# Appendix A – Existing Conditions Report

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# 1. INTRODUCTION

This report presents a summary of existing bicycling conditions, facilities, programs and policies in the San Diego region, as well as a preliminary assessment of the region in terms of relative priority for bicycle improvements. The findings from this analysis will be used to develop the San Diego Regional Bicycle Plan, which will include regional goals and objectives, a comprehensive plan for a San Diego regional bicycle network, and a delineation of 30 high priority bicycle projects.

After this introductory chapter, the report is organized into the following chapters:

**Chapter 2** explains key methodologies used in this report, including data collection, spatial analysis, and public outreach components.

**Chapter 3** describes the setting for this study in terms of existing land uses and bicycle infrastructure across the region.

**Chapter 4** summarizes currently adopted bicycle-related policies and programs which provide an important framework for the effort to improve the regional bicycling environment.

**Chapter 5** presents an overview of existing bicycle demand through an assessment of bicycle count data, and bicycle trip generators and attractors. This chapter also summarizes survey results related to current bicycling behavior and facility preferences.

**Chapter 6** assesses bicycling network constraints, especially in relation to unbuilt segments of the currently adopted regional bicycle corridors, and also through an assessment of specific barriers to bicycling such as high vehicular traffic volumes, presence of freeway on/off interchange intersections, and steep slopes. This chapter also summarizes survey results related to bicycle facility deficiencies.

**Chapter 7** synthesizes the results of all data collection and analysis – including the inventory of bicycle facilities, the analysis of attractors/generators and barriers, and the community input – into preliminary bicycle opportunity areas where potential project locations will be examined in the next stages of this planning process.

# 2. METHODOLOGY

The data required to develop this report was collected primarily by soliciting public input, gathering existing regional geographic information systems (GIS) data, and requesting local information from the region's jurisdictions. Data was synthesized into regional databases, mapped with GIS, and analyzed through non-spatial and spatial tools, including spatial modeling.

## 2.1 Public Involvement

Extensive public outreach is essential to developing a regional bicycle plan that addresses the needs of community members. For this report public input acquired during two public workshops and via the project website was analyzed to identify issues and constraints to bicycling in the San Diego region.

The first two public workshops were held on June 24 and June 25, 2008 at the Carlsbad Senior Center and Balboa Park Hall of Champions, respectively. Twenty-five people attended the public workshop held in Carlsbad and 43 attended the workshop held in central San Diego. The intent of this first set of workshops was to introduce the purpose of the San Diego Regional Bicycle Plan, explain the planning process, and collect input on needs, concerns, and recommendations for bicycle programs, policies, and facilities throughout each subarea of the region. A key segment of the workshops was the "break-out" groups, in which workshop attendees were divided into small groups and asked to circulate through four stations, each of which addressed one of the following bicycling related topics: riding behaviors, facility preferences, facility deficiencies and program deficiencies. At each station participants completed a brief topic-specific survey and then discussed the topic with the assistance of a facilitator. A note-taker recorded comments made during the discussion. Prior to the break-out session, workshop attendees were also able to browse through the stations and comment on the boards displayed at each station. These comments were also recorded by workshop facilitators and are summarized in this report.

The 58 surveys collected during the first two workshops were combined and analyzed with the results of the 1,519 online surveys collected as of August 3, 2008 through the Regional Bicycle Plan project website. The online survey questions and workshop survey questions are identical, although the formats differ. **Appendix A** includes the survey questions. The results of the total 1,577 surveys and other public comments were summarized and analyzed in conjunction with GIS mapping and modeling to inform the findings and preliminary recommendations of this report. **Figure 2-1** displays the distribution of survey respondents' residences by local jurisdiction. Surveys were obtained from residents of every jurisdiction in the region, with San Diego having the greatest representation with 907 respondents and National City and Imperial Beach having the lowest representation with 6 respondents from each jurisdiction.

Another important component of public input was derived from SANDAG's Bicycle-Pedestrian Working Group (BPWG), which is a committee formed to advise SANDAG on the bicycle facilities component of the RTP and to make recommendations about funding priorities for local bicycle and pedestrian projects. The BPWG is composed of representatives from local jurisdictions, transit agencies, and bicycle and pedestrian advocacy groups. As stakeholders in the San Diego Regional Bicycle Plan development, the BPWG is providing input on all aspects of the plan's development, including the content of this report.

## 2.2 Local Jurisdiction Inventory

Local agencies were sent a request to provide bicycle related data, plans, policies and GIS shapefiles as background for the San Diego Regional Bicycle Plan. Each jurisdiction was asked to provide the following detailed information:

**Contact List:** A list of contact information for key City staff and other local stakeholders that should be on a San Diego Regional Bicycle Plan project mailing list.

**Background Data:**

Bicycle count data collected along roadways, pathways, or at intersections;
Maps and descriptive materials for existing bikeways (Class I, II and III);
Maps and descriptive materials for proposed/planned bikeways or multi-use paths (Class I, II and III);
Maps and descriptive materials for end-of-trip facilities, including parking facilities and bicyclist amenities (e.g. showers and lockers);
Maps and descriptive materials for existing and proposed bike facilities for connections with other modes;
Literature/documents on City sponsored bicycle safety and education programs, including law enforcement efforts, school classroom curriculum, training for city staff, and evaluation reports of these programs;
Documents pertaining to maintenance programs for bicycle facilities and sidewalks, including street sweeping, re-striping, and stenciling;
Current, proposed or programmed bicycle projects including brief descriptions, cost estimates, and prioritization;
Summary of expenditures on bicycle facilities and programs for the past 5 years;
Per-unit costs for constructing, striping, signing and maintaining bikeway and pedestrian facilities;
List of bicycle-related zoning ordinances with ordinance text (including standards and requirements for new developments to provide bicycle parking); and
List of any other planned transportation improvements that would affect the existing or proposed bikeway network.

**Background Planning and Policy Documents:** All relevant plans or planning documents (trail plans, parks and recreation plans, transit plans, EIRs, downtown plans, streetscapes, etc.) related to bicycle transportation in the city, including updates or changes.

**GIS Data**

General Plan Land Uses,
Utility corridors,
Existing and proposed bicycle or multi-use facilities (Class I, II and III),

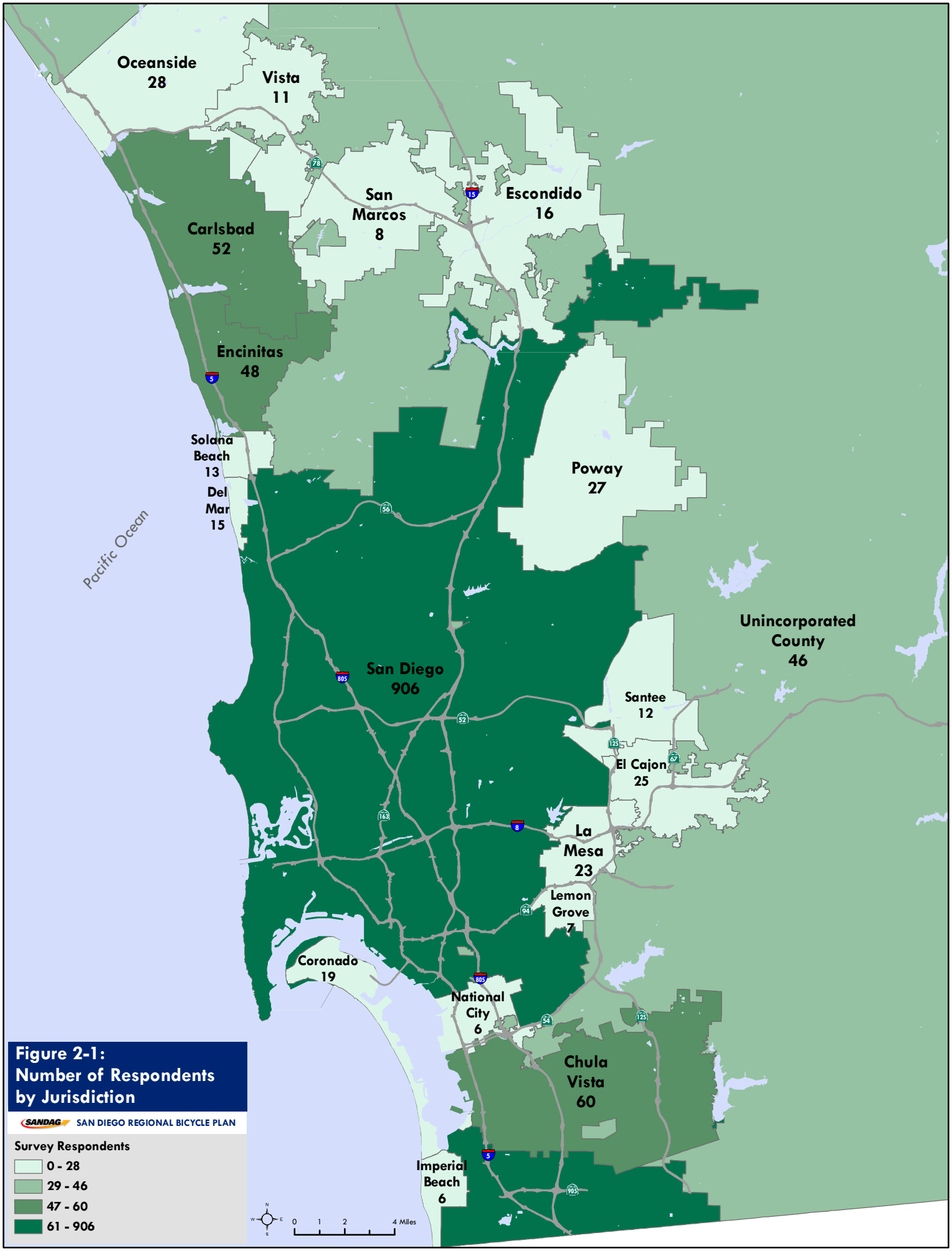



**Figure 2-1: Number of Respondents by Jurisdiction**

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

Existing and proposed support facilities such as bicycle racks, lockers, showers and storage facilities,
Locations of traffic signals and signal detectors, and
Trail and trailhead locations.

**Appendix B** provides a summary of documents and other information obtained from local governments across the region.

## 2.3 Spatial Modeling

Mapping is relied upon in this report to display existing and planned facilities and to identify network problems such as gaps in the regional corridor system. Spatial modeling allows the analyst to develop a single "surface" of values across a study area that incorporates multiple input variables. This process begins with the development of a grid imposed across a study area, identifying relevant input variables, developing a ranking system that orders the importance of each input variable relative to the group of variables, and a weighting system that orders the relative importance of various values of a particular input variable. The final output provides a visual representation of the combined intensity and distribution of multiple variables, which would otherwise be presented in multiple maps or tables.

The spatial modeling presented in this report was conducted to understand locations of high bicycle travel demand and high bicycling environment deficiencies, which in sum, is referred to as high bicycle priority/need. The model allows for an objective assessment of the combined magnitude and distribution of various population characteristics, infrastructure, roadway environment, and land uses – all deemed important to predicting demand and deficiencies related to bicycling. Similar types of modeling have been employed for pedestrian master planning in the region – such as for the San Diego Pedestrian Master Plan and the City of Carlsbad Pedestrian Master Plan.

The bicycle model presented in this report is comprised of four submodels: a bicycle network quality submodel, a bicycle trip attractor submodel, a bicycle trip generator submodel, and finally, a bicycle network barrier submodel. A final bicycle priority composite model was generated from the four submodels to identify locations where the highest demand potential and network barriers overlap. The modeling results, in combination with corridor gap identification and public input, were used to identify the potential project locations presented in Chapter 7.

# 3. EXISTING LAND USES AND BICYCLE INFRASTRUCTURE

This chapter provides an overview of the major components of the bicycling environment including existing land uses, existing and planned bicycle facilities within the regional corridor alignments, a bicycle network quality assessment, and finally, a discussion of existing bicycle support facilities.

## 3.1 Setting and Land Uses

The 19 local jurisdictions in the San Diego region encompass approximately 4,300 square miles of varied physical conditions. The region's bays, lagoons, rivers, hills, and mountains help make San Diego a unique and distinctive region but also presents challenges for bicycle travel.

In 2007, the San Diego region was home to just over three million people, reflecting a 10 percent increase in population since the 2000 Census. San Diego population has been characterized by a decreasing growth rate since the 1990's. San Diego's population is also becoming more ethnically diverse, with an anticipated increase in Hispanic population by the year 2010 that eliminates the presence of any ethnic majority in the region. The region's population is expected to grow relatively older, with an anticipated growth rate of 128 percent in the population segment over 65 years by the year 2030.

Growth in travel across the region has outpaced population growth since the 1990's. The region is also increasingly relying upon vehicular travel, with generally increasing mode shares for the drive alone trip, and decreasing shares for carpool, transit and non-motorized travel. A noted reversal of this trend has occurred in recent months as a result of spiking gasoline costs. Many predict this will continue into the unforeseen future as oil supplies remain vulnerable.

**Table 3-1** shows the distribution of land use types across the region, with roughly 12 percent residential, and less than 1 percent commercial and industrial. The largest portion of the county is open space and agriculture. **Figure 3-1** presents existing land uses across the region.

**Table 3-1. Existing Regional Land Uses**

| Land Use Type | Acreage | Percent of Total |
|---|---|---|
| Residential | 338,900 | 12.4% |
| Commercial | 17,500 | 0.6% |
| Industrial | 18,900 | 0.7% |
| Open Space and Agriculture | 1,176,100 | 43.1% |
| Education | 12,300 | 0.4% |
| Institutions | 9,100 | 0.3% |
| Military, Transportation, & Utilities | 166,900 | 6.1% |
| Undeveloped | 887,100 | 32.7% |
| Other | 100,700 | 3.7% |
| **TOTALS 2,727,500** | | **100%** |

*Source: SANDAG Land Use shapefile, 2007; Alta Planning + Design, August 2008*

## 3.2 Types of Bicycle Facilities

This report uses the classification of bicycle facilities as identified by the American Association of State Highway and Transportation Officials (AASHTO). **Figure 3-2** illustrates the three types of bikeways.

### CLASS I SHARED USE PATH

Bike paths are paved rights-of-way completely separated from any street or highway. Often these are built within greenway corridors, along railroad rights-of-way or parallel to (but separate from) highways. Shared use paths are shared by a variety of users, including bicyclists, pedestrians, rollerbladers and people pushing strollers. As such, they need to be designed appropriately to accommodate all users.

### CLASS II BIKE LANE

Bike lanes are striped and stenciled lanes for one-way travel on a street or highway. These are designated with signs, striping, and pavement stencils. With this type of bikeway, motorists and bicyclists share the street, each having their own preferred lane.

### CLASS III BIKE ROUTE

Bike routes are roadways shared by bicyclists and motor vehicle traffic and are identified by signing. On these routes, motor vehicles and bicycles share the same lane on a street. Signs are posted to indicate that the street is a bikeway.

It is important to note that bicycles are permitted on all roads in the State of California and in the San Diego region (with the exception of access-controlled freeways). As such, the region's entire street network effectively serves bicyclists, regardless of whether or not a bikeway stripe, stencil, or sign is present on a given street. The designation of certain roads as Class II or III bicycle facilities typically implies that these roadways are optimal bicycle routes, for reasons such as directness or access to significant destinations.

## 3.3 Local Bikeways

SANDAG publishes a widely known bike map showing existing bicycle facilities across the region, as well as other recommended routes. **Table 3-2** summarizes mileage of bikeways by facility type for the entire region, including those facilities designated as regional corridors. **Figure 3-3** displays all local and regional bikeways across the region.

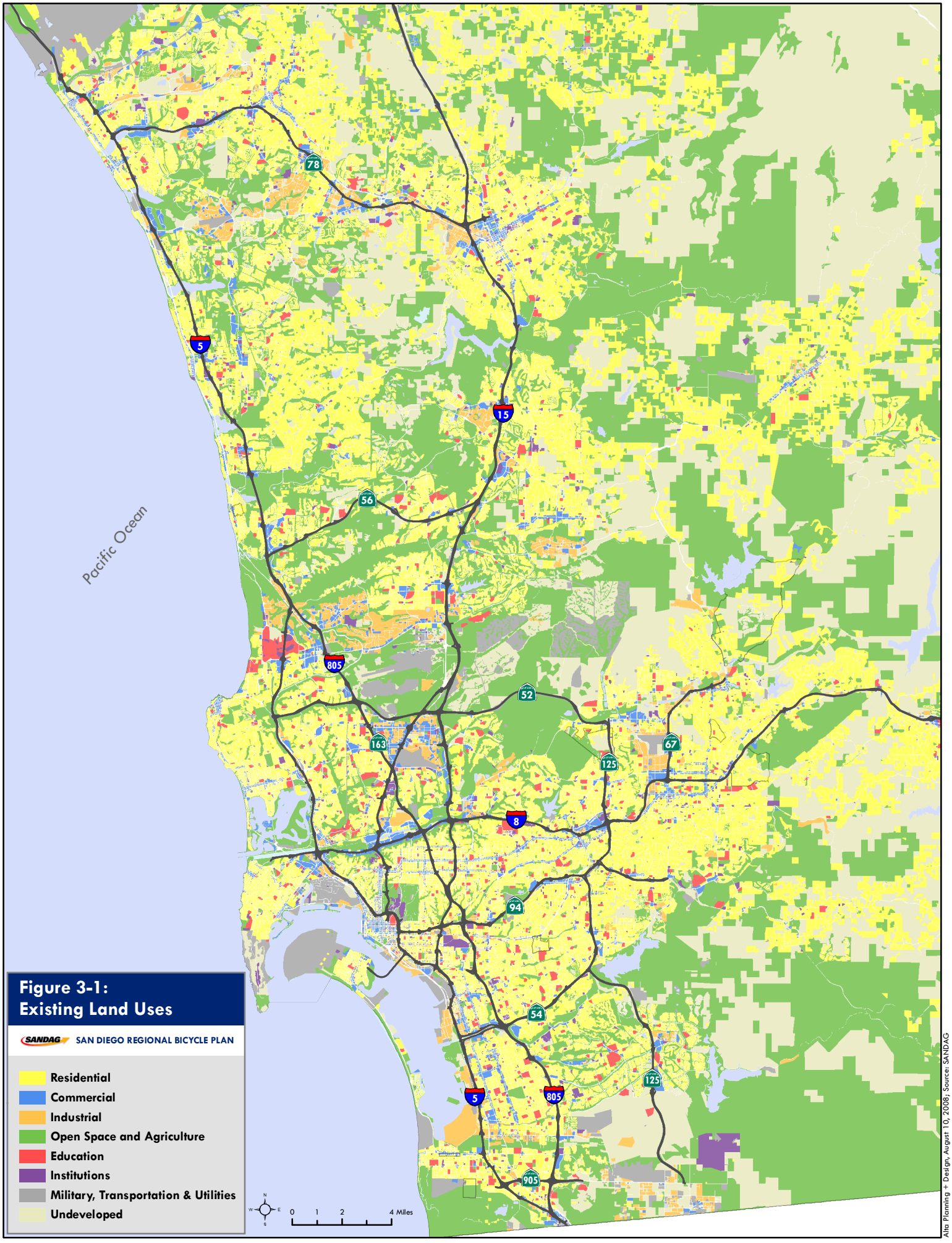
**Table 3-2. Bicycle Facilities in the Region**

| Facility Type | Miles | % of Total |
|---|---|---|
| Class I – Path | 106.9 | 9.0% |
| Class II – Lane | 784.2 | 66.4% |
| Class III – Route | 251.7 | 21.3% |
| Freeway Shoulders | 39.1 | 3.3% |
| **TOTALS** | **1181.8** | **100%** |

*Source: SANDAG Bikes shapefile, 2007; Alta Planning + Design, August, 2008*

There are approximately 1,200 miles of bikeway facilities in the region. Class II facilities are the predominate type of bikeway at roughly 67 percent of the total, followed by Class III facilities at 21 percent of the regional total. Class I facilities comprise just under 10 percent of the regional total.

**Table 3-3** presents a summary of bikeways by facility type and jurisdiction. Four local jurisdictions – Del Mar, La Mesa, Lemon Grove, and Vista have no Class I facility; while National City is the only jurisdiction with no Class II facility. The City of San Diego has the greatest percentage of regional facility, at roughly 36 percent of the regionwide total, while Del Mar and Solana Beach have the smallest percentage of the regional total. The overall trends in bikeway facility provision follow trends in population and land area. Noticeably, there are 8 jurisdictions whose share of regional bicycle facilities is less than their share of the


Pacific Ocean
78
5
15
56
805
52
163
67
125
8
94
54
5
805
125
905
0 1 2 4 Miles
Figure 3-1:
Existing Land Uses
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Residential
Commercial
Industrial
Open Space and Agriculture
Education
Institutions
Military, Transportation & Utilities
Undeveloped
Alta Planning + Design, August 10, 2008; Source: SANDAG

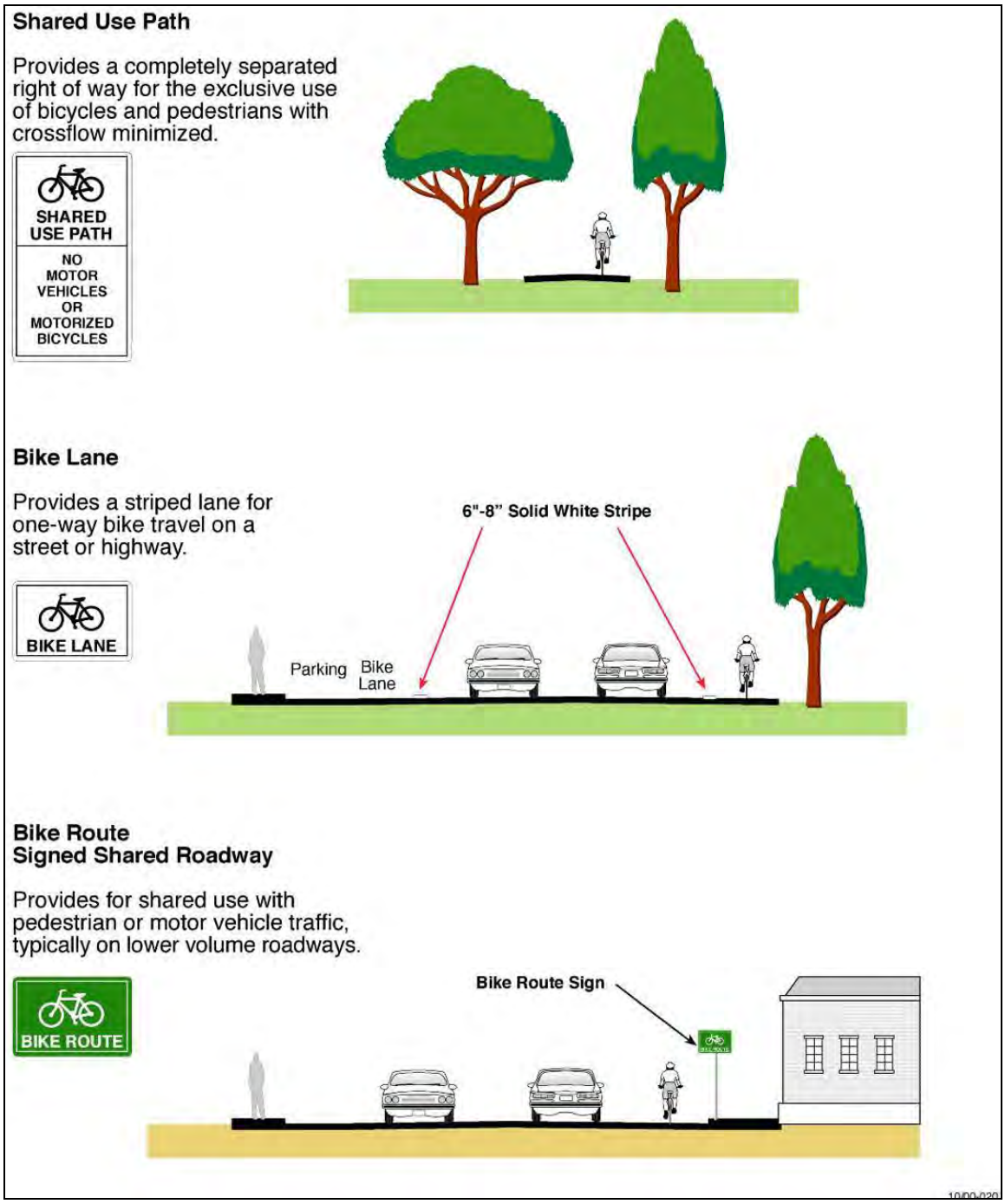



**Figure 3-2. AASHTO Bicycle Facility Types**

regional population. These jurisdictions include El Cajon, Escondido, Imperial Beach, Lemon Grove, National City, San Diego, Vista and the unincorporated county.

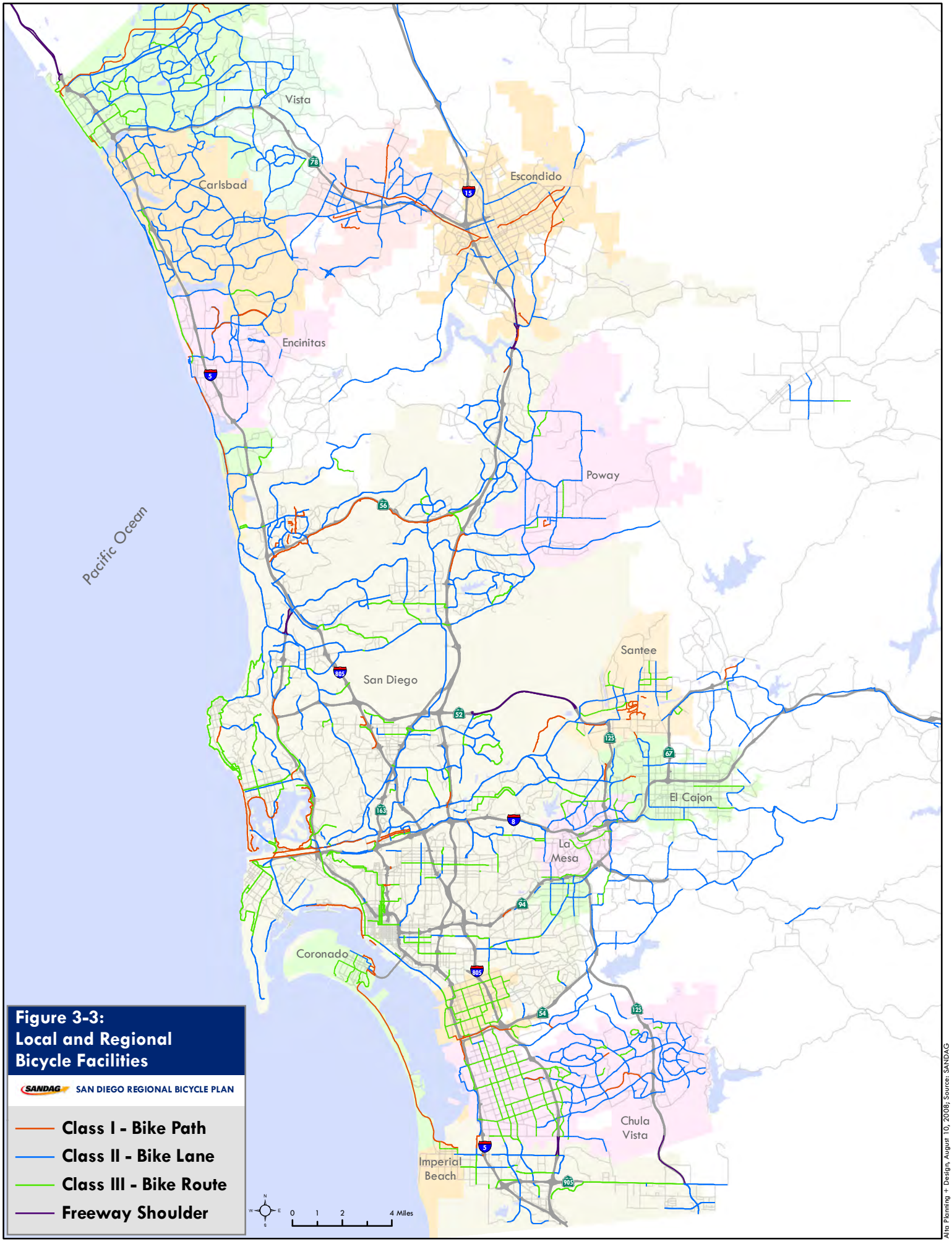



**Figure 3-3: Local and Regional Bicycle Facilities**

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

- Class I - Bike Path
- Class II - Bike Lane
- Class III - Bike Route
- Freeway Shoulder

Alta Planning + Design, August 10, 2008; Source: SANDAG

**Table 3-3. Bicycle Facilities by Jurisdiction**

| Jurisdiction | Mileage by Facility Type | | | | Mileage by Jurisdiction | Percent of Regional Mileage | Percent of Regional Population |
|---|---|---|---|---|---|---|---|
| | Class I | Class II | Class III | Freeway Shoulder | | | |
| Carlsbad | 3.3 | 76.7 | 5.0 | 0 | 85.0 | 7.2% | 3.3% |
| Chula Vista | 4.8 | 63.1 | 43.9 | 0.5 | 112.3 | 9.5% | 7.4% |
| Coronado | 9.4 | 1.5 | 5.2 | 0 | 16.1 | 1.4% | 0.7% |
| Del Mar | 0 | 6.0 | 0.1 | 0 | 6.1 | 0.5% | 0.1% |
| El Cajon | 1.3 | 14.8 | 3.5 | 0 | 19.6 | 1.7% | 3.1% |
| Encinitas | 4.4 | 21.2 | 3.0 | 0 | 28.6 | 2.4% | 2.0% |
| Escondido | 8.7 | 19.7 | 0.1 | 1.8 | 30.3 | 2.6% | 4.6% |
| Imperial Beach | 0.6 | 0.3 | 1.3 | 0 | 2.1 | 0.2% | 0.9% |
| La Mesa | 0 | 11.6 | 10.9 | 0 | 22.5 | 1.9% | 1.8% |
| Lemon Grove | 0 | 7.8 | 1.0 | 0 | 8.8 | 0.7% | 0.8% |
| National City | 1.8 | 0 | 20.7 | 0 | 22.5 | 1.9% | 2.0% |
| Oceanside | 7.9 | 78.5 | 16.7 | 0 | 103.1 | 8.7% | 5.7% |
| Poway | 0.6 | 25.5 | 3.9 | 0 | 30.0 | 2.5% | 1.6% |
| San Diego | 51.7 | 242.5 | 119.7 | 14.2 | 428.1 | 36.3% | 42.5% |
| San Marcos | 2.5 | 41.9 | 0 | 0 | 44.4 | 3.8% | 2.6% |
| Santee | 5.9 | 13.7 | 8.0 | 0 | 27.6 | 2.3% | 1.8% |
| Solana Beach | 1.4 | 3.4 | 1.6 | 0 | 6.4 | 0.5% | 0.4% |
| Vista | 0 | 24.8 | 1.3 | 0 | 26.1 | 2.2% | 3.1% |
| Unincorporated | 2.6 | 131.2 | 5.8 | 22.6 | 162.2 | 13.7% | 15.5% |
| **TOTALS 106.9** | | **784.2** | **251.7** | **39.1** | **1,181.8** | **100%** | **100%** |

*Source: SANDAG Bikes shapefile, 2007; Alta Planning + Design, August, 2008*

**Note:** Shading indicates that the percentage of regional bicycle facility in the respective jurisdiction is less than its share of the regional population.

## 3.4 Regional Bicycle Corridors

This section summarizes the currently adopted Regional Bicycle Corridors as depicted in the 2030 *Regional Transportation Plan* (RTP). There are a total of 445 miles of existing and planned regional corridor facility. The RTP does not define the classification for each segment of the regional corridor system. **Figure 3-4** displays an overview of the currently adopted regional corridors. **Table 3-4** defines the corridors in terms of start and end locations and provides each corridor's approximate length. **Figures 3-5A** and **3-5B** show more detail on the start and end locations of each regional corridor. The I-15 Bikeway is the longest planned regional corridor, running approximately 56 miles long from the northern San Diego County border with Temecula to the Mid-City Community of San Diego. The second and third longest corridors in the regional system are the Coastal Rail Trail, proposed as running 43 miles from the northern San Diego County border with Camp Pendleton to Downtown San Diego; and the SR-125 Bikeway, proposed as running 27 miles from the I-8 Corridor to the Otay Mesa International Border Crossing with Mexico.

