

**Consulting Arborist's Report
September 15, 2022**

Tree Assessment Report

14005 Live Oak, Irwindale

Prepared for:

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Introduction

Background

Rodarte Landscape Architects is designing a new landscape for the site at 14005 Live Oak Avenue, in the City of Irwindale, California. This site is near the intersection of Ramona Boulevard and the 605 Freeway. At the time of my site inspection the existing businesses was in operation, but the parking lot was half empty.

There are no trees protected by City ordinance and no City ordinance affecting these trees. The enclosed tree location map shows the approximate location of the 78 trees in the designated area. The overall site has a minor slope from north to south. The enclosed tree location map is used as a base map to give approximate tree locations (not surveyed by this consultant).

The purpose of this report is to help analyze the impact of the project on the existing trees, especially the neighbor's trees along their common property line, and satisfy City of Irwindale requirements and questions. The current plans are to fully clear existing trees along most of the west edge that are within the property lines, and few or none may be retained. Almost the entire west half of the site will be cleared for a proposed 100,380 square foot warehouse.

This report is intended to provide an inventory of existing trees and their condition and estimate of how many can remain, as well as recommendations of how to preserve as many as possible.

Assignment

Arbrogate Consulting will review and provide arboricultural evaluation of about 80 trees' health and condition, professional opinions, and report as appropriate for the City of Irwindale. Photographs will be included to illustrate important points. All trees over 8" caliper and all protected trees over 4" caliper will be included.

Executive Summary

Overview of Conditions and Recommendations

The subject property is on Live Oak Avenue, bordered by Rivergrade Road on the north, and Stewart Avenue on the west. There is no neighbor on the east yet, only a vacant lot. There is an open parking lot to the northeast along Rivergrade Road, but not associated with this project.

This site contains a mix of native and exotic trees, but no protected, rare, endangered, native or street trees were found. No tree species were found that are listed as federally threatened or endangered by the USFWS; or State listed as threatened or endangered or considered sensitive by the CDFW; and/or, are CNPS List 1A, 1B, or 2 species, as recognized in the CNPS's Inventory of Rare and Endangered Vascular Plants of California.

Representative photographs can be found later in this report, starting on page 16. The focus of this report is the health and condition of the existing tree resource. For the purposes of this report, the limit of grading is unknown. The Recommendations Matrix will list the clearance requirements necessary to retain health and stability.

Generally, the trees are in good health and fair structural condition. Most have escaped the ravages of typical low bid pruning. However, there are a number that need corrective pruning to correct codominant stems, included bark or

overly long limbs. A few of the site trees have some value, but not enough to warrant boxing, storing and replanting in a new landscape design.

Nearly all the trees are in or on the edge of the parking lot, though some are near the edge of the building and the parking lot. All the trees have at least one limit to their root spread, either the curb around a parking island or planter, or a curb at the edge of a perimeter planting area. Thus, nearly all the trees will have a limit to their useful life span.

Almost the entire west half of the site will be cleared for a proposed 100,380 square foot warehouse. The parking islands on the east will be removed for truck access and many edge trees are likely to be impacted to accommodate the revised parking arrangement.

Findings

General

The designated area of study contains 78 trees over 4 inches in trunk diameter. The tallest are the California sycamores, and the largest of those are 18 inches in trunk diameter. Most of the sycamores are currently allowed to grow in a more vertical form. Several have dead tops, which resulted in the lower branches growing wider. The trees along the east edge are mostly of low value, due to poor maintenance, poor pruning, and some like the Mexican fan palms may be weeds. Most are the California sycamores, *Platanus racemosa*; then carrotwoods, *Cupaniopsis anacardioides*, and the rest are Silver Mountain gums, *Eucalyptus polyanthemos*. There are no rare, endangered or protected species on this site or immediately adjoining.

To my knowledge the preservation of the trees on the east side of this property will be a design decision, based on practicality, considering grading and construction issues. There are signs of past heading, topping and over-pruning, which are all decried in all arboricultural texts and standards, weakens their future structure, and is hard on their health. Fortunately, that has not continued recently, though the effects of it remain.

There are no clear street trees, but there are trees along Live Oak, Stewart and Rivergrade. If they are under City jurisdiction or not is unknown. There is no apparent difference in species, maintenance or size.

Any efforts to save trees by transplanting would cost more than new trees, and leave weak and declining trees. New trees would not, or should not, have the same defects common to these trees. The eucalypts do not transplant successfully. The sycamores can be easily transplanted in winter, but transplanting would be disproportionately expensive considering their value.

The pest or disease issues are factors in the above considerations, The sycamores show minor signs of flathead borers and a few had symptoms of the invasive shot-hole borer. The shot-hole borer spreads three fungal diseases that increase decay and limb drop. Since the majority of trees are sycamores, which are favorite food for these insects, any new planting should be with other species.

Arial Site Map



The site is outlined in red.

