

**Royal Oaks Project  
(APN: 8527-021-041)  
Updated Tree Preservation and Protection Plan**

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### 1 INTRODUCTION

Dudek evaluated and recorded information about regulated trees classified as native, prominent, significant, and orchard trees over 4 inches in diameter at 24 inches above finished grade and prepared this updated Tree Preservation and Protection Plan (TPPP) for the proposed Royal Oaks Project (project) in the City of Bradbury (City), California. Primary topics of this updated TPPP include recent evaluations of project-related impacts and recommendations for tree protection, relocation, removal, and mitigation. The previous TPPP (dated October 2015) is included as Appendix A. The project site is located on private land within in the City, approximately 1.3 miles south of the Angeles National Forest.

This updated TPPP provides a summary of Dudek's site and tree evaluation within the proposed development and infrastructure improvement areas. There are seven native tree species that meet the City's definition of a native tree: Arizona ash (*Fraxinus velutina*), coast live oak (*Quercus agrifolia*), Engelmann oak (*Quercus engelmannii*), western cottonwood (*Populus fremontii*), toyon (*Heteromeles arbutifolia*), sumac (*Rhus ovata*), and Mexican elderberry (*Sambucus mexicana*). Of the seven native species found on site, coast live oak is the most prominent. Non-native trees found on site include king palm (*Archontophoenix alexandrae*), flame tree (*Brachychiton acerifolius*), carob (*Ceratonia siliqua*), lime (*Citrus aurantifolia*), lemon (*Citrus x limon*), blue gum eucalyptus (*Eucalyptus globulus*), edible fig (*Ficus edulis*), Shamel ash (*Fraxinus uhdei*), silk oak (*Grevillea robusta*), Chinese flame tree (*Koelreuteria bipinnata*), white mulberry (*Malus alba*), avocado (*Persea Americana*), stone pine (*Pinus pinea*), prunus (*Prunus* spp.), cork oak (*Quercus suber*), Brazilian pepper (*Schinus terebinthifolius*), tipu (*Tipuana tipu*), Chinese elm (*Ulmus parvifolia*), and one unknown dead tree.

Dudek's International Society of Arboriculture (ISA) Certified Arborists performed various tasks associated with surveying, inventorying, and evaluating the condition of the property's trees, as described in the following sections. The purpose of this updated TPPP is to present the physical characteristics, mapped locations, impact and preservation totals, and appropriate mitigation for impacts to native and other protected trees. The tree quantities and related project impacts have been analyzed and are reported in the following sections.

In summary, the Royal Oaks property exhibits an orchard like setting, with non-native trees and scattered oaks on the southern portion of the property and scattered individual coast live oak trees throughout the northern portion. There are 468 protected trees located throughout the project site, 261 of which are native (55.8%) and 207 of which are non-native (44.2%). Of these, 154 trees (32.9% of the trees on the project site) are expected to be impacted by the proposed project and associated infrastructure improvements. Of the impacted protected trees, 11 trees are considered "candidates" for relocation. However, tree relocation is not a requirement of the City or of this

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TPPP. Should the project applicant determine that relocating trees would be desirable, the candidate trees could be considered appropriate, upon closer examination.

### **1.1 Site Description**

The approximately 12.4-acre project site is located northeast of the intersection of Royal Oaks Drive and Royal Oaks Drive North, north of Interstate 210 and west of Interstate 605, within the City of Bradbury, Los Angeles County, California (Figure 1). The site includes of Assessor's Parcel Number (APN) 8527-021-041, situated in Section 30 of Township 1 North Range 10 West of the Azusa 7.5-minute U.S. Geological Survey quadrangle (Figure 2). The project site is located on private land approximately 1.3 miles south of the Angeles National Forest.

The topography within the project site creates a natural divide between the southern and northern portions of the property. Two unoccupied residential homes are located in the central portion of the property. The southern half of the project site is disturbed, dominated by numerous horse corrals and horse boarding areas, dirt roads, buildings, and avocado orchards. Numerous small buildings exist throughout the southern half of the project site. The vegetation within the southern portion of the site is dominated by non-native grassland, non-native vegetation, and disturbed and non-disturbed oak woodland. The northern portion of the project site is undeveloped and composed of natural vegetation dominated by coast live oak woodlands along the canyons.

### **1.2 Project Description**

The site is approximately 12 acres (APN 8527-021-041) located off Royal Oaks Drive. The proposed Royal Oaks Project would establish a specific plan to create a new gated subdivision consisting of 10 custom residential home sites and a small security gatehouse. Demolition of an existing residence, pool, carport, garage and apartment, and horse stables is also proposed.

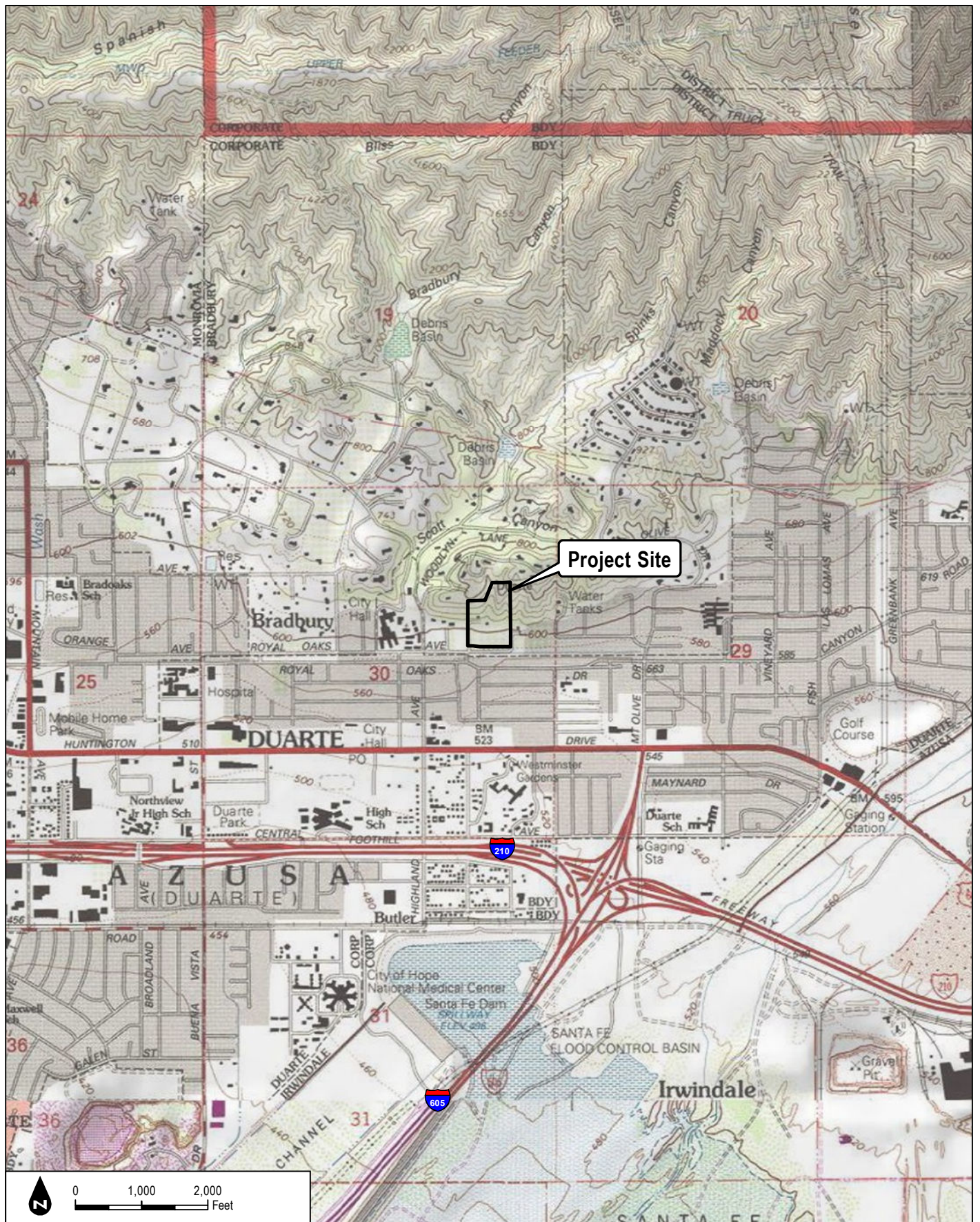


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SOURCE: USGS 7.5-Minute Series Azusa Quadrangle.

**DUDEK**

**FIGURE 2**  
**Vicinity Map**

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## 2 METHODS

### 2.1 Individual Tree Evaluation

Dudek mapped and collected tree attribute information for all trees within and immediately adjacent to the tree survey area meeting the City's definition of a "protected tree," which includes native, prominent, significant, and orchard trees that have a minimum diameter of 4 inches at 24 inches above final grade. The location of each individual mature tree was mapped using a Trimble Pathfinder Pro XH Global Positioning System (GPS) receiver (Appendix B). The Pathfinder has a horizontal accuracy of 1 meter (1 sigma) using differential code positioning techniques. Since tree canopies can sometimes cause loss of satellite lock by blocking the line-of-sight to satellites, an electronic compass and reflectorless electronic distance measuring device was also used in mapping tree locations. The electronic distance measuring/compass combination operates in concert with the Pathfinder system to position offsets, and offset information is automatically attached to the GPS position data string. Protected trees were tagged in the field with an aluminum tree tag bearing a unique identification number. The tags were placed on the trunk of each inventoried tree and tag numbers correspond with the individual tree data presented in Appendix C.

Concurrent with tree mapping efforts, Dudek arborists collected tree attribute data, including species, quantity of individual trunks, individual trunk diameters, overall height, canopy extent, and general health and structural conditions. Trunk diameter measurements were collected at 24 inches above the ground along the trunk axis as described in Section 9.06.090.030 of the City's Municipal Code, with a few common exceptions. In cases where a tree's trunk is located on a slope, the 2-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively) and the measurement was made at the circumference of the trunk at this point. Tree height measurements were ocular estimates made by experienced field arborists. Tree canopy diameters were typically estimated by "pacing-off" the measurement based on the investigator's knowledge of his stride length or by visually estimating the canopy width. The tree crown diameter measurements were made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter.

Pursuant to the *Guide for Plant Appraisal* (ISA 2000), tree health and structure were evaluated with respect to five distinct tree components: roots, trunk(s), scaffold branches, small branches, and foliage. Each component of the tree was assessed with regard to health factors such as insect, fungal, or pathogen damage; fire damage; mechanical damage; presence of decay; presence of wilted or dead leaves; and wound closure. Components were graded as *good*, *fair*, *poor*, and *dead*, with *good* representing no apparent problems, and *dead* representing a dying and/or dead tree. This method of tree condition rating is comprehensive and results in ratings that are useful for determining the status of trees based on common standards. Trees in natural

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settings have important habitat value, as evidenced by numerous cavity nesters and insects that thrive on and within oak trees, even when they are considered in poor structural or health condition. However, this assessment focuses on tree condition with regard to health and structure for purposes of analyzing potential project impacts and where necessary, providing recommendations for mitigating potential tree hazards, such as trees with weak limb attachments, cavities and rot, or excessive lean.

Upon completion of field data collection and mapping, raw GPS data was post-processed using GPS Pathfinder Office (v 3.10), and individual tree location data was compiled and updated in a geographic information system (GIS). The digital tree locations were linked to individual tree identification numbers and associated tree attribute data. This data set was then evaluated using ArcGIS (v. 10.1) software to determine the position of individual trees related to the proposed project development areas. Data resulting from this analysis was utilized to evaluate the individual tree impact totals presented in this report.

### **2.2 Scope of Work Limitations**

No root crown excavations or investigations, aerial evaluations, or internal probing was performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal, or subterranean, decay by a qualified ISA Certified Arborist before finalizing preservation plans.

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### 3 OBSERVATIONS

There are 468 trees located within and immediately adjacent to the Royal Oaks tree survey area and include 26 different tree species that meet the City’s criteria for a “protected tree.” As Table 1 indicates, most of the inventoried trees (55.8%) are native to California, including Arizona ash, coast live oak, Engelmann oak, western cottonwood, toyon, sumac, and Mexican elderberry. The coast live oak and Engelmann oak trees are considered the highest value trees on this site. Table 1 provides a summary of the 26 species mapped and evaluated within the tree survey area. The Tree Location Exhibit in Appendix B presents the location of the individual trees mapped and assessed for the Royal Oaks project.

Overall, the trees exhibit growth and structural conditions that are typical of their locations as landscape, orchard, and natural trees. The trees include various trunk and branch maladies as well as varying health and structural conditions. As presented in the Tree Information Matrix in Appendix C, most of the individually mapped trees, a total of 41.2% (193 trees), exhibit fair health condition, 4.3% (20 trees) are in good health condition, 10.5% (49 trees) in poor health, 16.6% (78 trees) are in critical health, and 27.4% (128 trees) are dead. Structurally, 0.4% (2 trees) of the individually mapped trees are considered to exhibit good structure, 58.8% (275 trees) exhibit fair structure, 27.8% (130 trees) exhibit poor structure, and 13.0% (61 trees) exhibit are dead. Good condition trees exhibit acceptable vigor, healthy foliage, adequate structure, and lack of any major maladies. Fair condition trees are typical, with few maladies, but declining vigor. Poor condition trees exhibit declining vigor, unhealthy foliage, poor branch structure, or excessive lean. Critical condition trees exhibit levels exceeding those of poor condition trees but are also likely to be dead within 3 to 6 months. The majority of trees found to be in critical health, poor health, or dead are located in the site’s inactive orchard areas. The trees located throughout the orchard are of poor quality and have not been maintained in several years. Additionally, many native trees on the northern upper slopes of the property have died or declined as a result of the recent 5-year statewide drought and secondary pests.

**Table 1**  
**Summary of Trees Royal Oak Project Site**

Scientific Name	Common Name	Number of Trees
<i>Archontophoenix alexandrae</i>	King palm	5
<i>Brachychiton acerifolius</i>	Flame tree	1
<i>Ceratonia siliqua</i>	Carob	3
<i>Citrus aurantifolia</i>	Lime	7
<i>Citrus x limon</i>	Lemon	2
<i>Eucalyptus globulus</i>	Blue gum eucalyptus	1
<i>Ficus edulis</i>	Edible fig	7

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**Table 1**  
**Summary of Trees Royal Oak Project Site**

Scientific Name	Common Name	Number of Trees
<i>Fraxinus uhdei</i>	Shamel ash	3
<i>Fraxinus velutina</i>	Arizona ash	24
<i>Grevillea robusta</i>	Silk oak	3
<i>Heteromeles arbutifolia</i>	Toyon	3
<i>Koelreuteria bipinnata</i>	Chinese flame tree	1
<i>Malus alba</i>	White mulberry	3
<i>Persea americana</i>	Avocado	152
<i>Pinus pinea</i>	Stone pine	1
<i>Populus fremontii</i>	Western cottonwood	1
<i>Prunus</i> spp.	Prunus	3
<i>Quercus agrifolia</i>	Coast live oak	212
<i>Quercus engelmannii</i>	Engelmann oak	2
<i>Quercus suber</i>	Cork oak	1
<i>Rhus ovata</i>	Sumac	7
<i>Sambucus mexicana</i>	Mexican elderberry	12
<i>Schinus terebinthifolius</i>	Brazilian pepper	1
<i>Tipuana tipu</i>	Tipu	2
<i>Ulmus parvifolia</i>	Chinese elm	10
Unknown	Unknown (dead)	1
<b>Total</b>		<b>468</b>

Trees within the tree survey area vary in size and stature according to species and available growing space. The site's coast live oak and Engelmann oak trees are primarily single-stemmed with trunk diameters (diameter at 24 inches above finished grade) ranging from 4 to 32 inches. Multi-stemmed oak trees with 2 to 5 stems have combined diameters up to 64 inches. Single and multi-stemmed non-native species have diameters between 4 and 25 inches. Tree heights vary from 6 to 70 feet. Tree canopy extents range from 4 feet to nearly 70 feet. Over 45% of the trees on site exhibit canopy spreads that are greater than 20 feet across at their widest points.

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### 4 TREE PRESERVATION

#### 4.1 Regulatory Definitions and Requirements

The following section summarizes the relevant policies regulating tree impact and removal associated with the Royal Oaks Project.

##### 4.1.1 City of Bradbury

The City's Tree Preservation and Protection Ordinance (Chapter 9.06.090 of the City's Municipal Code) requires a tree report be prepared for removal of protected trees species.

