Tree Survey and Arborist Report

for an approximate 4.1-acre Site

Located at 2375 N Tustin St, Orange, California

Prepared for: **Melia Homes**
Contact: Chad Brown, VP of Planning & Development
9860 Irvine Center Drive
Irvine, CA 92618

Prepared by: **CalPacific Sciences**
George J Wirtes, MS, RCA #738
ISA Certified and ASCA Registered Consulting Arborist

Report Date: June 24, 2025

Table of Contents

SECTION 1: EXECUTIVE SUMMARY

This tree survey has been performed at the request of Melia Homes for a proposed 4.1-acre site in the City of Orange, California, within the County of Orange. The site is completely developed with a vacant retail building and an adjacent parking lot with associated landscaping.

The field survey associated with this report was performed on June 12, 2025. The subject trees were tagged with aluminum tags, each containing a unique number. As part of this survey, details of each tree were recorded documenting their species, stature, health, local environment as well as conditions in which they occur. In all, 86 trees were assessed onsite involving *four* distinct species. The most common species observed was Brisbane box (*Lophostemon confertus)*, comprising 44.2% of all species within the project area.

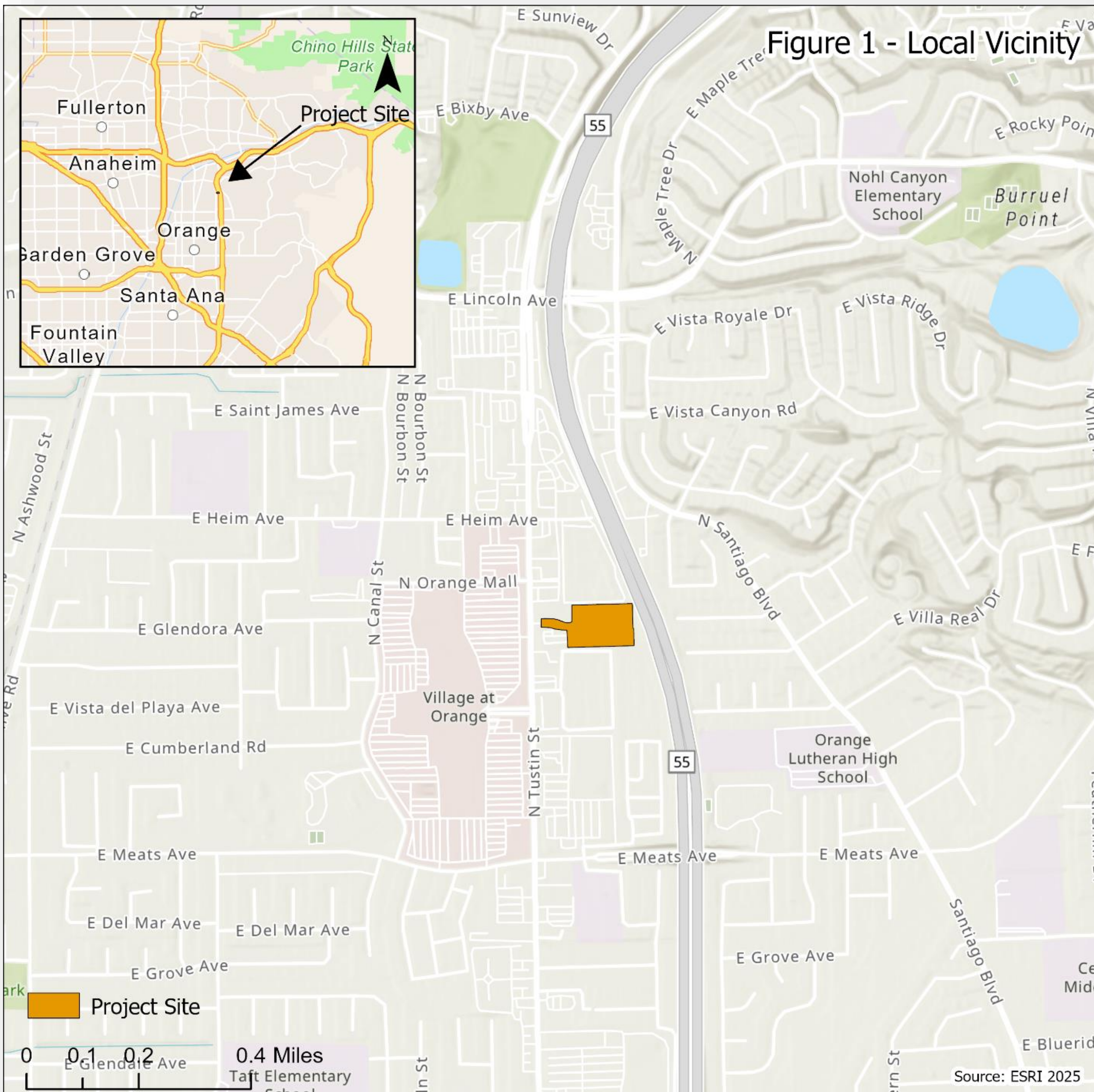
Due to disease, poor structural integrity, or other signs of distress, eight (9.3%) of the trees onsite are recommended for removal. The remaining 78 trees are viable specimens, but a few of them are marginal and require treatment (strategic pruning, insecticide/fungicide application, etc.) to mitigate defects and facilitate safety if retained. In addition, *one* dead tree was noted as well. No trees within the property were noted as native. Several trees within the property were found to serve the local community. To address this, the proposed project retains 13 of the date palms (#573-84) lining the entrance of the property, preserving them within the new site plan (see Figure 2 below).

