Vista. Class III facilities total 0.5 miles in the City. Class II bikeway facilities totaling 8 miles can be found along portions of streets including San Juan Creek Road, Del Obispo and Alipaz Streets, and Camino Capistrano. Totaling 11 miles in length, Class I facilities can be found along portions of streets such as Rancho Viejo and San Juan Creek Roads, Camino del Avion, Camino Capistrano, and along San Juan and Trabuco Creeks.

Two existing bicycle parking facilities have been identified. These are located at the San Juan Capistrano Amtrak/Metrolink Station and at the San Juan Capistrano Community Center and Sports Park located on Camino del Avion. Two park-and-ride locations exist in the City, including at the Amtrak/Metrolink Station in the downtown area, on Rancho Viejo Road at Junipero Serra Road. One transit center is located in the downtown area: the San Juan Capistrano Amtrak/Metrolink Station.

Santa Ana

With a year 2000 population of 317,700, Santa Ana is the seat of County government and the largest city in Orange County. County government offices are located in the City's Civic Center downtown. The City is also home to Santa Ana College, the Santa Ana Zoo, and the Main Place and Bristol Marketplace shopping centers. The City is one of the oldest and established cities in Orange County. Most of the City's destinations and services are located along the arterial street network, including streets such as Main and Bristol Streets, Grand, McFadden, and Edinger, and Warner Avenues, and 1st and 17th Streets. Santa Ana currently does not have a well-developed network of bikeways. The City has a short 0.25-mile connecting Class III facility along Orange Avenue and Adams Street. Santa Ana has two short Class II facilities totaling 1 mile, which are located along Susan Street and Sunflower Avenue near the South Coast Metroplex. There are several Class I bikeway facilities in Santa Ana, including those located along Maple, Greenville, and Flower Streets, MacArthur Boulevard, the rail trail parallel to Alton Avenue, and the Santa Ana River Bikeway. These Class I bikeway facilities total 8.75 miles.

Several bicycle parking facilities were identified in the Civic Center area of Santa Ana. One park-and-ride facility is located at the Santa Ana Transportation Center. Two transit centers currently exist in the City. One is the OCTA Santa Ana Transit Terminal near the Civic Center, and the other is the Santa Ana Regional Transportation Center located near Santa Ana Boulevard and Santiago Avenue. Amtrak, Metrolink and intercity buses as well as OCTA buses serve the Santa Ana Regional Transportation Center.

Seal Beach

A small beach community with a year 2000 population of 27,400, Seal Beach is one of many summer beach destinations for people from Los Angeles and Orange Counties.

Although the United States Naval Weapons Support Facility dominates the City's territory, Seal Beach is also home to a Leisure World retirement community and the Anaheim Bay National Wildlife Refuge.

Most of the City's destinations are located in the downtown area or along Seal Beach Boulevard. The City has several bikeways that currently exist. One Class III bikeway facility totaling 0.5 miles is located along the southern portion of Seal Beach Boulevard. Several Class II facilities are located along portions of Seal Beach Boulevard, Lampson, Westminster, Bolsa, and Electric Avenues, Marina Drive, and Beverly Manor Road. Class II facilities total 6.25 miles in length. Two Class I bikeways exist in Seal Beach. One is the San Gabriel River Bikeway and the other is a connecting path from Beverly Manor Road to the River path. These total 0.5 miles.

Currently, no existing bicycle parking facilities have been identified. Seal Beach also has no park-and-ride facilities nor transit centers.

Stanton

With a year 2000 population of 34,350, Stanton is an older established city along one of the former Pacific Electric Railway routes between Los Angeles and Santa Ana. Many arterial streets pass through Stanton, including Beach Boulevard, and Katella, Chapman, and Western Avenues. Currently, the City has two very short segments of bikeway---one Class I and one Class II each 0.25 miles in length. They are both located along Knott Avenue.

Stanton currently has identified no existing bicycle parking facilities, and has no park-and-rides or transit centers within the city limits.

Tustin

With a year 2000 population of 68,300, Tustin is home to some of the oldest and newest developments in Orange County. The downtown area of the City is well established, but the eastern Tustin Ranch area has been developed primarily over the past decade. Tustin Marketplace in Tustin Ranch is a major regional shopping and entertainment destination in the County. The closed Tustin Marine Corps Air Station is currently being studied for redevelopment in the southern portion of Tustin. The City has a network of bikeways, primarily in its newer eastern portion. There currently exist no Class III bikeways. Several Class II bikeway facilities totaling 15 miles can be found on streets such as Irvine Boulevard, Edinger, Bryan, and Walnut Avenues, and Jamboree and Tustin Ranch Roads. Two Class I facilities are located along Newport Avenue and Peters Creek, which runs through the entire city from north to south. These facilities total 5 miles in length.

Several bicycle parking facilities have been identified, and they are primarily located at municipal parks throughout Tustin. One will be located at the new Tustin Metrolink Station, scheduled to open in fall 2001 on Edinger Avenue. No park-and-ride facilities

currently exist in the City, and one transit center will be located at the Tustin Metrolink Station on Edinger Avenue.

Unincorporated Areas

Unincorporated areas of Orange County have a total year 2000 population of 218,800. Several areas of unincorporated county are urban, such as the communities of Rossmoor, North Tustin/Lemon Heights, Midway City, and Aliso Viejo. Other areas are rural and include communities such as Trabuco Canyon, Silverado, and Santiago Canyon. Existing bikeway facilities exist outside of the incorporated cities and they include 30.25 miles of Class I bikeways, such as along the Santa Ana River, Coyote Creek, El Toro Road, and Santiago and Aliso Creeks. Existing Class II bikeway facilities total 45.50 miles and include such streets as Aliso Viejo Road, Pacific Park Drive, Irvine and Orange Park Boulevards, Newport Avenue, and Oso and Antonio Parkways. Existing Class III bikeways in unincorporated areas total 16 miles and include streets such as Portola Parkway, Santiago Canyon Road, and Laguna Canyon Road.

Although bicycle parking facilities exist at many locations in unincorporated areas, no designated parking facilities were identified. No park-and-ride facilities or transit centers are located in unincorporated areas of Orange County.

Villa Park

One of the smallest cities in the County with a population of 6,775, Villa Park is primarily residential and is surrounded by the City of Orange. The City has a well-developed network of Class II bikeways and one Class I facility on the border with Orange. Totaling 7.75 miles, Class II facilities can be found on streets such as Villa Park Road, Taft Avenue, and Lemon Street. The one Class I facility is located along Wanda Road and is approximately 0.5 miles in length. The City of Villa Park has not identified any existing bicycle parking or park-and-ride facilities. Villa Park also does not have a transit center within its limits.

Westminster

With a year 2000 population of 87,600, Westminster has become the center of Vietnamese-American culture in Southern California. Numerous cultural destinations are located in the City. Many of these and other destinations are located along the arterial grid network of streets, including Beach and Westminster Boulevards, Bolsa Avenue, and Golden West, Magnolia, and Brookhurst Streets. The City is home to the Westminster Mall, a regional shopping center serving the west County area. Westminster currently does not have a developed network of bikeways. Currently, the City has one Class III bikeway facility along Trask Avenue totaling approximately 2.25 miles in length. Class II facilities are located along portions of Edwards and Hoover Streets. These total 1.25 miles. Two Class I bikeways totaling 2 miles are located along Hoover Street and the Anaheim Barber City Channel waterway.

Currently, no bicycle parking facilities have been identified in Westminster. On park-and-ride facility is located near the intersection of McFadden Avenue and Beach Boulevard. Westminster does not have a transit center within its limits.

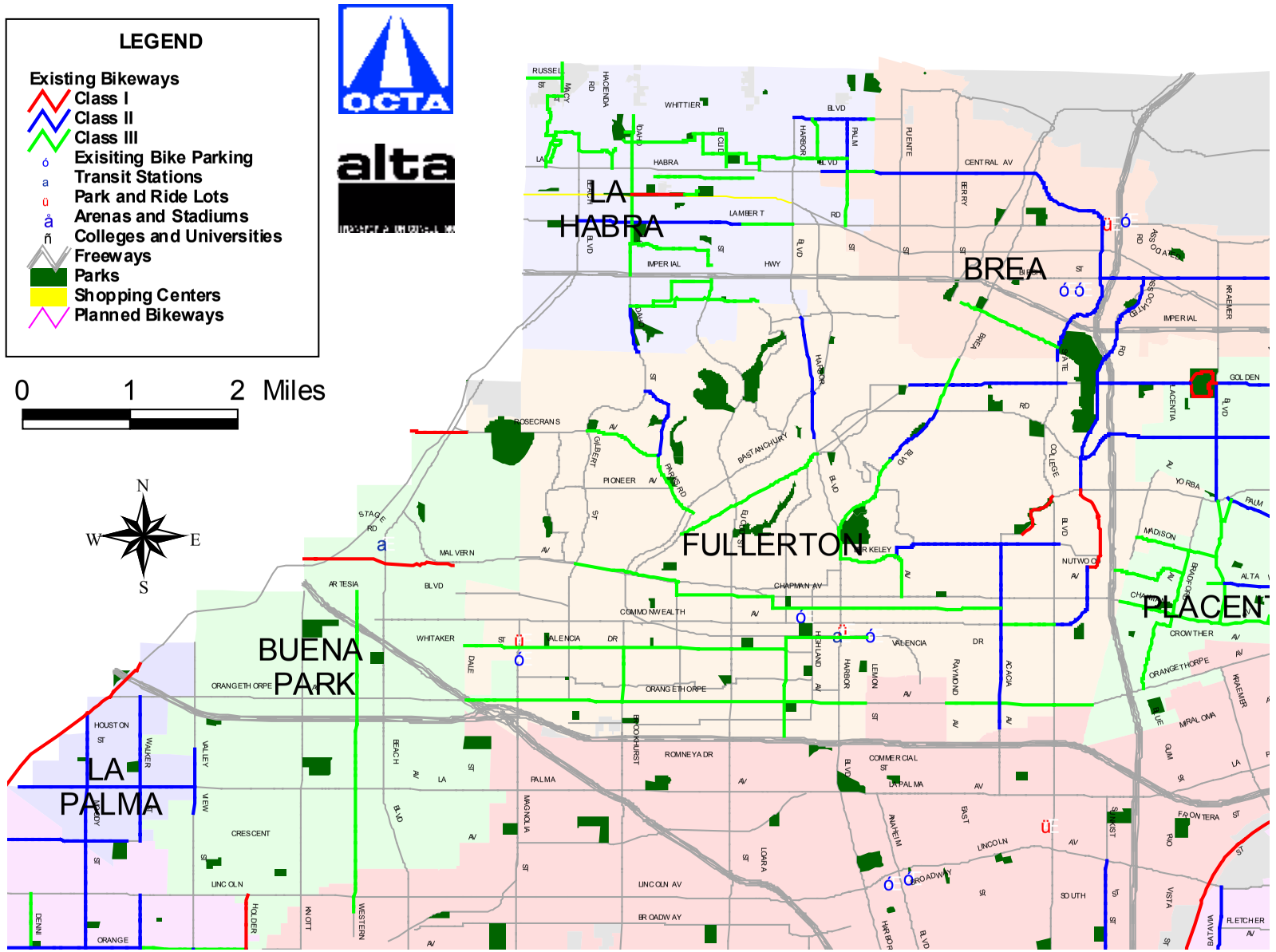
Yorba Linda

With a year 2000 population of 63,100, the City of Yorba Linda has many newer neighborhoods and streets, especially in the eastern portion of the City. The downtown area is older and includes the Richard Nixon Presidential Library on Yorba Linda Boulevard. Some of the major arterial streets include Imperial Highway, Yorba Linda Boulevard, Esperanza Road, and Lakeview Avenue. Currently, the City has two Class III facilities located along Bastanchury Road and Oak Meadow Drive. These comprise 1.5 miles in total length. A few Class II facilities can be found along portions of Yorba Linda Boulevard, Kellogg Drive, and Fairmont Boulevard. Class II facilities total 2.75 miles in Yorba Linda. Three Class I facilities are located in the City. One is along Esperanza Road, and the other two are on other rights-of-way. One Class I path roughly parallels Imperial Highway and serves the downtown area. Total Class I mileage is approximately 10 miles.

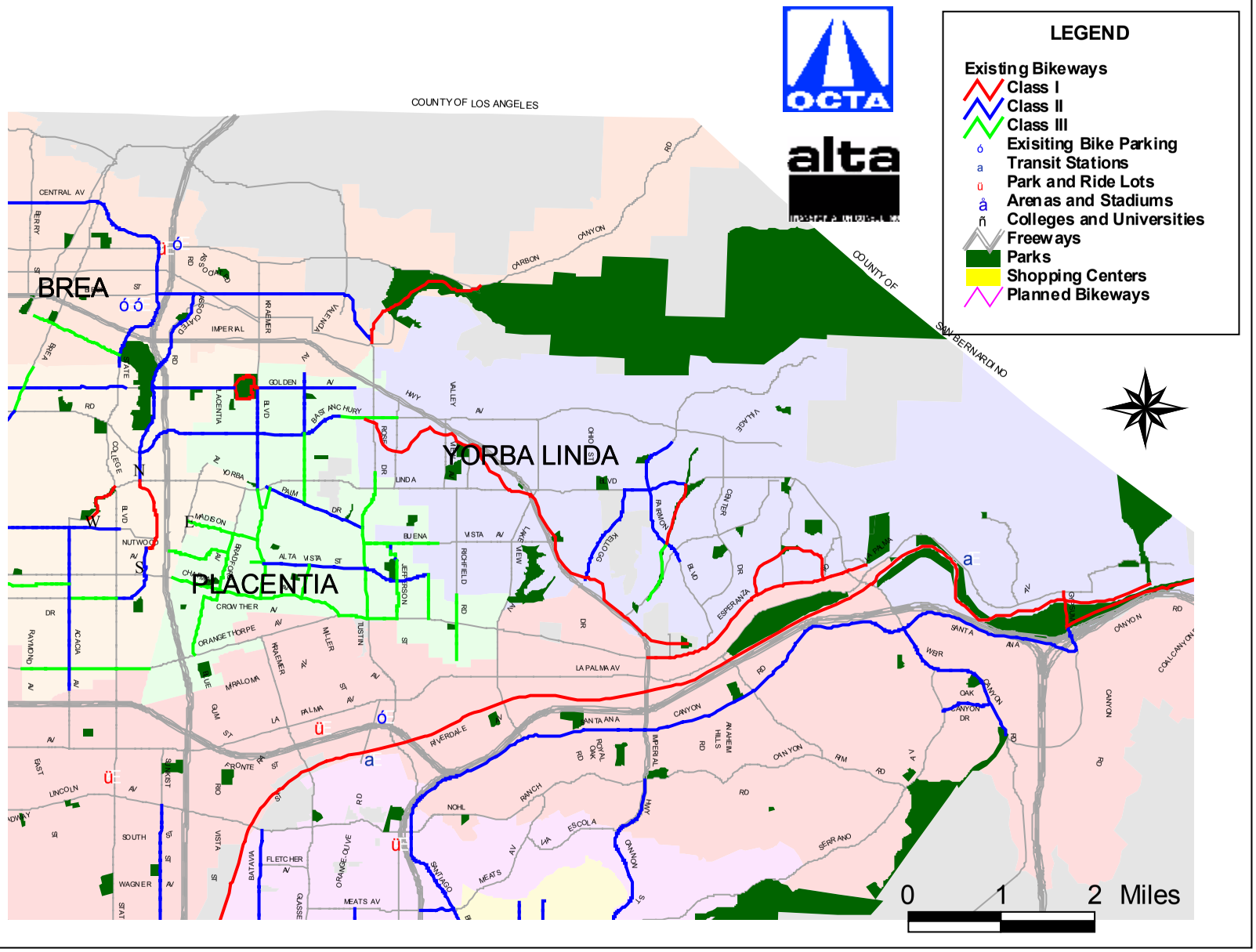
Yorba Linda currently has no identified bicycle parking facilities, and only one park-and ride facility is located near Yorba Linda Boulevard and Esperanza Road.

The following maps show the existing facilities as described above.

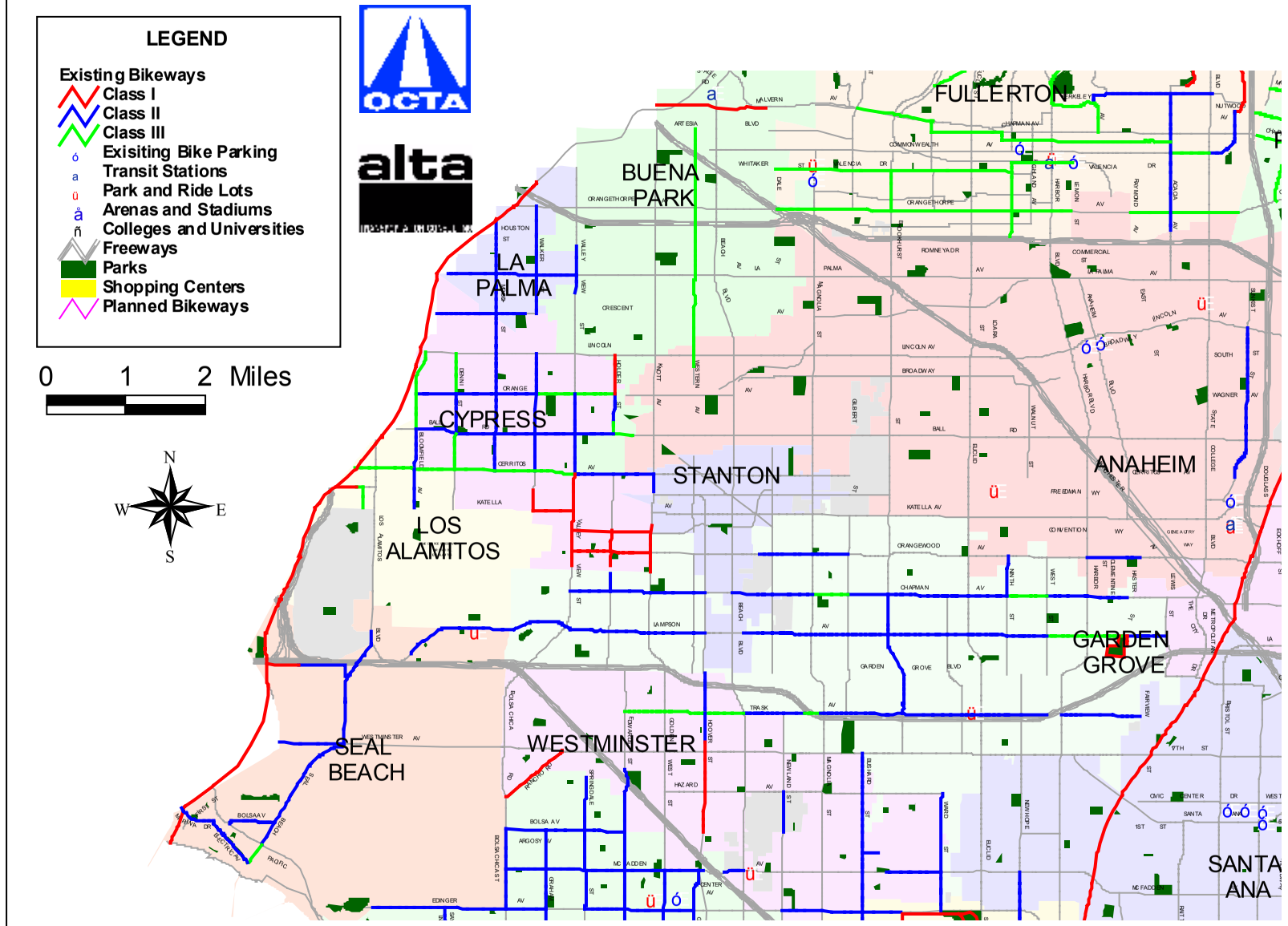
Map 1: Existing Bicycle Facilities
La Habra, Brea, Buena Park, Fullerton, Anaheim



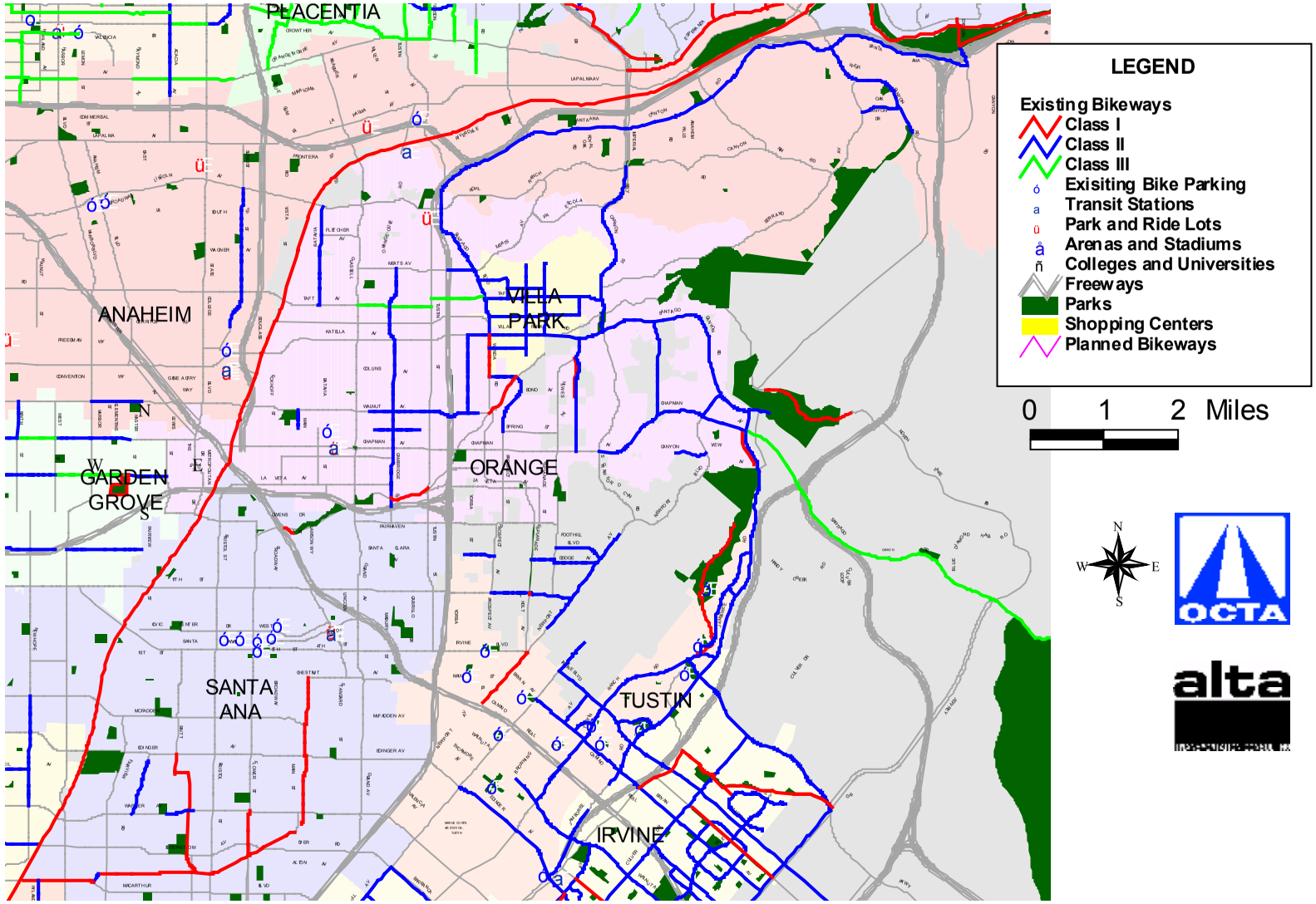
Map 2: Existing Bicycle Facilities
Brea, Yorba Linda, Anaheim and Unincorporated County



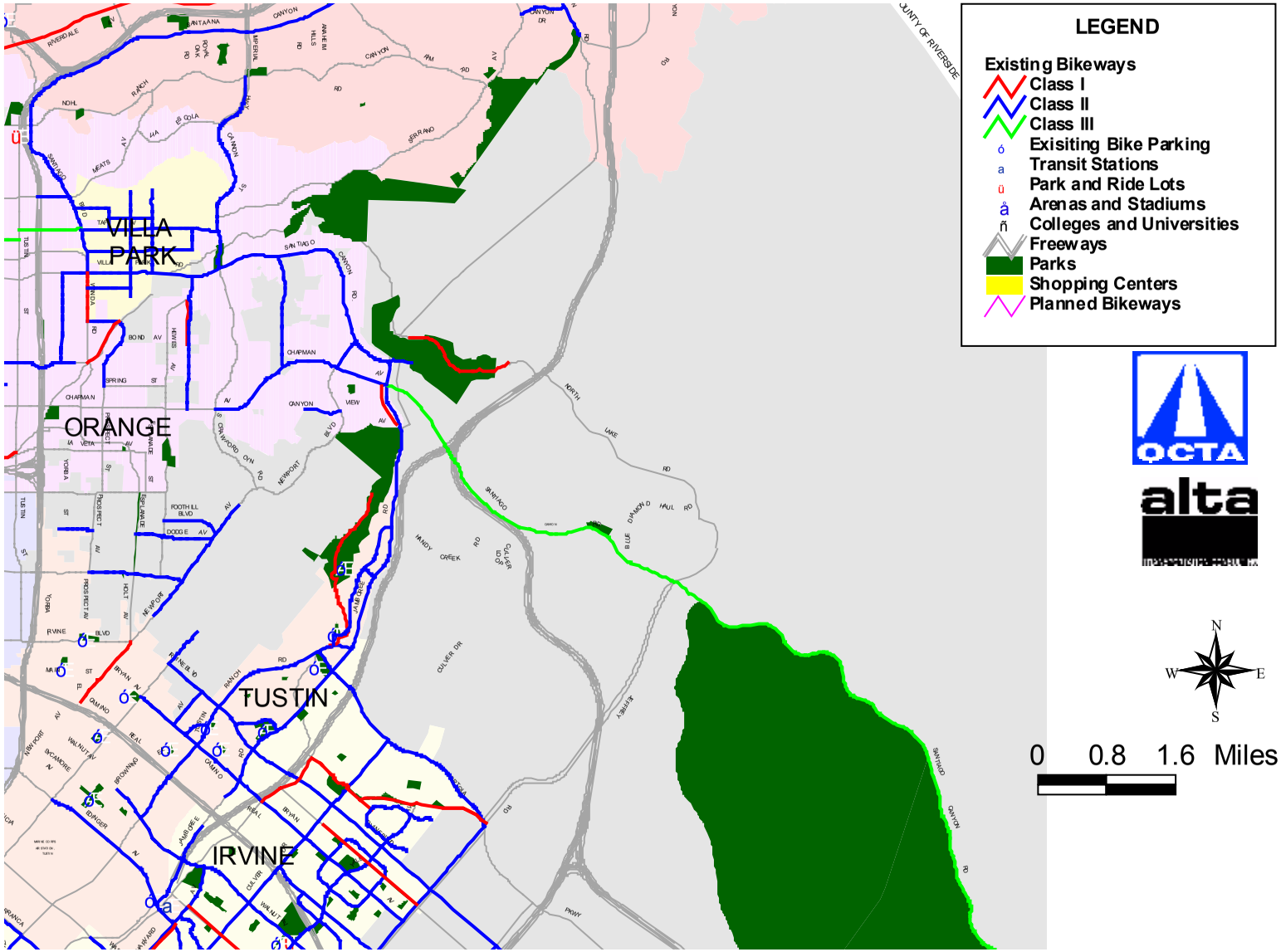
Map 3: Existing Bicycle Facilities
La Palma, Buena Park, Anaheim, Cypress, Stanton, Los Alamitos, Seal Beach, Westminster, Garden Grove



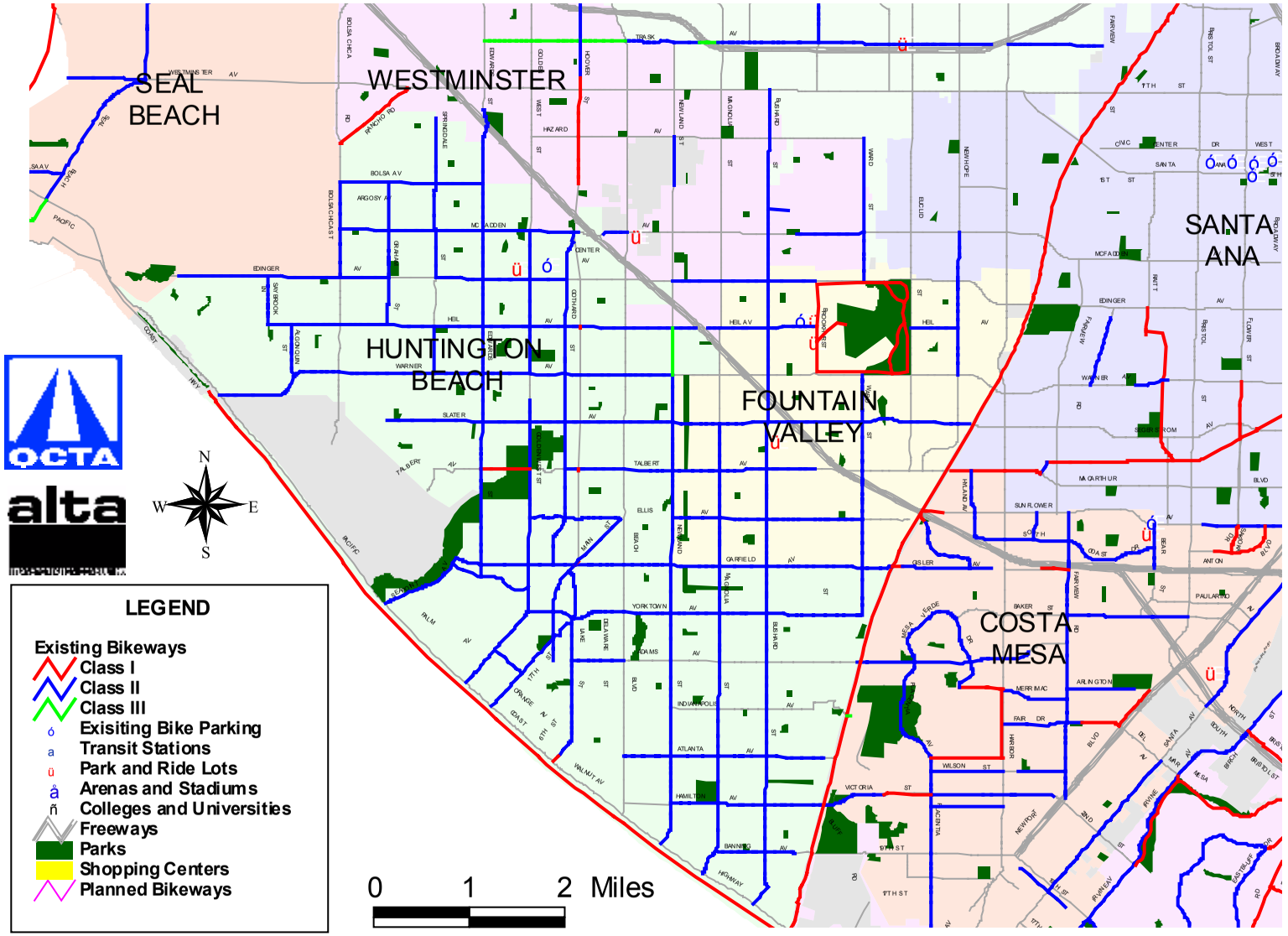
Map 4: Existing Bicycle Facilities
Anaheim, Orange, Villa Park, Santa Ana, Tustin



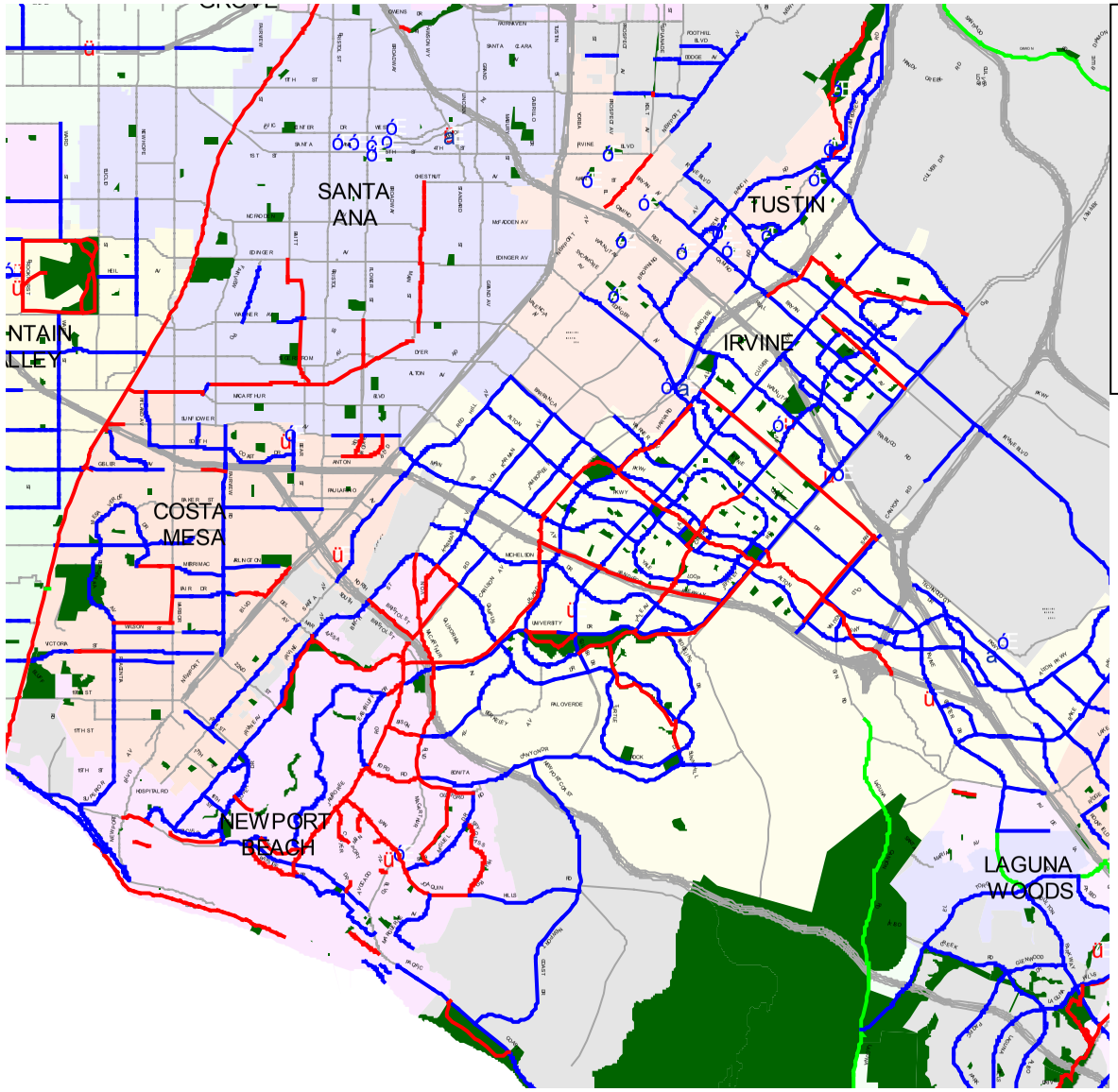
Map 5: Existing Bicycle Facilities
Villa Park, Tustin, and Unincorporated County



Map 6: Existing Bicycle Facilities
Seal Beach, Westminster, Huntington Beach, Fountain Valley, Santa Ana, Costa Mesa



Map 7: Existing Bicycle Facilities
Santa Ana, Tustin, Irvine, Costa Mesa, Newport Beach



LEGEND

Existing Bikeways
- Class I
- Class II
- Class III

Exisiting Bike Parking
Transit Stations
Park and Ride Lots
Arenas and Stadiums
Colleges and Universities
Freeways
Parks
Shopping Centers
Planned Bikeways

