



Appendix C

Rubio Wash Channel Improvements
Project Arborist Report

ARBORIST REPORT

RUBIO WASH CHANNEL IMPROVEMENTS PROJECT, COUNTY OF LOS ANGELES, CALIFORNIA

PREPARED BY



County of Los Angeles
Department of Public Works
Programs Development Division
900 Fremont Avenue
Alhambra, California 91803

WITH ASSISTANCE FROM

DUDEK

38 North Marengo Avenue
Pasadena, California 91101

SEPTEMBER 2018

TABLE OF CONTENTS

SECTION	PAGE
1 INTRODUCTION	1
2 PROJECT LOCATION AND DESCRIPTION	3
2.1 Existing Conditions.....	3
2.2 Project Characteristics	3
3 METHODS	7
4 RESULTS.....	9
4.1 Tree Summary.....	9
4.2 Mapping.....	10
4.3 Tree Impacts	10
4.4 Overall Tree Impacts Summary	11
5 MITIGATION.....	13
6 TREE PROTECTION	15
7 CONCLUSION.....	17
8 ARBORIST'S DISCLOSURE	19
9 REFERENCE	21

APPENDICES

A	Tree Information Matrix
B	Representative Site Photographs
C	Tree Location and Disposition Exhibit
D	Tree Protection Measures

FIGURE

1	Project Location	5
---	------------------------	---

TABLES

Table 1	Summary of Tree Species	9
Table 2	Summary of Tree Impacts	10
Table 3	Summary of Protected Trees Recommended Mitigation	13

INTENTIONALLY LEFT BLANK

1 INTRODUCTION

A tree inventory and assessment of the Rubio Wash Channel Improvement (project) was performed pursuant to Chapter 95 (Trees and Shrubs; Weeds) of the City of San Gabriel (City) Municipal Code for any protected trees that exist on the project site. The City's Municipal Code defines a protected tree within commercial designated zones as follows:

Landmark or Historically Significant tree: A tree that has a trunk with a 40-inch circumference (12.75-inch diameter) if located in the front yard or 60 inches in circumference (19-inch diameter) if located in the rear and side yards.

Mature trees are any variety of a tree (except fruit trees) that is more than 12.5 inches in circumference (4-inch diameter) when measured at a point 4 feet above the natural grade.

Any palm tree or fruit tree may be trimmed or removed without a permit.

The City's Municipal Code requires a tree removal permit for all protected trees proposed for removal or pruning. For purposes of this inventory, all trees that measured 1 inch or greater in trunk diameter at chest height (4 feet above natural grade) were evaluated as part of this updated arborist report.

Dudek was retained by Los Angeles County Department of Public Works to conduct a tree inventory and assessment of the project site. Dudek's International Society of Arboriculture (ISA) Certified Arborist performed various functions associated with surveying, inventorying, and evaluating the condition of selected trees on the project site, as described in this report.

The purpose of this report is to present the physical characteristics, mapped locations, and disposition of the trees.

INTENTIONALLY LEFT BLANK

2 PROJECT LOCATION AND DESCRIPTION

The Los Angeles County Flood Control District maintains the Rubio Wash drainage system from the Rubio Wash Debris Basin in the unincorporated County area of Altadena to the Rio Hondo Channel. The project is located between Pine Street (at the upstream end) and San Gabriel Boulevard (at the downstream end) of Rubio Wash in San Gabriel (Figure 1, Project Location).

