

# Appendix E

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Tree Survey and Arborist Report

# Tree Survey and Arborist Report

THE TERRACES AT WALNUT  
CITY OF WALNUT, CA



Prepared as a coordinated effort by:

**Golden State Land & Tree Assessment**  
George J Wirtes, MS, ISA Certified Arborist

**Michael Baker International**  
14725 Alton Parkway  
Irvine, CA 92618

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## SECTION 1: EXECUTIVE SUMMARY

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This arborist survey has been performed at the request of Michael Baker International for a proposed specific plan (The Terraces at Walnut) project site (TTM78210), which includes residential, commercial, and recreational development in the City of Walnut, California. *During this survey, public safety was the primary goal when determining each tree's ability to remain within the proposed project. Tree health, its functional and aesthetics value were also considered when making a final determination.*

The trees assessed were identified using a GPS, and decisions to include individual species were based on their typical growth form (tree vs. shrub), and the City's municipal code (minimum stem circumference of 6 inches (see Section 2.7 below) at breast height). Given the number of trees onsite, the primary goal of this tree survey was to inventory and rapidly assess the health and integrity of each tree within the site boundary. The surveys associated with this report were performed during the months of November and December 2017 by George Wirtes (ISA Certified Arborist), Dan Rosie (biologist), Linda Nguyen (biologist), and Ryan Phaneuf (biologist). During the surveys, 142 trees were assessed onsite involving four distinct ornamental trees species and one native bush/tree species (see section 3.1 below). Details of each tree were recorded documenting their species, stature, health, environment/conditions in which they occur, and potential for failure (risk). The subject trees were tagged with an aluminum tag containing a unique number. The species onsite are listed in Appendix A below along with each tree's stature and health characteristics.

Many of the trees onsite are diseased, stressed, lacking vigor, or are in a state of decline due to lack of maintenance, environmental stressors, and competition nearby invasive species. A number of trees pose a substantial risk to public safety due to codominant stems with included bark, disease, or other conditions. Evidence was found suggesting borer and termite infection along with the persistence of other diseases (viral/bacterial). In addition, many trees sprouted in close proximity to others leading to situations with increased risk of failure (unbalanced canopy mass).

In all, 111 trees are recommended for removal due to their poorly maintained condition, degraded health, or general appearance. All 142 trees assessed directly conflict with the site plan. Because of lack of maintenance, any remaining individuals must be pruned with on-going monitoring if preserved. *Within the site, any trees removed (native or ornamental) as part of the project should be mitigated at the discretion of the Community Development Director and in compliance with the City's Municipal Code 25-178.8 (see Section 4.1.2 below).*

Finally, 56.3% of the trees onsite are listed as invasive by the California Invasive Plant Council (CAL-IPC); these specific trees have adaptations that give them an advantage over native tree species and can potentially outcompete for local resources, crowding them out. This is evidenced by the numerous sprouting beds noted throughout the site and the resultant, recurring theme of competing canopies. This situation has in turn, lead to intermingling of canopies and offset canopy mass among many of the trees onsite resulting in increased risk of failure and potential liability.

## **SECTION 2: BACKGROUND**

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### **2.1 - Project Location and Description**

This Tree Survey and Arborist Report (report) has been prepared for Michael Baker International in order to quantify the number of trees (and assess their condition) within the grading limits the proposed specific plan development (project site) TTM 78210. This effort has been performed in order to determine the number of replacement trees required to mitigate ecological impacts of their removal. The proposed development includes construction of up to 240 dwelling units, a commercial space, as well as a neighborhood park, and greenbelt landscaping along with the associated infrastructure.

This report has been prepared according to the City of Walnut's Oak/Walnut Tree Preservation Code and International Society of Arboriculture (ISA) standards. The fieldwork for this report was conducted on November 16, 30 and December 2, 2017.

The project site is located along the northern edge of Valley Boulevard at the intersection of Valley Boulevard and Faure Avenue; it is located approximately 1.5 miles west of State Route (SR) 57 in the City of Walnut, Los Angeles County, California (see Figure 1 below).



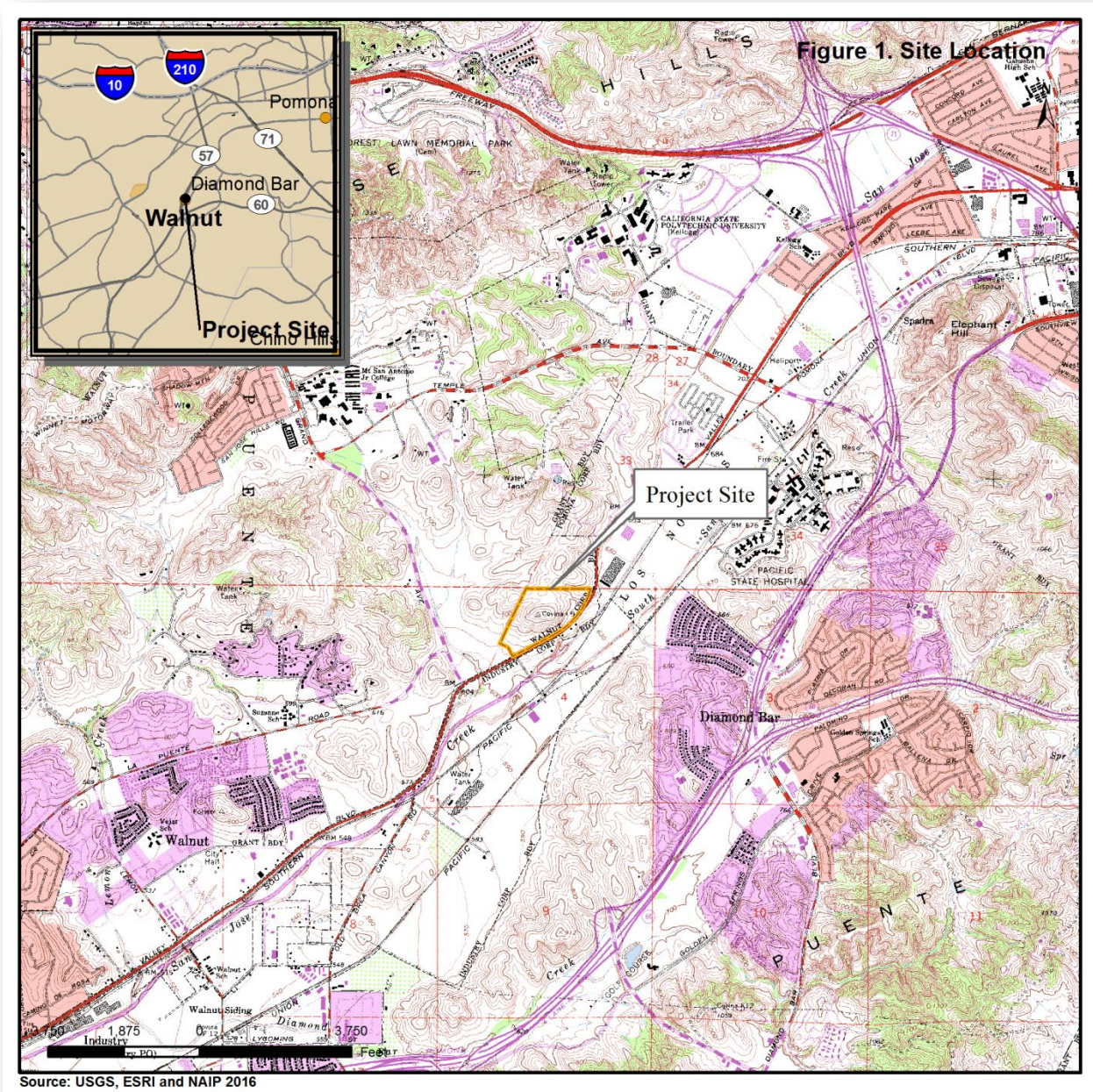


Figure 1. Map of site vicinity.

