

Pacific Grove Shoreline Management Plan



The Shoreline Management Plan aims to provide public access along Pacific Grove's shoreline well into the future while protecting and enhancing the coast's natural and cultural resources.



June 2020

Prepared for the City of Pacific Grove by the Eisen | Letunic team

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Grove Shoreline Management Plan
and enhancing your shoreline
www.PGshoreline.org



Sea-creature gummies



01 | Introduction

Project background

Pacific Grove's shoreline is a special place. It is an iconic stretch of coastline featuring trails, parks, beach areas, fishing spots, tidal pools, overlooks with panoramic views and opportunities for wildlife sightings, among many other amenities. Understandably, it is a beloved community destination, a source of much local pride and a popular regional attraction. At the same time, the area faces a number of challenges. It hosts sensitive natural and historic resources, as well as vital infrastructure, all of which require careful protection. Perhaps most seriously, Pacific Grove's coastline experiences ongoing erosion from winter storms, wave action and other natural processes. These forces continually reshape the shoreline, on many occasions with destructive effect.

On January 20, 2017, a 31-foot section of seawall across from 701 Ocean View Boulevard collapsed, along with an adjacent public access overlook, when part of the seawall's bedrock foundation cracked and slid down the bluff face due to intense wave action during a winter storm. The City of Pacific Grove sought permission from the California Coastal Commission—the agency



Overhead view of the collapsed section of seawall across from 701 Ocean View Boulevard.

charged with regulating development of the state's coast—to reconstruct that segment of seawall. In July 2017, the Coastal Commission approved the project with several conditions. The main condition was that the city conduct a long-term study of the Pacific Grove shoreline to provide “continuous recreational trail access along the shoreline...while best protecting coastal resources.” The condition further required that the study include: “a comprehensive alternatives analysis, including the potential for relocation of the recreational trail and removal of armoring;” implementation recommendations; and “an analysis of the impacts to coastal resources from retaining the existing armoring structures.” The Coastal Commission's staff report recommending approval of the city's petition to reconstruct the seawall is available at http://bit.ly/PGshoreline_CCCreport.

Project objectives

To fulfill the Coastal Commission's condition of approval, the City of Pacific Grove, working with a multi-disciplinary team of consultants, has prepared this Shoreline Management Plan (SMP). Consistent with the Commission's requirement, the plan's overarching objectives are to provide continuous recreational trail access along the shoreline and minimize the need for new seawalls, riprap and other forms of shoreline armoring while incorporating other opportunities to enhance and offer long-term protection from coastal erosion and sea level rise to other coastal amenities, public infrastructure, and natural and cultural resources. Meeting these objectives will entail trade-offs and it means that compromises will have to be made—for example, by retaining existing armoring to protect trails and parks, or by taking over public parking spaces to extend the shoreline trail or relocate it inland. While such trade-offs are inevitable, the city's goal is to strike the balance that, over time, maximizes public access opportunities and protection of the shoreline.

The recommendations in the SMP were formulated to be in conformity with policies under the California Coastal Act, the law that governs development along the coast and guides the decisions of the Coastal Commission. These policies relate to geologic conditions and hazards, public access and recreation, marine resources, and visual resources. The policies are cited, among other places, on pages 13–26 of the Coastal Commission's staff report mentioned above.

The SMP's recommendations were developed based on the Coastal Act policies and several other key sources. These include the city's own policies and previous plans; background technical studies prepared for the SMP; the professional knowledge and experience of the project consultants; input from stakeholder public agencies; and feedback from Coastal Commission staff. Perhaps most importantly, though, the recommendations emerged from, and were shaped by, the substantial and significant input of the Pacific Grove community: residents, property owners, community-based groups and organizations, city staff, and appointed and elected officials. These are the people who know the city's shoreline best, love it most and want the best for it for generations to come.

The various projects and programs recommended in this plan reflect the city's vision for the shoreline. However, the recommendations are meant to retain some flexibility, in order to account for changed on-the-ground conditions and circumstances at the time the recommendations are to be implemented. The biggest wildcard along Pacific Grove's shoreline is probably sea level, which is, to a large extent, changing unpredictably. Changes in sea level rise from estimates assumed in this plan could require different measures and strategies, especially in terms of providing new shoreline armoring or, conversely, a managed retreat away from the shoreline.

Planning process and contents of this document

The City of Pacific Grove launched the SMP planning process in April 2018. From start to finish, the process consisted of the main steps listed below. The order of chapters in this document mirror the tasks in the planning process.

- The process started with a light, initial round of outreach to introduce the project to the public and encourage people to sign up for updates and announcements (see the “Community Engagement” section on the next page for more details).
- The first substantive task was a survey of the planning context surrounding Pacific Grove’s shoreline, including its setting, land uses, key destinations, and main assets and resources, as well as the regulatory framework governing the SMP project and previous plans and studies of the city’s shoreline. The planning context is the subject of **Chapter 2** of this document.
- The next step was the preparation of several technical studies examining geologic and hydrologic conditions along the shoreline; coastal hazards and vulnerabilities; biological resources; and cultural and archaeological resources. These studies are summarized in **Chapter 3**.
- City staff and the project’s consultants conducted an extensive round of outreach to investigate the community’s vision for the shoreline with regard to coastal erosion. This outreach is

summarized in the “Community Engagement” section and described in more detail in **Chapter 4**.

- Based on the technical studies and public input on the visioning exercise mentioned above, the project team developed a number of draft management strategies for the shoreline and conducted another round of outreach to solicit the community’s feedback on the strategies. The strategies and the outreach are described in **Chapter 5**.
- Taking into consideration the public feedback on the draft strategies, the project team produced a set of recommendations for the SMP. **Chapters 6–8** outline a strategy for improving or providing continuous public trail access along the entirety of the shoreline under the city of Pacific Grove’s jurisdiction. **Chapter 9** describes a number of additional recommendations designed to improve residents’ and visitors’ experience of the shoreline while protecting its unique resources. **Chapter 10** discusses key considerations related to shoreline armoring while **Chapter 11** provides an implementation timeline for the various recommendations.
- Lastly, the project team prepared this revised draft SMP document and is now soliciting feedback on it from the public and the City Council. The revised draft plan will incorporate any additional comments received and a final version will then be presented to the California Coastal Commission.



Simplified timeline of the SMP planning process. The circled phases represent the main opportunities for public participation.

Community engagement

The Pacific Grove community is informed, involved and passionate about protecting the natural environment and their quality of life. For this reason, public outreach and engagement was a critical element of the SMP planning process from the start. While community engagement was an ongoing effort, activities were concentrated during four stages of the process:

- 1 **Project launch.** To kick off the project and introduce it to the public, city staff and their consultants:
 - Launched the project website, www.PGshoreline.org. The website contained a form encouraging people to sign up for updates and announcements. The project email list eventually grew to approximately 450 contacts.
 - Issued a press release and posted announcements on the city's social media accounts and in the City Manager's weekly email newsletter.
 - Sent out a postcard mailer to approximately 900 addresses and owners of property along and near the shoreline.
 - Gave a presentation at the September 2018 meeting of Sustainable Pacific Grove. The meeting was held at the Pacific Grove Museum of Natural History and was attended by approximately 40 people.
 - Tabled at the Hopkins Marine Station open house held on Saturday, October 6, 2018. An estimated 300 people, both locals and out-of-towners, stopped by the table.
- 2 **Community visioning exercise.** The city conducted an extensive round of outreach to hear the community's vision for the shoreline with regard to the impacts of coastal erosion. This outreach consisted of an online survey, online pinnable map, public open house and series of stakeholder interviews.



May 2018

The Pacific Grove Shoreline Management Plan is commencing!



Pacific Grove's shoreline is a unique and special place. Understandably, it is a source of much local pride and a popular regional attraction.

Unfortunately, its many amenities and resources face the constant threat of erosion from winter storms, wave action and other natural processes. To address this challenge, the City of Pacific Grove has just launched the Pacific Grove Shoreline Management Plan. The plan will look at ways to provide continuous public access along the shoreline well into the future while protecting and enhancing the coast's many natural and cultural resources.

The City invites the community to get involved in the planning process. Opportunities to participate will take place later this summer and fall and will include community workshops, surveys, presentations and an online map on which residents will be able to post comments.

To sign up for project updates and announcements, or to submit a comment or question, visit PGshoreline.org. You may also contact Joyce Halabi, the City's Project Manager, at (831) 648-5722 or at info@PGshoreline.org.

Front and back of the postcard announcing the start of the SMP project.

The survey received almost 340 responses while the pinnable map received just over 120 comments. The open house, which took place Saturday, February 2, 2019, at the Pacific Grove Community Center, was attended by approximately 100 people and resulted in an additional 130 comments. Altogether, the public submitted nearly 600 comments through these channels. Lastly, representatives of more than 20 stakeholder agencies, groups and organizations were interviewed and asked about their particular areas of interest and their concerns regarding the shoreline as well as their ideas and suggestions for achieving the SMP's objectives. Chapter 4 of this document provides detailed information about the visioning outreach.



Attendees signing in at the first community meeting for the SMP.

- 3 **Draft management strategies.** To gather feedback on a set of draft proposed management strategies for the shoreline, the city conducted a second survey and a second community meeting. The survey received almost 450 responses. The meeting took place on Saturday, October 12, 2019 at the Pacific Grove Community Center and was attended by approximately 40 people. Through these two channels, the city received more than 1,200 comments from the public. Detailed information about this round of outreach is contained in Chapter 5.



Home page of the SMP website.

- 4 **Review and approval of the plan document.** The draft SMP was released on April 24, 2020 for public review and comment. A formal hearing before the City Council will take place in mid-to-late May. Following City Council approval, the SMP will be presented to the California Coastal Commission at a date still to be determined.



02 | Planning context

Project setting

The Shoreline Management Plan addresses the entire shoreline that is under the jurisdiction of the City of Pacific Grove. This stretch of coastline extends from the city limit with Monterey, at Eardley Avenue and Ocean View Boulevard, to the western end of Lighthouse Avenue, a distance of approximately 3 miles. (South of Lighthouse, the shoreline is still within Pacific Grove but falls under the jurisdiction of California State Parks, a state agency.)

The area's character reflects the city's continued commitment to protect its shoreline and preserve its small, coastal town ambience. The shoreline is threaded by Ocean View Boulevard, a two-lane scenic drive intended primarily for recreational travel. Most of the land on the ocean side of the road is owned by the City of Pacific Grove and consists primarily of parks, a trail network, small beaches and other recreational open space; these provide unparalleled public access and unobstructed views of the ocean. This area also includes Hopkins Marine Station, a marine-science research institute owned by Stanford University. The land side of Ocean View Boulevard comprises mostly single-family

neighborhoods along with a small number of commercial properties and, west of Asilomar Avenue, in the Point Pinos area, a public 18-hole golf course owned by the city.

As the description above suggests, Pacific Grove's shoreline is not a uniform stretch but rather consists of fairly distinct segments. On the following pages is a description of the five sub-areas that make up the SMP project area, listed from east to west. Additional information about the planning context surrounding the shoreline is found in the 2019 Land Use Plan prepared as part of the city's Local Coastal Program (see the end of this chapter for more information about the LCP). The Land Use Plan, available at http://bit.ly/PGshoreline_LCPLUP, includes sections on the regulatory context that governs the management of the shoreline and surrounding waters; the involvement of volunteers dedicated to protecting the shoreline; coastal hazards; water and marine resources; scenic resources; biological resources and environmentally sensitive habitat areas; community design; land use designations; cultural resources; public infrastructure; and parks, recreation and public access.

Point Cabrillo

This first stretch of shoreline extends from the city border with Monterey, at the Monterey Bay Aquarium, to 3rd Street (see Figure 2.1). Hopkins Marine Station—the oldest marine laboratory on the west coast and a venerable local institution—sits on Point Cabrillo and occupies most of the shoreline frontage along this segment. (Whereas most of Pacific Grove’s shoreline is owned by the city, most of this segment is owned by Stanford University.) The facility is fenced to prevent public access to its beaches and other surrounding ecological habitat, which are home to two sensitive animal species: black oystercatchers and harbor seals.



Hopkins Marine Station, seen from the coastal trail.

Hopkins is fronted by the Monterey Bay Coastal Trail, a multi-use facility that connects west to Lovers Point Park and east through Monterey and beyond. The trail consists of a paved bicycle path (also used by pedestrians) and an adjacent gravel path for pedestrians; it ranges in width between 10–20 feet, approximately. For the most part the trail here is set back substantially from the edge of the bluff, and there is little erosion or geologic instability.

On the land side of Ocean View Boulevard is a small visitor-oriented commercial area east of Dewey Avenue (American Tin Cannery Outlets) and single-family homes west of Dewey. With the exception of metered spaces adjacent to Hopkins and around the commercial area, parking here on Ocean View is free, though limited to two hours; on some stretches parking is on both sides of the street and on others on only one side of the street. Ocean View is an unmarked bike route, with no bike lanes, until it reaches Asilomar Avenue, 2.3 miles to the west.

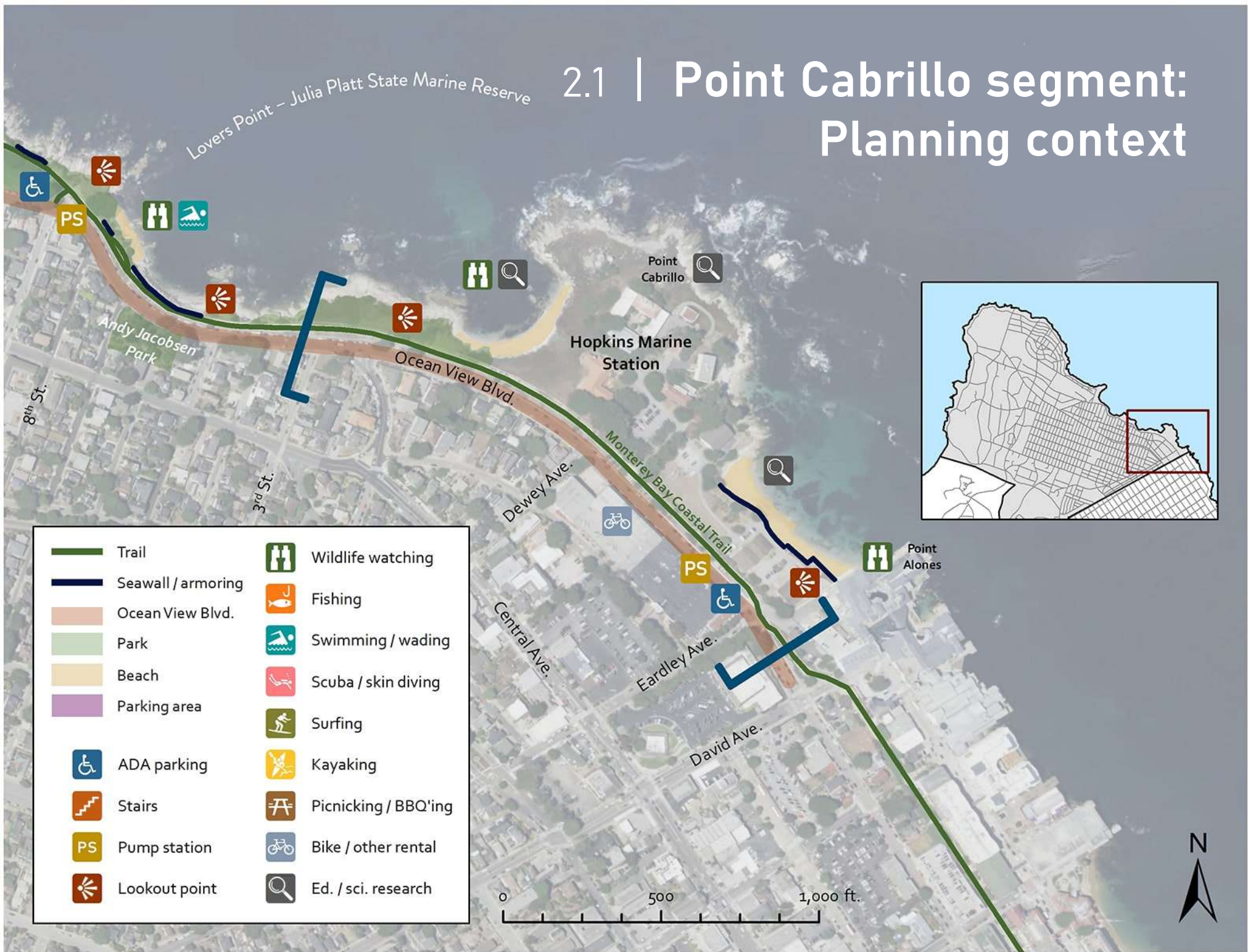
Pacific Grove Retreat

This area stretches from 3rd Street to Grand Avenue (see Figure 2.2). It encompasses the Pacific Grove Retreat neighborhood, a key community resource, with unique historic, architectural and scenic characteristics. It includes three parks: Andy Jacobsen (along both sides of Ocean View Boulevard), Berwick (on the ocean side) and Greenwood (on the land side). Parking on Ocean View here is unmetered and mostly on both sides of the street.



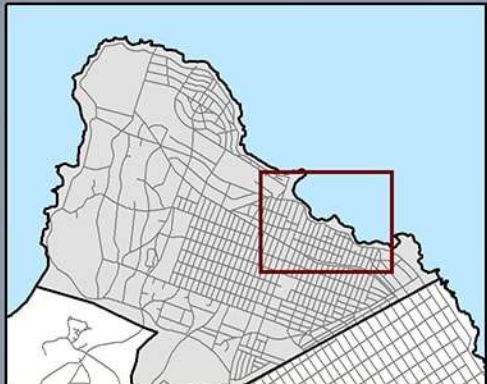
The shoreline between 15th Street and Fountain Avenue.

2.1 | Point Cabrillo segment: Planning context



2.2 | Pacific Grove Retreat segment: Planning context

Lovers Point – Julia Platt State Marine Reserve



Trail	Wildlife watching
Seawall / armoring	Fishing
Ocean View Blvd.	Swimming / wading
Park	Scuba / skin diving
Beach	Surfing
Parking area	Kayaking
ADA parking	Picnicking / BBQ'ing
Stairs	Bike / other rental
Pump station	Ed. / sci. research
Lookout point	



In this segment, the coastal trail is close to the bluff, except through Berwick Park. From the trail, there is access to several pocket beaches along steep unmanaged paths. In the area around Jacobsen Park are shorth lengths of wooden retaining walls to buttress the trail and a 250-foot section of riprap boulders. Roughly between 12th and 15th Streets are two additional sections of riprap.

Lovers Point

The shoreline segment between Grand Avenue and Sea Palm Avenue (see Figure 2.3) contains Lovers Point Park and Beach, perhaps the most popular spots along Pacific Grove’s shoreline. Located at the foot of 17th Street, this area offers a variety of recreational amenities—sandy beaches (accessible by stairs), Stillwell Children’s Pool, volleyball court, picnic tables, restaurant, snack bar and bike rental—as well as opportunities for fishing, swimming, kayaking and surfing. This is also where the Monterey Bay Coastal Trail ends. The segment also contains the start of Perkins Park, a linear park extending west and north to Esplanade Park that is known for its iconic “pink carpet” of ice plant (*Drosanthemum floribundum*). Perkins Park features an unpaved walking trail parallel to the shoreline with benches and overlooks, connected by lateral trails to Ocean View Boulevard.

On the land side of Ocean View Boulevard, across from Lovers Point Park is a small visitor-oriented commercial area, including a motel. Otherwise, most of the street frontage along this segment of the shoreline consists of single-family homes. There is a public parking lot at the Ocean View Boulevard and 17th Street intersection and a smaller one immediately to the west of Lovers Point Park, where Ocean View turns westward. In addition, there are two-hour parking spaces on Ocean View between Forest

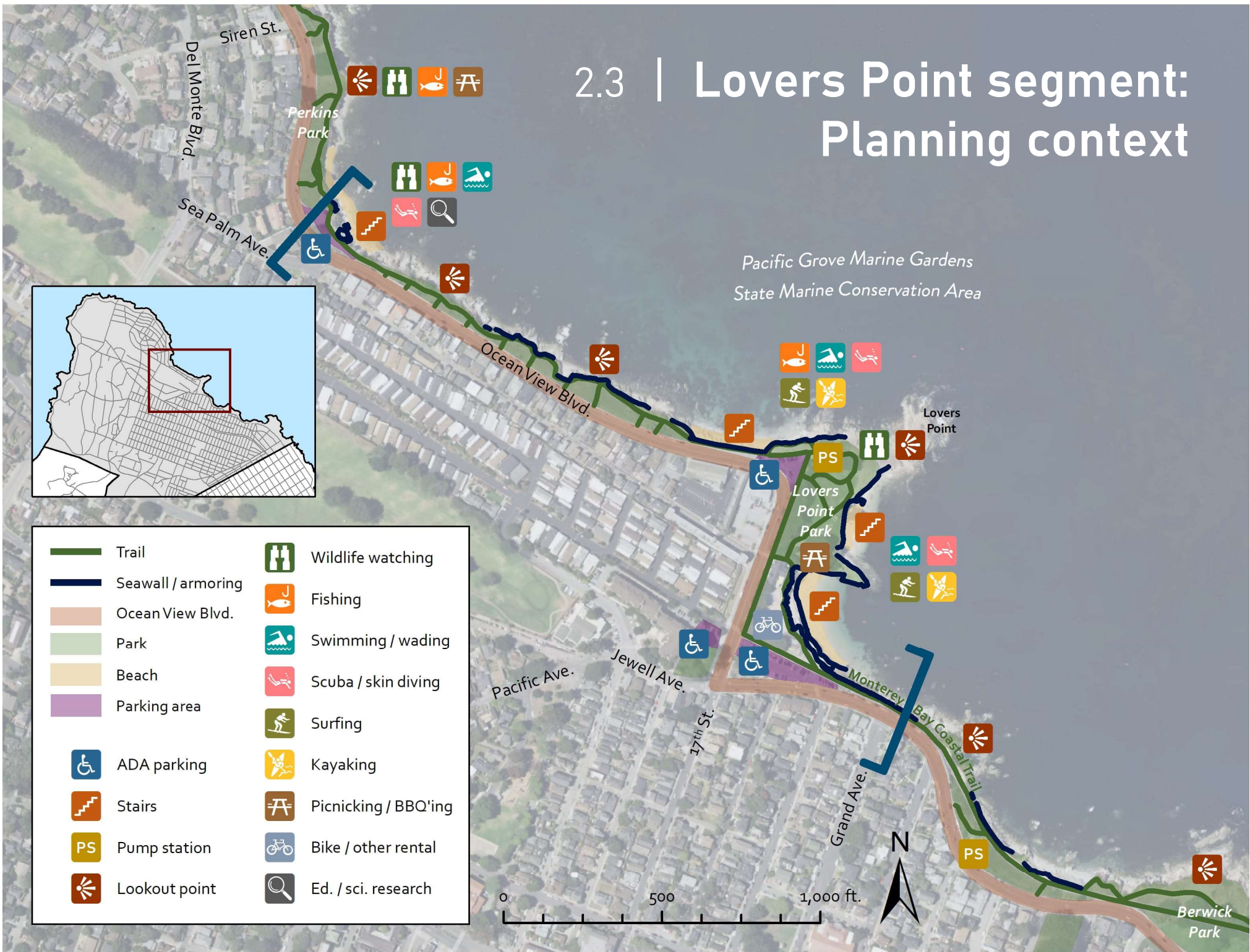
Avenue and Marine Street, and unrestricted street parking elsewhere.