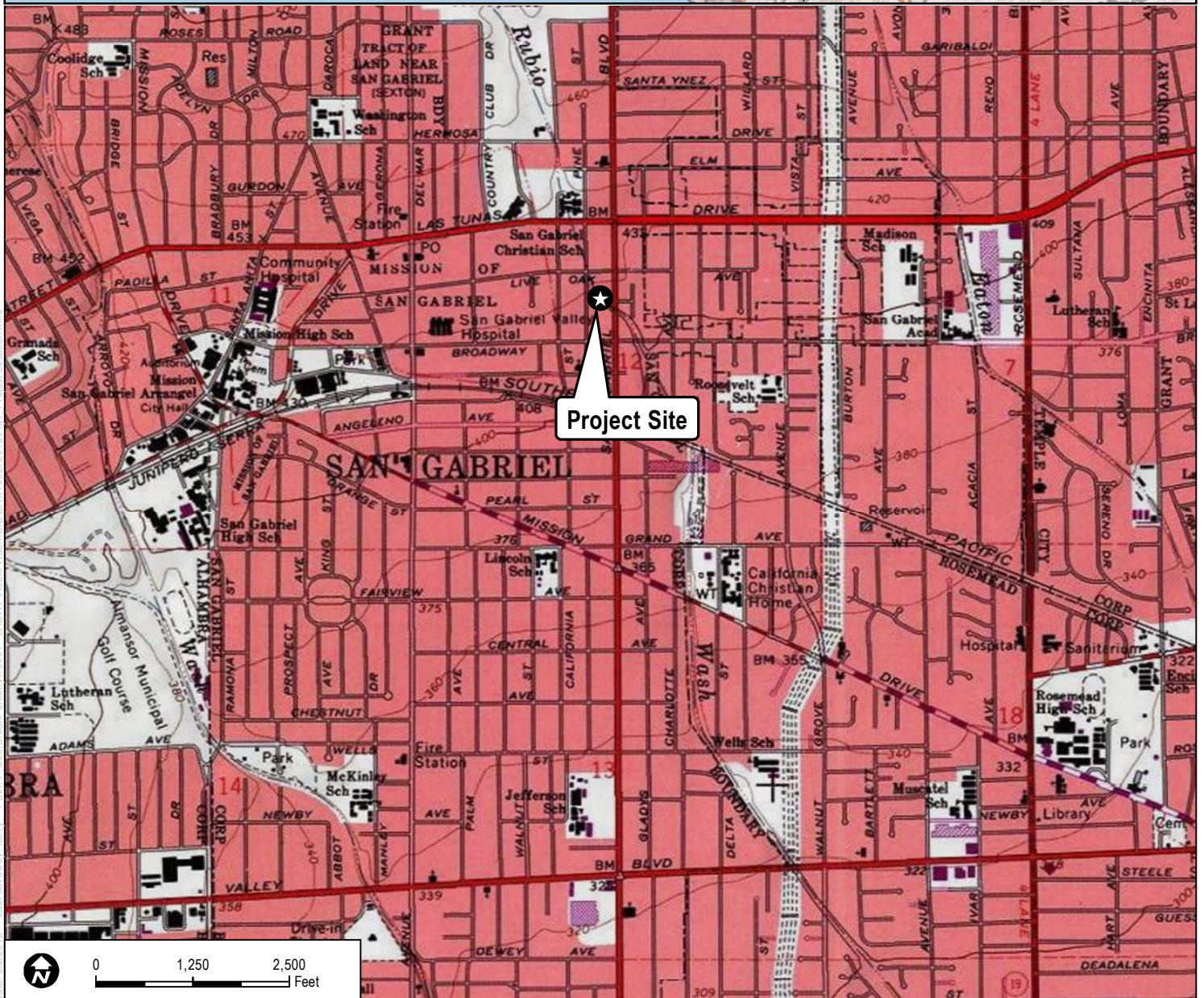
2.1 Existing Conditions

The project site consists of a residential house and small oak woodland along Pine Street; the Rubio Wash Channel, which bisects the property northwest to southeast; and a closed commercial building complex with associated parking lot to the east of the channel. The trees and shrubs are located in selected groupings and/or are dispersed throughout the property.

2.2 Project Characteristics

Rubio Wash improvements will include construction of a 24-foot-wide by 10-foot-high reinforced concrete open channel within the existing 26-foot-wide by 6-foot-3-inch-high reinforced concrete open channel. This tree assessment addresses the project site, where channel improvements are proposed.

INTENTIONALLY LEFT BLANK



SOURCE: USGS 7.5 Minute Series, El Monte Quadrangle

DUDEK



FIGURE 1
Project Location

INTENTIONALLY LEFT BLANK

3 METHODS

Dudek mapped tree locations using a Trimble Pathfinder Pro XH Global Positioning System (GPS) receiver. 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 to map tree locations. The electronic distance measuring/compass combination operates in concert with the Pathfinder system to position offsets, and offset information automatically attaches to the GPS position data string. The electronic tree locations were then evaluated using ArcView 10.4 software to determine the position of the trees relative to the project site.