The Municipal Code outlines provisions and guidelines for tree removal, installation, preservation, as well as maintenance within the City. All trees that are intended for removal as part of a project require a permit (prior to removal) and must be approved by the Planning Director. The Director must approve final mitigation (See Section 2.6.3 below) involving all replacement tree species, location, and size.

SECTION 2: BACKGROUND

2.1 - Project Location and Description

The 4.1-acre site is located at 2375 N Tustin St. Orange, California, within the County of Orange (see Figure 1 below). Specifically, the site resides between Tustin St. and the 55 Freeway; it is 0.3-mile north of the Meats Ave. offramp. The proposed project involves the development of a residential property with associated infrastructure dwellings, landscaping and parking.



2.2 - Site and Vicinity Characteristics

2.2.1 - Natural Surroundings

The elevation of the site is approximately 280 feet AMSL[1],and it is relatively flat. The geological basement rock is described as unconsolidated to moderately consolidated silt and alluvial fan sand deposits from the Holocene to late Pleistocene (.0117 mya-present) periods[2].

As indicated in Table 1 below, one distinct soil series occurs within the site boundary. This soil series' parent material is described by the Natural Resource Conservation Service (NRCS) as alluvium derived from sedimentary rock.

Table 1. Soils on Site

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Sorrento clay loam, 2 to 9 percent slopes **NRCS Map Unit 209**	**Typical profile** • *Ap1 - 0 to 6 inches: clay loam* • *Ap2 - 6 to 12 inches: clay loam* • *AB1 - 12 to 21 inches: silty clay loam* • *AB2 - 21 to 27 inches: silty clay loam* • *AB3 - 27 to 37 inches: silty clay loam* • *Bk1 - 37 to 49 inches: silty clay loam* • *Bk2 - 49 to 62 inches: silty clay loam* • *2C - 62 to 72 inches: stratified loamy fine sand to silt loam* **Properties and qualities** • *Slope: 2 to 9 percent* • *Depth to restrictive feature: More than 80 inches* • *Drainage class: Well drained* • *Runoff class: Medium*	**4.1**	**100.0%**
Totals for Area of Interest		**4.1**	**100.0%**

2.2.2 - Vegetation Community

The local vicinity is within Sunset Zone 24 and USDA Hardiness Zone 10b. The project area is completely developed with a building and associated landscaping that includes ornamental trees and plants.

2.3 - Assignment and Scope of Survey

CalPacific Sciences (CPS) was assigned to perform a tree survey and health assessment of all mature trees within the project area (see Section 2.4 below). The primary goal of the study was to accumulate information on the trees potentially impacted by the proposed development so significant adverse impacts

1 AMSL – above mean sea level
2 ROCKD, 2025 – See Reference Section below

could be avoided or addressed. A limited health assessment was performed, cataloging the health and stature parameters of each tree onsite. This effort included, but was not limited to; recording total diameter at breast height (DBH), canopy spread, tree height, apparent disease/decay, other signs of potential hazard, and pest damage. A limited (visual only) risk assessment was also conducted keeping public safety in mind.

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

2.4 - Survey Method and Health Assessment

Prior to the field survey, the City of Orange'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 Municipal Code, trees with a DBH of $\geq$ 4.5 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 (or where highly visible) at approximately 4.5 feet above grade for later reference. Aerial views (if present) were captured using a DJI Mavic Air 3. 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, 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 - Tree Risk Assessment

The International Society of Arboriculture (ISA) recommends a Risk Assessment be included with arborist reports. Such an assessment is an important component of any report and is critical if trees are to be located near public areas such as parks, walkways, residences, and buildings. This tree assessment includes a Level 1 Limited Visual Risk Assessment (as defined by ISA Best Management Practices) unless otherwise stated. No invasive techniques were employed unless otherwise stated. Given the number of trees involved as well as the narrow scope of the tree survey, only obvious and readily viewable signs of defects were assessed; these typically include:

- 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

In this report, a risk rating is assigned to each tree based on its defects, apparent health, location and current exposure to nearby targets. 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 typically include sidewalks, walkways, roads, vehicles, structures, playgrounds, or any other area where people are likely to gather. Common conditions that elevate risk of tree failure include dead and diseased trees, cracks, dead branches including bark, stubs from topping cuts, broken branches (hangers), multiple leaders, tight-angled or weakly attached crotches, poor tree structure (i.e. unbalanced crown, lean, poor flare development, etc.).

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, and the consequences are significant.

