

# ARBORIST REPORT

## 3300 PANORAMA

Location:  
3300 Panorama Drive  
Morro Bay, CA 93442

Revised:  
June 5, 2023

Prepared For:  
Morro 94, LLC

Prepared By:  
Jake Minnick  
ISA Certified Arborist WE-11830A  
ISA Tree Risk Assessment Qualification  
Professional Landscape Architect #6426

RRM Design Group  
3765 S Higuera St. Suite 102  
San Luis Obispo, CA 93401



# TABLE OF CONTENTS

Page	Section
1	1 - Introduction
	1.1 - Project Location
	1.2 - Project Description
2	2 - Methodology
	2.1 - Regulatory Overview
	2.2 - Tree Survey Methodology
	2.3 - Terms and Conditions
4	3 - Summary of Findings
6	4 - Site Plan Review
	4.1 - Tree Preservation
	4.2 - Tree Removal
	4.3 - Tree Replacement
8	5 - Tree Observations and Recommendations
	5.1 - Individual Species Observations and Recommendations
	5.2 - Recommendations for Trees During Construction
	5.3 - Maintenance Recommendations for Trees to Remain

<b>Page</b>	<b>Tables</b>
14	Table 1 - Tree Quantity Summary
15	Table 2 - Tree Evaluation Summary
	<b>Figures</b>
22	Figure 1 - Tree Location Map
23	Figure 2 - Site Plan Review
24	Figure 3 - Archival Aerial Photography
26	<b>Appendices</b>
	Appendix A - Tree Photographs

**THIS PAGE INTENTIONALLY LEFT BLANK**

# 1 INTRODUCTION

---

RRM Design Group was contracted by Morro 94, LLC to complete a tree inventory, assessment, and arborist report for trees located within the property boundary of the proposed project site located at 3300 Panorama Drive in Morro Bay (APN: 065-038-001). Our scope of services includes locating, tagging, measuring, assessing, and photographing the condition of all trees included in the inventory. Preservation suitability and health are based on the current site conditions. The proposed project may change the preservation suitability and impact the health of the trees.

## 1.1 Project Location

The 10.6-acre project site is located less than one half mile from the Pacific Ocean in the northeast corner of Morro Bay. It consists of several unoccupied structures, an environmentally sensitive habitat (ESH) area along an existing drainage, and two large earthen basins. It is bounded by residential housing to the south and west, and undeveloped land to the north and east.

According to a Mitigated Negative Declaration (MND) published by the City of Morro Bay on June 11, 2018, the project site was previously owned and operated by the U.S. Department of Defense as a Defense Fuel Support Point (DFSP) facility. Two aboveground JP-5 jet fuel storage tanks capable of storing 5,527,000 gallons each and a 100,000 gallon fire-water tank were constructed in 1961. Fuel was pumped to the storage tanks from an offshore tanker mooring point, stored onsite, and transferred to Lemoore Naval Air Station in Fresno County via a 98-mile pipeline. The site was closed in 1991 and decommissioned in 1996. Site infrastructure associated with the storage and distribution of jet fuel was removed or capped and abandoned underground in 2018 in accordance with the MND.

## 1.2 Project Description

The proposed development project consists of a single family residential subdivision with a vehicular road that loops through the development. The ESH area located in the northwestern corner of the property is proposed to remain mostly untouched with some opportunities for passive outdoor recreation proposed. Preliminary grading plans indicate extensive earthwork will be required to develop the property. Many existing trees are proposed to be protected in place.

## **2 METHODOLOGY**

---

### **2.1 Regulatory Overview**

Refer to the City of Morro Bay Municipal Code, Chapter 12.08 – City Tree Regulations and the City of Morro Bay Public Services Department Major Vegetation Removal, Replacement, and Protection Guidelines.

### **2.2 Tree Survey Methodology**

Our tree survey work is a deliberate and systematic practice of cataloging trees on site:

1. Identify each tree species.
2. Tag each tree with a metal tag (as feasible) and note its location on a site map.
3. Measure each trunk diameter at 54” above grade per current International Society of Arboriculture (ISA) best practices and City of Morro Bay guidelines.
4. Evaluate the health and structure of each tree using the following numerical standard:
  - 5 - A healthy, vigorous tree, reasonably free of disease, with good structure and form typical of the species.
  - 4 - A tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
  - 3 - A tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that may be mitigated with care.
  - 2 - A tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
  - 1 - A tree in severe decline, dieback of scaffold branches and or trunk, mostly epicormic growth; extensive structural defects that cannot be abated.
5. Evaluate the vigor of each tree using the following scale:

High – Tree putting on healthy, new twig growth in quantities characteristic of the species.

Moderate – Tree putting on new twig growth but showing signs of stress.

Low – Tree putting on most of their new twig growth as epicormic shoots with signs of severe stress. There may be areas of dieback in the crown.
6. Evaluate the crown opacity of each tree using the following scale:

High – Tree with a thin crown characterized by lack of old growth and small quantities of newer growth. Visually, the sky is seen through the crown with little obstruction.

Moderate – Tree with a moderately thin crown, or with high opacity areas in the crown.

Low – Tree with a healthy, full crown that is characteristic of the species. Visually, it is difficult to see the sky through the crown.

## 2.3 Terms and Conditions

The following terms and conditions apply to all oral and written reports and correspondence pertaining to consultations, inspections, and activities of RRM Design Group.

1. The scope of any report or other correspondence is limited to the trees and conditions specifically mentioned in those reports and correspondence. RRM Design Group assumes no liability for the failure of trees or parts of trees, either inspected or otherwise. RRM Design Group assumes no responsibility to report on the condition of any tree or landscape feature not specifically requested by the named client.

2. No tree described in this report was climbed, unless otherwise stated. RRM Design Group does not take responsibility for any defects, which could have only been discovered by climbing. A full root collar inspection, consisting of excavating the soil around the tree to uncover the root collar and major buttress roots was not performed unless otherwise stated. RRM Design Group does not take responsibility for any root defects, which could only have been discovered by such an inspection.

3. RRM Design Group shall not be required to provide further documentation, give testimony, be deposed, or attend court by reason of this appraisal or report unless subsequent contractual arrangements are made, including payment of additional fees for such services as described by RRM Design Group or in the schedule of fees or contract.

4. RRM Design Group guarantees no warranty, either expressed or implied, as to the suitability of the information contained in the reports for any reason. It is the responsibility of the client to determine applicability to his/her case.

5. Any report and the values, observations and recommendations expressed therein represent the professional opinion of RRM Design Group, and the fee for services is in no manner contingent upon the reporting of a specified value nor upon any finding to be reported.

6. Any photographs, diagrams, graphs, sketches, or other graphic material included in any report, being intended solely as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys, unless otherwise noted in the report. Any reproductions of graphic material or the work produced by other persons, is intended solely for the purpose of clarification and ease of reference. Inclusion of said information does not constitute a representation by RRM Design Group as to the sufficiency or accuracy of that information.

7. Trees can be managed, but cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate risk associated with trees is to remove them.