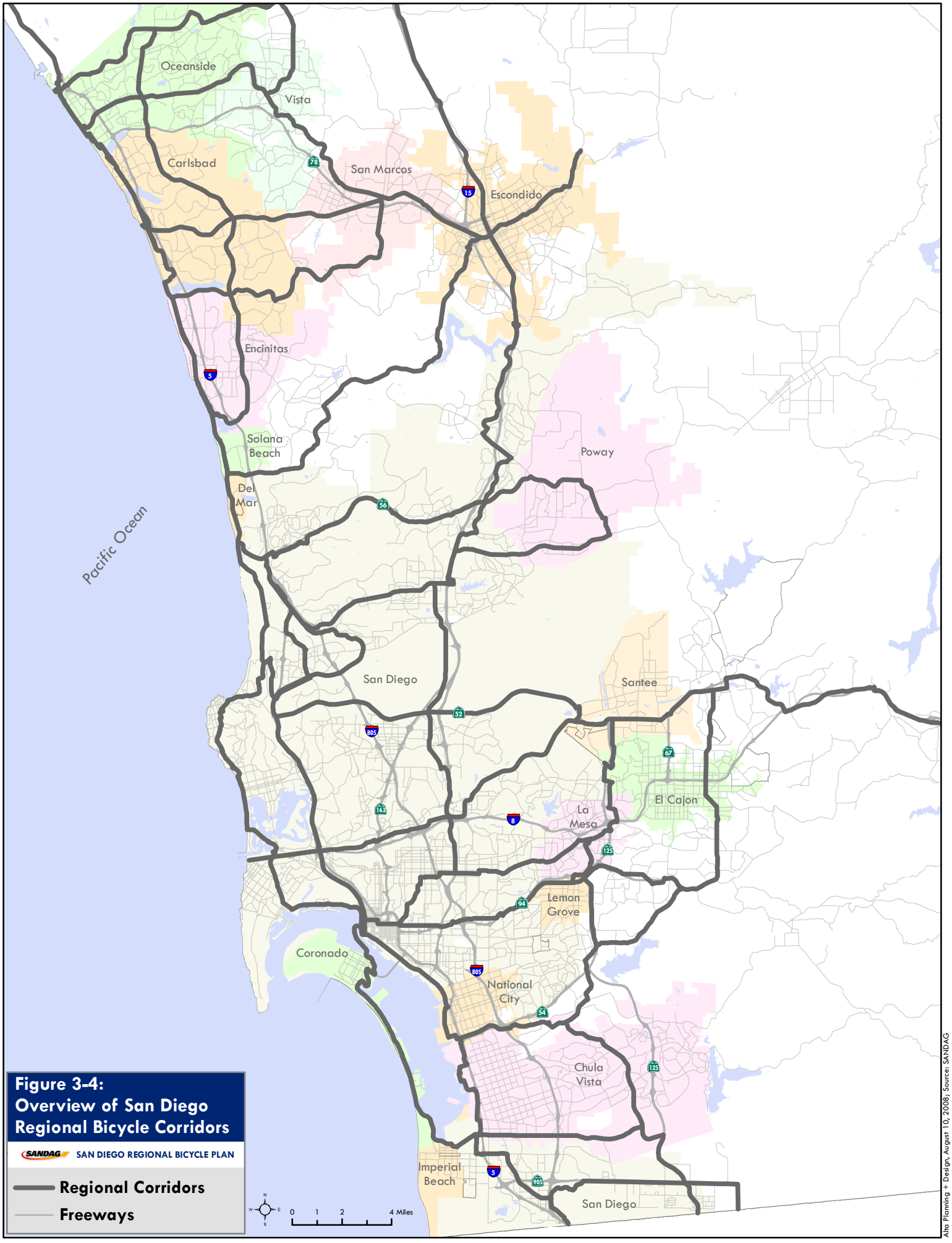



**Figure 3-4:**
**Overview of San Diego Regional Bicycle Corridors**

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

**Regional Corridors**

**Freeways**

Alta Planning + Design, August 10, 2008; Source: SANDAG

**Table 3-4. Currently Adopted Regional Bicycle Corridors**

| | Corridor | Start | End | Miles |
|---|---|---|---|---|
| Loop | Bayshore Bikeway | Central Coast Corridor | Central Coast Corridor | 23 |
| N/S | Border Access Corridor | Chula Vista Greenbelt Otay River, San Diego | San Ysidro Border Crossing, San Diego | 6 |
| N/S | Camp Pendleton Trail | Northern boundary of County of San Diego | San Luis Rey River Trail, Oceanside | 19 |
| N/S | Central Coast Corridor | Coastal Rail Trail, Del Mar | Bayshore Bikeway, San Diego | 14 |
| E/W | Chula Vista Greenbelt Otay River | Bayshore Bikeway, Imperial Beach | SR-125 Corridor, Chula Vista | 7 |
| N/S | Coastal Rail Trail | San Luis Rey River Trail, Oceanside | Bayshore Bikeway, San Diego | 43 |
| E/W | East County – Downtown San Diego Corridor | SR-94 Corridor Bikeway, San Diego | SR-125 Corridor, La Mesa | 11 |
| N/S | El Camino Real | San Luis Rey River Trail, Oceanside | Coastal Rail Trail, Encinitas | 20 |
| E/W | Escondido Creek Bikeway | I-15 Bikeway, Escondido | Valley Centre Rd, Escondido | 6 |
| E/W | I-8 Corridor | SR-125 Corridor, Santee | Japatul Valley Rd, County of San Diego | 25 |
| N/S | I-15 Bikeway | Northern boundary of County of San Diego | East County-Downtown San Diego Corridor, San Diego | 56 |
| E/W | Inland Rail Trail | Coastal Rail Trail, Oceanside | I-15 Bikeway, Escondido | 20 |
| E/W | La Costa Avenue/ Rancho Santa Fe Road | Coastal Rail Trail , Encinitas | Inland Rail Trail, San Marcos | 13 |
| E/W | Mid-County Bikeway | Coastal Rail Trail, Del Mar | Inland Rail Trail, Escondido | 17 |
| E/W | Mira Mesa Boulevard | SR-56 Bikeway | I-15 Bikeway | 9 |
| E/W | Palomar Airport Road/ San Marcos Boulevard | Coastal Rail Trail, Carlsbad | Inland Rail Trail, San Marcos | 11 |
| E/W | San Diego River Bikeway | Voltaire St, San Diego | SR-125 Corridor., Santee | 16 |
| E/W | San Luis Rey River Trail | Coastal Rail Trail, Oceanside | I-15, County of San Diego | 18 |
| Loop | Scripps Poway Parkway | SR-56 Bike Path, San Diego | I-15 Bikeway, San Diego | 14 |
| E/W | SR-52 Bikeway | Coastal Rail Trail, San Diego | San Diego River Bikeway, San Diego | 14 |
| N/S | SR-54 Bikeway | SR-125 Corridor, County of San Diego | I-8 Corridor, County of San Diego | 14 |
| E/W | SR-56 Bikeway | Coastal Rail Trail, San Diego | I-15 Bikeway, San Diego | 11 |
| E/W | SR-94 Corridor Bikeway | Central Coast Corridor, San Diego | SR-54 Bikeway, County of San Diego | 12 |
| N/S | SR-125 Corridor | San Diego River Bikeway, Santee | Otay Mesa Border Crossing, San Diego | 27 |
| E/W | SR-905 Corridor | Border Access Corridor, San Diego | Future SR-11 Border Crossing, County of San Diego | 9 |
| E/W | Sweetwater River Bikeway | Bayshore Bikeway, Chula Vista | SR-125 Corridor, Chula Vista | 5 |
| N/S | Vista Way | San Luis River Rey Trail | Inland Rail Trail | 5 |
| | | | **Total Regional Bicycle Corridor Miles** | **445** |

*Source: Alta Planning + Design, August, 2008*

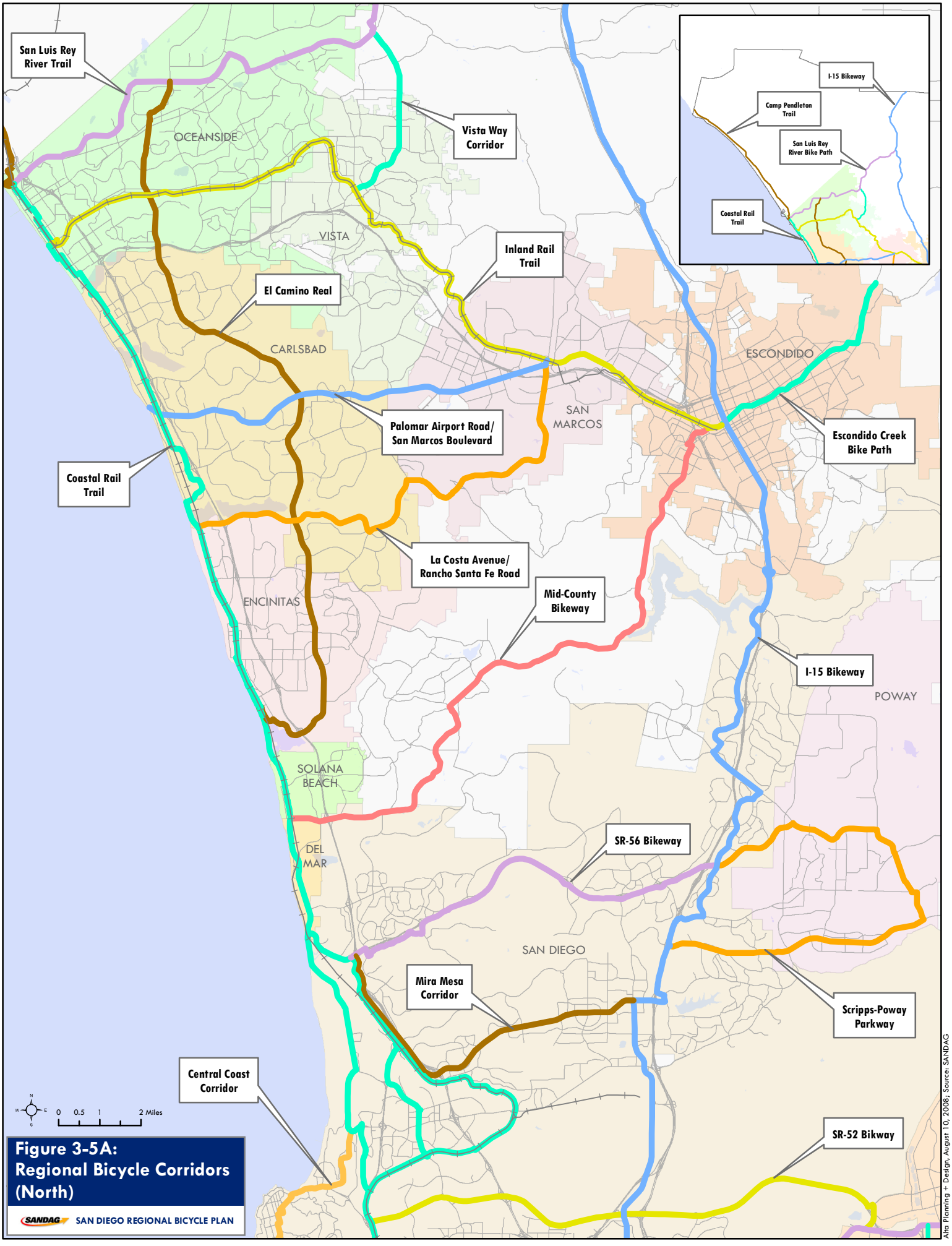



**Figure 3-5A: Regional Bicycle Corridors (North)**

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

Alta Planning + Design, August 10, 2008; Source: SANDAG

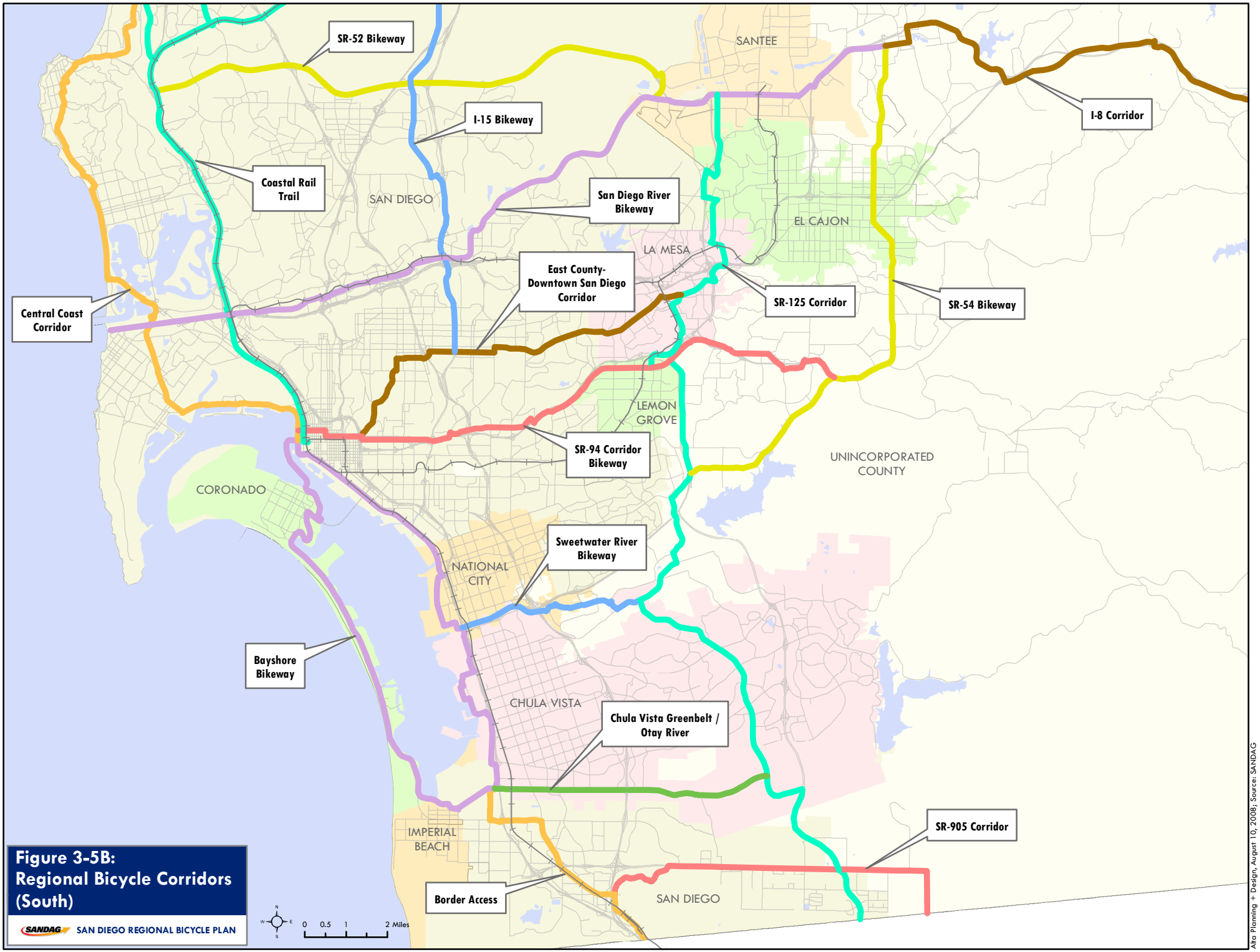



**Figure 3-5B: Regional Bicycle Corridors (South)**

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

Alta Planning + Design, August 10, 2008; Source: SANDAG

**Table 3-5** summarizes existing facility types with a quarter mile buffer of the regional corridor alignments. Facilities within the current alignment are largely Class II (220 miles or 63 percent), followed by Class I facilities (60 miles or 16.7 percent). There are a total of approximately 354 miles of existing facility within a quarter mile buffer of the alignments. **Figure 3-6A** and **Figure 3-6B** show existing facility types within a quarter mile buffer of the generalized regional corridor alignments, for the north and south portions of the county, respectively.

**Table 3-6** summarizes planned bicycle facility upgrades within the regional corridor alignments, as depicted in the respective local government bicycle plans and/or general plan circulation elements. Only planned upgrades to existing facilities or planned construction of a new facility parallel to an existing facility were included in Table 3-6. Planned facilities in locations where no current bicycle facility exists (i.e. a "gap") are treated in Chapter 6. A majority of the planned facilities described in Table 3-6 are Class I bikeways (roughly 67 miles), followed by Class II facilities (8 miles), then Class III facilities (Class III). **Figures 3-7A** and **3-7B** show the locations of planned upgrades within the regional corridor alignments.

**Table 3-5. Existing Facilities within a Quarter-Mile of Regional Bicycle Corridor Alignments**

| Corridor | Existing Facility | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | Class I | | Class II | | Class III | | Freeway Shoulder | | |
| | miles | % | miles | % | miles | % | miles | % | |
| Bayshore Bikeway | 11.0 | 49.5% | 6.9 | 31.1% | 4.3 | 19.4% | - | - | 22.2 |
| Border Access Corridor | 0.7 | 21.9% | 2.5 | 78.1% | - | - | - | - | 3.2 |
| Camp Pendleton Trail | - | - | - | - | 0.8 | 9.3% | 7.8 | 90.7% | 8.6 |
| Central Coast Corridor | 6.0 | 42.9% | 4.8 | 34.3% | 3.2 | 22.9% | - | - | 14.0 |
| Chula Vista Greenbelt Otay River | - | - | 1.6 | 59.3% | 1.1 | 40.7% | - | - | 2.7 |
| Coastal Rail Trail | 6.0 | 11.8% | 26.0 | 51.1% | 17.9 | 35.1% | 1.0 | 2.1% | 50.9 |
| East County – Downtown San Diego Corridor | - | - | 2.4 | 55.8% | 1.9 | 44.2% | - | - | 4.3 |
| El Camino Real | - | - | 16.7 | 97.1% | 0.5 | 2.9% | - | - | 17.2 |
| Escondido Creek Bikeway | 3.3 | 64.7% | 0.8 | 15.7% | 1.0 | 19.6% | - | - | 5.1 |
| I-8 Corridor | - | - | 16.2 | 81.0% | 0.3 | 1.85% | 3.5 | 17.5% | 20.0 |
| I-15 Bikeway | 3.0 | 5.9% | 43.0 | 84.0% | 5.5 | 5.5% | 2.4 | 4.7% | 51.2 |
| Inland Rail Trail | 6.6 | 34.6% | 11.8 | 61.8% | 0.7 | 3.7% | - | - | 19.1 |
| La Costa Avenue/ Rancho Santa Fe Road | - | - | 7.8 | 78.0% | 2.2 | 22.0% | - | - | 10.0 |
| Mid-County Bikeway | 0.7 | 4.1% | 10.7 | 62.9% | 5.6 | 32.9% | - | - | 17.0 |
| Mira Mesa Corridor | - | - | 7.8 | 80.4% | 1.9 | 19.6% | - | - | 9.7 |
| Palomar Airport Road/ San Marcos Boulevard | - | - | 13.1 | 100% | - | - | - | - | 13.1 |
| San Diego River Bikeway | 11.2 | 56.3% | 8.4 | 42.2% | 0.3 | 1.5% | - | - | 19.9 |
| San Luis Rey River Trail | 7.3 | 72.3% | 2.8 | 27.7% | - | - | - | - | 10.1 |
| Scripps Poway Parkway | - | - | 10.6 | 100% | - | - | - | - | 10.6 |
| SR-52 Bikeway | - | - | 0.7 | 13.0% | 0.2 | 3.7% | 4.5 | 83.3% | 5.4 |
| SR-54 Bikeway | - | - | 7.9 | 100% | - | - | - | - | 7.9 |
| SR-56 Bikeway | 9.9 | 94.3% | 0.2 | 1.9% | 0.4 | 3.8% | - | - | 10.5 |
| SR-94 Corridor Bikeway | 0.4 | 8.2% | 4.2 | 85.7% | 0.3 | 6.1% | - | - | 4.9 |
| SR-125 Corridor | 1.4 | 5.8% | 16.7 | 69.0% | 3.6 | 14.9% | 2.5 | 10.3% | 24.2 |
| SR-905 Corridor | - | - | 1.8 | 23.7% | 5.8 | 76.3% | - | - | 7.6 |
| Sweetwater River Bikeway | 2.5 | 52.1% | 1.4 | 29.2% | 0.9 | 18.7% | - | - | 4.8 |
| Vista Way Corridor | - | - | 2.1 | 100% | - | - | - | - | 2.1 |
| **TOTALS** | **59.0** | **16.7%** | **222.0** | **62.7%** | **54.1** | **15.3%** | **21.7** | **6.1%** | **354.1** |

*Source: Alta Planning + Design, August, 2008*


San Luis Rey River Trail
OCEANSIDE
Vista Way Corridor
VISTA
Inland Rail Trail
El Camino Real
CARLSBAD
ESCONDIDO
SAN MARCOS
Palomar Airport Road/ San Marcos Boulevard
Escondido Creek Bike Path
Coastal Rail Trail
ENCINITAS
La Costa Avenue/ Rancho Santa Fe Road
Mid-County Bikeway
I-15 Bikeway
POWAY
SOLANA BEACH
DEL MAR
SR-56 Bikeway
SAN DIEGO
Mira Mesa Corridor
Scripps-Poway Parkway
Central Coast Corridor
SR-52 Bikway
I-15 Bikeway
Camp Pendleton Trail
San Luis Rey River Bike Path
Coastal Rail Trail
N
W
E
S
0 0.5 1 2 Miles
Figure 3-6A:
Existing Facilities Within the Regional Bicycle Corridors (North)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Class I - Bike Path
Class II - Bike Lane
Class III - Bike Route
Freeway Shoulder
Alta Planning + Design, August 10, 2008; Source: SANDAG

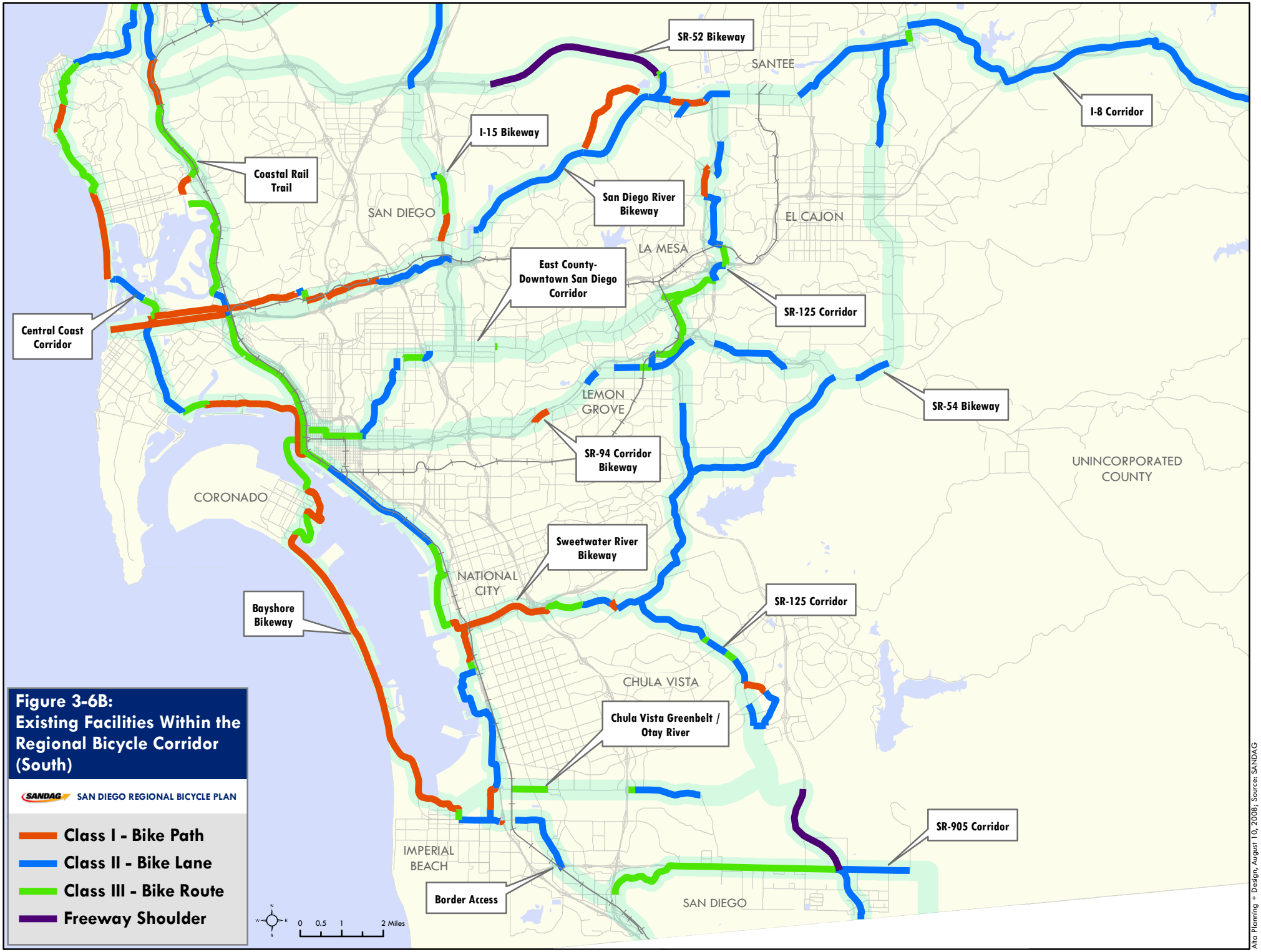
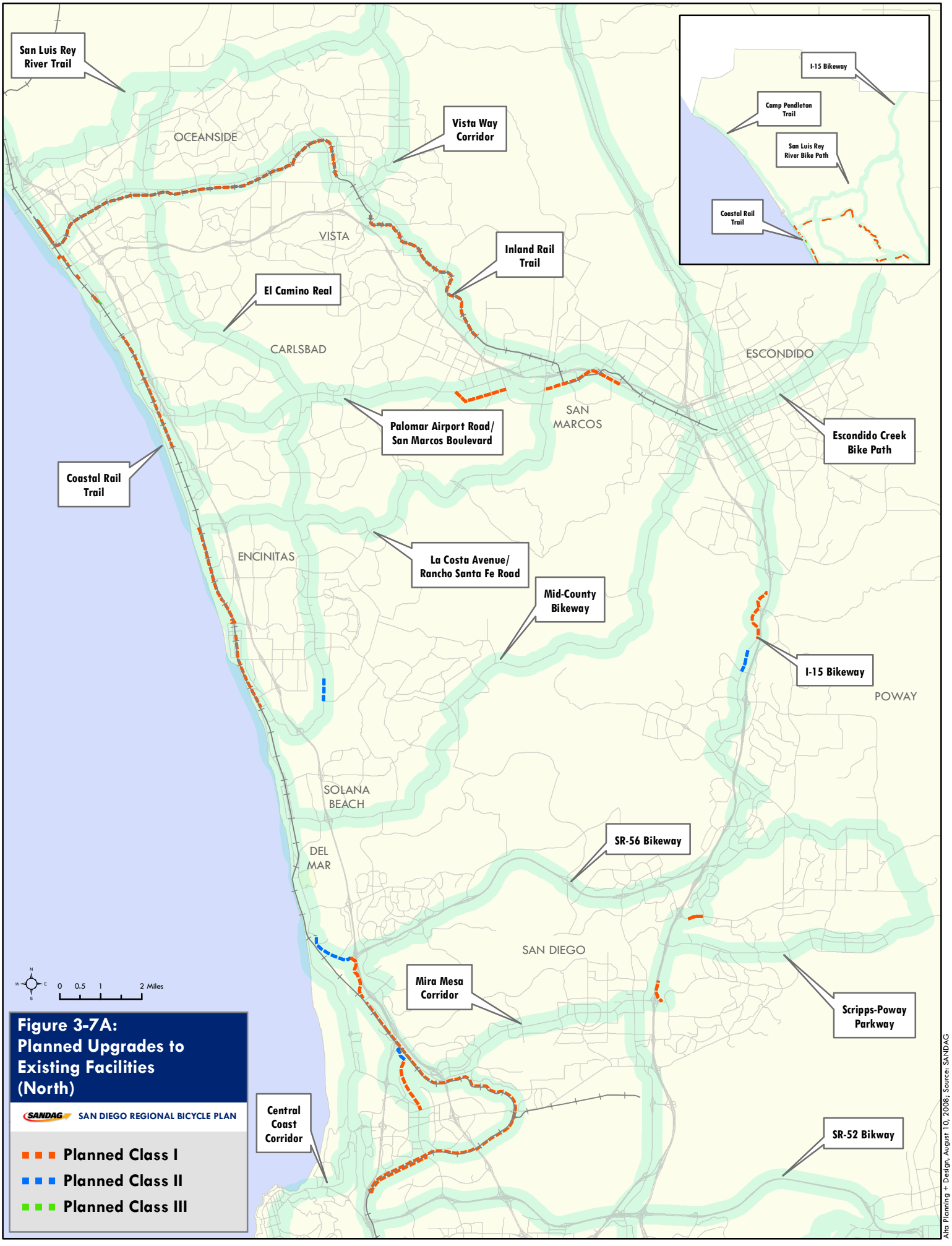

SR-52 Bikeway
SANTEE
I-8 Corridor
I-15 Bikeway
Coastal Rail Trail
SAN DIEGO
San Diego River Bikeway
EL CAJON
LA MESA
East County-Downtown San Diego Corridor
SR-125 Corridor
Central Coast Corridor
LEMON GROVE
SR-54 Bikeway
SR-94 Corridor Bikeway
UNINCORPORATED COUNTY
CORONADO
Sweetwater River Bikeway
NATIONAL CITY
Bayshore Bikeway
SR-125 Corridor
CHULA VISTA
Chula Vista Greenbelt / Otay River
SR-905 Corridor
IMPERIAL BEACH
Border Access
SAN DIEGO
Figure 3-6B:
Existing Facilities Within the Regional Bicycle Corridor (South)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Class I - Bike Path
Class II - Bike Lane
Class III - Bike Route
Freeway Shoulder
0 0.5 1 2 Miles
Alta Planning + Design, August 10, 2008; Source: SANDAG

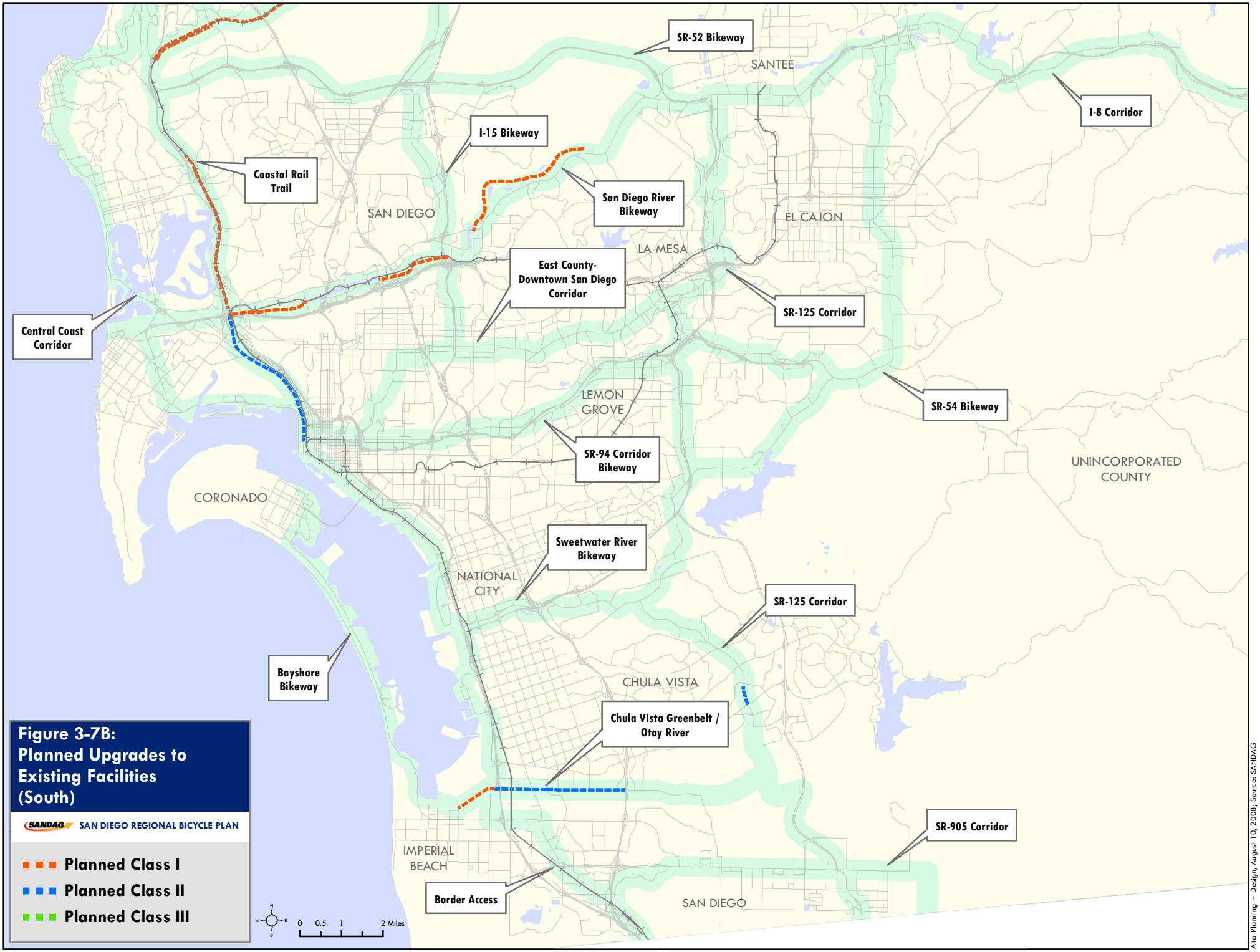
**Table 3-6. Planned Upgrades to Existing Facilities within a Quarter Mile of the Regional Bicycle Corridor Alignments**

| Corridor | Planned Upgrades | | | | | | |
|---|---|---|---|---|---|---|---|
| | Class I | | Class II | | Class III | | Total |
| | Miles | % | Miles | % | Miles | % | Miles |
| Bayshore Bikeway | - | - | - | - | - | - | - |
| Border Access Corridor | - | - | - | - | - | - | - |
| Camp Pendleton Trail | - | - | - | - | - | - | - |
| Central Coast Corridor | - | - | - | - | - | - | - |
| Chula Vista Greenbelt Otay River | - | - | 0.9 | 100% | - | - | 0.9 |
| Coastal Rail Trail | 25.6 | 77.6% | 5.6 | 17.0% | 1.8 | 5.5% | 33.0 |
| East County – Downtown San Diego Corridor | - | - | - | - | - | - | - |
| El Camino Real | - | - | 0.5 | 100% | - | - | 0.5 |
| Escondido Creek Bikeway | - | - | - | - | - | - | - |
| I-8 Corridor | - | - | - | - | - | - | - |
| I-15 Bikeway | 2.4 | 82.8% | 0.5 | 17.2% | - | - | 2.9 |
| Inland Rail Trail | 13.3 | 100% | - | - | - | - | 13.3 |
| La Costa Avenue/ Rancho Santa Fe Road | 2.8 | 100% | - | - | - | - | 2.8 |
| Mid-County Bikeway | - | - | - | - | - | - | - |
| Mira Mesa Corridor | 2.0 | 100% | - | - | - | - | 2.0 |
| Palomar Airport Road/ San Marcos Boulevard | 5.0 | 100% | - | - | - | - | 5.0 |
| San Diego River Bikeway | 7.4 | 100% | - | - | - | - | 7.4 |
| San Luis Rey River Trail | - | - | - | - | - | - | - |
| Scripps Poway Parkway | - | - | - | - | - | - | - |
| SR-52 Bikeway | 8.5 | 100% | - | - | - | - | 8.5 |
| SR-54 Bikeway | - | - | - | - | - | - | - |
| SR-56 Bikeway | - | - | - | - | - | - | - |
| SR-94 Corridor Bikeway | - | - | - | - | - | - | - |
| SR-125 Corridor | - | - | 0.5 | 100% | - | - | 0.5 |
| SR-905 Corridor | - | - | - | - | - | - | - |
| Sweetwater River Bikeway | - | - | - | - | - | - | - |
| Vista Way Corridor | - | - | - | - | - | - | - |
| **TOTALS 67.0** | | **87.2%** | **8.0** | **10.4%** | **1.8** | **2.3%** | **76.8** |

*Source: Alta Planning + Design, August, 2008*

**Note:** The planned upgrades described in this table include an upgrade to an existing facility or a plan for a facility parallel to an existing facility.


San Luis Rey River Trail
OCEANSIDE
Vista Way Corridor
VISTA
Inland Rail Trail
El Camino Real
CARLSBAD
ESCONDIDO
SAN MARCOS
Palomar Airport Road/ San Marcos Boulevard
Escondido Creek Bike Path
Coastal Rail Trail
ENCINITAS
La Costa Avenue/ Rancho Santa Fe Road
Mid-County Bikeway
I-15 Bikeway
POWAY
SOLANA BEACH
DEL MAR
SR-56 Bikeway
SAN DIEGO
Mira Mesa Corridor
Scripps-Poway Parkway
Central Coast Corridor
SR-52 Bikway
I-15 Bikeway
Camp Pendleton Trail
San Luis Rey River Bike Path
Coastal Rail Trail
0 0.5 1 2 Miles
Figure 3-7A: Planned Upgrades to Existing Facilities (North)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Planned Class I
Planned Class II
Planned Class III
Alta Planning + Design, August 10, 2008; Source: SANDAG


SR-52 Bikeway
SANTEE
I-8 Corridor
I-15 Bikeway
Coastal Rail Trail
San Diego River Bikeway
SAN DIEGO
EL CAJON
LA MESA
East County-Downtown San Diego Corridor
SR-125 Corridor
Central Coast Corridor
LEMON GROVE
SR-54 Bikeway
SR-94 Corridor Bikeway
UNINCORPORATED COUNTY
CORONADO
Sweetwater River Bikeway
NATIONAL CITY
SR-125 Corridor
Bayshore Bikeway
CHULA VISTA
Chula Vista Greenbelt / Otay River
SR-905 Corridor
IMPERIAL BEACH
Border Access
SAN DIEGO
Figure 3-7B: Planned Upgrades to Existing Facilities (South)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Planned Class I
Planned Class II
Planned Class III
0 0.5 1 2 Miles
Alta Planning + Design, August 10, 2008; Source: SANDAG

## 3.5 Bicycle Network Quality Submodel

As discussed in Chapter 2, spatial modeling was employed to assign unique values to locations across the region reflecting multiple input variables. In the case of the bicycle network quality submodel, input variables included factors that influence the overall effectiveness of the transportation system in serving a bicycle trip. Such variables include presence of a bicycle facility; mixed land uses, which would typically shorten trip lengths and increase the likelihood of making a non-motorized trip; and transit access, which serves to extend the reach of a bicyclist. The bicycle network quality model therefore reflects the relative likelihood of various locations across the region to accommodate a bicycle trip. **Table 3-7** displays the ranking and weighting assigned to the bicycle network quality input variables.

**Table 3-7. Bicycle Network Quality Model Input Variables**

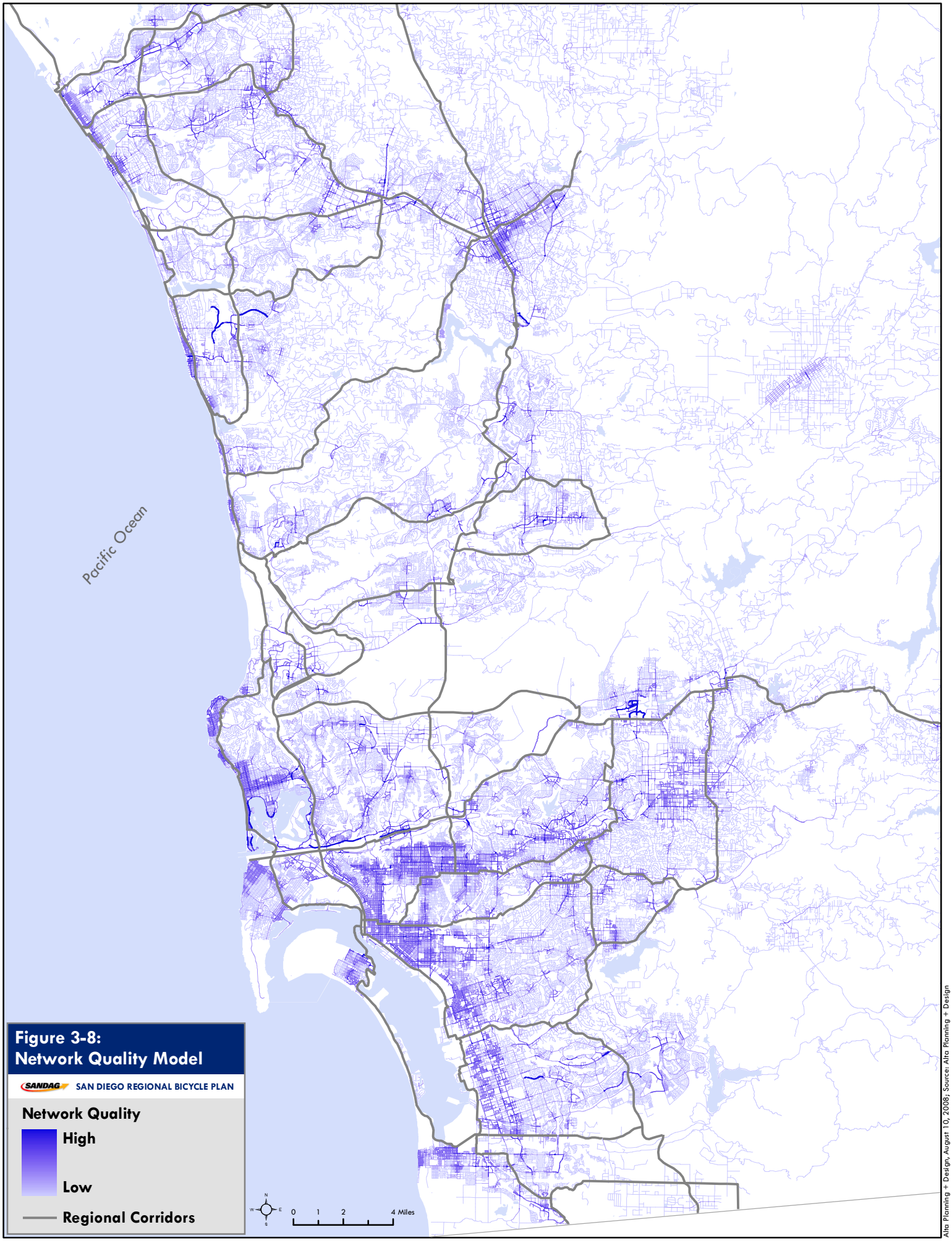
| Network Quality Factors | Weights | Multiplier | Score |
|---|---|---|---|
| Bicycle Facilities | | | |
| Class I | 2 | 4 | 8 |
| Class II | 1 | | 4 |
| Class III, Freeway Shoulders, or Other Recommended | 0.5 | | 2 |
| Mixed Use Adjacency | | | |
| Presence of housing near commercial land uses | 2 | 2 | 4 |
| Presence of housing near employment | 1 | | 2 |
| Transit Proximity | | | |
| Within 1 mile of transit stop with frequency ≤ 15 minutes | 2 | 2 | 4 |
| Within 1 miles of transit stop with frequency between 15 and 30 minutes | 1 | | 2 |

*Source: Alta Planning + Design, August, 2008*

**Figure 3-8** displays the results of the bicycle network quality submodel. This submodel will be combined with the other three submodels (attractors, generators, and barriers) presented in Chapter 2 to create a final composite map of bicycle priority/need. Areas of relatively higher bicycle network quality occur in the more urbanized portions of local communities such as Downtown San Diego and the various town cores of many of the coastal and inland communities. High quality networks also appear to occur in locations with dense roadway networks.

