Perkins Park
Existing Conditions Report

November 19, 2020 ////////////////////////////////

Prepared for:

Perkins Park
City of Pacific Grove
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Introduction /

Perkins Park is a coastal access park located within the City of Pacific Grove in Monterey County, California. The project site occupies the coastline adjacent to Ocean View Boulevard. The park stretches 0.8 miles between Lover's Point through Esplanade Park. (See Location Map, p. 3). During a historic drought in 2015, the park's most notable feature, the "Magic Carpet" ice plant (*Drosanthemum floribundum*), sustained extensive damage. Due to the park's notoriety and its historic and economic value to the city of Pacific Grove, a Landscape Maintenance Plan has been developed to revive the park.

The purpose of this Existing Conditions Report is to serve as a reference for the existing vegetation and general condition of Perkins Park. These existing conditions have informed the design process for the revival of the vegetation in Perkins Park, and have provided the opportunity for site-specific decisions to be made regarding the park's long-term health and maintenance.

All observations and analysis were conducted by a team of specialists consisting of Landscape Designers, Irrigation Auditors, Arborists, Landscape Installation and Maintenance specialists, Horticulturists, Botanists, and Restoration Ecologists between April 2019 and September 2020. Data collected by the team of specialists was collected using GPS units with submeter accuracy and analyzed using Q-GIS software.

Excluded from this document is a discussion of the condition of all hardscape surfaces (e.g., parking lots, pathways, general curb conditions, and stairs), erosion control measures (e.g., sea walls or overall cliff conditions), signs and wayfinding, and existing soil conditions.

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Site Context

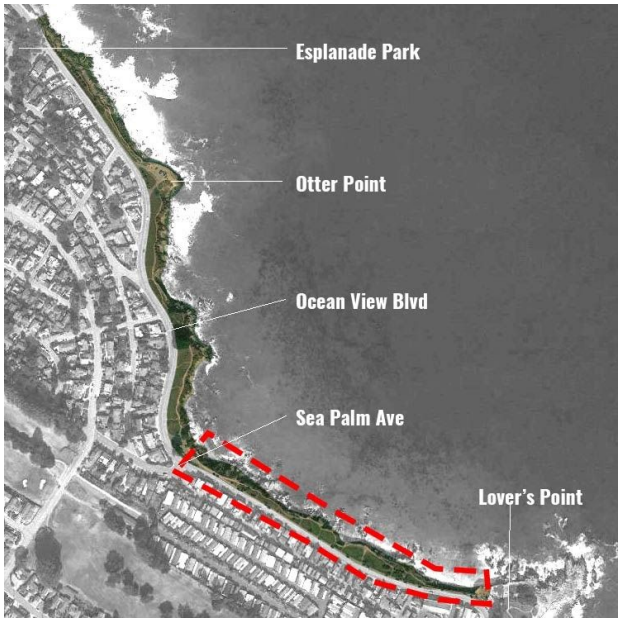
Perkins Park is a 0.8 mile stretch of coastline on Monterey Bay, located in Pacific Grove between Lover's Point and Esplanade Park. The entire park is flanked by Ocean View Blvd.

Due to its large scale, the park has been divided into three main sections for the purpose of this report. These sections are as follows:

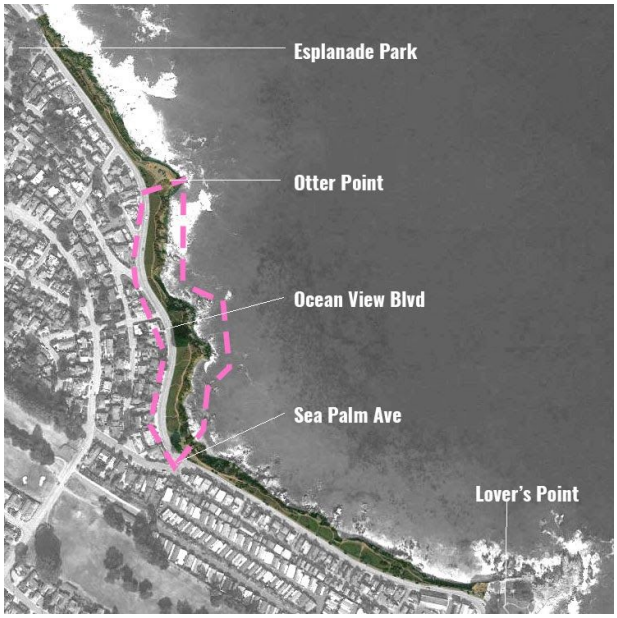
01) Lovers Point to Sea Palm Ave.
02) Sea Palm Ave. to Otter Point
03) Otter Point to Esplanade Park

Above: Perkins Park location, highlighted in color.

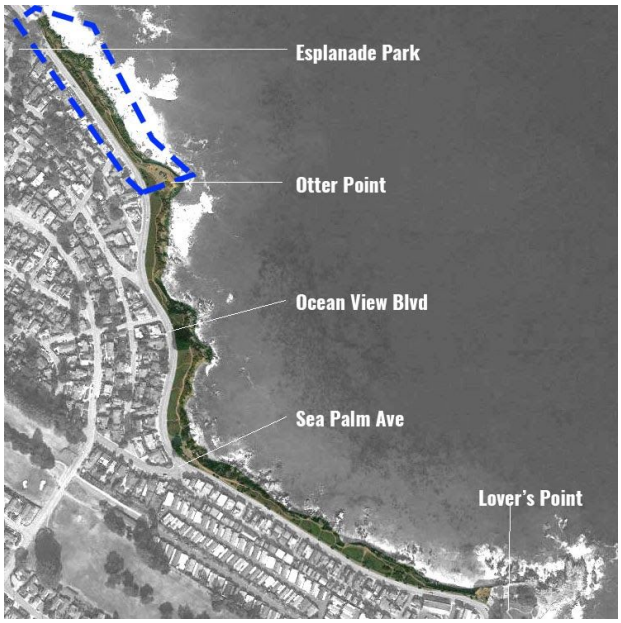
Area 01: Lover's Point to Sea Palm Ave.