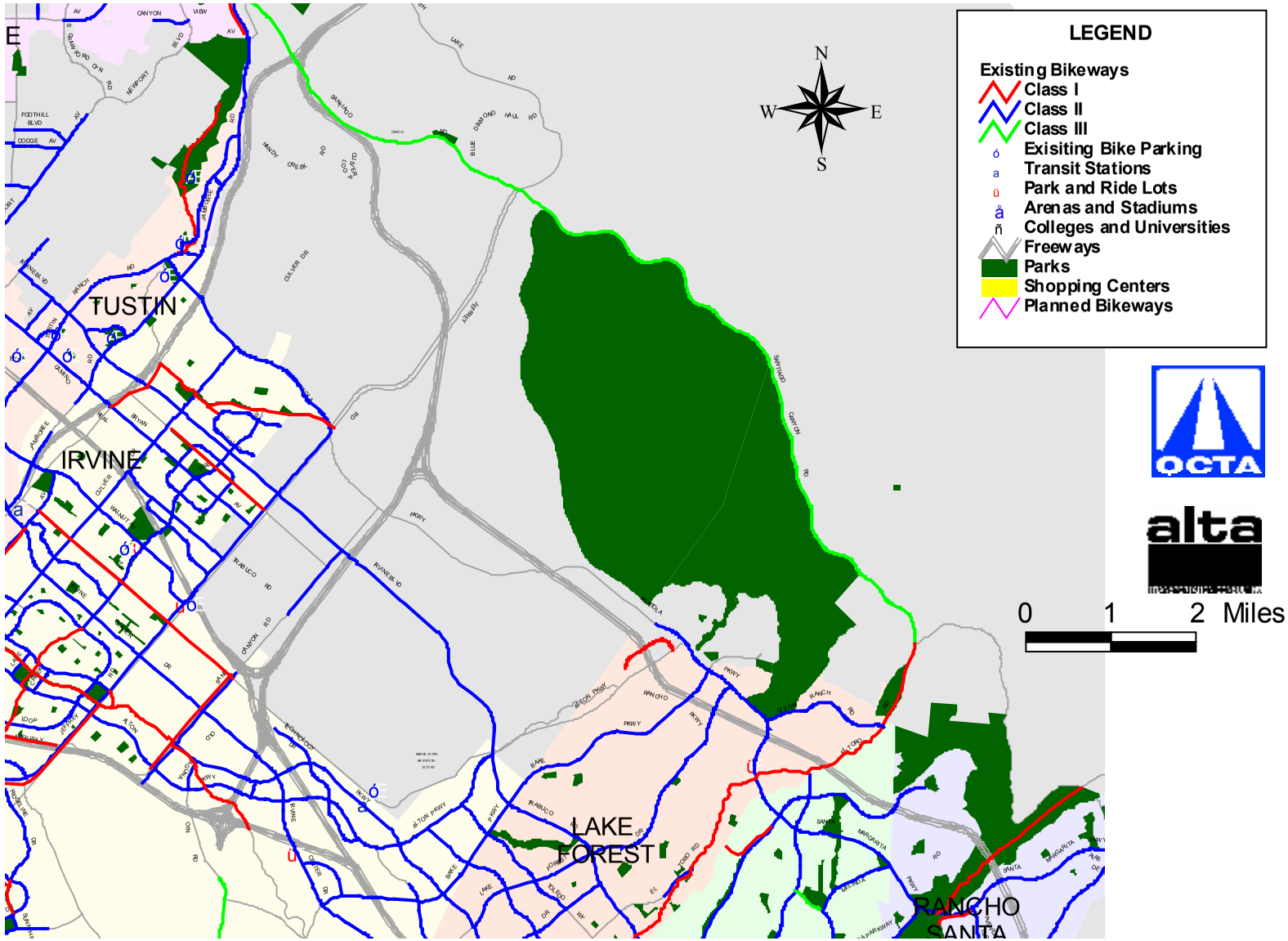
N
W E
S

OCTA

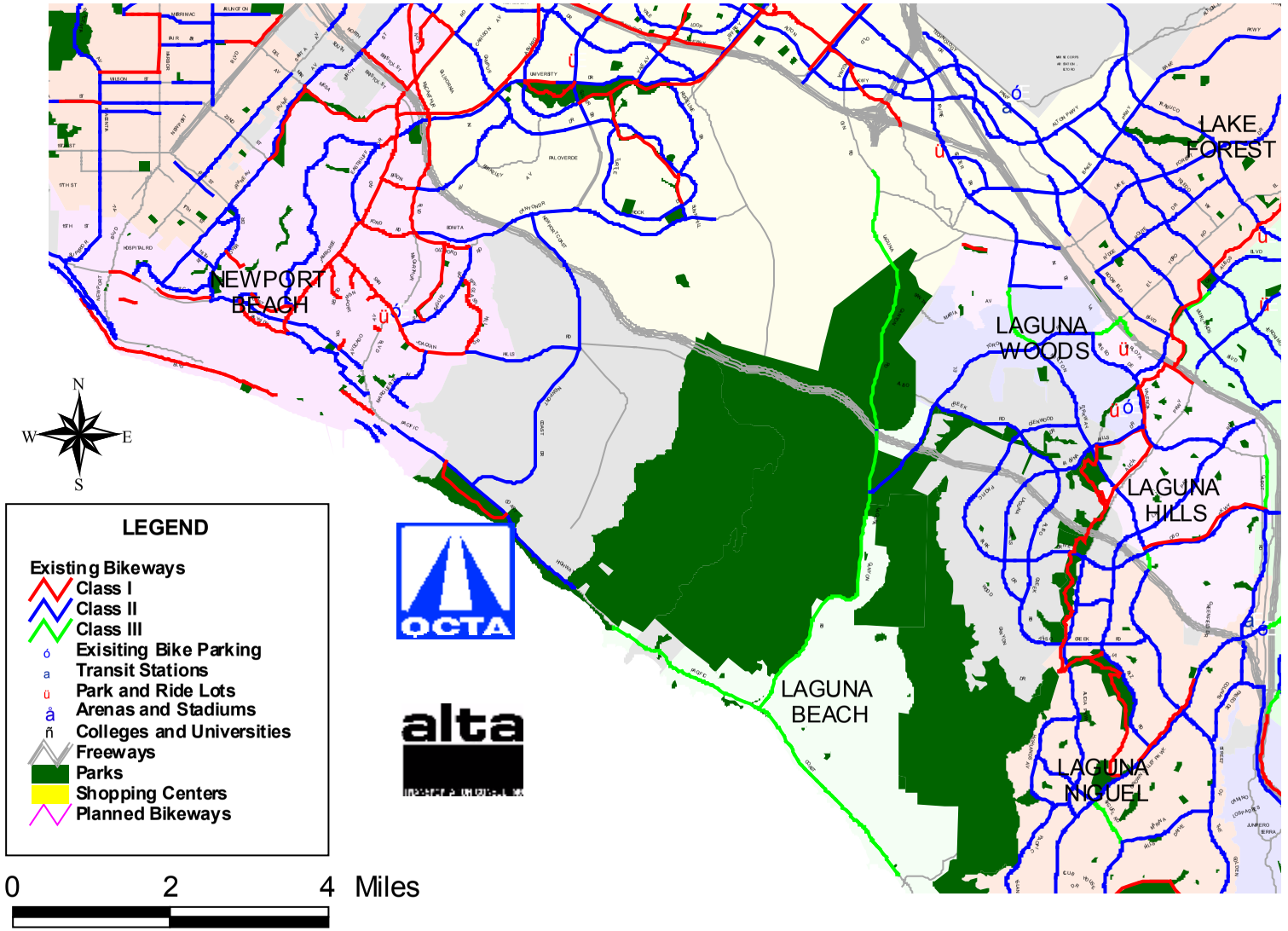
alta

0 1 2 Miles

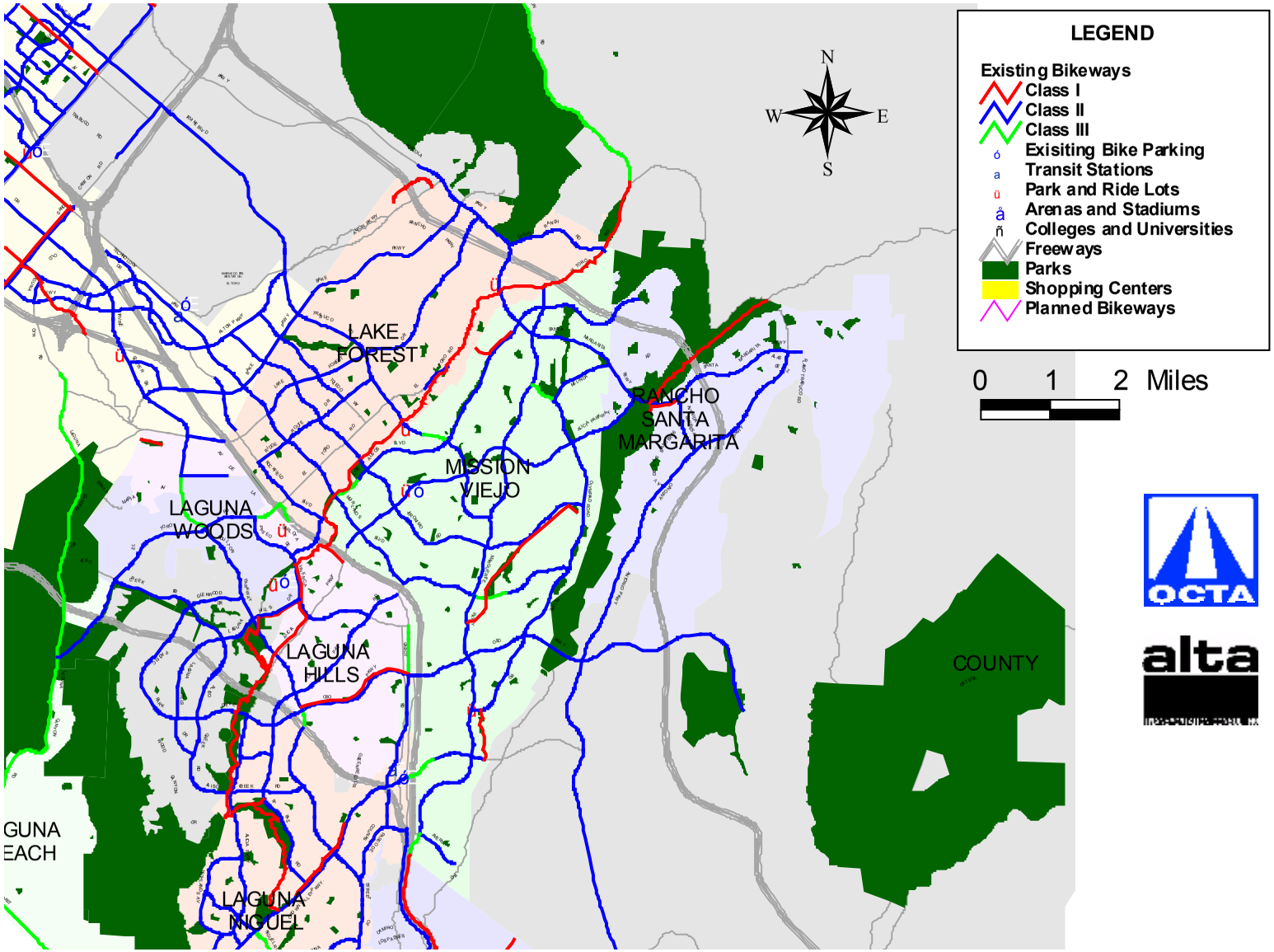
Map 8: Existing Bicycle Facilities
Irvine, Unincorporated County



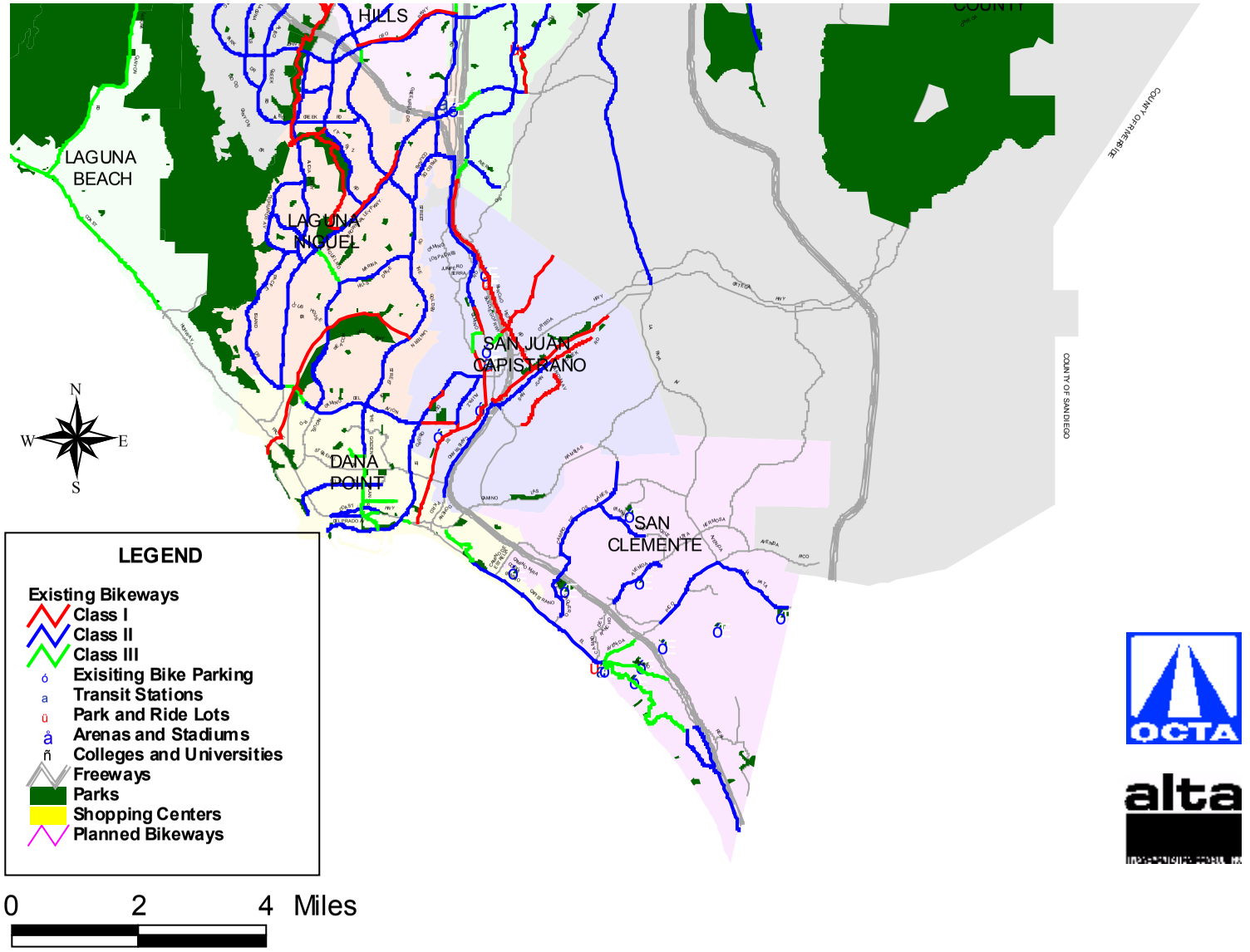
Map 9: Existing Bicycle Facilities
Newport Beach, Laguna Beach, Irvine, Laguna Woods, Laguna Niguel



Map 10: Existing Bicycle Facilities
Laguna Woods, Laguna Hills, Lake Forest, Mission Viejo, Rancho Santa Margarita, Unincorporated County



Map 11: Existing Bicycle Facilities
Laguna Beach, Laguna Niguel, Dana Point, San Juan Capistrano, San Clemente, Unincorporated County



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Chapter 3
Needs Analysis

The purpose of reviewing the needs of commuter and recreational bicyclists is twofold: (1) it is instrumental when planning a system that must serve both user groups, and (2) it is useful when pursuing competitive funding and attempting to quantify future usage and benefits to justify expenditures of resources.

Needs of Commuter Bicyclists

Commuter bicyclists in Orange County range from employees who ride to work to children who ride to school. Millions of dollars nationwide have been spent attempting to increase the number of people who ride to work or school, with some success. In addition to commuters, there is a growing interest in recreational bicycling, especially with children, elderly and families who enjoy the outdoors.

Although each of the jurisdictions vary in geography, demographics and infrastructure, Orange County still lends itself to having the potential for commuter and recreational bicyclists because of:

- Favorable climate throughout most of the year
- Relatively moderate terrain
- There are accessible parks and some water channels that show strong potential for off-road bike paths
- A large number of jobs which allow local residents to work in the County
- A large number of school-aged people and retired people enjoy cycling

In addition to the reasons why there is a potential for commuter bicycling, there is a population in the County that is prime for bicycle commuting. The type of commuter bicyclists and the characteristics of their cycling are summarized below.

- Commuter bicyclists typically fall into one of three categories: (1) adult employees, (2) students, and (3) shoppers.

- Commuter trips usually range from several blocks to ten miles.

- Commuters typically seek the most direct and fastest route available, with regular adult commuters often preferring to ride on arterials rather than 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 bicycle commuters.

- Major commuter concerns include changes in weather (rain), riding in darkness, personal safety and security.

- Rather than be directed to side streets, most commuting adult cyclists would prefer to be given bike lanes or wider curb lanes on direct routes.

- In general, a primary concern to all bicycle commuters is intersections with no stop signs or signal controls.

- Commuters generally prefer routes where they are required to stop as few times as possible, thereby minimizing delay.

- 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 street wherever possible.

Needs of Recreational Bicyclists

The needs of recreational bicyclists in Orange County must be considered, as they are often different from commuter bicycling. Specific needs and patterns for recreational bicyclists are:

- Recreational bicycling typically falls into one of three categories: (1) exercise, (2) non-work destinations such as parks, or (3) touring, long distance treks or events.

- Recreational users range from healthy adults to children to senior citizens. Each group has their own abilities, interests and needs.

- Directness of the route is typically less important than routes with less traffic conflict. Visual interest, shade, protection from weather elements, moderate gradients or other "comfort" features are also very important.

- People exercising or touring often prefer a loop route rather than having to backtrack.

Public Input

Two public workshops were held in Orange County. Announcements for the public workshops were made through OCTA public information office in which they sent out press releases to major newspapers, notices to a mailing list of 500 people, and flyers to chambers of commerce and bicycle shops. Workshops were held at the OCTA offices located in the City of Orange. At the first workshop, attendees were asked to identify their bicycle needs verbally, on a written survey and on maps. The second workshop included a presentation of the preliminary recommended routes. Approximately 20 people attended both workshops

Surveys were also distributed to Orange County residents. The surveys included questions about bicycling characteristics and bicycle facility preferences. There were 15 surveys returned. Although this number is statistically insignificant, the results are presented.

- The preferred type of bicycle facility is off street bike paths, which ranked 60%.

- The majority of riders, 80%, ride their bicycle 1-6 times per week.

- The trip purpose for bicyclists includes 86% recreation, 33% work, 20% shopping and 5% other.

- The highest number of bicyclists, 46%, travels a distance of 11 miles or more while 33% travel 6-10 miles and 13% travels less than 5 miles.

- The primary reason for not riding a bicycle is the lack of bikeways (60%). The other reasons for not riding a bicycle include safety, which ranked 40%.

As part of the survey bicyclists also noted issues such as trail maintenance, maintenance, motorist education, signage and use of right of ways as concerns. Table 2 on the next page shows the results.

Table 2: Orange County Bicycle Survey Results

1. Please rank your preference in regard to bikeways:

RANKING	Off Street Bike Paths	On Street Bike Lanes	Bike Routes
1	60%	40%	0%
2	13%	33%	33%
3	27%	6%	40%
No Answer		21%	27%

2. Describe your current level of bicycling:

1 per day	1-6 per week	1-3 per month	Rarely	Never	No Answer
13%	80%	6%	0%	0%	11%

3. Describe your bicycle trip purpose (answer all that apply)

Work	School	Shopping	Recreation	Other
33%	0%	20%	86%	6%

4. How far do you live from work or school:

1-5 miles	6- 10 miles	11 or more miles	No Answer
13%	33%	46%	8%

5. Describe your reason you don't ride or ride more often:

RANKING	Safety	Lack of Bikeways	Parking	Weather	Car	Shower
1	40%	60%	0%	20%	7%	7%
2	40%	33%	0%	0%	0%	0%
3	13%	0%	7%	40%	0%	0%
4	0%	0%	13%	0%	13%	13%
5	0%	0%	20%	7%	0%	20%
6	0%	0%	7%	7%	27%	7%
No Answer	7%	7%	53%	26%	53%	53%

As part of the survey, people were given the opportunity to list specific comments about constraints and opportunities.

Issues ranked more than 10%

River Trail Connections	60%
Maintenance	33%
Motorist Education	33%
Signage	27%
Use Rights of Way (railroad or utilities)	27%
Connectivity to Bikeways	27%
General Education	13%
Traffic Control Buttons	13%
Merging Traffic	13%

Table 2: Orange County Bicycle Survey Results continued

Issues ranked less than 10%

Motorist Safety	7%
Bicycle Map	7%
Cars in Bike Lanes	7%
Residential Streets Have Too Many Stops	7%
Bicycle Parking	7%
Lighting	7%
Unrealistic Bicycle Laws	7%
Unsafe Intersections	7%
Separate Buses	7%
Roller Bladers Hazardous	7%
Build Bridge Crossings	7%

Preferred Routes or Streets

East West Route from Orange and Villa Park to Santa Ana River Trail
Santiago Creek Off Road Trail
Walnut between Handy and Santa Ana River Trail
Katella Avenue
Grand Avenue
East West Route of Tustin Branch Trail to Santa Ana River Trail
Orange Avenue between Walnut and 17th Street
Walnut to Cambridge to Palm to Maple to Eckhoff to Orangewood to Mountain View to Wakefield to Haster to Disney Way
Jamboree and Chapman near Irvine Park connection to Santa Ana River Trail
Chapman Avenue from Tustin Avenue to Orange Hill
Fountain Valley Streets to Santa Ana River Trails to Beaches
John Wayne Airport to Balboa via San Diego Creek Trail
Placentia to Chino Hills via Telegraph Canyon Trail
Wanda Road through Tustin to Newport Back Bay
Santiago Oaks Park along the creek to Santa Ana River Trail
Southern California Electric Villa Park Sub Station west towards Santa Ana River Trail
Extend Aliso Creek Bike Trail
Rail to Trail in Lake Forrest
Laguna Canyon Road
Serrano Creek to San Diego Creek Bike Trail
Santiago Canyon Road
Hart Park connect to Santa Ana River Trail
El Toro Base open for bikeways
Batavia to Taft and Ball to Western to Katella
Katella to Ball to State College to Wagner to Rio Vista to Lincoln to Batavia
Yale Loop to Santa Ana River Trail
Aliso Creek Trail to the Beach
Newport Beach via Victoria and Hamilton to Beach Trail
Yale Loop to Newport Back Bay

Ridership Forecast and Air Quality Benefits

A key goal of the CBSP is to maximize the number of bicycle commuters. While accurate forecasting of bicycle trips is beyond the present capabilities of planners, a model that incorporates observed behavior with demographic data presents the best method used to date. The existing and projected bicycle commute population and characteristics is prepared in Table 3 using such a model. These calculations are based on 2000 Department of Finance population data and other 1990 U.S. Census data that is extrapolated to the year 2000. Where statistical data could not be obtained, national averages or aggregated estimates from other cities are used. Per capita calculations of the other Orange County cities are used as the basis for the cities of Laguna Woods, Rancho Santa Margarita and Lake Forest (unincorporated at the time U.S. Census data was collected). Population data was available for these two cities and it was used to calculate the estimated data per capita.

Table 3: Bicycle Ridership Forecast and Air Quality Benefits							
Forecast Parameters	**Countywide**	**Anaheim**	**Brea**	**Buena Park**	**Costa Mesa**	**Cypress**	**Methodology Notes**
Population	2,828,400	310,700	36,950	77,300	106,600	49,050	1997 California Department of Finance extrapolated to 2001
# Of Employed Persons	1,244,496	162,106	20,955	38,788	63,809	26,733	1990 US Census extrapolated employed persons to 2001
# Bicycle-to-Work Commuters	14,482	1,879	85	223	1,262	176	1990 US Census extrapolated bike to work consistent with population growth
Bicycle-to-Work Mode Share	1.16%	1.16%	0.41%	0.57%	1.98%	0.66%	Calculated from above
Population: Ages 6-14 years	311,910	37,009	4,256	9,663	9,294	6,265	1990 US Census extrapolated consistent with population growth
# Of College Students	260,626	24,909	3,449	6,507	12,212	5,369	1990 US Census extrapolated consistent with population growth
# Of Daily Bike-Transit Users	549	68	3	8	45	6	Local transit agencies extrapolated
Total # of Bicycle Commuters	56,689	6,288	646	1,364	2,993	1,032	Assumes 5% of school students and 10% of college students commute by bicycle - from national studies and estimates
# Miles Ridden by Bicycle Commuters per Weekday	146,875	17,968	1,177	2,747	10,836	2,126	Work commuters (including bike-transit users) x 7 miles + college and school students x 1 mile (round trip)
# Of Future Daily Bicycle Commuters	158,163	17,544	1,803	3,806	8,351	2,880	Estimated using increase to 279% of baseline from 2000 LACMTA study by Alta
Future # Miles Ridden by Bicycle Commuters per Weekday	409,782	50,131	3,283	7,664	30,233	5,930	
Reduced Vehicle Miles per Weekday	262,906	32,163	2,107	4,917	19,397	3,805	
Reduced PM10 (lbs/weekday)	4,837.48	591.80	38.76	90.47	356.90	70.01	(.0184 tons per reduced mile)
Reduced NOX (lbs/weekday)	13,113.77	1,604.29	105.08	245.25	967.52	189.78	(.04988 tons per reduced mile)
Reduced ROG (lbs/weekday)	19,087.01	2,335.03	152.94	356.96	1,408.22	276.22	(.0726 tons per reduced mile)
Reduced Vehicle Miles per Year	61,636,878	7,643,120	463,433	1,104,455	4,736,260	858,342	180 days for students, and 256 days for employed persons
Reduced PM10 (lbs/year)	1,134,119	140,633	8,527	20,322	87,147	15,793	(.0184 tons per reduced mile)
Reduced NOX (lbs/year)	3,074,447	381,239	23,116	55,090	236,245	42,814	(.04988 tons per reduced mile)
Reduced ROG (lbs/year)	4,474,837	554,891	33,645	80,183	343,852	62,316	(.0726 tons per reduced mile)

Table 3: Bicycle Ridership Forecast and Air Quality Benefits continued							
Forecast Parameters	**Fountain Valley**	**Fullerton**	**Garden Grove**	**Huntington Beach**	**Irvine**	**Laguna Beach**	**Methodology Notes**
Population	56,900	128,300	158,300	199,300	144,600	25,300	1997 California Department of Finance extrapolated to 2001
# Of Employed Persons	31,517	68,350	77,535	116,604	80,325	15,790	1990 US Census extrapolated employed persons to 2001
# Bicycle-to-Work Commuters	142	925	538	1,333	975	85	1990 US Census extrapolated bike to work consistent with population growth
Bicycle-to-Work Mode Share	0.45%	1.35%	0.69%	1.14%	1.21%	0.54%	Calculated from above
Population: Ages 6-14 years	6,788	13,873	19,135	19,916	17,522	1,652	1990 US Census extrapolated consistent with population growth
# Of College Students	6,702	16,032	13,122	22,000	23,860	2,084	1990 US Census extrapolated consistent with population growth
# Of Daily Bike-Transit Users	5	38	19	47	35	3	Local transit agencies extrapolated
Total # of Bicycle Commuters	1,157	3,260	2,826	4,576	4,272	379	Assumes 5% of school students and 10% of college students commute by bicycle - from national studies and estimates
# Miles Ridden by Bicycle Commuters per Weekday	2,039	9,038	6,168	12,858	10,331	908	Work commuters (including bike-transit users) x 7 miles + college and school students x 1 mile (round trip)
# Of Future Daily Bicycle Commuters	3,227	9,095	7,884	12,767	11,918	1,058	Estimated using increase to 279% of baseline from 2000 LACMTA study by Alta
Future # Miles Ridden by Bicycle Commuters per Weekday	5,689	25,215	17,208	35,874	28,822	2,535	
Reduced Vehicle Miles per Weekday	3,650	16,177	11,040	23,016	18,492	1,626	
Reduced PM10 (lbs/weekday)	67.16	297.66	203.13	423.49	340.25	29.92	(.0184 tons per reduced mile)
Reduced NOX (lbs/weekday)	182.05	806.93	550.67	1,148.04	922.36	81.11	(.04988 tons per reduced mile)
Reduced ROG (lbs/weekday)	264.98	1,174.47	801.50	1,670.96	1,342.49	118.06	(.0726 tons per reduced mile)
Reduced Vehicle Miles per Year	797,011	3,828,939	2,517,552	5,457,334	4,290,084	376,695	180 days for students, and 256 days for employed persons
Reduced PM10 (lbs/year)	14,665	70,452	46,323	100,415	78,938	6,931	(.0184 tons per reduced mile)
Reduced NOX (lbs/year)	39,755	190,987	125,576	272,212	213,989	18,790	(.04988 tons per reduced mile)
Reduced ROG (lbs/year)	57,863	277,981	182,774	396,202	311,460	27,348	(.0726 tons per reduced mile)

Table 3: Bicycle Ridership Forecast and Air Quality Benefits continued								
Forecast Parameters	**Laguna Niguel**	**Laguna Woods**	**La Habra**	**Lake Forest**	**La Palma**	**Los Alamitos**	**Mission Viejo**	**Methodology Notes**
Population	60,100	20,250	56,800	60,000	16,550	12,150	98,500	1997 California Department of Finance extrapolated to 2001
# Of Employed Persons	34,132	2,535	29,074	30,441	9,389	6,420	52,375	1990 US Census extrapolated employed persons to 2001
# Bicycle-to-Work Commuters	72	29	233	353	6	68	225	1990 US Census extrapolated bike to work consistent with population growth
Bicycle-to-Work Mode Share	0.21%	1.16%	0.80%	1.16%	0.07%	1.05%	0.43%	Calculated from above
Population: Ages 6-14 years	6,642	2,245	6,573	6,652	2,102	1,414	13,394	1990 US Census extrapolated consistent with population growth
# Of College Students	5,531	1,876	4,797	5,558	2,150	1,220	9,178	1990 US Census extrapolated consistent with population growth
# Of Daily Bike-Transit Users	3	4	8	12	0	2	8	Local transit agencies extrapolated
Total # of Bicycle Commuters	959	333	1,049	1,254	327	263	1,820	Assumes 5% of school students and 10% of college students commute by bicycle - from national studies and estimates
# Miles Ridden by Bicycle Commuters per Weekday	1,405	531	2,495	3,444	367	683	3,215	Work commuters (including bike-transit users) x 7 miles + college and school students x 1 mile (round trip)
# Of Future Daily Bicycle Commuters	2,677	929	2,928	3,497	912	733	5,078	Estimated using increase to 279% of baseline from 2000 LACMTA study by Alta
Future # Miles Ridden by Bicycle Commuters per Weekday	3,921	1,481	6,961	9,609	1,024	1,906	8,970	
Reduced Vehicle Miles per Weekday	2,515	950	4,466	6,165	657	1,223	5,755	
Reduced PM10 (lbs/weekday)	46.28	17.48	82.18	113.44	12.08	22.49	105.89	(.0184 tons per reduced mile)
Reduced NOX (lbs/weekday)	125.47	47.40	222.77	307.52	32.76	60.98	287.07	(.04988 tons per reduced mile)
Reduced ROG (lbs/weekday)	182.62	68.99	324.24	447.59	47.68	88.76	417.82	(.0726 tons per reduced mile)
Reduced Vehicle Miles per Year	523,515	202,465	1,033,344	1,457,416	124,583	286,758	1,257,354	180 days for students, and 256 days for employed persons
Reduced PM10 (lbs/year)	9,633	3,725	3,443,583	4,110,840	2,292	5,276	23,135	(.0184 tons per reduced mile)
Reduced NOX (lbs/year)	26,113	10,099	29,122,707	32,425,990	6,214	14,303	62,717	(.04988 tons per reduced mile)
Reduced ROG (lbs/year)	38,007	14,699	24,877,003	29,177,699	9,045	20,819	91,284	(.0726 tons per reduced mile)

Table 3: Bicycle Ridership Forecast and Air Quality Benefits continued							
Forecast Parameters	**Orange**	**Placentia**	**Rancho Santa Margarita**	**San Celemente**	**San Juan Capistrano**	**Santa Ana**	**Methodology Notes**
Population	129,400	50,200	47,214	50,200	32,500	317,700	1997 California Department of Finance extrapolated to 2001
# Of Employed Persons	69,658	27,387	23,969	26,947	16,257	147,813	1990 US Census extrapolated employed persons to 2001
# Bicycle-to-Work Commuters	706	183	278	170	245	1,644	1990 US Census extrapolated bike to work consistent with population growth
Bicycle-to-Work Mode Share	1.01%	0.67%	1.16%	0.63%	1.50%	1.11%	Calculated from above
Population: Ages 6-14 years	14,591	6,295	5,238	4,641	4,527	44,089	1990 US Census extrapolated consistent with population growth
# Of College Students	12,808	5,018	4,377	3,787	2,466	21,846	1990 US Census extrapolated consistent with population growth
# Of Daily Bike-Transit Users	28	6	9	11	9	60	Local transit agencies extrapolated
Total # of Bicycle Commuters	2,745	1,006	987	792	726	6,094	Assumes 5% of school students and 10% of college students commute by bicycle - from national studies and estimates
# Miles Ridden by Bicycle Commuters per Weekday	7,151	2,140	2,709	1,879	2,246	16,320	Work commuters (including bike-transit users) x 7 miles + college and school students x 1 mile (round trip)
# Of Future Daily Bicycle Commuters	7,658	2,805	2,753	2,209	2,026	17,001	Estimated using increase to 279% of baseline from 2000 LACMTA study by Alta
Future # Miles Ridden by Bicycle Commuters per Weekday	19,952	5,969	7,558	5,242	6,265	45,533	
Reduced Vehicle Miles per Weekday	12,801	3,830	4,849	3,363	4,020	29,213	
Reduced PM10 (lbs/weekday)	235.54	70.47	89.22	61.88	73.96	537.52	(.0184 tons per reduced mile)
Reduced NOX (lbs/weekday)	638.51	191.03	241.86	167.75	200.50	1,457.15	(.04988 tons per reduced mile)
Reduced ROG (lbs/weekday)	929.34	278.04	352.03	244.16	291.82	2,120.88	(.0726 tons per reduced mile)
Reduced Vehicle Miles per Year	3,003,532	869,329	1,146,145	777,887	964,665	6,881,486	180 days for students, and 256 days for employed persons
Reduced PM10 (lbs/year)	55,265	15,996	21,089	14,313	17,750	126,619	(.0184 tons per reduced mile)
Reduced NOX (lbs/year)	149,816	43,362	57,170	38,801	48,117	343,249	(.04988 tons per reduced mile)
Reduced ROG (lbs/year)	218,056	63,113	83,210	56,475	70,035	499,596	(.0726 tons per reduced mile)

Table 3: Bicycle Ridership Forecast and Air Quality Benefits continued							
Forecast Parameters	**Stanton**	**Tustin**	**Villa Park**	**Westminster**	**Yorba Linda**	**Unincorporated**	**Methodology Notes**
Population	34,350	68,300	6,775	87,600	63,100	218,800	1997 California Department of Finance extrapolated to 2001
# Of Employed Persons	16,800	39,344	3,572	43,911	34,400	96,228	1990 US Census extrapolated employed persons to 2001
# Bicycle-to-Work Commuters	291	381	8	491	106	1,116	1990 US Census extrapolated bike to work consistent with population growth
Bicycle-to-Work Mode Share	1.73%	0.97%	0.21%	1.12%	0.31%	1.16%	Calculated from above
Population: Ages 6-14 years	3,927	7,020	846	10,846	9,533	23,540	1990 US Census extrapolated consistent with population growth
# Of College Students	2,578	6,774	803	7,988	5,721	19,670	1990 US Census extrapolated consistent with population growth
# Of Daily Bike-Transit Users	10	14	0	17	4	43	Local transit agencies extrapolated
Total # of Bicycle Commuters	755	1,423	130	1,850	1,158	4,303	Assumes 5% of school students and 10% of college students commute by bicycle - from national studies and estimates
# Miles Ridden by Bicycle Commuters per Weekday	2,561	3,793	177	4,902	1,817	11,259	Work commuters (including bike-transit users) x 7 miles + college and school students x 1 mile (round trip)
# Of Future Daily Bicycle Commuters	2,107	3,971	364	5,161	3,232	12,006	Estimated using increase to 279% of baseline from 2000 LACMTA study by Alta
Future # Miles Ridden by Bicycle Commuters per Weekday	7,145	10,581	495	13,675	5,068	31,412	
Reduced Vehicle Miles per Weekday	4,584	6,789	317	8,774	3,252	20,153	
Reduced PM10 (lbs/weekday)	84.35	124.91	5.84	161.44	59.83	370.82	(.0184 tons per reduced mile)
Reduced NOX (lbs/weekday)	228.66	338.62	15.83	437.63	162.20	1,005.24	(.04988 tons per reduced mile)
Reduced ROG (lbs/weekday)	332.82	492.86	23.03	636.97	236.08	1,463.11	(.0726 tons per reduced mile)
Reduced Vehicle Miles per Year	1,111,800	1,598,008	64,533	2,063,627	689,775	4,731,483	180 days for students, and 256 days for employed persons
Reduced PM10 (lbs/year)	20,457	29,403	1,187	37,971	12,692	87,059	(.0184 tons per reduced mile)
Reduced NOX (lbs/year)	55,457	79,709	3,219	102,934	34,406	236,006	(.04988 tons per reduced mile)
Reduced ROG (lbs/year)	80,717	116,015	4,685	149,819	50,078	343,506	(.0726 tons per reduced mile)

Based on a total Countywide employed population of 1,244,496 (extrapolated from 1990 US Census data) approximately 14,482 use bicycling as their primary commute mode to work. The cities with the highest number, or at least more than 1,000 people bicycling to work are Anaheim, Costa Mesa, Huntington Beach and Santa Ana. Other cities with the lowest number, under 10 bicycle commuters, are La Palma and Villa Park.

The average bicycle commute mode split is 1.16%, which is within the range of national and state averages of 1%. Those cities with a bicycle mode split higher than 1% include Anaheim, Costa Mesa, Fullerton, Huntington Beach, Irvine, Lake Forest, Los Alamitos, Newport Beach, Orange, Rancho Santa Margarita, San Juan Capistrano, Santa Ana, Seal Beach, Stanton and Westminster. It is not well known why some of these cities have higher bicycle mode splits than others. Some possible explanations include:

- Beach cities often have more developed bicycle cultures as a result of recreational riding
- Cities with younger populations tend to have higher numbers of bicyclists
- Cities that have accommodated bicycling with bikeways, parking, and the like often induce more cycling
- Cities with high numbers of low-income people have more people who cycle out of necessity
- Some of the data may not be statistically significant

In addition to these employed adults, if 10% of college students and 5% of school age children also commute by bicycle (consistent with national statistics) the total number of commuters could increase to 56,689 people. Cities with larger student populations typically have greater numbers of people using bicycles for transportation. Some of the cities that are estimated to have over 3,000 daily bicycle commuters when trips to school or college are factored in include Anaheim, Fullerton, Huntington Beach, Irvine and Santa Ana.

If the Orange County bikeways system is completely built, the model shows it could attract more than 158,163 bicycle commuters, based on the average increase that has been seen in other cities with a comprehensive bikeway system.

Recreational bicyclists could also add to the total number of projected users. In a national study, 46% of all Americans bicycling for pleasure. If Orange County is consistent with the national average, based on a total population of nearly 2,828,400 residents, more than 1,301,064 residents in Orange County do, or would like to, bicycle for pleasure.

There is a need in Orange County, to consider how bicycle commuting contributes to improving air quality.

Bicycle commuting currently accounts for 146,875 vehicle miles traveled (VMT) per weekday. Future projections for VMT are approximately 409,782 per weekday and 61,636,878 per year.

