

Arborist's Report

February 4, 2021

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# Tree & Palm Evaluation Report

4555 Executive Drive, San Diego, CA

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# Introduction

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## Background

The following report is to provide information on the trees and palms on the 4555 Executive Drive site and adjoining street trees. The intent of the report is to aid decision makers and designers as they plan redesign and reuse of this site.

The purpose of this report is not so much to analyze the impact of planned construction on the trees and palms, which will be mostly or entirely removed, but to make recommendations to guide design so as to minimize potential impacts and maximize the number of trees and palms that can be safely retained.

This site has a row of Mexican fan palms along the Executive Drive and Executive Way. Both the trees and the palms are the subjects of this report. Shrubs and herbaceous plants like, Raphiolepis, Strelitzia and Lonicera, are not included. No subsurface information has been provided. The new buildings planned are a parking garage and a 5-story office building, similar to the surrounding buildings.

These trees have provided many years of good use and, due to close spacing and crowding, most are nearing the end of their useful lives. In addition, past pruning and landscape maintenance has not increased their longevity.

Please keep in mind that a report, in itself, does not protect trees. Reading and following the report recommendations do. Good fences, monitoring, and good communication will help protect trees.

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## Assignment

Arbrogate Consulting is pleased to submit this proposal for review and arboricultural evaluation of about 150 trees' health and condition, professional opinions and report as appropriate. Each tree 2" DBH or greater and all City street trees will be included. The report will list DBH, height, spread, health and structural quality. Defects, insects and vertebrate pests will also be noted. Recommendations will be included to aid preservation of suitable trees.

# Observations

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## General Observations

This property contained a well-used facility for support of the blind. The building was not in use at the time of our site inspection, but was still standing and apparently maintained. Currently the landscape is maintained to some degree. No trees or palms appeared drought stressed. However, the black acacia on the south edge of the site and the Brisbane box on the east edge, did not seem to be maintained.

The relatively small planting spaces, with large tree species (mostly elms and Brisbane box) seem to be impacting tree health by limiting root space. There may also be a soils issue that is negatively affecting the Brisbane box along the east edge. The elms mainly have structural defects, but otherwise are reasonably healthy. The street tree Mexican fan palms are in a narrow parkway along the edge of the two streets, but appear perfectly healthy. The trunks of the palms are slightly slenderer than would be expected if they were originally grown in an open landscape. Yet, most of the palms are attractive and form a nice edge along these two busy streets.

The trees are in fair to good health overall. No significant insect infestations or disease infections were observed. Some cultivars of Chinese elms are severely affected by elm anthracnose, but these Brea elms were free of any symptoms. They were dormant and nearly bare, but they lacked the cankers associated with elm anthracnose.

Mono-cultures usually lead to increased pest problems. Since this site has only two dominant species, elm and Brisbane box, with a few accent trees, it is fortunate that otherwise hearty species were planted. The naked corals were bare, but almost every year in summer they are heavily infested by mites. The row of black acacias along the south edge appear to be gradually declining and dying. They are a short-lived species.

## Matrix of Observations

Tree#	Species	DBH	Ht.	Wd.	Health	Structure	Root condition	Pest or disease	Comments
1	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
2	Washingtonia robusta	14	39'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
3	Washingtonia robusta	14	38'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
4	Washingtonia robusta	14	40'th	10'	A	A	42" Parkway	Not yet	Newly trimmed
5	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
6	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
7	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
8	Washingtonia robusta	14	40'th	10'	B	A	42" Pkway	Not yet	Newly trimmed
9	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
10	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
11	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
12	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
13	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
14	Washingtonia robusta	14	40'th	10'	B?	A	42" Parkway	Not yet	Chlor new leaf
15	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
16	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
17	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
18	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
19	Washingtonia robusta	14	40'th	10'	B	A	42" Parkway	Not yet	Newly trimmed
20	Erythrina coralloides	5+4	9'	10'	C	C	Circling	not now	Flat back side

Tree#	Species	DBH	Ht.	Wd.	Health	Structure	Root condition	Pest or disease	Comments
21	Ficus microcarpa	23	30	40	A	C	Sh MB	Gall wasp	CrS Lt cod inc, edge of turf
22	Ficus microcarpa	19	30	40	A	C	Sh MB	Gall wasp	CrS Lt cod inc, edge of turf
23	Ficus microcarpa	17	30	40	A	C-	Sh MB	Gall wasp	CrS Lt cod inc, edge of turf
24	Platanus x Hispanica	6.3	30	28	C	C	Sh MB		Epi cod
25	Platanus x Hispanica	6	30	20	C	C	Circling		Epi cod
26	Lophostemon confertus	5.5	28	15	C	D	covered		T-bow 1s
27	Ulmus parvifolia	9	36	20	B	C	covered		Cod
28	Ulmus parvifolia	9	36	16	B	C-	Sh MB		OL OP cod
29	Ulmus parvifolia	8	32	25	B	C	1sRF		Cod
30	Ulmus parvifolia	9	36	22	B	C	Sh MB		Cod Hd
31	Ulmus parvifolia	10	34	22	B	C-	Sh MB		Cod Hd
32	Ulmus parvifolia	9	24	20	B	D	covered		Leans 1s cod
33	Ulmus parvifolia	9	32	22	B	C-	covered		Cod FC Hd Xing
34	Ulmus parvifolia	10	36	28	B	C	covered		Cod mHd
35	Ulmus parvifolia	10	36	20	B	C-	1sRF		Cod Hd DL OL
36	Ulmus parvifolia	11	36	22	B	C-	1sRF		Cod Hd OL Xing
37	Ulmus parvifolia	11	36	28	B	C	1sRF		Cod Hd
38	Ulmus parvifolia	10	36	26	B	C	Sh MB		Cod Hd OL
39	Ulmus parvifolia	8.5	30	22	B	C-	covered		Cod Hd OP FC
40	Ulmus parvifolia	8.5	30	26	B	C	covered		Cod DL
41	Erythrina coralloides	8+8+6+4	15	16	B	C	covered	not now	brk Xing DL
42	Erythrina coralloides	8+8+5+3	18	20	B	B	Circling	not now	Xing
43	Ulmus parvifolia	10	33	30	B	C	okay		Cod Hd TO

