South Bay Bicycle Mini-Corral Plan

Final Plan

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alta PLANNING + DESIGN

50 YEARS SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Acknowledgements

City of Hermosa Beach

Mondher Saïed, P.E.

City of Manhattan Beach

Laurie Jester
Nhung Madrid
Erik Zendvliet

City of Redondo Beach

Tim Shea
Reed Salan

Southern California Association of Governments

Kristen Pawling

South Bay Bicycle Coalition

Julian Katz
Jim Hannon

Alta Planning + Design

Jessie Holzer
Jennifer Donlon-Wyant
James Powell

Table of Contents

List of Tables

List of Figures

1 Introduction

This South Bay Bicycle Mini-Corral Plan recommends locations for bicycle mini-corrals in the cities of Hermosa Beach, Manhattan Beach, and Redondo Beach, referred to in this Plan as the "participating cities." Bicycle mini-corrals are clusters of two to four bicycle racks located on-street, along the curb in commercial areas. Some cities choose to replace an on-street parking stall with a bicycle corral, however due to high vehicle parking demand in the participating cities this Plan only recommends bicycle mini-corrals in locations that do not require parking removal.

This Plan serves to implement bike parking recommendations from the South Bay Bicycle Master Plan, a seven-city multijurisdictional bike plan for the cities of Hermosa Beach, Manhattan Beach, Redondo Beach, Gardena, Lawndale, Torrance, and El Segundo. It furthers the efforts of the Bicycle Master Plan by recommending locations for mini-corrals and providing design guidelines for their installation.

This Plan was funded by the Southern California Association of Governments (SCAG). In April 2012, SCAG adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future. The RTP/SCS guides regional planning policy through the integration of land use planning and transportation investment decision-making. SCAG's Sustainability Program implements the RTP/SCS by funding projects that further its goals. The South Bay Bicycle Mini-Corral Plan received funding from this program as the Plan helps to improve bicycling on a regional scale in Southern California.

Bicycle mini-corral in Redondo Beach

1.1 Setting

The South Bay region is located in southwest Los Angeles County and includes the cities along and inland of the southern Santa Monica Bay. This Bicycle Mini-Corral Plan focuses specifically on three beach cities within the South Bay region – Manhattan Beach, Redondo Beach, and Hermosa Beach – that have partnered to assess the potential for bicycle mini-corrals in their respective jurisdictions. Existing levels of bicycle infrastructure and bicycle usage vary in the three cities due to historical differences in size, population, socioeconomic conditions and climate, but all have been identified as in need of additional bicycle parking locations.

Commercial areas such as retail streets adjacent to beaches are the geographic focus of this Plan as they attract a great number of visitors within the cities and bicycle parking in these areas were identified as a need by both the communities and businesses. **Figure 1-1** displays the commercial and mixed use parcels in the three cities.

1.2 Importance of Bicycle Mini-Corrals

Hermosa Beach, Manhattan Beach, and Redondo Beach experience increasingly high levels of bicycling year-round; the cities have attractors, such as the Marvin Braude Bikeway along the beach, the Hermosa Beach and Manhattan Beach Piers, Redondo Beach's King Harbor, and various business districts that residents and visitors alike enjoy riding to. As additional people choose to bike in the participating cities, there is a need for additional bicycle parking locations.

The South Bay Bicycle Mini-Corral Plan addresses this need by recommending bicycle mini-corral sites in the three cities. Bicycle mini-corrals provide higher capacity than sidewalk racks because they can accommodate more bicycles in a smaller space by clustering racks in underutilized on-street locations; increasing parking for businesses is especially important in commercial areas.

Convenient and secure bicycle parking can benefit the participating cities by:

- Supporting current bicycle trips to retail centers
- Providing convenient parking for bicycles that matches vehicular parking
- Encouraging increased trips to retail centers by bicycling
- Contributing to reducing greenhouse gas emissions

There are a number of benefits to moving bicycle parking off the sidewalk, including:

- Increasing pedestrian comfort
- Providing clear pedestrian walking areas
- Improved safety for both pedestrians and bicyclists

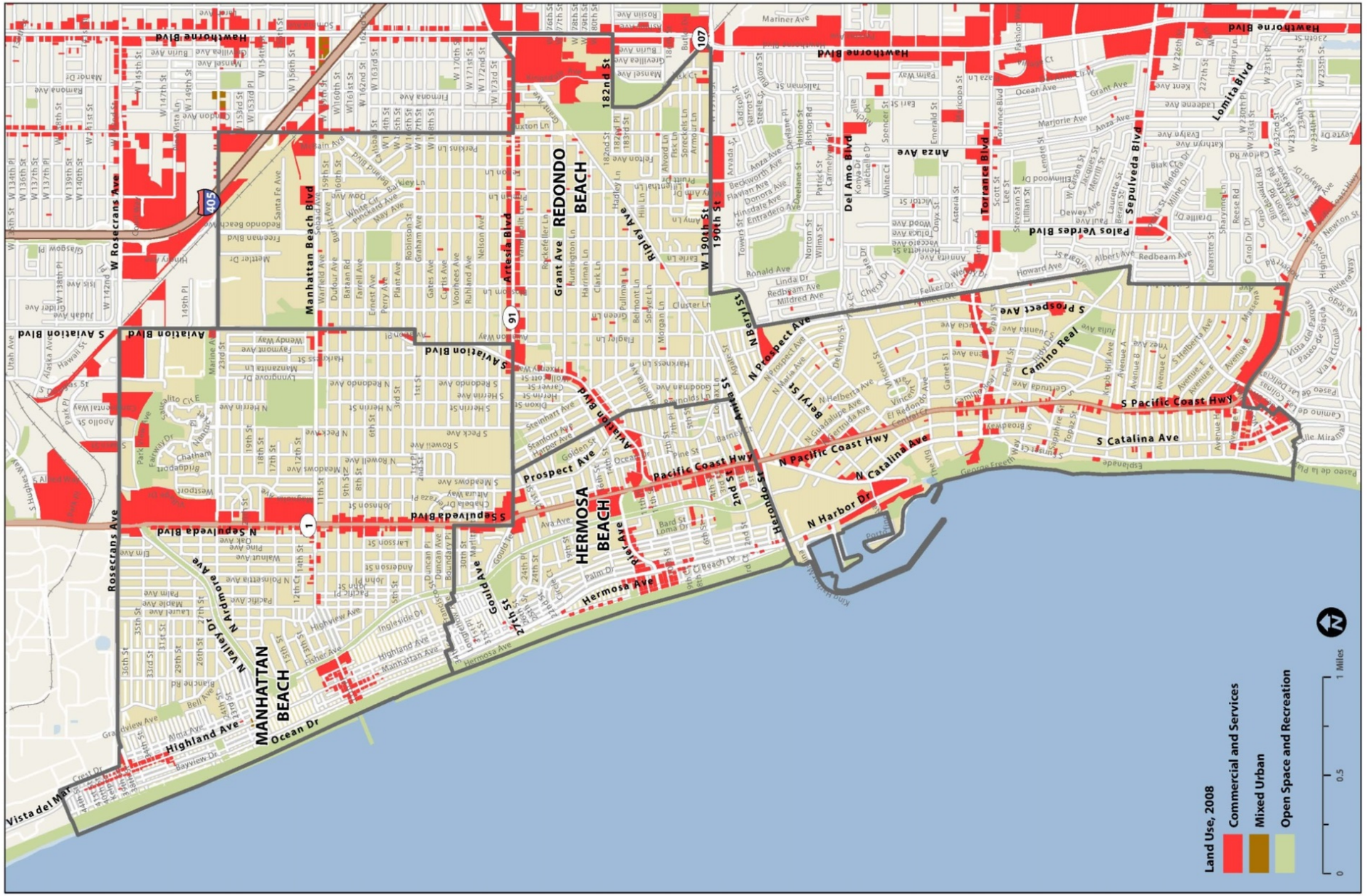

Figure 1-1: Commercial Land Uses in the Participating Cities

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2 Existing Conditions

This Chapter presents the existing conditions related to bicycle parking in the participating cities. A review of relevant plans and policies was conducted and is presented in **Appendix A**. The following describes existing bicycle parking locations and types in the three cities.

2.1 Existing Bicycle Racks

An interactive mapping tool (described in Section 3.1.2) was available to the broad community to help identify existing bicycle parking and desired locations for bicycle mini-corrals. Supplemented with existing datasets, such as Manhattan Beach's municipal inventory, this information helps to identify where bicycle parking currently exists.

Existing bicycle parking locations in Hermosa Beach, Manhattan Beach, and Redondo Beach are shown in **Figure 2-1**, **Figure 2-2**, and **Figure 2-3**. It should be noted that this map does not represent all bicycle parking in the three cities, but shows locations identified by the public on the mapping tool, the Cities, and the South Bay Bicycle Master Plan.

A number of bicycle rack facility types are present in the participating cities. Examples of these facilities are shown in **Table 2-1**. None of the cities currently have bicycle parking design guidelines and thus have a variety of different racks installed throughout their jurisdictions.

Table 2-1: Types of Bicycle Racks Present in the Participating Cities

U-Racks	Post and Ring	Wheelbender	Decorative	Bicycle Corral
				
Hermosa Beach	Manhattan Beach	Redondo Beach	Manhattan Beach	Redondo Beach

Despite not having bike parking or mini-corral design guidelines, the City of Redondo Beach has one existing bike corral and two existing mini-corrals in the Riviera Village. For the bike corral, the Riviera Village Business Improvement District (BID) approved the use of black Paris racks from CycleSafe, shown in the images below. The Redondo Beach Engineering department recommended a 2.5 foot wide bike rack and sited each bicycle parking space as 2' x 6' with a minimum 4 foot aisle clearance.

Bike corral in Redondo Beach

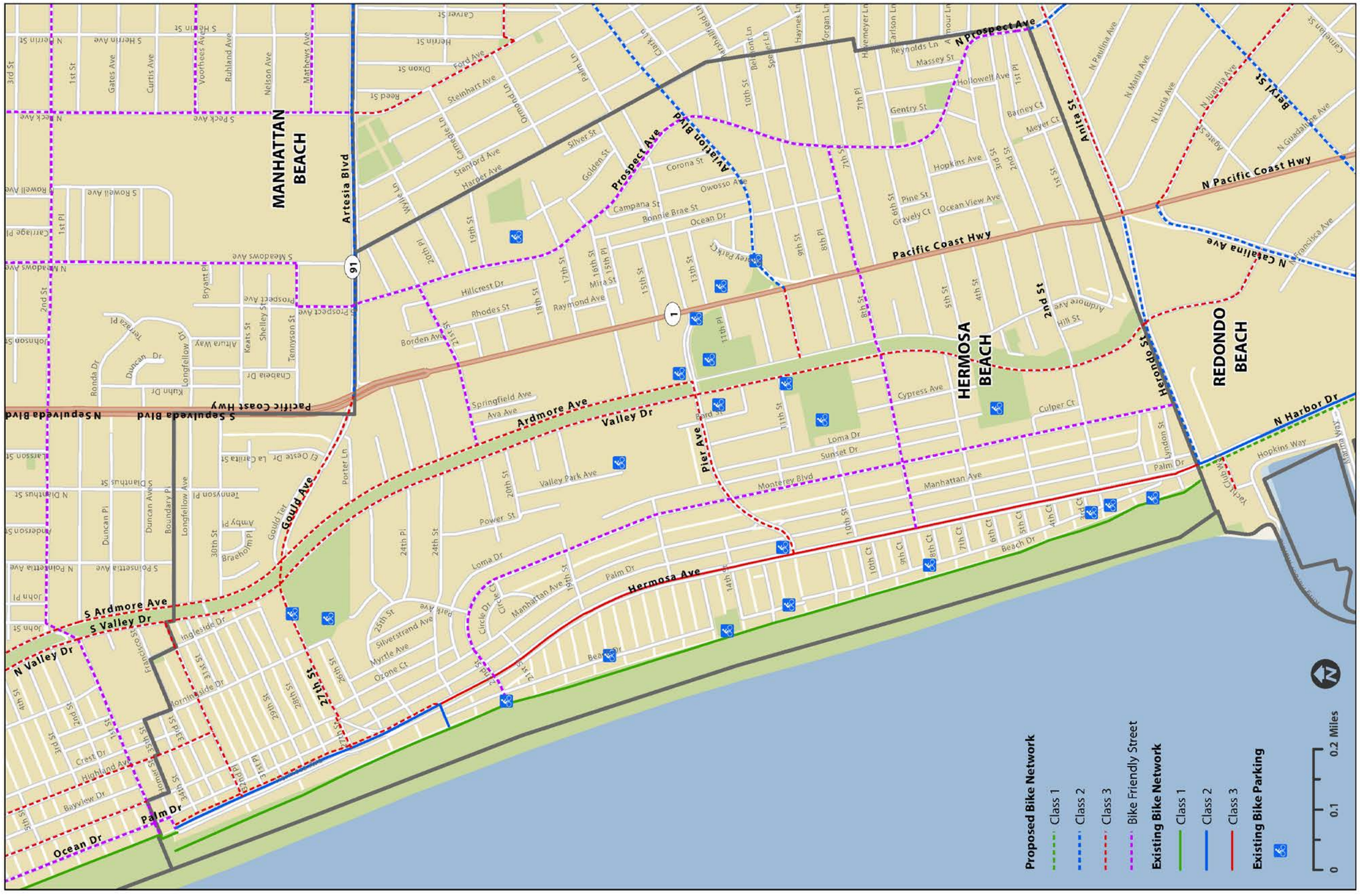

Figure 2-1: Existing Bike Parking in Hermosa Beach

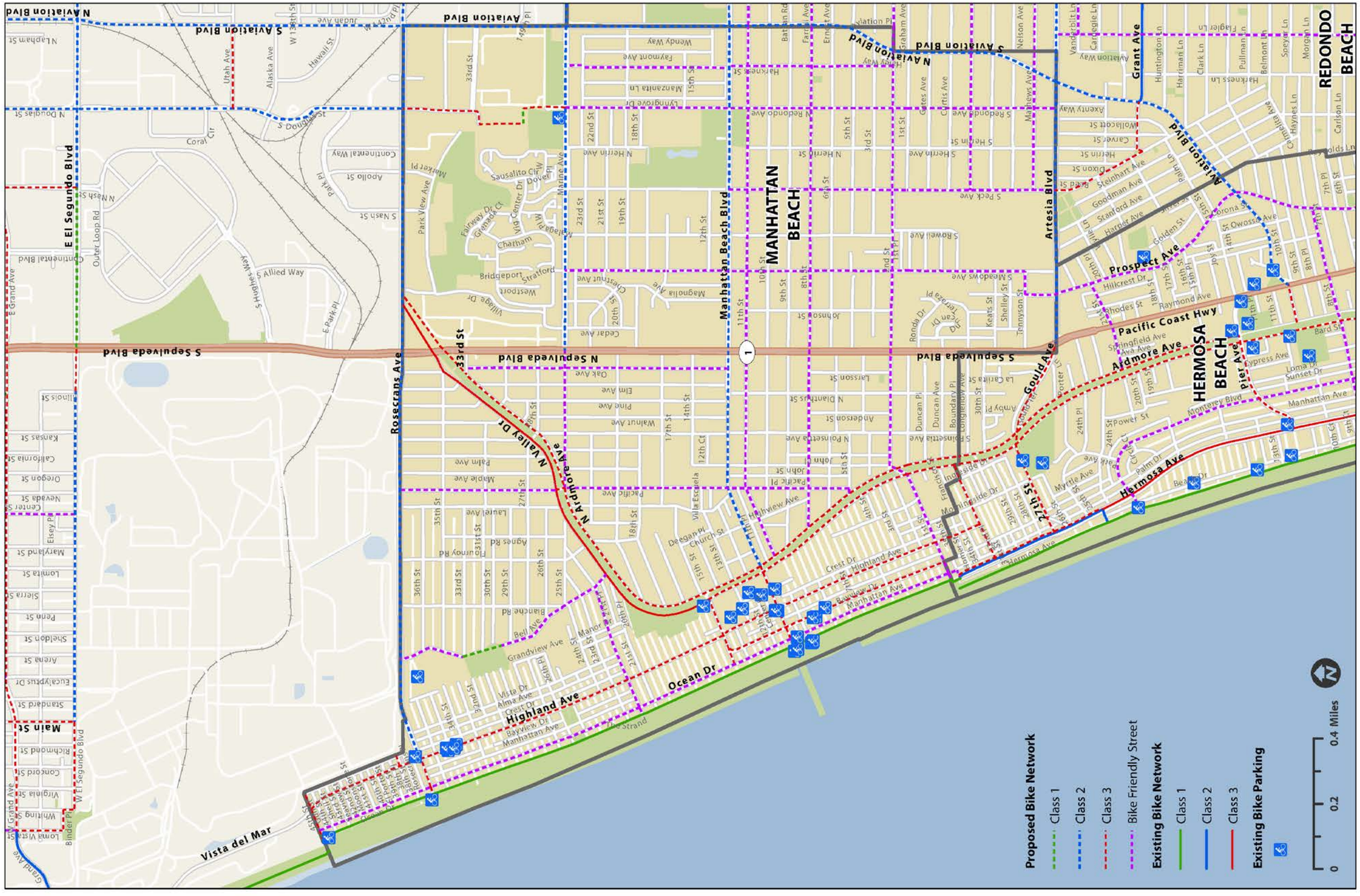

Figure 2-2: Existing Bike Parking in Manhattan Beach

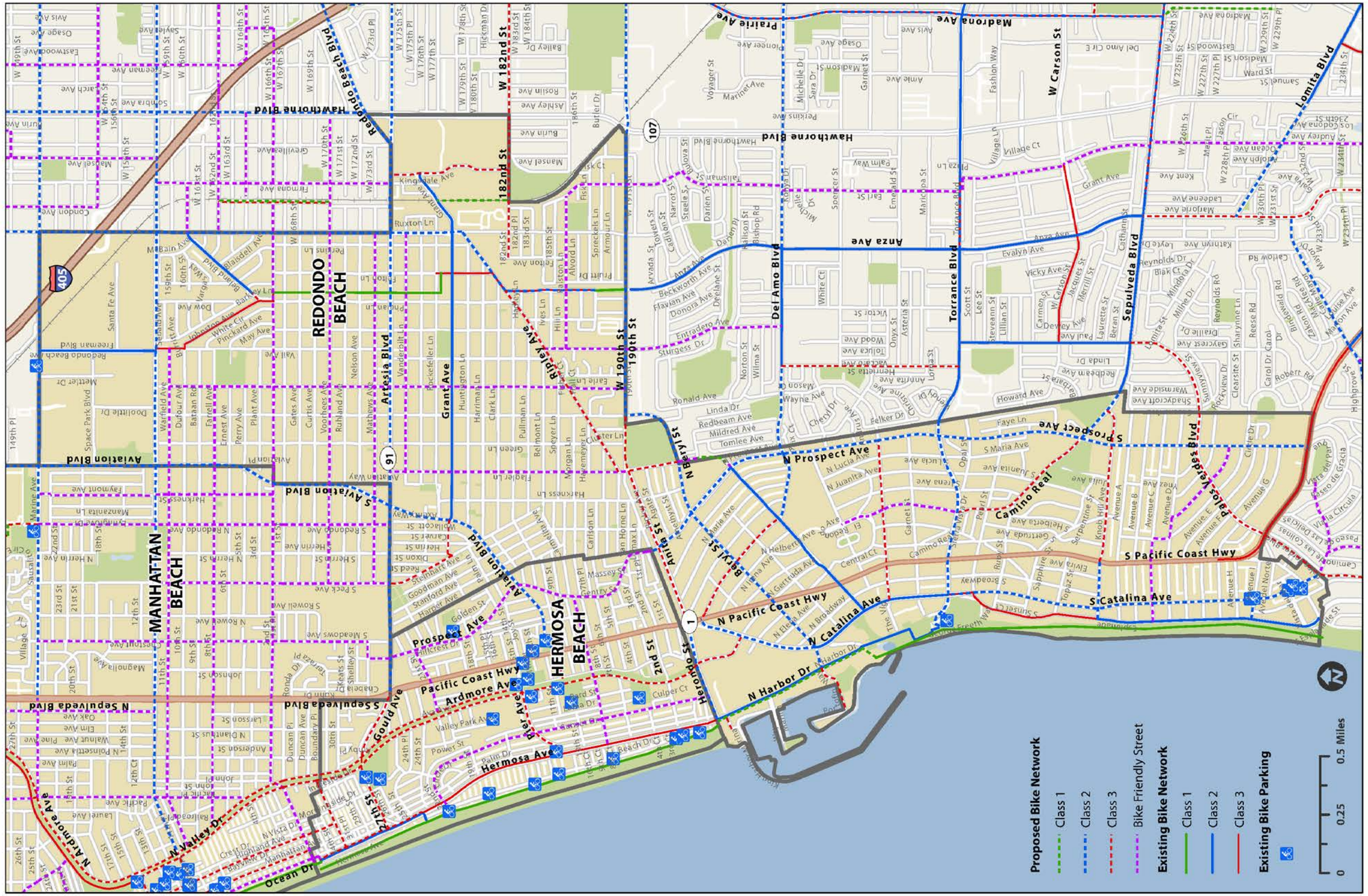

Figure 2-3: Existing Bike Parking in Redondo Beach

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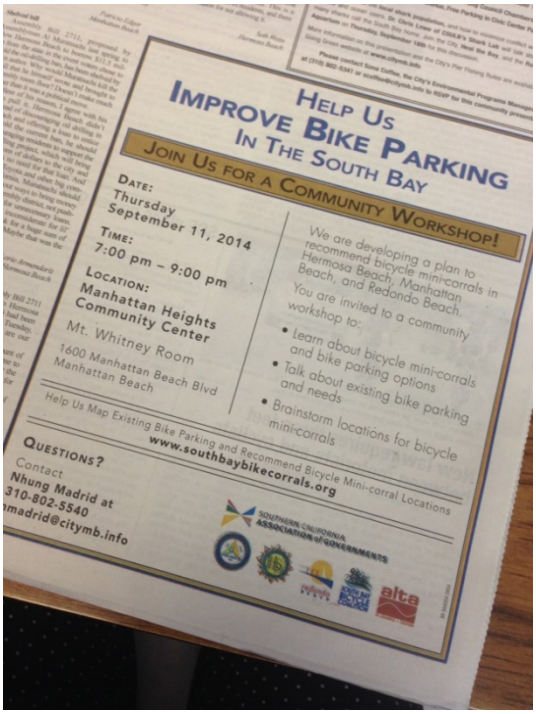
3 Community Identified Need

Public input was an important component of this Plan development. Outreach methods include a public input meeting, an online mapping tool, and community site visits to suggested locations, discussed further in the following sections. **Figure 3-1, Figure 3-2,** and **Figure 3-3** present suggested locations for bicycle mini-corrals received through the various outreach methods.