In this context, risk refers to *Likelihood of Failure*. As defined by ISA the ratings are defined below*:

1. *Improbable* – The tree or part of the tree is not likely to fail during normal weather conditions and may not fail during extreme weather conditions within a specified period of time.
2. *Possible* – Failure may be expected in extreme weather conditions, but it is unlikely during normal weather conditions during the specified period of time.
3. *Probable* – Failure may be expected under normal weather conditions within the specified period of time.
4. *Imminent* – Failure has started or is most likely to occur in the near future, even if there is no significant wind or increased load. The imminent category overrides the time frame.

** The time frame relative to this report is one year.*

2.6 - Local Tree Regulation (City of Orange Municipal Code Chapter 12.32)

The City's Municipal Code (Code) outlines several provisions relative to development and the protection of its tree resources. Key provisions within the Code are outlined below. This list is not all inclusive and further reading of the Code is recommended.

2.6.1 - Street Trees (Chapter 12.28.020)

No person shall plant, or remove, any tree or shrub, stakes or tree guards in, or upon, any public street or right-of-way, without having first obtained a permit.

- Every person planting or arranging for the planting of street trees shall obtain a permit required by this chapter from the Director of Public Works/City Engineer and perform the work in accordance with the specifications prepared by the Public Works Director/City Engineer;

- Every person removing or arranging for the removal of a street tree shall obtain a permit required by this chapter from the Director of Public Works/City Engineer and perform the work in accordance with the specifications prepared by the Public Works Director/City Engineer.

2.6.2 - Tree Removal Permit (Chapter 12.32)

The City of Orange states in their Municipal Code that, it is illegal for any individual or entity, including firms, partnerships, corporations, or other legal structures, to remove or destroy any tree from undeveloped or public interest property without first obtaining a permit. These terms, "tree," "undeveloped property," and "public interest property," are specifically defined within the Code.

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 risk of tree failure/decline, it does not fully remove it. The scope of the survey was to assess the trees within the project site to gather information relative to their quantity, species, and health. Given the scope and the number of trees involved, a limited tree risk assessment was conducted, providing an initial evaluation of the tree's condition (see Section 2.5 above). This assessment does not encompass the comprehensive techniques required to detect internal decay, assess root crown health, or thoroughly address potential failure risks. For a complete and accurate understanding of the tree's health and structural integrity, a more detailed risk assessment is recommended. This higher-level assessment should involve advanced techniques to evaluate internal decay, root crown health, and other critical factors. Tree failure may still occur for a number of reasons and can only be adequately addressed on a tree-by-tree basis that involves higher level risk assessment. No tree pruning, treatment, or maintenance was performed as part of this assessment.

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.

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.).

The statements made in this report do not consider the effects of climate/wind extremes, vandalism, or accidents (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.

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

The conclusions contained herein rely on documentation readily available (see Section 6 below) and further review of local law and communication with the City's planning department are recommended. In addition, consulting 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. Arborists cannot guarantee that a tree will be safe under any circumstances, or for a specified period of time. Only proper maintenance according to ISA Standards can reduce the risk of failure. 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

As previously indicated, specific measurements, observations, and parameters of all mature trees onsite were recorded on tree assessment worksheets at the time of the survey; these data have been transferred into the table in Appendix A at the end of this document. Figure 2 below shows the location of each tree within the property and any notable conditions observed are provided in the following plates below. Table 2 provides a species profile for the individual types of trees found within the property.