## 2.2 - Site and Vicinity Characteristics

The project site has topological and ecological features that contribute to a unique set of conditions within the property. The elevation of the site ranges from approximately 700 to 800 feet above mean sea level. There is a prominent central knoll within the site along with swales and minor ravines with patches of remnant coastal sage scrub.

## 2.3 - Project Site Soils

The soils onsite are comprised of discontinuous human-transported material over mixed alluvium derived from granite and/or sedimentary rock. Below are specific soil types and characteristics as described by the National Resource Conservation Service.

Map Unit Symbol	Map Unit Name	Typical profile	Percent of AOI
1007*	Urban land-Biscailuz-Pico complex, 0 to 2 percent slopes	Ap - 0 to 13 inches: loam Bk1 - 13 to 28 inches: loam Bk2 - 28 to 37 inches: loam Bkg - 37 to 49 inches: sandy clay loam 49 to 57 inches: sandy loam C2 - 57 to 79 inches: sand	5.0%
1141*	Zaca-Apollo, warm complex, 20 to 55 percent slopes	A - 0 to 8 inches: clay Bkss1 - 8 to 21 inches: clay Bkss2 - 21 to 37 inches: clay Bk - 37 to 53 inches: clay Cr - 53 to 63 inches: bedrock	94.2%
1232*	Counterfeit-Urban land complex, 10 to 35 percent slopes, terraced	Au - 0 to 5 inches: clay loam Cu1 - 5 to 18 inches: clay Cu2 - 18 to 37 inches: clay Cu3 - 37 to 57 inches: clay loam C57 to 79 inches: sandy loam	0.8%
<b>Totals for Area of Interest</b>			<b>100.0%</b>

\* `National Resource Conservation Service map Unit Symbols and descriptions.

## 2.4 - Scope of Survey

In a joint effort, Golden State land & Tree Assessment (GSL&T) conducted a tree survey and health assessment of all trees within the grading limits of the project area (TTM 78210) with the assistance of Michael Baker International (MBI) biologists determining trees within the area of impact and taking stature and canopy spread measurements. The survey was performed to identify the different tree species found within the project grading area, assess their health, and provide insight as to which trees may be retained as part of the planned improvement. The health assessment included, but was not limited to; recording total diameter at breast height (DBH), canopy spread, tree height, apparent decay, other signs of potential hazard, and pest damage. A potential 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.

## 2.5 - Survey Method and Health Assessment

Prior to the field survey, the City of Walnut'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 and GPS-enabled smartphone and tablet with digitized project boundaries and grading limits were used to identify the precise location of each subject tree. The survey team included ISA arborist George Wirtes of Golden State Land and Tree Assessment (GSLTA) and The

MBI staff used this GPS-enabled device to determine all trees within the grading zone. They documented trunk diameters measured in inches at 4.5 feet above ground level (termed total diameter at breast height (DBH)). The crown-width was 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. Trees with a circumference of less than 6 inches at breast height were excluded from this assessment (with the exception of sprouting trees of heaven saplings – see below).

Tree status (relative condition, stature, and health) was conducted by arborist, George Wirtes from ground level with the aid of binoculars. To estimate wood integrity, a rubber mallet was often used to assess possible decay within the tree stem and flare. 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.

The positions of the subject trees were recorded using a GPS whose data was shared among the team and exported into GIS for periodic illustration over aerial photographs. Given that the fieldwork was conducted over several days, the GPS data (.gpx/.kmz) were projected on GIS layouts as available, and communicated occurred among the group to assure all trees affected by the project were identified and assessed to the greatest extent feasible by the team.

*Note: There were many instances of sprouting stands of trees of heaven that were intentionally overlooked given the invasive character of the species and size of the trees involved (<4" DBH in most cases).*





Plate 1. This is a northwestern view across the southeastern portion of the property showing a stand of volunteer tree of heaven sprouters.

## **2.6 - 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 such 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 2 Basic Risk Assessment* as defined by ISA Best Management Practices. This type of assessment is limited to evaluating trees and obvious signs of defects such as:

- Dead or broken structures
- Cracks
- Weakly attached branches and codominant 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). The ratings are defined below as defined by ISA:

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 someone 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, 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 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.

## **2.7 - Local Tree Regulation**

According to Chapter 25-178 (Ord. No. 03-05, § 1) of the Code of the City of Walnut, California (Walnut City Code), the City lies in the Walnut Valley, the beauty and natural setting of which is greatly enhanced by the presence of large majestic trees (see References). These indigenous trees are recognized for their significant historical, aesthetic and environmental value. They are indicator species for the natural communities, in which they exist, supporting a broad spectrum of other native plant and animal species. As one of the most picturesque trees in the Southern California area, they lend beauty and charm to the natural and fabricated landscape, enhance the value of property and preserve the character of the communities in which they exist. Development within the Walnut Valley has resulted in the removal of most of these trees. Further uncontrolled and indiscriminate destruction of this diminishing plant heritage would detrimentally affect the general health, safety and welfare of the citizens of Walnut. The preservation program and procedures outlined in these guidelines contribute to the welfare and aesthetics of the community and retain the great historical and environmental value of these last remaining trees. No person, partnership, firm, corporation, government agency, or other legal entity shall cut, prune, remove, relocate, endanger or damage any tree protected by this division on any land located within the incorporated areas of the City of Walnut except in accordance with the conditions of a valid tree permit issued by the city.

Chapter 25-178 of the Walnut City Code addresses only Oak and Walnut Tree Preservation and Protection. Native trees with a circumference at breast height of 6 inches including oak (*Quercus spp.*), California black walnut (*Juglans californica*), require preservation under this ordinance. *Other tree species within the City are not protected within this regulation.* Specific mitigation ratios are not identified in the ordinance. The City has many provisions outlined in their Municipal Code that must be

adhered to during the pre-construction and constructions phase of the proposed developments. A tree location map must be available and a fencing plan in place during ground-disturbing activity.

The Walnut City Code indicates, “It shall be the policy of the City of Walnut to require the preservation of all healthy trees<sup>1</sup> unless compelling reasons justify the removal of such trees. This policy shall apply to the removal, pruning, cutting and/or encroachment into the protected zone of the trees. The community development department shall have the primary and overall responsibility to administer, evaluate and monitor this policy to assure strict compliance” (Ord. No. 03-05, § 1).