Study Area & Tree Map



Matrix of Findings

Tree#	Species	DBH	Ht	Wd	Health	Condition	Root cond.	Comments
1	Cupaniopsis anacardioides	14	25	28	B	D	okay	TO in main crotch, epi
2	Eucalyptus polyanthemos	9	14	16	C	C-	turf	T-bow 1s mDb
3	Platanus racemosa	14	30	30	B	C	okay	Cod 2long Xing
4	Platanus racemosa	14	40	30	B	C	Sh	Cod inc 2long
5	Eucalyptus polyanthemos	8	18	14	B	C-	Sh turf	T-bow 1s DL
6	Platanus racemosa	11	35	18	B	B	okay	Cod
7	Cupaniopsis anacardioides	9	22	18	C	D	turf	<u>Cod inc</u> TO Xing
8	Cupaniopsis anacardioides	11	30	16	C	D	turf	Cod inc Lt
9	Platanus racemosa	15	35	18	D-	D	okay	Near dead PSHB
10	Platanus racemosa	13	40	24	B	C	okay	Cod 2long Xing
11	Cupaniopsis anacardioides	9	20	20	C-	D	turf	Cod inc Xing Sp Wwinj
12	Cupaniopsis anacardioides	8	24	18	C-	D	turf	Cod WWinj Tinj Xing Sp
13	Cupaniopsis anacardioides	9	22	20	C-	D	turf	Cod WWinj Xing Sp
14	Cupaniopsis anacardioides	9	20	20	C-	D	turf	Cod inc WWinj Xing epi
15	Platanus racemosa	16	35	35	B	C	Sh	Cod 2long
16	Platanus racemosa	14	40	40	B	C	okay	Cod DL
17	Cupaniopsis anacardioides	4+3	24	18	C	C-	okay	Cod inc Sp
18	Platanus racemosa	15	35	30	B	C	Sh	Cod lean FH
19	Platanus racemosa	12	30	30	C	D	Sh	Cod Xing DL
20	Platanus racemosa	15	45	30	C	C-	Sh	Cod Hd DL
21	Platanus racemosa	5+5	35	18	C	C-	Sh	Stmp sprts, Sp
22	Platanus racemosa	18	45	40	C	C	okay	Cod CrS 2long FH

Tree#	Species	DBH	Ht	Wd	Health	Condition	Root cond.	Comments
23	Cupaniopsis anacardioides	8	16	16	D	D	turf	Cod inc Db CrS pale
24	Eucalyptus polyanthemos	11	30	30	C	C	turf	Sp 1s cod
25	Eucalyptus polyanthemos	5	12	12	C-	D	turf	Db cod CrS Sp
26	Platanus racemosa	7	30	20	C-	C-	med-isl	Db cod Sp
27	Platanus racemosa	8	25	18	C-	D	med-isl	Db cod Sp TO Dk
28	Platanus racemosa	10	30	22	C	C	med-isl	mDb cod TO mDk
29	Platanus racemosa	7	30	22	B	B	med-isl	2long
30	Platanus racemosa	7	30	24	C	C-	med-isl	Cod 2long Db
31	Platanus racemosa	9	35	24	C	C	med-isl	Cod 2long Db
32	Platanus racemosa	11	45	30	B	B	med-isl	2long FH
33	Platanus racemosa	14	50	30	B	C	med-isl	Cod 2long DL
34	Platanus racemosa	15	50	30	B	B	med-isl	Cod 2long DL Tinj
35	Platanus racemosa	15	50	30	B	C	med-isl	Cod inc FH
36	Platanus racemosa	9	20	18	C	D	med-isl	Cod TDK top-dead
37	Platanus racemosa	11	45	25	B	C	med-isl	Cod CrS DL
38	Platanus racemosa	12	50	30	B	D	Bldg	TDK Hazard
39	Platanus racemosa	10	40	30	B	C-	Bldg	Topd cod DL Hd
40	Platanus racemosa	18	45	35	C	C-	Bldg	Topd cod DL Hd epi
41	Platanus racemosa	17	45	35	B	C	Bldg	Cod CrS epi Hd DL
42	Platanus racemosa	8	20	15	C	C-	sml-isl	Topd mDb
43	Platanus racemosa	8	22	18	C	B	sml-isl	mDb epi
44	Platanus racemosa	8	18	13	D	D	sml-isl	TDK canker topd
45	Platanus racemosa	17	40	26	B	C	end isl	Hd Db
46	Eucalyptus polyanthemos	17	42	36	B	C-	Bldg N edge	Leans cod inc Xing Lt

Tree#	Species	DBH	Ht	Wd	Health	Condition	Root cond.	Comments
47	Cupaniopsis anacardioides	16 @ 1'	35	35	C	C-	N parking edge	Cod inc Xing 2long
48	Eucalyptus sp.	16	40	36	C-	C-	N parking edge	Cod Xing mDb
49	Eucalyptus polyanthemos	10	14	16	B	C-	N parking edge	T-bow 1s leans at 30°
50	Cupaniopsis anacardioides	13	30	36	B	C-	N parking edge	Cod inc
51	Cupaniopsis anacardioides	14	30	34	C	C-	N parking edge	Cod inc CrS brk
52	Cupaniopsis anacardioides	10	25	30	C-	C-	N parking edge	Cod inc CrS Sp
53	Platanus racemosa	16	40	40	C	C	E slope	Dead top, 2long
54	Platanus racemosa	15	50	40	C	C-	E slope	Cod inc 2long CrS Xing
55	Platanus racemosa	14	40	35	C	D	E slope	Topd or dead top cut, cod
56	Platanus racemosa	14	50	40	B	C-	E slope	Cod topd
57	Platanus racemosa	12	45	35	B	C	E slope	Topd Hd
58	Platanus racemosa	14	45	35	B	C	E slope	Cod
59	Platanus racemosa	13	18	25	D	D	E slope	Dead top
60	Platanus racemosa	15	55	35	B	C	E slope	Cod CrS
61	Cupaniopsis anacardioides	10	20	22	B	C-	S slope	Cod inc Xing Hd Db
62	Cupaniopsis anacardioides	11	20	20	C	D	S slope	Cod inc Xing Hd Sp
63	Cupaniopsis anacardioides	12	20	20	B	D	S slope	Cod inc Xing Hd
64	Cupaniopsis anacardioides	12	18	20	C	D	S slope	Cod inc Xing R-epi
65	Cupaniopsis anacardioides	8	14	16	C-	C-	S slope	Cod Xing Hd
66	Cupaniopsis anacardioides	12	16	18	B	C	S slope	Cod inc Hd
67	Platanus racemosa	14	45	30	C	C	planter	Top-Db, 2long Hd Db
68	Platanus racemosa	14	40	35	B	C-	entry	Cod Xing Hd FH
69	Platanus racemosa	14	40	32	C	C	entry	mT-bow Hd DL
70	Platanus racemosa	10	24	24	C	C	planter	Cod mLean 2long brk