## 3.6 Bicycle Support Facilities

Bicycle support facilities refer to end-of-trip facilities or services designed to accommodate or promote the use of bicycles. Bicycle parking facilities, showers, lockers, and changing rooms are a critical need for bicyclists at the non-home end of the trip.


Pacific Ocean
Figure 3-8:
Network Quality Model
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Network Quality
High
Low
Regional Corridors
0 1 2 4 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

### BICYCLE PARKING

Bicycle parking is an important component in planning bicycle facilities and encouraging people to use their bicycles for everyday transportation. Bicycles are one of the top stolen items in many communities, with components often being stolen even when the bicycle frame is securely locked to a rack. Because today's bicycles are often high-cost and valuable items, many people will not use a bicycle unless they are sure that there is secure parking available at their destinations. In California, bicycle parking facilities are classified as either Class I or Class II facilities. Many cyclists may use (and even prefer) less formal bicycle parking methods, such as simply bringing their bicycle inside their building and storing it in their office. Cyclists with higher-end bicycles (perhaps costing several thousand dollars) may be reluctant to risk their bicycle with insecure parking, and for them the ability to bring a bicycle inside a building may be a deciding factor when they are considering whether or not to bicycle to work or to a store. There are two basic types of bicycle parking: bike lockers and bike racks. Bike lockers accommodate parking for more than two hours, and offer security and protection from weather. Bike racks 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.

SANDAG maintains an inventory of bike lockers across the region as displayed in **Figure 3-9**. Based upon responses to a request for bicycle support data, none of the 19 local jurisdictions in San Diego maintain inventories of parking facilities within their respective cities.

### OTHER SUPPORT FACILITIES

Showers, lockers, and changing rooms provide important support for commuting bicyclists. For those bicyclists needing to dress more formally, commute long distances, or bicycle during wet or hot weather, the ability to shower and change clothing can be as important as bicycle storage. Such facilities are most often provided by building owners or tenants for use by those who work in the building. Cyclists are encouraged to ride to work if employers offer bicycle support facilities which offer a safe place to store bicycles, changing facilities and showers. Local jurisdictions' responses to a request for data related to bicycle support facilities indicated that none of the 19 jurisdictions are currently tracking this information. It should be noted that many public outreach survey respondents registered complaints about the lack of support facilities and bicycle parking throughout the region.

## 3.7 Trails

Trail systems provide potential for expanded bicycling opportunities. Only 3 jurisdictions across the region maintain digital trail system information, as depicted in **Figure 3-10**. These jurisdictions are the Unincorporated County, the City of Carlsbad and the City of San Marcos. There are currently several major regional trail planning efforts underway in the county including the Coast to Crest Trail and the Sea to Sea Trail. The San Diego region is also home to several active trail advocacy groups such as the San Diego Mountain Biking Association, the San Diego Trails Council and the Bicycle Section of the San Diego Sierra Club.

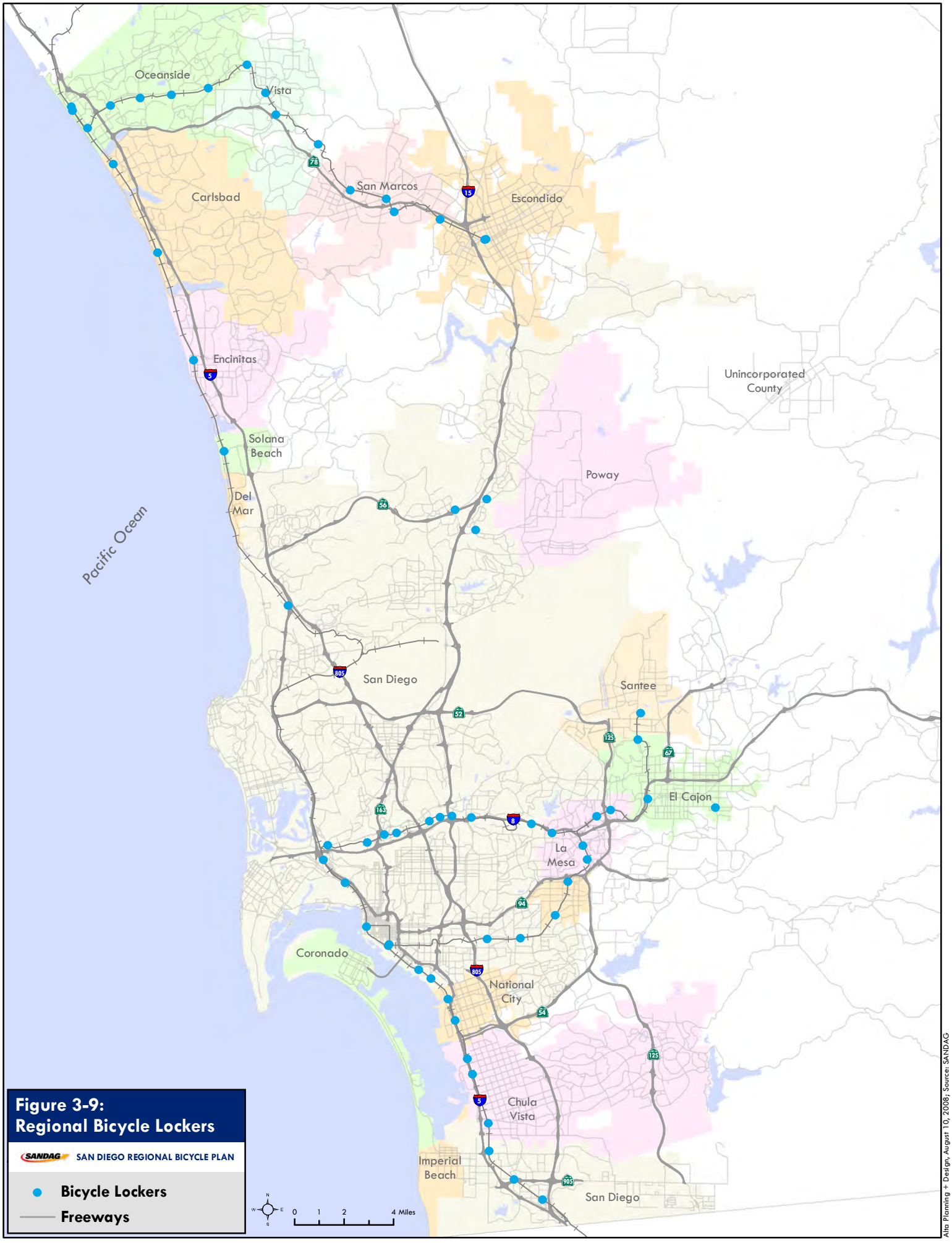



**Figure 3-9:**
**Regional Bicycle Lockers**

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

- Bicycle Lockers
- Freeways

Alta Planning + Design, August 10, 2008; Source: SANDAG

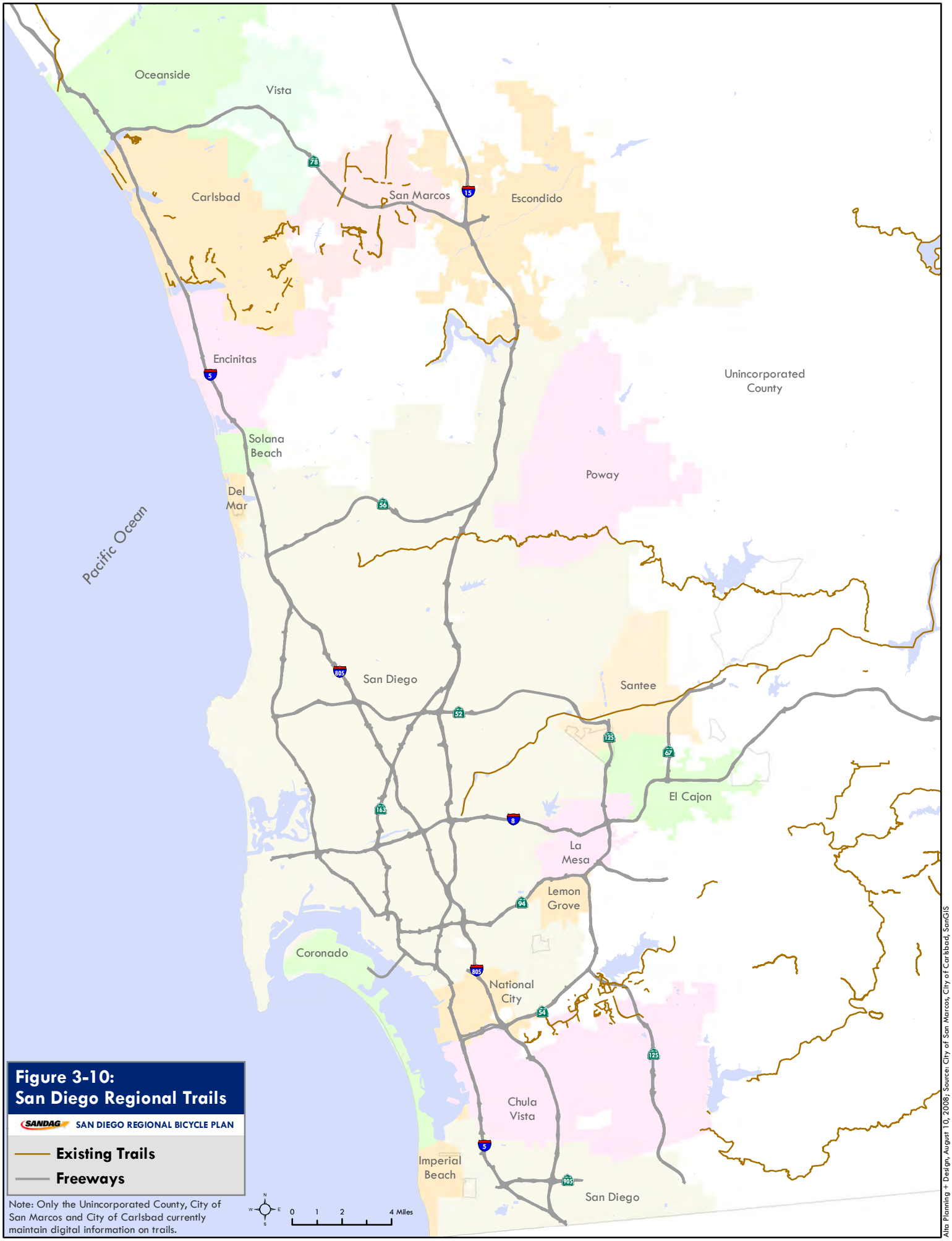



**Figure 3-10:**
**San Diego Regional Trails**

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

**Existing Trails**

**Freeways**

Note: Only the Unincorporated County, City of San Marcos and City of Carlsbad currently maintain digital information on trails.

Alta Planning + Design, August 10, 2008; Source: City of San Marcos, City of Carlsbad, SanGIS

# 4. EXISTING BICYCLE POLICIES AND PROGRAMS

This chapter summarizes local, regional, and state policies and programs that are relevant to bicycling in the San Diego region. Reviewing existing policies provides a framework for developing the San Diego Regional Bicycle Plan's goals, policies, and objectives. Examining existing programs reveals opportunities to improve the balance between bicycle infrastructure development and education, encouragement, and enforcement programs. This chapter also summarizes survey responses to questions about bicycle programs and program deficiencies. The results highlight priorities for regional program development and coordination.

## 4.1 Bicycle Related Plans and Policies

This section outlines the current planning and policy context for the San Diego Regional Bicycle Plan, including an overview of relevant regional, state and local policies and plans.

### *REGIONAL POLICIES*

The Regional Bicycle Plan will serve as a complementary document to San Diego's Regional Comprehensive Plan (RCP) and the 2030 RTP. The RCP provides a regional vision and strategic planning framework to guide local and regional decision-making. The RCP seeks to balance regional population, housing, and employment growth with habitat preservation, agriculture, open space, and infrastructure needs. A part of the vision espoused by the RCP is a transportation system that makes walking, biking and using transit more convenient and simpler. A related objective stated in the RCP is to create more bicycle-friendly and walkable communities consistent with good urban design principles. The RCP also recommends enhancing pedestrian and bicycle connections to transit as one action toward improving the regional transportation system. At the core of the RCP is the identification of Smart Growth Opportunity Areas across the region, which provide a recommended policy framework for land development densification focused on the regional transit system. Many of the currently adopted regional bicycle corridors also serve existing and planned Smart Growth Opportunity Areas.

The RTP describes existing regional bicycle facilities, including regional corridors, and conveys the significance of developing the Regional Bicycle Plan to enhance the existing bicycle system. According to the RTP, the goal of the Regional Bicycle Plan is to promote the development of a bicycle system that is integrated, connects to activity and transit centers and accommodates both recreational and utilitarian bicyclists. The RTP delineates the following tasks to be accomplished by the Regional Bicycle Plan:

Define a network of regionally significant bicycle routes, facilities, and necessary support programs;

Identify gaps in the network and recommend specific improvements needed to fill the gaps;

Develop cost estimates to complete construction of the regional network;

Develop a funding strategy to build and maintain the regional bike network;

Provide a design manual focusing on bicycle-friendly designs for all streets and roadways through new technologies, standards, guidelines, and innovative treatments on all new roadways and multiuse paths; and

> Provide policy direction and identify programs to assist local jurisdictions in improving safety, education, and awareness about bicycle travel.
>
> *– 2030 San Diego Regional Transportation Plan, 2007*

A key goal of the Regional Bicycle Plan as defined in the RTP, therefore, is to elevate the status of bicycling as a viable mode of transportation, as well as to provide a framework for the planning and implementation of a significant regional bicycle system.

### STATE POLICIES

The California Department of Transportation (Caltrans) guides regional and local bicycle planning by establishing statewide planning, policy, and design standards. Local jurisdictions must adhere to specific guidelines in order to qualify for Local Assistance Program funding. For example, Bicycle Transportation Account funding is available to cities and counties that adopt bicycle master plans containing content specified by Caltrans. State guidelines, manuals, and policies that address bicycle transportation include:

Project Development Procedures Manual, Chapter 31: Non-motorized Transportation Facilities (1999);

Deputy Directive Number 64: Accommodating Non-motorized Travel (2001);

State Assembly Concurrent Resolution No. 211: Relative to Integrating Walking and Biking into Transportation Infrastructure (2002);

Local Assistance Program Guidelines, Chapter 21: Bicycle Transportation Account (2004);

Highway Design Manual, Chapter 1000: Bikeway Planning and Design (2006); and

California Manual on Uniform Traffic Control Devices (2006).

The United States Department of Transportation (USDOT) also advises on local and regional planning efforts. The USDOT design guidance publication *Accommodating Bicycle and Pedestrian Travel: a Recommended Approach* is a policy statement that seeks to promote the integration of bicycling and walking into transportation infrastructure.

### LOCAL POLICIES

Local plans and policies related to land-use, circulation and bicycle facilities impact the feasibility of developing a unified regional bicycle system. Multiple cities and the County of San Diego have developed long-range planning documents such as bicycle master plans, trails plans, and general plan circulation elements to delineate goals for developing bicycle infrastructure and the supporting facilities and programs necessary to make bicycling a viable choice for transportation and recreation. As **Table 4-1** shows, 12 of the region's 19 jurisdictions have plans that articulate a local vision for bicycle infrastructure and program development. Existing local policies were reviewed to extrapolate local jurisdictions' priorities and to ensure that the Regional Bicycle Plan provides structure for and enhances local efforts. Although only about half of the region's jurisdictions have an adopted bicycle master plan, interest in bicycle master planning is increasing. In 2008 five jurisdictions, including the City of San Diego, were updating or developing their first bicycle master plan.

## 4.2 Bicycle Related Programs

This section summarizes education, encouragement and enforcement programs that compliment infrastructure by supporting bicycle use. Education programs ensure that bicyclists, pedestrians, and motorists understand how to travel safely in the roadway environment and are cognizant of the regulations that govern these modes of transportation. Encouragement programs promote non-motorized transportation through a variety of fun and innovative strategies, such as special events and commuter incentive programs. Enforcement programs target unsafe bicyclist and motorist behaviors and enforce laws that reduce bicycle/motor vehicle collisions and conflicts. Enforcement fosters mutual respect between roadway users and improves safety. These programs generally require coordination between law enforcement, transportation agencies, and bicycling organizations. Education, enforcement and encouragement programs increase public awareness of bicycling as a viable means of transportation and enhance public support for policies that promote biking.

**Table 4-1. Local Jurisdictions' Plans**

| Jurisdiction | Bicycle Master Plan | Bicycling Policies in Circulation Element | Trails Plan |
|---|---|---|---|
| Carlsbad | 2007 | | |
| Chula Vista | 2005 | | |
| Coronado | | | |
| Del Mar | | | |
| El Cajon | | | |
| Encinitas | 2005 | 2003 | 2002 |
| Escondido | Developing New Plan | | |
| Imperial Beach | | 1994 | |
| La Mesa | | | |
| Lemon Grove | 2006 | | |
| National City | 2007 – DRAFT | 1996 | |
| Oceanside | Updating Plan | | 1996 (sub-element of CE) |
| Poway | Developing New Plan | | |
| San Diego | 2002 | 2008 | |
| San Marcos | 2005 | | |
| Santee | Developing New Plan | 2003 | 2003 |
| Solana Beach | | | |
| Vista | 2002 | 2002 | |
| Unincorporated | 2003 | | |

*Source: Alta Planning + Design, August, 2008*

### *REGIONAL PROGRAMS*

SANDAG provides and sponsors a variety of bicycling-related programs in the San Diego region, primarily through RideLink, a program administered by SANDAG that offers transportation assistance to the San Diego region. RideLink provides the public with information and assistance on commuting by alternative modes of transportation, such as transit, carpool/vanpool, and bicycle. The RideLink website contains the following bicycling information:

Bicycle safety guidelines

Bike security information

Transporting bicycles on transit

A directory of regional bike shops

A listing of bicycle advocacy groups and clubs

RideLink's bike locker coordinator manages public access to mechanical and electronic bike lockers located at 47 transit stations and Park and Ride lots throughout San Diego County. Bicyclists are able to reserve lockers in advance of traveling by contacting RideLink's bike locker coordinator.

SANDAG RideLink's encouragement programs include the Diamond Awards and Bike to Work Day. The Diamond Awards recognize businesses, organizations, and public or private agencies that facilitate alternative transportation choices, such as bicycling, for employees. SANDAG also sponsors Bike to Work Day, an annual celebration in which thousands of people commute to work with the support of 'pit stops' hosted by local area employers and organizations.

Updated by SANDAG in 2007, the San Diego Region Bike Map encourages bicycle usage by providing information on bicycle facilities to bicyclists and potential bicyclists. As described in Chapter 3, the map shows existing Class I, II and III facilities throughout San Diego County, as well as "Other Suggested Routes" that are not designated facilities, but are recommended routes for bicycling.

SANDAG has a significant impact on the region's bicycle infrastructure through administration of Transportation Development Act (TDA) and *TransNet*, a regional half-cent sales tax for transportation projects. Over the last twenty years the regional bicycle network has expanded with the use of over $20 million in *TransNet* funds and in 2008 *TransNet* expenditures for bicycle and pedestrian projects will increase to $5 million per year. SANDAG's investment in bicycle facilities could be enhanced by expanding RideLink's programs and encouraging local jurisdictions to provide programs that educate, encourage, and enforce traffic laws.

### *STATE PROGRAMS*

Caltrans Bicycle Facilities Unit operates a bicycle program aimed at enhancing bicycle safety and making bicycling a more convenient mode of transportation. The unit works in conjunction with the public and federal, state, and local agencies to improve bicycle transportation through policy, planning, funding and technical assistance. The unit provides support to Caltrans' California Bicycle Advisory Committee (CBAC), a thirteen member committee who advises Caltrans on bicycle issues. For each California district, a Caltrans bicycle coordinator works with the district's agencies and organizations to improve bicycling in the region.

The State of California also plays an integral role in bicycle planning by funding local and regional projects. The Bicycle Transportation Account (BTA) awards millions of matching fund dollars to cities and counties for bicycle improvement projects. Caltrans also manages two programs to fund local Safe Routes to School projects, the state-legislated Program (SR2S) and the federally-legislated Program (SRTS). SR2S refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, incentives, increased law enforcement, and engineering measures. Safe Routes to School programs typically involve partnerships between municipalities, school districts, community and parent volunteers, and law enforcement agencies. Numerous San Diego region communities have utilized Caltrans' programs to develop SR2S projects, including San Diego's City Heights, East County neighborhoods, and Chula Vista.

## LOCAL PROGRAMS

Jurisdictions' bicycle master plans and public websites were reviewed for information related to local bicycle programs. A request was also sent to local governments for information pertaining to local plans and programs. The inventory suggests that locally-initiated bicycle education, encouragement and enhancement programs are somewhat limited. **Table 4-2** summarizes the status of existing locally-initiated programs in the region.

Programs that focus on enforcing traffic laws and educating school-age children about bicycle safety are most common. Police forces at the cities of San Diego, Escondido and Carlsbad include bicycle patrol units. Bicycle patrol units undergo special training in bicycle safety and bicycle-related traffic laws and are therefore especially equipped to enforce laws pertaining to bicycling. Bicycle patrol officers also help educate cyclists and motorists through enforcement. County Sheriff's Department offices throughout the county hold periodic bicycle rodeos to teach children riding techniques and bicycle traffic laws. The City of El Cajon offers a bicycle registration service to residents. Bicycle licensing costs three dollars and helps encourage bicycling through increased security for bicycle owners.

**Table 4-2. Local Bicycle-Related Programs**

| Jurisdiction | Education Programs | Encouragement Programs | Enforcement Programs |
|---|---|---|---|
| Carlsbad | | | ✓ |
| Chula Vista | ✓ | ✓ | ✓ |
| Coronado | | | |
| Del Mar | | | |
| El Cajon | | ✓ | |
| Encinitas | | | |
| Escondido | | | ✓ |
| Imperial Beach | ✓ | | |
| La Mesa | | | |
| Lemon Grove | ✓ | | ✓ |
| National City | | | |
| Oceanside | ✓ | ✓ | ✓ |
| Poway | | | |
| City of San Diego | ✓ | ✓ | ✓ |
| San Marcos | | | |
| Santee | | | |
| Solana Beach | | | |
| Vista | | | |
| Unincorporated | | | |

*Source: Alta Planning + Design, August, 2008*

In terms of education, the City of San Diego airs public service announcements, provides free educational materials and works with non-profit organizations to provide bicycle safety and technique classes at local elementary schools and other education centers. San Diego also provides online safety information as do other cities such as Imperial Beach. In 2007 the City of Chula Vista initiated a large-scale SR2S program which addresses education, encouragement and enforcement surrounding area schools.

The City of Oceanside is the only local jurisdiction that has a bicycle and pedestrian coordinator. The bicycle and pedestrian coordinator represents the City on the Oceanside Bicycle Committee, which advises the City on issues related to bicycling. The coordinator also organizes school bicycle safety programs and public awareness activities.

### NON-PROFIT ORGANIZATIONS' PROGRAMS

Non-profit organizations in the San Diego region play a vital role in bicycle related education and encouragement. Non-profit organizations spearhead bicycle related programs and collaborate with public agencies to provide programs, such as SANDAG-sponsored Bike to Work Day. The San Diego County Bicycle Coalition offers adult and youth bicycling classes taught by League of American Bicyclists Certified Instructors. Ongoing bike rides, such as Cycling Sundays at Petco Park, and special event rides, such as Bike the Bay are important local tools to encourage and promote biking. In the San Diego region there are also numerous bike clubs and advocacy groups that encourage and raise awareness about bicycling, including:

San Diego County Bicycle Coalition

San Diego Bicycle Club

San Diego Tandem Club

Bicycle Section of the Sierra Club

San Diego Mountain Biking Association

San Diego Randonneurs

North County Cycle Club

San Diego Cyclo-Vets

California Bicycle Coalition

## 4.3 Bicycle Program Deficiencies Survey Results

This section summarizes survey responses to bicycle program related questions. Respondents were asked about their participation in existing regional and local bicycle programs, their satisfaction with existing programs, and their interest in developing future programs. The results are a synthesis of the 1,519 surveys collected as of August 3, 2008 through the Regional Bicycle Plan project website online survey and the 58 paper surveys collected during the public workshops held on June 24 and June 25, 2008. The summary of responses reveal opportunities to expand bicycle programming in the region by highlighting program deficiencies and identifying successful programs.

**Table 4-3** indicates that Bike to Work Day is an exceptionally popular encouragement program. 92.6 percent of survey respondents have participated in the annual event which is a far greater rate of participation than all of the other listed programs combined. The next most popular program among survey respondents was the Elementary Safe Routes to School program, with about 16 percent having participated.

As Table 4-3 shows, 13.5 percent of respondents listed events, classes and activities they have participated in that were not presented as an answer choice. The most common "other" response was the monthly Critical Mass ride. Other reoccurring write-in answers were San Diego Velodrome classes and various organized group bike rides.

**Table 4-3. Have you or your family participated in any of the following events or classes?[1]**

| Program | Response Percent |
|---|---|
| Bike to Work Day | 92.6 %[2] |
| Elementary School Bicycle Safety Education Program | 15.9 % |
| Other *(please specify)* | 13.5 % |
| San Diego Bicycle Coalition Classes | 11.1 % |
| Pedal to the Park | 7.8 % |
| Cycling Sundays at Petco Park | 4.0 % |
| Safe Routes to School Event | 2.3 % |

*Source: Alta Planning + Design, August, 2008*

**Table 4-4** displays responses to the survey question asking about San Diego community members' usage of SANDAG bicycling resources. Respondents indicated that they use or have used the San Diego Region Bike Map significantly more than the other resources provided through RideLink, although 47.6 percent of respondents also refer to the RideLink website for information about multimodal transportation options. When asked about their level of satisfaction with SANDAG resources, the majority responded that they are satisfied or highly satisfied with the existing programs, however many also requested more bicycling resources be made available to the public.

[1] *Respondents were permitted to select multiple answers. As a result, the number of responses does not equal 100 percent.*

[2] *The most common response to each question choice is indicated with grey shading.*

**Table 4-4. Have you used any of the following bicycling resources SANDAG makes available?** [3]

| Resource | Percent of Respondents |
|---|---|
| San Diego Region Bike Map | 94.8 % |
| RideLink's Bikes on Transit Information | 26.3 % |
| RideLink's Bus, Rail, and Carsharing Information | 21.3 % |
| RideLink's Safety Guidelines | 12.7 % |
| RideLInk's Bicycle Advocacy Groups and Clubs Listing | 12.0 % |
| RideLink's Regional Bike Shop Directory | 8.5 % |
| RideLink's Bike Security Information | 4.6 % |
| Other *(please specify)* | 3.4 % |

*Source: Alta Planning + Design, August, 2008*

**Table 4-5** summarizes respondents' interest in developing education and encouragement program types. The table suggests that individuals are highly interested in expanding most program types. Responses indicate that public awareness campaigns and user-friendly bicycle maps and guides are the most desired program types, with only a few respondents not at all interested in program development. Interest in maps and guides is consistent with the results presented in Table 4-4. Approximately 95 percent of respondents use the San Diego Region Bicycle Map and 90 percent are interested or highly interested in additional maps and guides. Public awareness campaigns focused on bicyclists' rights, responsibilities, and the health and environmental benefits of bicycling are deficient regionally compared to education and enforcement related programs. Respondents' strong interest in this program type makes a case for increasing awareness related programs.

**Table 4-5. Please rate your level of interest in developing or expanding the following bicycle programs.** [4]

| Program Type | 1 Highly Interested | 2 | 3 | 4 Not at all Interested |
|---|---|---|---|---|
| User-friendly Bicycle Maps and Guides | 63.9 | 26.8 | 6.3 | 3.0 |
| Public Awareness Campaign Focused on Bicyclists Rights, Responsibilities, and the Health and Environmental Benefits of Bicycling | 63.2 | 26.4 | 6.5 | 3.9 |
| One-stop Bicycle Information Website | 58.1 | 28.4 | 10.3 | 3.2 |
| Route Planning for Bicyclists (511 service) | 50.0 | 29.5 | 14.1 | 6.4 |
| Education Programs for Motorists | 48.0 | 27.9 | 14.6 | 9.5 |
| Education Programs for Elementary, Middle/Junior, and High School Students | 45.1 | 34.0 | 13.8 | 7.1 |
| Education Programs for Law Enforcement Personnel | 37.8 | 32.4 | 19.0 | 10.9 |
| Education Programs for Adult Cyclists | 33.7 | 36.1 | 21.2 | 8.9 |
| Community Support Encouragement Programs, such as the Diamond Awards Program | 32.8 | 33.2 | 23.6 | 10.3 |

*Source: Alta Planning + Design, August, 2008*

[3] *Respondents were permitted to select multiple answers. As a result, the number of responses does not equal 100 percent.*

[4] *Respondents were permitted to select multiple answers. As a result, the number of responses does not equal 100 percent.*

# 5. BICYCLE TRAVEL DEMAND

Understanding why people ride bicycles, how the type and quality of facility influences these trips, and how adjacent land uses, density, connectivity, roadway traffic volumes, and other features impact bicycling, are all critical to developing a unified regional bicycle system. Identifying how many and where people bicycle is important to prioritizing where facilities should be improved or constructed, to developing a baseline against which to measure success, and is vital information for pursuing funding. This chapter attempts to understand demand and system usage through three methods: bicycle demand modeling, summarizing count data from various sources, and asking people about their biking behavior through the bicycle survey described in Chapter 2.

## 5.1 Bicycle Trip Generator Submodel

The bicycle trip generator model reflects locations across the region with a greater likelihood of generating a bicycle trip, such as areas with high population or employment densities, or high concentrations of sub-populations known to depend on bicycling, such as bicycle commuters or zero-vehicle households.

**Figure 5-1** displays the results of the bicycle generator submodel. Areas of noteworthy concentration of high bicycle generators include University Town Center (UTC), Mid-City San Diego, and Downtown San Diego.

## 5.2 Bicycle Trip Attractor Submodel

The bicycle trip attractor submodel input variables reflect land use types with relatively higher propensity to attract a bicycle trip. The attractor model assigns higher model values to areas closer to the respective bicycle generating land use.

**Figure 5-2** displays the results of the bicycle attractor submodel. Areas of noteworthy concentration of high bicycle trip attraction include Downtown San Diego, Mission Bay, and coastal areas running the entire length of the county.

**Table 5-1. Bicycle Generator Input Variables**

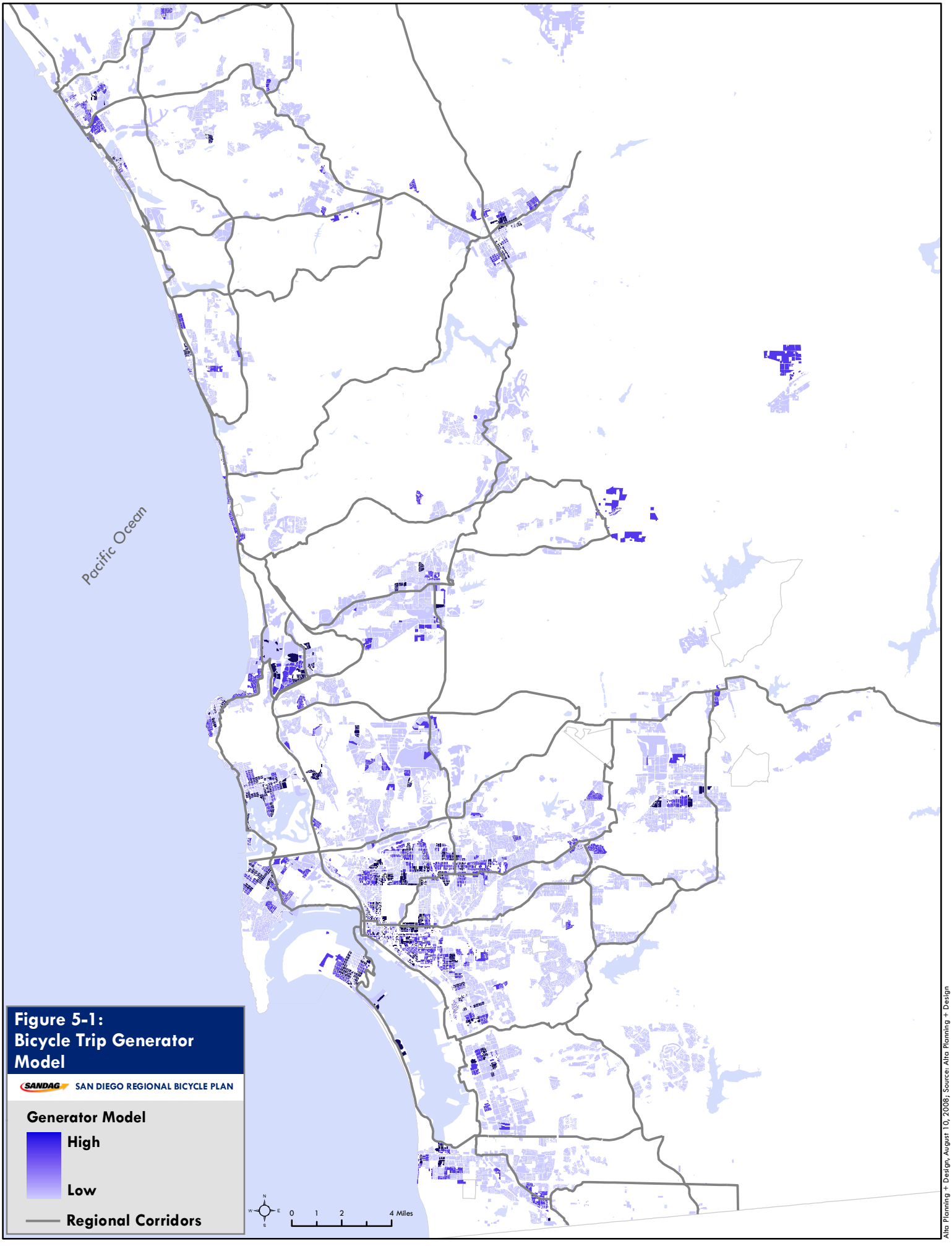
| Bicycling Generators | Weights | Multiplier | Score |
|---|---|---|---|
| Population Density (persons per residential acre) | | | |
| > 40 | 3 | 2 | 6 |
| 25 - 40 | 2 | | 4 |
| < 25 | 1 | | 2 |
| Employment Density (employees per non-residential acre) | | | |
| > 15 | 3 | 2 | 6 |
| 5 - 15 | 2 | | 4 |
| < 5 | 1 | | 2 |
| Zero-Vehicle Households (percent of households) | | | |
| ≥ 25 | 3 | 2 | 6 |
| 15 – 24.99 | 2 | | 4 |
| 5 – 14.99 | 1 | | 2 |
| Bicycling Commuters (percent of commuters) | | | |
| ≥ 4 | 3 | 2 | 6 |
| 2 - 3.99 | 2 | | 4 |
| 1 – 1.99 | 1 | | 2 |
| Pedestrian and Transit Commuters (percent of commuters) | | | |
| ≥ 25 | 3 | 2 | 6 |
| 15 – 24.99 | 2 | | 4 |
| 5 – 14.99 | 1 | | 2 |

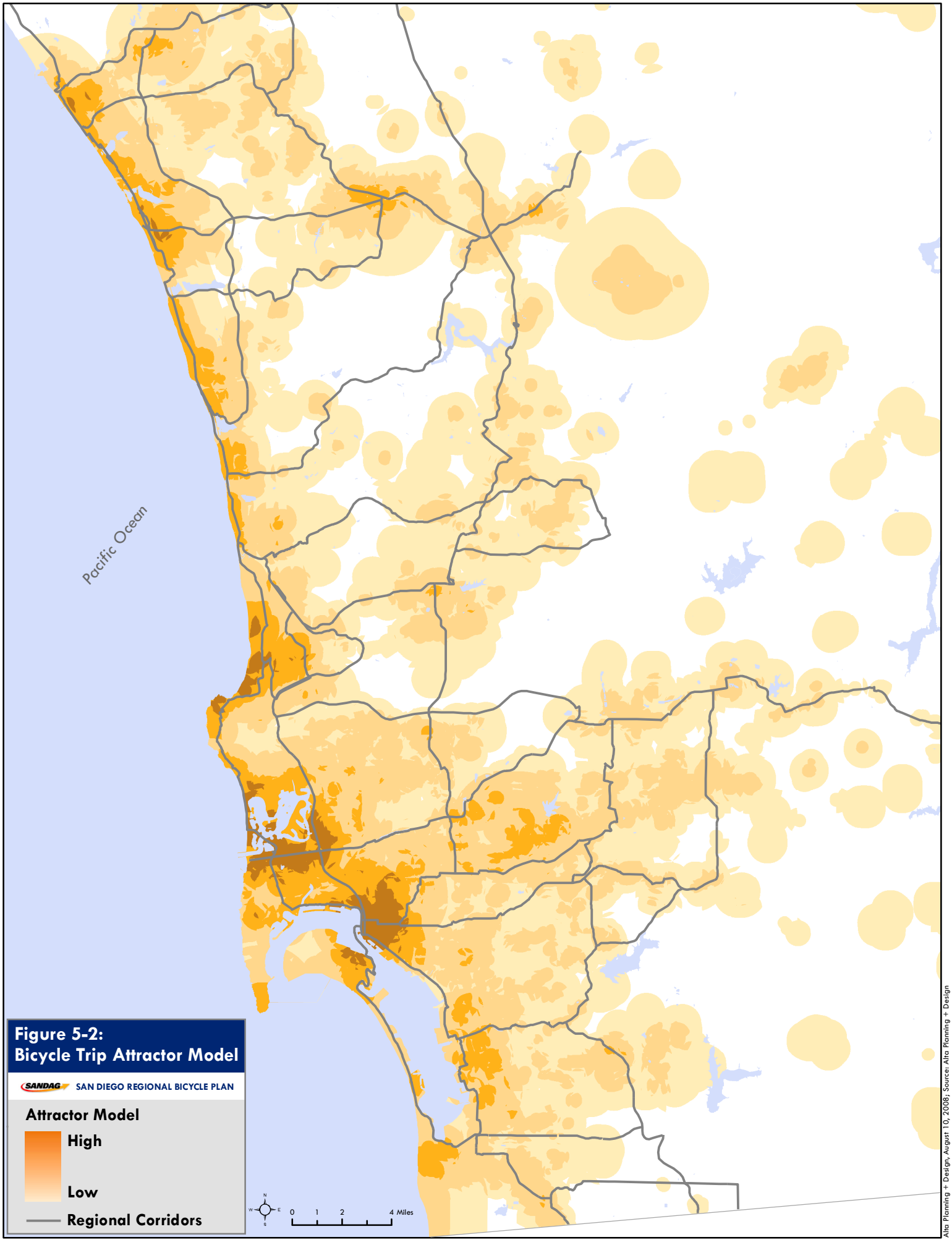
*Source: Alta Planning + Design, August, 2008*

**Table 5-2. Bicycle Attractor Input Variables**

| Bicycling Attractor Land Uses | Weights | Within ½ mile | Between ½ and 1 mile | Between 1 and 1 ½ mile | Between 1 ½ and 2 miles |
|---|---|---|---|---|---|
| Major Universities (SDSU, UCSD, CSUSM) | 4 | 6 | 4 | 3 | 2 |
| Beaches and Coastal Parks | 4 | 6 | 4 | 3 | 2 |
| Tourist Attractions | 4 | 6 | 4 | 3 | 2 |
| Non-Coastal Parks & Recreation | 3 | 4.5 | 3 | 2.25 | 1.5 |
| Retail Facilities | 2 | 3 | 2 | 1.5 | 1 |
| Community Colleges | 2 | 3 | 2 | 1.5 | 1 |
| High Schools & Middle Schools | 1 | 1.5 | 1 | 0.75 | 0.5 |
| Neighborhood Civic Facilities | 1 | 1.5 | 1 | 0.75 | 0.5 |

*Source: Alta Planning + Design, August, 2008*


Pacific Ocean
Figure 5-1:
Bicycle Trip Generator Model
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Generator Model
High
Low
Regional Corridors
0 1 2 4 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design


Pacific Ocean
Figure 5-2:
Bicycle Trip Attractor Model
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Attractor Model
High
Low
Regional Corridors
0 1 2 4 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

## 5.3 Bicycle Count Data

The lack of reliable data on bicycling is a significant hindrance to understanding bicycle usage and demand. In 2000, the Bureau of Transportation Statistics published a report summarizing the existing bicycle and pedestrian data sources and the importance, quality and usefulness of this data. According to the report, *Bicycle and Pedestrian Data: Sources, Needs & Gaps*, national data are commonly available, but state, regional and local data are not. The report notes that data quality ranges from fair to poor (Bureau of Transportation Statistics, 2000). On a state and regional level, the U.S. Census and the National Household Travel Survey (NHTS) provide the only readily available, consistent bicycle count and survey information. However, several limitations make these data sources less than ideal for estimating regional and local bicycling rates. Due to its data collection methodology, the Census often undercounts the actual number of biking trips made in a locality. The Census data only include commute trips, leaving out the significant number of people who bicycle for recreation, to conduct personal business, or to socialize. Additionally, the Census long-form, which is used to gather journey to work information, requires that respondents choose only one mode. As a result, multi-modal trips, such as biking to transit, are not counted as a biking trip (California Department of Transportation, May 2002).