Tree#	Species	DBH	Ht.	Wd.	Health	Structure	Root condition	Pest or disease	Comments
44	Ulmus parvifolia	9	30	27	B	B	covered		mHd
45	Ulmus parvifolia	11	35	36	B	B	okay		Cod mHd
46	Ulmus parvifolia	8	32	30	C	C-	shifted		1s leans cod OL
47	Ulmus parvifolia	11	35	30	B	B	covered		mLean
48	Washingtonia x Filabusta	18	40'th	13	B	B	okay	mDiamond scale	Gaffed
49	Washingtonia robusta	14	50'th	13	A	A	okay	not now	
50	Ulmus parvifolia	6.3	30	25	B	C	covered		1s FC
51	Ulmus parvifolia	6.1	27	28	B	C	covered		Cod
52	Ulmus parvifolia	6.2	25	28	B	B	covered		mLean
53	Ulmus parvifolia	6.5	27	28	B	B	1sRF		epi
54	Ulmus parvifolia	10	35	30	C-	C-	Sh MB		1s cod Lt OP
55	Platanus x Hispanica	2	14	6	F	F	covered	death	Cr
56	Lophostemon confertus	12	40	22	C	C	covered		Leans Cr#57
57	Lophostemon confertus	3	30	18	C-	C	covered		Sp sup
58	Lophostemon confertus	4.6	24	16	B	C	covered		2long cod-top
59	Lophostemon confertus	4.6	15	12	C	C-	covered		mDb mLean, no leader
60	Lophostemon confertus	2.6	25	18	C	C-	covered		Leans cod Cr#61
61	Lophostemon confertus	5.8	30	20	C	C-	covered		2long cod lean Cr#62
62	Lophostemon confertus	8	30	26	B	C-	covered		Cod-top 2long Cr#61 & 63
63	Lophostemon confertus	5.6	30	26	C	C	covered		Leans T-bow 2long Cr#62
64	Lophostemon confertus	6.8	25	25	C	C-	covered		Cod 2long
65	Lophostemon confertus	5.2	24	24	C	C-	covered		Cod mDb epi
66	Lophostemon confertus	8.1	30	24	D	C	covered		Sp cod 2long

Tree#	Species	DBH	Ht.	Wd.	Health	Structure	Root condition	Pest or disease	Comments
67	Lophostemon confertus	6.8	26	24	D	D	covered		Sp cod 2long Db
68	Lophostemon confertus	4	18	15	D	D	covered		Sp cod top-Db
69	Lophostemon confertus	5.1	24	22	C-	C-	covered		Sp cod Db
70	Lophostemon confertus	4.7	24	18	C-	C-	covered		Leans mSp, dead leader
71	Lophostemon confertus	6	26	24	C-	C	covered		Cod 2long
72	Lophostemon confertus	6.5	26	24	D	C	covered		Sp 2long
73	Lophostemon confertus	9	30	28	C-	C-	covered		Leans mSp
74	Ulmus parvifolia	10	34	36	B	C	Sh MB		OL stubs
75	Ulmus parvifolia	9	34	32	B	C-	<u>Sh</u>		Cod leans Cr#76
76	Ulmus parvifolia	8.3	34	28	B	C	<u>Sh</u>		Cod Lt FC Cr#75
77	Ulmus parvifolia	6	24	24	B	C-	covered		CrS cod, old-FC Cr#78
78	Ulmus parvifolia	5.3	27	24	B	C	covered		Cod old-FC Cr#77
79	Ulmus parvifolia	8	32	26	C	C-	Sh MB		TO Dk Cr#80
80	Ulmus parvifolia	6.9	32	26	C	C	Sh MB		OL cod Cr
81	Ulmus parvifolia	8.6	32	26	C	C	Sh MB		OL Lt Cr
82	Ulmus parvifolia	8.2	32	26	B	C	Sh MB		OL cod Lt Cr
83	Ulmus parvifolia	8	32	28	B	C	covered		OL cod Lt Cr
84	Ulmus parvifolia	8.2	32	26	B	C	covered		OL cod Lt Cr
85	Ulmus parvifolia	10	32	28	B	C	<u>Sh</u>		Cod Lt Cr
86	Ulmus parvifolia	11	32	30	C	C	Sh MB		OL FC cod Cr
87	Strelitzia nicholai	4Ts, 8-9'	18	13	C	C	covered		
88	Hymenosporum flavum	2.6	13	7	D	C	covered		Sup by#89
89	Pittosporum viridiflorum	12	30	28	C-	C	okay		Limb sun scald cod

Tree#	Species	DBH	Ht.	Wd.	Health	Structure	Root condition	Pest or disease	Comments
90	Pyrus calleryana cv	3+3	15	7	C	D	covered		Bushy Xing epi climbing vine
91	Lophostemon confertus	6	24	16	C	D	covered		T-bow Hd 2long
92	Lophostemon confertus	6.3	32	30	C	C	covered		mSp 2long
93	Lophostemon confertus	11	38	30	C	D	covered		Cod <u>TO</u> 2long
94	Lophostemon confertus	4.1	18	18	C-	D	covered		Leans Sup by#93 1s
95	Erythrina coralloides	4+6+7.5	20	20	B	C	covered		T-bow cod Xing
96	Lophostemon confertus	8.4	38	35	C	C-	covered		mSp cod 2long
97	Erythrina coralloides	12 @ 3'	18	18	B	C	covered		Cod Xing
98	Lophostemon confertus	7	30	28	C	D	covered		Leans DL Xing 2long
99	Lophostemon confertus	7	25	26	C-	C-	covered		Sp cod Db
100	Lophostemon confertus	6.2	25	20	C	C-	covered		mSp cod mDb
101	Lophostemon confertus	7.2	28	24	C-	C-	covered		Sp cod 2long
102	Lophostemon confertus	6.1	23	20	C-	C-	covered		Sp cod 2long
103	Lophostemon confertus	6.8	28	24	D	C	covered		Leans Sp 2long
104	Platanus x Hispanica	6	32	15	C	C-	Sh		Sp Lt LB OL
105	Platanus x Hispanica	6.8	33	18	C	C-	<u>Sh</u>		FC cod OL
106	Platanus x Hispanica	5.2	26	18	B	C	Sh MB		DL Xing Hd
107	Platanus x Hispanica	4.5	18	16	B	C-	Sh MB		LB Xing
108	Platanus x Hispanica	5.1	24	18	C-	D	Sh MB		1s Sp
109	Acacia melanoxylon	14	50	20	C-	C-	covered		OL
110	Acacia melanoxylon	14	50	20	C-	C-	covered		OL cod
111	Acacia melanoxylon	15	50	20	C	C-	covered		OL
112	Acacia melanoxylon	3.5	16	7	D-	D	covered		Ivy girdling

Tree#	Species	DBH	Ht.	Wd.	Health	Structure	Root condition	Pest or disease	Comments
113	Acacia melanoxylon	5	40	8	C-	C-	fill		OL
114	Ulmus parvifolia	8	32	26	C	C-	okay		OL cod Lt FC
115	Ulmus parvifolia	10	35	35	B	C-	fill		OL cod Lt
116	Acacia melanoxylon	2	8	5	B	C	covered		Ivy climbing T
117	Acacia melanoxylon	15	50	26	B	C	fill		OL cod-top
118	Acacia melanoxylon	12	40	14	C-	D	fill		Leaning on bldg
119	Acacia melanoxylon	12	40	20	C-	D	fill		1s TO leans T-bow
120	Ulmus parvifolia	8	35	30	C	C-	covered		OL Lt
121	Acacia melanoxylon	2	12	7	C-	C	covered		Sp epi mDb
122	Acacia melanoxylon	3	13	9	D	D	covered		1s top-Db
123	Acacia melanoxylon	2	13	8	B	B	covered		Cr
124	Ulmus parvifolia	9	35	38	C	C	fill		OL Lt cod stubs
125	Acacia melanoxylon	10	50	16	D	D	fill		OL Db cod inc
126	Acacia melanoxylon	7	40	18	F	F	fill	death	OL Sp, dead tree on it
127	Ulmus parvifolia	8.5	38	7	C-	C-	fill		1s OL Lt
128	Acacia melanoxylon	15	50	26	B	C	fill		OL TO lower-Db
129	Acacia melanoxylon	12	50	18	C	C-	fill		OL Cr#128
130	Acacia melanoxylon	8	40	6	D-	F	noRF		near dead
131	Acacia melanoxylon	8	45	12	D-	D-	fill		near dead, cod inc
132	Acacia melanoxylon	16	50	30	C	C	on SW		Lower-Db cod
133	Acacia melanoxylon	8	45	15	F	F	noRF	death	Bare
134	Ulmus parvifolia	9.5	30	30	C	C-	fill		OL cod FC Lt Xing
135	Ulmus parvifolia	7.5	32	28	C	C-	1sRF		mLean OL Lt, ivy up T