Section 9.06.090.030 (Definitions):

- **Tree:** Tree shall mean a woody perennial plant which usually has (but is not limited to) a single dominant trunk and has a mature height of fifteen feet (15') or more, or has a trunk diameter of four inches (4") or more measured at twenty-four inches (24") above finished grade.
- **Native Tree:** Any woody plant species indigenous to the desert, foothills or canyons of Southern California prior to the California Mission Period, provided that the plant has an expected mature trunk size of six inches (6") DBH and has an expected mature height of fifteen feet (15') or higher. Giant Sequoias, Redwoods (*Sequoiadendron sempervirens*), and Dawn Red-woods (*Metasequoia glyptostroboides*), evergreen native Oaks (such as *Quercus agrifolia*, *engelmannii*), deciduous Oaks (such as *Quercus lobata*, and *kelloggii*) are to be regarded as important native trees even though they have been planted by man, introduced (or possibly reintroduced) into the Southern California foothill and canyon environments.
- **Prominent Tree:** Any woody perennial plant with a trunk DBH of six inches (6") or more, and having an expected mature height of fifteen feet (15') or higher.
- **Significant Tree:** Any non-native or exotic tree with a trunk DBH of six inches (6") or more, and having an expected mature height of fifteen feet (15') or higher, and known to survive in the Southern California environment.
- **Orchard Tree:** Any trees located in an area primarily used for growing fruit trees or nut trees or any other agricultural commodity

Section 9.06.090.060 (Prohibitions):

- **Removal of Native Trees and/or Prominent Trees:** No prominent tree, native tree of any other tree defined in Section 9.06.090.030 and/or which is of a desirable genus and

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species shall be removed without first obtaining a permit to do so. The City manager shall issue such permits only after the presentation of photographs and/or drawings showing that the prominent tree is a significant health or fire hazard or has become an extremely severe detriment to the view of the mountains or valley from house sites. A 14-day waiting period is created hereby, during which time appeals to any decisions, restrictions or conditions made by the City Manager on the permit may be submitted in writing to the Planning Commission. Should an appeal be filed, the 14-day holding period is extended automatically until the next Planning Commission meeting for which the item can be placed on the agenda.

- **Removal of Orchard Trees:** No orchard tree shall be removed without first obtaining a permit to do so. The City manager shall issue such permits only after the presentation of photographs and/or drawings showing that the prominent tree is a significant health or fire hazard or has become an extremely severe detriment to the view of the mountains or valley from house sites. A 14-day waiting period is created hereby, during which time appeals to any decisions, restrictions or conditions made by the City Manager on the permit may be submitted in writing to the Planning Commission. Should an appeal be filed, the 14-day holding period is extended automatically until the next Planning Commission meeting for which the item can be placed on the agenda.

#### **4.1.2 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (1918) requires tree removal and potentially disturbing construction activities to occur during certain times to avoid harassment of nesting birds. According to this act, no construction or other disturbing activities can occur within 500 feet of an active bird nest during the period beginning in January and ending in June each year. Biological surveys should be conducted to provide clearance for project initiation.

## **4.2 Impacts**

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

Impacts to trees can be classified as either direct or indirect. Direct impacts to trees related to site improvements are typically the result of physical injuries or changes caused by machinery involved with the development process. Direct impacts include tree removal, root damage, soil



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excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Indirect impacts include alterations to stream flow rates, diversion of groundwater flow, introduction of exotic plant species, and alterations to disturbance regimes. Wider-scale alterations to the area near trees as well as specific changes that occur around the trees are important considerations.

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

Impact totals presented herein are based on conceptual disturbance limits, fuel modification zones, and development plans as of the date of this updated TPPP. Therefore, the actual number of trees that are subject to direct and indirect impacts may change as the detailed site planning process proceeds.

#### 4.2.1 Direct Tree Impacts

For the purposes of this report, direct impacts are those associated with tree removal or encroachment within the tree protected zone (canopy drip line plus 5 feet or 15 feet from trunk, whichever is greater). Tree removal is expected to be required when the trunk is located inside or within 2 feet of the proposed limits of grading. Encroachment is expected when soil and roots are disturbed within the tree protected zone. Table 2 summarizes the total number of trees, by species, that are expected to be subject to direct construction-related impacts. The locations of impacted trees, by impact type, are presented in the map in Appendix D. Measures to minimize the extent of impact to preserved trees are provided in Appendix E.

**Table 2**  
**Summary of All Direct Tree Impacts – Royal Oaks**

Scientific Name	Common Name	Removal	Encroachment
<i>Archontophoenix alexandrae</i>	King palm	4	—
<i>Brachychiton acerifolius</i>	Flame tree	—	1
<i>Ceratonia siliqua</i>	Carob	3	—
<i>Citrus aurantifolia</i>	Lime	5	—
<i>Eucalyptus globulus</i>	Blue gum	—	1
<i>Ficus edulis</i>	Fig	7	—

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**Table 2**  
**Summary of All Direct Tree Impacts – Royal Oaks**

Scientific Name	Common Name	Removal	Encroachment
<i>Fraxinus uhdei</i>	Shamel ash	2	1
<i>Fraxinus velutina</i>	Arizona ash	14	—
<i>Grevillea robusta</i>	Silk oak	3	—
<i>Koelreuteria bipinnata</i>	Chinese flame tree	—	—
<i>Malus alba</i>	White mulberry	1	—
<i>Persea americana</i>	Avocado	4	—
<i>Pinus pinea</i>	Stone pine	1	—
<i>Populus fremontii</i>	Western cottonwood	1	—
<i>Prunus</i> spp.	Prunus	1	—
<i>Quercus agrifolia</i>	Coast live oak	75	14
<i>Quercus engelmannii</i>	Engelmann oak	—	2
<i>Quercus suber</i>	Cork oak	1	—
<i>Sambucus mexicana</i>	Mexican elderberry	1	—
<i>Schinus terebinthifolius</i>	Brazilian pepper tree	1	1
<i>Tipuana tipu</i>	Tipu	2	—
<i>Ulmus parvifolia</i>	Chinese elm	6	2
<b>Totals</b>		<b>132</b>	<b>22</b>

### 4.2.2 Indirect Tree Impacts

Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Site-wide changes affecting trees include diverting runoff and storm water, creating retention and detention ponds, relocating streams or making improvements to streams, lowering or raising water tables, altering the capacity for soil moisture recharge, removing vegetation, or damming underground water flow (Matheny and Clark 1998). For the purposes of this report, indirect tree impacts are expected for trees within 25 feet of the project's limits of grading and not subject to removal or encroachment. Trees located in fuel modification zones are also typically considered indirectly impacted; however, at the time of this updated TPPP, the extent of the fuel modifications zones are unknown. Table 3 presents the number of trees expected to be indirectly impacted by the proposed project.

**Table 3**  
**Summary of Indirect Tree Impacts – Royal Oaks**

Scientific Name	Common Name	Indirect Impact
<i>Quercus agrifolia</i>	Coast live oak	1
<b>Total</b>		<b>1</b>

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### 4.2.3 Tree Removals Due to Health

Tree removals due to health are the result of changes to the site prior to construction that may cause tree decline, even when the tree is not directly injured. The project contains an inactive avocado orchard (including non-avocado species) that has not received irrigation for an extended period of time, resulting in the death or decline of 256 trees classified as dead, critical, or in poor health. In the 2015 TPPP, there were 192 trees classified as dead or poor. The observed increase in overall tree health decline is primarily due to the 5-year statewide drought and lack of supplemental irrigation. Of these 256 trees, 148 are avocado and 108 are protected trees that are generally located adjacent or within the inactive orchard. Table 4 presents the number of trees expected to be removed due to health. These removals should be removed as nuisance trees per the classification in Title 9.06.090.060 for the City's Municipal Code. These tree removals do not require mitigation as stated in the municipal code. It should be noted that these 256 trees present a significant fire hazard.

**Table 4  
Summary of Health Related Removals – Royal Oaks**

Scientific Name	Common Name	Total
<i>Archontophoenix alexandrae</i>	King palm	1
<i>Citrus aurantifolia</i>	Lime	2
<i>Citrus x limon</i>	Lemon	2
<i>Fraxinus velutina</i>	Arizona ash	10
<i>Heteromeles arbutifolia</i>	Toyon	1
<i>Koelreuteria bipinnata</i>	Chinese flame tree	1
<i>Malus alba</i>	White mulberry	2
<i>Persea americana</i>	Avocado	148
<i>Prunus</i> spp.	Prunus	2
<i>Quercus agrifolia</i>	Coast live oak	78
<i>Sambucus mexicana</i>	Mexican elderberry	6
<i>Ulmus parvifolia</i>	Chinese elm	2
Unknown		1
<b>Total</b>		<b>256</b>

### Tree Impact Summary – All Trees

In total, it is estimated that 132 (28.2%) protected trees will require removal due to direct impacts; 22 (4.7%) will experience encroachment into the tree protected zone; 1 (0.2%) will be indirectly impacted; 57 (12.2%) will be preserved in place with no direct impacts; and 256 (54.7%) trees will require removal due to health. Of the 256 trees identified for health removal,

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108 meet the criteria for classification as a protected tree (95 native trees and 13 significant trees), and 148 avocado trees meet the criteria for classification as an orchard tree as defined by the City. In addition, 1 coast live oak tree is indirectly impacted.

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### 5 MITIGATION

The City's Municipal Code does not identify specific tree replacement standards for projects affecting native and/or protected trees. The City does require the submission of a tree preservation and landscaping plan per the Title 9.06.090.040 of the Municipal Code. In addition, during an on-site meeting with the City on March 7, 2017, it was determined that typical mitigation for native trees (*Quercus* species only) is to be at a 2-to-1 ratio with 24-inch box trees of like species or payment of in-lieu fees. It was also stated that non-*Quercus* native trees, non-native significant trees, and orchard trees do not require mitigation. The 256 trees identified as removals due to health should be removed as nuisance trees as per the classification in Title 9.06.090.060 for the City's Municipal Code because they pose a significant fire hazard and should not require mitigation. The direct impact to 75 coast live oaks and encroachment on an additional 16 oak trees (including 14 coast live oaks and 2 Engelmann oaks) requires mitigation tree planting per the meeting held with the City. This impact mitigation planting should focus on container oak plantings into the built landscape and hillside oak woodlands at a ratio of 2 to 1 (2 replacement oak trees for every 1 impacted oak tree) or the payment of in-lieu fees. Table 5 presents the number of trees impacted by type and recommended mitigation.

**Table 5**  
**Summary of Impacts and Recommended Mitigation – Royal Oaks**

Tree Type	Number of Impacts	Number of Replacement Trees
Direct impact	132 (75 oak trees)	150 oak trees
Encroachment	22 (16 oak trees)	32 oak trees
Indirect impact	1	0
Health related	256	0
Preserved in place	57	0
<b>Totals</b>	<b>468</b>	<b>182</b>

#### 5.1 Potential Relocation Candidates

Of the directly impacted protected trees, 11 are considered “candidates” for relocation. However, tree relocation is not a requirement of the City or of this updated TPPP. Potential relocation candidate oak trees exhibit good health and structure, have no uncorrectable, outwardly detectable defects, and reveal no signs or symptoms of serious pest infestation or disease. Table 6 provides a summary of the proposed relocation candidates, by species, and Appendix C details which trees are the relocation candidates.

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**Table 6**  
**Summary of Relocation Candidates by Species**

Botanical Name	Common Name	Relocation Candidates
<i>Quercus agrifolia</i>	Coast live oak	11
Total		11

Should the project applicant determine that relocating trees is desired, the final quantity of relocation trees should be determined following tree relocation contractor inspection, root crown investigations, or internal probing and root pruning operations. The relocation process is stressful for trees and often results in tree loss. Therefore, it should be performed by an experienced tree relocation contractor and follow standard tree relocation processes to maximize the probability of relocation success.

### **5.2 Tree Removal Permit**

Consistent with Title 9.06.090.050 of the City's Municipal Code (City of Bradbury 2012), a tree removal permit will be required prior to all tree removals.

# Royal Oaks Project

## Updated Tree Protection and Preservation Plan

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### 6 CONCLUSIONS

Dudek inventoried and evaluated 468 regulated trees at the Royal Oaks Project site. A total of 154 trees would be impacted by the proposed project. Furthermore, an additional 256 trees classified as dead, critical, or in poor health will require removal because they are considered a significant fire hazard. The City's Municipal Code does not identify specific tree replacement standards for projects affecting native and/or protected trees. During an on-site meeting with the City on March 7, 2017, it was determined that typical mitigation for native trees (*Quercus* species only) is to be at a 2-to-1 ratio with 24-inch box trees of like species or payment of in-lieu fees. It was stated that non-*Quercus* native trees, non-native significant trees, and orchard trees do not typically require mitigation. The direct impact to 75 coast live oaks and the additional encroachment of 16 oak trees (including 14 coast live oaks and 2 Engelmann oaks) requires mitigation tree planting per the meeting held with the City. This impact mitigation planting should focus on container oak plantings into the built landscape and hillside oak woodlands at a ratio of 2 to 1 (2 replacement oak trees for every 1 impacted oak tree) or the payment of in-lieu fees. Note that any oaks planted in the hillside areas will require ongoing irrigation for at least 3 years following establishment and then a weaning off period over the course of 1 or 2 years. An oak restoration plan may be warranted for this area.

#### Arborist's Statement

This report provides conclusions and recommendations based on an examination of the trees and surrounding site by ISA Certified Arborists. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees.

No root crown excavations, investigations, or internal probing was performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal or subterranean decay by a qualified arborist before finalizing preservation plans.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms that fail in ways not fully understood. Conditions are often hidden within trees and belowground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for a specified period. There are no guarantees that a tree's condition will not change over a short or long period due to weather or cultural or environmental conditions. Trees can be managed but not controlled.

**Royal Oaks Project**  
**Updated Tree Protection and Preservation Plan**

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## Royal Oaks Project Updated Tree Protection and Preservation Plan

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### 7 REFERENCES

City of Bradbury. 2012. City of Bradbury Municipal Code. February 2012. Accessed October 9, 2015. <http://www.cityofbradbury.org/city-services/municipal-code>.

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

Matheny and Clark. 1998. *Trees and Development. A Technical Guide to Preservation of Trees During Land Development*. International Society of Arboriculture.

**Royal Oaks Project**  
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# **APPENDIX A**

*Tree Preservation and Protection Plan  
(Appendices not included)*



**Royal Oaks Project  
(APN: 8527-021-041)  
Tree Preservation and Protection Plan**

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**OCTOBER 2015**



# Royal Oaks Project Tree Protection and Preservation Plan

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C	Tree Impact Exhibit
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# Royal Oaks Project Tree Protection and Preservation Plan

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# Royal Oaks Project

## Tree Protection and Preservation Plan

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### 1 INTRODUCTION

Dudek evaluated and recorded information about regulated trees classified as native, prominent, significant, and orchard trees over 4 inches in diameter at 24 inches above finished grade and prepared this Tree Preservation and Protection Plan (TPPP) for the proposed Royal Oaks Project (project) in the City of Bradbury, California. Primary topics of this TPPP include evaluations of project-related impacts and recommendations for tree protection, relocation, removal, and mitigation. The project site is located on private land, in the City of Bradbury, approximately 1.3 miles south of the Angeles National Forest.

This TPPP provides a summary of Dudek's site and tree evaluation within the proposed development and infrastructure improvement areas. There are seven native tree species that meet the City's definition of a native tree, including Arizona ash (*Fraxinus velutina*), coast live oak (*Quercus agrifolia*), Engelmann oak (*Quercus engelmannii*), western cottonwood (*Populus fremontii*), toyon (*Heteromeles arbutifolia*), sumac (*Rhus ovata*), and Mexican elderberry (*Sambucus mexicana*). Of the seven native species found on site, coast live oak is the most prominent. Non-native trees found on site include king palm (*Archontophoenix alexandrae*), flame tree (*Brachychiton acerfolius*), carob (*Ceratonia siliqua*), lime (*Citrus aurantifolia*), lemon (*Citrus x limon*), blue gum eucalyptus (*Eucalyptus globulus*), edible fig (*Ficus edulis*), Shamel ash (*Fraxinus uhdei*), silk oak (*Grevillea robusta*), Chinese flame tree (*Koelreuteria bipinnata*), white mulberry (*Malus alba*), avocado (*Persea Americana*), stone pine (*Pinus pinea*), prunus (*Prunus* spp.), cork oak (*Quercus suber*), Brazilian pepper (*Schinus terebinthifolius*), tipu (*Tipuana tipu*), Chinese elm (*Ulmus parvifolia*), and one unknown dead tree.