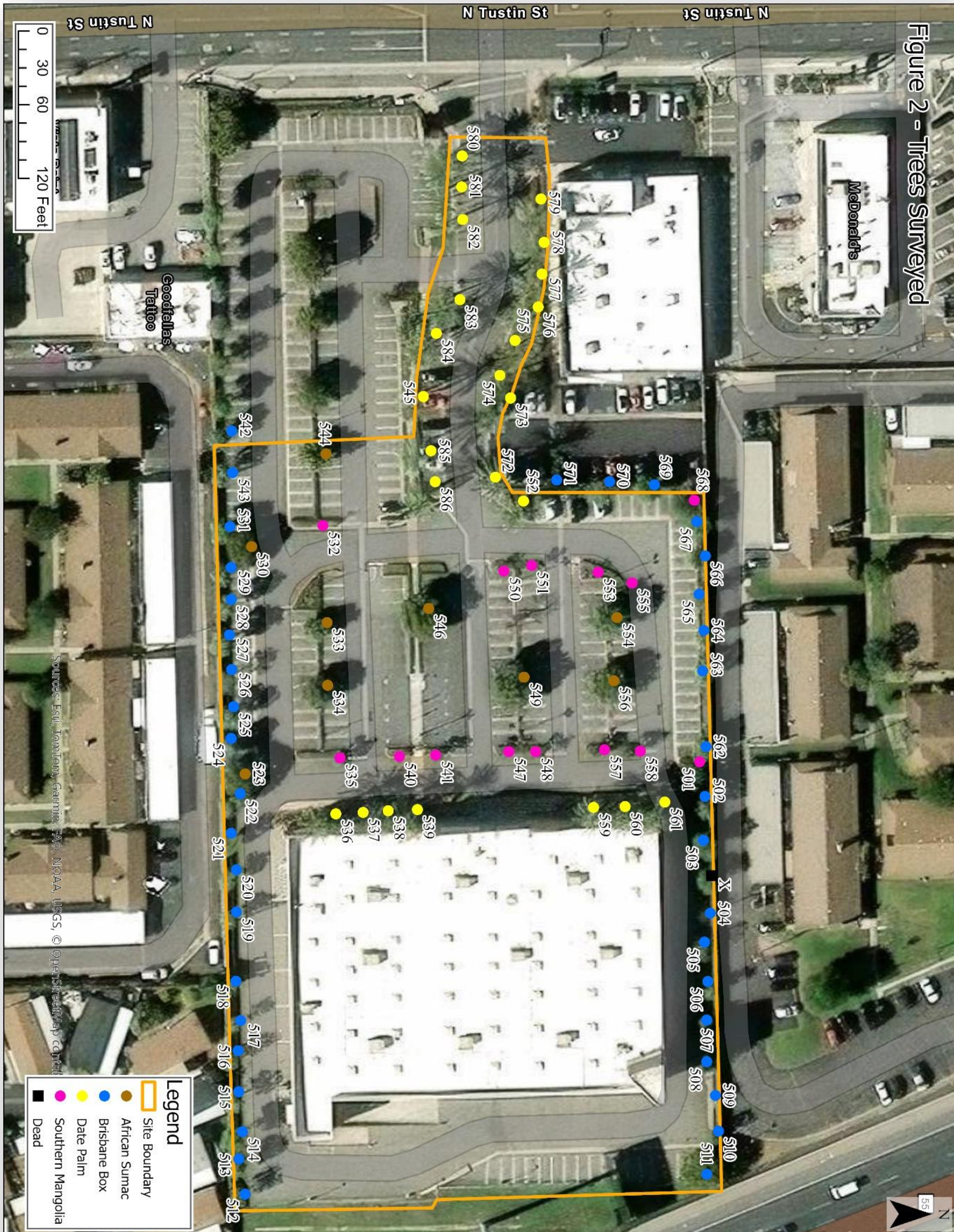


Figure 2 - Trees Surveyed
N Tustin St
N Tustin St
N Tustin St
McDonald's
Goodfellas Tattoo
0 30 60 120 Feet
Legend
Site Boundary
African Sumac
Brisbane Box
Date Palm
Southern Mangolia
Dead
N
55

Table 2. Species Profiles

African Sumac *Searsia lancea*	The African Sumac is a dense shade tree belonging to the cashew family, *Anacardiaceae*. Known for its resilience in dry conditions, it thrives with minimal water but maintains its best appearance when provided with regular, deep irrigation. Adapted to Sunset Climate Zones 8–9 and 12–24, this tree does not tolerate shade and flourishes in USDA Hardiness Zones 9, 10, and 11. It can grow in various soil textures, including loam, sand, and clay, and is tolerant of pH levels ranging from slightly acidic to very alkaline. With a moderate tolerance to salt, the African Sumac reaches a maximum height of 30 feet, with a canopy spread between 20 and 35 feet. It grows at an approximate rate of 24 inches per year, has medium-strength branches, and presents a low potential for root damage. There are no known hazards associated with this tree, and its biogenic emissions are low. Additionally, it attracts birds, enhancing local wildlife interactions. While generally hardy, it is susceptible to diseases such as root rot and verticillium.	9
Brisbane Box *Lophostemon confertus*	This species is drought resistant, and once established, is smog tolerant. This Native of Australia from the *Myrtaceae* (myrtle) family; it can be a larger tree in warmer areas. It grows erect or spreading and requires ample growing space with a rounded Shape when mature. It has Evergreen foliage. It typically attains a height of 30 - 50 feet with a width 10 - 30 feet. It grows approximately 24 to 36 inches per year with a Longevity 50 to 150 years. This tree or shrub has a shading capacity rated as, dense in leaf and its litter issue is dry fruit. It grows in Sunset Zones 15 - 17 and 19 - 24; H1, H2 and USDA Hardiness Zones 10 - 11. It tolerates exposure from full sun to partial shade. It is typically planted in moist to dry soil composed of clay, loam or sand texture with slightly acidic to highly alkaline soil pH. This species is susceptible to scales, Phytophthora and root rot. Its branch strength rated as medium and its root damage potential rated as moderate.	38
Date Palm *Phoenix dactylifera*	With origins from the middle east, northern Africa, and southern Asia; this tree is a source of edible dates having many cultivars. It is a member of the palm family, *Areacaceae,* and it needs high temperatures to fruit. Its SelecTree water use rating is low. It thrives in sunset zones 8 - 9, 11 – 24. It prefers sun exposure of partial shade to full sun with a soil texture of loam or sand with a soil pH that is slightly acidic to very alkaline. Its maximum tree height is 100 feet with a canopy width of 20-40 feet. Its growth rate is approximately 12-36 in/year. Its branch strength is strong, and its root damage potential is moderate. This tree is susceptible to Texas root rot.	24
Southern Magnolia *Magnolia grandiflora*	This tree is a member of the *Magnoliaceae* (magnolia) family, is a medium to large evergreen tree known for its fragrant flowers. This species is native to the Southeastern United States, specifically endemic to the lowland subtropical forests of the Gulf and South Atlantic coastal plain. It thrives in full sun to partial shade and prefers moist soil with a loam or sand texture, tolerating a pH range from very acidic to slightly alkaline. With a high water use rating, it can reach a height of 60 to 80 feet and a width of 50 to 60 feet, exhibiting a growth rate of about 24 inches per year. These resilient trees boast a longevity of over 150 years and show moderate salt tolerance. They are suitable for Sunset Zones 4 - 12, 14 - 24, H1, H2, and USDA Hardiness Zones 7 - 9. While generally robust, they can be susceptible to issues like Armillaria, Root Rot, Verticillium, Invasive Shot Hole Borer, Aphids, Scales, and Spider Mites. Its branch strength is rated as medium, and it has a high potential for root damage.	15
* California native tree species ** Cal-IPC (California Invasive Plant Council) invasive tree species		