Tree#	Species	DBH	Ht.	Wd.	Health	Structure	Root condition	Pest or disease	Comments
136	Ulmus parvifolia	7.5	32	28	C-	C-	1sRF		mLean OL Lt
137	Ulmus parvifolia	7.7	32	26	C	C-	noRF		Cr sup FC OL Lt
138	Ulmus parvifolia	8.2	28	22	C	D	noRF		Leans cod OP OL Lt
139	Ulmus parvifolia	10	34	32	C	C-	covered		Cod Lt Xing FC
140	Erythrina coralloides	10+10	22	18	B	C-	Sh	not now	Cod Xing Hd FC
141	Ulmus parvifolia	8.1	32	24	C	C-	okay		Cod OL Lt epi
142	Ulmus parvifolia	7.2	32	26	C	C-	covered		Cod Lt FC Hd DL
143	Ulmus parvifolia	7.4	34	20	C	C-	covered		Cod TO Lt epi
144	Erythrina coralloides	7+4+4+3	15	15	B	B	covered	not now	Cod mXing
145	Erythrina coralloides	10 @ 2'	12	18	B	C-	covered	not now	Topd Hd Xing
146	Ulmus parvifolia	12	40	40	A	B	covered		Cod Xing epi Hd, SW-lift
147	Ulmus parvifolia	9	36	30	B	C	Sh MB		Cod Lt
148	Ulmus parvifolia	10	36	32	B	B	Sh MB		Cod Lt
149	Ficus microcarpa	19	36	40	A	C	Sh MB	Gall wasp	Cod inc CrS Lt
150	Ulmus parvifolia	10	35	32	B	C-	<u>Sh</u>		Cod Lt leans Hd epi
151	Magnolia g. Little Gem	4+3	16	15	B	C	covered		LB epi mSp
152	Magnolia g. Little Gem	4+4+3	24	14	C-	C	covered		Cod inc LB epi mSp
153	Magnolia g. Little Gem	2	10	6	C-	C	covered		LB Db Sp
154	Platanus x Hispanica	3	23	10	D	D	Sh MB	not now	Cod-top LB epi Sp
155	Magnolia g. Little Gem	4.2 @ 1'	9	8	C-	C-	okay		LB Db Sp
156	Platanus x Hispanica	7.7	30	15	C-	C-	Sh MB	not now	Cod-top Db epi FC

DBH = diameter at breast height (4.5') "m" preceding an abbreviation or condition indicates a minor state.

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## Explanation of Abbreviations Used in the Matrix

The size, species, evaluation of health, structural condition, location, and the description of defects, health and condition of the trees are listed below. Arboricultural terms are defined in the glossary.

Underlined abbreviations indicate severity. An “m” in front of an abbreviation indicates minor significance e.g., mDb = minor dieback.

The above matrix and the one found in Recommendations can also be presented combined as an Excel file, via e-mail.

1s=one-sided

1sRF = one-sided root flare

2long = limb too long

Binj=basal injury

Brk = broken branch

Cod=codominant

Cr=crowded

CrS = crowded scaffolds

Db=dieback

*DBH – Diameter at breast height, i.e. 4.5’*

Dk = decay

DL=Dog-leg

DLT = dogleg trunk

Epi = epicormic shoots

FC=flush cut

Gird = girdling root

Hd = headed

Inc=included bark

Inj=injury

LB = low branched

Lt=lion-tailed

NoRF = no root flare

OL = over-lifted

OP = over pruned

RF = root flare

Rinj=root injury

Sh = shallow roots

Sp = sparse

T-bow = bowed trunk

th = trunk height (per ANSI Z-60)

