Tree Survey and Arborist Report

for an approximate 8.3-acre Site

Located at 333 Garrison St. Oceanside, CA, within the County of San Diego

Prepared for: **TTLC Management**
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Report Date: March 27, 2024

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SECTION 1: EXECUTIVE SUMMARY

This arborist survey has been performed at the request of TTLC Management, under the care of TK Consulting, Inc. for a proposed residential project in the City of Oceanside, California, within the County of San Diego.

The field survey associated with this report was performed on February 29, 2024. Subject trees were tagged with aluminum tags containing a unique number and assessed for 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, 42 mature trees were observed, comprised of 11 distinct species. The most prominent species surveyed was Aleppo pine (*Pinus halepensis*), comprising 33.3% of the total tree population present within the project area. No mature native trees were noted within the project boundary.

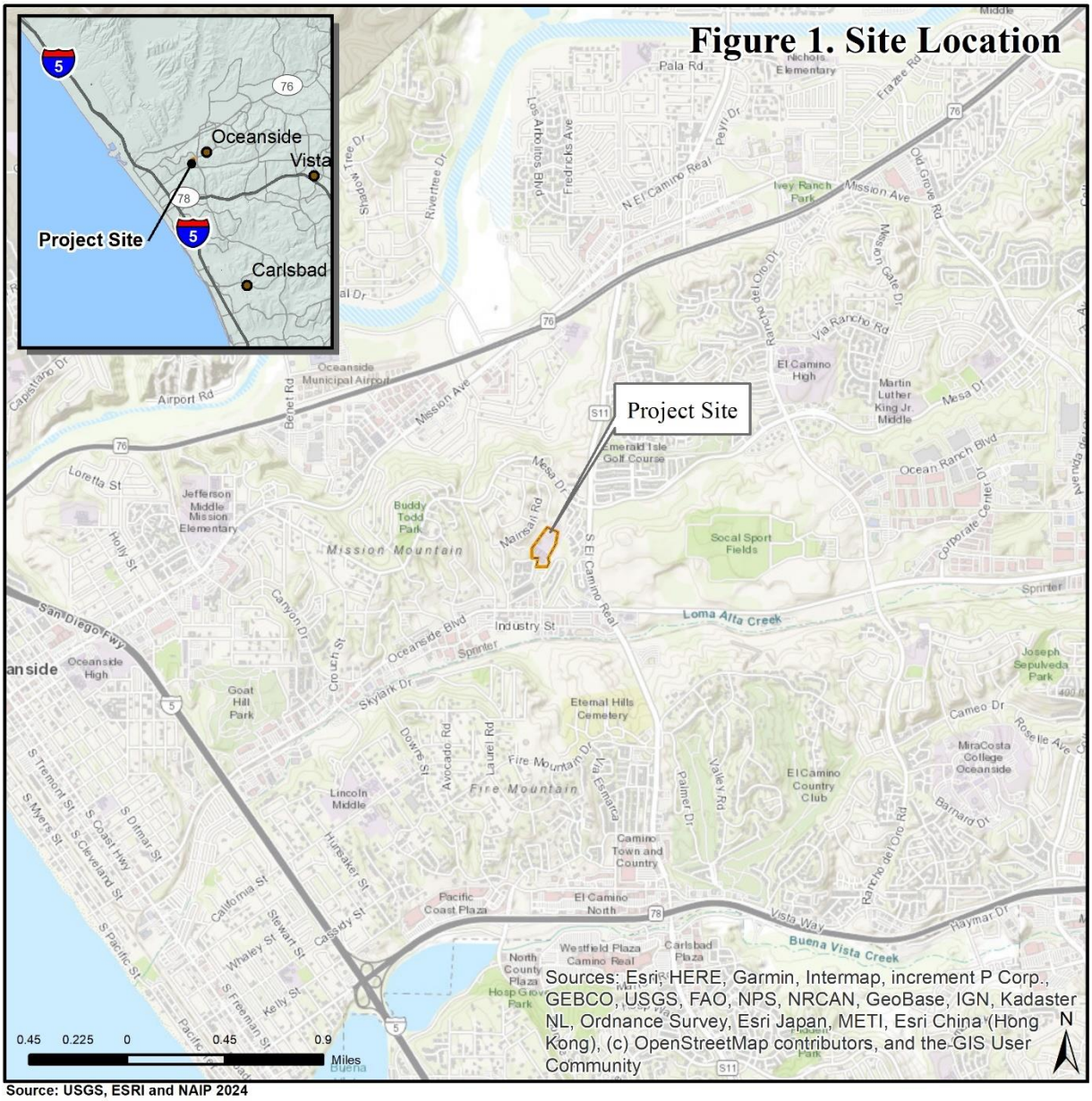
The subject trees appear to be regularly maintained, but several trees show indication of infection, disease, and potential failure. Due to disease or significant decay, 18 trees (35.3%) are in decline, or pose a risk of failure and are not candidates for preservation. The remaining 24 trees may potentially be candidates for preservation if measures are taken to treat, trim, brace, and irrigate them. Two trees (#598 and #599) require further evaluation for risk if preserved.

The City of Oceanside's municipal Code (see Section 3.1A) outlines provisions and guidelines for tree removal and maintenance within streets and parkways within the City. 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 or Superintendent. Final mitigation for trees removed as part of the project is at the discretion of the Planning Director.