Dudek's International Society of Arboriculture (ISA) certified arborists performed various tasks associated with surveying, inventorying, and evaluating the condition of the property's trees, as described in the following sections. The purpose of this TPPP is to present the physical characteristics, mapped locations, impact and preservation totals, and appropriate mitigation for impacts to native and other protected trees. The tree quantities and related project impacts have been analyzed and are reported in the following sections.

In summary, the Royal Oaks property exhibits an orchard like setting, with non-native trees and scattered oaks on the southern portion of the property and scattered individual coast live oak trees throughout the northern portion. In summary, there are 465 protected trees located throughout the project site 234 that are native (50.3%) and 231 that are non-native (49.7%). Of these, 154 trees (33.1% of the trees on the project site) are expected to be impacted by the proposed project and associated infrastructure improvements. Of the impacted protected trees, 13 trees are considered "candidates" for relocation. However, tree relocation is not a requirement of the City or of this TPPP. Should the project applicant determine that

# **Royal Oaks Project**

## **Tree Protection and Preservation Plan**

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relocating trees would be desirable, the candidate trees could be considered appropriate, upon closer examination.

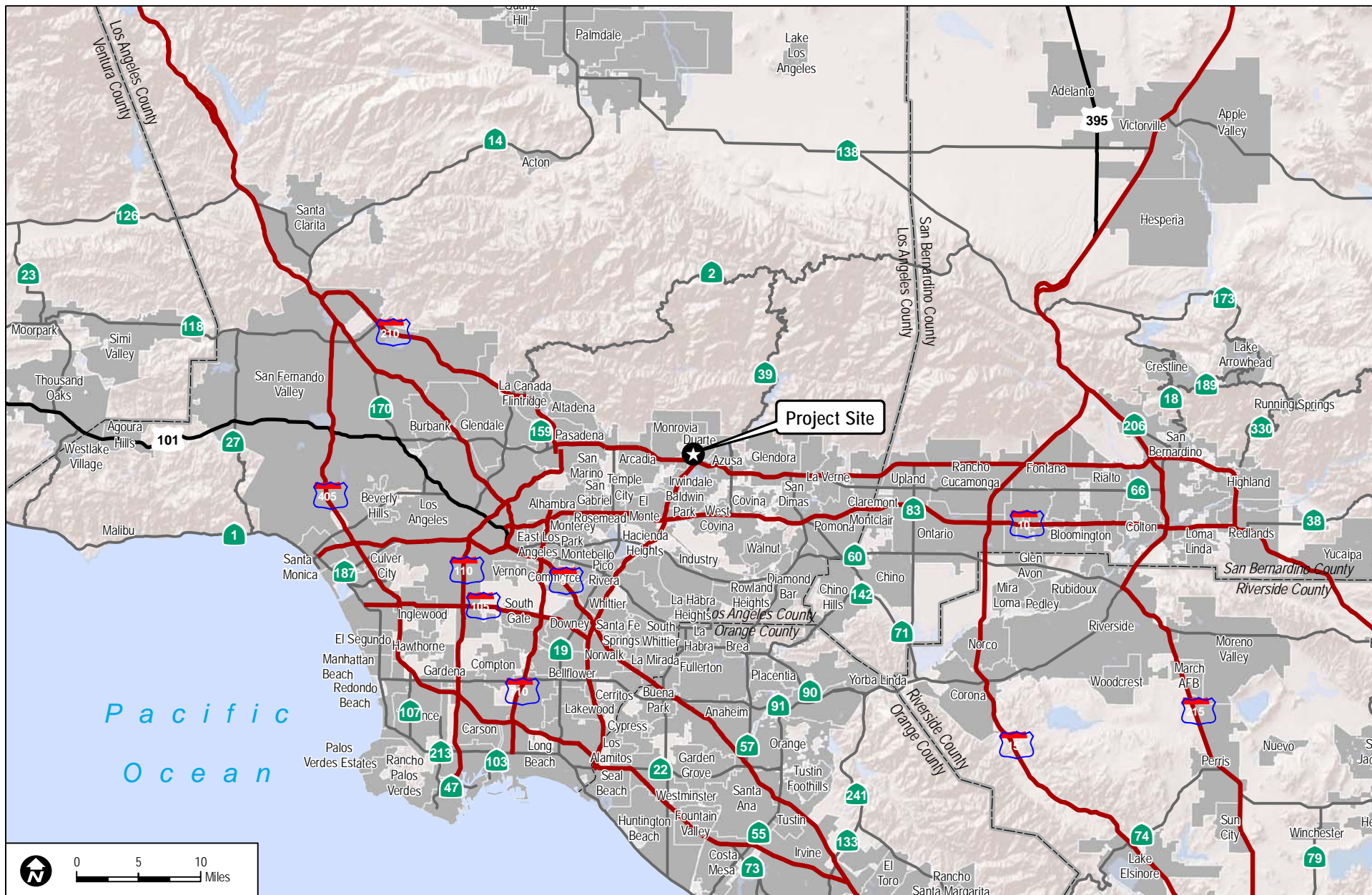
### **1.1 Site Description**

The approximately 12.4-acre project site is located northeast of the intersection of Royal Oaks Drive and Royal Oaks Drive North, north of Interstate 210 (I-210) and west of Interstate 605 (I-605), within the City of Bradbury, Los Angeles County, California (Figure 1; all figures are provided in Attachment A). It is comprised of Assessor's Parcel Number (APN) 8527-021-041, situated in Section 30 of Township 1 North Range 10 West of the Azusa 7.5-minute U.S. Geological Survey (USGS) quadrangle (Figure 2). The project site is located on private land approximately 1.3 miles south of the Angeles National Forest.

The topography within the project site creates a natural divide between the southern and northern portions of the property. Two unoccupied residential homes are located in the central portion of the property. The southern half of the project site is disturbed, dominated by numerous horse corrals and horse boarding areas, dirt roads, buildings, and avocado orchards. Numerous small buildings exist throughout the southern half of the project site. The vegetation within the southern portion of the site is dominated by non-native grassland, non-native vegetation, and disturbed and non-disturbed oak woodland. The northern portion of the project site is undeveloped and comprised of natural vegetation dominated by coast live oak woodlands along the canyons.

### **1.2 Project Description**

The site is approximately 12-acres (APN 8527-021-041) located off Royal Oaks drive in Bradbury, California. The proposed Royal Oaks Project would establish a specific plan to create a new private gated subdivision consisting of eight custom residential home sites and a small security gatehouse. Demolition of an existing residence, pool, carport, garage and apartment, and horse stables is also proposed.



**FIGURE 1**  
**Regional Map**

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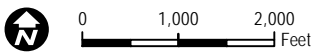
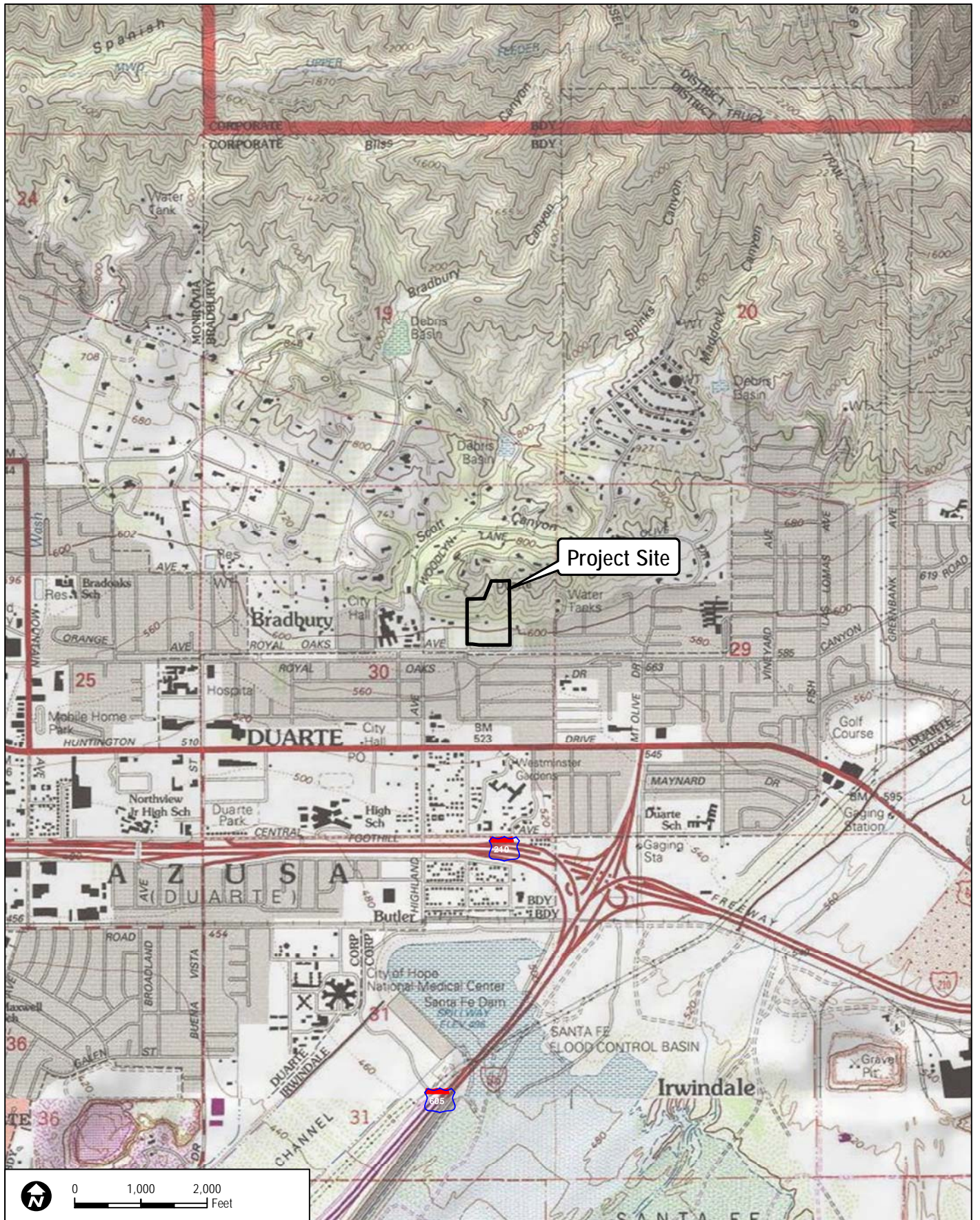
Royal Oaks Tree Preservation and Protection Plan

**Royal Oaks Project  
Tree Protection and Preservation Plan**

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SOURCE: USGS 7.5-Minute Series Azusa Quadrangle.

Royal Oaks Tree Preservation and Protection Plan

**FIGURE 2**  
**Vicinity Map**

**Royal Oaks Project  
Tree Protection and Preservation Plan**

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# Royal Oaks Project

## Tree Protection and Preservation Plan

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## 2 METHODS

### 2.1 Individual Tree Evaluation

Dudek mapped and collected tree attribute information for all trees within and immediately adjacent to the tree survey area meeting the City of Bradbury's definition of a "protected tree," which includes native, prominent, significant, and orchard trees that have a minimum diameter of 4 inches at 24 inches above final grade. The location of each individual mature tree was mapped using a Trimble Pathfinder Pro XH Global Positioning System (GPS) receiver (Appendix A). The Pathfinder has a horizontal accuracy of 1-meter (1-sigma) using differential code positioning techniques. Since tree canopies can sometimes cause loss of satellite lock by blocking the line-of-sight to satellites, an electronic compass and reflectorless electronic distance measuring (EDM) device was also used in mapping tree locations. The EDM/compass combination operates in concert with the Pathfinder system to position offsets, and offset information is automatically attached to the GPS position data string. Protected trees were tagged in the field with an aluminum tree tag bearing a unique identification number. The tags were placed on the trunk of each inventoried tree and tag numbers correspond with the individual tree data presented in Appendix B.

Concurrent with tree mapping efforts, Dudek arborists collected tree attribute data including species, quantity of individual trunks, individual trunk diameters, overall height, canopy extent, and general health and structural conditions. Trunk diameter measurements were collected at 24 inches above the ground along the trunk axis as described in Section 9.06.090.030 of the City's Municipal Code, with a few common exceptions. In cases where a tree's trunk is located on a slope, the 2-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively) and the measurement was made at the circumference of the trunk at this point. Tree height measurements were ocular estimates made by experienced field arborists. Tree canopy diameters were typically estimated by "pacing-off" the measurement based on the investigator's knowledge of his stride length or by visually estimating the canopy width. The tree crown diameter measurements were made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter.

Pursuant to the *Guide for Plant Appraisal* (ISA 2000), tree health and structure were evaluated with respect to five distinct tree components: roots, trunk(s), scaffold branches, small branches, and foliage. Each component of the tree was assessed with regard to health factors such as insect, fungal, or pathogen damage; fire damage; mechanical damage; presence of decay; presence of wilted or dead leaves; and wound closure. Components were graded as *good*, *fair*, *poor*, and *dead*, with "good" representing no apparent problems, and "dead" representing a dying and/or dead tree. This method of tree condition rating is comprehensive and results in ratings that are useful for determining the status of trees based on common standards. Trees in



## **Royal Oaks Project Tree Protection and Preservation Plan**

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natural settings have important habitat value, as evidenced by numerous cavity nesters and insects that thrive on and within oak trees, even when they are considered in poor structural or health condition. However, this assessment focuses on tree condition with regards to health and structure for purposes of analyzing potential project impacts and where necessary, providing recommendations for mitigating potential tree hazards, such as trees with weak limb attachments, cavities and rot, or excessive lean.

Upon completion of field data collection and mapping, raw GPS data was post-processed using GPS Pathfinder Office (v 3.10), and individual tree location data was compiled and updated in a geographic information system (GIS). The digital tree locations were linked to individual tree identification numbers and associated tree attribute data. This data set was then evaluated using ArcGIS (v. 10.1) software to determine the position of individual trees related to the proposed project development areas. Data resulting from this analysis was utilized to evaluate the individual tree impact totals presented in this report.

### **2.2 Scope of Work Limitations**

No root crown excavations or investigations, aerial evaluations, or internal probing was performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal, or subterranean, decay by a qualified ISA-certified arborist before finalizing preservation plans.



# Royal Oaks Project

## Tree Protection and Preservation Plan

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### 3 OBSERVATIONS

#### 3.1 Individual Trees

There are 465 trees located within and immediately adjacent to the Royal Oaks tree survey area and include 26 different tree species that meet the City’s criteria for a “protected tree.” As Table 1 indicates, most of the inventoried trees (50.3%) are native to California, including Arizona ash, coast live oak, Engelmann oak, western cottonwood, toyon, sumac, and Mexican elderberry. The coast live oak and Engelmann oak trees are considered the highest value trees on this site. Table 1 provides a summary of the 26 species mapped and evaluated within the tree survey area. The Tree Location Exhibit in Appendix A presents the location of the individual trees mapped and assessed for the Royal Oaks project.

Overall, the trees exhibit growth and structural conditions that are typical of their locations as landscape, orchard, and natural trees. The trees include various trunk and branch maladies as well as varying health and structural conditions. As presented in the Tree Information Matrix in Appendix B, most of the individually mapped trees, a total of 49.2% (229 trees), exhibit fair health condition, 9.3% (43 trees) are in good health condition, 28.4% (132 trees) in poor health, and 13.1% (61 trees) are dead. Structurally, 0.4% (2 trees) of the individually mapped trees are considered to exhibit good structure, 58.7% (273 trees) exhibit fair structure, 28.7% (129 trees) exhibit poor structure, and 13.1% (61 trees) exhibit are dead. Good condition trees exhibit acceptable vigor, healthy foliage, adequate structure, and lack of any major maladies. Fair condition trees are typical, with few maladies, but declining vigor. Poor condition trees exhibit declining vigor, unhealthy foliage, poor branch structure, or excessive lean. A majority of the trees found to be dead or in poor health are located in the site’s in-active orchard areas. The trees located throughout the orchard are of poor quality and have not been maintained in several years.