Area 02: Sea Palm Ave. to Otter Point



Area 03: Otter Point to Esplanade Park



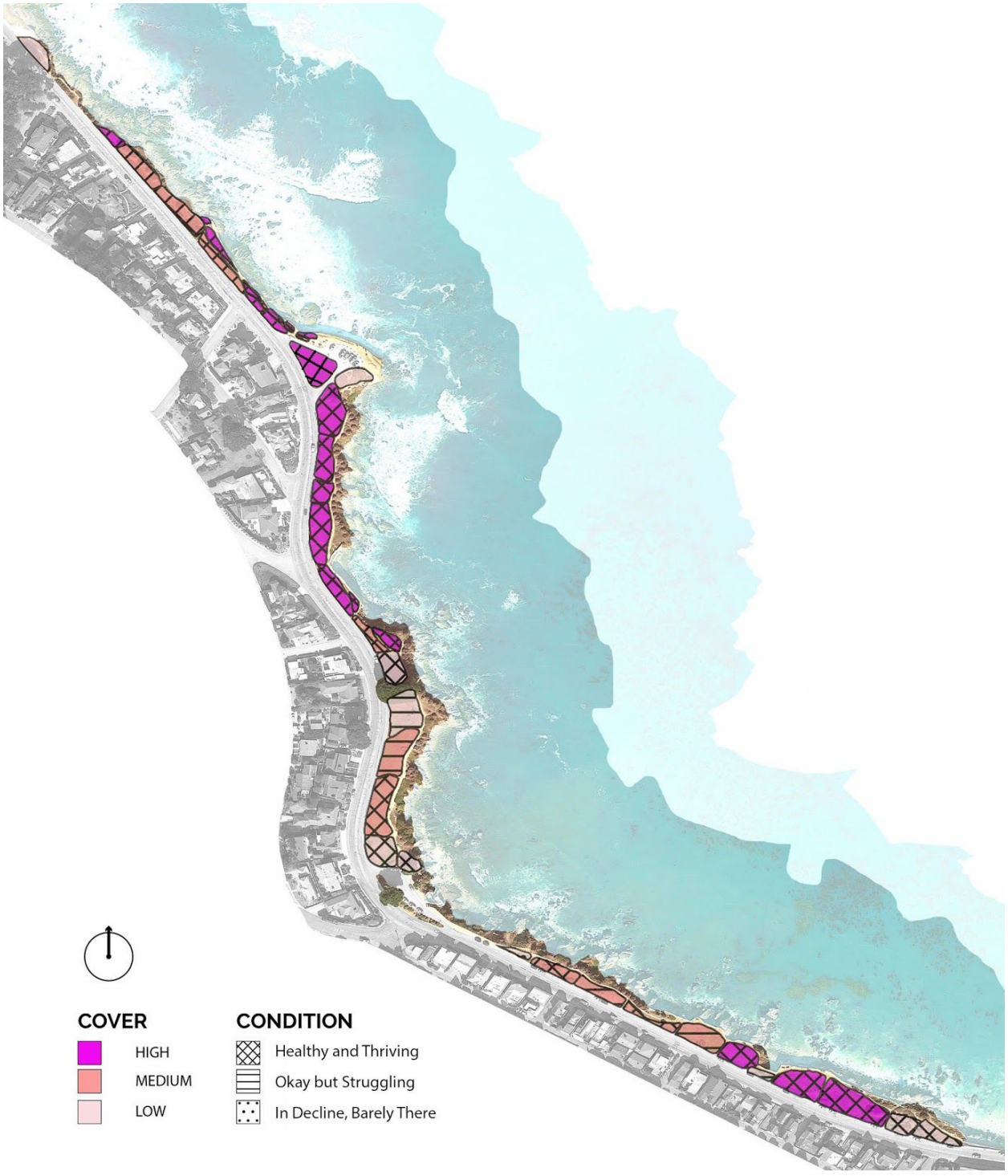
Park Health

The vegetation of Perkins Park was inspected and analyzed by a team of Landscape Designers, Horticulturists, Botanists, and Restoration Ecologists. The team's focus was to determine the overall health of the vegetation, identify weed coverage, analyze existing native plants and habitats, and locate potential planting zones.

This section reviews the general condition of the park's vegetation. It is broken down into the following sections:

01 - "Magic Carpet" Ice Plant
02 - Weeds & Pests
03 - *Aloe arborescens*
04 - Native Califonia Plants & Potential Native Habitat

01 - “MAGIC CARPET” ICE PLANT



“Magic Carpet” ice plant covers 90% of Perkins Park, making it the iconic feature. Its eye-popping floral displays have adorned the cover of *Life* magazine and were once featured in *National Geographic Magazine*.

“Magic Carpet” ice plant COVER was determined by the percentage of the landscape that the ice plant covers within each landscape area. (Landscape areas are defined as those within the boundaries of Perkins Park that are covered in plants and are found between formal and informal pathways.) Cover amounts were then classified as follows:

- 67-100% = High
- 34-66% = Medium
- 0-33% = Low

“Magic Carpet” ice plant CONDITION was determined based on visual observations and was divided into three categories:

- Healthy and Thriving
- Okay but Struggling
- In Decline, Barely There

The overall health of a stand is determined by a combination of both COVER and CONDITION, which varies throughout the park. There appears to be a direct correlation between ice plant health and 1) volunteer efforts to maintain the plant, 2) irrigation, 3) ground squirrel nesting, and 4) presence and thickness of weed growth.

Ice plant cover is highest in the landscape areas south of Otter Point to Siren St., where dedicated volunteers have made extensive efforts to weed and encourage the growth of the ice plant. The other area of high cover is featured along the south side of the park, near Borg’s Motel where the gardens feature 85% ice plant cover. These high-cover areas were also found to be “Healthy and Thriving.”