Tree#	Species	DBH	Ht	Wd	Health	Condition	Root cond.	Comments
71	Platanus racemosa	9	30	26	B	C	sml isl	mDb 2long DL
72	Platanus racemosa	7	18	18	C	C-	sml isl	Cod CrS dead-epi
73	Platanus racemosa	7	20	20	C	B	sml isl	Hd DL
74	Platanus racemosa	11	35	30	B	C	sml isl	TDK @ TO cod DLS
75	Platanus racemosa	11	35	28	C	B	sml isl	Hd DL 1s-canopy
76	Platanus racemosa	10	35	24	C	C-	sml isl	Cod CrS Hd DL
77	Platanus racemosa	10	35	30	B	B	sml isl	2long
78	Eucalyptus polyanthemos	13	40	20	B	C	S bldg edge	FC mLean OL Hd DL

DBH = diameter at breast height (54" above grade) aka DSH

Note that the last trees along the east edge have a gopher infestation. Even with trapping and removing these gophers, due to the raw character of the property to the east, gophers may still be a continuing problem.

Abbreviations

1s = one-sided

Bldg = building

brk = break

cod = codominant

Cr = crowded

CrS = crowded scaffold limbs

Db = dieback

DL = dogleg branch

Epi = epicormic shoots

FC = flush cut

Hd = headed back

Inc = included bark

Isl = island

Lt = lion-tailed

OL = over-lifted

PSHB = polyphagous shot-hole borer

Sh = shallow roots

Sml = small

Sp = sparse

Sup = suppressed

T-bow = bowed trunk

Topd = topped

TO = limb torn out

Ts = trunks

Xing = crossing limbs

Analysis

Reasons for Removal of Site Trees

The first reason for removing trees is that almost the entire west half of the site will be cleared for a proposed 100,380 square-foot warehouse. The parking islands on the east will also be removed for truck access, and many edge trees are likely to be impacted to accommodate the revised parking arrangement.

Secondly, many employees and visitors drive and park below these trees. They are now large enough that falling limbs could be fatal or cause significant injury. The trees that remain need to be assessed for risk after construction to make sure they do not pose an inordinate level of risk.

The Recommendations Matrix includes a column for “clearance” requirements. The numbers in that column are the closest distance (in feet) that grading, trenching or construction can come without potentially destabilizing that tree. Research by Davey Tree Research has shown that for field grown trees the closest roots can be cut is three times trunk diameter. When the author of the study, Dr. Tom Smiley, was asked how that applied to more urban trees, he said five times trunk diameter is the closest he would cut. Dr. James Clark of Hort Science has a chart in his book “Trees and Development” for how close roots can be cut before tree health would be impacted. For mature carrotwoods and

sycamores that is about nine inches per inch of caliper, for Eucalyptus that is about one foot radius per inch of trunk diameter. That standard would protect both health and stability.

The third reason for removing site trees would be their health or structural condition. The health and/or structure of some trees is so poor they should be removed regardless, for to several reasons, e.g. unsafe, lack of root space, or pests that removal is the best option. The parking island trees are mostly sycamores, a large species, and if the invasive shot-hole borer spreads, more limbs could fall. If the trees remained healthy enough, they would soon damage the adjoining curbs and paving. When they do damage the paving or curb, roots are usually cut and the health declines.

Protection of Neighbor's Trees

It is also important to keep the neighbor's trees healthy and stable. The trees #16 to 21 may be on the property line, or they may be on the neighbor's property. In either case the trees may not belong to this property. The radius listed in the clearance radius column only covers the stability issue.

For good healing or branching of cut roots, any roots over one inch diameter that are cut, must be cut cleanly using appropriate size pruning tools, e.g. loppers, Sawz-all, hand pruners or hand saws. Cover any cut root ends quickly with moist soil or burlap, not pruning paint.

If the neighbor would like assurance that construction grading will not cause any trees to decline or die, the standard of one foot of clearance per inch of trunk diameter should be used. Even then the neighbor could still make a claim that construction caused decline or death, but at least it would be clear to most people that the owner acted reasonably, which would not necessarily be the case if only the stability clearance was followed.

Depending on how close the new building, construction equipment or vehicles come to the east edge, some of the neighbor's trees may need clearance pruning. Because these trees may belong to the neighbor, all pruning of overhanging branches must be expertly performed. Good supervision helps make for good pruning. At least a certified arborist should be present to guide all pruning and to make sure no pruning happens over the property line. The pruning should be only where necessary, and should be at good branching points.

Construction Impacts

Construction can be hard on all surrounding trees due to dust, interruption of water service, spilling construction supplies, like form oil or fuel. These issues should be tightly controlled, but accidents can happen. Secure chain-link fence and dust control can reduce most of these risks.

General Tree Preservation

The main stresses and risks of building and site remodeling to existing trees are:

- * Soil compaction
- * Lack of water or changes in the site hydrology
- * Change of grade in the root zone
- * Cutting roots or unauthorized pruning of the canopy
- * Physical damage to tree roots or canopy
- * Dumping of potentially toxic construction wastes
- * Lack of adequate pest control and other care
- * Construction dust
- * Incompatible landscaping beneath the canopy
- * Human error

The quality of supervision and care will control the tree risk related to construction and grading. Some risk will remain, despite excellent supervision and care due to the reduced structural quality of some trees.

Photographic Documentation



Sycamores #3, 4 and 6 Tree #3 were probably topped years ago.



Sycamores #9 and 10 – note dead top.



Carrotwoods #12 to 14 – note crowding.



Trees #16 to 21 may belong to the property above.