Lovers Point Beach.

The park and beaches are ringed by old yet stable stone walls, and there is riprap to protect a section of wall in the beach cove. Seawalls continue beyond Lovers Point Park to between Clyte and Moss Streets. Just east of Naiad Street, a 30-foot-long, 5-foot-tall section of wall that failed in January 2017 has been repaired. Past the seawalls to Sea Palm Avenue, the shoreline is marked by soil slumping, shallow landslides and channel erosion.

2.3 | Lovers Point segment: Planning context



Ocean View

The Ocean View segment extends from Sea Palm Avenue to approximately halfway between Coral Street and Acropolis Street (see Figure 2.4), where the continuous shoreline trail ends. (That end point is where the study area for the Point Pinos Coastal Trail Study and Plan begins; see the description of the next segment for more information.)



The shoreline near Beach Street.

On the ocean side of Ocean View Boulevard, this segment contains the rest of Perkins Park (including the unpaved pedestrian trail along the shoreline and lateral trails); paved parking areas at Sea Palm Avenue and halfway between Shell Avenue and Beach Street; a sewage pump station between Esplanade Street and Coral Street; and four pocket beaches, accessible by stairs, at Sea Palm Avenue, Shell Avenue, Beach Street and Coral Street. On the land side of Ocean View Boulevard are single-family homes and Esplanade Park. In addition to the parking pull-outs mentioned above, there is free, unrestricted street parking, generally along both sides of Ocean View.

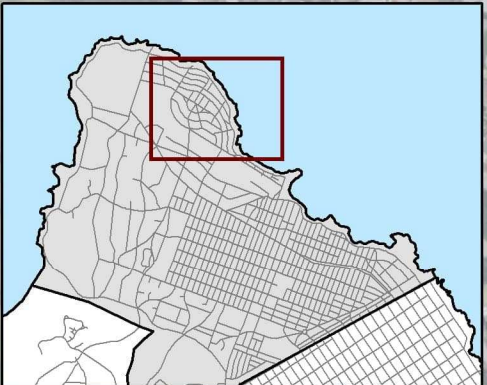
There is localized channel erosion, soil slumping and shallow landslides throughout the segment. In the area of the Sea Palm Avenue stairway to the beach are several shallow slope failures abutting the trail. Erosion in this area appears to be a result of not only wave action but also poor drainage. There is a short section (approximately 160 feet long) of stable rock wall between Siren Street and Balboa Avenue and a longer one (approximately 470 feet long) wrapping around and to the west of the parking area just east of Beach Street. In the area of Esplanade Park, the coastal trail abuts Ocean View Boulevard and there is channel erosion at two locations; here, it would not be possible to move the trail inland without modifying the road alignment. Past this area, between Esplanade Street West and Coral Street, the trail is adjacent to road but set back from the bluff. Lastly, there is a 380-foot section of old seawall around Coral Street. The seawall is stable but erosion has occurred behind it, where waves have overtopped it, with the water then draining back toward the sea.



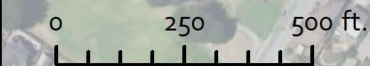
The beach at the foot of Coral Street.

2.4 | Ocean View Segment: Planning context

Pacific Grove Marine Gardens
State Marine Conservation Area



	Trail		Wildlife watching
	Seawall / armoring		Fishing
	Ocean View Blvd.		Swimming / wading
	Park		Scuba / skin diving
	Beach		Surfing
	Parking area		Kayaking
	ADA parking		Picnicking / BBQ'ing
	Stairs		Bike / other rental
	Pump station		Ed. / sci. research
	Lookout point		



Point Pinos

The stretch of shoreline around Point Pinos, from between Coral Street and Acropolis Street to Lighthouse Avenue (see Figure 2.5), was studied in detail as part of the Point Pinos Coastal Trail Study and Plan, completed in 2017. On the ocean side, this segment includes the Great Tidepool (near Lighthouse Avenue) as well as several unpaved parking areas, including the Acropolis turnout (between Coral Street and Acropolis Street), Asilomar turnout (between Acropolis Street and Asilomar Avenue, an area that also includes picnic facilities), the parking turnout at Crespi Pond, and the Foghorn turnouts at two spots around Point Pinos proper, along Ocean View Boulevard.



Ocean View Boulevard through Point Pinos.

The land side is taken up by Crespi Pond, the city's water recycling plant, the Point Pinos Lighthouse Reservation and Museum and a portion of the municipal golf course. Ocean View Boulevard has bike lanes west of Acropolis and there is free, unrestricted parking along the street. The Point Pinos Coastal Trail Study and Plan is available at

http://bit.ly/PGshoreline_PPstudy. That document contains much more detailed information about the area and, perhaps of greatest interest, it includes a proposed alignment for continuing the shoreline trail to the Great Tidepool.

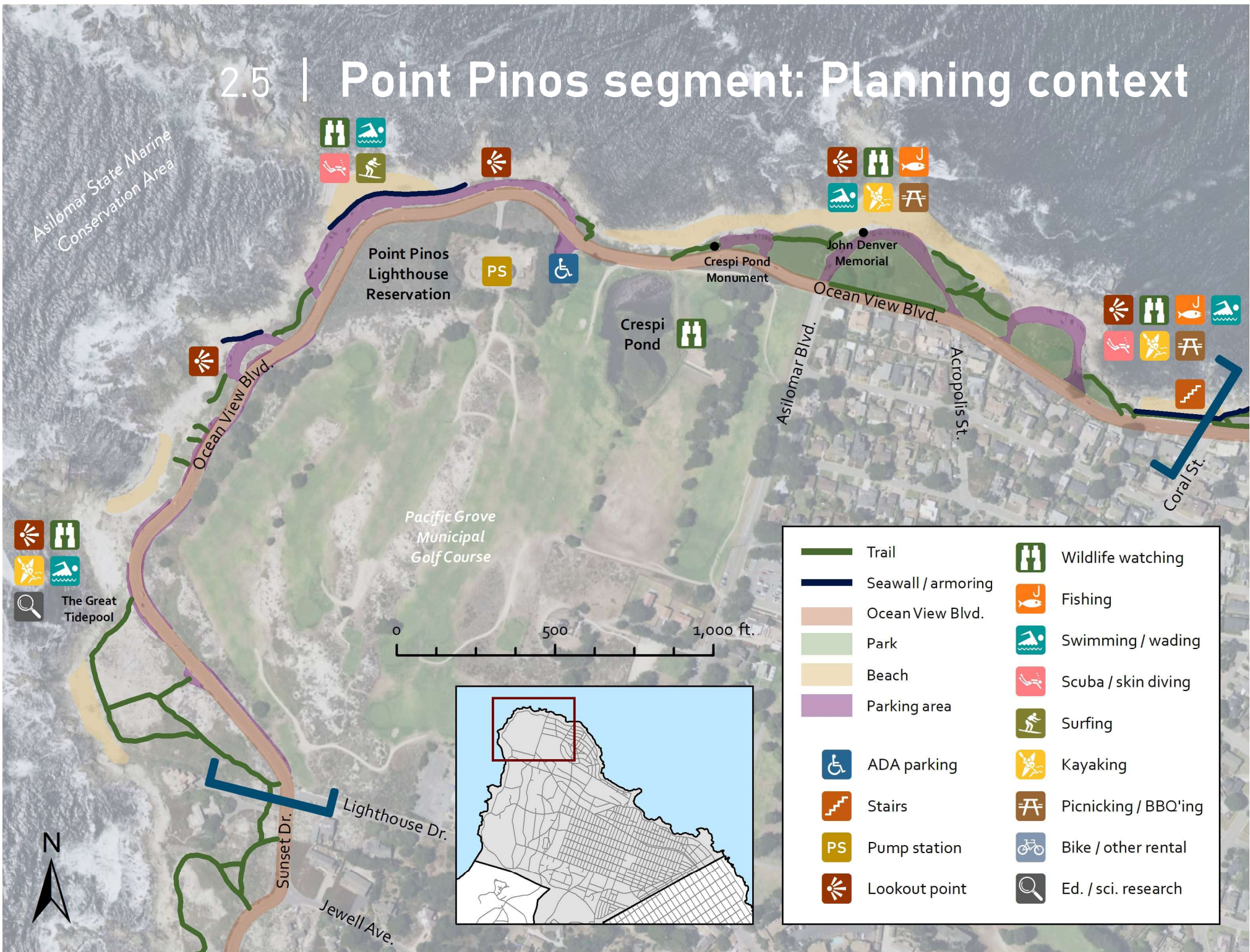
A world of recreational opportunities

With its many diverse settings, treasured natural resources and unrivalled scenic qualities, Pacific Grove's waterfront truly offers something for everyone. The shoreline provides wildlife-related and other educational and research opportunities; attracts community-minded volunteers of many stripes; and hosts races, weddings and other special events.

At the same time, the shoreline offers a world of recreational opportunities—both land-based and aquatic—to the city's residents and its many visitors. While there are as many recreational uses along the shoreline as people who visit it, below are some common ones. Some popular locations where recreational activities are practiced are shown on the maps in this chapter:

- Walking, jogging, running
- Dog walking
- Bicycling
- Scenic driving
- Bike-surrey touring
- Photography
- Picnicking, barbecuing
- Bird / wildlife watching
- Hook-and-line fishing
- Various board sports
- Body surfing
- Snorkeling, spearfishing
- Scuba and skin diving
- Kayaking, sailing

2.5 | Point Pinos segment: Planning context



Asilomar State Marine Conservation Area

Point Pinos Lighthouse Reservation

Crespi Pond

Crespi Pond Monument

John Denver Memorial

Pacific Grove Municipal Golf Course

The Great Tidepool

0 500 1,000 ft.

Sunset Dr.

Lighthouse Dr.

Jewell Ave.

Ocean View Blvd.

Asilomar Blvd.

Ocean View Blvd.

Acropolis St.

Coral St.

- | | | | |
|--|--------------------|--|----------------------|
| | Trail | | Wildlife watching |
| | Seawall / armoring | | Fishing |
| | Ocean View Blvd. | | Swimming / wading |
| | Park | | Scuba / skin diving |
| | Beach | | Surfing |
| | Parking area | | Kayaking |
| | ADA parking | | Picnicking / BBO'ing |
| | Stairs | | Bike / other rental |
| | Pump station | | Ed. / sci. research |
| | Lookout point | | |



Related plans

Pacific Grove's shoreline has been the subject of numerous planning efforts over the years. Below is a list of related plans, studies and reports, going back 25 years, that were reviewed as part of the planning process for the SMP. A report summarizing these documents more fully is available at http://bit.ly/PGshoreline_relatedplans.

Pacific Grove General Plan (1994)

Outlines the long-term development policies for the city. Includes the following "elements," or chapters: Land Use, Transportation, Parks and Recreation, Natural Resources, Urban Structure and Design, Historic Resources, and Health and Safety.

Pacific Grove Coastal Parks Plan (1998)

Establishes guidelines and provisions for circulation, trails, parking, biological and cultural resources, seawalls and aesthetics at the shoreline parks.

Lovers Point Park Master Plan (draft, never adopted; 1999)

Includes recommendations and design concepts for circulation, parking, drop-off areas, pathways, plazas, restrooms, plantings and signage at Lovers Point Park. While this plan was never adopted, it is included here because it discusses locations and issues relevant to the Shoreline Management Plan.

Shoreline Protection Feasibility Study (1999)

Prepared in response to the destructive 1998 El Nino season, this study assessed shore erosion, developed design concepts for seawalls and riprap revetment, and conducted a benefit-cost analysis for these options.

2006 Coastal Development Permit (application)

Permit application submitted by the city to the California Coastal Commission for the repair of structures at 18 shoreline locations.

California Coastal Commission Statewide Sea Level Rise Vulnerability Synthesis (2016): Pacific Grove Case Study

Highlighted and evaluated the vulnerability assessment prepared as part of Pacific Grove's update of its Local Coastal Program.

Coastal Bluff Protection Analysis and Geotechnical Investigation (2016)

Evaluated options for responding to erosion at six coastal bluff sites near Perkins Park and Esplanade Park.

2017 Coastal Development Permit (staff report)

Report by California Coastal Commission staff on the city's permit application for reconstruction of seawall just west of Lovers Point. The permit requires the city to prepare a shoreline management plan for the area.

Point Pinos Coastal Trail Study and Plan (2017)

Study for completing the coastal trail gap through Point Pinos. Outlines options for removing all recreational facilities from the 30-year setback zone.

Local Coastal Program

Guides development in the coastal zone—in partnership with the California Coastal Commission—by specifying the appropriate location, type and scale of new or changed uses of land and water. Carries out the California Coastal Act's mandate to protect coastal resources and maximize public access to the shoreline. Includes the following reports and plans: Climate Change Vulnerability Assessment (2015), Local Coastal Plan Final Background Report (2015), Local Coastal Land Use Plan (2019) and Local Coastal Program Implementation Plan (2019).



03 | Technical studies

In an early phase of the SMP planning process, the consultant team conducted a series of technical studies and analyses of existing conditions along Pacific Grove's shoreline. The purpose of these studies was to provide background information that would later be used to develop the recommendations in the Shoreline Management Plan, including, perhaps most importantly, a proposed realignment of the shoreline trail between Lovers Point and Point Pinos.

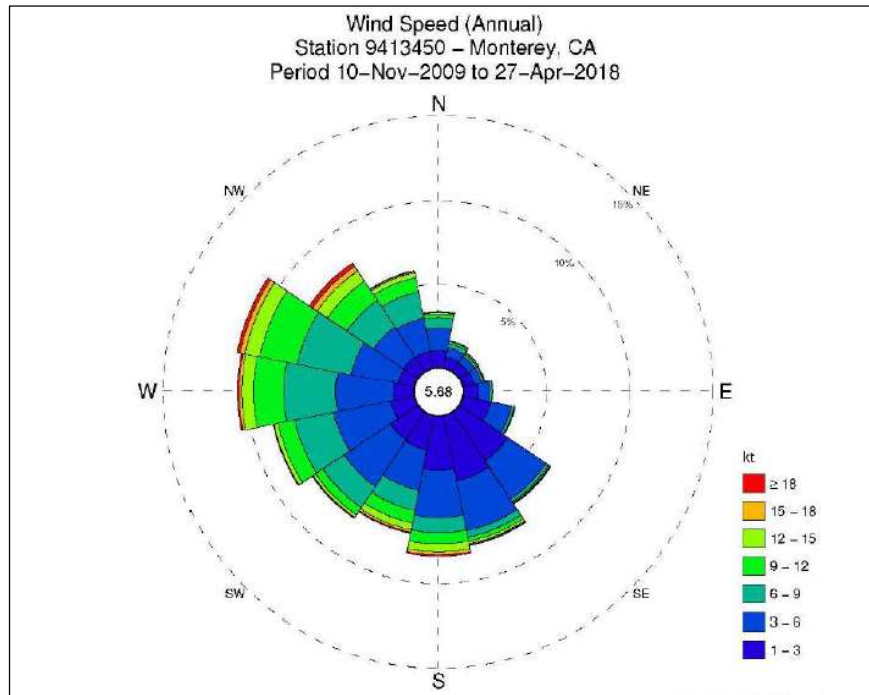
This chapter summarizes the reports prepared for the four technical studies conducted under the SMP. The reports themselves, providing much more detailed information, can be found online at the links provided later in this chapter. It should be noted that under the summaries below, **page numbers and other content references are for the technical reports, not for this document.**

Coastal processes and vulnerability

Project consultants conducted a vulnerability assessment for the Pacific Grove shoreline with respect to a variety of coastal processes that are continually reshaping the city's waterfront. The purpose of this study was to better understand these processes, evaluate the shoreline's vulnerability to them, and estimate the risk to infrastructure and public access. The vulnerability assessment can be found at http://bit.ly/PGshoreline_report1.

The key elements determining the shoreline's vulnerability are offshore water depths, which affect wave transformation, runup and overtopping; water levels, with contribution from tides, storm surges and sea level rise affecting wave heights; storm-generated waves and swells; wave parameters such as wave height and wave period; the durability of cliffs, marine terrace deposits and sand dunes; and areas and infrastructure affected by wave runup and overtopping. The first part of the report assesses these factors, more specifically bathymetric (water depth) and topographic data (see pages 3–5 of the report), tides and extreme water levels (pages 5–7), tsunami impacts (pages 7–8), sea level rise (pages 8–9),

climate cycles such as El Niño (pages 9–12), wind directions and speeds (page 13), wave sources, directions and heights (pages 14–18) and geologic factors and seismic hazards (pages 19–20).

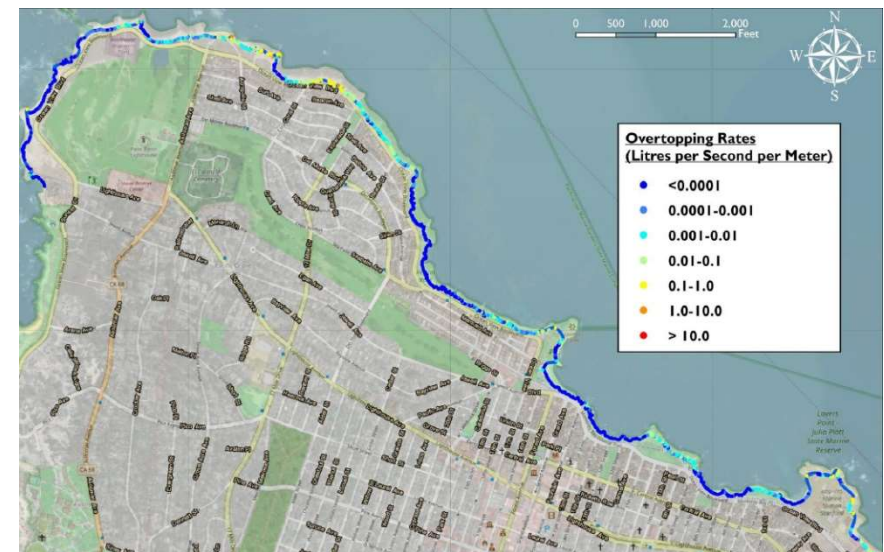


Wind rose for the NOAA meteorological station at Monterey, showing wind directions and their speeds.

The second part of the report consists of the vulnerability assessment. To estimate the vulnerability to coastal flooding at Pacific Grove, the study began by considering six 1% annual-chance scenarios combining extreme wave heights and water levels (page 22, including Table 3-1). A wave analysis was conducted to investigate wave transformation from deep water to shallow water so as to allow the calculation of extreme wave runups (pages 22–25; wave runup essentially refers to the height reached by a wave up a slope). Based on these wave runup

calculations, the study estimated the inland extent of coastal flooding and mapped the 1% annual-chance coastal flood inundation limit for the shoreline (pages 25–26, including the inundation line map in Figure 3-4).

Using the wave height and water level scenarios mentioned previously, the study also calculated wave overtopping rates for the shoreline (pages 27–28, including the map in Figure 3-6; overtopping is the flow of a wave over the top of a slope or shore-protection structure). Lastly, in order to consider sea level rise (SLR) impacts on the shoreline, the study combined projected SLR values and water level elevations to generate projected 1% annual-chance flood inundation maps for the years 2030, 2050 and 2100 (pages 29–30, including the inundation line map in Figure 3-7).



Map of wave overtopping rates along the shoreline.

Geology and soils

For this study, project consultants reviewed geologic, soils-related and some hydrologic conditions along the shoreline. Together with the fuller hydrology study referenced above, the information was used to determine coastal erosion rates and a 30-year erosion setback line. The erosion rates and setback line provide a basis for a potential future realignment of the shoreline trail to take into account geologic hazards such as coastal erosion, bluff recession, slope instability and ocean-wave runup. The report on geologic and hydrologic conditions is available at http://bit.ly/PGshoreline_report2.

