



11.11 Arborist Report

Tree Survey and Arborist Report

For an Approximate 13.8-acre Site

Located at the NE C/O Hughes Way and Via Oro Ave. in Long Beach, CA



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Report Date: October 9, 2024 (Revised March 6, 2026)

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SECTION 1: EXECUTIVE SUMMARY

This arborist survey has been performed at the request of ELMT Consulting for a proposed industrial project in the City of Long Beach, California, within the County of Los Angeles. The field survey associated with this report was originally conducted on September 19, 2024, and the report was initially issued on October 9, 2024. Re-issuance of this report is for administrative purposes. No additional field inspection or reassessment of the subject trees has been performed since the original survey date. Accordingly, the observations, tree conditions, and recommendations presented herein reflect site conditions as they existed at the time of the original inspection only.

Subject trees were tagged with aluminum tags containing a unique number and assessed for their health and stature. As part of this assessment, details of each tree were recorded, documenting their species, stature, health, local environment as well as conditions in which they occur. In all, 83 mature trees were observed, comprised of ten distinct species. The three most prominent species surveyed were paperbark (*Melaleuca Quinquenervia*), Canary Island pine (*Pinus canariensis*), and southern magnolia (*Magnolia grandiflora*), comprising 80.7% of the total tree population present within the project area. No native trees were noted onsite.

The subject trees were regularly maintained in the past, but several trees show indication of infection, disease, or are structurally compromised. Due to these conditions, 33 trees (39.8%) are in decline or pose a risk of failure, and are not candidates for preservation. Another five trees (6.0%) are marginal, requiring significant treatment if preserving. The remaining 45 trees are potentially candidates for preservation, but require pruning or spraying for pests going forward (see Appendix A below).

The City of Long Beach's municipal Code outlines provisions and guidelines for tree removal and maintenance within the City (see Section 2.6 below). Any trees that are intended for removal as part of a project may require a removal permit and must be approved by the Planning Director. Final mitigation for any trees removed as part of the project is at the discretion of the City.

The project site (site) is located at the NE C/O Hughes and Via Oro Way; it is adjacent to the 710 Fwy to the east and 0.1-mile north of the 405 Fwy in Long Beach, CA, within the County of Los Angeles (see Figure 1). The proposed project includes the development of a new warehouse building with associated infrastructure, parking, landscaping, and hardscape.



2.2 - Site and Vicinity Characteristics

2.2.1 - Natural Surroundings

The elevation of the site is approximately 33 feet above mean sea level, and the terrain slopes gently to the west. The geological basement rock is described as poorly consolidated, poorly sorted permeable flood-plain deposits consisting of soft clay, silt, and loose to moderately dense sand and silty sand from the Late Pleistocene to Holocene (0.129 – 0 mya) period (Rockd 2024).

As indicated below, *one* distinct soil series occurs within the site boundary; this soil series is described by the Natural Resource Conservation Service (NRCS) as *Urban land-Metz-Pico complex* (see Table 1 below). In terms of climate, the site resides in Sunset Zone is 22 as well as USDA Hardiness zone 10.

Table 1. Soils on Site

Map Unit Symbol	Description	Acres	Percent
Urban land-Metz-Pico complex 0 to 2 percent slopes (1001)	Landform: Flood plains Typical profile • A - 0 to 3 inches: loamy sand • C1 - 3 to 18 inches: loamy sand • C2 - 18 to 37 inches: sand • 2C3 - 37 to 49 inches: silt loam • 3C4 - 49 to 79 inches: sand	13.4	100%
Totals for Area of Interest		13.4	100.0%

2.2.2 - Current Land Use

The project area includes an existing communication center with an array of satellite dishes and solar panels along with landscaping and parking. A vacant lot with ruderal vegetation exists onsite and a grassy field are present as well.

2.2.3 - Urban Forest

California is a very unique setting having its own floristic province while supporting a robust population of both, people and endemic floral species. Typically, the term urban forest refers to all trees within a densely populated area; this includes trees within cities located in parks, streetways, easements, private property etc. within a community or urban forest. In this capacity, trees provide many benefits, as they help to reduce air and water pollution, alter heating and cooling costs, reduce storm runoff, increase real estate values, provide habitat for plants and animals, and increase the quality of life for the community.

Implementing trees of various size, shape, and species serve many vital functions to the community as well as the wildlife, contributing to spatial complexity, species richness as well as species abundance. Many municipalities promote approved tree lists comprised of hardy species that thrive and reduce the threat of failure in harsh environments. Integrating carefully selected native species can also serve the community well and enriches the experience, promoting an environment better suited to the resident avian and butterfly population.

The project site is a very small component of the urban forest that makes up the coastal community in Southern California. Within the site, no trees were noted as native. The subject trees are diverse in size and stature with a variation in tree height and tree scaffolding. The City has a Draft Urban Forest Management Plan available for review (Long Beach UFMP 2024).

2.3 - Assignment and Scope of Survey

CalPacific Sciences (CPS) was assigned to conduct a tree survey and health assessment of all mature trees within the project area (see Section 2.4 below). The primary goal of the study was to accumulate information on the trees potentially impacted by the proposed development so significant adverse impacts could be avoided. A *limited* health assessment was performed, cataloging the health and stature parameters of each tree onsite. This effort included, but was not limited to; recording total diameter at breast height (DBH), canopy spread, tree height, apparent disease/decay, other signs of potential hazard, and pest damage. A limited (visual only) risk assessment was also conducted keeping public safety in mind.

All documentation in this report is in compliance with standards and requirements published by the International Society of Arboriculture (ISA). This report includes recommendations and mitigation measures meant to satisfy all applicable ordinances and permit guidelines.

2.4 - Survey Methodology

Prior to the field survey, the City of Long Beach's website was accessed to review specific tree protection guidelines. An aerial photograph was used as a visual guide during the assessment. A handheld Global Positioning System (GPS) device (Garmin GPSMAP 66sr) and a GPS-enabled smartphone (with digitized project boundaries) were used to identify the location of each subject tree; these data were exported into GIS for periodic illustration and presentation over aerial photographs. Trees with a DBH of ≥ 5 inches (mature tree per the Municipal Code) were included in this assessment. The crown-width was measured using a Bosch laser device or estimated by pacing, and the height of each subject tree was visually estimated using a tangent height gauge. These data were recorded on field sheets, and associated aluminum numeric tags were affixed to trees on the north side at BH for later reference.

Tree status (relative condition, stature, and health) was conducted by ISA certified and ASCA registered consulting arborist/biologist, George Wirtes from ground level with the aid of binoculars. No invasive procedures were performed unless otherwise indicated in this report. Visual characteristics were recorded on field sheets, and twig/leaf samples as well as digital photographs were taken as needed to assure accurate identification. Overall health and general appearance of each tree was numerically rated (Health/General Appearance Rating - 1-Good, 2-Fair, 3-Poor, 4-Degraded/dead) based on the conditions. Tree stature was also assessed in relation to the tree species shape (lean, scaffolding, offset canopy mass, etc.) with the rating as follows: 1-Good, 2-Fair, 3-Poor, 4-hazardous. Other conditions were also considered such as fence lines, utilities, competing canopies, grade cuts/slope, etc.

