

PROTECTED TREE REPORT
for
the Meadows at Bailey Canyon Project
City of Sierra Madre, California

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JANUARY 2022

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
City	City of Sierra Madre
ISA	International Society of Arboriculture
project	The Meadows at Bailey Canyon Project

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1 Introduction

This protected tree report provides an inventory and evaluation of the protected trees located on the proposed The Meadows at Bailey Canyon (project). The project site is located in the City of Sierra Madre, California (Figure 1, Project Location). As such, this protected tree report covers the regulations and requirements for the protection and removal of protected trees within the jurisdiction of the City of Sierra Madre (City).

NUWI Sierra Madre LLC retained Dudek to conduct a tree inventory and assessment for the project site. A Dudek International Society of Arboriculture (ISA)-Certified Arborist performed various functions associated with surveying, inventorying, and evaluating the condition of all trees located within the project site to meet the requirements of the City of Sierra Madre Municipal Code, Chapter 12.20, Tree Preservation and Protection.

The purpose of this protected tree report is to present the physical characteristics and mapped locations of the site's protected trees that are to be removed or protected in place during the proposed grading and construction-related activities. This protected tree report addresses protected and non-protected oak trees on the project site.

1.1 Project Location

The project site is located in the City of Sierra Madre, in the foothills of the San Gabriel Mountains in Los Angeles County. The project site lies just east of the City of Pasadena and north of the City of Arcadia. The project is located on a southerly 17.39 acres of the Congregation of the Passion, Mater Dolorosa Community, 700 N. Sunnyside Avenue, Sierra Madre, CA 91024. The proposed project would also include off-site improvements to Carter Avenue, between the southeastern portion of the project site boundary and Lima Street.

1.2 Site Characteristics

The project site is located within the Congregation of the Passion, Mater Dolorosa Community, which has residential areas to the west and south, a large retention basin to the east, and the foothills of the San Gabriel Mountains to the north. The proposed project area is located in the southern portion of the Center is separated from the foothills by buildings and landscaped areas.

1.3 Project Description

The proposed project will develop approximately the lower 17.30 acres of property with a residential development of 42 detached single-family dwellings, a 3.045-acre dedicated neighborhood park, and dedication of approximately 35 acres of open space to the City of Sierra Madre. The applicant would also acquire approximately 9 feet of public right-of-way in order to widen each travel lane to 12 feet and add a 5-foot sidewalk on the north side of Carter Avenue. The total off-site improvement area would be approximately 4,560 square feet (0.10 acres).

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2 Methods

2.1 Individual Tree Evaluation

Dudek mapped tree locations for all trees located on the project site. Tree mapping was conducted using a Trimble Pathfinder Pro XH GPS receiver with H-Star Technology. Since tree canopies can sometimes cause loss of satellite lock by blocking the line-of-sight to satellites, an electronic compass and reflectorless, electronic distance-measuring device were also used in mapping tree locations. The reflectorless, electronic distance-measuring device/compass combination operates in concert with the Pathfinder system to position offsets, and offset information is automatically attached to the GPS position data string. The electronic tree locations were then evaluated using ArcView 10.4 software to determine the position of the trees related to the project development footprint.

All inventoried and assessed protected trees were tagged with an aluminum tag bearing a unique identification number, which was placed on the trunk of each tree. These numbers correspond to the tree attribute information presented in the Tree Information Matrix in Appendix A. Tree trunk diameters were measured using a diameter tape providing adjusted figures¹ for diameter measurements when wrapping the tape around an object's circumference. Diameter measurements were taken using protocol provided by the Council of Tree and Landscape Appraisers in the Guide for Plant Appraisal (ISA 2000). The trunk diameter measurement of each tree was taken at 4.5 feet above the ground along the trunk axis, with common exceptions. For example, in cases where a tree's trunk was located on a slope, the 4.5-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively), and the measurement was made at this point. Tree height was visually estimated by experienced tree surveyors. Tree canopy diameters were typically estimated by "pacing-off" the measurement based on the investigator's knowledge of their stride length or by visually estimating the canopy width. The crown diameter measurements were made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter. Additionally, Dudek arborists calculated composite trunk diameters for multiple-stem trees according to ISA standards. According to these standards, the sum of all stem diameters was calculated to ascertain composite trunk diameter values for multiple-stem trees.

Pursuant to the Guide for Plant Appraisal (ISA 2000), tree health and structure were evaluated with respect to five distinct tree components: roots, trunk, scaffold branches, small branches, and foliage. Each component of the tree was assessed with regard to health factors such as insect and pathogen damage, mechanical damage, presence of decay, presence of wilted or dead leaves, and wound closure. Tree health and structure were graded as good, fair, poor, and dead, with "good" representing no apparent problems, and "dead" representing a dying and/or dead tree. Good condition trees exhibit acceptable vigor, healthy foliage, and adequate structure, and lack any major maladies. Fair condition trees are typically those with few maladies but declining vigor. This method of tree condition rating is comprehensive and results in ratings that are useful for determining the status of trees based on common urban forestry standards.

Individual tree attribute data is presented in Appendix A, Tree Information Matrix, and tree locations are presented in Appendix B1 and B2, Tree Location Exhibit. Representative protected tree photographs are presented in Appendix C.

¹ Inches divided by 3.14 (π) provide diameter measurement in inches.

2.2 Tree Impact Analysis

Dudek's ISA-certified arborists determined tree impacts by conducting a spatial analysis of individual tree locations and canopy extents visible in project site aerial imagery in relation to the proposed development plan. The tree dataset, digital aerial imagery, and site development planning data were evaluated using GIS software to determine where individual trees were located in relation to proposed development areas. Per the City Tree Preservation and Protection Ordinance, the root zone of a tree is considered the circular area surrounding the trunk with a radius fifteen times the trunk diameter or the area between the dripline and the trunk, whichever is greater. The tree impact analysis reflects the arborists understanding of the site grading and construction impacts at the time of this report.

2.3 Scope of Work Limitations

No root crown excavations or investigations, internal probing, or aerial canopy inspections were performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden or inaccessible inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation or relocation in an urban setting be thoroughly inspected for internal or subterranean decay by a qualified arborist before finalizing preservation or relocation plans.