Carrotwood #23 – note dieback and pale color.



Sycamore #45



Silver Mt. gum #48



Silver Mt. gum #49



Sycamore #45



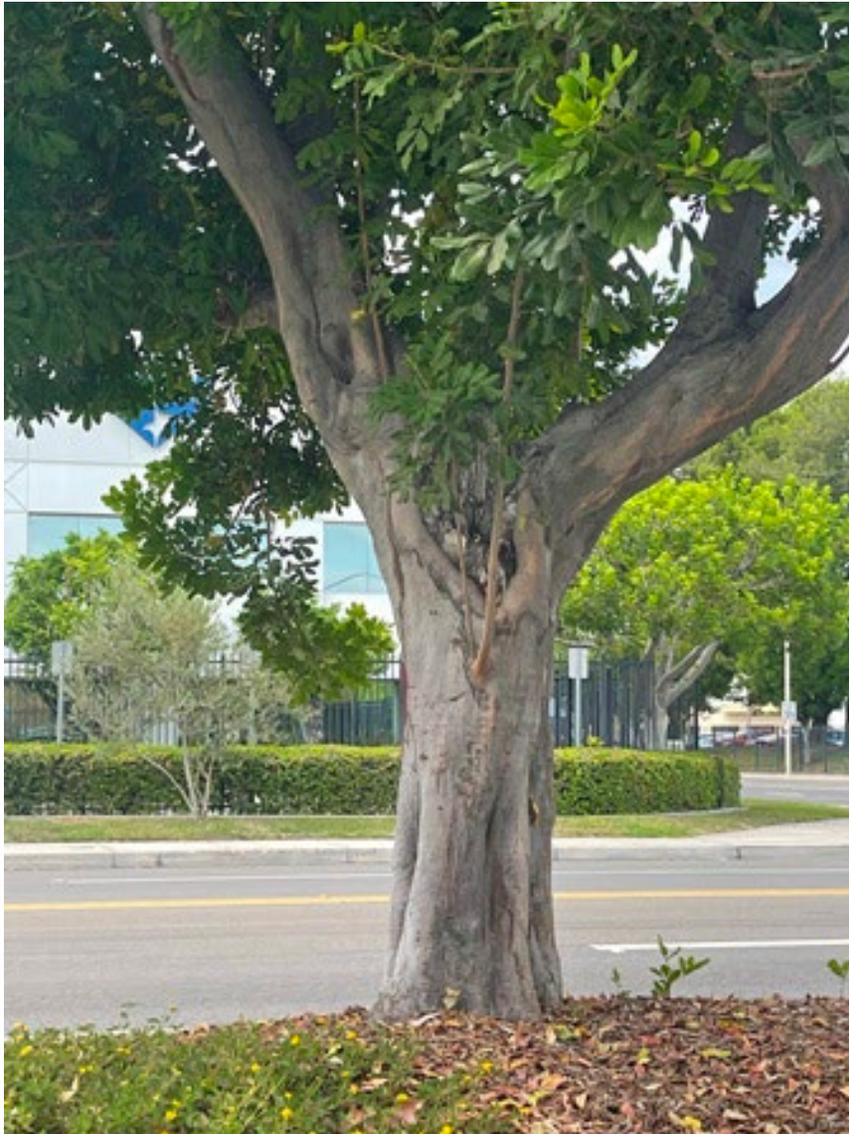
Silver Mt. gum #46



Sycamores 54 to 46 – note dead top



Sycamores #68, 69 and 74 (left to right)



Carrotwood #1 – note large cavity where a limb tore out.



Flat head borers signs. Holes in the bark and fine saw dust in web



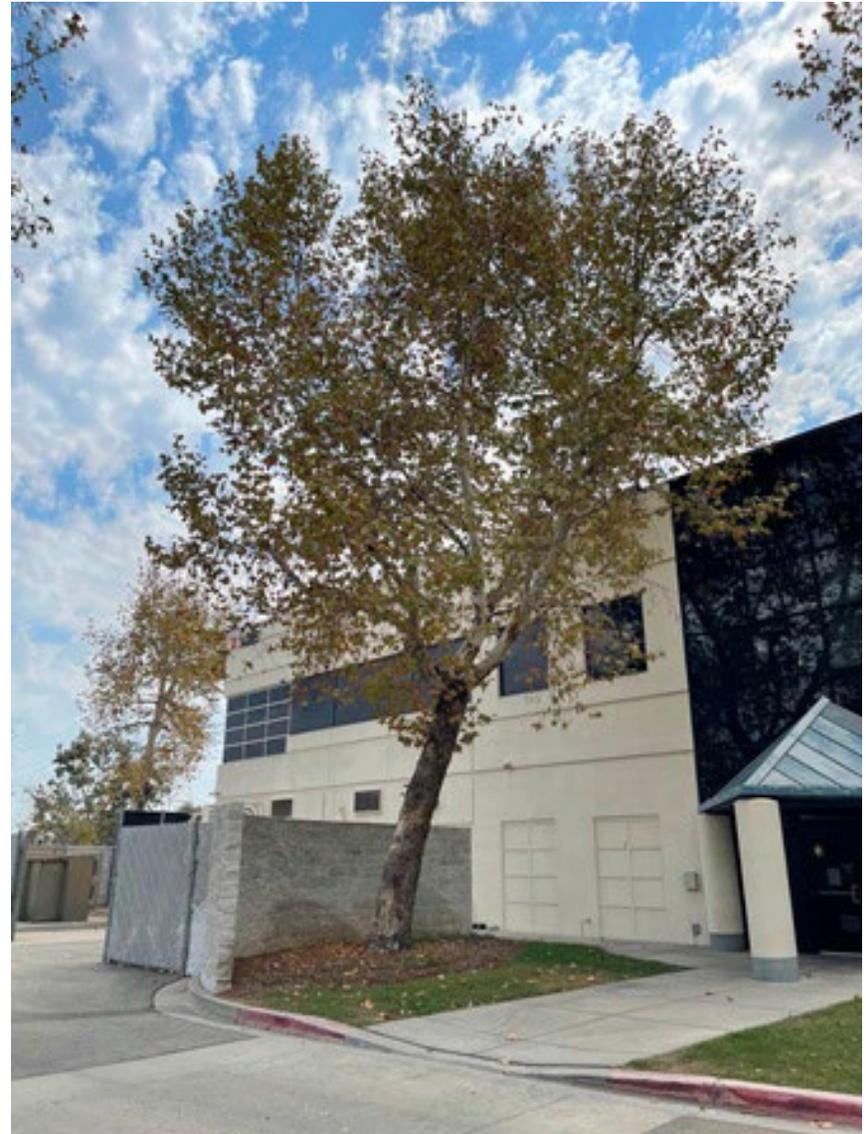
Carrotwoods #61 to 63 (left to right)