Tinj = trunk injury

Tinj = trunk injury

TO = tear out

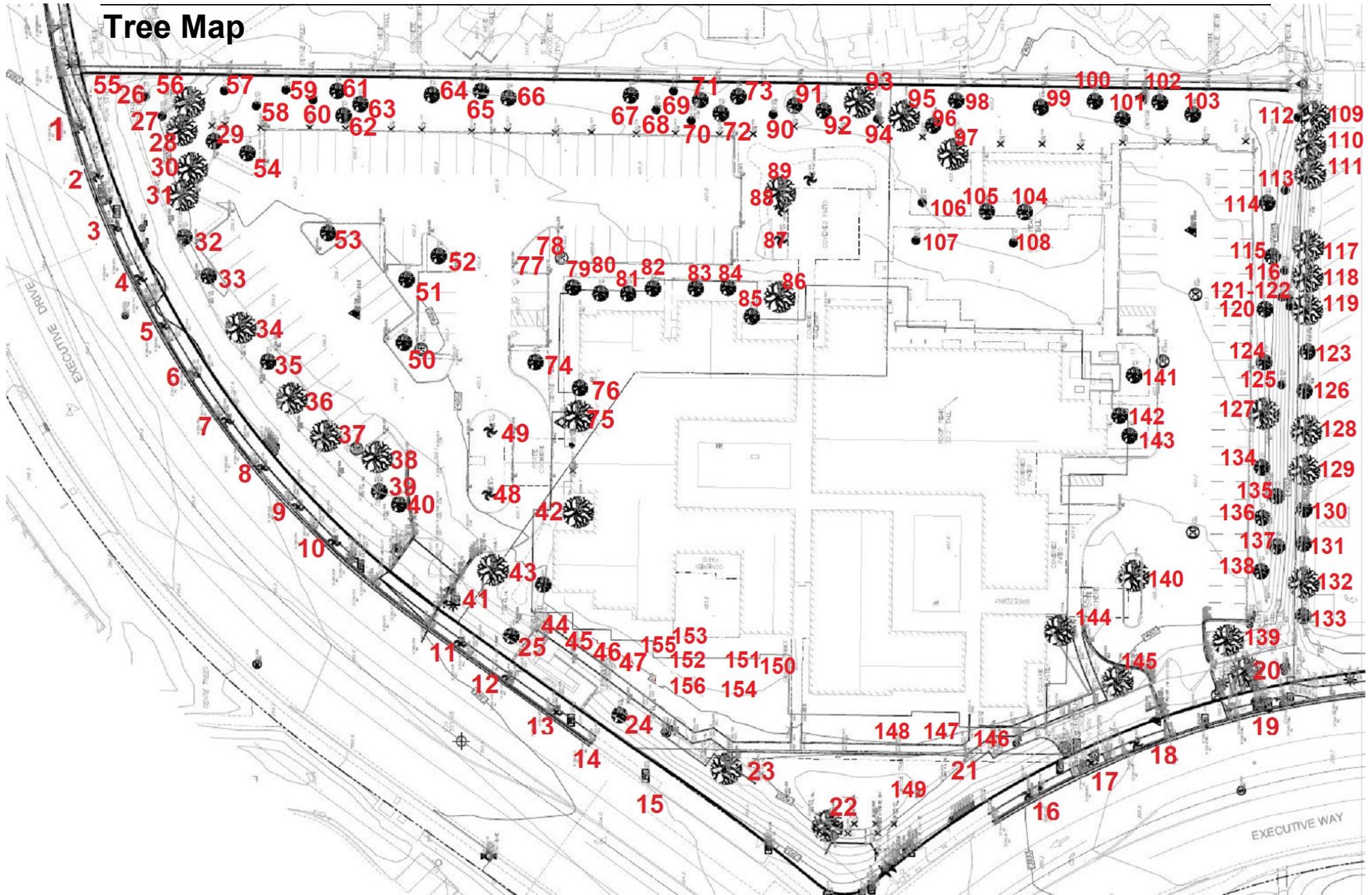
Top’d = Topped

Xing = crossing branches

## Botanic name / Common name Cross-reference

Botanic name	Common name
<i>Acacia melanoxylon</i>	Black acacia
<i>Erythrina coralloides</i>	Naked coral
<i>Ficus microcarpa</i>	Indian laurel
<i>Hymenosporum flavum</i>	Sweet shade
<i>Lophostemon confertus</i>	Brisbane box
<i>Magnolia</i> g. Little Gem	Dwarf magnolia
<i>Pittosporum viridiflorum</i>	Cape pittosporum
<i>Platanus</i> x <i>Hispanica</i>	London plane tree
<i>Pyrus calleryana</i> cv	Callery pear cultivar
<i>Ulmus parvifolia</i> "Drake"	Brea Chinese elm
<i>Washingtonia robusta</i>	Mexican fan palm
<i>Washingtonia</i> x <i>Filabusta</i>	Hybrid fan palm

# Tree Map



# Analysis

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## Protection Status

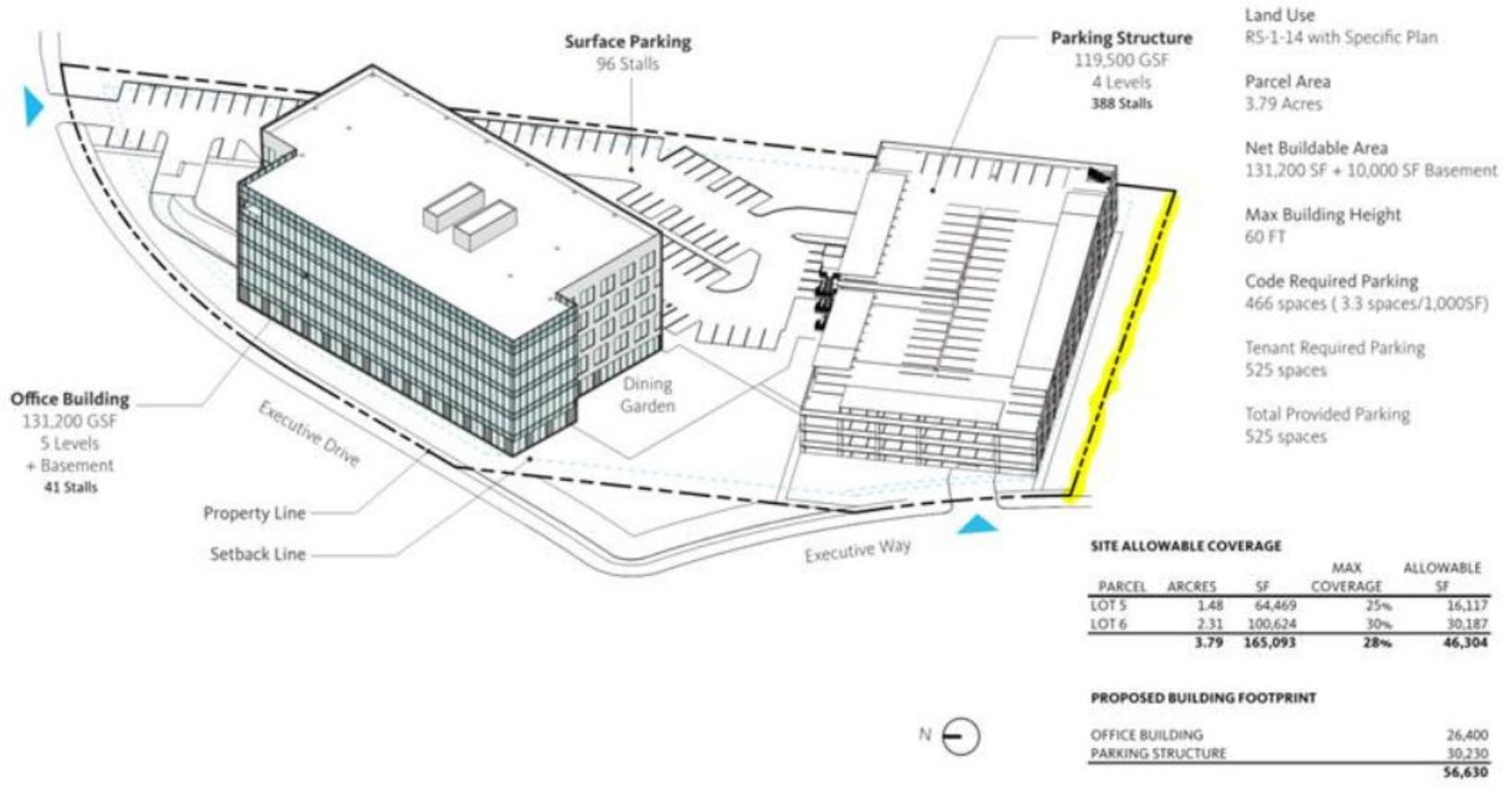
None of the trees or palms on this site are considered protected species, rare or endangered, except those that belong to, and are controlled by, the City of San Diego, the street palms.

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## Protection Measures

Transplanting of some of these trees has not been discussed as a possible means of preserving the better specimens, however for a few it should be considered. Transplanting has possible use here to move valuable trees that are in the path of construction to plant in the new landscape. Successful transplanting of trees requires a healthy tree to begin with, good soil preparation, a skillful contractor, and proper timing. Only the “A” or “B” level trees should be considered for transplanting. No tree with shallow roots mentioned should be considered. Transplanting by tree spade should not be considered. Only specialty contractors with good experience and known ability should be considered. The current soil conditions are not suitable for planting a transplanted tree without testing percolation and amending the soil per an agronomic laboratory’s recommendation. Late fall or winter is the time to transplant elms, from November until new growth begins. Brisbane box cannot be transplanted at any reasonable rate. Any that survive would take many years to recover. Only a few of the elms are of sufficient quality to justify the expense and risk of transplanting.

# Preservation in Place



As is apparent above, the prospects for preserving any trees in place are remote. The Indian laurels on the western point of the site have a good chance for protecting in place, as long as the clearance specifications and other measures in the recommendations of this report are followed. The limits of grading are unknown, but even being able to store transplanted trees on site may be too difficult. If there is no suitable place nearby to store trees, the cost to store them any distance away may make transplanting economically unreasonable.