3 Observations

3.1 Individual Trees

~~117~~ were inventoried within the biological study area and the off-site improvement area (101 trees were inventoried within the biological study area and 16 within the off-site improvement area). The biological study area includes ~~eleven~~ ~~ten~~ coast live oak (*Quercus agrifolia*) trees (~~ten within the biological study area and one within the off-site improvement area~~). ~~Of the 11 eleven coast live oak, a~~ All 110 of the oak trees that meet the City's criteria for a protected oak tree. The 16 trees inventoried in the off-site improvement area meet the City's criteria for a protected tree as they are located on City-owned property within Bailey Canyon Wilderness park. Appendix B1 and B2 presents the location of the individual trees mapped and assessed for the proposed project. Overall, the trees exhibit growth and structural conditions that are typical of their location in an undeveloped urban landscape and park setting. The trees include various trunk and branch maladies and health and structural conditions. As presented in Appendix A, ~~32.52~~ 29% of the individually mapped trees (~~3829~~ trees) exhibit good health; ~~45.38~~ 53.48% (~~5348~~ trees) are in fair health; and ~~22.24~~ 26.4% (~~264~~ trees) are in poor health. Structurally, ~~13.76~~ 16% (~~16~~ trees) of the individually mapped trees are considered to exhibit good structure, and ~~70.17~~ 82.77% (~~8277~~ trees) exhibit fair structure; and ~~16.28~~ 19.8% (~~198~~ trees) have poor structure. The trees in good condition exhibit acceptable vigor, healthy foliage, and adequate structure, and lack any major maladies. Trees in fair condition are typical, with few maladies but declining vigor. Trees in poor condition exhibit declining vigor, unhealthy foliage, poor branch structure, and excessive lean. No pests or pathogens were observed on site.

Trees within the biological study and off-site improvement area vary in size and stature according to species and available growing space. The site's trees are composed of single- and multi-stemmed trees, with single-stemmed trunk diameters that range from 2 to 44 inches, and multi-stemmed trunk diameters that range from 4 to 76 inches. Tree heights vary from 8 to ~~6055~~ feet. Tree canopy extents range from 5 feet to approximately 70 feet.

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4 Regulatory Definitions and Requirements

A tree inventory and assessment of the project site was performed pursuant to the City of Sierra Madre Tree Preservation and Protection Ordinance. The following is an outline of the key aspects of the ordinance.

4.1 Definitions

4.1.1 City of Sierra Madre Tree Preservation and Protection

Trees subject to City permit requirements include those defined by Title 12.20.020, as follows:

‘Protected tree’ means any legacy tree as defined herein, any tree planted on city-owned property, including parkways, or California Scrub Oak (*Quercus berberidifolia*), Coast Live Oak (*Quercus agrifolia*), Coastal Scrub Oak (*Quercus dumosa*), Engelmann Oak (*Quercus engelmannii*), Southern California Black Walnut (*Juglans californica*), or Western Sycamore (*Platanus racemosa*) or other tree species as added from time to time by city council resolution whose trunk exceeds a diameter of four inches as measured at four and one-half feet above natural or established grade.

4.2 Regulations

4.2.1 City of Sierra Madre Tree Preservation and Protection

The City adopted the ordinance to “contribute to a better public understanding of the value of the city’s trees and to prohibit indiscriminate damage and destruction of this significant resource.”

Under the City Ordinance:

A. It is unlawful for any person, firm or corporation to remove, damage, or trim substantially any protected tree (as defined herein) on private property without the written consent (permit) of the director of public works. There shall be no fee charged the applicant for this permit, provided the action being taken on the tree is not associated with development/construction related impacts.

B. In the event that a property owner applies for a building permit for a property from which a protected tree has been removed in the prior twelve months, the property owner shall provide mitigation for the removal of the tree in the form of replacement trees in accordance with the mitigation guidelines described in Section 12.20.040(C).

C. In the event that a property owner has been found to have removed a protected tree without a permit the property owner shall provide mitigation for the removal of the tree in the form of replacement trees in accordance with the mitigation guidelines described in Section 12.20.040(C), and the commission may recommend to the planning commission that approval of building permit application or other development entitlement application be prohibited for up to five years. In determining whether to

impose such a five-year prohibition, the planning commission shall consider whether the tree violation appears to be in furtherance of development, as evidenced in the extent of damage, removal, damage to the root system, and/or excessive trimming of trees within the buildable area of a property; oral or written admissions or repeated actions taken in spite of prior warnings; notices of violations; and the number and size of the damaged and/or removed trees.

4.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (1918) requires tree removal and potentially disturbing construction activities to occur during certain time periods to avoid harassment of nesting birds. According to this act, no construction or other disturbing activities can occur within 300 feet of an active bird nest (500 feet for listed species) from February to September each year. Biological surveys should be conducted to provide clearance for project initiation.

5 Impacts

Tree impacts were determined using GIS software and spatial locations of trees relative to the project's impact areas (development footprint). Impacts were further determined based on Dudek's experience with native and non-native trees and their typical reactions to root disturbances from construction activities, such as soil compaction, excavation, and grading. The impact analysis results presented herein were used for developing appropriate mitigation measures for the proposed project.

Impacts to trees can be classified as direct or indirect. Direct impacts to trees related to site development are typically the result of physical injuries or changes caused by machinery involved with the development process. Direct impacts include tree removal, root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Indirect impacts include alterations to stream flow rates, diversion of groundwater flow, introduction of exotic plant species, and alterations to disturbance regimes. Wider-scale alterations to the area near trees, as well as specific changes that occur around the trees, are important considerations.

In general, there is a great deal of variation in tolerance to construction impacts among tree species, ages, and conditions. It is important to know how a certain tree, based on its species, age, and condition, would respond to different types of disturbance. The trees on the project site are of varying ages and conditions. Mature specimens are typically more sensitive to root disturbance and grade changes. In general, healthy trees will respond better to changes in their growing environment. Trees of poor health or stressed conditions may not be vigorous enough to cope with direct or indirect impacts from construction activities.

Impact totals presented are based on conceptual disturbance limits and development plans as of the date of this tree report. As such, the actual number of trees subject to direct and indirect impacts may change as the detailed site planning process proceeds. Actual tree impact numbers may be lower than anticipated and as presented in this tree report once detailed grading plans are developed. Measures to reduce impacts are encouraged and would be implemented in the field during grading operations. Following completion of construction-related disturbances, actual protected tree impact totals would be updated and provided, along with revised mitigation totals.