Finally, the City also provides specific protection for species of “heritage” oak or walnut trees as defined below (Chapter 25-178.2). *Note: None of the trees within the project footprint qualifies as a candidate for specific protection using the guidelines within this regulation.*

*“Heritage oak/walnut tree” means any tree<sup>1</sup> measuring forty inches or more in circumference or, in the case of a multiple trunk tree, two or more trunks measuring thirty inches or greater in circumference, measured three feet above the natural grade surrounding such tree. In addition, the planning commission and/or city council may classify a tree, regardless of size, as a heritage oak/walnut tree if it is determined by a majority vote thereof that such tree has exceptional historic, aesthetics and/or prominence to the community.*

<sup>1</sup> “Tree” means any oak tree of the genus *Quercus* including, but not limited to, Blue Oak (*Quercus douglasii*), California Black Oak (*Quercus kelloggii*), Valley Oak (*Quercus lobata*), California-Live Oak (*Quercus agrifolia*), Canyon Oak (*Quercus chrysolepis*), Interior Live Oak (*Quercus wislizeni*), Scrub Oak (*Quercus dumosa*), and California Black Walnut (*Juglans californica*).

## **2.8 - Limitations and Exceptions of Assessment**

This survey was conducted in accordance with industry standards and ethics. 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. No diagnostic testing was performed during this assessment. This survey associated with this Arborist Report included no 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 visible from the ground. Epiphytic growth and structures can also obscure defects on the stem, limbs and in the canopy of a tree. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. 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.

The statements made in this report do not take into account the effects of extremes of climate, wind, 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. Golden State Land & Tree

Assessment 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.

The goal of this survey was not to diagnose all pathogens noted, but to assess each tree's potential to serve the project long term. It is also to recommend measures to limit risk exposure while enhancing the beauty and health of each tree onsite. The trees assessed within the grading limits of the project were surveyed, and decisions and conclusions were based primarily on public safety going forward. Other features of the trees were taken in consideration to draw conclusions. 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**

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During the site survey, specific measurements and parameters of all trees onsite were recorded on tree assessment worksheets; the data have been transferred into the table in Appendix A at the end of this document. In total, 142 ornamental or native trees consisting of five distinct species were found within the project impact area. The species observed are displayed in the figure below (see Figure 2) and characterized in Table 1 below.

There were many trees onsite that were in site need of maintenance or in a state of decline. In addition, portions of the site have not been adequately maintained resulting in limbs encroaching on Valley Blvd. Numerous instance were also noted where trees had voluntarily spouted occurred where resulting tree canopies were poorly developed leading to situations with increased liability of tree failure (stem lean, offset canopy mass, etc.).







### 3.1 - Tree Species Composition

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 species onsite are described in detail below and a comprehensive table is provided in Appendix A of this report. In general, the variety of species onsite was appropriate for the location.

As indicated, the project site includes 142 trees within five distinct species (see Table 1 below). Of the tagged tree species within the property, one is a native species (but usually in bush form), and four are considered exotic. Two of these exotics are classified as invasive (“Limited”) by the California Invasive Plant Council (Cal-IPC). The age of the trees onsite ranged from mature to senescent and the health from rigorous to dead.

**Table 1. Tagged Tree Species**

Common Name Botanical Name	Species Profile	Qty.
Carrotwood tree <i>Cupaniopsis anacardiodes</i>	This species 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. It growth habit is erect or spreading with a low canopy. Has evergreen foliage. Height: 40 feet. Width: 30 feet. Growth Rate: 12 to 24 Inches per Season. Longevity 50 to 150 years. It prefers moist soil clay, loam or sand type soil. Its branch strength is rated as medium weak. Its Root damage potential is rated as moderate.	36
Chinese Flame Tree <i>Koelreuteria bipinnata</i>	This species is a good shade tree and is native to Asia. Its habit is spreading with a low rounded, umbrella or vase shape canopy with deciduous foliage. Height: 20 - 40 feet. Width: 15 - 30 feet. Growth Rate: 12 to 24 Inches per Season. Longevity is 50 to 150 years. It tolerates exposure full sun to partial shade and prefers moist soil with clay, loam or sand texture. It is susceptible to beetle borers and scales. Its branch strength is rated as medium and root damage potential is rated as low.	8
Tree of heaven ** <i>Ailanthus altissima</i>	Native to China and grows rapidly. This deciduous tree tolerates hot and dry conditions, wind, air pollution, and difficult soils. However, is weedy and less desirable in most landscape situations. Can grow taller under some conditions. Cal-IPC ( <a href="#">California Invasive Plant Council</a> ) classifies the invasiveness of this plant as moderate. Has Deciduous foliage. Height: 40 - 60 feet. Width: 40 - 60 feet. Growth Rate: 36 or More Inches per Year. Longevity Less than 50 years. Sunset Zones 2 - 24. USDA Hardiness Zones 4 - 8. It tolerates full sun to full shade and wet to dry soil with clay, loam or sand texture. Highly Acidic to Highly Alkaline Soil pH. Branch Strength Rated as Weak. Root Damage Potential Rated as Moderate. Desirable Wildlife Plant.	51
Within the property, numerous instances were noted of volunteer sprouting by this very-invasive species. Many occurrences were observed where mature crowns of sprouters had crowded canopies of other planted trees creating poor or sub-optimal growing conditions. Other instances were noted where dense stands of sprouters had emerged.		
Mexican Elderberry* <i>Sambucus mexicana</i>	Large shrub or small tree with usu. multiple trunks and dark green leaves. Elderberry can adapt to most any climate and soil conditions, though some irrigation is needed to establish. Elderberry is fast growing. USDA Hardiness Zones 6 - 10 Height 25'-30' Width: 6-24 feet. The berries can be used for jams and jellies, juices and wines. The leaves, stems and bark of Elderberry are poisonous. Elderberry has also been used extensively in medicinal treatments. Blue Elderberry is a beautiful shrub, or tree, that produces edible fruit and attracts wildlife.	18
Mexican elderberry is a California native plant species that typically takes on a bush-like form. Within the site, there were a number of these plants of substantial size taking on a tree-like form. Given their size and contribution to the local flora, they were included in the survey as accessibility allowed. Their location was often difficult to access due to the dense invasive annual flora, mainly milk thistle and black mustard. These invasive species were so dense that it directly competed against the elderberries likely affecting their health.		
Peruvian pepper ** <i>Schinus molle</i>	This species tolerates saline soil and smog. Susceptible to Texas root rot, especially in desert. Cal-IPC (California Invasive Plant Council) classifies the invasiveness of this plant	29

as limited. It is native to Northern South America and has Evergreen foliage.  
Height: 25 - 50 feet. Width: 25 - 40 feet.  
Growth Rate: 36 Inches per Season. Longevity 50 to 150 years.  
This species tolerates full sun and it prefers partial shade and moist to dry soil. It is drought tolerant and can be planted in clay, loam or sand textured soils. Susceptible to aphids, psyllid, scales and thrip, phytophthora, root rot, sooty mold and verticillium. Its branch strength is rated as medium weak and root damage potential is rated as high.

Peruvian pepper trees planted onsite have been permitted to grow or sprout with limited maintenance. There are many instances with offset or overlapping canopies, failed branches, poor cuts, and several of the individuals are senescent and pose a liability risk to future development. This particular species is the most abundant type of tree within the site.