**Table 1**  
**Summary of Trees Royal Oak Project Site**

Scientific Name	Common Name	Number of Trees
<i>Archontophoenix alexandrae</i>	King palm	5
<i>Brachychiton acerfolius</i>	Flame tree	1
<i>Ceratonia siliqua</i>	Carob	3
<i>Citrus aurantifolia</i>	Lime	7
<i>Citrus x limon</i>	Lemon	2
<i>Eucalyptus globulus</i>	Blue gum eucalyptus	1
<i>Ficus edulis</i>	Edible fig	7
<i>Fraxinus uhdei</i>	Shamel ash	2
<i>Fraxinus velutina</i>	Arizona ash	25

## Royal Oaks Project Tree Protection and Preservation Plan

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**Table 1**  
**Summary of Trees Royal Oak Project Site**

Scientific Name	Common Name	Number of Trees
<i>Grevillea robusta</i>	Silk oak	3
<i>Heteromeles arbutifolia</i>	Toyon	3
<i>Koelreuteria bipinnata</i>	Chinese flame tree	1
<i>Malus alba</i>	White mulberry	3
<i>Persea americana</i>	Avocado	149
<i>Pinus pinea</i>	Stone pine	1
<i>Populus fremontii</i>	Western cottonwood	1
<i>Prunus</i> spp.	Prunus	4
<i>Quercus agrifolia</i>	Coast live oak	209
<i>Quercus engelmannii</i>	Engelmann oak	2
<i>Quercus suber</i>	Cork oak	2
<i>Rhus ovata</i>	Sumac	7
<i>Sambucus mexicana</i>	Mexican elderberry	12
<i>Schinus terebinthifolius</i>	Brazilian pepper	1
<i>Tipuana tipu</i>	Tipu	2
<i>Ulmus parvifolia</i>	Chinese elm	11
Unknown	Unknown (dead)	1
<b>Total</b>		<b>465</b>

Trees within the tree survey area vary in size and stature according to species and available growing space. The site's Coast live oak and Engelmann oak trees are primarily single-stemmed with trunk diameters (diameter at 24 inches above finished grade) ranging from 4–32 inches. Multi-stemmed oak trees with 2–5 stems have combined diameters up to 64 inches. Single and multi-stemmed non-native species have diameters between 4–25 inches. Tree heights vary from 6–70 feet. Tree canopy extents range from 4 feet to nearly 70 feet. Over 45% of the trees on site exhibit canopy spreads that are greater than 20 feet across at their widest points.

# Royal Oaks Project

## Tree Protection and Preservation Plan

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### 4 TREE PRESERVATION

#### 4.1 Regulatory Definitions and Requirements

The following section summarizes the relevant policies regulating tree impact and removal associated with the Royal Oaks project.

##### 4.1.1 City of Bradbury

The City of Bradbury's Tree Preservation and Protection Ordinance (Chapter 9.06.090 of the City's Municipal Code) requires a tree report be prepared for removal of protected trees species.

Section 9.06.090.030 (Definitions):

- **Tree:** Tree shall mean a woody perennial plant which usually has (but is not limited to) a single dominant trunk and has a mature height of fifteen feet (15') or more, or has a trunk diameter of four inches (4") or more measured at twenty-four inches (24") above finished grade.
- **Native Tree:** Any woody plant species indigenous to the desert, foothills or canyons of Southern California prior to the California Mission Period, provided that the plant has an expected mature trunk size of six inches (6") DBH and has an expected mature height of fifteen feet (15') or higher. Giant Sequoias, Redwoods (*Sequoiadendron sempervirens*), and Dawn Red-woods (*Metasequoia glyptostroboides*), evergreen native Oaks (such as *Quercus agrifolia*, *engelmannii*), deciduous Oaks (such as *Quercus lobata*, and *kelloggii*) are to be regarded as important native trees even though they have been planted by man, introduced (or possibly reintroduced) into the Southern California foothill and canyon environments.
- **Prominent Tree:** Any woody perennial plant with a trunk DBH of six inches (6") or more, and having an expected mature height of fifteen feet (15') or higher.
- **Significant Tree:** Any non-native or exotic tree with a trunk DBH of six inches (6") or more, and having an expected mature height of fifteen feet (15') or higher, and known to survive in the Southern California environment.
- **Orchard Tree:** Any trees located in an area primarily used for growing fruit trees or nut trees or any other agricultural commodity

Section 9.06.090.060 (Prohibitions):

- **Removal of Native Trees and/or Prominent Trees:** No prominent tree, native tree of any other tree defined in Section 9.06.090.030 and/or which is of a desirable genus and

## **Royal Oaks Project Tree Protection and Preservation Plan**

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species shall be removed without first obtaining a permit to do so. The City manager shall issue such permits only after the presentation of photographs and/or drawings showing that the prominent tree is a significant health or fire hazard or has become an extremely severe detriment to the view of the mountains or valley from house sites. A 14-day waiting period is created hereby, during which time appeals to any decisions, restrictions or conditions made by the City Manager on the permit may be submitted in writing to the Planning Commission. Should an appeal be filed, the 14-day holding period is extended automatically until the next Planning Commission meeting for which the item can be placed on the agenda.

- **Removal of Orchard Trees:** No orchard tree shall be removed without first obtaining a permit to do so. The City manager shall issue such permits only after the presentation of photographs and/or drawings showing that the prominent tree is a significant health or fire hazard or has become an extremely severe detriment to the view of the mountains or valley from house sites. A 14-day waiting period is created hereby, during which time appeals to any decisions, restrictions or conditions made by the City Manager on the permit may be submitted in writing to the Planning Commission. Should an appeal be filed, the 14-day holding period is extended automatically until the next Planning Commission meeting for which the item can be placed on the agenda.

### **4.1.2 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (1918) requires tree removal and potentially disturbing construction activities to occur during certain time periods to avoid harassment of nesting birds. According to this Act, no construction or other disturbing activities can occur within 500 feet of an active bird nest during the period beginning in January and ending in June each year. Biological surveys should be conducted to provide clearance for project initiation.

## **4.2 Impacts**

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

Impacts to trees can be classified as either direct or indirect. Direct impacts to trees related to site improvements are typically the result of physical injuries or changes caused by machinery involved with the development process. Direct impacts include tree removal, root damage, soil

## Royal Oaks Project Tree Protection and Preservation Plan

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excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Indirect impacts include alterations to stream flow rates, diversion of ground water flow, introduction of exotic plant species, and alterations to disturbance regimes. Wider-scale alterations to the area near trees as well as specific changes that occur around the trees are important considerations.

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

Impacts totals presented herein are based on conceptual disturbance limits, fuel modification zones, and development plans as of the date of this TPPP. As such, the actual number of trees that are subject to direct and indirect impacts may change as the detailed site planning process proceeds.

### 4.2.1 Direct Tree Impacts

For the purposes of this report, direct impacts are those associated with tree removal or encroachment within the tree protected zone (canopy drip line plus 5 feet or 15 feet from trunk, whichever is greater). Tree removal is expected to be required when the trunk is located inside or within 2 feet of the proposed limits of grading. Encroachment is expected when soil and roots are disturbed within the tree protected zone. Table 2 summarizes the total number of trees, by species, that are expected to be subject to direct construction-related impacts. The locations of impacted trees, by impact type, are presented in the map in Appendix C. Measures to minimize the extent of impact to preserved trees are provided in Appendix D.

**Table 2**  
**Summary of All Direct Tree Impacts – Royal Oaks**

Scientific Name	Common Name	Removal	Encroachment
<i>Archontophoenix alexandrae</i>	King palm	5	0
<i>Brachychiton acerfolius</i>	Flame tree	1	0
<i>Ceratonia siliqua</i>	Carob	1	0
<i>Citrus aurantifolia</i>	Lime	7	0
<i>Citrus x limon</i>	Lemon	1	0

## Royal Oaks Project Tree Protection and Preservation Plan

**Table 2**  
**Summary of All Direct Tree Impacts – Royal Oaks**

Scientific Name	Common Name	Removal	Encroachment
<i>Eucalyptus globulus</i>	Blue gum	—	1
<i>Ficus edulis</i>	Fig	4	0
<i>Fraxinus uhdei</i>	Shamel ash	—	1
<i>Fraxinus velutina</i>	Arizona ash	9	1
<i>Grevillea robusta</i>	Silk oak	2	0
<i>Koelreuteria bipinnata</i>	Chinese flame tree	—	1
<i>Malus alba</i>	White mulberry	2	0
<i>Persea americana</i>	Avocado	14	0
<i>Pinus pinea</i>	Stone pine	1	0
<i>Populus fremontii</i>	Western cottonwood	1	0
<i>Prunus</i> spp.	Prunus	2	0
<i>Quercus agrifolia</i>	Coast live oak	70	13
<i>Quercus engelmannii</i>	Engelmann oak	—	2
<i>Quercus suber</i>	Cork oak	2	0
<i>Sambucus mexicana</i>	Mexican elderberry	2	0
<i>Tipuana tipu</i>	Tipu	2	0
<i>Ulmus parvifolia</i>	Chinese elm	5	1
<b>Totals</b>		<b>131</b>	<b>20</b>

### 4.2.2 Indirect Tree Impacts

Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Site-wide changes affecting trees include diverting runoff and storm water, creating retention and detention ponds, relocating streams or making improvements to streams, lowering or raising water tables, altering the capacity for soil moisture recharge, removing vegetation, or damming underground water flow (Matheny and Clark 1998). For the purposes of this report, indirect tree impacts are expected for trees within 25 feet of the project's limits of grading and not subject to removal or encroachment. Trees located in fuel modification zones are also typically considered indirectly impacted; however, at the time of this TPPP, the extent of the fuel modifications zones are unknown. Table 3 presents the number of trees expected to be indirectly impacted by the proposed project.

## Royal Oaks Project Tree Protection and Preservation Plan

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**Table 3**  
**Summary of Indirect Tree Impacts – Royal Oaks**

Scientific Name	Common Name	Indirect Impact
<i>Fraxinus velutina</i>	Arizona ash	1
<i>Persea americana</i>	Avocado	1
<i>Quercus agrifolia</i>	Coast live oak	1
<b>Total</b>		<b>3</b>

### 4.2.3 Tree Removals Due to Health

Tree removals due to health are the result of changes to the site prior to construction that may cause tree decline, even when the tree is not directly injured. The project contains an in-active avocado orchard that has not received irrigated for an extended period of time, resulting in the death and decline in 192 trees classified as dead or in poor health. Of these 192 trees, 131 are avocado and 61 are protected trees that are located adjacent or within the inactive orchard. Table 4 presents the number of trees expected to be removed due to health. These removals should be removed as nuisance trees as per the classification in Title 9.06.090.060 for the City's Municipal Code. These tree removals are not to be mitigated.

**Table 4**  
**Summary of Health Related Removals – Royal Oaks**

Scientific Name	Common Name	Total
<i>Citrus x limon</i>	Lemon	1
<i>Fraxinus velutina</i>	Arizona ash	8
<i>Malus alba</i>	White mulberry	1
<i>Persea americana</i>	Avocado	131
<i>Prunus</i> spp.	Prunus	1
<i>Quercus agrifolia</i>	Coast live oak	40
<i>Sambucus mexicana</i>	Mexican elderberry	7
<i>Ulmus parvifolia</i>	Chinese elm	2
Unknown		1
<b>Total</b>		<b>192</b>

#### 4.2.3.1 Tree Impact Summary – All Trees (Proposed Project)

In total, it is estimated that 131 (28.1%) protected trees will require removal due to direct impacts; 20 (4.3%) will experience encroachment into the tree protected zone; 3 (0.7 %) will be indirectly impacted; 119 (25.6%) will be preserved in place with no direct impacts; and 192

## **Royal Oaks Project Tree Protection and Preservation Plan**

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(41.3%) trees will require removal due to health. Of the 192 trees identified for health removal, 61 meet the criteria for classification as a protected tree, and 131 avocado trees meet the criteria for classification as an orchard tree as defined by the City. In addition, one coast live oak tree is indirectly impacted.



# Royal Oaks Project

## Tree Protection and Preservation Plan

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### 5 MITIGATION

The City of Bradbury Municipal Code does not identify specific tree replacement standards for projects affecting native and/or protected trees. The City does require the submission of a tree preservation and landscaping plan per the Title 9.06.090.040 of the Municipal Code. The 192 trees identified as removals due to health should be removed as nuisance trees as per the classification in Title 9.06.090.060 for the City's Municipal Code as they pose a significant fire hazard. In Dudek's professional opinion, the direct impact to 70 coast live oaks and encroachment on an additional 20 oak trees (including 13 coast live oaks and 2 Engelmann oaks) requires mitigation tree planting. This impact mitigation planting should focus on container oak plantings into the built landscape and hillside oak woodlands at a ratio of 3 to 1 (3 replacement trees for every 1 impacted tree). A variety of other tree species can be used though proportionally the plantings should focus on coast live oaks. Table 5 presents the number of trees impacted by type and recommended mitigation.

**Table 5**  
**Summary of Impacts and Recommended Mitigation – Royal Oaks**

Tree Type	Number of Impacts	Number of Replacement Trees
Direct Impact	131	393
Encroachment	20	60
Indirect Impact	3	0
Health Related	192	0
<b>Totals</b>	<b>151</b>	<b>453</b>

#### 5.1 Potential Relocation Candidates

Of the directly impacted protected trees, a total of 13 are considered “candidates” for relocation. However, tree relocation is not a requirement of the City or of this TPPP. Potential relocation candidate oak trees exhibit good health and structure, have no uncorrectable, outwardly detectable defects, and reveal no signs or symptoms of serious pest infestation or disease. Table 6 provides a summary of the proposed relocation candidates, by species and Appendix B details which trees are the relocation candidates.

**Table 6**  
**Summary of Relocation Candidates by Species**

Botanical Name	Common Name	Relocation Candidates
<i>Quercus agrifolia</i>	Coast live oak	13
<b>Total</b>		<b>13</b>

## **Royal Oaks Project Tree Protection and Preservation Plan**

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Should the project applicant determine that relocating trees is desired, the final quantity of relocation trees should be determined following tree relocation contractor inspection, root crown investigations or internal probing and root pruning operations. The relocation process is stressful for trees and often results in tree loss. Therefore, it should be performed by an experienced tree relocation contractor and follow standard tree relocation processes to maximize the probability of relocation success.

### **5.2 Tree Removal Permit**

Consistent with Title 9.06.090.050 of the City's Municipal Code (City of Bradbury 2012), a tree removal permit will be required prior to all tree removals.

## **Royal Oaks Project Tree Protection and Preservation Plan**

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### **6 CONCLUSIONS**

Dudek inventoried and evaluated 465 regulated trees at the Royal Oaks project site. A total of 151 trees would be impacted by the proposed project. Furthermore, an additional 192 trees classified as dead or in poor health will require removal. The City of Bradbury Municipal Code does not identify specific tree replacement standards for projects affecting native and/or protected trees. The City does require the submission of a tree preservation and landscaping plan. The direct impact of 70 coast live oaks and encroachment on an additional 20 oak trees (including 13 coast live oaks and 2 Engelmann oaks) is considered by Dudek to require mitigation. These impacts can be mitigated through the incorporation of container size (15 gallon is a common planting size) oak plantings into the built landscape and smaller, seedling, 1-, and 5-gallon plantings in the hillside oak woodlands at ratio of 3 to 1. The applicant will submit landscape plans separately during Phase 2 of the project. Note that any oaks planted in the hillside areas will require ongoing irrigation for at least 3 years following establishment and then a weaning off period over the course of 1 or 2 years. An oak restoration plan may be warranted for this area.

#### **Arborist's Statement**

This report provides conclusions and recommendations based on an examination of the trees and surrounding site by ISA-certified arborists. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees.

No root crown excavations, investigations, or internal probing was performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal or subterranean decay by a qualified arborist before finalizing preservation plans.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms that fail in ways not fully understood. Conditions are often hidden within trees and belowground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for a specified period. There are no guarantees that a tree's condition will not change over a short or long period due to weather or cultural or environmental conditions. Trees can be managed but not controlled.

**Royal Oaks Project  
Tree Protection and Preservation Plan**

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## Royal Oaks Project Tree Protection and Preservation Plan

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### 7 REFERENCES

City of Bradbury. 2012. City of Bradbury Municipal Code. February 2012. Accessed October 9, 2015. <http://www.cityofbradbury.org/city-services/municipal-code>

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

Matheny and Clark. 1998. *Trees and Development. A Technical Guide to Preservation of Trees During Land Development*. International Society of Arboriculture.