The trees throughout the survey boundaries were tagged on the trunk with an aluminum tag bearing a unique identification number. These tree tag numbers correspond to the tree information matrix in Appendix A. Tree diameter was found using a diameter tape with adjusted figures for diameter measurements when wrapping the tape around an object's circumference. Diameter measurements were taken using protocol provided in the *Guide for Plant Appraisal*, published by the ISA (Council of Tree and Landscape Appraisers 2000). The diameter at breast height of each tree measurement was taken at a circumference at 4.5 feet above the ground along the trunk axis, with common exceptions. In cases where a tree's trunk was located on a slope, the 4.5-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively), and the measurement was made at the circumference of the trunk at this point. Tree height was visually estimated. Tree canopy diameters were estimated by "pacing-off" the measurement based on the investigator's knowledge of his stride length or by visually estimating the canopy width. The 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*, tree health and structure were evaluated with respect to five distinct tree components: roots, trunk, scaffold branches, small branches, and foliage. Each component was assessed with regard to health factors such as insect, fungal, or pathogen 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.

Scope of Work Limitations

No root crown excavations or investigations or internal probing were 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 or relocation in an urban setting be thoroughly inspected for internal or subterranean decay by a qualified arborist before finalizing preservation or relocation plans.

INTENTIONALLY LEFT BLANK

4 RESULTS

4.1 Tree Summary

On June 27, 2018, Dudek's ISA Certified Arborist/urban forester conducted field evaluations of the trees within the survey boundary. In summary, there are 44 trees dispersed throughout the project site. The 44 trees are represented by 13 species. As depicted in Table 1, coast live oak (*Quercus agrifolia*) occurs at the highest population level on the project site, with 9 individual trees, representing 20% of the site's trees. The remaining 35 trees include 2 trees of heaven (*Ailanthus altissima*), 1 redbud (*Cercis* species), 1 lemon tree (*Citrus limon*), 5 carrotwood trees (*Cupaniopsis anacardioides*), 1 Nichol's willow-leafed peppermint (*Eucalyptus nicholii*), 1 edible fig (*Ficus carica*), 5 Shamel ash trees (*Fraxinus uhdei*), 1 eastern black walnut (*Juglans nigra*), 6 crape myrtle trees (*Lagerstroemia indica*), 1 Peruvian pepper tree (*Schinus molle*), 3 Chinese elms (*Ulmus parvifolia*), and 8 Mexican fan palms (*Washingtonia robusta*). Table 1 provides a summary of the individual species.

Table 1
Summary of Tree Species

Tree Species			
Scientific Name	Common Name	Number of Trees (Total Protected)	Percentage
<i>Ailanthus altissima</i>	Tree of heaven	2 (2)	4.55%
<i>Cercis</i> species	Redbud	1 (1)	2.27%
<i>Citrus limon</i>	Lemon	1 (0)	2.27%
<i>Cupaniopsis anacardioides</i>	Carrotwood	5 (5)	11.36%
<i>Eucalyptus nicholii</i>	Nichol's willow-leafed peppermint	1 (1)	2.27%
<i>Ficus carica</i>	Edible fig	1 (0)	2.27%
<i>Fraxinus uhdei</i>	Shamel ash	5 (5)	11.36%
<i>Juglans nigra</i>	Eastern black walnut	1 (1)	2.27%
<i>Lagerstroemia indica</i>	Crape myrtle	6 (6)	13.64%
<i>Quercus agrifolia</i>	Coast live oak	9 (9)	20.45%
<i>Schinus molle</i>	Peruvian pepper	1 (1)	2.27%
<i>Ulmus parvifolia</i>	Chinese elm	3 (2)	6.82%
<i>Washingtonia robusta</i>	Mexican fan palm	8 (0)	18.18%
Total		44 (33)	100%

The trees are either single- or multi-stemmed and have diameters that range from 2 to 41 inches. Average tree heights range from 9 to 65 feet, and canopy widths extend from 4 to 45 feet at their widest points. The tallest trees consist primarily of Mexican fan palms. The larger tree species, including the coast live oak, eastern black walnut, and

Peruvian pepper tree, dominate the larger canopy spread categories. Appendix A provides tree height and canopy cover attribute information for each tree on the project site. Appendix B provides representative site photographs of the project area.