\* California native tree species

\*\* Cal-IPC (California Invasive Plant Council) invasive tree species

### **3.2 - Observations**

As previously indicated, the stature and condition of each tree within the project boundary were assessed at the time of the survey. Below are a few representative examples of the conditions found within the project site among the trees.

#### **3.2.1 - Pedestrian Hazard**

Of the trees planted adjacent to the southbound Valley Boulevard, it was noted that many of the trees has grown beyond the curb line with the canopy encroaching on the right lane shoulder. *During the course of this evaluation, a pedestrian pointed out the apparent danger to foot-traffic walking adjacent to the roadway.*



Plate 2. This a view of a carrotwood tree encroaching in southbound lanes of Valley Blvd (tree #57).



Plate 3. This is a view from the median of Valley Blvd at carrotwood trees lining the street.

### **3.2.2 - Canopy Crowding**

Plants and trees compete for available resources such as light, water and nutrients. Strategies employed by each individual plant take place above and below the soil. If adequate spacing is not permitted, it can also lead to offset canopies/above ground biomass, poor uptake of nutrients, stressed trees with lack of vigor and canopy dieback among many other conditions. Overcrowded plants must compete with each other for soil nutrients, which can result in increased fertilizer needs. Soil contains a finite amount of nitrogen and other necessary plant nutrients. The more plants there are in a small space, the more quickly these nutrients are used up. In addition, Poor air circulation can lead to an increase of fungal diseases, such as powdery mildew. Pests, including aphids and mites, can also more easily move between plants if they are spaced so closely that they touch.



Plate 4. This a view of densely sprouting trees of heaven creating intermingling canopies (tree #88).

### **3.2.3 - Inadequate Maintenance**

Trees need periodic maintenance and regular irrigation; this is especially important as trees become established and flourish.



Plate 5. This is a view of a primary branch cut with resultant water sprouting (tree #58).



### 3.2.4 - Pest and Disease



Plate 6. This is a view of internal stem decay stemming from an unclosed branch cut (tree #129).

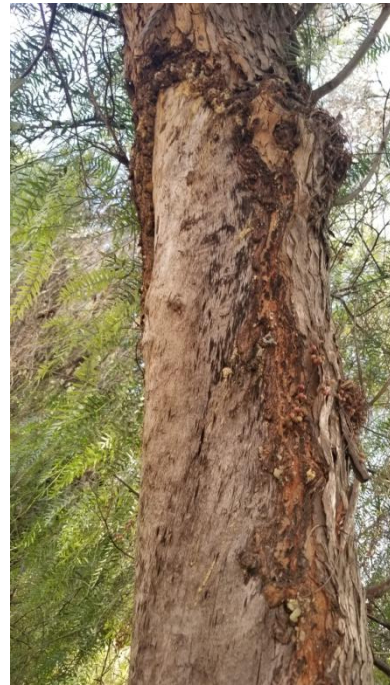


Plate 7. This is a view of a large patch of decay with internal, xylem tissue exposed (tree # 107).



Plate 8. This is a view of excessive bark shedding stemming from a possible infection (tree # 90)



Plate 9. This is a view of a lateral crack in the bark from a likely incision (tree # 28)



Plate 10. This is a view of termite-infested deadwood from a previous branch cut (tree #48).



Figure 12. This is a view of significant herbivory damage on a tree of heaven from a local pest (tree #8).



Plate 11. This is a view of a possible fungal canker on tree #30.



Plate 13. This is a view of crowded interior canopy branches (tree #34).



### **3.2.5 - Potential or Immanent Hazard**

Because of the prolonged lack of maintenance, several trees within the site pose a significant threat of failure. These trees may show signs of stem cracking, significant lean, or serious decay. Trees showing indication for immediate removal include the following individuals:



Plate 14. This is a view of a tree of heaven bifurcated by and compartmentalizing a chain link fence (tree #14).



Plate 16 This is a view of severe internal stem decay posing a substantial hazard (tree #112).



Plate 17. This is a view of possible mechanical damage and subsequent stem decay (tree #39).



Plate 18. This is a view of tree # 43 planted too close to a utility pole creating a potential hazard.

## SECTION 4: DISCUSSION AND RECOMMENDATIONS

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No Heritage Trees, California black walnuts, western sycamores, or oak species are present onsite as defined in the City's Municipal Code (see Section 2.7 above). Within the project, 142 trees composed of five distinct species were assessed. Of these, 111 trees should be removed due to their increased liability of failure, diseased status, poor structural integrity or vigor, reduced functionality and poor aesthetics (a few are marginal and may be preserved with treatment and evaluation once project is implemented). According to the site plan, all 142 trees directly conflict with the site plan. A detailed list of each tree is provided in Appendix A below.

**Table 2. Tree Designation**

<b>Prune and Monitor</b> - Trees appeared to present the health and stature necessary for long-term preservation. Tree protection during construction is necessary and re-evaluation is warranted once project has been implemented. Treatment may be warranted for certain trees due to the level of stress tolerated.	31
<b>Remove</b> - These trees present certain health, stature, or liability risks that replacement with younger, more viable trees will benefit future community and natural environment.	111
<b>Total*</b>	<b>142</b>

*\* According to the site plan, all 142 trees conflict with the site plan and are slated to be replaced.*

A total of 80 trees (56.3%) of the 142 trees onsite are classified by CAL-IPC as invasive. This status basically means these species have evolved characteristics that give them an advantage over native flora. Due to the invasive nature of the trees of heaven, numerous sprouters had erupted within the site over time – some of substantial size. Unfortunately, their sprouting location often jeopardized their stature, development, or that of a tree in its immediate vicinity. Given the nature of the tree of heaven and marginal appearance of certain individuals, it was felt in many cases that the future project would be better served with a replacement tree of approved species.

### 4.1 - Recommendations

*Decisions to label a tree as viable were made primarily keeping future public safety in mind and secondarily by the ecological contribution and aesthetics of each individual tree.*

#### 4.1.1 - Trees to be Preserved

There were as many as 31 trees that appeared viable and worthy of preserving. These trees are proposed for removal and replacement due to conflict with the development site plan.

#### 4.1.2 - Tree Removal Mitigation and Mitigation Plan

There were 111 trees that have been determined to be in decline, or have substantial defects to where they pose a liability or are aesthetically unappealing. Recommended mitigation for living trees removed is replacement with “approved” species in accordance with Section 25-178.8 of the City's municipal code.

Replacement mitigation involving replacement ration and species type are at the discretion of the Community Development Director. The proposed project's landscaping plan is anticipated to include a significant amount of parks/slope landscaping (approx. 17 ac.) that would address the removal of non-invasive trees at a greater than 1:1 ratio.

#### **4.1.3 - Strategic Pruning and On-going Monitoring**

Several species listed in Appendix A require maintenance and ongoing monitoring if preserved; this is to ensure public safety and minimize liability due to potential tree failure. Strategic pruning compliant with ISA standards must be performed to subordinate codominant stems, and canopy deadwood should be removed. Regular maintenance according to ISA standards is recommended for all trees onsite.