The combined air quality benefits of future bicycle commuters over the next 20 years are of millions of pounds of reduced air pollutants like nitrogen oxides (NoX), particulate matter (PM_{10}) and reactive organic gases (ROG). The daily reduction of pollutants is estimated at 4,837 pounds of PM_{10}, 13,113 pounds of NoX, and 19,087 pounds of ROG. Annual reduction of pollutants is estimated at 1,134,119 pounds of PM10, 3,074,447 pounds of NoX and 4,474,837 pounds of ROG.

Bicycle Accident Analysis

Bicycle-involved-collision data was collected for the past three years, 1997, 1998, 1999 using California Highway Patrol SWITRS reports. This data was analyzed for 31 cities, and assumptions are based on this sample. There is no accident data available for the cities of Laguna Woods and Rancho Santa Margarita, since they were not incorporated at the time data was compiled.

Countywide, a total of 3,437 bicycle accidents were reported for the last three years with an annual average of 1,146 bicycle accidents. The majority, 3,390 accidents, were reported as injury collisions and 47 were reported as fatalities. The results are displayed on Table 4.

Table 4: Orange County Bicycle Related Accidents by City

Jurisdiction	Number of Bicycle Involved Collisions 1997 (SWITRS 1997)		Number of Bicycle Involved Collisions 1998 (SWITRS 1998)		Number of Bicycle Involved Collisions 1999 (SWITRS 1999)		Total # of Bicycle Collisions for 3 Years	Average # of Bicycle Collisions per Year	2000 Est. Population (California Department of Finance)	Accidents per 1000 people/yr.	Index (relative to state avg. of 0.37/1000)
	Fatality	Injury	Fatality	Injury	Fatality	Injury					
Anaheim	4	164	2	132	2	147	451	150.3	310,700	0.48	1.31
Brea	0	23	0	18	0	23	64	21.3	36,950	0.58	1.56
Buena Park	1	30	0	44	0	33	108	36.0	77,300	0.47	1.26
Costa Mesa	0	73	0	82	0	82	237	79.0	106,600	0.74	2.00
Cypress	0	26	0	15	0	14	55	18.3	49,050	0.37	1.01
Dana Point	1	14	1	12	0	10	38	12.7	3,800	3.33	9.01
Fountain Valley	0	30	0	24	0	19	73	24.3	56,900	0.43	1.16
Fullerton	2	63	1	49	4	56	175	58.3	128,300	0.45	1.23
Garden Grove	0	81	3	52	1	57	194	64.7	158,300	0.41	1.10
Huntington Beach	0	109	2	112	2	100	325	108.3	199,300	0.54	1.47
Irvine	0	41	0	24	0	35	100	33.3	144,600	0.23	0.62
La Habra	0	22	0	18	0	22	62	20.7	56,800	0.36	0.98
La Palma	0	5	0	5	0	7	17	5.7	16,550	0.34	0.93
Laguna Beach	0	5	0	9	0	10	24	8.0	25,300	0.32	0.85
Laguna Hills	0	8	0	7	0	6	21	7.0	31,000	0.23	0.61
Laguna Niguel	0	10	0	7	1	12	30	10.0	60,100	0.17	0.45
Lake Forest	0	18	0	19	1	17	55	18.3	60,000	0.31	0.83
Los Alamitos	0	5	0	11	0	7	23	7.7	12,150	0.63	1.71
Mission Viejo	0	16	0	18	0	13	47	15.7	98,500	0.16	0.43
Newport Beach	2	74	0	72	0	82	230	76.7	75,600	1.01	2.74
Orange	0	73	1	53	2	73	202	67.3	129,400	0.52	1.41
Placentia	0	22	0	18	1	16	57	19.0	50,200	0.38	1.02
San Clemente	0	16	0	7	0	12	35	11.7	50,300	0.23	0.63
San Juan Capistrano	0	10	1	6	0	11	28	9.3	32,500	0.29	0.78
Santa Ana	5	116	1	116	0	134	372	124.0	317,700	0.39	1.05
Seal Beach	0	10	1	12	0	11	34	11.3	27,400	0.41	1.12
Stanton	1	22	1	13	0	11	48	16.0	34,350	0.47	1.26
Tustin	0	21	1	25	0	14	61	20.3	68,300	0.30	0.80
Villa Park	0	3	0	0	0	1	4	1.3	6,775	0.20	0.53
Westminster	1	40	0	38	0	47	126	42.0	87,600	0.48	1.30
Yorba Linda	0	16	0	10	0	12	38	12.7	63,100	0.20	0.54
Unincorporated	1	42	0	29	0	31	103	34.3	218,800	0.16	0.42
TOTAL	**18**	**1208**	**15**	**1057**	**14**	**1125**	**3437**	**1145.7**	**2,794,225**	**0.41**	**1.11**

Orange County averages 0.41 accidents per 1,000 per year, slightly higher than the state average of 0.37 per 1,000 people. Of all the cities with accident statistics, 14 Orange County cities fall below the average while 17 are above it. Dana Point had the most number of accidents at 3.3 per capita while Mission Viejo was the lowest at 0.16 accidents per capita.

Bicycle accident data provides statistical information, but does not include other important factors that would allow for conclusive analysis. Until a system is established that can collect all of the necessary data, only assumptions can be made to why these accidents occur.

Although without thorough research, conclusions are difficult to draw, the variance in the accident rates among cities may be due to any one of several reasons.

The first reason maybe because there are simply more people riding bicycles in places where the accident rate is high.

Second, beach cities in particular have highest collision rates of all. This maybe because more people, residents and visitors, are attracted to riding in these areas.

Third, cities that have more bicycle paths and bicycle lanes that better accommodate safe bicycle riding may reduce their accident rates, compared with cities that have few bikeways.

Fourth, people in cities with better safety education programs may have fewer incidents of collision than those with less safety education.

Bicycle Safety Education and Enforcement Programs

Last, enforcement of bicycle laws, or lack of enforcement, can be a factor. In fact, the City of Huntington Beach Police Department observed that with a more active enforcement program there are fewer accidents. This is simply an observation and is not substantiated by any data.

Collecting basic information about Bicycle Safety Education Programs in Orange County must be done in order to analyze its effectiveness and relationship to accident statistics. As part of this process, a bicycle survey was distributed to all cities. The results are summarized in Table 5.

Table 5: Orange County Bicycle Safety Education Programs Survey Results by City

Jurisdiction	Active Safety Education Program	# Of Years Program Conducted	# Of Times a Year the Program is Conducted	Program Administered by	Program Location	Program Curriculum and Activities	Other Bicycle Safety Support Programs	Total # of Children Reached	Age of Children Reached	Other Program Notes
Anaheim	No									
Brea	Yes	15	All Year Long	Police Department	Schools and Parks	Presentation/ Assembly, Bicycle Rodeo, Bicycle Handbook	Bicycle Registration and Free Bicycle Helmets, special events	300	Grade 5-6	Police Dept. has bike patrols
Buena Park	No									
Costa Mesa	No									
Cypress	No									
Dana Point	No									
Fountain Valley	Yes	20	4	Police Department	Schools and Police Department	Presentation/ Assembly, Bicycle Rodeo	Bicycle Registration	200	Grade 3-6	
Fullerton	Yes - no reply									
Garden Grove	No									
Huntington Beach	Yes	28	12	Police Department and Traffic Bureau	Schools and Police Department	Presentation/ Assembly and Bicycle Class	Bicycle Registration and Free Helmets	1,600	K-12	
Irvine	Yes	5	All Year Long	Police Department	Schools and City Hall	Presentation/ Assembly, Bicycle Rodeo	Bicycle Helmets and Bicycle Maps, special events		Grade 3-6	Received OTS Grant; Police Dept.has bike patrols
Laguna Beach	No									

Table 5: Orange County Bicycle Safety Education Programs Survey Results by City

Jurisdiction	Active Safety Education Program	# Of Years Program Conducted	# Of Times a Year the Program is Conducted	Program Administered by	Program Location	Program Curriculum and Activities	Other Bicycle Safety Support Programs	Total # of Children Reached	Age of Children Reached	Other Program Notes
Laguna Hills	Yes	8	4	Police Department and Parks and Recreation Department	Schools and Parks	Presentation/ Assembly, Bicycle Rodeo, Bicycle Handbook	None	500	Grade K-6	
Laguna Niguel	No									
Laguna Woods	No									
La Habra	No									
Lake Forest	Yes	5	2	Police Department	Schools	Presentation/ Bike Rodeo	Bike Registration	200	K-6	
La Palma	Yes - no reply									
Los Alamitos	Yes	2	All Year Long	Police Department	Schools and Community Events	Presentation/ Assembly, Bicycle Rodeo, Bicycle Handbook	Bicycle Registration	100	Grade K-6	
Mission Viejo	Yes	4	5	Police Department	Schools	Assembly/Presentation, Bicycle Rodeo, Bicycle Handbook, Safety Exam	Registration	500	Grade K-6	
Newport Beach	Yes	20	1	Police Department and Local Parent Teacher Association	Schools	Presentation/ Assembly, Bicycle Rodeo, Bicycle Handbook, Safety Activity Book, Video	Bicycle Registration	500	Grade 3-6	2 Day Event, Corporate Sponsorship and Support from Children's Hospital

Table 5: Orange County Bicycle Safety Education Programs Survey Results by City

Jurisdiction	Active Safety Education Program	# Of Years Program Conducted	# Of Times a Year the Program is Conducted	Program Administered by	Program Location	Program Curriculum and Activities	Other Bicycle Safety Support Programs	Total # of Children Reached	Age of Children Reached	Other Program Notes
Orange	Yes - no reply									
Placentia	No									
Rancho Santa Margarita	No									
San Clemente	Yes - no reply									
San Juan Capistrano	No									
Santa Ana	No									
Seal Beach	No									
Stanton	Yes	10	1	Police Department	Schools	Presentation/ Assembly, Bicycle Rodeo, Bicycle Handbook	None		Preschool-Grade 6	
Tustin	Yes	18	1	Police Department	Schools	Presentation/ Assembly, Bicycle Handbook, Bicycle Safety Coloring Book, bicycle Poster Contest	Bicycle Registration and Helmet Replacement	3,500	Grade 4-5	Corporate Sponsorship from Local Businesses
Villa Park	No									
Westminster	No									
Yorba Linda	No									

Fifteen of the 34 jurisdictions reported a formal Bicycle Safety Education Program. Five have not responded with details. Most of the programs are administered through the City Police Department or Sheriff's Department, with some coordination between City Transportation and Traffic Bureaus. Two cities, Tustin and Newport Beach, have also partnered with local business to enhance their programs.

All of the cities use public locations to conduct their Bicycle Safety Education Programs including schools, parks and city halls. The bicycle rodeo, which has children ride a mock street course to test their riding skills, is the most popular method of teaching. All of the programs also hand out either a bicycle handbook or safety activity book to remind them of the skills they learned. Other benefits such as bicycle registration is administered by 7 of the cities. Free bicycle helmets are also distributed to encourage safety by 4 cities.

The Bicycle Safety Education Programs for the ten cities reach approximately 3,500 students per year. These students are usually in elementary school grades 3-6. There are some cities reaching kindergarten through elementary school and one city that teaches up through high school.

The information collected does not reveal any conclusive evidence that can be related to accident data or effectiveness of the program for any of the cities. Since only a few of the jurisdictions have a program, they only reach a small fraction of the population, and therefore are not effective Countywide.

Although some of the cities have been implementing some type of program for more than 15 years, most have not been in place long enough to see the impact or any results.

A telephone survey of all law enforcement jurisdictions, including police and sheriff departments, was conducted. The survey asked questions about law enforcement as it pertains bicycle enforcement as well as bicycle patrols. Most of the jurisdictions that responded stated that they enforce all traffic laws, for bicycles and motor vehicles as part of their regular duties. This includes bicyclists who break traffic laws, as well as motorists who disobey traffic laws and make the cycling environment more dangerous. The level of enforcement depends on the availability of officers. The Police and Sheriff Departments responds to particular needs and problems as they arise.

There are twelve jurisdictions, Brea, Buena Park, Costa Mesa, Fullerton, Irvine, Laguna Hills, Lake Forest, Laguna Beach, La Palma, Los Alamitos, Orange, and Tustin, that all have fleets of bicycle-mounted officers. These officers have had special training in bicycle safety and assist in enforcing traffic laws. They are especially qualified to enforce laws that pertain to bicycles.

The number of bicycle-related accidents hasn't changed much in the past three years, so it is difficult to assess the effectiveness of the safety program and police efforts. Overall, the data is statistically insignificant to assess the impact of the programs in any of the

cities. In the long run, comprehensive safety education that reaches many people will likely be more effective. It will also yield more data for better analysis.

Chapter 4
Proposed Projects

Consistency with Other Transportation and Air Quality Plans

This Commuter Bikeway Strategic Plan (CBSP) is an update of the previous Plan adopted in 1995. It is intended to fill in gaps in the bikeway network, update the existing bikeway system, and add local routes based on input from each of the cities in the County. This set of recommendations comprises the heart of the CBSP. It is consistent with other local and regional transportation and air quality plans. This Plan is a regional plan because it is an agglomeration of local planning efforts rolled into one document. This Plan was produced from the gathering of information from each city in the County. Bicycle elements from each city in Orange County are included in this Plan and provide for consistency with the local plans. Plans in the adjacent counties of Los Angeles, Riverside, and San Diego were reviewed to ensure consistency and that linkages were made to other regions. Some of these linkages include the Santa Ana River bikeway into Riverside County, the coastal route bikeway into San Diego County, and the Coyote Creek bikeway into Los Angeles County.

Overall, this plan will fit squarely into Orange County's portion of the Regional Mobility Plan (RMP) prepared by the Southern California Association of Governments (SCAG). The RMP is the regional transportation plan. It is also the transportation element of the South Coast Air Quality Management District's Air Quality Master Plan. Projects in this Plan were planned in coordination with land use planning and were intended to link destinations such as colleges and universities, employment centers, shopping centers, and other existing and proposed activity centers. This Plan attempts to coordinate with existing and proposed land use patterns in the County by proposing that bikeway and support facilities be developed as development occurs and as future projects are built. The future bikeway system is based upon future growth patterns as projected by each city through their land use and zoning sections of their general plans as shown in Appendix B. Most of the growth in the County is expected to take place in the southern portions of the County and in some of the foothill areas over the next twenty years. Although much of the new development will be residential, there is expected to be a significant increase in the number of jobs created in the all areas of the County, especially toward the south.

Planning Criteria

The County of Orange and all of its cities had designated specific bikeway projects to be included in this CBSP. These projects were prioritized into three tiers. Projects were ranked by priority using several criteria. These included:

- Regional connectivity
- Closing gaps in the bikeway network
- Completion of the bikeway network
- Connections with major destinations, such as colleges and universities, employment centers, major shopping centers, and transit centers
- Each cities' desired list of projects
- Input from the public on desired routes

Top priority projects have mileage and cost estimates calculated using typical cost estimates for each class of bikeway. These assumed costs are $500,000 per mile for Class I facilities, $50,000 per mile for Class II facilities, which only includes paint, stenciuls, and signage, and $10,000 per mile for Class III facilities. Actual project costs may vary by location and the characteristics of each individual project. Several bikeway projects have regional significance and would connect several cities and major destinations in the County. Some of these proposed regional bikeway projects include those along Westminster and Warner Avenues, 17th Street, State College and Harbor Boulevards, Imperial Highway, and Coyote and Santiago Creeks. The maps on pages 70-80 show the proposed bikeway projects for all cities in the County including unincorporated areas. They also show proposed locations for bicycle parking facilities.

Only the top priority projects are accompanied by mileage and cost estimate figures in the table found on pages 81-94. Countywide, these top priority projects include 45.5 miles of Class I facilities with a projected cost of $22,751,000. Countywide, Class II facility projects account for 154.75 miles with a projected cost of $7,737,500. Class III projects for the County amount to 7.75 miles of bikeway with an estimated cost of $77,500. The total cost for all of the top priority projects is estimated at $30,566,000 for 208 miles of bikeways in the County of Orange.

Parking and Other Amenities

In addition to bikeway development projects, end-of-trip amenities are included in the plan. Some of these projects would include providing bicycle parking facilities at major destinations, including:

- Regional shopping centers
- Transit centers (Amtrak and Metrolink stations)
- Colleges and universities
- Schools

- Municipal institutions
- Park-and-ride locations
- Retail shopping districts
- Parks
- Beaches

Parking facilities are planned for all Amtrak and Metrolink stations as well as park-and-ride locations. The cities of San Juan Capistrano, Tustin, and Stanton have identified specific proposals for bicycle parking projects in their cities. It is recommended that cities adopt bicycle-parking programs, which can be funded from BTA and other funding sources. Some cities also may condition new office developments of a certain size to include shower and locker facilities for use by bicycle commuters. The City of Orange already has a program that conditions development projects on a case-by-case basis. The City of Tustin requires bicycle parking, showers and clothing lockers in new development where appropriate. Successful amenity programs could encourage employers and developers to provide parking and also clothing lockers and shower facilities in new and renovated development projects.

Safety Education

Bicycle safety and education programs are an important component of cycling in Orange County. Many cities already have such programs, as described in Chapter 3. It is recommended that all cities develop a program to educate students and other residents about proper cycling behavior and safety on the County's roads and paths. Many potential bicyclists cite the fear of traffic as their main objection to riding a bicycle on urban streets. Orange County cities can help alleviate this fear by providing good bikeway facilities, particularly at intersections, where most bicycle-motor vehicle crashes occur.

However, many concerns about cycling's level of danger are based on the misconception that most bicycle crashes involve an automobile. In fact, the vast majority of bicycle crashes do not involve a motor vehicle; rather, studies of hospital data have shown that bicycle accidents primarily involve falls or collisions with stationary objects, other cyclists, or pedestrians. This points to the need for education of cyclists and motorists, enforcement of existing laws, and encouragement of safe cycling techniques.

Education is an important element in promoting bicycle use while also improving safety. People often assume that as cycling becomes more popular, the number of crashes will increase. This need not be the case as has been demonstrated in other communities. Perhaps the most effective way to improve the safety of cycling is simply to improve the quality of Orange County's bikeway facilities. However, bikeways cannot do it alone; it must be combined with proper education of both youth and adult cyclists and motorists.

The most common education programs are provided for youth in schools. However, it is important to seek venues to educate adults and motorists about proper cycling and make them aware of the dynamics of the relationship between cyclist and motorist on the road.

Proposed Bikeway Projects

The following is a description of each city's proposed bikeway projects for this Strategic Plan. Top priority projects are presented in more detail and include total proposed mileage and estimated cost based on standard cost figures. The maps on pages 70-80 graphically show the proposed bikeway projects by priority (top and second/third) and Class (I, II, or III). These bikeway classifications are for regional planning purposes. If a jurisdiction applies to fund another class of bikeway along the same corridor, the intent of this plan is to provide for that. For example, if a proposed bikeway is shown as a Class III route, a city could apply for funds for Class II bike lanes along the same street. The intent is also that any bikeway improvement is eligible for funding along existing and proposed bikeways. The maps also show key employer sites, park-and-ride locations, and rail stations. Land use maps are found on pages 157-161, and these show the existing and proposed land uses for Orange County cities. These maps are a compilation of each city's land use map from the year 1999.

Anaheim

Top priority projects in Anaheim include one 0.25-mile project from the Santa Ana River bikeway to Anaheim Stadium. This project totals $125,000. Top priority Class II projects in the City total 21 miles and cost $1,050,000. These projects include Brookhurst Street, State College and Kraemer Boulevards, Orangethorpe, and Orangewood Avenues, Ball Road, and Imperial Highway. Second and third priority projects include Magnolia, Euclid, and Sunkist Streets, Harbor, and Anaheim Boulevards, La Palma, and Lincoln Avenues, Broadway, and Ball Road. Anaheim is the largest city in the County in area and has a diverse mix of land uses. The older central and western part of the City has a mix of high and low density residential as well as large commercial and industrial sectors. The newer eastern part of the City (Anaheim Hills) is primarily low density residential with higher density residential and open space planned in the future east of Weir Canyon Road. Future development in the western part of Anaheim will be primarily through redevelopment.

Brea

Top priority projects in Brea total 3.25 miles of Class II bikeway with a cost of approximately $162,500. These projects are along Brea and Kraemer Boulevards, Rose Drive, and Birch Street. Second and third priority projects include Lambert Road, the Union Pacific rail trail, Berry and Puente Streets, and Carbon Canyon Road. Most of the City is developed with future development planned in the northeastern area in the

vicinity of Carbon Canyon. Brea is roughly evenly split between residential, industrial, and commercial land uses.

Buena Park

Top priority projects in Buena Park include 2.25 miles of Coyote Creek, a Class I facility totaling $1,125,000. Top priority Class II projects total 4 miles and $200,000. These projects include Malvern and Orangethorpe Avenues and Valley View Street. Second and third priority bikeway projects include Knott, Commonwealth, Lincoln, and La Palma Avenues. Buena Park has a mix of land uses, including residential, industrial, and commercial. Future development is expected to take place within the existing built environment because the City is built out.

Costa Mesa

Costa Mesa has a total of 5.50 miles of top priority Class II bikeway projects costing $275,000. These include Sunflower, Adams, Del Mar, and Santa Ana Avenues, and Bristol, Bear, Wilson, and 22nd Streets. Second and third priority bikeway projects in Costa Mesa include Gisler Avenue and Baker and Victoria Streets. The City is built out with a mix of land uses, including high and low density residential, industrial located in the southwest and northeast, commercial along arterial streets and in the South Coast Metroplex area, open space, and institutional (Orange County Fairgrounds, Orange Coast College, and Southern California College). Future development is likely to occur as redevelopment.

Cypress

The City of Cypress has two top priority Class II projects totaling 0.75 miles and costing $37,500. These projects include portions of Valley View and Walker Streets. Second priority projects include Holder and Denni Streets and Lincoln Avenue. The City has no third priority projects proposed. Cypress is a built out city with a mix of land uses, including high and low density residential, commercial, and institutional (Cypress College). Future development will occur primarily as redevelopment in Cypress.

Dana Point

Dana Point has top priority Class II bikeways projects totaling 6.75 miles and costing 312,500. These projects include Pacific Coast Highway, Stonehill Drive, Doheny Park Road, and Camino de Estrella. Second and third priority bikeway projects in Dana Point include Niguel Road, Stonehill Drive, Crown Valley Parkway, and Camino Las Ramblas. Dana Point has a mix of high and low-density residential, commercial, and open space land uses. The downtown area has primarily medium to high density residential and commercial, while the hills have low-density residential and open space. Future development will follow existing patterns of growth.

Fountain Valley

The City of Fountain Valley has one top priority Class II bikeway project. Costing $37,500, this project include Newhope Street and is 0.50 miles long. Second and third priority bikeway projects in Fountain Valley include Edinger, McFadden Avenue, and Magnolia Street. The City is a mix of primarily low-density residential and commercial uses. One small industrial area is located in the east near the Santa Ana River. A large open space and recreational use is located in the center of the City at Mile Square Park. Some high density residential is scattered in a few locations in the City. Future development in Fountain Valley will be primarily through redevelopment.

Fullerton

Fullerton has 27 miles of top priority bikeway projects. Class I projects total 7.75 miles costing $3,875,000 and include the Craig Regional Park connector, Brea Creek, and the UP Railroad rail trail. Top priority Class II projects total 18.50 miles at $1,187,500 and include Yorba Linda and State College Boulevards, Rosecrans, Commonwealth, Malvern, and Chapman Avenues, Bastanchury Road, and Brookhurst and Idaho Streets. Second and third priority bikeway projects include Gilbert and Euclid Streets, Bastanchury Road, Southgate Avenue, Artesia Boulevard. Fullerton is a built out city with most new development occurring as renovations and redevelopment. Fullerton is primarily residential with some industrial uses in the southwest and southeast portions of the City. Some of the north central hilly regions of the City are designated open space.

Garden Grove

Garden Grove has one Class I top priority bikeway project totaling 1 mile and $500,000. This project is along a north-south Union Pacific rail corridor near Stanton. Top priority Class II projects total 11.75 miles and cost $587,500. These projects include Brookhurst, Dale, and Newhope Streets, and Lampson and Westminster Avenues. Second and third priority bikeway projects include Chapman Avenue and Dale, Magnolia, Gilbert, Nelson, Euclid, and West Streets, and Harbor Boulevard. Garden Grove covers a relatively large area with many different land uses, including high and low density residential, commercial, and industrial. The far western section of the City is newer with low density residential and a medium-sized industrial area immediately west of Stanton. Future development in the City will be through redevelopment projects.

Huntington Beach

Huntington Beach has two top priority Class I bikeway projects totaling 0.5 miles and costing $250,000. These projects are a short connector to the Santa Ana River bikeway from Atlanta Avenue and LeBard Park. Top priority Class II projects in Huntington Beach total 8.75 miles and cost $437,500. These projects include Bolsa Chica Road, Golden West Street, and Edinger, Talbert, and Adams Avenues. Second and third priority projects include Warner and Hamilton Avenues, Bolsa Chica Street, and Pacific

Coast Highway. Huntington Beach is a large, mostly built out city with a mix of land uses, including industrial in the west and along the former north-south railway corridor, commercial along arterial streets, in the downtown area, and around the Huntington Beach Mall, and open space including Central Park. High density residential uses are primarily located in the southern part of the City near the downtown area with low density residential located primarily elsewhere. Future development will likely be through redevelopment efforts. New redevelopment projects downtown have been built and future redevelopment will likely be with mixed land uses.

Irvine

The City of Irvine has top priority bikeway projects of every class. Top priority Class I projects total 10.25 miles and cost $5,750,000. These include Peters Canyon Wash, the Venta Spur rail trail, Culver Drive, the San Diego Freeway Trail, and San Diego Creek. Two top priority Class II projects totaling 2.50 miles and have an estimated cost of $125,000. These are located along Laguna Canyon and Jamboree Roads. Second and third priority bikeway projects in Irvine include Warner and Sand Canyon Avenues, and several corridors yet to be developed. Irvine is a master planned city with segregated land uses including two large industrial zones in the east and west, large commercial zones in the east around the Irvine Spectrum, medium to high density residential in the central portion of the City, and low density residential in the southern hills. Open space is located near San Diego Creek and in the southern hills. Future development will follow a similar pattern of development within the framework of the master plan.

La Habra

The City of La Habra has a total of 3.25 miles of Class I and 0.25 of Class II top priority proposed projects. The estimated cost of these projects is $1,625,000 and $112,500 respectively. These projects include the Bastanchury Bypass rail trail, Coyote Creek, and one small segment of Idaho Street. Other second and third priority projects include the Imperial Channel, La Habra Boulevard, and Gilbert Street. Most of the land in the City has already been developed. The City is a mix of land uses, including high and low density residential, industrial, and commercial, with most new development being in the form of brownfield projects and renovations.

La Palma

The City of La Palma has two top priority projects. One Class I project totaling 0.25 miles along the Coyote Creek costs $125,000. One Class II project along Orangethorpe is 1.25 miles in length and costs $62,500. La Palma has no second or third priority bikeway projects in the plan. La Palma is another built out city where new development is expected to occur through redevelopment. The City is primarily residential with some commercial and industrial uses being located along arterial streets and in the northern part of the City, respectively.

Laguna Beach

Two top priority Class I bikeway projects totaling 1 mile are proposed in Laguna Beach. Costing $500,000, these projects include Aliso Canyon and Coast Highway. Laguna Beach's land uses include commercial and high density residential along Coast Highway and low-density residential and open space in the hills. Future development will follow existing patterns of growth. The City will promote the provisions of the Transportation Demand Management Ordinance which requires showers, changing rooms, and an accessible and secure area for bicycle storage at all businesses when appropriate and feasible. This will apply to businesses that are not specifically mentioned in the Ordinance.

Laguna Hills

Laguna Hills has 6 miles of top priority Class II bikeway projects totaling $300,000. These include Alicia Parkway and Lake Forest Drive. Second and third priority bikeway projects include La Paz and Cabot Roads and Paseo de Valencia. Laguna Hills has primarily low to medium density residential land uses with open space and commercial along major arterial streets. Two large commercial zones are also located in the north of the City. Although most of the City is developed, any future development is likely to follow existing patterns

Laguna Niguel

Laguna Niguel has one top priority Class I bikeway project along Aliso Creek. This project is 0.25 miles in length and costs $125,000. Second and third priority projects in the City include Oso Creek. Laguna Niguel's land uses are primarily low density residential, commercial near the intersections of major arterials, and open space along canyon corridors. Future development will follow past patterns as land is developed in the City.

Laguna Woods

The City of Laguna Woods has no top priority projects in the Plan. Two second and third priority projects include a Class I bikeway along Aliso Creek and a Class II facility along Moultaon Parkway. This young City has benefited from the existence of a near-complete bikeway network implemented before municipal incorporation. Laguna Woods consists of medium density retirement residential and some commercial at the intersections of major arterial streets. Future development will follow the same pattern of development that exists today, as shown on the land use map.

Lake Forest

The City of Lake Forest has a total of 1.50 miles of top priority Class II projects totaling $75,000. These include Los Alisos and Rockfield Boulevards. Second and third priority projects in Lake Forest include Alton Parkway and El Toro Road. The City has a mix of

land uses including low density residential, commercial in the north and far south, and open space along canyon corridors. Future development is expected in the northern part of Lake Forest where commercial and industrial development is slated to occur.

Los Alamitos

Top priority bikeway projects in Los Alamitos include 2.25 miles of Class II bikeway totaling $112,500. These projects are located along Los Alamitos Boulevard, Ball Road, and Catalina Street. No second or third priority bikeway projects are proposed in Los Alamitos. The City is built out with a mix of land uses, which include military, commercial, industrial, and high and low density residential. Future development in this small city will be through development.

Mission Viejo

Mission Viejo has 0.5 miles of top priority Class II bikeway projects totaling $25,000. These include Alicia and Avery Parkways. Second and third priority projects include Oso and Trabuco Creeks, and Camino Capistrano. Mission Viejo has a diverse mix of land uses, including one industrial zone, low to medium density residential, commercial in the south and at the intersections of major arterials, one institutional use (Saddleback College), and open space along canyon corridors. Although the City is mostly developed, future development will follow past patterns of growth.

Newport Beach

Top priority Class II bikeway projects in Newport Beach total 5.75 miles and cost $287,500. These projects include Newport and MacArthur Boulevards, Coast Highway, Bristol and 22nd Streets, and Jamboree Road. Second and third priority bikeway projects include Balboa Boulevard. Newport Beach has a mix of land uses including high density residential near the bay and the beaches, low density residential in the hills, commercial along some arterial streets, around Fashion Island, and near John Wayne Airport, and some open space around the upper bay. Future development will likely consist of redevelopment within existing land uses.

Orange

The City of Orange has top priority bikeway projects for every class of bikeway. Totaling 1.5 miles with a cost of $750,000, Class I projects include two sections of Santiago Creek and the Tustin Branch Rail Trail. Totaling 6.25 miles with a cost of $312,500, top priority Class II projects include Meats, Chapman, and La Veta Avenues, Glassell, Lewis, and Prospect Streets, and Garden Grove Boulevard. Totaling 2.5 miles with a cost of $25,000, top priority Class III projects include Amond, Feldner, and Bedrod Streets. Second and third priority projects include Fletcher, Chapman, Tustin, Hewes, and Lincoln Avenues, and The City Drive. Orange is mostly built out with some future development planned in the eastern hills of the City. A mix of land uses exist in Orange, including industrial in the western sector, high and low density residential, and

commercial. Most future development will occur through redevelopment with some eastern development occurring as high and low density residential and open space.

Placentia

The City of Placentia has 4.5 miles of top priority Class II bikeways proposed. At a cost of $225,000, these projects include Yorba Linda and Kraemer Boulevards and Orangethorpe Avenue. Placentia has no second or third priority bikeway projects. Placentia is built out and does not have room to expand in the future. Current and future land uses are primarily residential with some commercial, industrial, and open space uses being located in the southern part of the City.

Rancho Santa Margarita

The City of Rancho Santa Margarita does not have any proposed bikeway projects in this Plan. The young City has benefited from the existence of a near-complete bikeway network implemented before municipal incorporation. Rancho Santa Margarita has low density residential, commercial, and open space land uses. The City is still developing, and future patterns of growth will follow current patterns.

San Clemente

Top priority Class II bikeway projects in San Clemente total 3.25 miles and cost $162,500. These projects include Camino de Estrella, El Camino Real, Avenidas Pico and Vaquero. Top priority Class III projects total 1.5 miles and cost $75,000. These include Camino del Rancho, Forster Ranch Road, and Via Ballena. Second and third priority bikeway projects in San Clemente include Avenidas Pico, La Pata, and Vista Hermosa, Camino Vera Cruz, and Calle Amanecer. The City has a mix of land uses including industrial near Avenida Pico, commercial along major arterials, and low to medium density residential. Most future development will occur in the northern hills area and will be primarily low density residential with some commercial development.

San Juan Capistrano

San Juan Capistrano has two top priority Class I bikeway projects. The first is the Vereda Bikeway (San Juan Creek) undercrossing of the LOSSAN rail corridor at a cost of $1.5 million. Design is 90% complete with construction estimated to be completed in the fall of 2001. The second project is the construction of the Trabuco Creek Bikeway from the northern city limit to the existing trail at the south end of Avenida de La Vista. This route, along with the proposed trail within the proposed Ladera/Rancho Mission Viejo Golf Course, will complete a trail extending from Doheny State Beach to O'Neill Regional Park. This trail project is estimated to cost $1 million with a ten-year completion schedule. Top priority Class II bikeway projects in the City total 2.25 miles and cost $125,000. These include Camino Capistrano from San Juan Creek Road to Doheny Park Road and Stonehill Drive. Second and third priority bikeway projects include Ortega Highway, Del Obispo Street, Oso Creek, and a Class I path connecting

San Juan Creek Road and Camino Las Ramblas. San Juan Capistrano has a mix of land uses including industrial near the railway corridor, commercial in the downtown area and along major arterials, low to high-density residential, and open space in the southeast. Future development is slated for low density residential in the eastern hills, and other development will follow existing growth patterns.

Santa Ana

The City of Santa Ana has top priority Class I projects totaling 5.25 miles and costing $2,250,000. These projects include Santiago Creek, the former Pacific Electric rail corridor, and the Southern Pacific rail corridor between Flower Street and Orange Avenue in the southern part of the City. Top priority Class II projects total 18.75 miles and cost $1,187,500. These projects include Grand and Warner Avenues, Bristol, Flower, Raitt, and Newhope Streets, Memory Lane, and Santa Ana Boulevard. Second and third priority projects in Santa Ana include Euclid, Bristol, 1st, and 4th Streets, Civic Center Drive, Fairhaven, McFadden, Edinger, Segerstrom, and Chestnut Avenues, and MacArthur Boulevard. Santa Ana is a built out city with a mix of land uses, including high and low density residential, commercial along arterial streets, and industrial primarily in the eastern portion of the City. Future development will occur primarily as redevelopment.

Seal Beach

One top priority Class I project in Seal Beach totals 1.75 miles and cost $875,000. This project is along the coast near Pacific Coast Highway and Anaheim Bay. Top priority Class II bikeway projects total 5 miles and cost $250,000. These include Seal Beach Boulevard, Lampson and Westminster Avenues, and Pacific Coast Highway. Second and third priority bikeway projects in Seal Beach include the western extension of the top priority coastal bikeway. Seal Beach is built out with a large percentage of its land going to the United States Naval Weapons Support Facility in the eastern part of the city. The other sections of the City are primarily medium and high density residential with some low density residential in the north and commercial uses along the arterial streets near the downtown area. Future development is likely to be through redevelopment.

Stanton

The City of Stanton has top priority Class I projects totaling 3.75 miles and costing $1,875,000. These projects are two Union Pacific rail trails (east-west and north-south). Top priority Class II projects include Knott, Orangewood, and Lampson Avenues and Dale Street. These total 2.25 miles with a cost of $112,500. Second and third priority bikeway projects include Cerritos, Chapman, and Western Avenues. Stanton is also a built out city with a mix of land uses, including high and low density residential, commercial, and industrial. This small city's future development will occur as redevelopment because vacant land is scarce.

Tustin

Tustin has one top priority Class I project located along the SCRRA rail corridor. This project is 0.25 miles in length and costs $125,000. Top priority Class II projects total 4.5 miles and cost $225,000. These projects are located along Red Hill and Warner Avenues, Jamboree Road, and 17th Street. Second and third priority projects in Tustin include Tustin Ranch Road, Warner, Edinger, Valencia, and Newport Avenues, and Irvine Boulevard. The City requires bicycle parking, showers and clothing lockers in new developments where appropriate. The City is mostly built out with new mixed-use development being planned for the closed Tustin Marine Corps Air Station in the south of the City. The central and western portions of Tustin are a mix of high and low density residential as well as commercial uses. The eastern Tustin Ranch area is primarily low density residential with large commercial uses near the intersections of major arterials. Future development will occur primarily at the former Air Corps station and as redevelopment in the older central and western portions of Tustin.

Unincorporated Areas

Several bikeway projects are proposed in unincorporated portions of Orange County. Top priority Class II projects total 5 miles and cost $250,000. These projects include Pacific Coast Highway near Sunset Beach, Crown Valley Parkway near Mission Viejo, Laguna Canyon Road between Irvine and Laguna Beach, and Coast Highway between Corona del Mar and Laguna Beach. Top priority Class I projects in these areas total 5.5 miles and cost $2,750,000. These projects are the Venta Spur rail trail, Aliso Creek, Peters Canyon, and the East-West Rail Trail near Stanton. Second and third priority projects in unincorporated areas include the Borrego Canyon Trail near Lake Forest, Newport Boulevard and Cannon Street in North Tustin, Portola Parkway in Foothill Ranch, Newport Coast Drive, and Trabuco Canyon Road near Rancho Santa Margarita. Future growth patterns in unincorporated areas is expected to continue as in the past, with growth occurring near incorporated cities and in foothill areas, especially in South County. Unincorporated areas can expect to see mostly residential development occurring over the next twenty years.

Future development will follow existing land use patterns in the unincorporated areas of the County. Pockets of low density residential are located in the hills near Mission Viejo, Rancho Santa Margarita, and Irvine. The institutional land use at the former El Toro Marine Corps base is being reconsidered for another use, but no future use has been agreed upon at this time. Much of the hillside and mountain areas will remain open space in the future, and rural residential will continue in the rural canyons in the eastern part of the County.