Carrotwoods #64 to 66 (left to right)



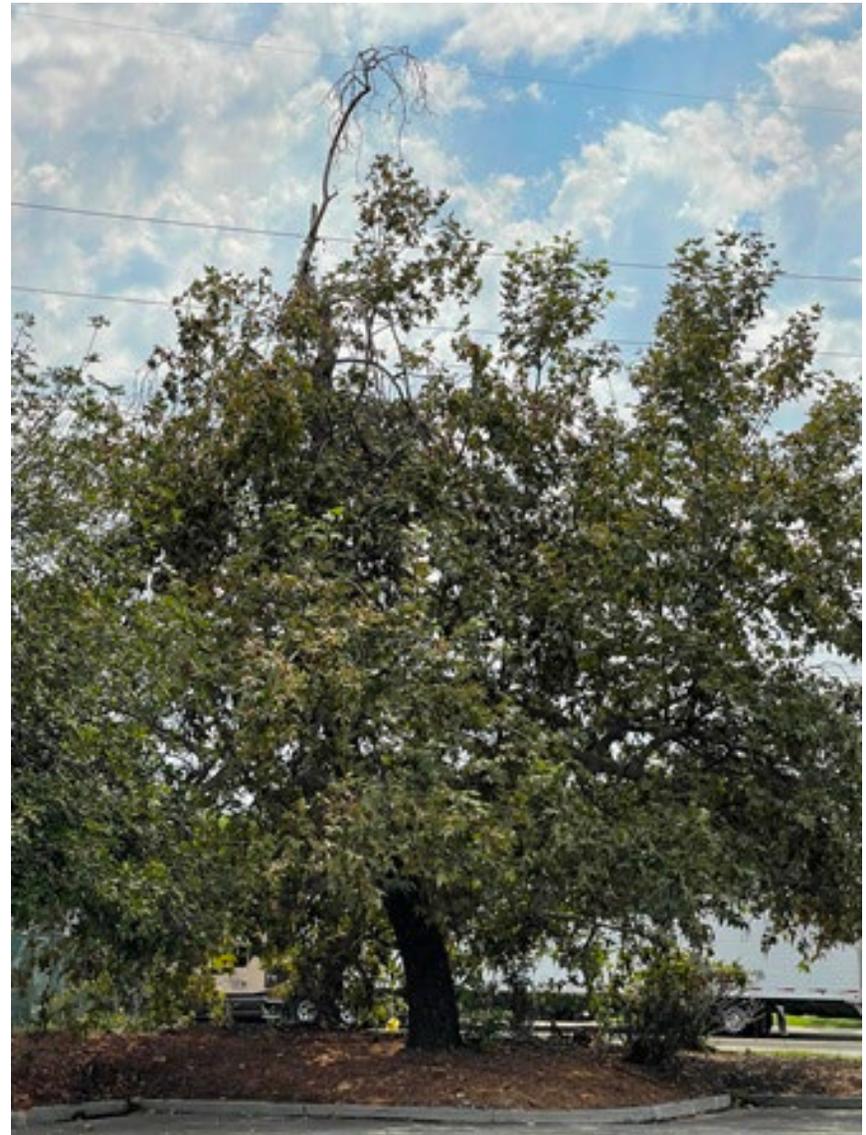
Sycamore #40 – note past topping



Sycamore #41 - note past topping



Sycamore #37 – note dieback in the top



Sycamore #53 – note dead top

Recommendations

Matrix of Recommendations

Tree#	Species	DBH	Ht	Wd	Health	Condition	Safety clearance	Health clearance	Disposition
1	Cupaniopsis anacardioides	14	25	28	B	D	5.8	10.5	Remove structure
2	Eucalyptus polyanthemos	9	14	16	C	C-	3.8	9	protect if possible
3	Platanus racemosa	14	30	30	B	C	5.8	10.5	protect if possible
4	Platanus racemosa	14	40	30	B	C	5.8	10.5	protect if possible
5	Eucalyptus polyanthemos	8	18	14	B	C-	3.3	8	protect if possible
6	Platanus racemosa	11	35	18	B	B	4.6	8.25	protect if possible
7	Cupaniopsis anacardioides	9	22	18	C	D	3.8	6.75	Remove structure
8	Cupaniopsis anacardioides	11	30	16	C	D	4.6	8.25	Remove structure
9	Platanus racemosa	15	35	18	D-	D	6.3	11.25	Remove structure
10	Platanus racemosa	13	40	24	B	C	5.4	9.75	protect if possible
11	Cupaniopsis anacardioides	9	20	20	C-	D	3.8	6.75	Remove structure