2.5 - Hazard Risk Assessment

The International Society of Arboriculture (ISA) recommends a Risk Assessment be included with arborist reports. Such an assessment is an important component of any report and is critical if trees are to be located near public areas such as parks, walkways, residences, and buildings. This tree assessment includes a *limited Level 2 Basic Risk Assessment* as defined by ISA Best Management Practices. *This assessment was limited and did not include tools to detect internal decay. A level 3 assessment of many trees onsite is recommended to assure public safety, especially in high traffic areas (see section 4.3.2 below).* Level 2 (visual only) assessments are limited to evaluating trees and obvious signs of defects such as:

- Dead or broken structures
- Cracks
- Weakly attached branches and co-dominant stems
- Missing or decayed wood
- Unusual tree architecture or distribution
- Obvious loss of root support

A risk rating is assigned to each tree based on its defects, aesthetics, apparent health, location and the nearby targets (people or property). In this context, risk refers to consequences and likelihood of failure and impacting a target. As defined by ISA The ratings are defined below:

1. *Low* - Low-risk category applies when consequences are negligible, and likelihood is unlikely, or consequences are minor, and likelihood is somewhat likely.
2. *Moderate* - Moderate risk situations are those for which consequences are minor and likelihood is very likely or likely or likelihood is somewhat likely, and the consequences are significant or severe.
3. *High* - High-risk situations are those for which consequences are significant and likelihood is very likely or likely or Consequences are severe, and likelihood is likely.
4. *Extreme* - The extreme risk category applies in situations in which failure is imminent and there is a high likelihood of impacting the target and the consequence of the failure is severe. The tree risk assessor should recommend that mitigation measures be taken as soon as possible.

It is impossible to maintain a tree free of risk. A tree is considered hazardous when it has a structural defect that predisposes it to failure, and it is located near a target when consequences are severe.

- A target is person or property that may sustain potential injury or property damage if a tree or a portion of a tree fails.
- Target areas include sidewalks, walkways, roads, vehicles, structures, playgrounds, or any other area where people are likely to gather.
- Structurally sound and healthy trees may also be hazardous if they interfere with utilities, roadways, walkways, and sidewalks, or if they obstruct motorist vision.
- Common hazards include dead and diseased trees, dead branches including bark, stubs from topping cuts, broken branches (hangers), multiple leaders, tight-angled crotches, and an unbalanced crown. Evaluation of risk is as follows: 1-Good, 2-Fair, 3-Poses risk, and 4-Hazardous.

2.6 - Local Tree Regulation

The City of Long Beach has several provisions within its Municipal Code (Code) relating to tree preservation and protection, mostly pertaining to City-maintained trees. Many of these key provisions are provided below; this list is NOT all-inclusive and further review of the Code and follow up with the City's Planning and Public Works Departments are recommended. In addition, the City Maintains an "Approved Tree" List (Long Beach 2024).

2.6.1 - Planting or removing—Permit required (Section 14.28.060)

No person may plant, cut, trim, prune, remove, or in any way interfere with the natural growth of any tree planted along City streets or on other City property without having first obtained a permit from the Director of Public Works to do such work. The Director may require any or all of the work approved by him to be performed under the supervision of the Public Works Department.

2.6.2 - Protection during construction (Section 14.28.100)

In the erection, alteration, construction or repairing of any building or structure, the owner thereof shall place, or cause to be placed, such guards around all nearby trees located along the street, alley, court or other public place as shall effectively prevent injury to them.

2.7 - Limitations and Exceptions of Assessment

The field survey associated with this report was originally conducted on September 19, 2024, and the report was initially issued on October 9, 2024. Re-issuance of this report is for administrative purposes. No additional field inspection or reassessment of the subject trees has been performed since the original survey date. Accordingly, the observations, tree conditions, and recommendations presented herein reflect site conditions as they existed at the time of the original inspection only.

This survey was conducted in a manner that draws upon past education, acquired knowledge, training, experience, and research. It was conducted to the greatest extent feasible, and although the information gathered reduces risk of tree failure/decline, it does not fully remove it.

California has a Mediterranean climate, and the costal environment provides excellent growing conditions for many floral species from all over the world. Trees mostly flower and fruit in the spring and fall months revealing characteristics that aid in their identification. Trees may not exhibit such features due to factors related to their health, vigor, reproduction strategy, etc. There is a potential (albeit small) for a tree species to be misidentified. Drawing clues from the leaves (shape and position), bark, tree morphology, and any other structures (inflorescence, fruit, etc.), every effort was made to provide a conclusive species name to the greatest degree possible.

No invasive diagnostic testing was performed during this assessment. The survey associated with this Arborist Report was *visual only* in nature and did not include soil sampling, root excavation, trunk coring/drilling or any other invasive procedure. The determinations of damage due to pest infestation and decay were made solely on outward appearance and inspection of the tree structures. Not all tree defects

may be readily visible from the ground or apparent at the time of the survey, especially during rain events when the wood is wet. Epiphytic growth can also obscure defects on the stem and in the canopy of a tree.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Internal or heartwood decay can be present and significant while showing little outward indication of wood rot internally. Trees are living organisms subject to attack by disease, insects, fungi and other forces of nature. Many aspects of tree health and environmental conditions are often not detectable (internal decay, poor root anchoring, etc.). Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time.

Given the location of the trees with frequent targets, bias was given to limiting risk exposure within the new development moving forward. The statements made in this report do not consider the effects of climate/wind extremes, vandalism, or accident (whether physical, chemical, or fire). In addition, this area is known to have periodic, high velocity Santa Ana winds from transient high-pressure ridges. CPSC cannot, therefore, accept any liability in connection with these factors, or where prescribed work is not carried out in a correct and professional manner in accordance with current ISA good practice.