The NHTS provides more useful information, as it asks each respondent to complete a travel diary where all types of trips are recorded, not just commute trips. In addition, every component of a multi-modal trip is captured. The NHTS however uses a smaller sample size than the U.S. Census, and is only useful at a national level. Recently, the NHTS has expanded its add-on program, which allows states and metropolitan planning organizations to purchase additional sample surveys for their area. As with any survey that relies on a subset of a population, sampling error may affect the accuracy of the Census and NHTS data. Both the Census Long Form (which collects the journey-to-work data) and the NHTS use samples of the population, and may under-represent or omit subgroups of the population. This is especially pertinent for bicycle commuting data, for which the mode share is usually less than 1 percent.[5]

The quantity and quality of regional and local bicycle data vary throughout the United States. State, regional and local data collection efforts are generally tailored to suit the specific needs of the community or project being evaluated (Greene-Roesel et al. 2007) [6]. The Bureau of Transportation Statistics notes that, "While a few cities and metropolitan planning organizations routinely conduct pedestrian and bicycle counts, most collect them only sporadically for specific studies or do not collect them at all"(Bureau of Transportation Statistics 2000). In California, it is common for metropolitan planning organizations or regional transportation planning agencies to collect regional travel surveys. Though these surveys generally focus on motor vehicle trips, most have a mode share component.

### *REGIONAL COUNT DATA*

There are two key bicycle count programs in the San Diego region, one carried out by Caltrans and the other by SANDAG. Both programs have traditionally collected morning and afternoon peak period bicycle counts at intersections. Morning peak periods are 6AM - 9AM while afternoon peak periods are 3PM - 6PM. Monday thru Thursday are typically used as count days. Intersection counts are performed by temporary workers, college students or interns. The Caltrans count program has collected data over the years at 185 different intersections across the County. SANDAG's count program has collected bicycle data at approximately 50 intersections. **Table 5-3** displays various characteristics of the two San Diego regional bicycle count programs.

[5] Using Journey to Work data from the U.S. Census 2000, the bicycle mode share for the United States is 0.40% and the bicycle mode share for California is 0.80%.

[6] Green-Roesal et al. (2007). "Effectiveness of a Commercially Available Automated Pedestrian Counting Device in Urban Environments: Comparison with Manual Counts." Paper presented at the Transportation Research Board 2008 Annual Meeting.

**Table 5-3. San Diego Regional Bicycle Count Programs**

| Count Program | Peak Periods | Years | Number of Intersection | Days of the Week | Turn Movements |
|---|---|---|---|---|---|
| Caltrans | 6AM – 9AM<br>3PM – 6PM | 1981, 1982 | 185 | Monday – Thursday | Y |
| SANDAG | 6AM – 9AM<br>3PM – 6PM | 1985, 1987, 1990, 1993, 1997 | 50 | Monday–Thursday | Y |

*Source: Caltrans Bicycle Count Program, 1981 & 1982; SANDAG Regional Bicycle Count Program 1985-1997*

There are approximately 40 intersections across the region where count data has been collected by the two programs and by the Seamless Travel Project (discussed in the next section) at least twice between the years from 1981 to 2007. This allows for preliminary assessments of changes in bicycle volume. **Appendix C** presents AM peak period bicycle count volume data from the three count efforts, as well as percent change between each of the data collection timeframes. **Table 5-4** summarizes the number of intersections showing growth in AM peak period bicycle volumes between each of the data collection timeframes. Table 5-4 shows that before 1990, a majority of counted intersections experienced growth in AM peak period bicycle volumes, while after 1990, a majority of the counted intersections showed declines in AM peak period bicycle volumes. Overall, between 1981 and 2007, only 24 percent of the counted intersections showed growth in bicycle volumes.

**Table 5-4. Intersections Showing Growth in AM Peak Period Bicycle Volumes**

| Period of Change | Number of Intersections with Bicycle Volume Growth | Total Intersections Counted | Percent of Intersections with Bicycle Volume Growth |
|---|---|---|---|
| '81 to '85 | 5 | 9 | 55% |
| '85 to '87 | 13 | 20 | 65% |
| '87' to '90 | 12 | 22 | 55% |
| '90 to '93 | 8 | 27 | 30% |
| '93 to '97 | 11 | 28 | 40% |
| '97 to '07 | 10 | 39 | 26% |
| '81 to '07 | 4 | 17 | 24% |

*Source: Alta Planning + Design, 2008*

## SEAMLESS TRAVEL PROJECT COUNT DATA

The Seamless Travel Project is a two year Caltrans-funded research effort that investigates correlations between rates of bicycling and walking, and land uses, facility types, and local demographics. The project, in coordination with the National Bicycle & Pedestrian Documentation Project, is one of the larger count and survey efforts in the United States focusing only on bicyclists and pedestrians. Using San Diego County as a case study, this research is the first of its type to develop an extensive database of count and survey data for use in analyzing and identifying factors that influence bicycling and walking.

The Seamless Travel Project was initiated in 2007 and will continue through 2009. A key goal of the project is to conduct comprehensive counts and surveys of bicyclists and pedestrians in a consistent manner using the National Bicycle & Pedestrian Documentation Project[7] as a template. The project includes manual peak period counts at 80 locations throughout San Diego County and automated 24-hour counts at five locations. The five locations selected for continuous automated counts represent a mix of urban environments and facility types, and capture differences in commute versus recreational trip making. During the first year of the study manual peak counts were collected during July and August 2007. Automatic counts have been

[7] *National Bicycle and Pedestrian Documentation Project*, Jones, M., Buckland, L., Cheng, A., Transportation Research Board, Aug. 2005

collected continuously since July 2007. Some preliminary findings can be drawn from analyzing a snapshot of data collected between August 2007 and November 2007.

More than 4,100 bicyclists were recorded at the 80 locations during the manual count sessions. Bicycle volumes varied widely among sites with the highest bicycle count recorded during the weekend at Pacific Highway and Loma Santa Fe in Solana Beach. **Table 5-5** shows the maximum bicycle counts recorded and the respective locations during each of the 2-hour count periods.

**Table 5-5. Maximum Bicycle Counts – Manual Count Locations**

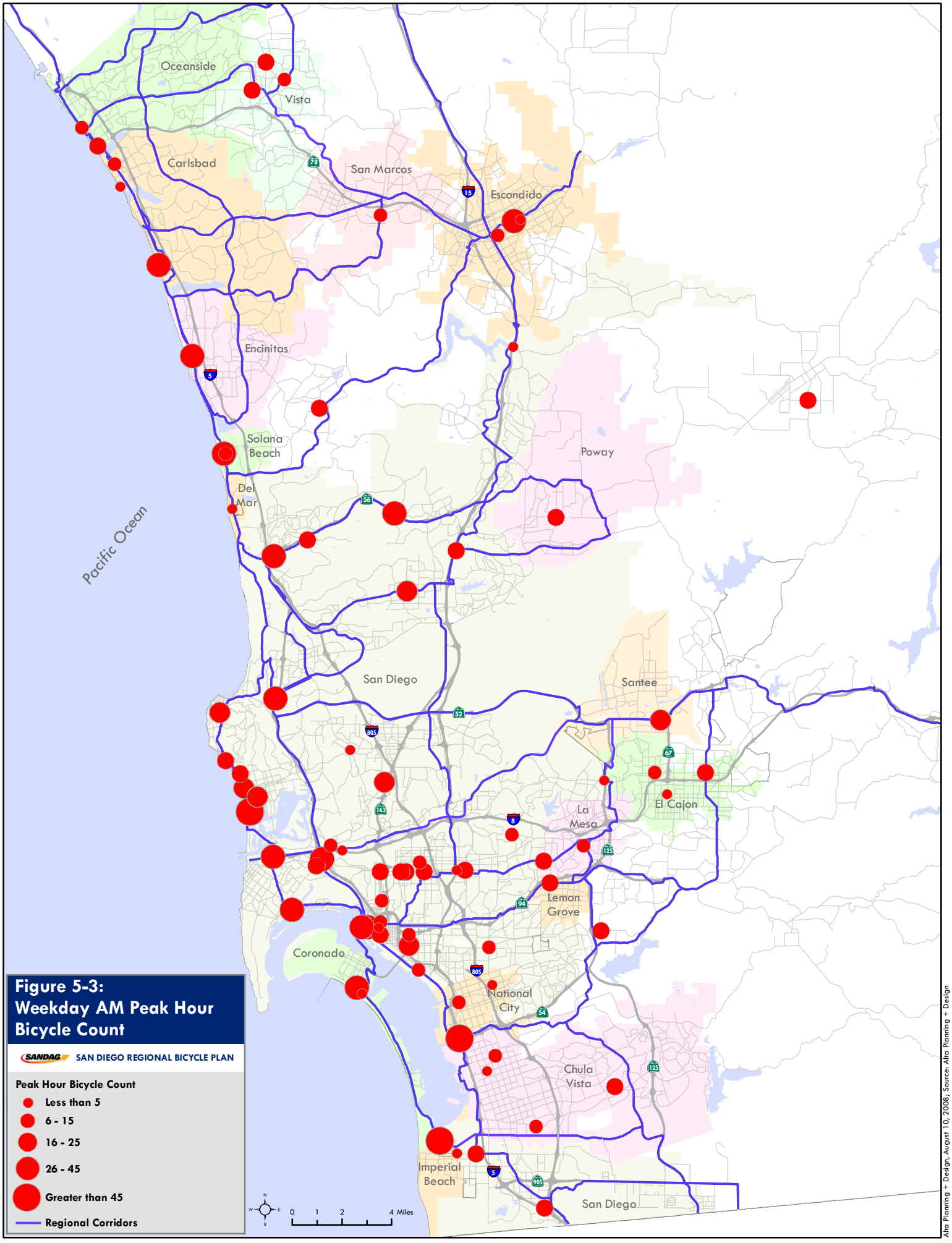
| Count Period | 2-Hour Bicycle Count | Location | Jurisdiction |
|---|---|---|---|
| Weekday AM (7AM - 9AM) | 83 | Bayside Walk & Santa Clara Place | San Diego |
| Weekday PM (4PM - 6PM) | 140 | Bayside Walk & Santa Clara Place | |
| Weekend Midday (12noon - 2PM) | 207 | Pacific Highway & Loma Santa Fe | Solana Beach |

*Source: Alta Planning + Design, August, 2008*

**Figures 5-3** and **5-4** display the peak period counts from the Seamless Travel Project manual counts. During both peak periods, there are noticeably higher bicycle volumes along the coast.

## 5.4 Riding Behavior and Bicycle Facility Preferences Survey Results

Developing a comprehensive regional bicycle system requires understanding the behaviors and preferences of bicyclists. Cyclists' behaviors and preferences are influenced by skill and comfort levels and cyclists' trip purposes. For example, cyclists who bicycle for recreational purposes may prefer scenic, winding, off-street trails, while cyclists who bicycle to work or for errands may prefer more direct on-street bicycle facilities. A bicycle plan should consider these variances when planning a system that serves all user types. The bicycle survey used to inform the Regional Bicycle Plan included questions about bicyclists' riding behaviors and preferences in order to better understand the needs of San Diego community members. The following tables summarize results from a total of 1,577 surveys obtained via an online questionnaire and during the first series of public workshops.



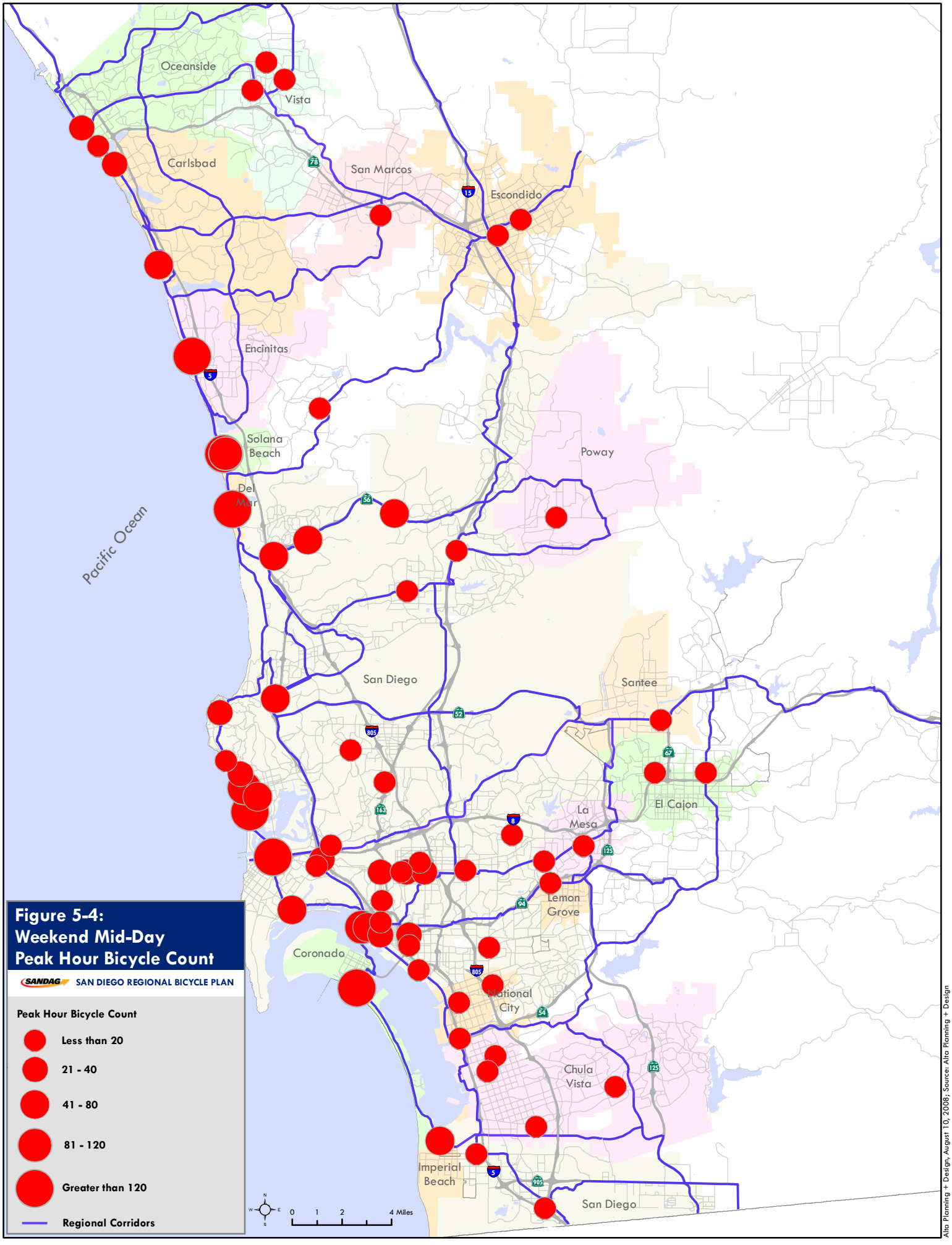

# Figure 5-3: Weekday AM Peak Hour Bicycle Count

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

**Peak Hour Bicycle Count**

- Less than 5
- 6 - 15
- 16 - 25
- 26 - 45
- Greater than 45
- Regional Corridors

Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design


Oceanside
Vista
Carlsbad
San Marcos
Escondido
Encinitas
Solana Beach
Del Mar
Poway
Pacific Ocean
San Diego
Santee
El Cajon
La Mesa
Lemon Grove
Coronado
National City
Chula Vista
Imperial Beach
San Diego
Figure 5-4:
Weekend Mid-Day
Peak Hour Bicycle Count
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Peak Hour Bicycle Count
Less than 20
21 - 40
41 - 80
81 - 120
Greater than 120
Regional Corridors
0 1 2 4 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

As shown in **Table 5-6**, the vast majority of survey respondents (90.9 percent) are motivated to bike due to the health benefits associated with biking. The pleasure of riding a bicycle is also an incentive for 81.3 percent of respondents. Transportation related purposes were cited less frequently by survey respondents with 58.2 percent biking to get to work, 36.6 percent for shopping or running errands, 15.2 percent to connect to transit and 9 percent to travel to school. Response frequencies do not sum to 100 percent because survey respondents were allowed to select multiple responses.

**Table 5-6. Why do you bike?[8]**

| Reason | Response Percent |
|---|---|
| For exercise / health reasons | 90.9 % |
| For pleasure | 81.3 % |
| To get to work | 58.2 % |
| For shopping / errands | 36.6 % |
| To get to transit | 15.2 % |
| To get to school | 9.0 % |
| Other *(please specify)* | 7.6 % |
| I don't bike | 3.2 % |

*Source: Alta Planning + Design, August, 2008*

**Table 5-7** reports bicycling frequency during the typical week. Responses are fairly evenly distributed across the week, with the most common response being three days per week (21.3 percent). This pattern suggests that the community members surveyed represent a broad cross-section of bicyclists in terms of riding frequency and also shows consistency with other regions across the United States[9].

**Table 5-7. How many days per week do you ride?**

| Days per Week | Percent of Respondents |
|---|---|
| 0 | 5.0 % |
| 1 | 7.4 % |
| 2 | 14.7 % |
| 3 | 21.3 % |
| 4 | 17.8 % |
| 5 | 16.7 % |
| 6 | 10.1 % |
| 7 | 7.0 % |
| **Total** | 100 % |

*Source: Alta Planning + Design, August, 2008*

The most commonly traveled distance for a respondent's bicycle ride is 11 to 24 miles, as displayed in **Table 5-8**. This finding points to the potential for bicycle travel to replace vehicular travel, as San Diego bicyclists appear willing to travel relatively long distances.

[8] *Respondents were permitted to select multiple answers. As a result, the number of responses does not equal 100 percent.*

[9] *Ragland et al. (2008). "Seamless Travel: Measuring Bicycle and Pedestrian Activity in San Diego County and its Relationship to Land Use, Transportation, Safety, and Facility Type." UC Berkeley Traffic Safety Center, University of California, Berkeley.*

**Table 5-8. What is the average distance of your rides (one-way)?**

| Miles | Percent of Respondents |
|---|---|
| Under 2 miles | 9.0 % |
| 3 – 5 miles | 15.6 % |
| 6 – 10 miles | 24.5 % |
| 11 – 24 miles | 34.3 % |
| 25 miles and above | 16.6 % |
| **Total 100** | **%** |

*Source: Alta Planning + Design, August, 2008*

When asked why they do not ride more often, survey respondents cited lack of bicycle facilities (53.9 percent), excessive traffic (50 percent), and motorists not providing room for bicycles on roadways (47.3 percent) as the strongest factors. However, several other deterrents, such as poorly maintained roads or bike facilities (43.5 percent) were also indicated (see **Table 5-9**).

**Table 5-9. What prevents you from biking more often?**[10]

| Issue | Percent of Respondents |
|---|---|
| No bike paths, lanes, or bike routes | 53.9 |
| Too many cars / cars drive too fast | 50.0 |
| Drivers don't share the road | 47.3 |
| Bikeways / roads in poor condition | 43.5 |
| Not enough time | 30.9 |
| Destinations are too far away | 26.0 |
| I have to carry things | 22.2 |
| Other *(please specify)* | 19.7 |
| Insufficient lighting | 11.4 |
| Weather | 9.6 |
| I travel with small children | 5.8 |

*Source: Alta Planning + Design, August, 2008*

**Table 5-10** shows that the greatest number of respondents are most interested in riding on separated bikes paths (71 percent), then on on-street bike lanes (42.6 percent), and thirdly, on bicycle boulevards (41.9 percent). Fewer respondents favor bike routes. The highest percent (34.6 percent) of respondents ranked bike routes second on a scale from 1 to 4 with one being most preferred. Trails or dirt paths are least preferred; with 36.9 percent responding that they are not at all interested in riding on this type of facility. Overall, these results indicate a preference for urban facilities that provide for separate bicycling rights-of-way, or secondarily, on-street lanes.

**Table 5-10. Please rate your level of preference for each of the following bicycle facilities.**[11]

| Bicycle Facility Type | 1 Highly Interested | 2 | 3 | 4 Not at all Interested |
|---|---|---|---|---|
| Off-Street Paved Bike Paths | 71.0 % | 16.9 % | 8.8 % | 3.4 % |
| On-Street Bike Lanes | 42.6 % | 41.7 % | 11.6 % | 4.1 % |
| Bicycle Boulevards | 41.9 % | 34.7 % | 17.7 % | 5.7 % |
| Bike Routes | 26.2 % | 34.6 % | 29.9 % | 9.3 % |
| Unpaved Trails or Dirt Paths | 16.8 % | 19.2 % | 27.1 % | 36.9 % |

*Source: Alta Planning + Design, August, 2008*

[10] *Respondents were permitted to select multiple answers. As a result, the number of responses does not equal 100 percent.*

[11] *Respondents were permitted to select multiple answers. As a result, the number of responses does not equal 100 percent.*

## 5.5 High Bicycling Demand Locations

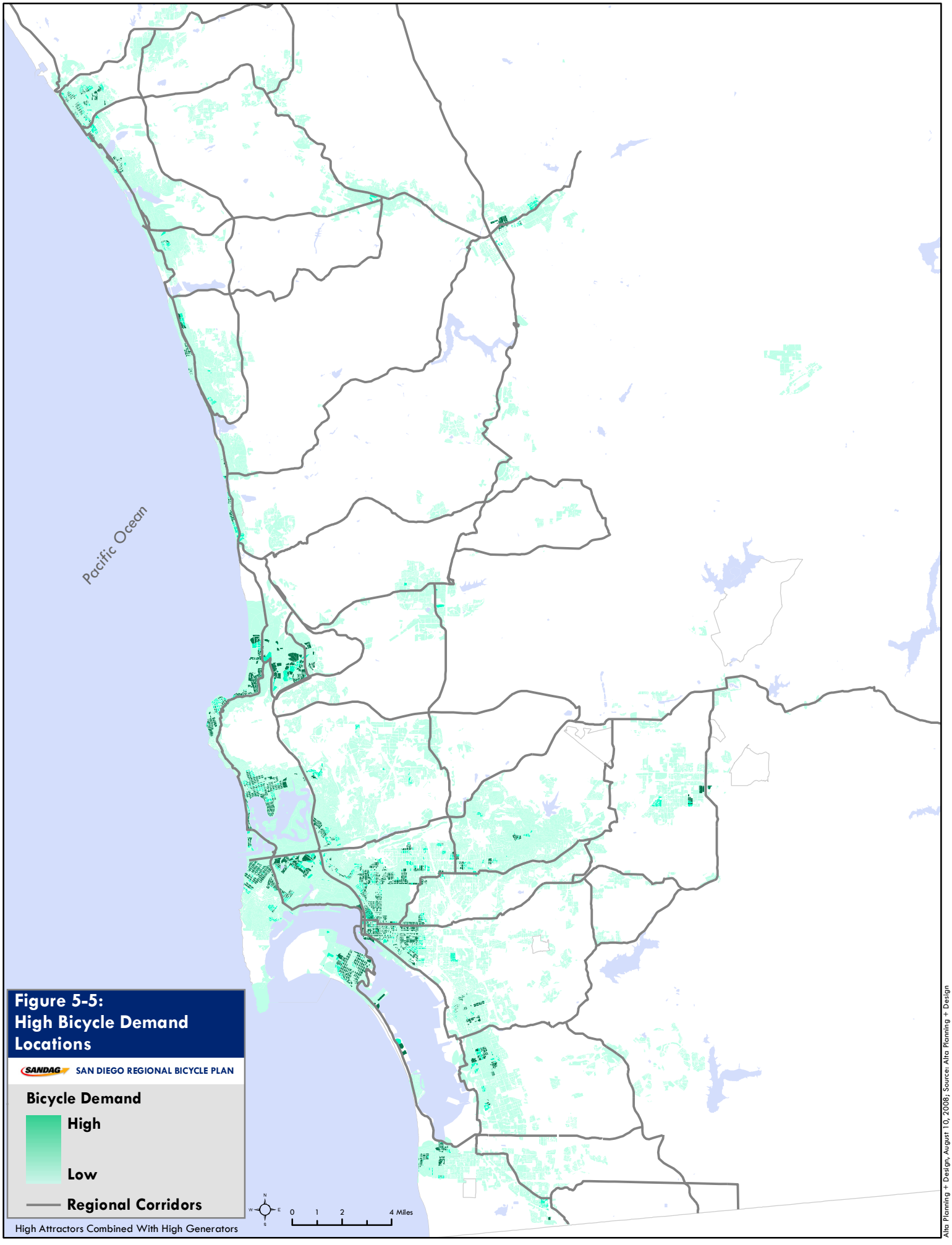
**Figure 5-5** shows a composite map of high bicycle attractors and high bicycle generators. Several patterns emerge from this information, as well as from the public input received:

There is strong north – south demand along the coast across the entire length of the county;

There is strong east-west demand in the Mid-City area of San Diego from the western La Mesa area to Uptown then on to the coast; and

There are pockets of demand in the inland communities of Vista, San Marcos, Escondido, Mira Mesa, and El Cajon.

These areas of high demand serve as a framework for developing a highly connected and well-serving regional bicycle corridor system. These areas of high demand lead to identification of locations that should be connected via high quality bicycle infrastructure, such as bike paths or bike lanes.


Pacific Ocean
Figure 5-5:
High Bicycle Demand Locations
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Bicycle Demand
High
Low
Regional Corridors
High Attractors Combined With High Generators
0 1 2 4 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

# 6. REGIONAL BICYCLE CORRIDOR DEFICIENCIES

This chapter summarizes deficiencies in the regional bicycle corridor system as identified through three primary techniques: 1) analysis of built and unbuilt facilities in the vicinity of the regional corridors 2) spatial modeling which allows for the identification of high priority/high need locations, and 3) direct public input regarding bicycle network deficiencies.

## 6.1 Gaps in the Regional Bicycle Corridor System

**Table 6-1** summarizes gap locations in the regional corridor system as identified through an assessment of existing and planned facilities within a quarter-mile buffer of the proposed regional bicycle corridor alignments. Table 6-1 distinguishes between gaps where local jurisdictions have a current plan for a facility versus gaps where there is no local plan for a facility. **Figures 6-1A** and **6-1B** show the locations of these "unbuilt-planned" and "unbuilt-unplanned" gaps across the region. There are approximately 100 miles of such gaps across the region.

Seven of 19 jurisdictions have unbuilt-planned facilities totaling about 72 miles. These cities include Chula Vista (6.4 miles), Encinitas (1.5 miles), La Mesa (0.8 miles), Oceanside (0.3 miles), San Diego (31.2 miles), San Marcos (0.4 miles), Santee (3.7 miles), Unincorporated County (23.9 miles), and Vista (3.3 miles).

Nine of 19 jurisdictions have unbuilt-unplanned gaps totaling about 28 miles. These jurisdictions include Carlsbad (0.7 miles), El Cajon (3.2 miles), Escondido (0.6 miles), La Mesa (1.8 miles), Oceanside (2 miles), Poway (3 miles), San Diego (2.1 miles), Santee (0.3 miles), and the Unincorporated County (13.9 miles).

**Appendix D** summarizes miles of gap by type (planned or unplanned) and by regional bicycle corridor.

**Table 6-1. Gaps in the Regional Bicycle Corridors**

| | Unbuilt w/Plan - No Existing Parallel Facility | | | Unbuilt No Plan | | Total Gap Miles |
|---|---|---|---|---|---|---|
| | Miles | Planned Facility | Jurisdiction | Miles | Jurisdiction | |
| Coastal Rail Trail | 0.2 | Class I | Oceanside | - | - | 2.8 |
| | 2.6 | Class I | San Diego | | | |
| Camp Pendleton Trail | - | - | - | 10.3 | Unincorporated | 10.3 |
| I-15 Bikeway | 1.4 | Class I | San Diego | 0.4 | San Diego | 5.2 |
| | 2.3 | Class II | | | | |
| | 1.1 | Class III | | | | |
| San Luis Rey River Trail | 7.5 | Class I | Unincorporated | 0.7 | Oceanside | 15.6 |
| | 7.4 | Class II | | | | |
| El Camino Real | 0.9 | Class II | Encinitas | 1.2 | Oceanside | 2.7 |
| | 0.6 | Class III | | | | |
| Inland Rail Trail | 1.2 | Class I | Vista | 0.1 | Escondido | 2.9 |
| | 0.7 | Class II | | | | |
| | 0.7 | Class III | | 0.1 | Oceanside | |
| | 0.1 | Class III | Oceanside | | | |
| Palomar Airport Road/ San Marcos Boulevard | - | - | - | 0.7 | Carlsbad | 0.7 |
| La Costa Avenue/ Rancho Santa Fe Road | 0.4 | Class I | San Marcos | - | - | 0.4 |
| Escondido Creek Bikeway | - | - | - | 0.5 | Escondido | 0.5 |
| Mid-County Bikeway | - | - | - | - | - | 0 |
| SR-56 Bikeway | - | - | - | - | - | 0 |
| Scripps Poway Parkway | - | - | - | 3.0 | Poway | 3.0 |
| Central Coast Corridor | - | - | - | 0.2 | San Diego | 0.2 |
| SR-52 Bikeway | 8.5 | Class I | San Diego | - | - | 8.5 |
| San Diego River Bikeway | 1.2 | Class I | San Diego | 0.2 | San Diego | 1.4 |
| East County – Downtown San Diego Corridor | 4.3 | Class II | San Diego | 0.2 | San Diego | 6.5 |
| | 0.2 | Class III | | 1.8 | La Mesa | |
| SR-94 Corridor Bikeway | 4.3 | Class II | San Diego | 0.7 | San Diego | 7.9 |
| | 0.5 | Class II | La Mesa | | | |
| | 0.3 | Class III | | | | |
| | 1.3 | Class II | Unicorporated | 0.3 | Unicorporated | |
| | 0.5 | Class III | | | | |
| SR-125 Corridor | .9 | Class I | Santee | 0.3 | Santee | 6.7 |
| | 1.2 | Class II | | 0.2 | El Cajon | |
| | 1.2 | Class II | Unincorporated | 0.4 | San Diego | |
| | 2.5 | Class II | Chula Vista | | | |
| Sweetwater River Bikeway | - | - | - | - | - | 0 |
| SR-54 Bikeway | 3.0 | Class II | Unincorporated | 3.0 | El Cajon | 6.0 |
| I-8 Corridor | 1.6 | Class II | Santee | 3.3 | Unicorporated | 4.9 |
| Bayshore Bikeway | 1.0 | Class I | San Diego | - | - | 1.0 |
| Chula Vista Greenbelt Otay River | 3.9 | Class II | Chula Vista | - | - | 3.9 |
| SR-905 Corridor | 1.4 | Class II | Unincorporated | - | - | 1.4 |
| Border Access | 3.0 | Class II | San Diego | - | - | 4.3 |
| | 1.3 | Class III | | | | |
| Vista Way | .7 | Class II | Vista | - | - | 2.3 |
| | 1.6 | Class II | Unincorporated | | | |
| Mira Mesa Corridor | - | - | - | - | - | 0 |
| **TOTALS** | **71.5** | | | **27.6** | **99.1** | |

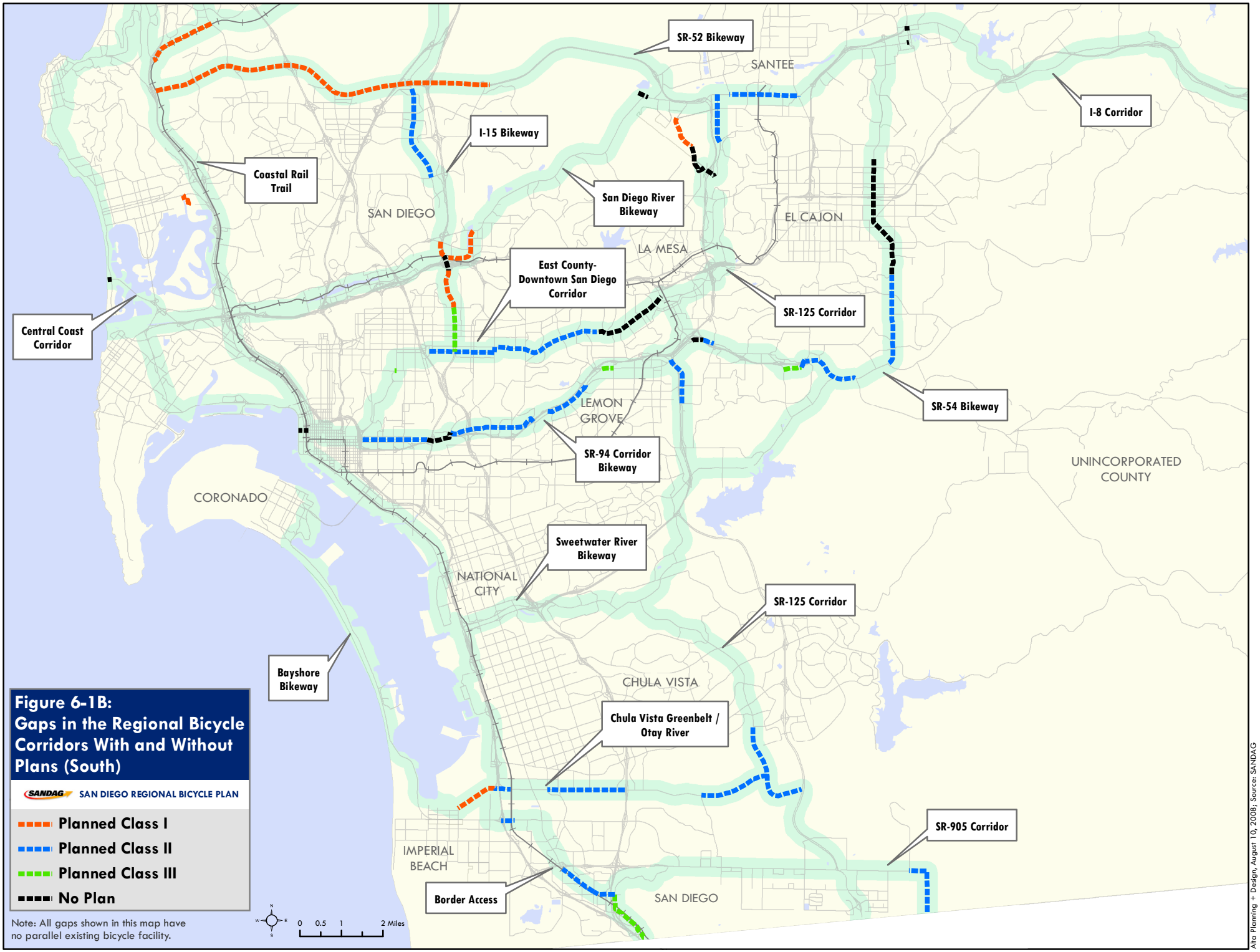

# Figure 6-1A: Gaps in the Regional Bicycle Corridors With and Without Plans (North)

SANDAG SAN DIEGO REGIONAL BICYCLE PLAN

- Planned Class I
- Planned Class II
- Planned Class III
- No Plan

Note: All gaps shown in this map have no parallel existing bicycle facility.