5.1 Direct Tree Impacts

For the purposes of this tree report, direct impacts are those associated with tree removal or encroachment within the tree-protected zone defined by the City as, the circular area surrounding the trunk with a radius fifteen times the trunk diameter or the area between the dripline and the trunk, whichever is greater. Tree removal is expected to be required when the trunk is located inside or within 2 feet of the proposed limits of grading. Encroachment is expected when soil and roots are disturbed within the tree protected zone. Table 1 summarizes the number of trees by species that are expected to be directly impacted by construction. Direct tree impacts would result in the removal of ~~140~~ protected trees and an additional 91 non-protected tree. The locations of impacted trees within the proposed project site are presented in the Tree Location Exhibit in Appendix B1. The locations of impacted trees within the proposed off-site improvement area are presented in Appendix B2.

Table 1. Summary of Direct Tree Impacts

Species		Protected Trees		Non-Protected Trees	
Scientific Name	Common Name	Trees to Remove	Impacted but Not Removed	Trees to Remove	Impacted but Not Removed
<u>Cupressus arizonica</u>	<u>Arizona cypress</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>0</u>
<u>Cedrus deodara</u>	<u>deodor cedar</u>	<u>0</u>	<u>8</u>	<u>0</u>	<u>0</u>
<u>Eucalyptus cladocalyx</u>	<u>Sugar gum</u>	0	0	4	0
<u>Ficus macrophylla</u>	Morten Bay fig	0	0	10	0
<u>Jacaranda mimosafolia</u>	<u>Jacaranda</u>	0	0	29	0
<u>Juniperus chinensis 'Torulosa'</u>	Hollywood juniper	0	0	4	0
<u>Platanus racemosa</u>	<u>Western Sycamore</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>
<u>Olea europaea</u>	<u>Fruitless olive</u>	0	0	1	0
<u>Quercus agrifolia</u>	<u>Coast live oak</u>	10	0	1	0
<u>Quercus ilex</u>	<u>Holly oak</u>	0	0	2	0
<u>Quercus virginiana</u>	Southern live oak	0	0	1	0
<u>Sambucus canadensis</u>	American elderberry	0	0	1	0
<u>Schinus molle</u>	Peruvian pepper	0	0	1	0
<u>Syzygium australe</u>	<u>Brush cherry</u>	0	0	2	0
<u>Ulmus parvifolia</u>	Chinese elm	0	0	35	0
Total		140	10	91	0

5.2 Indirect Tree Impacts

Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Site-wide changes affecting trees include diverting runoff and stormwater, creating retention and detention ponds, relocating streams or making improvements to streams, lowering or raising water tables, altering the capacity for soil moisture recharge, removing vegetation, or damming underground water flow (Matheny and Clark 1998). For the purposes of this tree report, two trees located within the off-site improvement area will have indirect impacts as they are ~~indirect tree impacts are expected for trees~~ within 25 feet of the proposed project's development footprint.

5.3 Tree Impact Summary

In summary, 1150 ~~1~~ trees will be directly impacted (105 ~~1~~ removals) by the proposed project, of which, 140 are protected trees as defined by the City Tree Preservation and Protection Ordinance. Individual tree impacts can be found in Appendix A.

6 Mitigation

6.1 Determination of Minimum Replacement Standards

Any protected tree located on the project site that requires removal must be replaced on a 1:1 basis, with a like species, based on the City Tree Preservation and Protection Ordinance.

6.2 Recommended Mitigation

The City Tree Preservation and Protection Ordinance identifies tree replacement requirements for tree removal associated with a development project. In total, ~~140~~ protected trees may be removed for this project. As such, they should be replaced on a 1:1 basis with a like species. The specific location of individual mitigation tree plantings on site would be addressed in the mitigation planting plan or landscape design plan prepared for the site. The mitigation requirement and the approved tree replacement mitigation ratio is at the discretion of the City and subject to a final tree impact analysis. As such, the final tree numbers associated with tree replacement and other mitigation components may vary from that presented in this tree inventory and assessment.

Dudek recommends all mitigation tree plantings be subject to a 5-year monitoring effort by an independent third-party certified arborist. This monitoring effort would consider growth, health, and condition of the subject trees to evaluate success. The monitoring effort may result in a recommendation of remedial actions should any of the tree plantings exhibit poor or declining health.

In addition, 10 -protected trees located in the -off-site improvement area will experience direct impacts from the proposed widening of Carter Avenue. As such, tree protection is required and recommended to ensure that impacts to trees would be minimized to the full extent feasible. Dudek recommends that any preserved trees be protected according to the City tree protection measures set forth in section 7 of this report. Bbecause encroachment will occur an arborist would be required to be present on-site during the proposed widening of Carter Avenue. If construction impacts require tree removal, they would be replaced on 1:1 basis with a like species, consistent with the City's Tree Preservation and Protection Ordinance. Finally, per the City Tree Preservation and Protection Ordinance, the applicant shall obtain a permit for the removal of the 14 protected trees within the biological survey area and off-site improvement area.

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7 Tree Protection Measures

All trees on the site are expected to be removed. As such, tree protection measures are not required or recommended. However, if a tree is preserved on site, the tree must be protected according to the tree protection measures discussed in the City Tree Preservation and Protection Ordinance, as follows:

Tree Preservation and Protection Ordinance, 12.20.110 – Permit Procedure

D. Construction shall not be done in a manner which negatively affects the growth or health potential of a tree required to be preserved. To improve the chances for long term survival of such trees, the following protection standards shall apply:

- 1. All cut, fill and/or building foundations shall be located at least three times the affected tree's diameter from the outside edge of the trunk of any tree scheduled for preservation and/or from any tree on adjacent properties, unless, because of the species affected, a lesser distance is adequate, as may be determined by the tree expert. No material stockpiling, storage, placement of excavated soils or other changes in grade shall occur within the dripline of any tree, either temporarily, during construction or permanently.
- 2. All trees scheduled for preservation shall have the ground area surrounding the trunk, for which areas maintenance and protection is necessary during construction for the purpose of tree preservation, conspicuously designated by durable semi-permanent means. Such area shall be located outside the tree's dripline, if possible, and shall be designated prior to the start of construction. In no event shall the outer limits of the designated area be located closer than five feet from the outside edge of the trunk unless a lesser distance is determined adequate by the tree expert. Designated areas shall not be used for vehicle parking, shall be maintained in a natural condition, and not compacted.
- 3. In order to avoid unnecessary damage to the root system of trees, the applicant will be required to submit a utility trenching pathway plan to the department of public works for review and approval prior to issuance of a building permit. The plan must depict all systems to be placed below ground including but not limited to the following systems: storm and runoff drains; sewers; gas lines; electrical, cable television and telephone lines; and water mains. Additionally, the plan must show all lateral lines serving the proposed construction and any proposed irrigation system. The plan must include trees accurately located on the project site as well as an accurate plotting of their root zones. The plan should be developed considering the following guidelines:
 - a. The trenching pathway plan should avoid the root zone of any protected tree.
 - b. In cases where alternative routes are not available, tunneling under roots shall be used for all underground lines such as utility and drain lines in order to preserve roots two inches or larger in diameter. All tunneling shall be performed under the onsite supervision of the tree expert.
 - c. Wherever possible underground lines shall be combined in the fewest possible trenches.
 - d. Where it is possible to avoid some encroachment into root zones, the design must minimize the extent of such encroachment. The tree expert may require that these

encroachments and mitigation measures be documented in a supplemental report prepared by an arborist.