3.1 Outreach

3.1.1 Public Input Meeting

The participating cities invited residents, community groups, stakeholders, and others with an interest in bicycle parking to attend a public input meeting as part of the Bicycle Mini-Corral Plan. The workshop took place on Thursday, September 11, 2014 from 7:00-9:00 pm in the Mt. Whitney Room of the Manhattan Heights Community Center. The meeting was advertised through press releases, email blasts, letters to the various Chambers of Commerce, and an ad in the Beach Reporter newspaper. Approximately 20 residents, employees, and City staff from the three cities attended the public input meeting.



Newspaper ad advertising the public input meeting

Meeting attendees learned about bicycle mini-corrals and bike parking options, and participated in a facilitated discussion about existing bike parking locations, demand for new parking, and potential locations for bicycle mini-corrals in the three cities. Breakout groups were formed by city and attendees marked up large-scale maps to record their suggestions for bicycle mini-corrals. Members of the public that were not able to attend the meeting had the option of providing input via the online mapping tool, discussed as follows.

3.1.2 Online Mapping Tool

The participating cities hosted an online interactive mapping tool to collect suggestions on locations for bicycle mini-corrals in the participating cities from residents, bicycling groups, and business owners. **Figure 3-4** shows a snapshot of the online mapping tool. The interactive map allows website visitors to suggest potential locations for mini-corrals, upload photos, and comment on others' suggested sites. The online mapping tool could be viewed on smartphones so that data could be entered while on-site.

The interactive map showed both existing and planned bicycle paths, lanes and routes. This information was provided to help with user orientation and to encourage community members to consider integration with other bicycle infrastructure in their bicycle parking suggestions.

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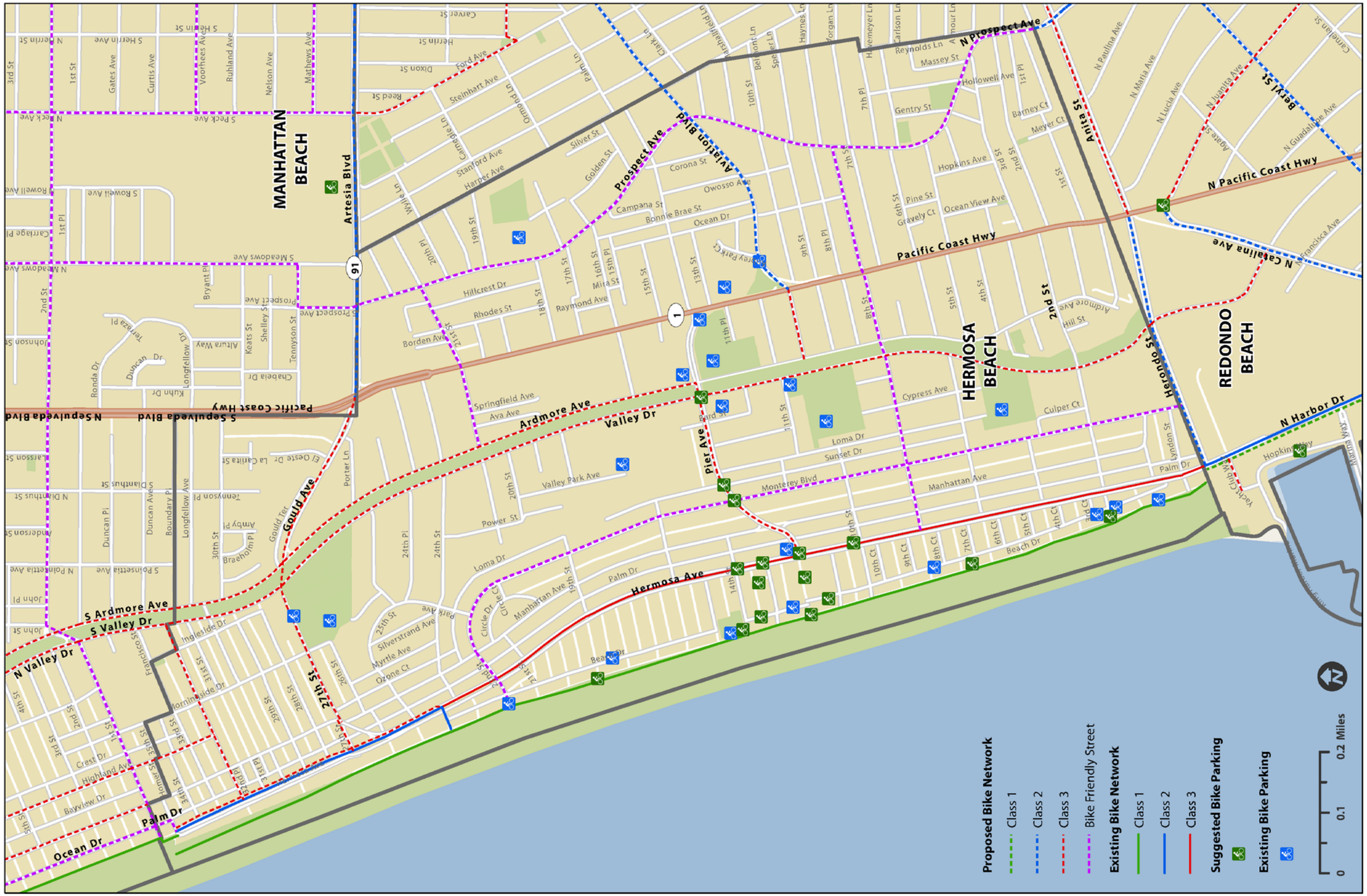


Figure 3-1: Suggested Bike Parking Locations in Hermosa Beach

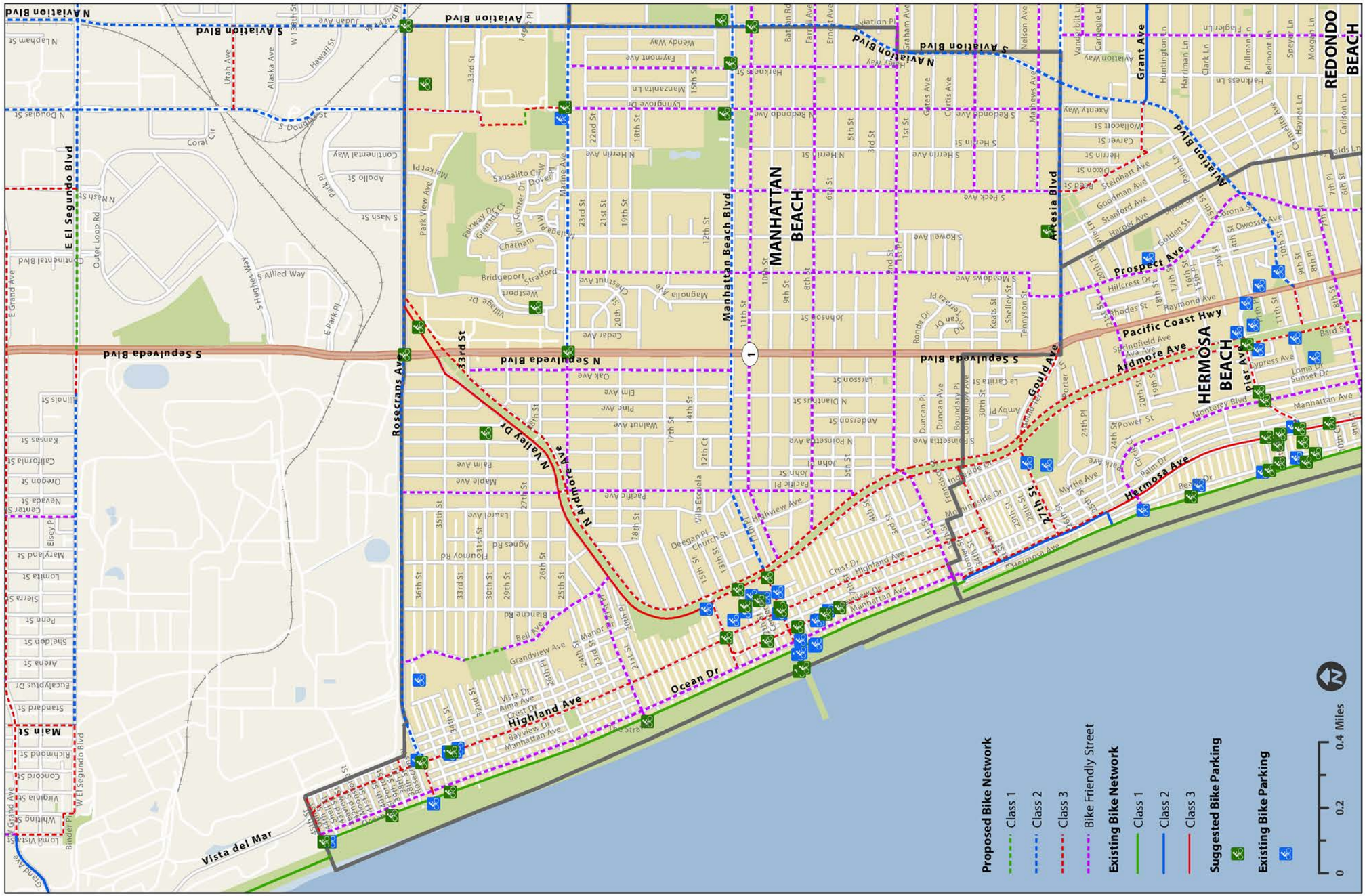


Figure 3-2: Suggested Bike Parking Locations in Manhattan Beach

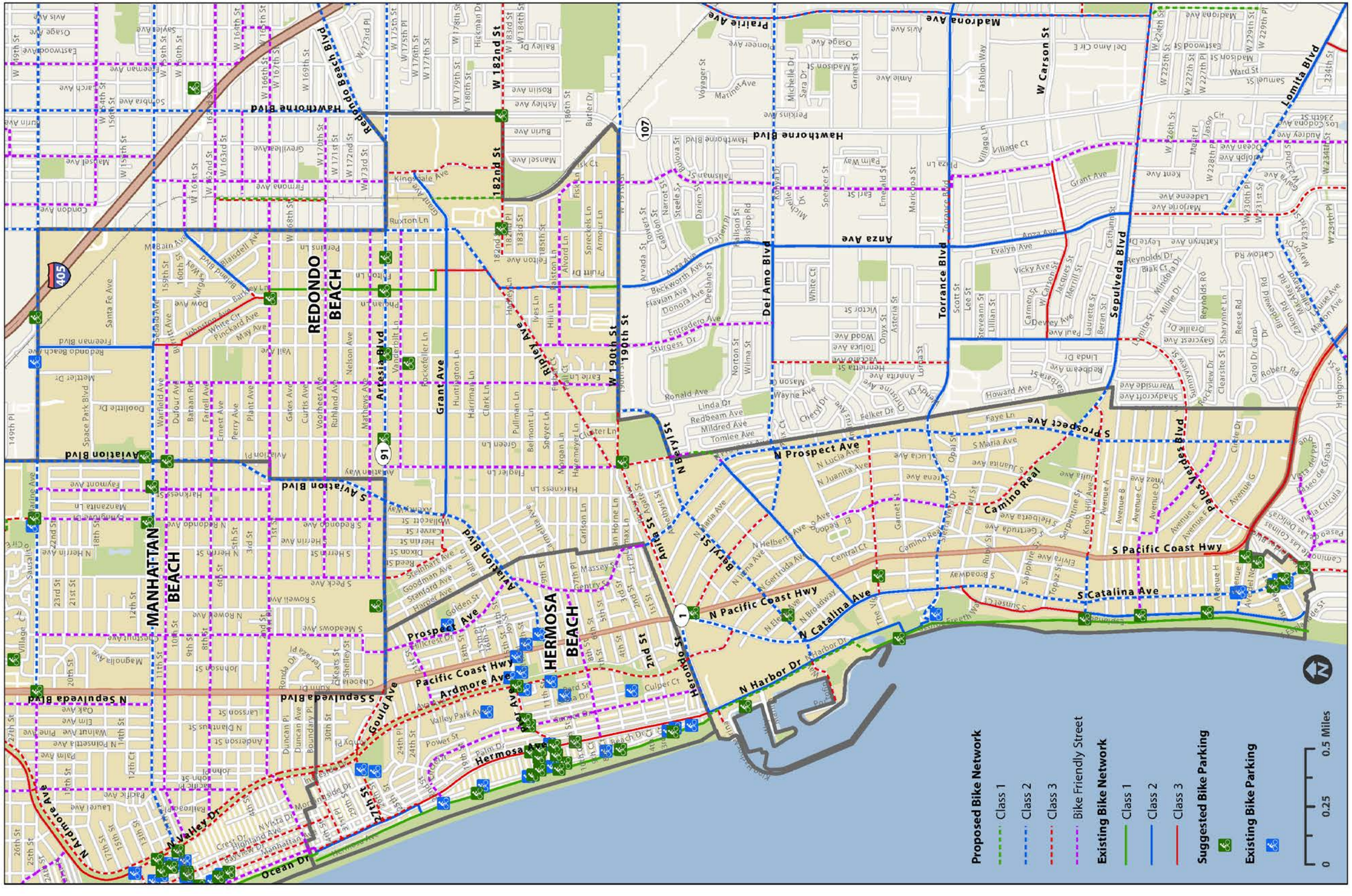


Figure 3-3: Suggested Bike Parking Locations in Redondo Beach

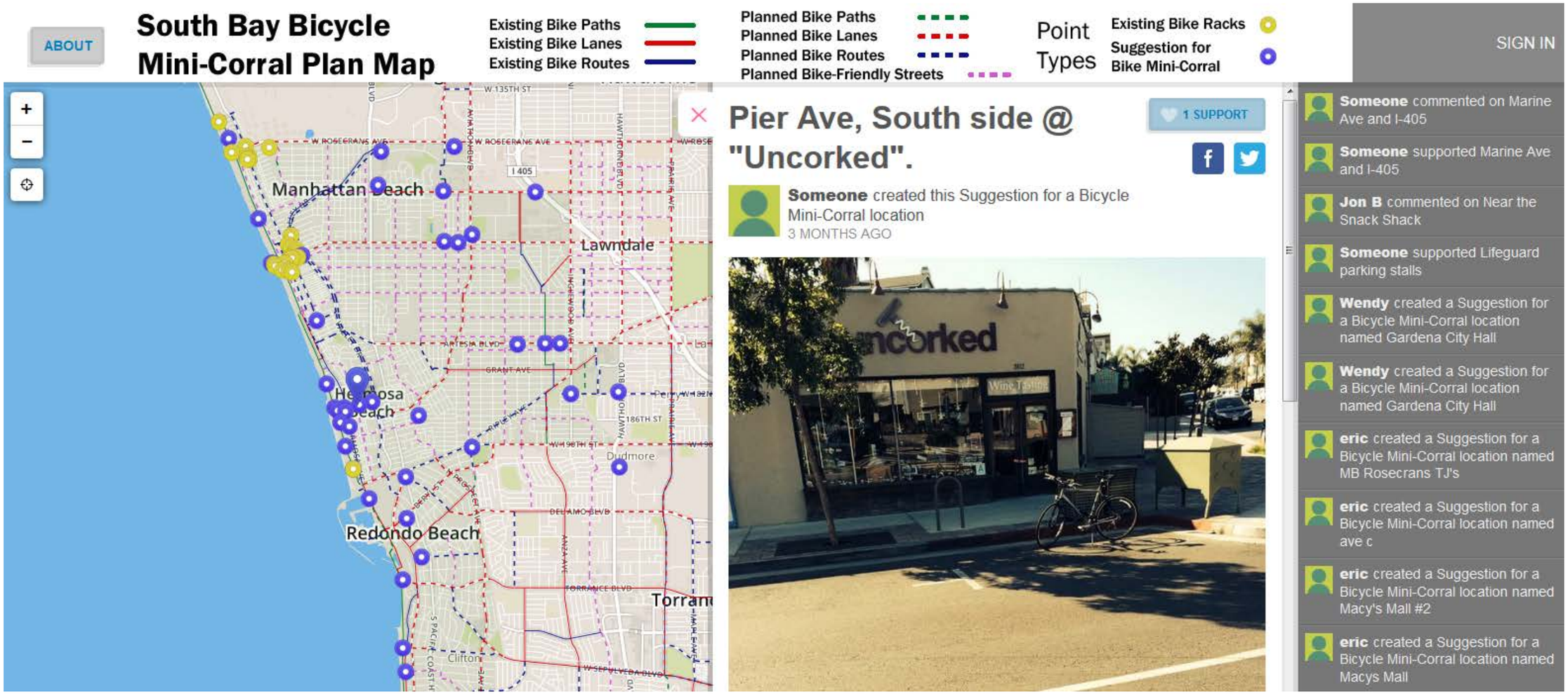


Figure 3-4: Interactive Mapping Tool with Suggested Bicycle Mini-Corral Locations

3.2 Community Identified and Observed Demand

The feedback received from both the public input meeting and the interactive mapping tool highlights a general desire for improved bicycle parking throughout the three cities with suggested bicycle parking locations clustered in the areas listed below. All suggested locations are presented in **Appendix B**.

- Near the Hermosa Beach Pier
- Along the Strand bikeway
- Along streets adjacent to the beach, such as Hermosa Ave and Esplanade
- At parks and golf courses, especially in Manhattan Beach
- Along Artesia Boulevard in North Redondo Beach
- In the Riviera Village
- Downtown Manhattan Beach

3.3 Site Evaluation and Field Visits

To conduct an initial feasibility study of the suggested locations for bicycle mini-corrals, this Plan evaluated each of the proposed sites with a set of criteria defined by the project team, shown in **Table 3-1**. Suggested mini-corral sites were required to be located in commercial areas. The complete scored list of suggested bicycle mini-corral locations can be found in **Appendix B**.

Table 3-1: Site Evaluation Criteria

Evaluation Criteria	Max. Score
Community identified or observed demand: Locations identified by the community.	20
Land use: Locations near bicycle trip generating businesses including restaurants, cafes, and bars.	20
Available right-of-way: Locations in the public right-of-way free of utility boxes, manhole covers, and other obstacles.	20
Suitable site conditions: Locations with conditions suitable for installation of bicycle parking such as size, slope, and pavement quality.	20
Bikeway connections: Location is adjacent to an existing or proposed bikeway identified in the South Bay Bicycle Master Plan.	20
Total Possible Score	**100**

Each City formed a community-based team to visit their top scoring suggested bicycle mini-corral sites and conduct further analysis in the field.

Table 3-2 presents the locations visited in each city. Site visits occurred on October 27 and October 28, 2014, and consisted of representatives from the participating cities, the South Bay Bicycle Coalition, Alta Planning + Design, local businesses, and the Chambers of Commerce. Community-based teams observed the demand for parking at each location and studied the feasibility of installing bicycle mini-corrals based on the aforementioned criteria. Some sites that scored high initially proved to be infeasible once studied in the field due to obstructions such as utility covers, low observed demand, or requirement of parking removal. Their scores in **Appendix B** were updated to reflect these observations.

An additional site visit was conducted by the South Bay Bicycle Coalition and Alta Planning + Design on Saturday November 8, 2014 to evaluate the weekend peak demand and visit additional locations not evaluated during the initial site visits. The locations revisited all had an equal or increased demand given the higher numbers of people in the commercial areas on the weekend. Additional locations visited included one on-street location in Hermosa Beach (shown in the following table) and potential off-street locations where bike racks could be clustered on the sidewalk in case the cities did not have enough options for five on-street priority mini-corral locations.

Information gathered through the community-based team site visits were used to recommend five prioritized locations for bicycle mini-corrals per city (fifteen total locations).

Table 3-2: Locations of Community-Based Site Team Visits

City	Locations
Hermosa Beach	• Pier Ave at Monterey Blvd • Hermosa Ave at 14th St • Hermosa Ave at 13th St • Pier Ave at Hermosa Ave • Hermosa Ave at 10th St • Pier Ave at Valley Dr • 11th St at The Strand (Saturday only)
Manhattan Beach	• Manhattan Ave at 8th Pl • Manhattan Beach Blvd east of Highland Ave • Manhattan Beach Blvd at Valley Dr (Metlox Plaza) • Rosecrans Ave at Highland Ave • 45th St at the Strand • Highland Ave at 35th St • Morningside Dr at 12th St
Redondo Beach	• Artesia Blvd at Green • Artesia Blvd at Phelan Ln • Robinson St at Phelan Ln • Esplanade at Ave G • S. Catalina Ave at Elena Ave • Ave I at Elena St • Beryl St at Harkness Ln

4 Recommendations

Based on the initial site evaluation and field visits, five priority locations for bicycle mini-corrals were identified for each city. These locations are shown in **Table 4-1**. Locations identified as priority locations meet the requirements outlined in Chapter 3, listed below, and have few or no challenges to implementation as determined by field evaluations.

Table 4-1: Recommended Priority Locations

City	Locations
Hermosa Beach	• Pier Ave at Valley Dr • Pier Ave at Monterey Blvd • Pier Ave at Hermosa Ave • Hermosa Ave at 10th St • Hermosa Ave at 13th St
Manhattan Beach	• Manhattan Ave at 8th Pl • Morningside Dr at 12th St • Manhattan Beach Blvd east of Highland Ave • Manhattan Ave at 12th Pl • Highland Ave at 35th St (Walk Street)
Redondo Beach	• Artesia Blvd at Phelan Ln • S. Catalina Ave at Elena Ave • Robinson St at Phelan Ln • Ave I at Elena Ave • Artesia Blvd at Green Ln

The majority of priority locations were evaluated for feasibility in the field as part of the community based site team visits. Sites that were identified as priority locations after the community based site team visits were completed have been reviewed in the field by the respective Engineering departments. Not all sites visited with the community based site teams are included in the following recommendations if they were deemed infeasible due to obstructions such as utility covers, low observed demand, or requirement of parking removal.

Each priority location for bicycle mini-corrals is discussed in detail as follows. Estimated costs of priority locations are based on conceptual designs and are to be used for planning purposes only. A breakdown of estimated costs is included in **Appendix C**.

This Plan also identifies additional secondary priority locations recommended for bicycle mini-corrals. Though the objective of the Plan was to identify five secondary priority locations per city, due to limited available on-street space that meet project requirements, only three additional locations per city were selected. A number are sidewalk clustered racks. These locations are shown in **Table 4-2**.