#### **4.1.4 - 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.

#### **4.1.5 - Tree Protection during Construction**

Building/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 condition takes some of an older tree's strength and vigor and further diminishes its health. The City of Walnut's Municipal Code contains specific provisions regarding construction.

Work within the Protected Zone. Because of the high sensitivity of these trees, great care must be taken when work is being conducted within the protected zone. For this reason, the city has established specific procedures to ensure that the trees receive maximum protection. The procedures are as follows:

- a) Onsite Supervision. All work conducted within the protected zone of the *tree* shall be performed in the presence of the applicant's *oak tree* consultant, and verified by the city's *oak tree* consultant.
- b) Forty-eight Hour Notice. Except for dead wooding and pruning of limbs which are six inches or less in circumference, the applicant shall provide a forty-eight hour notice to the department of community development and the appropriate *tree* consultant before beginning any work within the protected zone.
- c) Hand Tools. Unless otherwise approved, all work conducted within the protected zone underneath the *tree* shall be accomplished using hand tools only. Use of tractors and other vehicles within the protected zone is prohibited. The use of chainsaws for cutting branches is permitted.
- d) Certification Letter. Certification letters are required for all work conducted upon the trees. In this regard, the applicant's *tree* consultant shall submit a certification letter to the department of community development within ten working days after completion

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.

The following measure must be taken for any trees that are to be preserved onsite (or as dictated by the City's guidelines).

1. 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).
2. 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.
3. 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 not be 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.
4. 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.
5. 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.


6. Construction creates large amounts of dust. Trees to be preserved will need to be kept clean. Dust reduces photosynthesis within the leaves of trees. 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**

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Mr. Wirtes is a Certified Arborist with the International Society of Arboriculture (CH-08084). Mr. Wirtes was certified in November of 2005 and has conducted numerous tree assessments for residential properties that involve oak and other tree species. Most notably, Mr. Wirtes has created an oak regeneration plan for a 2.3-acre project site in Ventura County as mitigation within a specific plan development. 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:



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George Wirtes, MS

ISA Certified Arborist, CH-08084

## **SECTION 6: REFERENCES**

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- Calflora. 2007. Website at <http://www.calflora.org>.
- California Geological Survey, 2016. Website at <https://mrdata.usgs.gov/geology/state/state.php?state=CA>
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- Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press. Berkeley, California.
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## Appendix A - Tree Species Observed

*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.*

EVALUATION FORMS FOR PROTECTED TREES														
Tree Tag #	Species1	DBH (inches)				Total	Height (feet)	Canopy Width (feet)			Gen App	Env	Risk	Conclusion
		1st Trunk	2nd Trunk	3rd Trunk	4th Trunk									
1	Chinese Flame	3	3			6	24	9	5	6	1-2	1	1	Preserve
Good vigor, dual leader							5		6					
							5	3	5					
2	Chinese Flame	2.8				2.8	21	3	4	2	1-2	2-3	2-3	Preserve
Good vigor, one leader, competing canopy, 10-15° lean to West/ competing canopy							6		1					
							2	1	2					
3	Chinese Flame	5.5				5.5	27	5	8	8	1-2	2-3	2-3	Preserve
Good vigor, competing canopy							4		7					
							2	5	8					
4	Tree of Heaven	3				3	24	4	4	4	1-2	3	1-2	Preserve
Invasive, competing canopy, poor prognosis							3		4					
							6	5	5					
5	Chinese Flame	5.5				5.5	29	3	5	1	2	3	1-2	Preserve
Competing with Chinese Flame Tag #6, clumped, decay at stem, poor prognosis							12		3					
							12	8	6					
6	Chinese Flame	5.5				5.5	21	3	1	7	1-2	2-3	1-2	Preserve
10° Lean, competing canopy, poor prognosis							10		11					
							8	6	11					
7	Chinese Flame	2.5				2.5	17	3	2	2	1-2	2-3	1-2	Preserve
approx 15° Lean North, competing canopy, decay at flare							3		2					
							12	1	1					
8	Chinese Flame	8	4	8		20	27	12	14	14	1-2	2	2	Preserve
Multi-stem, some decay at crotch, increased herbivory							10		14					
							12	6	10					
9	Chinese Flame	3	4.5	3	12.5	23	27	15	20	22	1-2	3-4	2-3	Remove
Beneath another (canopy), increased lean, poor prognosis							14		14					
							12	12	14					
10	Tree of Heaven	12	13			25	42	14	21	21	3	2-3	3-4	Remove
Borer with frass, termites, at fence line and culvert, decreased canopy health decline large branch cut, near culvert							13		21					
							20	20	15					
11	Tree of Heaven	9.5				9.5	33	13	16	14	2	2	2	Preserve
At fence line and culvert, good vigor, Increased bloom							12		14					
							11	14	14					
12	Tree of Heaven	6.5	8			14.5	35	16	17	18	2	3	2-3	Remove
Impaled by stake, competing canopy with Carrotwood							20		16					
							12	15	18					
13	Tree of Heaven	6.5				6.5	33	7	8	10	2	2	2-3	Remove
Good vigor, competing canopy, lean due to canopy competing, large branch cut							6		11					

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								5	15	15				
14	Tree of Heaven	9	8			17	36	20	17	18	2	3-4	4	Remove
	Divided by fence, good canopy development							15		12				
								20	22	16				
15	Tree of Heaven	12				12	29	10	11	10	2-3	3-4	4	Remove
	Divided by fence, compartmentalized, decreased vigor							7		12				
								6	12	15				
16	Tree of Heaven	9				9	21	8	12	15	2	2	3-4	Remove
	Pests at crotch, poor prognosis							10		18				
								8	15	8				
17	Carrotwood	13				13	28	12	8	12	1-2	2	2	Preserve
	Next to road way, good vigor, good canopy							11		8				
								15	20	13				
18	Carrotwood	10.5				10.5	24	13	18	20	2	2	2	Preserve
	Good vigor, well developed canopy, (15° lean to North)							11		15				
								18	17	12				
19	Tree of Heaven	7.5				7.5	35	20	20	20	3	3	3-4	Remove
	Shedding bark infxn, lean, poor prognosis, near cement culvert							4		3				
								2	2	2				
20	Tree of Heaven	13	8	8	6.5	35.5	52	24	23	20	2-3	2-3	3-4	Remove
	Infxn, near culvert, multi stem with included bark							25		29				
								26	23	25				
21	Tree of Heaven	5.5				5.5	30	6	8	6	3-4	3	3-4	Remove
	Distressed, main stem cut, infection at base							5		7				
								9	11	14				
22	Tree of Heaven	8.5				8.5	36	6	7	5	2-3	2-3	2-3	Remove
	Mechanical damage, poor prognosis, large gaping wound							5		12				
								14	15	16				
23	Tree of Heaven	7.5				7.5	40	10	13	10	2	2	2	Preserve
	Good vigor, unclosed branch cut at flare							8		12				
								9	7	9				
24	Carrotwood	8.5				8.5	20	13	20	17	2	2	2	Preserve
	Good vigor, good canopy							11		12				
								13	15	11				
25	Tree of Heaven	14.5	15			29.5	52	14	21	25	2-3	2-3	3	Remove
	Infxn, callus wood, co-dominant stem							15		25				
								16	14	14				
26	Carrotwood	14.5				14.5	32	17	14	11	2	2	3-4	Remove
	Unclosed cut at crotch, vigor good, poor prognosis							15		6				
								22	21	9				
27	Tree of Heaven	4	4			8	23	2	2	1	3-4	3	3-4	Remove
	at grade change, increased infxn							2		6				
								2	2	1				
28	Tree of Heaven	8.5	10			18.5	40	8	10	3	3	3-4	3	Remove
	Infxn, poor crown development, shedding bark, competing crown, poor prognosis							6		2				
								5	5	5				
29	Carrotwood	4	4.5			8.5	24	9	10	2	3	3-4	3	Remove
	Poor crown development, infxn, competing crown, leaf curl, poor prognosis							5		4				
								11	11	7				