### **3 SUMMARY OF FINDINGS**

---

On January 6, 2022 and June 15, 2022 RRM Design Group conducted a tree inventory of 83 trees located within the property boundary. Aside from recent activities involved with the demolition of the site in 2018, there appears to be little maintenance performed on these trees since the site was decommissioned in 1996. Fifteen of the existing Monterey cypress trees had been previously identified with numbered tree tags, and those tree tag numbers are referenced throughout this report. Sixteen additional Monterey cypress trees were planted recently to mitigate for several tree removals associated with the 2018 demolition of the DFSP facility and are numbered 269-283. Generally, the health of the trees inspected is poor-moderate with many exhibiting signs of stress like high crown opacity, low vigor, pests, epicormic, and sucker growth.

There are three suspected sources of stress that have led to the decline of many trees onsite: (1) construction of the DFSP facility, (2) several extended periods of exceptional drought, and (3) demolition of the facility.

The DFSP facility was originally constructed in 1961. The earthwork involved with the construction of the facility required the removal of most of the existing trees, however the study of archival aerial photographs dating back to 1937 suggests nine trees were preserved (*Figure 3*). The root zones of these trees sustained impacts from over excavation, compaction from the installation of a 100,000 gallon water tank, and the installation of shotcrete to form the basin walls.

The DFSP facility was decommissioned in 1996 and demolished in 2018. According to records available from the U.S. Drought Monitor (USDM), a multi-agency government partnership that coordinates drought monitoring, forecasting, and planning, San Luis Obispo County experienced several exceptional droughts over that 23 year period. Most notable are the extended drought periods lasting from 2006-2009, and again from 2012-2017. These periods of drought led to the devastation of many, already stressed, native and planted forests throughout the County, and the greater state of California. The stress associated with these drought periods may have been great enough to allow boring insects to colonize the Monterey cypress and Monterey pine trees throughout the site.

Demolition of the DFSP facility in 2018 introduced heavy equipment and soil disturbance to the root zones of several trees. Additionally, several trees were removed, and others over pruned to facilitate access to demolition areas. This work may represent the final stressor that led to the decline of several additional trees onsite. At least sixteen Monterey cypress trees were planted along the Panorama Drive and Whidbey Street frontages with drip irrigation to aid in establishment. As of June 6, 2022, two of the sixteen trees are in declining health and two have died of drought stress. The battery operated irrigation system providing supplemental irrigation to dead trees 268 and 269 was observed as non-functional. Most of the remaining fourteen mitigation trees are in good health. The battery operated irrigation system providing supplemental irrigation to these trees uses bluetooth wireless technology for control and appears to be functioning correctly, although it could not be confirmed in the field.

See *Section 5.1 Individual Species Observations and Recommendations* for a detailed summary of major tree species findings observed onsite.

## 4 SITE PLAN REVIEW

---

Many trees will be affected by the proposed development project, and special consideration should be given to any trees proposed to remain. The native topography of the site was a combination of gentle to steep slopes on a sparsely vegetated hillside. Construction of the DFSP facility 1961 drastically altered that topography and left behind steep slopes and large flat basins. The challenging topography that exists today will require substantial earthwork to populate the site with the moderate density residential homes called for by the May 2021 version of *Plan Morro Bay*, the City's General Plan and Local Coastal Plan. Ultimately, the proposed earthwork will lead to the removal of most trees located outside of the ESH area.

The proposed site plan shown in *Figure 2 - Site Plan Review* indicates forty-eight trees are proposed for preservation, thirty-five trees are proposed for removal, and at least fifty-one trees are proposed to replace those removed.

### 4.1 Tree Preservation

Forty-eight trees in total will be preserved. The project proposes the preservation of all trees within the ESH area, along with nine trees located just outside the ESH area. This is a thoughtful concept on paper, but given the health and structure of some of these specimens, careful consideration should be given to which trees should remain given the proximity to adjacent roadways and homes. A level 1 ISA Basic Tree Risk Assessment should be performed on all trees proposed to remain, based on the proposed site conditions. The results of the tree risk assessment should drive long-term tree preservation goals for this development.

### 4.2 Tree Removal

Thirty-five trees are proposed for removal in favor of the proposed development project. All tree removals represent conflicts with proposed grading associated with the building lots, public improvements, infrastructure improvements, and a proposed stormwater basin. Preservation of any of these trees would require a site plan redesign and preservation would likely lead to reduced dwelling density.

Sixteen of the trees proposed for removal were planted as required mitigation trees associated with the 2018 demolition of the DFSP facility. Two of these trees are dead (268 & 269), and two are in declining health (272 & 280). It should be noted that none of these trees meet the minimum size threshold of a protected tree per the City's 2007 *Major Vegetation Removal Guidelines*.

No trees in the ESH area are proposed for removal.

Per the *Major Vegetation Removal Guidelines*, qualifying trees should be replaced at a ratio of two 5-gallon trees or one 15-gallon tree for every tree removed. There is no

specific guidance in the policy directing mitigation requirements for previously planted mitigation trees under the size threshold. For that reason we recommend replacing those sixteen trees at a 2:1 ratio of the quantities called for in the *Major Vegetation Removal Guidelines*.

### 4.3 Tree Replacement

The *Landscape Concept Plan*, Sheet L1 of the plans, suggests replacing the thirty-five trees proposed for removal with a diverse species list totaling at least fifty-one 15-gallon trees. These trees will be a combination of eleven different species, six of which are native to California. Of the six California native species, four are regionally native, the coast live oak (*Quercus agrifolia*), western sycamore (*Platanus racemosa*), black elderberry (*Sambucus nigra*), and hollyleaf cherry (*Prunus ilicifolia*). Within ten years of planting, the proposed palette of trees is expected to meet and exceed the existing canopy of the thirty-five trees proposed for removal, and will offer more species diversity.

Given the proximity to ESH area and the site boundary shared with existing open space area, California native and regionally native species are recommended to be located closer to the site margins. Non-native species better suited for urban development should be planted in the interior portion of the site in the core of the proposed development.

## 5 TREE OBSERVATIONS AND RECOMMENDATIONS

---

### 5.1 Individual Species Observations and Recommendations

Species: *Hesperocyparis macrocarpa* (Monterey cypress)

Quantity: 61

Observations: Many of the Monterey cypress exhibit signs of long-term stress, as exhibited by moderate to high crown opacity, low vigor, and moderate borer insect damage throughout the lower main stems. Review of archival photography dating back to 1930 shows the property planted with a series of windrows that form a pentagonal shape (*Figure 3*). When compared with aerial photography from 1969 and 2021, it appears at least nine of the Monterey cypress specimens included in this tree inventory were planted before the property was developed as a DFSP facility. These trees are 815-821, 825 and 198. Development of the property required extensive earthwork, much of which occurred nearby these nine trees. It's likely much of the stress these trees are experiencing can be traced back to a combination of impacts to the root zone associated with the original development of the DFSP facility, many consecutive years of drought, and recent impacts to the root zone associated with the deconstruction of the DFSP infrastructure.