**Royal Oaks Project  
Tree Protection and Preservation Plan**

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# **APPENDIX B**

## *Tree Location Exhibit*





### Native Trees

- Fraxinus velutina (24)
- Heteromoles arbutifolia (3)
- Populus fremontii (1)
- Quercus agrifolia (212)
- Quercus engelmannii (2)
- Rhus ovata (7)
- Sambucus mexicana (12)

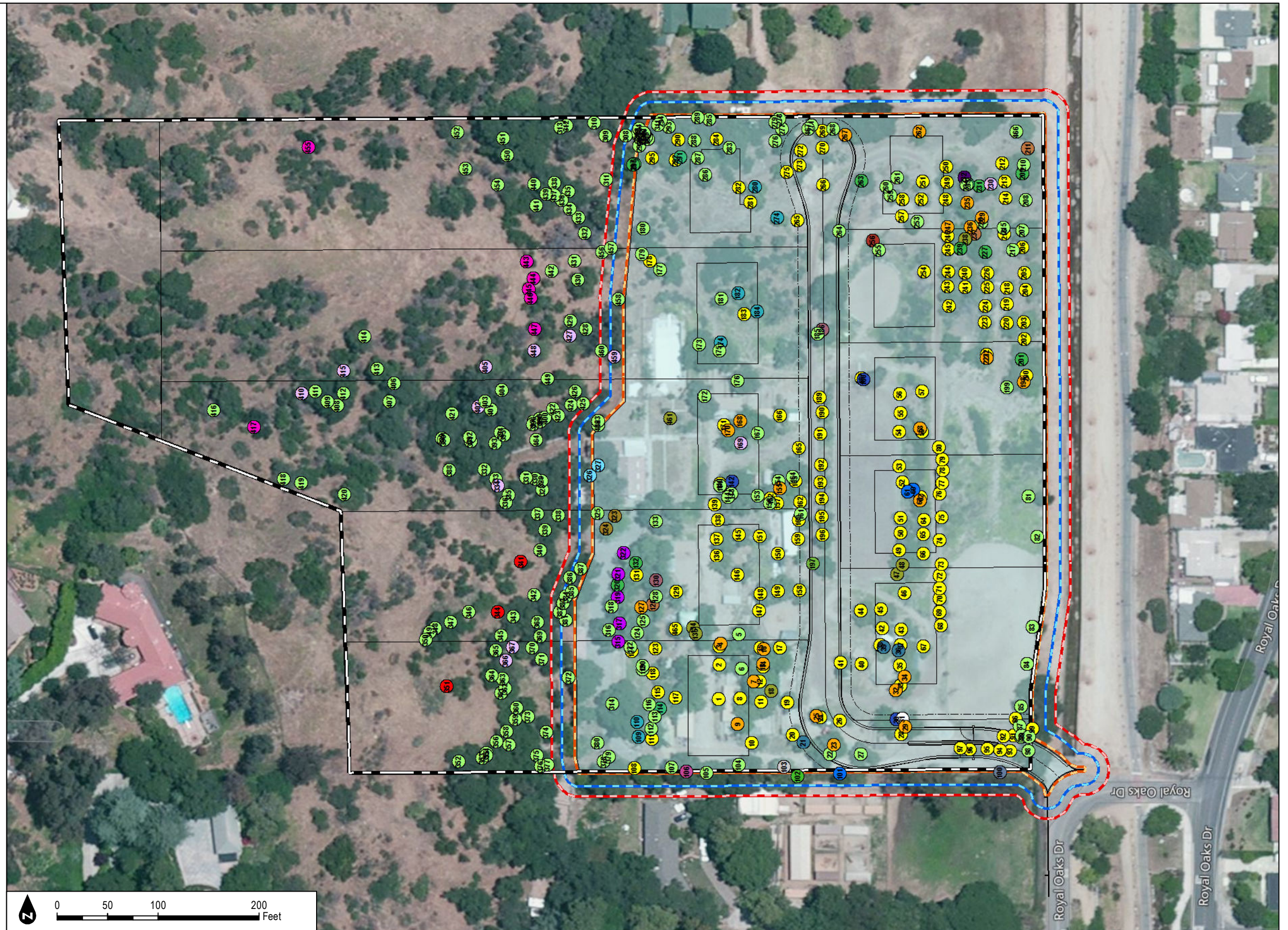
### Significant Trees

- Arcontophoenix alexandrae (5)
- Brachychiton acerfolius (1)
- Ceratonia siliqua (3)
- Citrus aurantifolia (7)
- Citrus x limon (2)
- Eucalyptus globulus (1)
- Ficus edulis (7)
- Fraxinus uhdei (3)
- Grevillea robusta (3)
- Koelreuteria bipinnata (1)
- Malus alba (3)
- Pinus pinea (1)
- Prunus spp. (3)
- Quercus suber (1)
- Schinus terebinthifolius (1)
- Tipuana tipu (2)
- Ulmus parvifolia (10)
- Unknown spp. (1)

### Orchard Trees

- Persea americana (152)

- 25-Ft Buffer
- 15-Ft Buffer
- 2-Ft Buffer
- Development Impacts (May 2017)
- Project Boundary







# **APPENDIX C**

## *Tree Information Matrix*



Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
1	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	12	10	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14468
2	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	14	10	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14467
3	<i>Persea americana</i>	Avocado	15	12	9	0	0	0	18	10	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14467
4	<i>Fraxinus velutina</i>	Arizona ash	8	8	0	0	0	0	40	14	Fair	Poor	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14467
5	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	30	25	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14462
6	<i>Quercus agrifolia</i>	Coast live oak	11	11	0	0	0	0	30	25	Good	Fair	Good	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14461
7	<i>Fraxinus velutina</i>	Arizona ash	14	14	0	0	0	0	65	25	Good	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14458
8	<i>Persea americana</i>	Avocado	15	15	0	0	0	0	24	30	Fair	Critical	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14462
9	<i>Fraxinus velutina</i>	Arizona sah	10	10	0	0	0	0	50	20	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14462
10	<i>Persea americana</i>	Avocado	8.485281	6	6	0	0	0	20	18	Fair	Fair	Poor		Orchard Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14459
11	<i>Persea americana</i>	Avocado	14.73092	10	9	6	0	0	20	22	Fair	Fair	Poor		Orchard Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14456
12	<i>Persea americana</i>	Avocado	15.6205	12	8	6	0	0	24	24	Fair	Critical	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14456
13	<i>Persea americana</i>	Avocado	12.80625	10	8	0	0	0	22	24	Fair	Critical	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14456
14	<i>Fraxinus velutina</i>	Arizona ash	13	13	0	0	0	0	60	30	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14455
15	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	22	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14456
16	<i>Fraxinus velutina</i>	Arizona ash	4	4	0	0	0	0	24	8	Poor	Dead	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14455
17	<i>Persea americana</i>	Avocado	16.5	17	0	0	0	0	24	20	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14451
18	<i>Ficus edulis</i>	Fig	7.071068	5	5	0	0	0	20	15	Good	Good	Poor		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14453
19	<i>Persea americana</i>	Avocado	12.32883	6	10	4	0	0	15	18	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14449
20	<i>Persea americana</i>	Avocado	14.86607	10	11	0	0	0	22	30	Fair	Fair	Fair		Orchard Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14447
21	<i>Prunus spp.</i>	Prunus	4	4	0	0	0	0	18	10	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14445
22	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	35	30	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14437
23	<i>Fraxinus velutina</i>	Arizona ash	10	10	0	0	0	0	30	16	Fair	Poor	Poor		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14436
24	<i>Persea americana</i>	Avocado	10	8	6	0	0	0	14	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.1444
25	<i>Fraxinus velutina</i>	Arizona ash	8	8	0	0	0	0	30	14	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14441
26	<i>Persea americana</i>	Avocado	13.45362	10	9	0	0	0	16	18	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14435
27	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	27	24	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14429
28	<i>Persea americana</i>	Avocado	8	8	0	0	0	0	16	8	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14418
29	<i>Fraxinus velutina</i>	Arizona ash	10	10	0	0	0	0	55	20	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14417
30	<i>Malus alba</i>	White mulberry	10.86278	8	4	3	2	5	20	18	Fair	Poor	Fair		Significant Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14419
31	<i>Unknown spp.</i>	Unknown spp.	12	12	0	0	0	0	22	20	Dead	Dead	Dead		Significant Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14418
32	<i>Fraxinus velutina</i>	Arizona ash	8	8	0	0	0	0	35	15	Fair	Fair	Fair		Native Tree	Future Impact	Encroachment	Direct Impact	-117.964	34.14419
33	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	22	28	Fair	Critical	Fair		Orchard Tree	Fire Hazard	Indirect Impact	Remove - Health	-117.964	34.14418
34	<i>Fraxinus velutina</i>	Arizona ash	6.708204	6	3	0	0	0	20	14	Fair	Fair	Fair		Native Tree	Future Impact	Indirect Impact	Direct Impact	-117.964	34.14417
35	<i>Persea americana</i>	Avocado	16.27882	12	11	0	0	0	20	23	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14418
36	<i>Prunus spp.</i>	Prunus	8.944272	8	4	0	0	0	20	20	Dead	Dead	Dead		Significant Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14419
37	<i>Persea americana</i>	Avocado	12.0416	9	8	0	0	0	20	22	Fair	Critical	Poor		Orchard Tree	Fire Hazard		Remove - Health	-117.964	34.14418
38	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	20	18	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14424
39	<i>Prunus spp.</i>	Prunus	5.385165	4	2	3	0	0	18	12	Fair	Poor	Fair		Significant Tree	Fire Hazard		Remove - Health	-117.964	34.14423
40	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	12	10	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14429
41	<i>Persea americana</i>	Avocado	16.30951	12	8	3	7	0	20	20	Fair	Critical	Poor		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14434
42	<i>Persea americana</i>	Avocado	14.86607	10	11	0	0	0	30	26	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14423
43	<i>Persea americana</i>	Avocado	13.60147	13	4	0	0	0	26	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14418
44	<i>Persea americana</i>	Avocado	15	15	0	0	0	0	28	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14429
45	<i>Persea americana</i>	Avocado	14.42221	12	8	0	0	0	23	18	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14423
46	<i>Persea americana</i>	Avocado	17	15	8	0	0	0	20	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14417

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
47	<i>Ficus edulis</i>	Fig	13.89244	12	7	0	0	0	20	20	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.964	34.14419
48	<i>Ficus edulis</i>	Fig	12.72792	7	6	6	5	4	20	30	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.964	34.14418
49	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	28	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14418
50	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	28	20	Fair	Critical	Poor		Orchard Tree	Fire Hazard		Remove - Health	-117.964	34.14418
51	<i>Persea americana</i>	Avocado	14	14	0	0	0	0	28	20	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14418
52	<i>Persea americana</i>	Avocado	8.944272	8	4	0	0	0	16	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14418
53	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	22	12	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14418
54	<i>Persea americana</i>	Avocado	16.7332	12	10	6	0	0	22	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14418
55	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	20	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14418
56	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	12	10	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14418
57	<i>Persea americana</i>	Avocado	14	14	0	0	0	0	22	18	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14412
58	<i>Fraxinus velutina</i>	Arizona ash	6	6	0	0	0	0	24	8	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14413
59	<i>Persea americana</i>	Avocado	12.72792	9	9	0	0	0	18	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14412
60	<i>Fraxinus uhdei</i>	Shamel ash	4.690416	3	3	2	0	0	20	12	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.963	34.14415
61	<i>Fraxinus uhdei</i>	Shamel ash	7.071068	5	5	0	0	0	25	12	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.963	34.14416
62	<i>Persea americana</i>	Avocado	10.77033	10	4	0	0	0	18	15	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14413
63	<i>Fraxinus velutina</i>	Arizona ash	8	8	0	0	0	0	30	20	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.964	34.14413
64	<i>Persea americana</i>	Avocado	15.55635	11	11	0	0	0	15	15	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14412
65	<i>Persea americana</i>	Avocado	15	15	0	0	0	0	16	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14412
66	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	25	15	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14412
67	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	18	15	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14412
68	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	18	6	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14407
69	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	18	6	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14408
70	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	18	6	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14407
71	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	20	6	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14408
72	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	35	10	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14407
73	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	30	10	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14407
74	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	24	15	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14407
75	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	25	15	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14407
76	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	30	12	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14407
77	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	30	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14407
78	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	35	12	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14407
79	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	30	13	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14407
80	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	30	13	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14408
81	<i>Quercus agrifolia</i>	Coast live oak	11	11	0	0	0	0	30	20	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.964	34.14383
82	<i>Quercus agrifolia</i>	Coast live oak	9.848858	9	4	0	0	0	23	15	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.964	34.14381
83	<i>Quercus agrifolia</i>	Coast live oak	12.80625	10	8	0	0	0	25	24	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.964	34.14382
84	<i>Quercus agrifolia</i>	Coast live oak	7	7	0	0	0	0	23	12	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.964	34.14384
85	<i>Quercus agrifolia</i>	Coast live oak	33.54102	30	15	0	0	0	30	30	Fair	Fair	Fair		Native Tree	Future Impact	Encroachment	Direct Impact	-117.964	34.14385
86	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	30	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14387
87	<i>Quercus agrifolia</i>	Coast live oak	24	24	0	0	0	0	35	35	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14386
88	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	35	35	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14385
89	<i>Quercus agrifolia</i>	Coast live oak	17	17	0	0	0	0	35	40	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14385
90	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	10	8	Good	Good	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14383
91	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	30	20	Good	Critical	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14387
92	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	35	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.1439

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
93	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	30	28	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14388
94	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	20	12	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14391
95	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	35	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14395
96	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	30	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14399
97	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	30	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14402
98	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	14	18	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14383
99	<i>Persea americana</i>	Avocado	8.485281	6	6	0	0	0	14	18	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14382
100	<i>Eucalyptus globulus</i>	Blue gum	60	60	0	0	0	0	70	55	Fair	Fair	Fair		Significant Tree	Future Impact	Encroachment	Encroachment	-117.964	34.14391
101	<i>Fraxinus uhdei</i>	Shamel ash	12	12	0	0	0	0	50	35	Fair	Fair	Fair		Significant Tree	Future Impact	Encroachment	Encroachment	-117.964	34.14435
102	<i>Brachychiton acerfolius</i>	Flame tree	10	10	0	0	0	0	18	13	Good	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Encroachment	-117.964	34.14446
103	<i>Populus fremontii</i>	Western cottonwood	20	20	0	0	0	0	35	30	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.1445
104	<i>Quercus agrifolia</i>	Coast live oak	24.08319	18	16	0	0	0	50	45	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14462
105	<i>Quercus agrifolia</i>	Coast live oak	15.81139	13	9	0	0	0	35	40	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14471
106	<i>Quercus suber</i>	Cork oak	15	15	0	0	0	0	35	30	Good	Good	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14476
107	<i>Quercus agrifolia</i>	Coast live oak	35	35	0	0	0	0	40	35	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.1448
108	<i>Persea americana</i>	Avocado	25.45584	18	18	0	0	0	35	35	Good	Poor	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14491
109	<i>Citrus aurantifolia</i>	Lime	5.196152	3	3	2	2	1	12	14	Good	Good	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14489
110	<i>Citrus aurantifolia</i>	Lime	6.557439	5	3	2	2	1	12	14	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.1449
111	<i>Persea americana</i>	Avocado	8	8	0	0	0	0	16	14	Fair	Fair	Fair		Orchard Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14486
112	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	20	15	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14486
113	<i>Quercus agrifolia</i>	Coast live oak	5.385165	4	3	2	0	0	20	10	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14485
114	<i>Grevillea robusta</i>	Silk oak	8	8	0	0	0	0	45	15	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14483
115	<i>Persea americana</i>	Avocado	8	8	0	0	0	0	15	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14484
116	<i>Quercus agrifolia</i>	Coast live oak	2	2	0	0	0	0	12	8	Good	Good	Good	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14486
117	<i>Persea americana</i>	Avocado	10.29563	9	5	0	0	0	28	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14479
118	<i>Persea americana</i>	Avocado	15	15	0	0	0	0	28	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14485
119	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	12	8	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14488
120	<i>Quercus agrifolia</i>	Coast live oak	2	2	0	0	0	0	9	4	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14488
121	<i>Persea americana</i>	Avocado	14.42221	12	8	0	0	0	14	10	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14491
122	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	15	10	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14492
123	<i>Persea americana</i>	Avocado	9.219544	7	6	0	0	0	15	10	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14485
124	<i>Quercus agrifolia</i>	Coast live oak	4.123106	4	1	0	0	0	14	12	Good	Good	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.1449
125	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	24	18	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14488
126	<i>Ceratonia siliqua</i>	Carob	5	5	0	0	0	0	18	10	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14485
127	<i>Fraxinus velutina</i>	Arizona ash	9	9	0	0	0	0	20	18	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14489
128	<i>Quercus agrifolia</i>	Coast live oak	11	11	0	0	0	0	25	20	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14485
129	<i>Persea americana</i>	Avocado	12.08305	11	5	0	0	0	30	28	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14479
130	<i>Citrus x limon</i>	Lemon	4	4	0	0	0	0	12	10	Fair	Poor	Fair		Significant Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14485
131	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	20	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.1449
132	<i>Ulmus parvifolia</i>	Chinese elm	20.51829	12	14	9	0	0	50	30	Good	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.1449
133	<i>Quercus agrifolia</i>	Coast live oak	28	28	0	0	0	0	28	30	Good	Good	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14485
134	<i>Ficus edulis</i>	Fig	15.26434	9	8	4	6	6	28	30	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14474
135	<i>Ficus edulis</i>	Fig	15.26434	9	8	4	6	6	28	30	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14474
136	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	28	20	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14468
137	<i>Persea americana</i>	Avocado	15.6205	12	10	0	0	0	24	20	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14468
138	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	18	14	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14468