SECTION 2: BACKGROUND

2.1 - Project Location and Description

The project site (site) is located at 333 Garrison St. Oceanside, CA, within the County of San Diego (see Figure 1). The site is 1.0 mile south of Hwy 76, and 2.0 miles east of Interstate 5 Fwy. The proposed project includes the construction of a residential development with associated infrastructure, landscaping, parking stalls and related hardscape.



2.2 - Site and Vicinity Characteristics

The elevation of the site is approximately 100 feet above mean sea level, and the terrain slopes to the south. A sloped terrace is located along the northwestern boundary of the project site. The geological basement rock is described as active and recently active flood plain deposits consisting of sandy, silty, or clay-bearing alluvium from the Holocene (0.0117 MYA to present). Along the northern portion of the property is the Santiago Formation from the Middle Eocene (47.8 - 37.7mya); this consists of massive coarse-grained sandstone, poorly sorted arkosic sandstone, and conglomerate deposits.

As indicated below, *two* distinct soil series occur within the site boundary; these soil series are described by the Natural Resource Conservation Service (NRCS) as calcareous sandstone and alluvium (see Table 1 below). In terms of climate, the site resides in Sunset Zone 23 as well as USDA Hardiness Zone 9b.

Table 1. Soils on Site

Map Unit Symbol	Map Unit Name	Acres	Percent
LeD2	**LeD2—Las Flores loamy fine sand, 9 to 15 percent slopes, eroded** **Setting** • *Parent material: Residuum weathered from siliceous calcareous sandstone* **Typical profile** • *H1 - 0 to 14 inches: loamy fine sand* • *H2 - 14 to 22 inches: sandy clay* • *H3 - 22 to 38 inches: sandy clay* • *H4 - 38 to 48 inches: loamy coarse sand* • *H5 - 48 to 52 inches: weathered bedrock*	8.2	99.6%
SbA	**SbA—Salinas clay loam, 0 to 2 percent slopes, warm MAAT, MLRA 19Setting** • *Parent material: Alluvium derived from sedimentary rock* **Typical profile** • *Ap - 0 to 7 inches: clay loam* • *A - 7 to 22 inches: clay loam* • *C1 - 22 to 32 inches: clay loam* • *C2 - 32 to 46 inches: clay loam* • *2Ck1 - 46 to 55 inches: clay loam* • *2Ck2 - 55 to 64 inches: loam*	<0.1	0.4%
Totals for Area of Interest		**8.3**	**100.0%**

The project area is the former site for Garrison Elementary School. The site currently contains vacant buildings, ornamental plantings, play yards and hardscaping. Due to its closure and lack of maintenance, the fields have transitioned to ruderal plantings (see Plate 1 below). However, along the terrace at the northern portion of the property, sporadic native plants persist (see Figure 2).

2.2.1 - Vegetation Communities

The vegetation communities (also referred to as natural communities) within the project site (with exception of disturbed/ruderal and bare ground) are classified according to the Manual of California

Vegetation Classification System (California Native Plant Society) for California Terrestrial Natural Communities (see Figure 2 below).

Ornamental (CDFW Code: Not Applicable) – 1.6 acres

This habitat type is not considered sensitive, but it does provide cover, nesting, and foraging habitat for raptors and other species. Elements of this plant community can also serve as a "bridge" between local riparian communities for various avian species.

Within the project site, this vegetation community was dominated by ornamental trees including shamel ash (*Fraxinus uhdei*), Aleppo pine (*Pinus halepensis*), and others (see Section 3 below). Shrubs within the site are dominated by Sydney golden wattle (*Acacia longifolia*), coastal wattle (*Acacia cyclops*), Myoporum (*Myoporum tenuifolium*), Chinese juniper (*Juniperus chinensis*), iceplant (*Carpobrotus* sp.), and others. Ruderal species, such as spiny sowthistle (*Sonchus asper*) and non-native grasses were also noted.

Disturbed/Ruderal Community (CDFW Code: Not Applicable) – 2.2 acres

This plant community is a relative of the Mediterranean non-native grassland described by Keeler-Wolf and Evans 2009 (see photoplate 3 below). The primary species found within this community consist mostly of common mediterranean grass (*Schismus barbatus*), Russian thistle (*Salsola sp.*) and red-stemmed filaree (*Erodium cicutarium*). Ruderal and non-native grassland communities can contain native perennials and annual forbs (i.e. wildflowers), especially in years with plentiful rain.

Within the project site, this community mostly occurred in the large field to the NE that has gone fallow. The primary species noted included spiny sowthistle (*Sonchus asper*), Maltese centaury (*Centaurea melitensis*), hoary mustard (*Hirschfeldia incana*), wild radish (*Raphanus raphanistrum*), storksbill (*Erodium cicutarium*) and non-native grasses.

Diegan Coastal Sage Scrub (CDFW Code: 32.200.00) – 0.1 acres

Diegan Coastal Sage Scrub (DCSS) is a drought-deciduous community in Southern California, dominated by low-growing, fragrant shrubs. Its diverse understory includes both annual and perennial forbs and grasses. In periods of dryness, including summer and extended drought, many of the shrubs lose their leaves entirely, only to regenerate them when rain returns. This habitat primarily thrives on dry south-facing slopes, hillsides, and clay-rich soils. Notable plant species within this community include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyotebrush (*Baccharis pilularis*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), lemonade berry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and others.