The trees share similar health and structural ratings, the majority of which are in fair to poor health and structure. As presented in Appendix A, a total of 23 trees (52.27%) exhibit fair health, 8 (18.18%) trees good health, 12 (27.27%) trees poor health, and 1 (2.28%) is dead. Structurally, 19 trees (43.18%) are considered in fair condition, 16 (36.36%) are considered in poor condition, 8 (18.18%) are considered in good condition, and 1 (2.28%) is dead. Fair condition trees are typical, with few maladies but declining vigor. Trees in poor condition exhibit declining vigor, unhealthy foliage, poor branch structure, or excessive lean. The most commonly observed maladies include pruning wounds, drought dieback, and crown topping.

A total of 8 (18.18%) trees are considered to be Landmark trees, 25 (56.82%) are considered to be Mature trees, and 11 (25.00%) have no status. Four of the species are considered weedy or invasive trees: Shamel ash, edible fig, tree of heaven, and Peruvian pepper.

4.2 Mapping

The location of each tree identified in the project site is depicted in Appendix C.

4.3 Tree Impacts

For the purposes of this report, tree impacts are those associated with tree removal or encroachment within the tree protection 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 protection zone. 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. Table 2 summarizes the total number of trees, by species that are expected to be subject to construction-related impacts. The locations of impacted trees, by impact type, are presented in Appendix C. Measures to minimize the extent of impact to preserved trees are provided in Appendix D.

Table 2
Summary of Tree Impacts

Scientific Name	Common Name	Removal (Total Protected)	Encroachment (Total Protected)	Indirect (Total Protected)	Protect in Place (Total Protected)
<i>Ailanthus altissima</i>	Tree of Heaven	—	—	—	2 (2)
<i>Cercis species</i>	Redbud	—	1 (1)	—	—
<i>Citrus limon</i>	Lemon	—	1 (0)	—	—
<i>Cupaniopsis anacardioides</i>	Carrotwood	4 (4)	—	—	1 (1)

Table 2
Summary of Tree Impacts

Scientific Name	Common Name	Removal (Total Protected)	Encroachment (Total Protected)	Indirect (Total Protected)	Protect in Place (Total Protected)
<i>Eucalyptus nicholii</i>	Nichol's willow-leafed peppermint	—	—	—	1 (1)
<i>Ficus carica</i>	Edible fig	1 (0)	—	—	—
<i>Fraxinus uhdei</i>	Shamel ash	—	—	2 (2)	3 (3)
<i>Juglans nigra</i>	Eastern black walnut	—	1 (1)	—	—
<i>Lagerstroemia indica</i>	Crape myrtle	—	—	—	6 (6)
<i>Quercus agrifolia</i>	Coast live oak	3 (3)	3 (3)	1 (1)	2 (2)
<i>Schinus molle</i>	Peruvian pepper	—	1 (1)	—	—
<i>Ulmus parvifolia</i>	Chinese elm	2 (2)	—	—	1 (0)
<i>Washingtonia robusta</i>	Mexican fan palm	6 (0)	1 (0)	—	1 (0)
Totals		16 (9)	8 (6)	3 (3)	17 (15)

4.4 Overall Tree Impacts Summary

In total for protected trees, it is estimated that 16 (36.36%) will require removal, nine of which are considered protected; eight (18.18%) will experience encroachment into the tree protection zone, six of which are considered protected; three (6.82%) will experience indirect impacts and are considered protected; and 17 (38.64%) will be preserved in place with no direct impacts. The locations of impacted trees, by impact type, are presented in Appendix C. Measures to minimize the extent of impact to preserved trees are provided in Appendix D.

INTENTIONALLY LEFT BLANK

5 RECOMMENDATIONS

The City's Municipal Code requires mitigation for the removal of protected trees. The community development director may require as a condition of a tree removal permit the replacement of the trees at the applicant's expense. One or more trees may be required as replacement trees as shall be determined by the community development director. Of the 16 trees proposed for removal, nine require mitigation in accordance with the City's Municipal Code. Of the nine protected trees, one tree is dead. The Dudek arborist recommends the eight living trees proposed for removal be mitigated at a minimum 2:1 ratio with 24-inch box size replacement trees. The Dudek arborist does not recommend mitigation for the one dead tree proposed for removal. Table 3 provides a summary of recommended mitigation. It is recommended that the eight removed protected trees be replaced with 16, at minimum, 24-inch box size replacement trees.