Alta Planning + Design, August 10, 2008; Source: SANDAG


SR-52 Bikeway
SANTEE
I-8 Corridor
I-15 Bikeway
Coastal Rail Trail
SAN DIEGO
San Diego River Bikeway
EL CAJON
LA MESA
East County-Downtown San Diego Corridor
SR-125 Corridor
Central Coast Corridor
SR-54 Bikeway
LEMON GROVE
SR-94 Corridor Bikeway
UNINCORPORATED COUNTY
CORONADO
Sweetwater River Bikeway
NATIONAL CITY
SR-125 Corridor
Bayshore Bikeway
CHULA VISTA
Chula Vista Greenbelt / Otay River
SR-905 Corridor
IMPERIAL BEACH
Border Access
SAN DIEGO
Figure 6-1B:
Gaps in the Regional Bicycle Corridors With and Without Plans (South)
SAN DIEGO REGIONAL BICYCLE PLAN
Planned Class I
Planned Class II
Planned Class III
No Plan
Note: All gaps shown in this map have no parallel existing bicycle facility.
0 0.5 1 2 Miles
Alta Planning + Design, August 10, 2008; Source: SANDAG

## 6.2 Bicycle System Gaps Identified Via Public Input

This section identifies gaps based upon public input received via the online survey and the in-person survey administered at the first set of workshops. The survey asked community members about gaps experienced while riding in the San Diego area. Responses to this question were coded as falling within or outside of the currently adopted regional bicycle corridor system. Survey respondents' references to gaps in the currently adopted system show the community's desire to bicycle in a particular regional corridor, but also indicate a potential problem. Survey respondents' references to gaps which are not currently with the adopted regional system were considered as potential new regional corridors. Both gap types are summarized in the following sections.

### *GAPS ASSOCIATED WITH REGIONAL BICYCLE CORRIDORS*

**Table 6-2** displays a summary of the frequency with which survey respondents referenced a gap that fell within the currently adopted regional bicycle network. A total of 583 comments were made about gap locations that correspond to locations along the currently adopted regional bicycle corridors. References to gaps along the Coastal Rail Trail were by far the most frequently cited, with almost 30 percent of the gap references related to this facility. The next most common gap reference was made in relation to areas along the San Diego River Bikeway, the Central Coast Corridor, and the Bayshore Bikeway.

**Figure 6-2A** and **6-2B** show public comment specifically related to the currently adopted regional corridors, with the darker, thicker line reflecting greater numbers of gap references.

### *GAPS IDENTIFYING NEW REGIONAL BICYCLE CORRIDORS*

**Table 6-3** displays the frequency with which corridors outside the currently adopted regional system were mentioned by community members in the survey. **Figure 6-3** depicts these corridor demands. Bicycle demand between the Clairemont area and the San Carlos area was mentioned 13 times, making it the most frequently cited corridor not currently served by the regional system. This represents a strong east-west demand north of and parallel to Interstate 8. Three corridors, not currently served by the regional system, were mentioned 9 times, including Mission Hills to La Mesa, North Park to Mira Mesa, and the Pacific Ocean to Clairmont. Mission Hills to La Mesa represents an east-west demand traversing the entire Mid-City area of San Diego, while North Park to Mira Mesa represents a north-south demand corridor, and Clairmont to the ocean represents a fairly localized east-west corridor.

**Table 6-2. Public Comment Regarding Gaps in the Regional Bicycle Network**

| Regional Corridor | Frequency | Percent of Total |
|---|---|---|
| Coastal Rail Trail | 164 | 28.1% |
| San Diego River Bikeway | 74 | 12.7% |
| Central Coast Corridor | 67 | 11.5% |
| Bayshore Bikeway | 67 | 11.5% |
| SR-56 Bike Path | 57 | 9.8% |
| I-15 Bikeway | 34 | 5.8% |
| SR-52 Bikeway | 29 | 5.0% |
| East County - Downtown San Diego Corridor | 14 | 2.4% |
| Mira Mesa Corridor | 11 | 1.9% |
| Inland Rail Trail | 9 | 1.5% |
| I-8 Corridor | 8 | 1.4% |
| Camp Pendleton Trail | 8 | 1.4% |
| SR-94 Corridor Bikeway | 7 | 1.2% |
| El Camino Real | 7 | 1.2% |
| SR-125 Bikeway | 6 | 1.0% |
| San Luis River Rey Trail | 5 | 0.9% |
| SR-54 Bikeway | 3 | 0.5% |
| Scripps Poway Parkway | 3 | 0.5% |
| Escondido Creek Bike Path | 3 | 0.5% |
| La Costa Ave - Rancho Sante Fe Rd | 2 | 0.3% |
| Vista Way Corridor | 2 | 0.3% |
| Sweetwater River Bikeway | 2 | 0.3% |
| Border Access | 1 | 0.2% |
| **TOTALS** | **583** | **100.0%** |

*Source: Alta Planning + Design, August, 2008*


San Luis Rey River Trail
OCEANSIDE
Vista Way Corridor
VISTA
Inland Rail Trail
El Camino Real
CARLSBAD
ESCONDIDO
SAN MARCOS
Palomar Airport Road/ San Marcos Boulevard
Escondido Creek Bike Path
Coastal Rail Trail
ENCINITAS
La Costa Avenue/ Rancho Santa Fe Road
Mid-County Bikeway
I-15 Bikeway
POWAY
SOLANA BEACH
DEL MAR
SR-56 Bikeway
SAN DIEGO
Mira Mesa Corridor
Scripps-Poway Parkway
Central Coast Corridor
SR-52 Bikway
I-15 Bikeway
Camp Pendleton Trail
San Luis Rey River Bike Path
Coastal Rail Trail
0 0.5 1 2 Miles
Figure 6-2A: Frequency of Public Comment on Regional Corridor Problems (North)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Number of Comments by Public Per Segment
Less than 5
5 - 15
16 - 30
31 - 50
Greater than 50
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

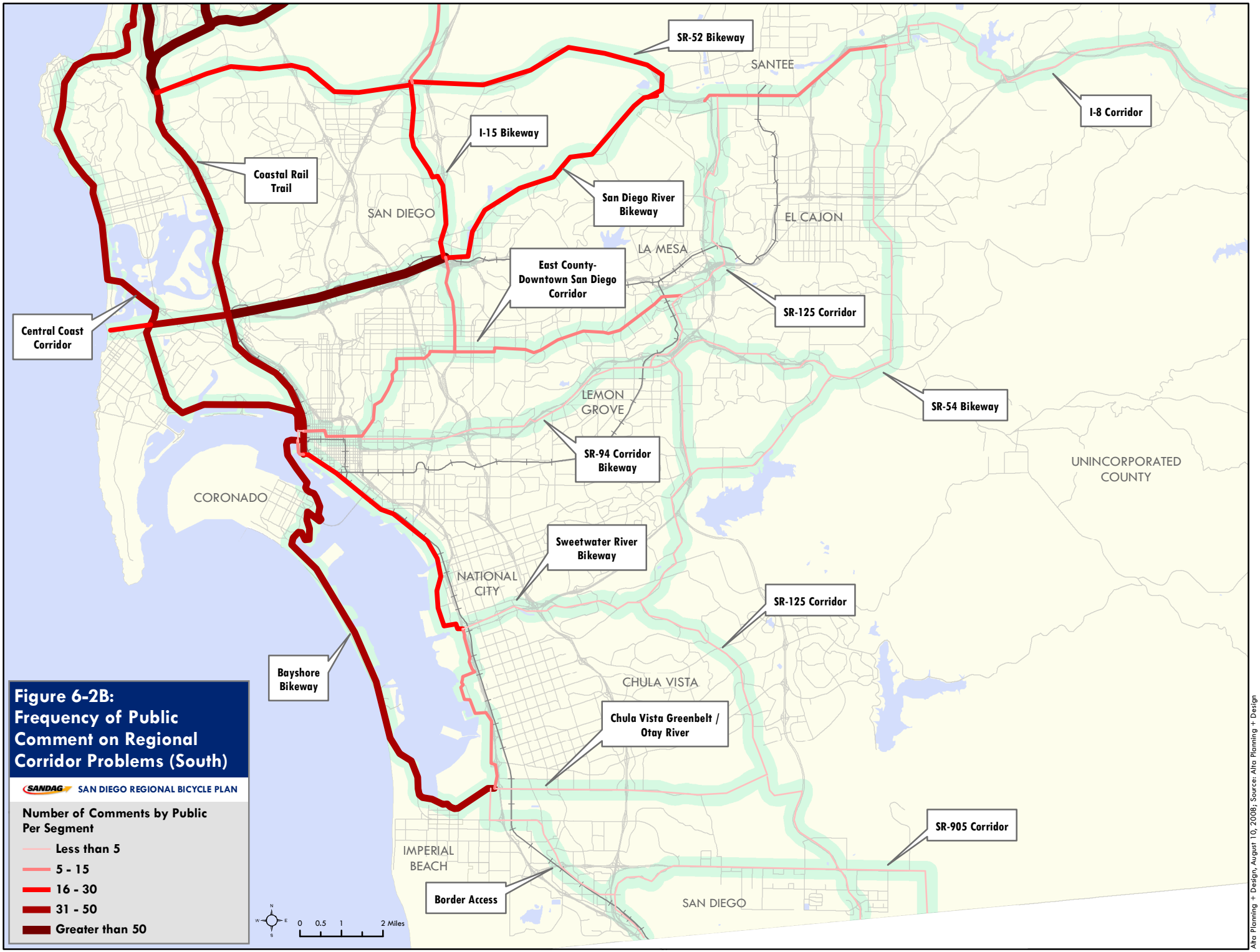
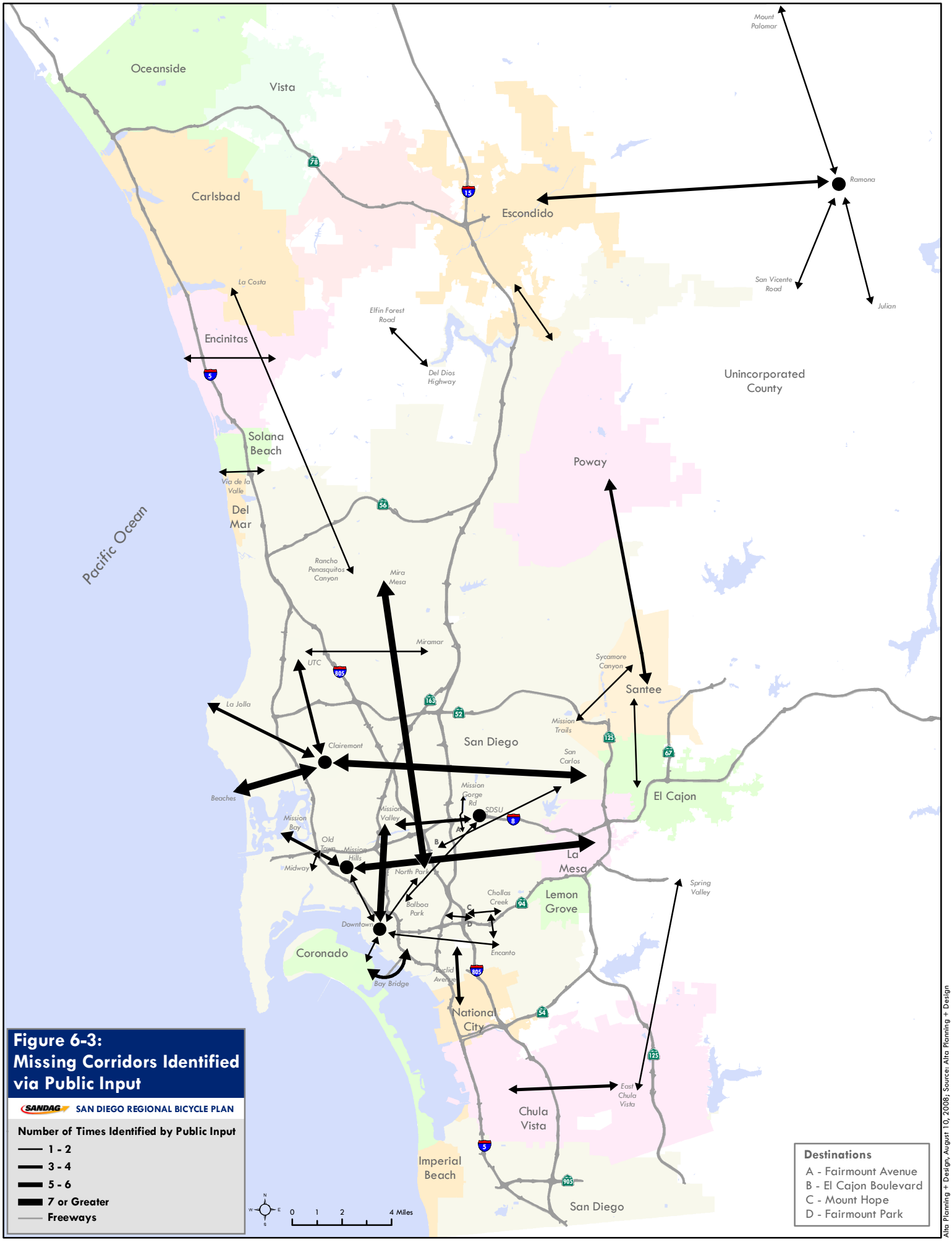

SR-52 Bikeway
SANTEE
I-8 Corridor
I-15 Bikeway
Coastal Rail Trail
SAN DIEGO
San Diego River Bikeway
EL CAJON
LA MESA
East County-Downtown San Diego Corridor
SR-125 Corridor
Central Coast Corridor
LEMON GROVE
SR-54 Bikeway
SR-94 Corridor Bikeway
UNINCORPORATED COUNTY
CORONADO
Sweetwater River Bikeway
NATIONAL CITY
SR-125 Corridor
Bayshore Bikeway
CHULA VISTA
Chula Vista Greenbelt / Otay River
SR-905 Corridor
IMPERIAL BEACH
Border Access
SAN DIEGO
Figure 6-2B: Frequency of Public Comment on Regional Corridor Problems (South)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Number of Comments by Public Per Segment
Less than 5
5 - 15
16 - 30
31 - 50
Greater than 50
0 0.5 1 2 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

**Table 6-3. Public Comment Regarding Gaps Outside the Regional Bicycle Network**

| Starting Location | Ending Location | Frequency Mentioned |
|---|---|---|
| Clairemont | San Carlos | 13 |
| Mission Hills | La Mesa | 9 |
| North Park | Mira Mesa | |
| Pacific Ocean | Clairmont | |
| Mission Valley | Downtown | 7 |
| West of I-805 in Chula Vista | East of I-805 in Chula Vista | 4 |
| National City | City of San Diego via Euclid | |
| Mission Hills | Mission Bay | |
| Clairemont | UTC | |
| Clairemont | La Jolla | |
| Downtown San Diego | Coronado | |
| San Diego State University | Mission Valley | 3 |
| Santee | Poway | |
| Escondido | Ramona | |
| North Park | Downtown San Diego | 2 |
| Mission Hills | Downtown San Diego | |
| Otay Lakes Road | SR-94 | |
| San Carlos | El Cajon Blvd | |
| Mission Valley | North Park | |
| Mira Mesa | La Jolla | |
| Pacific Ocean | Via de la Valle | |
| Eastern Encinitas | Western Encinitas | |
| Northwestern Escondido | Southeastern Escondido | |
| Ramona | Julian | |
| Ramona | Mount Palomar | 1 |
| Carlsbad | Rancho Penasquitos Canyon | |
| Elfin Forest Road | Del Dios Highway | |
| Midway | Old Town | |
| San Diego State University | Balboa Park | |
| San Diego State University | Mission George Rd | |
| El Cajon | Santee | |
| Camino del Rio | Mission Gorge Rd | |
| Encanto | Downtown San Diego | |
| Chollas Creek | Mount Hope | |
| North of SR-94 | South of SR-94 in Mountain View Area | |
| Fairmount Park | West of I-805 | |
| Mission Trails | Sycamore Canyon | |

*Source: Alta Planning + Design, August, 2008*


Oceanside
Vista
Carlsbad
Escondido
Mount Palomar
Ramona
San Vicente Road
Julian
La Costa
Elfin Forest Road
Del Dios Highway
Encinitas
Unincorporated County
Solana Beach
Via de la Valle
Del Mar
Pacific Ocean
Poway
Rancho Penasquitos Canyon
Mira Mesa
Miramar
UTC
Sycamore Canyon
Santee
La Jolla
Clairemont
San Diego
Mission Trails
San Carlos
Beaches
Mission Gorge Rd
SDSU
Mission Valley
Mission Bay
Old Town
Mission Hills
Midway
North Park
La Mesa
Spring Valley
Chollas Creek
Lemon Grove
Balboa Park
Downtown
Encanto
Coronado
Bay Bridge
Euclid Avenue
National City
East Chula Vista
Chula Vista
Imperial Beach
San Diego
0 1 2 4 Miles
Figure 6-3:
Missing Corridors Identified via Public Input
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Number of Times Identified by Public Input
1 - 2
3 - 4
5 - 6
7 or Greater
Freeways
Destinations
A - Fairmount Avenue
B - El Cajon Boulevard
C - Mount Hope
D - Fairmount Park
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

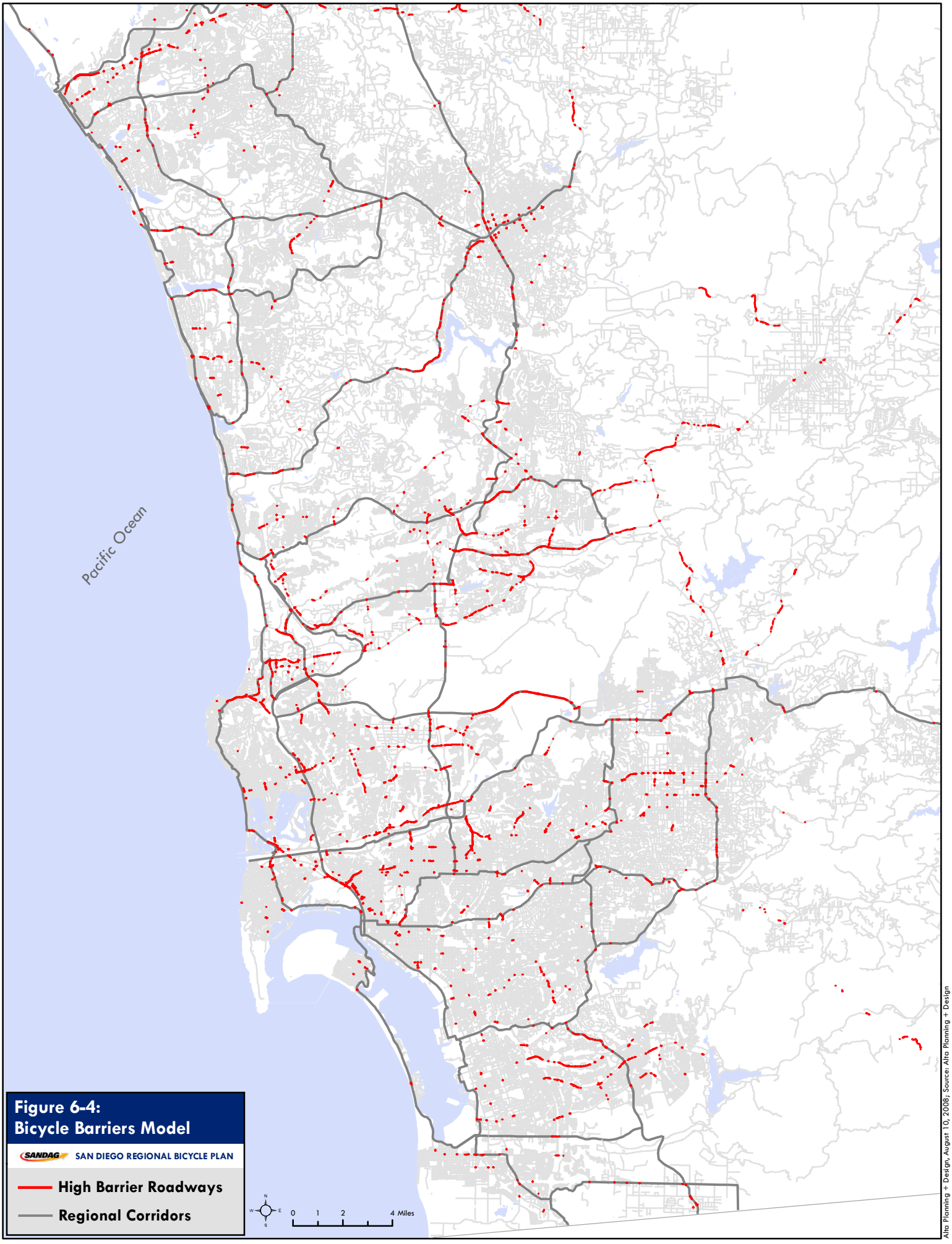
## 6.3 Bicycle Network Barriers Submodel

The bicycle barrier submodel reflects indications of "problem areas" such as relatively high crash locations, roadways with high vehicular traffic volumes and speeds, freeway on/off ramps, and steep slopes. These types of barriers were confirmed by survey responses related to questions about deficiencies in the roadway environment (What prevents you from biking more often?). **Table 6-4** displays the bicycle barrier submodel input variables and their respective rankings and weights. **Figure 6-4** displays the results of the bicycle barriers submodel. As shown, areas of high bicycle barriers follow linear patterns reflecting high bicycle crash locations and roadway environments that have a automobile orientation.

**Table 6-4. Bicycle Barriers Submodel**

| Bicycling Detractors | Weights | Multiplier | Score |
|---|---|---|---|
| Bicycle Crashes 2002-2007 | | | |
| High (> 8 over 5 years) | 3 | 3 | 9 |
| Medium (4-7 over 5 years) | 2 | | 6 |
| Low (1-3 over 5 years) | 1 | | 3 |
| No crashes | 0 | | 0 |
| Slopes | | | |
| 10.1-15% | 3 | 2 | 6 |
| 5.1-15% | 2 | | 4 |
| < 5% | 1 | | 2 |
| Posted Speed Limit (or Observed Speed) | | | |
| >45 mph | 3 | 2 | 6 |
| 35-44 mph | 2 | | 4 |
| 30-34 mph | 1 | | 2 |
| Motor Vehicle Average Daily Trips (ADT) | | | |
| >45,000 | 3 | 2 | 6 |
| 35,000-45,000 | 2.5 | | 5 |
| 25,000-34,999 | 2 | | 4 |
| 15,000-24,999 | 1.5 | | 3 |
| 10,000-14,999 | 1 | | 2 |
| 5,000-9,999 | 0.5 | | 1 |
| <5,000 | 0 | | 0 |
| Freeway Ramps | | | |
| Freeway Ramps | 5 | 1 | 5 |

*Source: Alta Planning + Design, August, 2008*


Pacific Ocean
Figure 6-4:
Bicycle Barriers Model
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
High Barrier Roadways
Regional Corridors
0 1 2 4 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

## 6.4 Bicycle Facility Deficiencies Survey Results

The public outreach survey asked community members about those improvements that would most likely influence increased riding. More lanes (Class II) and more paths (Class I) were mentioned as being very likely to encourage increased riding by over 60 percent of the respondents. Maintenance and wider shoulders were mentioned as being very likely to increase riding by approximately 50 percent of respondents. Bicycle boulevards were mentioned by about 43 percent of the respondent as being very likely to increase riding. These results are summarized in **Table 6-5**.

**Table 6-5. Would the following improvements influence you to bike more often?[12]**

| Improvement | Very Likely | Likely | Somewhat Likely | Somewhat Unlikely | Unlikely | Very Unlikely |
|---|---|---|---|---|---|---|
| More Bike Lanes on Major Streets | 67.5 | 20.0 | 8.3 | 1.8 | 1.1 | 1.3 |
| More Paved (off-street) Bike Paths | 62.6 | 16.8 | 11.2 | 3.6 | 3.0 | 2.9 |
| Increased Maintenance | 52.2 | 22.8 | 18.0 | 3.7 | 1.7 | 1.5 |
| Widen Outside/Curb Lanes on Major Streets | 51.4 | 26.6 | 13.9 | 3.9 | 2.5 | 1.8 |
| Bicycle Boulevards | 43.5 | 25.9 | 18.0 | 6.1 | 4.0 | 2.6 |
| More Bike Routes | 41.5 | 25.4 | 19.5 | 5.8 | 4.9 | 3.0 |
| More On-Road Bike Signage | 29.7 | 18.3 | 27.9 | 12.4 | 8.0 | 3.7 |
| More Bicycle Parking | 23.6 | 19.3 | 26.1 | 14.1 | 10.9 | 6.0 |

*Source: Alta Planning + Design, August, 2008*

[12] *Respondents were permitted to select multiple answers. As a result, the number of responses does not equal 100 percent.*

# 7. PROJECT AND PROGRAM NEEDS ANALYSIS

## 7.1 Preliminary Bicycle Project Focus Areas

**Figure 7-1** presents the final bicycle facility priority/need model, which is a composite of the generators, attractors, barriers and network quality submodels. As shown and confirmed by the public input, there is a significant north-south coastal priority/need along the entire county. There are also hot spots of bicycle priority/need throughout Downtown San Diego, the Mid-City communities of San Diego, UTC, and several town cores across the region.

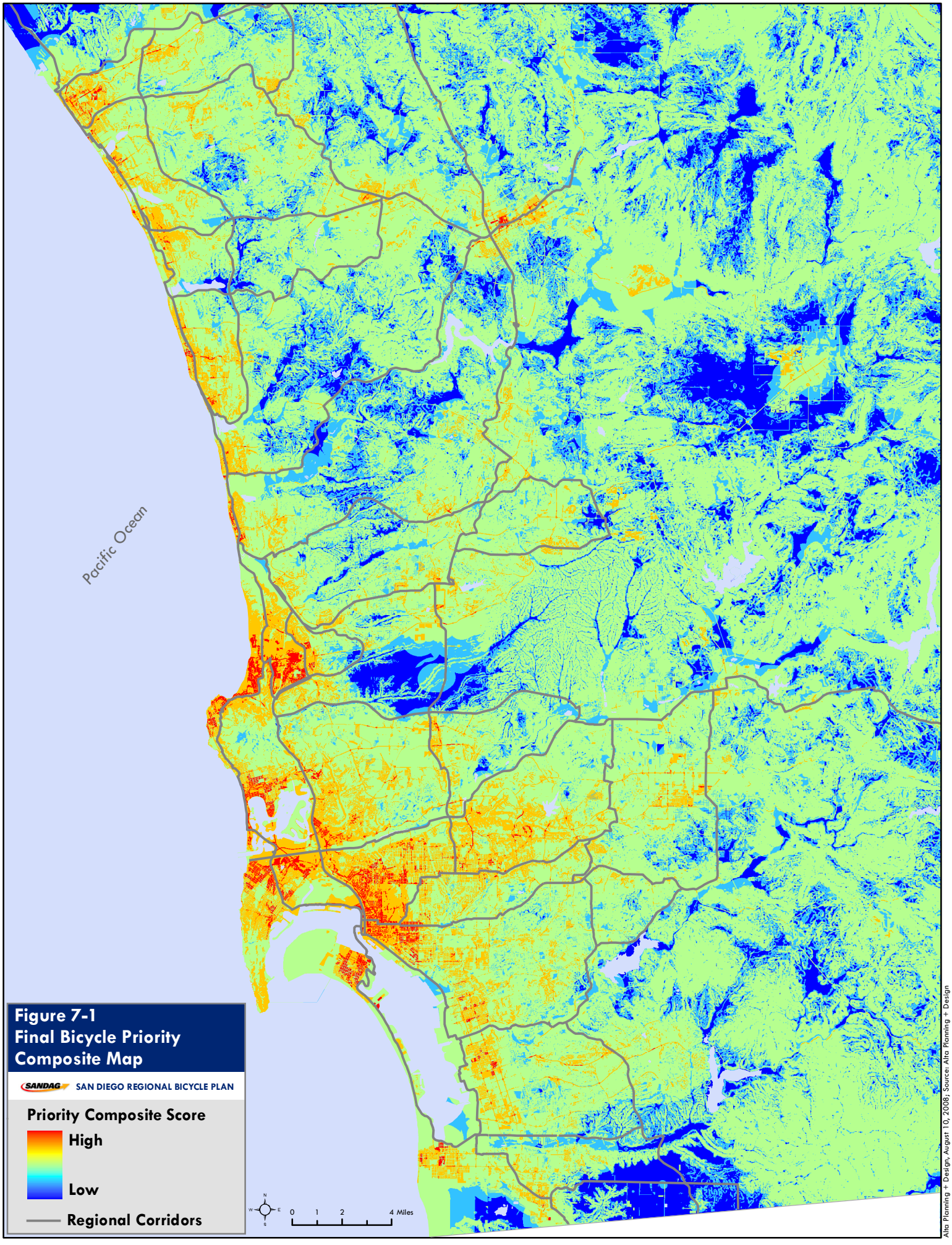
**Figures 7-2A** and **7-2B** present portions of the regional corridors that intersect with the highest bicycle priority values as well as the previously identified gaps in the system. The intersection of Class III facilities and high priority areas is also displayed in these maps. Overall, this analysis provides insight into potential project locations, and was used to identify preliminary project locations.

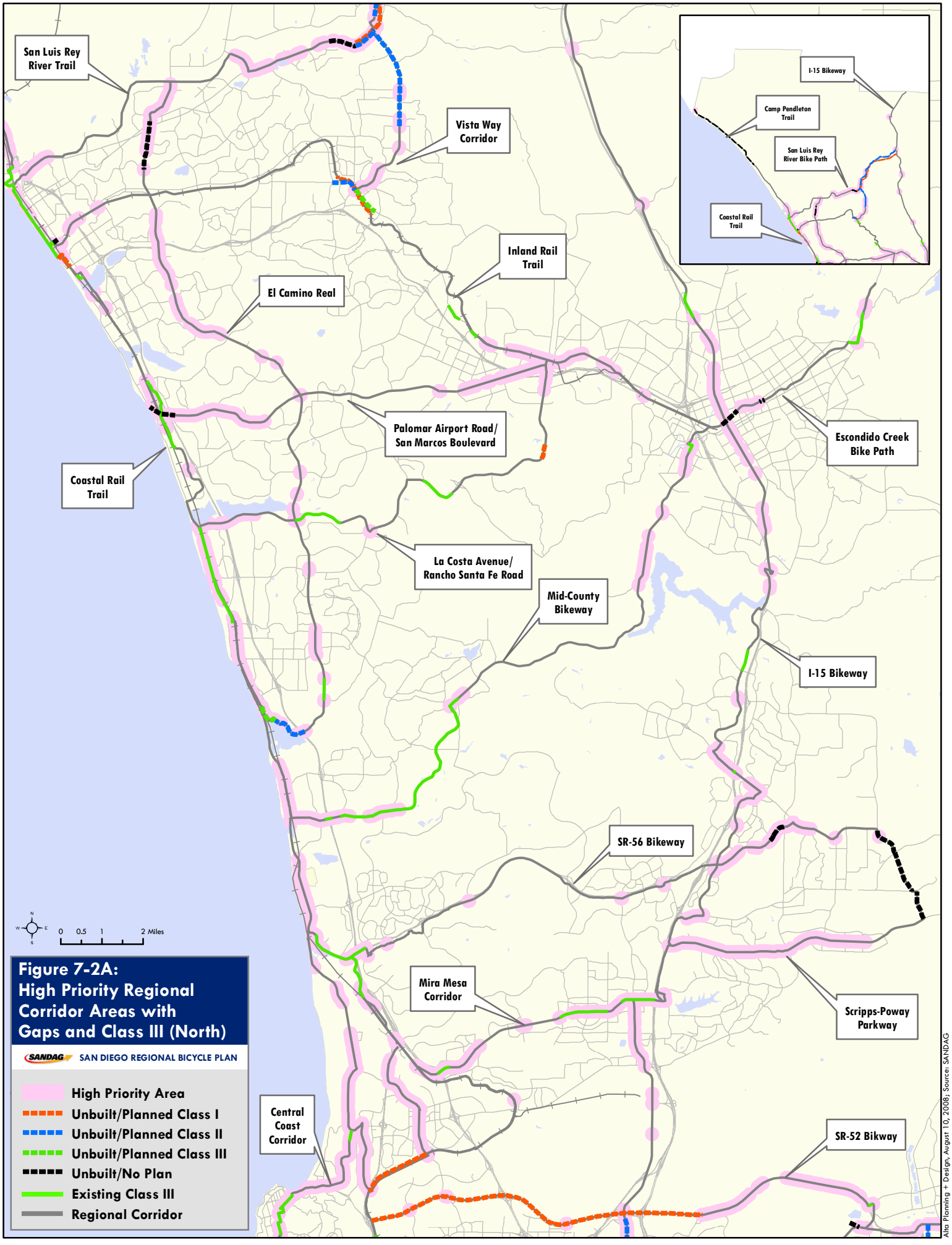
**Figures 7-3A** and **7-3B** present preliminary project locations based upon a synthesis of information depicted in the previous figures (7-2A and 7-2B), as well as incorporation of missing corridors mentioned during public comment. The preliminary project location maps therefore present a compilation of results from the gap assessments, spatial modeling, and public input. A total of 41 project areas were identified and are summarized in **Tables 7-1** and **7-2**, including 35 project locations that would improve currently adopted regional corridors, and 6 project locations that would represent new regional corridors. These locations should have priority when embarking on the next stage of this planning process, which is to conduct more detailed assessments and field reviews to determine the scope of potential projects.