Table 4-2: Additional Recommended Locations

City	Locations
Hermosa Beach	• 11th St at The Strand • 13th St at The Strand • Pier Ave at Manhattan Ave
Manhattan Beach	• Manhattan Ave at 9th Pl • Manhattan Ave at 11th Pl • 15th St at Highland Ave
Redondo Beach	• S. Catalina Ave between Vista Del Mar and Elena Ave • Artesia Blvd at Slauson Ln • S. Catalina Ave at Vista Del Mar

Secondary priority recommended locations for bicycle mini-corrals are discussed in detail in the following section. These locations, while recommended based on the criteria identified in Chapter 3, have not been studied in the field for feasibility and will require additional evaluation. Field measurements will need to be taken to confirm estimated parking capacity identified in this Plan.

4.1 Recommended Bicycle Mini-Corrals in Hermosa Beach

4.1.1 Priority Locations

Pier Ave at Valley Dr

Site Description and Rationale

Location: Southwest corner of Pier Ave/Valley Dr on the south side of Pier Ave

Nearby uses:

- Hermosa Beach Public Library
- Post office
- Skate park
- Hermosa Beach Police Department
- Hermosa Beach Fire Department
- Hermosa Beach Community Center
- Large retail shopping center with a gym, sports bar, café, and apparel store
- Hermosa Valley Greenbelt

Nearby bikeways: Proposed Class III Bike Routes on Pier Ave and Valley Dr

Rationale:

- High demand area (Downtown Hermosa Beach)
- Available right-of-way
- Suitable site conditions
- Adjacent to proposed bikeways

Additional notes: The bicycle mini-corral will be placed along the curb drainage grates on Pier Ave. Regular sweeping is important to keep grates clear. The City should work with the Public Library to provide maintenance services for the mini-corral.

Site Images

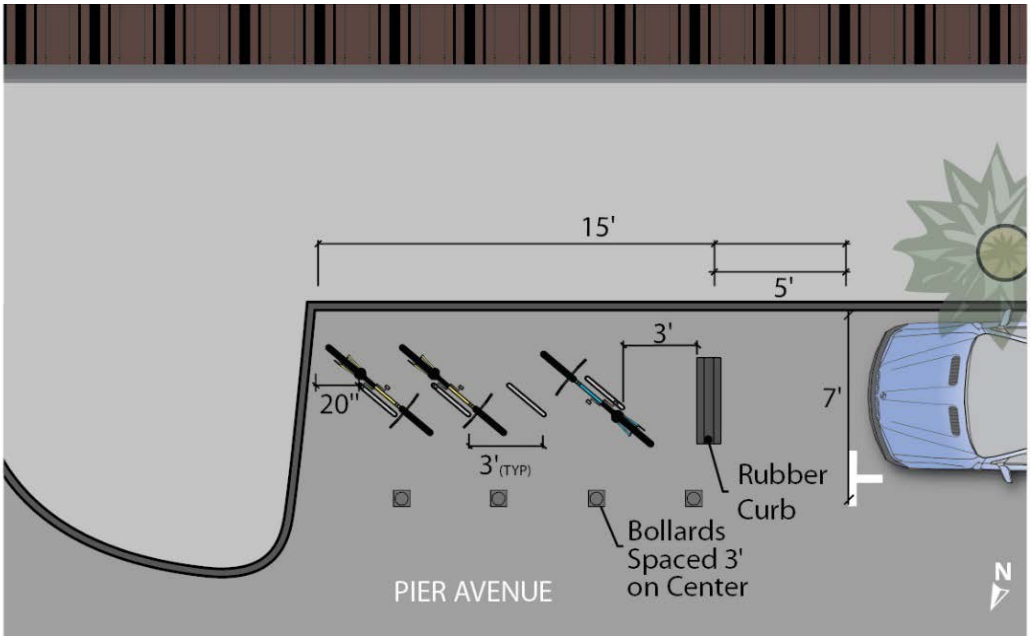
Approximate Parking Capacity

4 racks, 8 bicycles total

Estimated Cost

$5,500

Concept Graphic



Pier Ave at Monterey Blvd

Site Description and Rationale

Location: Southeast corner of Pier Ave/Monterey Blvd on the south side of Pier Ave in Downtown Hermosa Beach

Nearby uses:

- Retail shops
- Restaurants
- Liquor store

Nearby bikeways:

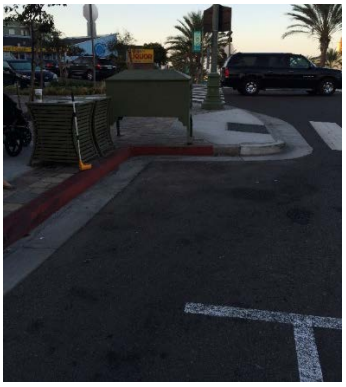
- Proposed Class III Bike Route on Pier Ave
- Proposed Bicycle Friendly Street (enhanced Class III Bike Route) on Monterey Blvd

Rationale:

- High demand area (Downtown Hermosa Beach)
- Available right-of-way
- Suitable site conditions
- Adjacent to proposed bikeways

Additional notes: There is an existing sidewalk bicycle rack located adjacent to the future mini-corral. After installation of the mini-corral, the City should consider the removal of the sidewalk rack. The City should reach out to Uncorked and Chef Wang's as potential partners for maintenance of the mini-corral.

Site Images



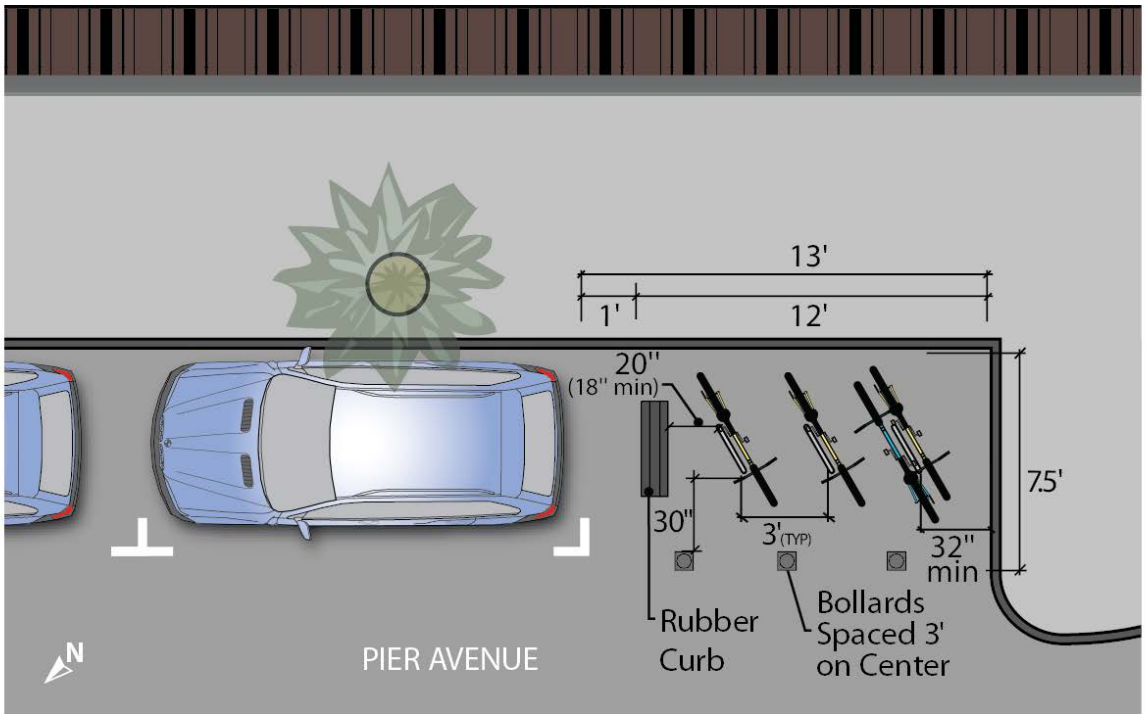
Approximate Parking Capacity

3 racks, 6 bicycles total

Estimated Cost

$4,400

Concept Graphic



Pier Ave at Hermosa Ave

Site Description and Rationale

Location: Southeast corner of Pier Ave/Hermosa Ave on the south side of Pier Ave in Downtown Hermosa Beach

Nearby uses:

- Pier Plaza
- Hermosa Beach Pier
- The Strand
- Restaurants
- Banks
- Retail shops

Nearby bikeways:

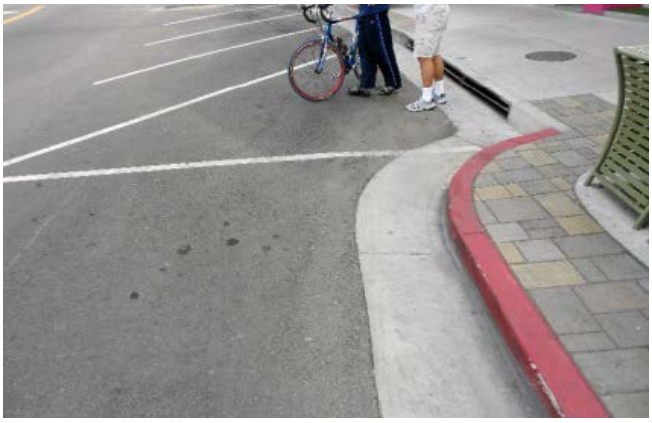
- Proposed Class III Bike Route on Pier Ave
- Existing Class III Bike Route with shared lane markings on Hermosa Ave,
- Existing Class I Marvin Braude Bikeway

Rationale:

- High demand area (Downtown Hermosa Beach)
- Available right-of-way
- Suitable site conditions
- Adjacent to existing and proposed bikeways

Additional notes: To address a potential visibility issue for right-turning vehicles, the mini-corral should be located at the eastern edge of the curb extension. Striping of the travel lane around the mini-corral will help define the vehicle path. The corral will be located near a storm drain, so regular sweeping may be necessary. The City should reach out to Zane's and Nu Shuz as potential partners for maintenance of the mini-corral.

Site Images



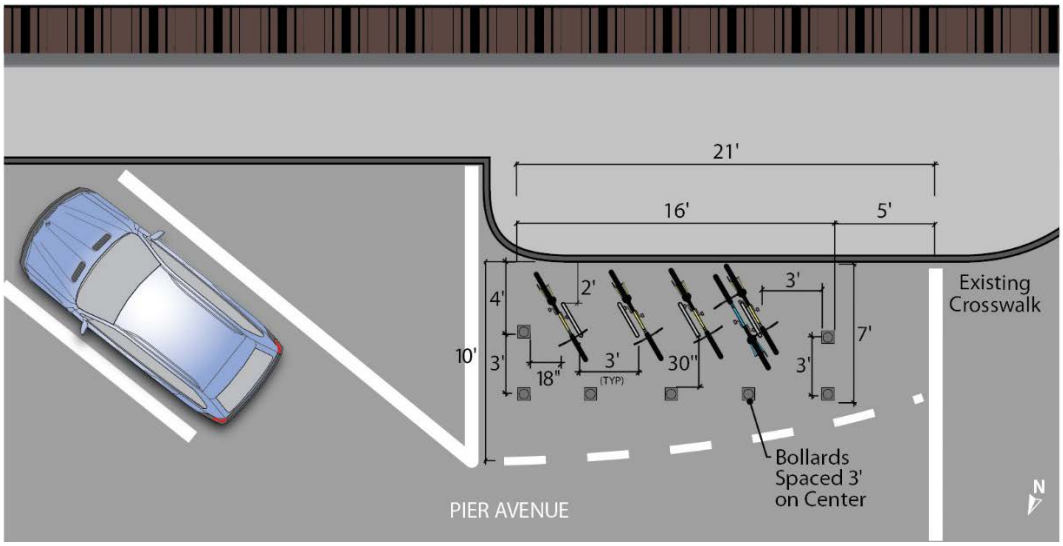
Approximate Parking Capacity

4 racks, 8 bicycles total

Estimated Cost

$7,700

Concept Graphic



Hermosa Ave at 10th Street

Site Description and Rationale

Location: Southeast corner of Hermosa Ave/10th St on the east side of Hermosa Ave in Downtown Hermosa Beach

Nearby uses:

- Retail shops
- Stand up paddleboard rentals
- The Comedy and Magic Club
- Gym
- Optometrist

Nearby bikeways:

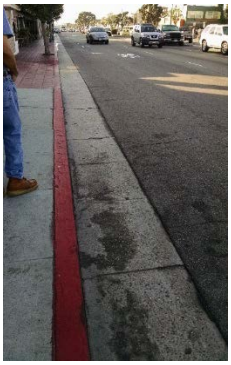
- Existing Class III Bike Route with shared lane markings on Hermosa Ave
- Proposed Class III Bike Route on Pier Ave
- Proposed Bicycle Friendly Street (enhanced Class III Bike Route) on 8th St
- Existing Class I Marvin Braude Bikeway.

Rationale:

- High demand area (Downtown Hermosa Beach)
- Available right-of-way
- Suitable site conditions
- Adjacent to existing and proposed bikeways

Additional notes: To better buffer the mini-corral from the driveways, it should be placed in the center of the curb. The City should reach out to Tarsan Stand Up Paddle as a potential partner for maintenance of the mini-corral.

Site Images



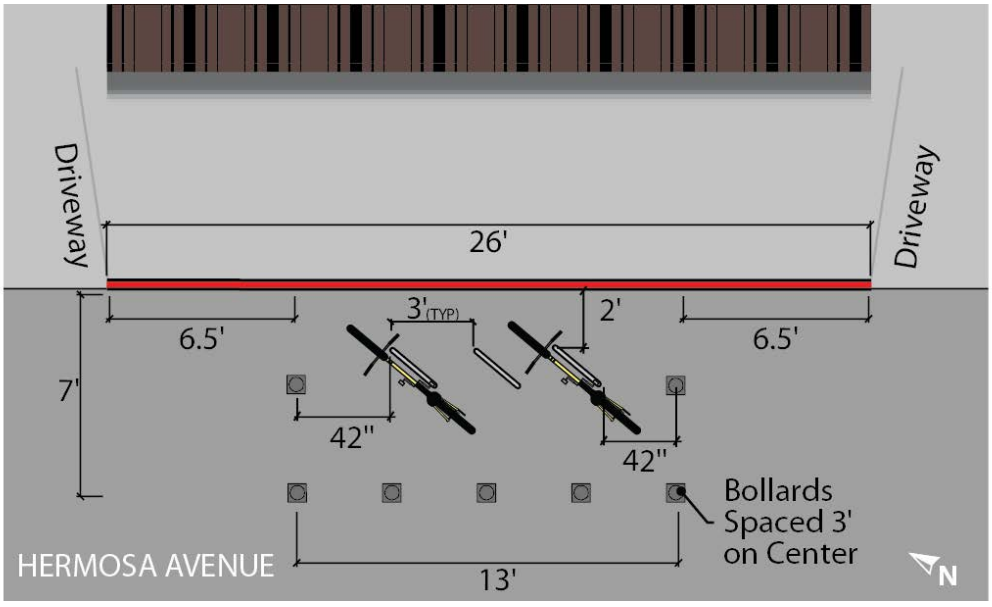
Approximate Parking Capacity

3 racks, 6 bicycles total

Estimated Cost

$6,900

Concept Graphic



Hermosa Ave at 13th Street

Site Description and Rationale

Location: Southwest corner of Hermosa Ave/13th St on the west side of Hermosa Ave in Downtown Hermosa Beach

Nearby uses:

- Starbucks Coffee
- Kinecta Federal Credit Union
- Pilates Place
- Retail shops
- Restaurants

Nearby bikeways:

- Existing Class III Bike Route with shared lane markings on Hermosa Ave
- Existing Class I Marvin Braude Bikeway.

Rationale:

- High demand area (Downtown Hermosa Beach)
- Available right-of-way
- Suitable site conditions
- Adjacent to existing bikeways

Additional notes: The impacts of U-turning vehicles should be studied further by the City's Engineering Department prior to implementation of the mini-corral. The City should reach out to Starbucks Coffee and Pilates Place as potential partners for maintenance of the mini-corral.

Site Images

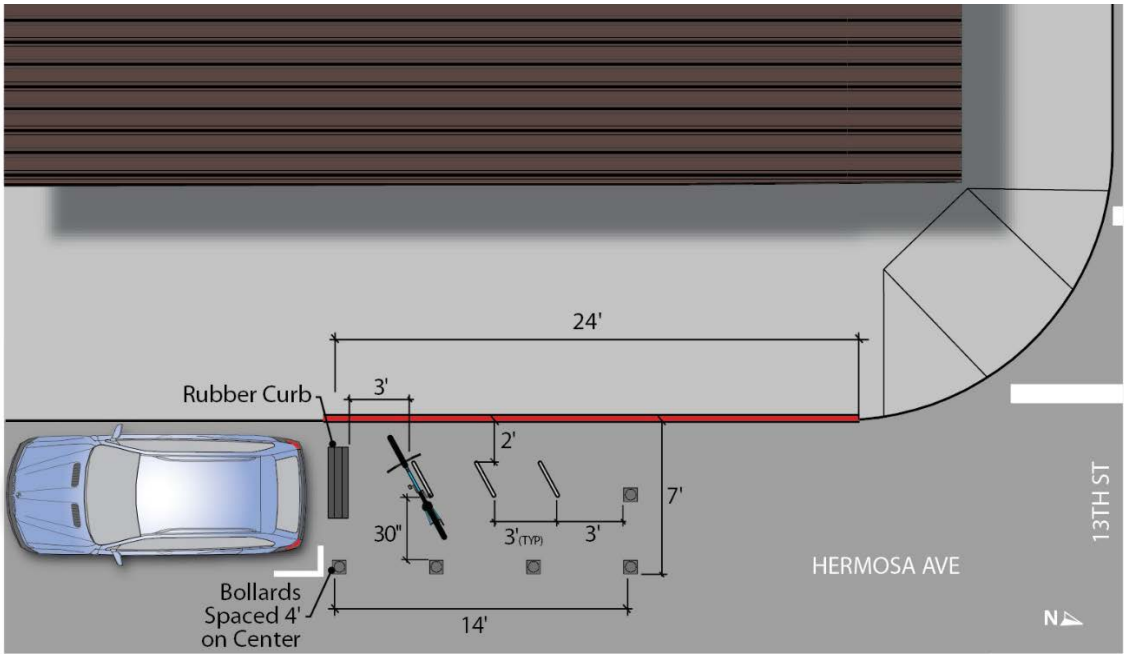
Approximate Parking Capacity

3 racks, 6 bicycles total

Estimated Cost

$5,800

Concept Graphic



4.1.2 Additional Locations

11th St at The Strand

Site Description and Rationale	Site Images
Location: Southwest corner of 11th St/The Strand on the south side of 11th St in Downtown Hermosa Beach **Nearby uses:** • Brother's Burritos • Scotty's **Nearby bikeways:** Existing Class I Marvin Braude Bikeway **Rationale:** • High bicycle demand • Lack of existing high quality bicycle parking **Additional notes:** The mini-corral should have angled racks to be clear of opening car doors. Racks should be installed to maintain access to utility boxes. Bollards should be placed in line with the blue patio to the south to protect bicycles from Marvin Braude Bikeway users. The City may need to work with the County of Los Angeles if the mini-corral encroaches into the Marvin Braude Bikeway. The City should reach out to Brother's Burritos and Scotty's as potential partners for maintenance of the mini-corral.	 
Approximate Parking Capacity	
2-3 racks, 4-6 bicycles total	

13th St at The Strand

Site Description and Rationale	Site Image
Location: Northwest corner of 13th St/The Strand on the north side of 13th St in Downtown Hermosa Beach **Nearby uses:** • Good Stuff • Hermosa Cyclery **Nearby bikeways:** • Existing Class I Marvin Braude Bikeway **Rationale:** • High bicycle demand was observed for Good Stuff • Lack of existing high quality bicycle parking **Additional notes:** There is an existing wave rack, yet the orientation of the rack underutilizes the space available. The City should reach out to Good Stuff and Hermosa Cyclery as potential partners for maintenance of the mini-corral.	
Approximate Parking Capacity	
5 racks, 10 bicycles total	

Pier Ave at Manhattan Ave	
Site Description and Rationale	**Site Images**
Location: Northeast corner of Pier Ave/Manhattan Ave on the north side of Pier Ave in Downtown Hermosa Beach **Nearby uses:** • Java Man • Retail shops • Restaurants **Nearby bikeways:** • Proposed Class III Bike Route on Pier Ave • Proposed Bike Friendly Street (Enhanced Class III Bike Route) on Monterey Blvd • Existing Class III Bike Route with shared lane markings on Hermosa Ave **Rationale:** • High bicycle demand observed • Existing racks observed at/reaching capacity • Few on-street locations available on Pier Ave **Additional notes:** This location has available space to add approximately two additional bike racks to the existing two racks (four racks total) either by placing them to the north of the existing racks or by reorienting the existing racks so that they are parallel to the street. Because this would be located off-street, it may not require the maintenance agreement that on-street mini-corrals do.	 
Parking Capacity	
Existing: 2 racks, 4 bicycles total New: 4 racks, 8 bicycles total	

4.2 Recommended Bicycle Mini-Corrals in Manhattan Beach

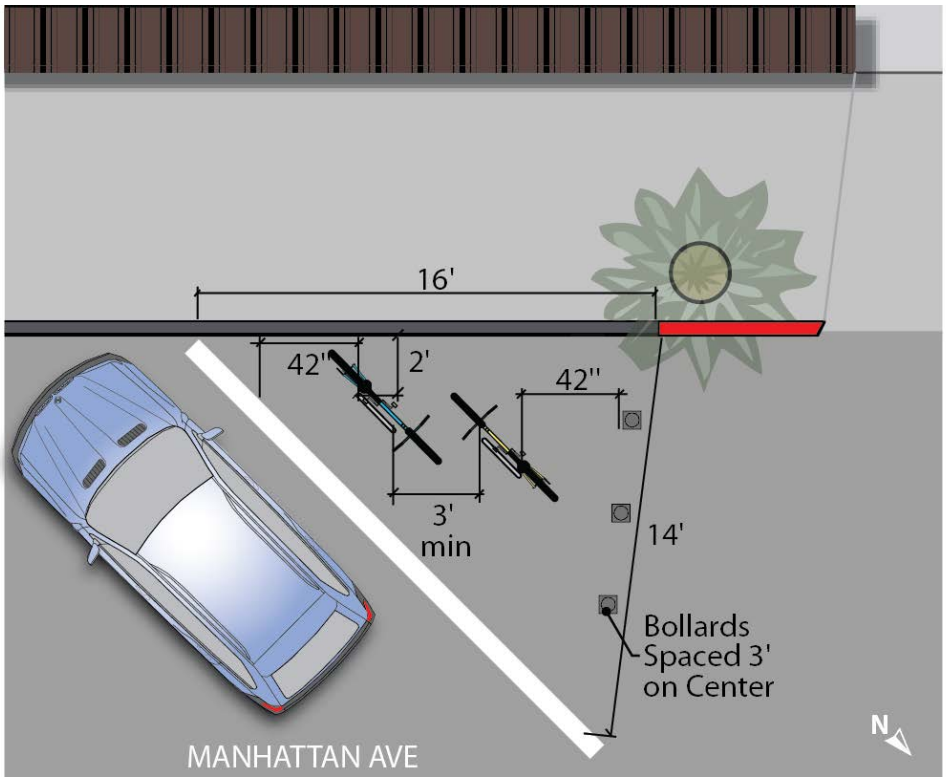
4.2.1 Priority Locations

Manhattan Ave at 8th Place

Site Description and Rationale	Site Image
Location: Northwest corner of Manhattan Ave/8th Pl on the east side of Manhattan Ave in Downtown Manhattan Beach **Nearby uses:** • Health Center & Spa • Retail stores **Nearby bikeways:** • Existing Class III Bike Route with shared lane markings on Manhattan Ave (existing with Class II bike lanes beginning south of 8th St) • Existing Class I - Marvin Braude Bikeway **Rationale:** • High demand area (Downtown Manhattan Beach) • Available right-of-way • Suitable site conditions • Adjacent to existing bikeways **Additional notes:** The City should reach out to tenants of the Westcoast Land Building in front of the mini-corral as potential partners for maintenance of the mini-corral.	