Within the project site, this plant community was only present on the sloped terrace along the northwestern portion of the site and only represented by a limited number of species; representative

species included California sagebrush (*A. californica*), California buckwheat (*E. fasciculatum*), coyotebrush (*B. pilularis*), and lemonade berry (*R. integrifolia*) among others.

Ornamental with Sporadic Elements of Relic DCSS (CDFW Code: Not Applicable) – 0.7 acres

This plant community was located along the terraced slope bordering the NW portion of the property, adjacent to the DCSS to the east. The vegetation present included ornamental species, dominated by Aleppo pine (*P. halepensis*), coastal wattle (*A. cyclops*), iceplant, and manatoka (*M. tenuifolium*), but sporadic, relic native species of lemonade berry (*R. integrifolia*), coyotebrush (*B. pilularis*), California buckwheat (*E. fasciculatum*), and California sagebrush were also noted.

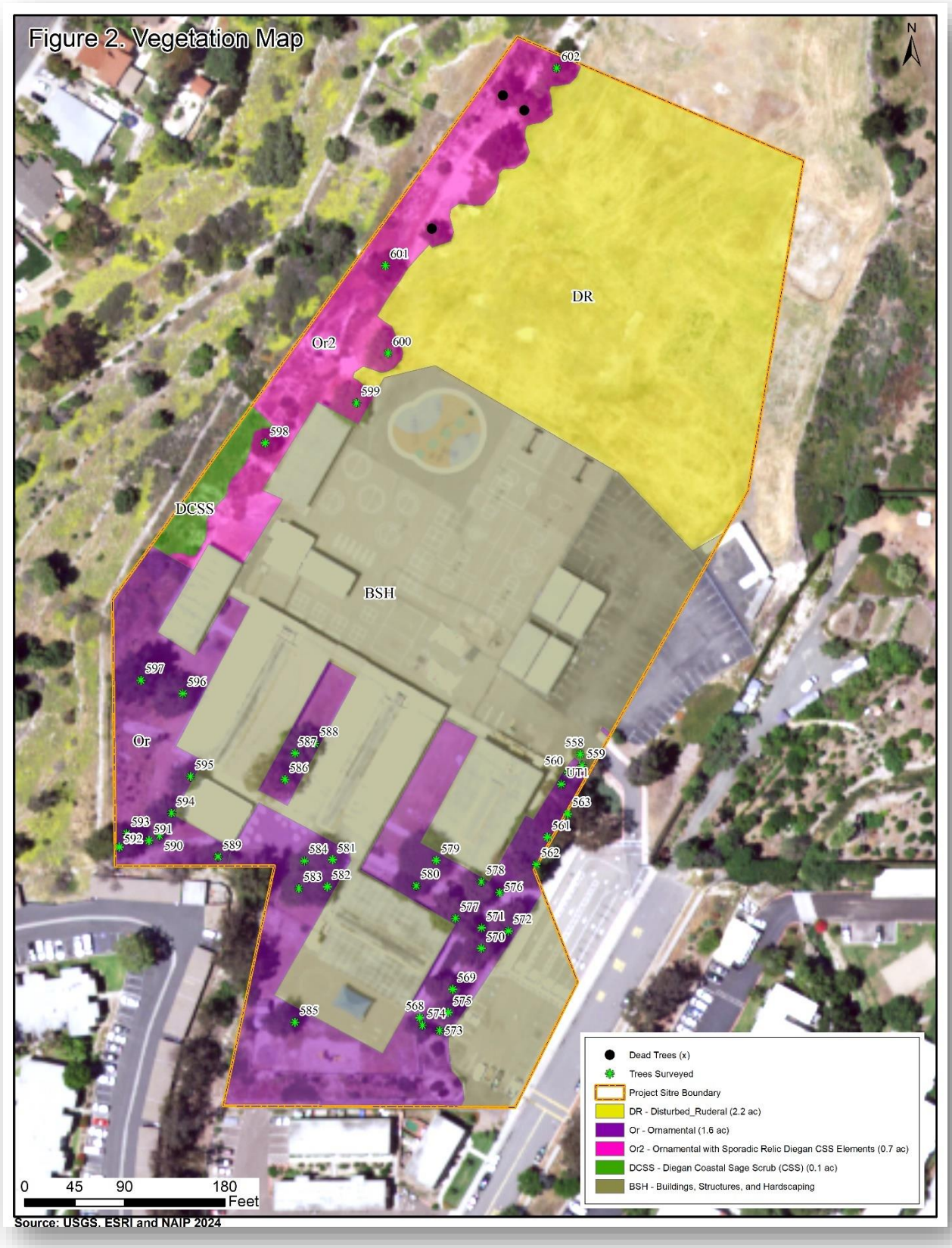


Figure 2. Vegetation Map
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Or2
DCSS
BSH
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UT1
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Dead Trees (x)
Trees Surveyed
Project Sitre Boundary
DR - Disturbed_Ruderal (2.2 ac)
Or - Ornamental (1.6 ac)
Or2 - Ornamental with Sporadic Relic Diegan CSS Elements (0.7 ac)
DCSS - Diegan Coastal Sage Scrub (CSS) (0.1 ac)
BSH - Buildings, Structures, and Hardscaping
0 45 90 180
Feet
Source: USGS, ESRI and NAIP 2024

Plate 1. This is an eastern view of a paved area within the central portion of the site, with a field in the background, composed of ruderal vegetation.

