

Perkins Park Landscape Maintenance Plan

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Project Introduction

Perkins Park is a coastal access park located within the City of Pacific Grove (the City) in Monterey County. The project site is located along the coastline adjacent to Ocean View Blvd. The park stretches 0.8 miles between Lover's Point through Esplanade Park. (Location Map, p.6). 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 the historic and economic value to the City, the Perkins Park Landscape Plan was developed. The overarching plan contains the following elements:

- Existing Conditions Report
- Schematic Landscape Design
- Public Outreach & Community Feedback Reports
- Construction Drawings & Specifications
- Landscape Maintenance Plan

The purpose of the Landscape Maintenance Plan is to provide for the maintenance procedures of the park areas delineated within this document. This document focuses on park maintenance in two scenarios:

- 1) Maintenance of current park configuration; or
- 2) Maintenance of the park if the City proceeds with the landscape design detailed in the Construction Drawings/Specifications.

Those two scenarios are outlined within this document as:

- **Part 01: Enhancement of Existing Conditions Maintenance Protocols**
- **Part 02: Post-construction Maintenance Protocols**

SUMMARY OF GOALS

The goals for this project are as follows:

- 1) Enhancement of "Magic Carpet" ice plant monocultures,
- 2) Restore Perkins Park in order to have the park remain as an economic driver for the City of Pacific Grove,
- 3) Create native habitats using native California species to encourage local species to repopulate the area,
- 4) Develop an efficient and effective irrigation system that will optimize plant health,
- 5) Preserve & Enhance beloved cliffside aesthetics and picturesque viewsheds,
- 6) Create a more biologically diverse landscape with more seasonal interest and more immersive and rich visitor experience,
- 7) Identify effective methods to reduce and eradicate pests and rodents.



Image 01: Park Extent: Along Ocean View Blvd. in Pacific Grove between Lover's Point and Esplanade Park

SUMMARY OF MAINTENANCE PROTOCOLS

The Perkins Park Maintenance Plan protocols are derived from the City's Public Works Department desire to maintain the park as an internationally iconic landscape that will increase tourism. The maintenance program for the Perkins Park landscape areas is designed to ensure project success with the project conditions and goals, as outlined in Chapter 1.11: Success Criteria and Monitoring Program.

Part 01: Enhancement of Existing Conditions Maintenance Protocols

Maintenance goals will be accomplished by implementing a 5-year maintenance protocol that will enhance the existing landscape and meet project goals. Weeding, fertilizing, irrigation improvements, and general plant maintenance will be the primary focus of the protocol. This park-enhancement maintenance plan can be implemented immediately and can be maintained indefinitely in the event that the city of Pacific Grove does not implement major changes to the park.

Part 02: Post-Construction Maintenance Protocols

This will be accomplished by implementing a 3-year plant-establishment maintenance program, beginning in Year 1 post-construction, such that plant survival rates are maximized and desired landscape features are achieved. Weeding, irrigation, and plant protection will be the primary components of the program. The program also includes implementation of a 2-year post-establishment period maintenance program, beginning in Year 4 post-construction, in order to maximize the potential for long-term plant survival and landscape features. The maintenance program includes the implementation of remedial actions on a yearly basis if plantings fail to meet performance standards. The success of the program will be documented by implementing a 5-year monitoring program that evaluates the status of the landscape areas and reports the findings to regulatory agencies and the City of Pacific Grove Public Works Department on a yearly basis.

SUMMARY OF REPORTING & INSPECTION

In order to ensure maintenance is being completed in accordance with the goals set by this document, a protocol for reporting has been established. Reporting is as follows:

Weekly/Monthly Maintenance Schedule

Each week/month a maintenance schedule shall be completed and reviewed internally with the City of Pacific Grove maintenance crew and the City Public Works Department. This is to ensure the proper maintenance is being applied and determine if there are any deficiencies. During periods of plant establishment, weekly schedules will be required, and as plants mature, schedules can be converted to monthly, where applicable. This will be completed for both Part 1 and Part 2 maintenance sections.

Monthly Maintenance Report

Monthly reports for Parts 1 and 2 shall include maintenance progress and deficiencies for each landscape zone. The report shall include but not be limited to:

- Planting areas and zones maintained
- Plant conditions and high-priority plant maintenance tasks
- Irrigation/water observations
- Changes to irrigation schedule and repairs
- Soil erosion due to foot traffic, run-off, curb-cuts, etc.

- Hazard observations
- Suggestions/Requests

Quarterly Inspections Report

Quarterly reports shall be conducted by the City of Pacific Grove during plant-establishment periods to ensure plant health. After the establishment period, reports can be bi-annual, where applicable. The report shall include but not be limited to:

- Overall plant conditions and high-priority areas
- Water use, irrigation, and erosion observations
- Exhausted tasks (those tasks no longer needed)
- New task(s)
- Suggestions/Requests

SUMMARY OF RELEVANT PROJECT PERMITS & CONSULTANT COORDINATION

Permitting

Perkins Park is managed and maintained by the City's Public Works Department. The park may be required to adhere to guidelines set by the California Coastal Commission and the City of Pacific Grove's Local Coastal Plan. It will be the responsibility of the Public Works Department to acquire the necessary permits and/or approvals in order to install the proposed landscape plans.

Coordination With Consultants

The Landscape Maintenance Plan may require the consulting services of qualified biologists, arborists, water managers, landscape architects, landscape technicians, and soil engineers. The City's Project Manager will be responsible for obtaining the correct specialists for the project.

LMP PART 01:
Enhancement of Existing Conditions
Maintenance Protocols

Chapter 1.1 : Landscape Areas

INTRODUCTION

The Perkins Park Landscape Maintenance Plan (LMP) provides the basis for enhancing the existing conditions of Perkins Park. The Public Works Department will be responsible for maintaining the park in order to meet the implementation and maintenance goals and objectives in a timely and efficient manner. These goals can be located in the Project Introduction at the beginning of this document.

LOCATION AND ATTRIBUTES OF LANDSCAPE AREAS

Perkins Park currently contains 3 primary landscape areas that shall be maintained within the Perkins Park project area. These are:

- “Magic Carpet” Ice Plant
- Native California Gardens
- Cliffsidess

The general features and attributes of each landscape area are described below. For a more robust description of the conditions at Perkins Park as of Oct 15, 2020, please refer to the Perkins Park Existing Conditions Report.

“Magic Carpet” Ice Plant

The “Magic Carpet” ice plant groundcover is composed of a monoculture of ice plant with magenta flowers. This landscape blooms approximately late February to mid-April and receives heavy pedestrian traffic during this time. Due to the sensitivity of the ocean habitats located adjacent to Perkins Park, only Ammonium Sulfate 21-0-0 will be used sparingly upon the “Magic Carpet.” Less-aggressive fertilizers also may be used, and are outlined in Chapter 1.9: Fertilizer Application. In addition, no insecticides, herbicides, rodenticides will be used within 15 feet of the ocean/cliffsidess.

Native California Gardens

Areas between Sea Palm Ave. and Esplanade Park consist of native California plants, grass patches, and trees and succulent plantings. These areas will require pruning, weeding, and infill plantings. Protection from grazing deer is recommended. Native and non-native trees are found throughout the park. Their recommended care is listed in Chapter 1.7: Plant Care and Protections.

Cliffsidess

Many stretches of cliffside found within Perkins Park feature well-established torch aloe (*Aloe arborescens*). Aloes will be maintained and pruned in order to optimize viewsheds and reduce weight upon the cliffside. Ground squirrels use the understory of the aloe as protected habitat, creating their burrows in the soil below the plant causing destabilization of the cliffside. Ground squirrels are to be eliminated. See Chapter 1.5: Integrated Pest Management Plan for details. No insecticides, herbicides, rodenticides will be used within 15 feet of the ocean.

Chapter 1.2 : Maintenance & Management Goals & Objectives

The implementation and management program for Perkins Park is designed to ensure adherence to a set of maintenance and management goals and objectives.

Landscape Goals for Part 01, Existing Conditions Enhancement

- 1) Maintain “Magic Carpet” ice plant monoculture.
- 2) Reduce invasive weeds.
- 3) Minimize opportunities for invasive plant species establishment.
- 4) Create and maintain a world-renowned park and picturesque attraction.

These goals will be accomplished through a maintenance and management plan which consists of proper management and reporting, basic hand weeding, irrigation improvements, scheduled plant fertilization, and pest management. Existing plants will be maintained and replenishment of “Magic Carpet” ice plant in the event of die-off will occur as needed.

Management Goals

- 1) Implement a maintenance program that will ensure the lasting beauty of the park.
- 2) Implement maintenance activities during the growing season (March-October).
- 3) Implement maintenance activities during the dormant season (November-February).
- 4) Implement remedial actions on a yearly basis if plantings or landscapes fail to establish.
- 5) Implement quarterly irrigation checks to ensure lines and spray heads are working properly and are not leaking or causing overspray.

Maintenance and Management Objectives

Irrigation:

- 1) Upgrade irrigation system to provide comprehensive coverage of all “Magic Carpet” ice plant and new garden spaces.
- 2) Identify and cap or repair all broken irrigation lines and spray heads.
- 3) Perform regular maintenance testing of irrigation system.
- 4) Address all areas showing erosion due to irrigation or curb cut run-off through irrigation scheduling adjustments, diversion and spreading of runoff, and / or other erosion control measures such as planting or rock placement.

Weed Control:

- 1) Weeding will be completed year-round and be scheduled into daily routine maintenance.
- 2) Weeding protocols will be based upon the season and weed species.

Browse Control:

- 1) Minimize deer browse damage on plantings by utilizing browse protection devices as required to maximize plant survival.

Replacement Plantings:

- 1) Replace dead or declining “Magic Carpet” ice plant within the landscape if plant survival falls below 70% in any year.

- 2) Replace senescent or dead large Aloes with Native California gardens as needed.

Cliff Edges

- 1) Use only EPA approved products for aquatic environments within 50 feet of the cliff areas.
- 2) Preserve and protect the cliff edges when possible.
- 3) Preserve viewsheds out over the cliff edges to the Monterey Bay.

Monitoring:

- 1) Consider an annual visit with Landscape Architect and City of Pacific Grove Public Works Department to discuss landscape development and management recommendations; incorporate recommendations.

Reporting of Maintenance Activities

The maintenance personnel will monitor the need for maintenance and will keep records documenting maintenance task items performed. Documentation will include:

- the date,
- maintenance task performed,
- who performed maintenance,
- notes on other tasks requiring action and observation of problems or potential problems.

Maintenance tasks documented will include, but not be limited to:

- irrigation, irrigation system maintenance,
- weed control,
- supplemental planting,
- mulching,
- plant protection measures, and debris removal.

A sample maintenance log sheet is presented in Appendix F.

Chapter 1.3: Annual Task Schedule of Maintenance Activities

Throughout the year each season will require different maintenance requirements to enhance the existing park's conditions. Thus, staffing will vary based on these requirements. The following is a maintenance schedule for the Enhancement of Perkins Park Existing Conditions Maintenance:

Spring (March-May)

- Four weeks per month, four days per week, three crew members working 8 hours per day.
- Weeding, fertilizing, pruning, rodent controls, seed bank exhaustion of the entire park (see Chapter 1.5).
- Quarterly irrigation check for broken lines, broken spray heads, over-spray, or clogged lines.

Summer (June-August)

- Four weeks per month, four days per week, three crew members working 8 hours per day.
- Weeding, fertilizing, pruning, rodent controls, replanting of exhausted "Magic Carpet" ice plant.
- Quarterly irrigation check for broken lines, broken spray heads, over-spray, or clogged lines.

Fall (September-November)

- Four weeks per month, three days per week, three crew members working 8 hours per day.
- Removal and replacement of exhausted "Magic Carpet" ice plant and other shrubs.
- Pruning of native California plants during their dormancy period.
- On-going rodent control, weeding, and mulching.
- Quarterly irrigation check for broken lines, broken spray heads, over-spray, or clogged lines.

Winter (December-February)

- Four weeks per month, three days per week, two crew members working 8 hours per day.
- Pruning and winter clean-up.
- Removal and replacement of exhausted "Magic Carpet" ice plant and other shrubs.
- Quarterly irrigation check for broken lines, broken spray heads, over-spray, or clogged lines.
- Yearly irrigation and maintenance report.

"Magic Carpet" ice plant maintenance will continue on the aforementioned prescribed maintenance schedule indefinitely.

Chapter 1.4 : Tools & Equipment

Tools & Equipment

The following tools and equipment will be needed to successfully maintain Perkins Park:

Body Protections: To be worn by all employees and volunteers for Perkins Park. Protections to follow City of Pacific Grove employee requirements and guidelines.

- Long pants such as jeans or utility pants
- Long-sleeve shirt
- Closed-toe and supportive footwear
- Gardeners gloves (fit to the individual)
- Eye protection
- Sunscreen
- Hat or other sun protection
- Plumbers knee pads or foam pad for kneeling
- Disposable Tyvek suits

Hand Tools: To be used when performing hand-weeding and debris removal within Perkins Park

- Dandelion picker
- Hand trowel
- Action hoe
- Weed wrench
- 5-gallon bucket (to collect debris)
- Pruning shears (sharpened)

Irrigation: To be used when installing irrigation within Perkins Park

- Leaf rake
- Garden rake
- Pickaxe
- Wheelbarrow
- Flat shovel
- Spade shovel
- Trenching shovel
- Tamper
- Channel-lock pliers
- Wire-stripping tool
- Pipe clippers/pipe cutter
- Screwdriver
- Axe
- Loppers
- Sidewalk sleever
- Sledgehammer
- Syphon

- Meter key
- PVC primer or glue
- Teflon tape
- Waterproof wire nuts
- Paddle bit for impact drill
- Soil tensiometer

Fertilizing: To be used when applying fertilizer within Perkins Park

- Handheld fertilizer tank (1 gallon) and applicator
- Truck with large fertilizer tank and applicator hose

Grass-cutting: To be used when trimming grasses within the area between Siren St. and Sea Palm Ave. within Perkins Park

- Weed whip only. Grass mowers are not advised to be used within the park's boundary.