Above Left: Gardens with high coverage of Healthy and Thriving “Magic Carpet” ice plant, located on the south side of the park near Borg’s Motel.
Above Right: Healthy and Thriving “Magic Carpet” ice plant with high coverage, located near Esplanade Park.

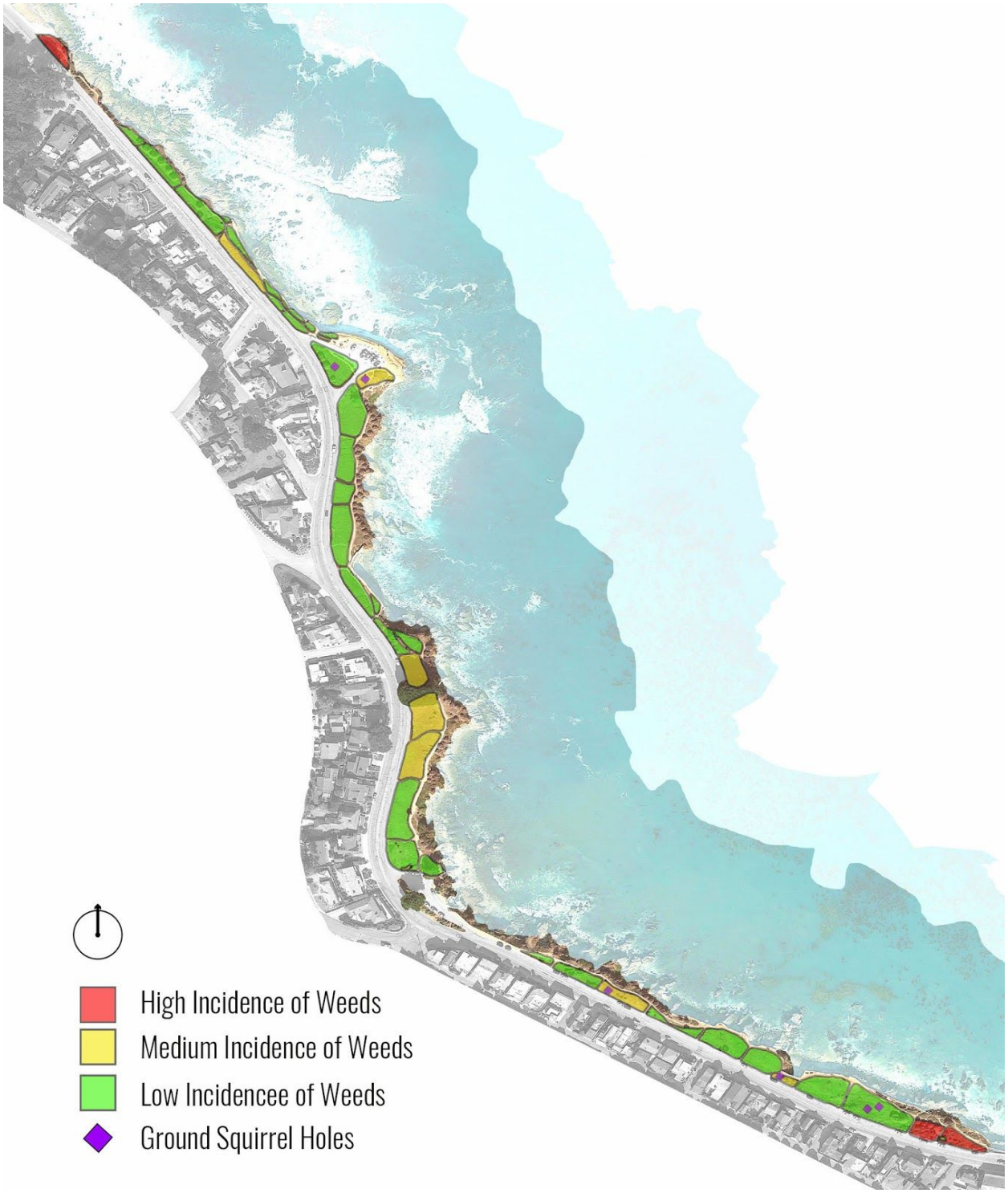
Gardens containing between 34-66% ice plant cover were considered to have medium COVER. These gardens have a higher concentration of weed coverage, and the irrigation system does not fully water the plants. In general, these gardens primarily contained ice plant whose condition was considered to be “Okay but Struggling,” though some scattered sections of “Healthy and Thriving” areas occur throughout the park.

Above: Gardens with 45% coverage of Healthy and Thriving "Magic Carpet" ice plant, located on the south side of the park. "Magic Carpet" ice plant is outlined above within the pink dashed line.

Areas containing 0-33% ice plant are considered to be of low COVER. These include areas where low-impact development gardens with native plants have been intentionally placed where the "Magic Carpet" ice plant historically struggled to survive, such as around Sea Palm Ave. Other gardens have been trampled and do not contain irrigation, so the "Magic Carpet" ice plant has died off in these areas. It should be noted that while some areas may have low COVER, their CONDITION is still "Healthy and Thriving," because the few plants that grow within these areas are healthy.

Above: A garden with low concentrations of "Magic Carpet" ice plant. However, the few stands of ice plant that are found within the space are considered to be Healthy and Thriving. "Magic Carpet" ice plant is outlined above within the pink dashed line.

02 - WEEDS & PESTS



The following weeds were identified throughout Perkins Park. Weeds are defined as plants found within the park that have not been intentionally planted by the City of Pacific Grove representatives or volunteers. Weeds are also defined by their inclusion in the California Department of Food and Agriculture (CDFA) and California Invasive Plant Council (CAL-IPC) plant lists for the Central Coast region. Some of these weeds may be listed as invasive species according to CDFA and CAL-IPC. The incidence of weeds

was greater in areas where volunteer efforts were minimal and where irrigation is irregular.