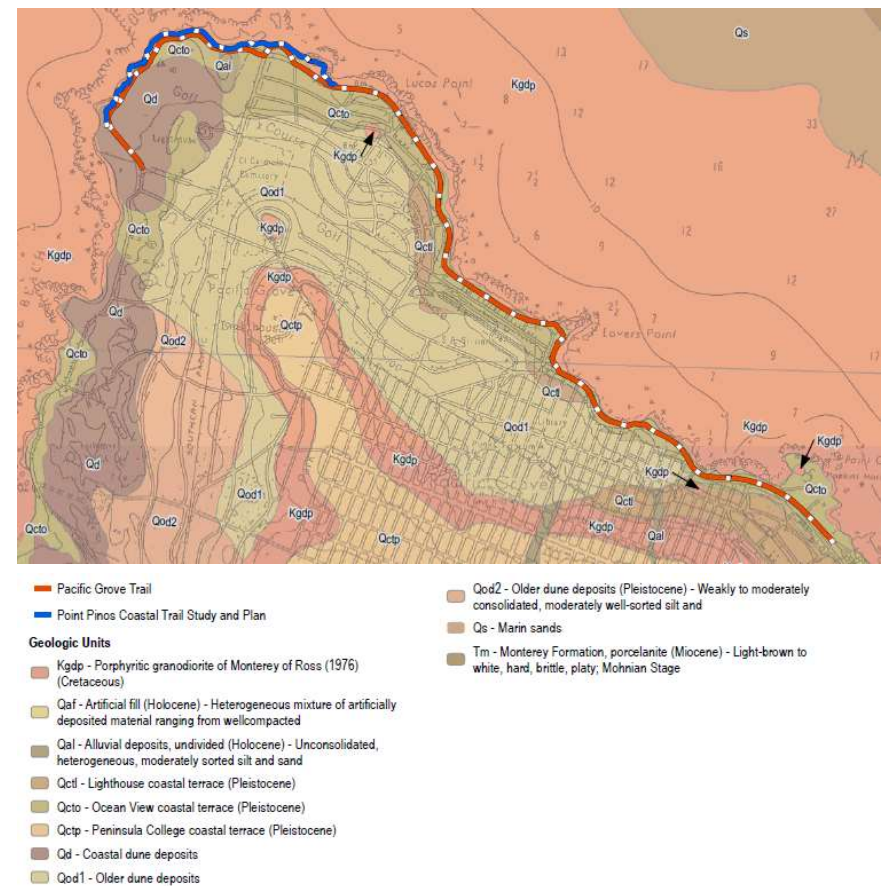
The report briefly summarizes the geologic setting and hydrologic and drainage conditions of the Monterey Bay region (page 2). This is followed by a more detailed description of the soils and geology in Pacific Grove (pages 2–3; see also Figure 2 on page 10 for a map of the geologic units, or rock and soil types, underlying the city).

A subsequent section discusses erosion of the local coastal bluffs (pages 4–5) and includes a breakdown of Pacific Grove’s shore protection structures by type and by shoreline segment (Table 1). The report also discusses erosion from drainage and wave runoff (page 5). The rate of bluff erosion is variable and depends on several factors. Based in part on rates of bluff retreat over the past 70 years (Figure 3), the study estimated future bluff recession and determined a 30-year erosion setback line for the shoreline.

Appendix A of the report (“Bluff Erosion Logs”) breaks up the shoreline into 19 segments and for each one provides a summary of site conditions observed during the consultants’ site visit, relative erosion hazard and the 30-year erosion setback (in feet), among other data.

Lastly, the report summarizes findings from two previous studies of bluff erosion along Pacific Grove’s shoreline, one from 1999 and

the other from 2016 (pages 6–7). These studies identified the extent of ongoing erosion and provided recommendations for shore protection devices to address the erosion. The 1999 study identified three shoreline segments, totaling 790 linear feet, as being in critical need of repair: the headwall at the Sea Palm Avenue parking area; the bluff immediately west of the Perkins Park stairway area; and the reach from just west of Beach Street to Esplanade Park. The 2016 study focused on three areas near Esplanade Park and another three near Sea Palm Avenue.



Map of Pacific Grove's geologic units.

Cultural resources

Consultants for the project identified significant historic and prehistoric resources along the shoreline that could be potentially affected by future project work in the area. The study relied on background research of previous studies and reports, and a field survey of the area by trained archaeologists. The archaeologists' investigations found the shoreline to be highly sensitive for archaeological resources. The confidential sections of the report, which contain information about the location of these resources, are not being made available to the public. However, the non-confidential sections of the report are available at http://bit.ly/PGshoreline_report3.

The report begins by describing the regulatory context surrounding the protection of cultural resources in general. It continues by summarizing the prehistory of the project area, including the Paleo-Indian, Millingstone, Early, Middle, Middle-Late Transition and Late periods and the area's history, including the Spanish, Mexican and American periods.

The second part of the report contains the results of a records search submitted to the Northwestern Information Center of the California Historical Resources Information System. The records search area included a 1/8-mile buffer of the coastline for previously recorded sites and a 50-meter (approximately 165 feet) buffer for previously conducted studies. The search identified 57 previously conducted cultural studies and reports of the immediate shoreline area, and 141 studies and reports of areas within the 50-meter buffer. The studies range in date from 1915 to 2017. The search also yielded 17 previously identified cultural resource sites within the project area and an additional 17 resource sites within a 1/8-mile buffer of the coastline. Most of these resources are archeological in nature, namely Late Period shell middens.



Shoreline erosion and "bioturbation" (the reworking of soils and sediments by animals or plants) documented by the consultant archaeologists at one of the resource sites.

A search of the Native American Heritage Commission (NAHC) Sacred Lands File showed that Native American traditional cultural places have been documented in the study area. The NAHC recommended that the Ohlone Costanoan Esselen Nation (OCEN) be contacted. The lead consultant for the SMP subsequently contacted an OCEN representative as part of the stakeholder interviews that were conducted for the project (see the next chapter of this report for more information about these interviews).

Biological resources

A wildlife biologist and a plant ecologist on the consultant team documented the shoreline's plant communities and wildlife resources based on a review of existing maps and reports; database records; consultation with regional biologists and interested parties; and field observations by the consultants. More specifically, the research included searches of the California Natural Diversity Database and the California Native Plant Society's Rare Plant Inventory for records of special-status species in Pacific Grove and surrounding areas. The biological resources report can be found at http://bit.ly/PGshoreline_report4.

The report inventories the nine types of plant communities found along the shoreline (see Section 3.0 for descriptions of the community types and Appendix A for maps showing their locations). Also, the document summarizes the regulatory framework governing the protection of sensitive biological resources (Sections 4.1–4.13). Lastly, the report inventoried the occurrence or potential occurrence of special-status plant species in the project area (Section 4.14) and of special-status wildlife species, including invertebrates, fish, amphibians, reptiles, birds and mammals (Section 4.15). The report noted the occurrence along the shoreline of several such plant species and of two wildlife species: black oystercatchers and harbor seals.



Map of plant communities along a stretch of the shoreline.



04 | Community vision

Early on in the planning process for the Shoreline Management Plan, the city conducted a round of community engagement to hear people’s vision for the shoreline with regard to the impacts of coastal erosion. More specifically, the city sought input on issues and locations of concern and on ideas and suggestions for managing the effects of erosion and other coastal processes. Input was gathered primarily through an online survey, a community open house, an interactive mapping tool and interviews with key project stakeholders. As a result of this outreach, the city received nearly 600 individual comments from the public and approximately 120 from stakeholder representatives.

This chapter contains a summary of these engagement activities. A full report on the public outreach—including all the comments received—is available on the project website, at http://bit.ly/PGshoreline_documents, under “Outreach on the community’s vision.” A summary fact sheet on the stakeholder interviews, listing the stakeholder organizations and summarizing the main issues and concerns expressed by the interviewees, is available http://bit.ly/PGshoreline_interviews.

Online survey

The city administered an 8-question online survey, and received 338 responses. Below are key results and findings from the survey:

- The top three reasons chosen by respondents for visiting Pacific Grove’s shoreline are: (i) for the views, to watch the sunset, watch wildlife; (ii) to stroll, jog, walk their dog; (iii) to take out-of-town visitors.
- Respondents’ top three issues of concern regarding the shoreline are: (i) coastal erosion; (ii) sea level rise, storms, wave run-up; (iii) too much traffic or speeding on Ocean View Boulevard.
- One question asked, “Are there particular spots or places along the shoreline where conditions need to be improved? Do you have any specific ideas or suggestions for improvements?” The most common concerns or needs expressed by people include:
 - Coastal erosion, especially of the trails.
 - The need to maintain the existing seawalls and to construct new ones to reinforce the shoreline, particularly in the area around Esplanade Park.

- Contrary to the previous point, the desire for a more natural shoreline, with fewer seawalls and less riprap, along with the managed retreat of infrastructure and facilities.
- Continuous and improved pedestrian trails and also bicycle facilities on Ocean View Boulevard.
- Better management and maintenance of the landscaping.
- More than 90% of respondents live in Pacific Grove, including almost two-thirds (63%) who live “along or very near” the shoreline and 28% who live elsewhere in the city. The rest live elsewhere in Monterey County (7%) or outside the county (2%).

Community open house

The city hosted a community open house on Saturday, February 2, 2019, in the early afternoon at the Pacific Grove Community Center. The open house consisted of three “modules:”

- Half-hour meet-and-greet, during which people could discuss the project with city staff and project consultants, ask questions and look at poster-size project materials.
- 15-minute slide-show presentation by the lead project consultant, with an overview of the project’s objectives, its relation to previous and concurrent shoreline planning efforts, the resources found along the shoreline, work conducted up to that point and remaining tasks.



- 45-minute group discussion of various policy trade-offs, designed as a quiz with multiple-choice questions. The exercise yielded almost 100 comments (both written and oral).

The open house materials—including the presentation slide show, policy trade-offs quiz and photos of the event—are posted on the project website, at http://bit.ly/PGshoreline_events, under “Community meeting on policy trade-offs.”

Pinnable map

The city set up an online map on which people could post location-specific comments (as well as general ones) and also read and respond to other people’s comments (see Figure 4.1). 123 comments were submitted through the map:

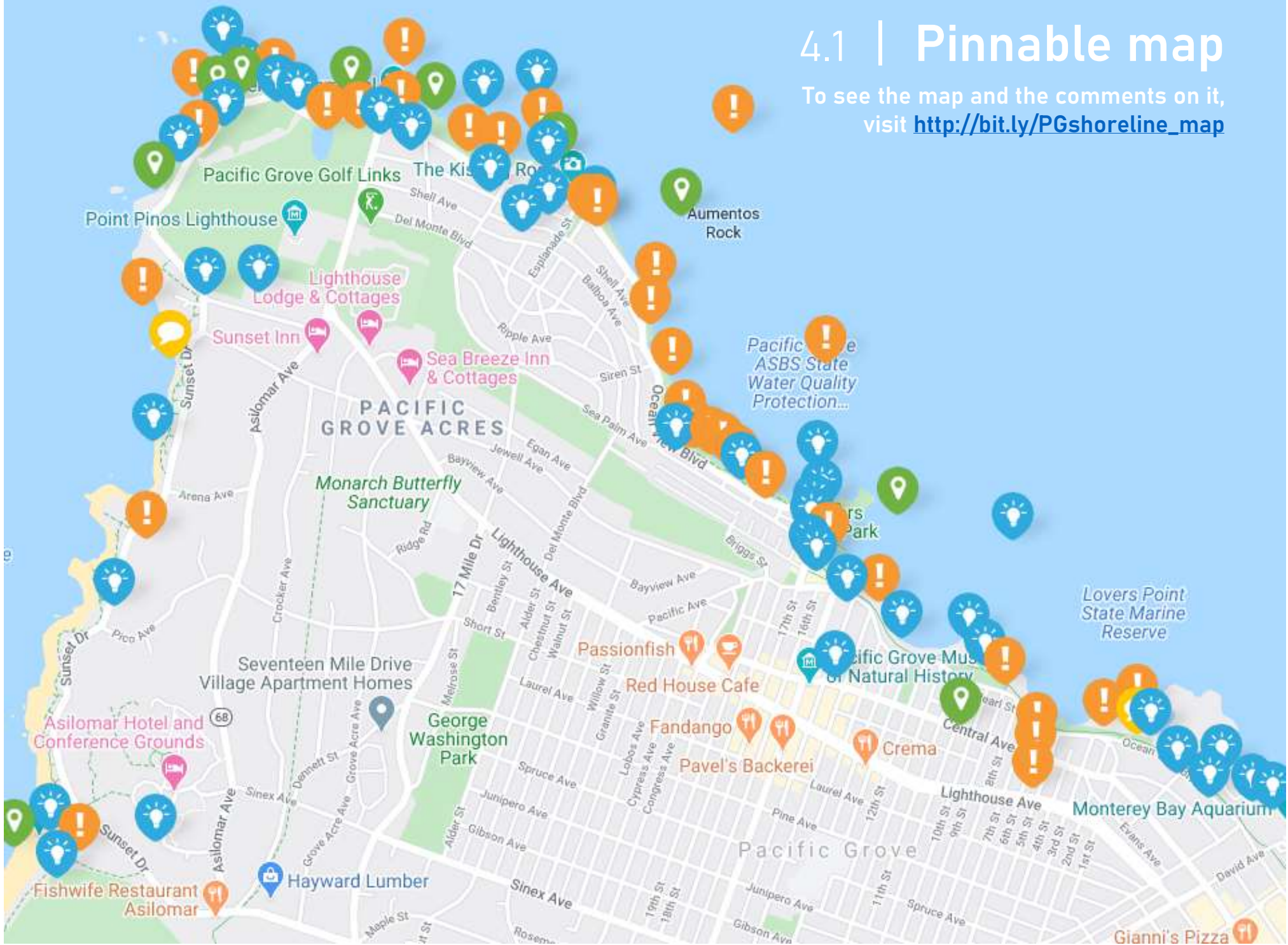
- Idea for improvement: 49 comments (shown as blue markers on the map that appears on the following page).
- Issue of concern: 48 comments (orange markers).
- “Place I visit (and why):” 24 comments (green markers).
- Other comment: 2 comments (yellow markers).

While the map has been closed for comment, the map and the comments on it may still be viewed at http://bit.ly/PGshoreline_map.

A report on the public outreach efforts—including all the comments received—is available on the project website, at http://bit.ly/PGshoreline_documents, as is a summary fact sheet on the stakeholder interviews.

4.1 | Pinnable map

To see the map and the comments on it, visit http://bit.ly/PGshoreline_map



Stakeholder interviews

The city's lead consultant conducted one-on-one interviews (primarily by phone) with representatives of agencies, groups and organizations considered stakeholders in Pacific Grove's shoreline. The representatives were asked about particular areas of interest and concerns, as well as ideas and suggestions for protecting the shoreline and its resources. The interviewees represented more than 20 organizations, including six federal, state and tribal agencies; five regional and local government agencies; eight nonprofits and community organizations; and five utility and service providers. A summary fact sheet of the stakeholder interviews is available at http://bit.ly/PGshoreline_interviews.

Publicizing the engagement opportunities

The city publicized the survey, mapping tool and community open house through various online and off-line means:

- The project website.
- Several mass emails to the project's email contact list. (Over time, the list has grown to just under 450 contacts.)
- Postcard mailer to almost 900 addresses in an area covering the shoreline and nearby streets.
- Announcements and posts on the city's website and social-media feeds and in the City Manager's weekly e-newsletter.
- Announcements by city staff at meetings of the City Council and the Beautification and Natural Resources Commission.
- Display and online advertisements in the Cedar Street Times and Monterey Herald and on their websites.



Home page of the project website showing links to the survey, online map and list of events.



Front side of the mailer postcard.



NATURAL AREA
NATURAL HAZARDS PRESENT
UNEVEN GROUND, SLIPPERY FOOTING
AND LOOSE ROCKS.
PROCEED WITH CAUTION.

05 | Draft management strategies

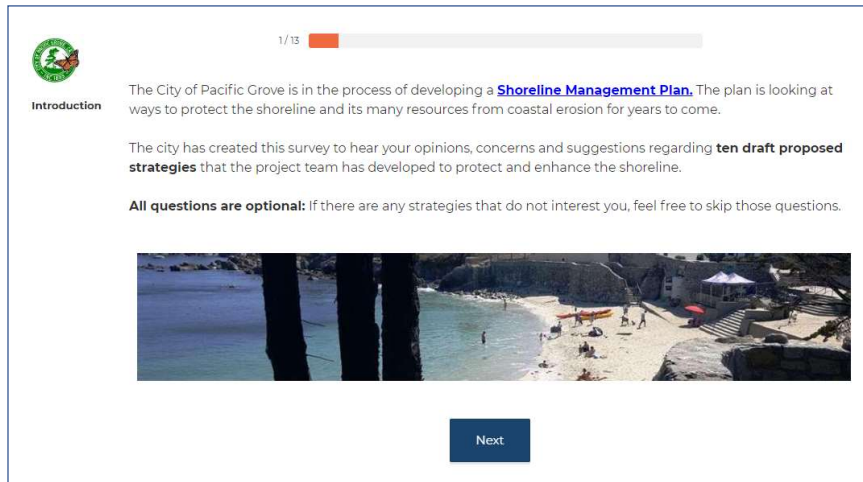
Following the community vision outreach, the consultants for the Shoreline Management Plan developed a number of draft management strategies for the shoreline. The city then conducted a second round of extensive community engagement to solicit feedback on those draft strategies.

To make it manageable for the public to provide detailed feedback, the draft strategies did not seek to address every issue and every location of concern. Instead, the strategies focused on key issues and locations identified by the public during the outreach on the community vision and by the consultants through their work on the previous tasks in the planning process. The strategies also focused on three specific sites that the consultants saw as providing particularly valuable opportunities for improving public access and related issues along the shoreline: (i) the trail across from Borg's Motel, (ii) the parking area at Ocean View Boulevard and Sea Palm Avenue and (iii) the parking area on Ocean View Boulevard just east of Beach Street.

Feedback was gathered through an online survey and a community meeting. The survey contained 23 questions and received 447 responses. The public meeting was held on Saturday, October 12, 2019, in the early afternoon at the Pacific Grove Community Center; it had approximately 40 participants. These engagement opportunities were publicized in much the same way as for the outreach on the community vision. Through the survey and public meeting, the city received more than 1,200 comments from the public.

A report on this second round of public outreach—including all the comments received—is available on the project website, at http://bit.ly/PGshoreline_documents, under “Outreach on draft proposed management strategies.” The materials from the public meeting—including the presentation slides, public comments, conceptual designs for the three opportunity sites mentioned above and photos of the event—are also posted on the project website, at http://bit.ly/PGshoreline_events, under the October 12, 2019 event.

This chapter describes the ten draft management strategies presented to the public through the online survey and summarizes the feedback received. The survey—available at http://bit.ly/PGshoreline_survey—provides the most context on the strategies, including background information and illustrative graphics. The survey is still open for viewing, though responses are no longer being recorded.



Introductory page of the online survey.

Among other things, the survey asked people to rate each strategy on a five-point scale: support strongly, support somewhat, indifferent/unsure, oppose somewhat and oppose strongly. On the following pages, the ratings results are presented next to each strategy’s description. The green thumbs up represents the combined percentage of respondents who support a strategy strongly or somewhat while the red thumbs down represents those who oppose it strongly or somewhat (the remaining percentage are those who are indifferent or unsure). As shown, all the strategies had more survey respondents in support than opposed. Nonetheless, some people—typically those opposed—

raised a number of concerns about the strategies. The main concerns and other comment themes expressed by the public for each strategy are summarized under the ratings results.

As mentioned earlier, the strategies addressed three specific “opportunity sites” along the shoreline. For these sites, the consultant team developed design concepts showing how the sites could be redesigned to better accommodate public access long-term. To see how the draft designs were revised to incorporate comments from the public, turn to Chapter 7. The draft designs themselves may be seen on the survey and in the outreach report prepared under this task.

Lastly, a number of the strategies, and also a number of comments from the public, addressed landscaping-related issues and concerns. It is worth mentioning that landscaping details for Perkins Park are being defined through the planning process for the Perkins Park Landscape Plan rather than through the Shoreline Management Plan.

A report on this second round of public outreach—including all the comments received—is available on the project website, at http://bit.ly/PGshoreline_documents. The materials from the public meeting are also posted on the project website, at http://bit.ly/PGshoreline_events. The survey is available at http://bit.ly/PGshoreline_survey.

Strategy 1: At the end of the Monterey Bay Coastal Trail

This strategy—which mirrors a proposed city project, the Lover's Point Coastal Access Project—aims to enhance the feel and function of this spot as a gathering place. The project, which began construction in January 2020, will redesign the space as a pausing place for the coastal trail, with a viewing area, seating, bike racks and native landscaping. Wayfinding signage and an improved, higher-visibility crosswalk at Forest Avenue will strengthen the connection to downtown. The existing parking lot will be redesigned to accommodate the changes with no net loss of parking spaces. (Again, for more context on the strategies, see the survey, at http://bit.ly/PGshoreline_survey.)



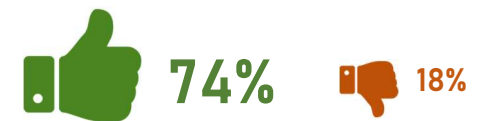
Strategy 2: Across from Borg's Motel

The stretch across from Borg's Motel, immediately west of Lovers Point, is perhaps the least inviting segment of Pacific Grove's shoreline. Public access here is highly constrained, consisting of a narrow path sandwiched between two fences. This strategy would remove approximately a dozen parking spaces on the ocean side of Ocean View Boulevard to create a wider and disabled-accessible boardwalk. Much of the area would be re-vegetated with native landscaping* while new overlooks would steer people away from the landscaped spots.