The street palms are also safe, as long as they are irrigated and protected. One or two may need to be removed for the new access points. However, the current disease threat of the new Fusarium wilt of palms, *Fusarium oxysporum* f. sp. *palmarum*. is significant. Its impact in Florida on *Washingtonia robusta* and *Syagrus romanzoffiana* has been quite severe. Exact means of its spread are not fully understood yet, but if it is like the Fusarium wilt that affects palms in the Phoenix genus, sterilizing pruning tools or only cutting dead fronds may be sufficient.

Though most of the naked coral trees have crossing limbs and have not been well trained, they still could be. They may at least be of value to a local tree nursery. Being able to get an appropriate size rootball is essential for transplanting. For many of these trees that may be impossible until after some demolition and the adjoining paving is removed.

If any trees are to remain in place, they will require protection from almost all construction activities. Soil compaction, dust, soil pollution, root cutting, and root injury must be avoided. Any excavation or disruption in the root zone needs to stay outside the protection zone or be tunneled below at three foot depth or greater. This includes all utilities and irrigation lines. Running new irrigation lines between the trees will be challenging.

If work or access must occur within the protection radii, steel plates or one-inch plywood must be laid down over a 4-inch-deep layer of coarse mulch. The trunks will also need to be protected if work will occur nearby, e.g. wrapping the trunk with two layers of carpet and an outer layer of 2x4's. If work will only occur outside the protection zone, chain link fencing installed around the protection zone is sufficient. For limb protection, protection needs to occur as high as any equipment can reach that will be used nearby. Some clearance pruning may be allowed if done in the proper season by a licensed tree services, according to ANSI A300, part 1 standards and ISA Best Management Practices.

The protection radii listed in the Recommendations Matrix are based on an International Society of Arboriculture publication by Dr. Jim Clark and Nelda Matheny called, *Trees and Development*. Many arborists use a dripline based protection zone, but that takes no consideration of the health or age of the tree, nor of its proportions or shape. Older trees need proportionately more clearance. Leaning trees need more clearance on the side opposite the lean. A tall narrow tree with a trunk diameter of 12 inches needs just as much clearance as a broad spreading tree of the same trunk diameter. *Trees and Development* uses a formula based on the age/health, species, and trunk diameter.

# Recommendations

While preserving trees in place may not be reasonable once the limits of grading are known, the following recommendations are offered for any opportunities to do so. If transplanting is considered, no amount of recommendations will make up for lack of experience and proper tools. There are only about three or four contractors with the skills and experience to box and store any of these trees, and they will not need recommendations. A list of such contractors can be provided should the need arise.

- If the irrigation is disrupted, check soil moisture weekly. Increase or decrease irrigation according to the findings and anticipate the coming weather.
- Do not allow vehicle traffic over wet soil in landscape areas.
- Fence off a root protection zone with 6-foot-high chain link fence according to the clearances in the following matrix.
- If equipment access is necessary within the protection zone of the trees or palms, apply a 4" deep layer of coarse mulch, hay or wood chips under tree's canopy and overlay with steel plates or 1" plywood to mitigate compaction.
- If work will occur in the protection zone, wrap the trunks with two layers of carpet 6-foot high or as high as the equipment to be used near it. The carpet should be secured by 2"x4" boards 6-inches apart and banded into place.
- Monitor, monitor, monitor construction near the trees and palms and monitor the moisture until an irrigation schedule can be determined.
- Perform agronomic soil testing at least four locations on site. Each location should have a one-pound sample taken from the 0 to 12" horizon, the 12 to 24" horizon and the 24 to 36" level. The 24 to 36" level should also be tested for percolation.
- Do not prune the elms until November and stop when new growth begins. Do not cut any green palm fronds. Dead branches or fronds can be cut any time.
- If the trees or palms are pruned, hire a properly licensed and insured tree service, supervised by a certified arborist. All pruning must be according to ANSI A300, part 1 standards and ISA Best Management Practices.

## Recommendations Matrix

Tree #	Species	DBH	Ht.	Wd.	Health	Structure	Clearance radius	Winter radius	Remove?
1	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
2	Washingtonia robusta	14	39'th	10'	B	A	3'	4'	Protect
3	Washingtonia robusta	14	38'th	10'	B	A	3'	4'	Protect
4	Washingtonia robusta	14	40'th	10'	A	A	3'	4'	Protect
5	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
6	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
7	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
8	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
9	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
10	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
11	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
12	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
13	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
14	Washingtonia robusta	14	40'th	10'	B?	A	3'	4'	Protect
15	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
16	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
17	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
18	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
19	Washingtonia robusta	14	40'th	10'	B	A	3'	4'	Protect
20	Erythrina coralloides	5+4	9	10'	C	C	6	5	Move?
21	Ficus microcarpa	23	30	40	A	C	18	23	Protect

Tree #	Species	DBH	Ht.	Wd.	Health	Structure	Clearance radius	Winter radius	Remove?
22	Ficus microcarpa	19	30	40	A	C	15	19	Protect
23	Ficus microcarpa	17	30	40	A	C-	13	17	Protect
24	Platanus x Hispanica	6.3	30	28	C	C	6	5	Yes
25	Platanus x Hispanica	6	30	20	C	C	6	5	Yes
26	Lophostemon confertus	5.5	28	15	C	D	5	5	Yes
27	Ulmus parvifolia	9	36	20	B	C	9	7	?
28	Ulmus parvifolia	9	36	16	B	C-	9	7	No
29	Ulmus parvifolia	8	32	25	B	C	8	6	No
30	Ulmus parvifolia	9	36	22	B	C	9	7	No
31	Ulmus parvifolia	10	34	22	B	C-	10	8	No
32	Ulmus parvifolia	9	24	20	B	D	9	7	Yes
33	Ulmus parvifolia	9	32	22	B	C-	9	7	No
34	Ulmus parvifolia	10	36	28	B	C	10	8	No
35	Ulmus parvifolia	10	36	20	B	C-	10	8	No
36	Ulmus parvifolia	11	36	22	B	C-	11	8	No
37	Ulmus parvifolia	11	36	28	B	C	11	8	No
38	Ulmus parvifolia	10	36	26	B	C	10	8	No
39	Ulmus parvifolia	8.5	30	22	B	C-	8.5	6	No
40	Ulmus parvifolia	8.5	30	26	B	C	8.5	6	No
41	Erythrina coralloides	8+8+6+4	15	16	B	C	8	7	Move?
42	Erythrina coralloides	8+8+5+3	18	20	B	B	8	7	Move?
43	Ulmus parvifolia	10	33	30	B	C	10	8	yes
44	Ulmus parvifolia	9	30	27	B	B	9	7	?