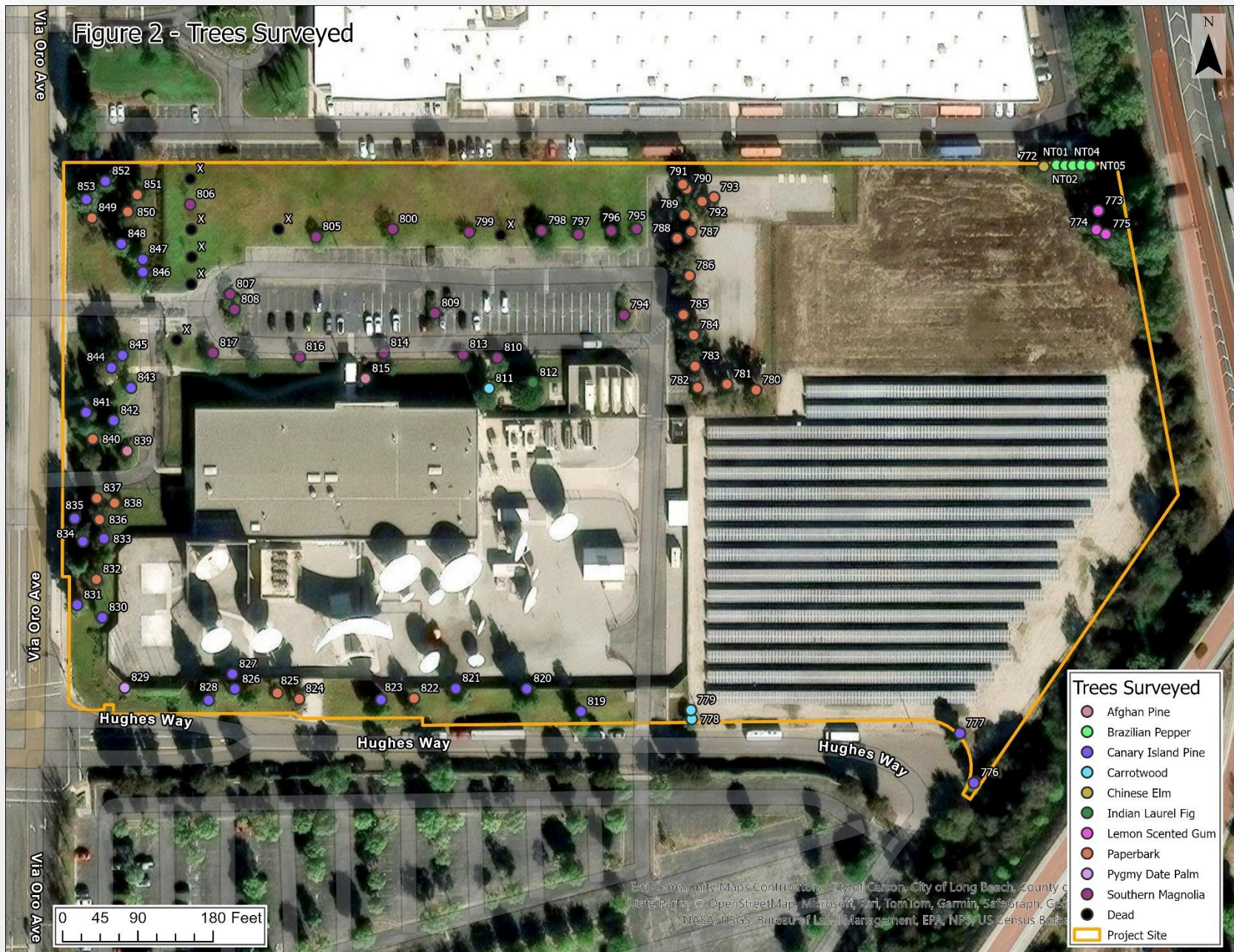
The authority of this report ceases at any stated time limit within it, after one year from the date of the survey (if none stated), when any site conditions change, or after pruning (or other activity) not specified in this report.

As described in the Survey Methodology in Section 2.4 above, tree location was recorded using a Garmin GPSMAP 66sr; this device is known to have an error of up to 3m. In addition, the data were overlain on an aerial map using GIS, and a parcel map was projected to estimate tree locations relative to property boundaries.

The conclusions contained herein rely on documentation readily available (see Section 6 below) and further review of local law and communication with the City's planning department are recommended. In addition, consulting arborist are *not* risk managers nor responsible for tree removal or preservation. They make recommendations based on several factors, including (but not limited to) tree health and public safety. Clients may choose to accept or disregard the recommendations contained within this report; or seek additional advice. ***To live near trees is to accept some degree of risk. The only way to eliminate all risk is to remove all trees onsite.***

SECTION 3: SUBJECT TREES AND OBSERVATIONS

During the site survey, specific measurements and parameters of all trees onsite were recorded on tree assessment worksheets; these data have been transferred into the table in Appendix A at the end of this document. In all, 83 trees consisting of ten distinct species were assessed (see Figure 2 below). A tree species matrix is provided below, characterizing each tree species observed onsite. The age of the trees onsite ranged from mature to over-mature, and the health ranged from rigorous to dead.



3.1 - Species Assessment

During the survey, tree assessments were conducted according to general ISA and City requirements; GPS waypoints were recorded as were specific details of each tree. The tree species represented onsite are characterized in detail below (as well as their count), and a comprehensive table of each tree present is provided in Appendix A of this report. In general, the species onsite were appropriate for the location.

Species	Characteristics	Qty
Afghan (Mondell) Pine <i>Pinus eldarica</i>	This tree species is from the <i>Pinaceae</i> (Pine) family and is drought resistant. It is also known as an Afghan pine. It is native to Armenia, Azerbaijan, Georgia, Northern Iran and Northern Iraq and thrives in hot dry climates and poor soils. Its growth habit is erect or spreading and requires ample growing space. It has a conical Shape with evergreen foliage. Height: 30 - 80 feet. Width: 15 - 25 feet. Growth Rate: 36 Inches per Season. Longevity 50 to 150 years. Exposure Full Sun to Partial Shade. It tolerates moist to Dry Soil. Its branch Strength Rated as Medium Strong and its root Damage Potential Rated as Moderate. It is susceptible to Aphids.	2
Brazilian Pepper Tree ** <i>Schinus terebinthifolia</i>	The Brazilian pepper tree is in the <i>Anacardiaceae</i> (cashew) family This species' native range is South America, but it is widely naturalized in Hawaii, as it is in tropical areas worldwide. This species Requires a moderate amount of water. Cal-IPC (California Invasive Plant Council) classifies the invasiveness of this plant as limited. It has evergreen foliage and grows in Sunset zones 13 - 17, 19 - 24 and USDA zones 10, - 12 Height: 15 - 30 feet. Width: 15 - 30 feet. Growth Rate: 24 Inches per Season. Longevity 50 to 150 years. It prefers full sun to partial shade. It prefers moist to dry clay, loam or sand textured soil. Its branch strength is rated as medium weak and its root damage potential is rated as moderate.	5
This species was clustered along the northeastern fence boundary to provide visual cover. Many of the specimens had the fencing embedded within their tissue due to its proximity and overgrowth.		
Canary Island Pine** <i>Pinus canariensis</i>	Native to Canary Islands of Spain in the Atlantic Ocean, the Canary Island pine is a species of gymnosperm in the conifer family <i>Pinaceae</i> . It is a large, evergreen tree columnar or conical in shape. Height: 50 - 80 feet. Width: 20 - 35 feet. Its growth Rate is 36 Inches per Year and its longevity is 50 to 150 years. The flowers of this tree are Inconspicuous. It is also monoecious having separate male and female flowers on the same tree. Its cones are brown growing as large as 3 inches. It thrives best in Sunset Zones 8, 9, and 12 - 24 and USDA Hardiness Zones 9 - 10. It tolerates exposure Full Sun to Partial Shade in Moist to Dry Soil. It is a drought tolerant tree. It can grow in loam or sand texture soil with highly acidic to highly alkaline soil pH. It is a subtropical pine and does not tolerate low temperatures or hard frost. It is resistant to verticillium. Susceptible to aphids, beetle borers and spider mites, armillaria, phytophthora, root rot, sooty mold and pitch canker. Its root damage potential rated as moderate and branch strength rated as medium. This tree attracts birds and squirrels and is resistant to oak root fungus.	23
Carrotwood <i>Cupaniopsis anacardioides</i>	This species is from the <i>Sapindaceae</i> (soapberry) family is native to Australia and tolerates hot and dry winds. Some mature trees produce marble size fruits, which drop and can be a nuisance, some never fruit. Its growth habit is erect or spreading with a low canopy. Has evergreen foliage. Shading Capacity Rated as Moderate in Leaf. It reaches a height to 40 feet and a Width of 30 feet. Its growth rate is typically 12 to 24 Inches per Season and can live 50 to 150 years. It prefers moist soil clay, loam or sand type soil that is comprised of Clay, Loam or Sand Texture with a Slightly Acidic to Highly Alkaline Soil pH. Its branch strength is rated as medium weak. Its Root damage potential is rated as moderate.	3
Chinese Elm <i>Ulmus parvifolia</i>	This species is drought tolerant, but is susceptible to Texas root rot in the desert. It has same problems as other elms but not as extensively. Susceptible to Dutch elm disease, but relatively few pests and diseases compared to other elms. This species is from the <i>Ulmaceae</i> (elm) family Native to China, Japan, north Korea, and Vietnam. Its form is erect, spreading or weeping and requires ample growing space. Its growth habit is oval, rounded or umbrella shape with evergreen to partly deciduous foliage. Height: 40 - 60 feet. Width: 50 - 70 feet.	1