* Landscaping details for Perkins Park are being defined through the planning process for the Perkins Park Landscape Plan.



- Improve the transition from the coastal trail by adding bike lanes on Ocean View Blvd.
- Need more detailed information about the proposed improvements.
- The project is not needed; the money could be better spent elsewhere.
- Concerned about loss of parking and increased congestion.
- Ice plant/pink carpet is preferable to native landscaping here.



- Remove the overlook huts. *[These were included in the proposed conceptual design for the site.]*
- Concerned about the removal of parking spots.
- The walkway needs to be widened; consider a boardwalk design.
- Reconfigure Ocean View Boulevard to accommodate bicycle facilities.
- This could be expensive; leave the area as is.
- Explore other parking configurations to improve safety and circulation.
- Ice plant is preferable to native landscaping.*

Strategy 3: From Lovers Point to Sea Palm Avenue

This stretch of the shoreline consists of a thin band of land between Ocean View Boulevard and the water. A continuous but narrow trail extends next to the water along the entire segment. Seawalls exist from Lovers Point to west of Clyte Street and are in generally good condition. Under this strategy, the existing network of trails would be replaced with a wider path closer to Ocean View Boulevard. A limited number of parking spaces on the ocean side would be eliminated to accommodate the new path. Public access from the path to the water's edge would be provided at a few designated access points. The seawalls would be monitored, and would be maintained and repaired if they become damaged.



- The trail through here is fine.
- Preserve the trail's natural, meandering character.
- Keep the trail close to the water and away from Ocean View Blvd.
- Do not eliminate parking.
- Put in bike lanes on Ocean View Blvd.
- Do not maintain the seawalls; let the site revert to its natural state.
- Restore the pink carpet in this area.*
- Widen the trail where needed.



Strategy 4: Parking area at Sea Palm Avenue

The shoreline at Sea Palm Avenue is a significant transition point. Currently, the area consists of a paved parking lot that is underutilized much of the time, and there is a gap in the shoreline trail. This strategy would replace the parking lot with a landscaped area*. The design would include a wide, continuous trail connecting to existing segments to the north and south. A new crosswalk and sidewalk bulbout (an extension of the sidewalk at the corner) would make it easier for residents of the neighborhood to cross the street. To replace the lost parking, new on-street parking spaces would be created on the ocean side of Ocean View Boulevard.



- Preserve the parking lot for kayakers, scuba divers and people with disabilities.
- The area is fine as it is.
- A crosswalk is needed across Ocean View Blvd.
- Retain the parking lot while reconfiguring it to accommodate a trail connection.
- Street parking on the curve would be dangerous.
- Seawalls are expensive and detract from the area's qualities.
- Bulbouts are dangerous for both drivers and cyclists.

Strategy 5: From Sea Palm Avenue to Beach Street

After Sea Palm Avenue, the shoreline widens but also experiences more coastal erosion. This segment encompasses a large portion of Perkins Park, one of the most popular and iconic stretches of the city's shoreline. The park incorporates a continuous, narrow trail along the water's edge. There are short segments of seawall around Sea Palm Avenue and Balboa Avenue and a longer stretch east of Beach Street. In order to protect Perkins Park as well as Ocean View Boulevard, the strategy for this segment would be to maintain the seawalls and build additional short segments as necessary, particularly around Sea Palm Avenue. The existing network of trails would be replaced with a wider path closer to Ocean View Boulevard. A small number of parking spaces on the ocean side would be eliminated to accommodate the new path. A few designated access points would provide public access from the path to the water's edge.



- Keep the trail close to the water and away from Ocean View Blvd.
- Do not eliminate parking.
- Maintain the seawalls and expand them to preserve public access.
- Do not maintain or expand the seawalls; let nature take its course.
- Leave the site as is.
- Restore the pink carpet.*
- The trail's natural, meandering character is part of the area's charm and beauty.

Strategy 6: Parking area just east of Beach Street

Ocean View Boulevard just east of Beach Street provides spectacular views of the shoreline and ocean. The site itself, however, is less than scenic, with a paved parking lot and barren dirt areas. Pedestrians must navigate around traffic and get past the parked cars to reach the overlook. The strategy for this area would replace the parking lot with native landscaping. A new, wide trail would connect with existing segment to the east and west. A disabled-accessible boardwalk with lookout points would meander through the site. The lost parking spaces would be replaced with new on-street parking on the ocean side of Ocean View Boulevard.

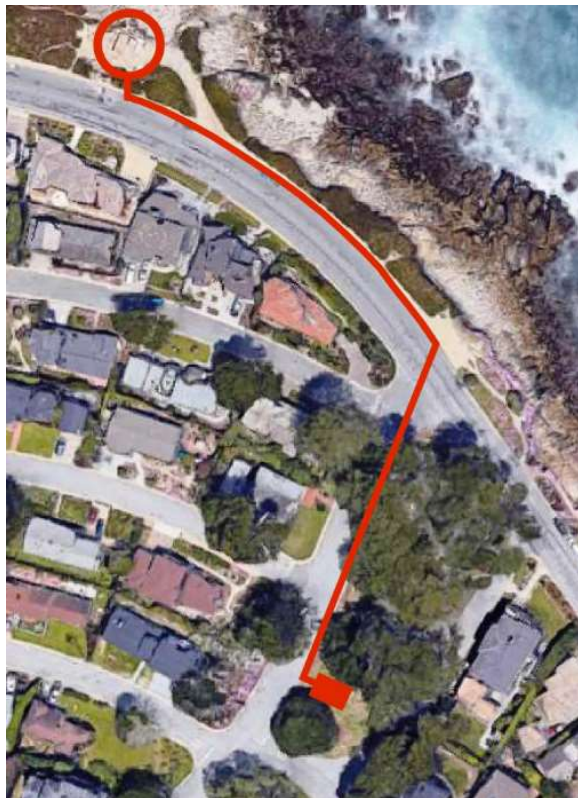


- The parking lot should be improved, not removed.
- On-street parking would be dangerous for drivers and cyclists.
- Fishermen need the parking and access to the seawall.
- Replacing parking with landscaping would improve the site.
- Do not put up fencing.
- Add ice plant here rather than native plants.*
- Vehicles make the area difficult to walk through.
- Leave the area as is.



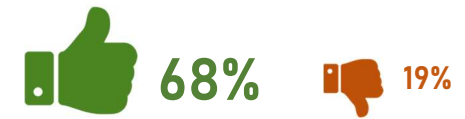
Strategy 7: From Beach Street to Coral Street

This stretch of shoreline consists of a thin band of land--which keeps getting thinner due to high coastal erosion, particularly around Esplanade Park. Just east of Esplanade East, the otherwise continuous shoreline trail essentially disappears for a stretch, forcing pedestrians onto a thin strip of dirt right next to Ocean View Boulevard. Seawalls exist around Coral Street. To protect public access, Ocean View Boulevard and the sewage pump station east of Coral Street, the strategy for this segment would be to maintain the seawalls and riprap, and to build additional short segments, particularly around Esplanade Park. The existing trail would be replaced with a wider path next to Ocean View Boulevard, with access points to the water's edge. To accommodate the new path, parking on both sides of the boulevard would be removed around Esplanade Park.



Strategy 8: Sewage pump station near Coral Street

Along the shoreline between Coral Street and Esplanade Street is underground equipment that pumps sewage from Pacific Grove to the regional sewage treatment plant. In recent years, flooding has knocked out the equipment's power, which could cause raw sewage spills into the bay. This strategy would relocate the electrical components to Esplanade Park, at a site that is further from the ocean and at a higher elevation. Pumps and motors would remain at the existing site, underground. They would be operated remotely from the new site by way of a buried cable duct along Ocean View Boulevard.



- Do not eliminate on-street parking.
- Riprap is ugly and ineffective.
- Retain and maintain the seawalls.
- Keep the trail close to the water and away from traffic.
- A wider trail is needed along this stretch.
- Move the trail closer to the road to protect it from erosion.
- No new seawalls.
- Keep and enhance the ice plan/pink carpet.*



- The facility is an eyesore and is at risk from storm waves.
- Do not relocate the equipment to Esplanade Park.
- Preventing sewage spills is a top priority.
- Relocate the entire facility inland, not just the electrical components.
- Need more information about how the new structure would look.
- Restore the current site.
- Reduce the sewage smell.
- Communicate with the neighborhood about any proposed plans.

Strategy 9: Ocean View Boulevard from Lovers Point to Point Pinos

The popular pedestrian and bicycle coastal trail that connects Monterey to Pacific Grove ends at Lovers Point. West of the point, cyclists are expected to use Ocean View Boulevard. However, the street is too narrow to accommodate bike lanes, and there is speeding. For pedestrians, it can be challenging to cross the street in order to reach the shoreline. This strategy aims to slow down traffic on Ocean View Boulevard in order to make it safer and easier for pedestrians to cross and for bicyclists to navigate. Under this strategy, traffic-calming features would be installed at strategic points along the street and “sharrows” would be stenciled on the pavement. (Sharrows designate traffic lanes meant to be shared by drivers and cyclists.) Traffic-calming features would include things like sidewalk bulbouts (extensions of the sidewalk at the corner to shorten the crossing distances); crosswalks with special colors, materials or patterns; and raised crosswalks or intersections (which enable pedestrians to cross at the same level as the sidewalk).

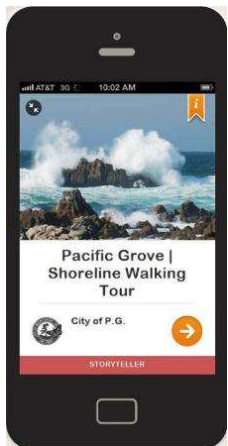


- Do not install bulbouts; they are an obstruction for both drivers and cyclists.
- Lower the speed limit, or enforce the existing limit.
- Uncertainty over the effectiveness and aesthetics of sharrows.
- Consider making Ocean View Boulevard one way and installing bike lanes or a bike path in the freed-up space.
- Do not use road markings, painting, stencils or signage that are out of character with the area.
- Install additional crosswalks.



While most people support the idea, the main concerns that were expressed include:

- The project will attract even more visitors to the area.
- People should be looking at (and enjoying) their surroundings, not at their phone screen.
- The cost of such a project.



Strategy 10: Online walking tour of the shoreline

This strategy would develop an online walking tour of the shoreline (see sample image at left). The tour would take users to a number of stops along the shore and narrate stories of environmental, cultural and historical interest. The stories would consist of text and also images, audio and video, as appropriate.

A continuous shoreline trail

The primary purpose of the Shoreline Management Plan is to identify a long-term alignment for a continuous trail that would provide for safe and environmentally responsible enjoyment of the Pacific Grove coastline. For one thing, as mentioned in Chapter 1, providing continuous shoreline trail access was the main reason why the California Coastal Commission required the city to prepare this SMP. At the same time, themes around improving the extent and quality of public access along the shoreline, and protecting it from coastal erosion, were the top needs and concerns identified by the Pacific Grove community through the extensive public outreach conducted as part of the SMP.

For purposes of the SMP, shoreline trail access in Pacific Grove can be broken up into three broad stretches, involving clearly distinct conditions and experiences; coincidentally, each stretch extends for approximately one mile. These stretches, listed from east to west, are covered in the next three chapters:

- **Chapter 6** discusses the multi-use trail that already exists between Monterey and Lovers Point. This segment is commonly referred to as the Monterey Bay Coastal Trail.
- **Chapter 7** proposes a strategy to provide a continuous trail between Lovers Point and Point Pinos.
- **Chapter 8** incorporates recommendations for Point Pinos that were made in the Point Pinos Coastal Trail Study and Plan, a separate planning effort concluded in 2017.



Welcome to the
 Monterey Bay Coastal Trail
 Pacific Grove Section



Rules And Safety Guidelines

Bicyclists reduce speed
 and call out when passing.

Excessive speed and
 reckless trail use
 are prohibited.

Be prepared to
 share the space.

BE SAFE • BE COURTEOUS • ENJOY





THANK YOU FOR YOUR COOPERATION

Please report damage or safety hazards to the Public Works Department
 4081 Ave. 200, or the Police Department at 425-444-1100.

KEEP



TSUNAMI HAZARD ZONE



**IN CASE OF EARTHQUAKE GO
 TO HIGH GROUND OR INLAND**

06 | A continuous shoreline trail

Part I: Monterey to Lovers Point

The Monterey Bay Coastal Trail is one of the most popular amenities along Pacific Grove's shoreline. It connects Monterey and communities east to Pacific Grove, where it ends at Lovers Point. From the city limit with Monterey to Berwick Park, the facility consists of a two-way paved bike path and an adjacent unpaved walking and jogging trail. In Berwick Park, the pedestrian trail splits into two, with a narrower segment continuing next to the path and a wider segment running closer to the coastline. The path and trail rejoin near the foot of 12th Street.

From 12th Street, the *bike path* continues as is to Ocean View Boulevard at the foot of 17th Street. The *pedestrian trail* continues unpaved until approximately the foot of 15th Street. From there to Forest Avenue—a three-block stretch—it turns into a paved path separated from the bike path by a painted stripe. From Forest Avenue to Ocean View Boulevard, its surface changes again, this time to interlocking pavers.



The Monterey Bay Coastal Trail near Grand Avenue.

Throughout its length, the bike path is generally 10 feet wide (5 feet in each direction). The width of the pedestrian trail is much more variable, though it is generally a very comfortable 8–12 feet

wide. Around the foot of 12th Street, the trail narrows to 5–6 feet for a length of approximately 140 feet west of where the dual walking trails through Berwick Park merge, across from the historical mural. The trail again narrows around 15th Street (where it becomes paved) to about 4 feet for a distance of almost 150 feet.

The coastal trail can be accessed from Ocean View Boulevard either directly or along ramps, lateral trails or stairs at approximately a dozen locations, including at Eardley Avenue; at the entrance to Hopkins Marine Station; around 1st/2nd, 3rd, 5th, 7th, 9th and 13th Streets; between 15th Street and Fountain Avenue; around Forest Avenue; and in the parking lot at the foot of 16th/17th Streets.

As of this writing, the city was in the process of redesigning the end of the coastal trail at Lovers Point. The aim is to enhance the feel and function of this spot as a gathering place. It will be redesigned as a pausing place for the coastal trail, with a viewing area, seating, bike racks and native landscaping. The existing parking lot is being redesigned to accommodate the changes with no net loss of parking spaces. Wayfinding signage and a higher-visibility crosswalk at Forest Avenue will help direct visitors to downtown. This is essentially the project described under Strategy 1 in Chapter 5, “Draft Management Strategies.”

Needs and concerns

Pacific Grove’s section of the Monterey Bay Coastal Trail is a superior facility and a very popular and much-loved amenity. It accommodates both cyclists and pedestrians safely and, unlike existing or proposed trails west of Lovers Point, the Monterey Bay Coastal Trail for the most part sits a comfortable distance back from the coastal bluff and experiences no or only minor, localized erosion nearby. That said, the facility does have a few shortcomings, some of which present opportunities for improvement. Based on input from the public and on observations by the project consultants and city staff, the three main concerns regarding the coastal trail are:

- User conflicts, especially distracted pedestrians ambling along the bike path.
- Challenging conditions for some people in crossing Ocean View Boulevard to access the trail.
- Narrowing of the walking and jogging trail around the foot of 12th Street and again around the foot of 15th Street.



Narrowing of the walking/jogging trail near the foot of 12th Street.

Recommendations

To address the concerns listed, the SMP recommends the following actions:

- The path currently has stencils with the message “Bike path only.” However, these stencils are not effective: they are faded, they occur infrequently and the message is not as clear as it could be. They should be replaced by stencils, and also signs, that show pedestrians’ and cyclists’ rights-of-way in a clearer, graphical format, similar to the image shown at right. The stencils and signs should be placed more frequently, including at all entrances to the trail from Ocean View Boulevard. Stencils should be repainted often or should be made of a more durable and non-slip thermoplastic material, similar to what is used for roadway markings.
- User conflicts could also be reduced by more clearly differentiating the bike path from the walking trail. Where the walking trail is unpaved, and where room allows, a flush edge or border could be installed between the two using, for example, railroad ties laid end to end. Where the trail is paved, the surface should be painted a different color.
- To make it easier, safer and more inviting for pedestrians to access the trail from the south side of Ocean View Boulevard (the eastbound direction), intersections could be redesigned with bulb-outs, raised crossings and specially colored, patterned or textured crosswalks. These features would give drivers visual cues to expect pedestrians and slow down. (Bulb-outs are extensions of the sidewalk or curb into the parking or travel lane. When designing them, care should be taken that



they not extend past the parking lane, so that they do not become a hazard for cyclists and drivers.) These measures should be considered for all intersections where pedestrians can access the trail, and especially for the larger intersections at 1st/2nd, 9th, 15th and 17th Streets.



*Crosswalk with the look of interlocking brick pavers.
(Image credit: alternative-paving.com.)*



*Bulb-outs must be designed so as not to squeeze out cyclists.
(Image credit: olympiawa.gov.)*

- Widen the walking trail around the foot of 12th Street to at least 8 feet for a length of approximately 100 feet west of where the dual walking trails through Berwick Park merge, across from the historical mural. The trail here could be widened onto the bluff top without much difficulty.

Also widen the trail around 15th Street., widening the trail would require re-grading the inland side so that the bike path could be shifted landward to make room. This would be a more complex and costly project.

- Lastly, install split-rail fencing in Berwick Park where necessary to discourage people from walking across the park and through bushes to reach the trail.



07 | A continuous shoreline trail

Part II: Lovers Point to Point Pinos

The stretch of shoreline from Lovers Point to Point Pinos already provides generally continuous trail access. However, this access is of highly variable quality and in certain places it is not satisfactory. At various points, the main trail (meaning the continuous trail that runs parallel to the coastline) narrows to as little as two feet, is not accessible to people with impaired mobility or runs immediately next to Ocean View Boulevard, with no buffer from the road. More importantly, trail access is not guaranteed in the long term: parts of the trail are already eroding into the ocean and other portions lie within the area that is expected to erode away within the next 30 years.

This section outlines a proposed long-term alignment of the shoreline trail from Lovers Point to Point Pinos. The main objectives in formulating the alignment were to locate the trail close to the water, away from Ocean View Boulevard and outside the 30-year erosion zone while avoiding sensitive areas. It is

intended that the main trail (meaning the continuous trail parallel to the coastline) generally be 5 feet wide, surfaced in decomposed granite and for use by pedestrians only. A sidebar later in this chapter summarizes the trail development projects outlined here that will be needed to provide continuous high-quality trail access along the shoreline through this segment.

The trail alignment is shown across four maps over the next few pages (see Figure 7.1 for an overview map). The maps cover the following sub-segments, roughly:

- II.1, Lovers Point to Sea Palm Avenue (Figure 7.2)
- II.2, Sea Palm Avenue to Balboa Avenue (Figure 7.7)
- II.3, Balboa Avenue to Esplanade Park (Figure 7.10)
- II.4, Esplanade Park to Point Pinos (Figure 7.13)

7.1 | Proposed trail alignment

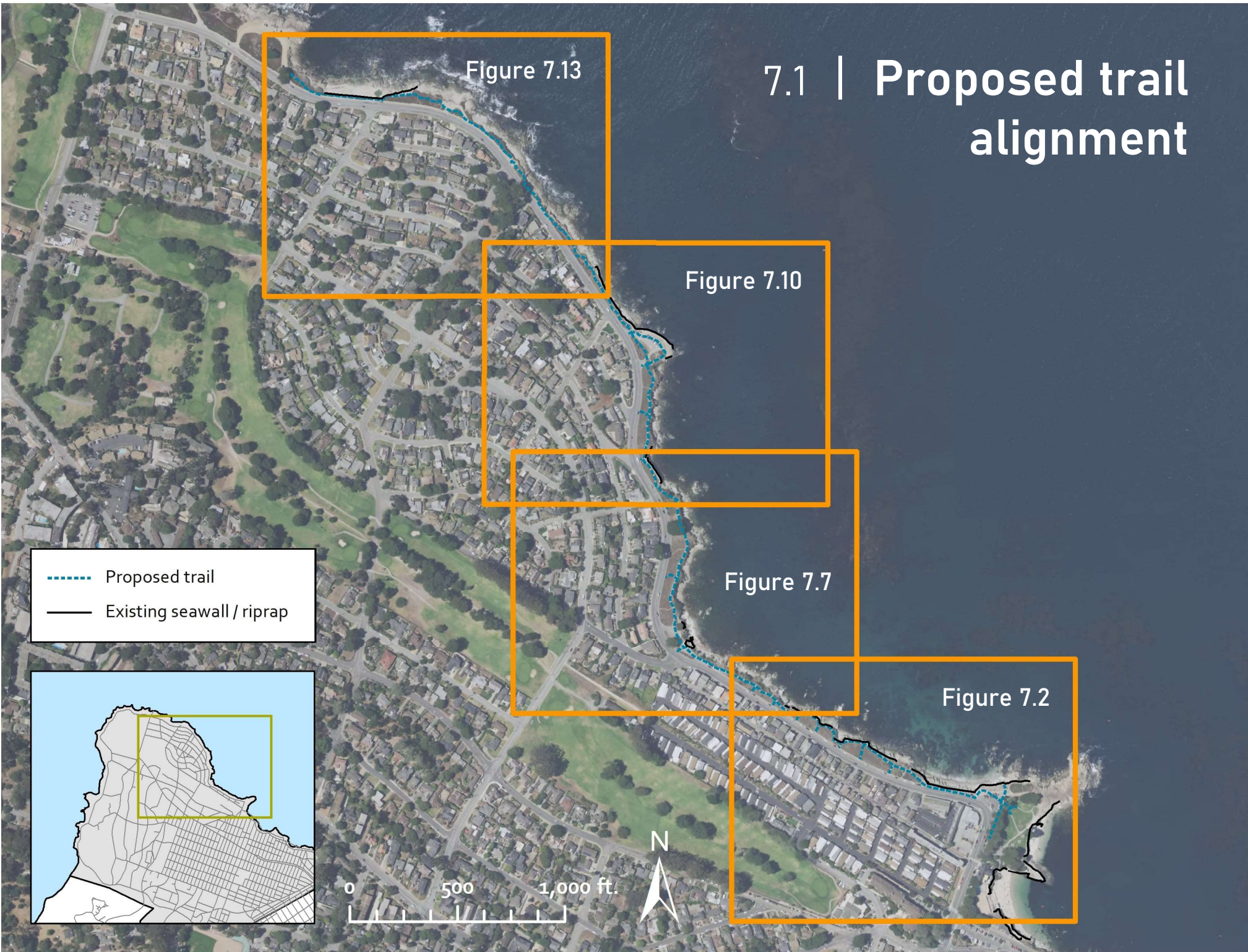


Figure 7.13

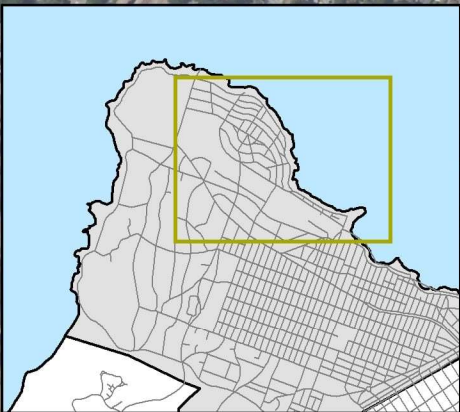
Figure 7.10

Figure 7.7

Figure 7.2

- Proposed trail
- Existing seawall / riprap

0 500 1,000 ft.