Tree#	Species	DBH	Ht	Wd	Health	Condition	Safety clearance	Health clearance	Disposition
12	Cupaniopsis anacardioides	8	24	18	C-	D	3.3	6	Remove structure
13	Cupaniopsis anacardioides	9	22	20	C-	D	3.8	6.75	Remove structure
14	Cupaniopsis anacardioides	9	20	20	C-	D	3.8	6.75	Remove structure
15	Platanus racemosa	16	35	35	B	C	6.7	12	protect if possible
16	Platanus racemosa	14	40	40	B	C	5.8	10.5	protect if possible
17	Cupaniopsis anacardioides	4+3	24	18	C	C-	3.0	4	protect if possible
18	Platanus racemosa	15	35	30	B	C	6.3	11.25	protect if possible
19	Platanus racemosa	12	30	30	C	D	5.0	9	protect if possible
20	Platanus racemosa	15	45	30	C	C-	6.3	11.25	protect if possible
21	Platanus racemosa	5+5	35	18	C	C-	7	7	protect if possible
22	Platanus racemosa	18	45	40	C	C	7.5	13.5	protect if possible
23	Cupaniopsis anacardioides	8	16	16	D	D	3.3	6	Remove construction
24	Eucalyptus polyanthemos	11	30	30	C	C	4.6	11	Remove construction
25	Eucalyptus polyanthemos	5	12	12	C-	D	2.1	5	Remove construction
26	Platanus racemosa	7	30	20	C-	C-	2.9	5.25	Remove construction
27	Platanus racemosa	8	25	18	C-	D	3.3	6	Remove construction
28	Platanus racemosa	10	30	22	C	C	4.2	7.5	Remove construction
29	Platanus racemosa	7	30	22	B	B	2.9	5.25	Remove construction
30	Platanus racemosa	7	30	24	C	C-	2.9	5.25	Remove construction
31	Platanus racemosa	9	35	24	C	C	3.8	6.75	Remove construction
32	Platanus racemosa	11	45	30	B	B	4.6	8.25	Remove construction
33	Platanus racemosa	14	50	30	B	C	5.8	10.5	Remove construction
34	Platanus racemosa	15	50	30	B	B	6.3	11.25	Remove construction
35	Platanus racemosa	15	50	30	B	C	6.3	11.25	Remove construction

Tree#	Species	DBH	Ht	Wd	Health	Condition	Safety clearance	Health clearance	Disposition
36	Platanus racemosa	9	20	18	C	D	3.8	6.75	Remove construction
37	Platanus racemosa	11	45	25	B	C	4.6	8.25	Remove construction
38	Platanus racemosa	12	50	30	B	D	5.0	9	Remove construction
39	Platanus racemosa	10	40	30	B	C-	4.2	7.5	Remove construction
40	Platanus racemosa	18	45	35	C	C-	7.5	13.5	Remove construction
41	Platanus racemosa	17	45	35	B	C	7.1	12.75	Remove construction
42	Platanus racemosa	8	20	15	C	C-	3.3	6	Remove construction
43	Platanus racemosa	8	22	18	C	B	3.3	6	Remove construction
44	Platanus racemosa	8	18	13	D	D	3.3	6	Remove health
45	Platanus racemosa	17	40	26	B	C	7.1	12.75	Remove construction
46	Eucalyptus polyanthemos	17	42	36	B	C-	7.1	17	Remove structure
47	Cupaniopsis anacardioides	16 @ 1'	35	35	C	C-	5.4	9.75	Remove construction
48	Eucalyptus sp.	16	40	36	C-	C-	6.7	16	Remove construction
49	Eucalyptus polyanthemos	10	14	16	B	C-	4.2	10	Remove construction
50	Cupaniopsis anacardioides	13	30	36	B	C-	5.4	9.75	Remove construction
51	Cupaniopsis anacardioides	14	30	34	C	C-	5.8	10.5	Remove construction
52	Cupaniopsis anacardioides	10	25	30	C-	C-	4.2	7.5	Remove construction
53	Platanus racemosa	16	40	40	C	C	6.7	12	protect if possible
54	Platanus racemosa	15	50	40	C	C-	6.3	11.25	protect if possible
55	Platanus racemosa	14	40	35	C	D	5.8	10.5	Remove structure
56	Platanus racemosa	14	50	40	B	C-	5.8	10.5	Remove structure
57	Platanus racemosa	12	45	35	B	C	5.0	9	Remove structure
58	Platanus racemosa	14	45	35	B	C	5.8	10.5	protect if possible
59	Platanus racemosa	13	18	25	D	D	5.4	9.75	Remove structure

Tree#	Species	DBH	Ht	Wd	Health	Condition	Safety clearance	Health clearance	Disposition
60	Platanus racemosa	15	55	35	B	C	6.3	11.25	protect if possible
61	Cupaniopsis anacardioides	10	20	22	B	C-	4.2	7.5	Remove structure
62	Cupaniopsis anacardioides	11	20	20	C	D	4.6	8.25	Remove structure
63	Cupaniopsis anacardioides	12	20	20	B	D	5.0	9	Remove structure
64	Cupaniopsis anacardioides	12	18	20	C	D	5.0	9	Remove structure
65	Cupaniopsis anacardioides	8	14	16	C-	C-	3.3	6	Remove structure
66	Cupaniopsis anacardioides	12	16	18	B	C	5.0	9	Remove structure
67	Platanus racemosa	14	45	30	C	C	5.8	10.5	Remove construction
68	Platanus racemosa	14	40	35	B	C-	5.8	10.5	Remove construction
69	Platanus racemosa	14	40	32	C	C	5.8	10.5	Remove construction
70	Platanus racemosa	10	24	24	C	C	4.2	7.5	protect if possible
71	Platanus racemosa	9	30	26	B	C	3.8	6.75	Remove construction
72	Platanus racemosa	7	18	18	C	C-	2.9	5.25	Remove construction
73	Platanus racemosa	7	20	20	C	B	2.9	5.25	Remove construction
74	Platanus racemosa	11	35	30	B	C	4.6	8.25	Remove construction
75	Platanus racemosa	11	35	28	C	B	4.6	8.25	Remove construction
76	Platanus racemosa	10	35	24	C	C-	4.2	7.5	Remove construction
77	Platanus racemosa	10	35	30	B	B	4.2	7.5	Remove construction
78	Eucalyptus polyanthemos	13	40	20	B	C	5.4	13	Remove construction

The ultimate disposition of the tree will need to be worked out in the field to work with other phases of work, such as grading and utilities. In addition, the season will affect how much clearance will be needed. The health clearances for sycamores reflect fall and winter root cutting. Carrotwoods need more clearance in fall and winter.