Most of the remaining Monterey cypress specimens exhibit similar signs of stress to those described above. This species of cypress is susceptible to borer insects and it is likely that years of drought conditions, resource competition, and construction related impacts have weakened these trees to a point that bark beetles have populated most of the cypress on the property. There is also a notable history of large limb failures and standing dead trees throughout the site.

Recommendations: Once the project has been designed to a suitable conceptual level, a tree protection plan should be developed to identify potential candidates for preservation. A level 1 ISA Basic Tree Risk Assessment should be performed on all trees proposed to remain, based on the proposed site conditions. The results of the tree risk assessment should drive tree preservation decisions.

Species: *Pinus radiata* (Monterey pine)

Quantity: 9

Observations: The Monterey pines are located in the ESH area, and have largely been out competed by the Monterey cypress. These specimens are overcrowded with crowns that have naturally been reduced to the top few feet of the tree, or a live crown ratio of 5-10%. The stress of being out competed, coupled with years of drought has weakened these trees and allowed borer insects to populate the stand. Monterey pines are declining in the same fashion throughout the state at an alarming rate, and these specimens are no exception.

Recommendations: Most, if not all, of the Monterey pines are likely candidates for removal

pending the results of a level 1 ISA Basic Tree Risk Assessment. They have been stressed into an irreversible decline. The low live crown ratios also may present as a high risk if nearby trees are removed due to an elevated risk of windthrow.

Species: *Juniperus chinensis* 'Torulosa' (Hollywood juniper)

Quantity: 6

Observations: The aerial image circa 1969 included in *Figure 3* indicates these trees were originally planted as a screen hedge along the fence line of the DFSP facility. Most have died or have been removed over the years. The interesting form of these trees can lead to structural defects, such as pockets of decay low in the main stems. As the trees put on foliage and additional weight, these pockets of decay can lead to the failure of large portions of the crown.

Recommendations: The potential failure of these trees or tree parts presents a low risk due to the small size and crown spread. They can be retained if they do not conflict with the proposed development and the ornamental quality suits the site. Supplemental irrigation may extend their lifespan.

Species: *Salix lasiolepis* (Arroyo willow)

Quantity: 6

Observations: The Arroyo willows are located in the ESH area along the northern property boundary behind chain link fence topped with barbed wire. The area was not safely accessible while onsite to perform the tree inventory for this report, so tree diameters and locations were estimated from outside the fenced perimeter.

When grown in a riparian habitat, the sprawling form of the species can look like a dense forest of willow shrubs, but careful observation will reveal many large stems traveling along the ground and originating from one central location. These specimens bear this horizontal, sprawling form. Although semi-dormant when observed, these appear to be in moderate health.

Recommendations: Exercise caution when removing or replacing fencing along the northern property boundary to avoid damaging the Arroyo willows in this area. The horizontal sprawling form of these trees will not support the installation of recreational trails beneath the canopy, and is not recommended.

## 5.2 Recommendations During Construction

Site preparation: All existing trees shall be fenced off along the extent of the drip line of the tree, as feasible. Alternatively, where this is not feasible, the trunk shall be wrapped with a

straw waddle and orange snow fencing. Tree protection fencing should be a minimum of four feet high, made of pig wire with steel stakes or any material superior in quality, such as cyclone fencing. A tree protection zone sign shall be affixed to the fencing at appropriate intervals as determined by the arborist on site. If the fence is within the drip line of the trees, the crown shall be raised to offset the chance of limb breakage from construction equipment encroaching within the drip line. All contractors, subcontractors and other personnel shall be warned that encroachment within the fenced area is forbidden without the consent of the Project Arborist. This includes, but is not limited to, storage of lumber and other materials, disposal of paints, solvents or other noxious materials, parked cars, grading equipment or other heavy equipment. Penalties, based on the cost of remedial repairs and the evaluation guide published by the international society of arboriculture, shall be assessed for damages to the trees.

**Grading/excavating:** All grading plans that specify grading within the drip line of any tree, or within the distance from the trunk as outlined in the site preparation section above when said distance is outside the drip line, shall first be reviewed by a certified arborist. Provisions for aeration, drainage, pruning, tunneling beneath roots, root pruning or other necessary actions to protect the trees shall be outlined by an arborist. If trenching is necessary within the area as described above, said trenching shall be undertaken by hand labor and dug directly beneath the trunk of the tree. All roots 2 inches or larger shall be tunneled under and other roots shall be cut smoothly to the trunk side of the trench. The trunk side should be draped immediately with two layers of untreated burlap to a depth of 3 feet from the surface. The burlap shall be soaked nightly and left in place until the trench is back filled to the original level. An arborist shall examine the trench prior to back filling to ascertain the number and size of roots cut, to suggest the necessary remedial repairs.

**Remedial repairs:** An arborist shall have the responsibility of observing all ongoing activities that may affect the trees and prescribing necessary remedial work to ensure the health and stability of the trees. This includes, but is not limited to, all arborist activities brought out in the previous sections. In addition, pruning, as outlined in the “pruning standards” of the western chapter of the International Society of Arboriculture, shall be prescribed as necessary. Fertilizing, aeration, irrigation, pest control and other activities shall be prescribed according to the tree needs, local site requirements, and state agricultural pest control laws. All specifications shall be in writing. For pest control operations, consult the local county agricultural commissioner’s office for individuals licensed as pest control advisors or pest control operators.

**Final inspection:** Upon completion of the project, the arborist shall review all work undertaken that may impact the existing trees. Special attention shall be given to cuts and fills, compacting, drainage, pruning and future remedial work. An arborist should submit a final report in writing outlining the ongoing remedial care following the final inspection.

### 5.3 Maintenance Recommendations for Trees to Remain

Regular maintenance, designed to promote plant health and vigor, ensures longevity of existing trees. Regular inspections and the necessary follow-up care of mulching, fertilizing, and pruning can detect problems and correct them before they become damaging or fatal.

**Tree Inspection:** Regular inspections of mature trees at least once a year can prevent or reduce the severity of future disease, insect, and environmental problems. During tree inspection, four characteristics of tree vigor should be examined: new leaves or buds, leaf size, twig growth, and absence of crown dieback (gradual death of the upper part of the tree). A reduction in the extension of shoots (new growing parts), such as buds or new leaves, is a reliable cue that the tree's health has recently changed. Growth of the shoots over the past three years may be compared to determine whether there is a reduction in the tree's typical growth pattern. Further signs of poor tree health are trunk decay, crown dieback, or both. These symptoms often indicate problems that began several years before. Loose bark or deformed growths, such as trunk conks (mushrooms), are common signs of stem decay. Any abnormalities found during these inspections, including insect activity, and spotted, deformed, discolored, or dead leaves and twigs, should be noted and observed closely.