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30	Tree of Heaven	7.5	4			11.5	35	0	10	20	3-4	3-4	3-4	Remove
	Competing crown, diseased, poor prognosis							0		15				
								0	8	12				
31	Tree of Heaven	3	3	3.5		9.5	18	4	6	5	3	3	2	Remove
	Poor developing crown, infxn, smell, diseased stem							5		7				
								4	5	6				
32	Carrotwood	11.5				11.5	20	12	18	15	2	2	2	Preserve
	Good canopy, road side, large branch cut, embedded tube							14		18				
								13	15	17				
33	Tree of Heaven	6	7			13	22	12	19	20	2-3	2-3	3	Remove
	Included bark, co dominant stem, infxn, Increased callus wood							8		9				
								15	13	11				
34	Carrotwood	9.5				9.5	19	11	10	12	2-3	2-3	2-3	Preserve
	Embedded tie, wrapped limbs, some dead wood							13		9				
								12	17	17				
35	Carrotwood	8				8	31	15	7	10	2-3	2	2-3	Preserve
	Embedded (tie), good canopy							13		11				
								12	14	13				
36	Carrotwood	10				10	21	14	11	12	2-3	2	2-3	Preserve
	Good canopy, some dieback, minor incl. bark, some dead wood							14		10				
								11	12	9				
37	Carrotwood	8.5				8.5	23	13	16	10	2	2	2	Preserve
	Some die back, some med branch cuts							12		9				
								9	11	8				
38	Carrotwood	9				9	25	17	22	10	3	2	3	Remove
	Good canopy, large decay site at stem flare							16		9				
								14	13	12				
39	Carrotwood	8.5				8.5	23	10	12	13	2-3	2-3	4	Remove
	Large damage area to stem South side, Immediate removal, some canopy deadwood							8		11				
								7	12	12				
40	Tree of Heaven	3	3	3.5		9.5	16	7	14	15	2-3	2-3	2	Preserve
	Included bark, possible decline							4		7				
								2	7	7				
41	Carrotwood	6.5				6.5	17	9	6	8	3	3	3-4	Remove
	Large damage at stem, crown die Back							11		8				
								6	6	7				
42	Carrotwood	9				9	23	13	10	9	2-3	2-3	3	Remove
	Some die back, stained wood, stem decay, dense crown, increased callus wood, clean up							10		11				
								13	12	12				
43	Carrotwood	10.5				10.5	25	16	13	16	2-3	2	3	Remove
	Infected, poor prognosis, treat? Near utility pole							15		17				
								11	12	15				
44	Carrotwood	8.5				8.5	23	13	11	7	2-3	2	3-4	Remove
	Large decay at South stem, good canopy							9		9				
								7	10	11				
45	Carrotwood	11				11	28	11	12	9	2-3	2-3	2-3	Preserve
	Some (die back?), some minor exuding bark, infxn, Treat							16		12				
								16	15	11				
46	Carrotwood	11				11	25	16	12	13	2-3	2-3	2-3	Preserve

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	Some minor die back, heavy crown							17		12				
								14	10	11				
47	Carrotwood	10				10	27	13	15	20	2-3	2-3	2-3	Preserve
	Good crown development, some included bark							14		17				
								15	11	17				
48	Elderberry	7	4	3		14	18	5	15	13	2	2-3	1-2	Remove
	deciduous, under crown, under crown, volunteer, Some pest damage, boring with frass							5		10				
								5	6	10				
49	Carrotwood	11				11	32	18	19	20	2	2	2	Preserve
	Street tree, clean crown, unclosed branches cut, minor canopy stress							15		18				
								15	17	20				
50	Elderberry	9	11	14		34	27	15	15	15	3-4	2-3	2	Remove
	Severe decline							25		15				
								14	12	15				
51	Tree of Heaven	10.5				10.5	21	15	18	18	3-4	3	2	Remove
	Poor growth form, poor aesthetics, heavy thistle invasion							8		13				
								8	15	17				
52	Carrotwood	9				9	20	16	14	11	2	2	2	Preserve
	Large unhealed branch cut, some crown thinning							15		11				
								14	13	12				
53	Carrotwood	14				14	22	14	13	17	2	2-3	2	Remove
	Internal decay and pests, near utility pole, poor prognosis							15		15				
								15	10	16				
54	Tree of Heaven	21	12	7	6	46	22	17	20	20	2	2-3	2-3	Remove
	Open growth form, many volunteer shoots, competes with canopy of volunteer, better with appropriate species							16		15				
								13	12	15				
55	Carrotwood	8.5				8.5	16	9	9	7	2-3	2-3	2-3	Remove
	substantial decay at base, poor prognosis							9		8				
								9	11	10				
56	Carrotwood	13.5				13.5	21	17	17	13	2-3	2-3	3-4	Remove
	Poorly pruned, longitudinal crack in primary branch, good vigor, increased risk, included bark							17		9				
								14	14	10				
57	Carrotwood	12.5				12.5	24	15	14	12	2	2	2	Preserve
	Good crown development, good trunk form, minor stress							11		10				
								13	17	12				
58	Carrotwood	13.5				13.5	29	15	20	18	2	2	2-3	Preserve
	Poorly pruned with large branch cuts, questionable prognosis							18		14				
								15	15	19				
59	Carrotwood	13				13	27	25	21	15	2-3	2	3	Remove
	Offset crown, poor stem form, mechanical damage at upper branches, callus wood, pest/termites internally							20		17				
								25	20	18				
60	Elderberry	11	9	7	18	45	27	16	15	14	3	2-3	2-3	Remove
	Bored, canopy deadwood, poor prognosis							15		20				
								15	15	15				
61	Elderberry	13				13	18	15	14	13	2-3	2	2-3	Remove
	Boring holes, deciduous poor prognosis, sparse canopy, increased evidence of blooming, boring near flare, poor prognosis							14		13				
								15	11	12				
62	Tree of Heaven	2	2			4	14	5	5	4	2	2	2	Preserve
	multi-stemmed, vigor good							4		5				