Trail development projects

This sidebar lists the trail development projects, from east to west, that will be needed to provide continuous high-quality trail access along the shoreline between Lovers Point and Point Pinos:

- Redesign the trail across from Borg's Motel.
- Realign the trail along the Naiad and Clyte Street seawalls.
- Redesign the Sea Palm Avenue parking lot site to provide a trail connection through the area.
- Redesign the parking lot at Otter Point to provide a trail connection through the area.
- Convert into a trail the ocean-side parking lane between 1045 and 1119 Ocean View Boulevard and between Coral Street and halfway to Acropolis Street.
- Construct a formal 5-foot-wide bluff-top trail between 1119 Ocean View Boulevard and the beach wall

Sub-segment II.1: Lovers Point to Sea Palm Avenue

Figure 7.2 shows the trail alignment from Lovers Point Park to just east of Sea Palm Avenue. Also shown on the map is the 30-year erosion setback line, which is the expected extent of erosion along the shoreline by the year 2047 (based on historical rates of erosion and accounting for expected sea level rise). Through most of this stretch, the shoreline is armored and erosion rates are relatively low. As a result, the existing trail through this stretch is already inside the 30-year erosion zone, so it generally does not need to be realigned.

However, the trail along the Naiad and Clyte Street seawalls has the tendency to flood, since water pools behind the walls as the ground is compacted. The trail here should be pulled back to slightly higher ground, while providing short spurs to the water.



The shoreline trail near Clyte Street. (Image credit: Lisa Ciani.)

The main change proposed for this segment is the redesign of the trail across from Borg's Motel, immediately west of Lovers Point Park. This is arguably the least inviting segment of Pacific Grove's shoreline. Public trail access here is highly constrained, consisting of a narrow walkway sandwiched between two fences. Figure 7.3 is an aerial view of the existing site while Figure 7.4 shows the conceptual redesign of the site.

Under the design, the parking next to the existing trail is eliminated and the trail is replaced with a wider, accessible boardwalk with overlooks, fenced only on the ocean side for a more open feel. Figure 7.5 shows the existing cross section of Ocean View Boulevard and the trail across from Borg's Motel while Figure 7.6 is the cross section under the proposed redesign. Also, the existing beach access at the east end is preserved and

part of the large overlook to the right of the trail is revegetated while maintaining two overlook areas. Also, it is important that the final design of the boardwalk, and of the fence more specifically, preserve the existing views.



The trail across from Borg's Motel.

The proposed redesign is based on Strategy 2 in Chapter 5, “Draft Management Strategies.” Feedback was sought from the public on the draft strategies through an online survey and a community meeting. Based on feedback received from the public, the original design under Strategy 2 has been simplified to focus on widening the trail. The new design leaves the adjacent parking lot and the land-side parking lane of Ocean View Boulevard in their current configuration in order to reduce the number of parking spaces that would be eliminated.

The immediate area includes approximately 58 public parking spaces:

- **Off-street:** 15 spaces in the parking lot immediately to the east of the trail to be widened.

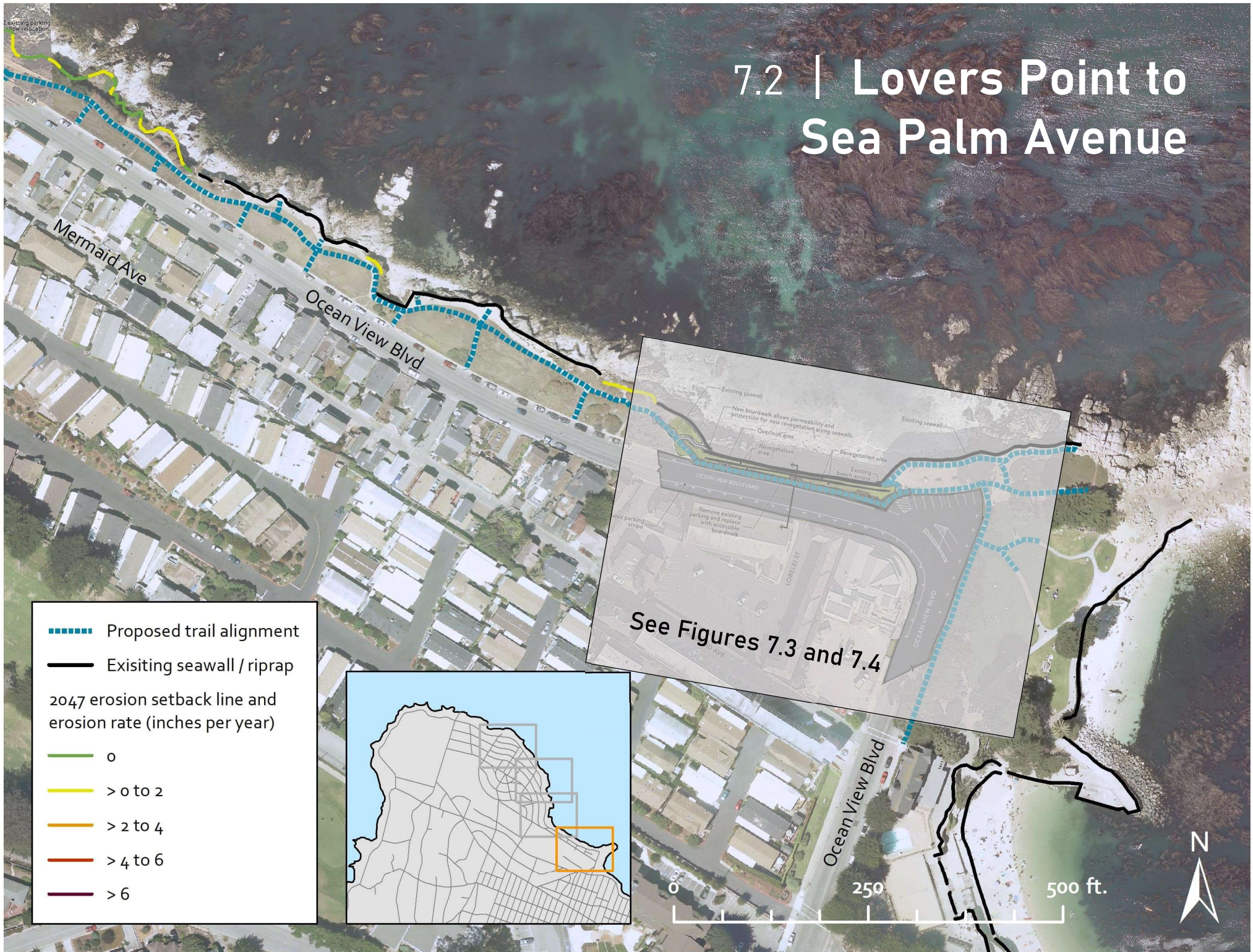
- **On-street:**
 - 17 spaces on the north (ocean) side of Ocean View Boulevard west of the parking lot.
 - 14 spaces on the south (land) side of Ocean View Boulevard west of the parking lot.
 - 6 spaces on the west side of Ocean View Boulevard east of the parking lot.
 - 6 spaces on the east side of Ocean View Boulevard east of the parking lot.

This proposal would result in the removal of 12 of these spaces. These are on-street spaces on the ocean side of Ocean View Boulevard, adjacent to the existing trail; three of the spaces are configured diagonally while nine are parallel. The proposed removal of the spaces may be justified on several grounds:

- The purpose of removing the parking spaces is to improve public trail access, including to make the trail accessible for people with disabilities.
- Currently, this stretch is the least inviting segment of Pacific Grove’s shoreline.
- Given the layout of the street, removing on-street parking spaces is the only feasible way to widen the trail.
- A large majority of the public parking spaces in the immediate area will remain.

It should be noted that while redesigning the trail as a wider, more open boardwalk by replacing ocean-side parking spaces is a firm recommendation, Figures 7.4 and 7.6 present only a conceptual design. If the project moves forward, the public and other stakeholders will have further opportunities to shape and refine the details of the design as more detailed plans and drawings are prepared. At that time, the city will attempt to mitigate the loss of oceanside parking where feasible.

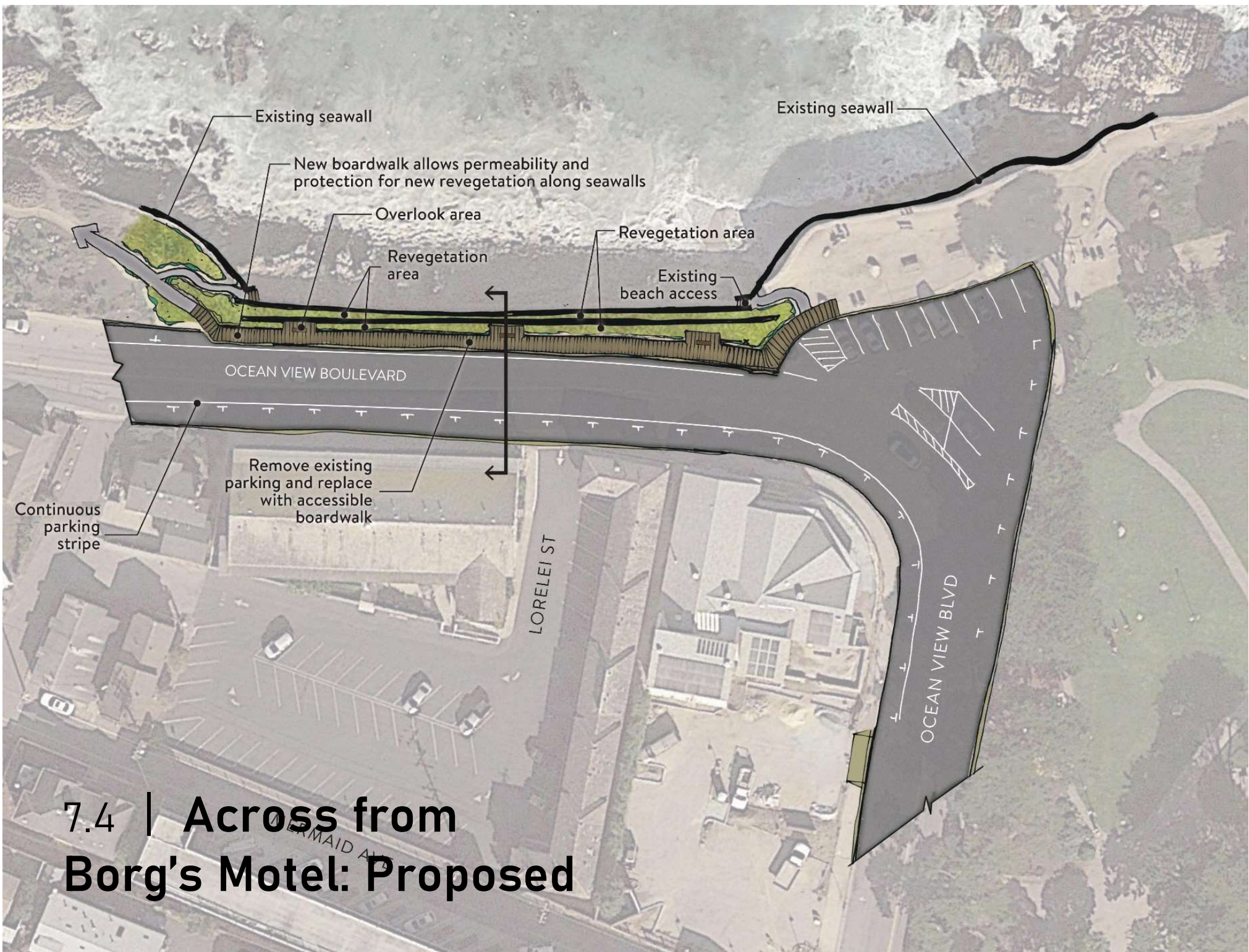
7.2 | Lovers Point to Sea Palm Avenue





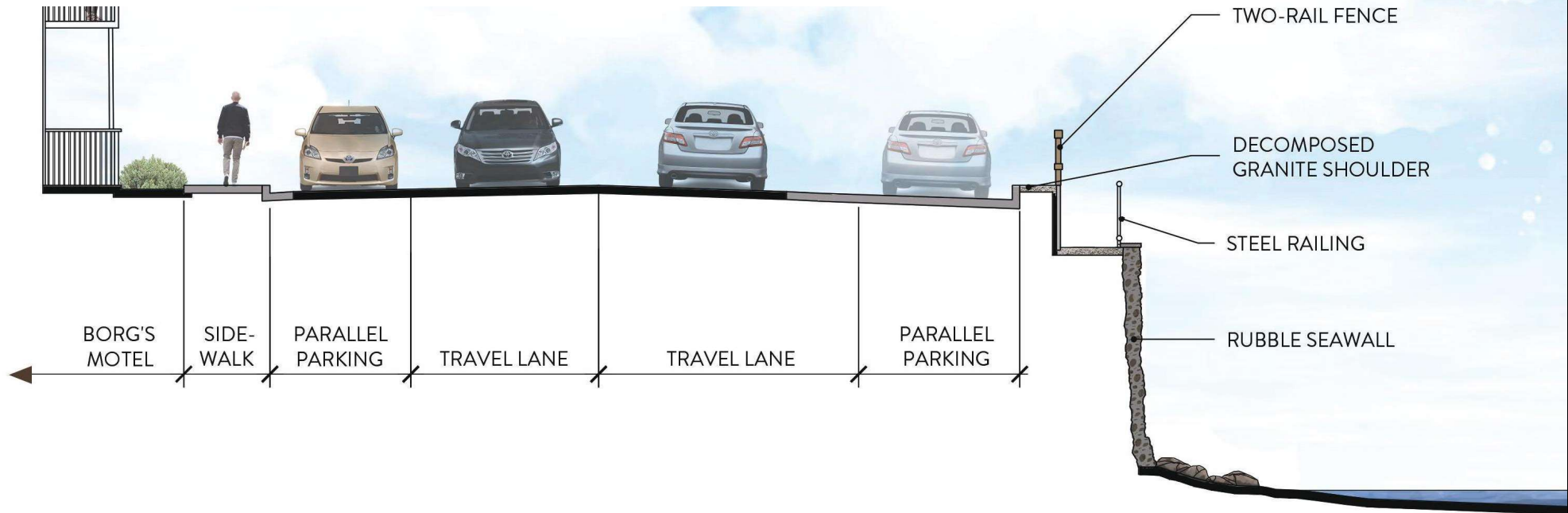
Trail across from Borg's Motel

7.3 | Across from
Borg's Motel: Existing

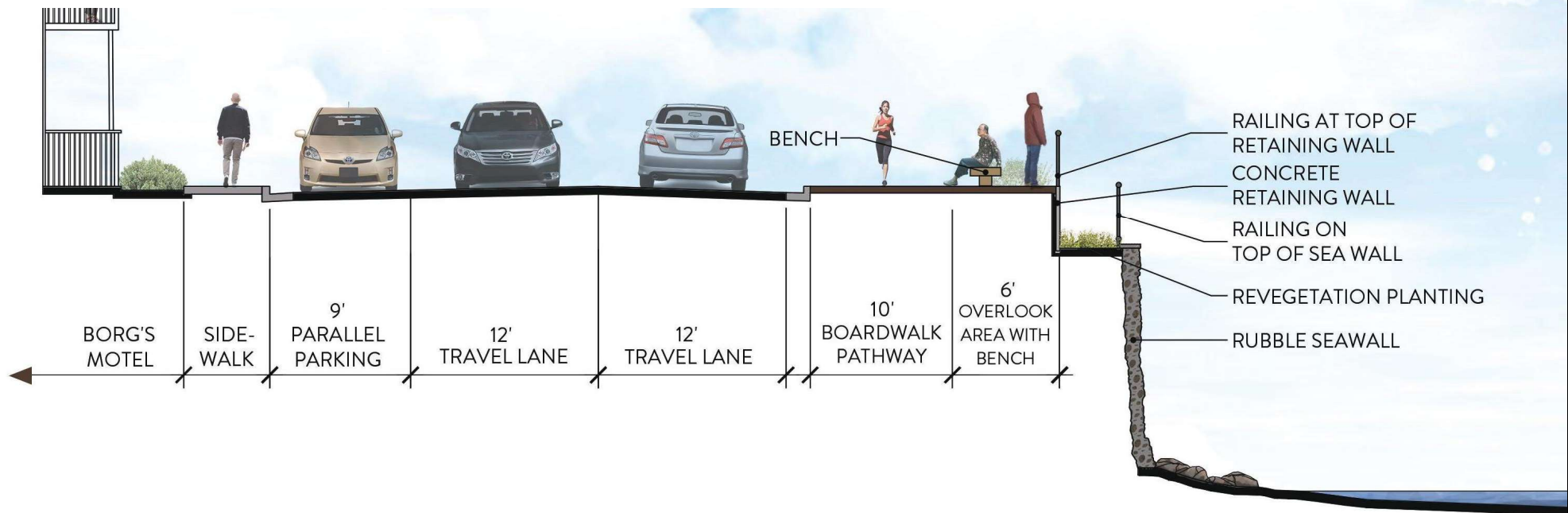


7.4 | Across from Borg's Motel: Proposed

7.5 | Trail across from Borg's Motel: Existing



7.6 | Trail across from Borg's Motel: Proposed



Sub-segment II.2: Sea Palm Avenue to Balboa Avenue

Figure 7.7, on the next page, shows the trail alignment from east of Sea Palm Avenue to Balboa Avenue. The trail through this stretch is generally already inside the 30-year erosion zone. Across the street from 747–755 Ocean View Boulevard (circled in blue in Figure 7.7) and again at 807–809 (circled in blue in Figure 7.8), the trail has been undermined due to bluff erosion. At these two locations, there is enough room to relocate the trail inland by several feet.



The parking lot at Sea Palm Avenue. (Image credit: Google Street View.)

The main change proposed for this segment is the redesign of the parking area at Sea Palm Avenue. (The proposed redesign is based on Strategy 4 in Chapter 5, “Draft Management Strategies.”) The lot creates a gap in the shoreline trail and the pavement occupies a large footprint for just seven formal parking spaces. Perhaps more importantly, the bluff immediately south/east of the beach access stairs, at the southern end of the lot, has receded

landward (see area circled in orange on Figure 7.8). The trail now sits immediately next to the bluff edge and is at high risk of being undermined.

Figure 7.8 is an aerial view of the existing site while Figure 7.9 shows the conceptual redesign of the site. Under the design, the parking lot is eliminated and the site is revegetated to a more natural state. The design includes a continuous decomposed-granite pedestrian trail parallel to Ocean View Boulevard, connecting to existing trail segments to the north and south. It is important that the final design include access points for kayakers, surfers and other recreational users to unload equipment safely from their vehicles.

At the southern end of the site, across from 811–821 Ocean View Boulevard, the trail is highly constrained, squeezed between parked cars and an ocean-side fence. Here, an additional three parking spaces are removed in order to widen the trail, which would also allow the fence to be removed. The existing stairway to the beach is preserved. A new crosswalk and sidewalk bulb-outs (extensions of the sidewalk at the corner) would reduce speeding and make it easier for residents of the neighborhood to cross the street to access the shoreline.

As mentioned above, the parking lot contains seven parking spaces (including one accessible space). In addition, there is on-street parking along both sides of Ocean View Boulevard in front of the parking lot and on either side of it, including at least four dozen spaces within easy walking distance. The proposal would remove the seven parking spaces inside the lot and an additional three on-street parking spaces where the bluff edge is receding, just past the southern end of the lot. At the same time, the proposed redesign would gain street frontage by eliminating the entrance and exit to the parking lot; this would allow for the

creation of approximately four new on-street parking spaces. The net proposed loss would therefore be only six spaces.