**Mulching:** Mulch, or decomposed organic material, placed over the root zone of a tree reduces environmental stress by providing a root environment that is cooler and contains more moisture than the surrounding soil. Mulch can also prevent mechanical damage by keeping machines such as lawn mowers and string trimmers away from the tree's base. Furthermore, mulch reduces competition from surrounding weeds and turf. To be most effective, mulch should be placed 2 to 4 inches deep and cover the entire root system, which may be as far as 2 or 3 times the diameter of the branch spread of the tree. If the area and activities happening around the tree do not permit the entire area to be mulched, it is recommended that as much of the area under the drip line of the tree is mulched as possible. When placing mulch, care should be taken not to cover the actual trunk of the tree. This mulch-free area, 1 to 2 inches wide at the base, is sufficient to avoid moist bark conditions and prevent trunk decay. An organic mulch layer 2 to 4 inches deep of loosely packed shredded leaves, pine straw, peat moss, or composted wood chips is adequate. Plastic should not be used as it interferes with the exchange of gases between soil and air, which inhibits root growth. Thicker mulch layers, 5 to 6 inches deep or greater, may also inhibit gas exchange.

**Fertilization:** Trees require certain nutrients (essential elements) to function and grow. Urban landscape trees may be growing in soils that do not contain sufficient available nutrients for satisfactory growth and development. In certain situations, it may be necessary to fertilize to improve plant vigor. Fertilizing a tree can improve growth; however, if fertilizer is not applied wisely, it may not benefit the tree at all and may even adversely affect the tree. Mature trees making satisfactory growth may not require fertilization. When considering supplemental fertilizer, it is important to consider nutrient deficiencies and how and when to amend the deficiencies. Soil conditions, especially pH and organic matter content, vary greatly, making the proper selection and use of fertilizer

a somewhat complex process. To that end, it is recommended that the soil be tested for nutrient content. A soil testing laboratory can give advice on application rates, timing, and the best blend of fertilizer for each tree and other landscape plants on site. Mature trees have expansive root systems that extend from 2 to 3 times the size of the leaf canopy. A major portion of actively growing roots is located outside the tree's drip line. Understanding the actual size and extent of a tree's root system before applying fertilizer is paramount to determine quantity, type, and rate at which to best apply fertilizer. Always follow manufacturer recommendations for use and application.

**Pruning:** Pruning is often desirable or necessary to remove dead, diseased, or insect-infested branches and to improve tree structure, enhance vigor, or maintain safety. Because each cut has the potential to change the growth of (or cause damage to) a tree, no branch should be removed without reason. Removing foliage from a tree has two distinct effects on growth: (1) it reduces photosynthesis and, (2) it may reduce overall growth. Pruning should always be performed sparingly. Caution must be taken not to over-prune as a tree may not be able to gather and process enough sunlight to survive. Pruning mature trees may require special equipment, training, and experience. Arborists are equipped to provide a variety of services to assist in performing the job safely and reducing risk of personal injury and property damage.

**Removal:** There are circumstances when removal is necessary. An arborist can help decide whether a tree should be removed. Professionally trained arborists have the skills and equipment to remove trees safely and efficiently. Removal is recommended when a tree: (1) is dead, dying, or considered irreparably hazardous; (2) is causing an obstruction or is crowding and causing harm to other trees and the situation is impossible to correct through pruning; (3) is to be replaced by a more suitable specimen, and (4) should be removed to allow for construction. Pruning or removing trees, especially large trees, can be dangerous work. It should be performed only by those trained and equipped to work safely in trees.

**THIS PAGE INTENTIONALLY LEFT BLANK**

**TABLE 1 - TREE QUANTITY SUMMARY**

<b>Tree Quantity by Species</b>		
<b>Species</b>	<b>Quantity</b>	<b>% of Site</b>
<i>Hesperocyparis macrocarpa</i>	61	73%
<i>Juniperus chinensis</i>	6	7%
<i>Pinus radiata</i>	9	11%
<i>Myoporum laetum</i>	1	1%
<i>Salix lasiolepis</i>	6	7%
<b>Total</b>	<b>83</b>	<b>100%</b>
<b>Tree Quantity by Protection Status</b>		
	<b>Quantity</b>	<b>% of Site</b>
Landmark Tree	0	0%
Mitigation Tree	16	19%
Protected Tree (6"+)	66	80%
<b>Tree Quantity by Native Range</b>		
	<b>Quantity</b>	<b>% of Site</b>
Regionally Native Species	6	7%
Exotic Species	77	93%
<b>Total</b>	<b>83</b>	<b>100%</b>

**TABLE 2 - TREE EVALUATION SUMMARY**

<b>Preservation Suitability</b>		
<b>Good</b>	Tree with good health and structural stability that have the potential for longevity at the site.	
<b>Mod.</b>	Tree in somewhat declining health and/or exhibits structural defects that cannot be abated with treatment. Tree may require more intense management and will have a shorter lifespan than those in the 'Good' category.	
<b>Poor</b>	Tree in poor health or with significant structural defects that cannot be mitigated. Tree is expected to decline, regardless of treatment.	
<b>Health Rating</b>		
<b>5</b>	A healthy, vigorous tree, reasonably free of pests and disease, with good form typical of the species	
<b>4</b>	Tree with good vigor and slight signs of stress	
<b>3</b>	Tree with moderate vigor and moderate signs of stress	
<b>2</b>	Tree in decline	
<b>1</b>	Tree in severe decline	
<b>Vigor</b>		
<b>High</b>	Tree putting on healthy, new twig growth in quantities characteristic of the species.	
<b>Mod.</b>	Tree putting on new twig growth but showing signs of stress.	
<b>Low</b>	Tree putting on most of their new twig growth as epicormic shoots with signs of severe stress. There may be areas of dieback in the crown.	
<b>Crown Opacity</b>		
<b>High</b>	Tree with a thin crown characterized by lack of old growth and small quantities of newer growth. Visually, the sky is seen through the crown with little obstruction.	
<b>Mod.</b>	Tree with a moderately thin crown, or with high opacity areas in the crown.	
<b>Low</b>	Tree with a healthy, full crown that is characteristic of the species. Visually, it is difficult to see the sky through the crown.	
<b>Abbreviations and Definitions</b>		
<b>BB</b>	Bark Beetles	Sap flows on stems indicative of an attempt to pitch bark beetles.
<b>CD</b>	Codominant Stems	Forked branches nearly the same size in diameter, arising from a common junction and lacking a normal branch union.
<b>CDB</b>	Crown Dieback	Condition where branches in the tree crown die from the tips toward the center.
<b>CR</b>	Crowded	Growing in a crowded space with other trees competing for light.
<b>D</b>	Decline	Tree shows obvious signs of decline, which may be indicative of the presence of multiple biotic and abiotic disorders.
<b>DBH</b>	Diameter at Breast Height	Measurement of tree diameter in inches. Measurement height varies by agency and is noted above.
<b>EG</b>	Epicormic Growth	Watersprouting on trunk and main leaders. Typically indicative of tree stress.
<b>EH</b>	Exposed Heartwood	Exposure of the tree's heartwood is typically seen as an open wound that leaves a tree more susceptible to pathogens, disease or infection.
<b>IB</b>	Included Bark	Structural defect where bark is included between branch attachment so wood can't join, often having a higher probability of failure.
<b>LC</b>	Low Crotch	Multiple central leaders originating below the DBH measurement site.
<b>LN</b>	Lean	Tree leaning, see notes for severity.
<b>LS</b>	Leaf Spot	Specific to the coast live oaks for this project, this indicates a combination of whiteflies and black sooty mold caused by the accumulation of their moist frass on leaf surfaces.
<b>S</b>	Suckers	Shoot arising from the roots.
<b>SD</b>	Structural Defects	Naturally or secondary conditions including cavities, poor branch attachments, cracks, or decayed wood in any part of the tree that may contribute to structural failure.
<b>SR</b>	Surface Roots	Roots visible at finished grade.
<b>TP</b>	Topped	Poor pruning practice of removing the top of main leaders to limit tree height.
<b>ST</b>	Stress	Environmental factor inhibiting regular tree growth. Includes drought, salty soils, nitrogen and other nutrient deficiencies in the soil.
<b>WU</b>	Weak Union	Weak union or fork in tree branching structure.