Source: UFEI, 2024. Urban Forest Ecosystems Institute

3.1 - Observations

Plate 1. This is a view of a tree planted in close proximity to a block wall (#502).

Plate 2. This is a view of a tree canopy with the potential of interfering with nearby electrical lines (#504).

Plate 3. This is a view of a failed branch suggesting a potential of future failure elsewhere in the tree (#511).

Plate 4. This is a view of an embedded tree tie within the tissue of the tree (#524).

Plate 5. This is a view of upper canopy deadwood or retrenchment (#532).

Plate 6. This is a view of the site of a flush cut pruning (#534).

Plate 7. This is a view of a longitudinal stem split that presents an immediate **hazard** of a limb failure (#563).

Plate 8. This is a view of exudation or staining within the lower stem of a tree (#565).

Plate 9. This is a view of tissue decay beneath a branch collar (#566).

Plate 10. This is a view of included bark at the union of two stems (#727).

3.1.1 - Urban Forest

California is a very unique setting having its own floristic province while supporting a robust population of 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.

The project site is a very small component of the urban forest that makes up the interior community in Southern California. Implementing trees of various size, shape, and species serve many vital functions to the community as well as the wildlife, contributing to spatial complexity, species richness as well as species abundance. Many municipalities promote approved tree lists comprised of hardy species that thrive and reduce the threat of failure in harsh environments. Integrating carefully selected native species can also serve the community well and enriches the experience, promoting an environment better suited to the resident avian and butterfly population.

Specific to the project site, the subject trees are fairly diverse in size and stature providing a variation in tree height, shape, and scaffolding. With only four distinct species, the tree population within the site provides decreased diversity given the number of species present. Within the site no tree species were noted as native and no trees considered invasive Cal-IPC (California Invasive Plant Council). The average stem diameter, tree height, and canopy cover for the population of 86 trees within the site were 9.4 inches, 34.2 feet, and 497.0 square feet respectively.

SECTION 4: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

4.1 - Conclusion

As previously indicated, the site is completely developed with a vacant retail building and an adjacent parking lot with associated landscaping. The field survey associated with this report was performed on June 12, 2025. The subject trees were tagged with aluminum tags, each containing a unique number. As part of this survey, details of each tree were recorded documenting their species, stature, health, local environment as well as conditions in which they occur. In all, 86 trees were assessed onsite, involving four distinct species. The most common species observed was Brisbane box (*Lophostemon confertus*), comprising 44.2% of all species within the project area.

Due to disease, poor structural integrity, or other signs of distress, eight (9.3%) of the trees onsite are recommended for removal. The remaining 78 trees are viable specimens, but a few of them are marginal and require treatment (strategic pruning, insecticide/fungicide application, etc.) to mitigate defects and facilitate safety if retained. In addition, *one* dead tree was noted as well. No trees within the property were noted as native. Several trees within the property were found to serve the local community. To address this, the proposed project retains 13 of the date palms (#573-84) lining the entrance of the property, preserving them within the new site plan.

4.2 - Discussion

The project area is the site of a former retail store with associated space for parking. All of the trees within the site are generally well maintained and include all ornamental species. Of potential significance is the stand of date palms that line the entrance of the project area; these palms are earmarked for retention and integration within the new site plan. With exception to these palms, no other trees are preserved according to the site plan. In the event other trees are preserved, recommendations are provided in Appendix A to address structural defects and other health concerns within the stand trees.

4.3 - Recommendations

4.3.1 - Tree Replacement

As indicated above, all trees within the project site (with exception to the 13 palm trees lining the entrance) are earmarked for removal. Removal of living, native and non-native trees may result in a biological impact. Recommended mitigation for tree removal is replanting with like-kind specimens (tree species and ratio to be determined by the Planning Director). Removal of any trees must be preceded by authorization (removal permit) from the City's Planning Department.

4.3.2 - Trees Preserved

For any trees preserved as part of the project, strategic pruning compliant with ISA standards must be performed to subordinate non-primary, codominant stems, and canopy deadwood should be removed. Regular maintenance and on-going monitoring are recommended according to ISA standards.