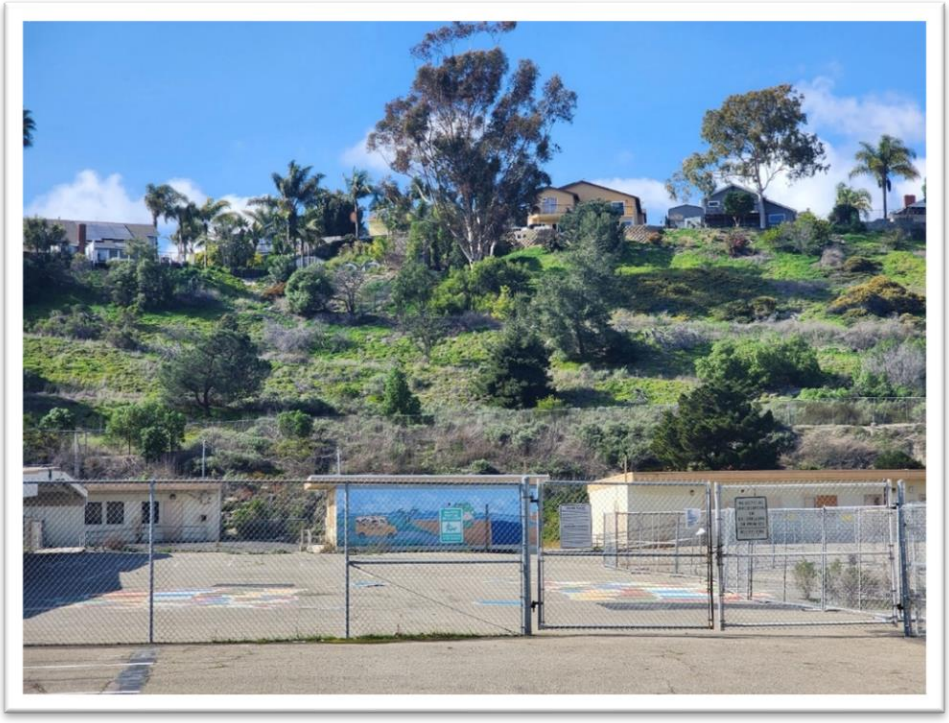

Plate 2. This is a northern view at the terrace just beyond the pavement showing ornamental vegetation with relic native plants seen sporadically on the lower hillside.

2.2.2 - 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 and wildlife, contributing to spatial complexity, species richness as well as 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, there is a low diversity of tree species at 11, with the top three species represented composing 66.7% of the total tree population present. The subject trees are diverse in stature with variation in tree height and tree scaffolding. No mature trees observed were California natives.

2.3 - Assignment and Scope of Survey

CalPacific Sciences (CPS) was assigned to conduct a tree survey and health assessment of all trees within the project area. In addition, a limited vegetation map was also included in this effort. The survey was primarily performed to identify the various tree species found within the project boundary, assess their health, and provide insight as to which trees may be retained as part of the planned improvement. A limited health assessment was performed cataloging the health and stature parameters of each tree onsite. This 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 Oceanside'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. Unless otherwise dictated by the local regulation, trees with a DBH of >4 inches 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. As indicated earlier, no invasive procedures were performed. 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-Decline/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 Hazard 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.

A target is a 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 (City of Oceanside)

The City of Oceanside has limited provisions within its Municipal Code (Code or MC) relating to tree preservation and protection, most of which pertain to public property within the City property (street rights-of-way, parkways, etc.). Several key provisions are provided below and appear to be the only ones applicable to the site, given the small-scale proposed project. This list is NOT all-inclusive and further review of the Code and follow-up with the City's planning department are recommended.

2.6.1 - City Trees (Section 31A.1)

The superintendent of the Parks and Recreation Department of the City appointed shall have exclusive jurisdiction and supervision over all trees, shrubs, hedges, plants and grassy areas planted or growing in streets, public areas and parkways in the city.

2.7 - Limitations and Exceptions of Assessment

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 the risk of tree failure/decline, it does not fully remove it.

California has a Mediterranean climate, and the coastal 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. Ultimately, subject tree ownership can only be <u>estimated</u> using these tools, and the details contained herein can only be used <u>as a guide</u>. Definitive tree ownership can only be accurately determined by the site plan engineer and City planning department.

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 arborists 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, 42 trees consisting of 11 distinct species were assessed (see Figure 3 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.