Approximate Parking Capacity	Estimated Cost
2 racks, 4 bicycles total	$3,600

Concept Graphic



Morningside Dr at 12th Street

Site Description and Rationale

Location: Southeast corner of Morningside Dr/12th St on the east side of Morningside Dr in Downtown Manhattan Beach

Nearby uses:

- Metlox Plaza
- Coffee shops
- Additional retail stores
- Restaurants

Manhattan Beach City Hall

Nearby bikeways:

- Existing Class II on Manhattan Ave
- Existing Class I - Marvin Braude Bikeway
- Proposed Class III Bike Route on Manhattan Beach Blvd
- Proposed Class III Bike Route on Highland Ave
- Proposed Class III Bike Route on Valley Dr

Rationale:

- High demand area (Downtown Manhattan Beach)
- Available right-of-way
- Suitable site conditions
- Community identified as a priority area for increased bike parking

Additional notes: This will require shifting the existing stalls to the south by approximately 10 feet and relocating one parking meter. This will not impact access to the fire hydrant at Morningside Dr/Manhattan Beach Blvd and the City has expressed support of this project. The City should reach out to businesses in Metlox Plaza, such as Nick's Restaurant and Waterleaf, as potential partners for maintenance of the mini-corral.

Site Images

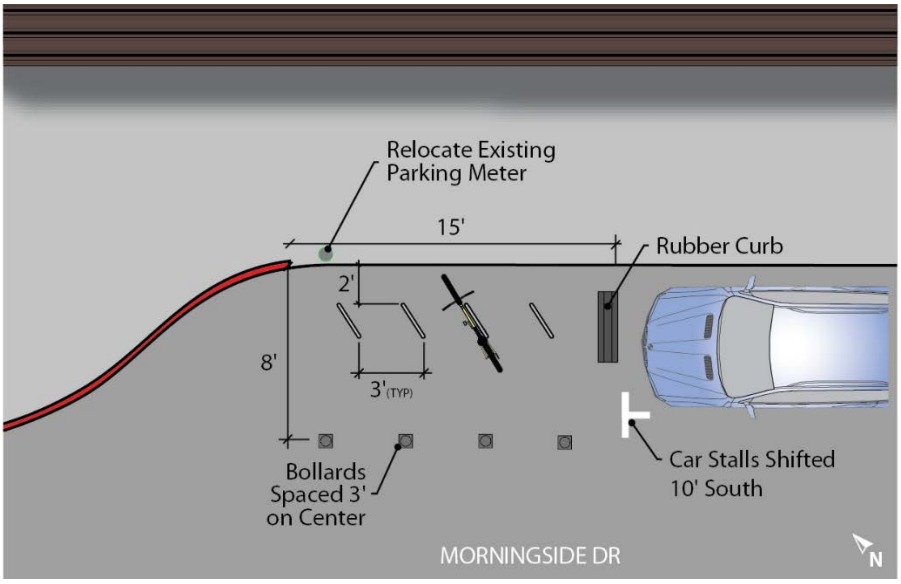
Approximate Parking Capacity

4 racks, 8 bicycles total

Estimated Cost

$3,900

Concept Graphic



Manhattan Beach Boulevard east of Highland Ave

Site Description and Rationale

Location: Midblock on the south side of Manhattan Beach Blvd east of Highland Ave in Downtown Manhattan Beach

Nearby uses:

- Retail stores
- Offices
- Restaurants
- Coffee shops

Nearby bikeways:

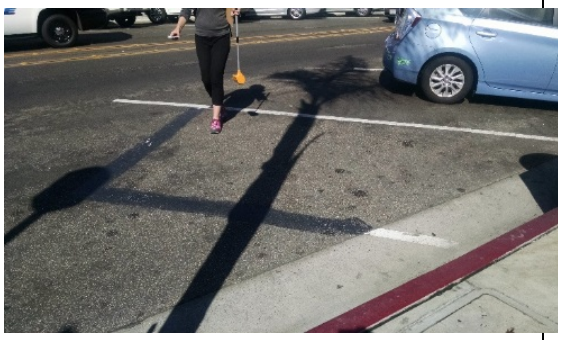
- Existing Class II on Manhattan Ave
- Existing Class I - Marvin Braude Bikeway
- Proposed Class III Bike Route on Manhattan Beach Blvd
- Proposed Class III Bike Route on Highland Ave
- Proposed Class III Bike Route on Valley Dr

Rationale:

- High demand area (Downtown Manhattan Beach)
- Available right-of-way
- Suitable site conditions
- Adjacent to proposed bikeways

Additional notes: The mini-corral should be placed near to the angled parking stall to the north to better buffer parked bicycles. The City should reach out to Allison by the Beach and Katwalk as potential partners for maintenance of the mini-corral.

Site Images



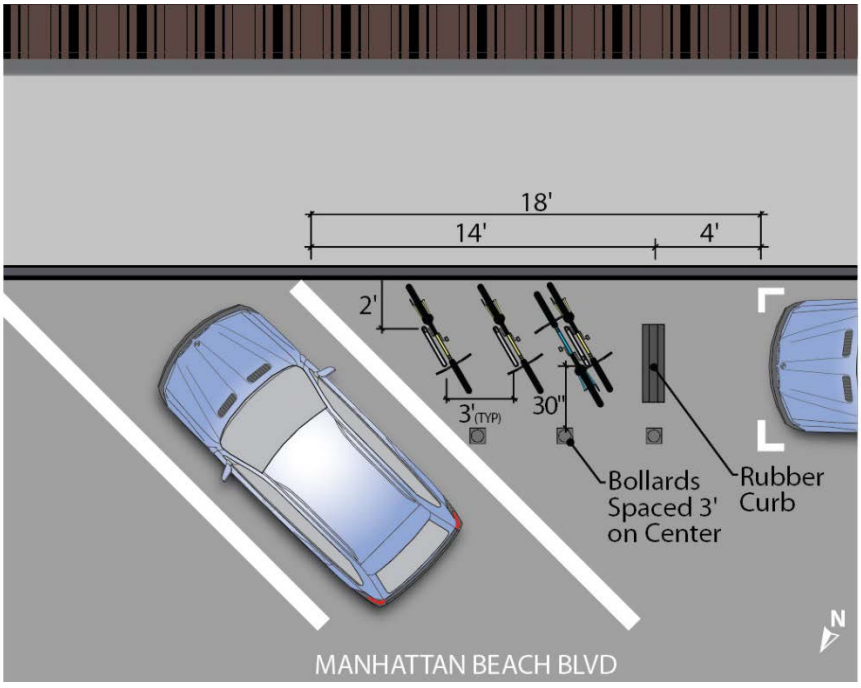
Approximate Parking Capacity

3 racks, 6 bicycles total

Estimated Cost

$4,400

Concept Graphic

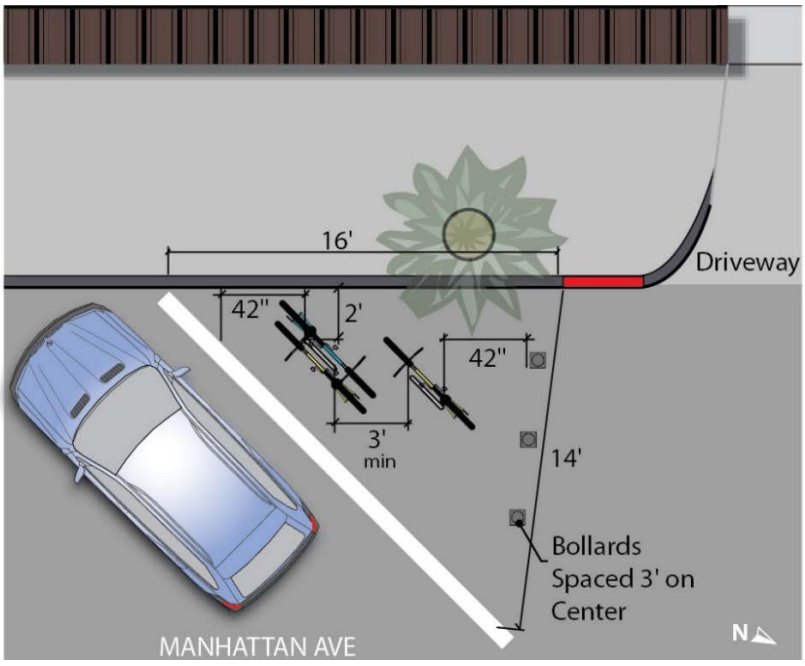


Manhattan Ave at 12th Pl

Site Description and Rationale	Site Image
Location: Southwest corner of Manhattan Ave/12th Pl on the west side of Manhattan Ave in Downtown Manhattan Beach **Nearby uses:** • Barber shop • Laundromat • Dentist • Retail stores **Nearby bikeways:** • Existing lass III Bike Route with shared lane markings on Manhattan Ave • Proposed Class III Bike Route on 15th St • Proposed Class III Bike Route on Manhattan Beach Blvd • Existing Class I - Marvin Braude Bikeway **Rationale:** • High demand area (Downtown Manhattan Beach) • Available right-of-way • Suitable site conditions • Adjacent to existing and proposed bikeways **Additional notes:** Motorcycle parking is permitted by the City at this location and the existing stripe will need to be removed. The City will consider the relocation of this motorcycle parking or allowing motorcycles to share the use of this mini-corral. The City should reach out to Whale of a Wash Cleaners and Laundry as a potential partner for maintenance of the mini-corral.	

Approximate Parking Capacity	Estimated Cost
2 racks, 4 bicycles total	$3,600

Concept Graphic



Highland Ave at 35th St (Walk Street)

Site Description and Rationale

Location: Southwest corner of Highland Ave/35th St on the west side of Highland Ave in North Manhattan Beach

Nearby uses:

- North End Caffe
- Four Daughters Kitchen
- Yoga studio
- Retail shops

Nearby bikeways:

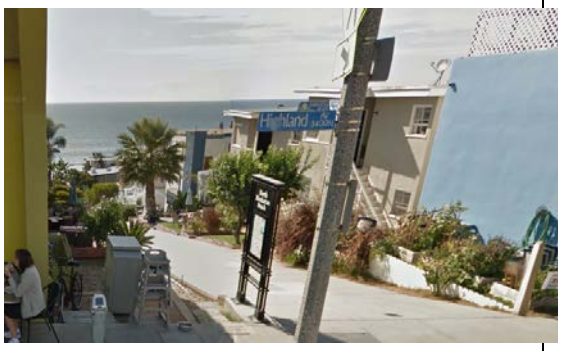
- Proposed Class III Bike Route on Highland Ave
- Walk street on 35th St (closed to motorized traffic)
- Existing Class I - Marvin Braude Bikeway

Rationale:

- High demand area (North Manhattan Beach)
- No available right-of-way on-street
- Community identified as a priority area for increased bike parking

Additional notes: This is in the 35th St undeveloped City right-of-way adjacent to 3421 Highland Avenue. The site should be paved to provide a level surface for bicyclists to roll their bicycles onto. The City should work with the North End Caffe as a potential partner for maintenance of the off-street mini-corral as it will be located adjacent to their property.

Site Images



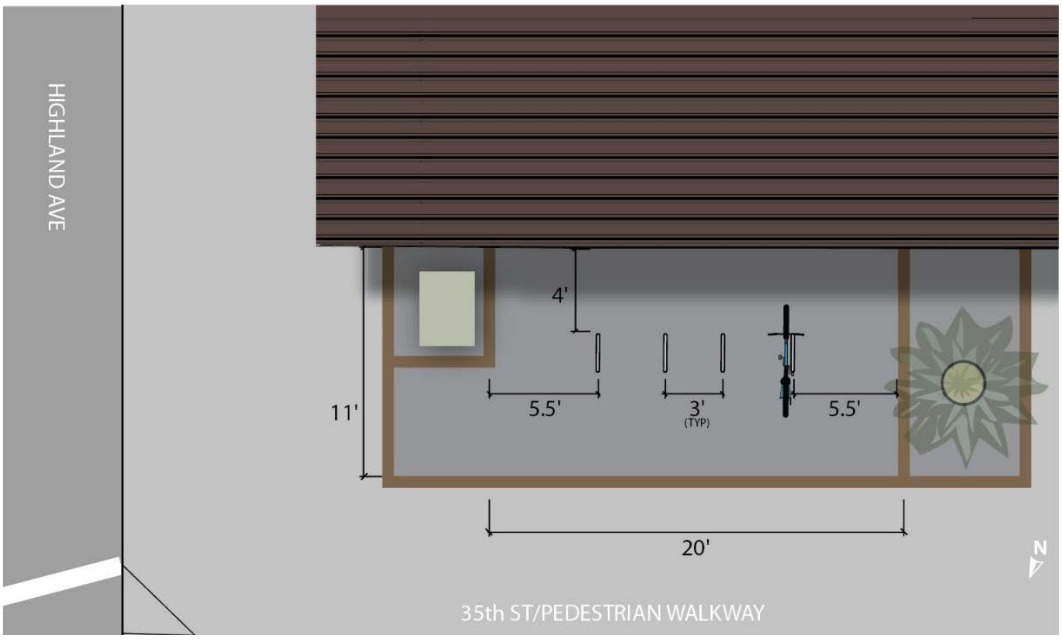
Approximate Parking Capacity

4 racks, 8 bicycles total

Estimated Cost

$11,200

Concept Graphic



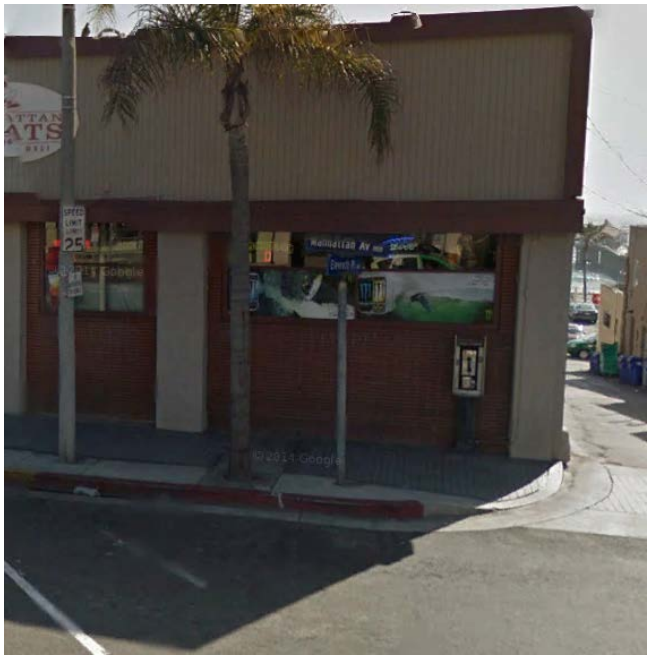
4.2.2 Additional Locations

Manhattan Ave at 9th Pl

Site Description and Rationale	Site Image
Location: Southwest corner of Manhattan Ave/9th Pl on the west side of Manhattan Ave in Downtown Manhattan Beach **Nearby uses:** • Retail shops • Restaurants **Nearby bikeways:** • Existing Class III Bike Route with shared lane markings (bike lanes start at 8th St to the south) on Manhattan Ave • Existing Class I - Marvin Braude Bikeway **Rationale:** High bicycle demand observed, yet close proximity to priority recommendation **Additional notes:** This site should use a similar layout as the mini-corral at Manhattan Ave/12th Pl as the dimensions are roughly the same. The City should reach out to Arthur J.. or Landis' Labyrinth as potential partners for maintenance of the mini-corral.	

Approximate Parking Capacity
2 racks, 4 bicycles total

Manhattan Ave at 11th Pl

Site Description and Rationale	Site Image
Location: Southwest corner of Manhattan Ave/11th Pl on the west side of Manhattan Ave in Downtown Manhattan Beach **Nearby uses:** • Small grocery and market • Retail shops • Restaurants **Nearby bikeways:** • Existing Class III Bike Route with shared lane markings (bike lanes start at 8th St to the south) on Manhattan Ave • Existing Class I - Marvin Braude Bikeway **Rationale:** High bicycle demand observed, yet close proximity to priority recommendation **Additional notes:** Manhattan Meats currently uses the adjacent area as a loading zone. This site should use a similar layout as the mini-corral at Manhattan Ave/12th Pl as the dimensions are roughly the same. The City should reach out to Manhattan Meats as a potential partner for maintenance of the mini-corral.	

Approximate Parking Capacity
2 racks, 4 bicycles total

15th St at Highland Ave	
Site Description and Rationale	**Site Image**
Location: Southeast corner of 15th St/Highland Ave on the south side of 15th St just north of Downtown Manhattan Beach **Nearby uses:** • Bank of Manhattan • Manhattan Beach City Hall • Retail shops **Nearby bikeways:** • Proposed Class III Bike Route on Highland Ave • Class I - Marvin Braude Bikeway **Rationale:** • High bicycle demand observed • City Hall bike racks observed to be at full capacity **Additional notes:** 15th St at this location is currently signed as "No Stopping Anytime" and will not require the removal of parking. The City may need to increase enforcement of parking regulations at this location since vehicles were observed parking at this site despite signage. The City should work with City Hall employees for maintenance of the mini-corral.	
Approximate Parking Capacity	
6-7 racks, 12-14 bicycles total	

4.3 Recommended Bicycle Mini-Corrals in Redondo Beach

4.3.1 Priority Locations

Artesia Blvd at Phelan Lane

Site Description and Rationale

Location: Northwest corner of Artesia Blvd/Phelan Ln on the north side of Artesia Blvd in North Redondo Beach

Nearby uses:

- Bars
- Restaurants
- Retail shops

Nearby bikeways:

- Proposed Class II Bike Lanes on Artesia Blvd
- Existing Class I North Redondo Beach Bike Path

Rationale:

- High demand area (North Redondo Beach)
- Available right-of-way
- Suitable site conditions
- Adjacent to existing and proposed bikeways
- Community identified location for investments

Additional notes: Bollards should be placed along the radius of right-turning vehicles. The corral should also be installed with a maneuvering zone for vehicles parallel parking to the east. The City should reach out to Pacific Premier Computer and Brogino's as potential partners for maintenance of the mini-corral.

Site Image

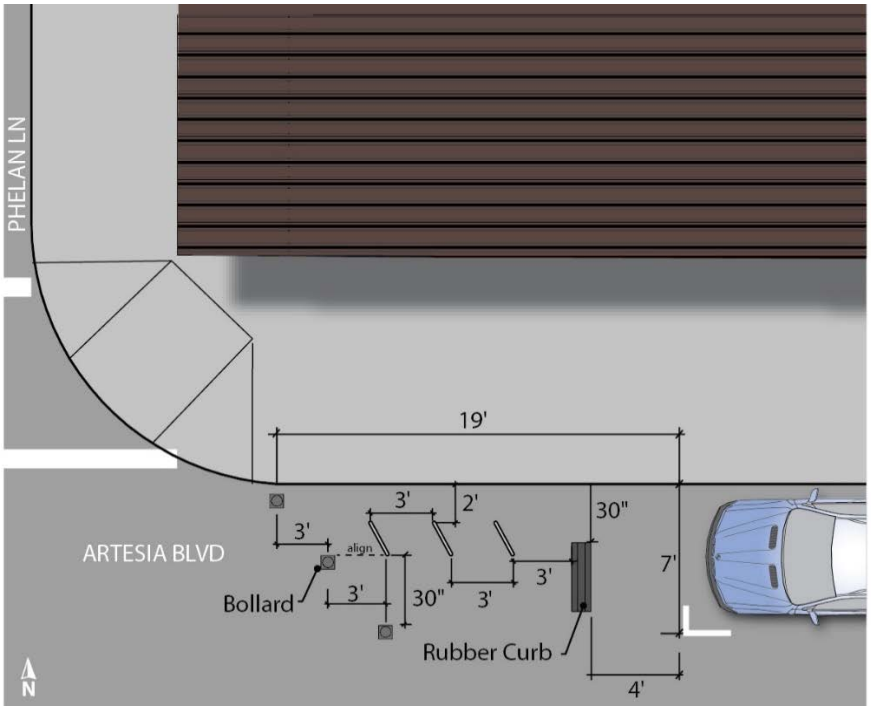
Approximate Parking Capacity

3 racks, 6 bicycles total

Estimated Cost

$4,400

Concept Graphic



S. Catalina Ave at Elena Ave

Site Description and Rationale

Location: Midblock on the east side of S. Catalina Ave north of Elena Ave at the driveway entrance to Coffee Cartel in the Riviera Village

Nearby uses:

- Coffee Cartel
- Redondo Beach Brewing
- Restaurants
- Bars
- Retail shops

Nearby bikeways: Proposed Class II Bike Lanes on Catalina Ave

Rationale:

- High demand area (Riviera Village)
- Available right-of-way
- Suitable site conditions
- Adjacent to proposed bikeways

Additional notes: There is a need for additional bicycle parking without compromising space for pedestrians on narrow sidewalks. Bollards should be placed to define the path of the vehicle outside of the mini-corral. The City should reach out to Coffee Cartel and the Riviera Village Business Improvement District as potential partners for maintenance of the mini-corral.