TABLE 01: WEEDS OF PERKINS PARK - NATIVE & NON-NATIVE

Species Name	Common Name	Type
Ambrosia psilostachya	Ragweed	Native
Brassica species	Mustard	Invasive
Bromus diandrus	Ripgut brome	Non-native
Carpobrotus edulis	“Highway” Ice plant	Invasive
Dimorphotheca sp.	African daisy	Non-native
Echium candicans	Pride of Madeira	Invasive
Ehrharta erecta	Veldt grass	Invasive
Erodium botrys	Long-beak stork's bill	Non-native
Gnaphalium palustre	Lowland cudweed	Native
Malva sylvestris	High mallow	Non-native
Medicago sp.	Burclover	Invasive
Oxalis pes-caprae	Bermuda buttercup	Invasive
Toxicodendron diversilobum	Poison Oak	Native
Stellaria media	Chickweed	Non-native
Various	Annual grass	Non-native
Zantedeschia aethiopica	Calla lily	Invasive

Above Left: Bare soil and weeds along the stretch of Cypress trees in Perkins Park.
Above Right: Landscape areas near Sea Palm Ave. are overrun with weeds.


Above Left: Non-native grasses inundate a stand of "Magic Carpet" ice plant near Esplanade Park.
Above Right: Detail image of weedy grasses within a stand of "Magic Carpet" ice plant near Esplanade Park.

A second species of ice plant is also present within Perkins Park, "Highway" ice plant (*Carpobrotus edulis*), which appears in a few sections of the park. This species is not as desirable as it is considered to be an invasive plant species for the Central Coast region and is being eliminated along stretches of coastline within Pacific Grove, such as at Asilomar Beach and the Point Pinos trail. In addition, it does not contribute to the pink carpet the "Magic Carpet" ice plant provides.


Above Left "Highway" ice plant at Otter Point.
Above Right: "Highway" ice plant and annual grasses along the cliff edge between Sea Palm Ave. and Siren St.

Two additional plants that are found throughout Perkins Park are also categorized as invasive species by CDFA and CAL-IPC: Pride of Madeira (*Echium candicans)* and Calla Lily (*Zantedeschia aethiopica*).

Above: Calla lilies at Sea Palm Ave.

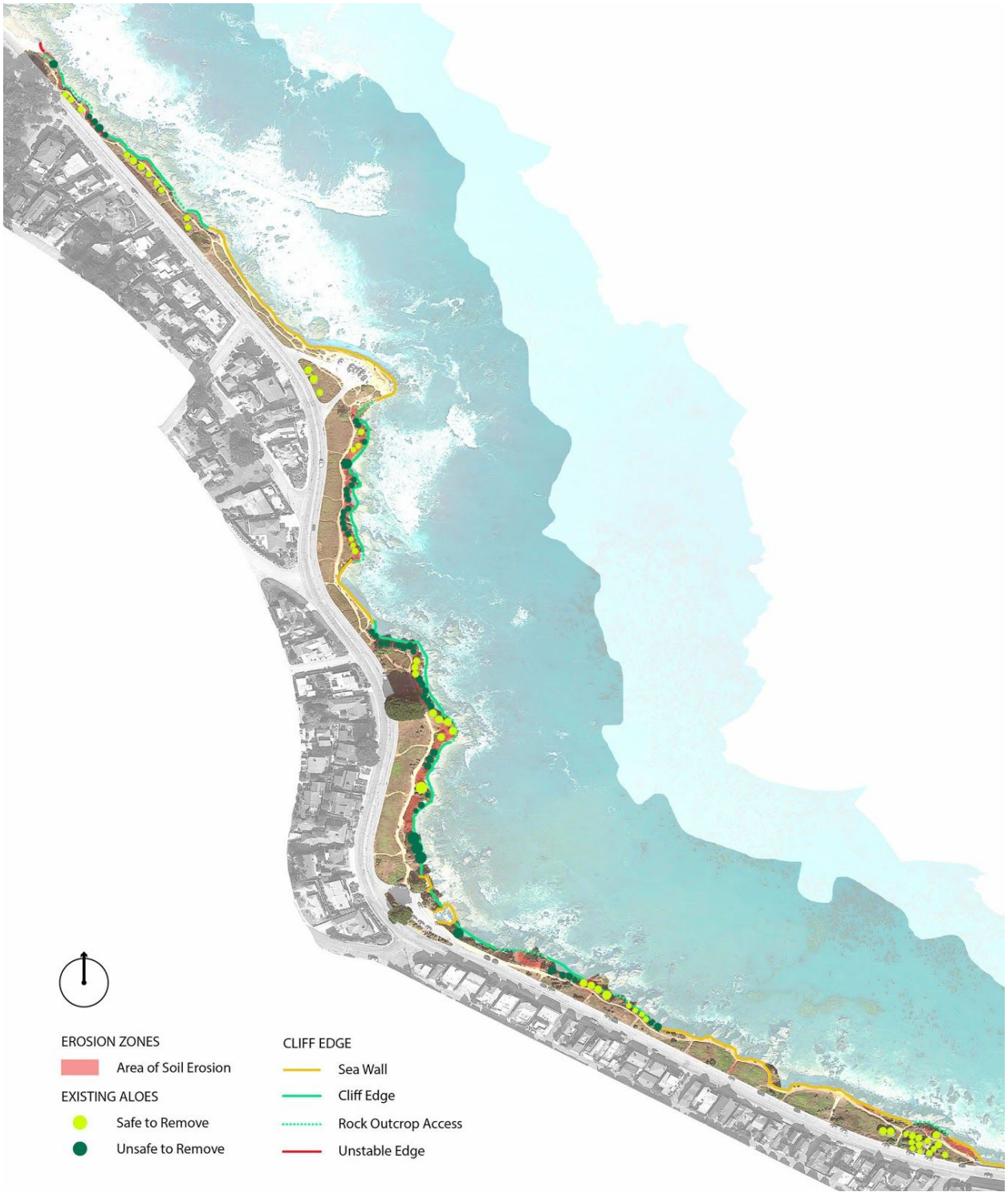
Above: Pride of Madeira stands along Ocean View Blvd. near Lover's Point. Calla lilies mixed within the stand are in bloom in this photograph.