Tree Maintenance: To be monitored by a certified arborist

- Handheld chainsaw
- Handheld manual saw
- Insecticide or fungicide applicator with tank

Additional Equipment:

- Truck with open bed
- Tarps
- Trashbags
- Roto-tiller (8-inch diameter blade)
- Construction fencing
- OSHA-approved impalement protections for all rebar
- Air compressor
- Impact drill
- Marking flags

Chapter 1.5 :

Integrated Pest Management Plan

Integrated Pest Management (IPM) can be defined as an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

Parameters for IPM

- To rid Perkins Park of all ground squirrels and rodents.
- To manage damaging insects, such as aphids, from destroying plant populations.
- To manage browsing of deer.
- To maintain the health of existing organisms deemed beneficial to the ecosystem.
- To protect the adjacent Monterey Bay aquatic habitat.

Monitoring

Weeds, rodents, and deer, as outlined in the Perkins Park Existing Conditions Report, will be managed. Additional pests can be identified and relayed to the City Public Works Department for management tactics.

Prevention & Control Methods

Effective, less risky pest controls that exclude chemical applications (such as pheromones to disrupt pest reproduction), and often rely upon mechanical control (such as trapping or weeding), are to be utilized before turning to chemically applied methods. If further monitoring and action thresholds indicate that the less risky controls are not working, then additional pest control methods may be employed with approval from the City Public Works Department. Chemical application includes targeted spraying of pesticides.

- **Rodents:**
 - Rodenticides that contain first- and second-generation rodenticides are prohibited from use within the Park.
 - Trapping, electrocution, or predator introduction into the landscape will be the only acceptable methodologies for rodent eradication.
 - For ground squirrel and gopher eradication, please contact Pest Management Consultant John Gingrich. 925-765-5154
- **Deer:**
 - Deer cannot be kept out of the park.
 - To minimize deer browsing, utilize deer-browsing cages on new or herbaceous succulent planting.
- **Insects:**
 - Use of predaceous insects.
 - Selective use and application of Neem Oil.
 - Selective application of diatomaceous earth.
 - *Insecticides must be approved prior to use and may only be approved for use*

after options i-iii have been exhausted.

- **Weeds:**
 - Herbicide use is restricted to the use of organic herbicides and manual/hand weeding.
 - Seed bank exhaustion may be used in areas where “Magic Carpet” ice plant is below 50%. Prepare healthy ice plant specimens for transplant prior to seed bank exhaustion. Uprooted plants to be tended and cared for in 1-gallon pots or larger and kept in a nursery setting to ensure good health.
 - See Section 1.6 Weed Control for further instruction.

Seed Bank Exhaustion: A Step-by-step Guide

Preparation for seed bank exhaustion is to be completed in late winter and early spring prior to “Magic Carpet” ice plant bloom. Repeat this process when necessary throughout the life of the park during this time period only. As noted above, this technique shall apply only to areas where “Magic Carpet” ice plant is below 50% coverage.

- 1) Determine areas where excessive weeds are growing and re-seeding each year.
- 2) Place erosion control wattles on downhill slopes greater than 10%.
- 3) Lightly scarify the top one to two inches of soil.
- 4) Saturate soils to encourage seedling germination; repeat as necessary to ensure soil remains moist.
- 5) As seedlings germinate, manually remove seedlings and discard from the park.
- 6) Repeat steps 3, 4, & 5 as necessary until the seed bank has been eliminated and seedlings no longer emerge.
- 7) Replant “Magic Carpet” ice plant with 10-inch on-center spacing.

Poison Oak Eradication

Due to its extensive and deep rhizomatous root structure, Poison Oak (*Toxicodendron diversilobum*) roots must **not** be manually removed from its established locations within the park. To eradicate Poison Oak maintenance staff members must follow the instructions listed below:

- 1) When removing Poison Oak, all staff members must wear PPE to protect themselves from the oils found upon the leaves and stems of the plant. Eye protection, gloves, and disposable Tyvek suits are required when handling poison oak. Staff is to avoid having any exposed skin when they come in contact with Poison Oak.
- 2) Eradications is to take place during Mid-June prior to the flowering of the plant.
- 3) Poison Oak plant is to be cut down to a stump. DO NOT DIG UP ROOTS or disturb the soil beneath the plant. Roots will stay in the ground to prevent cliffside destabilization.
- 4) All branches, leaves, vines and plant material will be removed and collected into trash bags. These trash bags will be tied and sealed for protection and brought to the landfill.
- 5) Herbicide will be applied to the freshly cut stump of the Poison Oak plant. The herbicide is to be painted on to the stump and will be applied in concentrated form. Herbicide will be used per manufacturers recommendation.
- 6) Reapply herbicide within 4 to 6 weeks if the stump grows suckers.
- 7) Continue to monitor the plant. If The plant regenerates, repeat steps 1-5 until the plant has been killed.

Chapter 1.6 :

Weed Control In Landscape Areas

Goals for Weed Control:

- All planting areas shall be kept clear of weed growth.
- Achieve by a combination of mulching and hand-weeding/hoeing.
- Ensure that the methods used will cause a minimum of damage to adjacent planted areas.

Summary of Weed Control Program

The control of weeds (non-native/non-desired plant species) is crucial to the success of the revegetation efforts, and to the long-term vitality of the landscape areas within Perkins Park. (Success Criteria are listed in Chapter 1.11.) Invasive weeds aggressively compete with desired or native plants for resources and space and consequently diminish the value of local landscapes to sensitive native wildlife. As both invasive and non-invasive weeds compromise a thriving "Magic Carpet," all weeds will be managed appropriately to eliminate or diminish their impact on the project site.

The desired manner for weed control within all planting areas is to patrol frequently and remove weeds manually, depending on the landscape conditions. Weed control will be accomplished through weed whipping and hand removal prior to the production of weed seed. All weeds shall be killed before they set viable seed. "Magic Carpet" ice plant areas are to be regularly cleared of weeds indefinitely. Weeds are to be cut or removed when they become 4 inches in height or cover 15% of landscape areas. Weed species will be bagged and removed from the site.

An infestation of non-native plants will be reduced and controlled immediately throughout the landscape areas, and in adjacent existing vegetation if these areas are providing a significant source of weeds. If herbicides are considered necessary for the control of invasive species, their application will be by a California Qualified Applicator, but only after approval by the City of Pacific Grove Public Works Department. The herbicide will be EPA-approved and all product label requirements will be strictly adhered to.

How To Hand Weed/Hoe

- Using an action hoe, hand trowel, or dandelion picker, loosen the soil throughout the planting areas, taking care to avoid disturbance of roots of planted material.
- Remove weeds entirely, including roots. Remove the minimum of soil and minimize disturbance to plants and mulched surfaces.

Application and Maintenance of Wood Chip Mulch Around Plantings

A well-maintained mulch layer can greatly reduce competition from weeds and the need for more intensive weeding efforts. When replacing exhausted plants, following planting the gardens for all container stock will be maintained with a 3-inch layer of wood chip mulch. Mulch will be free of disease and invasive weeds and shall be kept several inches from trunks of woody species to prevent rot.

**Table 1
Weed Control Schedule**

Planting Areas	Invasive, Non-native Species	Non-invasive, Non-native Species
Cliff Bluff No herbicides.	Weeds removed by hand with hand trowel, dandelion picker, weed wrench, or shovel. Careful and methodical movements to reduce soil disruption and erosion. Years 1-5 and beyond.	Weeds removed by hand with hand trowel, dandelion picker, weed wrench, or shovel. Careful and methodical movements to reduce soil disruption and erosion. Years 1-5 and beyond.
General Garden Space EPA approved herbicides may be used if all other weed control options have been exhausted. Reporting must indicate all alternatives have been attempted and failed.	Weeds removed by hand during routine maintenance visits. The seed bank exhaustion technique is advised within gardens with more than 35% weed coverage. Years 1-5 and beyond.	Seasonal weed whipping prior to weeds setting seed. The seed bank exhaustion technique is advised within gardens with more than 35% weed coverage. More intense for Years 1-3. Occasionally after year 5.

Weed Control Techniques for Invasive Species

Invasive non-native species should be reported immediately and action must be taken to remove the plant(s) before the infestation expands. Removal will take place during routine maintenance visits unless otherwise required.

Invasive non-native species will be eradicated by hand. Removal of these species from all planting areas will include the entire plant, including roots to at least 4 inches depth, as many such species are capable of regenerating from root fragments left in the soil.

As each invasive species is unique in form and habit, the recommended removal and disposal techniques vary by species. Table 2 contains a list and brief descriptions of locally significant invasive species, as well as some recommended techniques for their removal.

Weed Control Techniques for Non-Invasive Species

Non-invasive species, such as non-native annual and perennial grasses and forbs, occur within the landscape areas. Within the entire park all weeds will be removed by hand pulling/hoeing the entire plant, including the roots if the species is subject to re-sprouting.

The seed bank exhaustion technique (described in Chapter 1.5) may be used within general garden spaces, but should not be allowed within sensitive cliff bluff/edge areas.

Typical non-native grass species that will need to be managed include rip-gut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), and wild oats (*Avena fatua* or *A. barbata*).

Some common non-native forbs include plantain (*Plantago* spp.) and filaree (*Erodium* spp.).

The Weed Control Program entails monitoring the development of the weedy vegetation in the late winter and early spring in order to determine the optimal time for hand weeding vs. seed bank exhaustion.

- The goal is to cut or remove the annual grasses prior to their setting viable seed, and to eliminate the existing seed bank within the gardens.
- It will be necessary to cut or remove the weedy grasses two to three times per growing season depending on the soil moisture of a given area.
- Areas with relatively high soil moisture will experience significant resprouting of the weedy grasses, and will require more frequent weeding.
- After several years of well-timed weeding, the seed bank of the weedy grasses will be depleted and the mowing frequency will decrease.

A power weed whip will be the appropriate tool for grass cutting depending on the terrain, density of plant cover, and proximity of planted native species. The steep cliffsides and general garden areas within the landscapes can be effectively managed with a power weed whip or by hand pulling.

All weeds, especially weeds with seed heads, are not to be left within the landscape for decomposition. During raking, care must be taken not to damage any of the native plants.

**Table 2
Invasive Weed Control Detail**

Plant Form	Species	Characteristics	Removal
Vines/ Groundcovers	English Ivy (<i>Hedera helix</i>) Periwinkle (<i>Vinca major</i>) Himalayan Blackberry (<i>Rubus armeniacus</i>)	Often forming dense, uniform groundcover. Can spread by seed, but especially by vegetative growth. Re-sprout easily.	Climbing vines should be cut down. Pull site will need follow-up weeding. Use gloves. Dispose off site.
Thistles	Yellow Star-thistle (<i>Centaurea solstitialis</i>) Italian Thistle (<i>Carduus pycnocephalus</i>) Bull Thistle (<i>Cirsium vulgare</i>) Milk Thistle (<i>Silybum marianum</i>)	Spiny annuals/biennials. Taprooted. Lots of seeds. Wind-dispersed. All have sharp spines.	Young plants pull easily with gloves, but are often more practical to control through mowing or weed whipping. Dispose of mature plants off site.
Broom (sub-shrub)	French Broo (<i>Genista monspessulana</i>)	Long-lived. Deep taproot. Produces lots of seed.	Young plants pull easily with gloves. Mature plants require weed wrench or digging tools. Dispose of flowering plants off site.
Tall Herbs	Wild Mustard & Radish (<i>Brassica</i> spp.) Cocklebur (<i>Xanthium</i> spp.) Bristly Ox Tongue (<i>Picris echioides</i>)	Taprooted. Short-lived. Annuals/biennials.	These plants pull easily with gloves, but are often more practical to control through mowing or weed whipping

		Produce lots of seed.	prior to flowering. Dispose of mature plants off site.
Iceplant	<i>(Carpobrotus edulis)</i> <i>(Carpobrotus chilensis)</i>	Shallow-rooted perennial. Spreads vegetatively. Re-sprouts easily.	These plants pull easily but the roots must be dug out. Pull site will need follow-up weeding. Dispose off site.
Tree	<i>Acacia</i> sp.	Fast-growing. Yellow-flowered. Deep-rooted. Spreads by roots. Lots of seed.	Small trees can be pulled or dug. All major roots removed. Remove from site.
Large Grass	Jubata Grass ("pampas grass") <i>(Cortaderia jubata)</i>	Fast growing. Long-lived. Extensive roots. Lots of seed. Re-sprouts easily.	Flower plumes should be cut and bagged. Whole plants must be dug out. Dispose off site. Use gloves as the leaves cut.