Tree #	Species	DBH	Ht.	Wd.	Health	Structure	Clearance radius	Winter radius	Remove?
45	Ulmus parvifolia	11	35	36	B	B	11	8	Okay
46	Ulmus parvifolia	8	32	30	C	C-	8	6	Yes
47	Ulmus parvifolia	11	35	30	B	B	11	8	?
48	Washingtonia x Filabusta	18	40'th	13	B	B	4'	4'	Yes
49	Washingtonia robusta	14	50'th	13	A	A	3'	4'	No
50	Ulmus parvifolia	6.3	30	25	B	C	6.3	5	yes
51	Ulmus parvifolia	6.1	27	28	B	C	6.1	5	yes
52	Ulmus parvifolia	6.2	25	28	B	B	6.2	5	?
53	Ulmus parvifolia	6.5	27	28	B	B	6.5	5	Yes
54	Ulmus parvifolia	10	35	30	C-	C-	10	8	Yes
55	Platanus x Hispanica	2	14	6	F	F	N/A	N/A	Yes
56	Lophostemon confertus	12	40	22	C	C	12	12	Yes
57	Lophostemon confertus	3	30	18	C-	C	3	3	Yes
58	Lophostemon confertus	4.6	24	16	B	C	5	5	?
59	Lophostemon confertus	4.6	15	12	C	C-	5	5	Yes
60	Lophostemon confertus	2.6	25	18	C	C-	3	3	Yes
61	Lophostemon confertus	5.8	30	20	C	C-	6	6	Yes
62	Lophostemon confertus	8	30	26	B	C-	8	8	Yes
63	Lophostemon confertus	5.6	30	26	C	C	6	6	Yes
64	Lophostemon confertus	6.8	25	25	C	C-	7	7	Yes
65	Lophostemon confertus	5.2	24	24	C	C-	5	5	Yes
66	Lophostemon confertus	8.1	30	24	D	C	N/A	N/A	Yes
67	Lophostemon confertus	6.8	26	24	D	D	N/A	N/A	Yes

Tree #	Species	DBH	Ht.	Wd.	Health	Structure	Clearance radius	Winter radius	Remove?
68	Lophostemon confertus	4	18	15	D	D	N/A	N/A	Yes
69	Lophostemon confertus	5.1	24	22	C-	C-	5	5	Yes
70	Lophostemon confertus	4.7	24	18	C-	C-	N/A	N/A	Yes
71	Lophostemon confertus	6	26	24	C-	C	6	6	Yes
72	Lophostemon confertus	6.5	26	24	D	C	N/A	N/A	Yes
73	Lophostemon confertus	9	30	28	C-	C-	9	9	Yes
74	Ulmus parvifolia	10	34	36	B	C	10	8	yes
75	Ulmus parvifolia	9	34	32	B	C-	9	7	Yes
76	Ulmus parvifolia	8.3	34	28	B	C	8.3	6	yes
77	Ulmus parvifolia	6	24	24	B	C-	6	5	Yes
78	Ulmus parvifolia	5.3	27	24	B	C	5.3	4	yes
79	Ulmus parvifolia	8	32	26	C	C-	8	6	Yes
80	Ulmus parvifolia	6.9	32	26	C	C	6.9	5	Yes
81	Ulmus parvifolia	8.6	32	26	C	C	8.6	6	Yes
82	Ulmus parvifolia	8.2	32	26	B	C	8.2	6	yes
83	Ulmus parvifolia	8	32	28	B	C	8	6	yes
84	Ulmus parvifolia	8.2	32	26	B	C	8.2	6	yes
85	Ulmus parvifolia	10	32	28	B	C	10	8	yes
86	Ulmus parvifolia	11	32	30	C	C	11	8	Yes
87	Strelitzia nicolai	4Ts, 8-9'	18	13	C	C	4	5	Yes
88	Hymenosporum flavum	2.6	13	7	D	C	N/A	N/A	Yes
89	Pittosporum viridiflorum	12	30	28	C-	C	12	12	Yes
90	Pyrus calleryana cv	3+3	15	7	C	D	3	3	Yes

Tree #	Species	DBH	Ht.	Wd.	Health	Structure	Clearance radius	Winter radius	Remove?
91	Lophostemon confertus	6	24	16	C	D	6	6	Yes
92	Lophostemon confertus	6.3	32	30	C	C	6	6	Yes
93	Lophostemon confertus	11	38	30	C	D	11	11	Yes
94	Lophostemon confertus	4.1	18	18	C-	D	N/A	N/A	Yes
95	Erythrina coralloides	4+6+7.5	20	20	B	C	7	6	Move?
96	Lophostemon confertus	8.4	38	35	C	C-	8	8	Yes
97	Erythrina coralloides	12 @ 3'	18	18	B	C	9	7	Move?
98	Lophostemon confertus	7	30	28	C	D	7	7	Yes
99	Lophostemon confertus	7	25	26	C-	C-	7	7	Yes
100	Lophostemon confertus	6.2	25	20	C	C-	6	6	Yes
101	Lophostemon confertus	7.2	28	24	C-	C-	7	7	Yes
102	Lophostemon confertus	6.1	23	20	C-	C-	6	6	Yes
103	Lophostemon confertus	6.8	28	24	D	C	N/A	N/A	Yes
104	Platanus x Hispanica	6	32	15	C	C-	6	5	Yes
105	Platanus x Hispanica	6.8	33	18	C	C-	7	5	Yes
106	Platanus x Hispanica	5.2	26	18	B	C	5	4	Yes
107	Platanus x Hispanica	4.5	18	16	B	C-	4	3	Yes
108	Platanus x Hispanica	5.1	24	18	C-	D	N/A	N/A	Yes
109	Acacia melanoxylon	14	50	20	C-	C-	N/A	N/A	Yes
110	Acacia melanoxylon	14	50	20	C-	C-	N/A	N/A	Yes
111	Acacia melanoxylon	15	50	20	C	C-	15	15	Yes
112	Acacia melanoxylon	3.5	16	7	D-	D	N/A	N/A	Yes
113	Acacia melanoxylon	5	40	8	C-	C-	N/A	N/A	Yes

Tree #	Species	DBH	Ht.	Wd.	Health	Structure	Clearance radius	Winter radius	Remove?
114	Ulmus parvifolia	8	32	26	C	C-	8	6	Yes
115	Ulmus parvifolia	10	35	35	B	C-	10	8	Yes
116	Acacia melanoxylon	2	8	5	B	C	2	2	Yes
117	Acacia melanoxylon	15	50	26	B	C	15	15	Yes
118	Acacia melanoxylon	12	40	14	C-	D	N/A	N/A	Yes
119	Acacia melanoxylon	12	40	20	C-	D	N/A	N/A	Yes
120	Ulmus parvifolia	8	35	30	C	C-	8	6	Yes
121	Acacia melanoxylon	2	12	7	C-	C	N/A	N/A	Yes
122	Acacia melanoxylon	3	13	9	D	D	N/A	N/A	Yes
123	Acacia melanoxylon	2	13	8	B	B	2	3	Yes
124	Ulmus parvifolia	9	35	38	C	C	9	7	Yes
125	Acacia melanoxylon	10	50	16	D	D	N/A	N/A	Yes
126	Acacia melanoxylon	7	40	18	F	F	N/A	N/A	Yes
127	Ulmus parvifolia	8.5	38	7	C-	C-	9	6	Yes
128	Acacia melanoxylon	15	50	26	B	C	15	15	Yes
129	Acacia melanoxylon	12	50	18	C	C-	12	12	Yes
130	Acacia melanoxylon	8	40	6	D-	F	N/A	N/A	Yes
131	Acacia melanoxylon	8	45	12	D-	D-	N/A	N/A	Yes
132	Acacia melanoxylon	16	50	30	C	C	16	17	Yes
133	Acacia melanoxylon	8	45	15	F	F	N/A	N/A	Yes
134	Ulmus parvifolia	9.5	30	30	C	C-	9.5	7	Yes
135	Ulmus parvifolia	7.5	32	28	C	C-	7.5	6	Yes
136	Ulmus parvifolia	7.5	32	28	C-	C-	8	6	Yes