Table 3
Summary of Protected Trees Recommended Mitigation

Tree Species			
<i>Scientific Name</i>	<i>Common Name</i>	<i>Number of Trees</i>	<i>Recommended Mitigation</i>
<i>Cupaniopsis anacardioides</i>	Carrotwood	3	6
<i>Quercus agrifolia</i>	Coast live oak	3	6
<i>Ulmus parvifolia</i>	Chinese elm	2	4
Total		8	16

INTENTIONALLY LEFT BLANK

6 TREE PROTECTION

Eight trees will experience encroachment into the tree protection zone, six of which are considered protected by the City; three trees will experience indirect impacts and are considered protected by the City; and 17 will be preserved in place with no direct impacts. The locations of impacted trees, by impact type, are presented in Appendix C. Measures to minimize the extent of impact to preserved trees are provided in Appendix D.

INTENTIONALLY LEFT BLANK

7 CONCLUSION

The project site includes 44 trees dispersed throughout the survey area. The 44 trees are represented by 13 species. Of the 44 trees on site, 33 are considered to be protected. Based on the proposed project footprint, 16 trees would require removal to accommodate the project. Of the 16 trees proposed for removal, nine require mitigation in accordance with the City's Municipal Code. Of the nine trees, one is dead. Dudek arborist recommends the eight living trees proposed for removal be mitigated at a minimum 2:1 ratio with 24-inch box size replacement trees.

INTENTIONALLY LEFT BLANK

8 ARBORIST'S DISCLOSURE

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

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

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

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

INTENTIONALLY LEFT BLANK

9 REFERENCE

Council of Tree and Landscape Appraisers. 2000. *Guide for Plant Appraisal*. 9th ed. Champaign, Illinois: International Society of Arboriculture.