**TABLE 3:
WEEDS OF PERKINS PARK - NATIVE & NON-NATIVE**

Species Name	Common Name	Type
<i>Ambrosia psilostachya</i>	Ragweed	Native
<i>Brassica</i> species	Mustard	Invasive
<i>Bromus diandrus</i>	Ripgut brome	Non-native
<i>Carpobrotus edulis</i>	"Hottentot fig" iceplant	Invasive
<i>Dimorphotheca</i> sp.	African daisy	Non-native
<i>Echium candicans</i>	Pride of Madeira	Invasive
<i>Ehrharta erecta</i>	Veldt grass	Invasive
<i>Erodium botrys</i>	Long-beak stork's bill	Non-native
<i>Gnaphalium palustre</i>	Lowland cudweed	Native
<i>Malva sylvestris</i>	High mallow	Non-native
<i>Medicago</i> sp.	Burclover	Invasive
<i>Oxalis pes-caprae</i>	Bermuda buttercup	Invasive
<i>Stellaria media</i>	Chickweed	Non-native
Various	Annual grass	Non-native
<i>Zantedeschia aethiopica</i>	Calla lily	Invasive

Chapter 1.7 : Plant Care & Protection

The following specifications itemize the care and protections that will be necessary to meet success criteria for the enhancement of the existing conditions of Perkins Park. This chapter reviews the following:

- Care of “Magic Carpet” Ice Plant
- Care of Grass Areas
- Care of Native Vegetation
- Care of Succulents and Aloes
- Plant-protection Devices
- Pruning of Native Vegetation
- Mulching
- Debris Removal

Care of “Magic Carpet” Ice Plant

Care of “Magic Carpet” ice plant consists of a combination of regular weeding, minimal watering, annual feeding (fertilizer application), pest management, protection fencing and pruning of die-off.

- **Trampling:** Preventing the public from trampling the “Magic Carpet” ice plant can be accomplished by fencing off particularly vulnerable areas.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil testing of the top 6” of soil to be dry to moderate moisture level.
- **Feeding:** See Chapter 1.9: Fertilizer Application.
- **Pest Management:** See Chapter 1.5: Integrated Pest Management Plan.
- **Pruning:** When portions of the ice plant have died off, prune off using pruning shears.

Care of Grass Areas

- **Frequency:** Grass will be cut a minimum of 1 time per year.
- **General Maintenance:** Maintenance of grass in a manner appropriate to the intended use. Maintenance of grass height between 5 to 7 inches. Insurance that grass does not become compacted or waterlogged. Maintenance of grass in a healthy, vigorous condition. Repair of grassed areas damaged by trampling, abrasion, or scalping during mowing or trimming. Regular removal of litter.
- **Remedial works:** Top dress, decompact and scarify soil. Re-seeding where necessary.
- **Grass-cutting:** Remove litter, rubbish, and debris from grass before mowing. Cut to a neat, even finish without rutting or compaction, particularly when ground conditions are soft. Trim grass edges to paving and around the base of planting areas and street furniture. Sweep adjacent hard surface clear of cuttings and debris.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil moisture testing of the top 6” of soil to be dry to moderate moisture level.

Care of Native Vegetation

- **Pruning:** Methods as listed below in “Pruning of Vegetation.”
- **Weeding:** Native California plant gardens to be weeded on a monthly basis per weeding protocols detailed in Chapter 1.6.
- Regular removal of litter.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil moisture testing of the top 6” of soil to be dry moisture level.

Trees and Shrubs

- **Watering:** All planting to receive watering if needed during establishment. Ensure sufficient water is applied to maintain healthy growth, taking into account published meteorological data on rainfall for any given period, in particular in periods of summer and fall drought (August - November). Trees of girth size 5 - 12 inches or over will need to be watered regularly during the first season, especially in dry periods when weekly watering will be required. Irrigation pipes may be required depending on soil condition at time of planting: consult the landscape architect.
- Do not allow nylon filament rotary cutters or other mechanical tools closer than 6 inches to the stem of any tree or plant. Carry out operations close to stems using hand tools.

Re-firming of Protections & Staking

- **General:** Trees and shrubs shall be maintained in a firm position in the ground and all stakes and ties shall be checked regularly.
- **Particular timing of inspections:** After strong winds, King Tides, and other disturbances replace missing rabbit protection, and replace any significant failures.
 - **Tree stakes and ties:** Inspect all trees twice a year. Adjust fixing to suit stem growth and provide correct and uniform tension. If growth is sufficient for tree to be self-supporting, remove fixing and fill holes with lightly compacted soil. Check stakes for looseness, breaks, and decay and replace as necessary. Remove stakes and ties after 3 years of establishment.

Care of Succulents and Aloes

- **Pruning:**
 - Pruning of Aloes is to be restricted to the pruning of dead limbs and to general height of Aloes. Aloes are not to exceed 4'-0" in height and are not to impede on pedestrian walkways where possible.
 - Other Succulents within the landscape are to be pruned only in the event of die off and impediment on pedestrian walkways.
- **Weeding:** Areas to be weeded on a monthly basis per weeding protocols detailed in Chapter 1.6.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil testing of the top 6” of soil to be dry to moderate moisture level.

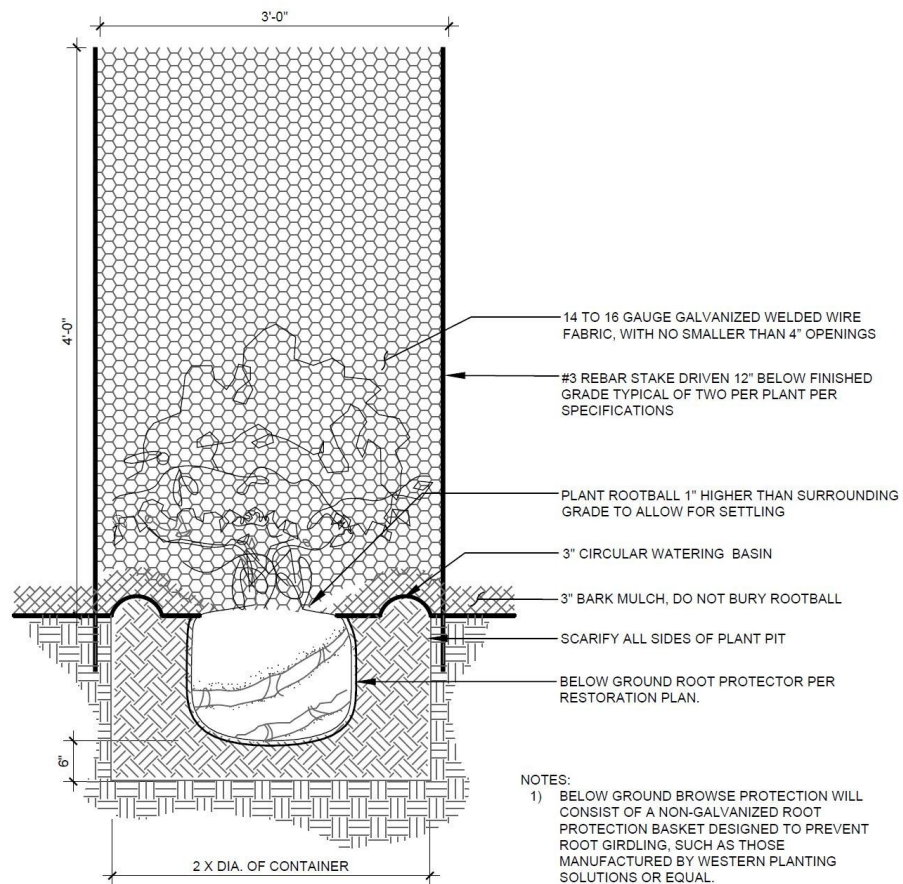
- Regular removal of litter is not necessary below Aloes.

Plant-protection Devices

Plant-protection cages (also known as browse cages) and gopher-wire baskets are standard for native plant installations throughout the park, especially in areas prone to ground squirrel infestations. It is recommended that all new plants be installed with gopher-wire baskets, though not all plants will require browse cages.

Browse cages are typically installed on trees and shrubs as part of the plant-installation phase. However, they can be installed on an as-needed basis during the plant-establishment period. If the animal impact on plant development becomes a significant issue, plant-protection cages are the most cost-effective manner in which to ensure that the plant performance criteria are met within the 5-year period. If installed, plant-protection devices will be repaired or replaced if they are damaged or vandalized. The devices will be repaired to the installed condition, as depicted in Figure 1.

Figure 1: Shrub Planting with Browse Cage



SHRUB PLANTING WITH BROWSE CAGE

1" = 1'-0"

CAT-PL-11

Pruning of Native Vegetation

Pruning of plant materials will be minimally required, except for occasional trimming of branches that may obscure public passage. Irregular and random plant growth is desirable (for wildlife value) in a landscape area. Pruning will be permitted for the purpose of grooming plants. Most especially, pruning to tidy up the understory shrubs and low branches of trees will not be acceptable. This practice would undermine progress toward the vegetative community structures specified in the performance standard, whereby cover, screening, and closure of shrubs will be part of the criteria for success.

If pruning is necessary, pruning will be limited to the bare minimum required to accomplish the following goals:

1. Promote healthy initial plant growth and strong branch structure. Extremely unbalanced plant growth will be pruned only during the first 5 years after planting, and just enough to promote initial strong growth of trees and shrubs.
2. Repair storm damage or remove hazards. Storm damage, such as broken branches or fallen trees, will be cleaned up if they compromise public safety or passage.
3. Shrubs that interfere with pedestrian pathways may be pruned back.
4. Corrective pruning to eliminate structural defects on trees and large woody shrubs.

Pruning Methods

- **Agreement:** Before starting work, agree which trees and hedges are to be pruned.
- **Appearance:** Trim individual plant appropriate to species, location, and season to leave a well-balanced natural shape.
- **Cutting:** Use appropriate, clean, sharp tools. Clean cuts back to sound wood. Provide notice if any fungal disease is detected.
- **Do not use growth retardants, fungicides, or sealant.**

Pruning of Trees

- **Tree work standards:** to Forestry and Arboriculture Training and Safety Council Safety Guidance.
- **Protections:** During pruning, protect adjacent pathways, plants, or trees. Restrict human access within areas to prevent harm.
- **Appearance:** Trees to maintain a well-balanced, natural appearance. Remove any suckers or basal growth. Cut back level with source stem or root.
- **Timing:** Prune between fall and mid-winter.

Pruning of Hedges

- Cut back hedge plants by one-third at time of planting.
- **Replacement:** Remove dead plants as soon as possible and replace in the next scheduled round of replacement planting.
- Maintain a safe, clean, and secure environment.

Debris Removal

All non-organic debris will be removed and properly disposed of off-site during the entire maintenance period. Exceptions to this rule may be made within native California planting areas. In that case, limited amounts of organic debris such as leaves and dead plants will be left in the landscape areas to increase wildlife habitat and soil organic matter.

- **Litter/Dog Waste:** Collect litter as necessary to maintain a clean, litter-free environment.
- **Hard surfaces:** Undertake a regular and time-tabled cleaning regime including brushing.

Chapter 1.8 : Plant Replacement within Landscape Areas

In the event of plant die-off, supplemental planting will be necessary to maintain coverage of “Magic Carpet” ice plant and Native California gardens to success criteria levels. In this section we will cover:

- Supplemental Planting
- Criteria for Replacement Plantings
- Installation of “Magic Carpet” Ice Plant
- Installation of Native California Planting Areas
- Failure to Re-establish

Supplemental Planting

Supplemental planting needs will be assessed during quarterly monitoring. The need for supplemental planting will occur if plant survival rates are less than dictated by the success criteria. The number of replacement plants, the species, and the container size will be determined by the City Public Works Department and stated in the annual monitoring reports for approval by the City’s Public Works Department. Substitute species may be used if the original species consistently performs poorly and suitable alternative species perform well. However, substitute species should be consistent with the goals and objectives and be compatible with the success criteria.

Supplemental plant installation will occur in the fall after the quarterly maintenance monitoring. This schedule may be amended if the necessary plants are not available, are low in quality, or conditions are deemed unsuitable for replanting. It is desirable to replant as soon as possible to minimize the extension of the establishment-period maintenance.

The number of supplemental plants installed should be greater than the number of plants required to bring the total live plants up to the success criteria. Enough plants should be replanted to allow for expected mortality and still meet the success criteria.

Criteria for Replacement Plantings

- Individual plants of “Magic Carpet” ice plant have an average age of 5-7 years. Replacement of these plants should be monitored closely to ensure replacement plants are being grown locally and are available for planting.
- Replacement plantings are to match the existing plants in kind and color. Replacement of “Magic Carpet” ice plant is to be derived from cuttings of healthy specimens from within the park and propagated at a local nursery.

Installation of “Magic Carpet” Ice Plant

- Once replacement plantings are delivered to the park, they can be installed in the same manner as the original planting.
- Dead plant material may have decomposed by the time new plant material is ready to install.
- New plants can be installed with the same density and planting pattern as originally specified for the planting area receiving the replacement plants. (Approximately 2-inch plugs should be placed on 18-inch on-center spacing.)

Installations of Native California Planting Areas

- Once replacement plantings are delivered to the park, they can be installed in the same manner as the original planting.
- The original plant material must first be removed. Removal can be achieved by digging around the base of the dead plant and lifting it out with a shovel.
- The planting hole should then be re-excavated to the specified dimensions and prepared to receive the replacement plant.
- The replacement plant should be carefully removed from its container in order to avoid any root damage and placed in the planting hole.
- The planting hole is then to be backfilled with the original soil and a water basin of appropriate dimension is to be constructed. The foliage protector is to then be refitted over the replacement plant.
- The final step is to apply a 3-inch layer of wood chip mulch.

Failure to Re-establish

The following measures will be taken if replacement plants fail to re-establish:

- Irrigation lines will be checked to ensure proper water is being delivered to the planting area.
- Watering schedule will be evaluated to ensure the area is being adequately watered.
- Soil chemistry will be evaluated with soil testing

Chapter 1.9 :

Fertilizer Application

In order to ensure success for the gardens throughout Perkins Park, while also maintaining aquatic ecosystem health adjacent to the park, fertilization of gardens must be completed strategically and methodically.

“Magic Carpet” Ice Plant

- Application of fertilizer needs to be done sparingly in order to reduce the chances of run-off into the adjacent protected aquatic environment.
- Utilizing a truck-watering tank, manually apply a water and a balanced, liquid organic fertilizer which is in the range of 3-3-2.
- Apply two times per year and between rain events.
 - Mid-March prior to spring blooms.
 - Early October.