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>53</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	38.5			2	Mod.	Low	Mod.	measured at 2' above grade - inferior stems not accessible, several recent limb failures, previously tagged, SD, EH, BB	Remove
<b>198</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	37.5			3	Poor	Mod.	Mod.	previously tagged, BB, SD, TP	Remove
<b>268</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			1	Poor	Low	High	Dead, irrigation system non-functional	Remove
<b>269</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			1	Poor	Low	High	Dead, irrigation system non-functional	Remove
<b>270</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole, minor drought stress	Remove
<b>271</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>272</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			2	Poor	Low	Mod.	ST, D, CDB, BB	Remove
<b>273</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>274</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>275</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>276</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>277</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole, severe lean from improper staking at install	Remove
<b>278</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole, lean from improper staking at install	Remove
<b>279</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>280</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			2	Poor	Low	Mod.	Remove lodgepole, ST, BB	Remove

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>281</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	2.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>282</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole	Remove
<b>283</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	1.0			4	Good	Mod.	Low	Remove lodgepole, lean from improper staking at install	Remove
<b>340</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	38*			3	Mod.	Mod.	Mod.	previously tagged	Protect
<b>341</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	37.0			3	Mod.	Mod.	Mod.	previously tagged, CR, BB	Protect
<b>344</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	25.5			2	Poor	Low	High	large failure, previously tagged, TP, CR, LN, CDB, BB	Protect
<b>345</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	22.0			2	Poor	Low	High	previously tagged, CR, BB	Protect
<b>347</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	30.0			2	Poor	Low	High	previously tagged, CR, CDB, ST, BB	Protect
<b>349</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			3	Mod.	Mod.	Mod.	previously tagged, CR	Protect
<b>350</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32*			3	Mod.	Mod.	Mod.	previously tagged, CR, ST	Protect
<b>351</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			3	Mod.	Low	Mod.	previously tagged, CR, ST, EH	Protect
<b>352</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	11.0			2	Poor	Low	High	previously tagged, CR, ST, BB	Protect
<b>353</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	11.5			2	Poor	Low	High	previously tagged, CR, ST, BB	Protect
<b>354</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	14.5			3	Poor	Low	High	previously tagged, CR, BB	Protect
<b>356</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	31.0	12, 11, 8		2	Poor	Low	High	previously tagged, EH, SD, BB, ST	Protect
<b>357</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	31.0			2	Mod.	Low	High	previously tagged, LN, BB, ST	Protect

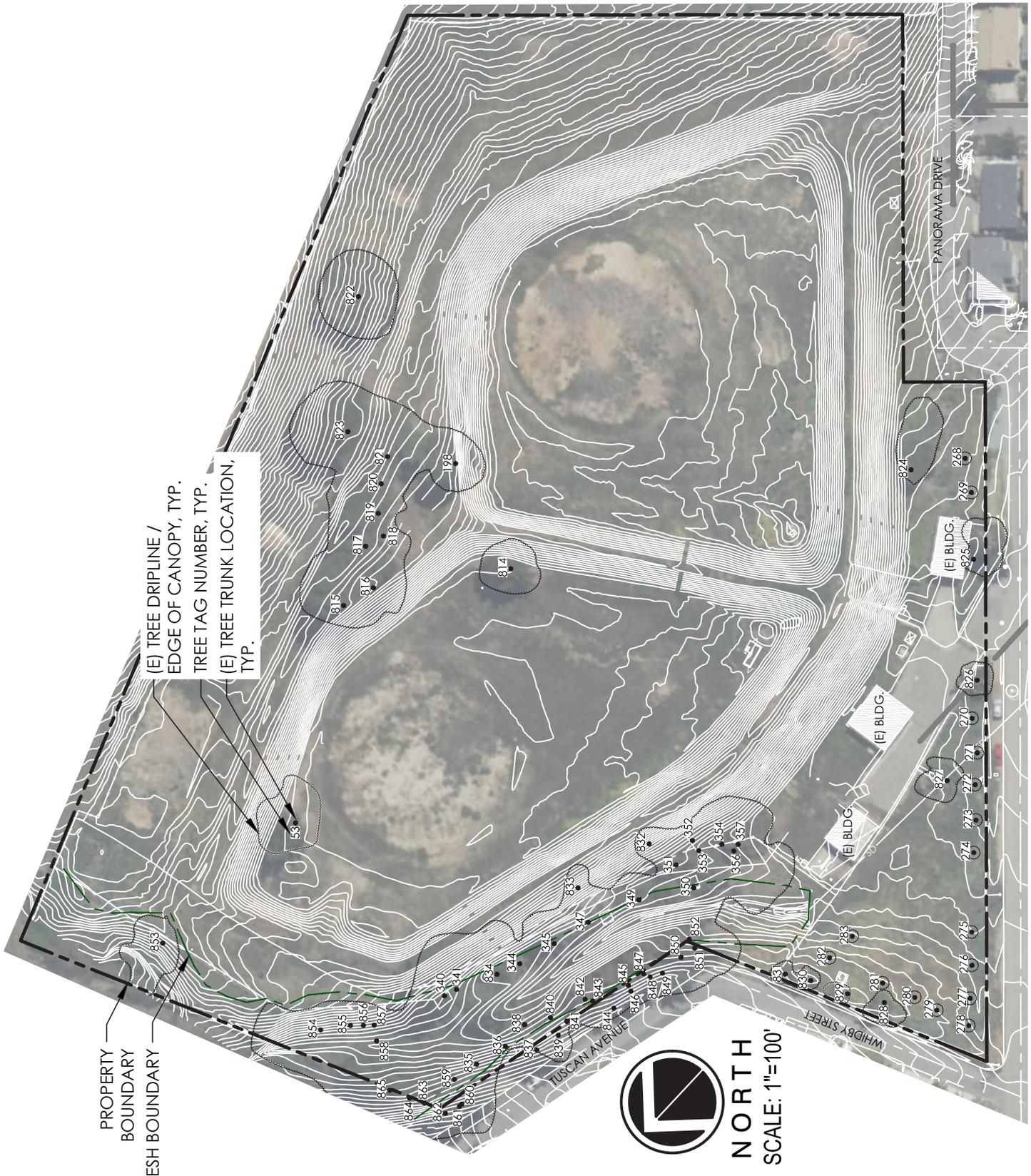
Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>814</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	60.0	22, 14.5, 11, 8.5, 4		2	Poor	Low	High	overpruned, EH, BB	Remove
<b>815</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	38.5			3	Mod.	Low	High	LN, BB, SR	Remove
<b>816</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	63.0	43.5, 19.5		2	Poor	Low	High	BB, EH	Remove
<b>817</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32.0			2	Poor	Low	High	LN, CR, BB, EH	Remove
<b>818</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			1	Poor	Low	High	LN, CR	Remove
<b>819</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	35.5	25, 10.5		3	Mod.	Low	Mod.	remove large dead stem, LN, CR, EH	Remove
<b>820</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	49.5	22.5, 14.5, 12.5		1	Poor	Low	High	SD, EH	Remove
<b>821</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	43.5			3	Mod.	Mod.	Mod.	several recent limb failures, LN	Remove
<b>822</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	58.0			4	Mod.	High	Mod.	measured at 2' above grade - interior stems not accessible	Remove
<b>823</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	68.0			2	Poor	Low	High	canker at root collar, BB, ST	Remove
<b>824</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	16.0			3	Mod.	Mod.	Mod.	LN, CD	Remove
<b>825</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32.0			3	Poor	Mod.	Mod.	large limb failure, close proximity to high voltage lines, LN, EH	Remove
<b>826</b>	<i>Juniperus chinensis</i>	Hollywood juniper	28.5	10.5, 9, 9		2	Poor	Mod.	Mod.	EH, ST	Remove
<b>827</b>	<i>Juniperus chinensis</i>	Hollywood juniper	28.0	10.5, 9.5, 8		2	Poor	Low	Mod.	cavities at root collar, EH, LN, SD	Remove
<b>828</b>	<i>Juniperus chinensis</i>	Hollywood juniper	32.0	9.5, 8.5, 7.5, 6.5		2	Mod.	Mod.	Mod.	EH, ST	Remove
<b>829</b>	<i>Juniperus chinensis</i>	Hollywood juniper	24.0	7, 6.5, 5.5, 5		2	Poor	Low	High	EH, CDB, ST	Remove