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
139	<i>Persea americana</i>	Avocado	13.45362	10	9	0	0	0	18	14	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14469
140	<i>Persea americana</i>	Avocado	16.40122	13	10	0	0	0	20	24	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14467
141	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	28	24	Good	Good	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14467
142	<i>Malus alba</i>	White mulberry	10.77033	10	4	0	0	0	22	20	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14464
143	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	10	8	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14464
144	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	28	24	Fair	Poor	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14465
145	<i>Persea americana</i>	Avocado	11.18034	8	6	5	0	0	18	18	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14462
146	<i>Persea americana</i>	Avocado	10	10	0	0	0	0	23	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14462
147	<i>Persea americana</i>	Avocado	7.28011	7	2	0	0	0	20	15	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14457
148	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	20	25	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14456
149	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	25	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14451
150	<i>Persea americana</i>	Avocado	10.29563	9	5	0	0	0	20	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14451
151	<i>Persea americana</i>	Avocado	8.485281	6	6	0	0	0	12	12	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14456
152	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	22	18	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14453
153	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	25	25	Fair	Dead	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14457
154	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	25	25	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14451
155	<i>Fraxinus velutina</i>	Arizona ash	7.211103	6	4	0	0	0	25	16	Fair	Poor	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.963	34.14451
156	<i>Quercus agrifolia</i>	Coast live oak	5	5	0	0	0	0	16	10	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14454
157	<i>Persea americana</i>	Avocado	13.85641	8	8	8	0	0	20	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14452
158	<i>Persea americana</i>	Avocado	13.45362	10	9	0	0	0	18	18	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14446
159	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	15	10	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14446
160	<i>Persea americana</i>	Avocado	10	10	0	0	0	0	18	14	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14446
161	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	14	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14445
162	<i>Persea americana</i>	Avocado	13.45362	9	8	6	0	0	22	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14445
163	<i>Persea americana</i>	Avocado	10.81665	9	6	0	0	0	22	15	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14447
164	<i>Quercus agrifolia</i>	Coast live oak	12	12	0	0	0	0	35	30	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14447
165	<i>Persea americana</i>	Avocado	9.899495	7	7	0	0	0	10	8	Poor	Critical	Fair		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14446
166	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	25	16	Poor	Dead	Fair		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14451
167	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	30	25	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14457
168	<i>Fraxinus velutina</i>	Arizona ash	9	9	0	0	0	0	45	30	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14462
169	<i>Sambucus mexicana</i>	Mexican elderberry	11.61895	7	6	5	5	0	15	15	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14462
170	<i>Fraxinus velutina</i>	Arizona ash	9	9	0	0	0	0	40	30	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14465
171	<i>Persea americana</i>	Avocado	19	19	0	0	0	0	10	10	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14466
172	<i>Quercus agrifolia</i>	Coast live oak	22.51666	12	11	11	11	0	30	35	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14471
173	<i>Quercus agrifolia</i>	Coast live oak	27.3313	17	16	11	9	0	35	35	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14473
174	<i>Citrus aurantifolia</i>	Lime	8.774964	6	4	4	3	0	16	16	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14467
175	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	30	30	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14467
176	<i>Quercus agrifolia</i>	Coast live oak	18.02776	15	8	6	0	0	30	25	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14462
177	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	35	25	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14483
178	<i>Persea americana</i>	Avocado	17	17	0	0	0	0	30	30	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14486
179	<i>Quercus agrifolia</i>	Coast live oak	14.86607	11	10	0	0	0	25	20	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14488
180	<i>Quercus agrifolia</i>	Coast live oak	13.45362	10	9	0	0	0	18	20	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14488
181	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	30	25	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14467
182	<i>Citrus aurantifolia</i>	Lime	10.81665	7	6	4	4	0	18	18	Fair	Critical	Fair		Significant Tree	Fire Hazard	Direct Impact	Remove - Health	-117.963	34.14462
183	<i>Persea americana</i>	Avocado	8.944272	8	4	0	0	0	16	16	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14461
184	<i>Citrus aurantifolia</i>	Lime	8.246211	5	4	3	3	3	10	10	Fair	Critical	Fair		Significant Tree	Fire Hazard	Direct Impact	Remove - Health	-117.963	34.14457



Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
185	<i>Quercus agrifolia</i>	Coast live oak	16	16	0	0	0	0	35	30	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14441
186	<i>Citrus x limon</i>	Lemon	5	4	3	0	0	0	10	6	Poor	Critical	Poor		Significant Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14439
187	<i>Persea americana</i>	Avocado	7	7	0	0	0	0	10	6	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14429
188	<i>Malus alba</i>	White mulberry	11	7	6	6	0	0	25	25	Poor	Dead	Poor		Significant Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14428
189	<i>Persea americana</i>	Avocado	10.24695	7	6	2	4	0	10	14	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1444
190	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	12	8	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14439
191	<i>Persea americana</i>	Avocado	11.6619	8	6	6	0	0	18	18	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1444
192	<i>Persea americana</i>	Avocado	12.64911	12	4	0	0	0	16	15	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1444
193	<i>Persea americana</i>	Avocado	9.848858	9	4	0	0	0	18	16	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1444
194	<i>Persea americana</i>	Avocado	11.40175	9	7	0	0	0	18	16	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14439
195	<i>Persea americana</i>	Avocado	12.36932	11	4	4	0	0	25	18	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14439
196	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	20	18	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14439
197	<i>Pinus pinea</i>	Stone pine	18.30301	13	9	6	7	0	20	25	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14442
198	<i>Fraxinus velutina</i>	Arizona ash	7	7	0	0	0	0	35	20	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14385
199	<i>Quercus agrifolia</i>	Coast live oak	16	16	0	0	0	0	35	35	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14389
200	<i>Persea americana</i>	Avocado	15	15	0	0	0	0	25	30	Fair	Poor	Fair		Orchard Tree	Fire Hazard		Remove - Health	-117.963	34.14384
201	<i>Ulmus parvifolia</i>	Chinese elm	9.899495	7	7	0	0	0	14	16	Fair	Fair	Poor		Significant Tree	Future Impact		Direct Impact	-117.963	34.14385
202	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	30	16	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14384
203	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	25	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14384
204	<i>Persea americana</i>	Avocado	12.80625	9	7	3	5	0	20	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14384
205	<i>Persea americana</i>	Avocado	18.60108	12	11	9	0	0	25	25	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14384
206	<i>Persea americana</i>	Avocado	12.8841	9	6	7	0	0	20	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14385
207	<i>Quercus agrifolia</i>	Coast live oak	17	17	0	0	0	0	35	30	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14385
208	<i>Quercus agrifolia</i>	Coast live oak	4.472136	4	2	0	0	0	12	6	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14384
209	<i>Ulmus parvifolia</i>	Chinese elm	12.0416	8	9	0	0	0	25	25	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.962	34.14385
210	<i>Quercus agrifolia</i>	Coast live oak	12.0416	8	9	0	0	0	16	25	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14385
211	<i>Ceratonia siliqua</i>	Carob	5	5	0	0	0	0	30	14	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.962	34.14383
212	<i>Persea americana</i>	Avocado	8	8	0	0	0	0	15	15	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.1439
213	<i>Persea americana</i>	Avocado	8.246211	8	2	0	0	0	15	15	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.1439
214	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	15	15	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14389
215	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	12	8	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.1439
216	<i>Persea americana</i>	Avocado	11.31371	8	8	0	0	0	16	16	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1439
217	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	12	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14388
218	<i>Persea americana</i>	Avocado	13.60147	11	8	0	0	0	22	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14389
219	<i>Persea americana</i>	Avocado	10	10	0	0	0	0	12	8	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14389
220	<i>Persea americana</i>	Avocado	12	12	0	0	0	0	25	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14389
221	<i>Fraxinus velutina</i>	Arizona ash	6	6	0	0	0	0	18	10	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14395
222	<i>Persea americana</i>	Avocado	15.81139	13	9	0	0	0	25	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14395
223	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	25	20	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14395
224	<i>Persea americana</i>	Avocado	8	8	0	0	0	0	18	16	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14395
225	<i>Persea americana</i>	Avocado	10	8	6	0	0	0	18	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14394
226	<i>Persea americana</i>	Avocado	17.20465	14	6	8	0	0	25	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14394
227	<i>Ulmus parvifolia</i>	Chinese elm	11	11	0	0	0	0	25	20	Poor	Critical	Poor		Significant Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14395
228	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	25	16	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14396
229	<i>Fraxinus velutina</i>	Arizona ash	2	2	0	0	0	0	18	6	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14396
230	<i>Sambucus mexicana</i>	Mexican elderberry	8.485281	6	6	0	0	0	25	12	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14393

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
231	<i>Ulmus parvifolia</i>	Chinese elm	8	8	0	0	0	0	25	18	Dead	Dead	Dead		Significant Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14397
232	<i>Schinus terebinthifolius</i>	Brazillian pepper	8	8	0	0	0	0	25	18	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.962	34.14401
233	<i>Grevillea robusta</i>	Silk oak	13	13	0	0	0	0	45	25	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.962	34.144
234	<i>Quercus agrifolia</i>	Coast live oak	9.899495	7	7	0	0	0	12	15	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.144
235	<i>Fraxinus velutina</i>	Arizona ash	6	6	0	0	0	0	35	20	Poor	Dead	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.144
236	<i>Fraxinus velutina</i>	Arizona ash	7	7	0	0	0	0	35	20	Poor	Critical	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14399
237	<i>Ceratonia siliqua</i>	Carob	6	6	0	0	0	0	20	16	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.963	34.14398
238	<i>Ficus edulis</i>	Fig	13.0767	7	6	6	5	5	35	25	Fair	Fair	Fair		Significant Tree	Future Impact		Direct Impact	-117.963	34.144
239	<i>Ulmus parvifolia</i>	Chinese elm	7	7	0	0	0	0	25	25	Fair	Fair	Poor		Significant Tree	Future Impact		Direct Impact	-117.963	34.14402
240	<i>Persea americana</i>	Avocado	15.81139	13	9	0	0	0	20	25	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14401
241	<i>Persea americana</i>	Avocado	13	13	0	0	0	0	25	25	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.144
242	<i>Persea americana</i>	Avocado	12.0416	9	8	0	0	0	25	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14405
243	<i>Persea americana</i>	Avocado	14.42221	12	8	0	0	0	25	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14405
244	<i>Persea americana</i>	Avocado	15.6205	12	10	0	0	0	25	20	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14405
245	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	25	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14405
246	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	25	20	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14405
247	<i>Fraxinus velutina</i>	Arizona ash	6	6	0	0	0	0	35	16	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14405
248	<i>Persea americana</i>	Avocado	14.59452	8	8	7	6	0	20	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14406
249	<i>Persea americana</i>	Avocado	12.0416	9	8	0	0	0	20	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14405
250	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	20	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14406
251	<i>Persea americana</i>	Avocado	15	9	12	0	0	0	20	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14412
252	<i>Persea americana</i>	Avocado	12.72792	9	9	0	0	0	25	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14412
253	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	25	16	Fair	Fair	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14414
254	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	18	16	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14412
255	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	12	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14424
256	<i>Koelreuteria bipinnata</i>	Chinese flame tree	6	6	0	0	0	0	18	12	Fair	Poor	Poor		Significant Tree	Fire Hazard	Encroachment	Remove - Health	-117.963	34.14426
257	<i>Persea americana</i>	Avocado	9	9	0	0	0	0	20	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14418
258	<i>Persea americana</i>	Avocado	10	8	6	0	0	0	15	10	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14418
259	<i>Quercus agrifolia</i>	Coast live oak	7	7	0	0	0	0	18	10	Fair	Poor	Fair		Native Tree	Future Impact		Direct Impact	-117.963	34.14421
260	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	12	Fair	Poor	Fair		Native Tree	Future Impact		Direct Impact	-117.962	34.14422
261	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	15	8	Fair	Critical	Fair		Native Tree	Fire Hazard		Remove - Health	-117.962	34.14419
262	<i>Fraxinus velutina</i>	Arizona ash	8	8	0	0	0	0	28	20	Poor	Critical	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14413
263	<i>Ulmus parvifolia</i>	Chinese elm	7.681146	4	4	3	3	3	18	22	Fair	Fair	Fair		Significant Tree	Future Impact	Encroachment	Direct Impact	-117.962	34.14429
264	<i>Quercus agrifolia</i>	Coast live oak	14.21267	11	9	0	0	0	24	22	Fair	Poor	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.963	34.14435
265	<i>Persea americana</i>	Avocado	9.486833	9	3	0	0	0	13	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14446
266	<i>Persea americana</i>	Avocado	10.44031	10	3	0	0	0	13	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14439
267	<i>Fraxinus velutina</i>	Arizona ash	4.242641	3	3	0	0	0	16	8	Poor	Critical	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14433
268	<i>Quercus agrifolia</i>	Coast live oak	6.403124	4	5	0	0	0	17	12	Poor	Fair	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14436
269	<i>Persea americana</i>	Avocado	15.06652	11	9	5	0	0	15	18	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14439
270	<i>Persea americana</i>	Avocado	9.219544	7	6	0	0	0	15	18	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14439
271	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	10	8	Good	Good	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14442
272	<i>Persea americana</i>	Avocado	8.944272	4	8	0	0	0	10	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14445
273	<i>Persea americana</i>	Avocado	9.219544	6	7	0	0	0	10	12	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14445
274	<i>Citrus aurantifolia</i>	Lime	7.81025	6	5	0	0	0	16	18	Good	Good	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.963	34.14452
275	<i>Persea americana</i>	Avocado	11.35782	7	8	4	0	0	18	18	Fair	Critical	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.962	34.14449
276	<i>Quercus agrifolia</i>	Coast live oak	12.52996	11	6	0	0	0	24	25	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14452