Succulents and California Native Plants

- Native California plants and existing succulents within Perkins Park do not require feeding.
- Fertilizing of succulents, such as Aloes and Aeoniums, is discouraged as it is not conducive to general plant health.
- Fertilizing of Native California plants is not recommended, as this may spur the growth of non-native weeds.

Chapter 1.10 : Irrigation System Operation & Maintenance

Irrigation is an extremely important aspect in the continued success of this project. The following topics will be discussed within this section:

- Irrigation Plan Summary
- Irrigation Schedule for “Magic Carpet” Ice Plant (Table 4)
- Frequency and Duration of Irrigation
- Measurement of Soil Moisture
- Maintenance of Cliffsides
- Irrigation Recommendations
- Further Recommendations for Retrofitting the Existing Irrigation System.

Irrigation Plan Summary

Watering must be effectively controlled to minimize costly water waste resulting from overwatering, particularly under drought conditions. Soil erosion and/or saturation due to overwatering, line breakage, or improper irrigation must be addressed immediately. It is the responsibility of the maintenance personnel to ensure that the landscape receives sufficient water to promote healthy plant growth. Care must also be taken to prevent over-watering and water damage resulting from irrigation onto adjacent walks, fences, and walls. The application of supplemental water can only be determined by good judgment and careful observation. Any loss of plant material due to insufficient irrigation shall be immediately replaced.

The existing irrigation system at Perkins Park is outdated and does not provide proper coverage. This results in areas of “Magic Carpet” ice plant dieback, weed encroachment, trampling, and soil compaction. The City of Pacific Grove has two main options for dealing with the existing irrigation system:

- 1) Install a new irrigation system.
 - 2) Retrofit the existing system and implement a routine hand-watering plan for the park.
- The pursuit of either option would be coordinated by the Public Works Department.

TABLE 4: IRRIGATION SCHEDULE

“Magic Carpet” Ice Plant	May-October	3 waterings/month	1-5 gallons, or 3-5 minutes/area
“Magic Carpet” Ice Plant	November-April	1 watering/month, if necessary	or 1-2 minutes/area

Frequency and Duration of Irrigation

Irrigation frequency and quantity will be species- or landscape area-specific. Native plant species need less frequent water than traditional landscape plants, and typically need watering only during the dry season (May-October.) Plants should be monitored to ensure overwatering does not occur. Frequency and duration of watering shall be based on field conditions determined by maintenance personnel. Watering frequency should be maintained during times of drought while

in the establishment period.

“Magic Carpet” ice plant will need regular light watering throughout the year to ensure plant health and proper plant growth. See Table 3 (above) for a watering schedule. New plantings of the “Magic Carpet” ice plant will require additional watering for plant establishment for the first two years after planting. After Year 2, “Magic Carpet” ice plant can resume the regular watering profile as listed in Table 3.

Measurement of Soil Moisture

Within areas designated for “Magic Carpet” ice plant, the Public Works Department shall use a sub-surface installed soil tensiometer to determine the moisture content of the soil.

For coastal bluff planting and native California gardens, species diversity inherent in the plant selections precludes the use of sub-surface installed soil tensiometers, whose accuracy favors the monoculture plantings of fairways and greens. In lieu of tensiometers, the Public Works Department shall test soil moisture levels by using a shovel to excavate a six-inch deep hole in a few sample planting basins throughout the planting areas.

Maintenance of Cliffsides

- Cliff edges/bluffs will be routinely inspected by maintenance staff regularly to ensure that hand-watering is effective.
- At the onset of the fall rainy season, the watering shall be halted if excessive rains have occurred.
- Avoid over-watering to prevent excessive erosion to cliff edges.

Irrigation Recommendations:

Potential solutions to the existing irrigation system at Perkins Park that will save water and provide better coverage for the landscape:

- Use matching spray heads and spray bodies
 - Install “head-to-head coverage” where appropriate (goal of 90% or better coverage of landscape with over-head spray).
- Use check valves and pressure regulators.
- Use check valve and pressure-compensating emitters and driplines.
- Install irrigation in accordance with MWELo requirements.
- Size zones and laterals to accommodate gallons per minute (GPM) and maintain average GPM across all zones were possible.
- Apply smart-controller guidance to ensure proper water management electronically
- Record water use and implement water and plant management practices to maintain water-use compliance and solutions.
- Select Low- to Medium-use plants with deep root systems to help reduce water demand and erosion. (Natives accepted by CAL-IPC/WUCOLS).
- Reduce/eliminate water use after plant establishment of most species and systems.
- Use recycled water for irrigation when available.
- Place plants that require shade, full-sun, part-sun accordingly in separate hydrozones.

Further Recommendations For Retrofitting The Existing Irrigation System

- Much of the existing irrigation system such as many spray heads and PVC lateral line pipes need to be capped in place and retired to prevent further leaking and malfunctions along vulnerable portions of cliffside along the length of the park, especially in the northernmost reaches of the park where we do not have an engineered sea wall.
- In the northern region of the park, the park becomes very thin and erosion potential is high. This area of cliffside of the park is too vulnerable to sustain the implementation of irrigation infrastructure of regular watering that would only further terrain erosion and destabilization. Recommendations may be made to hand-water new plantings in these areas as needed for establishment only.

Chapter 1.11 :

Success Criteria & Monitoring Program

Monitoring of plantings is vital to the success of the “Magic Carpet” ice plant and the general enhancement of Perkins Park.

Success Criteria

The final success criteria for the proposed revegetation are outlined below. Annual monitoring will ensure progress toward the desired conditions. The final success criteria will be monitored for compliance at the end of the 5-year period, but these criteria will remain indefinitely for the life of the park.

Success Criteria for “Magic Carpet” Ice Plant:

- Weeds do not exceed 15% within any stands of “Magic Carpet” ice plant.
- Plant condition is considered to be “Healthy and Thriving.”
- Swaths of “Magic Carpet” do not fall below 70% cover.
- Adequate and comprehensive water is being provided to the “Magic Carpet” ice plant.
- Bloom periods feature robust flower displays

Success for Native California Gardens:

- Weeds do not exceed 15% within any stands of Native California Gardens.
- Plant condition is considered to be “Healthy and Thriving.”
- Mulch remains at 3-inches of depth.
- Plant survival does not fall below 80%.
- Pruning is completed within the parameters of this document (Chapter 1.7).
- Adequate water is being provided to each individual plant.

Monitoring Program Methods

Trees, shrubs, forbs, and grasses within the park will be monitored as to the survival of the plants contained within each garden area. When there is die-off of a plant, it is to be reported. If a particular species is under-performing, the City Public Works Department will assess the suitability for that plant species and recommend further remedial actions as necessary. If plant survival falls below these criteria, supplemental planting will be undertaken the following fall.

Invasive plant species, as defined within Chapter 1.6, within the park shall be reduced to 5% by Year 5.

Monitoring Frequency

Establishment-period monitoring will include monitoring of installed vegetation conditions (e.g., plant survival, growth), and will document relevant site conditions (e.g., mulch, invasive weeds). Monitoring during a first-year establishment period after installation will focus on plant survival to ensure that the development of the revegetated areas will proceed adequately, and will allow for remedial action as needed. Monitoring will continue in Years 4 and 5, but the emphasis will shift to the evaluation of percent cover of vegetation and “Magic Carpet” ice plant. If the revegetation is slow or deficient in some aspect during either of these periods, the monitoring program will identify such deficiencies and remedial actions.

Secondary Monitoring Methods

Reconnaissance Vegetation Surveys

The City Public Works Department will periodically survey the landscape areas after plant installation. The purpose of the reconnaissance surveys will be to assess how the landscape areas are developing and to identify problems that may exist. Plants are most vulnerable to disturbance during the early part of the establishment period, so monitoring must be relatively frequent during the first years. Reconnaissance surveys will be conducted four times per year during Years 1 and 2, twice per year during Years 3 and 4, and once during Year 5.

During these surveys, the City Public Works Department will document plant damage or the presence of invasive species and make recommendations to correct any significant problems or potential problems. The City Public Works Department will identify areas of concern regarding irrigation, erosion, and general aesthetics. These visits will also be used to document the need to change or adjust revegetation plan activities (e.g., altering the maintenance schedule, adding extra weed control visits, increasing or reducing the frequency or amount of irrigation water, etc.).

Detailed Monitoring of Vegetation

In addition to reconnaissance surveys, quantitative monitoring visits will be made to assess plant survival, plant cover, and plant growth (e.g., tree height, health and vigor, etc.). The surveys will evaluate plant health during or, for some species, just after peak growth. The native California landscapes will be sampled between August and September of each year. The “Magic Carpet” ice plant will be sampled during May and June of each year. These visits will include the collection of quantitative data and the photographing of revegetation plantings.

Photo Documentation

Photos shall be taken of landscape areas once a year during Years 1-5. Photos will be taken from the same vantage point and in the same direction every year, and shall reflect material discussed in the monitoring report.

LMP PART 02: Post Construction Maintenance Protocols

Chapter 2.1 : Landscape Areas

INTRODUCTION - LOCATION AND ATTRIBUTES OF LANDSCAPE AREAS

The Perkins Park Landscape Plan suggests six primary landscape areas shall be created and maintained within the Perkins Park Project area. These are:

- “Magic Carpet” Ice Plant Groundcover
- California Native Primary
- California Native Cliff Edge
- California Native Grass and Succulents
- South African Botanic Primary
- South African Botanic Secondary

The locations of these areas are roughly depicted in the Landscape Design Construction documents plan set. The general features and attributes of each landscape area are described below. For a complete list of species planted see Appendix B - D.

“Magic Carpet” Ice Plant Groundcover

The “Magic Carpet” ice plant ground cover is composed of a monoculture of ice plant with magenta flowers. This landscape will bloom during the spring months (approximately Late February - Mid April,) and will receive heavy pedestrian traffic during this time. Due to the sensitivity of the ocean habitats located adjacent to Perkins Park, only fertilizers outlined in Chapters 2.9 shall be used. In addition, no insecticides, herbicides, rodenticides will be used within fifteen feet of this area.

California Native Primary

The California Native gardens consist of native coastal bluff plantings. Plants chosen will provide seasonal interest and habitats to native species throughout the coast. Plant species were chosen to integrate year-round habitat for native species of both plants and fauna, such as Beach Laia, and the Monarch butterfly. Native California plants were also chosen to provide year-round visual interest for park visitors. The inclusion of this landscape area increases the wildlife value of the site by providing cover and a food base for a diversity of invertebrates which form the base of many food webs. Plant species included can be found in Appendix B. Only fertilizers listed in Chapter 2.9 will be used in this area. Due to the sensitivity and value of the California Native Plants gardens for terrestrial wildlife, no insecticides, herbicides or rodenticides will be used in fifteen feet of the ocean.

California Native Cliff Edge

The gardens found along the cliff edge will feature specific coastal bluff planting that will assist with the reinforcement of the cliff. Plants featured within this garden type can be found in Appendix B. During plant establishment, these areas will receive only hand watering and will not have an installed irrigation system in order to prevent additional and unnecessary erosion. Due to the sensitivity of the ocean habitats located adjacent to the cliff edge, only fertilizers outlined in Chapter 2.9 will be used upon the Californian Native Cliff Edge. In addition, no insecticides, herbicides, rodenticides will be used within fifteen feet of the ocean.

California Native Grass and Succulents

The California Native Grass and succulents landscape features plants which will be sustainable in the soils surrounding the well established Monterey cypress trees. Succulents such as fox tail

agave (*Agave attenuata*) will accent the coastal grasses.

South African Botanic Primary

The South African Botanic gardens will feature plants originally planted by Henry Hays Perkins, the namesake of the park. Plant species will accentuate the “Magic Carpet” ice plant and will need routine pruning, weeding and maintenance. Plants will be lushly planted and will provide year round floral blooms. No insecticides, herbicides, rodenticides will be used within fifteen feet of the ocean.

South African Cliffside

Many stretches of cliffside found within Perkins Park feature well established torch aloe (*Aloe arborescens*). Within the South African cliffside gardens, aloes will be maintained and pruned in order to optimize viewsheds and reduce weight upon the cliffside. Ground squirrels use the understory of the aloe as protected habitat, creating their burrows in the soil below the plant causing destabilization of the cliffside. No insecticides, herbicides, rodenticides will be used within fifteen feet of the ocean.

Chapter 2.2 :

Maintenance Goals & Objectives

The implementation and management program for the Perkins Park is designed to ensure adherence to a set of maintenance and management schedule goals and objectives.

The Goals for Part 02 Post-Construction Planting Establishment are as follows:

The main goal for Part 2 the landscape areas within Perkins Park is to establish a robust garden system throughout the 0.8 mile stretch of the park which is dynamic, picturesque and well maintained. A secondary goal for the park is to provide suitable landscape for wildlife and to protect the Monterey Bay aquatic ecosystem.

Additional goals for the project are:

- 1) Create and maintain a world renowned park and picturesque attraction,
- 2) minimize opportunities for invasive plant species establishment,
- 3) provide natural cliffside stabilization,
- 4) minimize irrigated water use.

An establishment period maintenance program will be implemented for the first 3 years following plant installation for all garden bed types. For the California Native Coastal Bluff plantings, an additional 2-year post establishment period maintenance program will further aid the success of the gardens and cliffside stabilization efforts. The vegetation areas will be maintained in perpetuity by the City of Pacific Grove.