Site Images

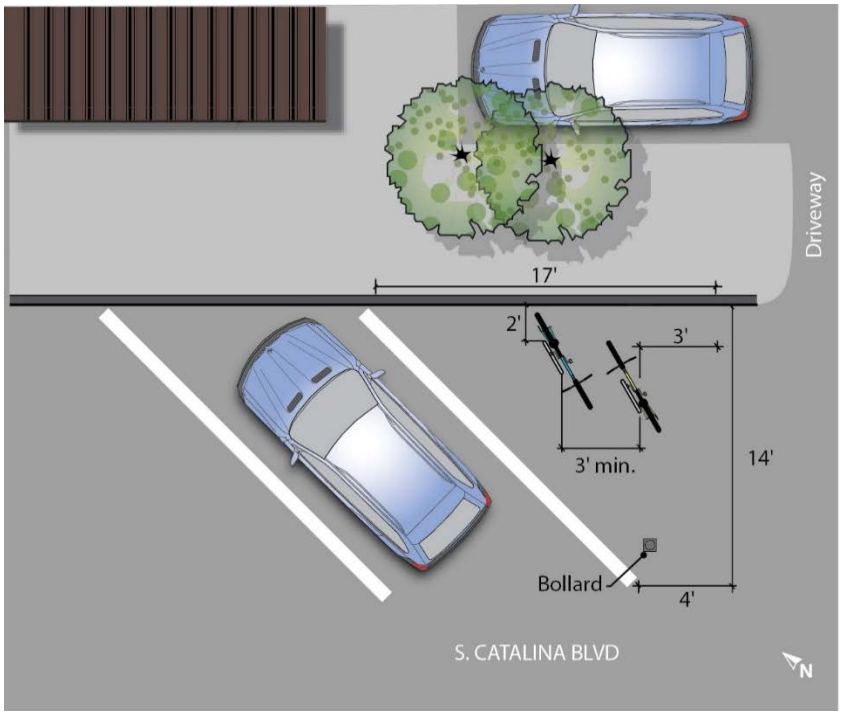
Approximate Parking Capacity

2 racks, 4 bicycles total

Estimated Cost

$3,600

Concept Graphic



Robinson St at Phelan Ln

Site Description and Rationale

Location: Northeast corner of Robinson St/Phelan Ln on the north side of Robinson St in North Redondo Beach

Nearby uses:

- Dale Page Park
- Hair salon
- Cleaners
- Liquor store
- Market
- Redondo Groomers
- Panela's Brazilian Cuisine

Nearby bikeways:

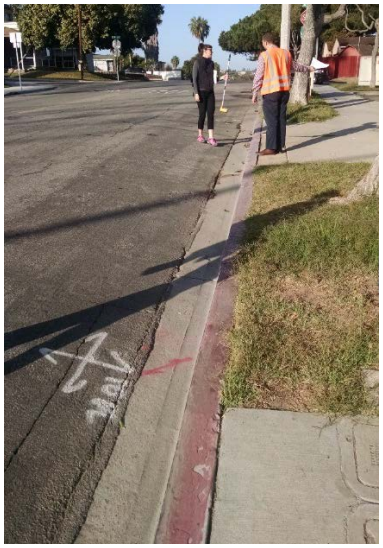
- Existing Class III Bike Route on White Cir
- Existing Class I North Redondo Beach Bike Path
- Proposed Bike Friendly Street (enhanced Class III Bike Route) on Robinson St

Rationale:

- Located at uniquely-sited commercial development
- Available right-of-way
- Suitable site conditions
- Adjacent to existing and proposed bikeways
- Community identified location for investments

Additional notes: The corral should start at the west end adjacent to the sidewalk so bicyclists do not have to cross through the grass and should end prior to the driveway to the east to increase the buffer between and visibility of turning vehicles. The City should work with tenants in the existing commercial development or the Department of Parks and Recreation as a potential partner for maintenance of the corral.

Site Images



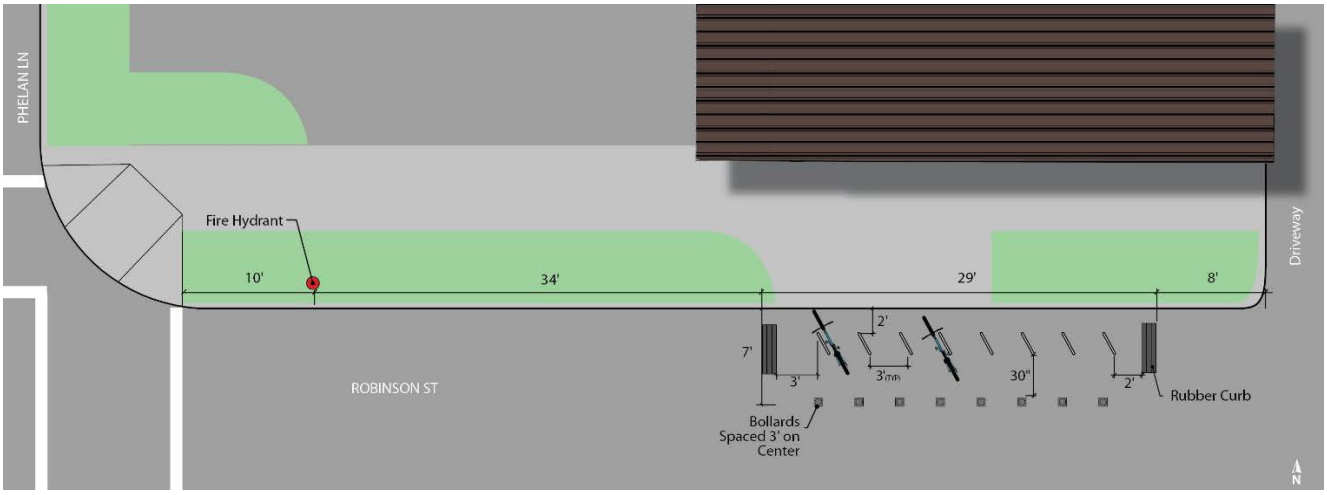
Approximate Parking Capacity

8 racks, 16 bicycles total

Estimated Cost

$10,900

Concept Graphic



Ave I at Elena Ave

Site Description and Rationale

Location: Northwest corner of Ave I/Elena Ave on the north side of Ave I in the Riviera Village

Nearby uses:

- Coffee Bean and Tea Leaf
- Restaurants
- Retail shops
- Liquor store

Nearby bikeways:

- Existing Class III Bike Route on Pacific Coast Highway
- Proposed Class II Bike Lanes on Catalina Ave

Rationale:

- High demand area (Riviera Village)
- Close proximity to Pacific Coast Highway (Caltrans does not currently permit on-street bicycle parking)
- Available right-of-way
- Suitable site conditions

Additional notes: There is a need for additional bicycle parking without compromising space for pedestrians on narrow sidewalks. The bicycle mini-corral will be placed along the curb drainage grates on Ave I. Regular sweeping is important to keep grates clear. The City should reach out to the Coffee Bean and Tea Leaf and the Riviera Village Business Improvement District as potential partners for maintenance of the mini-corral.

Site Image

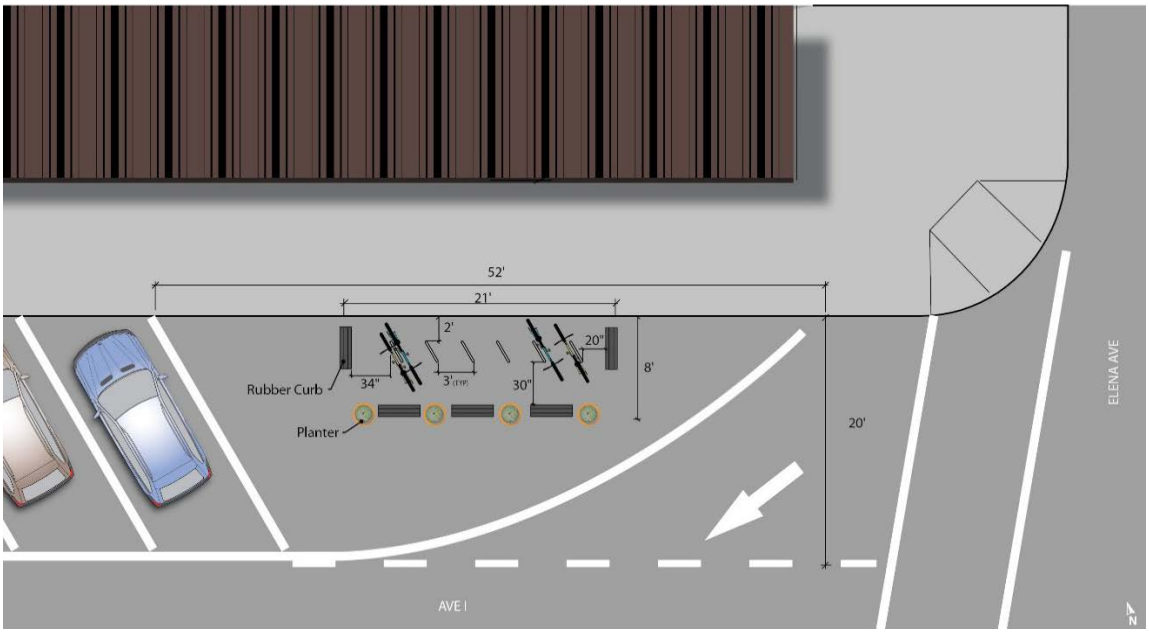
Approximate Parking Capacity

6 racks, 12 bicycles total

Estimated Cost

$8,800

Concept Graphic

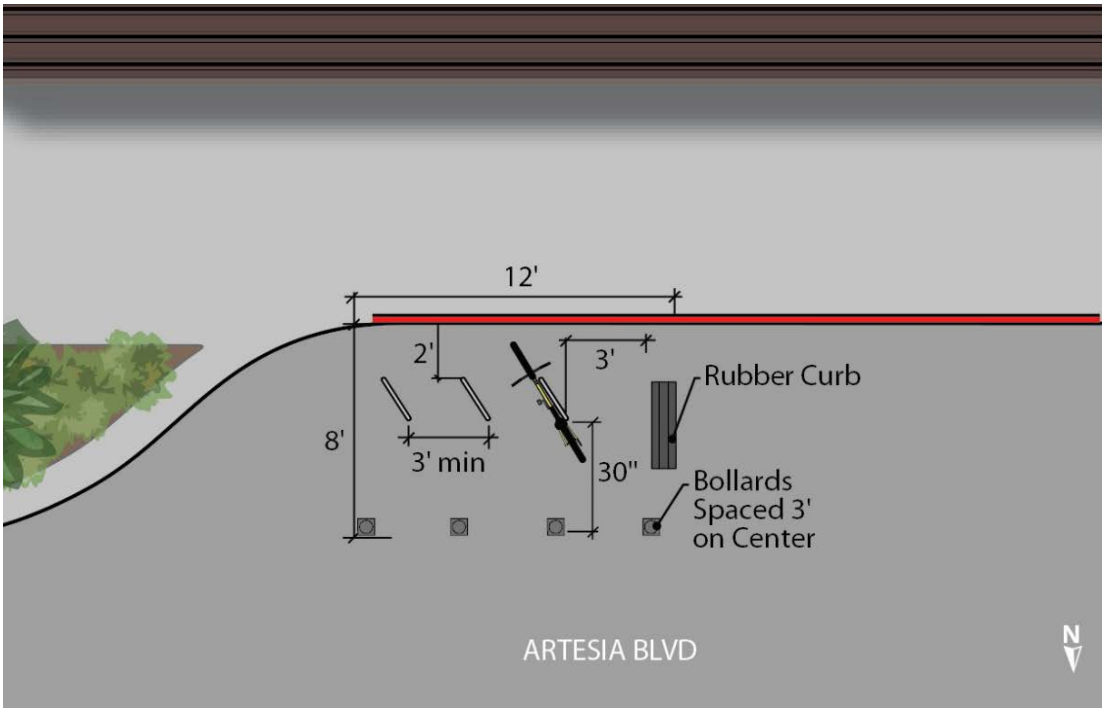


Artesia Blvd at Green Ln

Site Description and Rationale	Site Image
Location: Southeast corner of Artesia Blvd/Green Ln on the south side of Artesia Blvd in North Redondo Beach **Nearby uses:** • Redondo Beach North Branch Library • Restaurants • Retail shops **Nearby bikeways:** Proposed Class II Bike Lanes on Artesia Blvd **Rationale:** • High demand area (North Redondo Beach) • Available right-of-way • Suitable site conditions • Adjacent to existing and proposed bikeways • Community identified location for investments **Additional notes:** This site is just east of an existing Metro bus stop. The City will need to work with Metro prior to installation of the corral. The bicycle mini-corral will be placed adjacent to outflow drainage on Artesia Blvd. Regular sweeping is important to keep grates clear. The City should work with the Redondo Beach North Branch Library as a potential partner for maintenance of the mini-corral.	

Approximate Parking Capacity	Estimated Cost
3 racks, 6 bicycles total	$5,000

Concept Graphic

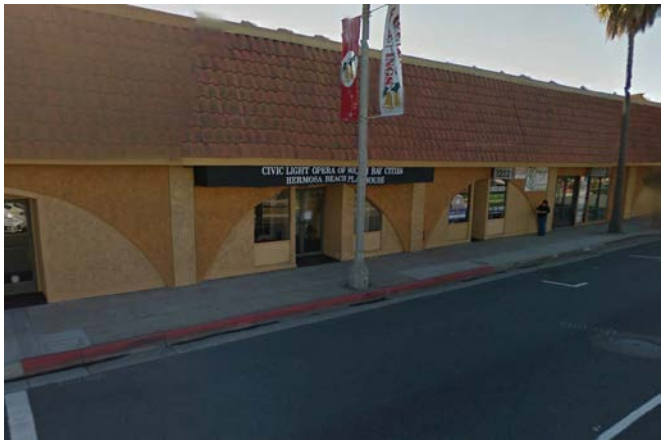


4.3.2 Additional Locations

S. Catalina Ave between Vista Del Mar and Elena Ave

Site Description and Rationale	Site Image
Location: Midblock on the east side of S. Catalina Ave between Vista Del Mar and Elena Ave **Nearby uses:** • Redondo Beach Brewing • Restaurants • Retail shops **Nearby bikeways:** Proposed Class II Bike Lanes on Catalina Ave **Rationale:** • High demand area (Riviera Village) • Existing mini-corral • Bike rack and site design upgrades needed **Additional notes:** The City should remove the existing racks and install two high quality U-racks in their place. The City should reach out to Redondo Beach Brewing and the Riviera Village Business Improvement District as potential partners for maintenance of the mini-corral and trash removal.	
Approximate Parking Capacity	
2 racks, 4 bicycles total	

Artesia Blvd at Slauson Ln

Site Description and Rationale	Site Image
Location: The south side of Artesia Blvd at Slauson Ln **Nearby uses:** • Hermosa Beach Playhouse • Restaurants • Retail shops • Bars **Nearby bikeways:** Proposed Class II Bike Lanes on Artesia Blvd **Rationale:** • High demand area (North Redondo Beach) • Available right-of-way • Suitable site conditions • Community identified location for investments **Additional notes:** The mini-corral should be designed with additional space on the east end to accommodate right-turning vehicles. The City should work with the Hermosa Beach Playhouse for maintenance of the mini-corral.	
Approximate Parking Capacity	
5 racks, 10 bicycles total	

S. Catalina Ave at Vista Del Mar

Site Description and Rationale

Location: West side of S. Catalina Ave at Vista Del Mar

Nearby uses:

- Restaurants
- Bars
- Retail shops
- Medical offices

Nearby bikeways: Proposed Class II Bike Lanes on Catalina Ave

Rationale:

- High demand area (Riviera Village)
- Available right-of-way
- Suitable site conditions
- Adjacent to proposed bikeways

Additional notes: There is a need for additional bicycle parking without compromising space for pedestrians on narrow sidewalks. The bicycle mini-corral will be placed along the drainage grates on S. Catalina Ave. Regular sweeping is important to keep grates clear. The City should work with the Riviera Village Business Improvement District to provide maintenance services for the mini-corral.

Approximate Parking Capacity

4 racks, 8 bicycles total

Site Image

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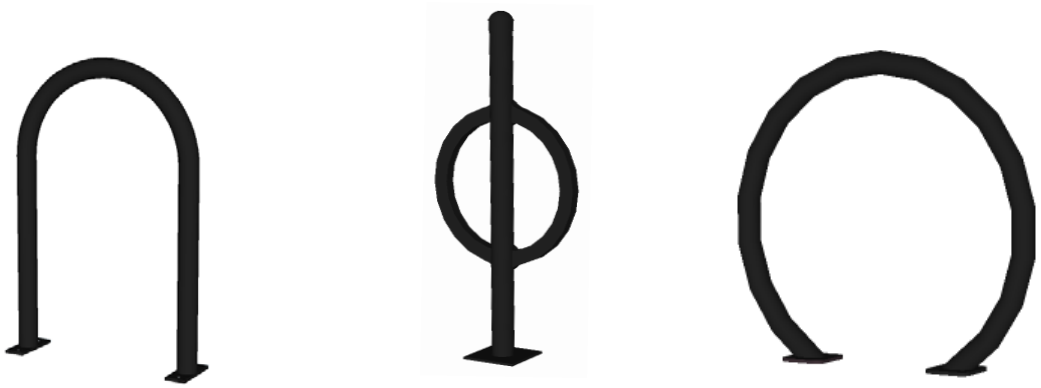
5 Design Guidelines

This chapter presents recommended bicycle rack designs, bicycle rack dimensions, and typical bicycle mini-corral layouts recommended for use in implementing the bicycle mini-corrals identified in this plan and future projects in the cities of Hermosa Beach, Manhattan Beach, and Redondo Beach.

5.1 Standard Bicycle Rack Designs

There are many types of bicycle rack designs. The design of the rack itself should be intuitive to use and provide security against theft. Racks with moving parts or complicated designs may confuse users. A simple yet attractive design will meet the needs of the participating cities. Custom designs that are "functional art" could be considered if they meet the design guidelines.

Many bicycle rack designs meet national standards and best practices, yet many do not. The Association of Pedestrian and Bicycle Professionals *Bicycle Parking Guidelines 2nd Edition* (2010) recommend the three types of rack designs shown below in **Figure 5-1**. These would be appropriate for use in a bicycle mini-corral.



U-Rack *Post and Loop* *Horseshoe*

Figure 5-1: Recommended Bicycle Rack Designs

This Plan recommends the above designs as the standard rack designs for general bike parking in Hermosa Beach, Manhattan Beach, and Redondo Beach, and recommends U-Racks as the standard rack designs for bicycle mini-corrals. As single inverted-U racks bolted to an asphalt surface can be easily dislodged over time, multiple U-racks welded to steel rails in clusters are also recommended for mini-corrals.

The following describes required elements of all bicycle parking installed in the participating cities.

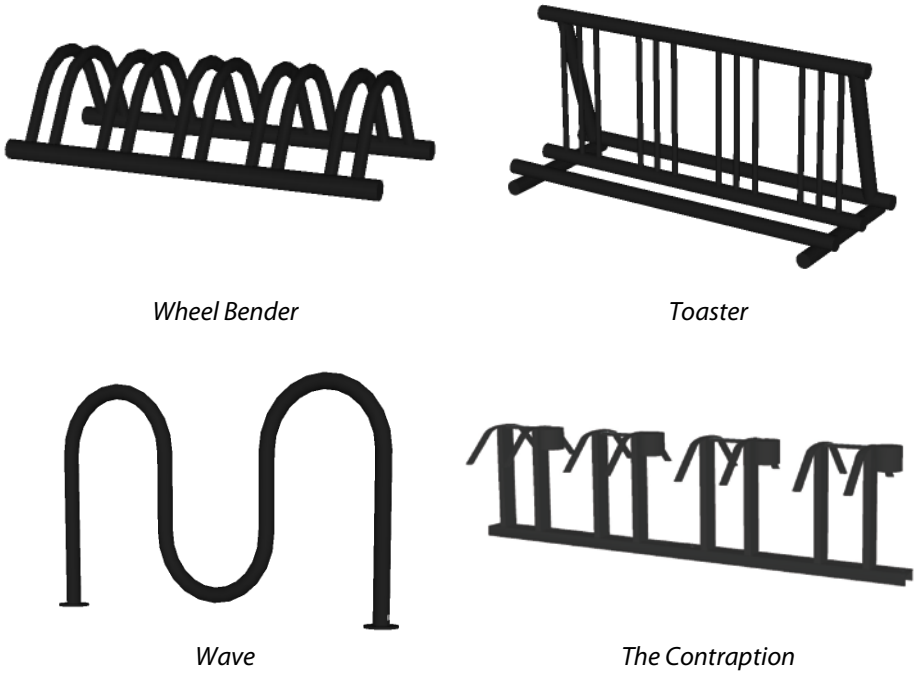
5.1.1 Ease of Use

Bicycle racks must be simple for bicyclists to use, thus not discouraging using the bicycle for transportation. Bicycle racks should:

1. Support the bicycle frame at two points
2. Allow for the frame and at least one wheel of the bicycle to be locked to the rack
3. Allow front- and back-in parking
4. Accept a variety of bicycle sizes
5. Allow for the use of U-type lock

6. Allow for access without moving another bicycle
7. Feature a design that is intuitive for users
8. Not require the user to lift the bicycle

Discouraged racks are those that are not as easy for bicyclists to use include the commonly installed wheel benders, toaster racks, wave racks, and "the contraption," and are shown in **Figure 5-2**. Wheel bender and toaster racks do not support the bicycle frame at two points or allow for the frame and at least one wheel of the bicycle to be locked to the rack. "Contraption" racks do not meet the same standards, and include moving parts that require maintenance and are not intuitive for users. Wave racks, when used as designed, also do not provide for two points of support for a bicycle frame. If used sideways, a wave rack can function as a U-rack, but is larger than a U-rack and provides little additional benefit.



Wheel Bender *Toaster*

Wave *The Contraption*

Figure 5-2: Unacceptable Bicycle Rack Designs

5.1.2 Design and Materials

The following design considerations for bicycle racks should be met when installing bicycle mini-corrals in the three participating cities:

1. Adhere to the *Americans with Disabilities Act* standards
    - If a protruding edge of the rack is 27"- 80" above the sidewalk surface, it may overhang a maximum of 12"
2. Be at least 32" tall and 18" wide
3. Include no moving parts
4. Be a material that resists being cut or detached using common tools

5. Flange-mounted racks: The base plate should be a minimum of 3/8" thick; footers should be a minimum of 5" x 6" for square-tube racks/5" diameter for round-tube racks
6. In-ground racks: A minimum 1.54" width pipe should extend a minimum of 10" below grade

5.1.3 Finishes

The selection of a finish for a bicycle rack should include consideration for appearance, durability and maintenance requirements. Typical finishes are described in **Table 5-1**.