Tree #	Species	DBH	Ht.	Wd.	Health	Structure	Clearance radius	Winter radius	Remove?
137	Ulmus parvifolia	7.7	32	26	C	C-	7.7	6	Yes
138	Ulmus parvifolia	8.2	28	22	C	D	N/A	N/A	Yes
139	Ulmus parvifolia	10	34	32	C	C-	10	8	Yes
140	Erythrina coralloides	10+10	22	18	B	C-	10	8	Move?
141	Ulmus parvifolia	8.1	32	24	C	C-	8.1	6	Yes
142	Ulmus parvifolia	7.2	32	26	C	C-	7.2	5	Yes
143	Ulmus parvifolia	7.4	34	20	C	C-	7.4	6	Yes
144	Erythrina coralloides	7+4+4+3	15	15	B	B	8	6	Move?
145	Erythrina corralioides	10 @ 2'	12	18	B	C-	8	6	Yes
146	Ulmus parvifolia	12	40	40	A	B	12	9	Yes
147	Ulmus parvifolia	9	36	30	B	C	9	7	Yes
148	Ulmus parvifolia	10	36	32	B	B	10	8	Yes
149	Ficus microcarpa	19	36	40	A	C	15	19	No
150	Ulmus parvifolia	10	35	32	B	C-	10	8	Yes
151	Magnolia g. Little Gem	4+3	16	15	B	C	5	4	Yes
152	Magnolia g. Little Gem	4+4+3	24	14	C-	C	6	6	Yes
153	Magnolia g. Little Gem	2	10	6	C-	C	2	2	Yes
154	Platanus x Hispanica	3	23	10	D	D	N/A	N/A	Yes
155	Magnolia g. Little Gem	4.2 @ 1'	9	8	C-	C-	4	4	Yes
156	Platanus x Hispanica	7.7	30	15	C-	C-	8	6	Yes

# Appendix

- A. Resume
- B. Photographic Documentation
- C. Glossary

## A. Resume for: Greg Applegate, ASCA

<b>Credentials</b>	American Society of Consulting Arborists - Registered Consulting Arborist #365 American Society of Consulting Arborists – Tree & Plant Appraisal Qualified International Society of Arboriculture - Certified Arborist #WE-180a International Society of Arboriculture - Tree Risk Assessment Qualified
<b>Experience</b>	Mr. Applegate is an independent consulting arborist, CEO of Arborgate Consulting, Inc. He has been in the horticulture industry since 1963, providing professional arboricultural consulting since 1984 within both private and public sectors. His expertise includes appraisal, tree preservation, diagnosis of tree and palm problems, decay quantification & evaluation, construction impact mitigation, forensic consulting and testimony, risk evaluation, pruning specifications and supervision, species selection, and tree health monitoring.  Mr. Applegate consults for insurance companies, developers, theme parks, museums, homeowners, homeowners' associations, landscape architects, landscape contractors, property managers, attorneys, schools, universities 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, Universal Studios, Knott's Berry Farm, J. Paul Getty Museum, Tustin Ranch, Newport Coast, Crystal Court, Newport Fashion Island Palms, Bixby Ranch Country Club, Playa Vista, MTA Purple and Expo Lines, MWD-California Lakes, 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, and the State of California review of the Landscape Architecture License exam (re: plant materials).
<b>Education</b>	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 ASCA membership
<b>Professional Affiliations</b>	American Society of Consulting Arborists (ASCA), Registered Member American Society of Landscape Architects (ASLA), Full Member International Society of Arboriculture (ISA), Regular Member California Tree Failure Report Program, UC Davis, Participant (1995 to present) California Oak Foundation, Member (2009 and continuing) International Palm Society (IPS), Member (1977 and continuing) Street Tree Seminar (STS), Member (1978 and continuing)
<b>Community Affiliations</b>	Horticulture Advisory Committee, Saddleback College (1988 -1995) Southern Calif ASLA visibility committee 1980-1982 UCLA Interior Landscape Committee 1987 Landscape Arch. License Exam prep, Instructor, Cal Poly Pomona (1986-90) ASCA Nominations Committee 2011 and A3G appraisal update committee ASCA, Industry definitions committee 2009-2010 ASCA web site, west coast tree question responder (2007 and continuing) American Institute of Landscape Architects Board of Directors (1980-82) California Landscape Architect Student Scholarship Fund-Chairman (1985) International Society of Arboriculture-Examiner-tree worker certification (1990)

Guest lecturer at UCLA, Cal Poly, Saddleback College, & Palomar Junior College

## B. Photographic Documentation



Mexican fan palms #1 to 19 are in the narrow parkway along Executive Drive and Executive Way



Overall view per Google. The large tree at the corner is no longer there.



There are four large Indian laurels at the corner. Three are outside the fence, #21, 22 & 23. The fourth is inside, #149



Palms #1 to 10



Palms #11 to 15



Palms #16 to 19



#20 Naked coral, outside, by the back gate



#26 to 32 Elms



#35 to 40 Elms



#41 Naked coral



#42 Naked coral



#43 to 47 Elms



#48 & 49 fan palms



#74 to 75 (L-R) Elms



Elms #50 to 53 in front parking lot



#60 to 66 Brisbane box



#67 to 73 Brisbane box



#77 to 82 Elms (R-L)



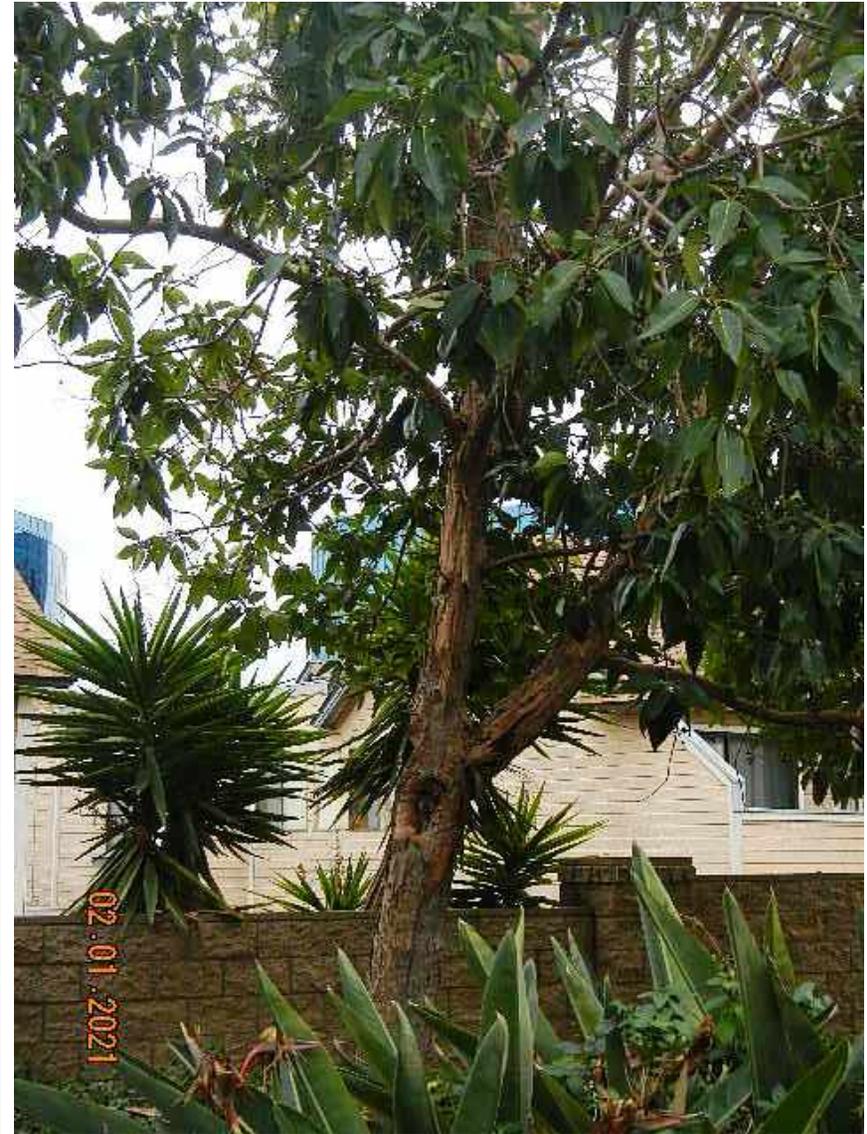
#83 to 85 Elms (R-L)