Villa Park

Villa Park has one top priority Class II project totaling 0.5 miles and costing $25,000. This project is located along Meats Avenue. The City has no second or third priority projects in the Plan. Villa Park is a small built out city with primarily low density

residential land uses. Some commercial uses can be found in the western portion of the City. Future development will primarily be through residential renovation and redevelopment in commercial areas.

Westminster

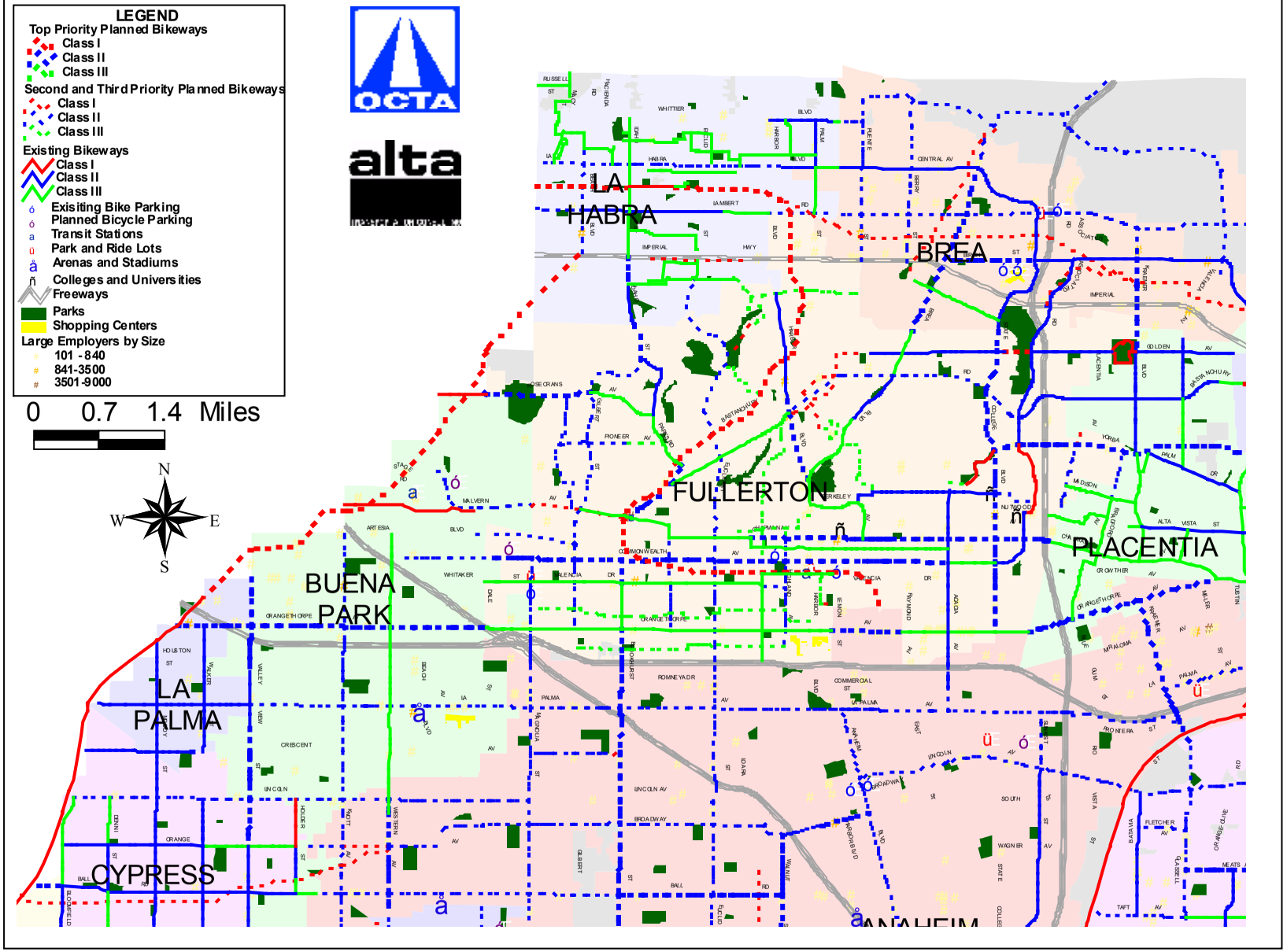
Westminster has one top priority Class I project totaling 0.5 miles and costing $250,000. This project is along the north-south Union Pacific rail corridor near McFadden Avenue. Second and third priority projects in Westminster include Edwards and Newland Streets, and Hazard and McFadden Avenues. The City is built out with a mix of land uses, including high and low density residential, commercial along arterial streets, and a small industrial sector in the west near the San Diego Freeway. Future development will occur as redevelopment in most areas of the Westminster.

Yorba Linda

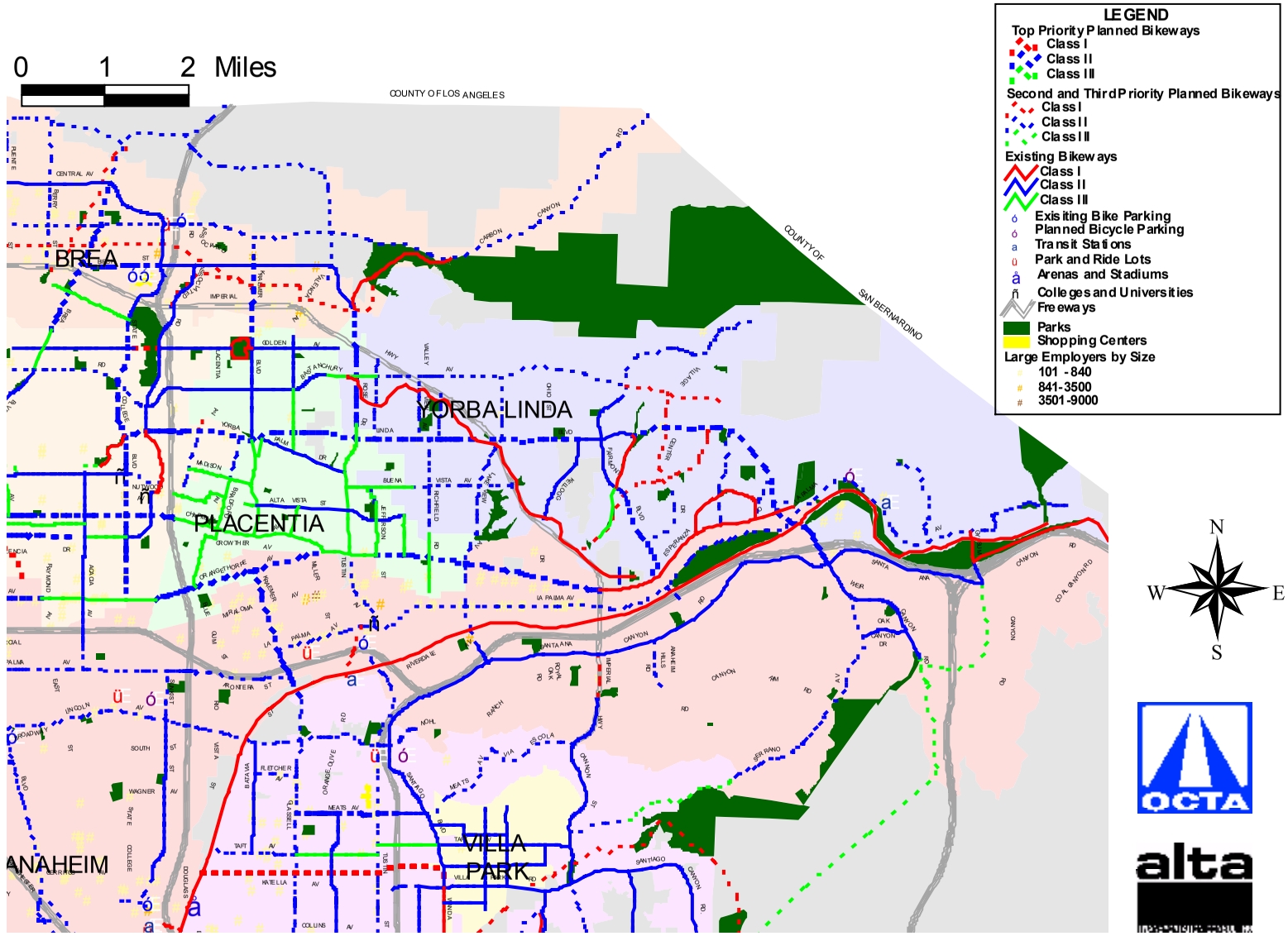
Yorba Linda has 6.75 miles of top priority Class II projects totaling $337,500. These projects include Yorba Linda and Fairmont Boulevards and Rose Drive. Second and third priority projects include Lakeview Avenue, Richfield and Bastanchury Roads, Village Center Drive, and Buena Vista Avenue. The City has primarily low and high density residential land uses with some open space in the eastern portion. A large industrial use area is located in the northwest of Yorba Linda for future development.

The following maps present the proposed bicycle facilities. Each of the bikeway projects is listed in Table 6 starting on page 81.

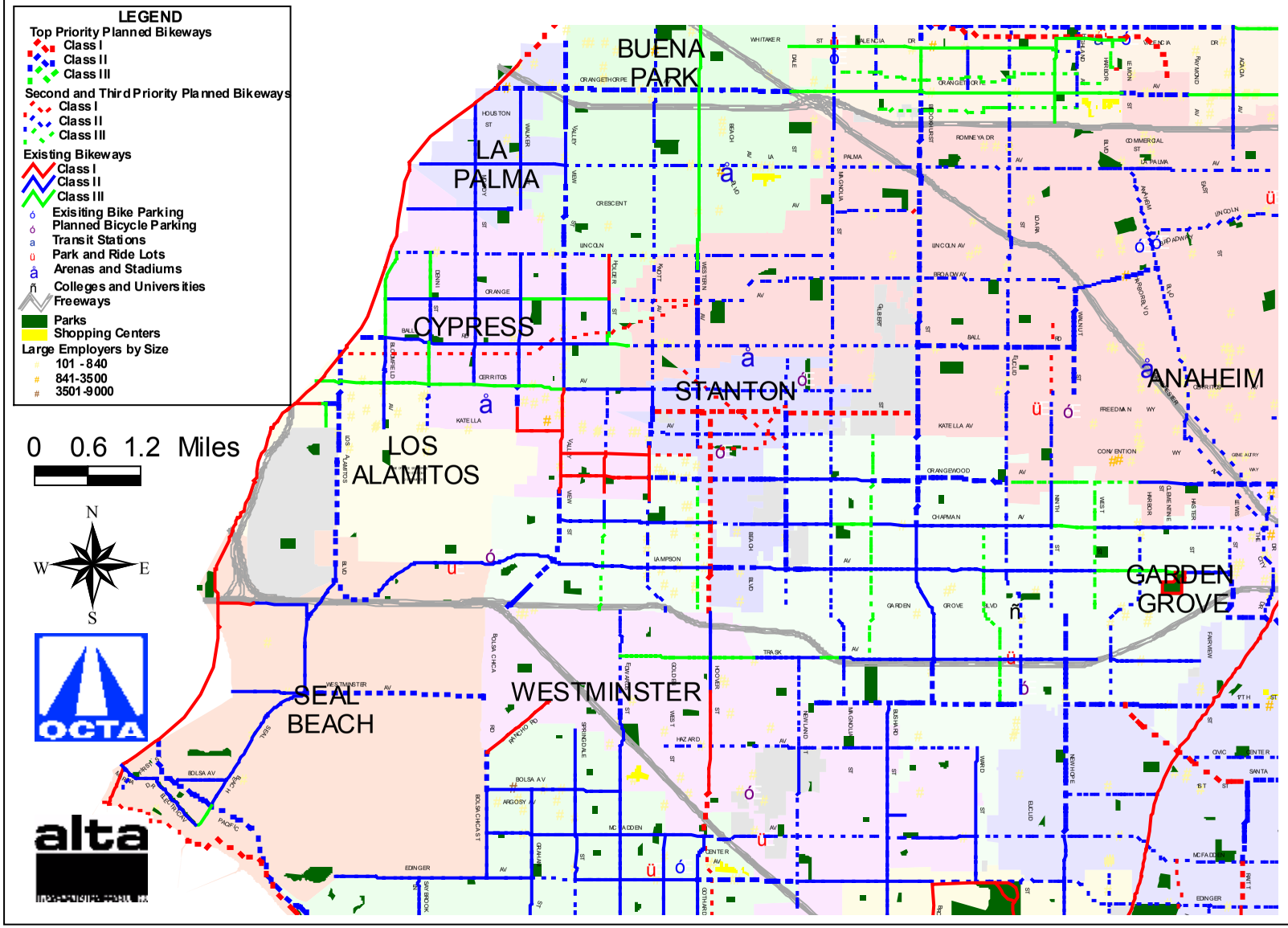
Map 12: Proposed Bicycle Facilities
La Habra, Brea, Buena Park, Fullerton, Anaheim



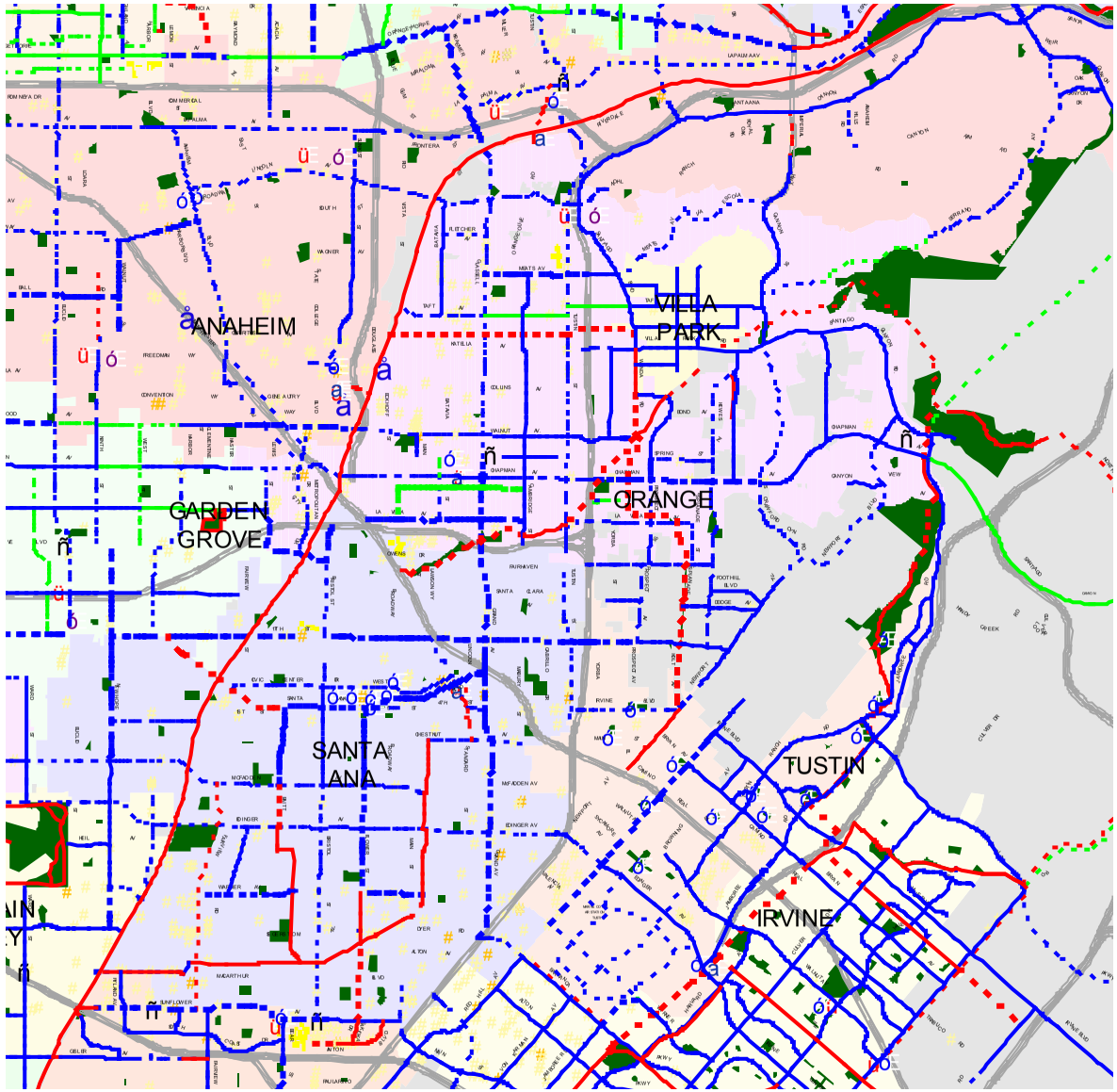
Map 13: Proposed Bicycle Facilities
Brea, Placentia, Yorba Linda, Anaheim, and Unincoporated County



Map 14: Proposed Bicycle Facilities
La Palma, Cypress, Anaheim, Stanton,
Los Alamitos, Garden Grove, Seal Beach, Westminster



Map 15: Proposed Bicycle Facilities
Anaheim, Garden Grove, Orange, Villa Park, Santa Ana, Tustin



LEGEND

Top Priority Planned Bikeways
- Class I
- Class II
- Class III

Second and Third Priority Planned Bikeways
- Class I
- Class II
- Class III

Existing Bikeways
- Class I
- Class II
- Class III

- Exisiting Bike Parking
- Planned Bicycle Parking
- Transit Stations
- Park and Ride Lots
- Arenas and Stadiums
- Colleges and Universities
- Freeways
- Parks
- Shopping Centers

Large Employers by Size
- 101 - 840
- 841-3500
- 3501-9000

0 0.8 1.6 Miles

N
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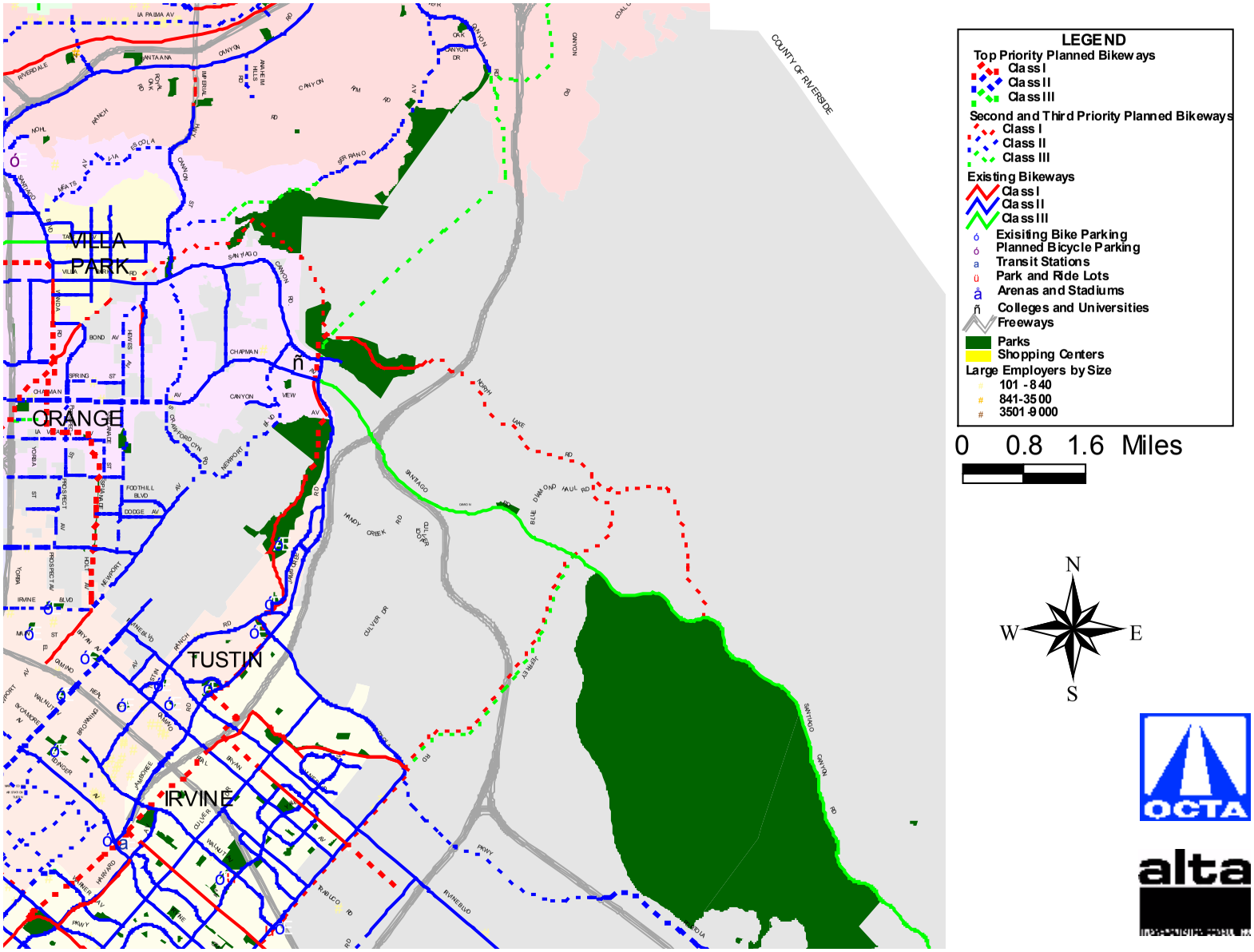
S

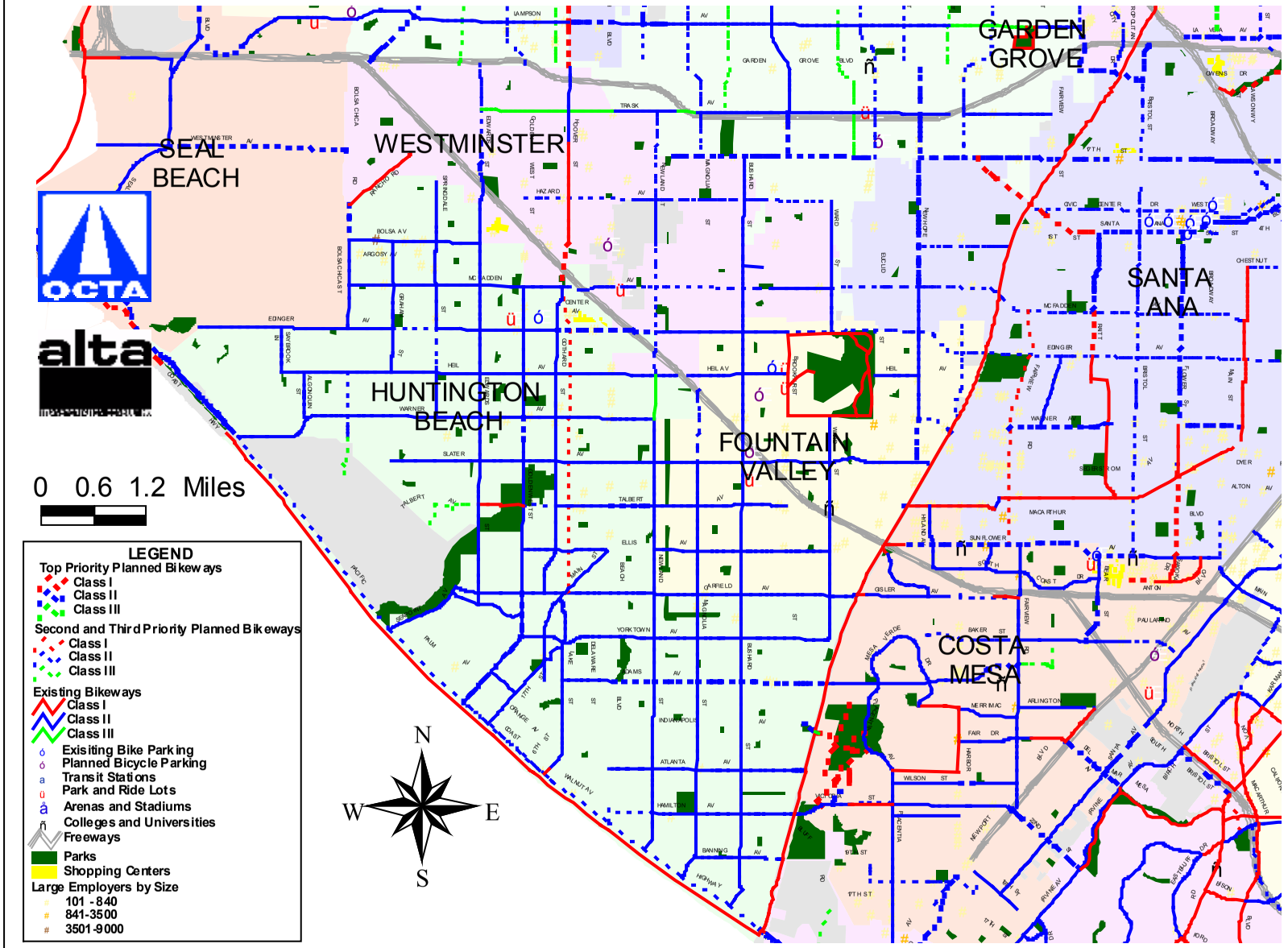
OCTA

alta

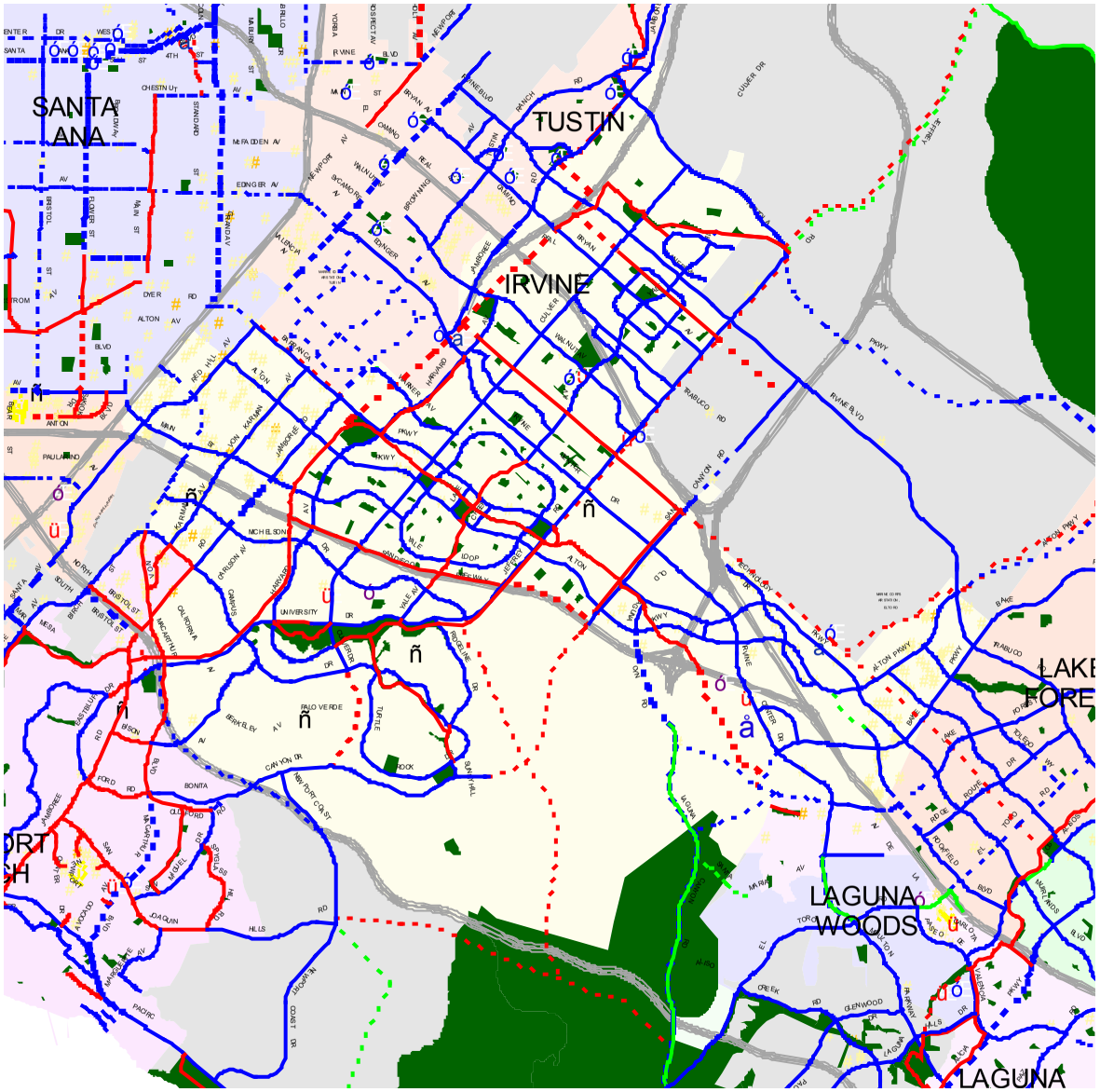
Map 16: Proposed Bicycle Facilities
Villa Park, Orange, Tustin, Unincorporated County



Map 17: Proposed Bicycle Facilities
Seal Beach, Huntington Beach, Fountain Valley, Costa Mesa, Santa Ana



Map 18: Proposed Bicycle Facilities
Costa Mesa, Santa Ana, Irvine



LEGEND

Top Priority Planned Bikeways
- Class I
- Class II
- Class III

Second and Third Priority Planned Bikeways
- Class I
- Class II
- Class III

Existing Bikeways
- Class I
- Class II
- Class III

- Exisiting Bike Parking
- Planned Bicycle Parking
- Transit Stations
- Park and Ride Lots
- Arenas and Stadiums
- Colleges and Universities
- Freeways
- Parks
- Shopping Centers

Large Employers by Size
- 101 - 840
- 841-3500
- 3501-9000

0 0.8 1.6 Miles

N
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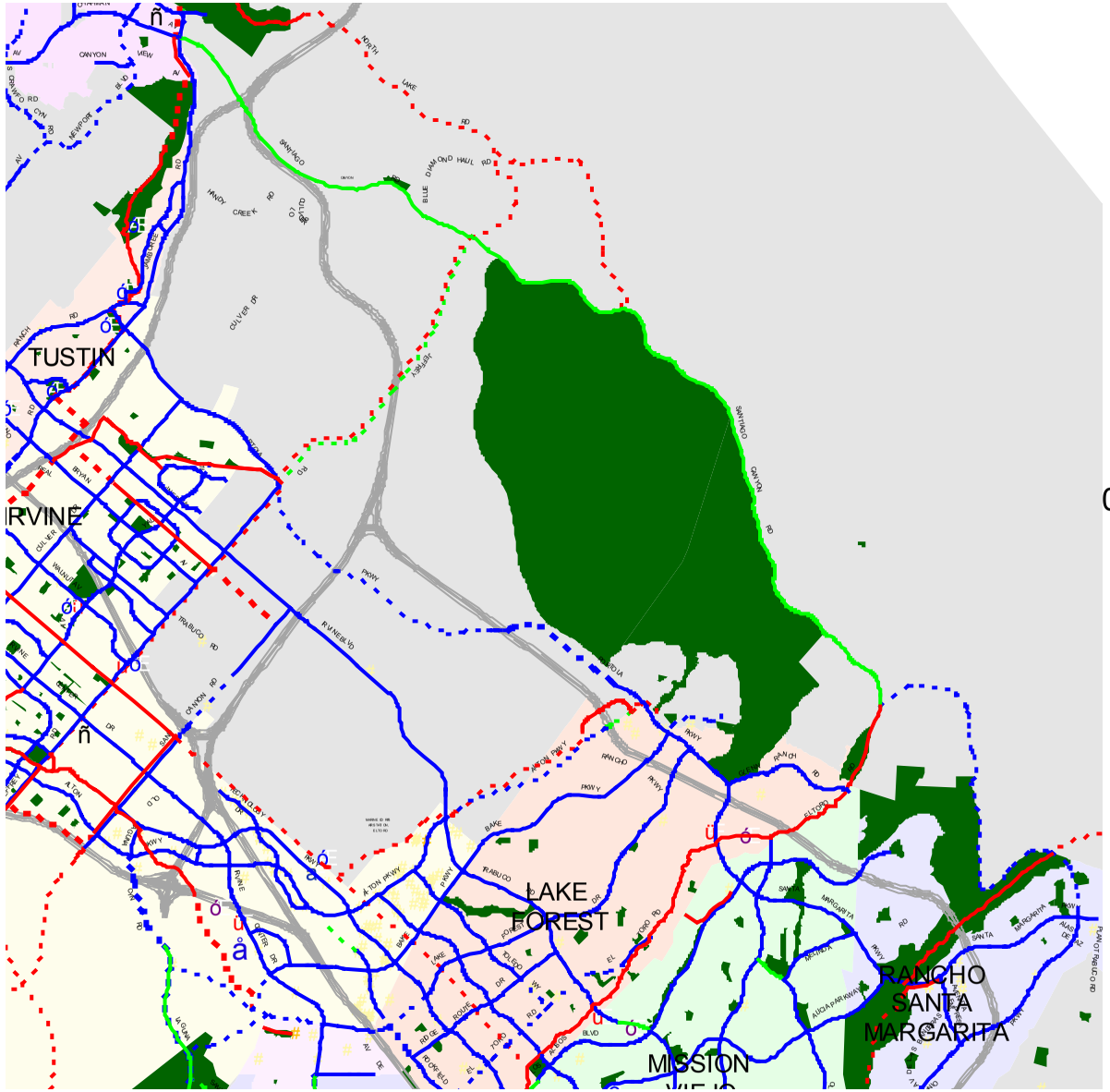
Map 19: Proposed Bicycle Facilities
Irvine, Unincorporated County



LEGEND

Top Priority Planned Bikeways
- Class I
- Class II
- Class III

Second and Third Priority Planned Bikeways
- Class I
- Class II
- Class III

Existing Bikeways
- Class I
- Class II
- Class III

- Exisiting Bike Parking
- Planned Bicycle Parking
- Transit Stations
- Park and Ride Lots
- Arenas and Stadiums
- Colleges and Universities
- Freeways
- Parks
- Shopping Centers

Large Employers by Size
- 101 - 840
- 841-3500
- 3501-9000

0 0.8 1.6 Miles

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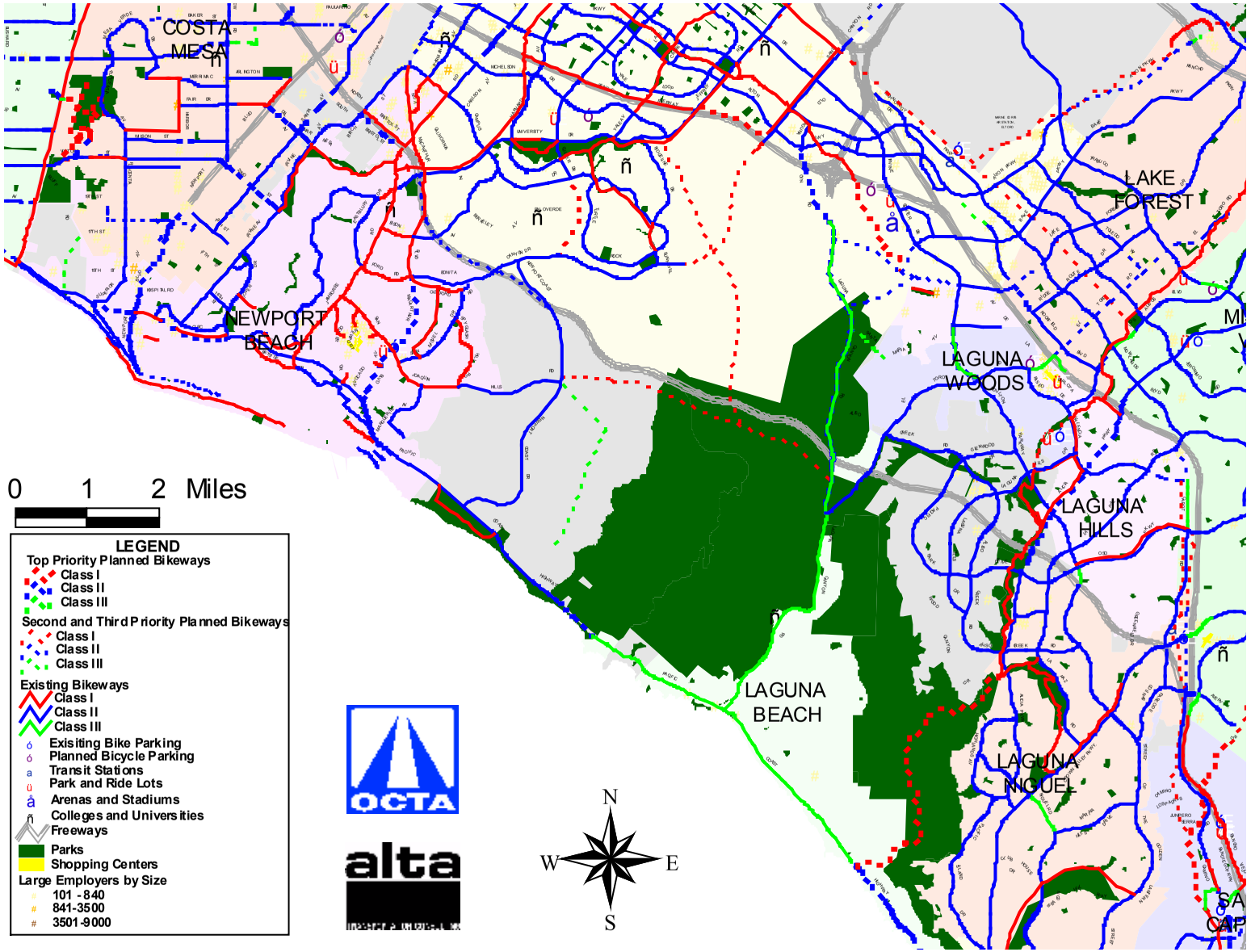
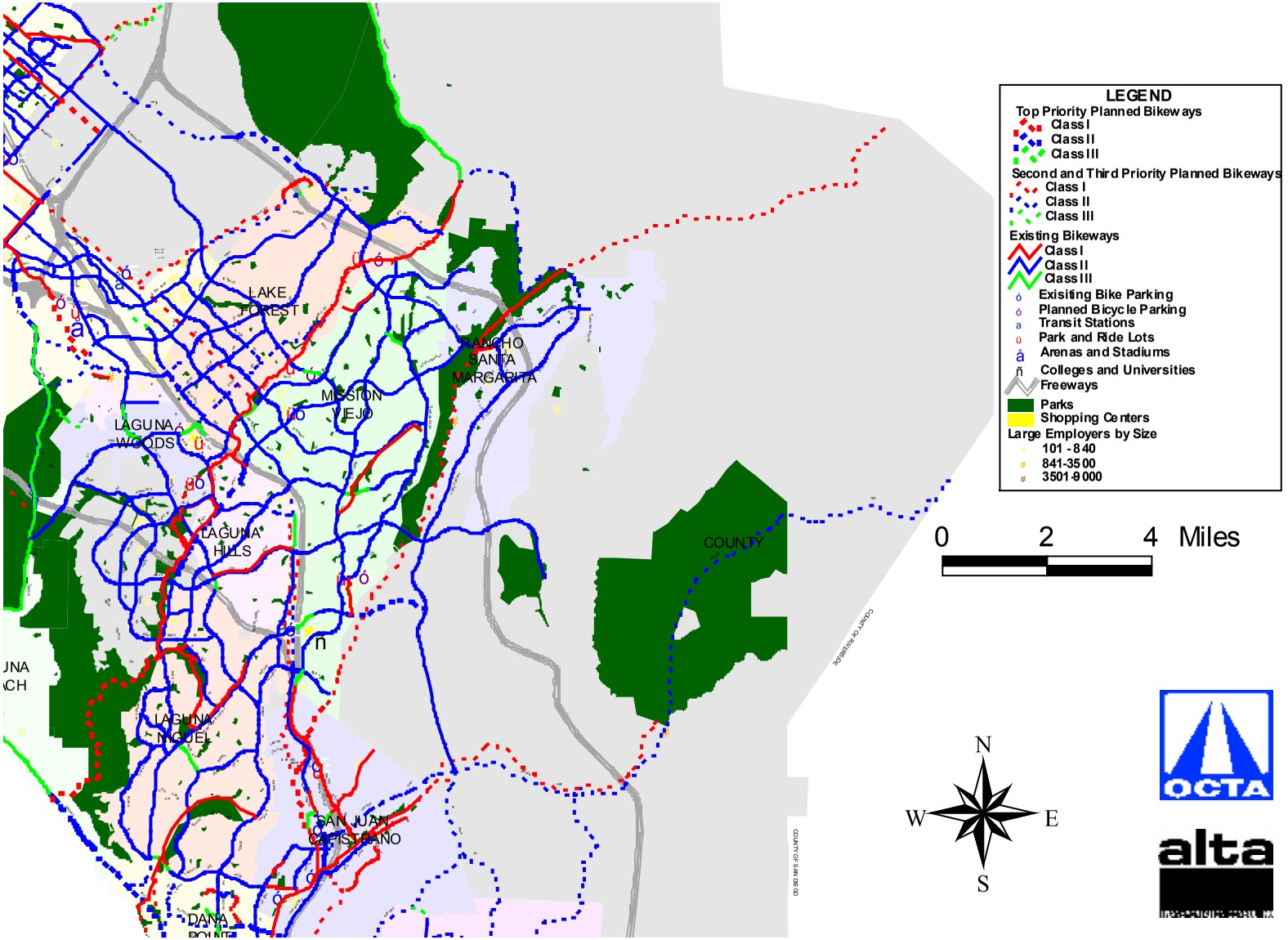
Map 20: Proposed Bicycle Facilities
Newport Beach, Irvine, Laguna Beach, Laguna Woods