Poison Oak (*Toxicodendron diversilobum)* is found within the park along the cliffsides at Sea Palm Avenue. Portions of the Poison Oak are encroaching into the pedestrian space, leaving visitors vulnerable to coming in contact with the plant. Poison Oak historically lined the cliffsides of Perkins Park. This species is also known to be one of the best plant species to prevent erosion of cliffsides throughout the Monterey Bay. However, its ability to cause serious allergic reactions to humans makes it undesirable to be featured within the Perkins Park landscape.

Ground squirrels are a notable pest throughout the park. Ground squirrels can be found along the cliff sides, on rock outcroppings, and within the center of the garden areas. Notably, the ground squirrels use stands of non-native *Aloe arborescens* as their main nesting ground. They have created burrows beneath the aloes, which have the potential to destabilize the plant and cliff sides they reside upon.


Above Left: A ground squirrel hole beneath an aloe on the south side of Perkins Park near Lover's Point.
Above Right: Ground squirrel holes within garden space in Perkins Park near Sea Palm Ave.

03 - ALOE ARBORESCENS



Mature stands of Candelabra Aloe (*Aloe arborescens*), native to southern Africa, are ubiquitous throughout the park. Although some colonies are situated near the roadside at Ocean View Blvd., the majority of these plants grow in relatively tight formations along the park's cliff edge. The establishment of

this species has created a variety of conflicting benefits and detriments to the park's long-term ecological health and structural stability.

Many of these aloes are currently serving as poor-quality habitat for a few insect and animal species, such as sparrows and ground squirrels. These plants do not provide maximum habitat value to the ecology of the park. Rather, they serve as a placeholder for more desirable native plant species that could increase habitat potential for many other native species, including the black oystercatcher.

The existing aloes presence along the cliff edge of the park, where they are planted in relatively tight lines, act as a safety barrier along the cliff for visitors. Consequently, the aloes also block views out toward the bay and along the shoreline of the park. Removal or pruning of the aloes may result in better viewshed visibility.

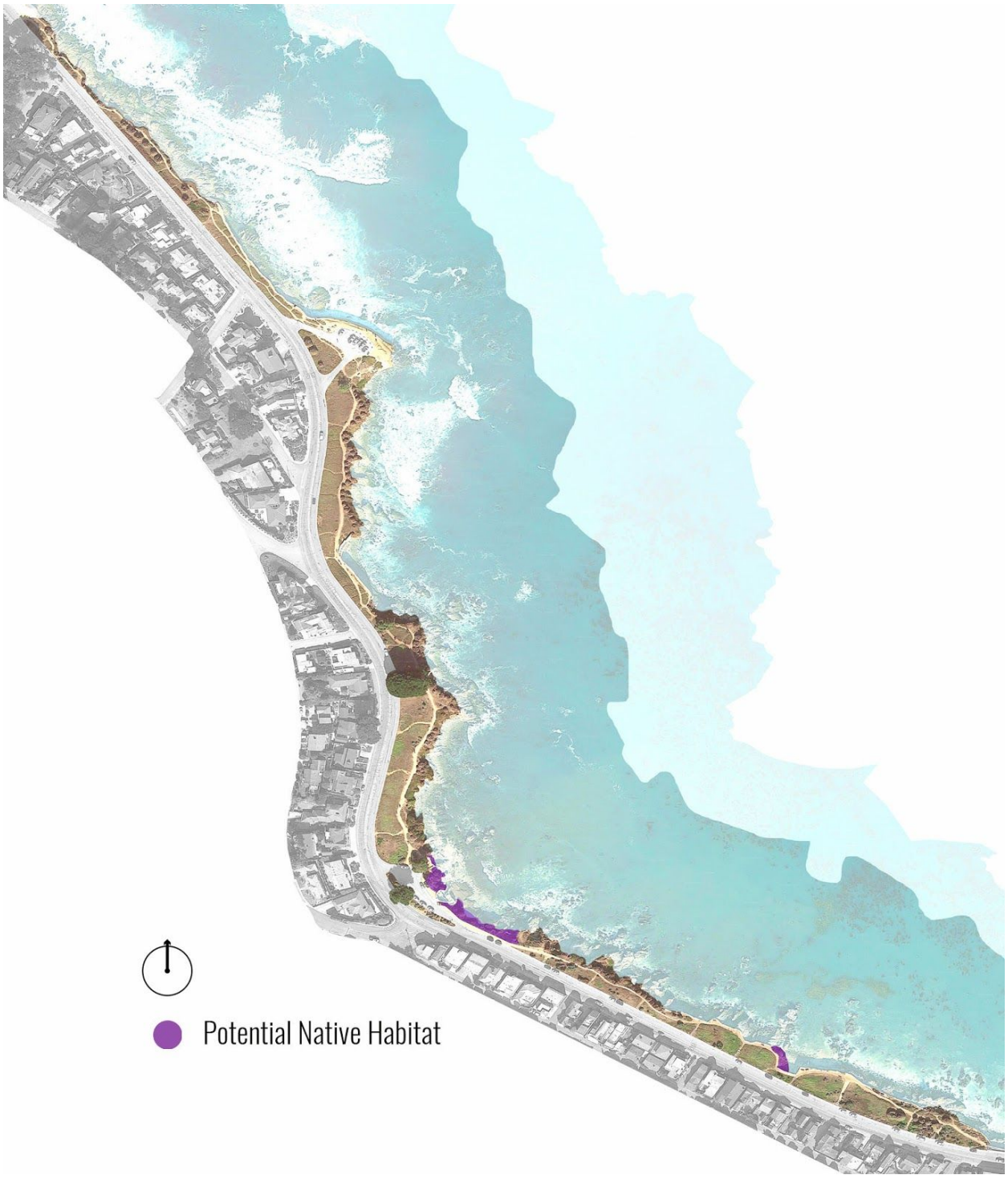
Erosion is a concern with the aloes located along the cliffsides. Futher investigations will be required to determine if their sheer size and weight has the potential to cause a catastrophic or exasserbated erosion event of the cliffside.