Source: USGS, ESRI and NAIP 2024

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
Aleppo Pine *Pinus halepensis*	The Aleppo pine tree is a monecious (separate male and female flowers on the same plant) member of the pine tree family *Pinaceae* and typically grows in USDA Hardiness zones 9-10. This species is drought resistant and is native to western Mediterranean. It is erect or spreading and requires ample growing space. It has a conical shape with evergreen foliage. Height: 30 - 60 feet. Width: 20 - 40 feet. Growth Rate: 24 to 36 Inches per Season. This species has a longevity greater than 150 years. Exposure prefers full sun to partial shade and moist to dry soil. This species tolerates a wide range of pH it is drought tolerant. Clay, loam or sand texture. Its branch strength is rated as strong and root damage potential is rated as moderate. It is susceptible to aphids and spider mites, *Phytophthora*, root rot and pitch canker. *This species of pine is also known to be susceptible to tree failure (University of California Tree Failure Program).*	14
American Linden *Tilia americana*	This deciduous tree is from the *Tiliaceae* family. It is native to eastern North America. It boasts a large, broad crown adorned with heart-shaped leaves. During its flowering season, it produces fragrant, yellowish flowers that attract bees. The wood of this tree is soft and light-colored. Its water use rating is medium, and it thrives in Sunset zones 1-17 and USDA zones 3-8. However, it does not tolerate shade. The soil texture it prefers ranges from loam to sand or clay, and it can adapt to soil pH levels from very alkaline to very acidic. With a growth rate of approximately 24 inches per year, it reaches a maximum height of 70 feet and has a canopy width of 20-25 feet. Its branches possess medium strength, and its root damage potential is moderate. While it attracts bees, birds, and squirrels, it is susceptible to root rot, sooty mold, verticillium, aphids, spider mites, and scales. On the bright side, it exhibits resistance to verticillium.	2
Carrotwood *Cupaniopsis anacardioides*	This species is from the *Sapindaceae* (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. It has evergreen foliage. Shading Capacity Rated as Moderate in Leaf. It reaches a height of up to 40 feet and a width of up to 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.	1
Chinese Elm *Ulmus parvifolia*	This species is drought tolerant but is susceptible to Texas root rot in the desert. It has the 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 *Ulmaceae* (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. 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,	1

	sooty mold and verticillium. Its branch strength is rated as medium weak to medium and root damage potential is rated as moderate.	
Chinese Juniper *Juniperus chinensis*	This species is native to northeast Asia grows in China, Mongolia, Japan, Korea and the southeast of Russia. This tree is a utility friendly tree and has irregular, twisted branches and fragrant leaves. It also has evergreen foliage. Trees may be referred to as male or female (dioecious), and it is part of the family, *Cupressaceae.* Height: 10 - 15 feet. Width: 6 - 10 feet. This tree has a growth rate of 24 inches per year and can live 40 to 150 years. The Sunset Zones includes zones 1 – 24, and the USDA Hardiness Zones ranges 5 - 11. It tolerates exposure from Full Sun to Partial Shade. It also tolerates moist to Dry Soil consisting of Clay, Loam or Sand Texture. Highly Acidic to Highly Alkaline Soil pH. It is resistant to Texas root rot. Susceptible to beetle borers and spider mites, armillaria, root rot and rust. Its branch strength is rated as medium strong, and its root damage potential is rated as low. Desirable wildlife plant and attracts birds.	4
Italian Stone Pine *Pinus pinea*	This species is native to the Mediterranean Region. It is a broad, flat-topped tree with age and needs ample room. It is a source for pine nuts. Its growth habit is erect or spreading and requires ample growing space. Its form is conical, rounded or umbrella shaped with evergreen foliage. Height: 40 - 80 feet. Width: 40 - 60 feet. Growth Rate: 24 to 36 Inches per Season. Longevity 50 to 150 years. Exposure Full Sun to Partial Shade. Moist to Dry Soil. Drought tolerant. Loam or Sand Texture. Susceptible to Aphids, Phytophthora, Root Rot and Pitch Canker. Branch Strength Rated as Weak to Medium Weak. Root Damage Potential Rated as Moderate.	1
Lemon-scented Gum *Corymbia citriodora*	This species from the Myrtaceae (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.	1
Myoporum *Myoporum laetum*	The *Myoporum laetum*, native to New Zealand, belongs to the *Scrophulariaceae* (figwort) family. It presents as a dense, low-growing tree or bush. While its fruit can be messy, it's essential to note that it is poisonous. The Myoporum Thrip is causing severe damage to these trees in Southern California landscapes. The water use rating for this tree is medium (according to SelecTree). It thrives in Sunset zones 8-9, 14-17, and 19-24, as well as USDA zones 9 and 10. The preferred sunlight is full sun. It adapts well to loam or sand with a pH range from slightly alkaline to slightly acidic. Its soil salinity tolerance is considered inland moderate and coastal good. The maximum tree height reaches approximately 30 feet, with a canopy width ranging from 10 to 20 feet. The growth rate is approximately 36 inches per year. Branch strength is rated as medium weak, and its root damage potential is rated as moderate. Despite its toxicity, it is deer resistant. However, it is susceptible to sooty mold and aphids, while showing resistance to thrips.	6
Shamel Ash *Fraxinus uhdei*	This large tree species is in the *Fraxinus* (olive) family and is used widely in Southern California. It is native to Mexico and had a growth habit that is erect or spreading and requires ample growing space. Oval Shape. Has Evergreen to Partly Deciduous foliage. Height: 80 feet. Width: 60 feet. Growth Rate: 36 or More Inches per Season. Longevity 50 to 150 years. SelecTree Water Use Rating: Medium. It grows in Sunset zones 9, 12 – 24 and USDA zones 8, - 10. It tolerates exposure to full sun to partial shade and moist to dry soil. It tolerates clay, loam or sand texture. Susceptible to aphids, scales and white fly, fusarium, root rot, sooty mold and verticillium. Its branch strength is rated as medium weak and root damage	8