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								5	6	6				
63	Carrotwood	16				16	31	18	23	18	2	2	2	Preserve
	Good form, good stem, good crown							14		12				
								16	24	18				
64	Tree of Heaven	3.5	3.5	3	2.5	12.5	18	4	5	3	3	2-3	3	Remove
	Distressed, volunteer sprouting, poor prognosis							5		5				
								5	6	6				
65	Tree of Heaven	8	8.5			16.5	21	10	15	15	3	2-3	3	Remove
	diseased, included bark, shedding bark, poor prognosis							12		2				
								11	11	3				
66	Carrotwood	12				12	26	16	18	20	2-3	2	2	Preserve
	Large prune cuts, good form							13		13				
								13	16	8				
67	Carrotwood	15				15	27	18	23	10	2-3	2	3-4	Remove
	Poor placement next to light pole, included bark, monitor needed							22		16				
								20	17	16				
68	Elderberry	30				30	22	16	17	15	3	2-3	3	Remove
	Bore holes at stem, access issues							15		15				
								17	18	16				
69	Carrotwood	6.5	8.5			15	17	8	10	15	2-3	2	2-3	Remove
	Infection, decreased vigor, poor prognosis							7		16				
								10	14	16				
70	Tree of Heaven	3	3	3		9	15	10	9	8	2-3	3	3	Remove
	Poor growth Form, volunteer sprouter, steep slope							11		8				
								10	11	12				
71	Carrotwood	11.5				11.5	21	15	14	10	2-3	3	2-3	Remove
	Large rock at flare, poor prognosis, damaged at flare, some decay at cut							10		12				
								12	13	15				
72	Tree of Heaven	2.5	3.5	4	6	16	12	2	4	6	2-3	3	2-3	Remove
	Poor prognosis, competing crown, volunteer sprouter							4		12				
								5	5	8				
73	Carrotwood	8.5				8.5	24	11	12	14	2	2	2	Preserve
	possible point of entry by pest, callus wood, monitor							13		11				
								15	17	13				
74	Tree of Heaven	3.5				3.5	15	0	0	0	2-3	3	3	Remove
	Fair vigor, steep hillside, poor prognosis							5		0				
								10	3	0				
75	Tree of Heaven	6.5				6.5	19	8	10	0	3	3	3	Remove
	Poor vigor in branch tips, steep grade							5		0				
								0	4	3				
76	Tree of Heaven	2	1	1	1	5	12	8	8	7	2-3	3	3	Remove
	Steep grade, competing canopy							5		4				
								5	6	0				
77	Tree of Heaven	5.5	6.5			12	17	5	16	13	2-3	3	2-3	Remove
	Dense thistle, poor growth form, poor prognosis							11		6				
								11	8	8				
78	Tree of Heaven	4				4	22	3	5	4	2-3	3	2-3	Remove
	Dense thistle, poor growth form, poor prognosis							3		3				
								3	4	3				

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79	Tree of Heaven	5.5				5.5	22	9	12	10	2-3	3	2-3	Remove
	Dense thistle, poor growth form, poor prognosis							10		3				
								5	4	4				
80	Tree of Heaven	4.5				4.5	21	12	7	4	3	3	2-3	Remove
	Significant decay, decreased vigor							8		3				
								3	2	2				
81	Tree of Heaven	4				4	15	7	8	10	2-3	3	2-3	Remove
	Poor prognosis, dense thistle							7		9				
								8	8	8				
82	Tree of Heaven	2.5	3.5			6	18	3	5	5	2	2	2	Remove
	Dense thistle, vigor fair, project better served by new tree							3		5				
								3	4	4				
83	Tree of Heaven	6	7	5	19	37	20	10	10	15	2-3	3-4	3	Remove
	volunteer sprouter, Competing with Carrotwood, poor prognosis, upper canopy decay							18		15				
								15	17	16				
84	Tree of Heaven	5	5	3	8.5	21.5	20	10	8	6	2	3-4	2-3	Remove
	Growing in canopy of Carrotwood, dense stand with other volunteers							12		10				
								8	6	6				
85	Carrotwood	9				9	26	10	12	15	3	3	2-3	Remove
	Heavily damaged, internal decay, decreased vigor							20		15				
								19	14	15				
86	Tree of Heaven	6	6.5	3.5	7.5	23.5	30	15	5	15	2	3	2-3	Remove
	co-dominant stem, poor placement, competing with Carrotwood and Tree of Heaven							17		15				
								8	6	8				
87	Tree of Heaven	4	3.5	1.5		9	30	5	5	6	2	3	2	Remove
	volunteer sprouter, competing with Tree of Heaven, poor form, better served by street tree							5		6				
								5	6	5				
88	Tree of Heaven	8				8	34	4	5	6		21	1-21	Remove
	in heavy stand of trees, project may be better served with tree replaced							8		8				
								10	10	8				
89	Tree of Heaven	8	5	5	7	25	25	3	4	20	2-3	3	2-3	Remove
	5 Trunk Cluster, Failed Tree of Heaven in canopy, decay at branch cut							2		10				
								3	3	4				
90	Tree of Heaven	5.5	3	1		9.5	25	3	2	5	2-3	3	2-3	Remove
	3 Trunk Cluster, Dense Tree of Heaven stand, competing with Carrotwood canopy, poor prognosis, near street, error on side of remove Tree of Heaven?							4		10				
								4	3	4				
91	Tree of Heaven	3.5	3.5			7	25	2	5	5	3	3	2	Remove
	Poor Aesthetics, better served with replaced tree							2		3				
								3	4	4				
92	Carrotwood	6.5				6.5	23	16	12	15	3	3-4	3	Remove
	Lean, canopy off balance, competing with Tree of Heaven, Remove Tree of Heaven							15		10				
								14	16	12				
93	Tree of Heaven	9				9	30	0	6	10	32-3	2-3	1-26	Remove
	Significant decay at flare, competing with Carrotwood, lean, volunteer sprouter							0		10				
								5	12	11				
94	Tree of Heaven	5.5	9	4		18.5	30	1	4	12	3-4	3	3-4	Remove
	Peeling bark, diseased							1		12				
								5	12	13				
95	Tree of Heaven	5.5	5			10.5	30	0	2	15	3	3	3-4	Remove