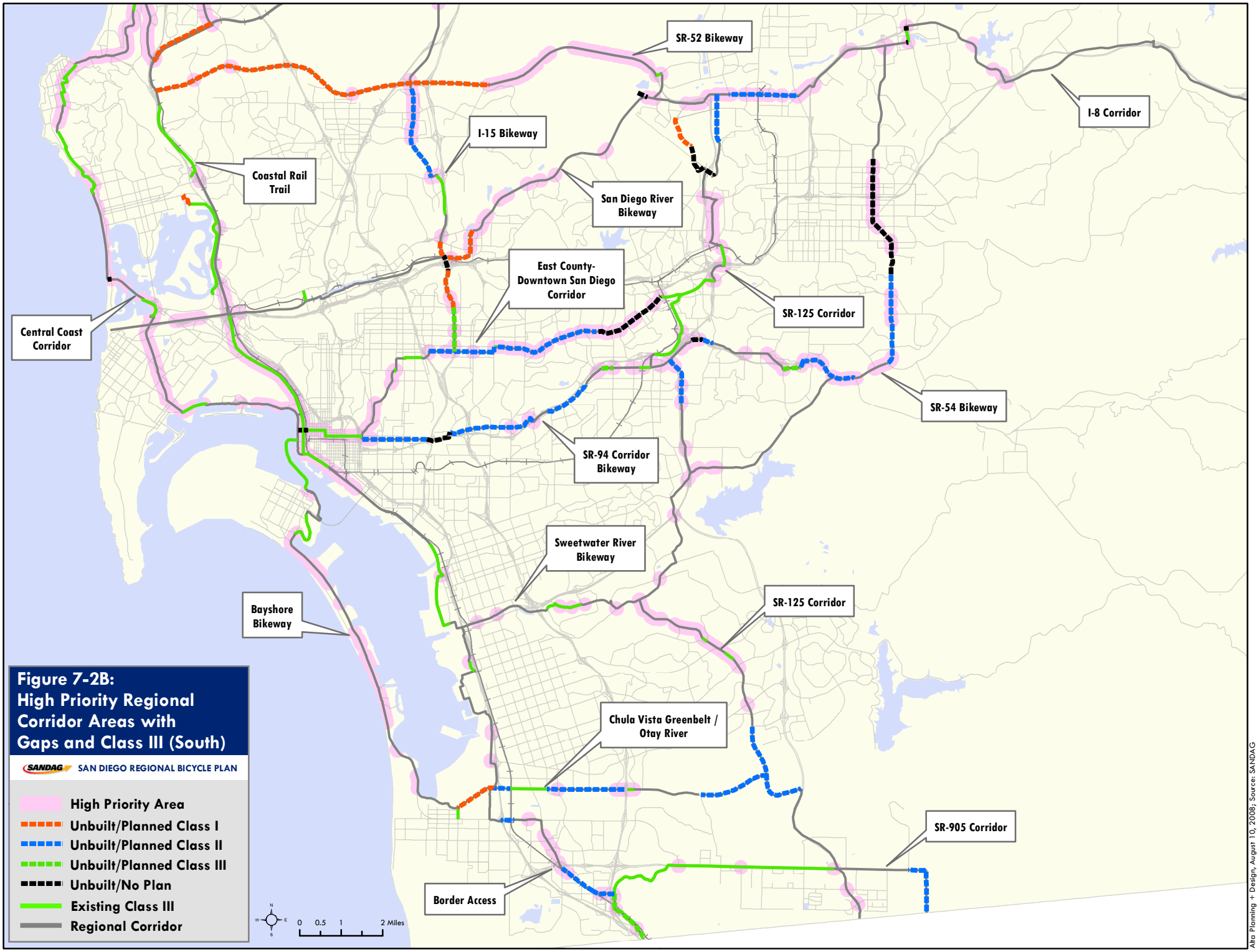
**Table 7-1. Summary of Potential Project Locations (North)**

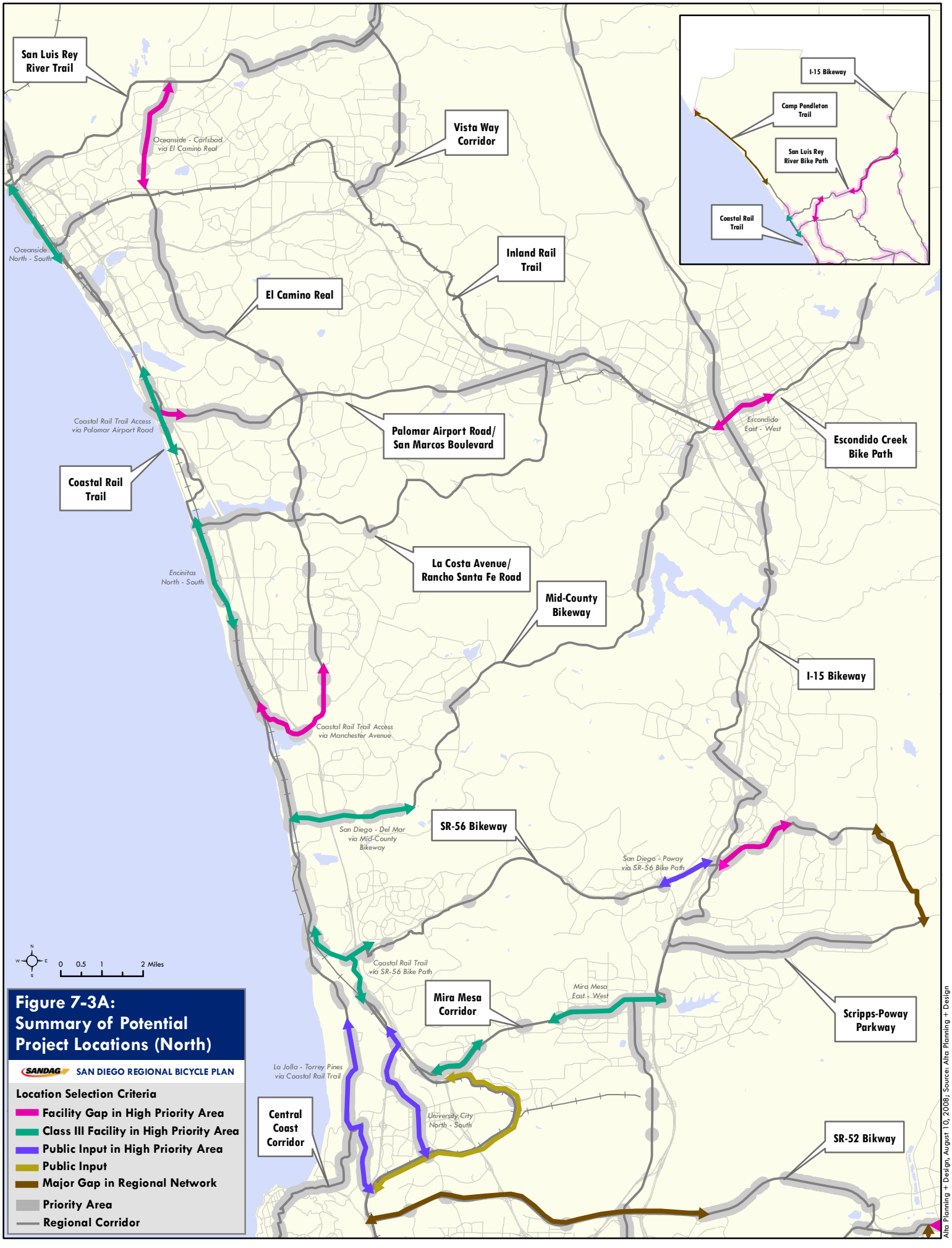
| Regional Corridor | Project Location | | Source of Recommendation | | | |
|---|---|---|---|---|---|---|
| | From | To | High Priority Model | Public Input | Gap | Class III |
| Coastal Rail Trail | San Luis Rey River Trail | Inland Rail Trail | ✓ | ✓ | | ✓ |
| | North of Palomar Airport Road | South of Palomar Airport Road | ✓ | ✓ | | ✓ |
| | La Costa Avenue | Encinitas Boulevard | ✓ | ✓ | | ✓ |
| | Del Mar | SR-56 Bike Path | ✓ | ✓ | ✓ | |
| | Sorrento Valley | UTC | | ✓ | | |
| | Mira Mesa Corridor | Rose Canyon Bike Path | | ✓ | | |
| El Camino Real | San Luis River Rey Trail | Inland Rail Trail | ✓ | | ✓ | |
| | Luecadia Boulevard | Coastal Rail Trail | ✓ | ✓ | ✓ | |
| Mid-County Corridor | Coastal Rail Trail | El Camino Real | ✓ | | | ✓ |
| SR-56 | Coastal Rail Trail | SR-56 Bike Path | ✓ | ✓ | | ✓ |
| | Eastern portion of SR-56 Bike Path | I-15 Bikeway | ✓ | ✓ | | |
| San Luis River Rey Trail | Vista Way Corridor | I-15 Bikeway | ✓ | | ✓ | |
| Palomar Airport Rd | Coastal Rail Trail | Armada Drive | ✓ | | ✓ | |
| Escondido Creek Bike Path | Inland Rail Trail | Central Escondido | ✓ | | ✓ | |
| Scripps Poway Parkway | I-15 Bikeway | Camino Del Norte | ✓ | | ✓ | |
| | Espola Road | Scripps Poway Pkwy | | | ✓ | |
| Mira Mesa Corridor | Coast Rail Trail | Scranton Road | ✓ | | | ✓ |
| | Camino Sante Fe | I-15 Bikeway | ✓ | ✓ | | ✓ |

*Source: Alta Planning + Design, August, 2008*


Pacific Ocean
Figure 7-1
Final Bicycle Priority
Composite Map
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Priority Composite Score
High
Low
Regional Corridors
N
W
E
S
0 1 2 4 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design


San Luis Rey River Trail
Vista Way Corridor
Inland Rail Trail
El Camino Real
Palomar Airport Road/ San Marcos Boulevard
Escondido Creek Bike Path
Coastal Rail Trail
La Costa Avenue/ Rancho Santa Fe Road
Mid-County Bikeway
I-15 Bikeway
SR-56 Bikeway
Mira Mesa Corridor
Scripps-Poway Parkway
Central Coast Corridor
SR-52 Bikway
I-15 Bikeway
Camp Pendleton Trail
San Luis Rey River Bike Path
Coastal Rail Trail
0 0.5 1 2 Miles
Figure 7-2A: High Priority Regional Corridor Areas with Gaps and Class III (North)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
High Priority Area
Unbuilt/Planned Class I
Unbuilt/Planned Class II
Unbuilt/Planned Class III
Unbuilt/No Plan
Existing Class III
Regional Corridor
Alta Planning + Design, August 10, 2008; Source: SANDAG


SR-52 Bikeway
I-8 Corridor
I-15 Bikeway
Coastal Rail Trail
San Diego River Bikeway
East County-Downtown San Diego Corridor
SR-125 Corridor
Central Coast Corridor
SR-54 Bikeway
SR-94 Corridor Bikeway
Sweetwater River Bikeway
Bayshore Bikeway
SR-125 Corridor
Chula Vista Greenbelt / Otay River
SR-905 Corridor
Border Access
Figure 7-2B: High Priority Regional Corridor Areas with Gaps and Class III (South)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
High Priority Area
Unbuilt/Planned Class I
Unbuilt/Planned Class II
Unbuilt/Planned Class III
Unbuilt/No Plan
Existing Class III
Regional Corridor
0 0.5 1 2 Miles
Alta Planning + Design, August 10, 2008; Source: SANDAG




Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

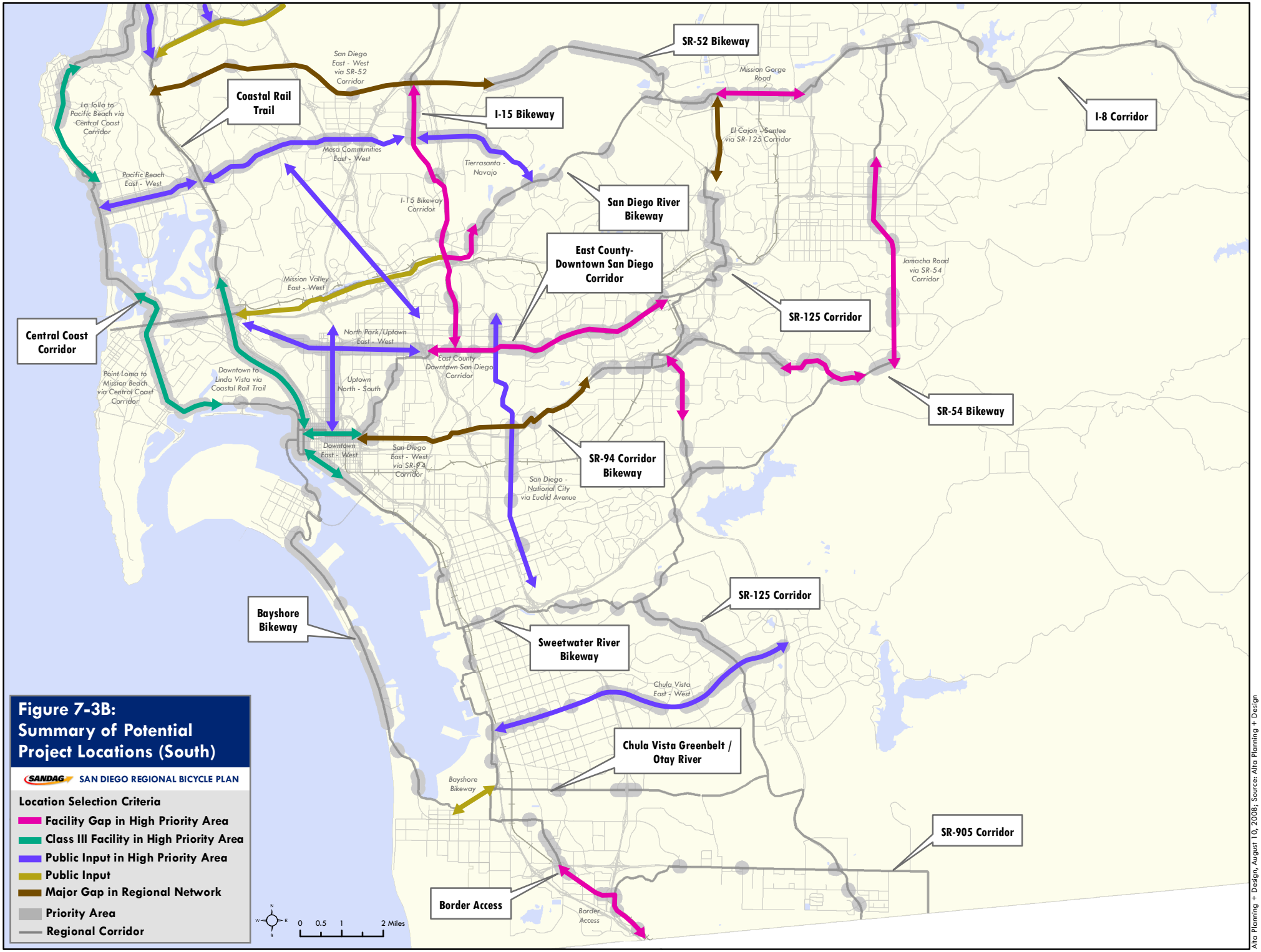

SR-52 Bikeway
Coastal Rail Trail
I-15 Bikeway
I-8 Corridor
San Diego River Bikeway
East County-Downtown San Diego Corridor
SR-125 Corridor
Central Coast Corridor
SR-54 Bikeway
SR-94 Corridor Bikeway
Bayshore Bikeway
SR-125 Corridor
Sweetwater River Bikeway
Chula Vista Greenbelt / Otay River
SR-905 Corridor
Border Access
San Diego East - West via SR-52 Corridor
La Jolla to Pacific Beach via Central Coast Corridor
Mesa Communities East - West
Tierrasanta - Navajo
Mission Gorge Road
El Cajon - Santee via SR-125 Corridor
Pacific Beach East - West
I-15 Bikeway Corridor
Mission Valley East - West
Jamacha Road via SR-54 Corridor
North Park/Uptown East - West
East County - Downtown San Diego Corridor
Point Loma to Mission Beach via Central Coast Corridor
Downtown to Linda Vista via Coastal Rail Trail
Uptown North - South
Downtown East - West
San Diego East - West via SR-94 Corridor
San Diego - National City via Euclid Avenue
Chula Vista East - West
Bayshore Bikeway
Border Access
Figure 7-3B: Summary of Potential Project Locations (South)
SANDAG SAN DIEGO REGIONAL BICYCLE PLAN
Location Selection Criteria
Facility Gap in High Priority Area
Class III Facility in High Priority Area
Public Input in High Priority Area
Public Input
Major Gap in Regional Network
Priority Area
Regional Corridor
0 0.5 1 2 Miles
Alta Planning + Design, August 10, 2008; Source: Alta Planning + Design

**Table 7-2. Summary of Potential Project Locations (South)**

| Regional Corridor | Project Location | | Source of Recommendation | | | |
|---|---|---|---|---|---|---|
| | From | To | High Priority Model | Public Input | Gap | Class III |
| Central Coast Corridor | La Jolla | Pacific Beach | ✓ | ✓ | | ✓ |
| | Mission Beach | Point Loma | ✓ | ✓ | | |
| Coastal Rail Trail | Linda Vista/Morena | Downtown | ✓ | ✓ | | ✓ |
| | Downtown | National City | ✓ | | | ✓ |
| I-15 Bikeway | SR-52 Bikeway | East County – Downtown San Diego Corridor | ✓ | ✓ | ✓ | ✓ |
| SR-125 Corridor | I-8 Corridor | Edgewood Dr | | | ✓ | |
| | SR-94 | Jamacha Rd | ✓ | | ✓ | |
| SR-54 Bikeway | El Cajon | SR-94 Bikeway | ✓ | | ✓ | |
| SR-52 Bikeway | Coast Rail Trail | Tierrasanta | ✓ | ✓ | ✓ | |
| I-8 Corridor | SR-125 Corridor | Chase Avenue | ✓ | | ✓ | |
| San Diego River Bikeway | Coastal Rail Trail | Navajo | | ✓ | ✓ | |
| East County-Downtown San Diego Corridor | Central Coast Corridor | SR-94 Corridor Bikeway | ✓ | | | ✓ |
| | I-15 Bikeway | SR-125 Corridor | ✓ | | ✓ | |
| SR-94 Corridor Bikeway | East County-Downtown San Diego Corridor | Federal Blvd | | | ✓ | |
| | Avocado Blvd | SR-54 Bikeway | ✓ | | ✓ | |
| Bayshore Bikeway | Imperial Beach | Chula Vista Greenbelt Otay River | | ✓ | | |
| Border Acess | SR-905 | San Ysidro Border Crossing | ✓ | | | |
| *New Corridor: (San Diego– National City via Euclid)* | East-County Downtown San Diego Corridor | Sweetwater Bikeway | | ✓ | | |
| *New Corridor (Uptown North-South)* | Uptown | Downtown | | ✓ | | |
| *New Corridor (Kearny Mesa – Uptown)* | Kearny Mesa | Uptown | ✓ | | | |
| *New Corridor (Pacific Beach to San Diego River Bikeway via Kearny Mesa)* | Pacific Beach | San Diego River Bikeway | ✓ | | | |
| *New Corridor (North Park/Uptown East-West)* | Coastal Rail Trail | East County – Downtown San Diego Corridor | | ✓ | | |
| *New Corridor (Chula Vista East-West)* | Bayshore Bikeway | SR-125 Corridor | | ✓ | | |

*Source: Alta Planning + Design, August, 2008*

## 7.2 Preliminary Bicycle Program Focuses

The findings presented in Chapter 4 pertaining to bicycle programs signify a need to expand encouragement programs throughout the region. Inventorying existing regional and local programs illustrates that few programs target the general public with information about the relationships between bicycling and issues

such as greenhouse gas emissions, obesity and neighborhood traffic safety. Public awareness campaigns are recognized as effective approaches to promoting bicycling and increasing support for bicycling by the general public. The importance of public awareness campaigns is reinforced by the bicycle program deficiencies survey results, with 63.2 percent of respondents indicating that they are highly interested in developing public awareness campaigns focused on bicyclists' rights, responsibilities, and the health and environmental benefits of bicycling. A coalition of San Diego community leaders has initiated an Active Transportation 2010 Campaign that seeks support for investment in facilities to foster active transportation in targeted communities throughout the region as well as investments in encouragement programs to change public behaviors and attitudes about non-motorized travel modes. There is an opportunity to build on the efforts of the Active Transportation Campaign to increase public awareness throughout the region and to identify specific incentive programs, resources and motorists-bicyclists awareness programs that encourage bicycling.

The bicycle program deficiencies survey results also demonstrate the usefulness of the San Diego Region Bike Map and bicyclists' strong desire for additional maps and guides that encourage bicycle travel. Similar resources could be developed in connection with public awareness campaigns. Roughly 48 percent of survey respondents also indicated that they have referred to the RideLink website for information about multimodal transportation choices. Improving this resource and promoting the development of additional support facilities would further the RCP aim to better connect pedestrian and bicycle travel to transit.

Two percent of the *TransNet* funds are allocated each year to facilitate biking and walking through improving facilities, constructing new infrastructure and funding education and encouragement campaigns. Providing direction to local governments on how to develop effective encouragement programs is important to furthering the benefits of bicycle facility investment.

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# APPENDIX EC-A: SAN DIEGO REGIONAL BICYCLE PLAN PUBLIC OUTREACH SURVEYS

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# Education, Encouragement, and Enforcement Programs Survey

***Welcome to the Program Preferences and Deficiencies Station**. Please complete the questions below. Your participation will help us recommend and prioritize programs that improve bicycle safety and promote bicycling.*

1. Have you or your family participated in any of the following events or classes?
   *(Check all programs you have participated in)*

   _____ Elementary School Bicycle Safety Education Program
   _____ San Diego Bicycle Coalition Classes
   _____ Safe Routes to School Event
   _____ Bike to Work Day
   _____ Cycling Sundays at Petco Park
   _____ Pedal to the Park
   _____ Other *(please specify)* _____

2. Please comment on your experience(s) participating in any of the programs listed in question 1.

3. Have you used any of the following bicycling resources SANDAG makes available? *(Please check all that apply)*

   _____ San Diego Region Bike Map

   _____ RideLink's online information:

      _____ Bus, Rail, and Carsharing Information

      _____ Regional Bike Shop Directory

      _____ Bicycle Advocacy Groups and Clubs

      _____ Safety Guidelines

      _____ Bike Security Information

      _____ Bikes on Transit Information

   _____ Other *(please specify)* _____

4. Please comment on your satisfaction with the printed and online bicycling information SANDAG makes available.

5. Please rate your level of interest in developing or expanding the following bicycle programs on a scale of 1 to 4, with 1 being highly interested and 4 being not at all interested.

| **Program Type** | **1** Highly Interested | **2** | **3** | **4** Not at all Interested |
|---|---|---|---|---|
| Education Programs for Motorists | | | | |
| Education Programs for Law Enforcement Personnel | | | | |
| Education Programs for Adult Cyclists | | | | |
| Education Programs for Elementary, Middle/Junior, and High School Students | | | | |
| Public Awareness Campaign Focused on Bicyclists Rights, Responsibilities, and the Health and Environmental Benefits of Bicycling | | | | |
| User-friendly Bicycle Maps and Guides | | | | |
| Route Planning for Bicyclists (511 service) | | | | |
| One-stop Bicycle Information Website | | | | |
| Community Support Encouragement Programs, such as the Diamond Awards Program | | | | |

6. Other suggestions or comments related to bicycle programs:

Thank you for your comments!

# Bicycle Riding Behavior Survey

***Welcome to the Riding Behavior Station**. Please complete the questions below. Your participation will help us define our goals as we develop the Regional Bicycle Plan.*

1. Why do you bike? *(check all that apply)*

   _____ For exercise/ health reasons
   _____ For pleasure
   _____ For shopping/errands
   _____ To get to work
   _____ To get to school
   _____ To get to transit
   _____ I don't bike
   _____ Other *(please specify)* _____

2. How many days per week do you ride? *(please circle the number below)*

   0 1 2 3 4 5 6 7

3. Where do you live? *(address or nearest intersection)*

   _____

4. What is the average distance of your rides (one-way)?

   _____ Under 2 miles
   _____ 3 – 5 miles
   _____ 6 – 10 miles
   _____ 11 – 24 miles
   _____ 25 miles and above

5. What prevents you from biking more often? *(check all that apply)*

_____ Destinations are too far away
_____ Too many cars/cars drive too fast
_____ Drivers don't share the road
_____ I travel with small children
_____ No bike paths, lanes or bike routes
_____ I have to carry things
_____ Not enough time
_____ Insufficient lighting
_____ Bikeways/roads in poor condition
_____ Weather
_____ Other *(please specify)* _____

6. Other comments related to your riding behaviors:

Thank you for your comments!

# Bicycle Facility Preferences Survey

***Welcome to the Facility Preferences Station**. Please complete the questions below. Your participation will help us recommend and prioritize bicycle facility improvement projects within the Regional Bicycle Plan.*

1. Where are your favorite places or routes to bike? *(please be specific)*

2. Please rate your level of preference for each of the following bicycle facilities on a scale of 1 to 4, with 1 being highly preferred and 4 being not at all preferred.

| **Bicycle Facility Type** | **1** Highly Preferred | **2** | **3** | **4** Not at all Preferred |
|---|---|---|---|---|
| Off-street Paved Bike Paths | | | | |
| On-street Bike Lanes | | | | |
| Bike Routes | | | | |
| Unpaved Trails or Dirt Paths | | | | |
| Bicycle Boulevard | | | | |

3. Other comments related to your bike facility preferences:

Thank you for your comments!

# Bicycle Facility Deficiencies Survey

***Welcome to the Facility Deficiencies Station**. Please complete the questions below. Your participation will help us identify bike facility deficiencies as we develop the Regional Bicycle Plan.*

1. Where are the most difficult places for you to bike and why? Where would you ride if you could and what prevents you from riding there?

2. Please list any gaps in the bicycle network you have experienced while riding in the San Diego region:

    a.

    b.

    c.

    d.

    e.

    f.

    g.

    h.

    i.

    j.

3. Would the following improvements influence you to bike more often:
   *(Please rate each improvement by likelihood of influencing you to bike more often)*

| **Improvement** | Very Likely | Likely | Somewhat Likely | Somewhat Unlikely | Unlikely | Very Unlikely |
|---|---|---|---|---|---|---|
| More Bike Lanes on Major Streets | | | | | | |
| More Bike Routes | | | | | | |
| More Paved (off-street) Bike Paths | | | | | | |
| Increased Maintenance | | | | | | |
| Widen Outside/Curb Lanes on Major Streets | | | | | | |
| More On-road Bike Signage | | | | | | |
| More Bicycle Parking | | | | | | |
| Bicycle Boulevards | | | | | | |

Other (please specify):

4. Other comments related to bike facility deficiencies:

Thank you for your comments

# APPENDIX EC-B. MATERIAL RECEIVED FROM LOCAL GOVERNMENTS (DATE & FORMAT )

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| Local Jurisdiction | Appendix EC-B: Material Received from Local Governments (date & format ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Acknowledge Receipt of Data Request | Proposed stakeholder List | Bicycle Count Data | Bicycle Crash Data | General Plan / Circulation Element | Bicycle Master Plan | Trail Plan | Other Bicycle Facilities | Bicycle Program Information | Bicycle Expenditure Past 5 Years |
| | | | | | | | | | | |
| La Mesa | | | | | | | | | | |
| Lemon Grove | Yes | | | | | 6/4/08 PDF | | | | |
| National City | | | | | 6/25/08 Hard Copy | 6/25/08 Hard Copy CD-Draft | | | | |
| Oceanside | Yes | | | 6/2/08 Excel | | NA | | | | |
| Poway | | | | | | | | | | |

| Local Jurisdiction | Appendix EC-B: Material Received from Local Governments (date & format ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Acknowledge Receipt of Data Request | Proposed stakeholder List | Bicycle Count Data | Bicycle Crash Data | General Plan / Circulation Element | Bicycle Master Plan | Trail Plan | Other Bicycle Facilities | Bicycle Program Information | Bicycle Expenditure Past 5 Years |
| City of San Diego | Yes | | | | | 5/29/08 PDF | | | | |
| San Marcos | Yes | | | | | 6/4/08 PDF | | | | |
| Santee | Yes | | | NA | 5/27/08 PDF | 5/27/08 PDF | 5/27/08 PDF | | | |
| Solana Beach | | | | | | | | | | |
| Vista | Yes | | | 6/25/08 Hard Copy | 5/28/08 PDF | 6/20/08 PDF | | | | 6/25/08 Hard Copy |
| County of San Diego | Yes | | | | | 5/27/08 Hard Copy | | | | |
| Caltrans | | | | | | | | | | |
| Port of San Diego | Yes | | | | 5/27/08 Hard Copy | | | | | |
| MTS | | | | | | | | | | |
| NCTD | Yes | | | | | | | | | |

| Local Jurisdiction | Appendix EC-B: Material Received from Local Governments (date & format ) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Acknowledge Receipt of Data Request | Proposed stakeholder List | Bicycle Count Data | Bicycle Crash Data | General Plan / Circulation Element | Bicycle Master Plan | Trail Plan | Other Bicycle Facilities | Bicycle Program Information | Bicycle Expenditure Past 5 Years |
| | | | | | | | | | | |
| Citizen Advocate | Yes | | | | | | | | | |
| SD Bicycle Coalition | Yes | | | | | | | | | |

# APPENDIX EC-C. AM PEAK PERIOD BICYCLE COUNT DATA (1981 – 2007)

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## Appendix EC-C: AM Peak Period Bicycle Count Data (1981 – 2007)

| Seamless Site ID | Count Location | 1981 | 1985 | % Change from previous period | 1987 | % Change from previous period | 1990 | % Change from previous period | 1993 | % Change from previous period | 1997 | % Change from previous period | 2007 | % Change from previous period |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Pomona Ave. & Orange Ave/Silver Strand | 62 | -- | -- | 36 | -41.9% | 83 | 130.6% | 32 | -61.4% | 58 | 81.3% | 108 | 86.2% |
| 3 | Euclid Ave & Eighth St | -- | -- | -- | -- | -- | 6 | -- | 11 | 83.3% | 13 | 18.2% | 0 | -100.0% |
| 6 | Sixth Ave & Laurel St | 32 | -- | -- | 42 | 31.3% | 49 | 16.7% | 31 | -36.7% | 32 | 3.2% | 4 | -87.5% |
| 8 | Euclid Ave & Imperial Ave | 12 | -- | -- | 15 | 25.0% | 23 | 53.3% | 13 | -43.5% | 3 | -76.9% | 3 | 0.0% |
| 9 | Idaho St & Howard Ave | 36 | 28 | -22.2% | 13 | -53.6% | 29 | 123.1% | 8 | -72.4% | 12 | 50.0% | 6 | -50.0% |
| 10 | Harbor Dr & Nimitz Blvd | 46 | -- | -- | -- | -- | -- | -- | -- | n--/a | 24 | -47.8% | 61 | 154.2% |
| 11 | Pacific Highway & Rosecrans St/Taylor St | 73* | 54 | -26.0% | -- | -- | -- | -- | -- | -- | 61 | 13.0% | 82 | 34.4% |
| 12 | Sunset Cliffs & San Diego River Bikeway | -- | -- | -- | -- | -- | -- | -- | -- | -- | 62 | -- | 83 | 33.9% |
| 13 | 28th St & Harbor Dr | 43 | -- | -- | 11 | -74.4% | 31 | 181.8% | 20 | -35.5% | -- | -- | 1 | -95.0% |
| 16 | College Ave & Montezuma Rd | 594 | 553 | -6.9% | 470 | -15.0% | 264 | -43.8% | 237 | -10.2% | 119 | -49.8% | 5 | -95.8% |
| 108 | Mission Blvd & Loring St | 66 | -- | -- | -- | -- | -- | -- | -- | -- | 34 | -48.5% | 13 | -61.8% |
| 109 | Napa St & Friars Rd | -- | 78 | -- | -- | -- | -- | -- | 69 | -11.5% | 57 | -17.4% | 3 | -94.7% |
| 110 | Linda Vista Rd & Mesa College Dr | -- | -- | -- | -- | -- | -- | -- | -- | -- | 46 | -- | 15 | -67.4% |
| 111 | Genesee Ave & Balboa Ave | 35 | 38 | 8.6% | 68 | 78.9% | 21 | -69.1% | 12 | -42.9% | 24 | 100.0% | 0 | -100.0% |
| 112 | Gilman Dr & Rose Canyon Bike Path | -- | 54 | -- | 77 | 42.6% | 72 | -6.5% | 57 | -20.8% | 54 | -5.3% | 67 | 24.1% |

## Appendix EC-C: AM Peak Period Bicycle Count Data (1981 – 2007)

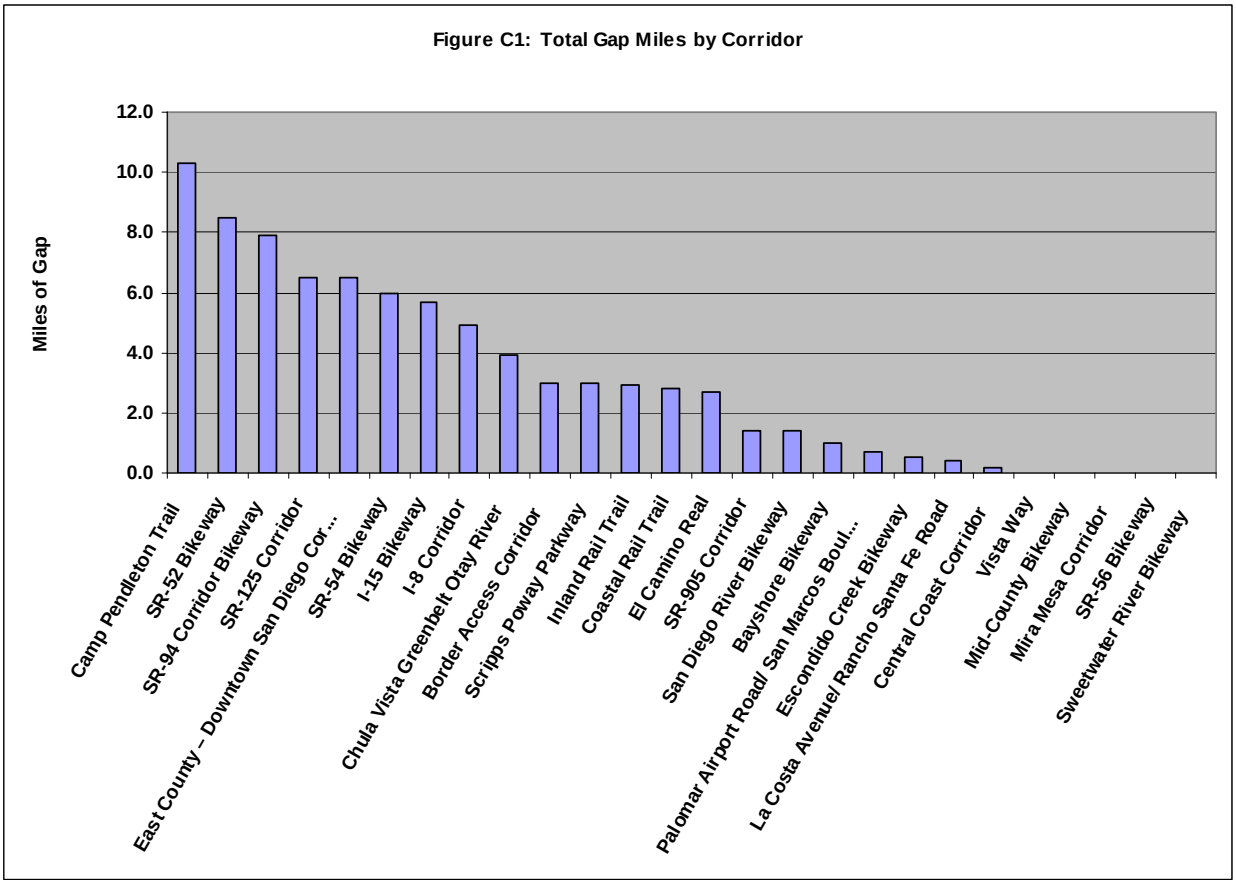
| Seamless Site ID | Count Location | 1981 | 1985 | % Change from previous period | 1987 | % Change from previous period | 1990 | % Change from previous period | 1993 | % Change from previous period | 1997 | % Change from previous period | 2007 | % Change from previous period |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 115 | I-15 Bikeway & Scripps Poway Pkwy | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21 | -- | 11 | -47.6% |
| 201 | 5th Ave & H St | 17 | -- | -- | 42 | 147.1% | 34 | -19.0% | 10 | -70.6% | 24 | 140.0% | 0 | -100.0% |
| 205 | Hilltop Dr & E Orange Ave | -- | -- | -- | 14 | -- | 7 | -50.0% | 20 | 185.7% | 8 | -60.0% | 6 | -25.0% |
| 207 | SR-75 & Bayshore Bikeway | -- | -- | -- | -- | -- | -- | -- | -- | -- | 51 | -- | 87 | 70.6% |
| 208 | 13th St & Palm Ave | -- | -- | -- | -- | -- | -- | -- | -- | -- | 57 | -- | 8 | -86.0% |
| 306 | Johnson Ave & Fletcher Pkwy | 29 | -- | -- | 27 | -6.9% | 27 | 0.0% | 12 | -55.6% | 20 | 66.7% | 8 | -60.0% |
| 308 | Second St & Broadway | 13 | -- | -- | 57 | 338.5% | 32 | -43.9% | 67 | 109.4% | 36 | -46.3% | 12 | -66.7% |
| 310 | 70th St & University Ave | 22 | 23 | 4.5% | 23 | 0.0% | 45 | 95.7% | 30 | -33.3% | 27 | -40.0% | 9 | -66.7% |
| 313 | Massachusetts Ave & Broadway | 4 | -- | -- | 23 | 475.0% | 20 | -13.0% | 20 | 0.0% | 5 | -75.0% | 13 | 160.0% |
| 315 | Fanita Dr Bike Path & Navajo Rd | -- | -- | -- | 25 | -- | 26 | 4.0% | 13 | -50.0% | 17 | -34.6% | -- | -- |
| 316 | Magnolia Ave & Mission Gorge Rd | 28 | 31 | 10.7% | 51 | 64.5% | 59 | 15.7% | 49 | -16.9% | 42 | -28.8% | 22 | -47.6% |
| 401 | Carlsbad Blvd & Tamarack Ave | 22 | 38 | 72.7% | 59 | 55.3% | 46 | -22.0% | 75 | 63.0% | 29 | -37.0% | 0 | -100.0% |
| 403 | Carlsbad Blvd & Poinsettia Ln | -- | -- | -- | -- | -- | 42 | -- | 58 | 38.1% | 61 | 5.2% | 46 | -24.6% |
| 405 | N. Coast Hwy & Encinitas Blvd | 25 | 35 | 40.0% | 26 | -25.7% | 38 | 46.2% | 57 | 50.0% | 42 | -26.3% | 55 | 31.0% |
| 406 | N. Coast Hwy & Oceanside Blvd | -- | 12 | -- | 18 | 50.0% | 24 | 33.3% | 21 | -12.5% | 25 | 19.0% | 6 | -76.0% |
| 409 | Pacific St & Oceanside Blvd | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10 | -- | 14 | 40.0% |
| 410 | Pacific Highway & Loma Santa Fe | 66 | -- | -- | 77 | 16.7% | 152 | 97.4% | 80 | -47.4% | 58 | -27.5% | 36 | -37.9% |