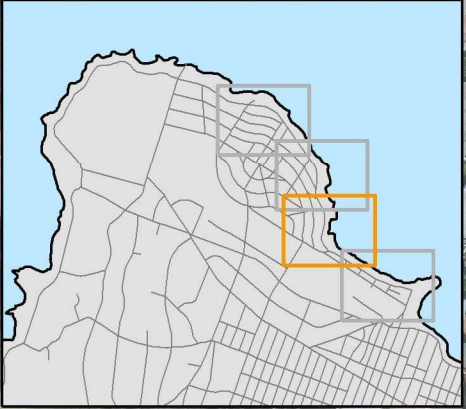
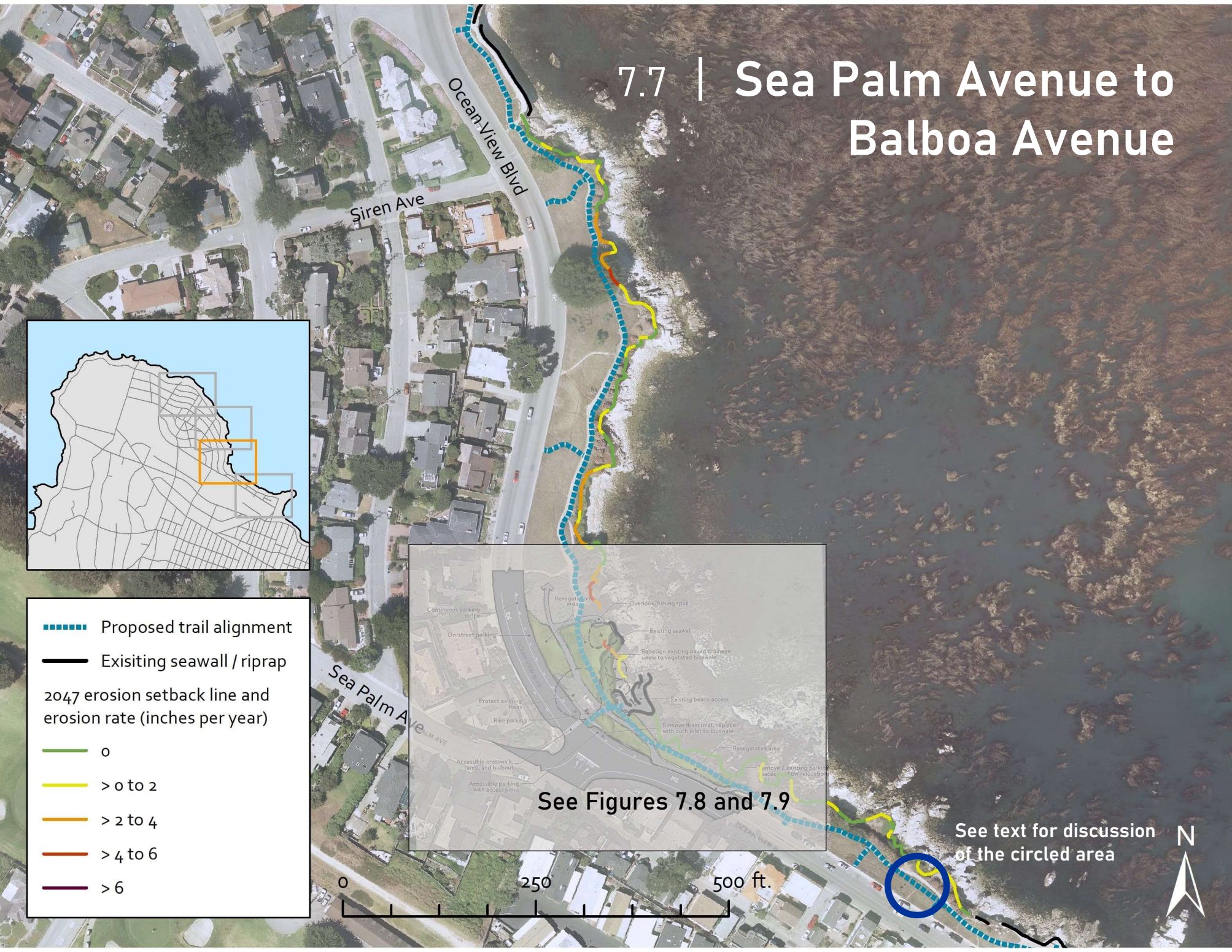
The proposal for the parking lot has three purposes that support public access at this pivotal location: (i) create a continuous trail connection; (ii) protect, preserve and improve public access where the bluff is receding; and (iii) beautify the area. The proposed redesign of the parking lot area includes several components meant to mitigate the loss of any parking spaces and maximize trail access and other public access opportunities:

- Currently, relatively few people park on the ocean side of Ocean View Boulevard at this location because the parking lane is narrow, unmarked and follows a curve. The proposed redesign would encourage greater use of the on-street parking spaces in front of the parking lot—effectively increasing their number—by slightly widening the parking lane into the site and by formalizing the parking spaces with street markings.
- The redesign is intended to include two accessible parking spaces; bike parking; access points for kayakers, surfers and other recreational users to unload equipment from their vehicles; and lookout points and fishing spots on the bluff terrace.
- The existing stairway to the beach at the foot of Sea Palm Avenue would be preserved.
- A new crosswalk and sidewalk bulbouts would reduce speeding and make it easier for residents of the neighborhood to cross the street to access the shoreline.

Lastly, it is important to note that while converting the parking lot into a coastal viewing area is a firm recommendation of the Shoreline Management Plan, the redesign shown and described in the plan is only a conceptual design at this point. If the project moves forward, the public and other stakeholders will have further opportunities to shape and refine the details of the design

as more detailed plans and drawings are prepared. At that time, the city will attempt to mitigate the loss of oceanside parking where feasible.

7.7 | Sea Palm Avenue to Balboa Avenue



Proposed trail alignment

Existing seawall / riprap

2047 erosion setback line and erosion rate (inches per year)

- 0
- > 0 to 2
- > 2 to 4
- > 4 to 6
- > 6

See Figures 7.8 and 7.9

Continuous parking strips

On-street parking

Protect existing trees

Bike parking

Accessible crosswalk, ramp, and bulbout

Accessible parking with access point

Revegetate on area

Overlook/fishing spot

Existing seawall

Redesign existing paved drainage swale to vegetated bioswale

Existing beach access

Remove drain inlet, replace with curb inlet to bioswale

Revegetated area

Remove 2 existing parking spaces and relocate



See text for discussion of the circled area



7.8 | Parking area at Sea Palm Avenue: Existing



See text for discussion
of the circled areas

7.9 | Parking area at Sea Palm Avenue: Proposed



Sub-segment II.3: Balboa Avenue to Esplanade Park

On the next page, Figure 7.10 shows the long-term trail alignment from just south of Balboa Avenue to just east of Esplanade Park. Due in large part to the armoring along this stretch, the existing trail does not need to be realigned up to the northern end of the Beach Street seawall. (The area beyond that point overlaps with the next map, so it is discussed in the next section.)

The main change proposed for this segment is the redesign of the parking area at Otter Point, just below the foot of Beach Street. The area offers stunning panoramic views of the shoreline and ocean. The site itself, however, is less than scenic, as it is taken up by a small paved parking lot and barren dirt areas (see the aerial on Figure 7.11). To reach the overlook pedestrians must navigate around traffic and past the row of parked cars (and sometimes large recreational vehicles) that otherwise block the view. At the same time, the shoreline trail here is interrupted in two places by the driveway into the parking lot.

Figure 7.12 shows the proposed redesign of the area. Under the design, the parking lot is eliminated and the site is revegetated to a more natural state. The redesigned site features a continuous decomposed-granite pedestrian trail roughly parallel to Ocean View Boulevard as well as an accessible boardwalk “spur” closer to the existing seawall, with overlook points/fishing spots and benches. The existing access to the beach at the foot of Beach Street is preserved. Removing the parking lot has the added benefit of reducing soil compaction and the resulting pressure on the seawall.

The proposed redesign is based on Strategy 6 in Chapter 5, “Draft Management Strategies.” Based on feedback from the public, that original design has been revised to incorporate access points from

the main trail to the seawall, to serve as lookout points and fishing spots. It is important that the final design include access points for kayakers, surfers and other recreational users to unload equipment safely from their vehicles.



*The parking lot at Otter Point.
(Image credit: Google Street View.)*

The parking lot contains nine parking spaces, including one accessible space. In addition, there is on-street parking along both sides of Ocean View Boulevard in front of the parking lot and on either side of it, including at least four dozen spaces within easy walking distance. The proposal would remove the nine spaces inside the lot. At the same time, the proposed redesign would gain street frontage by eliminating the entrance and exit to the parking lot; this would allow for the creation of approximately four new on-street parking spaces. The net proposed loss would therefore be only five spaces.

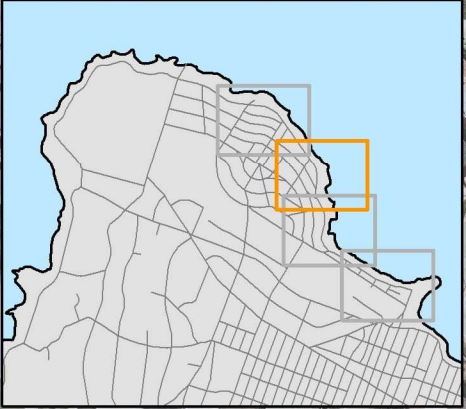
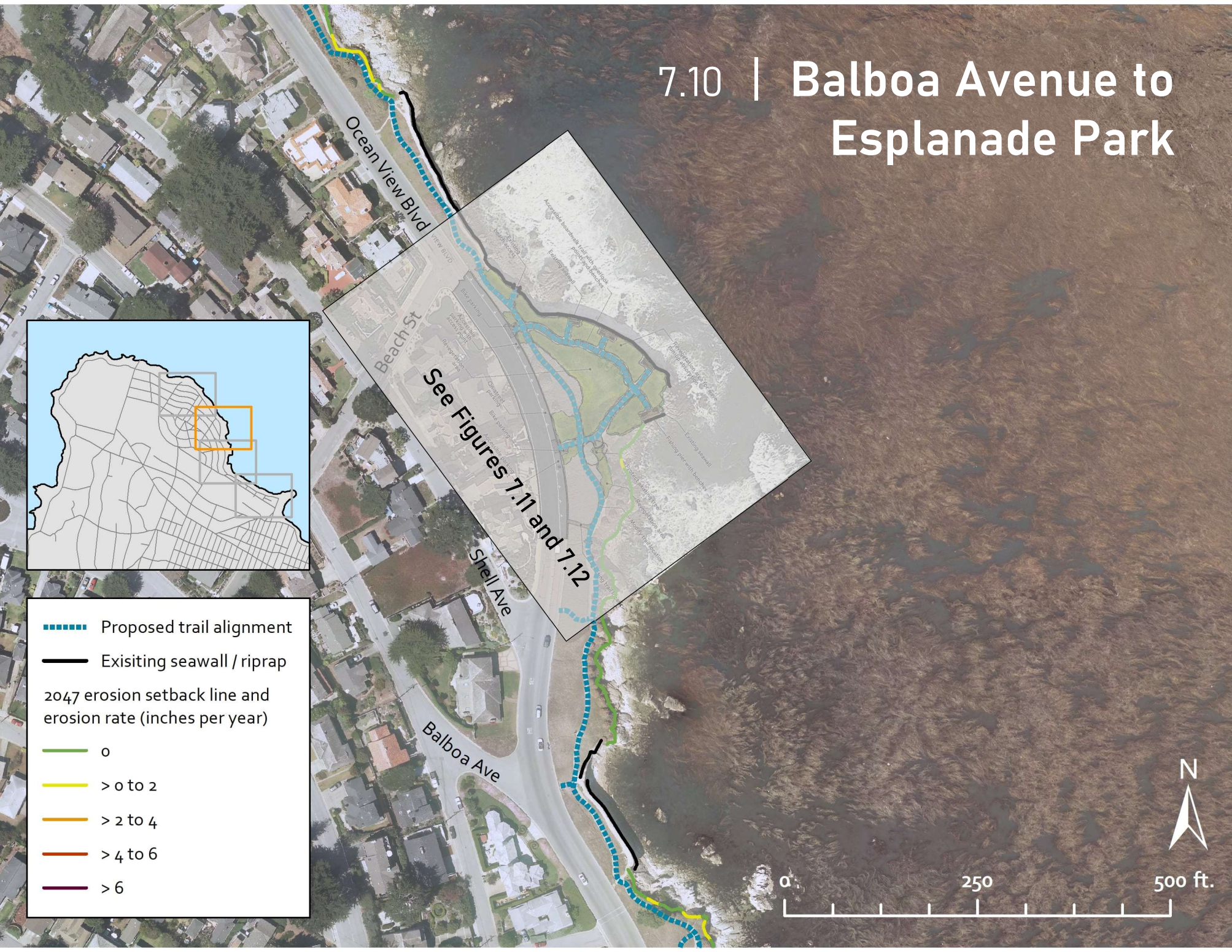
The proposal for the Otter Point lot is designed to support public access by creating a continuous trail connection and by making the lot area more inviting to people not in cars. The proposed

redesign of the parking lot area includes several components meant to mitigate the loss of the parking spaces and maximize trail access and other public access opportunities:

- Relatively few people park on the ocean side of Ocean View Boulevard at this location because the parking lane is narrow, unmarked and follows a curve. The proposed redesign would encourage greater use of the on-street parking spaces in front of the parking lot—effectively increasing their number—by slightly widening the parking lane into the site and by formalizing the parking spaces with street markings.
- Street frontage would be gained by eliminating the entrance and exit to the parking lot, allowing for the creation of approximately four on-street parking spaces.
- The redesign is intended to include two accessible parking spaces; bike parking; access points for kayakers, surfers and other recreational users to unload equipment from their vehicles; and a boardwalk “spur” off the main trail, closer to the existing seawall, with lookout points and fishing spots.
- The existing access to the beach at the foot of Beach Street would be preserved.

As is the case with the proposal for the Sea Palm Avenue parking area, converting the Otter Point lot into a coastal viewing area is a firm recommendation of the draft plan but the redesign itself is only a conceptual design at this point. If the project moves forward, the public and other stakeholders will have further opportunities to shape and refine the details of the design as more detailed plans and drawings are prepared. At that time, the city will attempt to mitigate the loss of oceanside parking where feasible.

7.10 | Balboa Avenue to Esplanade Park



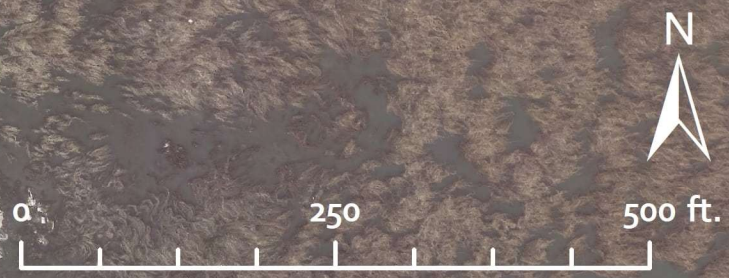
Proposed trail alignment

Existing seawall / riprap

2047 erosion setback line and erosion rate (inches per year)

- 0
- > 0 to 2
- > 2 to 4
- > 4 to 6
- > 6

See Figures 7.11 and 7.12



7.11 | Parking area at Otter Point: Existing



7.12 | Parking area at Otter Point: Proposed



Sub-segment II.4: Esplanade Park to Point Pinos

Figure 7.13, on the next page, shows the trail alignment from east of Esplanade Park to halfway between Coral and Acropolis Streets. (West of that end point is where the study area for the Point Pinos Coastal Trail Study and Plan begins; see the next chapter for more information about that area.) This segment of the shoreline consists of a very thin, and eroding, band of land; it is the stretch between Lovers Point and Point Pinos where trail access is currently most compromised or where it is most at risk in the future. This is especially true across the street on either side of Esplanade Park and west of the Coral Street wall. At these spots, the shoreline trail essentially disappears for short stretches, forcing pedestrians onto narrow strips of dirt immediately next to Ocean View Boulevard.



*Bluff erosion across from Esplanade Park.
(Image credit: Haro, Kasunich and Associates.)*

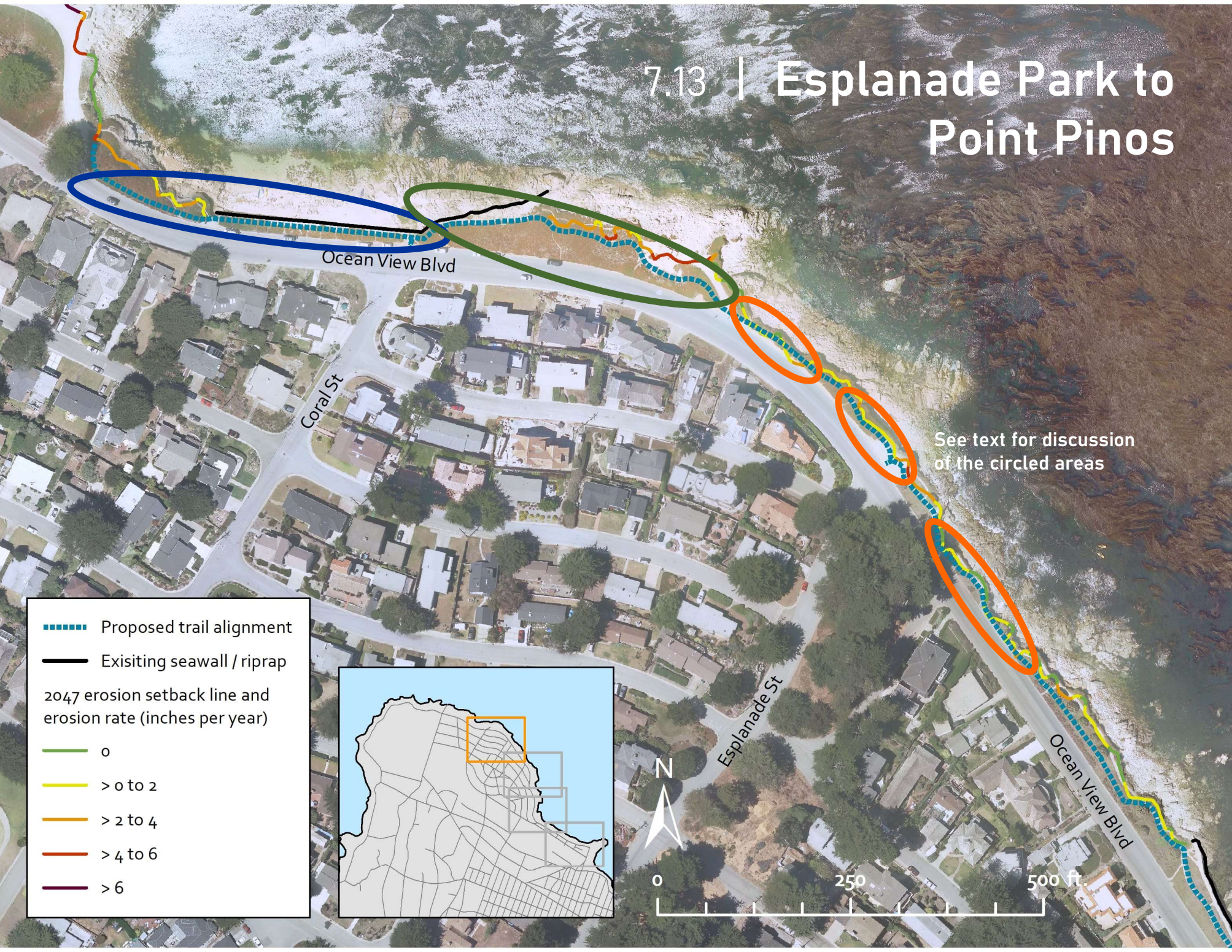
There are several stretches, circled in orange on Figure 7.13, where the trail cannot be located inside the 30-year erosion setback line without coming very close to or encroaching onto Ocean View Boulevard. For these stretches—extending approximately from

1045 to 1119 Ocean View Boulevard—the SMP recommends that the parking lane on the ocean side of the street be eliminated and the street curb be shifted inland by approximately 7–8 feet. The regained space would be restored to a more natural condition, and a proper pedestrian trail would be installed on it. The distance involved is approximately 500 feet; assuming a length of 20 feet per parallel parking space, this recommendation would result in the loss of 25 on-street parking spaces. The same treatment could be applied to the stretch from Coral Street to halfway to Acropolis Street (circled in blue on Figure 7.13), including along the Coral Street Beach retaining wall. This is a distance of approximately 420 feet, or 21 parking spaces. In addition, a formal 5-foot-wide trail needs to be constructed on the bluff top, away from the street, between 1119 Ocean View Boulevard and the beach wall (circled in green on Figure 7.13). If these projects move forward, the public and other stakeholders will have further opportunities to shape and refine the details of the designs as more detailed plans and drawings are prepared. At that time, the city will attempt to mitigate the loss of oceanside parking where feasible.



Immediately west of Esplanade Park.