Tree Preservation

1. **Protection Barrier:** A protection barrier shall be installed around the tree or trees to be preserved. The barrier shall be constructed of durable fencing material, such as chain-link fencing. The barrier shall be placed as far from the base of the tree(s) as possible, at least 1-foot per inch of trunk diameter and beyond the drip-line. The fencing shall be maintained in good repair throughout the duration of the project, and shall not be removed, relocated, or encroached upon without permission of the arborist involved.
2. **Storage of Materials:** There shall be NO storage of materials or supplies of any kind within the area of the protection barriers. Concrete and cement materials, block, stone, sand and soil shall not be placed within the drip-line of the tree.
3. **Fuel Storage:** Fuel storage shall NOT be permitted within 150 feet of any tree to be preserved. Refueling, servicing and maintenance of equipment and machinery shall NOT be permitted within 150 feet of protected trees.
4. **Debris and Waste Materials:** Debris and waste from construction or other activities shall NOT be permitted within protected areas. Wash down of concrete or cement handling equipment, in particular, shall NOT be permitted within 150 feet of protected trees.
5. **Planting near Trees Designated for Protection:** Any digging within designated protection zones shall be done using supersonic air directly as the digging medium, by means of a nozzle, whose nominal rated input pressure (available from manufacturer's literature) must not exceed 130 psig (pounds per square inch at gage) unless otherwise approved. Nozzles designed for input above 130 psig can damage fine roots. Air compressors rated between 100 to 125 psig recommended.
6. **Grade Changes:** Any grade changes proposed should be approved by a Registered Consulting Arborist before construction begins, and precautions taken to mitigate potential injuries. Grade changes can be particularly damaging to trees. Even as little as two inches of fill can cause the death of a tree. Lowering the grade can destroy major portions of a root system.
7. **Damages:** Any tree damages or injuries should be reported to the project arborist as soon as possible. Severed roots shall be pruned cleanly to healthy tissue, using proper pruning tools. Broken branches or limbs shall be pruned according to International Society of Arboriculture Pruning Guidelines and ANSI A-300 Pruning Standards.
8. **Preventive Measures:** Before construction begins, irrigation and fertilization of the affected tree(s) is recommended to improve tree vigor and health. Soil analysis testing should be completed to assure fertilization with the appropriate fertilizer products. Pruning of the tree canopies and branches should be done at the direction of the project arborist to remove any dead or broken branches, and to provide the necessary clearances for the construction equipment.

Appendix

A. Resume

B. Assumptions and Limiting Conditions

C. Certification

D. Glossary

RESUME: GREGORY W. APPLGATE, ASCA, ASLA

PROFESSIONAL REGISTRATIONS: American Society of Consulting Arborists #365
International Society of Arboriculture, Certified Arborist Number WC-180
International Society of Arboriculture, Tree Risk Assessment Qualified PNC-444

EXPERIENCE: Mr. Applegate is an independent consulting arborist. He has been in the horticulture field since 1963, providing professional arboricultural consulting since 1984 within both private and public sectors. His expertise includes appraisal, tree preservation, diagnosis of tree growth problems, construction impact mitigation, environmental assessment, expert witness testimony, hazard evaluation, pruning programs, species selection and tree health monitoring.

Mr. Applegate has consulted for insurance companies, major developers, , theme parks, homeowners, homeowners' associations, landscape architects, landscape contractors, property managers, attorneys and governmental bodies.

Notable projects on which he has consulted are: Disneyland, Disneyland Hotel, DisneySeas-Tokyo, Disney's Wild Animal Kingdom, the New Tomorrowland, Disney's California Adventure, Disney Hong Kong project, Knott's Berry Farm, J. Paul Getty Museum, Tustin Ranch, Newport Coast, Crystal Court, Newport Fashion Island Palms, Bixby Ranch Country Club, Playa Vista, Laguna Canyon Road and Myford Road for The Irvine Company, Beverly Hilton Hotel, MWD-California Lakes, Paseo Westpark Palms, Loyola-Marymount campus, Cal Tech, Cal State Long Beach, Pierce College, The Irvine Concourse, UCI, USC, UCLA, LA City College, LA Trade Tech, Riverside City College, Crafton Hills College, MTA projects, and the State of California review of the Landscape Architecture License exam (re: plant materials)

EDUCATION: Bachelor of Science in Landscape Architecture,
California State Polytechnic University, Pomona 1973
Arboricultural Consulting Academy (by ASCA)
Arbor-Day Farm, Kansas City 1995
Continuing Education Courses in Arboriculture
required to maintain Certified Arborist status and for registration

PROFESSIONAL AFFILIATIONS: American Society of Consulting Arborists (ASCA), Registered Member
American Society of Landscape Architects (ASLA), Full Member
International Society of Arboriculture (ISA), Regular Member
ASCA 2011 Nominations Committee
California Tree Failure Report Program, UC Davis, Participant
Street Tree Seminar (STS), Member

