APPENDIX B

Preliminary Tree Report



Preliminary Tree Report

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Preliminary Tree Report Harker School

San Jose CA

Table of Contents

	Page
Introduction and Overview	1
Assessment Methods	1
Description of Trees	2
Suitability for Preservation	5
Evaluation of Impacts and Recommendation for Action	6
Tree Mitigation	7
Tree Preservation Guidelines	15
Summary	17
List of Tables	
Table 1. Species present and tree condition.	2
Table 2. Suitability for preservation.	6
Table 3. Proposed action.	8
Table 4. Estimated tree mitigation.	7
Attachments	

Tree Assessment Form

Tree Inventory Plan

Preliminary Tree Report

Harker School San Jose CA

Introduction and Overview

David J. Powers & Associates are preparing environmental documents associated with the redevelopment of the Union Avenue campus of the Harker School, located in San Jose, CA. The Harker School's pre-school facility is located at this site which consists of school buildings, play areas, parking, and associated landscape features. David J. Powers requested that HortScience, Inc. prepare a **Tree Report** for the site. This preliminary report provides the following information:

- 1. A survey of trees currently growing on the site.
- 2. An assessment of the impacts of constructing the proposed project on the trees.
- 3. Preliminary recommendations for tree removal and replacement.
- 4. Preliminary estimate of mitigation requirements.

The report is considered preliminary because the project plan reviewed was conceptual in nature. As project plans become more refined, this report may be modified to reflect new information.

Assessment Methods

Trees were assessed in February 2018. Trees were evaluated through a visual assessment from the ground and consisted of the following steps:

- 1. Tagging each tree with an identifying number and record its location on a map.
- 2. Identifying the tree as to species.
- 3. Measuring the trunk diameter at 54" above grade.
- 4. Determining if the tree requires a permit for removal in the City of San Jose (ordinance size tree).
- 5. Evaluating the health and structural condition using a scale of 0-5 where 0= dead, 1= poor and 5= excellent.
- 6. Noting any significant structural characteristics including decay, poor crown form, dieback, and a history of failure.
- 7. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age and structural condition of the tree, and its potential to remain an asset to the site for years to come.
- 8. Recording the tree's location on a map.

Each tree is described in the attached *Tree Assessment Form* and its approximate location plotted in the *Tree Inventory Plan* located in the *Attachments*.

Description of Trees

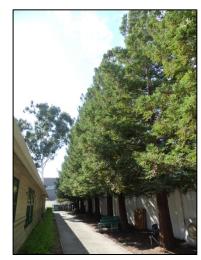
One hundred fifty-four (154) trees were evaluated, representing 12 species (Table 1). All of the trees were either planted or invaded the site. Trees are approximately 20 to 25 years old. Species present were typical of landscape plants used in the San Jose area. Coast live oak is native to the San Jose area but it is unlikely that trees were indigenous to the site.

Table 1. Species present and tree condition. The Harker School. Union Avenue campus. San Jose CA.

Common name	Scientific name		Con		No. of Ti	rees	
		Poor	Fair	Good	Excell.	Ordinance	Total
		(1,2)	(3)	(4)	(5)		
Australian willow	Geijera parvifolia	11	14	1			26
Jacaranda	Jacaranda mimosifolia	1	9			4	10
Koelreuteria	Koelreuteria paniculata	2				1	2
Crape myrtle	Lagerstroemia cv.			7	16		23
Tuliptree	Liriodendron tulipifera	5					5
Brisbane box	Lophostemon conferta			3	3		6
Southern magnolia	Magnolia grandiflora		2				2
London plane	Platanus x hispanica		2	2	7	4	11
Flowering cherry	Prunus serrulata cv.	1					1
Callery pear	Pyrus calleryana cv.	11	9			14	20
Evergreen pear	Pyrus kawakamii	2	3			1	5
Coast live oak	Quercus agrifolia	1	1			1	2
Brazilian pepper	Schinus terebinthefolius	8	1			5	9
Coast redwood	Sequoia sempervirens		10	20	2	31	32
Total, all trees asse	essed	42	51	33	28	61	154

Coast redwood was the most frequently occurring species with 32 trees (Photo 1). Trees were and in development with trunk diameters between 9-inches and 23-inches. Trees formed a long continuous row on the west and northwest property line. Tree condition was generally good (20 trees). Ten trees were in fair condition while #153 and 154 were excellent. The primary determinant to tree condition was canopy density, likely associated with soil moisture stress (or the lack of it). Tree trunks were approximately 4-feet from the wall along the property line. Trees had been side-trimmed to clear the nearby electrical conductors.