	Growth Rate: 36 or More Inches per Season. Longevity 50 to 150 years. It tolerates full Sun to Partial Shade and prefers moist Soil. Clay, loam or sand texture. Susceptible to aphids, beetle borers, beetle leaves, caterpillars and scales, Dutch elm disease, oak root rot, phytophthora, root rot, sooty mold and verticillium. Its branch strength is rated as medium weak to medium and root damage potential is rated as moderate.	
Indian Laurel Fig <i>Ficus microcarpa</i>	Also known as Chinese banyan, this evergreen tree species is from the mulberry family <i>Moraceae</i> and is native from the Malaysian peninsula to Borneo. It is a common street tree in California and is valued for its massive canopies with dark green foliage that stands in contrast with its light gray bark. Height: 25 - 35 feet. Width: 35 - 40 feet. Growth rate: 24 inches per year. Longevity 50 to 150 years. Sunset zones 9, 13 and 16 - 24; USDA hardiness zones 9 - 12. Exposure full sun to partial shade. This tree thrives in moist soil composed of loam or sand texture. It thrives in slightly acidic to highly alkaline soil pH. Its branch strength rated as weak and root damage potential is rated as moderate. Susceptible to thrip.	1
This specimen was planted within a courtyard within the property to commemorate past members of the staff.		
Lemon-scented Gum <i>Corymbia citriodora</i>	This species from the <i>Myrtaceae</i> (myrtle) family is endemic to north-eastern Australia and smog tolerant. Bark can be a litter problem. Its habit is erect or spreading and requires ample growing space. It has evergreen foliage. Height: 80 - 160 feet. Width: 50 - 100 feet. Growth rate: 36 or more inches per season. Longevity 50 to wet to dry soil. 150 years. This species is susceptible to beetle borers and thrip, oak root rot, phytophthora and root rot. Branch strength rated as medium and root damage potential rated is moderate.	3
Pygmy Date Palm <i>Phoenix roebelenii</i>	This species is a small, multi-trunked palm from the <i>Arecaceae</i> (palm) family native to southeastern Asia, from southwestern China. It branches from the base. It prefers half-shade to sun in fertile soil that does not dry out. It seldom exceeds 25 in height and grows very slowly. Its SelecTree water use rating is medium. It thrives in sunset zones: 13, 16 - 17, 22 - 24, h1, h2 as well as USDA zones: 10, 11. Its sun exposure tolerance is partial shade to full sun. This tree tolerates soil texture of loam or sand or clay with a soil pH of acidic to acidic. Its foliage type is evergreen, and can attain a maximum tree height of 15 feet with a canopy width of 6-7 feet. It grows approximately 12-24 in per year. It has a leaf arrangement and form of alternate and pinnately compound. Its root damage potential is Low. It is susceptible to Leaf Spot and Scales.	1
Paperbark <i>Melaleuca Quinquenervia</i>	This evergreen tree species is from <i>Myrtaceae</i> (myrtle) family and is native to New Caledonia, Papa New Guinea, and coastal eastern Australia. Height: 20 - 40 feet. Width: 15 - 25 feet. It has a growth rate: 24 inches per year and can live 50 to 150 years. Its bark is striking and paper like ranging from white to cream color. Sunset Zones 9, 12, 13, 15 -17 and 20 - 24; H1, H2. USDA Hardiness Zones 10 - 12. This species can tolerate exposure from full sun to partial shade. It can also tolerate wet to dry soil consisting of clay, loam or sand texture with slightly acidic to slightly alkaline soil pH. It is susceptible to Phytophthora and Root Rot. Its Branch Strength Rated as Medium, and its root Damage Potential Rated as Low. The paper-like bark is used traditionally for making shelter, wrapping baked food and lining ground ovens, and the nectar can be used as a beverage.	26
Many of these specimens were planted near the street and are very tall. Due to irrigation and maintenance routines, many of the specimens had decay in their flare and possessed included bark within stem crotches posing potential failure risk.		

Southern Magnolia <i>Magnolia grandiflora</i>	Magnolia grandiflora is a member of the <i>Magnoliaceae</i> (magnolia) family and is a medium to large evergreen tree. It has fragrant Flower. Native to Southeastern United States, endemic to the lowland subtropical forests on the Gulf and south Atlantic coastal plain. Has Evergreen foliage. Height: 60 - 80 feet. Width: 50 - 60 feet. Growth Rate: 24 Inches per Year. Longevity Greater than 150 years. Sunset Zones 4 - 12 and 14 - 24; H1, H2. USDA Hardiness Zones 7 - 9. Can tolerate exposure full sun to partial shade. Moist soil comprised of loam or sand texture. Susceptible to aphids, scales and spider mites, root rot and verticillium. Its branch strength is rated as medium, and its root damage potential rated as high.	18
Many of these specimens were located along the perimeter of a lawn within the northwestern portion of the property. Possibly due to excessive irrigation, many of the trees were dead or in steep decline. Sooty mold and scales were also noted on the twigs and foliage.		
* <i>California native tree species</i> ** <i>Cal-IPC (California Invasive Plant Council) invasive tree species</i>		

Source: UFEI 2024

3.2 - Observations

During the field survey, observations were documented pertaining to disease, structural defects, and other notable instances.