COMMUNITY AFFILIATIONS: Guest lecturer at UCLA, UCI, Cal Poly, Saddleback College, & Palomar Junior College
Landscape Architecture License Exam, Reviewer, Cal Poly Pomona (1986-90)
American Institute of Landscape Architects (L.A.) Board of Directors (1980-82)
California Landscape Architect Student Scholarship Fund - Chairman (1985)
International Society of Arboriculture - Examiner-tree worker certification (1990)

Assumptions and Limiting Conditions

1. Any legal description provided to this consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in nature. Any and all property is evaluated as though free and clear, under responsible ownership and competent management.
2. It is assumed that this property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations.
3. Care has been taken to obtain as much information as possible from reliable sources. Data has been verified insofar as possible. However, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.
4. This consultant shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule or contract of engagement.
5. Unless required by law otherwise, possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than this specific project and the person to whom it is addressed, without the prior expressed written or verbal consent of this consultant.
6. Unless required by law otherwise, neither all nor any part of this report or a copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, new, sales or other media without the prior expressed written consent of this consultant - particularly as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon this consultant as stated in his qualifications.
7. Sketches, drawings, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is for the express purposes of coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by Greg Applegate as to the sufficiency or accuracy of said information.
8. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.
9. Loss or alteration of any part of this report invalidates the entire report.
10. This consultant did not survey the tree locations.
11. Measurements are subject to typical margins of error, considering the oval or asymmetrical cross-section of most trunks.

Certification

I, Gregory W. Applegate, certify to the best of my knowledge and belief:

That the statements of fact contained in this report, are true and correct. That the report analysis, opinions, and conclusions are limited only the reported assumptions and limiting conditions, and are my personal unbiased professional analysis, opinions and conclusions.

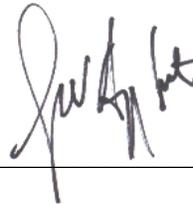
That I have no present or prospective interest in the vegetation that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

That my compensation is not contingent upon a reporting that favors the cause of the client or the attainment of stipulated result.

That my analysis, opinions, and conclusions were developed, and this report has been prepared, in conformity with the standards of arboricultural practice.

That I have made a personal inspection of the plants that are the subject of this report. No one provided significant professional assistance to the person signing this report.

Gregory W. Applegate _____



Date: 9-15-2022

Registered Consulting Arborist #365
Certified Arborist WC-0180

Glossary

Arboricultural	Pertaining to the awareness, care, evaluation, identification, growing, maintenance, management, planting, selection, treatment, understanding, valuation and so forth of trees and other woody plants and their growing environments, particularly in shade and ornamental (non-crop/commodity) settings.
Arborist	A person possessing the technical competence through experience and related training to provide for or supervise the management of trees or other woody plants in a landscape setting.
ASCA	The American Society of Consulting Arborists, Inc. a professional society, as described in its by-laws.
Bark	Tissue on the outside of the vascular cambium. Bark is usually divided into inner bark - active phloem and aging and dead crushed phloem - and outer bark.
Caliper	Diameter of a nursery-grown or small size tree trunk. Larger trees are usually measured at 4.5 feet (see DBH) Trees with calipers 4 inches and below are measured at 6 inches above grade(ANSI Z60-1-1990) Trees above 4 inches, but still transplantable are measured at 12 inches above grade.
Canopy	The part of the crown composed of foliage and twigs, for an individual tree or collective group of trees.
Codominant	Leaders equal in size and relative importance, developed from 2 apical buds at the top of a stem. Each codominant stem is an extension of the stem below it. There are no branch collars or trunk collars at the bases of codominant stems.
Compaction	(Soil Compaction) The compression of soil, causing a reduction of pore space and an increase in the bulk density of the soil. Tree roots cannot grow in compacted soil.
Crown	The upper portions of a tree or shrub, including the main limbs, branches, and twigs.
DBH	Diameter of the trunk, measured at breast height or 54 inches above the average grade. Syn. = caliper.

Decay	Progressive deterioration of organic tissues, usually caused by fungal or bacterial organisms, resulting in loss of cell structure, strength, and function. In wood, the loss of structural strength.
Decline	Progressive reduction of health or vigor of a plant.
Dripline	A projected line on the ground that corresponds to the spread of branches in the canopy; the farthest spread of branches.
Epicormic	Epi - upon; cormic – stem. Branches that are upon the stem, i.e. sprouting from either dormant buds in the cambial zone, or from buds sprung anew from ray traces. Epicormic shoots are a sign that energy reserves have been lowered.
Foliage	The live leaves or needles of the tree; the plant part primarily responsible for photosynthesis.
Grading	Intentional altering of topography and soil levels, using machinery.
Hardscape	The sidewalk, curb, gutter, paving or other concrete permanent features.
Heading	Pruning techniques where the cut is made to a bud, weak lateral branch or stub.
Included bark	The pattern of development at branch junctions where bark is turned inward rather than pushed out forming a branch bark ridge.
Limb	A large lateral branch growing from the main trunk.
Reduction cut	(drop crotch cut) pruning cut that reduces the length of a branch or stem back to a live lateral branch large enough to assume apical dominance that is typically at least one-third the diameter of the cut stem; also cutting back a stem or branch to an existing, smaller, lateral branch that is large enough to prevent bark death on the retained lateral branch. Root system The portion of the tree containing the root organs, including buttress roots, transport roots, and fine absorbing roots; all underground parts of the tree.
Root zone	The area and volume of soil around the tree in which roots are normally found. May extend to three or more times the branch spread of the tree, or several times the height of the tree.
Scaffold limb	Primary structural branch of the crown.
Shoot	Stem or branch and its leaves, especially when young
Target	People or property potentially affected by tree or limb failure.
Topping	The practice of cutting large limbs back severely, without regard to form or habit of the tree. Cuts are usually made between lateral branch nodes. This practice is extremely injurious to trees, and promotes decay.
Vigor	Active, healthy growth of plants: ability to respond to stress factors.