7.13 | Esplanade Park to Point Pinos



Ocean View Blvd

Coral St

Esplanade St

Ocean View Blvd

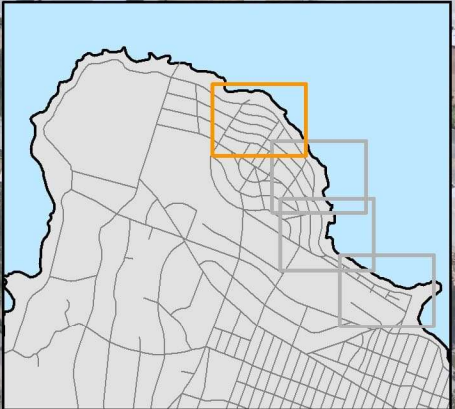
See text for discussion of the circled areas

Proposed trail alignment

Existing seawall / riprap

2047 erosion setback line and erosion rate (inches per year)

- 0
- > 0 to 2
- > 2 to 4
- > 4 to 6
- > 6



Currently, there is continuous on-street parallel parking on both sides of Ocean View Boulevard in and beyond the Esplanade and Coral Street areas, including at least 100 spaces within easy walking distance. In addition, 0.1 miles west of Coral Street, on the ocean side, there is a dirt parking lot with capacity for as many as 30 regular-size vehicles (because the lot does not include marked spaces, this is an estimate). As mentioned above, the proposal for this stretch would result in the elimination of 25 on-street ocean-side parking spaces around Esplanade Park and another 21 spaces from Coral Street to halfway to Acropolis Street.

Three alternatives were considered, and eliminated, for the stretch encompassing the three areas circled in orange on Figure 7.13:

- **A “no project” alternative** that leaves this stretch of shoreline as is. As mentioned earlier, trail access here is already seriously compromised and the coastal bluff continues to erode landward. If nothing is done, trail access through this segment will be eliminated. For that reason, the “no project” alternative does not meet the project goal of providing “continuous recreational trail access along the shoreline,” as required by the California Coastal Commission.
- **Removing one lane of travel, and possibly also the ocean-side parking lane, to make Ocean View Boulevard a one-way street** (westbound) west of Esplanade Park. This option would make room for a wider trail buffer and bike lanes. However, this would be disruptive to drivers who live on Ocean View Boulevard between Esplanade Park and Asilomar Avenue; it would lose Ocean View Boulevard’s function as a scenic route for drivers coming from Pebble Beach and points south; it would increase through traffic on other streets in the neighborhood that would be used by people making the eastbound return; and, because of these detours, could result in more vehicle-miles traveled.
- **Buttressing the most erodible locations with walls or riprap and shifting the trail landward.** A 2016 study commissioned by the city evaluated options for providing trail access and responding to erosion at two coastal bluff sites precisely along this stretch. One site, “Esplanade East,” is across from 1045–1051 Ocean View Boulevard, immediately east of Esplanade Park. The second site, “Esplanade West,” is directly across from Esplanade Park. The study resulted in a report titled “Coastal Bluff Protection Analysis and Geotechnical Investigation,” dated December 2016. That document is available at http://bit.ly/PGshoreline_bluffstudy.

The report determined that riprap at the Esplanade East site, while potentially feasible, would have significant visual impacts and would result in greater topographic alteration of the bluff morphology than retaining walls or seawalls. For the Esplanade West site, the report determined that riprap is economically and environmentally infeasible because of the site’s sloping geometry. Instead, the report recommended building walls at both locations and shifting the trail landward by about four feet. A retaining wall or seawall would have a smaller footprint, less visual impact and longer life expectancy than riprap; however, it would cost more. The SMP eliminated this alternative because either riprap or walls would have a greater visual and environmental impact and be much costlier than the recommended alternative of relocating the trail onto the space currently occupied by the ocean-side parking lane on Ocean View Boulevard. However, existing riprap, including between the Kissing Roack and Lucas Point, should be maintained and replaced as necessary.



It should be noted that the 2016 study considered and eliminated the option of relocating the trail onto the Ocean View Boulevard parking lane. The reasons given are that this option would: (i) create an unsafe condition for cyclists by narrowing the roadway and forcing cyclists to swerve into the traffic lane; and (ii) eliminate the Class III (unmarked bike route) at this location, which would be inconsistent with the city's General Plan. However, this reflects a misunderstanding of bike routes. A bike route is a shared *travel* lane; it does not include the parking lane, since cyclists should not be expected to ride in that lane. If anything, removing the parking lane is a safer design, since it eliminates the danger of danger of cyclists being hit by opening car doors.

Coral Street Pump Station

Also along the shoreline between Esplanade Park and Coral Street is an underground wastewater pump or lift station that pumps sewage from Pacific Grove to the Monterey Bay Regional Treatment Plant located in Marina for treatment and beneficial reuse. As a result of its location, the pump station is subject to the ever-increasing effects of climate change, including sea level rise, coastal erosion and storm surges. These result in inundation of the station, which presents electrical reliability challenges.

The pump station is owned and operated by Monterey One Water (M1W), the regional wastewater and water recycling agency. To improve station reliability, M1W has begun planning for the relocation of the station's key electrical components inland. Pending agreement with the city of Pacific Grove, the components would be moved to a new structure at nearby Esplanade Park, in the park's open space between Surf and Shell Avenues (see Figure 7.14). This site is substantially further from the ocean and at a higher elevation than the station's existing location, rendering it essentially free of flooding hazards. The station's pumps and

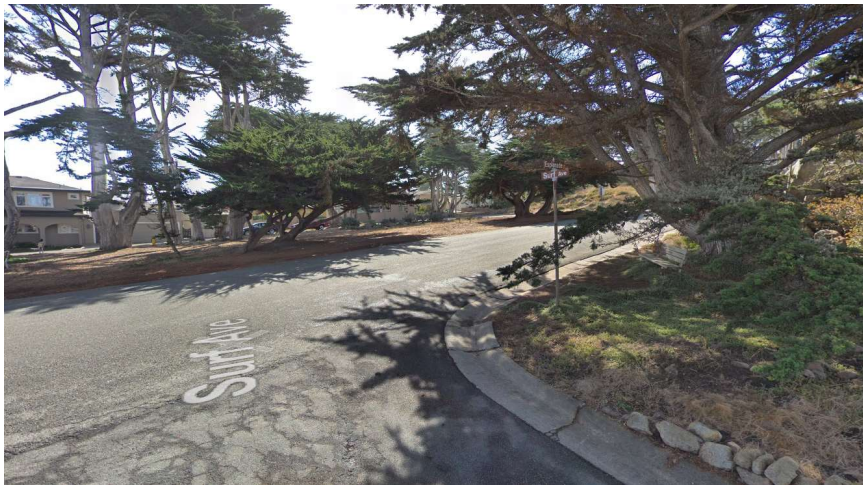
motors would remain underground at the existing site and would be operated remotely from the new site by way of a buried cable duct along Ocean View Boulevard. The concept project, called the Coral Street Pump Station Climate Resiliency Project, is listed in the "Monterey Peninsula, Carmel Bay, and South Monterey Bay Integrated Regional Water Management Plan Update" (dated September 25, 2019), under Appendix 6-A.



The pump station at its current location, between Esplanade Park and Coral Street. (Image credit: Google Street View.)

The city should support the relocation plan because of the water quality benefits of preventing sewage spills. At the same time, the city should require that M1W apply best practicable technologies and best practices at the existing site to control the sewage odors. Also, while it is necessary to maintain the access driveway to the pump station, M1W should explore the feasibility of removing the existing above-ground structures, the existing site should be restored to the extent practicable and the shoreline trail should be continued through the site, roughly as shown in Figure 7.13.

Relocation of the electrical components can be expected to be a sensitive issue for residents of the neighborhood. The new structure should be designed to be unobtrusive, using high-end materials that blend in with their surroundings, and the site should be minimally disturbed. Any outside equipment should be screened and all practicable sound control measures should be used. More generally, Monterey One Water and the city should communicate their relocation plans and their designs for the new site clearly and frequently with the community, and solicit their feedback meaningfully.



Potential relocation site in Esplanade Park between Surf and Shell Avenues. (Image credit: Google Street View.)

7.14 | Relocation of Coral Street pump station equipment





08 | A continuous shoreline trail

Part III: Point Pinos

As mentioned earlier, trail access around Point Pinos was studied separately and in detail recently as part of the Point Pinos Coastal Trail Study and Plan, completed in 2017. The objective of the study was to identify continuous trail access from roughly halfway between Coral Street and Acropolis Street (where an existing trail along the curb next to Perkins Park currently ends) to the Great Tidepool (past which a trail extension was under construction at the time). The primary consideration was threading a trail alignment on the seaward side of Ocean View Boulevard and several waterfront parking areas that avoids the shoreline frontage expected to erode into the sea within 30 years and that does not encroach into sensitive dune habitat. The report is available at http://bit.ly/PGshoreline_PPstudy.

Besides a “no project” alternative, the study delineated four preliminary trail alignment alternatives. Among other options, the alternatives considered closing Ocean View Boulevard and

turning it into a bike path/maintenance road; turning Ocean View into a one-way public road to accommodate constrained segments of the trail; and shrinking or closing parking areas that are within the 30-year coastal erosion retreat zone while expanding parking lots outside the retreat zone.

In the end, the study selected a phased approach, with a short-term plan (Phase I) and a long-term plan (Phase II). The conceptual designs for the two phases are shown and briefly described on the pages that follow. (On each page, the top plan drawing shows the segment of shoreline from the Great Tidepool to Crespi Pond and the bottom drawing shows the segment from Crespi Pond to halfway between Acropolis and Coral Streets.) Phase II would be implemented once sea-level rise necessitates it—or earlier if the city so desired.

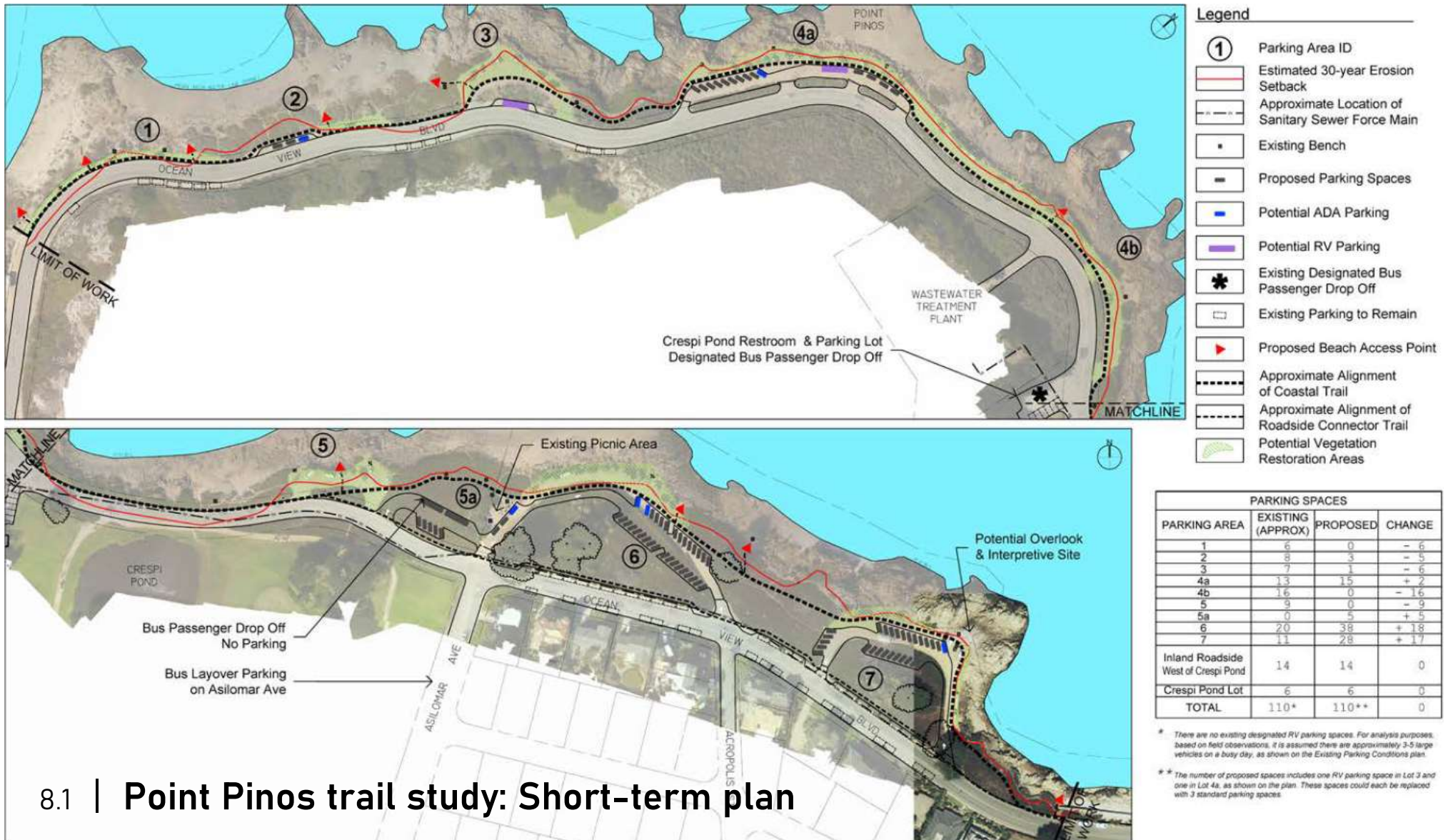


Cover of the Point Pinos Coastal Trail Study & Plan.

The trail would be a continuous formal coastal path, 5 feet wide and with a decomposed-granite surface, which would provide better access to people with limited or impaired mobility. There would be consolidated and formalized lateral access to designated access points or overlook areas, as well as steps or ramps down to the water. Surplus pavement areas and former parking areas would be restored to natural habitat. At the western end of the alignment proposed in the Point Pinos study, the trail would connect to a horseshoe-shaped trail constructed recently by the city near the Great Tidepool and, past Lighthouse Avenue, to paths in Asilomar State Beach.

Under the short-term plan, most of the trail would be constructed outside the 30-year retreat zone, except where it would be constrained by Ocean View Boulevard. Most existing parking areas inside the erosion retreat zone would be reduced or closed,

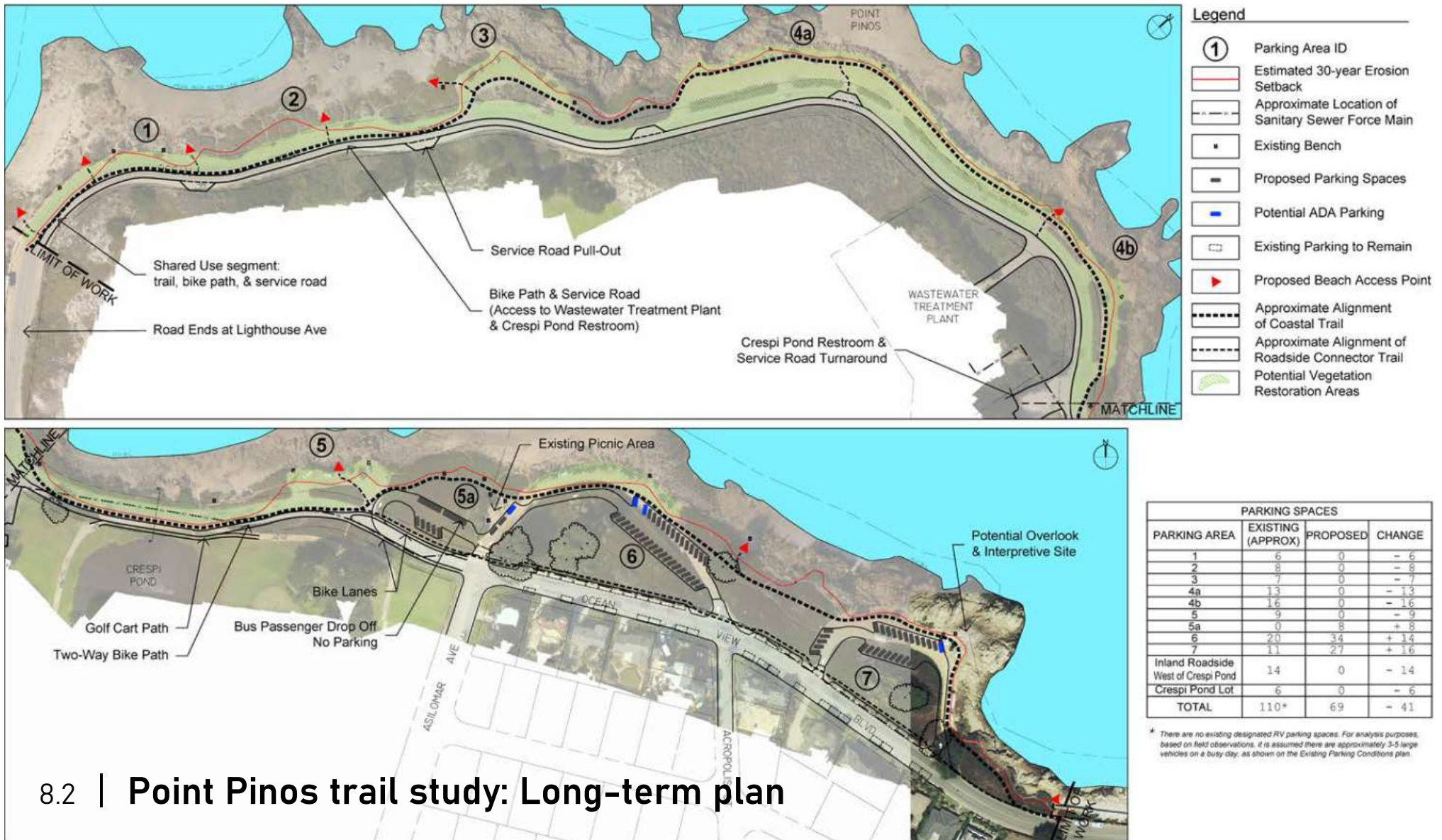
and restored to natural habitat; by expanding parking in other areas nearby, there would be no net loss of parking spaces. The conceptual design for the short-term plan is shown here.



8.1 | Point Pinos trail study: Short-term plan

The long-term plan, shown below, would result in a much more natural, car-free stretch of coastline. To address anticipated erosion, Ocean View Boulevard between Asilomar Avenue and Lighthouse Avenue would be closed and converted to a two-way

bike path, a portion of which would also serve as a maintenance access road for the water recycling plant near Crespi Pond; next to it, on the seaward side, there would be a separate foot trail. All parking in the western and middle portions would be removed.



8.2 | Point Pinos trail study: Long-term plan



09 | Additional recommendations

As mentioned elsewhere, the main goal of the SMP is to provide continuous recreational trail access along the shoreline. However, the SMP includes a number of additional recommendations designed to improve residents' and visitors' experience of the shoreline while protecting its unique resources. A number of the recommendations were suggested by the many people who took part in the project's public engagement opportunities. Pacific Grove has a unique, world-class shoreline, and the city's residents and other stakeholders are justifiably proud and protective of it.

Traffic calming on Ocean View Boulevard

The popular pedestrian and bicycle coastal trail that connects Monterey to Pacific Grove ends at Lovers Point. Beyond that point, cyclists are expected to use Ocean View Boulevard. However, between Lovers Point and Asilomar Avenue, the travel lanes on Ocean View are too narrow to accommodate bike lanes; at the same time, the right-of-way is wide and open enough that it causes some people to drive too fast. For pedestrians, especially those with limited mobility, it can be challenging to cross the street at certain locations in order to reach the shoreline.

Ocean View Boulevard could be made more pedestrian and bicycle friendly by introducing design measures at strategic points that remind drivers of the presence of cyclists and people on foot. Crossings and intersections could be improved for pedestrians by installing bulb-outs; raised crosswalks or intersections; and crosswalks with special colors, materials or patterns. (See also the recommendations in Chapter 6 to make it easier for people to access the Monterey Bay Coastal Trail across Ocean View Boulevard for people.) Raised crossings enable pedestrians to

cross the street at the same level as the sidewalk. Bulb-outs are extensions of the curb or sidewalk into the parking or travel lane; they shorten the crossing distance for pedestrians and make pedestrians more visible to drivers. (When designing bulb-outs, care should be taken that they not extend past the parking lane, so that they do not become a hazard for cyclists and drivers.) These measures are especially helpful at overly large intersections with excess paved areas or somewhat irregular geometries. Examples along Ocean View Boulevard include Sea Palm Avenue, Balboa Avenue, Shell Avenue and, to a lesser extent, Coral Street. It is worth mentioning that measures intended to improve conditions for pedestrians tend to also benefit cyclists by reducing speeding and encouraging motorists to drive more attentively.



Raised intersection. (Image credit: orcity.org.)

To improve conditions for cyclists, “sharrows” could be stenciled on Ocean View Boulevard between Lovers Point and Asilomar Avenue. These are pavement stencils indicating that a traffic lane is meant to be shared by drivers and cyclists (see photo below). They are typically used on lower-volume non-arterial streets

when travel lanes are too narrow to safely fit bike lanes. Beyond Asilomar Avenue, the road has striped shoulders that function as bike lanes. Here, the bike lane stencils should be refreshed as often as necessary, and additional stencils and “Park Off-Pavement” signs should be installed to discourage parking on the shoulder.

The 2017 Point Pinos Coastal Trail Study and Plan (see the end of Chapter 8) included an “optional additive alternative” of installing traffic calming features on Ocean View Boulevard, lowering the posted speed limit from 25 mph to 15 mph and stenciling sharrows west of Lovers Point. The report stated that this alternative “could be implemented independently of the coastal trail/parking alternatives or combined with them.” However, this alternative was not evaluated because on-street improvements were outside the scope of that study.



Sharrows. (Image credit: usa.streetsblog.org.)