Table 5-1: Common Bicycle Rack Finishes

Finish Type	Appearance	Choice of Color	Notes
Galvanized	Silver; may have slight texture	No	Least expensive, durable and maintenance-free; proper application reduces surface texture of finish
Powder coat	Color, typically smooth, may be gloss or matte	Yes[1]	Must be applied over a zinc-rich primer so rust cannot spread beneath the coating from nicks or abrasions that expose bare metal; both powder coating and vinyl may deteriorate quickly and will require ongoing maintenance.
Vinyl (PVC) jacket	Often black	Possibly	
Thermoplastic	Color, typically fairly smooth, comparable in appearance to powder coat	Yes[1]	Sprayed directly onto cleaned (sandblaster) and heated rack. High adhesion prevents rust from spreading beneath surface from nicks or abrasions. Technique is also used to weatherproof naval weaponry.
Stainless steel	Silver/chrome, typically smooth	No	High resistance to cutting. Most expensive finish.

Source: Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines 2nd Edition (2010)

[1] Manufacturers that feature powder-coated or thermoplastic-coated racks typically offer a set of standard colors. Some can produce special orders using custom colors selected from a larger palette (color chart). Matte black is a standard color that hides dirt better than gloss black.

5.2 Bicycle Corrals

While this Plan provides recommendations for bicycle mini-corrals (two to four racks), the following design guidelines may be adapted for both mini-corrals and full-size corrals with a higher number of bicycle racks per site.

5.2.1 Location Selection

Bicycle corrals should be located on-street in commercial areas where demand for bicycle parking is high. For recommendations in this Plan, bicycle mini-corrals should be placed in locations that do not require the removal of parking stalls; however, in future plans the cities may wish to evaluate the feasibility of removing on-street parking stalls for full-size corrals. The following location selection criteria should be used when siting and installing bicycle corrals.

Bicycle corrals in the participating cities should be installed (when feasible):

- Within 100 feet of the destination they serve on dense commercial corridors
- In visible areas with significant foot traffic (street corners provide greater visibility as opposed to mid-block corrals which can be obstructed physically and visually by adjacent parallel parked cars)
- On main streets where they are easier for bicyclists to find
- Away from traffic operations or street amenities, like bus stops, fire hydrants, turning movements, manholes and sewer valves, parking meters, adjacent landscaping areas, and areas subject to flooding or deep water during rain storms may be obstacles when identifying a location
- On level and high quality pavement surfaces

5.2.2 Dimensions

The following measurements are meant to guide the design of corral layouts for the non-priority recommended bicycle mini-corral locations in this Plan as they do not have completed conceptual designs and for potential future mini-corrals and full-size corrals. Dimensions include minimum spacing requirements, though actual spacing may vary depending on the locations.

The following measurements are recommended for bicycle corrals adjacent to parallel parking in the participating cities (shown in **Figure 5-3** and **Figure 5-4**):

- A minimum of 36″ (48″ recommended) spacing on the center between racks
- A minimum 32″ (36″ recommended) maneuvering zone between racks and parking stalls
    - If extra space is available, include a wider maneuvering zone on the side of the corral adjacent to parking stalls
- A minimum 32″ (36″ recommended) maneuvering zone between racks and corral edges on street corners when racks are placed perpendicular to the curb; a minimum 18″ (20″ recommended) maneuvering zone when racks are placed angled to the curb
- A minimum 30″ spacing between racks and curbs when racks are placed perpendicular to the curb; a minimum 24″ spacing when racks are placed angled to the curb
- 96″ (8-feet) parking lane widths are recommended when racks are placed perpendicular to the curb; 80″ minimum parking lane widths when racks are placed angled to the curb

Many on-street auto parking lanes in the participating cities are approximately 7 to 8 feet wide. By angling bicycle racks at an approximately 60 degree angle, the depth of a 6-foot bicycle is reduced to 5 feet, providing a greater buffer between moving traffic and the bicycle's wheel. Orienting racks perpendicular to the curb provides less room between the edge of the bicycle and the travel lane; however this layout accommodates a slightly greater number of bicycles within the available space.

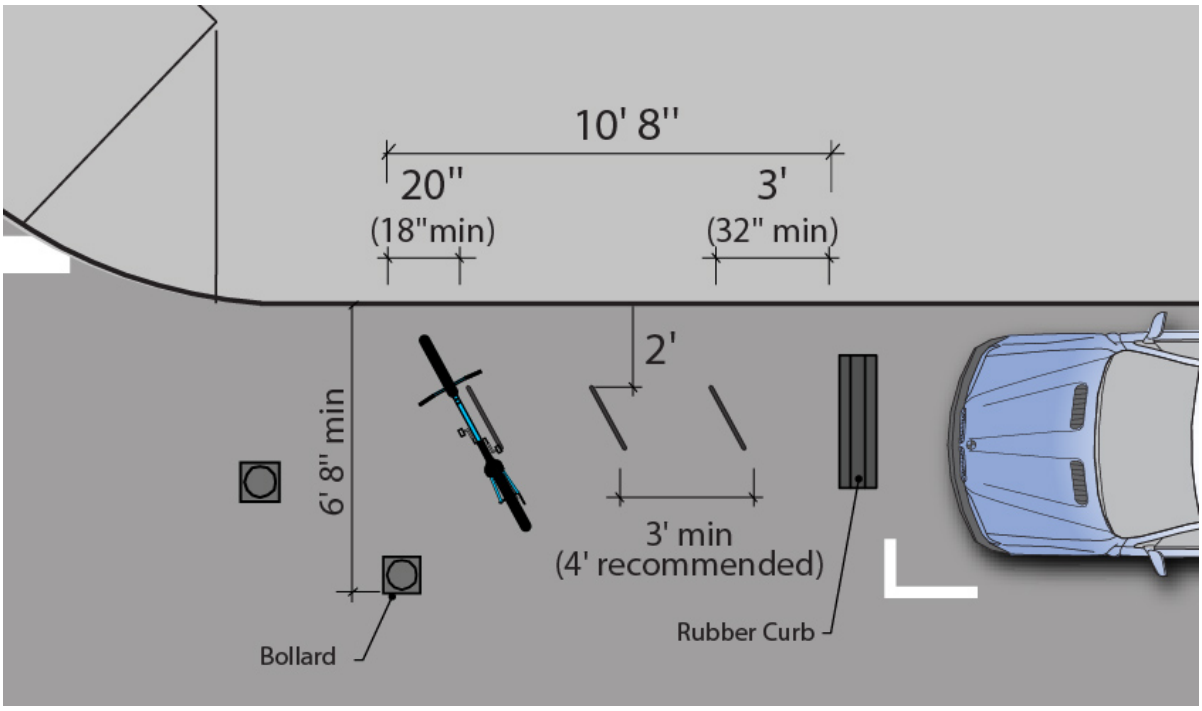


Figure 5-3: Sample Corral Layout with Angled Racks Adjacent to Parallel Parking

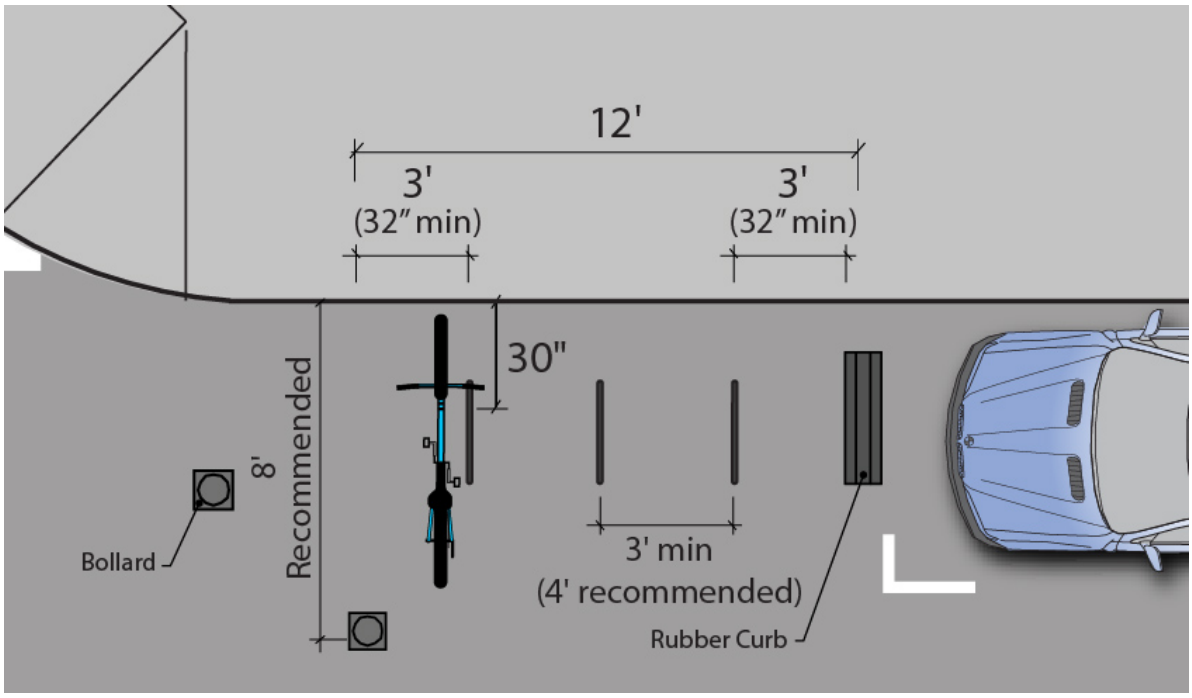


Figure 5-4: Sample Corral Layout with Perpendicular Racks Adjacent to Parallel Parking

The following measurements are recommended for bicycle corrals adjacent to angled parking in the participating cities (shown in **Figure 5-5**):

- A minimum of 3-feet between racks and curbs
- A minimum of 42" (3.5-feet) in length between the ends of racks from the first and second rows (if multiple rows are provided)
- A minimum of 1-foot in width between racks from the first and second rows of racks (if multiple rows are provided)
- A minimum of 2-feet between the end of the rack and the edge of the parking stall

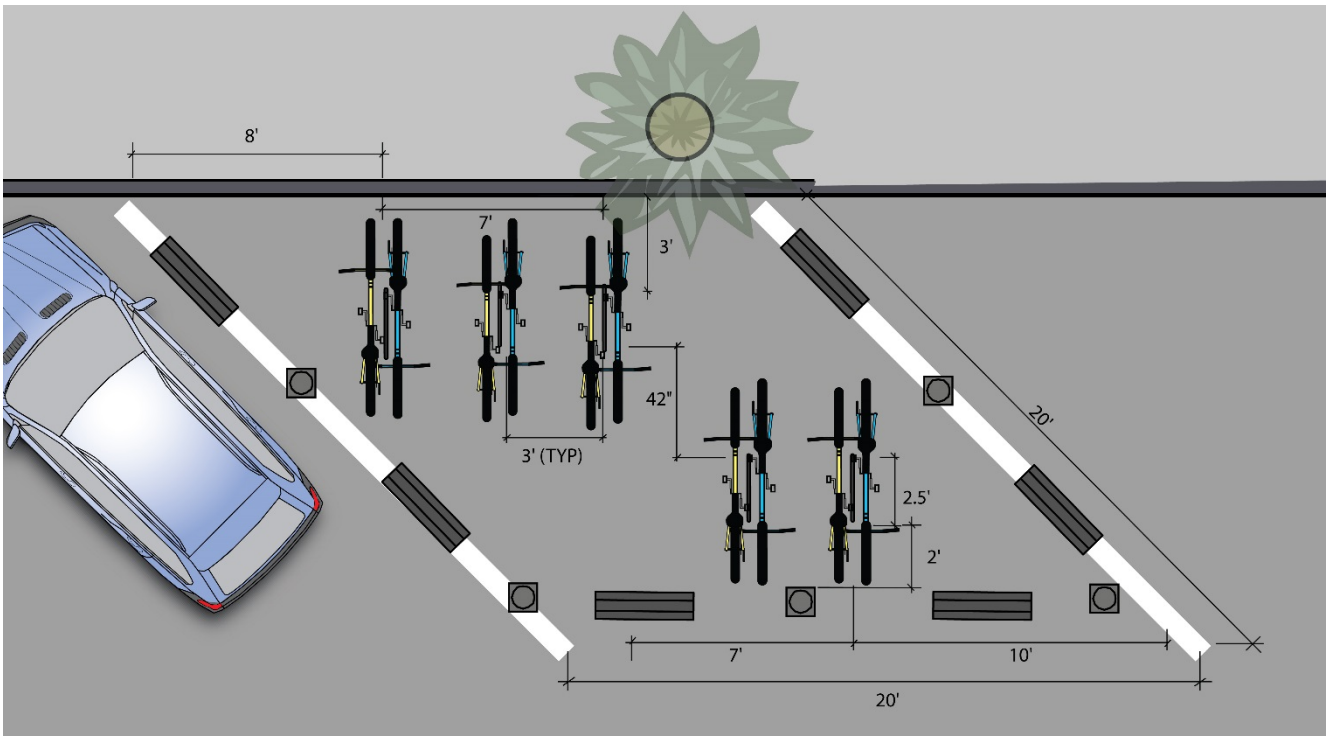


Figure 5-5: Sample Corral Layout Adjacent to Angled Parking

5.2.3 Demarcation

Bicycle mini-corral areas should be delineated to provide protection for bicycles, racks, and bicyclists. Mini-corrals can be separated from parking stalls and travel lanes through one or more of the following methods:

- Concrete or rubber curbs on the side of the corral adjacent to parallel parking vehicles to avoid damage to bicycles or racks
- Flexible bollards between corrals and travel/turn lanes
- Bicycle pavement markings on the sides of the corral to indicate the maneuvering zone (where extra space is available)
- Planters along the edges of the corrals (where extra space is available)

5.2.4 Visibility

To increase the visibility of the mini-corrals to drivers, mini-corrals can include:

- Vertical elements
- Reflective materials (like reflective tape on bike rack legs)
- Bright colors
- Placement on street corners

5.2.5 Recommended Maintenance Strategy

Since bicycle mini-corrals are located on-street, sweeping and debris removal must be undertaken frequently to maintain a clean and attractive place for bicyclists to park their bikes. Mini-corrals and full-size corrals in other jurisdictions are often swept and maintained by the adjacent businesses as it does not require a large time commitment and City street cleaning vehicles do not fit in corrals due to bollards and curbs.

As such, the participating cities should reach out to adjacent/nearby businesses or Business Improvement Districts when present to form maintenance agreements over the mini-corral upkeep. Maintenance agreements provide a schedule by which the party maintaining the mini-corral abides, such as weekly or biweekly sweeping, and the party notifies the City of any issues with the mini-corral. This Plan recommends potential partners the City can reach out to for maintenance services for each of the recommended locations.

5.3 Sidewalk and Off-Street Bicycle Parking

While recommendations in this Plan do not include singular sidewalk racks, the following design guidelines should be used when siting and installing off-street bicycle parking.

5.3.1 Location Selection

Bicycle racks should be located near the destination they are intended to serve. Additionally, because theft is a concern for many bicyclists, it is ideal to install bike racks within sight of the bicyclist's destination.

Sidewalk bicycle racks in the participating cities should be installed (when feasible):

- Within 50 feet (and no more than 100 feet) of the destination they serve
- In a visible area with significant foot traffic
- With consideration to existing conditions (clear of street furniture and other sidewalk elements that restrict placement of bicycle racks)

5.3.2 Dimensions

It is important to consider the space a parked bicycle requires and clearances from elements in the right-of-way in order for it to function properly. The following measurements and clearances are recommended for the participating cities.

Measurement

- Typical footprint of a singular sidewalk bicycle rack (the area occupied by two bicycles when parked at an 18" U-rack) is approximately 90" long x 32" wide (shown in **Figure 5-6**)
    - Where a significant number of bicycles with trailers are expected a larger footprint should be used (shown in **Figure 5-6**)
- Singular rack space: minimum 32" tall and 18" wide
- Multiple racks: minimum of 32" apart
- Single-loop racks placed end-to-end: minimum of 60" apart

- When possible/appropriate, exceed the minimums for spacing

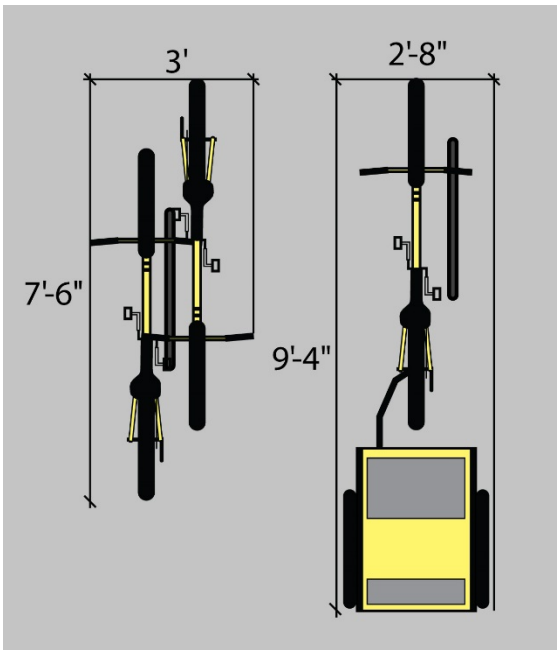


Figure 5-6: Standard (left) and Extended (right) Bicycle Footprints

Clearance

Sidewalk and off-street bicycle racks should not be placed in the pedestrian through zone **Figure 5-7**, impede pedestrian activity, or present an obstacle to those with visual impairments. The following clearances are required:

- A minimum of 6-foot clear for pedestrian right-of-way outside from the bicycle footprint to the building frontage
- The minimum distance from the rack to the building frontage will vary based on rack type and angle of placement
- Rack placement should always allow a clear and straight path of travel, particularly for people with visual impairments

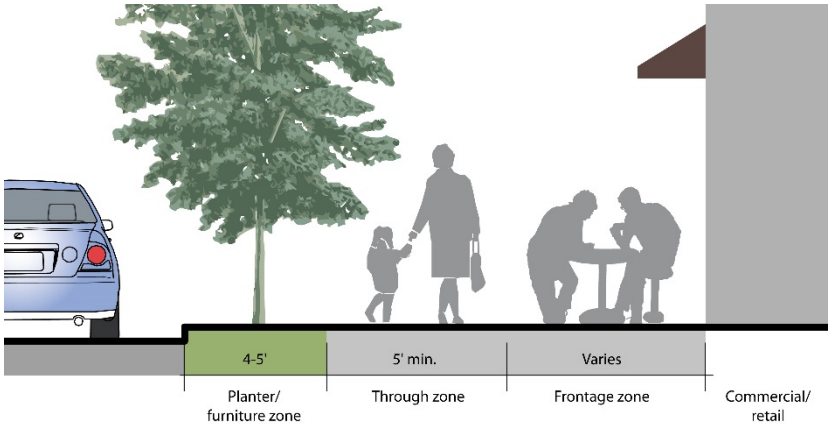


Figure 5-7: Sidewalk Zones

Minimum distances between a bicycle rack and street furniture, utilities, landscaping and other typical sidewalk elements are shown in the following table.

Table 5-2: Minimum Clearances Typical Sidewalk Elements

Setback from Bicycle Rack	Item in Right-of-Way
24″	• Curb *with parallel parking* • Building façade (if rack is sited adjacent)
30″	• Curb *with angled parking* • Light pole • US mailbox • Trash can • Other sidewalk obstruction • Newspaper rack • Tree well • Surface hardware (PG&E, cable grates, etc.) • Sign pole • Street furniture
48″	• Curb ramp • Storm drain grate • Driveway • Crosswalk • Transit red zone or shelter • White/yellow loading zone • Blue zone (disabled parking)
60″	• Fire hydrant • Bicycle rack (parallel to bicycle orientation)

Example Bicycle Rack Site Spacing Requirements

Figure 5-8 and **Figure 5-9** present typical bicycle rack spacing requirements for sidewalk and off-street parking.

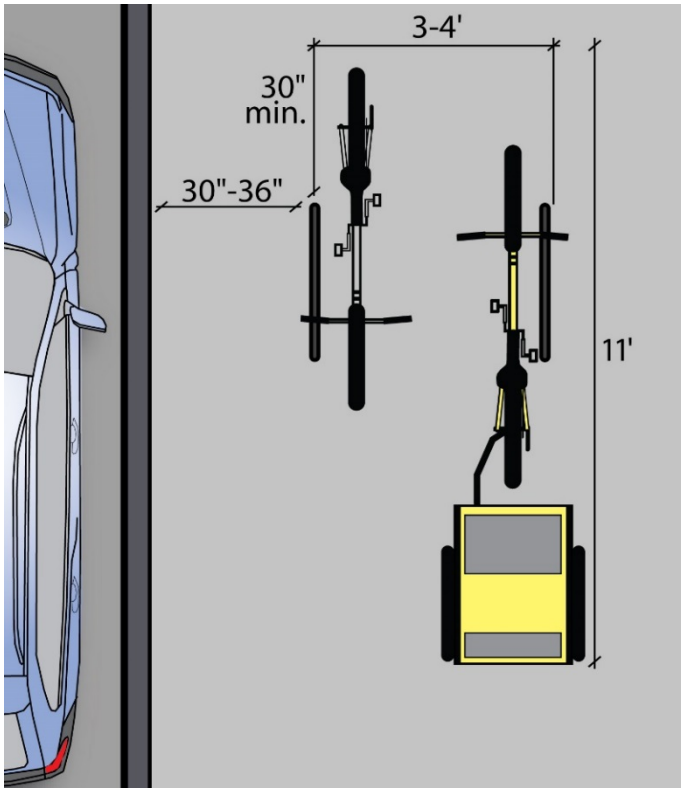


Figure 5-8: Typical Bicycle Parking Spacing Example A

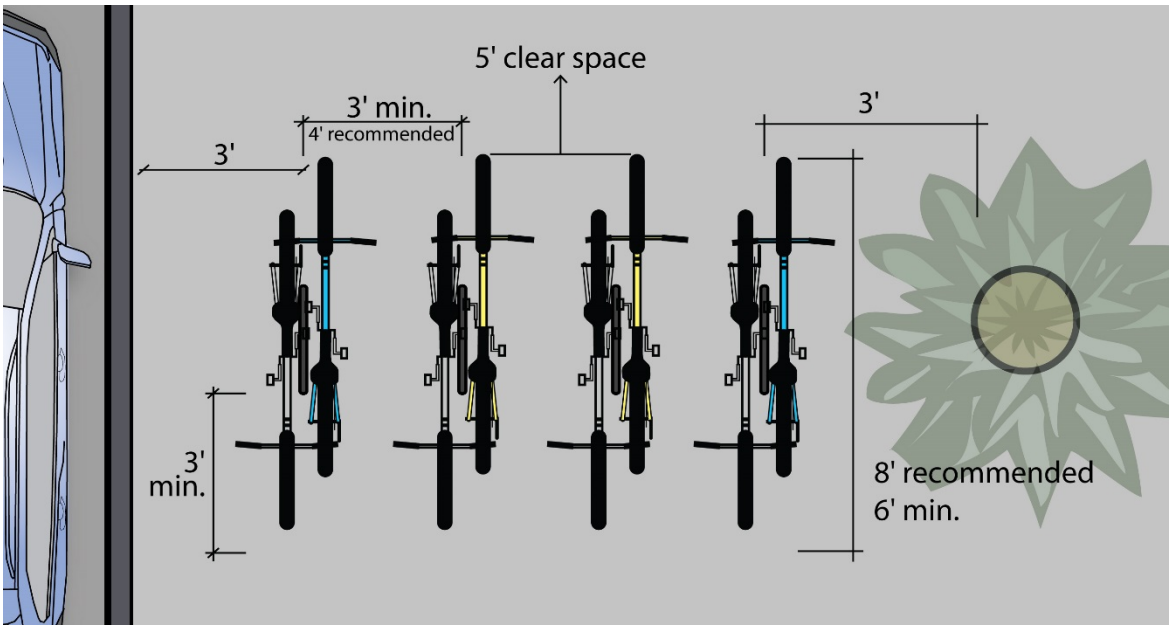


Figure 5-9: Typical Bicycle Parking Spacing Example B

6 Funding

Table 6-1 presents funding sources that can be used to purchase and install bicycle mini-corrals in the participating cities. These are discussed in detail in the following sections.