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>830</b>	<i>Juniperus chinensis</i>	Hollywood juniper	17.5			3	Mod.	Mod.	Mod.	EH	Remove
<b>831</b>	<i>Juniperus chinensis</i>	Hollywood juniper	14.0	7, 7		2	Poor	Low	High	EH, ST	Protect
<b>832</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	14.5			2	Mod.	Mod.	Mod.	BB, CR	Protect
<b>833</b>	<i>Myoporum laetum</i>	ngaio	12.5			2	Poor	Low	High	thrips, ST, EG, CR, EH, LN	Protect
<b>834</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	25.5			1	Poor	Low	High	CR, BB, CDB	Protect
<b>835</b>	<i>Pinus radiata</i>	Monterey pine	15.5			1	Poor	Low	High	BB, CR, D	Protect
<b>836</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	37.5			2	Mod.	Mod.	Mod.	CR, BB	Protect
<b>837</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	32*			2	Mod.	Mod.	Mod.	tagged nearby wood post, LN, BB, EH, ST	Protect
<b>838</b>	<i>Pinus radiata</i>	Monterey pine	17.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>839</b>	<i>Pinus radiata</i>	Monterey pine	19.0			1	Poor	Low	High	CR, BB, CDB, LN	Protect
<b>840</b>	<i>Pinus radiata</i>	Monterey pine	13.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>841</b>	<i>Pinus radiata</i>	Monterey pine	15.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>842</b>	<i>Pinus radiata</i>	Monterey pine	13.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>843</b>	<i>Pinus radiata</i>	Monterey pine	19.0			1	Poor	Low	High	CR, BB, CDB	Protect
<b>844</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21.0			2	Mod.	Mod.	Mod.	LN, BB, EH, ST	Protect
<b>845</b>	<i>Pinus radiata</i>	Monterey pine	12.0			1	Poor	Low	High	CR, BB, CDB, LN	Protect

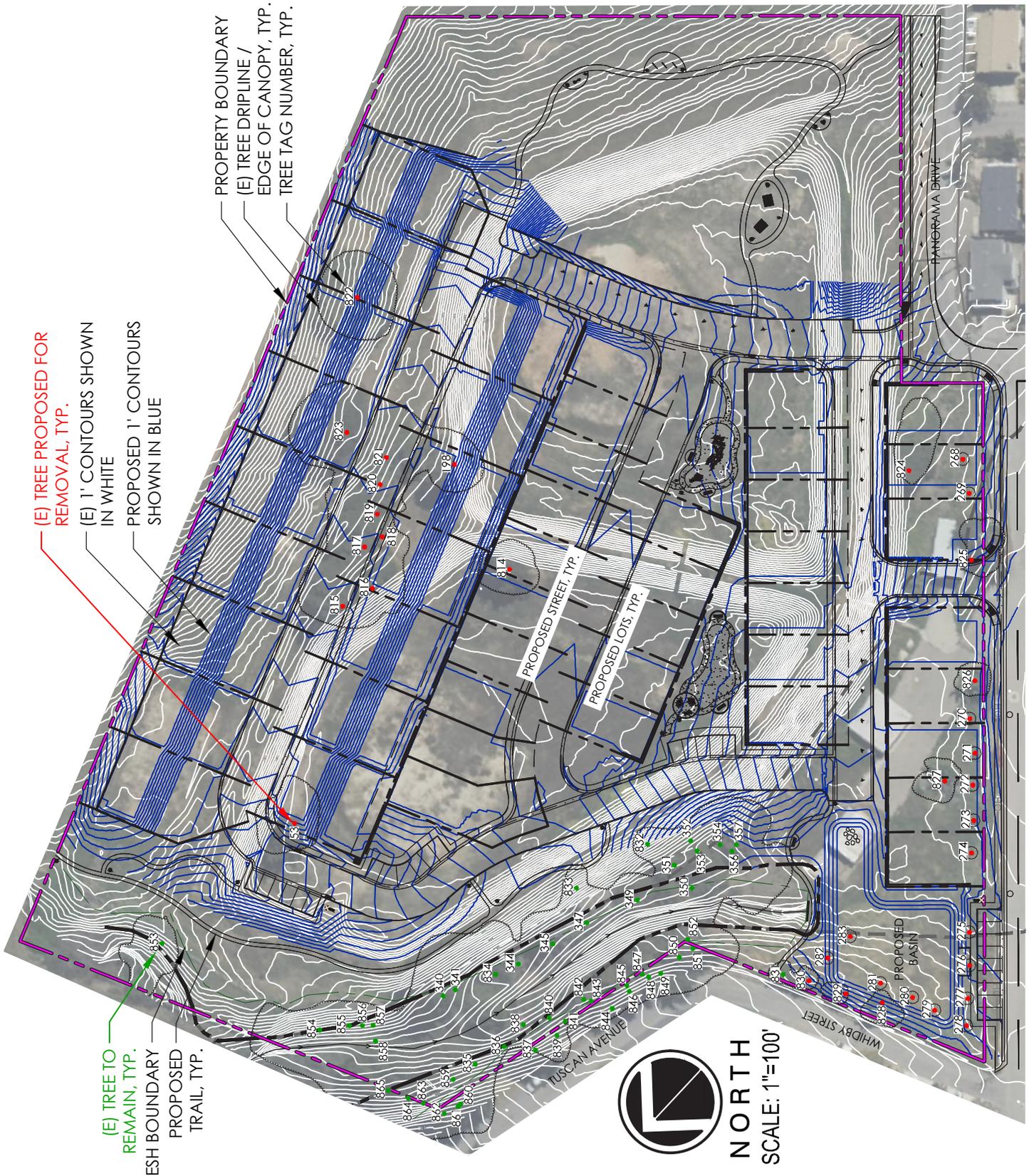
Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>846</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21*			2	Mod.	Mod.	Mod.	tagged nearby wood post, LN, BB, EH, ST	Protect
<b>847</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21*			2	Mod.	Mod.	Mod.	tagged nearby wood post, LN, BB, EH, ST	Protect
<b>848</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	23.0			2	Mod.	Mod.	Mod.	LN, BB, EH, ST	Protect
<b>849</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	21.5			2	Mod.	Mod.	Mod.	BB, EH, ST	Protect
<b>850</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	30*			2	Mod.	Mod.	Mod.	tagged nearby wood post, BB, EH, ST	Protect
<b>851</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	34*			2	Mod.	Mod.	Mod.	tagged nearby wood post, BB, EH, ST	Protect
<b>852</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	24.5			2	Mod.	Mod.	Mod.	BB, ST, CR	Protect
<b>853</b>	<i>Salix lasiolepis</i>	Arroyo willow	10*		X	2	Mod.	Low	High	no tag, LN, ST	Protect
<b>854</b>	<i>Salix lasiolepis</i>	Arroyo willow	38*	8, 8, 8, 6, 4, 4	X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>855</b>	<i>Salix lasiolepis</i>	Arroyo willow	18*	8, 6, 4	X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>856</b>	<i>Salix lasiolepis</i>	Arroyo willow	26*	8, 6, 6, 6	X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>857</b>	<i>Salix lasiolepis</i>	Arroyo willow	8*		X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>858</b>	<i>Salix lasiolepis</i>	Arroyo willow	8*		X	3	Mod.	Mod.	Mod.	no tag, LN	Protect
<b>859</b>	<i>Pinus radiata</i>	Monterey pine	14*			1	Poor	Low	High	no tag, BB, CR, D	Protect
<b>860</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	34*			2	Mod.	Mod.	Mod.	no tag, CR, BB	Protect
<b>861</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	30*			2	Mod.	Mod.	Mod.	no tag, CR, BB	Protect
<b>862</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	36*			2	Mod.	Mod.	Mod.	no tag, CR, BB	Protect