- 4. No more than one third of the root feeding zone of oak trees scheduled for preservation may be allowed to be damaged by new development, unless it can be demonstrated by an arborist, to the satisfaction of the city, that a greater area of the root feeding zone can be involved without damaging the tree.
- 5. Root feeding zone damage to other species shall be as allowed by the city tree expert. The tree advisory commission shall request technical assistance to determine standards for other tree species common to Sierra Madre, such report to be made available to the public at City Hall and the city library.
- 6. All approved construction work within the root zone of trees scheduled for preservation shall observe the following minimum tree protection practices:
 - a. Hand trenching shall be done at point of grade cuts closest to the trunk to expose the location of major roots, i.e., two inches in diameter or larger. Major roots shall be cut only with permission of the tree expert. In cases where rock or unusually dense soil prevents hand trenching, mechanical equipment may be approved; provided, that work inside the dripline is closely supervised by the city tree expert to prevent tearing or other damage to major roots.
 - b. Where root cutting is permitted, exposed major roots shall be cut with a saw. Major roots shall not be ripped by construction equipment.
 - c. Absorbent tarp or heavy cloth fabric shall be placed over new grade cuts and secured by stakes. Two to four inches of compost or woodchip mulch shall be spread over the tarp to prevent soil moisture loss. The organic covering material and tarp shall be thoroughly wetted twice per week to insure constant moisture levels until backfilling occurs.
 - d. Trimming of branches shall be done with a saw, cut clean and performed according to standards of the International Society of Arboriculture. No tree sealant shall be used on cuts.
 - e. Decks located above the root zone of trees scheduled for preservation shall be of post and beam construction to reduce the need for root pruning or removal.
 - f. On grade patios or paving that cover more than one third of the root feeding zone of oak trees shall be constructed of permeable materials that allow aeration and water penetration.
 - g. Planting and weed control beneath trees scheduled for preservation shall take into consideration the watering requirements of such trees, so as to prevent damage from over or under watering or other adverse effects on the health of the trees. Planting beneath native oak trees should be of special concern and should generally be avoided. (Installing lawn or other plantings that requires frequent watering insure a slow death for oak trees due to their sensitivity to over watering and susceptibility to oak root fungus.)

8 Conclusion

The project site contains ~~11704~~ trees, of which ~~2640~~ are protected by the City. Based on site and grading plans at the time of this report, it is expected that ~~140~~ protected trees will require removal. As such, the ~~140~~ protected trees that are proposed for removal must be replaced on a 1:1 basis, with a like species to meet the requirements of the City Tree Preservation and Protection Ordinance. The mitigation requirement and the approved tree replacement mitigation ratio is at the discretion of the City and subject to a final tree impact analysis. This protected tree report recommends that any remaining protected tree be subject to the protection measures outlined in the City Ordinance that, when implemented, minimize the possibility that the trees are inadvertently damaged during the construction process.

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9 Arborist's Disclosure Statement

This oak tree report provides conclusions and recommendations based only on a visual examination of the trees and surrounding site by an ISA-certified arborist and reasonable reliance on the completeness and accuracy of the information provided to the arborist. The examination did not include subterranean or internal examination of the trees.

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees; recommend measures to enhance the beauty and health of trees; and attempt to reduce the risk of living near them. Although trees provide many benefits to those who live near them, they also include inherent risks from breakage or failure that can be minimized but not eliminated.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms subject to attack by disease, insects, fungi, weather, and other forces of nature, and conditions that lead to failure are often hidden within trees and belowground. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced arborist. Arborists cannot predict acts of nature, including, without limitation, storms of sufficient strength, which can cause an apparently healthy tree to fail. Additionally, arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for any specific period of time. A tree's condition could change over a short or long period of time due to climatic, cultural, and/or environmental conditions. Further, there is no guaranty or certainty that recommendations or efforts to correct unsafe conditions will prevent future breakage or failure of a tree.

To live or work near trees is to accept some degree of risk. Neither the author of this oak tree report nor Dudek assume any responsibility for or will be liable for any claims, losses, or damages for damage to any tree, death or injury to any person, or any loss of or damage to any personal or real property.

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10 References

ISA (International Society of Arboriculture). 2000. *Guide for Plant Appraisal*. 9th edition. Council of Tree and Landscape Appraisers.

Matheny, N., and J.R. Clark. 1998. *Trees and Development: A Technical Guide to Preservation of Trees During Land Development*. International Society of Arboriculture. June 1, 1998.