Photo 1. Looking south along west property at coast redwoods.



Twenty-six (26) Australian willows were located along the north and southeast property lines (Photo 2). Trees were generally located in a 4-foot wide planting strip between property line and sidewalk. Trees on the north had been side-trimmed to clear overhead power lines. Australian willows ranged from 6-inches to 11-inches in diameter.

Photo 2. Looking along the north property line.



Condition was generally fair (14 trees) and poor (11). Australian willow #27 was in good condition. As is typical of the species, many trees were not vertically oriented but leaned and bowed away from the vertical. Poor branch attachments were common.

Twenty-three (23) crepe myrtles were planted in small groups across the site, often in small pavement cut-outs (Photo 3). Trees were mature in development. Trunk diameters varied from 7 to 10 inches. Tree condition was a mix of excellent (16 trees) and good (7).

Photo 3. Typical crape myrtles installed in pavement cut-outs.



Twenty (20) Callery pears were present. Trees were semi-mature and mature in development (Photo 4). Trunk diameters ranged from 6-inches to 18-inches. Tree condition was a mix of poor (11 trees) and fair (9). As is typical of the species, scaffold branches arose at one point on the trunk. Over time, these limbs bend away from vertical and are more likely to fail. A number of trees had one or more branch failures. Others had been pruned to reduce limb length.

Photo 4. Typical unpruned Callery pear. Note that all branches originate at one point on the trunk.



Eleven (11) London plane were in excellent (7 trees), good (2) and fair (2) condition (Photo 5). Trunk diameters varied between 4-inches and 19-inches. Planes had oval or rounded form which is typical of the species. Some trees appeared drought-stressed.

Photo 5. London plane #17.

Ten jacaranda trees were also present. Crowns had been reduced by pruning. Trunk diameters varied from 8-inches to 14-inches. Jacarandas were in fair condition with the exception of tree #95 which was poor. Most trees lacked a central leader but had large surface roots.



Nine Brazilian peppers were between 8-inches and 16-inches in diameter. Peppers were located along the north property line in a 4-foot wide planting space. Overhead electrical lines were present. Most trees had been topped. Tree roots had displaced adjacent sidewalk. As a result eight trees were in poor condition and #30 was fair.

No other species was represented by more than six trees. Included in this group were:

- Brisbane box #45 50 were located in the center of the site. Trees were young with trunk diameters of 4-inches to 6-inches. Tree condition was either good or excellent.
- Coast live oak #65 was 25-inches and in fair condition with small foliage and poor form and structure. Coast live oak #77 was six inches and in poor condition.
- Evergreen pears #51, 52, 53, 84 and 85 were typical of the species. Crowns were rangy in form. Tree condition was either fair or poor.
- Flowering cherry #112 was 6-inches in diameter, mature in development, and in poor condition.
- Koelreuterias #102 and 103 were located in the front parking lot. Trees were mature and poor.
- Southern magnolias #63 and 64 were located along the north property line. Both trees were 5-inches in diameter and in fair condition.
- Tuliptrees #67, 68, 69, 75 and 76 were located on the west side of campus. All
 were in poor condition, likely due to severe drought stress as well as poor form
 and structure. Trunk diameters were between 6-inches and 8-inches.

The City of San Jose defines Ordinance Sized Tree " any live or dead woody perennial plant...having a main stem or trunk 38 inches or more in circumference (12 inches diameter) at a height measured 54 inches above natural grade slope" (SJMC 13.32.20.I. Updated February 2018). Sixty-one (61) trees met this criterion with over 50% being coast redwoods. Ordinance Sized Trees are identified on the *Tree Assessment Form.*

The City of San Jose has also designated a number of Heritage Trees. No Heritage trees were present at this site.