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
277	<i>Quercus agrifolia</i>	Coast live oak	10	10	0	0	0	0	20	18	Good	Fair	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.1445
278	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	10	Good	Fair	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14451
279	<i>Quercus agrifolia</i>	Coast live oak	4.123106	4	1	0	0	0	12	8	Good	Fair	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14452
280	<i>Citrus aurantifolia</i>	Lime	9.219544	7	6	0	0	0	12	14	Good	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14458
281	<i>Persea americana</i>	Avocado	11	11	0	0	0	0	14	14	Poor	Critical	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14459
282	<i>Persea americana</i>	Avocado	5	4	3	0	0	0	13	12	Fair	Critical	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.962	34.14462
283	<i>Quercus agrifolia</i>	Coast live oak	5.830952	5	3	0	0	0	15	12	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14465
284	<i>Persea americana</i>	Avocado	17.69181	13	12	0	0	0	14	15	Poor	Dead	Poor		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14468
285	<i>Quercus agrifolia</i>	Coast live oak	32	32	0	0	0	0	40	40	Good	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.1447
286	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	20	18	Good	Poor	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.962	34.14471
287	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	12	8	Good	Fair	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14473
288	<i>Quercus agrifolia</i>	Coast live oak	2.236068	2	1	0	0	0	10	6	Good	Fair	Fair	Yes	Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14474
289	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	35	35	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14473
290	<i>Persea americana</i>	Avocado	22.80351	18	14	0	0	0	40	40	Poor	Dead	Fair		Orchard Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14479
291	<i>Grevillea robusta</i>	Silk oak	7	7	0	0	0	0	50	20	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14478
292	<i>Persea americana</i>	Avocado	16	16	0	0	0	0	45	30	Fair	Dead	Fair		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.962	34.14479
293	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	45	40	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14481
294	<i>Quercus agrifolia</i>	Coast live oak	1	1	0	0	0	0	50	40	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14483
295	<i>Persea americana</i>	Avocado	14	14	0	0	0	0	20	14	Dead	Dead	Dead		Orchard Tree	Fire Hazard	Direct Impact	Remove - Health	-117.962	34.14486
296	<i>Ulmus parvifolia</i>	Chinese elm	7.211103	6	4	0	0	0	35	14	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Encroachment	-117.962	34.1449
297	<i>Ulmus parvifolia</i>	Chinese elm	13	13	0	0	0	0	38	24	Fair	Fair	Fair		Significant Tree	Future Impact	Direct Impact	Encroachment	-117.962	34.14491
298	<i>Quercus agrifolia</i>	Coast live oak	2	2	0	0	0	0	12	8	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14489
299	<i>Quercus agrifolia</i>	Coast live oak	2	2	0	0	0	0	12	8	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.962	34.14489
300	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	12	8	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14487
301	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	12	8	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14488
302	<i>Quercus agrifolia</i>	Coast live oak	2	2	0	0	0	0	10	7	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.962	34.14489
303	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	14	7	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.962	34.1449
304	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	14	7	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.962	34.14489
305	<i>Quercus agrifolia</i>	Coast live oak	1	1	0	0	0	0	10	6	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14487
306	<i>Quercus agrifolia</i>	Coast live oak	1	1	0	0	0	0	10	6	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14488
307	<i>Quercus agrifolia</i>	Coast live oak	1	1	0	0	0	0	10	6	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.962	34.14488
308	<i>Quercus agrifolia</i>	Coast live oak	11	6	6	7	0	0	15	23	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.962	34.14493
309	<i>Quercus agrifolia</i>	Coast live oak	9.273618	5	6	5	0	0	18	23	Fair	Fair	Fair		Native Tree		Direct Impact	Indirect Impact	-117.962	34.14498
310	<i>Quercus agrifolia</i>	Coast live oak	8.602325	7	5	0	0	0	18	18	Fair	Fair	Fair		Native Tree		Encroachment	Preserve	-117.962	34.14501
311	<i>Quercus agrifolia</i>	Coast live oak	2	2	0	0	0	0	14	10	Fair	Dead	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.962	34.14484
311	<i>Quercus agrifolia</i>	Coast live oak	6.403124	5	4	0	0	0	18	15	Fair	Dead	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.962	34.14498
312	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	35	30	Fair	Fair	Fair		Native Tree			Preserve	-117.962	34.14509
313	<i>Quercus agrifolia</i>	Coast live oak	25	25	0	0	0	0	40	45	Fair	Fair	Fair		Native Tree			Preserve	-117.962	34.14511
314	<i>Quercus agrifolia</i>	Coast live oak	28	28	0	0	0	0	0	35	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14497
315	<i>Arcontophoenix alexandrae</i>	King palm	11	11	0	0	0	0	30	16	Fair	Poor	Fair		Significant Tree	Fire Hazard	Direct Impact	Remove - Health	-117.964	34.14495
316	<i>Quercus agrifolia</i>	Coast live oak	20	20	0	0	0	0	30	30	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14497
317	<i>Arcontophoenix alexandrae</i>	King palm	14	14	0	0	0	0	28	12	Fair	Fair	Fair		Significant Tree	nificant - Future Imp	Direct Impact	Direct Impact	-117.964	34.14495
318	<i>Quercus agrifolia</i>	Coast live oak	15.6205	12	10	0	0	0	28	25	Fair	Fair	Fair		Native Tree	ative - Future Impac	Direct Impact	Direct Impact	-117.964	34.14497
319	<i>Arcontophoenix alexandrae</i>	King palm	10	10	0	0	0	0	40	12	Fair	Fair	Fair		Significant Tree	nificant - Future Imp	Direct Impact	Direct Impact	-117.964	34.14495
320	<i>Ulmus parvifolia</i>	Chinese elm	7.211103	6	4	0	0	0	25	18	Fair	Fair	Fair		Significant Tree	nificant - Future Imp	Direct Impact	Direct Impact	-117.964	34.14495
321	<i>Arcontophoenix alexandrae</i>	King palm	12	12	0	0	0	0	28	12	Fair	Fair	Fair		Significant Tree	nificant - Future Imp	Direct Impact	Direct Impact	-117.964	34.14495

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
322	<i>Arcontophoenix alexandrae</i>	King palm	12	12	0	0	0	0	28	14	Fair	Fair	Fair		Significant Tree	nificant - Future Imp	Direct Impact	Direct Impact	-117.964	34.14493
323	<i>Tipuana tipu</i>	Tipu	8	8	0	0	0	0	30	23	Fair	Fair	Fair		Significant Tree	Demolition	Direct Impact	Direct Impact	-117.964	34.14496
324	<i>Tipuana tipu</i>	Tipu	9	9	0	0	0	0	35	30	Fair	Fair	Fair		Significant Tree	Demolition	Direct Impact	Direct Impact	-117.964	34.14498
325	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	20	15	Fair	Fair	Fair		Native Tree	Demolition	Encroachment	Direct Impact	-117.964	34.145
326	<i>Quercus engelmannii</i>	Englemann oak	17	17	0	0	0	0	40	35	Fair	Fair	Fair		Native Tree	Demolition	Encroachment	Encroachment	-117.963	34.14503
327	<i>Quercus engelmannii</i>	Englemann oak	19	19	0	0	0	0	40	35	Fair	Fair	Fair		Native Tree	Demolition	Encroachment	Encroachment	-117.963	34.145
328	<i>Quercus agrifolia</i>	Coast live oak	22	22	0	0	0	0	40	40	Good	Fair	Fair		Native Tree			Preserve	-117.963	34.14515
329	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	16	22	Fair	Critical	Poor		Native Tree	Fire Hazard		Remove - Health	-117.963	34.14516
330	<i>Quercus agrifolia</i>	Coast live oak	22	22	0	0	0	0	40	40	Good	Fair	Fair		Native Tree			Preserve	-117.963	34.14517
331	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	18	15	Good	Fair	Fair		Native Tree			Preserve	-117.963	34.1452
332	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	30	30	Good	Fair	Fair		Native Tree			Preserve	-117.963	34.14531
333	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	13	8	Poor	Fair	Fair		Native Tree		Remove - Health	Preserve	-117.963	34.14528
334	<i>Sambucus mexicana</i>	Mexican elderberry	10	8	6	0	0	0	17	12	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14528
335	<i>Quercus agrifolia</i>	Coast live oak	12	12	0	0	0	0	27	22	Good	Good	Fair		Native Tree			Preserve	-117.964	34.14525
336	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	27	22	Good	Fair	Fair		Native Tree			Preserve	-117.964	34.14525
337	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	30	30	Good	Good	Fair		Native Tree			Preserve	-117.964	34.14517
338	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	28	20	Good	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14511
339	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	20	12	Good	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14515
340	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	16	12	Good	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14516
341	<i>Heteromoles arbutifolia</i>	Toyon	6	6	0	0	0	0	13	10	Good	Good	Fair		Native Tree			Preserve	-117.964	34.14521
342	<i>Quercus agrifolia</i>	Coast live oak	3.605551	2	3	0	0	0	13	8	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14518
343	<i>Quercus agrifolia</i>	Coast live oak	20.24846	17	11	0	0	0	28	30	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14523
344	<i>Heteromoles arbutifolia</i>	Toyon	6	6	0	0	0	0	12	10	Good	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14528
345	<i>Quercus agrifolia</i>	Coast live oak	9.486833	9	3	0	0	0	20	18	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14527
346	<i>Quercus agrifolia</i>	Coast live oak	10.81665	9	6	0	0	0	20	12	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14535
347	<i>Quercus agrifolia</i>	Coast live oak	11	11	0	0	0	0	30	20	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.1454
348	<i>Quercus agrifolia</i>	Coast live oak	11.40175	9	7	0	0	0	30	20	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14545
349	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	30	20	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14546
350	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	30	20	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14547
351	<i>Heteromoles arbutifolia</i>	Toyon	6	6	0	0	0	0	18	12	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14542
352	<i>Quercus agrifolia</i>	Coast live oak	19	19	0	0	0	0	28	24	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14538
353	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	8	9	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14532
354	<i>Quercus agrifolia</i>	Coast live oak	5	5	0	0	0	0	14	12	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14531
355	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	30	30	Fair	Critical	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14531
356	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	12	10	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14528
357	<i>Quercus agrifolia</i>	Coast live oak	30	30	0	0	0	0	30	40	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14525
358	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	12	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14525
359	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	15	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14523
360	<i>Quercus agrifolia</i>	Coast live oak	16.27882	12	11	0	0	0	24	35	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14523
361	<i>Quercus agrifolia</i>	Coast live oak	12	12	0	0	0	0	20	20	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14527
362	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	16	12	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14526
363	<i>Quercus agrifolia</i>	Coast live oak	13.45362	9	10	0	0	0	22	25	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14526
364	<i>Quercus agrifolia</i>	Coast live oak	10.81665	9	6	0	0	0	20	20	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14529
365	<i>Quercus agrifolia</i>	Coast live oak	11	11	0	0	0	0	18	12	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14528
366	<i>Sambucus mexicana</i>	Mexican elderberry	12	12	0	0	0	0	22	25	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14525
367	<i>Sambucus mexicana</i>	Mexican elderberry	11	11	0	0	0	0	22	25	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14524

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
368	<i>Quercus agrifolia</i>	Coast live oak	24	24	0	0	0	0	40	35	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14517
369	<i>Quercus agrifolia</i>	Coast live oak	10	10	0	0	0	0	25	20	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14516
370	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	25	20	Fair	Critical	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14518
371	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	25	24	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14516
372	<i>Quercus agrifolia</i>	Coast live oak	27	27	0	0	0	0	38	35	Fair	Fair	Fair		Native Tree	Future Impact	Encroachment	Encroachment	-117.964	34.14508
373	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	15	30	Fair	Dead	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14519
374	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	15	18	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14515
375	<i>Quercus agrifolia</i>	Coast live oak	5	5	0	0	0	0	15	14	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14517
376	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	18	20	Poor	Fair	Fair		Native Tree		Remove - Health	Preserve	-117.964	34.14516
377	<i>Quercus agrifolia</i>	Coast live oak	28	28	0	0	0	0	18	35	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14514
378	<i>Quercus agrifolia</i>	Coast live oak	2.236068	2	1	0	0	0	10	8	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14499
379	<i>Quercus agrifolia</i>	Coast live oak	2.236068	2	1	0	0	0	10	8	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Direct Impact	-117.964	34.14497
380	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	20	12	Fair	Fair	Fair		Native Tree	Future Impact	Encroachment	Direct Impact	-117.964	34.14501
381	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	12	10	Fair	Fair	Fair		Native Tree	Future Impact		Encroachment	-117.964	34.14509
382	<i>Quercus agrifolia</i>	Coast live oak	7	7	0	0	0	0	18	14	Fair	Fair	Fair		Native Tree	Future Impact		Encroachment	-117.964	34.14511
383	<i>Quercus agrifolia</i>	Coast live oak	11	11	0	0	0	0	24	18	Fair	Critical	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.1451
384	<i>Quercus agrifolia</i>	Coast live oak	7	7	0	0	0	0	20	18	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.964	34.14509
385	<i>Quercus agrifolia</i>	Coast live oak	10	10	0	0	0	0	20	22	Fair	Fair	Fair		Native Tree	Future Impact	Encroachment	Encroachment	-117.964	34.14508
386	<i>Quercus agrifolia</i>	Coast live oak	7.549834	4	4	3	4	0	20	18	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.964	34.14508
387	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	20	22	Poor	Fair	Fair		Native Tree	Future Impact	Remove - Health	Encroachment	-117.964	34.14505
388	<i>Quercus agrifolia</i>	Coast live oak	5	5	0	0	0	0	12	14	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14541
389	<i>Quercus agrifolia</i>	Coast live oak	17.46425	16	7	0	0	0	25	25	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14543
390	<i>Quercus agrifolia</i>	Coast live oak	17.49286	15	9	0	0	0	35	30	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14542
391	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	35	30	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14535
392	<i>Quercus agrifolia</i>	Coast live oak	19	19	0	0	0	0	35	35	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14535
393	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	25	20	Poor	Dead	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14528
394	<i>Quercus agrifolia</i>	Coast live oak	14	14	0	0	0	0	25	20	Fair	Fair	Poor		Native Tree			Preserve	-117.963	34.14527
395	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	25	20	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14526
396	<i>Quercus agrifolia</i>	Coast live oak	16	16	0	0	0	0	9	5	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14518
397	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	12	5	Fair	Fair	Poor		Native Tree			Preserve	-117.963	34.14518
398	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	20	16	Poor	Dead	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14516
399	<i>Quercus agrifolia</i>	Coast live oak	7	7	0	0	0	0	12	12	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14516
400	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	25	25	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.963	34.14515
401	<i>Quercus agrifolia</i>	Coast live oak	12	12	0	0	0	0	20	20	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.963	34.14529
402	<i>Sambucus mexicana</i>	Mexican elderberry	7.874008	7	3	2	0	0	20	20	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14533
403	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	16	16	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14531
404	<i>Quercus agrifolia</i>	Coast live oak	39.25557	28	26	9	0	0	45	65	Fair	Critical	Fair		Native Tree	Fire Hazard		Remove - Health	-117.963	34.14526
405	<i>Sambucus mexicana</i>	Mexican elderberry	13.63818	8	8	7	3	0	22	22	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14531
406	<i>Quercus agrifolia</i>	Coast live oak	17	17	0	0	0	0	35	35	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.963	34.14556
407	<i>Quercus agrifolia</i>	Coast live oak	4	4	0	0	0	0	12	10	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14557
408	<i>Quercus agrifolia</i>	Coast live oak	7.211103	6	4	0	0	0	16	16	Fair	Fair	Poor		Native Tree			Preserve	-117.963	34.14571
409	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	30	30	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14574
410	<i>Sambucus mexicana</i>	Mexican elderberry	6	6	0	0	0	0	20	16	Poor	Fair	Fair		Native Tree		Remove - Health	Preserve	-117.963	34.14581
411	<i>Quercus agrifolia</i>	Coast live oak	13.30414	8	8	7	0	0	25	25	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14577
412	<i>Quercus agrifolia</i>	Coast live oak	16	16	0	0	0	0	35	35	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1457
413	<i>Quercus agrifolia</i>	Coast live oak	17.69181	13	12	0	0	0	35	35	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.963	34.1456