Table 6-1: Potential Funding Sources

Funding Source	Application Dates	Notes
AB 2766 Subvention Fund Program http://www.aqmd.gov/docs/default-source/transportation/ab2766-motor-vehicle-subvention-fund-program/ab2766-resource-guide.pdf?sfvrsn=2	Funds distributed quarterly by SCAQMD	
Active Transportation Program http://www.dot.ca.gov/hq/LocalPrograms/atp/	Varies. Applications in 2015 due May 31st	11.47% local match required for some projects
Measure R Local Return http://www.metro.net/projects_studies/local_return/images/measure-r-Local-Return-Guidelines.pdf	Expenditure Plan: August 1st Expenditure Report: October 15th	
Metro Call For Projects http://www.metro.net/projects/call_projects/	Bi-annual funding cycle. Applications in 2015 due January 16th	20% local match required
Propositions A and C Local Return http://media.metro.net/images/lr_guide.pdf	Project description: Submit at any point during first year of project Annual project updated: August 1st Annual expenditure report: October 15th	
Transportation Development Act (TDA) Article 3 http://www.metro.net/projects/tda/	Expenditure reports must be submitted by the end of each fiscal year	

6.1.1 AB 2766 Subvention Fund Program

The South Coast Air Quality Management District (SCAQMD) disburses funding quarterly to cities through AB 2766, the Subvention Fund Program. Funding is to be used to reduce motor vehicle air pollution. Bicycle and multi-modal projects are eligible uses of AB 2766 funding as an element of a Transportation Control Measures (TCM) program.

6.1.2 Active Transportation Program

The California Active Transportation Program (ATP) consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program. The ATP funds construction, planning, and design of facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, while also funding non-infrastructure programs related to active transportation. Bicycle parking is an eligible use of ATP funds. The ATP uses MAP-21 federal funds for a portion of the funded projects, so local agencies must adhere to certain federal guidelines. Projects must include at least 11.47% in matching funds except for projects predominantly benefiting a disadvantaged community, stand-alone non-infrastructure projects, and safe routes to schools projects.

6.1.3 Measure R

Measure R is funded with ½-cent sales tax revenues to meet the transportation needs of Los Angeles County. 15% percent of the Measure R tax is designated for the Local Return Program to be used by cities and the County of Los Angeles. Bicycle parking is an explicitly allowed use of Measure R Local Return funding.

6.1.4 Metro Call for Projects

The Los Angeles County Metropolitan Transportation Authority (Metro) bi-annual Call for Projects presents significant funding opportunities for a sustained funding stream through the Call's 5-year disbursement cycle. The majority of federal funding for transportation improvements (such as RSTP, TE STIP, and CMAQ) are disbursed through Metro's Call for Projects.

6.1.5 Propositions A and C

Local Return from Proposition A funds are allowed to be used for projects that increase access to public transit. Bike parking near transit stops and stations are not specifically identified as eligible projects. Local Return from Proposition C provides a funding stream for bicycle parking.

6.1.6 Transportation Development Act

Metro also oversees the disbursement of Transportation Development Act (TDA) Article 3 funding. Expenditures towards bicycle parking are eligible for TDA Article 3 funding.

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Appendix A: Plan and Policy Review

This appendix briefly summarizes policies in the three participating cities relating to bicycle parking to ensure that recommendations in this report are consistent with the planning and policy documents already adopted. At the municipal level, typical sources for relevant policy language include municipal codes, general plans, transportation plans, and complete streets/living streets policies. These city-specific policies are supplemented by policies at the regional, county, and state level which apply equally to Hermosa Beach, Manhattan Beach and Redondo Beach.

Together, these policy statements set the general course for bicycle parking facility planning and design in the South Bay. For policies informing the development of bicycle facilities in general (e.g. bike lanes), reference the South Bay Bicycle Master Plan.

Local Plans and Policies

Table A-1 presents plans and policies related to bicycle parking in Hermosa Beach. Plans and policies that reference bicycle parking include the City's Municipal Code, the Hermosa Beach General Plan, and the Living Streets Policy.

Table A-1: Hermosa Beach Plans and Policies Pertaining to Bicycle Parking

Source	Bicycle Parking Plan or Policy Language
Municipal Code	
17.44. 210 - Parking Plans	Parking Plans - Parking for development may be reduced based on a Parking Plan approved by the planning commission based on various factors including bicycle and foot traffic.
17.38.550(I)(5) - Specific Plan Area No. 11 zone	Secure bicycle parking facilities shall be supplied at the rate of one space per seven employees or 3,000 square feet of floor area. Bicycle facilities installed onsite shall not be placed within required pedestrian ways. Where facilities cannot be accommodated onsite as determined by the community development director or planning commission, the developer shall pay a commensurate fee adopted by the city for the provision and installation of bicycle parking facilities along Pier Avenue in a manner determined by the public works director. 'Secure' facilities means firmly attached devices in well-lit locations, protected from rain if feasible. *This policy affects a geographic area (No. 11 zone) encompassing parcels fronting Pier Avenue between Valley Drive and Hermosa Avenue, excluding parcels fronting Hermosa Avenue.*
17.48.030 - Transportation Demand and Trip Reduction Measures	**B(1)** Nonresidential development of 25,000 square feet or more shall provide bicycle route and facility information, including regional/local bicycle maps, bicycle safety information, and a listing of facilities available for bicyclists at the site. **B(2)** Nonresidential development of 50,000 square feet or more shall comply with subsection B(1) of this section and shall provide bicycle racks or other secure bicycle parking to accommodate four bicycles per the first 50,000 square feet of nonresidential development and one bicycle per each additional 50,000 square feet of nonresidential development. Calculations which result in a fraction of 0.5 or higher shall be rounded up to the nearest whole number. A bicycle parking facility may also be a fully enclosed space or locker accessible only to the owner or operator of the bicycle, which protects the bike from inclement weather. Specific facilities and location (e.g., provision of racks, lockers, or locked room) shall be to the satisfaction of the city. **B(3)** Nonresidential development of 100,000 square feet or more shall comply with subsections B(1) and (2) of this section, and shall provide safe and convenient access from the external circulation system to bicycle parking facilities onsite.
Hermosa Beach General Plan	
Urban Design Element – Traffic Ways (1979)	Policy 4: Find New Uses for street spaces other than for automobiles Program 13: Create mini-parks, pedestrian malls, promenades, open space, and areas where pedestrians would have right-of-way-over automobiles.

Source	Bicycle Parking Plan or Policy Language
	Non-automobiles use of street space should be given greater emphasis. Hermosa Beach, like all cities is seen mainly from its streets, so the width, the landscape character, the height and location of the buildings relative to the street width, the pedestrian and bicycle uses, and the amount of speed of traffic are among the most important urban design elements the City can control. Auto dominance should not be assumed and in some locations bicycles or pedestrians should have right-of-way.
Living Streets Policy (2012)	
Design	D) Bicycles. Provide well-designed bicycle accommodations along streets, unless safety would be significantly compromised after considering bicycle accommodating solutions. Bicycle accommodations can take numerous forms, such as the use of bicycle boulevards, striping, low speed or low auto volume streets, traffic calming, signs, and pavement markings, among others.
Performance Measures	The city will evaluate this living streets policy using the following performance measures: *Bicycles* 2. Increase in number of bicycle parking facilities

Table A-2 presents plans and policies related to bicycle parking in Manhattan Beach. Plans and policies that reference bicycle parking include the City's Municipal Code, the Draft Mobility Plan, and the Living Streets Policy.

Table A-2: Manhattan Beach Plans and Policies Pertaining to Bicycle Parking

Source	Bicycle Parking Plan or Policy Language
Municipal Code	
10.64.080 - Bicycle Parking	**A. Where Required** - Bicycle parking spaces shall be provided as required by this section; the provisions of Section 10.64.020 shall apply. **B. Number Required.** 1. Public and Semipublic Use Classifications: as specified by use permit. 2. Commercial Use Classifications: Five percent of the requirement for automobile parking spaces, except for the following classifications, which are exempt: a. Ambulance Services; b. Animal Boarding; c. Animal Grooming; d. Catering Services; e. Commercial Filming; f. Horticulture, Limited; g. Funeral and Interment Services; h. Vehicle/Equipment Sales and Services (all classifications). 3. Industrial Use Classification. None. **C. Design Requirements.** For each bicycle parking space required, a stationary object shall be provided to which a user can secure both wheels and the frame of a bicycle with a user-provided six-foot (6') cable and lock. The stationary object may be either a freestanding bicycle rack or a wall-mounted bracket.
Draft Mobility Plan (2015)	
New and Enhanced Bicycle Parking Locations	The Draft Mobility Plan includes provisions for enhanced bicycle parking at nine priority locations: • Downtown (Corner of Highland Avenue and Manhattan Beach Boulevard) • Civic Center/Library • Pier parking lots • Live Oak Park/Joslyn Center • Marine Ave Park • Polliwog Park • North Manhattan Beach • Mira Costa High School
Existing Circulation Element Policies	• Policy I-6.6: Incorporate bikeways and pedestrian ways as part of the City's circulation system where safe and appropriate to do so.

Source	Bicycle Parking Plan or Policy Language
	• Policy I-6.7: Encourage features that accommodate the use of bicycles in the design of new development as appropriate. • Policy I-6.8: Encourage the development of recreational bicycle routes to link residential, schools and recreational areas east of Sepulveda Boulevard with the Strand bike path
Living Streets Policy (2012)	
Performance Measures	The city will evaluate this living streets policy using the following performance measures: 2. Number of bicycle storage/parking facilities

Table A-3 presents plans and policies related to bicycle parking in Redondo Beach. Plans and policies that reference bicycle parking include the City's Municipal Code, existing Bicycle Corral Designs, and the Redondo Beach General Plan.

Table A-3: Redondo Beach Plans and Policies Pertaining to Bicycle Parking

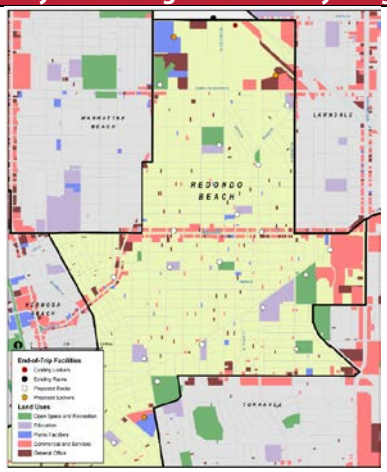
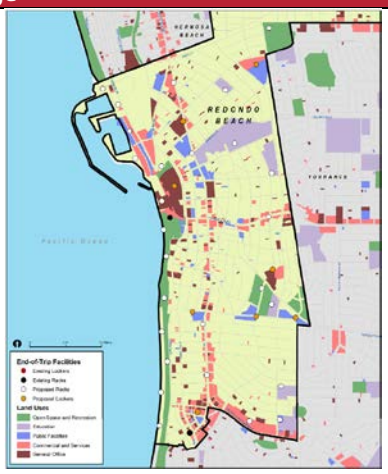
Source	Bicycle Parking Plan or Policy Language
Municipal Code	
10-2.2406 - Development standards	**(a)** Nonresidential development of 25,000 square feet or more shall provide bicycle route and facility information, including regional/local bicycle maps and bicycle safety information, and a list of existing of facilities available bicyclists at the site. **(b)** Nonresidential development of 50,000 square feet or more shall comply with subsection (a) of this section and shall provide bicycle racks or other secure bicycle parking to accommodate four bicycles per the first 50,000 square feet of nonresidential development and one bicycle per each additional 50,000 square feet of nonresidential development. A bicycle parking facility may also be a fully enclosed space or locker accessible only to the owner or operator of the bicycle, which protects the bike from inclement weather. Specific facilities and location (e.g., provision of racks, lockers, or locked room) shall be to the satisfaction of the City. **(c)** Nonresidential development of 100,000 square feet or more shall comply with subsections (a) and (b) of this section, and shall provide safe and convenient access from the external circulation system to bicycle parking facilities onsite.
General Plan	
Land Use Element (1992)	1.15.2 Publicly initiate and allow for the private sector development of municipal or shared parking lots, which incorporate bicycle storage facilities, along the street frontages to provide for joint use of adjacent commercial properties and allow for the incorporation of commercial uses into the structure along the street frontage (except for areas required for access) (I1.1, I1.16).
Circulation Element, (2009)	P23: Focus on access at transit stations, the waterfront, South Bay Galleria, Artesia Boulevard, Riviera Village, Pacific Coast Highway retail zones, and school zones. G14: Increase the provision of bike lockers, bike racks, and lighting for bike facilities. G15: Ensure that residents will be able to walk or bicycle to destinations the beach, the Civic Center, Redondo Beach Pier, Riviera Village, and other activity centers.

Regional Plans and Policies

Table A-4 presents plans and policies at the regional level that impact bike parking in the participating cities. These include the Los Angeles County Metropolitan Transportation Authority's (Metro) Bicycle Transportation Strategic Plan, the Beach Cities Livability Plan, the South Bay Bicycle Master Plan, and the Southern California Association of Governments' (SCAG) Regional Transportation Plan.

Table A-4: Regional Plans and Policies Pertaining to Bicycle Parking

Source	Bicycle Parking Plan or Policy Language
Metro Bicycle Transportation Strategic Plan (2006)	The *LA Metro Bicycle Transportation Strategic Plan* was prepared with the Bicycle Transportation Account Compliance Document to replace the 1996 sub-regional bicycle master plans. The purpose of the Strategic Plan is to guide the cities, County and transit agencies in planning bicycle facilities. Policy objective II states to "Encourage high quality end-of-trip facilities at commercial, employment, residential and transit locations" and lists several strategies for Metro to achieve this objective.
Blue Zones Vitality City: Beach Cities Livability Plan (2011)	The Beach Cities Livability Plan provides recommendations on how to improve livability and well-being in Hermosa Beach, Manhattan Beach and Redondo Beach through land-use and transportation systems that better support active living. As part of increasing the quality of life in the three cities, the Plan states that attractive, functional bike racks should be provided at all destinations, noting that an excellent model location is the beach cities Health District. The Plan also states that bike parking should be located where there are many "eyes" on the bikes to reduce theft, a key component of this Bicycle Mini-Corral Plan.
South Bay Bicycle Master Plan (2011)	The South Bay Bicycle Master Plan is intended to guide the development and maintenance of a comprehensive bicycle network and set of programs and policies throughout the cities of El Segundo, Gardena, Hermosa Beach, Lawndale, Manhattan Beach, Redondo Beach, and Torrance. The Plan includes general recommendations for bicycle parking based on land uses that are known trip generators, as shown below. The Plan also recommends that the cities amend their municipal codes to adopt more detailed bicycle parking policies. The participating cities in the South Bay Bicycle Mini-Corral Plan have not yet adopted new policies.  

Source	Bicycle Parking Plan or Policy Language
	 
SCAG Regional Transportation Plan (2012)	SCAG adopted its *Regional Transportation Plan* (RTP) and *Sustainability Communities Plan* (SCS) in April 2012 with the goal of increasing mobility for those who live in and visit Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. The RTP recommends key bikeways to connect the region and facilitate bicycle travel. Policies included in the RTP and SCS include addressing bicyclist and pedestrian safety, increasing bicycle and pedestrian mode share, encouraging local active transportation plans, and improving air quality in the region. The Plan does not specifically address bicycle parking.

State Plans and Policies

Table A-5 describes plans and policies at the State level that impact bike parking in the participating cities. These include the California Transportation Plan, the Complete Streets Bill, the Sustainable Communities Bill, and the Active Transportation Program.

Table A-5: State Plans and Policies Pertaining to Bicycle Parking

Source	Bicycle Parking Plan or Policy Language
California Transportation Plan (2006)	The California Transportation Plan 2025 seeks to provide for mobility and accessibility of people, goods, services, and information throughout California. It encourages consideration of bicycle facilities in capacity improvement projects, and promotes integration of active transportation into modeling and projection efforts. The Plan also speaks to the public health benefits of active transportation, urging better education of youth on personal health and air quality impacts of making trips by bicycle or on foot. The Plan does not specifically address bicycle parking.
California AB 1358 – Complete Streets (2008)	California Assembly Bill (AB) 1358, also known as the Complete Streets Bill, amended the California Government Code §65302 to require that all major revisions to a city or county's Circulation Element include provisions for the accommodation of all roadway users including bicyclists and pedestrians. Accommodations include bikeways, sidewalks, crosswalks, and curb extensions.
California SB 375 – Sustainable Communities (2008)	Senate Bill (SB) 375 is intended to compliment Assembly Bill (AB) 32: The Global Warming Solutions Act of 2006 and encourage local governments to reduce emissions through improved planning. Under SB 375, the California Air Resources Board (CARB) is required to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations (MPOs). Each of California's MPOs will then prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas (GHG) reduction target through integrated land use, housing, and transportation planning. One way to help meet the emissions targets is to increase the bicycle mode share by substituting bicycle trips for automobile trips.
California SB 99 (Active Transportation Program), 2013	Previously, the California Bicycle Transportation Account (1994) was one of the most important pieces of bicycle-related legislation and required all cities and counties to adopt a bicycle master plan in order to be eligible to apply for Bicycle Transportation Account (BTA) funding. In September 2013, Governor Jerry Brown signed legislation creating the Active Transportation Program (ATP), consolidating existing federal and state transportation programs: the Transportation Alternatives Program (TAP) (includes the Transportation Enhancements Program and Recreational Trails Program)Bicycle Transportation Account (BTA), and Safe Routes to School (SR2S). In August 2014, the CTC approved $221 million in

Source	Bicycle Parking Plan or Policy Language
	bicycle and pedestrian-related projects statewide. The purpose of the ATP is to encourage increased use of active modes of transportation, with the goal of increasing in biking and walking trips, increasing safety and mobility for all users, and helping to achieve greenhouse gas reduction goals. The ATP is now a source for bicycle parking funding.

Other

The Association of Pedestrian and Bicycle Professionals (APBP) developed its Bicycle Parking Guidelines 2nd Edition (2010) to guide the planning and design of bicycle parking structures and sites. The guidelines focus on the provision of various forms of short-term and long-term bicycle parking and provides standards relating to:

- General bicycle parking principles and definitions of bicycle parking terms
- Guidance for both short- and long-term bicycle parking
- Elements of a good rack or locker, including specific performance criteria
- Maintenance best practices
- Sample site plans and diagrams to help avoid blunders in rack and locker placement
- Sample quantity requirements for bicycle parking to meet need by land use
- A worksheet for programming bicycle parking for a building or cluster of buildings

The bicycle design guidelines established as part of this Bicycle Mini-Corral Plan will be based on the APBP guidelines.

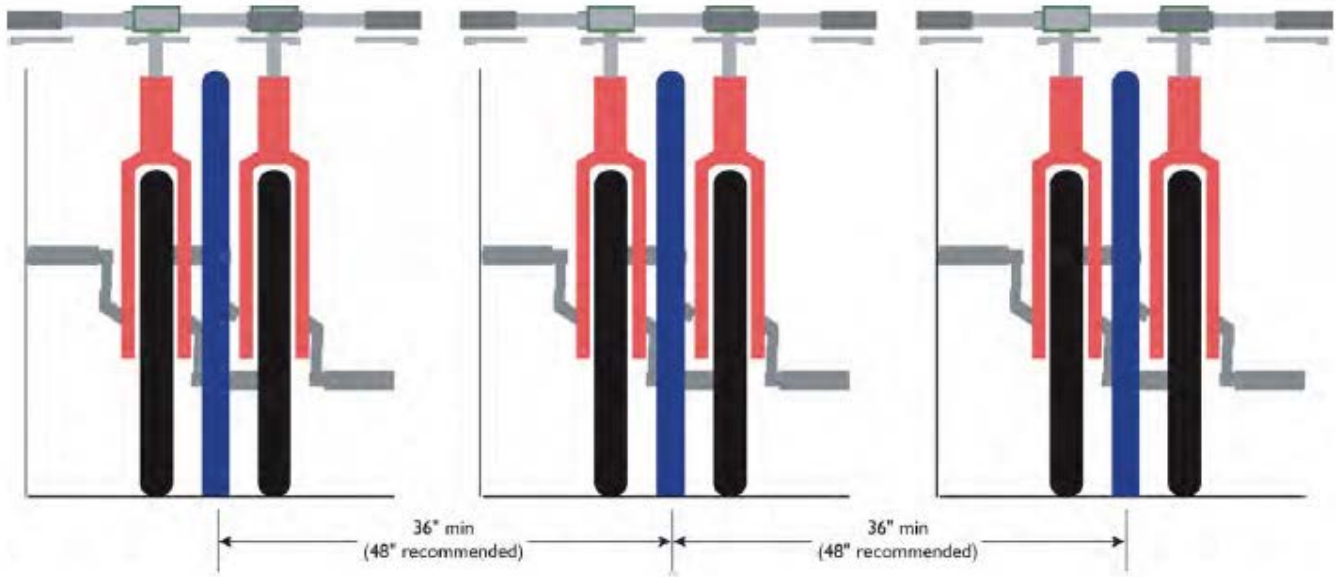


Figure A-1: APBP Reommended Bicycle Rack Spacing

Source: APBP Bicycle Parking Guidelines 2nd Edition (2010)

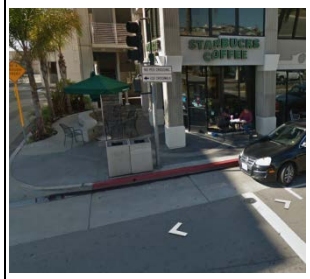
Appendix B: Ranking of Suggested Locations for Bicycle Mini-Corrals

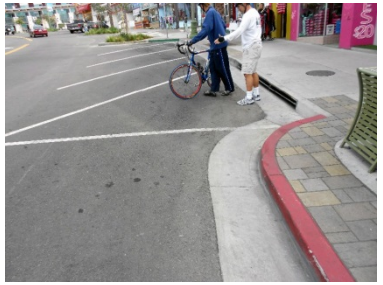
Each site was evaluated and scored based on the criteria presents in Chapter 4, ordered from highest to lowest score, and presented in the following tables. Some locations shown have two potential sites where a mini-corral could be feasible. Other suggested sites have limited available curb space and thus show a potentially feasible site nearby. Images are included for locations where community members uploaded photos to the online mapping tool or where they help to illustrate a potential high priority site. Initial Google Earth (GE) measurements are included for high ranking locations.