#89 Cape pittosporum with #88 Sweet shade in front.



#90 Callery pear



#93 Brisbane box, with several large tear-outs due to being too long.



#95 Naked coral



#97 Naked coral



#98 to 100 Brisbane box (L-R)



#104 to 108 London plane trees



#109 to 112 Black acacias in back, Elm #114 in front



#115 & 120 Elms in front, #117 to 119 black acacia in back.



#124 & 127 Elms in front, black acacia #125 to 130 in back



Elms 135 to 139 in front and black acacia #103 to 133 in back



#140 Naked coral



#144 Naked coral



#145 Naked coral



#141 to 143 Elms (R-L)



#146 Elm



#147 & 148 Elm (front to back)



#149 Indian laurel – note surface roots



#149 – note crowded limbs.



#150 Elm at right, dwarf magnolias #151 to 155 in middle, #154 London plane at left.



#154 London place with lawn mower or string trimmer root damage



#156 London place with lawn mower or string trimmer root damage.

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## C. Glossary

<b>ANSI A-300</b>	American National Standards Institute performance standards for the care and maintenance of trees, shrubs and other woody plants.
<b>Arboricultural</b>	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.
<b>Arborist</b>	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.
<b>ASCA</b>	The American Society of Consulting Arborists, Inc. a professional society, as described in its by-laws.
<b>Bark</b>	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.
<b>Canopy</b>	The part of the crown composed of foliage and twigs, for an individual or collective group of trees.
<b>Codominant</b>	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.
<b>Compaction</b>	(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.
<b>Conk</b>	A woody or perennial reproductive organ of certain fungi, usually found on trunks, branches or stumps.
<b>Crotch</b>	The union of two or more branches; the axillary zone between branches.
<b>Crown</b>	The upper portions of a tree or shrub, including the main limbs, branches, and twigs.
<b>DBH</b>	Diameter of the trunk, measured at breast height or 54 inches above the average grade. Syn. = caliper.
<b>Decay</b>	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.
<b>Decline</b>	Progressive reduction of health or vigor of a plant.
<b>Dripline</b>	A projected line on the ground that corresponds to the spread of branches in the canopy; the farthest spread of branches.

<b>Epicormic</b>	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
<b>Fertilization</b>	The process of adding nutrients to a tree or plant; usually done by incorporating the nutrients into the soil, but sometimes by foliar application or injection directly into living tissues.
<b>Foliage</b>	The live leaves or needles of the tree; the plant part primarily responsible for photosynthesis.
<b>Fruit</b>	A ripened ovary, together with any other parts which may develop with it, containing one, two or more seeds.
<b>Gall</b>	An abnormal, disorganized growth of plant tissues, caused by parasitic or infectious organisms such as insects, fungi, bacteria, or viruses.
<b>Grading</b>	Also Regrading. Intentional altering of topography and soil levels, using machinery.
<b>Hardscape</b>	The sidewalk, curb, gutter, paving or other concrete permanent features.
<b>Heading</b>	Pruning techniques where the cut is made to a bud, weak lateral branch or stub.
<b>Heartwood</b>	Xylem wood tissue, often slightly discolored, representing the inner growth rings of the wood. Mostly non-reactive wood cells; providing structural strength to the tree. see sapwood.
<b>Horticulture</b>	From the Latin <i>hortus</i> , garden and <i>cultor</i> , cultivator.
<b>Included bark</b>	The pattern of development at branch junctions where bark is turned inward rather than pushed out forming a branch bark ridge.
<b>Limb</b>	A large lateral branch growing from the main trunk.
<b>Lion-tailing</b>	The removal of all, or a great deal of, the inner branches and/or watersprouts from the crown of a tree. Lion's Tailing is not an acceptable pruning practice, see ANSI A-300.10.1.7
<b>Mature</b>	Plant will respond to flower-inducing conditions, in contrast with juvenile.
<b>Mulch/mulching</b>	Substances spread on top of the ground to conserve water, protect against erosion, retain moisture, and protect the roots of trees from heat, cold or drought. The substances are typically organic, such as compost or bark chips.
<b>Native</b>	A plant that grows naturally in a particular country, state, or region, and is neither introduced through planting, nor naturalized.
<b>Percolation</b>	The downward movement of water through soil.
<b>Root crown</b>	Area at the base of a tree where the roots and stem merge (synonym - root collar)

<b>Root system</b>	The portion of the tree containing the root organs, including buttress roots, transport roots, and fine absorbing roots; all underground parts of the tree.
<b>Root zone</b>	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.
<b>Scaffold limb</b>	Primary structural branch of the crown.
<b>Sprout</b>	A shoot or stem that grows from the bark of a tree; adventitious or secondary growth.
<b>Stress</b>	"Stress is a potentially injurious, reversible condition, caused by energy drain, disruption, or blockage, or by life processes operating near the limits for which they were genetically programmed." Alex Shigo
<b>Tap root</b>	A primary root that more or less enlarges and grows downward
<b>Topping</b>	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.
<b>Trunk</b>	The main stem or axis of a tree that is supported and nourished by the roots and to which branches are attached.
<b>Vigor</b>	Active, healthy growth of plants: ability to respond to stress factors.
<b>Wound</b>	Any injury, which induces a compartmentalization response.

# 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 palm that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

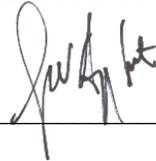
That my compensation is not contingent upon a reporting that favors the cause of the client, the attainment of a stipulated result, or the occurrence of a subsequent event.

That my analysis, opinions, and conclusions were developed, and this report has been prepared, in conformity 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.

Furthermore, the opinions above are held with reasonable degree of professional certainty, predicated on my 50 years of experience in the nursery, landscape, and arboricultural industries and the documents and information provided me.

Gregory W. Applegate, ASCA, ASLA  
Registered Consulting Arborist #365



Date 2/4/2021