Above Left & Right: Aloes precariously perched along the cliff edge near Sea Palm Ave.

Above: Aloes are beginning to fall off the cliff edge near Lover's Point.

Above: Aloes at risk of falling off the cliff edge near Siren St. Four plants showing signs of die-off.

05 - NATIVE CALIFORNIA PLANTS & POTENTIAL NATIVE HABITAT



Currently, there is very little native habitat in the park. The cliff-side slope along the shoreline opposite Sea Palm Ave. is the only area containing predominantly native California coastal bluff plants.


Above Left: Looking south along the cliff bluff from the stairs at Sea Palm Ave.
Above Right: Looking north along the cliff bluff from the stairs at Sea Palm Ave.

A few local species utilize marginal habitats within the park's non-native ecosystem. For instance, songbirds are using the aloe and "Magic Carpet" ice plant as habitat.

Additional native habitat is likely to form in two areas that have been recently planted with native species, at Sea Palm Ave. and near Siren St. below the Cypress trees. The CONDITION of these gardens is "Healthy and Thriving." However, there are currently large gaps between plants where weeds can easily grow. In addition, they are laid out in a linear pattern in monoculture rows, which may be aesthetically pleasing but does not mimic natural habitat patterns.


Above Left: Native plant garden near Siren St. Seaside daisy (Erigeron glaucus) *in full bloom in March 2020.*
Above Right: Native plant garden at Sea Palm Ave. *with* Salvia *sp. in bloom.*

Trees

This section provides current conditions of the existing trees within Perkins Park.

Tree coverage is limited at Perkins Park. There are select trees found in clusters at Sea Palm Ave., and in Area 02 between Sea Palm Ave. and Otter Point. The following describes the conditions of the existing trees.

Cypress 01: Located within the median between the Parking Lot and Ocean View Blvd.

This is an old-growth Monterey cypress (*Cupressus macrocarpa*), native to the Pacific Grove coastline. The tree is exhibiting a burl at its base and the tree's root flare is covered by ice plant, restricting its oxygen intake. The tree's branch growth appears healthy, and the general health of the tree appears to be good.

Cypress 02: Newly planted tree located to the north of Sea Palm Ave. parking area

This Monterey cypress has been recently planted, and is currently at 3" caliper. The tree appears to be planted properly and is in good health.

Located just south of Siren St. there is a cluster of 3 large Monterey cypress trees.

Cypress 03: Trunk located closest to the cliff edge

This is an old-growth tree and appears to be very healthy. However, there are a few hollows appearing on the trunk. The trunk is showing some damage on the side facing the ocean and the bark has fresh cuts where a limb was recently lost.

Cypress 04: Located in the center of the cluster

This is an old-growth tree and appears to be in moderate health. The crotch of the tree is showing signs of rot and decay. However, the tree is well established and is one of the older trees found in the park.

Cypress 05: Located closest to Ocean View Blvd.

This is an old-growth tree, which is in moderate to declining health. It appears to have termite damage, and as a result, the tree has been hollowed out. In addition, a vehicle appears to have backed into the tree aggressively and the root flare is covered.

***Metrosideros excelsa* 01: Tree located on the seaside edge of Sea Palm Ave. parking area (South)**

There are 4 New Zealand Christmas trees (*Metrosideros excelsa*) throughout the park. This particular tree is in healthy condition, and leaf growth appears healthy. No apparent pests or rotten areas are present. It also has healthy branching structures and multi-trunks.

***Metrosideros excelsa* 02: Tree located on the seaside edge of Sea Palm Ave. parking area (North)**

This particular tree, located along the cliff edge, appears to be a volunteer. It is in healthy condition, despite being close to the cliff. The roots appear to be healthy and are helping to stabilize the cliff edge.