3.2.1 - Survey Photographs

The situations described below were observed onsite, these potentially contribute to hazardous conditions, tree decline, poor growth form, etc. The plates below illustrate many of the situations and are merely representative of what was documented during the site assessment.

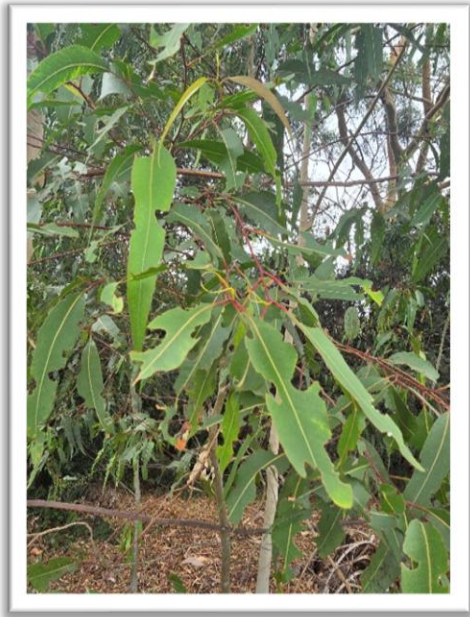


Plate 1. This is a view of significant foliage herbivory (#773).



Plate 2. This is a view of a codominant stem system with included bark (#774).



Plate 3. This is a view of a dotted paropsine leaf beetle (*Paropsis atomaria*) on the leaf of a subject tree (#774).



Plate 4. This is a view of several small trees grown along the fence line that have embedded fence in their tissue (#778-779).



Plate 5. This is a view of large codominant stems with included bark (#780).

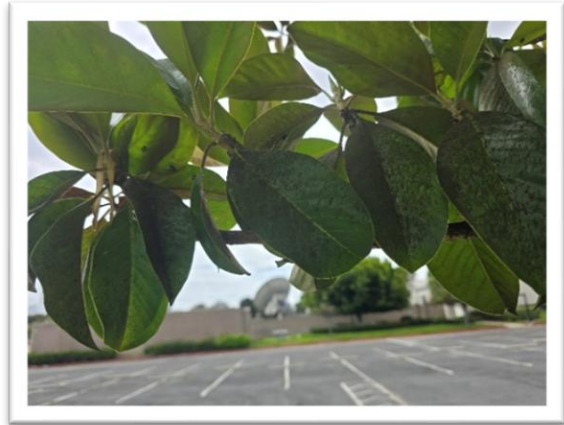


Plate 6. This is a view of sooty mold on the foliage of a tree (#798).



Plate 7. This is a view of two cankers with decayed tissue (#780).



Plate 8. This is a view of large epicormic basal sprouters (#788).



Plate 9. This is a view of decay on a structural root (#792).

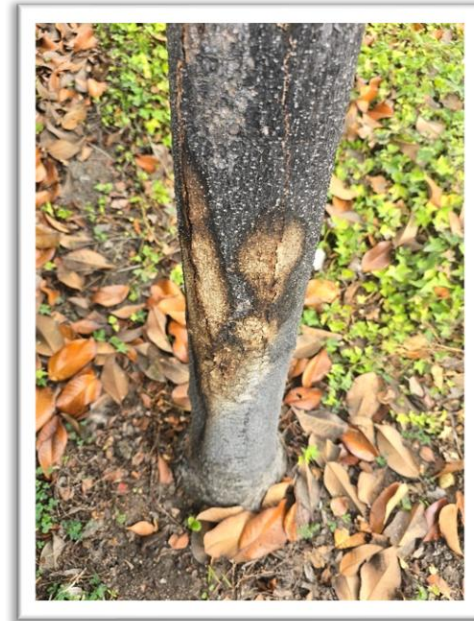


Plate 10. This is a view of stained bark with cankers (#794).

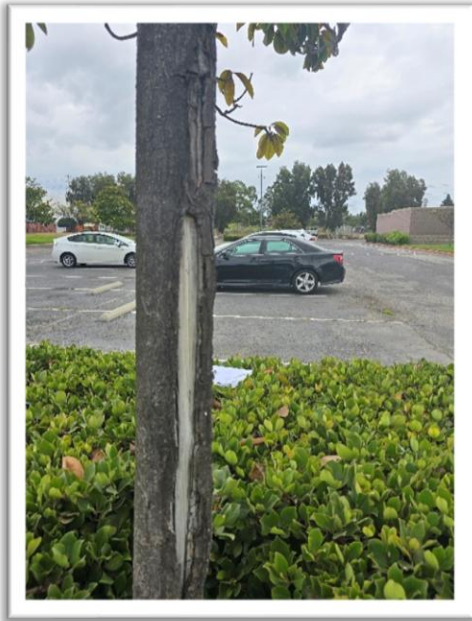


Plate 11. This is a view of a large longitudinal stem canker (#809).



Plate 12. This is a view of decay at the flare of a tree (#822).



Plate 13. This is a view of magnolia scale, (*Neolecanium cornuparvum*) on twigs and leaves (#809).



Plate 14. This is a view of a tree planted as a memorial to past staff members of the facility (#812).



Plate 15. This is a view of severe gummosis on the stem of a tree (#815).



Plate 16. This is a view of codominant stems with included and decayed tissue (#832).

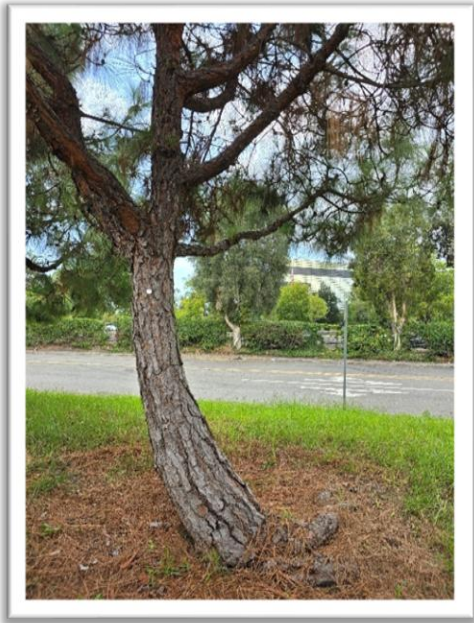


Plate 17. This is a view of a stem with significant sweep lean (#827).



Plate 18. This is a view of included bark and decayed tissue at the flare of a tree (#851).



Plate 19. This is a view of a structural root with a canker (#849).

SECTION 4: DISCUSSION AND RECOMMENDATIONS

4.1 - Conclusion

The field survey associated with this report was originally conducted on September 19, 2024. No additional field inspection or reassessment of the subject trees have been performed since the original survey date. Accordingly, conclusions are drawn and recommendations are suggested based on the observations, tree conditions, and site conditions as they existed at the time of the original inspection only.