Map 21: Proposed Bicycle Facilities
Laguna Woods, Lake Forest, Laguna Hills, Mission Viejo, Rancho Santa Margarita, Laguna Niguel, Unincorporated County



Map 22: Proposed Bicycle Facilities
Laguna Niguel, San Juan Capistrano, Dana Point, San Clemente, Unincorporated County

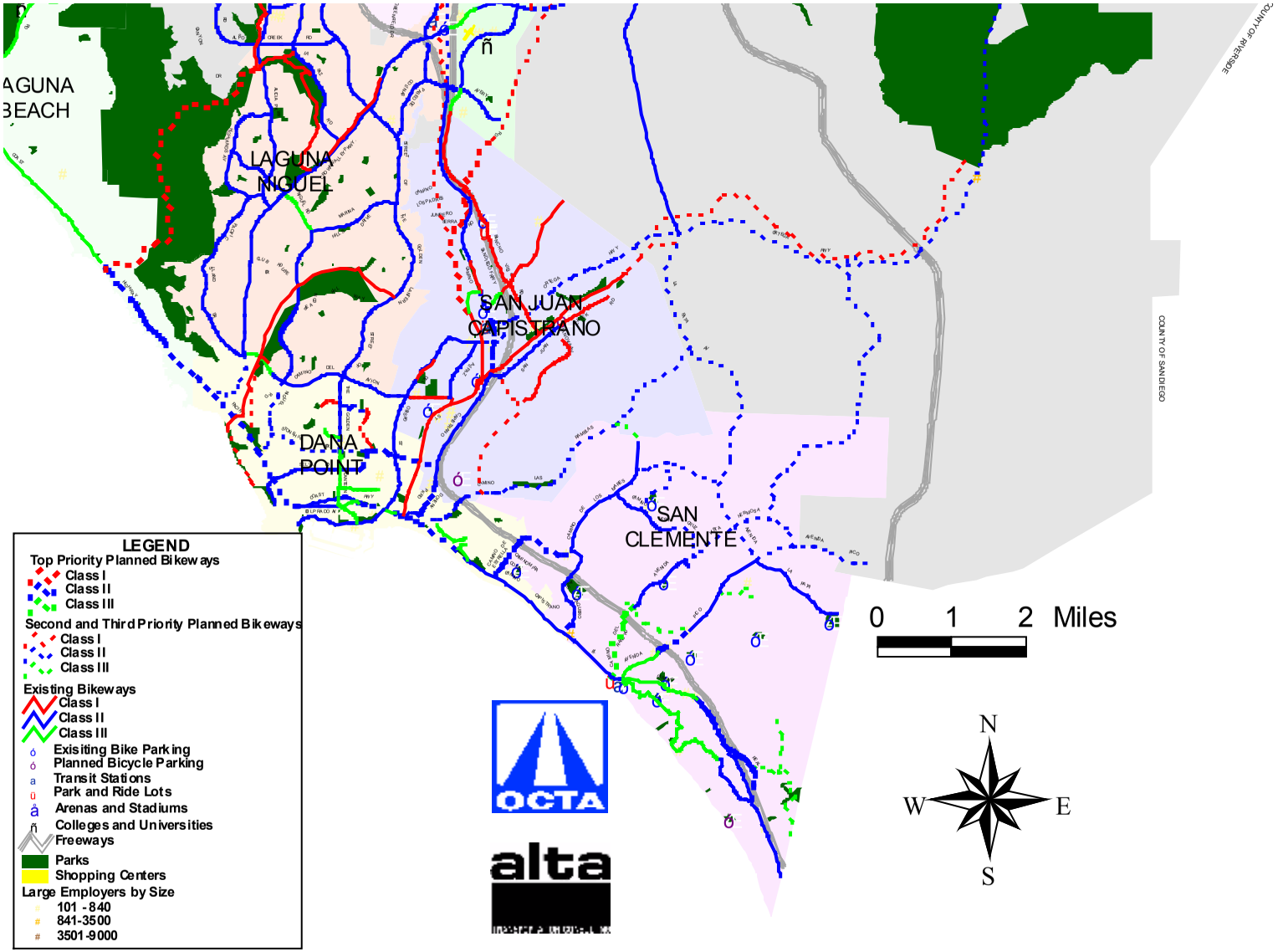


Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
1	Anaheim Stadium Trail	Anaheim	Amtrak Station	Santa Ana River	0.25	$125,000	Anaheim Stadium, Anaheim Rail Station, Arrowhead Pond
2	Ball Rd	Anaheim	Brookhurst St	W/o Santa Ana River	1.75	$87,500	Disneyland, Western Medical Center
2	Brookhurst St	Anaheim	Riverside Fwy	Katella Ave	3.50	$175,000	Regional connector
2	Katella Ave	Anaheim	State College Blvd	Santa Ana River	1.00	$50,000	Anaheim Stadium, Anaheim Rail Station, Arrowhead Pond
2	Kraemer Blvd	Anaheim	Orangethorpe Ave	Santa Ana River	1.50	$75,000	Employment center, regional connector
2	Orangethorpe Ave	Anaheim	Lemon St	Raymond Ave	0.75	$37,500	Metro center Fullerton
2	Orangethorpe Ave	Anaheim	Kraemer Blvd	Chapman Ave	0.75	$37,500	Employment center, regional connector
2	Orangethorpe Ave	Anaheim	Lakeview Ave	Imperial Hwy	1.75	$87,500	Employment center, regional connector
2	Orangewood Ave	Anaheim	E/o Haster St	Santa Ana River	1.50	$75,000	Anaheim Convention Center, Anaheim Stadium
2	Walnut St	Anaheim	Santa Ana St	Cerritos Ave	1.25	$62,500	Residential neighborhoods
2	Weir Canyon Rd	Anaheim	Esperanza Rd	Santa Ana Canyon Rd	1.00	$50,000	Residential neighborhoods
2	Western Ave	Anaheim	Cerritos Ave	Lincoln Ave	1.5	$75,000	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Birch St	Brea	Brea Blvd	State College Blvd	1.00	$50,000	Downtown Brea
2	Brea Blvd	Brea	Central Ave	Juniper St	2.00	$100,000	Downtown Brea
2	Kraemer Blvd	Brea	Imperial Hwy	Placentia city limit	0.25	$12,500	Brea employment center, residential neighborhoods
1	Coyote Creek	Buena Park	Los Angeles County Line near Rosecrans	Knott Ave	1.75	$875,000	Buena Park/La Mirada employment center
1	Coyote Creek	Buena Park	Artesia Blvd	Valley View Ave	0.50	$250,000	Buena Park/La Mirada employment center
2	Orangethorpe Ave	Buena Park	Valley View Ave	Dale St	2.25	$112,500	Downtown Buena Park
2	Valley View Ave	Buena Park	San Rafael Dr	Lincoln Ave	0.75	$37,500	Cypress College
2	Valley View Ave	Buena Park	Los Angeles County Line	Thelma Ave	1.00	$50,000	La Palma/Buena Park employment center, regional connector
2	22nd St	Costa Mesa	W/o Newport Blvd	Tustin Ave	1.00	$50,000	College Hospital
2	Adams Ave	Costa Mesa	E/o Harbor Blvd	Fairview Rd	0.50	$25,000	Orange Coast College
2	Bear St	Costa Mesa	San Diego Fwy	Baker St	0.50	$25,000	South Coast Plaza, Crystal Court
2	Santa Ana Ave	Costa Mesa	Bristol St	Mesa Dr	0.75	$37,500	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Sunflower Ave	Costa Mesa, Santa Ana	Cadillac Ave	E/o Bristol St	2.75	$137,500	South Coast Plaza, South Coast employment center, Orange County Performing Arts Center, Whittier Law School
2	Walker St	Cypress	Cerritos Ave	Executive Dr	0.25	$12,500	Los Alamitos Racetrack
2	Valley View Ave	Cypress	Lincoln Ave	Orange Ave	0.50	$25,000	Cypress College
2	Camino de Estrella	Dana Point	Camino Capistrano	S/o Calle del Sol	0.25	$12,500	Residential neighborhoods
2	Doheny Park Rd	Dana Point	Camino Capistrano	Camino Las Ramblas	0.50	$25,000	Capistrano Valley Plaza, regional connector
2	Pacific Coast Hwy	Dana Point	Street of the Copper Lantern	Palisades Dr	1.75	$87,500	Downtown Dana Point
2	Pacific Coast Hwy	Dana Point	Laguna Beach city limit	Street of the Blue Lantern	2.50	$125,000	Downtown Dana Point
2	Selva Rd	Dana Point	Calle La Primavera	Stonehill Dr	0.25	$12,500	Residential neighborhoods
2	Street of the Golden Lantern	Dana Point	Acapulco Dr	Camino del Avion	0.25	$12,500	Regional connector
2	Stonehill Dr	Dana Point	Selva Rd	San Juan Creek	0.75	$37,500	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Newhope St	Fountain Valley	Warner Ave	Slater Ave	0.50	$25,000	Costco Plaza, Fountain Valley employment center
1	UP Railroad Rail Trail	Fullerton	Lambert Rd	Commonwealth Ave	4.75	$2,375,000	Residential neighborhoods
1	BNSF Rail Trail	Fullerton	Commonwealth Ave	Anaheim city limit	2.75	$1,375,000	Downtown Fullerton, Fullerton Transportation Center
1	Rolling Hills Dr Connector	Fullerton	E/o State College Blvd	Associated Rd	0.25	$125,000	Craig Regional Park
2	Bastanchury Rd	Fullerton	Valencia Mesa Dr	Malvern Ave	0.75	$37,500	Residential neighborhoods, Sunny Hills High School
2	Brookhurst St	Fullerton	Commonwealth Ave	Riverside Fwy	1.25	$62,500	Regional connector
2	Chapman Ave	Fullerton	Woods Ave	Placentia Ave	3.25	$162,500	Downtown Fullerton
2	Commonwealth Ave	Fullerton	Dale St	Acacia Ave	5.00	$250,000	Downtown Fullerton, Fullerton Transportation Center
2	Gilbert St	Fullerton	La Habra city limit	Castlewood Dr	0.50	$25,000	Residential neighborhoods
2	Rosecrans Ave	Fullerton	Los Angeles County Line	Gilbert St	1.25	$62,500	Regional connector
2	State College Blvd	Fullerton	Brea city limit	Anaheim city limit	3.25	$162,500	CSU Fullerton
2	Yorba Linda Blvd	Fullerton	State College Blvd	Bradford Ave	1.50	$75,000	CSU Fullerton
1	UP N-S Rail Trail	Garden Grove	Chapman Ave	Garden Grove Blvd	1.00	$500,000	Stanton/west Garden Grove employment center
2	Brookhurst St	Garden Grove	Katella Ave	Westminster Blvd	3.00	$150,000	Regional connector
2	Dale Ave	Garden Grove	Katella Ave	Chapman Ave	1.00	$50,000	Residential neighborhoods
2	Dale St	Garden Grove	N/o Enault Ln	Lampson Ave	0.75	$37,500	Residential neighborhoods
2	Newhope St	Garden Grove	Trask Ave	Westminster Ave	0.50	$25,000	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Orangewood Ave	Garden Grove	Knott Ave	Western Ave	0.50	$25,000	Garden Grove employment center
2	Valley View St	Garden Grove	Cypress city limit	Garden Grove Blvd	1.75	$87,500	Regional connector
2	Westminster Ave	Garden Grove	Newland St	E/o Buena St	4.25	$212,500	Regional connector
1	Atlanta Ave	Huntington Beach	Surge Ln	Santa Ana River	0.25	$126,000	Santa Ana River Trail
1	LeBard Park Trail Connector	Huntington Beach	Le Bard Park	Santa Ana River	0.25	$125,000	Santa Ana River Trail
2	Adams Ave	Huntington Beach	Lake St	Bushard St	2.00	$100,000	Residential neighborhoods
2	Adams Ave	Huntington Beach	Bushard St	Santa Ana River	1.00	$50,000	Santa Ana River Trail
2	Bolsa Chica Rd	Huntington Beach	Rancho Rd	Heil Ave	2.00	$100,000	Residential neighborhoods, regional connector
2	Edinger Ave	Huntington Beach	Gothard St	Newland St	1.25	$62,500	Golden West College, Huntington Beach Mall
2	Golden West St	Huntington Beach	Warner Ave	Slater Ave	0.50	$25,000	Residential neighborhoods
2	Golden West St	Huntington Beach	Garfield Ave	Pacific Coast Hwy	1.50	$75,000	Residential neighborhoods
2	Talbert Ave	Huntington Beach	Beach Blvd	Newland St	0.50	$25,000	Regional connector
1	Jeffrey Rd	Irvine	Sand Canyon Creek	Portola Pkwy	4.00	$2,000,000	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
1	Culver Dr	Irvine	Campus Dr	Bonita Canyon Dr	1.25	$625,000	Residential neighborhoods
1	Harvard Ave	Irvine	Irvine Center Dr	Deerfield Ave	0.25	$125,000	Residential neighborhoods
1	San Diego Fwy Trail	Irvine	Jeffrey Rd	Sand Canyon Ave	1.00	$500,000	Residential neighborhoods
1	Venta Spur	Irvine	Peters Canyon Trail	Culver Dr	0.75	$375,000	Residential neighborhoods
2	Jamboree Rd	Irvine	Main St	Michelson Dr	0.75	$37,500	West Irvine employment center
2	Jamboree Rd	Irvine	N/o Warner Ave	Barranca Pkwy	0.75	$37,500	West Irvine employment center, regional connector
2	Old Laguna Canyon Rd	Irvine	San Diego Fwy	Future Lake Forest Dr	1.25	$62,500	Regional connector
1	Bastanchury Bypass	La Habra	Bastanchury Bypass Jct	Lambert Rd	0.25	$125,000	Residential neighborhoods
1	Coyote Creek	La Habra	Imperial Hwy	Los Angeles County Line	0.50	$250,000	Residential neighborhoods
1	UP Trail	La Habra	Los Angeles County Line	Bastanchury Bypass Jct	2.50	$1,250,000	La Habra employment center; link to Los Angeles County
2	Idaho St	La Habra	Imperial Hwy	Sandlewood Ave	0.25	$12,500	Regional connector
1	Coyote Creek	La Palma	183rd Street	Walker St	0.25	$125,000	La Palma employment center
2	Crescent Ave	La Palma	Watson St	Walker St	0.25	$12,500	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Orangethorpe Ave	La Palma	Los Angeles County Line	Valley View Ave	1.00	$50,000	Buena Park empolyment center
1	Aliso Canyon Trail	Laguna Beach	Laguna Beach city limit	S/o Coast Hwy	1.00	$500,000	Aliso Canyon, Aliso Beach
2	Coast Hwy	Laguna Beach	Aliso Canyon	Dana Point city limit	1.75	$87,500	South Laguna, Aliso Beach, regional connector
2	Alicia Pkwy	Laguna Hills	San Diego Fwy	Pacific Park Dr	3.00	$150,000	Residential neighborhoods
2	Cabot Rd	Laguna Hills	La Paz Rd	Paseo de Valencia	0.50	$25,000	Residential neighborhoods
2	La Paz Rd	Laguna Hills	Muirlands Blvd	Paseo de Valencia	0.75	$37,500	Residential neighborhoods
2	Lake Forest Dr	Laguna Hills	Moulton Pkwy	San Diego Fwy	0.50	$25,000	East Irvine employment center, residential neighborhoods
2	Lake Forest Dr	Laguna Hills	Tesla	Moulton Pkwy	0.75	$37,500	Residential neighborhoods, Irvine employment center
2	Paseo de Valencia	Laguna Hills	La Paz Rd	Cabot Rd	0.50	$25,000	Residential neighborhoods
1	Aliso Canyon Trail	Laguna Niguel	Orange Co. History Museum	Laguna Niguel city limit	0.25	$125,000	Aliso Canyon

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Lake Forest Dr	Lake Forest	San Diego Fwy	Muirlands Blvd	0.75	$37,500	Residential neighborhoods
2	Rockfield Blvd	Lake Forest	Irvine city limit	Ridge Route	0.75	$37,500	Residential neighborhoods
2	Ball Rd	Los Alamitos	Los Angeles County Line	Bloomfield St	0.25	$12,500	Regional connector
2	Los Alamitos Blvd	Los Alamitos	Los Angeles County Line	Bradbury Rd	2.00	$100,000	Downtown Los Alamitos, Rossmoor Center
2	Avery Pkwy	Mission Viejo	Camino Capistrano	Marguerite Pkwy	0.25	$12,500	Saddleback College
2	Coast Hwy	Newport Beach	Superior Ave	Dover Dr	0.50	$25,000	Newport Bay businesses, regional connector
2	Coast Hwy	Newport Beach	MacArthur Blvd	Poppy Ave	1.00	$50,000	Downtown Corona del Mar
2	Jamboree Rd	Newport Beach	Campus Dr	Bristol St	1.00	$50,000	Newport Beach employment center
2	MacArthur Blvd	Newport Beach	Ford Rd	Coast Hwy	1.50	$75,000	Downtown Corona del Mar
2	Newport Blvd	Newport Beach	15th Street	Balboa Blvd	1.50	$75,000	Downtown Newport Beach
2	Santiago Dr	Newport Beach	Tustin Ave	Irvine Ave	0.25	$12,500	Residential neighborhoods
1	Peters Canyon Trail	Orange	Tustin city limit	Santiago Canyon Trail	0.25	$125,000	Regional connector
1	Santiago Creek	Orange	Garden Grove Fwy	Walnut Ave	1.25	$625,000	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
1	Tustin Branch Rail Trail	Orange	Santa Ana River	Wanda Rd	2.75	$1,375,000	Santa Ana River, regional connecter
1	Tustin Branch Rail Trail	Orange	Collins Ave	Fairhaven Ave	2.50	$1,250,000	Regional connector
2	Garden Grove Blvd	Orange	Lewis St	The City Dr	0.50	$25,000	Regional connector
2	Glassell St	Orange	Palm Ave	Garden Grove Fwy	1.00	$50,000	Downtown Orange
2	La Veta Ave	Orange	Santa Ana Fwy	Cambridge St	1.75	$87,500	Downtown Orange
2	Lewis St	Orange	Lampson Ave	Garden Grove Blvd	0.50	$25,000	The Block at Orange
2	Meats Ave	Orange	Glassell St	Costa Mesa Fwy	1.25	$62,500	Orange employment center
3	Almond Ave	Orange	Feldner Rd	Cambridge St	1.50	$15,000	Downtown Orange
3	Bedford Rd	Orange	Palmyra Ave	La Veta Ave	0.50	$5,000	Downtown Orange
3	Feldner Ave	Orange	Almond Ave	Palmyra Ave	0.25	$2,500	Downtown Orange
3	Palmyra Ave	Orange	Feldner Rd	Bedford Rd	0.25	$2,500	Downtown Orange
2	Kraemer Blvd	Placentia	Brea city limit	Golden Ave	0.25	$12,500	Residential neighborhoods
2	Orangethorpe Ave	Placentia	Placentia Ave	Kraemer Blvd	1.25	$62,500	Employment center, regional connector
2	Orangethorpe Ave	Placentia	Jefferson St	Lakeview Ave	1.00	$50,000	Employment center, regional connector
2	Rose Dr	Placentia	Blake Rd	Golden Ave	0.50	$25,000	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Yorba Linda Blvd	Placentia	Bradford Ave	Propsect Ave	1.50	$75,000	Placentia Linda Hospital
2	Avd Pico	San Clemente	San Diego Fwy	Calle Frontera	0.50	$25,000	Regional connector
2	Avd Vaquero	San Clemente	Via Cascadita	Camino Capistrano	0.25	$12,500	Residential neighborhoods
2	Camino Capistrano	San Clemente	Avd Vaquero	Coast Hwy	0.25	$12,500	Residential neighborhoods
2	Camino de Estrella	San Clemente	S/o Calle del Sol	Camino El Molino	0.50	$25,000	Residential neighborhoods, shopping
2	El Camino Real	San Clemente	Avd Palizada	Avd Mendocino	1.75	$87,500	Regional connector
3	Camino del Rancho	San Clemente	El Camino Real	Forster Ranch Rd	1.00	$10,000	Residential neighborhoods
3	Forster Ranch Rd	San Clemente	Camino del Rancho	Via Ballena	0.25	$2,500	Residential neighborhoods
3	Via Ballena	San Clemente	Forster Ranch Rd	Calle Frontera	0.25	$2,500	Residential neighborhoods
1	Trabuco Creek Trail	San Juan Capistrano	San Juan Capistrano city limit	Near Ramos St	2.00	$1,000,000	Trabuco Creek, Ladera, Downtown San Juan Capistrano, Doheny State Beach
2	Camino Capistrano	San Juan Capistrano	La Zanja St	Doheny Park Rd	2.00	$100,000	Downtown San Juan Capistrano

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Stonehill Dr	San Juan Capistrano	San Juan Creek	Camino Capistrano	0.25	$12,500	Residential neighborhoods
1	Flower St Flood Control Channel	Santa Ana	Alton Bikeway	Sunflower Ave	0.50	$250,000	South Coast Plaza, South Coast employment center, Orange County Performing Arts Center
1	Santiago Creek	Santa Ana	Main St	Garden Grove Fwy	1.75	$875,000	Residential neighborhoods
1	PE Trail	Santa Ana	Westminster Ave	Raitt St	1.75	$875,000	Downtown Santa Ana
2	17th Street	Santa Ana	Newhope St	College Ave	1.00	$50,000	Santa Ana College, Bristol Marketplace
2	17th Street	Santa Ana	Bristol St	Deodar St	4.25	$212,500	Bristol Marketplace, Centre on 17th
2	Bristol St	Santa Ana	Garden Grove Fwy	Memory Ln	0.50	$25,000	Bristol Village Plaza
2	Flower St	Santa Ana	Santa Ana Blvd	Warner Ave	2.25	$112,500	Downtown Santa Ana
2	Grand Ave	Santa Ana	Garden Grove Fwy	Dyer Rd	3.75	$187,500	Santa Ana Transportation Center, Grand/Warner employment center
2	Memory Ln	Santa Ana	Townley St	Bristol St	0.50	$25,000	Bristol Village Plaza
2	Newhope St	Santa Ana	Westminster Ave	McFadden Ave	1.50	$75,000	Residential neighborhoods
2	Raitt St	Santa Ana	Santa Ana Blvd	McFadden Ave	1.00	$50,000	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Santa Ana Blvd	Santa Ana	Raitt St	Grand Ave	2.50	$125,000	Downtown Santa Ana, Orange County Civic Center
2	Warner Ave	Santa Ana	Fairview Flood Control Channel	Raitt St Flood Control Channel	0.50	$25,000	Residential neighborhoods
2	Warner Ave	Santa Ana	Flower St	Maple St	0.75	$37,500	Residential neighborhood
2	Pacific Coast Hwy	Seal Beach	Los Angeles County Line	Anderson St	2.50	$125,000	Regional connector
2	Westminster Ave	Seal Beach	Seal Beach Blvd	Bolsa Chica Rd	2.00	$100,000	Regional connector
1	Seal Beach Trail	Seal Beach	Seal Beach Blvd	Anderson St	1.75	$875,000	Seal Beach community
2	Seal Beach Blvd	Seal Beach	Bradbury Rd	St. Cloud Dr	0.50	$25,000	Rossmoor Center
1	UP E-W Rail Trail	Stanton	Knott Ave	Gilbert St	2.50	$1,250,000	Downtown Stanton
1	UP N-S Rail Trail	Stanton	UP E-W Rail Trail	Chapman Ave	1.25	$625,000	Downtown Stanton, Stanton/west Garden Grove employment center
2	Dale Ave	Stanton	Chapman Ave	N/o Enault Ln	0.25	$12,500	Residential neighborhoods
2	Dale Ave	Stanton	UP Rail Trail	Katella Ave	0.25	$12,500	Residential neighborhoods
2	Orangewood Ave	Stanton	Western Ave	Dale St	1.00	$50,000	Residential neighborhoods

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
1	SCRRA Rail Trail	Tustin	Peters Canyon Trail	Harvard Ave	0.25	$125,000	Residential neighborhoods
2	Jamboree Rd	Tustin	Edinger Ave	N/o Warner Ave	0.75	$37,500	West Irvine employment center, regional connector
2	Red Hill Ave	Tustin	Irvine Blvd	Barranca Pkwy	3.50	$175,000	South Tustin/East Santa Ana employment center, residential neighborhoods
2	Warner Ave	Tustin	Costa Mesa Fwy	Red Hill Ave	0.25	$12,500	Grand/Warner employment center
1	Aliso Canyon Trail	Unincorporated	Laguna Niguel city limit	Laguna Beach city limit	3.50	$1,750,000	Aliso Canyon
1	Peters Canyon w/o Jamboree Rd	Unincorporated	Santiago Canyon Rd	Santiago Creek Path	0.50	$250,000	Regional connector
1	UP E-W Rail Trail	Unincorporated	Gilbert St	Brookhurst St	0.50	$250,000	Residential neighborhoods
1	Venta Spur	Unincorporated	Jeffrey Rd	Sand Canyon Ave	1.00	$500,000	Residential neighborhoods
2	Coast Hwy	Unincorporated	El Morro Beach M.H.P.	Laguna Beach city limit	0.75	$37,500	Regional connector
2	Crown Valley Pkwy	Unincorporated	Marguerite Pkwy	Antonio Pkwy	1.50	$75,000	Regional connector
2	Laguna Canyon Road	Unincorporated	Irvine city limit	Laguna Beach city limit	1.50	$75,000	Regional connector

Table 6: Top Priority Proposed Bikeways

Class	Name	Cities/ Communities	From	To	Mileage	Estimated Cost	Destinations
2	Pacific Coast Hwy	Unincorporated	Anderson St	Warner Ave	1.25	$62,500	Sunset Beach, Surfrider Beach, regional connector
2	Meats Ave	Villa Park	Santiago Blvd	S/o Stone Pine Rd	0.50	$25,000	Residential neighborhoods
1	UP N-S Rail Trail	Westminster	Bolsa Ave	McFadden Ave	0.50	$250,000	Regional connector
2	Fairmont Blvd	Yorba Linda	S/o Paseo de Las Palomas	Imperial Hwy	1.00	$50,000	Residential neighborhoods
2	Rose Dr	Yorba Linda	Golden Ave	N/o Yorba Linda Blvd	1.00	$50,000	Residential neighborhoods
2	Yorba Linda Blvd	Yorba Linda	Propsect Ave	Kellogg Dr	2.50	$125,000	City Hall

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
1	Anaheim Stadium Trail	Anaheim	Amtrak Station	Santa Ana River
1	Flood Control Channel parallel to UPRR	Anaheim	Cerritos Ave	Crone Ave
1	Imperial Hwy	Anaheim	Santa Ana Canyon Rd	Nohl Ranch Rd
1	Carbon Creek	Anaheim, Placentia, Brea	La Palma Ave	E/o Kraemer Blvd
2	Acacia Ave	Anaheim	Carbon Creek	La Palma Ave
2	Anaheim Blvd	Anaheim	La Palma Ave	Santa Ana Fwy
2	Anaheim Hills Rd	Anaheim	Santa Ana Canyon Rd	Nohl Ranch Rd
2	Ball Rd	Anaheim	Brookhurst St	w/o Santa Ana River
2	Frontera St	Anaheim	La Palma Ave	Kraemer Blvd
2	Howell Ave	Anaheim	State College Blvd	Katella Ave
2	La Palma Ave	Anaheim, Buena Park	Valley View St	Sunkist St
2	9th Street	Anaheim	Orangewood Ave	Cerritos Ave
2	Serrano Ave	Anaheim	Canyon Rim Rd	Weir Canyon Rd
2	Sunkist St	Anaheim	La Palma Ave	Lincoln Ave
2	Sunkist St	Anaheim	Cerritos Ave	Howell Ave
3	Orangewood Ave	Anaheim	Euclid St	Harbor Blvd
2	Brea Blvd	Brea	Los Angeles County Line	Central Ave
2	Carbon Canyon Rd	Brea	Valencia Ave	San Bernardino County Line

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Kraemer Blvd	Brea	Lambert Rd	Imperial Hwy
2	Lambert Rd	Brea	Kraemer Blvd	Valencia Ave
2	Puente St	Brea	Whittier Blvd	Imperial Hwy
2	Whittier Blvd	Brea	La Habra city limit	Puente St
2	Commonwealth Ave	Buena Park	Beach Blvd	Dale St
2	Arlington Dr	Costa Mesa	Tewinkle Mem Park west	Harbor Blvd
2	Baker St	Costa Mesa	Bristol St	Red Hill Ave
2	Canyon Dr	Costa Mesa	Victoria St	**Banning Pl**
2	Gisler Ave	Costa Mesa	Harbor Blvd	Gisler Park
2	MacArthur Blvd	Costa Mesa, Irvine, Newport Beach	Susan St	Campus Dr
2	Orange Ave	Costa Mesa	Flower St	18th Street
2	Pacific Ave	Costa Mesa	Victoria St	Banning Pl
2	Victoria St	Costa Mesa	e/o American Ave	Placentia Ave
3	El Camino Ave	Costa Mesa	Adams Ave	Mendoza Ave
3	Mendoza Ave	Costa Mesa	El Camino Ave	Baker St
2	Holder St	Cypress	Cerritos Ave	Stanton Storm Channel
2	Lincoln Ave	Cypress, La Palma, Buena Park, Anaheim	Los Angeles County Line	Magnolia Ave
2	Crown Valley Pkwy	Dana Point	Camino del Avion	Pacific Coast Hwy
2	Niguel Rd	Dana Point	Camino del Avion	Pacific Coast Hwy

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Stonehill Dr	Dana Point	Niguel Rd	Selva Rd
2	Camino de Estrella	Dana Point, San Clemente	Camino Capistrano	Camino El Molino
2	Camino Las Ramblas	Dana Point, San Juan Capistrano	Coast Hwy	end
2	Edinger Ave	Fountain Valley, Santa Ana, Tustin	Brookhurst St	Red Hill Ave
2	Harbor Blvd	Fountain Valley	Santa Ana city limit	Santa Ana River
2	Magnolia St	Fountain Valley	San Diego Fwy	Slater Ave
1	Lemon Park Path	Fullerton	Rosslyn Ave	South edge of Lemon Park
2	Acacia Ave	Fullerton	Melody Ln	Dorothy Ln
2	Bastanchury Rd	Fullerton	Harbor Blvd	Associated Rd
2	Dorothy Ln East (CSUF)	Fullerton	State College Blvd	East Campus Trail
2	Gilbert St	Fullerton	Castlewood Dr	Orangethorpe Ave
2	Malvern Ave	Fullerton	Basque Ave	Chapman Ave
3	Melody Ln	Fullerton	Fullerton Creek Dr	Acacia Ave
2	Euclid St	Fullerton, Anaheim, Garden Grove	Chapman Ave	Trask Ave
2	Harbor Blvd	Fullerton	Orangethorpe Ave	Riverside Fwy
2	Malvern Ave	Fullerton, Buena Park	Beach Blvd	Gilbert St
2	Magnolia Ave	Fullerton, Buena Park, Anaheim, Stanton	Commonwealth Ave	Katella Ave
1	Placentia Ave	Fullerton, Placentia	Palm Dr	Yorba Linda Blvd
2	Placentia Ave	Fullerton, Placentia	Yorba Linda Blvd	Nutwood Ave

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
3	Pomona Ave	Fullerton	Chapman Ave	Santa Fe Ave
2	Brookhurst St	Garden Grove	Katella Ave	Westminster Blvd
2	Dale St	Garden Grove	Lampson Ave	Garden Grove Blvd
2	Euclid St	Garden Grove	Trask Ave	Westminster Ave
2	Harbor Blvd	Garden Grove	Chapman Ave	Westminster Ave
2	Knott St	Garden Grove, Cypress	Stanton Storm Channel	Garden Grove Blvd
2	Magnolia St	Garden Grove	Katella Ave	Westminster Blvd
2	Newhope St	Garden Grove, Santa Ana	Lampson Ave	McFadden Ave
2	Newland St	Garden Grove, Westminster	Trask Ave	Hazard Ave
3	Orangewood Ave	Garden Grove	Dale St	Euclid St
2	Orangewood Ave	Garden Grove, Stanton	Knott Ave	Dale St
2	Westminster Ave	Garden Grove, Santa Ana	UP Rail Trail	e/o Buena St
2	Ward St	Garden Grove, Westminster	Hazard Ave	Ballast Ave
1	UP Trail	Huntington Beach	McFadden Ave	Garfield Ave
2	Adams Ave	Huntington Beach	Lake St	Bushard St
2	Bolsa Chica Rd	Huntington Beach	Slater Ave	Los Patos Ave
2	Golden West St	Huntington Beach	Westminster Blvd	McFadden Ave
2	Main St	Huntington Beach	UP Rail Trail	Shoreline Dr
2	Pacific Coast Hwy	Huntington Beach	Warner Ave	Santa Ana River

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Warner Ave	Huntington Beach	Algonquin St	Golden West St
2	Indianapolis Ave	Huntington Beach	Beach Blvd	Brookhurst St
1	Bonita Canyon Dr	Irvine	San Joaquin Hills Toll Rd	Culver Dr
1	San Diego Creek	Irvine	San Diego Fwy	Lake Forest Dr
2	Jamboree Rd	Irvine, Tustin	Michelle Dr	El Camino Real
2	Portola Pkwy	Irvine	Jeffrey Rd	Foothill Ranch community
2	Sand Canyon Ave	Irvine	Portola Pkwy	Irvine Blvd
2	Sand Canyon Ave	Irvine	Trabuco Rd	SCRRA Rail Corridor
2	Yale Ave/Ct	Irvine	Meadowood	Arborwood
1	Coyote Creek	La Habra, Buena Park, La Palma	Imperial Hwy	Walker St
2	La Habra Blvd	La Habra	Los Angeles County Line	Fonda St
2	Lambert Rd	La Habra, Brea	Harbor Blvd	Kraemer Blvd
2	Euclid St	La Habra, Fullerton	Montwood Ave	Malvern Ave
2	Cabot Rd	Laguna Hills	La Paz Rd	Paseo de Valencia
2	Lake Forest Dr	Laguna Hills, Irvine	Tesla	Moulton Pkwy
2	La Paz Rd	Laguna Hills	Muirlands Blvd	Paseo de Valencia
2	Paseo de Valencia	Laguna Hills	La Paz Rd	Cabot Rd
1	Oso Creek	Laguna Hills, Mission Viejo, Laguna Niguel, San Juan Capistrano	Paseo de Valencia	Trabuco Creek
2	Camino Capistrano	Laguna Niguel, San Juan Capistrano	n/o Crown Valley Pkwy	Paseo de Colinas