***Metrosideros excelsa* 03: Located near Siren St.**

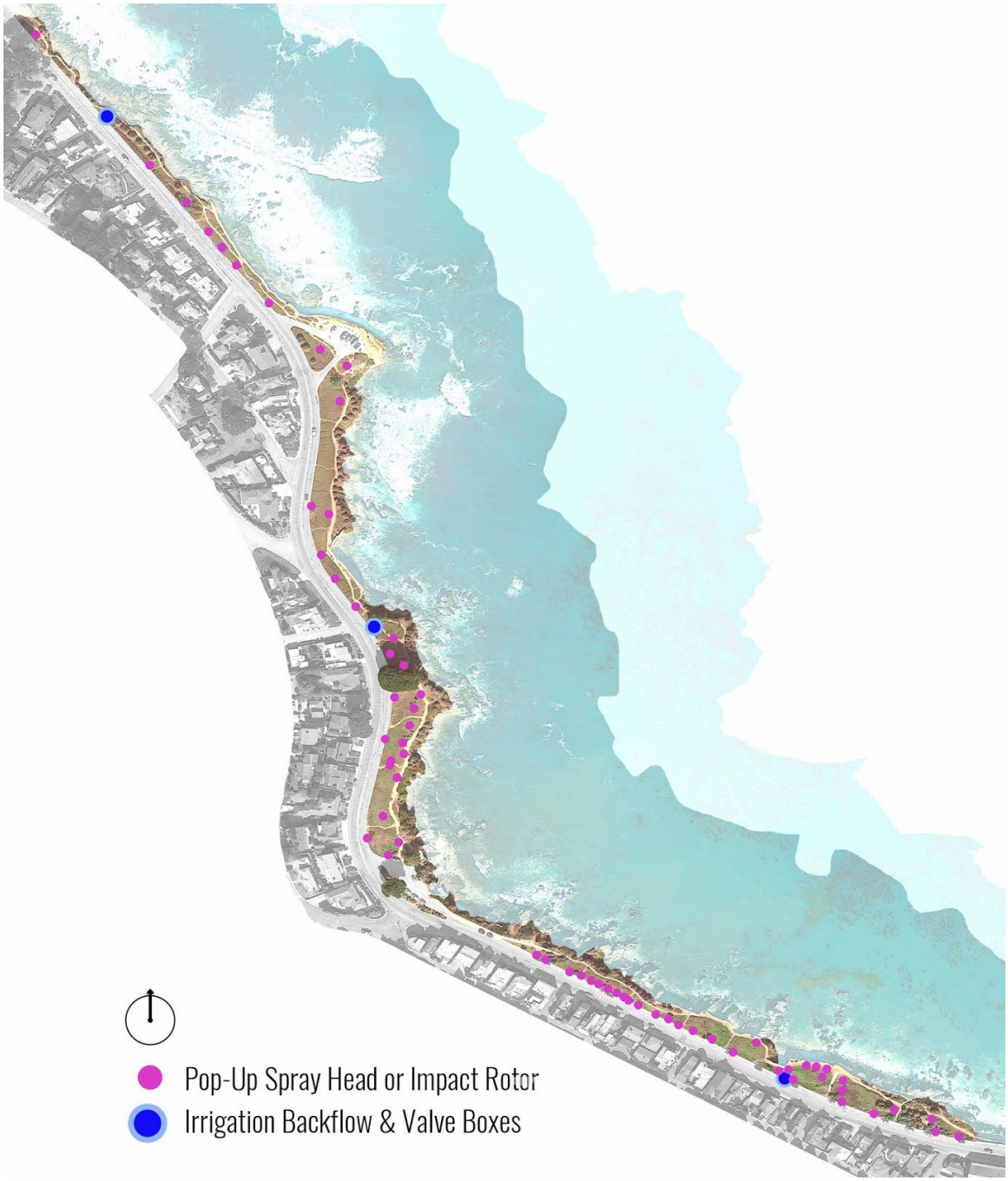
This tree appears to be very healthy. However, some root trampling has occurred due to the fact that the pathway does occur under the tree canopy. It has healthy branching structures and strong multi-trunks. No apparent pests are present.

***Metrosideros excelsa* 04: Located on the south side of Otter Point. Has a concrete bench sitting below the tree canopy.**

This tree has a concrete bench sitting below the tree canopy. The bench does not appear to be causing harm to the root system nor causing harm to the root flare. Its branching structures and multi-trunks appear to be healthy.

Irrigation

Observations and reporting on the existing irrigation system for Perkins Park are provided by a certified Irrigation Auditor.



The existing irrigation system present at Perkins Park utilizes a mix of sub-grade and above-grade main and lateral PVC lines. The exact age of the irrigation system is unknown, but the system is outdated and difficult to service. The following outlines the existing conditions for the irrigation system:

1) **Water Meters & Backflow Devices**

The existing water meters appear to be in working order. The existing copper backflow devices appear to be of the correct size and in working order, however, they are very weathered. The existing backflow devices are mounted upon concrete blocks that have been subject to major erosion, thus making them vulnerable to damage (see images below). The historic water use for Perkins Park is currently unknown.

Backflow device located between Lover's Point and Sea Palm Ave.

Backflow and valve box located between Esplanade Park and Otter Point exhibiting erosion.

Backflow device and valve box near Otter Point.

2) **Water Flow Control**

There is no centralized computerized irrigation controller system in place at Perkins Park. Water must be turned on/off manually. In addition, there are no flow sensors or a master valve that would allow for water to be shut off in the event of a water leak or break in the irrigation line. Extended run times and low head drainage are causing excessive watering of the park and can cause erosion.

3) **Valves**

All irrigation lines are set up to use ball or isolation valves. The true condition of these valves is unknown. Various irrigation remote control valves (RCV) of various conditions (newly replaced to original) with battery-operated solenoids do assist with water flow control.

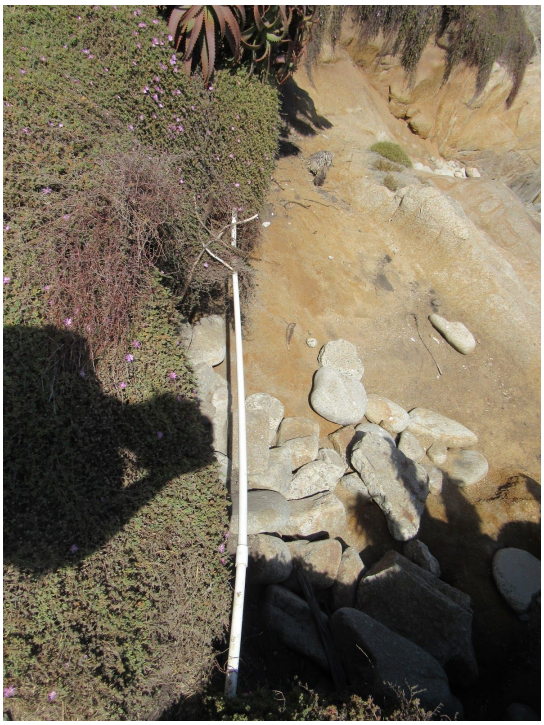
4) **Irrigation Lines**

Irrigation lateral lines are ¾" PVC pipe that is buried throughout the majority of the park. Above lines also exist throughout the park, but have been covered by the "Magic Carpet" ice plant. Inadequate/differing pipe sizes to accommodate required gallon per minute (GPM) of spray emitters. Broken lines can affect erosion patterns, cause excessive run-off and line pressure.