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
414	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	25	25	Fair	Fair	Poor		Native Tree			Preserve	-117.963	34.14564
415	<i>Sambucus mexicana</i>	Mexican elderberry	8.944272	8	4	0	0	0	20	16	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1457
416	<i>Quercus agrifolia</i>	Coast live oak	20	20	0	0	0	0	40	35	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14605
417	<i>Rhus ovata</i>	Sumac	11.87434	8	6	4	5	0	22	30	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14594
418	<i>Quercus agrifolia</i>	Coast live oak	20.3224	13	12	10	0	0	35	40	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14586
419	<i>Quercus agrifolia</i>	Coast live oak	15.65248	10	9	8	0	0	25	30	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14581
420	<i>Quercus agrifolia</i>	Coast live oak	18.81489	9	9	8	8	8	30	30	Fair	Fair	Fair		Native Tree			Preserve	-117.964	34.14569
421	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	15	10	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.1454
422	<i>Quercus agrifolia</i>	Coast live oak	9	9	0	0	0	0	20	20	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14513
423	<i>Quercus agrifolia</i>	Coast live oak	10.63015	9	4	4	0	0	20	20	Poor	Critical	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14511
424	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	20	18	Poor	Critical	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14508
425	<i>Quercus agrifolia</i>	Coast live oak	16.49242	16	4	0	0	0	35	35	Fair	Poor	Fair		Native Tree	Fire Hazard	Encroachment	Remove - Health	-117.963	34.14504
426	<i>Quercus agrifolia</i>	Coast live oak	11.31371	8	8	0	0	0	16	16	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14507
427	<i>Sambucus mexicana</i>	Mexican elderberry	11.31371	8	8	0	0	0	16	22	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14508
428	<i>Quercus agrifolia</i>	Coast live oak	34.64102	20	20	20	0	0	50	55	Fair	Poor	Fair		Native Tree	Fire Hazard	Encroachment	Remove - Health	-117.963	34.14504
429	<i>Quercus agrifolia</i>	Coast live oak	15	15	0	0	0	0	30	25	Poor	Dead	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14508
430	<i>Quercus agrifolia</i>	Coast live oak	16	16	0	0	0	0	35	35	Fair	Dead	Fair		Native Tree	Fire Hazard	Encroachment	Remove - Health	-117.963	34.14506
431	<i>Quercus agrifolia</i>	Coast live oak	4.242641	3	3	0	0	0	8	6	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14507
432	<i>Quercus agrifolia</i>	Coast live oak	9.899495	7	7	0	0	0	18	16	Fair	Fair	Poor		Native Tree		Encroachment	Preserve	-117.963	34.14504
433	<i>Quercus agrifolia</i>	Coast live oak	10	10	0	0	0	0	25	25	Fair	Fair	Fair		Native Tree		Encroachment	Preserve	-117.963	34.14506
434	<i>Quercus agrifolia</i>	Coast live oak	32	32	0	0	0	0	45	55	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14508
435	<i>Quercus agrifolia</i>	Coast live oak	10	8	6	0	0	0	20	20	Fair	Fair	Fair		Native Tree		Indirect Impact	Preserve	-117.963	34.14508
436	<i>Quercus agrifolia</i>	Coast live oak	7	7	0	0	0	0	20	16	Fair	Fair	Poor		Native Tree	Fire Hazard		Remove - Health	-117.963	34.1451
437	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	18	16	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14512
438	<i>Quercus agrifolia</i>	Coast live oak	3.605551	2	3	0	0	0	12	12	Fair	Fair	Poor		Native Tree	Fire Hazard		Remove - Health	-117.962	34.14512
439	<i>Quercus agrifolia</i>	Coast live oak	6	6	0	0	0	0	10	6	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14514
440	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	45	40	Fair	Fair	Fair		Native Tree			Preserve	-117.962	34.14518
441	<i>Quercus agrifolia</i>	Coast live oak	17	17	0	0	0	0	35	35	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.963	34.14517
442	<i>Quercus agrifolia</i>	Coast live oak	3	3	0	0	0	0	6	6	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14513
443	<i>Rhus ovata</i>	Sumac	7	7	0	0	0	0	15	15	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.1452
444	<i>Rhus ovata</i>	Sumac	6	6	0	0	0	0	15	15	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14518
445	<i>Rhus ovata</i>	Sumac	6	6	0	0	0	0	18	15	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14519
446	<i>Rhus ovata</i>	Sumac	8.774964	6	4	4	3	0	20	20	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14519
447	<i>Rhus ovata</i>	Sumac	8.062258	7	4	0	0	0	20	16	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14518
448	<i>Sambucus mexicana</i>	Mexican elderberry	10.63015	7	8	0	0	0	20	16	Poor	Poor	Fair		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14518
449	<i>Quercus agrifolia</i>	Coast live oak	18.38478	13	12	5	0	0	35	35	Dead	Dead	Dead		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14514
450	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	30	30	Fair	Fair	Poor		Native Tree			Preserve	-117.962	34.14525
451	<i>Quercus agrifolia</i>	Coast live oak	64.66065	55	34	0	0	0	55	70	Fair	Fair	Fair		Native Tree			Preserve	-117.962	34.14526
452	<i>Quercus agrifolia</i>	Coast live oak	16	16	0	0	0	0	20	35	Poor	Dead	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14539
453	<i>Quercus agrifolia</i>	Coast live oak	8.062258	7	4	0	0	0	25	20	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.962	34.14536
454	<i>Quercus agrifolia</i>	Coast live oak	15.06652	7	8	8	5	5	30	25	Fair	Poor	Fair		Native Tree	Fire Hazard		Remove - Health	-117.962	34.14528
455	<i>Rhus ovata</i>	Sumac	11.40175	9	7	0	0	0	20	25	Fair	Fair	Poor		Native Tree			Preserve	-117.962	34.14579
456	<i>Quercus agrifolia</i>	Coast live oak	4.123106	2	3	2	0	0	8	6	Poor	Poor	Poor		Native Tree	Fire Hazard	Remove - Health	Remove - Health	-117.963	34.14499
457	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	22	20	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.963	34.14497
458	<i>Quercus agrifolia</i>	Coast live oak	9.433981	8	5	0	0	0	18	20	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.963	34.14495
459	<i>Sambucus mexicana</i>	Mexican elderberry	13.92839	8	7	9	0	0	22	25	Fair	Fair	Fair		Native Tree	Future Impact	Direct Impact	Encroachment	-117.963	34.14496

Appendix C - Tree Information Matrix - Royal Oaks Project																				
Tree #	Botanical Name	Common Name	Diameter (in.)	Individual Stem					Height (ft.)	Canopy (ft.)	Health 2015	Health April 2017	Structure	Relocation Potential	Protected Status	Permit Type - June 2017	Impact Status 2015	Impact Status April 2017	X	Y
				D1	D2	D3	D4	D5												
460	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	22	20	Fair	Dead	Fair		Native Tree	Fire Hazard	Direct Impact	Remove - Health	-117.963	34.14499
461	<i>Ficus edulis</i>	Fig	9	9	0	0	0	0	22	20	Fair	Dead	Fair		Significant Tree	Demolition	Direct Impact	Direct Impact	-117.963	34.14481
462	<i>Quercus agrifolia</i>	Coast live oak	13	13	0	0	0	0	30	20	Fair	Fair	Fair		Native Tree	Future Impact	Encroachment	Encroachment	-117.963	34.145
463	<i>Quercus agrifolia</i>	Coast live oak	4.690416	3	3	2	0	0	8	12	Fair	Fair	Fair		Native Tree	Future Impact	Encroachment	Encroachment	-117.963	34.145
464	<i>Quercus agrifolia</i>	Coast live oak	7.211103	6	4	0	0	0	12	12	Fair	Fair	Fair		Native Tree			Preserve	-117.963	34.14517
465	<i>Persea americana</i>	Avocado	20	20	0	0	0	0	35	30	N/A	Critical	Poor		Orchard Tree	Fire Hazard	N/A	Remove - Health	-117.964	34.14479
466	<i>Quercus agrifolia</i>	Coast live oak	18	18	0	0	0	0	25	35	N/A	Fair	Fair		Native Tree	Future Impact	N/A	Direct Impact	-117.962	34.14387
467	<i>Quercus agrifolia</i>	Coast live oak	8	8	0	0	0	0	25	15	N/A	Fair	Fair		Native Tree	Future Impact	N/A	Direct Impact	-117.962	34.14443





# **APPENDIX D**

## *Tree Impact Exhibit*

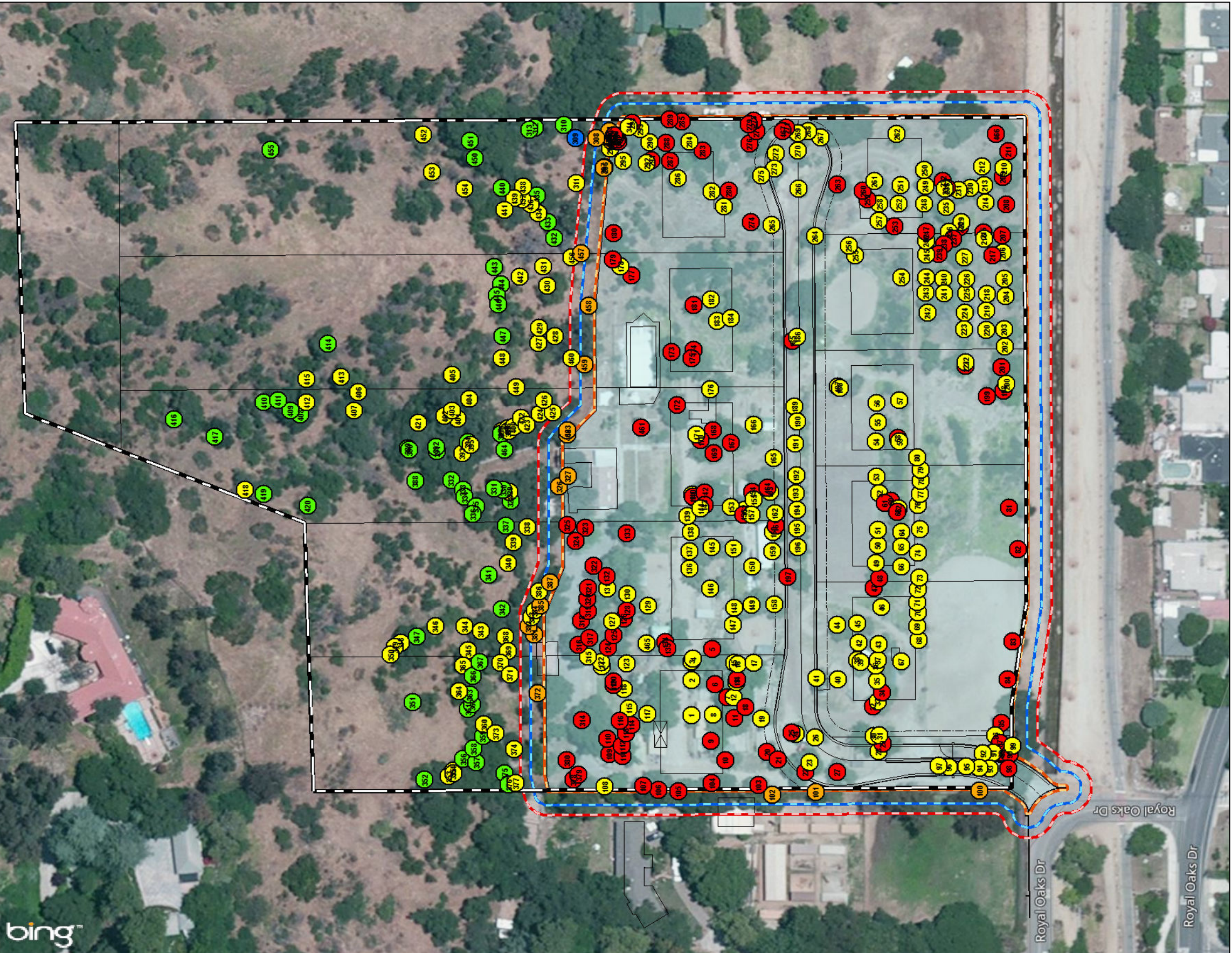
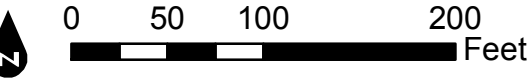






**Tree Impacts**

- Preserve (57)
- Direct Impact (132)
- Encroachment (22)
- Indirect Impact (1)
- Remove - Health (256)
- 2-Ft Buffer
- 15-Ft Buffer
- 25-Ft Buffer
- Development Impacts (May 2017)
- Project Boundary







# **APPENDIX E**

## ***Tree Protection Measures***



## Appendix E – Tree Protection Measures

*The following sections are included as general guidelines for tree protection from construction impacts. The measures presented should be monitored by arborists and enforced by contractors and developers for maximum benefit to the trees.*

### Tree Protection Measures Prior to Construction

**Fencing:** All remaining trees that will not be relocated or removed shall be preserved and protected in place. Trees within approximately 15 feet of proposed construction activity shall be temporarily fenced with chain link or other material satisfactory to City planning staff throughout grading and construction activities. The fencing shall be installed 3 feet outside of the dripline of each tree (or edge of canopy for cluster of trees), be 4 foot tall, and staked every 6 feet. The fenced area shall be considered the tree protection zone (TPZ) unless proximate construction required temporary removal.

**Pre-Construction Meeting:** A pre-construction meeting shall be held between all contractors (including grading, tree removal/pruning, builders, etc.) and the arborist. The arborist will instruct the contractors on tree protection practices and answer any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of their receiving tree protection training. This training shall include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish such.

### Protection and Maintenance During Construction

Once construction activities have begun the following measures shall be adhered to:

**Equipment Operation and Storage:** Avoid heavy equipment operation around the trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration in the soil. All heavy equipment and vehicles should, at minimum, stay out of the fenced tree protection zone, unless where specifically approved in writing and under the supervision of a Certified Arborist or as provided by the approved landscape plan.

**Storage and Disposal:** Do not store or discard any supply or material, including paint, lumber, concrete overflow, etc. within the protection zone. Remove all foreign debris within the protection zone; it is important to leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrients. Avoid draining or leakage of equipment fluids near retained trees. Fluids such as: gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) should be disposed of properly. Keep equipment parked at least 50 feet away from retained trees to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could lead to decline and death.

**Grade Changes:** Grade changes, including adding fill, are not permitted within the tree protection zone without special written authorization and under supervision by a Certified Arborist or as provided by the approved landscape plan. Lowering the grade within this area will necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade will compact the soil further, and decrease both water and air availability to the trees' roots.

**Moving Construction Materials:** Care will be taken when moving equipment or supplies near the trees, especially overhead. Avoid damaging the tree(s) when transporting or moving construction

materials and working around the tree (even outside of the fenced tree protection zone). Above ground tree parts that could be damaged (e.g., low limbs, trunks) should be flagged with red ribbon. If contact with the tree crown is unavoidable, prune the conflicting branch(es) using ISA standards.

**Root Pruning:** Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain tree roots, prune the roots using a Dosko root pruner or equivalent. All cuts should be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. The trench should be made no deeper than necessary.

**Irrigation:** Trees that have been substantially root pruned (30% or more of their root zone) will require irrigation for the first twelve months. The first irrigation should be within 48 hours of root pruning. They should be deep watered every two to four weeks during the summer and once a month during the winter (adjust accordingly with rainfall). One irrigation cycle should thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should dry out between watering; avoid keeping a consistently wet soil. Designate one person to be responsible for irrigating (deep watering) the trees. Check soil moisture with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary above ground micro-spray system that will distribute water slowly (to avoid runoff) and evenly throughout the fenced protection zone ***but never soaking the area located within 6- feet of the tree trunk, especially during warmer months.***

**Pruning:** Do not prune any of the trees until all construction is completed. This will help protect the tree canopies from damage. All pruning shall be completed under the direction of an ISA Certified Arborist and using ISA guidelines. Only dead wood shall be removed from tree canopies.

**Washing:** During construction in summer and autumn months, wash foliage of trees adjacent to the construction sites with a strong water stream every two weeks in early hours before 10:00 a.m. to control mite and insect populations.

**Inspection:** An ISA Certified Arborist shall inspect the impacted preserved trees on a monthly basis during construction. A report comparing tree health and condition to the original, pre-construction baseline shall be submitted following each inspection. Photographs of representative trees are to be included in the report on a minimum annual basis.

## **Maintenance After Construction**

Once construction is complete the fencing may be removed and the following measures performed to sustain and enhance the vigor of the preserved trees.

**Mulch:** Provide a 4-inch mulch layer under the canopy of trees. Mulch should include clean, organic mulch that will provide long-term soil conditioning, soil moisture retention, and soil temperature control.

**Pruning:** The trees will not require regular pruning. Pruning should *only* be done to maintain clearance and remove broken, dead or diseased branches. Pruning shall only take place following a recommendation by an ISA Certified Arborist and performed under the supervision of an ISA Certified Arborist. No more than 20% of the canopy shall be removed at any one time. All pruning shall conform to International Society of Arboriculture standards.

**Watering:** The natural trees that are not disturbed should not require regular irrigation, other than the twelve months following substantial root pruning. However, soil probing will be necessary to accurately monitor moisture levels. Especially in years with low winter rainfall, supplemental



irrigation for the trees that sustained root pruning and any newly planted trees may be necessary. The trees should be irrigated *only* during the winter and spring months.

Watering Adjacent Plant Material: All plants near the trees shall be compatible with water requirements of said trees. The surrounding plants should be watered infrequently with deep soaks and allowed to dry out in-between, rather than frequent light irrigation. The soil shall not be allowed to become saturated or stay continually wet. Irrigation spray shall not hit the trunk of any tree. A 60-inch dry-zone shall be maintained around all tree trunks. An above ground micro-spray irrigation system is recommended over typical underground pop-up sprays.

Washing: Periodic washing of the foliage is recommended during construction but no more than once every two weeks. Washing should include the upper and lower leaf surfaces and the tree bark. This should continue beyond the construction period at a less frequent rate with a high-powered hose only in the early morning hours. Washing will help control dirt/dust buildup that can lead to mite and insect infestations.

Spraying: If the trees are maintained in a healthy state, regular spraying for insect or disease control should not be necessary. If a problem does develop, an ISA Certified Arborist should be consulted; the trees may require application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying should be performed by a licensed applicator under the direction of a licensed pest control advisor.

Inspection: All trees that were impacted during construction within the tree protection zone should be monitored by an ISA Certified Arborist for the first five years after construction completion. The Arborist shall submit an annual report, photograph each tree and compare tree health and condition to the original, pre-construction baseline.