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Moulton Pkwy	Laguna Woods	Ridge Route	El Toro Rd
1	SCRRA Rail Trail	Lake Forest, Irvine	Aliso Canyon Bike Path	Borrego Canyon Bike Path
2	Alton Pkwy	Lake Forest	Towne Center Dr	Foothill Transp. Corridor
2	Bake Pkwy	Lake Forest	Portola Pkwy	Lake Forest Dr
2	El Toro Rd	Lake Forest	San Diego Fwy	Creekside
2	Los Alisos Blvd	Lake Forest, Mission Viejo	Rockfield Blvd	Muirlands Blvd
2	Toledo Wy	Lake Forest	Ridge Route	El Toro Rd
3	Alton Pkwy	Lake Forest	Foothill Transp. Corridor	Portola Pkwy
1	Carbon Creek	Los Alamitos, Cypress, Stanton, Anaheim	Coyote Creek	Western Ave
2	Lexington Dr	Los Alamitos, Cypress	Cerritos Ave	Katella Ave
2	Balboa Blvd	Newport Beach	Newport Blvd	Coronado St
2	Bristol St	Newport Beach	Campus Ave	Jamboree Rd
2	Bristol Trail	Newport Beach	Jamboree Rd	University Dr
2	Jamboree Rd	Newport Beach	Campus Dr	MacArthur Blvd
2	Seashore Dr	Newport Beach	Santa Ana River	Orange St
2	Batavia St	Orange	Chapman Ave	La Veta Ave
2	Chapman Ave	Orange, unincorporated	Glassell St	Santiago Creek
2	Crawford Canyon Rd	Orange, unincorporated	Santiago Canyon Rd	Newport Blvd
2	Fairhaven Ave	Orange, Santa Ana	Grand Ave	Hewes Ave

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Fletcher Ave	Orange	Batavia St	Glassell St
2	Hewes St	Orange, unincorporated	Rancho Santiago Blvd	17th Street
2	Katella Ave	Orange	Costa Mesa Fwy	Wanda Rd
2	Lincolln St	Orange	Walnut Ave	Palm Ave
2	Meats Ave	Orange	S/o Stone Pine Rd	Westfield Ct
2	Nohl Ranch Rd	Orange	Tustin Ave	Anaheim citry limit
2	Taft Avenue	Orange	Santa Ana River	Santiago Blvd
2	Tustin Ave	Orange, Anaheim, Santa Ana	Santa Ana River	N/o 1st Street
3	Batavia St	Orange	Palm Ave	Chapman Ave
1	Tustin Branch Rail Trail	Tustin, unincorporated	Fairhaven Ave	Irvine Blvd
1	Trabuco Creek	Rancho Santa Margarita, Mission Viejo, San Juan Capistrano, unincorporated	Santa Margarita Pkwy	Rancho Viejo Rd
2	Avd Pico	San Clemente	Avd La Pata	end
2	Avd Valencia	San Clemente	El Camino Real	Avd del Presidente
2	Camino de Los Mares	San Clemente	Camino El Molino	Avd Vaquero
3	Calle Frontera	San Clemente	Avd Vista Hermosa	Avd Pico
1	San Juan Creek Trail	San Juan Capistrano	near Camino Lacouague	La Pata Ave
1	San Juan Hills Golf Trail	San Juan Capistrano	San Juan Creek Rd	La Novia Ave
2	Del Obispo St	San Juan Capistrano	Ortega Hwy	Trabuco Creek
2	Ortega Hwy	San Juan Capistrano	Camino Capistrano	Riverside County Line

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
1	Fairview St Flood Control Channel	Santa Ana	McFadden Ave	Sunflower Ave
1	Flower St Path	Santa Ana	Segerstrom Ave	Sunflower Ave
1	BNSF Rail Trail	Santa Ana	6th Street	Chestnut Ave
1	Raitt St Flood Control Channel	Santa Ana	McFadden Ave	Edinger Ave
2	1st Street	Santa Ana	Newhope St	Santa Ana River Path
2	4th Street	Santa Ana	BNSF Rail Corridor	Grand Ave
2	Bristol St	Santa Ana	Memory Ln	17th Street
2	Bristol St	Santa Ana	Washington Ave	Sunflower Ave
2	Chestnut Ave	Santa Ana	Maple St	Elk Ln
2	Civic Center Dr/Fairview St	Santa Ana	PE right-of-way	Santiago St
2	Greeneville St	Santa Ana	Edinger Ave	Pomona St
2	MacArthur Blvd	Santa Ana	Santa Ana River	Susan St
2	Main St	Santa Ana	MacArthur Blvd	Sunflower Ave
2	McFadden Ave	Santa Ana	Sail St	Maple St Path
2	Penn Wy	Santa Ana	17th Street	Washington Ave
2	Santiago St	Santa Ana	Washington Ave	6th Street
1	Beach Path	Seal Beach	1st Street	Seal Beach Blvd
2	Chapman Ave	Stanton, Garden Grove, Anaheim, Orange	Western Ave	Glassell St
2	Dale Ave	Stanton	n/o Lola Ave	UP Rail Trail

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Knott Ave	Stanton, Cypress	UP RR	Stanton Storm Channel
2	Western Ave	Stanton	Anaheim city limit	s/o Stanton Storm Channel
1	Barranca Pkwy Path	Tustin	Red Hill Ave	Jamboree Rd
2	Armstrong Ave	Tustin	Barranca Pkwy	Edinger Ave
2	Marine Corp circle road	Tustin	Armstrong Ave	Valencia Ave
2	Newport Blvd	Tustin	Irvine Blvd	Warren Ave
2	Valencia Ave	Tustin	Red Hill Ave	Jamboree Rd
2	Von Karman Ave	Tustin	Barranca Pkwy	Walnut Ave
2	Warner Ave	Tustin	Red Hill Ave	Jamboree Rd
1	Borrego Canyon	Unincorporated, Lake Forest	Alton Pkwy/Borrego Canyon	Whiting Ranch Wilderness
1	Borrego Canyon Trail	Unincorporated	SCRRA Trail	Irvine Blvd
1	Santiago Creek	Unincorporated	North Lake Dr at Jeffrey Rd	Black Star Canyon Rd
1	SCRRA Corridor Trail	Unincorporated	Sand Canyon Ave	Borrego Canyon Wash
2	Cannon St	Unincorporated	Santiago Canyon Rd	Chapman Ave
2	Newport Blvd	Unincorporated	Hyde Park Dr	Chapman Ave
3	Portola Pkwy	Unincorporated	Foothill Ranch community	Paloma
1	Santiago Creek	Villa Park, Orange	Villa Park Rd	Jamboree Rd
2	Meats Ave	Villa Park, Orange, Anaheim	Santiago Blvd	Nohl Ranch Rd
2	Edwards St	Westminster	Garden Grove Blvd	Westminster Blvd

Table 6: Second Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	McFadden Ave	Westminster	Beach Blvd	Swallow Ln
2	Newland St	Westminster, Huntington Beach	Bolsa Ave	Heil Ave
1	Paseo de Las Palomas	Yorba Linda	Fairmont Blvd	Yorba Linda Blvd
1	Village Center Dr	Yorba Linda	n/o Via Espana	Vista del Mar
2	Brush Canyon Dr	Yorba Linda	Camino de Bryant	end
2	Camino de Bryant	Yorba Linda	Brush Canyon Dr	La Palma Ave
2	La Palma Ave	Yorba Linda, Anaheim	Imperial Hwy	Camino de Bryant
2	Lakeview Ave	Yorba Linda, Anaheim	Yorba Linda Blvd	Santa Ana Canyon Rd
2	Richfield Rd	Yorba Linda	Yorba Linda Blvd	Mariposa Ave
2	Valley View Ave	Yorba Linda	Bastanchury Rd	Yorba Linda Blvd
2	Village Center Dr	Yorba Linda	Vista del Mar	Fairmont Blvd

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
1	Carbon Creek	Anaheim	Brookhurst St	La Palma Ave
1	Carbon Creek	Anaheim	w/o Beach Blvd	Magnolia Ave
2	Academy Ave	Anaheim	Carbon Creek	Dale St
2	Anaheim Blvd	Anaheim	La Palma Ave	Santa Ana Fwy
2	Anaheim Blvd	Anaheim	Anaheim Blvd	The City Dr
2	Broadway	Anaheim	Dale St	Hessel St
2	Harbor Blvd	Anaheim	Riverside Fwy	Chapman Ave
2	Haster St	Anaheim	Anaheim Blvd	Katella Ave
2	Hessel St	Anaheim	Broadway	Santa Ana St
2	La Palma Ave	Anaheim	Kraemer Blvd	Imperial Hwy
2	Lincoln Ave	Anaheim, Orange	Santa Ana River	Tustin Ave
2	Manchester Ave	Anaheim	Anaheim Blvd	Chapman Ave
2	Orange Ave	Anaheim	Buena Park city limit	Beach Blvd
2	Santa Ana St	Anaheim	Hessel St	Anaheim Blvd
2	Serrano Ave	Anaheim	Nohl Ranch Rd	Canyon Rim Rd
2	Tustin Ave	Anaheim	Orangethorpe Ave	La Palma Ave
2	Walnut St	Anaheim	Santa Ana St	Cerritos Ave
3	Gypsum Canyon Rd	Anaheim	Santa Ana Canyon Rd	Weir Canyon Rd

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
1	Brea Creek	Brea	Brea Blvd	Elm St
1	East Brea Trail	Brea	Imperial Hwy/Associated Rd	Carbon Canyon Trail
2	Berry St	Brea	Northwood Ave	Imperial Hwy
2	Northwood Ave	Brea	Puente St	Brea Blvd
2	Puente St	Brea	Northwood Ave	Whittier Blvd
2	Tonner Canyon Rd	Brea	Brea Blvd	Valencia Ave
2	Valencia Ave	Brea	Tonner Canyon Rd	Enterprise St
2	Knott Ave	Buena Park, Anaheim, Stanton	Artesia Blvd	Cerritos Ave
1	Fairview Park Trail	Costa Mesa	Swan Dr	Canyon Dr
2	18th Street	Costa Mesa	Monrovia Ave	Orange Ave
1	Dana Point Path 1	Dana Point	Dana Woods	Stonehill Dr
1	Jeremiah Dr	Dana Point	Josiah Dr	Street of the Golden Lantern
1	Monarch Beach Golf Path	Dana Point	Camino del Avion	Pacific Coast Hwy
1	Salt Creek Beach Path	Dana Point	Salt Creek	Niguel Shores Dr
2	Dana Woods	Dana Point	Street of the Golden Lantern	Dana Point Trail 1
2	Warner Ave	Huntington Beach	Golden West St	Newland Street
1	Brea Creek	Fullerton	Buena Park city limit	Basque Ave
1	Fullerton Trail 1	Fullerton	Harbor/Vencia Mesa	Bastanchury Rd
1	Lakeview Trail	Fullerton	Euclid St	Lakeside Dr

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Artesia Ave	Fullerton, Buena Park	Dale St	Gilbert St
2	Basque Ave	Fullerton	Malvern Ave	Orangethorpe Ave
2	Harbor Blvd	Fullerton	N/o Bastanchury Rd	Bastanchury Rd
2	Harbor Blvd	Fullerton	N/o Brea Blvd	Brea Blvd
2	Harbor Blvd	Fullerton	Chapman Ave	Orangethorpe Ave
2	Highland Ave	Fullerton	Malvern Ave	Baker Ave
2	Malvern Ave	Fullerton	Basque Ave	Chapman Ave
2	Pioneer Ave	Fullerton	Sunny Ridge Dr	e/o Camino Centroloma
2	Sunny Ridge Dr	Fullerton	Rosecrans Ave	Malvern Ave
2	Valencia Ave	Fullerton	Richman Ave	Highland Ave
3	Baker Ave	Fullerton	Pacific Ave	Highland Ave
3	Barbara Blvd	Fullerton	Marion Blvd	Brea Blvd
3	Hermosa Dr	Fullerton	Santa Rosa Pl	Lakeview Dr
3	Hill Ave	Fullerton	Lee Ave	Euclid St
3	Hill Ave	Fullerton	Highland Ave	Harbor Blvd
3	Knepp Ave	Fullerton	Roosevelt Ave	Highland Ave
3	Laguna Rd	Fullerton	Euclid St	Bastanchury Rail Trail
3	Lakeside Dr	Fullerton	Lakeview Trail	Santa Rosa Pl
3	Lakeview Dr	Fullerton	Hermosa Dr	La Habra city limit

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
3	Las Palmas Dr	Fullerton	Lakeview Dr	Puente St
3	Lee Ave	Fullerton	Southgate Ave	Hill Ave
3	Longview Dr	Fullerton	Brea Blvd	Dorothy Ln
2	Magnolia Ave	Fullerton, Buena Park, Anaheim, Stanton	Commonwealth Ave	Katella Ave
3	Malden Ave	Fullerton	Malvern Ave	Union Ave
3	Malvern Ave	Fullerton	Highland Ave	Malden Ave
3	Marion Blvd	Fullerton	Park View Dr	Barbara Blvd
3	Melville Dr	Fullerton	Marion Blvd	Marion Blvd
3	Olive Ave	Fullerton	Magnolia Ave	Pine Dr
3	Pacific Dr	Fullerton	Roberta Ave	Baker Ave
3	Page Ave	Fullerton	Roberta Ave	Brookhurst Rd
3	Park View Dr	Fullerton	Brea Reservoir	Marion Blvd
3	Pine Dr	Fullerton	Olive Ave	Southgate Ave
3	Pioneer Ave	Fullerton	e/o Camino Centroloma	Parks Rd
3	Richman Ave	Fullerton	Synnycrest Dr	Commonwealth Ave
3	Roberta Ave	Fullerton	Gilbert St	Page Ave
3	Roberta Ave	Fullerton	Brookhurst Rd	Pacific Dr
3	Roosevelt St	Fullerton	Southgate Ave	Knepp Ave
3	Santa Rosa Pl	Fullerton	Lakeside Dr	Hermosa Dr

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
3	Southgate Ave	Fullerton	Pine Dr	Lee Ave
3	Southgate Ave	Fullerton	Euclid St	Roosevelt St
3	Sunnycrest Dr	Fullerton	Valencia Mesa Dr	Richman Ave
3	Union Ave	Fullerton	Malden Ave	Harbor Blvd
2	Lewis St	Garden Grove, Orange	Chapman Ave	Lampson Ave
2	Magnolia St	Garden Grove, Westminster, Fountain Valley	Katella Ave	Slater Ave
2	Hamilton Ave	Huntington Beach	Newland St	Magnolia St
3	Talbert Ave	Huntington Beach	Springdale St	Varsity Dr
3	Varsity Dr	Huntington Beach	Talbert Ave	Edwards St
1	Barranca Pkwy	Irvine	Red Hill Ave	e/o Von Karman
1	Bonita Canyon	Irvine	Bonita Canyon Dr end	Sand Canyon Trail
1	Jeffrey Rd	Irvine	San Diego Creek	Portola Pkwy
1	Sand Canyon Trail	Irvine	University Dr	San Joaquin Hills Rd
1	SCRRA Rail Trail	Irvine, Lake Forest	Borrego Canyon Wash	Aliso Creek
2	Bake Pkwy	Irvine	Lake Forest Dr	Laguna Canyon Rd
2	Lake Forest Dr	Irvine	Laguna Canyon Rd	Bake Pkwy
2	Newport Coast Dr	Irvine	Bonita Canyon Dr	Irvine city limit
1	UP Rail Trail	La Habra, Brea	Bastanchury junction	Kraemer Blvd
2	Lambert Rd	La Habra	Los Angeles County Line	Beach Blvd

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	La Palma Ave	La Palma, Buena Park, Anaheim	Los Angeles County Line	Acacia Ave
1	Aliso Creek	Laguna Woods	Laguna Hills Dr	Paseo de Valencia
2	Alton Pkwy	Lake Forest, Irvine	Irvine Blvd	Towne Center Dr
2	Ford Rd	Newport Beach	San Miguel Dr	Prairie Rd
2	Prairie Rd	Newport Beach	Ford Rd	Bonita Canyon Dr
3	Unidentified county road	Newport Beach	Coast Hwy	end
2	Esplanade St	Orange	La Veta Ave	Fairhaven Ave
2	Katella Ave	Orange	Santa Ana River	Wanda Rd
2	La Veta Ave	Orange	Tustin Ave	Esplanade St
2	Palmyra Ave	Orange	Santiago Creek	Tracy Ln
2	Prospect Ave	Orange, unincorporated, Tustin	Chapman Ave	17th Street
2	Serrano Ave	Orange	Cannon St	e/o Orange park Blvd
2	Spring St	Orange	Prospect St	Hewes St
2	The City Dr	Orange	Orangewood Ave	Garden Grove Blvd
2	Via Escola	Orange	Meats Ave	Cannon St
3	Jamboree Rd	Orange, Anaheim	Weir Canyon Rd	Santiago Canyon Rd
3	Palmyra Ave	Orange	Tracy Ln	Orange Rail Trail
3	Serrano Ave	Orange	e/o Orange park Blvd	w/o Nohl Ranch Rd
2	Bradford Ave	Placentia, Fullerton	Yorba Linda Blvd	Madison Ave

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Prospect Ave	Placentia, Yorba Linda	Imperial Hwy	Yorba Linda Blvd
1	Trabuco Canyon Trail	Rancho Santa Margarita	Trabuco Canyon Rd	end
2	Avd La Pata	San Clemente	northern city limit	Avd Pico
2	Avd La Pata	San Clemente	Calle Extremo	San Diego County Line
2	Avd Vista Hermosa	San Clemente	Camino Vera Cruz (east)	Avd Pico
2	Camino del Rio	San Clemente	Camino de Los Mares	Avd La Pata
2	Camino Vera Cruz	San Clemente	Carretera	Avd Vista Hermosa
2	Sarmentoso	San Clemente	Camino del Rio	Camino Vera Cruz
3	Avd Acapulco	San Clemente	Avd San Pablo	Avd Adobe
3	Avd Adobe	San Clemente	Avd Acapulco	Calle Bahia
3	Avd San Pablo	San Clemente	El Camino Real	Avd Acapulco
3	Avd Santa Margarita	San Clemente	Calle Bahia	Avd San Luis Rey
3	Calle Amanecer	San Clemente	Avd Pico	Calle Cordillera
3	Calle Bahia	San Clemente	Avd Adobe	Avd Santa Margarita
3	Calle Cordillera	San Clemente	Calle Amanecer	end
1	La Mesa/Suncal A Street	San Juan Capistrano	La Novia Ave	Camino Las Ramblas
1	San Juan Creek	San Juan Capistrano	Bell Creek	Ortega Hwy w/o Antonio
2	La Pata Ave	San Juan Capistrano	Ortega Hwy	San Clemente city limit
2	Camino de Los Mares	San Juan Capistrano, San Clemente	Camino Las Ramblas	Portico del Norte

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
2	Camino Las Ramblas	San Juan Capistrano, San Clemente	Montanas del Mar	La Pata Ave
2	Telega Valley Dr	San Juan Capistrano, San Clemente	Ortega Hwy	Avd Vista Hermosa
2	Dyer Rd	Santa Ana	Grand Avenue	Red Hill Ave
1	San Gabriel River Spur	Seal Beach	San Gabriel River	Nassau Dr
2	1st Street	Seal Beach	Ocean Ave	Marina Dr
1	Stanton Storm Channel	Stanton	Knott Ave	Dale St
2	Cerritos Ave	Stanton	Knott Ave	Gilbert St
2	Chapman Ave	Stanton, Garden Grove, Anaheim, Orange	Western Ave	Glassell St
1	San Joaquin Hills Rd	Unincorporated	Newport Coast Dr	Laguna Canyon Rd
1	Santiago Canyon	Unincorporated	Irvine Regional Park	Santiago Canyon Rd
1	Trabuco Canyon Rd	Unincorporated, Rancho Santa Margarita	El Toro Rd	Santa Margarita Pkwy
2	Newport Coast Dr	Unincorporated	Irvine city limit	San Joaquin Hills Trans Corr
3	Bolsa Chica Rd	Unincorporated	Los Patos Ave	end
3	Crystal Cove unnamed road	Unincorporated	Newport Coast Dr	Crystal Cove hills
3	Santa Maria Ave	Unincorporated	Laguna Canyon Rd	Laguna Woods city limit
3	Springdale St	Unincorporated	Talbert Ave	end
1	Santiago Creek	Villa Park, Orange	Prospect St	s/o Villa Park Rd
1	Bastanchury East Trail	Yorba Linda	Fairmont Blvd	San Antonio Dr
1	Yorba Linda Trail 1	Yorba Linda	w/o Yorba Ranch Rd	Esperanza Rd

Table 6: Third Priority Proposed Bikeways

Class	Name	Cities/Communities	From	To
1	Yorba Linda Trail 2	Yorba Linda	near Via Mariposa	Esperanza Rd
2	Avd Adobe	Yorba Linda	Yorba Linda Blvd	Avd Antigua
2	Avd Antigua	Yorba Linda	Avd Adobe	Esperanza Rd
2	Bastanchury Rd	Yorba Linda	Prospect Ave	Fairmont Blvd
2	Buena Vista Ave	Yorba Linda	w/o Richfield Rd	Imperial Hwy
2	Casa Loma Ave	Yorba Linda	Bastanchury Rd	Yorba Linda Blvd
2	Fairlynn Blvd	Yorba Linda	Oakvale Dr	Esperanza Rd
2	Fairmont Blvd	Yorba Linda	Avd del Rey	San Antonio Dr
2	Lakeview Ave	Yorba Linda	Bastanchury Rd	Yorba Linda Blvd
2	New River	Yorba Linda	Yorba Linda Blvd	Esperanza Rd
2	Via Lomas de Yorba	Yorba Linda	Foxtail Dr	La Palma Ave
2	Yorba Ranch Rd	Yorba Linda	Yorba Linda Blvd	Esperanza Rd

Chapter 5
Implementation

Selection of Projects

This section identifies costs for the proposed bicycle improvements, plus strategies on funding and financing.

Some of the primary goals of the OCTA Commuter Bikeways Strategic Plan (CBSP) ensure that the County's cities receive their fair share of competitive funding. Thus, the Plan prioritizes projects so that those projects providing the greatest benefit are implemented in the short term.

This plan recognizes that cooperation between local agencies in the selection of priority projects and the allocation of local funding (such as Transportation Development Act monies) is critical to ensuring an orderly implementation of an effective bicycle system.

Previous Funding

Previous expenditures on bicycle projects by the cities and the County of Orange over the past 5 years total approximately $10,570,270. These are listed in Table 7 on page 117.

Table 7: Projects Funded by Jurisdiction

Jurisdiction	Projects funded
Anaheim	Measure M TDM; $100,000 for bike lanes on Euclid and Brookhurst Streets
Brea	TDA: $280,000 bike lanes on Birch Street
Buena Park	None
Costa Mesa	Measure M TDM: $50,000 on Greenville Banning Channel Bicycle Facility Improvements; Measure M TDM: $80,000 for bike bridge over Greenville Banning Channel Measure M TDM: $100,000 for bike lanes on Sunflower Ave.; Measure M TDM: $100,000 for bikeway to access Fairview Park
County of Orange	TDA: $11,039 for emergency call boxes in Aliso-Woods Canyon Regional Park trails; TDA: $35,887 for Santa Ana River trail repairs; TDA: $61,357 for Trabuco Creek bike bridge; AB 2766: $25,000 for Trabuco Creek Bridge;
Cypress	None
Dana Point	None
Fountain Valley	None
Fullerton	None
Garden Grove	Measure M TDM: $15,600 for Class II bike lanes
Huntington Beach	None
Irvine	Measure M TDM: $100,000 bicycle ramp to paths; Measure M TDM: $100,000 for environmental review and design of Jeffrey/I-405 bike path connection; Measure M TDM: $99,778 for environmental review and design of Harvard bike path extension;
Laguna Beach	None
Laguna Hills	None
Laguna Niguel	None
Laguna Woods	Measure M TDM: Request for $100,000 for El Toro Road Bike path
La Habra	None
La Palma	TDA: $5,104 bike lanes; TDA: $4,515 for bike lanes; TDA: $2,144 for bike lanes
Lake Forest	Measure M TDM: $6,100 bike lanes
Los Alamitos	None
Mission Viejo	None
Newport Beach	None
Orange	AB 2766: $28,000 for bikeway maintenance; TEA 21: $220,000 for design of Class I path on the Tustin Branch line
Placentia	None
Rancho Santa Margarita	None
San Clemente	TEA: $4.5 million; BPF: $400,000
San Juan Capistrano	TEA: $1,200,000; Veneda Bikeway railroad crossing
Santa Ana	BPF: $480,000 for Alton/Maple bikeway gap closure; TEA: $225,000 for bike path improvements; Habitat path grant: $50,000 for bike path improvements; State Recreational paths program: $70,000 for bike path pavement resurfacing; Measure M TDM: $100,000 for Alton/Maple bikeway gap closure; Measure M TDM: $72,450 for bike lockers at high trip generators
Seal Beach	TEA: $843,000 for SB Regional path; BTA: $650,000 for SB Regional path; Measure M TDM: $100,000 for Marina Drive bridge bike lanes
Stanton	BTA: $280,000 for putting bike lanes on most arterials; BTA: $40,000 for feasibility study of bikeways on railroad rights-of-way
Tustin	None
Villa Park	None
Westminster	None
Yorba Linda	None

Funding Recommendation

Top priority projects identified in this plan represent the highest priority bicycle projects currently identified in Orange County. Local available matching funds should be allocated whenever possible to these projects or to other locally identified projects that meet the funding criteria of the program. The actual schedule for implementation on a year-to-year basis should be determined by (a) the readiness of each project in terms of local support, (b) California Environmental Quality Act (CEQA) approvals, (c) right-of-way control, (d) timing with other related improvements, and/or (e) success in obtaining competitive funding.

Orange County cities should monitor the top, second, and third priority projects identified in this Plan and subsequent updates, and keep a year-to-year list of projects. Should a project not be ready or able to utilize its allocation, it may trade with another short-term project. This process eliminates the constant evaluation of new projects and ensures that viable top priority projects have access to matching funds. It provides cities with a five- to ten-year schedule so that it may program its resources and feel assured that its projects will be implemented in the short term. Each year, cities and the County should review the list of projects slated for that year, review the project readiness of each project to be funded, and listen to requests for changes to the sequencing of the projects. Cities may also apply for funding for non-bikeway projects such as parking programs, safety and education programs, and other amenities to support the bikeway system.

OCTA has a policy that forbids the removal of any bicycle projects funded by OCTA, unless that project is replaced by an alternative that meets the same objectives in the same neighborhood. Table 8 on pages 119-121 lists potential funding sources along with pertinent information regarding each. Funding information can be found on OCTA's website: www.octa.net/funding/fundingguide.html.

Table 8: Bikeway System Funding Sources									
Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Bikeway Projects			Comments
						Commute	Recreation	Safety/ Education	
Federal Funding									
F1. TEA-21 Surface Transportation Program (STP)	Jan. 10 Annually	OCTA, Caltrans, FHWA	$23.4 m	12% non-federal match	Federally certified jurisdictions	X	X		In Orange County, STP funds are allocated for pavement rehab, railroad grade separation, freeway interchanges, and arterial improvement projects.
F2. TEA-21 Congestion Mitigation and Air Quality Program (CMAQ)	Dec. 1 Annually	OCTA, CTC	$30.5 m	12% non-federal match	Federally certified jurisdictions	X			In Orange County, funds are reserved for mass transit projects.
F3. TEA-21 Transportation Enhancement Activities (TEA)	Pending	OCTA	$2.8 m	12 - 25% non-federal match	Federally certified jurisdictions	X	X		In Orange County, most funds are programmed through FY 2002/03.
F4. TEA-21 National Recreational Trails	Oct. 1 Annually	State Dept. of Parks & Recreation	$3.5 m	20% match	Jurisdictions, special districts, non profits with management responsibilities over the land		X		For recreational trails to benefit bicyclists, pedestrians, and other users; contact State Dept. of Parks & Rec., Statewide Trails Coordinator, (916) 653-8803

Table 8: Bikeway System Funding Sources, Continued

Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Bikeway Projects			Comments
						Commute	Recreation	Safety/ Education	
State Funding									
S1. Environmental Enhancement and Mitigation (EEM) Program	Nov.	State Resources Agency	$10 m	Not required but favored	Local, state and federal government non-profit agencies	X	X	X	Projects that enhance or mitigate future transportation projects; contact EEM Project Manager (916) 653-5656
S2. Bicycle Transportation Account (BTA)	June 30, 2001	Caltrans	$7.2 m annually	10%	Cities and counties	X			Contact local Caltrans district office for details
S3. Safe Routes to School (AB1475)	Varies	Caltrans	$18 m	11.5%	Government agencies, non-profit groups, schools, community groups	X	X	X	Only two years of funding currently authorized as of 2000; submission dates and deadlines in flux

Table 8: Bikeway System Funding Sources, Continued

Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Bikeway Projects			Comments
						Commute	Recreation	Safety/ Education	
Local Funding									
L1. Transportation Development Act (TDA) Section 99234 (2% of total TDA)		OCTA	$1.6 m	No match required	Cities, county	X	X	X	In Orange County, funds are being used to address bus stop accessibility.
L2. State Gas Tax (local share)		Allocated by State Auditor Controller	Cities, county $90 m total	No match required	Local jurisdictions	X		X	
L3. Developer Fees or Exactions (developer fee for street improvements - DFSI)		Cities, or County		No match required		X	X	X	Mitigation required during land use approval process
L4. Vehicle Registration Surcharge Fee (AB 434)		SCAQMD		No match required	Local agencies, transit operators, others	X	X	X	Competitive program for projects that benefit air quality
L5. Vehicle Registration Surcharge Fee (AB 434)		SCAQMD or OCTA		No match required	Local jurisdictions	X	X	X	Funds are distributed to communities based on population
L6. Clean Air Fund (AB 2766)	Varies by region	SCAQMD	$50,000-$200,000	0-50%	Local jurisdictions, transit agencies	X	X	X	Consult local air quality control district for program details
L7. Measure M Transportation Demand Management (TDM)	Summer, even years	OCTA	$1.9 m 5 year period	No match required	Local jurisdictions	X	X		
L8. Measure M Growth Management Area (GMA)	Summer, even years	OCTA	$10 m 5 year period	No match required	Cities, County	X	X	X	Each GMA selects projects, 11 GMAs in Orange County
L9. Measure M Master Plan of Arterial Highways (MPAH)	Summer, even years	OCTA	$17.5 m 5 year period	50%	Cities, County	X			As part of road widening or new roadway project.

Funding

There are a variety of potential funding sources including local, state, regional, and federal funding programs that can be used to construct the proposed bicycle improvements. Most of the Federal, state, and regional programs are competitive, and involve the completion of extensive applications with clear documentation of the project need, costs, and benefits. Local funding for bicycle projects can come from Transportation Development Act (TDA) funding, which is prorated to each community based on return of gasoline taxes. Recently, OCTA has used this fund for bus stop improvements. Funding for many of the programs would need to be procured either with TDA, general fund (staff time), or possibly private grants. Table 8 presents a summary of available funding along with timing, criteria, and funding agency.

TEA-21

Federal funding through the TEA-21 (Transportation Equity Act) program will provide the some of the funding. TEA-21 currently contains three major programs, STP (Surface Transportation Program), TEA (Transportation Enhancement Activities), and CMAQ (Congestion Mitigation and Air Quality Improvement) along with other programs such as the National Recreational Trails Fund, Section 402(Safety) funds, Scenic Byways funds, and Federal Lands Highway funds.

Both houses of Congress adopted TEA-21 on May 22, 1998. However, there was delay in adopting the new transportation legislation resulting from conflicts between donor and recipient states (states that received more or less money than they paid in gas taxes) under the old transfer arrangements. The new formulas will rectify the past imbalances, allowing large donor states with higher amounts that can be transferred between various funding programs. The follow-up to ISTEA, TEA-21 offers some important changes in funding opportunities.

TEA-21 funding is administered through the state (Caltrans or Resources Agency) and regional governments (Orange County Transportation Authority). Most, but not all, of the funding programs are transportation versus recreational oriented, with an emphasis on (a) reducing auto trips and (b) providing an inter-modal connection. Funding criteria often includes completion and adoption of a bicycle master plan, quantification of the costs and benefits of the system (such as saved vehicle trips and reduced air pollution) proof of public involvement and support, CEQA compliance, and commitment of some local resources. In most cases, TEA-21 provides matching grants of 80 to 90 percent--but prefers to leverage other moneys at a lower rate.

With an active and effective regional agency such as the Orange County Transportation Authority, the County's cities should be in a good position to secure more than its fair share of TEA-21 funding. It will be critical to get the local State assemblyman and senator briefed on these projects and lobbying Caltrans and the California Transportation Commission for these projects.

The Surface Transportation Program (STP) was amended as follows:

1. Approximately $33 billion available nationwide.
2. Bicycle and pedestrian projects remain eligible.
3. Sidewalk improvements to comply with the Americans with Disabilities Act (ADA) are now eligible for Surface Transportation Program funds.

The National Highway System (NHS) program was amended as follows:

4. Pedestrian projects may now be funded with NHS funds.
5. NHS funds may now be used on bicycle and pedestrian projects within Interstate corridors.

The Transportation Enhancement Activities (TEA) program was amended as follows:

6. $3.3 billion available nationwide
7. Bicycle and pedestrian safety and education programs
8. Tourist and welcome centers
9. Environmental mitigation to provide wildlife corridors
10. Requirement that each project be directly related to a surface transportation project
11. Eighty percent federal matching requirement applies only to total non-federal share rather than total project cost.
12. Eight specific projects are funded off the top of the TEA program, none in the western United States.

The Congestion Mitigation and Air Quality Improvements (CMAQ) program was amended as follows:

13. $8.12 billion available nationwide

14. Bicycle project eligibility remains essentially the same
15. A small percentage can be transferred to other programs

The Recreational Trails Program was amended as follows:

16. $270 million available nationwide over the next six years
17. Bicycle project eligibility remains essentially the same

The Hazard Elimination Program was amended as follows:

18. Now can be used for bicycling and walking hazards

19. Definition of a "public road" now expended to include bikeways, pathways, and traffic calming measures.

20. A new category, Transit Enhancements Program, was created that calls for transit agencies in urbanized areas over 200,000 population to use 1 percent of their Urban Formula Funds for Transit Enhancements Activities. Up to $50 million per year may be available for pedestrian access, walkways, bicycle access, bike storage facilities, and bike-on-bus racks. The program calls for 95% Federal/5% local match.

21. Scenic Byway, bridge repair, transit, safety (non-construction), and Federal Lands programs all remain essentially the same under TEA-21, with the amounts either the same or increasing from ISTEA.

22. Planning provisions for states and Metropolitan Planning Organizations (MPOs) have been streamlined, with bicycle and pedestrian needs to be given due consideration in the development of comprehensive transportation plans. Specific policies include directives to not approve any project or regulatory action that will have an adverse impact on non-motorized safety, unless a reasonable alternative route is provided or already exists.

23. When state or local regulations permit, allow use of bicycle facilities by electric bicycles and motorized wheelchairs.

24. Railway-highway crossings should consider bicycle safety.

25. A new Surface Transportation-Environment Cooperative Research Program is established for funding non-motorized research.

26. In cooperation with AASHTO, ITE, and other groups, establish new bicycle design guidelines within 18 months.

State Funding Programs

A detailed program-by-program of available funding programs along with the latest relevant information is provided on the following pages. Specific amounts and deadlines are not yet identified for some of the TEA-21 programs.

TDA Article III (SB 821)

Transportation Development Act (TDA) Article III funds are state block grants awarded annually to local jurisdictions for bicycle and pedestrian projects in California. These funds originate from the state gasoline tax and are distributed through a competitive Call For Projects administered by OCTA on a yearly basis to local jurisdictions. Recently, OCTA has used this fund for bus stop improvements.

AB 434

AB 434 funds are available for clean air transportation projects, including bicycle projects, in California.

AB 2766

Clean air funds are generated by a surcharge on automobile registration. The Air Quality Management District (AQMD) may allocate some of these funds for external bicycle projects. The grants are generally in the range of $50,000 to $200,000 and are based on a cost-benefit formula for air quality developed by the District. Projects must have a direct and positive effect on reducing air pollutants through transportation programs or projects in the County.

Bicycle Transportation Account

The State Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. Funding that is available on a statewide basis amounts to 7.2 million dollars annually beginning this fiscal year 2001. Orange County cities may apply for these funds through the Caltrans Office of Bicycle Facilities.

Safe Routes to School (AB1475)

The Safe Routes to School program is a newly created State program using funds from the Hazard Elimination Safety program from TEA-21. For the year 2001, this program is meant to improve school commute routes by eliminating barriers to bicycle and pedestrian travel through rehabilitation, new projects and traffic calming. A local match of 11.5% is required for this competitive program, which will allocate 18 million dollars

annually. Planning grants are not available through this program. This fund expires this year, but legislation is pending to extend it.

Local Funding

New Construction

Future road widening and construction projects are one means of providing bike lanes. To ensure that roadway construction projects provide bike lanes where needed, appropriate and feasible, it is important that an effective review process is in place so that new roads meet the standards and guidelines presented in this CBSP.

Impact Fees

Another potential local source of funding is developer impact fees, typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site bikeway improvements, which will encourage residents to bicycle rather than drive. In-lieu parking fees may be used to help construct new or improved bicycle parking. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

Mello Roos

Bike paths, lanes, and pedestrian facilities can be funded as part of a local assessment or benefit district. Defining the boundaries of the benefit district may be difficult unless the facility is part of a larger parks and recreation or public infrastructure program with broad community benefits and support.

Other

Local sales taxes, fees, and permits may be implemented, requiring a local election. Volunteer programs may substantially reduce the cost of implementing some of the proposed pathways. Use of groups such as the California Conservation Corp (who offer low cost assistance) will be effective at reducing project costs. Local schools or community groups may use the bikeway or pedestrian project as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right of way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations 'adopt' a bikeway and help construct and maintain the facility.