Trail widening

As mentioned in Chapter 7, it is intended that the main trail from Lovers Point to Point Pinos generally be 5 feet wide (surfaced in decomposed granite and for use by pedestrians only). Most of the trail segments that need to be widened, or that do not currently exist, require careful planning. They are discussed in Chapter 7 and include the segments across from Borg's Motel; through, and on either side of, the Sea Palm Avenue parking lot and the Otter Point parking lot; on either side of Esplanade Park; and west of the Coral Street Beach retaining wall.

In addition, there are several narrow stretches that could be widened to 5 feet without much difficulty on the bluff top. Besides a number of short segments, the main continuous segment is approximately between the Otter Point parking lot and 200 ft. east of Esplanade Street East.



The trail near the foot of Beach Street.

Debris removal

As stunning as Pacific Grove's shoreline is, it is marred at a number of locations by the presence of construction debris and abandoned structures. There are numerous examples. For example, construction debris in the form of concrete slabs and concrete or asphalt paving can be found at the north cove of Lovers Point Beach; Sea Palm Beach; Lucas Point Beach and tidepools; and Coral Street cove. Abandoned structures include irrigation, drainage or sewer pipes at various locations. The city should remove these examples of construction debris and abandoned structures along the coast provided that they do not play a role as habitat for shoreline creatures.



Concrete slab (bottom center) amid the rocks near Esplanade Park.

Cultural and archeological resources

As mentioned in Chapter 3 of this report, the cultural resources study conducted as part of the SMP found the shoreline to be highly sensitive for archaeological resources and identified significant historic and prehistoric resources that could be potentially affected by project work in the area. A project that disturbs the soil along the shoreline has the potential to also disturb archaeological sites but meaningful mitigation efforts can reduce these impacts.

Whenever grading or excavation happens along the shoreline—even at previously disturbed sites—the Ohlone Costanoan Esselen Nation (OCEN) should be contacted and be invited to monitor the work. If human remains are discovered, work in the area shall halt and relevant procedures set forth in the California Public Resources Code (Section 5097.98) and State Health and Safety Code (Section 7050.5) shall be followed, beginning with notification to the City of Pacific Grove and the County Coroner. Tribal human remains should ideally be left in place, undisturbed. If the site must be disturbed, OCEN should be given the opportunity to move the remains so that they can be given a proper reburial and ceremony. Whenever tribal artifacts are found, they should be “repatriated” (returned to the tribe). In the event of burial artifacts, they may be reburied along with the human remains.

The historic timeline of the Pacific Grove area did not begin with the arrival of the Spanish. Protecting tribal resources would broaden and strengthen Pacific Grove’s commendable commitment to protecting and preserving its heritage.

Erosion control

Erosion along Pacific Grove’s shoreline is caused, most importantly, by a combination of wave action, extreme high tide and storm surge. But some erosion is also caused by a number of silent, less dramatic factors. These include burrowing by ground squirrels; landscape irrigation and other urban runoff; groundwater seepage; highway ice plant and aloe plants, which, as their weight builds, pull down topsoil off bluffs; and the action over time from the multitudes of people walking near bluff edges.



Rodent burrows. (Image credit: thefencepost.com.)

In particular, animal burrows funnel rain water runoff, eroding the earth behind seawalls. To address erosion caused by ground squirrels and other rodents, the city should institute a shoreline rodent control program. The program should avoid the use of poison, which would have adverse effects on other wildlife, and should address the public feeding of squirrels, among other issues. Among the many resources available online on this topic

that could be helpful to the city is

www.groundsquirrelbmp.com/management-cgs.html.

As of this writing, the city is in the process of developing a landscape plan for Perkins Park, the long, linear shoreline park that extends from Lovers Point to Esplanade Park. The SMP recommends that the landscape plan propose solutions for erosion resulting from the existing vegetation (including the large, heavy aloe plants) and from landscape watering along that stretch. The landscape plan should also address the issue of poison oak, which in some places encroaches onto trails. Potential solutions and recommendations from the landscape plan might be applicable to the other segments of the shoreline, namely from Monterey to Lovers Point and from Esplanade Park to the Great Tidepool.

Regarding runoff from precipitation, irrigation and natural springs, the city intends to prepare a comprehensive Stormwater System Master Plan. That plan will consider strategies for maximizing the capture of trash and diversion of stormwater for treatment and reuse, in order to minimize the amount of pollution that reaches Monterey Bay.

Hopkins Marine Station

Stanford University's Hopkins Marine Station is a world-class institution conducting ground-breaking research and also a beloved member of the Pacific Grove community. Located at a low elevation on the shoreline, the institution is facing serious challenges from sea-level rise. Their buildings and facilities have been battered at times in recent years by storm surges and these impacts are expected to increase. The institution plans to soon conduct a comprehensive study of its options for coping with sea level rise. The city should encourage Hopkins and the Monterey Bay Aquarium to coordinate planning efforts, and offer both institutions logistical and policy support in their efforts to climate-proof their facilities so that they may remain in Pacific Grove (and Monterey) for the foreseeable future.



Waves and surge impacting buildings on the protected shore of Hopkins Marine Station, January 11, 2001. (Image credit: Hopkins Marine Station.)

Ed Ricketts monument

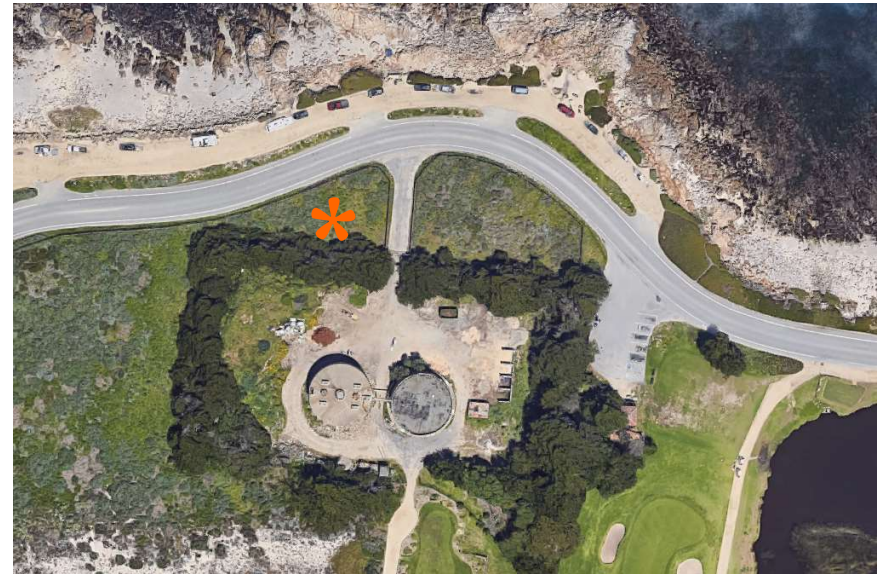
Area resident and marine biologist Ed Ricketts (1897–1948) was a pioneer in examining and documenting intertidal life as a holistic ecological community. This was a revolutionary approach at the time but one that was accessible to laypeople and helped change the way people view the natural world. His most important collecting site was the Great Tidepool, located west of Point Pinos Lighthouse, along Ocean View Boulevard. Sadly, Ricketts's—and the Great Tidepool's—contributions to science remain underappreciated. A worthy tribute to him would be to seek designation of the Great Tidepool as a California Point of Historical Interest and to install a monument there, simple and unobtrusive, to Ricketts' scientific efforts. One option is a brass plaque on a granite boulder, similar to the one pictured below at Asilomar State Beach and Conference Grounds.



*Monument at Asilomar State Beach and Conference Grounds.
(Image credit: Steven and Mary Albert.)*

Bird observation platform

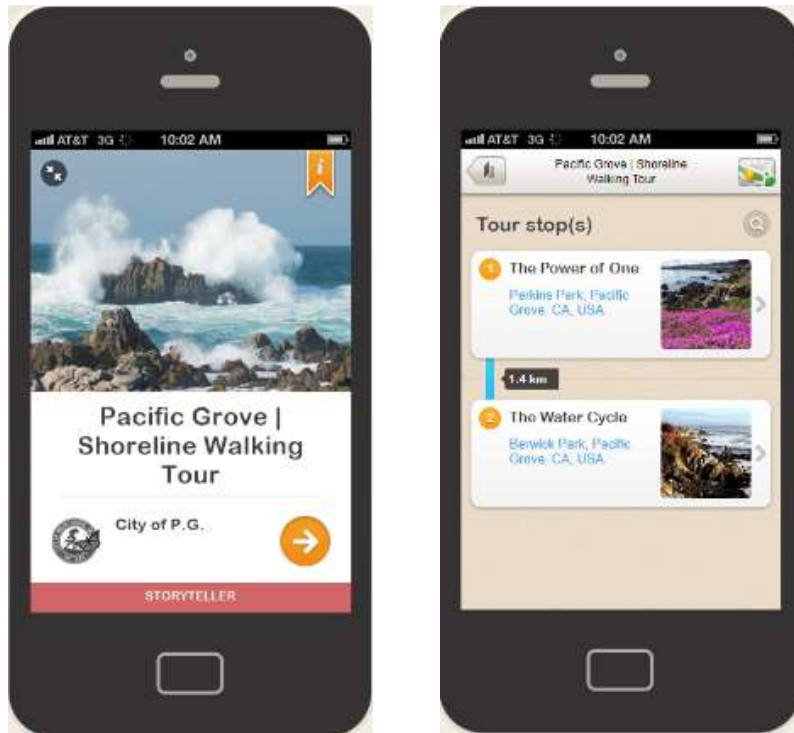
Point Pinos is a site particularly rich with opportunities for wildlife viewing. With the help of volunteers and through a collaboration of the city and relevant organizations, an observation platform should be constructed and maintained in Point Pinos for community-based programs involved in marine and wildlife observation, surveying and monitoring. The platform could be located on city-owned land near the water recycling plant in Point Pinos.



*Potential location of the observation platform,
near the water recycling plant.*

Online tour of the shoreline

Using a grant from the State of California, the city is in the process—as of this writing—of developing an online tour of the shoreline. The tour will take users to a number of stops along the shore and narrate stories of environmental, cultural and historical interest. The stories will consist of text and images, audio and video, as appropriate. The tour is intended to increase awareness and stewardship of the shoreline’s resources without adding new signage. Once the tour has been created, the city should work with the Monterey Bay Aquarium, Museum of Natural History, Chamber of Commerce and area hotels, among other partners, to publicize the online tour among residents and visitors.



Page mock-ups of the online tour (Image credit: Eisen | Letunic.).



10 | Shoreline armoring

To minimize erosion and protect the bluffs, a variety of structural protective improvements have been installed over time along Pacific Grove's shoreline. These improvements, known collectively as "armoring," include seawalls, rock retaining walls, wooden retaining walls and rock revetment (or riprap—essentially large boulders). (While related, seawalls are used to break the force of incoming waves and limit erosion while retaining walls support or hold back soil.) As can be seen on the maps in Chapter 2, the city's shoreline is protected by a number of armoring structures.

Armoring inventory

The table on the next page lists the main segments of armoring, including the type of armoring, approximate starting and ending points, and approximate length. The last column lists the main public infrastructure or features that are currently protected by each segment. (Some of the listed segments actually consist of two or three smaller non-continuous segments separated by very short

gaps. Those sub-segments have been combined for the sake of simplicity.) The table does not list a segment that exists between the Monterey Bay Aquarium and Hopkins Marine Station because that segment is not the responsibility of the city.



Armoring between Naiad and Clyde Streets.

Armoring type	From	To	Length (ft.)	Infrastructure / feature
Rock revetment	5 th Street	7 th Street	270	Monterey Bay Coastal Trail, Ocean View Boulevard
Wooden wall	10 feet east of 8 th Street	30 feet west of 8 th Street	40	Berwick Park, Monterey Bay Coastal Trail
Wooden wall	50 feet west of 9 th Street	10 th Street	100	Berwick Park, Monterey Bay Coastal Trail
Rock revetment	12 th Street	15 th Street	400	Monterey Bay Coastal Trail
Stone retaining wall	Fountain Avenue	Forest Avenue	350	Monterey Bay Coastal Trail, Ocean View Boulevard
Stone retaining wall	Lovers Point Park, southern corner	Lovers Point Park, northern corner	1,060	Lovers Point Park and associated facilities
Stone retaining wall / seawall	Lovers Point, northeastern parking lot	150 feet west of Clyde Street	1,160	Perkins Park, shoreline trail, Ocean View Boulevard
Stairs / stone retaining wall	Sea Palm Avenue / Moss Street beach parking lot	Sea Palm Avenue / Moss Street beach parking lot	90	Shoreline trail, beach access staircase, parking lot (seven spaces)
Seawall	Siren Street	Balboa Avenue	190	Perkins Park, shoreline trail, Ocean View Boulevard
Seawall	Otter Street parking lot	200 feet west of Beach Street	580	Parking lot (eight spaces), Perkins Park, shoreline trail/footpaths, Ocean View Boulevard
Seawall	Coral Street beach	Coral Street beach	440	Shoreline trail/footpath, Ocean View Boulevard
Rock revetment	Ocean View Boulevard parking lot, northwest point of Point Pinos	Ocean View Boulevard parking lot, northwest point of Point Pinos	470	Parking area (unpaved; space for approximately 20 vehicles)
Rock revetment	Ocean View Boulevard, next parking lot to the south	Ocean View Boulevard, next parking lot to the south	120	Parking area (unpaved; space for approximately 10–15 vehicles)

Potential to remove armoring

As shown in the table above, all of Pacific Grove's armoring structures protect valuable public infrastructure, almost all of it providing public access to the shoreline. This infrastructure includes the Monterey Bay Coastal Trail, unpaved trails and footpaths, Ocean View Boulevard, three parks (Berwick, Lovers Point and Perkins) and several paved parking lots and unpaved parking areas. At the same time, Pacific Grove's shoreline strip is generally very narrow and most of it is taken up by the public-access infrastructure mentioned previously. Together, these two facts make it infeasible to remove armoring. The SMP did consider the potential for the removal of segments of armoring at Sea Palm Avenue and at Otter Point, given that the parking lots at those two areas are proposed to be eliminated. Below is a discussion of such potential opportunities at those two locations and why the SMP recommends retaining the existing armoring.

Sea Palm Avenue

The Sea Palm Avenue site includes two very short stretches of armoring: an approximately 50-foot segment near the southern end of the lot that essentially consists of a long, winding staircase down to the beach below; and an approximately 30-foot segment near the northern end that protects an overlook. The geologic and hydrologic conditions report prepared for the SMP determined that this segment of coastline has a high erosion hazard in both the short and medium-to-long terms.

The staircase segment of armoring serves primarily as an important public access amenity, allowing access to the beach below the parking lot. In addition, while the staircase could be reconstructed without the seawall surrounding it, the existing staircase is an attractively designed structure with a sculptural quality that has become a local landmark along the shoreline. The

second segment of armoring is an even shorter section that does not have an appreciable negative impact on beach formation yet protects a popular and particularly valuable overlook offering panoramic views of Monterey Bay.

The Sea Palm Avenue site is an important transition point along the trail, as the shoreline character changes from the tourist-heavy Lovers Point to a quieter, more residential but still very popular stretch. As described in more detail in Chapter 7, the proposal for this site will create a continuous trail connection while providing additional access amenities such as fishing spots and lookout points, and beautifying the area. The resulting new mini-park will help ease some of the visitor pressure at nearby Lovers Point Park. Retaining the two armoring segments at this location would offer erosion protection to this new public access resource.

Otter Point

Otter Point is protected by a seawall along the north side—a distance of approximately 210 feet. In addition, there is a much shorter, 35-foot segment of seawall along the east side of the point. The geologic and hydrologic conditions report for the SMP determined that this stretch of coastline has a moderate erosion hazard in both the short and medium-to-long terms.

Again, and for similar reasons concerning the Sea Palm Avenue site, the SMP proposes to retain the two sections of armoring at Otter Point. As described in more detail in Chapter 7, the proposal for this site will create a continuous trail connection; provide additional access amenities such as a waterfront boardwalk, fishing spots and lookout points; make the area more accessible and inviting to pedestrians; and beautify the area. Retaining the armoring at this location would help protect the city's future investment in the site.

Maintaining existing armoring

The SMP does not propose new armoring anywhere along the city's shoreline. However, given the unpredictability of changes in sea level, there are several erosion hotspots that might require the construction of retaining walls or seawalls in the future. The main spots include several locations around Esplanade Park and Sea Palm Avenue that were identified in a 2016 report commissioned by the city titled "Coastal Bluff Protection Analysis and Geotechnical Investigation."

Regarding armoring, the city's priority should be to maintain the existing structures and to monitor key erosion hotspots along the shoreline. The city should establish a formal seawall/retaining wall monitoring and repair program. Under this program, the city would hire a qualified coastal geotechnical engineer to inspect the existing structures on a yearly basis, including the wall ends (for outflanking), the seaward perimeter (for undermining) and any stairways.

Necessary wall repairs have been documented to some extent in earlier documents, including in Appendix A of the geology and soils report for the SMP (that document is available at http://bit.ly/PGshoreline_report02) and, well before that, the Coastal Parks Plan (1998). The list of repair needs should be formally inventoried, expanded and catalogued, and updated on a yearly basis. Repair costs should be estimated, a budget should be developed and allocations for the purpose of wall repairs should be incorporated into the city's capital improvement plan. The goal should be to maintain all the structures in a state of good repair. At the same time, the annual inspections should look for areas being undermined by erosion in order to identify future needs and potential solutions.

Additional recommendations related to the maintenance of seawalls and retaining walls include:

- As mentioned under the earlier section on erosion control, the city should institute a shoreline rodent control program. Not only do ground squirrels and gophers cause erosion but also rodent burrows threaten the structural integrity of seawalls by channeling runoff water to the lower levels of the walls.
- Water from high surf, rain and irrigation can build up behind seawalls, creating pressure that pushes out on the walls. To prevent this, drainage holes should be added to seawalls. This is a need particularly for the seawall across from Naiad and Clyte Streets.



11 | Implementation

This chapter suggests an implementation timeline for the various recommendations included in this plan. The timeline classifies the recommendations under five implementation phases: very near term, near term, medium term, long term and ongoing. The recommendations are also classified as either higher priority (shown below in bold) or lower priority (shown in regular type). Lower-priority recommendations in the very near, near and medium terms that the city is not able to implement in time may slip into the next phase. The implementation of proposed strategies and actions will be subject to further deliberations of the City Council.

Very near term

- **Establish a seawall/retaining wall monitoring and repair program and begin annual inspections** (see page 86 for more information).
- **Add drainage holes to seawalls** (p. 86).
- Design and install new stencils and signage on the Monterey Bay Coastal Trail that indicate pedestrians' and cyclists' rights-of-way (p. 42).
- Refresh and supplement the bike lane stencils on Ocean View Boulevard west of Asilomar Avenue, and install additional "Park Off-Pavement" signs (p. 76).
- Identify and remove construction debris and decommissioned structures from bluffs and beaches (p. 77).
- Create and roll out the online tour of the shoreline (p. 81).

Near term

- **Shift the trail onto the ocean-side parking lane of Ocean View Boulevard around Esplanade Park** (pp. 63–64).
- **Relocate the trail along the Naiad and Clyde Street seawalls inland** (p. 47).
- **Relocate the trail across the street from 747–755 and 807–809 Ocean View Boulevard inland** (pp. 53–57).
- **Widen to 5 feet the trail between Otter Point and just east of Esplanade Street and similar bluff-top segments** (p. 77).
- **Design and begin implementing a shoreline rodent control program** (pp. 78–79, 86).
- Stencil sharrows on Ocean View Boulevard between Lovers Point and Asilomar Avenue (p. 76).
- Differentiate more clearly the bike path and pedestrian trail on the Monterey Bay Coastal Trail (p. 42).
- Widen the Monterey Bay Coastal Trail around the foot of 12th Street (p. 43).
- Install split-rail fencing in Berwick Park to discourage people from cutting across the park to reach the trail (p. 43).
- Install a monument to Ed Ricketts at the Great Tidepool (p. 80).
- Construct a bird observation platform in Point Pinos (p. 80).

Medium term

- **Redesign the parking area at Sea Palm Avenue** (pp. 53–57).
- **Shift the trail onto the ocean-side parking lane of Ocean View Boulevard west of the Coral Street wall** (pp. 63–64).
- **Construct a bluff-top trail between 1119 Ocean View Boulevard and the Coral Street Beach retaining wall** (p. 63).
- **Widen the Monterey Bay Coastal Trail around 15th Street** (p. 43).
- Install traffic-calming measures on Ocean View Boulevard (pp. 75–76).
- Implement the Point Pinos trail study's short-term plan (construction of a continuous trail; p. 72).
- Relocate the Coral Street pump station equipment (the timing of this recommendation ultimately depends on Monterey One Water; pp. 67–68).

Long term

- Redesign the trail across from Borg's Motel (pp. 47–52).
- Redesign the parking area at Otter Point (pp. 58–62).
- Implement the Point Pinos trail study's long-term plan (converting Ocean View Boulevard west of Asilomar Avenue into a two-way bike path; p. 73).

Ongoing

- On an annual basis, conduct annual inspections of seawalls and retaining walls, and monitor key erosion hotspots (p. 86).
- Refresh sharrows and bike stencils on Ocean View Boulevard and trail stencils on the Monterey Bay Coastal Trail (pp. 42, 76).
- Implement measures for the protection of cultural and archeological resources (p. 78).
- Continue implementing the shoreline rodent control program (pp. 78–79, 86).
- Maintain and update the online tour of the shoreline (p. 81).
- Lend logistical and policy support to Hopkins Marine Station (and the Monterey Bay Aquarium, if necessary) in their efforts to climate-proof their facilities (p. 79).