	potential is rated as high. This species is resistant to oak root fungus and is susceptible to Texas root rot.	
Silver Dollar Gum *Eucalyptus polyanthemos*	This species is native to Southeastern Australia and is from the *Myrtaceae* (myrtle) family. Its growth habit is erect or spreading and requires ample growing space. It typically has an oval Shape with evergreen foliage. Height: 30 - 75 feet. Width: 15 - 45 feet. Growth Rate: 36 or More Inches per Season. Longevity 50 to 150 years. It tolerates exposure to full sun to partial shade and wet to dry soil. It is drought tolerant and tolerates clay, loam or sand texture. Susceptible to beetle borers, oak root rot and root rot. Its branch strength is rated as medium, and its root damage potential is rated as moderate.	2
Tipu Tree *Tipuana tipu*	This medium sized tree is from the *Fabaceae* (pea) family and is native to Bolivia and Southern Brazil. Its SelecTree Water Use Rating is Medium, and it thrives in Sunset zones: 12 - 16, 18 – 24 as well as USDA zones: 9, 10, 11. It prefers Partial Shade to Full Sun in soil composed of Loam or Sand or Clay with a pH from Very Acidic to Slightly Alkaline. With a growth rate of 24-36 per year, it can attain a Maximum tree height of up to 50 feet with a canopy width of 25-50 feet. Its Branch strength is rated as Medium Weak, and its root damage potential is rated as Moderate. This tree has very showy yellow blossoms.	2
* California native tree species ** Cal-IPC (California Invasive Plant Council) invasive tree species		

Source: UFEI 2023

3.2 - Observations

During the field survey, observations were documented pertaining to disease, structural defects, and other notable instances. The situations described below were noted onsite, these potentially contributed to hazardous conditions, tree decline, poor growth form, etc.

3.2.1 - Survey Photographs

The plates below illustrate many of the situations noted above and are merely representative of what was documented during the site assessment.

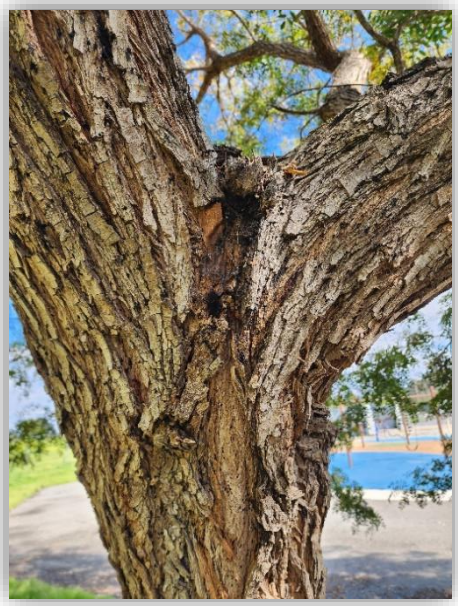

Plate 3. This is a view of a crotch with indication of decay (#599).

Plate 4. This is a view of a large canker at a former branch cut (#559).

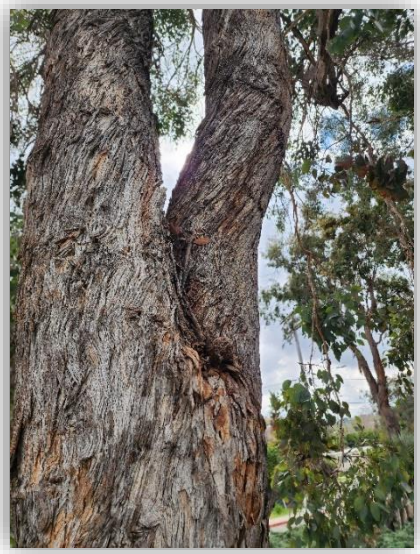

Plate 5. This is a view of a codominant stem with included bark (#559).

Plate 6. This is a view of a stem with irregular growth form affecting the balance of the overhead canopy mass (#564).

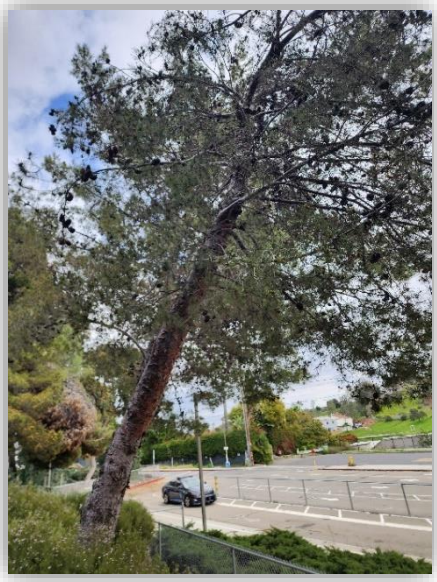

Plate 7. This is a view of a tree with an uncorrected lean (#572).

Plate 8. This is a view of a failed stem due to poor crotch development (#574).

Plate 9. This is a view of fungal fruiting bodies within the root crown of a tree (near #575).

Plate 10. This is a view of a diseased limb within the crown of a tree (#578).

Plate 11. This is a view of a limb topped with resultant water sprouting (#579).

Plate 12. This is a view of a structural root with decay (#582).

Plate 13. This is another view of a structural root with decay (#582).

Plate 14. This is a view of a failed branch with indication of termites (#602).

Plate 15. This is a view of an unclosed branch cut with indication of termites in the structural wood (#583).

Plate 16. This is a view of codominant stems with included bark (#585).

Plate 17. This is a view of mechanical bark damage resulting in exuding sap (#586).

Plate 18. This is a view of an unclosed branch cut with adjacent tissue decay (#590).