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Appendix A

Tree Information Matrix

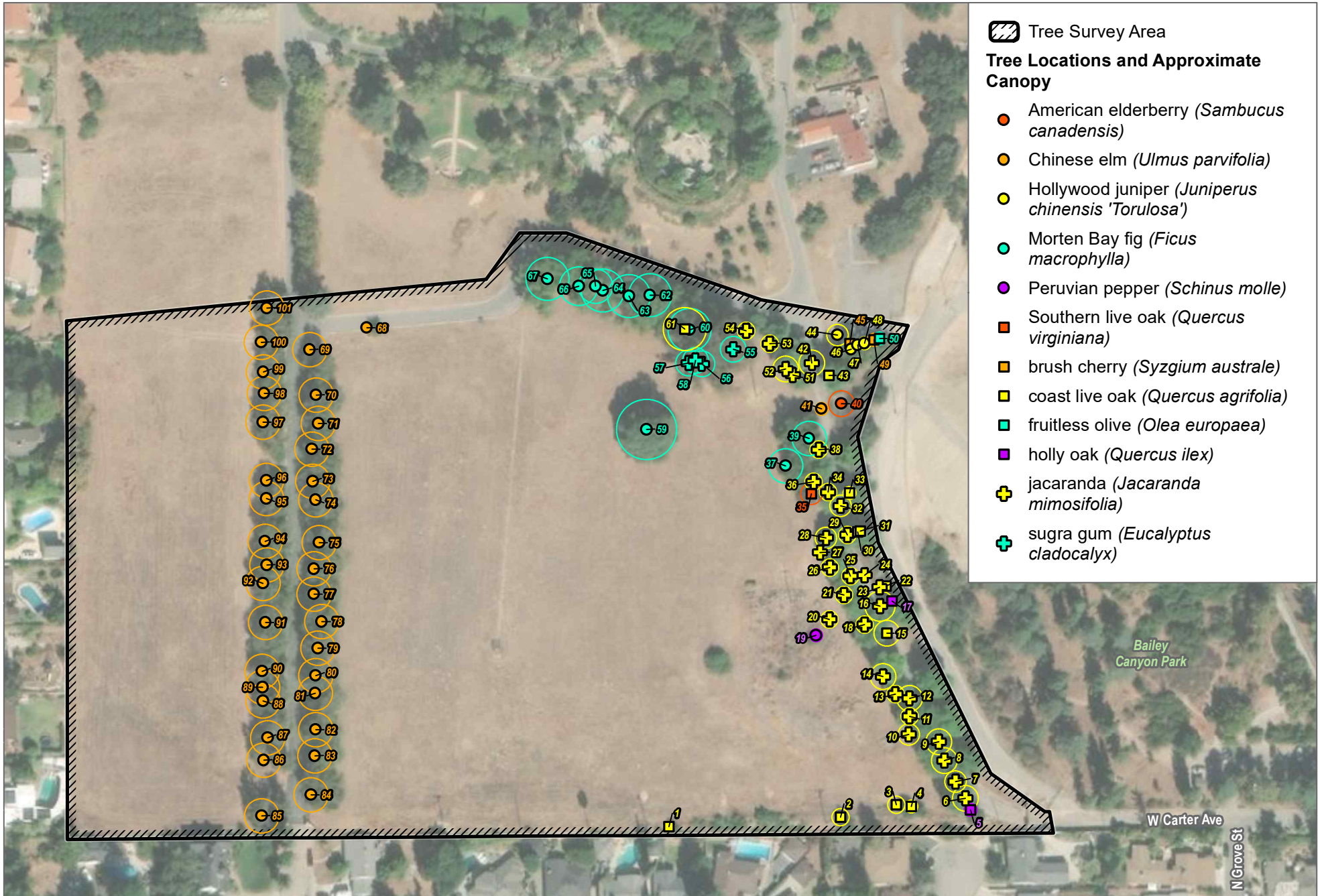
Appendix A - Tree Information Matrix

Tree No.	Botanical Name	Common Name	Impact	DBH (Inches)	Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Height (Feet)	Width (Feet)	Health	Structure	Protected	Notes	Latitude	Longitude
1	<i>Quercus agrifolia</i>	coast live oak	Removal	8	1	8	0	0	0	0	20	12	Fair	Fair	Yes		34.170836	-118.0633
2	<i>Quercus agrifolia</i>	coast live oak	Removal	33	5	8	7	6	6	6	25	20	Good	Fair	Yes		34.170867	-118.0627
3	<i>Quercus agrifolia</i>	coast live oak	Removal	26	3	9	9	8	0	0	25	20	Good	Fair	Yes		34.170907	-118.0624
4	<i>Quercus agrifolia</i>	coast live oak	Removal	12	2	6	6	0	0	0	15	15	Fair	Fair	Yes		34.170901	-118.0624
5	<i>Quercus illex</i>	holly oak	Removal	13	2	7	6	0	0	0	20	15	Fair	Poor	No		34.170891	-118.0622
6	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	22	1	22	0	0	0	0	30	30	Poor	Fair	No		34.170928	-118.0622
7	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	16	1	16	0	0	0	0	35	25	Fair	Fair	No		34.170981	-118.0622
8	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	19	1	19	0	0	0	0	30	30	Poor	Fair	No		34.171049	-118.0623
9	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	25	2	13	12	0	0	0	35	30	Fair	Fair	No		34.171109	-118.0623
10	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	27	2	14	13	0	0	0	30	25	Poor	Poor	No		34.171132	-118.0624
11	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	15	1	15	0	0	0	0	25	20	Poor	Poor	No		34.17119	-118.0624
12	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	29	2	16	13	0	0	0	35	30	Poor	Poor	No		34.171247	-118.0624
13	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	16	1	16	0	0	0	0	25	20	Poor	Poor	No		34.171262	-118.0624
14	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	20	1	20	0	0	0	0	30	30	Poor	Fair	No		34.171317	-118.0625
15	<i>Quercus agrifolia</i>	coast live oak	Removal	12	1	12	0	0	0	0	25	30	Fair	Fair	Yes		34.171456	-118.0625
16	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	19	1	19	0	0	0	0	40	35	Fair	Fair	No		34.171543	-118.0625
17	<i>Quercus illex</i>	holly oak	Removal	4	1	4	0	0	0	0	15	10	Fair	Fair	No		34.171559	-118.0625
18	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	18	1	18	0	0	0	0	25	20	Poor	Fair	No		34.171484	-118.0626
19	<i>Schinus molle</i>	Peruvian pepper	Removal	9	3	3	3	3	0	0	12	15	Fair	Poor	No		34.171449	-118.0627
20	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	16	1	16	0	0	0	0	30	20	Poor	Fair	No		34.1715	-118.0627
21	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	14	1	14	0	0	0	0	30	20	Poor	Fair	No		34.171578	-118.0626
22	<i>Quercus agrifolia</i>	coast live oak	Removal	2	1	2	0	0	0	0	8	6	Fair	Fair	No		34.171607	-118.0625
23	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	3	1	3	0	0	0	0	15	5	Fair	Poor	No		34.171604	-118.0625
24	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	4	3	2	1	1	0	0	10	8	Fair	Poor	No		34.171642	-118.0626
25	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	14	1	14	0	0	0	0	25	20	Poor	Fair	No		34.171639	-118.0626
26	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	16	1	16	0	0	0	0	25	20	Poor	Fair	No		34.171667	-118.0627
27	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	9	1	9	0	0	0	0	20	15	Poor	Fair	No		34.171715	-118.0627
28	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	22	2	11	11	0	0	0	20	25	Poor	Fair	No		34.171761	-118.0627
29	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	15	1	15	0	0	0	0	30	20	Fair	Fair	No		34.171771	-118.0626
30	<i>Quercus agrifolia</i>	coast live oak	Removal	6	1	6	0	0	0	0	20	10	Fair	Fair	Yes		34.171781	-118.0626
31	<i>Quercus agrifolia</i>	coast live oak	Removal	8	1	8	0	0	0	0	20	10	Fair	Fair	Yes		34.171783	-118.0626