Management Goals:

- 1) Implement a 3-year plant establishment maintenance program, beginning in Year 1 , such that plant survival rates are maximized and desired landscape features are achieved.
- 2) Implement maintenance activities during the growing season (March to October), beginning in Year 1, such that plant survival rates are maximized and desired landscape features achieved.
- 3) Implement maintenance activities during the dormant season (November to February), beginning in Year 1 , such that plant survival rates are maximized and desired landscape features are achieved.
- 4) Implement a 2-year post-establishment period maintenance program; beginning in Year 4, that maximizes the potential for long-term plant survival and landscape features.
- 5) Implement remedial actions on a yearly basis if plantings or landscapes fail to establish.
- 6) Implement a 5-year monitoring program that documents the status of the landscape areas and evaluates the success of the park's performance.

Maintenance and Management Objectives:

Irrigation:

- 1) Upgrade irrigation system to provide comprehensive coverage of all "Magic Carpet" ice plant and new garden spaces.
- 2) Identify and cap or repair all broken irrigation lines and spray heads.
- 3) Perform regular maintenance testing of irrigation system.
- 4) Address all areas showing erosion due to irrigation or curb cut run-off through irrigation scheduling adjustments, diversion and spreading of runoff, and / or other erosion control measures such as planting or rock placement.

Weed Control:

- 1) Weeding will be completed year-round and be scheduled into daily routine maintenance.
- 2) Weeding protocols will be based upon the season and weed species.

Browse Control:

- 1) Minimize deer browse damage on plantings by utilizing browse protection devices as required to maximize plant survival.

Replacement Plantings:

- 1) Replace dead or declining "Magic Carpet" ice plant within the landscape if plant survival falls below 70% in any year.
- 2) Replace senescent or dead large Aloes with Native California gardens as needed.
- 3) Replace dead or declining Native California and South African plants if survival falls below 70% in any year

Cliff Edges

- 1) Use only EPA approved products for aquatic environments within 50 feet of the cliff areas.
- 2) Preserve and protect the cliff edges when possible.
- 3) Preserve viewsheds out over the cliff edges to the Monterey Bay.

Monitoring:

- 1) Consider an annual visit with Landscape Architect and City of Pacific Grove Public Works Department to discuss landscape development and management recommendations; incorporate recommendations.

Reporting of Maintenance Activities:

The maintenance personnel will monitor the need for maintenance and will keep records documenting maintenance task items performed. Documentation will include:

- the date,
- maintenance task performed,
- who performed maintenance,
- notes on other tasks requiring action and observation of problems or potential problems.

Maintenance tasks documented will include, but not be limited to:

- irrigation, irrigation system maintenance,
- weed control,
- supplemental planting,
- mulching,
- plant protection measures and debris removal.

A sample maintenance log sheet is presented in Appendix F.

Chapter 2.3 :

General Schedule of Maintenance Activities

This schedule will help ensure that plant survival rates are maximized and desired landscape features are achieved. As with all maintenance schedules, adaptive management and schedule adjustment may become necessary and should be implemented if field conditions warrant.

Maintenance for South African and California Native Gardens, Years 1 - 3 :

During the 3-year establishment period post-construction, maintenance personnel will implement maintenance activities differently based on the season. Below is a suggested schedule per season for all areas:

Spring (February to April)

- Four weeks per month, four days per week, three crew members working 8 hours per day.
 - Weeding, fertilizing, pruning, rodent control, irrigation maintenance.

Summer (May to July)

- Four weeks per month, four days per week, three crew members working 8 hours per day.
 - Weeding, fertilizing, pruning, rodent control, irrigation maintenance.

Fall (August to October)

- Three weeks per month, four days per week, three crew members working 8 hours per day.
 - Weeding, fertilizing, pruning, rodent control, irrigation maintenance.

Winter (November to January)

- Four weeks per month, three days per week, two crew members working 8 hours per day.
 - pruning & winter clean-ups, rodent control, spot weeding

Maintenance on the “Magic Carpet” ice plant, Years 1 - 3:

Spring (February to April)

- Four weeks per month, 2 days per week, three crew members working 8 hours per day.
 - Weeding, fertilizing, rodent controls, irrigation maintenance, seed bank exhaustion.

Summer (May to July)

- Four weeks per month, 2 days per week, three crew members working 8 hours per day.
 - Weeding, fertilizing, rodent controls, irrigation maintenance, seed bank exhaustion.
Replanting of dead or dying “Magic Carpet” ice plant.

Fall (August to October)

- Three weeks per month, 2 days per week, three crew members working 8 hours per day.
- Weeding, pruning & removal of dead or dying “Magic Carpet” ice plant and other shrubs, rodent controls, irrigation maintenance, mulching

Winter (November to January)

- Four weeks per month, 2 days per week, two crew members working 8 hours per day.
- Pruning & winter clean-ups,

Maintenance Years 4 - 5:

For years 4-5, the maintenance schedule should be broken up into two categories: as the needs for these areas will be quite different:

1. maintenance of Native California and South African botanic garden beds.
2. maintenance of the "Magic Carpet" ice plant, and

Maintenance of Native California & South African Botanic Gardens, Years 4 - 5:

During the fourth and fifth year of the establishment period, maintenance personnel will implement maintenance activities on the suggested schedule per season:

Spring (February to April)

- Four weeks per month, 2 days per week, three crew members working 8 hours per day.

Summer (May to July)

- Four weeks per month, 2 days per week, three crew members working 8 hours per day.

Fall (August to October)

- Four weeks per month, 2 days per week, three crew members working 8 hours per day.

Winter (November to January)

- Once per month, two days, two crew

Maintenance of "Magic Carpet" ice plant, Years 4 - 5:

During the fourth and fifth year of the establishment period, maintenance personnel will implement maintenance activities on the suggested schedule per season:

Spring (February to April) - Once per month, six days, three crew

Summer (May to July) - Once per month, five days, two crew

Fall (August to October) - Once per month, four days, two crew

Winter (November to January) - Once per month, two days, two crew

Maintenance After Year 5

"Magic Carpet" Ice Plant maintenance will continue on the year 4 and 5 maintenance schedule above indefinitely.

Native California & South African Garden long term maintenance:

After the 5-year establishment period, the maintenance practices will be reviewed and revised to ensure the long-term management of the landscape areas, if necessary. Maintenance tasks after Year 5 are expected to include occasional plant replacement and the removal of invasive, non-native plant species.

Chapter 2.4 : Tools & Equipment

Tools & Equipment

The following tools and equipment will be needed to successfully maintain Perkins Park:

Body Protections: To be worn by all employees and volunteers for Perkins Park. Protections to follow City of Pacific Grove employee requirements and guidelines.

- Plumbers knee pads or foam pad for kneeling
- Gardeners gloves (fit to the individual)
- Long pants such as jeans or utility pants
- Long-sleeve shirt
- Eye protection
- Sunscreen
- Hat or other sun protection
- Closed-toe and supportive footwear
- Disposable Tyvek suits

Hand Tools: To be used when performing hand-weeding and debris removal within Perkins Park

- Dandelion picker
- Hand trowel
- Action hoe
- Weed wrench
- 5-gallon bucket (to collect debris)
- Pruning shears (sharpened)

Irrigation: To be used when installing irrigation within Perkins Park

- Leaf rake
- Garden rake
- Pickaxe
- Wheelbarrow
- Flat shovel
- Spade shovel
- Trenching shovel
- Tamper
- Channel-lock pliers
- Wire-stripping tool
- Pipe clippers/pipe cutter
- Screwdriver
- Axe
- Loppers
- Sidewalk sleever
- Sledgehammer
- Syphon
- Meter key

- PVC primer or glue
- Teflon tape
- Waterproof wire nuts
- Paddle bit for impact drill
- soil tensiometer

Fertilizing: To be used when applying fertilizer within Perkins Park

- Handheld fertilizer tank (1 gallon) and applicator
- Truck with large fertilizer tank and applicator hose

Grass-cutting: To be used when trimming grasses within the area between Siren St. and Sea Palm Ave. within Perkins Park

- Weed whip only. Grass mowers are not advised to be used within the park's boundary.

Tree Maintenance: To be monitored by a certified arborist

- Handheld chainsaw
- Handheld manual saw
- Insecticide or fungicide applicator with tank

Additional Equipment:

- Truck with open bed
- Tarps
- Trashbags
- Roto-tiller (8-inch diameter blade)
- Construction fencing
- OSHA-approved eye protection coverings for all rebar
- Air compressor
- Impact drill
- Marking flags

Chapter 2.5 :

Integrated Pest Management Plan

Integrated Pest Management (IPM) can be defined as an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

Parameters for IPM

- To rid Perkins Park of all ground squirrels and rodents.
- To manage damaging insects, such as aphids, from destroying plant populations.
- To manage browsing of deer.
- To maintain the health of existing organisms deemed beneficial to the ecosystem.
- To protect the adjacent Monterey Bay aquatic habitat.

Monitoring

Weeds, rodents, and deer, as outlined in the Perkins Park Existing Conditions Report, will be managed. Additional pests can be identified and relayed to the City Public Works Department for management tactics. All species must be reported, to ensure they are not a protected or endangered species.

Prevention & Control Methods

Effective, less risky pest controls that exclude chemical applications (such as pheromones to disrupt pest reproduction), and often rely upon mechanical control (such as trapping or weeding), are to be utilized before turning to chemically applied methods. If further monitoring and action thresholds indicate that the less risky controls are not working, then additional pest control methods may be employed with approval from the City Public Works Department. Chemical application includes targeted spraying of pesticides.

- **Rodents:**
 - Rodenticides that contain first- and second-generation rodenticides are prohibited from use within the Park.
 - Trapping, electrocution, or predator introduction into the landscape will be the only acceptable methodologies for rodent eradication.
 - For ground squirrel and gopher eradication, please contact Pest Management Consultant John Gingrich. 925-765-5154
- **Deer:**
 - Deer cannot be kept out of the park.
 - To minimize deer browsing, utilize deer-browsing cages on new or herbaceous succulent planting.
- **Insects:**
 - Use of predaceous insects.
 - Selective use and application of Neem Oil.
 - Selective application of diatomaceous earth.

- *Insecticides must be approved by the Public Works Department prior to use and may only be approved for use after options i-iii have been exhausted.*
- **Weeds:**
 - Herbicide use is restricted to the use of organic herbicides and manual/hand weeding.
 - Seed bank exhaustion may be used in areas where “Magic Carpet” ice plant is below 50%. Prepare healthy ice plant specimens for transplant prior to seed bank exhaustion. Uprooted plants to be tended and cared for in 1-gallon pots or larger and kept in a nursery setting to ensure good health.
 - See Section 2.6 Weed Control for further instruction.

Seed Bank Exhaustion: A Step-by-step Guide

Preparation for seed bank exhaustion is to be completed in late winter and early spring prior to “Magic Carpet” ice plant bloom. Repeat this process when necessary throughout the life of the park during this time period only. As noted above, this technique shall apply only to areas where “Magic Carpet” ice plant is below 50% coverage.

- 8) Determine areas where excessive weeds are growing and re-seeding each year.
- 9) Place erosion control wattles on downhill slopes greater than 10%.
- 10) Lightly scarify the top one to two inches of soil.
- 11) Saturate soils to encourage seedling germination; repeat as necessary to ensure soil remains moist.
- 12) As seedlings germinate, manually remove seedlings and discard from the park.
- 13) Repeat steps 3, 4, & 5 as necessary until the seed bank has been eliminated and seedlings no longer emerge.
- 14) Replant “Magic Carpet” ice plant with 10-inch on-center spacing.

Poison Oak Eradication

Due to its extensive and deep rhizomatous root structure, Poison Oak (*Toxicodendron diversilobum*) roots must **not** be manually removed from its established locations within the park. To eradicate Poison Oak maintenance staff members must follow the instructions listed below:

- 8) When removing Poison Oak, all staff members must wear PPE to protect themselves from the oils found upon the leaves and stems of the plant. Eye protection, gloves, and disposable Tyvek suits are required when handling poison oak. Staff is to avoid having any exposed skin when they come in contact with Poison Oak.
- 9) Eradications is to take place during Mid-June prior to the flowering of the plant.
- 10) Poison Oak plant is to be cut down to a stump. DO NOT DIG UP ROOTS or disturb the soil beneath the plant. Roots will stay in the ground to prevent cliffside destabilization.
- 11) All branches, leaves, vines and plant material will be removed and collected into trash bags. These trash bags will be tied and sealed for protection and brought to the landfill.
- 12) Herbicide will be applied to the freshly cut stump of the Poison Oak plant. The herbicide is to be painted on to the stump and will be applied in concentrated form. Herbicide will be used per manufacturers recommendation.
- 13) Reapply herbicide within 4 to 6 weeks if the stump grows suckers.
- 14) Continue to monitor the plant. If The plant regenerates, repeat steps 1-5 until the plant has been killed.

Chapter 2.6 :

Weed Control In Landscape Areas

Goals for Weed Control:

- All planting areas shall be kept clear of weed growth.
- Achieve by a combination of mulching and hand-weeding/ hoeing.
- Ensure that the methods used will cause a minimum of damage to adjacent planted areas.

Summary of Weed Control Program

The control of weeds (non-native/non-desired plant species) is crucial to the success of the revegetation efforts, and to the long-term vitality of the landscape areas within Perkins Park. (Success criteria is listed in Chapter 1.8: Success Criteria.) Invasive weeds aggressively compete with desired or native plants for resources and space and consequently diminish the value of local landscape to sensitive native wildlife. As both invasive and non-invasive weeds compromise a thriving “Magic Carpet”, all weeds will be managed appropriately to eliminate or diminish their impact on the project site.