Plate 19. This is a view of a bore hole from a boring insect (#599).

Plate 20. This is a view of a tree with retrenchment/dieback (#601).

SECTION 4: DISCUSSION AND RECOMMENDATIONS

4.1 - Conclusion

The field survey associated with this report was performed on February 29, 2024. Subject trees were tagged with aluminum tags containing a unique number and assessed for 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, 42 mature trees were observed, comprised of 11 distinct species. The most prominent species surveyed was Aleppo pine (*Pinus halepensis*), comprising 33.3% of the total tree population present within the project area. No mature native trees were noted within the project boundary.

The subject trees appear to be regularly maintained, but several trees show indication of infection, disease, and potential failure. Due to disease or significant decay, 18 trees (35.3%) are in decline or pose a risk of failure and are not candidates for preservation. The remaining 24 trees may potentially be candidates for preservation if measures are taken to treat, trim, brace, and irrigate them.

4.2 - Discussion

Given the nature of the past land use within the project area, the majority of the vegetation present is ornamental. However, given the undeveloped areas adjacent to the site, native species have encroached onto the site, especially due to the lack of recent activity within the area.

The trees within the property were generally well-cared for and adequately trimmed until the closure of the school. Due to lack of irrigation and inadequate maintenance, several of the trees onsite are no longer candidates for preservation. In addition, two trees (#598 and #599) require further evaluation for risk if preserved.

4.3 - Recommendations

4.3.1 - Tree Removal and Replacement

As noted 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. Within the property, 18 trees should be considered for removal. Tree removal is recommended for those trees that are diseased or pose a risk of failure (see Appendix A below). 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 mitigation during the permitting process. Recommended mitigation is 1:1 (one-inch DBH may be installed for each inch DBH lost with new tree equivalent). For multi-stemmed specimens, a DBH equivalent may be considered based on the two-largest stems. Credit may also be issued for trees in poor health, and an in-lieu payment may be an alternative for tree removal. *These are only recommendations. Since mitigation is not specified in the Municipal Code, these are at the discretion of the Planning department.*

Replacement tree species chosen for mitigation should be in accordance with the City-approved tree list (if available). 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. Deviation from the aforementioned recommendation is at the discretion of Oceanside's Planning Department.

4.3.2 - Trees Preserved

Removal of living, native and non-native trees may result in a biological impact. If it is decided to preserve any trees onsite, ongoing maintenance and monitoring are recommended; this is to ensure public safety and minimize liability due to potential tree failure. In addition, tree protection measures must be taken to assure all trees preserved within the site (or adjacent to) will be adequately protected during construction activity (see Appendix B below). Strategic pruning compliant with ISA standards must be performed to subordinate non-primary, codominant stems, and canopy deadwood should be removed. Regular care and maintenance are recommended according to ISA standards. It is also recommended that several trees onsite be trimmed to remove deadwood and reduce the risk of tree failure and limb-drop (if preserved).

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 550 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[1]	DBH (inches) 1st Stem	2nd Stem	3rd Stem	4th Stem	5th Stem	6th Stem	Total	Height (feet)	Canopy Width (feet) (north on top)	Canopy Cover (sq ft)	Health	Structure	Risk	Recommendation	Conclusion
558	Chinese Juniper	5	4					9	17	9 / 4 / 7 / 7	143	2	2	2	Prune for safety	Preserve
Good form and vigor																
559	Silver Dollar Gum	11						11	41	19 / 21 / 18 / 14	1017	2	2-3	2		Consider Removal
Good form and vigor, codominant stem removed, canker at flare																
560	Chinese Juniper	5						5	15	8 / 4 / 6 / 5	104	2	2	2	Prune for safety	Preserve
Lean. Good vigor																
561	Italian Stone Pine	15	14	10	12			51	53	26 / 27 / 22 / 20	1771	2	2	3	Prune for safety	Preserve
Good vigor, multi-stemmed																
562	Aleppo Pine	20						20	54	13 / 18 / 17 / 25	1046	3	2	3		Consider Removal
Poorly formed canopy, upper canopy deadwood,																
563	Silver Dollar Gum	20						20	71	35 / 35 / 26 / 23	2779	2-3	2-3	2-3	Prune for safety	Preserve
Good form and vigor, poor flare development, epicormic stump sprouter, possible soil lifting, lean																
568	Myoporum	7	6					13	16	6 / 9 / 7 / 5	143	3-4	3	3		Consider Removal
Severe decline																
569	Aleppo Pine	13						13	44	10 / 12 / 8 / 17	434	2-3	2-3	2-3	Prune for safety	Preserve
Fair form and vigor																
570	Aleppo Pine	14						14	47	17 / 17 / 15 / 15	804	2-3	2-3	2-3	Prune for safety	Preserve
Good form and vigor																
571	Aleppo Pine	16						16	37	8 / 9 / 7 / 12	254	2-3	2-3	2-3	Prune for safety	Preserve
Lean, good form and vigor																
572	Aleppo Pine	10						10	21	6 / 5 / 8 / 10	165	2-3	2-3	2-3	Prune for safety	Preserve
Lean, fair form and vigor																
573	Chinese Juniper	6						6	19	7 / 6 / 6 / 7	133	2	2	2	Prune for safety	Preserve
Lean, good form and vigor																
574	Myoporum	5.5						5.5	18	10 / 18 / 12 / 11	510	3	2-3	3		Consider Removal
Failed codominant stem, fair vigor																
575	Aleppo Pine	10.5						10.5	44	11	804	3	2-3	3		Consider Removal