Suitability for Preservation

Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape. Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. Evaluation of suitability for preservation considers several factors:

Tree health

Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

Structural integrity

Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely.

Species response

There is a wide variation in the response of individual species to construction impacts and changes in the environment. For example, London plane and coast redwood are tolerant of construction impacts while Australian willow, Brazilian pepper, and Tuliptree are sensitive.

Tree age and longevity

Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

Species invasiveness

Species which spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (www.cal-ipc.org) lists species identified as having being invasive. San Jose is part of the Central West Floristic Province. Brazilian pepper is listed as being invasive.

Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment (Table 2).

Table 2. Tree suitability for preservation. The Harker School. Union Avenue campus. San Jose CA.

High

Trees with good health and structural stability that have the potential for longevity at the site. Thirty-six (36) trees were rated as having good suitability for preservation including: 22 crape myrtles; 9 London planes; Brisbane box #45, 49, 49; and coast redwood #153, 154.

Moderate

Trees in fair health and/or possessing structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring, and may have shorter life-spans than those in the "high" category. Thirty-one (31) trees were rated as having moderate suitability for preservation including: 26 coast redwoods; Brisbane box \$46, 48, 50; Australian willow #27; and crape myrtle #109.

Low

Trees in poor health or possessing significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Eighty-seven (87) trees were rated as having poor suitability for preservation including: 25 Australian willows; 20 Callery pears; 10 jacaranda; 9 Brazilian peppers; 5 evergreen pears; 5 tuliptrees; coast redwoods #125, 126, 127, 138; coast live oak #65, 77; koelreuteria #102, 103; London plane #18, 20; southern magnolia #63, 64; and flowering cherry #112.

We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Evaluation of Impacts and Recommendations for Action

Appropriate tree retention develops a practical match between the location and intensity of construction activities and the quality and health of trees. The *Tree Assessment* was the reference point for tree condition and quality. Potential impacts from the proposed project were assessed using the site plan prepared by Devcon dated February 2018.

The plan depicted the location of two new academic buildings, playing field, and basketball courts. All would be on the west side of the site. Five existing buildings on the east would remain. A new access road would be constructed through the south property line.

Impacts to trees will be significant in the areas proposed for new construction. First, demolition of four existing buildings and infrastructure may damage trees. Second, grading, excavation, and other construction activities injure trees, through both direct mechanical injury and indirectly by altering drainage. Finally, existing trees may be located in areas planned for new development.

Based on my review of the plans, I recommend preservation of 108 trees (45 ordinance size) and removal of 46 (16 ordinance size) (Table 3, following pages). Among trees recommended for preservation are 16 coast redwoods noted as "preserve?" These trees are located along the west property line, relatively close to the location of new buildings. A final decision about their disposition should be made after more detailed project plans are prepared.

Tree Mitigation

The City of San Jose requires mitigation of trees removed on development sites. The species and exact number of trees to be planted on the site will be determined in consultation with the City Arborist and the Department of Planning, Building, and Code Enforcement.

All trees that are to be removed shall be replaced at the following ratios:

	Туре с	of Tree to be F		
Diameter of Tree to be Removed	Native	Non-Native	Orchard	Minimum Size of Each Replacement Tree
18 inches or greater	5:1	4:1	3:1	24-inch box
12 - 18 inches	3:1	2:1	none	24-inch box
less than 12 inches	1:1	1:1	none	15-gallon container

x:x = tree replacement to tree loss ratio

Note: Trees greater than 18" diameter shall not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees.

Where trees had more than one trunk, the diameters of individual trunks were added together to establish the diameter class for mitigation purposes.

Table 4. Estimated tree mitigation. The Harker School. Union Avenue campus. San Jose CA.