Subject trees were tagged with aluminum tags containing a unique number and assessed for their health and stature. As part of this assessment, details of each tree were recorded, documenting their species, stature, health, local environment as well as conditions in which they occur. In all, 83 mature trees were observed, comprised of ten distinct species. The three most prominent species surveyed were paperbark (*Melaleuca Quinquenervia*), Canary Island pine (*Pinus canariensis*), and southern magnolia (*Magnolia grandiflora*), comprising 80.7% of the total tree population present within the project area. No native trees were noted onsite.

The subject trees were regularly maintained in the past, but several trees show indication of infection, disease, or are structurally compromised. Due to these conditions, 33 trees (39.8%) are in decline or pose a risk of failure, and are not candidates for preservation. Another five trees (6.0%) are marginal, requiring significant treatment if preserving. The remaining 45 trees are potentially candidates for preservation, but require pruning or spraying for pests going forward (see Appendix A below).

4.2 - Discussion

The trees within the project area are generally well-cared for and adequately trimmed. Conditions within this large grassy field (possibly over-irrigation) appear to have impacted the trees along its perimeter, resulting in several dead trees and many others in decline and infested with pests. In addition, a number of large trees within the site and along Via Oro Ave. are multi-stemmed with included bark. This condition can lead to tree failure, especially during wind events.

4.3 - Recommendations

4.3.1 - Trees Preserved

The field survey associated with this arborist report was conducted on September 19, 2024. If any trees are preserved moving forward, a post-development arboricultural assessment must be conducted to evaluate the condition and structural stability of retained trees. This assessment should identify any trees requiring treatment (e.g., safety pruning, pest or disease management, or other arboricultural interventions) and determine whether any preserved trees are no longer suitable viable candidates for preservation due to project-related impacts or changes in site conditions. Particular attention should be given to trees located adjacent to Via Oro Avenue and Hughes Way due to their proximity to public rights-of-way and potential public safety considerations.

An ongoing tree maintenance and monitoring program is recommended for all retained trees to promote long-term health and structural integrity, minimize the risk of tree failure, and reduce potential liability. All tree work must be performed by a qualified arborist and conform to current International Society of Arboriculture (ISA) best management practices and ANSI A300 Tree Care Standards. Recommended pruning must include the subordination of non-primary codominant stems where appropriate and the removal of canopy deadwood.

Prior to and during construction, tree protection measures must be implemented to ensure that all trees designated for preservation (including those adjacent to the project site) are adequately protected from construction-related disturbance and encroachment within their Critical Root Zone (CRZ) (see Appendix B).

4.3.2 - Tree Replacement

As noted in Section 4.1 above, several trees within the project site are in poor condition and are not candidates for preservation; this is primarily due to decay and increased risk of failure. Removal of living, native and non-native trees may result a biological impact.

A tree removal permit may be required by the City. Although tree replacement is not specified in the City's Municipal Code, the City has the authority to require this measure during the permitting process. Tree replacement is recommended at 2:1 for each tree removed as part of the project. All species chosen should be in accordance with the City-approved tree list. Replacement trees should include native and non-native species that are selected from local, quality nursery stock, composed of 15-gal. and 24-in. boxed specimens. Note: Tree replacement requirements are ultimately decided upon and approved by the City. Deviation from the aforementioned recommendation is at the discretion of the Planning Department.

4.3.3 - Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) and CDFG Code, removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from early February through August, but can vary slightly from year to year based upon seasonal weather conditions.

SECTION 5: QUALIFICATIONS OF ARBORIST

Mr. Wirtes is a Certified Arborist (CH-08084) with the International Society of Arboriculture (ISA) and is a Registered Consulting Arborist (#738) with the American Society of Consulting Arborists. Originally ISA certified in November of 2005, Mr. Wirtes is also Tree Risk Assessment Qualification (TRAQ) certified, and has conducted numerous tree assessments for residential, industrial, and commercial properties involving oak and other tree species. Most notably, Mr. Wirtes has assessed properties with as many as 980 trees, and has created an oak regeneration, desert native plant and Joshua tree management plans. He regularly performs tree surveys within Riverside, San Bernardino, Orange as well as Los Angeles Counties. Mr. Wirtes' education includes a Bachelor of Science in Biology and a Master of Science in Environmental Science from California State University at Fullerton.

I certify that the details stated herein this report are true and accurate:



George Wirtes, MS, RCA #738
ISA Certified Arborist, CH-08084

SECTION 6: REFERENCES

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Appendix A - Tree Species Observed

Note - This tree survey details recorded below are meant to characterize the trees within the property based on a limited “visual only” evaluation (see Section 2.7 above). The goal was to accumulate enough data to make a judgment as to what role, if any, the existing trees may have in the proposed project.

KEY	Health Rating: 1= Good, 2 = Fair, 3 = Poor, 4 = Dying/Immanent Hazard									Structural/Stature Rating: 1 – Good, 2- Fair, 3- Potential Hazard 4- Imminent Hazard									Risk of Failure: 1 – Improbable, 2- Possible, 3 – Probable, 4 - Imminent			
Tree Tag #	Species	DBH (inches)							Height (feet)	Canopy Width (feet) (north on top)	Canopy Cover (sq ft)	Health	Structure	Risk	Conclusion	Suggestions						
		1st Stem	2nd Stem	3rd Stem	4th Stem	5th Stem	6th Stem	Total														
772	Chinese Elm	8	7	7	6	7	7 6	41	42	24	8 26	855	2-3	3	2-3	Marginal	Trim and re-evaluate or remove					
Multi-stem, decreased aesthetics, good vigor																						
NT1	Brazilian Pepper	2	3	4	4	4 2	3 4	26	40	13	8 17	491	2-3	3-4	2	Remove						
On fence line, good vigor, multi-stem, embedded in fence																						
NT2	Brazilian Pepper	8	3					11	41	14	8 17	491	2-3	3	2	Remove						
On fence line, good vigor, multi-stem																						
NT3	Brazilian Pepper	6	3	2	2	2 3	3.5 2	23.5	38	10	8 17	434	2-3	3-4	2	Remove						
On fence line, good vigor, multi-stem, embedded in fence																						
NT4	Brazilian Pepper	7	3					10	38	8	8 17	363	2-3	3	2	Remove						
On fence line, good vigor, multi-stem																						
NT5	Brazilian Pepper	8	6.5					14.5	39	7	8 17	397	2-3	3	2	Remove						
On fence line, good vigor, multi-stem																						
773	Lemon Scented Gum	7						7	48	17	11 8	346	2	1-2	2	Preserve						
Slight sweep lean, herbivory noted, erosion at root crown, good health and vigor																						
774	Lemon Scented Gum	6	6					12	47	17	12 0	240	2	3	3	Marginal	Brace and re-evaluate or remove					
Codominant stems with included bark																						
775	Lemon Scented Gum	5						5	42	10	6 12	214	2	2	2	Preserve						
Good form and vigor																						
776	Canary Island Pine	12.5						12.5	48	10	12 11	380	1-2	1-2	1-2	Preserve						
Good form and vigor																						
777	Canary Island Pine	14						14	29	12	11 12	452	2	2	2-3	Preserve						
Poor apical formation (not visible), near street on a berm																						
778	Carrotwood	2	3	1.5				6.5	13	8	4 5	113	2-3	3	2-3	Remove						
Bush form, multi-stem with sprouter, embedded in fence																						
779	Carrotwood	2.5	2.5	1.5				6.5	14	10	6 8	201	2-3	3	2-3	Remove						
Multi-stem, sprouters, embedded in fence																						
780	Paperbark	15	13					28	42	17	8	934	2	3	3	Remove						