32	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	15	1	15	0	0	0	0	30	25	Fair	Fair	No		34.171865	-118.0627
33	<i>Quercus agrifolia</i>	coast live oak	Removal	9	1	9	0	0	0	0	15	15	Fair	Fair	Yes		34.171905	-118.0626
34	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	14	1	14	0	0	0	0	35	20	Poor	Fair	No		34.171908	-118.0627
35	<i>Quercus virginiana</i>	Southern live oak	Removal	25	2	13	12	0	0	0	20	25	Fair	Fair	No		34.171903	-118.0628
36	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	15	1	15	0	0	0	0	25	20	Poor	Poor	No		34.171941	-118.0628
37	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	51	5	14	13	11	7	6	30	40	Fair	Fair	No		34.171992	-118.0629
38	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	14	1	14	0	0	0	0	30	20	Poor	Fair	No		34.172045	-118.0627
39	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	20	1	20	0	0	0	0	30	40	Fair	Fair	No		34.17208	-118.0628
40	<i>Sambucus canadensis</i>	American elderberry	Removal	27	2	17	10	0	0	0	20	30	Good	Fair	No		34.172191	-118.0626
41	<i>Ulmus parvifolia</i>	Chinese elm	Removal	4	3	2	1	1	0	0	10	15	Fair	Fair	No		34.172175	-118.0627
42	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	20	1	20	0	0	0	0	40	30	Fair	Fair	No		34.172322	-118.0628
43	<i>Quercus agrifolia</i>	coast live oak	Removal	4	2	2	2	0	0	0	12	8	Fair	Fair	Yes		34.172282	-118.0627
44	<i>Juniperus chinensis 'Torulosa'</i>	Hollywood juniper	Removal	34	4	12	9	7	6	0	30	25	Fair	Fair	No		34.172411	-118.0627
45	<i>Syzygium australe</i>	brush cherry	Removal	6	1	6	0	0	0	0	35	10	Fair	Poor	No		34.172384	-118.0626
46	<i>Juniperus chinensis 'Torulosa'</i>	Hollywood juniper	Removal	8	1	8	0	0	0	0	30	10	Fair	Poor	No		34.172366	-118.0626
47	<i>Juniperus chinensis 'Torulosa'</i>	Hollywood juniper	Removal	15	2	9	6	0	0	0	35	10	Fair	Poor	No		34.172379	-118.0626
48	<i>Juniperus chinensis 'Torulosa'</i>	Hollywood juniper	Removal	20	3	11	5	4	0	0	35	15	Fair	Poor	No		34.172385	-118.0626
49	<i>Syzygium australe</i>	brush cherry	Removal	10	1	10	0	0	0	0	25	15	Fair	Fair	No		34.172396	-118.0625
50	<i>Olea europaea</i>	fruitless olive	Removal	14	5	4	3	3	2	2	20	15	Fair	Poor	No		34.1724	-118.0625
51	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	14	1	14	0	0	0	0	15	15	Poor	Fair	No		34.172283	-118.0628
52	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	21	1	21	0	0	0	0	30	30	Poor	Fair	No		34.172303	-118.0629
53	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	19	1	19	0	0	0	0	25	20	Poor	Fair	No		34.172384	-118.0629
54	<i>Jacaranda mimosifolia</i>	jacaranda	Removal	15	2	8	7	0	0	0	20	20	Poor	Fair	No		34.172425	-118.063
55	<i>Eucalyptus cladocalyx</i>	sugra gum	Removal	70	5	26	20	8	8	8	55	30	Fair	Fair	No		34.172365	-118.0631
56	<i>Eucalyptus cladocalyx</i>	sugra gum	Removal	76	4	28	18	16	14	0	55	30	Fair	Fair	No		34.172319	-118.0632
57	<i>Eucalyptus cladocalyx</i>	sugra gum	Removal	53	6	24	8	7	7	7	55	30	Fair	Fair	No	Stem of 6"	34.172322	-118.0632
58	<i>Eucalyptus cladocalyx</i>	sugra gum	Removal	32	1	32	0	0	0	0	55	30	Fair	Fair	No		34.17233	-118.0632
59	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	32	1	32	0	0	0	0	50	70	Good	Good	No		34.172109	-118.0634
60	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	44	1	44	0	0	0	0	45	50	Fair	Fair	No		34.172428	-118.0632
61	<i>Quercus agrifolia</i>	coast live oak	Removal	54	2	36	18	0	0	0	40	50	Good	Fair	Yes		34.17243	-118.0633
62	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	63	4	19	18	13	13	0	50	50	Fair	Fair	No		34.172538	-118.0634
63	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	43	1	43	0	0	0	0	50	50	Fair	Fair	No		34.172536	-118.0635
64	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	46	3	19	17	10	0	0	50	50	Poor	Fair	No		34.172553	-118.0636