Diameter of tree to be removed	Number	of Trees to be	Replacement Tree Req'd		
be removed	Native	Non-Native	Orchard	15 Gallon	24" Box
18 inches or greater	1	1	0		9
12 - 18 inches	0	14	0		28
less than 12 inches	1	29	0	30	
Total	2	44	0	30	37

Note: there is no mitigation required for orchard trees less than 12".

Table 3. Proposed action. The Harker School. Union Avenue campus. San Jose ${\sf CA}.$

Tree No.	Species	Trunk Diameter (in.)	Ordinance Size?	Condition 1=poor 5=excell.	Proposed Action	Notes
1	Crape myrtle	8	No	5	Preserve	Outside project area
2	Crape myrtle	7	No	5	Preserve	Outside project area
3	Crape myrtle	8	No	5	Preserve	Outside project area
4	Crape myrtle	7	No	5	Preserve	Outside project area
5	Crape myrtle	7	No	5	Preserve	Outside project area
6	Crape myrtle	7	No	4	Preserve	Outside project area
7	Crape myrtle	9	No	5	Preserve	Outside project area
8	Crape myrtle	7	No	5	Preserve	Outside project area
9	Crape myrtle	7	No	5	Preserve	Outside project area
10	Crape myrtle	7	No	5	Preserve	Outside project area
11	Callery pear	18	Yes	3	Preserve	Outside project area; low suitability for preservation
12	Callery pear	8	No	3	Preserve	Outside project area; low suitability for preservation
13	Callery pear	7	No	3	Preserve	Outside project area; low suitability for preservation
14	Callery pear	8	No	3	Preserve	Outside project area; low suitability for preservation
15	Callery pear	6	No	2	Preserve	Outside project area; low suitability for preservation
16	Callery pear	8	No	3	Preserve	Outside project area; low suitability for preservation
17	London plane	14	Yes	5	Preserve	Outside project area
18	London plane	6	No	3	Preserve	Outside project area; low suitability for preservation
19	London plane	12	Yes	5	Preserve	Outside project area
20	London plane	8	No	3	Preserve	Outside project area; low suitability for preservation
21	Callery pear	14	Yes	3	Preserve	Outside project area; low suitability for preservation

Table 3, continued. Proposed action. The Harker School. Union Avenue campus. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Ordinance Size?	Condition 1=poor 5=excell.	Proposed Action	Notes
22	Australian willow	6	No	2	Preserve	Outside project area; low suitability for
23	Australian willow	6	No	3	Preserve	preservation Outside project area; low suitability for preservation
24	Australian willow	6	No	3	Preserve	Outside project area; low suitability for preservation
25	Australian willow	6	No	3	Preserve	Outside project area; low suitability for preservation
26	Australian willow	5,5	No	3	Preserve	Outside project area; low suitability for preservation
27	Australian willow	8	No	4	Preserve	Outside project area
28	Australian willow	6	No	2	Preserve	Outside project area; low suitability for preservation
29	Brazilian pepper	11	No	2	Preserve	Outside project area; low suitability for preservation
30	Brazilian pepper	13	Yes	3	Preserve	Outside project area; low suitability for preservation
31	Brazilian pepper	11	No	2	Remove	Within project area
32	Brazilian pepper	13	Yes	2	Remove	Within project area
33	Brazilian pepper	11	No	2	Remove	Within project area
34	Brazilian pepper	15	Yes	2	Remove	Within project area
35	Brazilian pepper	8	No	2	Remove	Within project area
36	Brazilian pepper	13	Yes	2	Remove	Within project area
37	Brazilian pepper	16	Yes	2	Remove	Within project area
38	Callery pear	15	Yes	2	Remove	Within project area
39	Callery pear	15	Yes	2	Remove	Within project area
40	Jacaranda	13	Yes	3	Remove	Within project area
41	Jacaranda	11	No	3	Remove	Within project area
42	Jacaranda	14	Yes	3	Remove	Within project area
43	Callery pear	17	Yes	2	Remove	Within project area
44	Callery pear	12	Yes	2	Remove	Within project area
45	Brisbane box	5	No	5	Remove	Within project area