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Codominant stems with included bark, decay in crotch, good vigor, epiphytic passion vine, upper stem decay, poor flare development										18	18						
781	Paperbark	11	13.5					24.5	58	16	13	707	3	3	3-4	Remove	
Decay at flare, codominant stems, increased risk										17	15						
782	Paperbark	18						18	37	15	10	471	2	2-3	2-3	Preserve	
Former codominant stem cut, good vigor, soil lift										11	13						
783	Paperbark	12						12	39	15	10	214	2	2-3	2-3	Preserve	
Lean, good vigor										7	9						
784	Paperbark	18	6					24	47	7	17	779	2-3	3	3	Remove	
Significant decay at flare, increased risk, mature sprouter										17	12						
785	Paperbark	23	11.5					34.5	44	17	17	1017	3	3	3	Marginal	Subordinate codominant stem or remove
Codominant stems										19	17						
786	Paperbark	18	7.5	10.5				36	41	18	16	829	2-3	3	3	Remove	
Multi stem with included bark, and decayed tissue, increased risk, poor branch attachment										20	13						
788	Paperbark	17.5	6	6.5				30	47	16	13	779	2-3	3	3	Preserve	Subordinate sprouter
Codominant stems-mature sprouters, good vigor										20	10						
787	Paperbark	9	10.5	9				28.5	39	20	9	510	2-3	3-4	3	Remove	
Codominant stems at 45-deg angle, off-center mass										7	13						
789	Paperbark	10.5	14	8.5				33	34	22	9	346	2-3	3	3	Marginal	Trim and brace for safety or remove
Multi-stem										13	10						
790	Paperbark	9.5	9.5					19	41	10	14	415	2-3	3	3	Remove	
Codominant stems, decayed structural root										11	14						
791	Paperbark	14	13					27	45	11	11	551	2-3	3	3	Remove	
Decay at flare, codominant stems										10	14						
792	Paperbark	11.5	9.5					21	44	14	9	346	2-3	3	2-3	Preserve	
Codominant stems, good vigor, decayed structural roots										8	11						
793	Paperbark	12.5	6.5					19	42	14	10	471	2-3	3	3	Remove	
Codominant stems, good vigor, significant decay at flare										9	16						
794	Southern Magnolia	4.5						4.5	15	14	6	154	2-3	2	2	Remove	
Stem canker, moderate upper canopy deadwood, poor prognosis										6	8						
795	Southern Magnolia	5.5						5.5	13	8	7	189	3	2	2-3	Remove	
Increased upper canopy deadwood, very wet soil, in decline										8	7						
796	Southern Magnolia	8						8		9	11	471	2	2	2	Preserve	
Good form and vigor, flowers										12	13						
797	Southern Magnolia	4.5						4.5	15	13	10	330	3	2	2-3	Remove	
In decline, increased upper canopy deadwood										10	11						
										10	10						

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798	Southern Magnolia	10						10	28	14	638	3	2	2-3	Preserve	Treat pests and infection
Pests (beetles), sooty mold										15						
799	Southern Magnolia	7						7	17	14						
Upper canopy deadwood, in decline										10						
800	Southern Magnolia	9.5						9.5	21	11						
Upper canopy deadwood, in severe decline, over-watered										12						
805	Southern Magnolia	6						6	18	14						
Sooty mold, in decline										13						
806	Southern Magnolia	4.5						4.5	16	10						
Severe decline, some flowers										10						
807	Southern Magnolia	5						5	15	6						
Moderate upper canopy deadwood										5						
808	Southern Magnolia	7						7	24	7						
Mild to moderate upper canopy deadwood										8						
809	Southern Magnolia	5						5	14	10						
Severe stem decay, pests										8						
810	Southern Magnolia	7						7	25	3						
Minor upper canopy deadwood										5						
811	Carrotwood	12						12	33	12						
Good form and vigor, large branch flush cut										16						
812	Indian Laurel Fig	18.5						18.5	35	17						
Viral infection, possible heritage tree - has plaque, good form and vigor										23						
813	Southern Magnolia	5.5						5.5	14	20						
Moderate upper canopy deadwood, stained bark										21						
814	Southern Magnolia	8.5						8.5	27	10						
Good form and vigor										8						
815	Afghan Pine	10						10	20	12						
Tree-needle pine, exuding sap, stressed, excessive brown needles										10						
816	Southern Magnolia	5.5						5.5	21	11						
Mild to moderate upper canopy deadwood										7						

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817	Southern Magnolia	7						7	21	15 14	531	2-3	2	2	Preserve	
Mild to moderate upper canopy deadwood										11						
818	Southern Magnolia	7.5						7.5	24	13 12	415	2-3	2	2	Preserve	
Mild to moderate upper canopy deadwood										11						
819	Canary Island Pine	14						14	45	17 15	730	2	2	2	Preserve	
Good form and vigor										13						
820	Canary Island Pine	15.5						15.5	55	20 16	962	2-3	2	2	Preserve	
Lower canopy dead foliage										20						
821	Canary Island Pine	18						18	51	14 12	660	2	2	2	Preserve	
Good form and vigor										17						
822	Paperbark	18						18	40	12 16	615	2-3	2-3	2	Marginal	Level II Risk Evaluation or remove
Decay at flare, good vigor										11						
823	Canary Island Pine	21						21	59	17 18	1046	2	2	2	Preserve	
Good form and vigor										20						
824	Paperbark	14	11	7	10.5			42.5	39	17 10	707	3	2-3	3	Remove	
Large decay at flare, increased risk, poor prognosis										18						
825	Paperbark	11						11	36	10 9	283	2-3	2-3	2-3	Preserve	
Decay at structural flare										10						
826	Canary Island Pine	13						13	43	12 13	572	2	2	2	Preserve	
Good form and vigor										16						
827	Canary Island Pine	10						10	31	8 11	330	2	3	3	Remove	
Good form and vigor, poor form (flare/lean)										12						
828	Canary Island Pine	18.5						18.5	60	15 18	804	2	2	2	Preserve	
Good form and vigor, poor form (flare/lean)										14						
829	Pygmy Date Palm	7	6					13	1	5 5	87	2	3	3	Preserve	Prune for safety
Codominant stems, good vigor										5						
830	Canary Island Pine	10						10	61	9 8	298	3	2	3	Remove	
Poor flare formation, good vigor										12						
831	Canary Island Pine	16.5						16.5	63	16 17	804	2	2	2	Preserve	
Good form and vigor										13						
832	Paperbark	11	8.5	9.5	9	10		48	49	18 15	855	2-3	2-3	3	Remove	
Multi-stemmed, water under bark, cankers (multiple) on structural roots and flare										17						