The desired manner for weed control within all planting areas is to patrol frequently, and remove weeds manually, depending on the landscape conditions. Weed control will be accomplished through weed whipping and hand removal prior to the onset of weed seed. All weeds shall be killed before they set viable seed. “Magic Carpet” ice plant areas are to be regularly cleared of weeds indefinitely. Weeds are to be cut or removed when they become 4 inches in height or cover 15% of landscape areas. Weed species will be bagged and removed from the site.

An infestation of non-native plants will be reduced and controlled immediately throughout the landscape areas, and in adjacent existing vegetation if these areas are providing a significant source of weeds. If herbicides are considered necessary for the control of invasive species and have received approval for their application from the City of Pacific Grove, their application will be by a California Qualified Applicator, only after approval by the City of Pacific Grove Public Works Department. The herbicide will be EPA-approved and all product label requirements will be strictly adhered to.

How To Hand Weed:

- Using a hoe, hand-spade or dandelion picker, loosen the soil throughout the planting areas, taking care to avoid disturbance of roots of planted material.
- Remove weeds entirely, including roots. Remove the minimum of soil and minimise disturbance to plants and mulched surfaces.

Application and Maintenance of Wood Chip Mulch Around Plantings

A well-maintained mulch layer can greatly reduce native plant competition from weeds and the need for more intensive weeding efforts. When replacing exhausted plants, following planting, the gardens for all container stock will be maintained with a 3-inch layer of wood chip mulch, as depicted on Figure 1. Mulch will be free of disease and invasive weeds and shall be kept several inches from trunks of wood species to prevent rot.

**Table 5
Weed Control Schedule**

Planting Areas	Invasive, Non-Native Weeds	Non-Invasive, Non-Native Weeds
Cliff Bluff No herbicides.	Weeds removed by hand with hand trowel or shovel. Careful and methodical movements to reduce soil disruption and erosion. Years 1-5 and beyond.	Weeds removed by hand with hand trowel or shovel. Careful and methodical movements to reduce soil disruption and erosion. Years 1-5 and beyond.
General Garden Space EPA approved herbicides may be used if all other weed control options have been exhausted. Reporting must indicate all alternatives have been attempted and failed.	Weeds removed by hand or cut with a mower during routine maintenance visits. Seed bank exhaustion techniques are advised within gardens with more than 35% weed coverage. Years 1-5 and beyond.	Seasonal mowing or weed whipping prior to weeds setting seed. Seed bank exhaustion techniques are advised within gardens with more than 35% weed coverage. More intense for Years 1-3. Occasionally after year 5.

Weed Control Techniques for Non-Invasive Species

Non-invasive weeds, such as non-native annual and perennial grasses and forbs, occur within the landscape areas. Within the entire park all weeds will be removed by hand pulling/hoeing the entire plant including the roots if the species is subject to re-sprouting.

Seed bank exhaustion techniques (described in detail in Chapter 1.5: Integrated Pest Management) may be used within the general garden spaces, but should not be allowed within sensitive cliff bluff/ edge areas.

Typical non-native grass species that will need to be managed include rip-gut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), and wilds oats (*Avena fatua* or *A. barbata*). Some common non-native forbs include plantain (*Plantago* sp.) and filaree (*Erodium* sp.).

The weed management program entails monitoring the development of the weedy vegetation in the late winter and early spring in order to determine the optimal time for hand weeding vs seed bank exhaustion.

- The goal is to cut or remove the annual grasses prior to their setting viable seed, and eliminating the existing seed bank within the gardens.
- It will be necessary to cut or remove the weedy grasses two to three times per growing season depending on the soil moisture of a given area.

- Areas with relatively high soil moisture will experience significant resprouting of the weedy grasses, and will require more frequent weeding.
- After several years of well-timed weeding, the seed bank of the weedy grasses will be depleted and the mowing frequency will decrease.

A power weed whip will be the appropriate tool for grass cutting depending on the terrain, density of plant cover and proximity of planted native species. The steep cliffsides and general garden areas within the landscapes can be effectively managed with a power weed whip or hand pulling.

All weeds, especially weeds with seed heads are not to be left within the landscape for decomposition. During raking, care must be taken not to damage any of the native plants.

Weed Control Techniques for Invasive Species

Invasive non-native species should be reported immediately and action must be taken to remove the plant(s) before the infestation expands. Removal will take place during routine maintenance visits, unless otherwise required.

Invasive non-native species will be eradicated by hand. Removal of these species from all planting areas will include the entire plant, including roots to at least 4 inches depth, as many such species are capable of regenerating from root fragments left in the soil.

As each invasive species is unique in form and habit, the recommended removal and disposal techniques vary by species. Table 6 has a partial list and a brief description of known invasive species of local significance, and their recommended techniques of removal.

EPA approved herbicides may be used if all other weed control options have been exhausted. Spot treatment only. Reporting must indicate all alternatives have been attempted and failed.

**Table 6
Invasive Weed Control Detail**

Plant Form	Species	Characteristics	Removal
Vines/ Groundcover	English Ivy (<i>Hedera helix</i>) Periwinkle (<i>Vinca sp.</i>) Himalayan Blackberry (<i>Rubus procerus</i>)	Often forming dense, uniform groundcover Can spread by seed, but especially by vegetative growth Re-sprouts easily	Climbing vines should be cut down. Pull site will need follow-up weeding. Use gloves. Dispose off site
Thistles	Yellow Star Thistle (<i>Centaurea solstitialis</i>) Italian Thistle (<i>Carduus pycnocephalus</i>) Bull Thistle (<i>Cirsium arvense</i>) Milk Thistle (<i>Silybum marianum</i>)	Spiny annuals Taprooted Lots of seeds Wind dispersed All have sharp spines	Young plants pull easily with gloves, but are often more practical to control through mowing or weed whipping Dispose of mature plants off site.
Broom (sub-shrub)	French Broom (<i>Genista monspessulana</i>)	Long-lived Deep taproot Produce lots of seed	Young plants pull easily with gloves. Mature plants require weed wrench or digging tools. Dispose of flowering plants off site.
Tall Herbs	Wild Mustard & Radish (<i>Brassica sp.</i>) Cocklebur (<i>Xanthum spp.</i>) Bristly Ox tongue (<i>Picris echioides</i>)	Tap rooted Short-lived Perennials Produce lots of seed	These plants pull easily with gloves, but are often more practical to control through mowing or weed whipping prior to flowering. Dispose mature plants off site.
Iceplant	(<i>Carpobrotus edulis</i>) "Hot & Tot Fig" Ice Plant (<i>Carpobrotus childensis</i>)	Shallow rooted perennial Spreads vegetatively re-sprouts easily	These plants pull easily but the roots must be dug out. Pull site will need follow-up weeding. Dispose off site.
Tree	<i>Acacia sp.</i>	Fast growing. Yellow flowered. Deep rooted. Spreads by roots. Lots of seed.	Small trees can be pulled or dug. All major roots removed. Remove from site.
Large Grass	Jubata Grass ("pampas grass") (<i>Cortaderia jubata</i>)	Fast growing. Long-lived. Extensive roots. Lots of seed. Re-sprouts easily.	Flower plumes should be cut and bagged. Whole plants must be intensely dug out. Dispose off site. Use gloves as the leaves cut.

Chapter 2.7 : Plant Care & Protection

The following specifications itemize the care and protections that will be necessary to meet success criteria for the enhancement of the existing conditions of Perkins Park. This chapter reviews the following:

- Care of “Magic Carpet” Ice Plant
- Care of Grass Areas
- Care of Native Vegetation
- Care of South African Plants
- Plant-protection Devices
- Pruning of Native California Vegetation
- Mulching
- Debris Removal

Care of “Magic Carpet” Ice Plant

Care of “Magic Carpet” ice plant consists of a combination of regular weeding, minimal watering, annual feeding (fertilizer application), pest management, protection fencing and pruning of die-off.

- **Trampling:** Preventing the public from trampling the “Magic Carpet” ice plant can be accomplished by fencing off particularly vulnerable areas.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil testing of the top 6” of soil to be dry to moderate moisture level.
- **Feeding:** See Chapter 1.9: Fertilizer Application.
- **Pest Management:** See Chapter 1.5: Integrated Pest Management Plan.
- **Pruning:** When portions of the ice plant have died off, prune off using pruning shears.

Care of Grass Areas

- **Occurance:** Grass will be cut a minimum of 1 time per year.
- **General Maintenance:** Maintenance of grass in a manner appropriate to the intended use. Maintenance of grass height between 5 to 7 inches. Insurance that grass does not become compacted or waterlogged. Maintenance of grass in a healthy, vigorous condition. Repair of grassed areas damaged by trampling, abrasion, or scalping during mowing or trimming. Regular removal of litter.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil testing of the top 6” of soil to be dry moisture level.
- **Remedial works:** Top dress, decompact and scarify soil. Re-seeding where necessary.
- **Grass-cutting:** Remove litter, rubbish, and debris from grass before mowing. Cut to a neat, even finish without rutting or compaction, particularly when ground conditions are soft. Trim grass edges to paving and around the base of planting areas and street furniture. Sweep adjacent hard surface clear of cuttings and debris.

Care of Native California Vegetation

- **Pruning:** Methods as listed below in “Pruning of Vegetation.”
- **Weeding:** Native California plant gardens to be weeded on a monthly basis per weeding protocols detailed in Chapter 2.6.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil testing of the top 6” of soil to be dry moisture level.
- Regular removal of litter.

Trees and Shrubs

- **Watering:** All planting to receive watering if needed during establishment. Ensure sufficient water is applied to maintain healthy growth, taking into account published meteorological data on rainfall for any given period, in particular in periods of summer and fall drought (August - November). Trees of girth size 5 - 12 inches or over will need to be watered regularly during the first season, especially in dry periods when weekly watering will be required. Irrigation pipes may be required depending on soil condition at time of planting: consult the landscape architect.
- Do not allow nylon filament rotary cutters or other mechanical tools closer than 6 inches to the stem of any tree or plant. Carry out operations close to stems using hand tools.

Re-firming of Protections & Staking

- **General:** Trees and shrubs shall be maintained in a firm position in the ground and all stakes and ties shall be checked regularly.
- **Particular timing of inspections:** After strong winds, King Tides, and other disturbances replace missing rabbit protection, and replace any significant failures.
 - **Tree stakes and ties:** Inspect all trees twice a year. Adjust fixing to suit stem growth and provide correct and uniform tension. If growth is sufficient for tree to be self-supporting, remove fixing and fill holes with lightly compacted soil. Check stakes for looseness, breaks, and decay and replace as necessary. Remove stakes and ties after 3 years of establishment.

Care of South African Plants

- **Pruning:** Methods as listed below in “Pruning of Vegetation.”
- **Weeding:** South African gardens to be weeded on a monthly basis per weeding protocols detailed in Chapter 2.6.
- **Watering:** All watering to be accomplished through a properly functioning irrigation system and hand-watering for choice areas (see Chapter 1.10). During the dry months, water once a week. During wet months, do not irrigate.
- **Soil Moisture:** Soil testing of the top 6” of soil to be dry to moderate moisture level.
- Regular removal of litter.

Care of Succulents and Aloes

- **Pruning:**

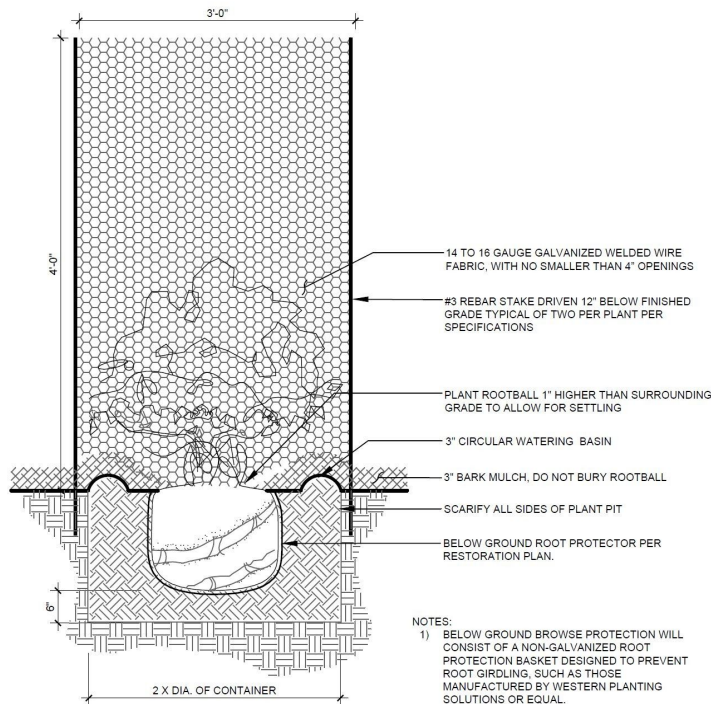
- Pruning of Aloes is to be restricted to the pruning of dead limbs and to general height of Aloes. Aloes are not to exceed 4'-0" in height and are not to impede on pedestrian walkways where possible.
- Other Succulents within the landscape are to be pruned only in the event of die-off and impediment on pedestrian walkways.
- **Weeding:** Areas to be weeded on a monthly basis per weeding protocols detailed in Chapter 2.6.
- Regular removal of litter is not necessary below Aloes.

Plant-protection Devices

Plant-protection cages (also known as browse cages) and gopher-wire baskets are standard for native plant installations throughout the park, especially in areas prone to ground squirrel infestations. It is recommended that all new plants be installed with gopher-wire baskets, though not all plants will require browse cages.

Browse cages are typically installed on trees and shrubs as part of the plant-installation phase. However, they can be installed on an as-needed basis during the plant-establishment period. If the animal impact on plant development becomes a significant issue, plant-protection cages are the most cost-effective manner in which to ensure that the plant performance criteria are met within the 5-year period. If installed, plant-protection devices will be repaired or replaced if they are damaged or vandalized. The devices will be repaired to the installed condition, as depicted in Figure 2 below.