Table 3, continued. Proposed action. The Harker School. Union Avenue campus. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Ordinance Size?	Condition 1=poor 5=excell.	Proposed Action	Notes
46	Brisbane box	4	No	4	Remove	Within project area
47	Brisbane box	5	No	5	Remove	Within project area
48	Brisbane box	4	No	4	Remove	Within project area
49	Brisbane box	4	No	5	Remove	Within project area
50	Brisbane box	6	No	4	Remove	Within project area
51	Evergreen pear	10	No	3	Remove	Within project area
52	Evergreen pear	14	Yes	3	Remove	Within project area
53	Evergreen pear	9	No	2	Remove	Within project area
54	London plane	19	Yes	4	Remove	Within project area
55	London plane	5	No	5	Remove	Within project area
56	London plane	4	No	4	Remove	Within project area
57	London plane	4	No	5	Remove	Within project area
58	London plane	4	No	5	Remove	Within project area
59	London plane	6	No	5	Remove	Within project area
60	Callery pear	13	Yes	2	Remove	Within project area
61	Callery pear	14	Yes	3	Remove	Within project area
62	Callery pear	14	Yes	2	Remove	Within project area
63	Southern magnolia	5	No	3	Remove	Within project area
64	Southern magnolia	5	No	3	Remove	Within project area
65	Coast live oak	25	Yes	3	Remove	Within project area
66	London plane	13	Yes	5	Preserve	Edge of project area
67	Tuliptree	7	No	2	Remove	Within project area
68	Tuliptree	7	No	2	Remove	Within project area
69	Tuliptree	8	No	2	Remove	Within project area
70	Crape myrtle	8	No	5	Remove	Within project area
71	Crape myrtle	7	No	5	Remove	Within project area
72	Crape myrtle	7	No	5	Remove	Within project area
73	Crape myrtle	7	No	5	Remove	Within project area
74	Crape myrtle	7	No	5	Remove	Within project area
75	Tuliptree	6	No	2	Remove	Within project area
76	Tuliptree	6	No	2	Remove	Within project area
77	Coast live oak	6	No	2	Remove	Within project area
78	Callery pear	12	Yes	2	Preserve	Outside project area; low suitability for preservation
79	Callery pear	14	Yes	2	Preserve	Outside project area; low suitability for preservation

Table 3, continued. Proposed action. The Harker School. Union Avenue campus. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Ordinance Size?	Condition 1=poor 5=excell.	Proposed Action	Notes
80	Callery pear	13	Yes	2	Preserve	Outside project area; low suitability for
81	Callery pear	6	No	2	Preserve	preservation Outside project area; low suitability for
82	Callery pear	13	Yes	3	Preserve	preservation Outside project area; low suitability for
83	Callery pear	12	Yes	3	Preserve	preservation Outside project area; low suitability for
84	Evergreen pear	11	No	2	Preserve	preservation Outside project area; low suitability for
85	Evergreen pear	10	No	3	Preserve	preservation Outside project area; low suitability for
86	Australian willow	10	No	2	Preserve	preservation Outside project area; low suitability for
87	Australian willow	6	No	3	Preserve	preservation Outside project area; low suitability for
88	Australian willow	8	No	3	Preserve	preservation Outside project area; low suitability for
89	Australian willow	8	No	2	Preserve	preservation Outside project area; low suitability for
90	Australian willow	9	No	3	Preserve	preservation Outside project area; low suitability for
91	Australian willow	8	No	3	Preserve	preservation Outside project area; low suitability for
92	Australian willow	8	No	3	Preserve	preservation Outside project area; low suitability for
93	Australian willow	6	No	2	Preserve	preservation Outside project area; low suitability for preservation