## Appendix EC-C: AM Peak Period Bicycle Count Data (1981 – 2007)

| Seamless Site ID | Count Location | 1981 | 1985 | % Change from previous period | 1987 | % Change from previous period | 1990 | % Change from previous period | 1993 | % Change from previous period | 1997 | % Change from previous period | 2007 | % Change from previous period |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 503 | Ash St & Valley Pkwy | 14 | 9 | -35.7% | 16 | 77.8% | 31 | 93.8% | 22 | -29.0% | -- | -- | 18 | -18.2% |
| 505 | Twin Oaks Valley Rd & Barham Dr | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14 | n/a | 1 | -92.9% |
| 508 | N. Melrose Dr & Olive Ave | -- | -- | -- | -- | -- | 15 | -- | 10 | -33.3% | 19 | 90.0% | 24 | 26.3% |
| 509 | E. Vista Way & Vale Terrace Dr | -- | -- | -- | -- | -- | 12 | -- | 30 | 150.0% | 9 | -70.0% | 4 | -55.6% |
| 510 | N. Santa Fe Ave & W. Bobier Dr | -- | -- | -- | -- | -- | 23 | -- | 67 | 191.3% | 26 | -61.2% | 10 | -61.5% |
| 616 | Park Boulevard & University Ave | 90 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 13 | -85.6% |
| 621 | Sports Arena Blvd & Rosecrans St | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 | n/a |
| 639 | Spring St & La Mesa Blvd | 15* | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7 | -53.3% |
| 643 | Poway Road & Community Road | 12 | -- | -- | 21 | 75.0% | 21 | 0.0% | -- | -- | -- | -- | 20 | -4.8% |

Source: Caltrans Bicycle Count Program, 1981 & 1982; SANDAG Regional Bicycle Count Program 1985-1997; and Seamless Travel Study 2007

# APPENDIX EC-D. SUMMARY OF GAP-MILES BY REGIONAL CORRIDOR



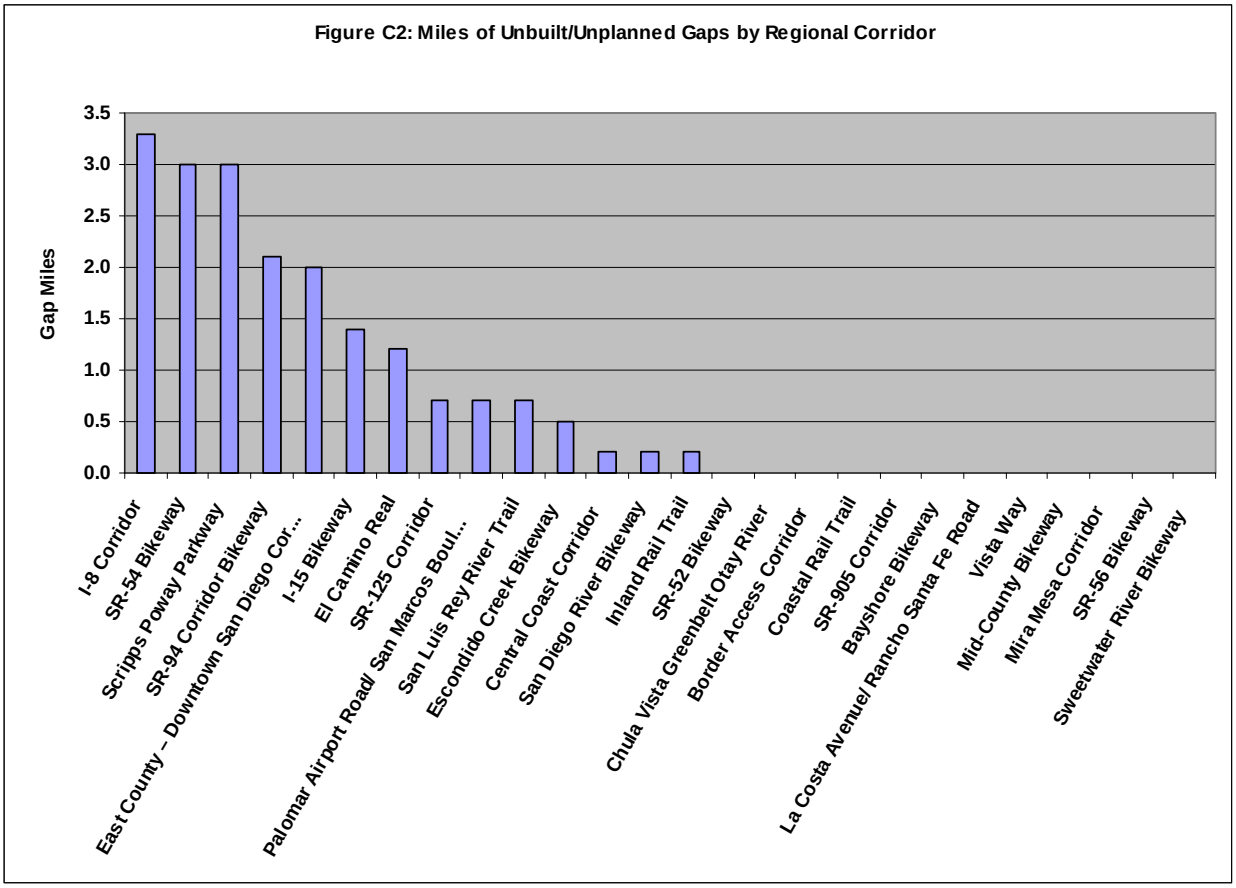


Figure C2: Miles of Unbuilt/Unplanned Gaps by Regional Corridor
Gap Miles
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
I-8 Corridor
SR-54 Bikeway
Scripps Poway Parkway
SR-94 Corridor Bikeway
East County – Downtown San Diego Cor...
I-15 Bikeway
El Camino Real
SR-125 Corridor
Palomar Airport Road/ San Marcos Boul...
San Luis Rey River Trail
Escondido Creek Bikeway
Central Coast Corridor
San Diego River Bikeway
Inland Rail Trail
SR-52 Bikeway
Chula Vista Greenbelt/Otay River
Border Access Corridor
Coastal Rail Trail
SR-905 Corridor
Bayshore Bikeway
La Costa Avenue/ Rancho Santa Fe Road
Vista Way
Mid-County Bikeway
Mira Mesa Corridor
SR-56 Bikeway
Sweetwater River Bikeway

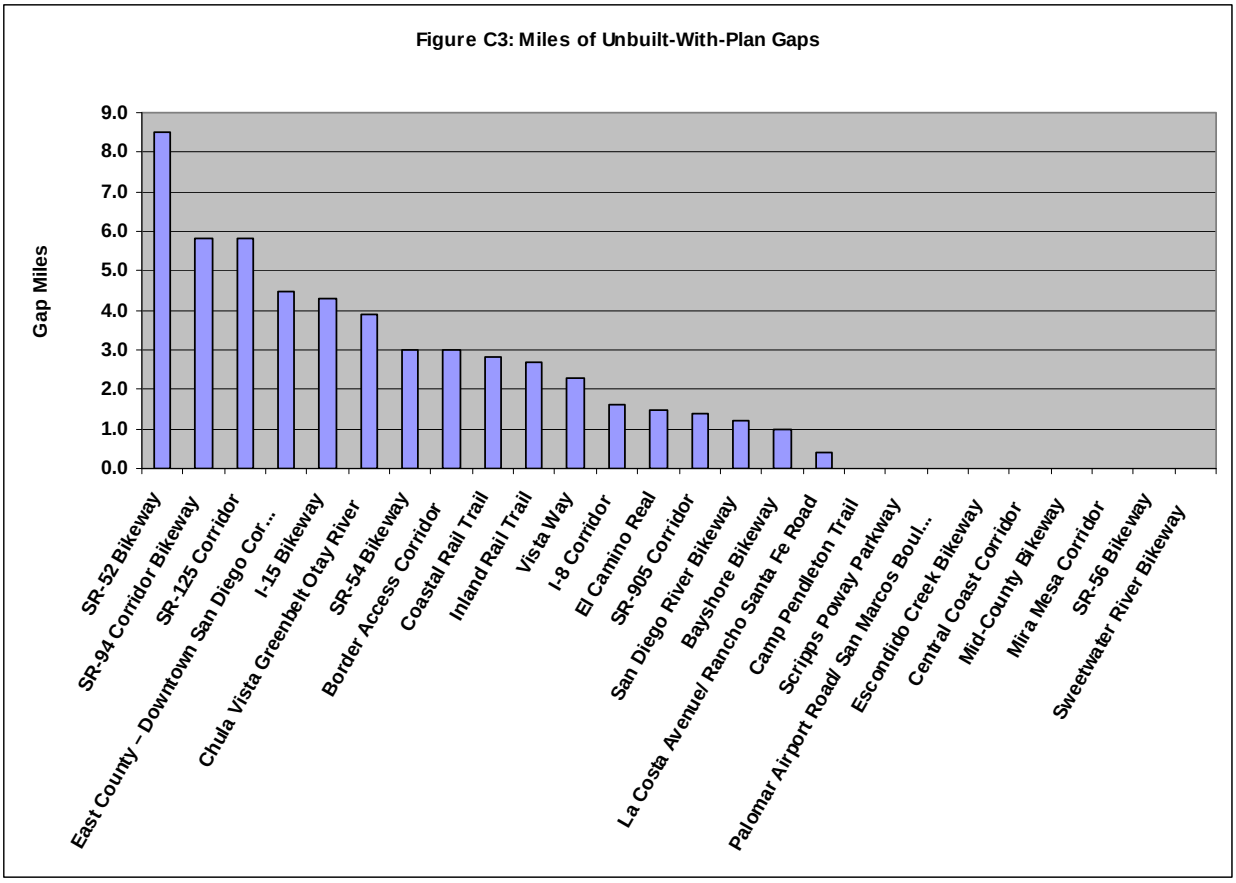


Figure C3: Miles of Unbuilt-With-Plan Gaps
Gap Miles
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
SR-52 Bikeway
SR-94 Corridor Bikeway
SR-125 Corridor
East County – Downtown San Diego Cor...
I-15 Bikeway
Chula Vista Greenbelt Otay River
SR-54 Bikeway
Border Access Corridor
Coastal Rail Trail
Inland Rail Trail
Vista Way
I-8 Corridor
El Camino Real
SR-905 Corridor
San Diego River Bikeway
Bayshore Bikeway
La Costa Avenue/ Rancho Santa Fe Road
Camp Pendleton Trail
Scripps Poway Parkway
Palomar Airport Road/ San Marcos Boul...
Escondido Creek Bikeway
Central Coast Corridor
Mid-County Bikeway
Mira Mesa Corridor
SR-56 Bikeway
Sweetwater River Bikeway

# Appendix B – Revenue Constrained Scenario Costing & Network Map

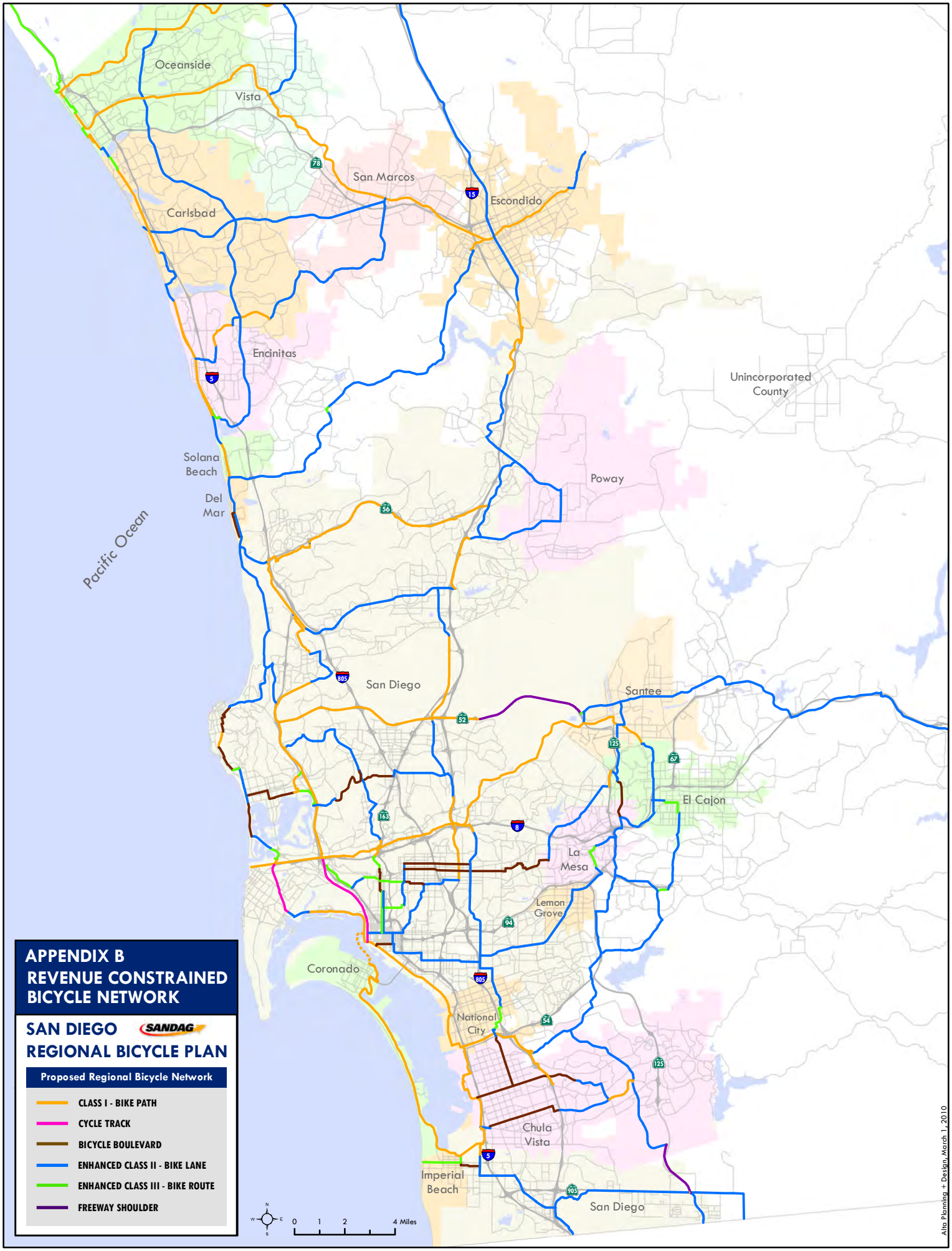
Cost Estimate for the Revenue Constrained Network
SANDAG Regional Bicycle Plan

| Name | Beginning | End | Total Miles | Miles of Unbuilt Facility | | | | | | | Average Priority Score | Cost of Unbuilt Portion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unbuilt Miles | Class I | Class II[1] | Class II[2] | Class III | Bike Blvd | Cycle Track | | |
| Bayshore Bikeway | Central Coast Corridor | Central Coast Corridor | 23.8 | 11.2 | 11.2 | 0 | 0 | 0 | 0 | 0 | 5.2 | $29,568,000 |
| Bay to Ranch Bikeway | Bayshore Bikeway | Chula Vista Greenbelt Otay River | 7.4 | 4.8 | 0 | 0 | 0.7 | 0 | 4.1 | 0 | 3.3 | $502,750 |
| Border Access Corridor (Preferred Alternative) | Bayshore Bikeway | San Ysidro Border Crossing, San Diego | 6.4 | 3.1 | 0 | 0 | 3.1 | 0 | 0 | 0 | 6.5 | $93,000 |
| Camp Pendleton Trail | Northern boundary of County of San Diego | San Luis Rey River Trail, Oceanside | 18.9 | 18.1 | 0 | 0 | 0 | 18.1 | 0 | 0 | 1.7 | $267,880 |
| Carlsbad – San Marcos Corridor | Coastal Rail Trail, Carlsbad | Inland Rail Trail, San Marcos | 10.3 | 0.7 | 0 | 0.7 | 0 | 0 | 0 | 0 | 2.4 | $191,100 |
| Central Coast Corridor | Coastal Rail Trail, Del Mar | Bayshore Bikeway, San Diego | 22.1 | 7.5 | 0 | 0 | 1.5 | 0.1 | 3.8 | 2.1 | 5.7 | $1,440,500 |
| Centre City – La Mesa Corridor | Bayshore Bikeway, San Diego | SR-125 Corridor | 13.7 | 7.5 | 0 | 0 | 6.8 | 0 | 0.7 | 0 | 7.3 | $286,250 |
| Chula Vista Greenbelt Otay River (Preferred Alternative) | Bayshore Bikeway, San Diego | SR-125 Corridor, Chula Vista | 5.7 | 3.8 | 0 | 0 | 0.8 | 0 | 3.0 | 0 | 3.2 | $376,500 |
| City Heights – Old Town Corridor | Coastal Rail Trail | I-15 Bikeway | 6.2 | 4.9 | 0 | 0 | 1.4 | 2.6 | 0.9 | 0 | 9.7 | $186,230 |
| Clairemont – Centre City Corridor | Coastal Rail Trail | North Park – Centre City Corridor | 13.9 | 7.7 | 0.9 | 0 | 4.2 | 1.5 | 1.1 | 0 | 8.1 | $2,653,450 |
| Coastal Rail Trail | San Luis Rey River Trail, Oceanside | Bayshore Bikeway, San Diego | 44.3 | 26.6 | 18.6 | 0 | 0.9 | 1.8 | 1.2 | 4.1 | 7.9 | $51,148,560 |
| East County Northern Loop | SR-125 Corridor, La Mesa | SR-125 Corridor, County of San Diego | 9.2 | 3.7 | 0 | 2.3 | 0 | 1.4 | 0 | 0 | 2.8 | $648,620 |
| East County Southern Loop | East County Northern Loop, El Cajon | SR-125 Corridor, County of San Diego | 4.3 | 1.1 | 0 | 0 | 1.1 | 0 | 0 | 0 | 1.1 | $33,000 |
| El Camino Real | San Luis Rey River Trail, Oceanside | Coastal Rail Trail, Encinitas | 20 | 3.8 | 0 | 3.2 | 0 | 0.6 | 0 | 0 | 1.4 | $882,480 |
| Encinitas – San Marcos Corridor | Coastal Rail Trail , Encinitas | Inland Rail Trail, San Marcos | 13.3 | 0.1 | 0 | 0.1 | 0 | 0 | 0 | 0 | 1.7 | $27,300 |
| Escondido Creek Bikeway | I-15 Bikeway, Escondido | Valley Centre Rd, Escondido | 5.9 | 1.7 | 0.5 | 0 | 1.2 | 0 | 0 | 0 | 3.3 | $1,356,000 |
| Gilman Connector | Central Coast Corridor, San Diego | Coastal Rail Trail | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.1 | 0 |
| Hillcrest – El Cajon Corridor | Kensington – Balboa Park Corridor | SR-125 Corridor | 11.5 | 6.8 | 0 | 0 | 0.4 | 6.4 | 0 | 0 | 7.3 | $764,000 |
| Imperial Beach Connector | Seacoast Drive, Imperial Beach | Border Access | 2.6 | 2.4 | 0 | 0 | 0 | 1.5 | 0.9 | 0 | 6.4 | $127,950 |
| Inland Rail Trail | Coastal Rail Trail, Oceanside | I-15 Bikeway, Escondido | 20.7 | 14.8 | 14.8 | 0 | 0 | 0 | 0 | 0 | 5.4 | $39,072,000 |
| Kearny Mesa – Beaches Corridor (Preferred Alternative) | Central Coast Corridor, Pacific Beach | I-15 Bikeway, San Diego | 10.4 | 7 | 0.2 | 1 | 0 | 0 | 5.8 | 0 | 5.2 | $1,482,500 |
| Kensington – Balboa Park Corridor | Clairemont – Centre City Corridor | Mission Valley – Chula Vista Corridor | 5.3 | 4.3 | 0 | 0 | 1.7 | 0 | 2.6 | 0 | 9.8 | $356,500 |
| North Park – Centre City Corridor | City Heights – Old Town Corridor | Coastal Rail Trail | 3.7 | 1.5 | 0 | 1 | 0.5 | 0 | 0 | 1 | 6.9 | $288,000 |
| Mid-County Bikeway Corridor | Coastal Rail Trail, Del Mar | Inland Rail Trail | 17.3 | 4.6 | 0 | 0 | 4.4 | 0.2 | 0 | 0 | 3.4 | $134,960 |
| Mira Mesa Corridor | Coastal Rail Trail, San Diego | I-15 Bikeway | 6.5 | 1.8 | 0.7 | 1.1 | 0 | 0 | 0 | 0 | 4.1 | $2,148,300 |
| Mission Valley – Chula Vista Corridor | San Diego River Bikeway, San Diego | Bay to Ranch Bikeway, Chula Vista | 12.5 | 10.3 | 0.7 | 2.1 | 4.2 | 1.2 | 2.1 | 0 | 6.5 | $2,811,810 |
| Park Boulevard Connector | North Park – Centre City Corridor | Centre City – La Mesa Corridor | 0.4 | 0.4 | 0 | 0.4 | 0 | 0 | 0 | 0 | 6 | $109,220 |
| Poway Loop | I-15 Bikeway, San Diego | I-15 Bikeway, San Diego | 6.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| San Diego River Bikeway | Voltaire St, San Diego | SR-125 Corridor, Santee | 17.9 | 10.7 | 10.7 | 0 | 0 | 0 | 0 | 0 | 5.2 | $28,248,000 |
| San Luis Rey River Trail | Coastal Rail Trail, Oceanside | I-15 Bikeway, County of San Diego | 18.4 | 10.7 | 10.7 | 0 | 0 | 0 | 0 | 0 | 2 | $28,248,000 |

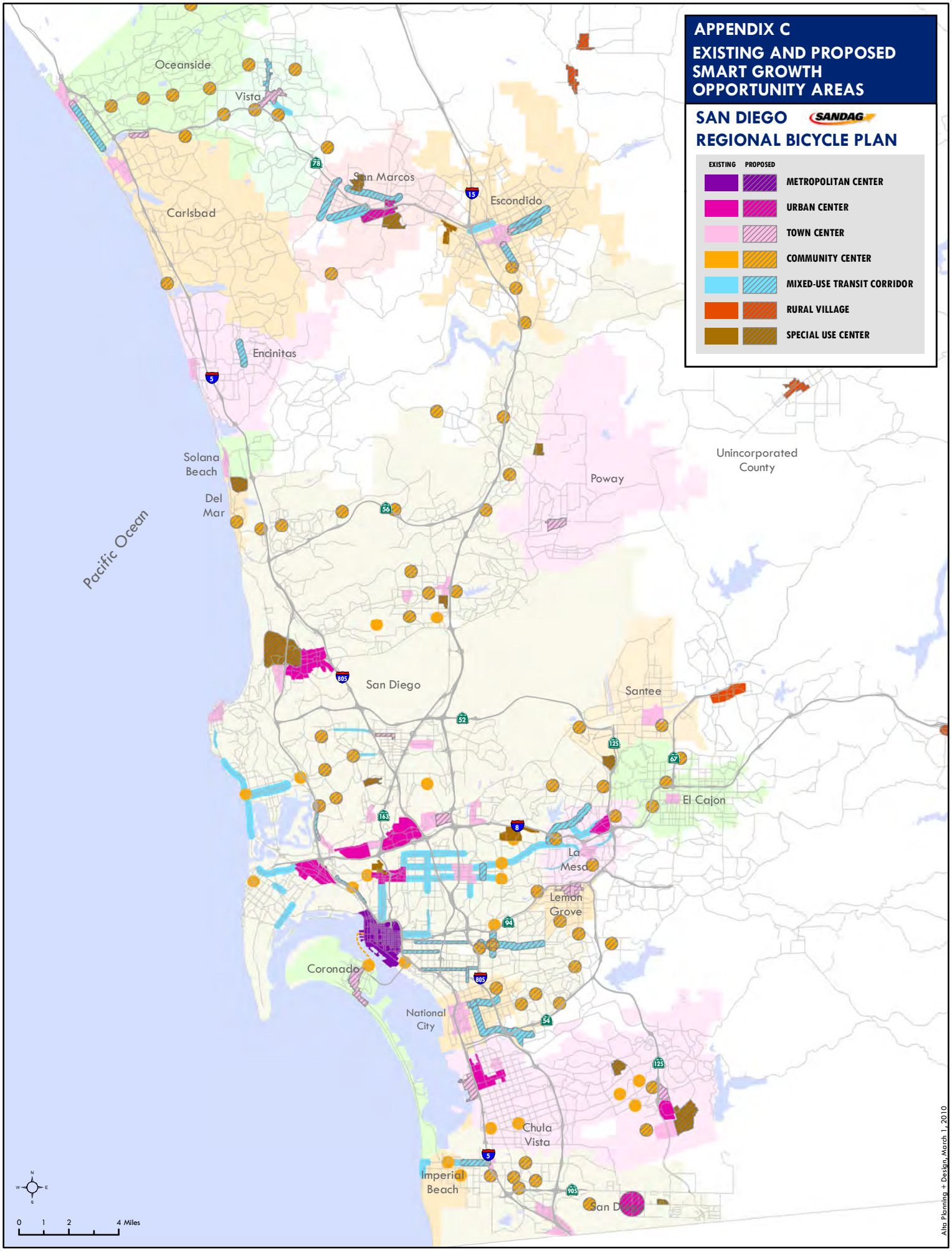
[1] Class II with constraints.
[2] Class II without constraints.

Cost Estimate for the Revenue Constrained Network
SANDAG Regional Bicycle Plan

| Name | Beginning | End | Total Miles | Miles of Unbuilt Facility | | | | | | | Average Priority Score | Cost of Unbuilt Portion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Unbuilt Miles | Class I | Class II[1] | Class II[2] | Class III | Bike Blvd | Cycle Track | | |
| Santee – El Cajon Corridor | El Cajon Northern Loop, El Cajon | I-8 Corridor, Santee | 4.9 | 0.2 | 0 | 0 | 0.2 | 0 | 0 | 0 | 3.5 | $6,000 |
| Sweetwater River Bikeway | Bayshore Bikeway, National City | SR-125 Corridor, Chula Vista | 5.2 | 0.6 | 0.6 | 0 | 0 | 0 | 0 | 0 | 2.5 | $1,584,000 |
| Vista Way Connector | San Luis Rey River Trail | Inland Rail Trail | 4.6 | 2.5 | 0 | 2.5 | 0 | 0 | 0 | 0 | 2.5 | $682,500 |
| I-8 Corridor | SR-125 Corridor | Japatul Valley Rd, County of San Diego | 26 | 4.4 | 0 | 0 | 4.4 | 0 | 0 | 0 | 1.6 | $132,000 |
| I-15 Bikeway | Northern boundary of County of San Diego | City Heights – Old Town Corridor | 55.1 | 12.6 | 7.5 | 0 | 5.1 | 0 | 0 | 0 | 2.3 | $19,953,000 |
| SR-52 Bikeway | Coastal Rail Trail, San Diego | San Diego River Bikeway, San Diego | 13.5 | 8.6 | 8.4 | 0 | 0 | 0.2 | 0 | 0 | 3.2 | $22,178,960 |
| SR-56 Bikeway | Coastal Rail Trail, San Diego | I-15 Bikeway, San Diego | 10.7 | 1.2 | 1.2 | 0 | 0 | 0 | 0 | 0 | 1.6 | $3,168,000 |
| SR-125 Corridor | San Diego River Bikeway, Santee | Otay Mesa Border Crossing, San Diego | 24.8 | 6.5 | 0 | 0 | 4.9 | 0 | 1.6 | 0 | 4.3 | $335,000 |
| SR-905 Corridor | Border Access Corridor, San Diego | Future SR-11 Border Crossing, County of San Diego | 9 | 7.2 | 0 | 0 | 7.2 | 0 | 0 | 0 | 2.5 | $216,000 |
| | | | 517.1 | 227.2 | 88.5 | 14.4 | 54.7 | 29.2 | 34.2 | 6.2 | | $246,460,300 |


Oceanside
Vista
San Marcos
Escondido
Carlsbad
Encinitas
Unincorporated County
Solana Beach
Del Mar
Poway
Pacific Ocean
San Diego
Santee
El Cajon
La Mesa
Lemon Grove
Coronado
National City
Chula Vista
Imperial Beach
San Diego
APPENDIX B
REVENUE CONSTRAINED BICYCLE NETWORK
SAN DIEGO REGIONAL BICYCLE PLAN
SANDAG
Proposed Regional Bicycle Network
CLASS I - BIKE PATH
CYCLE TRACK
BICYCLE BOULEVARD
ENHANCED CLASS II - BIKE LANE
ENHANCED CLASS III - BIKE ROUTE
FREEWAY SHOULDER
0 1 2 4 Miles
Alta Planning + Design, March 1, 2010

# Appendix C – Smart Growth Opportunity Area Map


APPENDIX C
EXISTING AND PROPOSED SMART GROWTH OPPORTUNITY AREAS
SAN DIEGO REGIONAL BICYCLE PLAN
SANDAG
EXISTING
PROPOSED
METROPOLITAN CENTER
URBAN CENTER
TOWN CENTER
COMMUNITY CENTER
MIXED-USE TRANSIT CORRIDOR
RURAL VILLAGE
SPECIAL USE CENTER
Oceanside
Vista
San Marcos
Escondido
Carlsbad
Encinitas
Solana Beach
Del Mar
Pacific Ocean
Poway
Unincorporated County
San Diego
Santee
El Cajon
La Mesa
Lemon Grove
Coronado
National City
Chula Vista
Imperial Beach
San Diego
0 1 2 4 Miles
Alta Planning + Design, March 1, 2010

# Appendix D – Model Bike Parking Ordinance

# Appendix D – MODEL BIKE PARKING ORDINANCES

This appendix provides sample bicycle parking code language taken verbatim from the City of Palo Alto Municipal Code, the City of San Francisco Planning Code and City of Oakland Planning Code. It is recommended that jurisdictions in the San Diego region adopt bicycle parking ordinances that incorporate comparable language into their municipal codes. Because bike parking needs vary between jurisdictions, agencies are encouraged to research the provisions of several jurisdictions within and outside of California. Note that standard design requirements is as equally as important as quantity requirements to ensure that required parking is effective and therefore utilized.

## PALO ALTO MUNICIPAL CODE

### BICYCLE PARKING REQUIREMENTS

**Excerpts from the Palo Alto, Ch. 18.5.**
**See: http://www.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=8727**

**18.54.060 Bicycle Parking Facilities**

Bicycle parking facilities shall be provided for new buildings, addition or enlargement of an existing building, or for any change in the use that results in the need for additional vehicle parking facilities consistent with the parking requirements contained within Section18.52.040. Bicycle parking facilities required by Section 18.52.040 may contain bicycle parking elements of the types described in subsection (a) below, and arranged according to the layout requirements described in (b) below. The department of planning and community environment maintains a list of Approved, Conditionally Approvable, and Prohibited types of bicycle racks and bicycle lockers. Bicycle racks and lockers not on the "Approved" list must be approved by the director. Likewise layout diagram examples specifying clearances and other aspects of bicycle parking areas are also available from the department of planning and community environment.

**(a) Types of Facilities**
Bicycle parking is designed for two types of uses: long-term and short-term. Depending on use, a bicycle parking facility may be a bicycle rack, a bicycle locker, or a multifamily dwelling unit storage locker, a restricted access enclosure, or a school bicycle enclosure as described below.

**(1) Short-Term Bicycle Parking (Bicycle Racks)**
Short-term bicycle parking is intended for shoppers, customers, and visitors who require bicycle storage for up to several hours.

**(A) Bicycle Rack**
An acceptable bicycle rack is a stationary object to which the bicycle user can lock the frame and one or both wheels of a bicycle with a user-provided high-security Ushaped lock ("U-lock") or cable, and which is either anchored to an immovable surface or is heavy enough that it cannot be easily moved.

*(i) Intended Use*
Bicycle racks located in publicly accessible areas are intended for short-term parking, to encourage shoppers, customers, and visitors to use bicycles.
*(ii) Performance*
All bicycle racks provided pursuant to this ordinance shall support a bicycle by its frame in a stable upright position with both tires on the ground or floor, without damage to the bicycle or its finish. The parts of the rack that secure the bicycle shall resist disassembly and cutting with manual tools. Bicycle racks should provide independent access to parked bicycles without the need for awkward movements even when the rack is fully loaded.

**(2) Long-Term Bicycle Parking**
Long-term bicycle facilities are intended for bicyclists who need to park a bicycle and its components and accessories for extended periods during the day, overnight or for a longer duration. Long-term bicycle storage is typically for employees, students, residents and commuters. The facility frequently protects the bicycle from inclement weather. Four design alternatives for these facilities are as follows:

**(A) Bicycle Locker**
A bicycle locker is a fully enclosed space for one bicycle, accessible only to the owner or operator of the bicycle. It protects the entire bicycle, its components and accessories from theft and inclement weather, including wind-driven rain. Bicycle lockers may be pre-manufactured or may be designed for individual sites.

*(i) Intended Use*
Bicycle lockers are the preferred long-term storage option for employees or residents.
*(ii) Locking Device*
**Internal Lock**. A bicycle locker must be equipped with an internally mounted key-actuated or electronic locking mechanism, and not lockable with a userprovided lock. Groups of internal-lock bicycle lockers may share a common electronic access mechanism provided that each locker is accessible only to its assigned user.
**External Lock.** An external-lock such as padlock hasps are not acceptable for most uses. External lock bike lockers may be permitted in shopping centers with the approval of the director on a case-by-case basis.

**(B) Restricted-Access Bicycle Enclosure**
A restricted-access bicycle enclosure is a locked area containing within it one bicycle rack space for each bicycle to be accommodated, and accessible only to the owners or operators of the bicycles parked within it. The maximum capacity of each restricted access bicycle enclosure shall be 20 bicycles unless approved by Transportation Division staff. The doors of such enclosures must be fitted with key or electronic locking mechanisms that admit only users and managers of the facility. The enclosure doors must close and lock automatically if released.

In multiple-family residential developments, a common locked garage area incorporating bicycle racks shall be deemed a restricted-access bicycle enclosure provided that the garage is accessible only to the residents of the units for whom the garage is provided. In such cases it

is preferable that the bicycle storage area within the garage be separately enclosed and secured to enable access only by bicycle owners.

*Intended Use*

A restricted access enclosure is an alternative long term bicycle storage option for commercial and multifamily residential projects.

**(C) Multifamily Dwelling Unit Storage Locker**

A multifamily dwelling unit storage locker is a locked area separate from the dwelling unit, secured by a lock that can be opened only by the occupants of the respective dwelling unit.

*Intended Use*

A multifamily dwelling unit storage locker is intended for long-term storage of household possessions that are not kept in the dwelling unit, including bicycles.

*Configuration*

In multiple-family developments, the required bicycle storage and household storage areas for each dwelling unit may be combined into a multifamily dwelling unit storage locker assigned to that unit, provided that the total space requirement shall be the sum of the household storage and bicycle storage requirements computed separately. A usable space 2' wide by 6' long shall be provided for each stored bicycle.

**(D) School Bicycle Enclosure**

A school bicycle enclosure is a locked area at a primary, middle or secondary school, containing within it one bicycle rack space for each bicycle to be accommodated. The doors of such enclosures must be fitted with locking mechanisms that admit only school and maintenance staff, and must close and lock automatically if released. School bicycle enclosures should be kept locked except during student arrival and departure periods. The student bicycle parking requirement for a school may be provided by two or more enclosures where students arrive on bicycles from two or more points along the school perimeter.

**(b) Bicycle Facility Design Standards**

**(1) Location**

(A) Neither short-term nor long-term bicycle parking areas shall be located inside occupied buildings.

(B) All bicycle parking areas shall be located at street floor level, or equivalent in a parking garage. In underground garages, only long-term bicycle parking is allowed and such bicycle parking facilities must be located near employee elevators or stairwells.

(C) Short-term bicycle parking shall be located within 50 feet of a main visitor entrance(s). Where there is more than one building on a site or where a building has more than one main entrance, the short-term bicycle parking must be distributed to serve all buildings or main entrance(s).

(D) Long-term bicycle parking shall be situated at least as conveniently as the nearest convenient vehicle parking area.

**(2) Layout**

(A) Convenient access to bicycle parking areas shall be provided. Where access is via a sidewalk or pathway, or where the bicycle parking area is next to a street, curb ramps shall be installed where appropriate. A twenty-four-inch side clearance shall be provided between walls or other obstructions and the centerline of the bicycles parked on the nearest bicycle rack.

(B) Bicycle facilities shall be separated from vehicle parking and circulation areas by a physical barrier or by a distance sufficient to protect parked bicycles from damage by vehicles, including front and rear overhangs of parked or moving vehicles.

(C) If more than 10 short-term spaces are required, at least fifty percent (50%) must be covered.

(D) A four foot (4') wide aisle shall be provided to allow bicycles to maneuver in and out of the bike parking areas and between rows of bicycle parking facilities. An aisle into which the door of a bicycle locker opens shall be at least 5' wide. Aisle width shall be measured between the rectangular areas that bicycles will occupy when parked on bicycle racks and/or the surface area occupied by bicycle lockers

(E) Where a public sidewalk or walkway serves as an aisle of a bicycle parking area and bicycles are parked perpendicular to that sidewalk or walkway, an additional 12" of paved area shall be provided between the sidewalk and the area occupied by adjacent parked bicycles.

(F) Where a public sidewalk or walkway serves as an aisle of a bicycle parking area and the doors of bicycle lockers open toward that sidewalk or walkway, the lockers shall be set back so an open door does not encroach onto the main travel width of the sidewalk or walkway.

**(3) Paving**

Bicycle parking areas shall be paved. Aisles and primary access areas shall be paved with asphalt or concrete. Bicycle parking areas may be surfaced with alternate paving materials as approved by the director.

**(4) Lighting**

Lighting of not less than one foot-candle of illumination at ground level shall be provided in both exterior and interior bicycle parking areas.

**(5) Signage**

(A) Where bicycle parking areas are not clearly visible to approaching bicyclists, signs shall be posted at the building entrance to direct cyclists to the facilities. (MUTCD sign D4-3 for bicycle parking). For bicycle parking areas intended for visitors, that entrance shall be the building's main entrance. For bicycle parking areas intended for employees, that entrance shall be the employee entrance served by the bicycle parking area.