Figure 2: Shrub Planting with Browse Cage



A

SHRUB PLANTING WITH BROWSE CAGE

1" = 1'-0"

CAT-PL-11

Pruning of Native California Vegetation & South African Plants

Pruning of plant materials will be minimally required, except for occasional trimming of branches that may obscure public passage. Irregular and random plant growth is desirable (for wildlife value) in a landscape area. Pruning will be permitted for the purpose of grooming plants. Most especially, pruning to tidy up the understory shrubs and low branches of trees will not be acceptable. This practice would undermine progress toward the vegetative community structures, whereby cover, screening, and closure of shrubs will be part of the criteria for success.

If pruning is necessary, pruning will be limited to the bare minimum required to accomplish the following goals:

- 1) Promote healthy initial plant growth and strong branch structure. Extremely unbalanced plant growth will be pruned only during the first 5 years after planting, and just enough to promote initial strong growth of trees and shrubs.
- 2) Repair storm damage or remove hazards. Storm damage, such as broken branches or fallen trees, will be cleaned up if they compromise public safety or passage.
- 3) Shrubs that interfere with pedestrian pathways may be pruned back.
- 4) Corrective pruning to eliminate structural defects on trees and large woody shrubs.

Pruning Methods

- **Agreement:** Before starting work, agree which trees and hedges are to be pruned.
- **Appearance:** Trim individual plant appropriate to species, location, and season to leave a well-balanced natural shape.
- **Cutting:** Use appropriate, clean, sharp tools. Clean cuts back to sound wood. Provide notice if any fungal disease is detected.
- **Do not use growth retardants, fungicides, or sealant.**

Pruning of Trees

- **Tree work standards:** to Forestry and Arboriculture Training and Safety Council Safety Guidance.
- **Protections:** During pruning, protect adjacent pathways, plants, or trees. Restrict human access within areas to prevent harm.
- **Appearance:** Trees to maintain a well-balanced, natural appearance. Remove any suckers or basal growth. Cut back level with source stem or root.
- **Timing:** Prune between fall and mid-winter.

Pruning of Hedges

- Cut back hedge plants by one-third at time of planting.
- **Replacement:** Remove dead plants as soon as possible and replace in the next scheduled round of replacement planting.
- Maintain a safe, clean, and secure environment.

Debris Removal

All non-organic debris will be removed and properly disposed of off-site during the entire maintenance period. Exceptions to this rule may be made within native California planting areas. In that case, limited amounts of organic debris such as leaves and dead plants will be left in the landscape areas to increase wildlife habitat and soil organic matter.

- **Litter/Dog Waste:** Collect litter as necessary to maintain a clean, litter-free environment.
- **Hard surfaces:** Undertake a regular and time-tabled cleaning regime including brushing.

Chapter 2.8 : Plant Replacement within Landscape Areas

In the event of plant die-off, supplemental planting will be necessary to maintain coverage of “Magic Carpet” ice plant and Native California gardens to success criteria levels. In this section we will cover:

- Supplemental Planting
- Criteria for Replacement Plantings
- Installation of “Magic Carpet” Ice Plant
- Installation of Native California Plantings & South African Gardens
- Failure to Re-establish

Supplemental Planting

Supplemental planting needs will be assessed during quarterly monitoring. The need for supplemental planting will occur if plant survival rates are less than dictated by the success criteria. The number of replacement plants, the species, and the container size will be determined by the City Public Works Department and stated in the annual monitoring reports for approval by the City’s Public Works Department. Substitute species may be used if the original species consistently performs poorly and suitable alternative species perform well. However, substitute species should be consistent with the goals and objectives and be compatible with the success criteria.

Supplemental plant installation will occur in the fall after the quarterly maintenance monitoring. This schedule may be amended if the necessary plants are not available, are low in quality, or conditions are deemed unsuitable for replanting. It is desirable to replant as soon as possible to minimize the extension of the establishment-period maintenance.

The number of supplemental plants installed should be greater than the number of plants required to bring the total live plants up to the success criteria. Enough plants should be replanted to allow for expected mortality and still meet the success criteria.

Criteria for Replacement Plantings

- Individual plants of “Magic Carpet” ice plant have an average age of 5-7 years. Replacement of these plants should be monitored closely to ensure replacement plants are being grown locally and are available for planting.
- Replacement plantings are to match the existing plants in kind and color. Replacement of “Magic Carpet” ice plant is to be derived from cuttings of healthy specimens from within the park and propagated at a local nursery.

Installation of “Magic Carpet” Ice Plant

- Once replacement plantings are delivered to the park, they can be installed in the same manner as the original planting.
- Dead plant material may have decomposed by the time new plant material is ready to install.
- New plants can be installed with the same density and planting pattern as originally specified for the planting area receiving the replacement plants. (Approximately 2-inch plugs should be placed on 18-inch on-center spacing.)

Installations of Native California Plants & South African Gardens

- Once replacement plantings are delivered to the park, they can be installed in the same manner as the original planting.
- The original plant material must first be removed. Removal can be achieved by digging around the base of the dead plant and lifting it out with a shovel.
- The planting hole should then be re-excavated to the specified dimensions and prepared to receive the replacement plant.
- The replacement plant should be carefully removed from its container in order to avoid any root damage and placed in the planting hole.
- The planting hole is then to be backfilled with the original soil and a water basin of appropriate dimension is to be constructed. The foliage protector is to then be refitted over the replacement plant.
- The final step is to apply a 3-inch layer of wood chip mulch.

Failure to Re-establish

The following measures will be taken if replacement plants fail to re-establish:

- Irrigation lines will be checked to ensure proper water is being delivered to the planting area.
- Watering schedule will be evaluated to ensure the area is being adequately watered.
- Soil chemistry will be evaluated with soil testing

Chapter 2.9 :

Fertilizer Application

In order to ensure success for the gardens throughout Perkins Park, while also maintaining aquatic ecosystem health adjacent to the park, fertilization of gardens must be completed strategically and methodically.

“Magic Carpet” Ice Plant

- Application of fertilizer needs to be done sparingly in order to reduce the chances of run-off into the adjacent protected aquatic environment.
- Utilizing a truck-watering tank, manually apply a water and a balanced, liquid organic fertilizer which is in the range of 3-3-2.
- Apply two times per year and between rain events.
 - Mid-March prior to spring blooms.
 - Early October.

California Native Plants

- Native California plants within Perkins Park do not require feeding.
- Fertilizing of Native California gardens is not recommended, as this may spur the growth of non-native weeds.

South African Plants & Succulents

- South African plants and succulents will not require feeding.
- Fertilizing of succulents, such as Aloes and Aeoniums, is discouraged as it is not conducive to general plant health.
- Fertilizing of South African gardens is not recommended, as this may spur the growth of non-native weeds.

Chapter 2.10 :

Irrigation System Operation & Maintenance

Irrigation is an extremely important aspect in the continued success of this project. The following topics will be discussed within this section:

- Irrigation Plan Summary
- Irrigation Schedule for Established Plants (Table 7)
- Frequency and Duration of Irrigation
- Measurement of Soil Moisture
- Maintenance of Cliffsides
- Irrigation Recommendations
- Further Recommendations for Retrofitting the Existing Irrigation System.

Irrigation Plan Summary

Watering must be effectively controlled to minimize costly water waste resulting from overwatering, particularly under drought conditions. Soil erosion and/or saturation due to overwatering, line breakage, or improper irrigation must be addressed immediately. It is the responsibility of the maintenance personnel to ensure that the landscape receives sufficient water to promote healthy plant growth. Care must also be taken to prevent over-watering and water damage resulting from irrigation onto adjacent walks, fences, and walls. The application of supplemental water can only be determined by good judgment and careful observation. Any loss of plant material due to insufficient irrigation shall be immediately replaced.

The existing irrigation system at Perkins Park is outdated and does not provide proper coverage. This results in areas of “Magic Carpet” ice plant dieback, weed encroachment, trampling, and soil compaction. The City of Pacific Grove has two main options for dealing with the existing irrigation system:

- 1) Install a new irrigation system.
 - 2) Retrofit the existing system and implement a routine hand-watering plan for the park.
- The pursuit of either option would be coordinated by the Public Works Department.

It is our recommendation to install a new irrigation system, which has been designed per the Construction Documents created for the Park’s revival.

**TABLE 7:
IRRIGATION SCHEDULE FOR ESTABLISHED PLANTS**

Vegetation Group	Time of Year	Frequency	Amount of Water	Notes
"Magic Carpet" ice plant	May - October	3 Waterings/ month	1 - 5 Gallons OR 3 - 5 minutes of watering per area	
"Magic Carpet" ice plant	November - April	1 Watering/month if necessary	1 - 2 minutes of watering per area	Do Not water during this season in high rainfall years
Native California Gardens	May - October	2 Waterings/ month	1 - 3 Gallons OR 3 minutes of watering per area	Do not provide supplemental water during dormancy period in late summer/early fall
Native California Gardens	November - April	1 Watering/month if necessary	1 - 2 minutes of watering per area	Do Not water during this season in high rainfall years
South African Gardens	May - October	2 Waterings/ month	1 - 3 Gallons OR 3 minutes of watering per area	Do Not Over-Water.
South African Gardens	November - April	1 Watering/month if necessary	1 - 2 minutes of watering per area	Do Not water during this season in high rainfall years

Frequency and Duration of Irrigation

Irrigation frequency and quantity will be species- or landscape area-specific. Native plant species need less frequent water than traditional landscape plants, and typically need watering only during the dry season (May-October.) **Plants should be monitored to ensure overwatering does not occur.** Frequency and duration of watering shall be based on field conditions determined by maintenance personnel. Watering frequency should be maintained during times of drought while in the establishment period.

"Magic Carpet" ice plant will need regular light watering throughout the year to ensure plant health and proper plant growth. See Table 7 (above) for a watering schedule. New plantings of the "Magic Carpet" ice plant will require additional watering for plant establishment for the first two years after planting. After Year 2, "Magic Carpet" ice plant can resume the regular watering profile as listed in Table 3.

Once established, Native California and South African Gardens will need minimal watering. Winter watering schedule must be adjusted based on the rainfall of the season to prevent over-watering. The use of an irrigation controller with solar synch and weather sensor will reduce

risk of overwatering. Be sure not to over-water Native California gardens in the late summer/early fall when the dry season promotes plant dormancy. Overwatering of these plants during this time will result in killing the plant.

Measurement of Soil Moisture

Within areas designated for “Magic Carpet” ice plant, the Public Works Department shall use a sub-surface installed soil tensiometer to determine the moisture content of the soil.

For coastal bluff planting and native California gardens, species diversity inherent in the plant selections precludes the use of sub-surface installed soil tensiometers, whose accuracy favors the monoculture plantings of fairways and greens. In lieu of tensiometers, the Public Works Department shall test soil moisture levels by using a shovel to excavate a six-inch deep hole in a few sample planting basins throughout the planting areas.

Maintenance of Cliffsides

- Cliff edges/bluffs will be routinely inspected by maintenance staff regularly to ensure that hand-watering is effective.
- At the onset of the fall rainy season, the watering shall be halted if excessive rains have occurred.
- Avoid over-watering to prevent excessive erosion to cliff edges.

Irrigation Recommendations:

Potential solutions to the existing irrigation system at Perkins Park that will save water and provide better coverage for the landscape:

- Use matching spray heads and spray bodies
 - Install “head-to-head coverage” where appropriate (goal of 90% or better coverage of landscape with over-head spray).
- Use check valves and pressure regulators.
- Use check valve and pressure-compensating emitters and driplines.
- Install irrigation in accordance with MWEL requirements.
- Size zones and laterals to accommodate gallons per minute (GPM) and maintain average GPM across all zones were possible.
- Apply smart-controller guidance to ensure proper water management electronically
- Record water use and implement water and plant management practices to maintain water-use compliance and solutions.
- Select Low- to Medium-use plants with deep root systems to help reduce water demand and erosion. (Natives accepted by CAL-IPC/WUCOLS).
- Reduce/eliminate water use after plant establishment of most species and systems.
- Use recycled water for irrigation when available.
- Place plants that require shade, full-sun, part-sun accordingly in separate hydrozones.

Further Recommendations For Retrofitting The Existing Irrigation System

- Much of the existing irrigation system such as many spray heads and PVC lateral line pipes need to be capped in place and retired to prevent further leaking and malfunctions along vulnerable portions of cliffside along the length of the park, especially in the northernmost reaches of the park where we do not have an engineered sea wall.

- In the northern region of the park, the park becomes very thin and erosion potential is high. This area of cliffside of the park is too vulnerable to sustain the implementation of irrigation infrastructure of regular watering that would only further terrain erosion and destabilization. Recommendations may be made to hand-water new plantings in these areas as needed for establishment only.

Chapter 2.11 :

Success Criteria & Monitoring Program

Monitoring of plantings is vital to the success of the “Magic Carpet” ice plant and the general enhancement of Perkins Park.

Success Criteria

The final success criteria for the proposed revegetation are outlined below. Annual monitoring will ensure progress toward the desired conditions. The final success criteria will be monitored for compliance at the end of the 5-year period, but these criteria will remain indefinitely for the life of the park.

Success Criteria for “Magic Carpet” Ice Plant:

- Weeds do not exceed 15% within any stands of “Magic Carpet” ice plant.
- Plant condition is considered to be “Healthy and Thriving.”
- Swaths of “Magic Carpet” do not fall below 70% cover.
- Adequate and comprehensive water is being provided to the “Magic Carpet” ice plant.
- Bloom periods feature robust flower displays

Success for Native California Gardens:

- Weeds do not exceed 15% within any stands of Native California Gardens.
- Plant condition is considered to be “Healthy and Thriving.”
- Mulch remains at 3-inches of depth.
- Plant survival does not fall below 70%.
- Pruning is completed within the parameters of this document (Chapter 2.7).
- Adequate water is being provided to each individual plant.