Table 3, continued. Proposed action. The Harker School. Union Avenue campus. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Ordinance Size?	Condition 1=poor 5=excell.	Proposed Action	Notes
94	Australian willow	6	No	2	Preserve	Outside project area; low suitability for preservation
95	Jacaranda	12	Yes	2	Preserve	Outside project area; low suitability for preservation
96	Jacaranda	8	No	3	Preserve	Outside project area; low suitability for preservation
97	Jacaranda	9	No	3	Preserve	Outside project area; low suitability for preservation
98	Jacaranda	8	No	3	Preserve	Outside project area; low suitability for preservation
99	Jacaranda	10	No	3	Preserve	Outside project area; low suitability for preservation
100	Crape myrtle	9	No	4	Preserve	Outside project area
101	Crape myrtle	10	No	4	Preserve	Outside project area
102	Koelreuteria	13	Yes	1	Preserve	Outside project area; low suitability for preservation
103	Koelreuteria	11	No	2	Preserve	Outside project area; low suitability for preservation
104	Crape myrtle	9	No	4	Preserve	Outside project area
105	Crape myrtle	7	No	4	Preserve	Outside project area
106	Crape myrtle	9	No	5	Preserve	Outside project area
107	Crape myrtle	9	No	4	Preserve	Outside project area
108	Crape myrtle	10	No	5	Preserve	Outside project area
109	Crape myrtle	8	No	4	Preserve	Outside project area
110	Jacaranda	12	Yes	3	Preserve	Outside project area; low suitability for preservation
111	Jacaranda	11	No	3	Preserve	Outside project area; low suitability for preservation
112	Flowering cherry	6	No	2	Preserve	Outside project area; low suitability for preservation

Table 3, continued. Proposed action. The Harker School. Union Avenue campus. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Ordinance Size?	Condition 1=poor 5=excell.	Proposed Action	Notes
113	Australian willow	8	No	2	Preserve	Outside project area; low suitability for preservation
114	Australian willow	8	No	2	Preserve	Outside project area; low suitability for preservation
115	Australian willow	10	No	3	Preserve	Outside project area; low suitability for preservation
116	Australian willow	11	No	3	Preserve	Outside project area; low suitability for preservation
117	Australian willow	8	No	3	Preserve	Outside project area; low suitability for preservation
118	Australian willow	9	No	3	Preserve	Outside project area; low suitability for preservation
119	Australian willow	9	No	2	Preserve	Outside project area; low suitability for preservation
120	Australian willow	8	No	2	Preserve	Outside project area; low suitability for preservation
121	Australian willow	10	No	2	Preserve	Outside project area; low suitability for preservation
122	Australian willow	6	No	3	Preserve	Outside project area; low suitability for preservation
123	Coast redwood	18	Yes	4	Preserve	Outside project area
124	Coast redwood	14	Yes	4	Preserve	Outside project area
125	Coast redwood	13	Yes	3	Preserve	Outside project area; low suitability for preservation
126	Coast redwood	13	Yes	3	Preserve	Outside project area; low suitability for preservation
127	Coast redwood	16	Yes	3	Preserve	Outside project area; low suitability for preservation
128	Coast redwood	19	Yes	4	Preserve	Outside project area

Table 3, continued. Proposed action. The Harker School. Union Avenue campus. San Jose CA.

Tree No.	Species	Trunk Diameter (in.)	Ordinance Size?	Condition 1=poor 5=excell.	Proposed Action	Notes
129	Coast redwood	23	Yes	4	Preserve	Outside project area
130	Coast redwood	20	Yes	4	Preserve	Outside project area
131	Coast redwood	16	Yes	4	Preserve	Outside project area
132	Coast redwood	15	Yes	4	Preserve	Outside project area
133	Coast redwood	12	Yes	3	Preserve	Outside project area
134	Coast redwood	12,12	Yes	3	Preserve	Outside project area
135	Coast redwood	13	Yes	4	Preserve	Outside project area
136	Coast redwood	13	Yes	4	Preserve	Outside project area
137	Coast redwood	14	Yes	4	Preserve	Outside project area
138	Coast redwood	13	Yes	3	Preserve	Outside project area; low suitability for preservation
139	Coast redwood	15	Yes	3	Preserve?	Edge of project area
140	Coast redwood	14	Yes	3	Preserve?	Edge of project area
141	Coast redwood	17	Yes	3	Preserve?	Edge of project area
142	Coast redwood	19	Yes	4	Preserve?	Edge of project area
143	Coast redwood	19	Yes	4	Preserve?	Edge of project area
144	Coast redwood	14	Yes	3	Preserve?	Edge of project area
145	Coast redwood	18	Yes	4	Preserve?	Edge of project area
146	Coast redwood	17	Yes	4	Preserve?	Edge of project area
147	Coast redwood	18	Yes	4	Preserve?	Edge of project area
148	Coast redwood	18	Yes	4	Preserve?	Edge of project area
149	Coast redwood	22	Yes	4	Preserve?	Edge of project area
150	Coast redwood	21	Yes	4	Preserve?	Edge of project area
151	Coast redwood	18	Yes	4	Preserve?	Edge of project area
152	Coast redwood	16	Yes	4	Preserve?	Edge of project area
153	Coast redwood	12	Yes	5	Preserve?	Edge of project area
154	Coast redwood	9	No	5	Preserve?	Edge of project area