65	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	40	3	19	11	10	0	0	35	40	Poor	Poor	No		34.172567	-118.0636
66	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	75	5	22	19	14	10	10	50	45	Poor	Poor	No		34.172568	-118.0637
67	<i>Ficus macrophylla</i>	Morten Bay fig	Removal	67	4	20	20	16	11	0	50	50	Fair	Poor	No		34.172591	-118.0638
68	<i>Ulmus parvifolia</i>	Chinese elm	Removal	12	10	4	3	2	2	1	12	12	Fair	Poor	No	stump sprout	34.172433	-118.0645
69	<i>Ulmus parvifolia</i>	Chinese elm	Removal	18	1	18	0	0	0	0	40	40	Good	Fair	No		34.172364	-118.0647
70	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.172218	-118.0647
71	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Fair	No		34.172127	-118.0647
72	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Fair	No		34.172044	-118.0647
73	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.171942	-118.0647
74	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Fair	No		34.171882	-118.0647
75	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.171745	-118.0647
76	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Fair	No		34.171662	-118.0647
77	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Good	No		34.17158	-118.0647
78	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Good	No		34.171492	-118.0647
79	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Good	No		34.171407	-118.0647
80	<i>Ulmus parvifolia</i>	Chinese elm	Removal	18	1	18	0	0	0	0	40	40	Good	Good	No		34.171319	-118.0647
81	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Good	No		34.171263	-118.0647
82	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Fair	No		34.171146	-118.0647
83	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.171063	-118.0647
84	<i>Ulmus parvifolia</i>	Chinese elm	Removal	21	1	21	0	0	0	0	40	40	Good	Fair	No		34.170937	-118.0647
85	<i>Ulmus parvifolia</i>	Chinese elm	Removal	20	1	20	0	0	0	0	40	40	Good	Fair	No		34.17087	-118.0649
86	<i>Ulmus parvifolia</i>	Chinese elm	Removal	16	1	16	0	0	0	0	40	40	Good	Fair	No		34.171049	-118.0649
87	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Fair	No		34.171112	-118.0649
88	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.171238	-118.0649
89	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.171282	-118.0649
90	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.171333	-118.0649
91	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Good	Fair	No		34.171489	-118.0649
92	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Good	Fair	No		34.171615	-118.0649
93	<i>Ulmus parvifolia</i>	Chinese elm	Removal	16	1	16	0	0	0	0	40	40	Fair	Fair	No		34.171674	-118.0649
94	<i>Ulmus parvifolia</i>	Chinese elm	Removal	19	1	19	0	0	0	0	40	40	Fair	Fair	No		34.171749	-118.0649
95	<i>Ulmus parvifolia</i>	Chinese elm	Removal	16	1	16	0	0	0	0	40	40	Fair	Fair	No		34.171886	-118.0649
96	<i>Ulmus parvifolia</i>	Chinese elm	Removal	15	1	15	0	0	0	0	40	40	Fair	Fair	No		34.171944	-118.0649
97	<i>Ulmus parvifolia</i>	Chinese elm	Removal	15	1	15	0	0	0	0	40	40	Fair	Fair	No		34.172131	-118.0649
98	<i>Ulmus parvifolia</i>	Chinese elm	Removal	14	1	14	0	0	0	0	40	40	Fair	Fair	No		34.172223	-118.0649
99	<i>Ulmus parvifolia</i>	Chinese elm	Removal	15	1	15	0	0	0	0	40	40	Fair	Fair	No		34.172292	-118.0649
100	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Fair	Fair	No		34.172387	-118.0649
101	<i>Ulmus parvifolia</i>	Chinese elm	Removal	17	1	17	0	0	0	0	40	40	Fair	Fair	No		34.172497	-118.0649
102	<i>Cupressus arizonica</i>	Arizona cypress	Removal	14	1	14	0	0	0	0	55	15	Poor	Fair	Yes		34.170895	-118.0617
103	<i>Cupressus arizonica</i>	Arizona cypress	Removal	18	1	18	0	0	0	0	60	15	Poor	Fair	Yes		34.170895	-118.0617
104	<i>Cupressus arizonica</i>	Arizona cypress	Impacted	11	1	11	0	0	0	0	40	10	Fair	Good	Yes		34.170929	-118.0616
105	<i>Cupressus arizonica</i>	Arizona cypress	Removal	15	1	15	0	0	0	0	60	15	Fair	Fair	Yes		34.170910	-118.0616
106	<i>Quercus agrifolia</i>	coast live oak	Indirect	5	1	5	0	0	0	0	15	10	Good	Good	Yes		34.17091	-118.0613
107	<i>Cupressus arizonica</i>	Arizona cypress	Removal	19	1	19	0	0	0	0	60	20	Good	Good	Yes		34.17093	-118.0612
108	<i>Cedrus deodora</i>	deodor cedar	Impacted	18	1	18	0	0	0	0	40	30	Good	Good	Yes		34.17093	-118.0612
109	<i>Platanus racemosa</i>	western sycamore	Impacted	22	2	17	5	0	0	0	40	40	Fair	Poor	Yes		34.17095	-118.0611
110	<i>Cedrus deodora</i>	deodor cedar	Impacted	16	1	16	0	0	0	0	40	25	Fair	Fair	Yes		34.17094	-118.0609
111	<i>Cedrus deodora</i>	deodor cedar	Impacted	25	1	25	0	0	0	0	50	40	Good	Good	Yes		34.17093	-118.0608
112	<i>Cedrus deodora</i>	deodor cedar	Impacted	22	1	22	0	0	0	0	45	40	Good	Good	Yes		34.17092	-118.0607
113	<i>Cedrus deodora</i>	deodor cedar	Impacted	21	1	21	0	0	0	0	45	30	Good	Good	Yes		34.17092	-118.0606
114	<i>Cedrus deodora</i>	deodor cedar	Indirect	24	1	24	0	0	0	0	50	30	Good	Good	Yes		34.17095	-118.0605
115	<i>Cedrus deodora</i>	deodor cedar	Impacted	17	1	17	0	0	0	0	40	30	Good	Good	Yes		34.17088	-118.0605
116	<i>Cedrus deodora</i>	deodor cedar	Impacted	23	1	23	0	0	0	0	50	35	Good	Good	Yes		34.17086	-118.0604
117	<i>Cedrus deodora</i>	deodor cedar	Impacted	20	1	20	0	0	0	0	40	20	Fair	Fair	Yes		34.17080	-118.0602

Appendix B1

Tree Location Exhibit
Proposed Project Site



SOURCE: Esri and Digital Globe 2019

Appendix B2

Tree Location Exhibit

Proposed Off-Site Improvement Area



SOURCE: Fuscoe 2021; County of Los Angeles; Bing Maps

Appendix C

Representative Site Photographs

Appendix C Photograph Log



Photo 1. Representative site photograph facing north.



Photo 2. Representative site photograph facing west.

Photograph Log



Photo 3. Representative site photograph of trees lining the driveway on the east side of property.



Photo 4. Representative site photograph of trees lining the driveway on the west side of property.

Photograph Log



Photo 5. Photograph of protected coast live oak tree #1.



Photo 6. Photograph of protected coast live oak tree #2.

Photograph Log



Photo 7. Photograph of protected coast live oak tree #3.



Photo 8. Photograph of protected coast live oak tree #4.

Photograph Log



Photo 9. Photograph of protected coast live oak tree #15.



Photo 10. Photograph of protected coast live oak trees #30 and #31.

Photograph Log



Photo 11. Photograph of protected coast live oak tree #33.



Photo 12. Photograph of protected coast live oak tree #43.

Photographs were taken on May 29, 2020

Photograph Log



Photo 13. Representative photograph of protected coast live oak tree #61.