INTENTIONALLY LEFT BLANK

APPENDIX A

Tree Information Matrix

Appendix A - Tree Information Matrix

Tree ID	Botanical Name	Common Name	Stems	Diameter at Breast					Height (ft.)	Canopy (ft.)	Health	Structure	City Status	Impact Status	Recommended Mitigation	Notes*	Coordinates	
				D1	D2	D3	D4	D5									X	Y
1	<i>Quercus agrifolia</i>	Coast live oak	1	41	0	0	0	0	30	35	Fair	Fair	Landmark	Direct	2 to 1		6533858	1859045
2	<i>Quercus agrifolia</i>	Coast live oak	1	23	0	0	0	0	30	30	Poor	Fair	Landmark	Encroached	None		6533836	1859047
3	<i>Quercus agrifolia</i>	Coast live oak	1	4	0	0	0	0	10	12	Poor	Poor	Mature	Encroached	None		6533827	1859066
4	<i>Quercus agrifolia</i>	Coast live oak	1	18	0	0	0	0	35	35	Fair	Fair	Mature	Direct	2 to 1		6533838	1859083
5	<i>Quercus agrifolia</i>	Coast live oak	1	9	0	0	0	0	22	16	Fair	Fair	Mature	Encroached	None		6533809	1859080
6	<i>Schinus molle</i>	Peruvian pepper tree	4	22	22	18	19	0	35	45	Fair	Fair	Landmark	Encroached	None	Invasive	6533798	1859109
7	<i>Juglans nigra</i>	Eastern black walnut	1	13	0	0	0	0	40	45	Poor	Fair	Mature	Encroached	None		6533782	1859124
8	<i>Quercus agrifolia</i>	Coast live oak	1	15	0	0	0	0	30	35	Fair	Fair	Mature	Indirect	None		6533791	1859074
9	<i>Quercus agrifolia</i>	Coast live oak	1	11	0	0	0	0	25	35	Fair	Poor	Mature	Protect in Place	None		6533788	1859062
10	<i>Quercus agrifolia</i>	Coast live oak	2	23	6	0	0	0	35	35	Fair	Fair	Landmark	Protect in Place	None		6533792	1859059
11	<i>Fraxinus uhdei</i>	Shamel ash	1	19	0	0	0	0	40	30	Poor	Fair	Landmark	Protect in Place	None	Recruited not planted	6533796	1859052
12	<i>Fraxinus uhdei</i>	Shamel ash	3	20	5	9	0	0	40	35	Poor	Poor	Landmark	Indirect	None	Recruited not planted	6533795	1859058
13	<i>Fraxinus uhdei</i>	Shamel ash	1	22	0	0	0	0	40	30	Poor	Poor	Landmark	Indirect	None	Recruited not planted	6533821	1859040
14	<i>Ailanthus altissima</i>	Tree of Heaven	1	7	0	0	0	0	45	18	Fair	Fair	Mature	Protect in Place	None	Invasive,recruited not planted	6533796	1859033
15	<i>Ailanthus altissima</i>	Tree of Heaven	5	16	12	4	12	4	45	35	Poor	Poor	Mature	Protect in Place	None	Invasive,recruited not planted	6533789	1859037
16	<i>Lagerstroemia indica</i>	Crape myrtle	1	5	0	0	0	0	12	10	Fair	Fair	Mature	Protect in Place	None		6533912	1859329
17	<i>Lagerstroemia indica</i>	Crape myrtle	1	6	0	0	0	0	15	12	Fair	Fair	Mature	Protect in Place	None		6533863	1859336
18	<i>Lagerstroemia indica</i>	Crape myrtle	1	4	0	0	0	0	9	8	Poor	Poor	Mature	Protect in Place	None		6533846	1859336
19	<i>Washingtonia robusta</i>	Mexican fan palm	1	17	0	0	0	0	35	16	Good	Good	No Status	Protect in Place	None		6533831	1859335
20	<i>Lagerstroemia indica</i>	Crape myrtle	1	4	0	0	0	0	14	10	Fair	Poor	Mature	Protect in Place	None		6533819	1859335
21	<i>Lagerstroemia indica</i>	Crape myrtle	1	4	0	0	0	0	14	10	Fair	Poor	Mature	Protect in Place	None		6533808	1859337
22	<i>Ulmus parvifolia</i>	Chinese elm	3	3	3	2	0	0	14	14	Fair	Poor	No Status	Protect in Place	None		6533794	1859332
23	<i>Lagerstroemia indica</i>	Crape myrtle	1	5	0	0	0	0	11	10	Fair	Fair	Mature	Protect in Place	None		6533785	1859335
24	<i>Cupaniopsis anacardioides</i>	Carrot wood	2	9	9	0	0	0	18	18	Fair	Poor	Mature	Protect in Place	None		6533783	1859322
25	<i>Cupaniopsis anacardioides</i>	Carrot wood	1	6	0	0	0	0	10	4	Dead	Dead	Mature	Direct	None		6533796	1859217
26	<i>Washingtonia robusta</i>	Mexican fan palm	1	16	0	0	0	0	18	12	Good	Good	No Status	Direct	None		6533804	1859206
27	<i>Washingtonia robusta</i>	Mexican fan palm	1	16	0	0	0	0	16	12	Good	Good	No Status	Direct	None		6533809	1859198
28	<i>Washingtonia robusta</i>	Mexican fan palm	1	18	0	0	0	0	65	16	Good	Good	No Status	Direct	None		6533827	1859161
29	<i>Washingtonia robusta</i>	Mexican fan palm	1	18	0	0	0	0	60	16	Good	Good	No Status	Direct	None		6533837	1859141
30	<i>Washingtonia robusta</i>	Mexican fan palm	1	18	0	0	0	0	55	16	Good	Good	No Status	Encroached	None		6533852	1859144
31	<i>Cupaniopsis anacardioides</i>	Carrot wood	1	8	0	0	0	0	20	20	Fair	Fair	Mature	Direct	2 to 1		6533847	1859129
32	<i>Washingtonia robusta</i>	Mexican fan palm	1	16	0	0	0	0	16	10	Good	Good	No Status	Direct	None		6533861	1859125
33	<i>Washingtonia robusta</i>	Mexican fan palm	1	16	0	0	0	0	35	16	Good	Good	No Status	Direct	None		6533861	1859118
34	<i>Cupaniopsis anacardioides</i>	Carrot wood	1	12	0	0	0	0	30	30	Fair	Fair	Mature	Direct	2 to 1		6533875	1859103