Based on my calculations, the required mitigation would be 37 24-inch box trees and 30 15-gal. trees (Table 4).

Alternative Mitigation Measures

In the event the project site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures may be implemented, to the satisfaction of the City's Environmental Principal Planner, at the development permit stage:

- The size of a 15-gallon replacement tree can be increased to 24-inch box and count as two replacement trees.
- An alternative site(s) will be identified for additional tree planting. Alternative sites may include local parks or schools or installation of trees on adjacent properties for screening
- A donation of \$300 per mitigation tree to Our City Forest or San Jose Beautiful for in-lieu off-site tree planting in the community. These funds will be used for tree planting and maintenance of planted trees for approximately three years. A donation receipt for off-site tree planting will be provided to the Planning Project Manager prior to issuance of a development permit.

Tree Preservation Guidelines

The following are recommendations for design and construction phases that will assist in successful tree preservation.

Design recommendations

- Establish the horizontal and vertical elevation of all trees recommended for preservation and located within 25-feet of the proposed project area. Include trunk locations and tag numbers on all plans.
- 2. Allow the Consulting Arborist to review all future project submittals including grading, utility, drainage, irrigation, and landscape plans.
- 3. Establish a TREE PROTECTION ZONE around trees to be preserved. As a general guideline, the TREE PROTECTION ZONE shall be the limit of work, as most trees recommended for preservation are outside the project area. For coast redwoods #139 154, the TREE PROTECTION ZONE shall be back of the existing sidewalk.
- 4. Route underground services including utilities, sub-drains, water or sewer around the TREE PROTECTION ZONE. Where encroachment cannot be avoided, special construction techniques such as hand digging or tunneling under roots shall be employed where necessary to minimize root injury.
- 5. Use only herbicides safe for use around trees and labeled for that use, even below pavement.
- 6. Design irrigation systems so that no trenching will occur within the **TREE PROTECTION ZONE**.

Pre-construction and demolition treatments and recommendations

- 1. The demolition contractor shall meet with the Consulting Arborist before beginning work to discuss work procedures and tree protection.
- 2. Install protection at the **TREE PROTECTION ZONE** prior to demolition, grubbing, or grading.
- 3. No entry is permitted into a **TREE PROTECTION ZONE** without permission of the project superintendent.
- 4. Trees to be preserved may require pruning to clean the crown and to provide clearance. All pruning shall be completed by an ISA Certified Arborist or Tree Worker and adhere to the latest editions of the American National Standards for tree work (Z133 and A300) and International Society of Arboriculture Best Management Practices, Pruning.

Tree protection during construction

- 1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.
- 2. Trees to be preserved must be irrigated on a regular basis.
- 3. Trees to be removed shall be felled so as to fall away from TREE PROTECTION ZONE and avoid pulling and breaking of roots of trees to remain. If roots are entwined, the consultant may require first severing the major woody root mass before extracting the trees, or grinding the stump below ground.
- 4. Any grading, construction, demolition or other work that is expected to encounter roots of trees to be preserved should be monitored by the Consulting Arborist.
- 5. If injury occurs to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.
- 6. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the project superintendent.
- 7. Construction trailers, traffic and storage areas must remain outside fenced areas at all times.
- 8. No materials, equipment, soil, waste or wash-out water may be deposited, stored, or parked within the **TREE PROTECTION ZONE** (fenced area).
- 9. Any additional tree pruning needed for clearance during construction must be performed by a qualified arborist and not by construction personnel.
- 10. Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw.