Other opportunities for implementation will appear over time, which may be used to implement the system.

Financing

Proposed improvements and programs to be developed over the next 20 years in Orange County have been analyzed to determine the annual financing requirements, and to allow the Cities and the County to budget their resources and target funding applications. It is important to note that the majority of funding for bicycle projects is expected to be derived from federal sources, TEA-21. These funding sources are extremely competitive, and require a combination of sound applications, local support, and lobbying on the regional and state level.

Chapter 6 Design and Maintenance

This chapter provides details on the recommended design and operating standards for the Orange County Bikeway System.

Existing Design Standards and Classifications

The American Association of Highway and Transportation Officials (AASHTO) and the California Department of Transportation (Caltrans) have developed national design standards for bikeways. The Caltrans Highway Design Manual, Chapter 1000: Bikeway Planning and Design, serves as the official design standard for all bicycle facilities in California. Design standards in Chapter 1000 fall into two categories, mandatory and advisory. Caltrans advises that all standards in Chapter 1000 be followed, which also provides a measure of design immunity to the cities. Not all possible design options are shown in Chapter 1000. For example, intersections, ramp entrances, rural roads, and a variety of pathway locations are not specified in the Caltrans Highway Design Manual.

The following section summarizes key operating and design definitions:

- Bicycle: A device upon which any person may ride, propelled exclusively by human power through a belt, chain, or gears, and having either two or three wheels in tandem or tricycle arrangement.

- Class I Bikeway: Variously called a bike path or multi-use trail. Provides for bicycle travel on a paved right of way completely separated from any street or highway.

- Class II Bikeway: Referred to as a bike lane. Provides a striped lane for one-way travel on a street or highway.

- Class III Bikeway: Referred to as a bike route. Provides for shared use with pedestrian or motor vehicle traffic.

Graphic descriptions of Class I, II, and III bikeways are shown in Figure 2 on page 134.

Class I, II and III Bikeway Design Guidelines

The following guidelines present the recommended minimum design standards and other recommended ancillary support items for Class I bike paths (also referred to as multi-use trails), Class II bike lanes, and Class III bike routes. All bikeways should meet minimum Caltrans standards as spelled out in the California Highway Design Manual, Chapter 1000. Where possible, it may be desirable to exceed the minimum standards for bike paths or bike lane widths, signage, lighting and traffic signal detectors.

Recommendation 1: Class I Guidelines.

Design Recommendations

1. All Class I bike paths should generally conform to the design recommendation by Caltrans.

2. Multi-use trails and unpaved facilities that serve primarily a recreation rather than a transportation function and will not be funded with federal transportation dollars may not need to be designed to Caltrans standards.

3. Class I bike path crossings of roadways require preliminary design review. A prototype design is presented in Figure 1. Generally speaking, bike paths that cross roadways with Average Daily Trips (ADTs) over 20,000 vehicles will require signalization or grade separation. No multi-use trails are proposed to cross a major arterial at an unprotected location with ADTs over 20,000 vehicles in the County.

4. Landscaping should generally be low water consuming native vegetation and should have the least amount of debris.

5. Lighting should be provided where commuters will use the bike path in the evenings.

6. Barriers at pathway entrances should be clearly marked with reflectors and ADA accessible (minimum five feet clearance).

7. Bike path construction should take into account impacts of maintenance and emergency vehicles on shoulders and vertical requirements.

8. Provide two feet wide unpaved shoulders for pedestrians/runners, or a separate tread way where feasible.

9. Direct pedestrians to right side of pathway with signing and/or stenciling.

10. Provide adequate trailhead parking and other facilities such as restrooms, drinking fountains at appropriate locations.

Recommendation 2: Class II Guidelines

Design Recommendations

1. All Class II bike lanes should generally conform to the minimum design recommendations in Figure 3.

2. Whenever possible the Department of Public works should recommend that wider bike lanes, beyond the minimum standard are installed.

3. Intersection and interchange treatment. Caltrans provides recommended intersection treatments in Chapter 1000 including bike lane 'pockets' and signal loop detectors. The Department of public works should develop a protocol for the application of these recommendations, so that improvements can be funded and made as part of regular improvement projects. Figure 4 (Class II Bike Lanes at Intersections) and Figure 5 (Recommended Right Turn Channelization) provides details for recommended intersection treatments.

4. Signal loop detectors, which sense bicycles, should be considered for all arterial/arterial, arterial/collector, and collector/collector intersections. A stencil of a bicycle and the words 'Bicycle Detector' should identify the location of the detectors.

5. When loop detectors are installed, traffic signalization should be set to accommodate bicycle speeds.

6. Bicycle-sensitive loop detectors are preferred over a signalized button specifically designed for bicyclists.

7. Bike lane pockets (min. 4' wide) between right turn lanes and through lanes should be provided wherever available width allows, and right turn volumes exceed 150 motor vehicles/hour.

8. Where bottlenecks preclude continuous bike lanes, they should be linked with Class III route treatments.

Recommendation 3: Class III Design.

Class III bike routes are typically simply signed routes and don't provide much advantage for bicyclists. With proper selection, signage and other treatments they can

add significant visibility, direction and advantages. Class III routes can become more useful when coupled with such techniques as:

- Route, directional and distance signage
- Wide curb lanes
- Accelerated pavement maintenance schedules
- New stencils marking the bike routes
- Traffic signals timed for cyclists
- Traffic calming

Recommendation 4: Other Guidelines to Consider

In addition to those identified by Caltrans, there are a variety of improvements, which will enhance the safety, and attraction of streets for bicyclists.

Signage

All bikeway signing in Orange County should conform to the signing identified in the Caltrans Traffic Manual and/or the Manual on Uniform Traffic Control Devices (MUTCD). These documents give specific information on the type and location of signing for the primary bike system. A list of bikeway signs from Caltrans and the MUTCD are shown in Table 9 (Bikeway Signing and Marking Standards). A typical bike route sign and an example of a customized logo sign for Orange County is shown in Figure 6a on page 140.

Orange County cities should also provide standard signage at unsignalized and signalized intersections on bikeways, as shown in Figures 9 and 10. Additional warning signs are shown in Figure 11.

Striping

In addition to the signing, striping and stencils should be considered according to Caltrans standards. This includes striping along bicycle lanes, which delineates the space between the bicyclist and the automobile (See Figure 3). Striping, and other treatments such as colored pavement (see Figure 7), double stripes, and new technologies should be considered for Orange County.

Stencils

Stencils can also be included on Class III bicycle facilities; to help cyclists and motorists more easily identify the bike route. Stencils currently under examination for approval should be used (see Figure 8).

Parking

Bicycle Parking is not standardized by any codes. However, there are preferable types of secure bicycle furnishing available on the market. When bicycle parking is being considered the types of bicycle lockers and racks in Figures 12, 13 and 14 are recommended. More specific guidelines to determine bicycle parking capacity and location are suggested in Table 10.

Action

A bicycle-parking program is recommended as a high priority project for Orange County cities. Specific bicycle parking guidelines should be developed to help city
Staff, developers and commercial districts determine the types of furnishings and location of bicycle parking.

Sidewalks

The use of sidewalks as bicycle facilities is not encouraged by Caltrans, even as a Class III bike route. There are exceptions to this rule. The California Vehicle Code states: 'Local authorities may adopt rules and regulations by ordinance or resolution regarding the....operation of bicycles...on the public sidewalks.' (CA VC 21100, Subdiv. H). Caltrans adds in Chapter 1000: 'In residential areas, sidewalk riding by young children too inexperienced to ride in the street is common. With lower bicycle speeds and lower auto speeds, potential conflicts are somewhat lessened, but still exist. But it is inappropriate to sign these facilities as bikeways. Bicyclists should not be encouraged (through signing) to ride facilities that are not designed to accommodate bicycle travel.'

Action

Orange County has a number of existing sidewalks that are currently designated as bicycle facilities, but new sidewalks should be considered only when there are no other options.

Traffic Calming

Traffic calming includes any effort to moderate or reduce vehicle speeds and/or volumes on streets where that traffic has a negative impact on bicycle or pedestrian movement. Because these efforts may impact traffic outside the immediate corridor, study of traffic impacts is typically required. For example, the City of Berkeley instituted traffic calming techniques by blocking access into residential streets. The impact was less traffic on local streets, and more traffic on arterials and collectors. Other techniques include installing traffic circles, intersection islands, partial street closings, 'bulb-out' curbs, pavement treatments, lower speed, signal timing, and narrowing travel lanes.

The County of Orange already has a relatively continuous street network system with little filtering of through traffic into residential neighborhoods. Traffic circles, roundabouts, and other measures may be considered for residential collector streets where there is a desire to control travel speeds and traffic volumes but not to install numerous stop signs or traffic signals.

Action

Traffic calming alternatives should be considered where traffic speeds are exceedingly high, and when safety is an issue.

Bicycle Boulevards

Palo Alto pioneered the concept of a bicycle boulevard, which in that city is a street directly parallel to a major commercial corridor that was designed to promote bicycle movement and discourage through vehicle movement. This was achieved by partial street closures and lack of coordinated signals. In addition, wider curb lanes and frequent signing as a 'Bicycle Boulevard' helps increase the motorists' awareness.

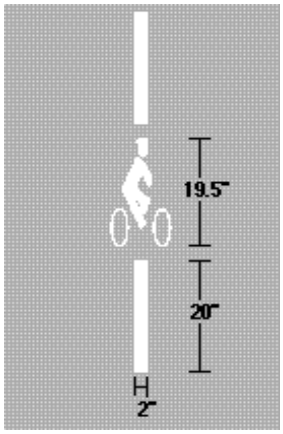
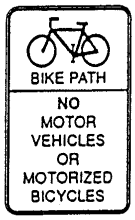
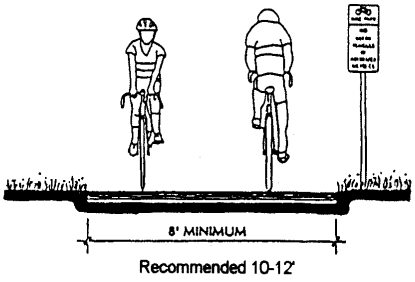


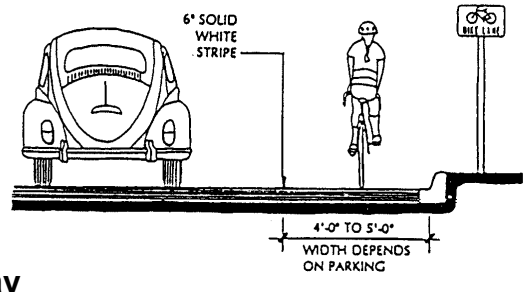
Figure 1: Multi-use Trail Crossing Prototype

Class I Bikewav
BIKE PATH





Class II Bikewav
BIKE LANE



Class III Bikewav
BIKE ROUTE

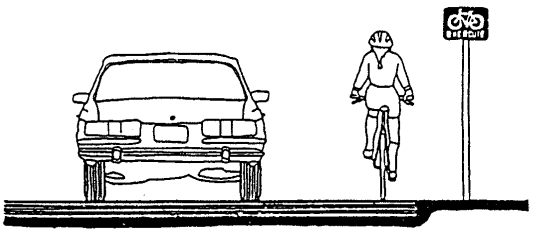


Figure 2: Classes of Bikeways

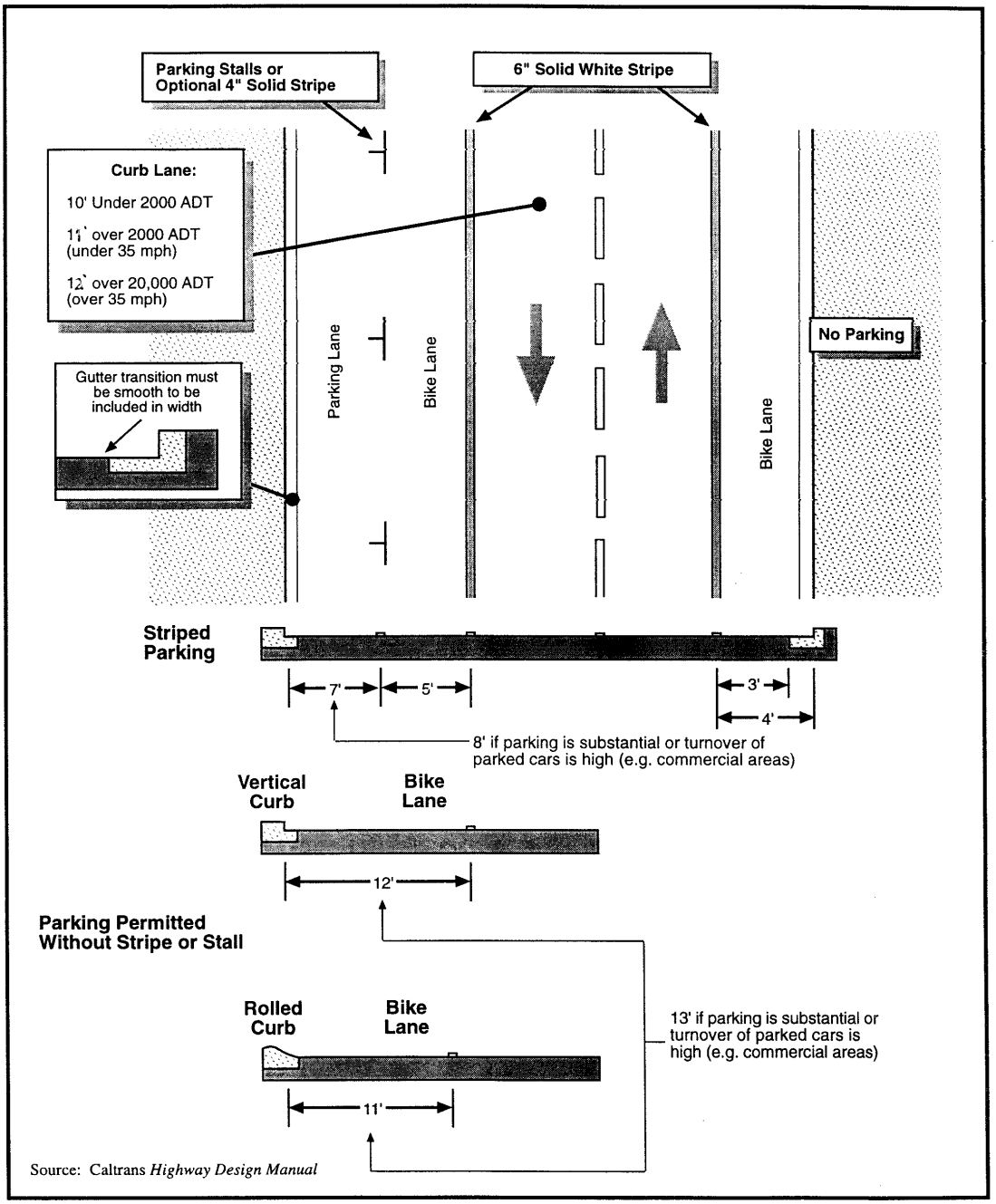


Figure 3: Class II Bike Lane Cross Section

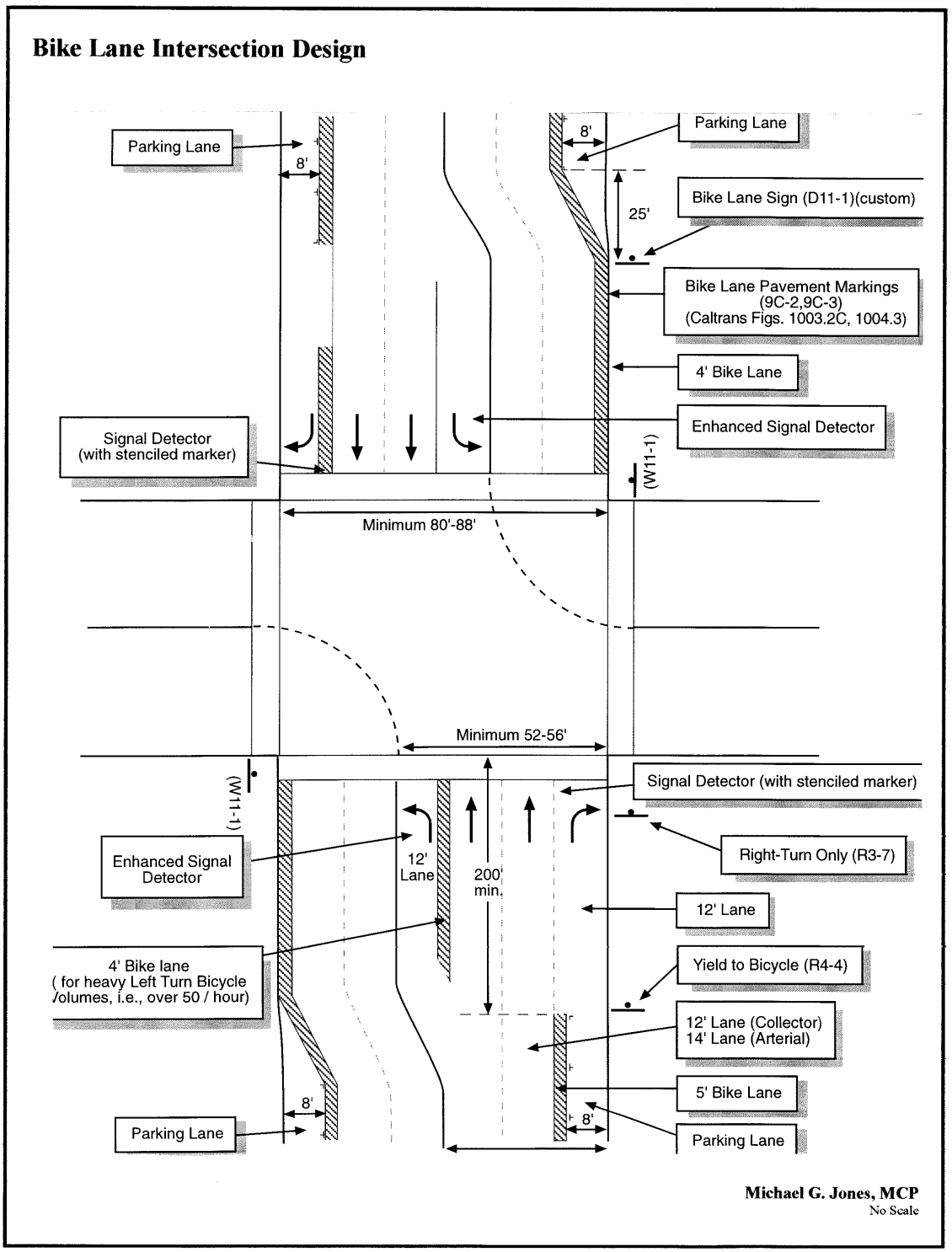


Figure 4: Bike Lane Intersection Design

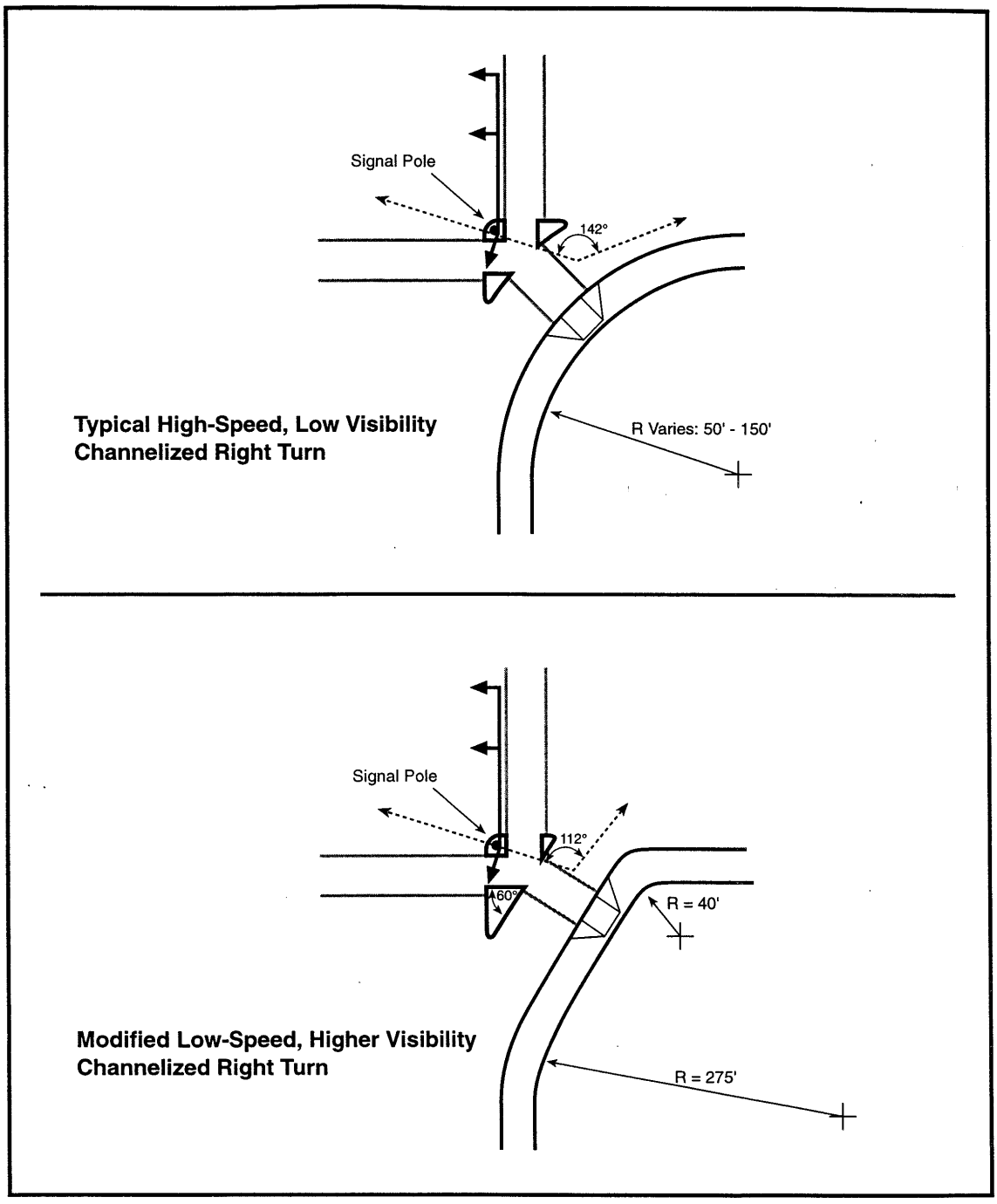


Figure 5: Recommended Right Turn Channelization

Table 9: Recommended Signing and Marking

Item	Location	Color	Caltrans Designation	MUTCD Designation
No Motor Vehicles	Entrances to trail	B on W	R44A	R5-3
Use Ped Signal/Yield to Peds	At crosswalks; where sidewalks are being used	B on W	N/A	R9-5 R9-6
Bike Lane Ahead: Right Lane Bikes Only	At beginning of bike lanes	B on W	N/A	R3-16 R3-17
STOP, YIELD	At trail intersections with roads and Coastal Bikeways	W on R	R1-2	R1-1 R1-2
Bicycle Crossing	For motorists at trail crossings	B on Y	W79	W11-1
Bike Lane	At the far side of all arterial intersections	B on W	R81	D11-1
Hazardous Condition	Slippery or rough pavement	B on Y	W42	W8-10
Turns and Curves	At turns and curves which exceed 20 mph design specifications	B on Y	W1,2,3 W4,5,6,14 W56,57	W1-1,2 W1-4,5 W1-6
Trail Intersections	At trail intersections where no STOP or YIELD required, or sight lines limited	B on Y	W7,8,9	W2-1, W2-2 W2-3, W2-3 W2-4, W2-5
STOP Ahead	Where STOP sign is obscured	B,R on Y	W17	W3-1
Signal Ahead	Where signal is obscured	B,R,G	YW41	W3-3
Bikeway Narrows	Where bikeway width narrows or is below 8'	B on Y	W15	W5-4
Downgrade	Where sustained bikeway gradient is above 5%	B on Y	W29	W7-5
Pedestrian Crossing	Where pedestrian walkway crosses trail	B on Y	W54	W11A-2
Restricted Vertical Clearance	Where vertical clearance is less than 8'6"	B on Y	W47	W11A-2
Railroad Crossing	Where trail crosses railway tracks at grade	B on Y	W47	W10-1
Directional Signs (i.e. Cal State LB, Downtown, Train Station, etc.	At intersections where access to major destinations is available	W on G	G7 G8	D1-1b(r/l) D1-1c

Table 9: Recommended Signing and Marking Continued

Item	Location	Color	Caltrans Designation	MUTCD Designation
Right Lane Must Turn Right; Begin Right Turn Here, Yield to Bikes	Where bike lanes end before intersection	B on W	R18	R3-7 R4-4
Trail Regulations	All trail entrances	B on W	n/a	n/a
Multi-purpose Trail: Bikes Yield to Pedestrians	All trail entrances	n/a	n/a	n/a
Bikes Reduce Speed & Call Out Before Passing	Every 2,000 feet	B on W	n/a	n/a
Please Stay On Trail	In environmentally-sensitive areas	n/a	n/a	n/a
Caution: Storm Damaged Trail	Storm damaged locations	B on Y	n/a	n/a
Trail Closed: No Entry Until Made Accessible & Safe for Public Use	Where trail or access points closed due to hazardous conditions	n/a	n/a	n/a
Speed Limit Signs	Near trail entrances: where speed limits should be reduced from 20 mph	B on W	n/a	n/a
Trail Curfew 10PM - 5AM	Based on local ordinance	R on W	n/a	n/a

Figure 6a: Standard Bike Route Sign

Figure 6b: Custom Bike Route Sign

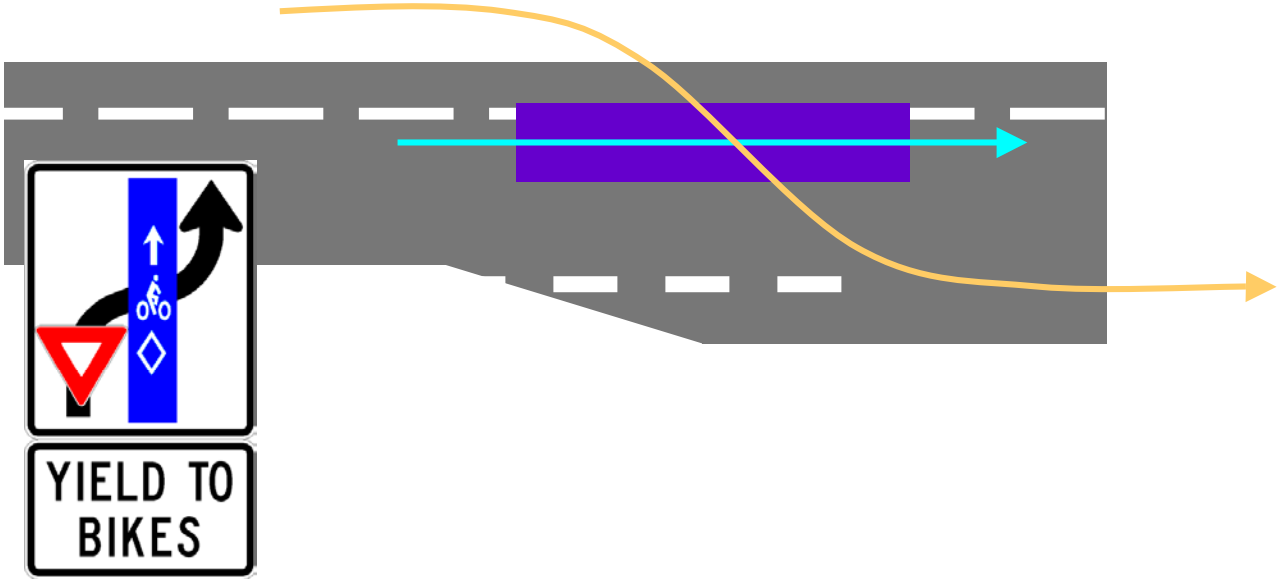


Figure 7: Schematic of Colored Lane Application

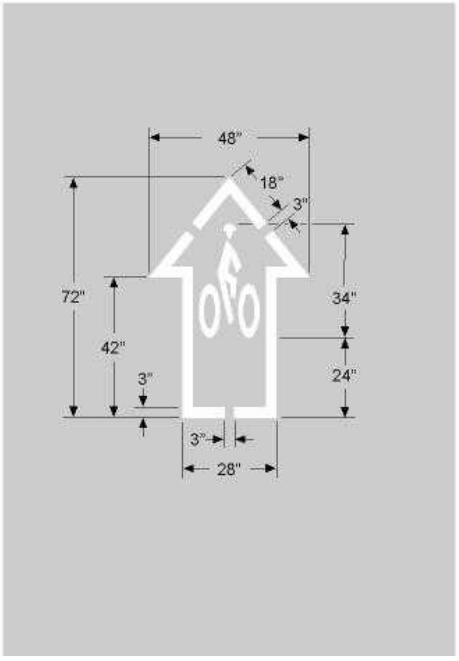


Figure 8: Schematic of Pavement Stencil in use in San Francisco and Denver

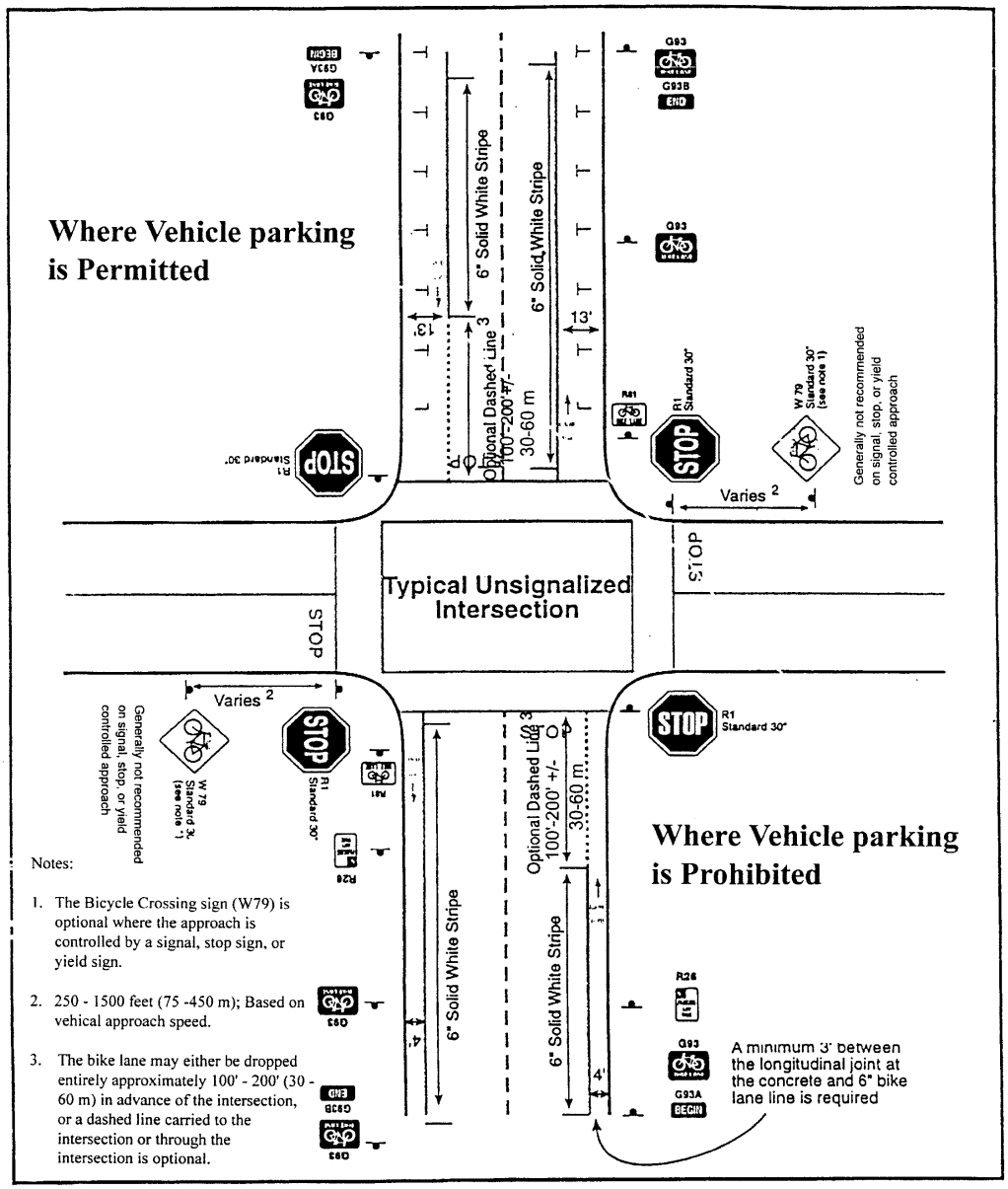


Figure 9: Signing at Unsignalized Intersections

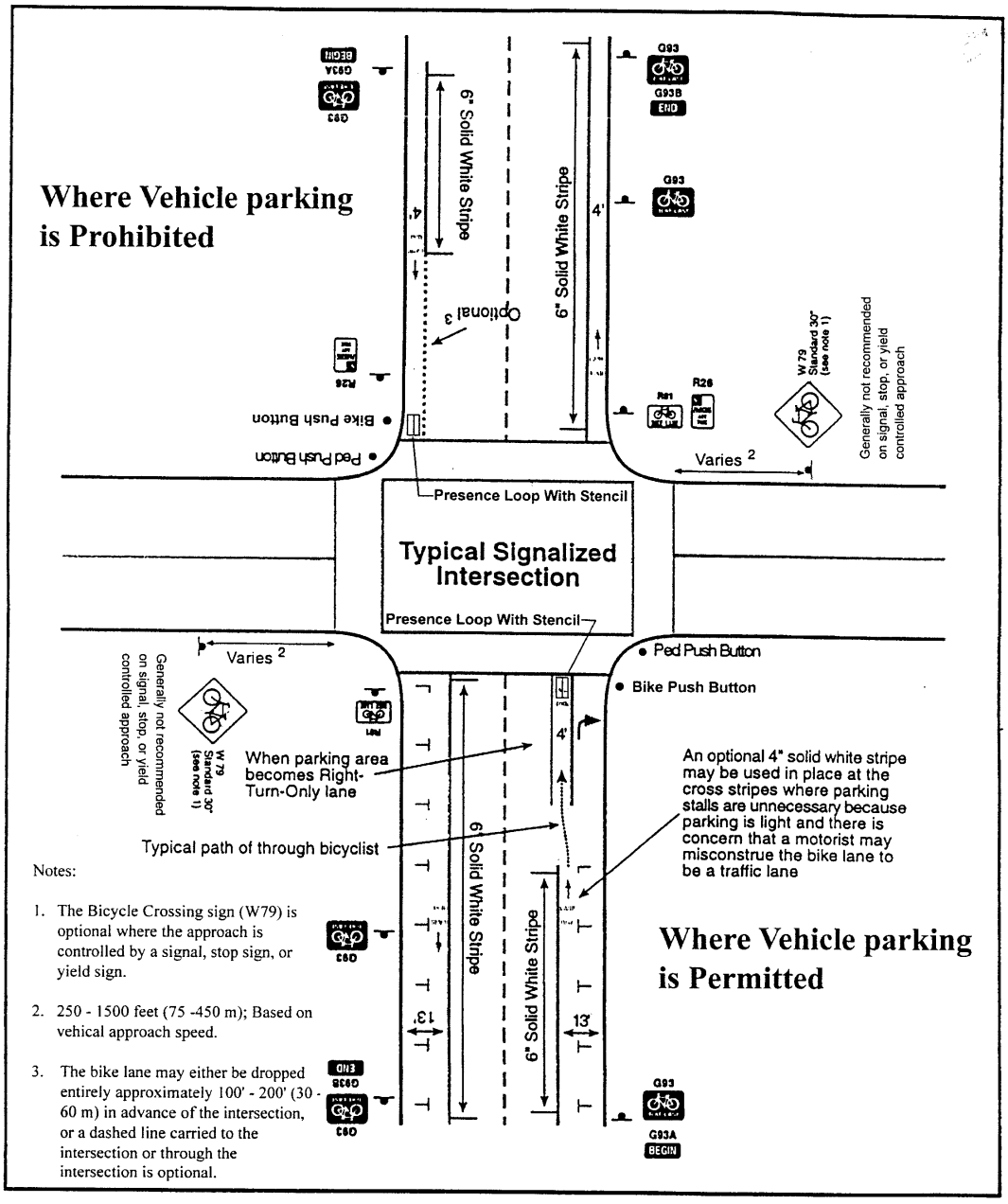


Figure 10: Signing at Signalized Intersections

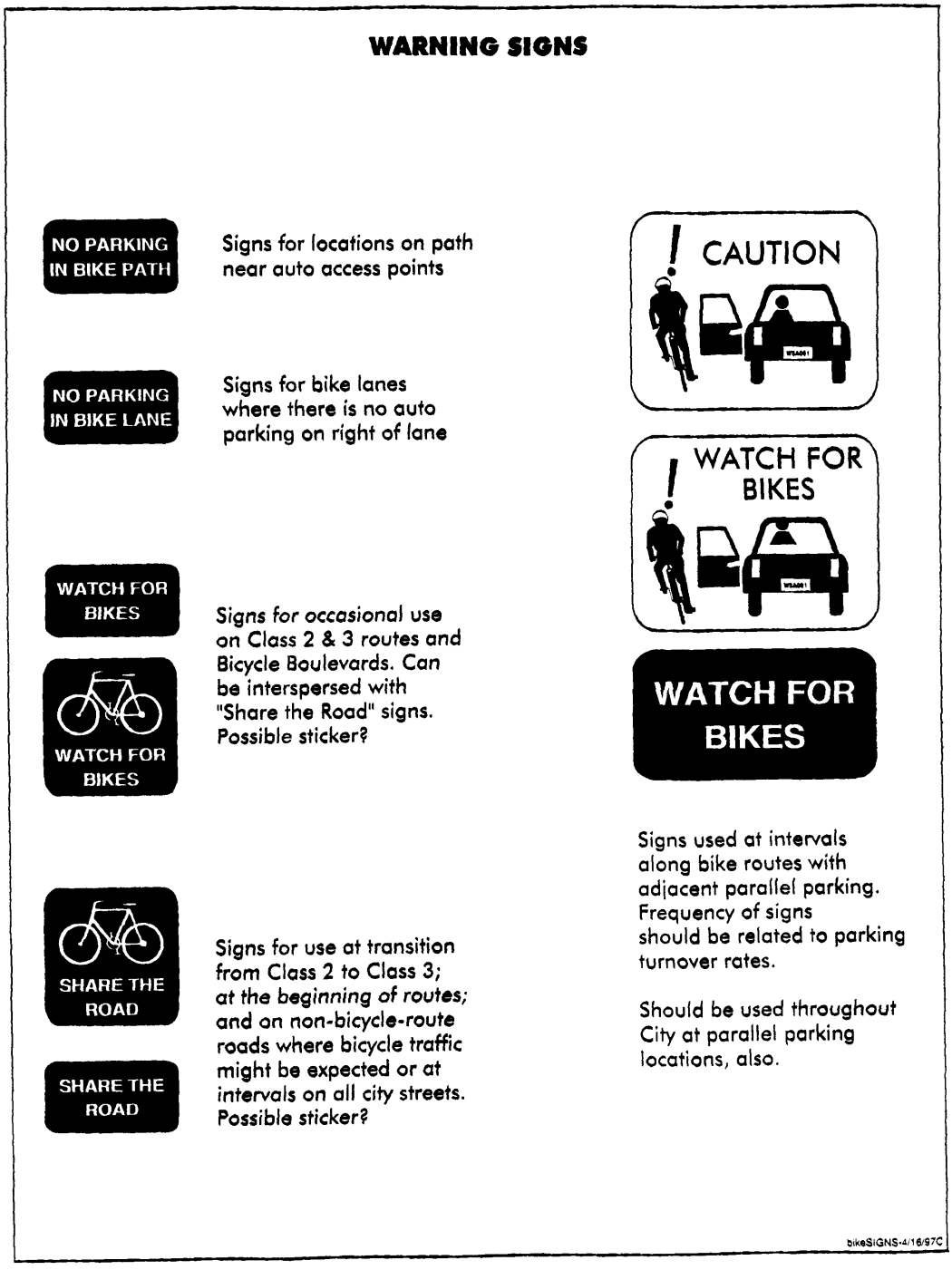


Figure 11: Warning Signs

Table 10: Recommended Guidelines for Bicycle Parking Locations and Quantities

Land Use or Location	Physical Location	Type of Parking	Bicycle Capacity
City Park	Adjacent to restrooms, picnic areas, fields, and other attractions	A Frame, Staple Rack	8 bicycles per acre
City Schools	Near office entrance with good visibility	A Frame, Staple rack in fenced area	8 bicycles per 40 students
Public Facilities (City Hall, libraries, community centers)	Near main entrance with good visibility	U, Staple Rack	8 bicycles per location
Commercial, Retail and Industrial Developments over 10,000 gross square feet	Near main entrance with good visibility	U, Staple Rack	1 bicycle per 15 employees or 8 bicycles per 10,000 gross square feet
Shopping Centers over 10,000 gross square feet	Near main entrance with good visibility	U, Staple Rack	8 bicycles per 10,000 gross square feet
Commercial Districts	Near main entrance with good visibility Not to obstruct auto or pedestrian movement	U or Staple Rack	2 bicycles every 200 feet
Transit Stations	Near platform or security guard	Enclosed Lockers	1 bicycle per 30 parking spaces

Recommended Locations

Prohibited Locations	4 Feet Minimum Distance From	5 Feet Minimum Distance From
Red zones, blue zones, bus zones, white zones, corners	Parking meters, newspaper boxes, trees, sign posts, light poles and public telephones.	Wheelchair ramps, driveways fire hydrants, fire escapes, and doorways.