4.3.3 - Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) and CDFW 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.

4.3.4 - Tree Protection During Construction

To protect any trees that will be preserved within the site as well as those immediately adjacent to the project area, measures must be taken to minimize the effects of construction within the tree protection zone. Building or grading near trees requires that they are healthy at the start of the project for the stand to recover well. Some older trees have little tolerance for root damage or other stress factors. Younger, more vital trees are more tolerant of changes in their surroundings. However, each change in soil compaction, irrigation, under plantings, and other conditions takes some of an older tree's strength and vigor and further diminishes its health. The main stresses and risks of construction are:

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

Mature trees take a long time to heal from, or respond to, injury. It could take 10 years for some trees to make a visible improvement in health after construction impacts occur. On the other hand, it could take 10 years for a tree to visibly start declining after cutting roots, compacting the soil, or raising the grade. Below are other recommendations that should be adhered to in order to protect trees onsite and on adjacent properties:

- Dripline fencing must be placed a minimum of 1 foot in radius from the tree per 1 inch of diameter at breast height (for example, 6-inch trunk = 6 feet protection radius/12 feet diameter).
- Dripline 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.
- Raising or lowering the grade in the root zone of trees can be fatal or ruin the health of trees for years to come. Grade change and soil compaction force out the oxygen and literally press the life out of the soil. A retaining wall can be used to minimize the amount of the root zone that is affected, but it is essential that the footing is not continuous. Gravel and aeration pipes should be placed inside the retaining wall before the fill is placed. Consult with a qualified civil engineer for proper design calculations.

- Trenching within the protection zone must be avoided wherever possible. Most of the roots are in the top 1 to 2 feet of soil, and trenching can sever a large percentage of roots.
- Oil from construction equipment, cement, concrete washout, acid washes, paint, and solvents are toxic to tree roots. Signs should be posted on the fencing around trees notifying contractors of the fines for dumping. Portable latrines that are washed out with strong detergents can damage the fine roots of the trees. Portable latrines should not be placed near trees, nor where frequent and regular foot traffic to them will compact the soil below the trees.
- Construction creates large amounts of dust, and the oaks and any other trees to be preserved will need to be kept clean. Dust reduces photosynthesis on all trees. Strict dust control measures must be implemented during construction to minimize this impact, and an occasional rinsing with a solution of water and insecticidal soap will help control pests.

SECTION 5: QUALIFICATIONS OF ARBORIST

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

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

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

SECTION 6: REFERENCES

Calflora. 2025. Website at http://www.calflora.org.

Cal-IPC 2025. Website at https://www.cal-ipc.org/plants/inventory/

City of Orange, 2025. Municipal Code posted on website: https://ecode360.com/43563854

Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press. Berkeley, California.

Natural Resource Conservation Service. 2025. Website at http://ortho.ftw.nrcs.usda.gov/

University of California, 2025. California Tree Failure Report Program website at http://ucanr.edu/sites/treefail/

University of Florida Environmental Horticulture Department 2025. Website at http://hort.ifas.ufl.edu/

UFEI, 2025. Urban Forest Ecosystems Institute website at https://selectree.calpoly.edu/

Virginia Tech, Dendrology Dept. 2025. Website at http://www.cnr.vt.edu/DENDRO/dendrology/main.htm

Appendix A - Tree Species Matrix

Note - This tree survey and the details recorded below are meant to characterize the trees within the property. The assessment is not exhaustive, but is a balance between the competing forces of in-depth description and cost effectiveness. 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:	Structural/Stature Rating:	Risk of Failure:
	1= Good, 2 = Fair, 3 = Poor, 4 = Dying/Immanent Hazard	1 – Good, 2- Fair, 3- Potential Hazard 4- Imminent Hazard	1 – Improbable, 2- Possible, 3 – Probable, 4 - Imminent

Tree Tag #	Species	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
501	Southern Magnolia	6.5						6.5	24	8	165	1-2	1-2	1-2		Viable
Good form and vigor										7 10						
										4						
502	Brisbane Box	8.5						8.5	30	8	380	1-2	2	3		Viable
Good form and vigor, too close to wall, lean										12 12						
										12						
503	Brisbane Box	10						10	39	13	551	1-2	2	3		Viable
Good form and vigor, too close to wall										12 11						
										17						
504	Brisbane Box	4.5						4.5	28	5	95	2-3	2	3	Trim if preserving	Viable
Minor upper canopy deadwood, decreased vigor, near utilities										5 5						
										7						
505	Brisbane Box	6						6	22	2	201	2	3	3		Viable
Excess lean, good vigor										10 8						
										12						
506	Brisbane Box	5.5						5.5	24	7	165	1-2	2	3		Viable
Good form and vigor, near wall										7 7						
										8						
507	Brisbane Box	6						6	24	9	298	2	2-3	2-3		Viable
Good vigor, lean										9 10						
										11						
508	Brisbane Box	7						7	39	10	314	1-2	2-3	2-3		Viable
Good form and vigor										10 8						
										12						
509	Brisbane Box	4						4	18	6	113	1-2	1-2	1-2		Viable
Good form and vigor										6 6						
										6						
510	Brisbane Box	6.5						6.5	26	8	247	1-2	1-2	1-2		Viable
Good form and vigor, near wall										9 8.5						
										10						
511	African Sumac	15.5						15.5	33	12	531	2	2	3		Viable
Failed branch, increased risk of future failure										13 13						
										14						
512	Brisbane Box	7						7	27	9	283	2	2	2		Viable
Lean, good vigor										12 7						
										10						
513	Brisbane Box	8.5						8.5	25	12	330	2	2	2		Viable