Some locations shown are identified as not being location in a commercial area, meaning they will not be looked at as part of this Plan. However, the cities may wish to study the demand further outside of this project and thus some of these sites include a discussion of opportunities.

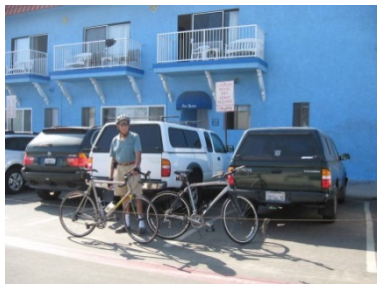
Hermosa Beach Sites and Scores

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
1. Hermosa Avenue at 14th Street	20	20	20	20	20	100	**Challenges:** Close to the corner **GE:** 11ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges	
2. Hermosa Avenue at 10th Street	20	20	20	20	20	100	**Opportunities:** Large curb space available **GE:** 18 ft 	
3. Hermosa Avenue at 13th Street	20	20	20	20	20	100	**Opportunities:** North side **GE:** 14 ft 	**Challenges:** South side may interfere with U-turns and post office loading/unloading **GE:** 14 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
4. Pier Avenue at Monterey Boulevard	20	20	20	20	10	90	**Opportunities:** Protected curb space available **GE:** 10 ft 
5. Pier Avenue at Hermosa Avenue	20	20	10	20	20	90	**Challenges:** Storm drain may be an issue **GE:** 16 ft 

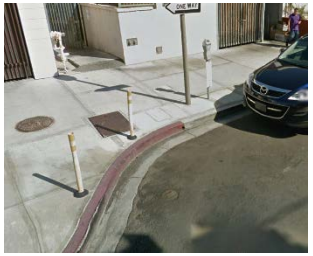
Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
6. Pier Avenue at Valley Drive (near City Hall)	20	20	10	20	10	80	**Challenges:** Storm drain may be an issue **GE:** 18 ft 
7. Pier Avenue Plaza	20	20	0	0	20	60	**Challenges:** This is a high demand location for bike parking, but not a mini-corral eligible site as it is not an on-street location
8. Pier Avenue at Sunset Drive	20	20	0	0	10	50	**Challenges:** There will be no parking removal as a result of this project. There are no other adequate curb spaces in this location. 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
9. Noble Park	20	10	0	0	20	50	**Challenges:** Adjacent commercial activity up the block, though not enough available curb space 
10. 13th Street at The Strand	20	10	0	0	20	50	**Challenges:** This existing bike parking location has high demand but is not an on-street location 
11. 11th Street at The Strand	20	10	0	0	20	50	**Challenges:** This is not located directly in front of a commercial business 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
12. The Strand and 7th Court	20	0	0	0	20	40	**Challenges:** This is not a commercial area
13. The Strand and 2nd Street	20	0	0	0	20	40	**Challenges:** This is not a commercial area
14. At the Pier (The Strand and Pier Avenue)	20	0	0	0	20	40	**Challenges:** This is a high demand location for bike parking, but not a mini-corral eligible site as it is not an on-street location
15. High Demand at Volleyball area on The Strand between 20th Court and 17th Court	20	0	0	0	20	40	**Challenges:** This is not a commercial area
16. Beach areas in general	20	0	0	0	20	40	**Challenges:** This is not a commercial area
17. Beach adjacent bars and restaurants	20	0	0	0	20	40	**Challenges:** This is not a commercial area
18. The Strand between 9th Court and 5th Court	20	0	0	0	20	40	**Challenges:** This is not a commercial area

Manhattan Beach Sites and Scores

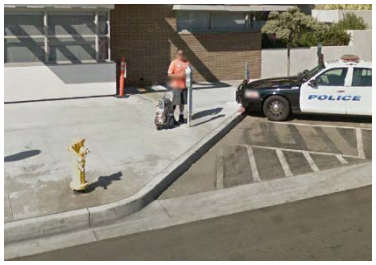
Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
1. Manhattan Avenue at 9th Place (west side)	20	20	20	20	20	100	**Opportunities:** Red curb at 9th Pl and Manhattan Ave **GE:** 17 ft 
2. Manhattan Avenue at 8th Place (east side)	20	20	20	20	20	100	**Opportunities:** Red curb available **GE:** 18 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
3. Morningside Drive at 12th Street	20	20	20	20	10	90	**Opportunities:** Existing red curb; could shift spaces to the south to enlarge corral space or use bulb-out area for off-street racks **GE:** 6 ft (but can shift stalls) 
4. Manhattan Beach Boulevard, west of Valley Drive* (north side)	20	20	20	20	10	90	**Opportunities:** Ideal location adjacent to Metlox Plaza **Challenges:** Space would require removal of small parking stall **GE:** 11 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
5. Manhattan Beach Boulevard, east of Highland Avenue	20	20	20	20	10	90	**Opportunities:** Large protected curb space **GE:** 17 ft 
6. Manhattan Beach Boulevard at Harkness Street (north side)	10	10	20	10	10	90	**Opportunities:** Near Martial Arts and Yoga **Challenges:** Low commercial activity, high speeds on street (35 MPH) **GE:** 24 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
7. Manhattan Avenue at 12th Place	10	20	20	20	10	80	**Opportunities:** Large curb space available near shops **GE:** 14 ft 
8. Manhattan Avenue at 11th Place	10	20	20	20	10	80	**Opportunities:** Large curb space available near shops **GE:** 14 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
9. Manhattan Beach Boulevard, west of Valley Drive (south side)	20	20	20	0	10	70	**Opportunities:** May be enough space for a few racks if angled **Challenges:** Utility cover in roadway **GE:** 19 ft 
10. 45th Street and The Strand	20	0	20	10	20	70	**Challenges:** Not a commercial area
11. The Strand at 40th Street	20	0	20	10	20	70	**Opportunities:** Snack Shack could be trip-generating. Appears to have available ROW on the NE corner. **Challenges:** Not a commercial area **GE:** 30 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
12. Rosecrans Avenue and Highland Avenue	10	20	20	0	20	70	**Challenges:** Steep slope, close to corner **GE:** 16 ft 
13. Valley Drive and 13th Street behind police station	20	10	20	10	10	70	**Challenges:** There is bike parking one block west. This is adjacent to the Metlox. **GE:** 11 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
14. Highland Avenue at 35th Street	20	20	10	10	10	70	**Opportunities:** Off-street site on walk street near wayfinding sign **Challenges:** There is no on-street space long enough support a corral **GE:** 25 ft 
15. 15th Street at Highland Avenue	10	20	20	10	10	70	**Opportunities:** There is a long curb adjacent to a bulb out with parking restricted **Challenges:** This site is around the corner from shops on Highland Avenue **GE:** 35 ft 

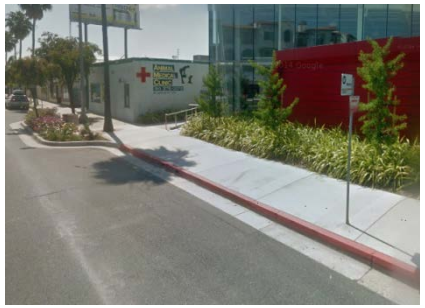
Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
16. Manhattan Beach Boulevard and Harkness Street (south side)	10	10	20	10	10	60	**Opportunities:** In front of Manhattan Academy **Challenges:** Low commercial activity; high speeds on street (35 MPH); exposed to traffic **GE:** 13 ft 
17. 36th Place and The Strand	10	0	20	10	20	60	**Challenges:** Might be steep. Lifeguard Office could serve as trip generator in addition to the Strand. Not a commercial area. **GE:** 14 ft 
18. Marine Avenue and the Strand	20	0	0	10	20	50	**Challenges:** This is not a commercial area

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
19. Aviation Boulevard at 11th Street (at Bike Store)	20	20	0	0	10	50	**Challenges:** No available curb space 
20. Manhattan Beach Blvd at Highland Avenue (northwest corner)	20	20	0	0	10	50	**Challenges:** No available curb space, existing landscaping 
21. The Strand at 11th Place (More and Better Parking)*	20	10	0	0	20	50	**Challenges:** There is no available curb space at this location and has a fairly steep slope
22. Sepulveda Boulevard and Marine Avenue	20	20	0	0	10	50	**Challenges:** No available curb space on Marine Ave. Sepulveda Blvd is a Caltrans facility and does currently permit on-street bike parking.

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
23. Sepulveda Boulevard and Rosecrans Avenue	20	20	0	0	10	50	**Challenges:** No available curb space on Rosecrans Ave. Sepulveda Blvd is a Caltrans facility and does currently permit on-street bike parking.
24. Rosecrans Avenue and Aviation Boulevard	20	20	0	0	10	50	**Challenges:** No available curb space on Rosecrans Ave or Rosecrans Blvd. Businesses do not face the street.
25. Mira Costa High School	20	0	20	0	10	50	**Challenges:** This is not a commercial area. Existing on-site parking.
26. Oak Avenue and Veterans Parkway (Pass under or Near the Mall)*	20	10	0	0	10	40	**Challenges:** Unable to locate Veterans Parkway
27. Morningside Drive and 13th Street	20	10	0	10	0	40	Bike parking exists at this location 
28. Trader Joe's (Rosecrans Avenue)	20	10	0	0	10	40	**Challenges:** This is not in the public right-of-way
29. Marine Avenue and Redondo Avenue	10	0	0	10	10	30	**Challenges:** Not a commercial area
30. Marine Ave Park	20	0	0	0	10	30	**Challenges:** This is not a commercial area
31. Pollywog Park	20	0	0	0	10	30	**Challenges:** This is not a commercial area
32. Macy's Mall	20	0	10	0	0	30	**Challenges:** This is not in the public right-of-way

Redondo Beach Sites and Scores

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges	
1. Artesia Boulevard from Phelan Lane to Felton Lane	20	20	20	20	20	100	**Opportunities:** Large curb space available. Near many businesses, including restaurants and sports studios. **GE:** 20 ft 	**Opportunities:** Several businesses. Adjacent to a pedestrian crossing and an existing bike path. **Challenges:** Utility box in pavement **GE:** 15 ft 
2. Artesia Boulevard and Slauson Lane	20	20	20	20	10	90	**Opportunities:** Near the Post Office, playhouse, bars, and restaurants **GE:** 35 ft 	

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
3. Artesia Boulevard at Green Lane	20	20	20	20	10	90	**Challenges:** Located adjacent to Metro bus stop 
4. S. Catalina Avenue and Palo Verdes Boulevard	20	20	20	20	10	90	**Opportunities:** Catalina Ave and Elena Ave **Challenges:** Close to a driveway. Site conditions would need to be confirmed. **GE:** 12 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
5. S. Catalina Avenue at Vista Del Mar	20	20	20	20	10	90	**Opportunities:** Many restaurants, bars, and shops **GE:** 25+ ft 
6. S. Catalina Avenue between Vista Del Mar and Elena Ave	20	20	20	20	10	90	**Opportunities:** Many restaurants, bars, and shops. Existing mini-corral with outdated racks. **GE:** 11 ft 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
7. Artesia Boulevard from Felton Lane to Perkins Lane	20	20	20	10	10	80	**Challenges:** No available curb space in front of the high demand businesses. Red curb at Felton Ln in front of Rod's is large enough but the number two lane width might not be wide enough at intersection. **GE:** 15 ft 
8. Bike Ramp at Avenue G and Esplanade	20	0	20	20	20	80	**Opportunities:** All conditions are favorable but there might not be enough demand to make this site a priority. **Challenges:** This is not a commercial area 

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
9. Robinson Street at Phelan Lane	10	10	20	20	20	80	**Opportunities:** Near the intersection of multiple existing bikeways; existing red curb 
10. Ave I at Elena Ave	20	20	20	20	0	80	**Opportunities:** Coffee shops typically have high demand for bike parking. This is also adjacent to shops and restaurants. **GE:** 50 ft 
11. Dominguez Park	20	0	20	20	10	70	**Opportunities:** There is a lot of red curb on Flagler Ln **Challenges:** This is not a commercial area

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
12. N. Harbor Drive between Yacht Club Way and Marine Way	20	20	0	0	20	60	**Challenges:** Businesses do not face the street. Existing parking (shown below) could get upgraded. 
13. Redondo Beach Pier	20	20	0	0	20	60	**Challenges:** This is a high demand location for bike parking, but not an eligible mini-corral site as it is not an on-street location
14. Knob Hill Avenue and Esplanade	20	0	20	0	20	60	**Challenges:** This is not a commercial area
15. Avenue C and Esplanade	20	0	20	0	20	60	**Challenges:** This is not a commercial area
16. Whole Foods	20	20	0	0	10	50	**Challenges:** Pacific Coast Highway is a Caltrans facility and does currently permit on-street bike parking
17. South Bay Galleria	20	20	0	0	10	50	**Challenges:** Not public ROW
18. Pacific Coast Highway and N. Catalina Avenue	20	20	0	0	10	50	**Challenges:** Pacific Coast Highway is a Caltrans facility and does currently permit on-street bike parking. Businesses do not face Catalina Ave at this location.
19. Avenue Del Norte and Elena Avenue	20	20	0	0	0	40	**Challenges:** There is no available curb space
20. Emerald Street at S. Broadway	20	0	20	0	0	40	**Challenges:** This is not a commercial area

Location	Demand	Land Use	ROW	Site Conditions	Bikeway Connections	Total Score	Opportunities and/or Challenges
21. 182nd Street and Inglewood Avenue	20	0	0	0	10	30	**Challenges:** This is not a commercial area
22. Marine Avenue and I-405 (Metro Green Line)	20	0	0	0	10	30	**Challenges:** Bike parking for the Green Line is provided at the station

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Appendix C: Planning Level Estimated Costs

Hermosa Beach

Pier Avenue at Monterey Boulevard						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	3	EA	$400.00	$1,200	
2	**Bollards**	3	EA	$450.00	$1,350	
3	**Rubber Curbs**	1	EA	$100.00	$100	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$2,700**
				CONTINGENCY	20.0%	$600
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$600
				CONSTRUCTION	15.0%	$500
				Total		**$4,400**

Pier Avenue at Hermosa Avenue						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	4	EA	$400.00	$1,600	
2	**Bollards**	7	EA	$450.00	$3,150	
3	**Rubber Curbs**	0	EA	$100.00	$0	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	22	LF	$3.00	$66	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$4,900**
				CONTINGENCY	20.0%	$1,000
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$1,000
				CONSTRUCTION	15.0%	$800
				Total		**$7,700**

Hermosa Avenue at 13th Street						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	3	EA	$400.00	$1,200	
2	**Bollards**	5	EA	$450.00	$2,250	
3	**Rubber Curbs**	1	EA	$100.00	$100	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$3,600**
				CONTINGENCY	20.0%	$800
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$800
				CONSTRUCTION	15.0%	$600
				Total		**$5,800**

Pier Avenue at Valley Boulevard						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	4	EA	$400.00	$1,600	
2	**Bollards**	4	EA	$450.00	$1,800	
3	**Rubber Curbs**	1	EA	$100.00	$100	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$3,500**
				CONTINGENCY	20.0%	$700
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$700
				CONSTRUCTION	15.0%	$600
				Total		**$5,500**

Hermosa Avenue at 10th Street						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	3	EA	$400.00	$1,200	
2	**Bollards**	7	EA	$450.00	$3,150	
3	**Rubber Curbs**	0	EA	$100.00	$0	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$4,400**
				CONTINGENCY	20.0%	$900
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$900
				CONSTRUCTION	15.0%	$700
				Total		**$6,900**

Hermosa Beach Total Estimated Cost: $30,300

Manhattan Beach

Manhattan Avenue at 8th Place						
		QTY			COST	SUB TOTAL
1	Bicycle Racks with Footings	2	EA	$400.00	$800	
2	Bollards	3	EA	$450.00	$1,350	
3	Rubber Curbs	0	EA	$100.00	$0	
4	Fiberglass Planter 24" with Soil and Plant Material	0	EA	$350.00	$0	
5	Striping Removal	0	LF	$1.00	$0	
6	4" Thermoplastic Striping	0	LF	$3.00	$0	
7	Concrete Paving	0	SQFT	$25.00	$0	
	Sub-total					**$2,200**
				CONTINGENCY	20.0%	$500
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$500
				CONSTRUCTION	15.0%	$400
				Total		**$3,600**

Manhattan Beach Boulevard at Highland Avenue						
		QTY			COST	SUB TOTAL
1	Bicycle Racks with Footings	3	EA	$400.00	$1,200	
2	Bollards	3	EA	$450.00	$1,350	
3	Rubber Curbs	1	EA	$100.00	$100	
4	Fiberglass Planter 24" with Soil and Plant Material	0	EA	$350.00	$0	
5	Striping Removal	0	LF	$1.00	$0	
6	4" Thermoplastic Striping	0	LF	$3.00	$0	
7	Concrete Paving	0	SQFT	$25.00	$0	
	Sub-total					**$2,700**
				CONTINGENCY	20.0%	$600
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$600
				CONSTRUCTION	15.0%	$500
				Total		**$4,400**

Morningside Drive at 12th Street						
		QTY			COST	SUB TOTAL
1	Bicycle Racks with Footings	4	EA	$400.00	$1,600	
2	Bollards	4	EA	$450.00	$1,800	
3	Rubber Curbs	1	EA	$100.00	$100	
4	Fiberglass Planter 24" with Soil and Plant Material	0	EA	$350.00	$0	
5	Striping Removal	12	LF	$1.00	$12	
6	4" Thermoplastic Striping	12	LF	$3.00	$36	
7	Relocate Parking Meter	1	EA	$300.00	$300	
	Sub-total					**$3,900**
				CONTINGENCY	20.0%	$800
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$800
				CONSTRUCTION	15.0%	$600
				Total		**$6,100**

Manhattan Avenue at 12th Place						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	2	EA	$400.00	$800	
2	**Bollards**	3	EA	$450.00	$1,350	
3	**Rubber Curbs**	0	EA	$100.00	$0	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	15	LF	$1.00	$15	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$2,200**
				CONTINGENCY	20.0%	$500
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$500
				CONSTRUCTION	15.0%	$400
				Total		**$3,600**

Highland Avenue at 35th Street						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	4	EA	$400.00	$1,600	
2	**Bollards**	0	EA	$450.00	$0	
3	**Rubber Curbs**	0	EA	$100.00	$0	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	220	SQFT	$25.00	$5,500	
	Sub-total					**$7,100**
				CONTINGENCY	20.0%	$1,500
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$1,500
				CONSTRUCTION	15.0%	$1,100
				Total		**$11,200**

Manhattan Beach Total Estimated Cost: $28,900

Redondo Beach

Elena Avenue at Avenue I						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	6	EA	$400.00	$2,400	
2	**Bollards**	0	EA	$450.00	$0	
3	**Rubber Curbs**	5	EA	$100.00	$500	
4	**Fiberglass Planter 24" with Soil and Plant Material**	4	EA	$350.00	$1,400	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$4,300**
				CONTINGENCY	20.0%	$900
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$900
				CONSTRUCTION	15.0%	$700
				Total		**$6,800**

Phelan Lane at Robinson Street						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	8	EA	$400.00	$3,200	
2	**Bollards**	8	EA	$450.00	$3,600	
3	**Rubber Curbs**	2	EA	$100.00	$200	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$7,000**
				CONTINGENCY	20.0%	$1,400
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$1,400
				CONSTRUCTION	15.0%	$1,100
				Total		**$10,900**

Artesia Boulevard at Phelan Lane						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	3	EA	$400.00	$1,200	
2	**Bollards**	3	EA	$450.00	$1,350	
3	**Rubber Curbs**	1	EA	$100.00	$100	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$2,700**
				CONTINGENCY	20.0%	$600
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$600
				CONSTRUCTION	15.0%	$500
				Total		**$4,400**

S. Catalina Avenue at Elena Avenue						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	2	EA	$400.00	$800	
2	**Bollards**	3	EA	$450.00	$1,350	
3	**Rubber Curbs**	0	EA	$100.00	$0	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$2,200**
				CONTINGENCY	20.0%	$500
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$500
				CONSTRUCTION	15.0%	$400
				Total		**$3,600**

Artesia Boulevard at Green Lane						
		QTY			COST	SUB TOTAL
1	**Bicycle Racks with Footings**	3	EA	$400.00	$1,200	
2	**Bollards**	4	EA	$450.00	$1,800	
3	**Rubber Curbs**	1	EA	$100.00	$100	
4	**Fiberglass Planter 24" with Soil and Plant Material**	0	EA	$350.00	$0	
5	**Striping Removal**	0	LF	$1.00	$0	
6	**4" Thermoplastic Striping**	0	LF	$3.00	$0	
7	**Concrete Paving**	0	SQFT	$25.00	$0	
	Sub-total					**$3,100**
				CONTINGENCY	20.0%	$700
				PLANS, SPECIFICATIONS AND ENGINEERING	20.0%	$700
				CONSTRUCTION	15.0%	$500
				Total		**$5,000**

Redondo Beach Total Estimated Cost: $30,700