Tree Tag	Botanical Name	Common Name	Diameter at Breast Height (in.)	Multi Leader Individual DBH (in.)	Regional Native	Health	Pres. Suit.	Vigor	Crown Opacity	Field Notes & Recommendations	Disposition
<b>863</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	12*			2	Poor	Low	High	no tag, LN, CR, BB	Protect
<b>864</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	28*			2	Mod.	Mod.	Mod.	no tag, LN, CR, BB	Protect
<b>865</b>	<i>Hesperocyparis macrocarpa</i>	Monterey cypress	40*			2	Mod.	Mod.	Mod.	no tag, LN, CR, BB	Protect
<p><b>*Indicates an estimated DBH measurement. These trees were inaccessible due to impassible fencing and it was not possible to obtain a physical measurement in the field.</b></p>											

# FIGURE 1 - TREE LOCATION MAP



# FIGURE 2 - SITE PLAN REVIEW



## FIGURE 3 - ARCHIVAL AERIAL PHOTOGRAPHY

### 1930

This aerial image dates back to 1930 and shows the original trees located within and nearby the property. The watersheds were compared between images to determine the property extents as they exist today, outlined in yellow. The ESH drainage that exists today appears devoid of vegetation. Trees 815-821 and 198 are encircled with an orange ellipse. Tree 825 is located at the entrance to the southwest and is also shown circled in orange.



### 1969

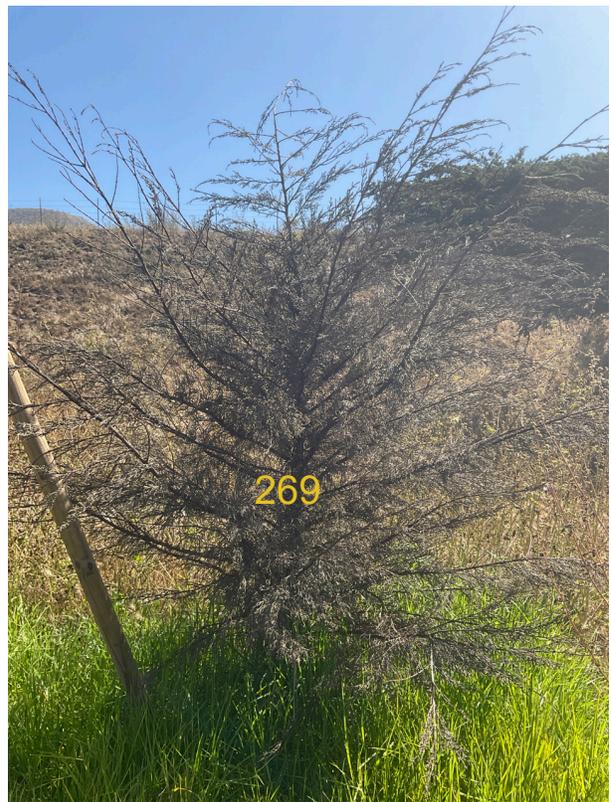
This aerial image was taken in 1969 and shows the operational DFSP facility. The same trees described above are also encircled in this image. It appears the remaining trees shown in the above image were removed to construct this facility and a new windrow along the ESH drainage was planted, which remains today in a similar form.