5) **Water Distribution - spray heads**

Spray heads are placed sporadically throughout the park, as indicated in the map below. Uniformity of coverage is low. Spray irrigation consists of impact rotors and pop-up spray heads. Within the park, irrigation is not working properly in garden zone 1. Inefficient amounts of water-emitting devices in hydrozones, differing nozzles types and sizes are causing overspray, run-off, and erosion.

Above: Erosion of soil along the cliffside exposes a broken irrigation line, creating a large hazard.

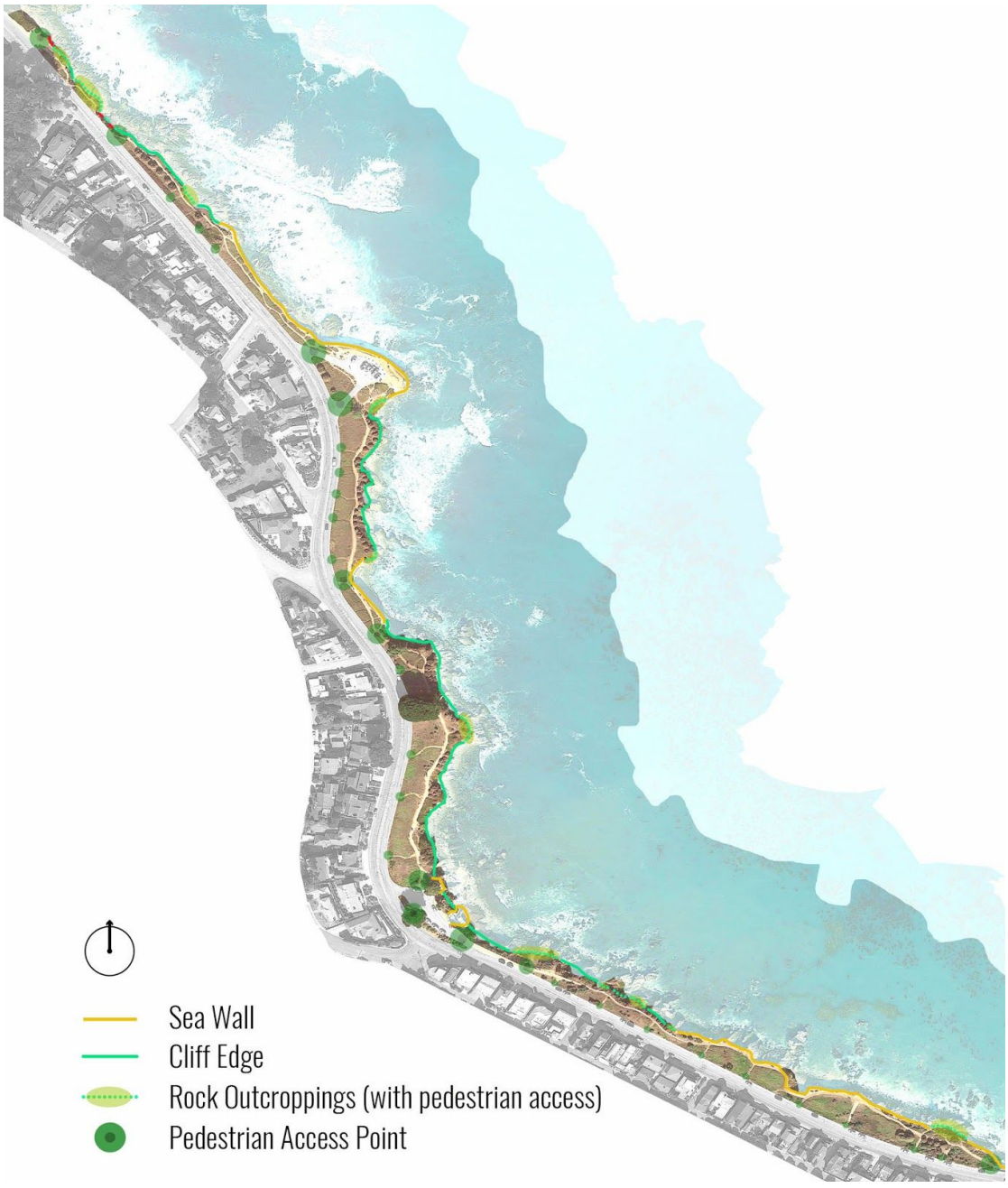



Above Left: A leaking irrigation line is most likely the culprit for the erosion we see around the backflow devices throughout the park.
Above Right: Area of the park where the cliffside is being eroded away and has exposed the irrigation line.

Pedestrian Experience

This section provides an overview of the existing pedestrian experience through the park.

ENTRANCES & ACCESS POINTS



Perkins Park is a public park with a history of cultural significance and picturesque aesthetics that enhance the community's image and economic standing. Considering the visitors' experience of the park is of paramount importance in order to maintain Perkins Park as an iconic feature and economic driver to the city of Pacific Grove.

Pedestrians access the park through both formal and informal entry points. The formal, main entry points are at Borg's Motel, Sea Palm Ave., Otter Point, and at Esplanade Park. The formal decomposed granite pathway leads pedestrians through the park between the main access points, running along the cliff edge. The distances between the main access points are:

- Between Esplanade Park to Otter Point: 0.17 miles
- Between Otter Point to Sea Palm Ave.: 0.25 miles
- Between Sea Palm Ave. & Borg's Motel: 0.21 miles

As a result of limited access into the park, informal ad-hoc pathways can be found approximately every 100 feet, providing pedestrians convenient access to the park. There are approximately 29 informal pathways found throughout Perkins Park. Informal pathways have occurred through large swaths of ice plant, and vary in size and shape. These informal pathways are important to provide pedestrian and maintenance access to the park.

Above: A curb cut and pedestrian path along Ocean View Blvd. Compacted soils due to human trampling will increase water flows and soil erosion.