Good form and vigor											11	8	10						
514	Brisbane Box	14						14	36	13				604	1-2	1-2	1-2		Viable
Good form and vigor, near wall											14	13.5	15						
515	Brisbane Box	6.5						6.5	32	10				380	1-2	1-2	1-2		Viable
Good form and vigor											12	12	10						
516	Brisbane Box	6						6	24	8				269	1-2	1-2	1-2		Viable
Good form and vigor											11	9	9						
517	Brisbane Box	5						5	24	8				240	1-2	1-2	1-2		Viable
Good form and vigor											7	10	10						
518	Brisbane Box	4	4.5					8.5	23	8				165	2	2	2		Viable
Good form and vigor, upper canopy deadwood											5	10	6						
519	Brisbane Box	6.5						6.5	24	7.5				195	1-2	1-2	1-2		Viable
Good form and vigor											8	8	8						
520	Brisbane Box	5.5	6					11.5	24	9.5				291	1-2	1-2	1-2		Viable
Good form and vigor											10	10	9						
521	Brisbane Box	9.5						9.5	25	10				397	1-2	1-2	1-2		Viable
Good form and vigor											13	11	11						
522	Brisbane Box	9.5						9.5	24	8				380	2	2	2		Viable
Lean, good form and vigor											10	12	14						
523	African Sumac	10.5						10.5	35	10				594	1-2	2	2		Viable
Good form and vigor											15	15	15						
524	Brisbane Box	8						8	32	10				346	1-2	1-2	1-2		Viable
Good form and vigor, embedded tree tie											9	12	11						
525	Brisbane Box	8						8	27	10				330	1-2	1-2	1-2		Viable
Good form and vigor											10	10	11						
526	Brisbane Box	6						6	27	7				298	2	2	2		Viable
Good form, decreased canopy health											11	10	11						
527	Brisbane Box	9						9	28	11				397	1-2	1-2	1-2		Viable
Good form and vigor											10	14	10						
528	Brisbane Box	8						8	34	10				406	1-2	1-2	1-2		Viable
Good form and vigor											10	13.5	12						
529	Brisbane Box	9						9	27	10				363	1-2	1-2	1-2		Viable
Codominant stem system, good vigor											10	13							

										10						
530	African Sumac	11.5						11.5	24	11	471	2	2	2		Viable
Good form and vigor										13 14 11						
531	Brisbane Box	8						8		11	424	1-2	1-2	1-2		Viable
Good form and vigor										9.5 14 12						
532	Southern Magnolia	3						3	12	3	20	3	2-3	3		Viable
Diseased and canopy dieback										2 2 3						
533	African Sumac	9						9	23	9	330	2	2	2		Viable
Good form and vigor										11 8 13						
534	African Sumac	10.5						10.5	22	12.5	649	1-2	1-2	1-2		Viable
Good form and vigor										14 15 16						
535	Southern Magnolia	5						5	19	8	214	1-2	1-2	2		Viable
Good form and vigor										8 9 8						
536	Date Palm	15						15	53	19	1134	1-2	2	2		Viable
Good form and vigor										19 19 19						
537	Date Palm	15						15	47	15	707	1-2	2	2		Viable
Good form, sparce canopy										15 15 15						
538	Date Palm	15						15	49	17	907	1-2	2	2		Viable
Good form and vigor										17 17 17						
539	Date Palm	3.5						3.5	50	22	1520	1-2	2	2		Viable
Good form and vigor										22 22 22						
540	Southern Magnolia	5						5	14	3	60	2-3	2-3	2-3		Viable
Dieback noted										5 5 4.5						
541	Southern Magnolia	8						8	18	7	143	1-2	2	2		Viable
Good form and vigor, flowering										7 6 7						
542	Brisbane Box							0	25	12	330	1-2	1-2	1-2		Viable
Good form and vigor										11 9 9						
543	Brisbane Box	8						8	21	10	314	3	2	2-3		Remove
Steep decline noted, retrenchment										9 10 11						