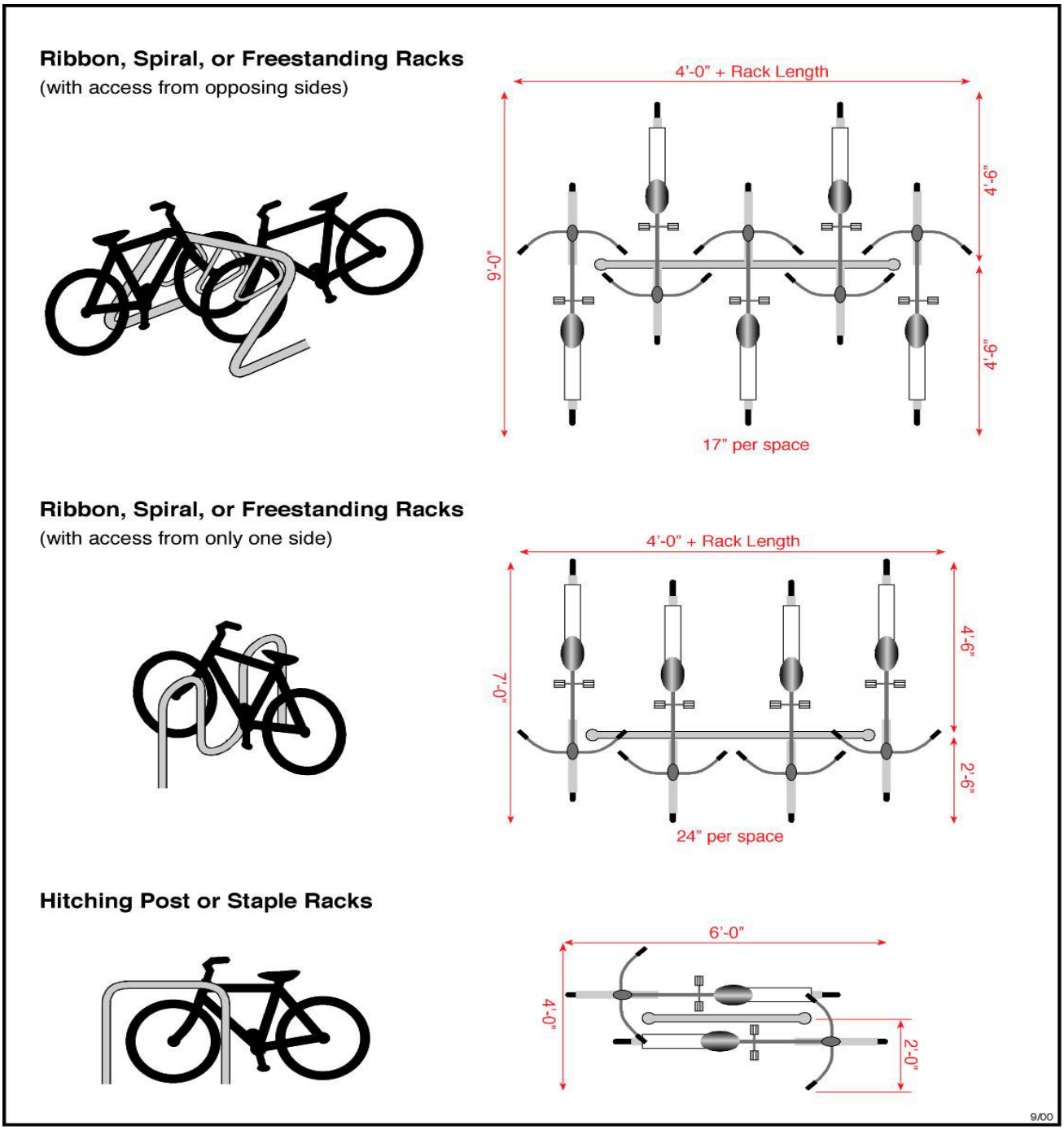


Figure 12: Dimensions of Commonly Used Bicycle Racks

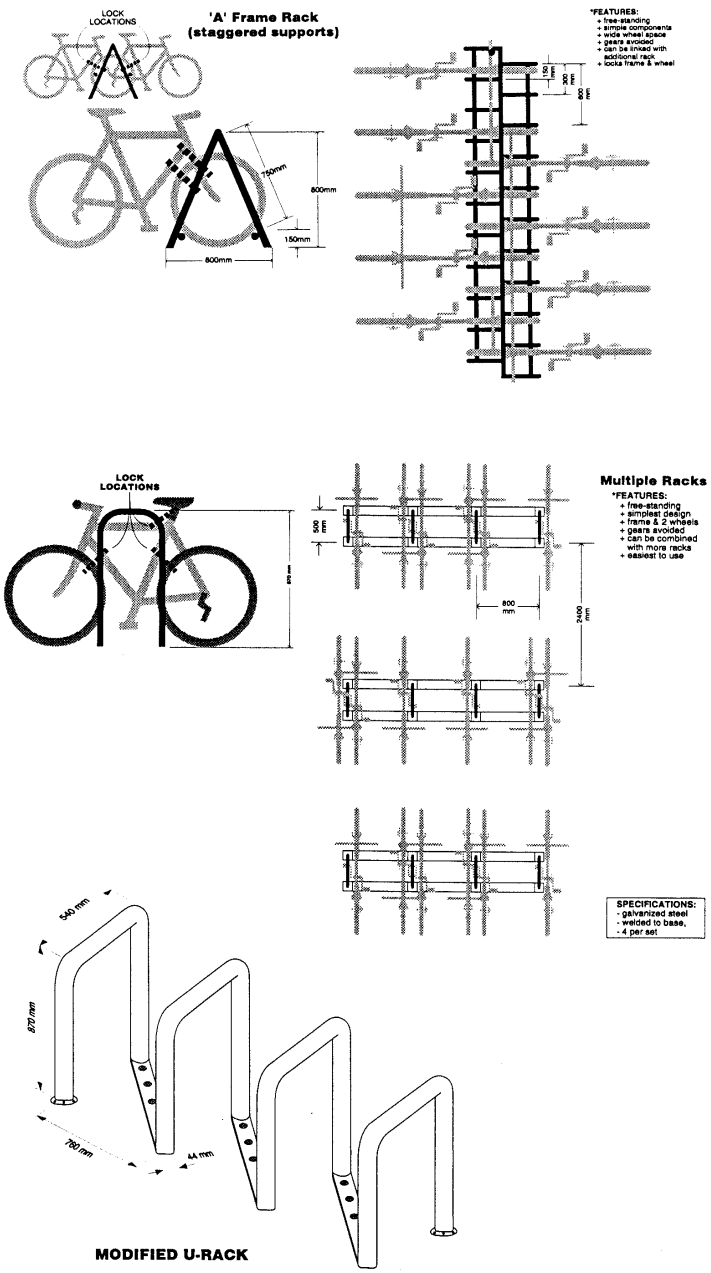


Figure 13: Bicycle Racks

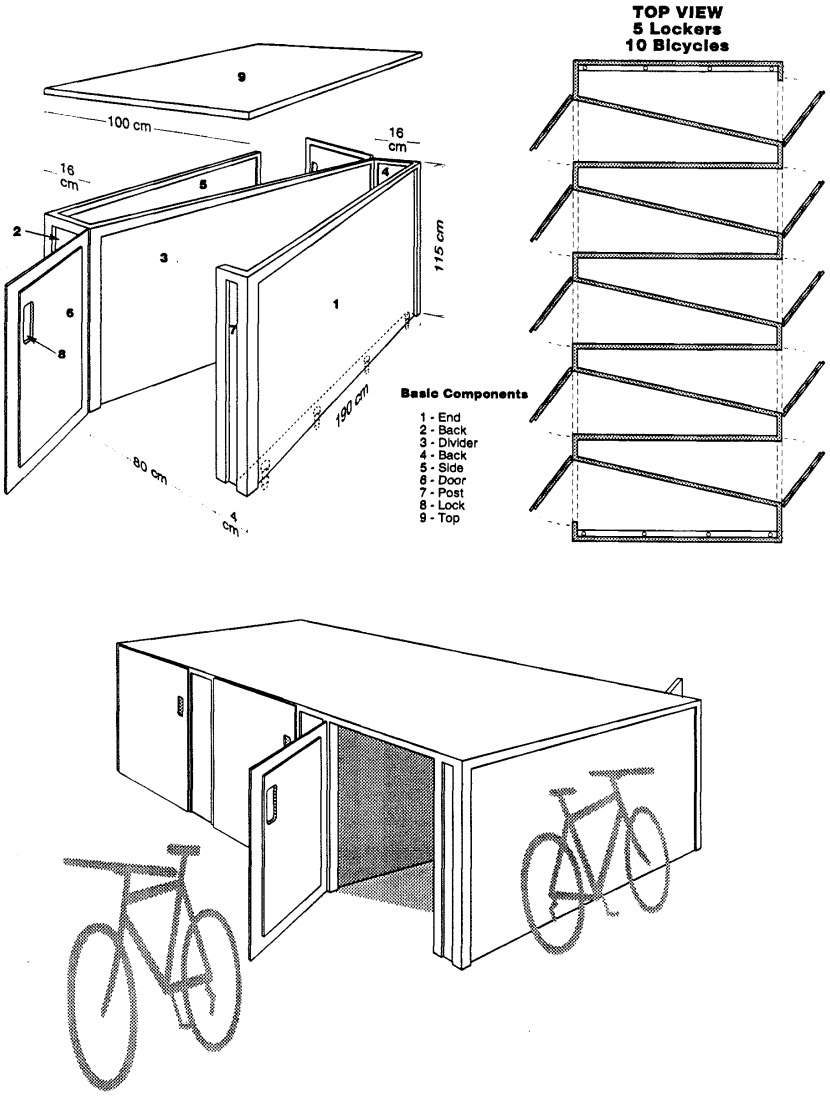


Figure 14: Bicycle Lockers

Maintenance

Most of the maintenance costs for bikeway facilities are associated with the proposed off-road bike paths, as bike lanes and routes are assumed to be maintained as part of routine roadway maintenance. However, as bicycle lanes do require occasional restriping and other maintenance, a cost of $2000 per mile annually is used based on experience in other cities. This includes costs like sweeping, replacing signs and markings, and street repair. Class I bike path maintenance costs are based on $8,500 per mile, which covers labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping, and bi-annual resurfacing and repair patrols.

Maintenance access on Class I bike paths can be achieved using standard pick-up trucks on the pathway itself. Sections with narrow widths or other clearance restrictions should be clearly marked. Class I bike path maintenance includes cleaning, resurfacing and restriping the asphalt path, repairs to crossings, cleaning drainage systems, trash removal, and landscaping. Underbrush and weed abatement should be performed once in the late spring and again in mid-summer. In addition, these same maintenance treatments should be performed on Class II and Class III facilities. These facilities should be prioritized to include an accelerated maintenance plan that is already a part of ongoing street maintenance. A maintenance schedule and checklist is provided in Table 11.

Action

Identify a reliable source of funding to cover all new Class I, II and III bikeway facilities maintenance. All proposed designs should be closely examined to minimize future maintenance costs. In particular, maintenance on Class II and III facilities should be accelerated.

Table 11: Bikeway Maintenance Check List and Schedule	
Item	Frequency
Sign Replacement/Repair	1 - 3 years
Pavement Marking Replacement	1 - 3 years
Tree, Shrub & grass trimming/fert.	5 months - 1 year
Pavement sealing/potholes	5 - 15 years[1]
Clean drainage system	1 year
Pavement sweeping	Weekly-Monthly/As needed
Shoulder and grass mowing	Weekly/As needed
Trash disposal	Weekly/As needed
Lighting Replacement/Repair	1 year
Graffiti removal	Weekly-Monthly/As needed
Maintain Furniture	1 year
Fountain/restroom cleaning/repair	Weekly-Monthly/As needed
Pruning	1 - 4 years
Bridge/Tunnel Inspection	1 year
Remove fallen trees	As needed
Weed control	Monthly/As needed
Remove snow and ice	Weekly/As needed
Maintain emergency telephones, CCTV	1 year
Maintain irrigation lines	1 year
Irrigate/water plants	Weekly-Monthly/As needed

Security

Security may be an issue along portions of Class I bike paths. The following actions are recommended to address these concerns.

Action

Enforcement of applicable laws on the bike path will be performed by each of the cities' municipal police departments and the County Sheriff, using both bicycles and vehicles. Enforcement of vehicle statutes relating to bicycle operation will be enforced on Class II and Class III bikeways as part of the department's normal operations. No additional manpower or equipment is anticipated for Class II or III segments.

Liability

Liability is a major concern for all local governments. Liability for local agencies implementing and operation new bikeways and pedestrian facilities should be no different than the liability for new roads, parks, or schools. Local agencies should adhere to the following guidelines to minimize their liability.

1. Use of Design standards.

The designers, builders, and inspectors of a facility should adhere to widely accepted standards governing the design and construction of the trail. A standard of conduct

includes adherence to published documents such as safety codes, standards, or guidelines that are sponsored or issued by government agencies or voluntary associations, even though such documents lack the force and effect of law. Provisions of state laws related to transportation facilities, if mandatory, may provide the basis for a finding of negligence per se.

Applicable California standards include the Uniform Building Code, and Caltrans Design Manual for Class I and II Bikeways. Other available design standards include AASHTO's Guide for the Development of Bicycle Facilities; Florida Department of Transportations Trail Intersection Design Guidelines, Island Press's "Greenways: A Guide to Planning, Design, and Development," Americans with Disabilities Act (ADA), and the Rail-to-Trails Conservancy's Trails for the 21st Century: A Planning, Design, and Management Manual for Multi-Use Trails.

Note that Caltrans requirements and guidelines are legally binding for all bikeways in California: deviations to these standards must go through the design exception process. Careful compliance with applicable laws, regulations, route selection criteria, and design standards should greatly reduce the risk of injury to bicyclists using the bikeway, and also provide strong evidence that the agency used reasonable care. A detailed Project Feasibility Report is specifically designed to address existing standards.

2. Traffic signals and warning devices.

Caltrans has adopted a Traffic Design Manual, which defines the circumstances under which traffic signals and warning devices are required. While California law limits the liability of public entities for failure to install regulatory traffic signals, signage and markings, non-regulatory warning signs must be installed where necessary to warn of dangerous condition, such as an intersection. All signals and warning devices must be adequately maintained, so as not to invite reliance on a defective warning device.

3. Usage of Professionals.

Facilities that have been reviewed and approved by unregistered or unlicensed professionals may increase liability exposure.

4. Adhere to Maintenance Standards.

Maintenance practices should be consistent along the entire facility and conform to recognized maintenance practices. The responsible maintaining agency(ies) should have a written procedure to follow to maintain all portions of the facility, including pre-existing conditions such as drain grates.

5. Monitor Conditions.

The responsible agency(ies) should have an internal mechanism to monitor and respond to actual operating conditions on the facility. This is typically done through the

maintenance procedures, a record of field observations and public comments, and an annual accident analysis. Accidents should be reviewed to determine if physical conditions on the bikeway were a contributing cause.

6. Keep Written Records.

Written records of all maintenance activities and procedures, responses to reports of safety hazards, and other regular through numerous jurisdictions, it may make sense to have one contact persons/department responsible for the entire facility, rather than risk confusion by incidents being reported to the wrong jurisdiction. Mileposts on the route may also help maintenance and enforcement personnel respond to problems.

7. Correct Hazards.

Trail managers should correct all hazards known by public officials in a timely fashion.

8. Warn of Known Hazards.

Trail users should be warned that the trail is adjacent to an active railroad corridor and to use caution when crossing the tracks or at intersections with roadways.

9. Insurance.

Proper insurance coverage or budgeting for self-insurance to cover potential liability will do much to alleviate concerns.

10. Be Careful With the Word 'Safe'.

Do not make any verbal or written comments that the facility is safe or safer than a non-designated route. For example, a Project Feasibility Report should not make any blanket claims that the facility is safe or safer than comparable routes.

11. Do Not Rush to Settle.

Fear that juries will award a plaintiff large sums for damages has made many attorneys eager to settle cases before they come to court. Lawsuits related to bikeways and walkways may be settled more quickly than other types of lawsuits due to the misconception that walking or bicycling are inherently unsafe activities.

Attorneys may feel that a local government has an extra responsibility on designated bikeways or walkways–more than it does for motor vehicles on roadways for example–to prevent incidents. In fact, there is no evidence that bicycling or walking is inherently more or less safe than other transportation modes such as driving, flying, or other recreational activities such as swimming or playing soccer. The same public who should be educated about proper bicycling and walking behavior probably shares this

misconception. The same exceptions for user responsibility and facility condition that apply to driving should apply to bicycling or walking. Since by law bicyclists and pedestrians are allowed on all roadways except were expressly prohibited, and roadway conditions vary widely, a public agency incurs no additional liability by identifying the route on a map or a plan. The net effect or prematurely settling a case is to incrementally reduce the types of improvements that can be offered by local government. In other cases, settling cases prematurely may simply encourage legal actions by others.

Appendices

Contents

Appendix A

Bicycle User Survey

Orange County

Name: _____ Address:_____

Date Completed: _____ Age: _____ Sex: _____

The Orange County Transportation Authority is updating the Commuter Bikeways Strategic Plan for a comprehensive and safe network of bikeways and amenities. This survey is intended to learn more about residents' preferences of bicycle routes and facilities.

1. Please rank your preference (1 through 3, 1 being highest) for:

   off-street bike paths _____ on-street bike lanes _____ bike routes (local streets) _____

2. Describe your current level of bicycling:

   At least 1x per day _____ 1 - 6x per week _____ 1-3x per month _____ Very rarely _____ Never _____

3. Describe your bicycle trip purpose. (Check all that apply)

   Work _____ School _____ Shopping _____ Recreation/exercise _____ Other _____

4. How far do you live from work or school?

   0-5 miles _____ 6-10 miles _____ 11 or more miles _____

5. Describe the reason you don't ride or don't ride more often: (Please rank in order of importance by marking 1,2 etc.)

   Safety concerns _____ Lack of bikeways (paths, bike lanes, routes) to ride on _____ Weather/darkness ___
   Lack of bicycle storage/parking _____ Lack of a place to shower/change clothes _____ Need access to a car _____

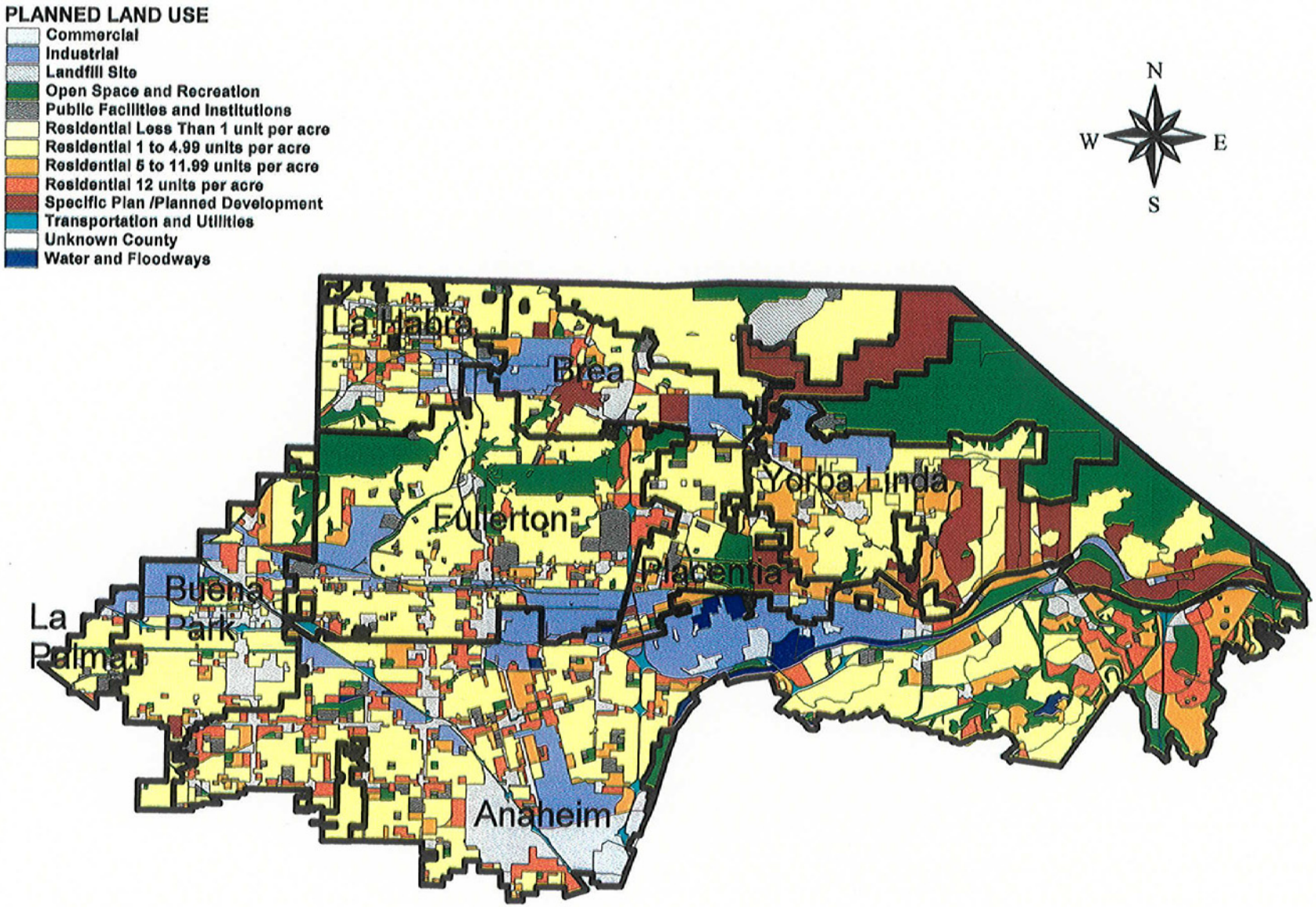
6. On the back please describe or list the routes you regularly bicycle on including your destinations, and other routes you know of that provide a good combination of directness and few conflicts with automobiles. Feel free to attach extra sheets of paper or hand-drawn maps if preferred.

7. Identify the top five major constraints for bicycling in Orange County, such as specific intersections, stretches of road, lack of parking, lack of education, etc.
   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

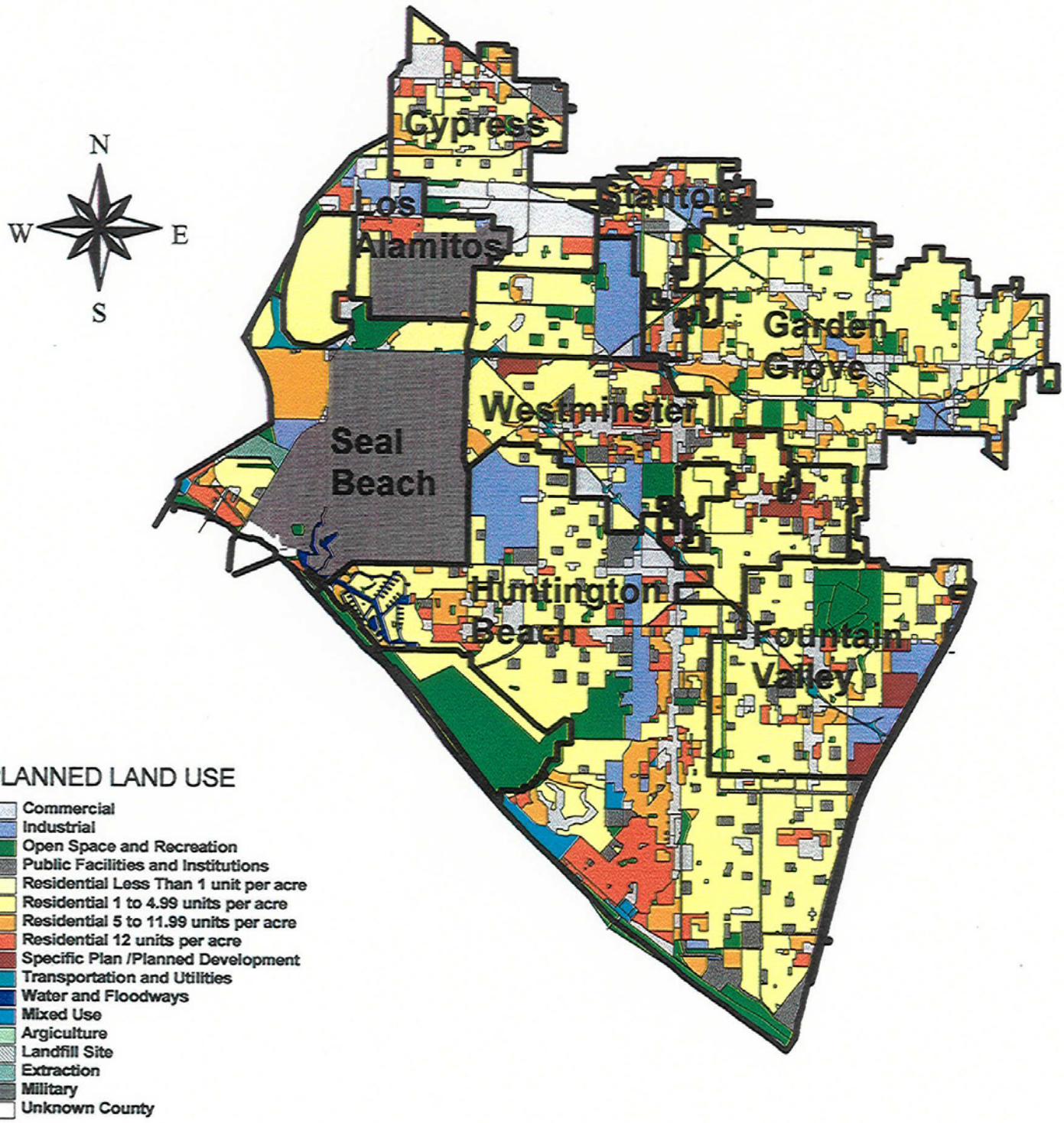
8. Please identify the top five bicycle projects or programs you would like to see implemented in Orange County. For example, education, signs, safety, lanes or paths* (*indicate location).
   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

Appendix B
Land Use Planning Maps

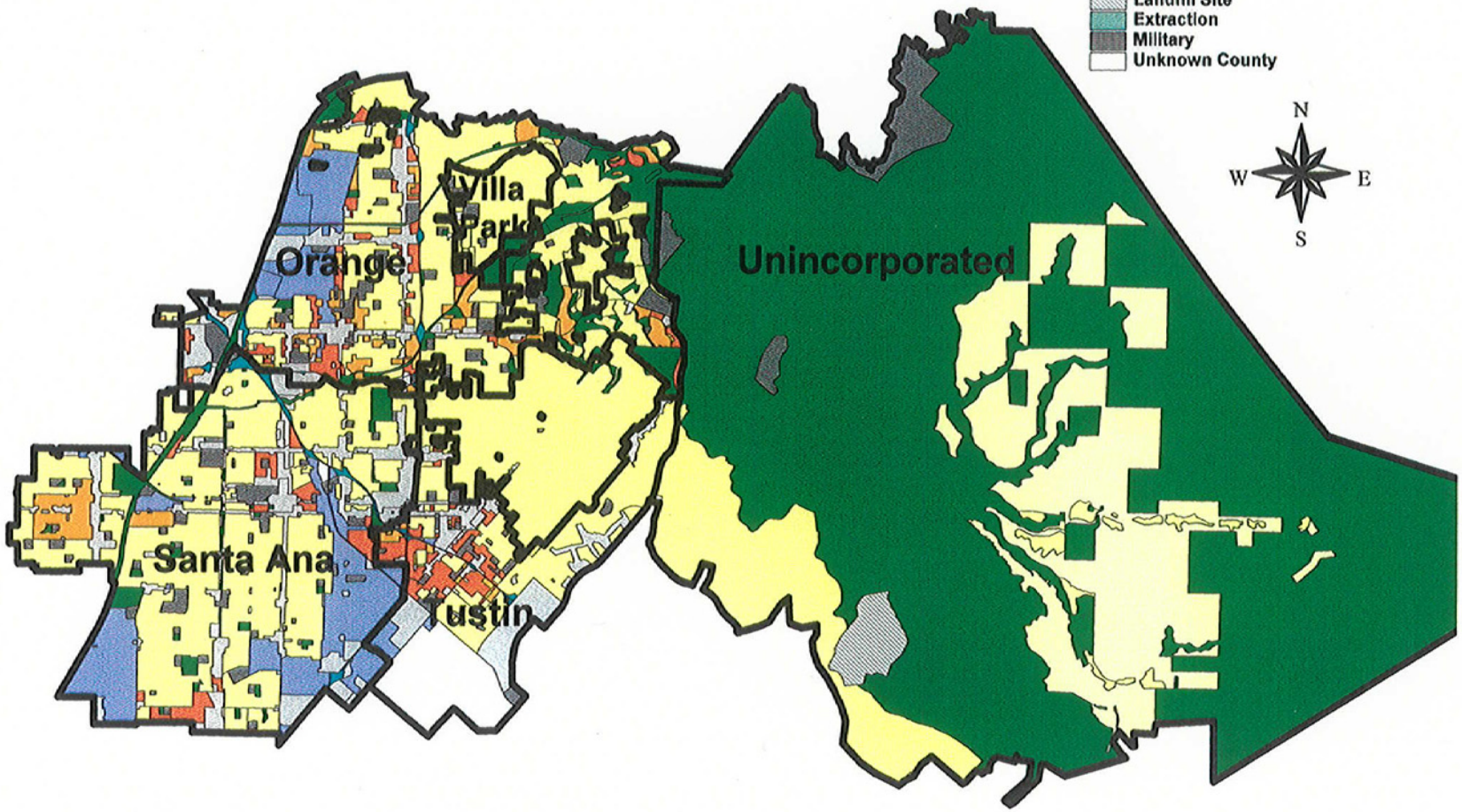
Land Use Plans for Anaheim, Brea, Buena Park, La Habra, La Palma, Placenita, Yorba Linda and Nearby Unincorporated County



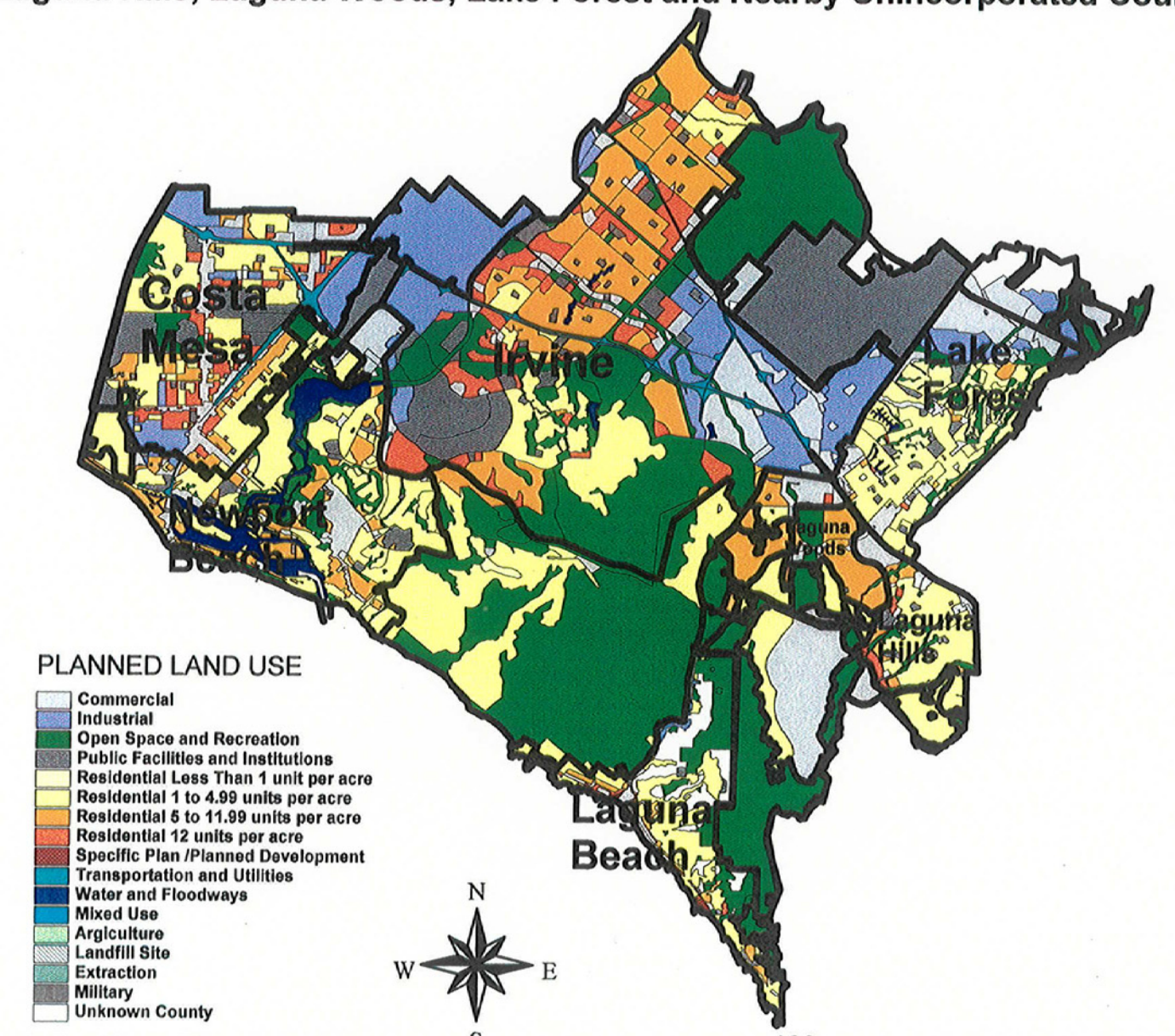
Land Use Plans for Cypress, Fountain Valley, Huntington Beach, Garden Grove, Los Alamitos, Seal Beach, Stanton, Westminster and Nearby Unincorporated County



Land Use Plans for Orange, Santa Ana, Tustin Villa Park and Nearby Unicorporated County



Land Use Plans for Costa Mesa, Irvine, Newport Beach, Laguna Beach, Laguna Hills, Laguna Woods, Lake Forest and Nearby Unincorporated County



Alta Transportation Consulting

Land Use Plans for Dana Point, Laguna Niguel, Mission Viejo, Rancho Santa Margarita, San Clemente, San Juan Capistrano and Nearby Unincorporated County