Decreased vigor, multiple fungal bodies on root crown										11 18 24						
576	Aleppo Pine	10	10					20	49	27 18 25 17	1485	2-3	2-3	3	Prune for safety	Preserve
Good form and vigor, codominant stem with fair union																
577	Aleppo Pine	20						20	56	18 14 23 20	1104	2-3	2-3	2-3	Prune for safety	Preserve
Fair form and vigor, minor upper canopy deadwood																
578	Aleppo Pine	18						18	32	18 14 23 20	1104	3	2-3	3		Consider Removal
Fungal bodies on structural roots, increased liability, poor vigor																
579	Shamel Ash	33						33	48	30 30 25 25	2375	2-3	3	3	Prune for safety	Preserve
Good vigor, topped with water sprouting, minor deadwood																
580	Shamel Ash	19.5						19.5	46	18 17 17 18	962	3	2-3	3		Consider Removal
Bacterial infection on a lot of new growth, fungal body on root crown, mild to moderate dieback. May be able to treat.																
581	Shamel Ash	16						16	43	24 18 23 18	1352	3	2-3	3		Consider Removal
Indication of termites, fungal body at root crown																
582	Shamel Ash	16						16	48	20 18 20 17	1104	3	2	3		Consider Removal
Decayed structural roots, poor vigor, moderate retrenchment																
583	American Linden	7.5						7.5	33	18 15 14 15	754	3	2-3	3		Consider Removal
Severe decline, decay at structural roots																
584	Chinese Elm	4.5	4	4	5.5			18	28	14 14 15 12	594	3	2-3	2-3		Consider Removal
Decline, poor vigor, deciduous, exfoliating bark																
585	Shamel Ash	15.5						15.5	52	20 15 17 17	934	2-3	2-3	3		Consider Removal
Good vigor, codominant stems with included bark, minor dieback, brace codominant stems to keep																
586	Lemon Scented Gum	21						21	82	22 28 26 32	2289	2-3	2-3	2-3	Prune for safety	Preserve
Good form and vigor																
587	American Linden	11	8	8				27	50	21 21 27 18	1485	3	2-3	3		Consider Removal
Moderate retrenchment, decay at unclosed branch cut, chlorosis																
588	Carrotwood	8						8	29	14 13 14 11	531	2	2	2	Prune for safety	Preserve
Codominant stem, small tree																
589	Myoporum	10.5						10.5	26	10 14 13 9	415	2-3	2-3	2-3	Prune for safety	Preserve
Good vigor, lean, on slope, poor form, upper canopy deadwood																
590	Myoporum	6.5	3					9.5	20	10 9 9 9	269	3	2-3	3		Consider Removal
Indication of termites, bacterial infection, poor form, upper canopy deadwood																

591	Myoporum	4	4	3.5	4			15.5	19	6 12 8 11	269	3	2-3	3		Consider Removal
Multi-stemmed, upper canopy deadwood, decreased vigor																
592	Aleppo Pine	17.5						17.5	51	15 13 18 13	683	2-3	2-3	2-3	Prune for safety	Preserve
Good form and vigor																
593	Myoporum	6	5.5					11.5	19	3 10 4 5	95	3	3	3		Consider Removal
Multi-stemmed, bacterial infection, decreased vigor																
594	Shamel Ash	14						14	44	18 23 17 18	1134	2-3	2-3	2-3	Prune for safety	Preserve
Minor upper canopy deadwood, vigor ok																
595	Shamel Ash	17						17	43	18 16 16 15	829	3	2-3	3		Consider Removal
Decay in crotch, moderate upper canopy deadwood																
596	Shamel Ash	18						18	54	22 16 22 21	1288	2-3	2-3	2-3	Prune for safety	Preserve
Good form, formerly topped with water sprouting																
597	Aleppo Pine	22						22	78	27 25 32 28	2462	2-3	2-3	2-3	Prune for safety	Preserve
Good form and vigor, on slope																
598	Aleppo Pine	15						15	33	15 11 16 13	594	2-3	2-3	2-3	Prune for safety Evaluate for risk	Preserve
Good form and vigor, on slope																
599	Tipu	12						12	34	20 22 18 28	1520	2-3	2-3	3	Prune for safety, Evaluate for risk and brace	Preserve
Good form and vigor, small borer holes																
600	Tipu	11						11	33	21 16 18 21	1134	2-3	2	2-3	Prune for safety	Preserve
Good form and vigor, small cankers, borers																
601	Aleppo Pine	18	11					29	37	17 16 18 18	934	2-3	2-3	2-3	Prune for safety	Preserve
Fair form and vigor, on slope																
602	Aleppo Pine	18.5						18.5	32	27 14 19 16	1134	3	2	3		Consider Removal
Borers, moderate to severe upper canopy deadwood																
UT1	Chinese Juniper	4.5						4.5	15	3 6 4 5	64	2	2	2	Prune for safety	Preserve
Good form and vigor																

Appendix B –Tree Protection during Construction

Construction activity near trees poses 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 greatly cause harm and structural instability to trees and cause 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 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.

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 occasional rinsing with a solution of water and insecticidal soap will help control pests.

6. 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.
7. 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.