Appendix A - Tree Information Matrix

Tree ID	Botanical Name	Common Name	Stems	Diameter at Breast					Height (ft.)	Canopy (ft.)	Health	Structure	City Status	Impact Status	Recommended Mitigation	Notes*	Coordinates	
				D1	D2	D3	D4	D5									X	Y
35	<i>Cupaniopsis anacardioides</i>	Carrot wood	1	13	0	0	0	0	35	35	Fair	Fair	Mature	Direct	2 to 1		6533898	1859062
36	<i>Ficus carica</i>	edible fig	10	5	5	5	5	5	20	35	Fair	Poor	No Status	Direct	None	Invasive	6533918	1859038
37	<i>Eucalyptus nicholii</i>	Nichol's willow-leafed peppermint	1	4	0	0	0	0	16	8	Fair	Fair	Mature	Protect in Place	None		6533765	1859040
38	<i>Citrus limon</i>	Lemon	4	2	1	1	1	0	9	10	Poor	Fair	No Status	Encroached	None		6533858	1859026
39	<i>Ulmus parvifolia</i>	Chinese elm	1	7	0	0	0	0	12	10	Poor	Poor	Mature	Direct	2 to 1		6533868	1859035
40	<i>Ulmus parvifolia</i>	Chinese elm	2	15	9	0	0	0	20	20	Poor	Poor	Mature	Direct	2 to 1		6533870	1859035
41	<i>Quercus agrifolia</i>	Coast live oak	3	9	8	6	0	0	16	16	Fair	Fair	Mature	Direct	2 to 1		6533901	1858999
42	<i>Cercis species</i>	Redbud	5	19	4	4	4	4	40	35	Poor	Poor	Landmark	Encroached	None		6533867	1859003
43	<i>Fraxinus uhdei</i>	Shamel ash	4	3	2	4	1	1	16	8	Fair	Poor	Mature	Protect in Place	None	Recruited not planted	6533825	1858994
44	<i>Fraxinus uhdei</i>	Shamel ash	4	4	2	2	8	0	25	16	Fair	Poor	Mature	Protect in Place	None	Recruited not planted	6533808	1858995

APPENDIX B

Representative Site Photographs

Appendix B- Representative Site Photographs



1. Overview photo of Tree Number 1, coast live oak proposed for removal, as viewed facing southeast.



2. Overview photo of Tree Numbers 2 and 3 (R to L), coast live oaks proposed for removal, as viewed facing southeast.

Appendix B- Representative Site Photographs



3. Overview photo of Tree Number 4, coast live oak proposed for removal, as viewed facing east.



4. Overview photo of Tree Number 5, coast live oak proposed for encroachment, as viewed facing southeast.

Appendix B- Representative Site Photographs



5. Overview photo of Tree Number 6, Peruvian pepper tree proposed for removal, as viewed facing northeast.



6. Overview photo of Tree Number 8, coast live oak proposed for indirect impact, as viewed facing east.

Appendix B- Representative Site Photographs



7. Overview photo of Tree Numbers 9 and 10 (R to L), coast live oaks proposed for protection in place, as viewed facing west.



8. Overview photo of Tree Number 41, coast live oak proposed for removal, as viewed facing east.

APPENDIX C

Tree Location and Disposition Exhibit

Document Path: P:\320-UrbanForestry\10001 - LA Public Works Rubio Wash\GIS DATA\6272018\Appendix C_Tree Locations+Disposition.mxd - 9/10/2018



Tree Species

- Carrot wood, *Cupaniopsis anacardioides* (5)
- Chinese elm, *Ulmus parvifolia* (3)
- Coast live oak, *Quercus agrifolia* (9)
- Crape myrtle, *Lagerstroemia indica* (6)
- Eastern black walnut, *Juglans nigra* (1)
- Lemon, *Citrus limon* (1)
- Mexican fan palm, *Washingtonia robusta* (8)
- Nichol's willow-leafed peppermint, *Eucalyptus nicholii* (1)
- Peruvian pepper tree, *Schinus molle* (1)
- Redbud, *Cercis species* (1)
- Shamel ash, *Fraxinus uhdei* (5)
- Tree of Heaven, *Ailanthus altissima* (2)
- edible fig, *Ficus carica* (1)

Disposition

- Removal (16)
- ◁ Encroached (5)
- ◇ Indirect (3)
- Protect in Place (20)
- ▭ Disturbance Area
- ▨ Staging



0 20 40 Feet



Rubio Wash Channel Improvements Project

DUDEK

APPENDIX C

Tree Location and Disposition Exhibit

Arborist Report for the Rubio Wash Channel Improvement Project

APPENDIX D

Tree Protection Measures

Appendix D – 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: Except where specifically approved in writing or as provided in Attachment 3, all trenching shall be outside of the fenced protection zone. 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.