(B) Long-term bicycle parking areas that incorporate bicycle lockers shall be identified by a sign at least 12"x12" in size that lists the name or title, and the phone number or electronic contact information, of the person in charge of the facility.

(C) Signs for restricted-access bicycle enclosures shall state that the enclosure shall be kept locked at all times.

**(6) Approval**

(A) The director shall have the authority to review the design of all bicycle parking facilities required by this chapter with respect to safety, security, and convenience.

(B) Where bicycle lockers or restricted access bicycle enclosures are required for a use, the director may approve secure bicycle storage facilities providing the same level of security. The Transportation Division must approve bicycle parking areas located in parking garages.

# SAN FRANCISCO PLANNING CODE

## BICYCLE PARKING AND SHOWER REQUIREMENTS

**Excerpts from the San Francisco Planning Code, Sections 155.1-4.**
**See: http://sfgov.org/planning/index.htm**

### *SEC. 155.1. BICYCLE PARKING REQUIREMENTS FOR CITY-OWNED AND LEASED BUILDINGS.*

In all City-owned and leased buildings, regardless of whether off-street parking is available, the responsible city official, as defined in Section 155.1(a)(11) below, shall provide bicycle parking according to the schedule in Section 155.1(c) below, except as otherwise provided in Section 155.2. The provisions of this Section shall not apply in any case where the City occupies property as a tenant under a lease the term of which does not exceed six months. In the event that a privately owned garage, as defined in Section 155.2, is in a building in which the City leases space, Section 155.2 and not this Section shall apply. All required bicycle parking shall conform to the requirements of Sections 155.1(b) (Location of Facilities) and 155.1(c) (Number of Spaces) set forth below:

(a) **Definitions.**

(1) **Locker.** A fully enclosed, secure and burglar-proof bicycle parking space accessible only to the owner or operator of the bicycle.

(2) **Check-In Facility.** A location in which the bicycle is delivered to and left with an attendant with provisions for identifying the bicycle's owner. The stored bicycle is accessible only to the attendant.

(3) **Monitored Parking.** A location where Class 2 parking spaces are provided within an area under constant surveillance by an attendant or security guard or by a monitored camera.

(4) **Restricted Access Parking.** A location that provides Class 2 parking spaces within a locked room or locked enclosure accessible only to the owners of bicycles parked within.

(5) **Personal Storage.** Storage within the view of the bicycle owner in either the operator's office or a location within the building.

(6) **Class 1 Bicycle Parking Space(s).** Facilities which protect the entire bicycle, its components and accessories against theft and against inclement weather, including wind-driven rain. Examples of this type of facility include (1) lockers, (2) check-in facilities, (3) monitored parking, (4) restricted access parking, and (5) personal storage.

(7) **Class 2 Bicycle Parking Space(s).** Bicycle racks which permit the locking of the bicycle frame and one wheel to the rack and, which support the bicycle in a stable position without damage to wheels, frame or components.

(8) **Director.** Director of the Department of City Planning.

(9) **Landlord.** Any person who leases space in a building to the City. The term "landlord" does not include the City.

(10) **Employees.** Individuals employed by the City and County of San Francisco.

(11) **Responsible City Official.** The highest ranking City official of an agency or department which has authority over a City-owned building or parking facility or of an agency or department for which the City is leasing space.

(12) **Person.** Any individual, proprietorship, partnership, joint venture, corporation, limited liability company, trust, association, or other entity that may enter into leases.

(b) **Location of Facilities.**

(1) At locations where the majority of parking spaces will be long-term (e.g., occupied by building employees for eight hours or more), at least ½ of the required bicycle parking spaces shall be Class 1 spaces. The remaining spaces may be Class 2 spaces. The Director may approve alternative types of parking spaces that provide an equivalent measure of security.

(2) **Alternative Locations.** In the event that compliance with Section 155.1(b)(1) may not be feasible because of demonstrable hardship, the responsible city official may apply to the Director for approval of an alternative storage location. In acting upon such applications, the Director shall be guided by the following criteria: Such alternative facilities shall be well-lighted and secure. The entrance shall be no more than 50 feet from the entrance of the building, unless there are no feasible locations within a 50 foot zone that can be provided without impeding sidewalk or pedestrian traffic. However, in no event shall an alternative location be approved that is farther from the entrance of the building than the closest automobile parking space.

(3) **Exemptions.** If no feasible alternative parking facility exists nearby which can be approved pursuant to Section 155.1(b)(1) or (2) or, securing an alternative location would be unduly costly and pose a demonstrable hardship on the landlord, or on the City, where the City owns the building, the Director may issue an exemption. In order to obtain an exemption, the responsible City official shall certify to the Director in writing that the landlord, or the City, where the City owns the building, will not prohibit bicycle operators from storing bicycles within their office space, provided that they are stored in such a way that the Fire Code is not violated and that the normal business of the building is not disrupted.

(c) **Required Number of Bicycle Parking Spaces.**

(1) **Class 1 Bicycle Parking Spaces.** The following standards shall govern the number of Class 1, long-term, bicycle parking spaces a responsible City official must provide:

(A) In buildings with one to 20 employees, at least two bicycle parking spaces shall be provided.

(B) In buildings with 21 to 50 employees, at least four bicycle parking spaces shall be provided.

(C) In buildings with 51 to 300 employees, the number of bicycle parking spaces provided shall be equal to at least five percent of the number of employees at that building, but in no event shall fewer than five bicycle spaces be provided.

(D) In buildings with more than 300 employees, the number of bicycle parking spaces provided shall be equal to at least three percent of the number of employees at that building but in no event shall fewer than 16 bicycle parking spaces be provided.

(2) In addition to the Class 1 bicycle parking spaces required above, a responsible City official shall also provide Class 2 bicycle parking spaces according to the below enumerated schedule:

(A) In buildings with one to 40 employees, at least two bicycle parking spaces shall be provided.

(B) In buildings with 41 to 50 employees, at least four bicycle parking spaces shall be provided.

(C) In buildings with 51 to 100 employees, at least six bicycle parking spaces shall be provided.

(D) In buildings with more than 100 employees, at least eight bicycle parking spaces shall be provided. Wherever a responsible City official is required to provide eight or more Class 2 bicycle parking spaces, at least 50 percent of those parking spaces shall be covered.

(3) In public buildings where the City provides a public service to members of the public who are patrons or users of the buildings, such as libraries, museums, and sports facilities, the responsible City official shall provide the number of bicycle parking spaces as set out in Section 155.1(c)(1) and (2), except that the average patron load in a building during peak use hours as determined by the Director, rather than the number of employees, shall determine the number of spaces required. This Section shall not apply where a public building has a "garage" (as such term is defined in Section 155.2(a)) that is open to the general public, in which case Section 155.2 shall apply.

(4) The Director shall annually survey the amount, location, and usage of provided bicycle parking spaces in all buildings subject to the requirements of this Section in order to ascertain whether current requirements are adequate to meet demand for such parking spaces. If current requirements are inadequate, the Director shall draft and submit to the Board of Supervisors proposed legislation that would remedy the deficiency.

(5) **Reductions.** The Director may grant a reduction from the number of bicycle parking spaces required by this Section where the applicant shows based upon the type of patronage, clientele, or employees using the building that there is no reason to expect a sufficient number of bicycle-riding patrons, clientele or employees to justify the number of spaces otherwise required by the Section.

(d) **Layout of Spaces.** Class 1 and Class 2 bicycle parking spaces or alternative spaces approved by the Director shall be laid out according to the following:

(1) An aisle or other space to enter and leave the facility shall be provided. The aisle shall provide a width of five feet to the front or rear of a standard six-foot bicycle parked in the facility.

(2) Each bicycle parking space shall provide an area at least two feet wide by six feet deep. Vertical clearance shall be at least 78 inches.

(3) Bicycle parking shall be at least as conveniently located as the most convenient nondisabled car parking. Safe and convenient means of ingress and egress to bicycle parking facilities shall be provided. Safe and convenient means include, but are not limited to stairways, elevators and escalators.

(4) Bicycle parking and automobile parking shall be separated by a physical barrier or sufficient distance to protect parking bicycles from damage.

(5) Class 2 bicycle racks shall be located in highly visible areas to minimize theft and vandalism.

(6) Where Class 2 bicycle parking areas are not clearly visible to approaching bicyclists, signs shall indicate the locations of the facilities.

(7) The surface of bicycle parking spaces need not be paved, but shall be finished to avoid mud and dust.

(8) All bicycle racks and lockers shall be securely anchored to the ground or building structure.

(9) Bicycle parking spaces may not interfere with pedestrian circulation.

(g) **Miscellaneous Requirements.**

(4) Buildings with existing traditional-type racks which support only one wheel shall have two years from the effective date of this Section to replace them with conforming racks.

## *SEC. 155.3. SHOWER FACILITIES AND LOCKERS REQUIRED IN NEW COMMERCIAL AND INDUSTRIAL BUILDINGS AND EXISTING BUILDINGS UNDERGOING MAJOR RENOVATIONS.*

(a) **Definitions.**

(1) **New Building.** A commercial or industrial building for which a building permit is issued at least six months after the effective date of this legislation.

(2) **Major Renovations.** Any construction or renovation project (i) for which a building permit is issued commencing at least six months after the date of enactment of this legislation (ii)

which involves an enlargement of an existing public or privately owned commercial or industrial building, and (iii) which has an estimated cost of at least $1,000,000.00. For purposes of this Section, the term "enlargement" shall mean an increase in the square footage of the ground story of a building.

(3) The term "commercial building" shall include, but is not limited to, public or privately owned buildings containing employees working for City government agencies or departments.

(b) **Requirements for New Buildings and Buildings With Major Renovations.** New buildings and buildings with major renovations shall provide shower and clothes locker facilities for short-term use of the tenants or employees in that building in accordance with this Section. Where a building undergoes major renovations, its total square footage after the renovation is the square footage that shall be used in calculating how many, if any, showers and clothes lockers are required.

(c) For new buildings and buildings with major renovations whose primary use consists of medical or other professional services, general business offices, financial services, City government agencies and departments, general business services, business and trade schools, colleges and universities, research and development or manufacturing, the following schedule of required shower and locker facilities applies:

(1) Where the gross square footage of the floor area exceeds 10,000 square feet but is no greater than 20,000 square feet, one shower and two clothes lockers are required.

(2) Where the gross square footage of the floor area exceeds 20,000 square feet but is no greater than 50,000 square feet, two showers and four clothes lockers are required.

(3) Where the gross square footage of the floor area exceeds 50,000 square feet, four showers and eight clothes lockers are required.

(d) For new buildings and buildings with major renovations whose primary use consists of retail, eating and drinking or personal services, the following table of shower and locker facilities applies:

(1) Where the gross square footage of the floor area exceeds 25,000 square feet but is no greater than 50,000 square feet, one shower and two clothes lockers are required.

(2) Where the gross square footage of the floor area exceeds 50,000 square feet but is no greater than 100,000 square feet, two showers and four clothes lockers are required.

(3) Where the gross square footage of the floor area exceeds 100,000 square feet, four showers and eight clothes lockers are required.

(e) **Exemptions.** An owner of an existing building subject to the requirements of this Section shall be exempt from Subsections (c) and (d) upon submitting proof to the Director of the Department of City Planning that the owner has made arrangements with a health club or other facility, located within a four-block radius of the building, to provide showers and lockers at no cost to the employees who work in the owner's building.

(f) **Exclusion for Hotels, Residential Buildings and Live/Work Units.** This Section shall not apply to buildings used primarily as hotels or residential buildings. In addition, this Section shall not apply to "live/work units" as defined in Section 102.13 of the San Francisco Planning Code.

(g) **Owners of Existing Buildings Encouraged to Provide Shower and Clothes Locker Facilities.** The City encourages private building owners whose buildings are not subject to this Section to provide safe and secure shower and clothes locker facilities for employees working in such buildings.

(h) The Department of City Planning may establish more definitive requirements for shower and locker facilities in accordance with this Section. (Added by Ord. 343-98, App. 11/19/98)

***SEC. 155.4. BICYCLE PARKING REQUIRED IN NEW AND RENOVATED COMMERCIAL BUILDINGS.***

(a) **Definitions.**

(1) All definitions set forth in Section 155.1(a) and Section 155.3(a) are incorporated into this Section.

(2) **New Commercial Building.** A commercial or industrial building for which a building permit is issued on or at least six months after the effective date of this Section.

(3) **Major Renovation.** Any construction or renovation project (i) for which a building permit is issued commencing on or at least six months after the effective date of this Section (ii) which involves an enlargement of an existing commercial building and (iii) which has an estimated construction cost of at least $1,000,000.00.

(b) **Requirements for New Commercial Buildings and Commercial Buildings with Major Renovations.** New commercial buildings and commercial buildings with major renovations, as a condition of approval, shall provide bicycle parking in that building in accordance with this Section. Where a building undergoes major renovations, its total square footage after the renovation shall be used in calculating how many, if any, bicycle parking spaces are required.

(c) **Types of Bicycle Parking.** New commercial buildings and commercial buildings with major renovations shall offer either Class 1 bicycle parking, as defined in Section 155.1(a)(6), or Class 2 bicycle parking, as defined in Section 155.1(a)(7), or a combination of Class 1 and Class 2 bicycle parking.

(d) **Bicycle Parking Spaces - Professional Services.** For new commercial buildings and commercial buildings with major renovations whose primary use consists of medical or other professional services, general business offices, financial services, general business services, business and trade schools, colleges and universities, research and development or manufacturing, the following schedule of required bicycle parking applies:

(1) Where the gross square footage of the floor area exceeds 10,000 square feet but is no greater than 20,000 feet, 3 bicycle spaces are required.

(2) Where the gross square footage of the floor area exceeds 20,000 square feet but is no greater than 50,000 feet, 6 bicycle spaces are required.

(3) Where the gross square footage of the floor area exceeds 50,000 square feet, 12 bicycle spaces are required.

(4) Bicycle Parking Spaces—Retail. For new commercial buildings and commercial buildings with major renovations whose primary use consists of retail, eating and drinking or personal service, the following schedule of required bicycle parking applies:

(1) Where the gross square footage of the floor area exceeds 25,000 square feet but is no greater than 50,000 feet, 3 bicycle spaces are required.

(2) Where the gross square footage of the floor area exceeds 50,000 square feet but is no greater than 100,000 feet, 6 bicycle spaces are required.

(3) Where the gross square footage of the floor area exceeds 100,000 square feet, 12 bicycle spaces are required.

(f) **Notice of Bicycle Parking.** New commercial buildings and commercial buildings with major renovations subject to this Section must provide adequate signs or notices to advertise the availability of bicycle parking.

(g) **Layout of Spaces.** Owners of new commercial buildings and commercial buildings with major renovations subject to this Section are encouraged to follow the requirements set forth in Section 155.1(d) (Layout of Spaces) in installing Class 1 and Class 2 bicycle parking.

(h) **Owners of Existing Buildings Encouraged to Provide Bicycle Parking Spaces.** The City encourages building owners whose buildings are not subject to this Section to provide bicycle parking spaces in such buildings.

(i) **Exemption.** Where a new commercial building or building with major renovations includes residential uses, the building's total non-residential square footage shall be used in calculating how many, if any, bicycle parking spaces are required.

(j) This Section shall not be interpreted to interfere with the Department of Planning's authority to require more than the minimum bicycle parking spaces required by this Section as a condition of approval of a project, where appropriate.

(k) For the purposes of this Section, commercial shall mean commercial and industrial. (Added by Ord. 193-01, File No. 010488, App. 9/7/2001)

# OAKLAND PLANNING CODE

## BICYCLE PARKING REQUIREMENTS

**Excerpts from the Oakland Planning Code, Chapter 17.117 and Chapter 9.52.**
**See: http://www.oaklandpw.com/AssetFactory.aspx?did=3337**

### Article I. General Provisions

**17.117.010 Title, Purpose, and Applicability.**

The provisions of this chapter shall be known as the bicycle parking requirements. The purpose of these regulations is to require secure and adequate long term-and-short term parking for bicycles, thereby promoting alternative transportation, providing additional, more sustainable transportation choices for residents and commuters, and reducing traffic congestion and air pollution. These requirements shall apply to the indicated activities as specified hereinafter.

**17.117.020 Bicycle Parking Required for New and Existing Uses.**

A. Bicycle Parking Shall be Provided for New Facilities and Additions to Existing Facilities. Bicycle parking as prescribed hereafter shall be provided for activities occupying facilities, or portions thereof, which are constructed, established, wholly reconstructed, or moved onto a new lot after the effective date of the bicycle parking requirements, or of a subsequent rezoning or other amendment thereto establishing or increasing bicycle parking for such activities, except to the extent that existing bicycle parking exceeds such requirements for any existing facilities. The required amount of new bicycle parking shall be based on the cumulative increase in floor area, or other applicable unit of measurement prescribed hereafter, after said effective date.

B. Bicycle Parking Shall be Provided for Remodels. "Remodel" means any proposed physical improvement of an existing structure which requires a building permit but does not include New Facilities or Additions to Existing Facilities.

    1. Remodel projects that are over 10,000 s.f. and have an estimated construction cost, excluding seismic retrofit costs, greater than $250,000 shall provide the number of short-term bicycle parking spaces prescribed in Sections 117.090 to 117.120. This amount shall be adjusted to account for changes in the Building Cost Index for the San Francisco Bay Region, as reported in the Engineering News Record. The adjustment shall be made annually, starting in 2009, no sooner than one year from adoption.
    2. Remodel projects that are over 50,000 s.f. and have an estimated construction cost , excluding seismic retrofit costs, over $1,000,000 shall provide, in addition to short-term bicycle parking, the number of long-term bicycle parking spaces and shower and locker facilities prescribed in Sections 117.090 to 117.130. This amount shall be adjusted to account for changes in the Building Cost Index for the San Francisco Bay Region, as reported in the Engineering News Record. The adjustment shall be made annually, starting in 2009, no sooner than one year from adoption.

C. Bicycle Parking Shall be Provided for New Living Units in Existing Facilities. If any facility, or portion thereof, which is in existence on the effective date of the bicycle parking requirements, or of a subsequent rezoning or other amendment thereto establishing or increasing bicycle

parking requirements for an activity therein, is altered or changed in occupancy so as to result in an increase on the number of residential living units therein, bicycle parking as prescribed hereafter shall be provided for the new units. However, such bicycle parking need be provided only in the amount by which the requirement prescribed hereafter for the facility after said alteration or change exceeds the requirement prescribed hereafter for the facility as it existed prior to such alteration or change; and such new bicycle parking need not be provided to the extent that existing bicycle parking exceeds the latter requirement.

**17.117.030 More than One Activity on a Lot.**

Whenever a single lot contains different activities with the same bicycle requirement, the overall requirement shall be based on the sum of all such activities, and the minimum size prescribed hereafter for which any bicycle parking is required shall be deemed to be exceeded for all such activities if it is exceeded by their sum. Whenever a single lot contains activities with different bicycle parking requirements, the overall requirement shall be the sum of the requirements for each activity calculated separately; provided, however, that the minimum size prescribed hereafter for which any bicycle parking is required shall be deemed to be exceeded on said lot for all activities for which the same or a smaller minimum size, expressed in the same unit of measurement, is prescribed, if said minimum size is exceeded by the sum of all such activities on the lot.

**17.117.040 Determination by Director of City Planning.**

In the case of activities for which the Director of City Planning is required to prescribe a number of bicycle parking spaces or for which this chapter is not clear or does not prescribe a number of spaces, the Director of City Planning shall base his or her written determination on the number of employees, residents or customers and the nature of operations conducted on the site. Any such written determination shall be subject to appeal pursuant to the administrative appeal procedure in Chapter 17.132.

**Article II. Standards for Required Bicycle Parking.**

**17.117.050 Types of Required Bicycle Parking.**

A. Long-term Bicycle Parking.
   Each long-term bicycle parking space shall consist of a locker or locked enclosure providing protection for each bicycle from theft, vandalism and weather. Long-term bicycle parking is meant to accommodate employees, students, residents, commuters, and others expected to park more than two hours.
B. Short-term Bicycle Parking.
   Short-term bicycle parking shall consist of a bicycle rack or racks and is meant to accommodate visitors, customers, messengers, and others expected to park not more than two hours.

**17.117.060 Minimum Specification for Required Bicycle Parking.**

A. All bicycle parking facilities shall be dedicated for the exclusive use of bicycle parking.
B. All required short-term bicycle parking spaces shall permit the locking of the bicycle frame and one wheel with a U-type lock, support the bicycle in a stable position without damage to wheels, frame, or components, and provide two points of contact with the bicycle's frame.
C. All required long-term bicycle parking spaces, with the exception of bicycle lockers, shall permit the locking of the bicycle frame and one wheel with a U-type lock and support the bicycle in a stable position without damage to wheels, frame, or components.

D. Bicycle parking facilities shall be securely anchored so they cannot be easily removed and shall be of sufficient strength and design to resist vandalism and theft.
E. The overall design and spacing of such facilities shall meet the standards of Section 17.117.070 or as may be modified.

**17.117.070 Location and Design of Required Bicycle Parking.**

Required bicycle parking shall be placed on site(s) as set forth below:

A. A bicycle parking space shall be at least two and a half (2.5) feet in width by six (6) feet in length to allow sufficient space between parked bicycles.
B. An encroachment permit may be required from the City to install bicycle parking in the public right-of-way.
C. Bicycle parking facilities shall not impede pedestrian or vehicular circulation.
    a. Bicycle parking racks located on sidewalks should maintain a minimum of five and one half (5.5) feet of unobstructed pedestrian right-of-way outside the bicycle parking space. For sidewalks with heavy pedestrian traffic, at least seven (7) feet of unobstructed right-of-way is required.
D. Bicycle parking facilities are subject to the following standards:
    a. Racks shall be located with at least thirty (30) inches in all directions from any vertical obstruction, including but not limited to other racks, walls, and landscaping. General Food Sales and Large Scale Combined Retail and Grocery Sales Activities are encouraged to locate racks with a thirty-six (36) inch clearance in all directions from any vertical obstruction, including but not limited to other racks, walls, and landscaping.
    b. A minimum four (4) foot wide aisle of unobstructed space behind all required bicycle parking shall be provided to allow for adequate bicycle maneuvering.
E. Bicycle parking facilities within auto parking facilities shall be protected from damage by cars by a physical barrier such as curbs, wheel stops, poles, bollards, or other similar features capable of preventing automobiles from entering the bicycle facility.
F. Bicycle parking facilities shall be located in highly visible well-lighted areas. In order to maximize security, whenever possible short-term bicycle parking facilities shall be located in areas highly visible from the street and from the interior of the building they serve (i.e. placed adjacent to windows).
G. The location and design of required bicycle parking shall be of a quality, character and color that harmonize with adjoining land uses. Required bicycle parking shall be incorporated whenever possible into building design or street furniture.
H. Long-term bicycle parking shall be covered and shall be located on site or within five hundred (500) feet of the main building entrance unless approved by the Director of City Planning with a written Discretionary Waiver. The main building entrance excludes garage entrances, trash room entrances, and other building entrances that are not publicly accessible.
I. Discretionary Waiver. The long-term bicycle parking location requirement of five hundred (500) feet may be waived in writing by the Director of City Planning when said activities are located within one thousand (1000) feet of a proposed or existing bike station or similar high-capacity bicycle parking facility. Any determination on such waiver shall be subject to appeal pursuant to the administrative appeal procedure in Chapter 17.132.
J. Whenever any required bicycle parking is proposed to be provided on a lot other than the lot containing the activity served, the owner or owners of both lots shall prepare and execute to the satisfaction of the City Attorney, and file with the Alameda County Recorder, an agreement

guaranteeing that such facilities will be maintained and reserved for the activity served, for the duration of said activity.

K. Short-term bicycle parking shall be placed within fifty (50) feet of the main entrance to the building or commercial use and should be in a well trafficked location visible from the entrance. When the main entrance fronts the sidewalk, the installer may obtain an encroachment permit from the City to install the bicycle parking in the public right-of-way. The main building entrance excludes garage entrances, trash room entrances, and other building entrances that are not publicly accessible.

## Article III. Minimum Number of Required Bicycle Parking Spaces

### 17.117.080 Calculation Rules.

A. If after calculating the number of required bicycle parking spaces a quotient is obtained containing a fraction of one-half or more, an additional space shall be required; if such fraction is less than one-half it may be disregarded.

B. When the bicycle parking requirement is based on number of employees, the number of spaces shall be based on the number of working persons on the lot during the largest shift of the peak season. If the Director of City Planning determines that this number is difficult to verify for a specific facility, then the number of required long-term bicycle parking spaces shall be a minimum of two spaces or five percent of the amount of required automobile spaces for the proposed facility, whichever is greater.

C. When the bicycle parking requirement is based on number of seats, in the case of pews or similar facilities each twenty (20) inches shall be counted as one seat.

D. The calculation of short-term bicycle parking may include existing racks that are in the public right-of-way and are within 50 feet of the main entrance.

### 17.117.090 Required Bicycle Parking – Residential Activities.

Subject to the calculation rules set forth in Section 17.117.080, the following minimum amounts of bicycle parking are required for all Residential Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

| Type of Activity | Long-term Bicycle Parking Requirement | Short-term Bicycle Parking Requirement |
|---|---|---|
| Permanent and Semi-Transient Residential Activities occupying the specified facilities: | | |
| 1) One-Family Dwelling. | No spaces required. | No spaces required. |
| 2) One-Family Dwelling with Secondary Unit. | No spaces required. | No spaces required. |
| 3) Two-Family Dwelling. | No spaces required. | No spaces required. |
| 4) Multifamily Dwelling. | | |
| a) With private garage for each unit. | No spaces required. | 1 space for each 20 dwelling units. Minimum requirement is 2 spaces. |
| b) Without private garage for each unit. | 1 space for each 4 dwelling units. Minimum requirement is 2 spaces. | 1 space for each 20 dwelling units. Minimum requirement is 2 spaces. |
| c) Senior Housing. | 1 space for each 10 dwelling units. Minimum requirement is 2 spaces. | 1 space for each 20 dwelling units. Minimum requirement is 2 spaces. |

| | | |
|---|---|---|
| 5) Rooming House. | 1 space for each 8 residents. Minimum requirement is 2 spaces. | No spaces required. |
| 6) Mobile Home. | 1 per 20 units. | No spaces required. |
| 7) HBX Live/Work Lofts. | 1 space for each 4 dwelling units. Minimum requirement is 2 spaces. | 1 space for each 20 dwelling units. Minimum requirement is 2 spaces. |
| Residential Care, Service-Enriched Permanent, Transitional Housing, and Emergency Shelter Residential Activities occupying the specified facilities: | | |
| 8) Residential Care.<br>9) Service-Enriched Permanent Housing. | 1 space for each 20 employees or 1 space for each 70,000 s.f., whichever is greater. Minimum requirement is 2 spaces. | 2 spaces. |
| 10) Transitional Housing. | 1 space for each 8 residents. Minimum requirement is 2 spaces. | 1 space for each 20 dwelling units. Minimum requirement is 2 spaces. |
| 11) Emergency Shelter Residential. | 1 space for each 20 employees or 1 space for each 70,000 s.f., whichever is greater. Minimum requirement is 2 spaces. | 1 space for each 5,000 s.f. of floor area. Minimum requirement is 2 spaces. |

**17.117.100 Required Bicycle Parking – Civic Activities.**

Subject to the calculation rules set forth in Section 17.117.080, the following minimum amounts of bicycle parking are required for the specified Civic Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

| Civic Activity | Long-term Bicycle Parking Requirement | Short-term Bicycle Parking Requirement |
|---|---|---|
| 1) Essential Service.<br>2) Limited Childcare. | Number of spaces to be prescribed by the Director of City Planning, pursuant to Section 17.117.040. | Number of spaces to be prescribed by the Director of City Planning, pursuant to Section 17.117.040. |
| 3) Community Assembly. | | |
| a) Churches, temples, and synagogues. | 1 space for each 40 fixed seats, or one space for each 4,000 s.f. of floor area, whichever is greater. Minimum requirement is 2 spaces. | 1 space for each 40 fixed seats, or one space for each 2,000 s.f. of floor area, whichever is greater. Minimum requirement is 2 spaces. |
| b) Other. | Number of spaces to be prescribed by the Director of City Planning, pursuant to Section 17.117.040. | Number of spaces to be prescribed by the Director of City Planning, pursuant to Section 17.117.040. |
| 4) Non-Assembly Cultural. | 1 space for each 20 employees. Minimum requirement is 2 spaces. | Spaces for 2% of maximum expected daily attendance. |
| 5) Administrative. | 1 space for each 20 employees. Minimum requirement is 2 spaces. | 1 space for each 20,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| 6) Health Care.<br>7) Special Health Care. | 1 space for each 20 employees; or one space for each 70,000 s.f. of floor area, whichever is greater. Minimum requirement is 2 spaces. | 1 space for each 40,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| 8) Utility and Vehicular. | | |
| a) Communications equipment installations and exchanges, electrical substations, emergency hospitals operated by a public agency, gas substations, neighborhood newscarrier distribution centers. | No spaces required. | No spaces required. |
| b) Fire Stations and Police Stations.<br>c) Post offices, excluding major mail-processing centers. | 1 space for each 10 employees. Minimum requirement is 2 spaces | 6 spaces. |
| d) Publicly operated off-street parking lots and garages available to the general public without charge or on a fee basis. | No spaces required. | Minimum of 6 spaces or 1 per 20 auto spaces (parking lots excepted). |
| 9) Community Education. | | |
| a) Public, parochial, and private day-care centers for fifteen (15) or more children. | 1 SPACE FOR EACH 10 EMPLOYEES. MINIMUM REQUIREMENT IS 2 SPACES. | 1 space per each 20 students of planned capacity. Minimum requirement is 2 spaces. |
| b) Public, parochial, and private nursery schools and kindergartens. | 1 space for each 10 employees. Minimum requirement is 2 spaces. | 1 space per each 20 students of planned capacity. Minimum requirement is 2 spaces. |
| c) Public parochial and private elementary, junior high and high schools. | 1 space for each 10 employees plus 1 space for each 20 students of planned capacity. Minimum is 2 spaces. | 1 space per each 20 students of planned capacity. Minimum requirement is 2 spaces. |

| | | |
|---|---|---|
| 10) Extensive impact | | |
| a) Colleges and universities. | 1 space for each 10 employees plus 1 space for each 10 students of planned capacity; or 1 space for each 20,000 s.f. of floor area, whichever is greater. | 1 space for each 10 students of planned capacity. |
| b) Railroad and bus terminals. | Spaces for 3.5% of projected maximum daily ridership. | Spaces for 1.5% of projected maximum daily ridership. |
| c) Other. | Number of spaces to be prescribed by the Director of City Planning, pursuant to Section 17.117.040. | Number of spaces to be prescribed by the Director of City Planning, pursuant to Section 17.117.040. |

## 17.117.110 Required Bicycle Parking – Commercial Activities

Subject to the calculation rules set forth in Section 17.117.080, the following amounts of bicycle parking are required for the specified Commercial Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

| Commercial Activity | Long-term Bicycle Parking Requirement | Short-term Bicycle Parking Requirement |
|---|---|---|
| Retail | | |
| 1. General Food Sales. | 1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces. | 1 space for each 2,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| 2. Convenience Market.<br>3. Fast-Food Restaurant.<br>4. Alcoholic Beverage Sales.<br>5. Convenience Sales and Service.<br>6. Mechanical or Electronic Games.<br>7. General Retail Sales.<br>8. Large-scale combined retail and grocery sales.<br>9. General Personal Service.<br>10. Consumer Laundry and Repair Service.<br>11. Check Cashier and Check Cashing. | 1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces. | 1 space for each 5,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| 12. Retail Business Supply.<br>13. General Wholesale Sales.<br>14. Construction Sales and Service. | 1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces. | 1 space for each 20,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| Office | | |
| 1. Consultative and Financial Service.<br>2. Administrative Commercial.<br>3. Business and Communication Service. | 1 space for each 10,000 s.f. of floor area. Minimum requirement is 2 spaces. | 1 space for each 20,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| Medical | | |
| 1. Medical Service.<br>2. Animal Care. | 1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces. | 1 space for each 5,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| Auto Related | | |
| 1. Automotive Sales, Rental, and Delivery. | 1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces. | 1 space for each 20,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| 2. Automotive Servicing.<br>3. Automotive Repair and Cleaning. | 1 space for each 20 employees. Minimum requirement is 2 spaces. | No spaces required. |
| Other Commercial | Long-term Bicycle Parking Requirement | Short-term Bicycle Parking Requirement |

| | | | |
|---|---|---|---|
| 1. | Group Assembly. | Number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040. | Number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040. |
| 2. | Research Service. | 1 space for each 10,000 s.f. of floor area. Minimum requirement is 2 spaces. | 1 space for each 40,000 s.f. of floor area. Minimum requirement is 2 spaces. |
| 3. | Transient Habitation. | 1 space for each 20 rentable rooms. Minimum requirement is 2 spaces. | 1 space for each 20 rentable rooms. Minimum requirement is 2 spaces. |
| 4. | Automotive Fee Parking. | 1 space for each 20 automobile spaces. Minimum requirement is 2 spaces. | Minimum of 6 spaces or 1 per 20 auto spaces (parking lots excepted) |
| 5. | Transport and Warehousing. | 1 space for each 40,000 s.f. of floor area. Minimum requirement is 2 spaces. | No spaces required. |
| 6. | Undertaking Service. | 1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces. | 2 spaces. |
| 7. | Scrap Operation. | 1 space for each 20 employees. Minimum requirement is 2 spaces. | No spaces required. |
| 8. | HBX Work/Live. | 1 space for each 4 dwelling units. Minimum requirement is 2 spaces. | 1 space for each 20 dwelling units. Minimum requirement is 2 spaces. |

### 17.117.120 Required Bicycle Parking – Manufacturing and Other Activities

Subject to the calculation rules set forth in Section 17.117.080, the following minimum amounts of bicycle parking are required for the specified Manufacturing, Agricultural and Extractive Activities and All Other Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

| Type of Activity | Long-term Bicycle Parking Requirement | Short-term Bicycle Parking Requirement |
|---|---|---|
| Manufacturing and Production | | |
| 1. Custom Manufacturing.<br>2. Light Manufacturing.<br>3. General Manufacturing.<br>4. Heavy Manufacturing.<br>5. Small Scale Transfer and Storage. Hazardous Waste Management.<br>6. Industrial Transfer/Storage Hazardous Waste Management.<br>7. Residual Repositories Hazardous Waste Management. | 1 space for each 15,000 s.f. of floor area. Minimum requirement is 2 spaces. | No spaces required. |
| Agricultural and Extractive | | |
| 1. Plant Nursery Agricultural. | Number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040. | Number of spaces to be prescribed by the Director of City Planning pursuant to Section 17.117.040. |
| 2. Crop and Animal Raising Agricultural<br>3. Mining and Quarrying Extractive. | No spaces required. | No spaces required. |
| Other Manufacturing | | |
| 1. HBX Work/Live. | 1 space for each 4 dwelling units. Minimum requirement is 2 spaces. | 1 space for each 20 dwelling units. Minimum requirement is 2 spaces. |

### 17.117.130 Required Shower and Locker Facilities

Subject to the calculation rules set forth in Section 17.117.080, the following amounts of shower facilities and lockers are required per gender for the specified Activities and shall be developed and maintained pursuant to the provisions of Article II of this chapter:

| Type of Activity | Shower Requirement (per gender) | Locker Requirement |
|---|---|---|
| Residential. | None required. | None required. |
| Civic. | None required. | None required. |
| Commercial: Less than 150,000 square feet of floor area. | None required. | None required. |
| Commercial: 150,000 square feet of floor area or greater. | A minimum of 2 showers per gender plus one shower per gender for each 150,000 s.f. above 150,000 s.f. | 4 lockers per shower. |
| Manufacturing. | None required. | None required. |
| Agricultural and Extractive. | None required. | None required. |

### 17.117.140 Additional Considerations for Variance Determination

A variance may be granted if the applicant can make the variance findings contained in Section 17.148.050. In making a variance determination, the following additional considerations should be taken into account:

1. The variance, if granted, will not be contrary to the policies included in the Bicycle Master Plan.
2. Consideration can be afforded to a proposal if incorporation of the bicycle parking would be detrimental to other bicycle or pedestrian facilities.

3. Consideration can be afforded to a proposal with a site access that is in excess of the street grade criteria established by the Bicycle Master Plan.
4. In consideration of what is physically feasible, the proposal meets as many of the bicycle parking requirements as possible to provide a form of storing bicycles in a safe, secure and accessible manner.

17.117.150 Automobile Parking Credit

The total number of required off-street automobile parking spaces may be reduced at the ratio of one automobile space for each six bicycle spaces provided in excess of the requirements in this chapter. The bicycle parking provided for this automobile parking credit shall include both long-term and short-term bicycle parking in proportion to the minimum long-term and short-term requirements for the given project. The total number of required off-street automobile parking spaces cannot be reduced by more than five percent.

## LARGE EVENT BICYCLE PARKING REQUIREMENTS

## Chapter 9.52 SPECIAL EVENT PERMITS

**9.52.040 Definitions.**

"Attended bicycle parking" means a service provided by the event sponsor or qualified bicycle parking service provider where at least one attendant is present throughout the event to receive, return and guard bicycles, and where a safe and sufficiently large area has been set aside for event attendees to leave their bicycles.

**9.52.080 Conditional approval of permit.**

J. Requiring the event promoter to provide attended bike parking service for events that expect 5,000 or more attendees, and for smaller events at the discretion of the Chief of Police. The promoter must advertise the service to potential attendees in all outreach and advertising materials and media, and place the bike parking area in an accessible location;

**Grounds for denial of application.**

O. The sponsor fails, or has failed in the past, to make provisions for attended bicycle parking, pursuant to Section 9.52.080; or