544	African Sumac	10						10	21	13	12	12	14	510	1-2	1-2	2		Viable
Good form and vigor																			
545	Date Palm	15						15	46	17	17	17	17	907	1-2	2	2		Viable
Good form and vigor																			
546	African Sumac	16						16	31	18	16	18	17	934	2	2	2		Viable
Good form and vigor, flush cut pruning																			
547	Southern Magnolia	4.5						4.5	115	2	3	5	7	57	2-3	2	2-3		Remove
Longitudinal stem canker, poor prognosis																			
548	Southern Magnolia	5						5	18	8.5	7	7.5	7	177	2	2	2		Viable
Good form and vigor, upper canopy deadwood																			
549	African Sumac	12						12	34	12	16	14.5	17	695	2	3	3	Trim to rebalance if preserving	Viable
Stem lean noted, flush cut pruning																			
550	Southern Magnolia	3.5						3.5	13	4	5	4	6	71	2	2	2		Viable
Minor upper canopy Deadwood noted																			
551	Southern Magnolia	4						4	17	7	7	7	7	154	2	2	2		Viable
Minor upper canopy deadwood noted, fair form and vigor																			
552	Date Palm	13						13	44	17	17	17	17	907	2	2	2		Viable
Good form and vigor																			
553	Southern Magnolia	3						3	12	4	4	3	4	44	3	2-3	2-3		Remove
Longitudinal stem canker, die back in canopy, epicormic sprouting, retrenchment																			
554	African Sumac	10						10	28	14	15	13	12	572	2	2	2		Viable
Good form and vigor, flush cut pruning																			
555	Southern Magnolia	4						4	15	4	4	3	4	44	3	2-3	2-3		Remove
Retrenchment noted in canopy																			
556	African Sumac	12						12	24	14	15	14	15	660	2-3	2	2	Trim and reevaluate if keeping	Viable
Poor scaffolding in structure, stem lean, flush cut printing																			

557	Southern Magnolia	5						5	16	6	6	7	7	133	2	2	2		Viable
Good form and vigor																			
558	Southern Magnolia	5						5	18	8	7	8.5	7	183	2	2	2		Viable
Good form and vigor																			
559	Date Palm	14						14	52	17	17	17	17	907	1-2	2	2		Viable
Good form and vigor																			
560	Date Palm	14						14	53	17	17	17	17	907	1-2	2	2		Viable
Good form and vigor																			
561	Date Palm	16						16	54	18	18	18	18	1017	1-2	2	2		Viable
Good form and vigor																			
562	Brisbane Box	9						9	31	11	11	10	11	363	1-2	2	2		Viable
Good form and vigor, minor lean																			
563	Brisbane Box	9.5						9.5	26	9	12	12	8.5	338	3	3	4	Urgent attention needed to mitigate risk of failure	Remove
Failed upper limb, increased risk of future failure																			
564	Brisbane Box	7						7	32	8	8	8	9	214	2	3	2		Viable
Good form and vigor																			
565	Brisbane Box	8						8	31	13	10	7	6	254	2-3	2	2	Treat and reevaluate if keeping	Viable
Good form, evidence of exudation noted on lower stem																			
566	Brisbane Box	7						7	31	12	11	7.5	3.5	227	2	2	2		Viable
Good form and vigor																			
567	Brisbane Box	9						9	36	13	11	15	9.5	462	2	2	2		Viable
Good form and vigor																			
568	Southern Magnolia	8						8	25	9	11	10	10	314	2	2	2		Viable
Good form and vigor																			
569	Brisbane Box	10						10	38	6	12	13	12	363	2	2-3	2		Viable
Good form and vigor, lean																			
570	Brisbane Box	9.5						9.5	39	11	10	14	9	380	2	2	2		Viable
Good form and vigor																			
571	Brisbane Box	7						7	28	12	12	9	13	415	2	3	2		Viable
Codominant stem system with included bark, stem lean																			
572	Date Palm	14						14	54	18				1017	1-2	2	2		Viable

Good form and vigor										18 18 18				
573	Date Palm	13						13	53	16	804	1-2 2 2		Viable
Good form and vigor										16 16 16				
574	Date Palm	15						15	51	17	907	1-2 2 2		Viable
Good form and vigor										17 17 17				
575	Date Palm	16						16	52	17	907	1-2 2 2		Viable
Good form and vigor										17 17 17				
576	Date Palm	16						16	53	18	1017	1-2 2 2		Viable
Good form and vigor										18 18 18				
577	Date Palm	15						15	52	15	707	1-2 2 2		Viable
Good form and vigor										15 15 15				
578	Date Palm	14						14	51	17	907	1-2 2 2		Viable
Good form and vigor										17 17 17				
579	Date Palm	14						14	53	17	907	1-2 2 2		Viable
Good form and vigor										17 17 17				
580	Date Palm	16						16	57	18	1017	1-2 2 2		Viable
Good form and vigor										18 18 18				
581	Date Palm	15						15	57	17	907	1-2 2 2		Viable
Good form and vigor										17 17 17				
582	Date Palm	16						16	58	18	1017	1-2 2 2		Viable
Good form and vigor										18 18 18				
583	Date Palm	16						16	51	19	1134	1-2 2 2		Viable
Good form and vigor										19 19 19				
584	Date Palm	17						17	51	17	907	1-2 2 2		Viable
Good form and vigor										17 17 17				
585	Date Palm							0	51	16	804	1-2 2 2		Viable
Good form and vigor										16 16 16				
586	Date Palm	16						16	51	18	1017	1-2 2 2		Viable
Good form and vigor										18 18 18				