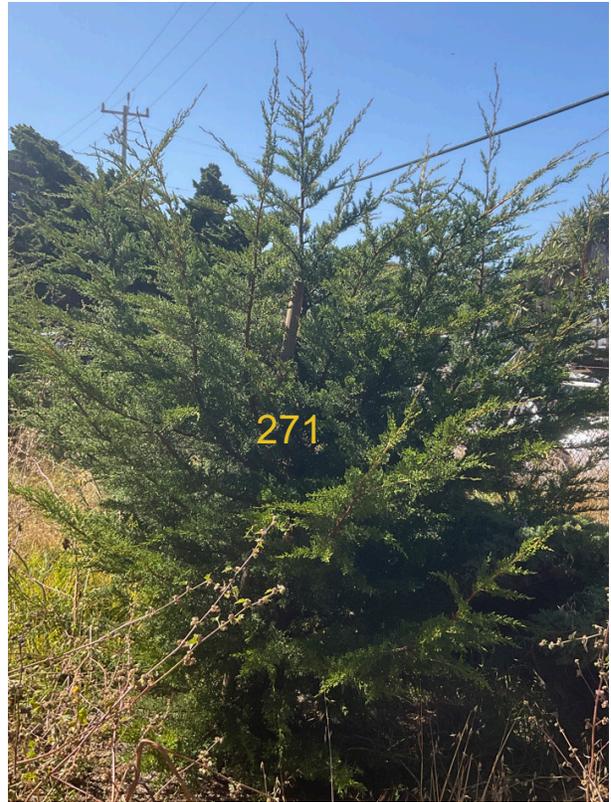


**THIS PAGE INTENTIONALLY LEFT BLANK**

# APPENDIX A TREE PHOTOGRAPHS

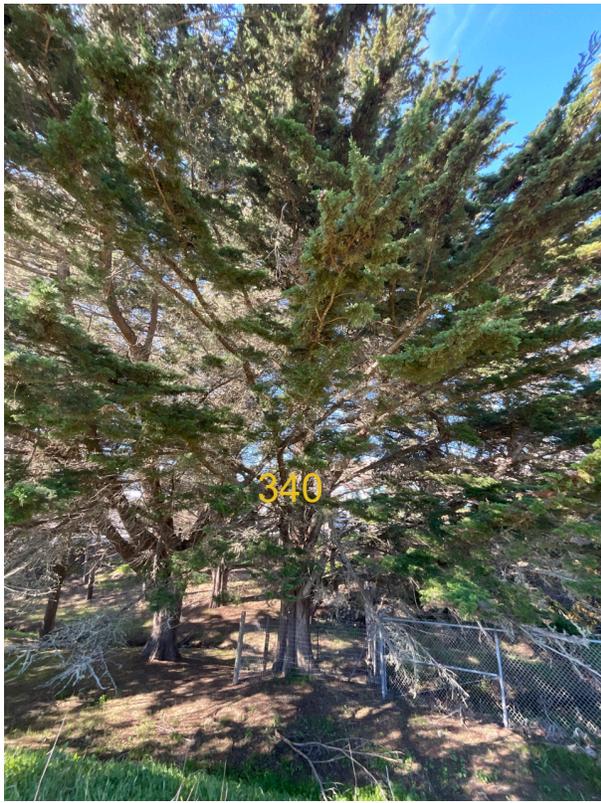
---

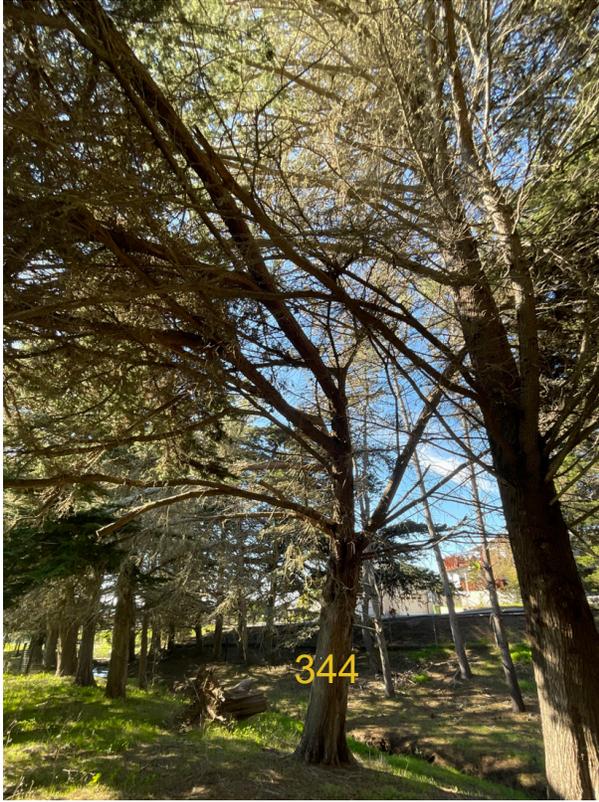


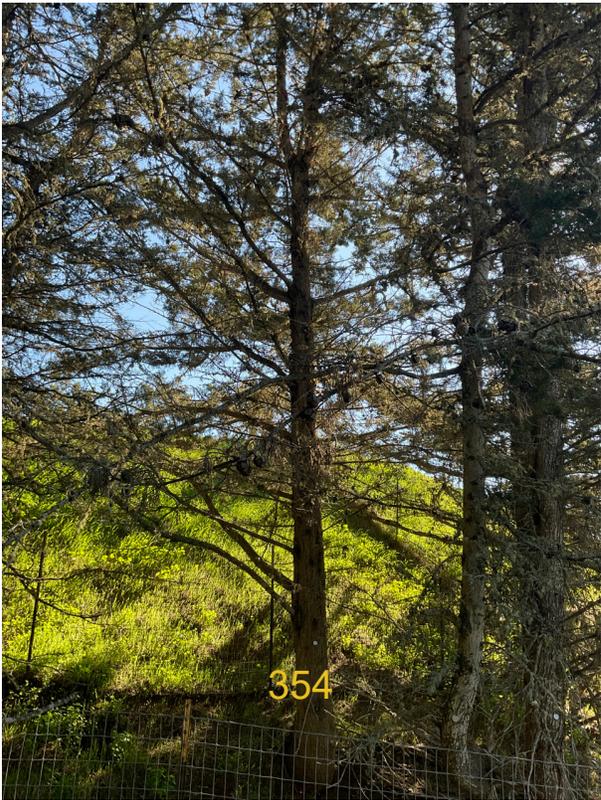












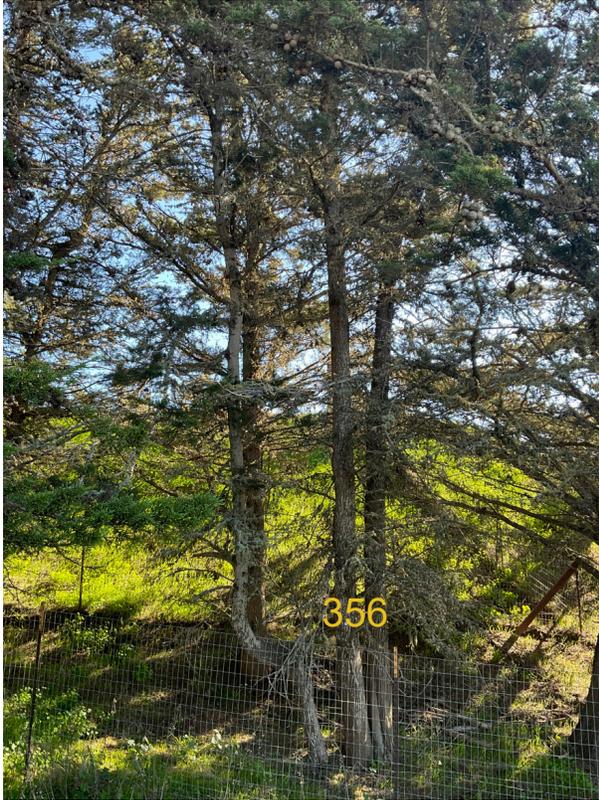


Photo of sap flows from tree 814, typical of most Monterey cypress onsite. Trees exude sap to trap and remove boring insects from the cambium.