Success for South African Gardens:

- Weeds do not exceed 15% within any stands of Native California Gardens.
- Plant condition is considered to be “Healthy and Thriving.”
- Mulch remains at 3-inches of depth.
- Plant survival does not fall below 70%.
- Pruning is completed within the parameters of this document (Chapter 2.7).
- Adequate water is being provided to each individual plant.
- Blooms are robust and plentiful

Monitoring Program Methods

Trees, shrubs, forbs, and grasses within the park will be monitored as to the survival of the plants contained within each garden area. When there is die-off of a plant, it is to be reported. If a particular species is under-performing, the City Public Works Department will assess the suitability for that plant species and recommend further remedial actions as necessary.

Invasive plant species, as defined by Chapter 2.6, within the park shall be 10% by Year 5. If plant survival falls below these criteria, supplemental planting will be undertaken the following fall.

Monitoring Frequency

Establishment-period monitoring will include monitoring of installed vegetation conditions (e.g., plant survival, growth), and will document relevant site conditions (e.g., mulch, invasive weeds). Monitoring during a first-year establishment period after installation will focus on plant survival to

ensure that the development of the revegetated areas will proceed adequately, and will allow for remedial action as needed. Monitoring will continue in Years 4 and 5, but the emphasis will shift to the evaluation of percent cover of vegetation and “Magic Carpet” ice plant. If the revegetation is slow or deficient in some aspect during either of these periods, the monitoring program will identify such deficiencies and remedial actions.

Secondary Monitoring Methods

Reconnaissance Vegetation Surveys

The City Public Works Department will periodically survey the landscape areas after plant installation. The purpose of the reconnaissance surveys will be to assess how the landscape areas are developing and to identify problems that may exist. Plants are most vulnerable to disturbance during the early part of the establishment period, so monitoring must be relatively frequent during the first years. Reconnaissance surveys will be conducted four times per year during Years 1 and 2, twice per year during Years 3 and 4, and once during Year 5.

During these surveys, the City Public Works Department will document plant damage or the presence of invasive species and make recommendations to correct any significant problems or potential problems. The City Public Works Department will identify areas of concern regarding irrigation, erosion, and general aesthetics. These visits will also be used to document the need to change or adjust revegetation plan activities (e.g., altering the maintenance schedule, adding extra weed control visits, increasing or reducing the frequency or amount of irrigation water, etc.).

Detailed Monitoring of Vegetation

In addition to reconnaissance surveys, quantitative monitoring visits will be made to assess plant survival, plant cover, and plant growth (e.g., tree height, health and vigor, etc.). The surveys will evaluate plant health during or, for some species, just after peak growth. The native California landscapes will be sampled between August and September of each year. The “Magic Carpet” ice plant will be sampled during May and June of each year. These visits will include the collection of quantitative data and the photographing of revegetation plantings.

Photo Documentation

Photos shall be taken of landscape areas once a year during Years 1-5. Photos will be taken from the same vantage point and in the same direction every year, and shall reflect material discussed in the monitoring report.

Appendices :

- A. **Landscape Management Resources**
- B. **Part 02: Post-Construction - List Of Native California Plant Species**
- C. **Part 02: Post-Construction - Non-Local Plant Species**
- D. **Part 02: Post-Construction - South African Botanic Plant Species**
- E. **Maintenance Log Sheet (Sample)**
- F. **Monitoring Log Sheet (Sample)**
- G. **Summary Of Success Criteria**
- H. **Existing Tree Care**

APPENDIX I.
Landscape MANAGEMENT RESOURCES

City of Pacific Grove Landscape Guidelines and official plant list:

<https://www.cityofpacificgrove.org/sites/default/files/general-documents/urban-greening/20160216-pglandscapevfinalallowres.pdf>

**APPENDIX B.
Post-Construction California Native Plant List**

SHRUBS: MUST- HAVE LOCAL SPECIES <4ft HIGH	
<i>Artemisia californica</i>	California sage
<i>Baccharis pilularis</i> var. <i>p.</i>	Coyote Bush
<i>Ceanothus thyrsiflorus</i> var. <i>griseus</i>	Carmel Ceanothus
<i>Diplacus aurantiacus</i>	Sticky Monkey Flower
<i>Ericameria ericoides</i>	Mock Heather
<i>Eriogonum fasciculatum</i>	California Buckwheat
<i>Eriophyllum stachaeifolium</i>	Lizardtail
<i>Lupinus arboreus</i>	Yellow Bush Lupine
<i>Lupinus chamissonis</i>	Silver Dune Lupine
<i>Salvia mellifera</i>	Black Sage

LOW SHRUBS, HERBS	
<i>Achillea millefolium</i>	Yarrow
<i>Acmispon glaber</i>	Deer Weed
<i>Arctostaphylos edmundsii</i>	Edmond's Manzanita
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick
<i>Artemisia pycnocephala</i>	Beach Sagewort
<i>Corethrogyne filaginifolia</i>	Sand Aster
<i>Dudleya caespitosa</i>	Sea Lettuce
<i>Epilobium canum</i>	California Fuschia
<i>Erigeron glaucus</i>	Seaside Daisy
<i>Eriogonum latifolium</i>	Coast Buckwheat
<i>Eriogonum parvifolium</i>	Big Sur Buckwheat
<i>Eschscholzia californica</i> var. <i>maritima</i>	Beach Poppy
<i>Fragaria chiloensis</i>	Beach Strawberry
<i>Grindelia stricta</i> var. <i>platyphylla</i>	Gumplant
<i>Iris douglasiana</i>	Douglas' Iris
<i>Oenothera elata</i> subsp. <i>hookeri</i>	Hooker's Evening Primrose

VINES	
<i>Calystegia macrostegia</i> subsp. <i>cyclostegia</i>	Coast Morning-glory

GRASSES, RUSHES, SEDGES	
<i>Calamagrostis foliosa</i>	Leafy Reed Grass

<i>Carex pansa</i>	Sand Dune Sedge
<i>Distichlis spicata</i>	Saltgrass
<i>Festuca rubra</i>	Red Fescue
<i>Juncus patens</i>	Grey Rush

SHRUBS: ADDITIONAL LOCAL SPECIES	
<i>Arctostaphylos hookeri</i> subsp. <i>h.</i>	Hooker's Manzanita
<i>Arctostaphylos pumila</i>	Sandmat Manzanita
<i>Frangula californica</i>	Coffeeberry

SHRUBS: ADDITIONAL NON-LOCAL SPECIES	
<i>Verbena lilacina</i>	Cedros Island Verbena
<i>Encelia californica</i>	California sunflower
<i>Eriogonum giganteum</i>	St Catherine's Lace
<i>Gambelia speciosa</i>	Island Snapdragon
<i>Leptosyne gigantea</i>	Giant Coreopsis
<i>Salvia leucophylla</i>	Purple Sage

Appendix C
Post - Construction Non-Local Plant List

SHRUBS: ADDITIONAL NON-LOCAL SPECIES	
<i>Verbena lilacina</i>	Cedros Island Verbena
<i>Encelia californica</i>	California sunflower
<i>Eriogonum giganteum</i>	St Catherine's Lace
<i>Gambelia speciosa</i>	Island Snapdragon
<i>Leptosyne gigantea</i>	Giant Coreopsis

ANNUAL WILDFLOWERS	
<i>Clarkia purpurea</i>	Farewell-to-Spring
<i>Clarkia unguiculata</i>	Farewell-to-Spring
<i>Lupinus nanus</i>	Sky Lupine
<i>Lupinus succulentus</i>	Arroyo Lupine

ADDITIONAL LOW SHRUBS, HERBS	
<i>Astragalus nuttallii</i> var. <i>n.</i>	Gray Locoweed
<i>Euthamia occidentalis</i>	Western goldenrod
<i>Phacelia ramosissima</i>	Monterey Branching Phacelia
<i>Symphyotrichum chilense</i>	California Aster
<i>Verbena lasiostachys</i>	Western Vervain

APPENDIX D.
Post-Construction: South African Botanic Plant List

SHRUBS: Up to 4ft HIGH	
<i>Echium candicans</i>	Pride of Madera
<i>Leucadendron salignum</i>	Conebush
<i>Protea repens</i> 'rubens'	Common Sugarbush
<i>Leucospermum cordifolium</i> 'Perry's Orange'	Pincushion
<i>Strelitzia nicola</i>	Birds of Paradise
<i>Leucospermum cordifolium</i> 'Don's Red'	Pincushion

LOW SHRUBS, HERBS	
<i>Arctotis</i> spp.	African Daisy
<i>Mimetes cucullatus</i>	
<i>Verbena lilacina</i>	Cedros Island Verbena
<i>Erica cerinthoids</i> 'Scarlet Santa Cruz'	Heath
<i>Pelargonium</i> 'Amelita'	South African Geranium
<i>Arctotheca populifolia</i>	Beach Pumpkin
<i>Coleonema calycinum</i>	Confetti bush
<i>Gazania rigens</i>	Treasure Flower
<i>Centaurea cineraria</i>	Dusty Miller
<i>Didelta carnosa</i>	
<i>Limonium latifolium</i>	Sea Lavandar
<i>Lampranthus productus</i>	

SUCCULENTS	
<i>Agave americana</i>	
<i>Cotyledon orbiculata</i>	Finger Alue
<i>Aloe distans</i>	Jeweled Aloe
<i>Aloe striata</i>	Coral Aloe
<i>Agave attenuata</i>	
<i>Euphorbia horrida</i> 'snowflake'	
<i>Euphorbia tricalli</i> (EXTREMELY TOXIC/CANCEROUS)	Sticks of Fire
<i>Kumara plicatilis</i>	Fan Alue
<i>Drosanthamum floribundum</i>	"Magic Carpet" Ice Plant

APPENDIX E. PERKINS PARK MAINTENANCE LOG SHEET (Sample)

Project Site: _____
 Inspection Date: _____ Revegetation Inspector(s): _____
 Installation Date: _____ Contractors: _____

Maintenance Task	Existing Condition	Maintenance Needed?	Dates Maintenance Implemented	Additional Actions?
Weeds and Mulch in Gardens 1. No weeds in spring and summer; maximum height 4" in winter. 2. Weed gardens 3x/month in spring and summer. 3. Replace/add woodchip mulch to 3" depth in Native California Gardens 4. Weed whip grass areas				
Plant Replacement 1 Monitor for dead or declining plants. 2. Replace dead or dying plants.				
Irrigation 1. Hand water cliff edges 1xmonth if needed 2. Increase watering schedule with drought. Decrease watering schedule with heavy seasonal rains. 3. Check Irrigation system per maintenance protocols 4. Repair leaks when detected.				
Browse Control 1. Replace stakes and screens. 2. Remove/cut screen if inhibitory.				
Invasive, Non-native Plants 1. Remove invasives when seen. Record: species, location, actions				
Other Maintenance Tasks 1. Debris Removal. 2. Fertilizing				

APPENDIX F. MONITORING DATA SHEET (Sample)

Project Site: _____ Page __ of __

Inspection Date: _____ Revegetation Inspector: _____

	Observed Conditions	Recommended Actions
Environmental Features		
Surface Erosion		
Human/Animal Disturbances		
Invasive Plant Species		
Plant Species Performance		
Trees		
Shrubs		
Herbaceous Plants		
Planting Location Conditions		
Cliff edges		
"Magic Carpet" ice plant		
Native California Beds		
Plant Health		
Drought Stress/Chlorosis		
Insects/Disease		
Dead Limbs/Plants		

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APPENDIX G. SUMMARY OF SUCCESS CRITERIA (sample)

Vegetative Cover	Year 1: Percent Cover	Year 1: Percent Survival	Year 1: Weeds Cover	Notes:
"Magic Carpet" ice plant				
Native California Gardens				
South African Gardens				
Vegetative Cover	Year 2: Percent Cover	Year 2: Percent Survival	Year 2: Weeds Cover	Notes:
"Magic Carpet" ice plant				
Native California Gardens				
South African Gardens				

Appendix H: Existing Tree Care

Tree coverage is limited at Perkins Park. There are select trees found in clusters at Sea Palm Avenue, and in Area 02 between Sea Palm Avenue 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.

Care Recommendations:

- Uncover root flare

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

Care Recommendations:

- Weed a 3'-0" radius around the base of the plant
- Lay 3" thick layer of mulch around the base of the tree
- Below mulch, include a watering ring connected to the irrigation system. Set up on a regular watering schedule to ensure plant health for up to 2 years.

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

Cypress 03: Trunk located closest to the cliff edge

Care recommendations

- Suggest making a clean cut where the limb was lost to prevent future disease.
- Monitor this tree for disease prior to cut.

Cypress 04: Located in the center of the cluster of 3 Cypress Trees

Care recommendations:

- Pull back the root flare
- Clear & clean the crotch of the tree to prevent further rotting.

Cypress 05: Cypress tree within the cluster located along Ocean View Blvd

Care Recommendations

- Due to termite damage and from being hit by a vehicle, the tree is potentially dangerous.
- If this tree were to fall, it could also damage adjacent trees.

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

Care recommendations

- Trim back suckers at the root flare

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

Care recommendations

- Trim back suckers at the root flare
- Remove tree if erosion event were to compromise the root structure. Keeping this tree on the unstable ground may exacerbate erosion if left untreated.

Metrosideros excelsa 03: Located near Siren Street

Care recommendations

- Pull back pathways and de-compact soils around the tree base.

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

Care recommendations

- Trim back suckers
- The bench may be moved to provide less stress to the root system.