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										17							
833	Canary Island Pine	8.5						8.5	48	11	12	415	2-3	2-3	2-3	Preserve	
Good form and vigor, some distressed foliage											13		10				
834	Canary Island Pine	16.5						16.5	62	20	16	881	2	2	2	Preserve	
Good form and vigor											19		12				
835	Paperbark	14	17					31	61	20	14	855	2-3	3	3	Remove	
Failed branch, increased risk, codominant stems with included bark											16		16				
836	Paperbark	11	10	12				33	44	11	14	779	2-3	3	3	Remove	
Multiple cankers on flare and structural roots											18		20				
837	Paperbark	16						16	47	12	13	615	2-3	2	2	Preserve	
Good form and vigor, surficial decay at flare											13		18				
838	Paperbark	10	9					19	47	13	14	829	2-3	2-3	2-3	Preserve	Prune for safety
Main limb with included bark											18		20				
839	Afghan Pine	6.5	7.5					14	20	10	11	363	2	2-3	2-3	Preserve	Trim and subordinate codominant stems
Codominant stems with included bark											10		12				
840	Paperbark	22						22	49	17	13	707	3	2-3	2-3	Remove	
Multiple decay sunken tissue at flare											16		14				
841	Canary Island Pine	18						18	52	19	18	934	2	2	2	Preserve	
Good form and vigor											17		15				
842	Canary Island Pine	15						15	61	17	17	1046	2	2	2	Preserve	
Good form and vigor											21		18				
843	Canary Island Pine	12						12	37	11	11	415	2	2	2	Preserve	
Good form and vigor											11		13				
844	Canary Island Pine	10.5	9.5	14	9.5			43.5	46	17	21	1075	2	3	3	Preserve	Trim and subordinate codominant stems
Codominant stems with included bark											17		19				
845	Canary Island Pine	24						24	47	13	15	754	2-3	2-3	2-3	Preserve	
Good form and vigor											16		18				
846	Canary Island Pine	11						11	34	14	13	551	2	2	2	Preserve	
Good form and vigor											16		10				
847	Canary Island Pine	11						11	54	17	15	829	2	2	2	Preserve	
Good form and vigor											17		16				
848	Canary Island Pine	15						15	55	14	855	2	2	2	Preserve		

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Good form and vigor										17	18						
849	Paperbark	10	8.5					18.5	41	17	12	707	2	3	3	Remove	
Codominant stems, increased risk, decayed structural roots										14	16						
850	Paperbark	9	10	11.5	11			41.5	39	18	18	962	2	3	3	Remove	
Multi-stemmed with multiple areas of included bark										17	20						
851	Paperbark	10	13	10.5	13			46.5	39	15	13	615	2	3	3	Remove	
Multi-stemmed with multiple areas of included bark										11	15						
852	Canary Island Pine	14						14	72	17	14	779	2	2	2	Preserve	
Thinned canopy										15	17						
853	Canary Island Pine	16.5						16.5	50	17	18	1194	2-3	2	2	Preserve	
Minor upper canopy dieback										20	21						
										19							

Appendix B –Tree Protection during Construction

Construction activity near trees pose a great risk due to many factors. It is very important to reduce disturbance impacts to existing trees during construction activity associated with a development project. Older trees are less tolerant to root crown disturbance, either from damaged roots or compacted soils. Damage to structural roots can cause great harm and structural instability to trees and causing them to fail. The main stresses and risks of construction include:

- Soil compaction
- Lack of water or changes in the site hydrology
- Change of grade in the root zone
- Physical damage to tree roots and stem structure
- Dumping of potentially toxic construction wastes
- Dust
- Human error

Given this, the following Best Management Practices (BMPs) are recommended to mitigate adverse effects stemming from construction and to preserve the health and vigor of the trees onsite.

The successful implementation of a project requires effective communication regarding protective measures in place and a willingness by everyone involved to follow the guidelines presented. Prior to groundbreaking activity, a pre-construction meeting should be held with the project arborist, supervisor, work crew, and other parties associated with the project that may be involved in the various stages of the project. The guidelines and BMPs can be presented at this time and handouts given to the work crews.

Tree Protection Zone (TPZ)

A tree protection zone should be established and clearly marked for all trees. A TPZ is meant to protect the tree's limbs, trunk and roots from construction damage by discouraging the storage of materials beneath the tree's canopy, accidental releases of chemicals, and the accidental breakage or damage of tree structures. The TPZ should extend one foot from the face of the trunk for each inch in trunk diameter (measured at a height of 4.5 feet), with a minimum of 2 feet. The TPZ should be extended to 1.5 feet per inches DBH for sensitive or overmature trees. A tree's Critical Root Zone (CRZ) includes the area in which the significant structural roots, critical to the tree's structural integrity, are located. To the extent feasible, it is advisable for the construction crew to refrain from working within the CRZ.

In areas where feasible, the following measures are recommended to protect the trees.

1. Protective fencing should be placed at the outer edge of the TPZ.
2. Protective fencing must be erected so that it is visible and structurally sound enough to deter construction equipment, foot traffic, and the storing of equipment under tree canopies.
3. Signs should be posted on the fencing around trees notifying contractors of the fines for dumping. Oil from construction equipment, cement, concrete washout, acid washes, paint, and solvents are toxic to tree roots.

4. If it is not feasible to operate outside of the TPZ and CRZ, an arborist or biological monitor should be consulted to assess the situation and explore methods that will result in minimal adverse impact to the nearby tree.
5. If work must be performed within or near the TPZ, soil compaction must be mitigated by the addition of 4" of mulch or other similar material in the immediate vicinity of the work being performed.
6. Construction creates large amounts of dust. Trees to be preserved will need to be kept clean. Dust reduces photosynthesis within the leaves of trees. During periods of extended drought, wind or grading, trunks, limbs and foliage should be sprayed with water to remove accumulated construction dust. Strict dust control measures must be implemented during construction to minimize this impact, and an occasional rinsing with a solution of water and insecticidal soap will help control pests.
7. Many trees in the appendix are noted to have poor health or structural issues. Strategic pruning may be required to limit hazardous conditions to the construction crew; this is at the discretion of the project arborist or supervisor. All pruning should be performed by an ISA Certified Arborist or ASCA Consulting Arborist.
8. Supplemental irrigation is recommended if a tree appears stressed or under irrigated. Irrigation should be designed to wet the soil within the Tree Protection Zone to the depth of the root zone and to replace that water once it is depleted. Light, frequent irrigation should be avoided.