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	Significant decay in stem, poor prognosis							0		15				
								5	5	12				
96	Tree of Heaven	5				5	24	4	10	16	3	3	2-3	Remove
	Dense canopy stand, volunteer sprouter, poor form and aesthetics							4		17				
								3	5	17				
97	Tree of Heaven	5.5	5	6	7.5	24	30	3	4	3	2-3	3	2-3	Remove
	7 Trunk Cluster, likely decay at flare, poor canopy development							3		15				
								3	10	15				
98	Tree of Heaven	4	4	3.5		11.5	22	5	8	12	3	3	2-3	Remove
	4 Trunk Cluster, decay at stem, decreased vigor, dense Tree of heaven stand							10		13				
								6	5	4				
99	Carrotwood	8				8	26	12	10	13	2-3	2-3	1-32	Prune and monitor
	Clean up crown, some dead wood							14		15				
								15	14	13				
100	Tree of Heaven	13				13	20	15	17	15	2-3	3	3	Remove
	Steep slope, vigor fair, decay at stem							15		16				
								9	10	11				
101	Peruvian Pepper	16				16	40	20	8	8	3	3	3-4	Remove
	substantial sweep lean,, unbalanced Canopy, vigor poor, Potential stem decay							25		25				
								20	20	25				
102	Peruvian Pepper	40				40	45	25	20	25	2-3	3	3-4	Remove
	Active bee hive, increased risk, large branch failure, pest							25		25				
								20	25	20				
103	Peruvian Pepper	16				16	20	10	12	8	3	3	3	Remove
	Stem decay, some canopy dead wood							8		8				
								12	20	10				
104	Peruvian Pepper	8				8	20	10	10	4	3	3	2-3	Remove
	Steep slope, large branch cut, increased decay							12		6				
								0	15	8				
105	Peruvian Pepper	13				13	25	4	4	4	2-3	3	3-4	Remove
	Increased stem decay, increased liability							8		5				
								12	30	7				
106	Peruvian Pepper	20				20	25	17	16	14	2-3	3	3	Remove
	primary branch decay, on steep slope							10		12				
								26	30	25				
107	Peruvian Pepper	12				12	15	6	5	5	2-3	3	3-4	Remove
	Tremendous canopy lean, offset mass?							10		4				
								26	35	25				
108	Peruvian Pepper	19				19	30	12	15	15	3-4	3	3	Remove
	large branch cut with decay							16		15				
								18	25	20				
109	Peruvian Pepper	8				8	10	5	2	2	3-4	3	3	Remove
	increased stem decay, competing canopy, decreased living foliage							4		4				
								4	6	6				
110	Peruvian Pepper	17				17	25	10	15	15	2-3	3	3-4	Remove
	Significant internal stem decay, upper canopy deadwood, thin canopy							10		20				
								6	18	20				
111	Peruvian Pepper	20				20	30	17	20	25	2-3	3	3-4	Remove
	Upper canopy branch failure, increased stem decay							15		15				

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								20	12	10				
112	Peruvian Pepper	13	16			29	25	15	15	10	3	3	4	Remove
	Increased stem decay, rubbing branch							20		10				
								30	30	15				
113	Peruvian Pepper	11				11	10	6	5	3	3-4	3	3-4	Remove
	Holes (burrows) at root base, topped, heave risk							10		5				
								10	10	4				
114	Peruvian Pepper	11.5	11			22.5	20	15	20	6	2	3	3-4	Remove
	Decent canopy, large branch cut, health fair, part of a two-stem system, other stem must be removed							10		5				
								20	25	18				
115	Peruvian Pepper	19				19	25	8	15	15	2-3	3	2-3	Remove
	Poor prognosis, unbalanced canopy, large cut likely won't heal, likely internal decay							10		10				
								15	25	20				
116	Peruvian Pepper	11				11	20	20	14	10	3	3	3-4	Remove
	Horse damage, poor canopy							5		5				
								5	4	5				
117	Peruvian Pepper	14	10			24	20	15	10	2	3	3	3-4	Remove
	Horse damage, increased decay on primary Limb, internal decay							20		3				
								12	25	25				
118	Peruvian Pepper	25				25	20	10	2	4	3	3	3-4	Remove
	substantial heave Risk, fungal decay, poor canopy development							20		13				
								25	30	30				
119	Peruvian Pepper	11.5				11.5	15	8	5	4	3	3	3-4	Remove
	Sweep lean, poor Structure							20		3				
								5	2	3				
120	Peruvian Pepper	15.5				15.5	25	25	15	5	3	3	3-4	Remove
	35-40° lean, possible stem decay							15		2				
								6	20	5				
121	Peruvian Pepper	16.5				16.5	15	15	15	0	3	3	3	Remove
	Unclosed branch cut, competing canopy, increased canopy deadwood							10		0				
								30	8	3				
122	Peruvian Pepper	20				20	20	4	5	5	4	3	4	Remove
	Large branch cut, significant stem decay							16		6				
								8	12	8				
123	Peruvian Pepper	10.5				10.5	28	25	20	4	3	3	3-4	Remove
	Poor crown development, increased stem decay, poor prognosis, water sprouting							0		5				
								0	6	6				
124	Peruvian Pepper	20				20	30	15	10	10	3	3	3	Remove
	Large branch cut, poor canopy development, likely internal decay							30		9				
								20	25	20				
125	Peruvian Pepper	21				21	20	25	8	4	3	3	3-4	Remove
	Offset canopy mass, branch decay							20		0				
								20	26	6				
126	Peruvian Pepper	3	3			6	8	3	3	3	4	3	4	Remove
	Stump sprouts							3		3				
								3	3	3				
127	Peruvian Pepper	3	3	3.5	7	16.5	12	5	5	5	4	3	4	Remove
	Stump sprouts							5		5				
								5	5	5				

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128	Peruvian Pepper	2	2	2	3	9	10	5	5	5	2	2	2	Remove
	Sprout system, poor primary Stem designation							5		5				
								5	5	5				
129	Peruvian Pepper	32				32	45	10	15	20	3	3	3-4	Remove
	Large unclosed branch cut, likely internal decay, competing canopy							5		15				
								25	20	25				
130	Elderberry	8	8	10	10	36	18	8	10	8	3-4	3	3	Remove
	decreased living mass, borer							8		8				
								8	8	8				
131	Elderberry	8	24			32	15	8	8	8	3	2	3	Remove
	Decay in stem, increased canopy dead wood							8		8				
								8	8	8				
132	Elderberry	8	8	8	10	34	15	15	15	15	3	2	3	Remove
	Decay in stem, canopy dead wood							15		14				
								14	14	14				
133	Elderberry	4	4	4	16	28	17	15	15	15	3-4	2	2-3	Remove
	Fire damaged, poor aesthetics							15		15				
								15	15	15				
134	Elderberry	12	8	5	50	75	18	10	10	10	3-4	2	2-3	Remove
	Fire damaged, poor aesthetics							10		10				
								10	10	10				
135	Elderberry	15	10			25	18	8	10	8	3	2	3-4	Remove
	Branch failure, poor aesthetics							8		10				
								8	8	8				
136	Elderberry	10	5	5	3	23	17	12	12	12	3	2	3	Remove
	Bore holes, stem decay, poor prognosis, decay at flare							12		12				
								12	12	12				
137	Elderberry	5	5	6	11	27	15	20	20	20	3	2	2	Remove
	increased dead wood in canopy, borer							20		20				
								20	20	20				
139	Elderberry	9	10	8	9	36	21	18	16	16	3-4	2	3	Remove
	Large branch failure, borer							20		16				
								20	18	16				
140	Elderberry	10	11.5			21.5	17	11	11	11	3	2	3	Remove
	Branch failure, poor vigor, uneven canopy, old stand, senescent, fire damage							11		11				
								11	11	11				
141	Elderberry	18				18	21	12	12	13	2-3	2	2	Remove
	Burrowing in ground, difficult to inspect stem, poor aesthetics, possible borer							13		14				
								14	15	14				
142	Elderberry	5	3	2		10	22	1	0	1	3-4	3	3	Remove
	Significant branch decay, branch failure, stem decay							2		15				
								15	15	15				
143	Elderberry	5	3	2		10	18	12	12	12	3-4	3	3	Remove
	Significant branch decay, branch failure, stem decay							12		12				
								12	12	12				