Photograph taken on May 29, 2020

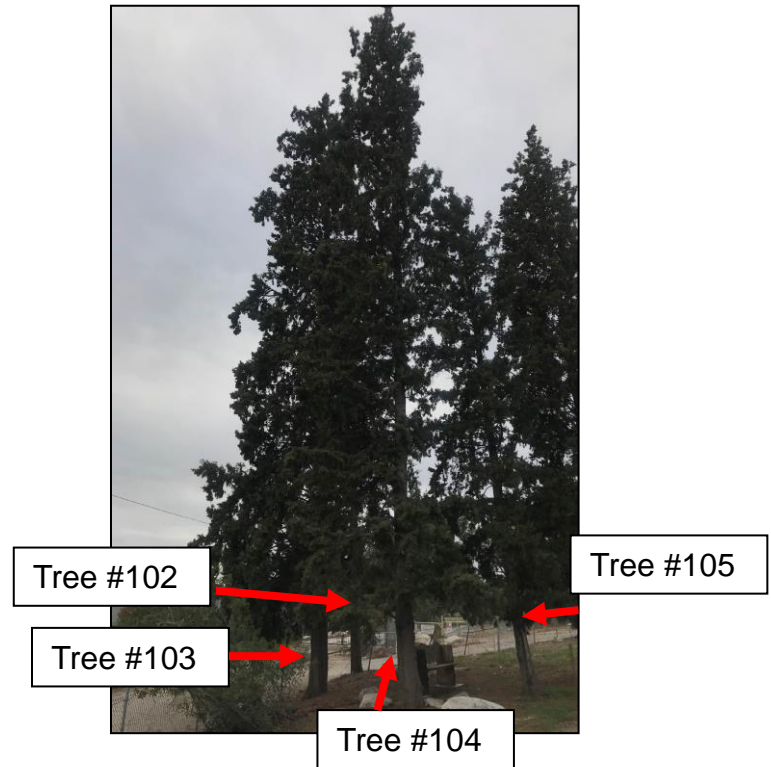


Photo 14. Representative photograph of protected trees nos. 102, 103, 104, 105.

Photograph taken on December 16, 2021

Photograph Log

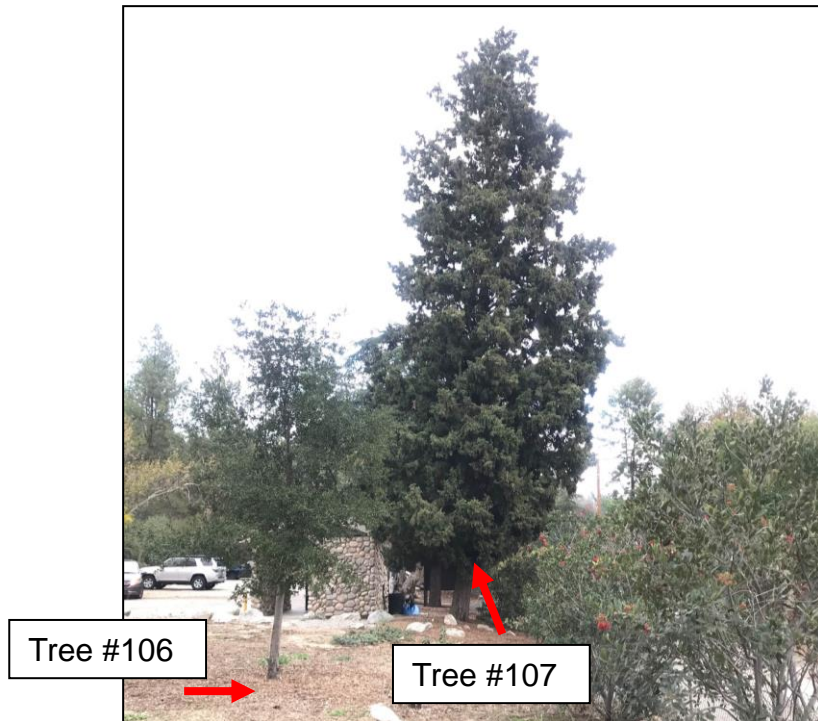


Photo 15. Representative photograph of protected tree nos. 106 and 107.

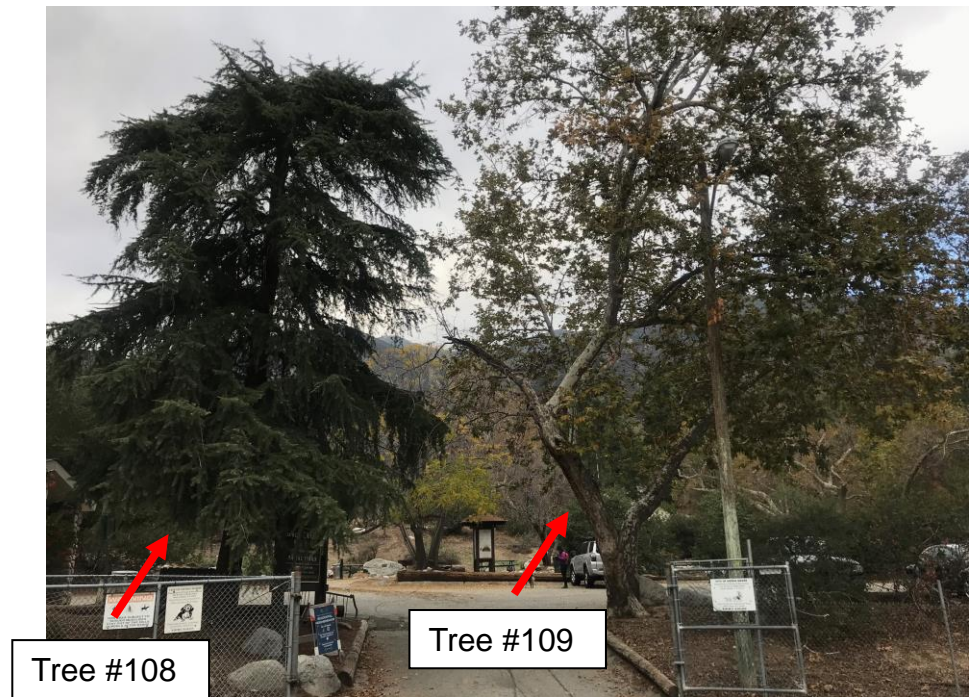


Photo 16. Representative photograph of protected trees nos. 108 and 109.

Photograph Log



Photo 17. Representative photograph of protected tree nos. 106 and 107.



Photo 18. Representative photograph of protected tree no. 117.

Photographs were taken on December 16, 2021