Summary

One hundred fifty-four (154) trees were assessed at the Harker School's Union Avenue campus. Among the 16 species were 32 coast redwoods, 26 Australian willows, 23 crape myrtles, 20 Callery pears, 11 London planes and 10 jacarandas. Tree condition was variable: 42 trees were in poor condition, 51 were fair, 33 were good, and 28 were excellent. Tree condition varied widely by species. Among the 154 trees were 61 that met the City of San Jose's criteria as ordinance size.

Proposed projects focus re-development on the west side of the campus. All trees within the proposed project area will be removed while those outside the project are recommended for preservation. Coast redwoods #139 – 164 are close to the location of a new building and have been noted as "preserve?" The keys to their retention are: 1) maintaining the **Tree Protection Zone** and 2) providing irrigation before, during and following construction.

The City of San Jose requires mitigation for trees to be removed during development. Based on those requirements, 37 24-inch box size trees and 30 15-gal size trees are required.

HortScience, Inc.

James R. Clark, Ph.D.

Certified Arborist WE-0846A

Registered Consulting Arborist #357

Attachments

Tree Assessment Form

Tree Inventory Plan



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
1	Crape myrtle	8	No	5	High	3' by 3' planter; good form & structure.
2	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
3	Crape myrtle	8	No	5	High	3' by 3' planter; good form & structure.
4	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
5	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
6	Crape myrtle	7	No	4	High	3' by 3' planter; good form & structure; slight asymmetry.
7	Crape myrtle	9	No	5	High	3' by 3' planter; good form & structure.
8	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
9	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
10	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
11	Callery pear	18	Yes	3	Low	Typical form & structure; severed roots; multiple attachments @ 7'; bowed out; previously topped.
12	Callery pear	8	No	3	Low	5' wide planter; narrow form; codominant trunks @ 4' with stub in attachment
13	Callery pear	7	No	3	Low	5' wide planter; narrow form; codominant trunks @ 5' & 8'.
14	Callery pear	8	No	3	Low	5' wide planter; narrow form; codominant trunks @ 6'.
15	Callery pear	6	No	2	Low	5' wide planter; narrow form; multiple attachments @ 5'; lacks vigor.
16	Callery pear	8	No	3	Low	5' wide planter; narrow form; codominant trunks @ 5'.
17	London plane	14	Yes	5	High	5' by 5' planter; good form & structure.
18	London plane	6	No	3	Low	Typical form & structure; lacks vigor.
19	London plane	12	Yes	5	High	Big surface roots; good form & structure.
20	London plane	8	No	3	Low	Typical form & structure; lacks vigor.



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
21	Callery pear	14	Yes	3	Low	Typical form & structure; adj. pavement displaced; multiple attachments @ 6'; bowed out; tipped back.
22	Australian willow	6	No	2	Low	4' wide planter; adj. overhead lines; topped; small crown.
23	Australian willow	6	No	3	Low	4' wide planter; adj. overhead lines; typical form & structure.
24	Australian willow	6	No	3	Low	4' wide planter; adj. overhead lines; typical form & structure.
25	Australian willow	6	No	3	Low	4' wide planter; adj. overhead lines; codominant trunks @ 7'; slight lean S.
26	Australian willow	5,5	No	3	Low	4' wide planter; adj. overhead lines; codominant trunks @ 1'; multiple attachments @ 3'.
27	Australian willow	8	No	4	Moderate	4' wide planter; adj. overhead lines; typical form & structure.
28	Australian willow	6	No	2	Low	4' wide planter; adj. overhead lines; one-sided to E.; partly suppressed; adj. pavement lifted.
29	Brazilian pepper	11	No	2	Low	4' wide planter; adj. overhead lines; poor form & structure; adj. pavement lifted.
30	Brazilian pepper	13	Yes	3	Low	4' wide planter; adj. overhead lines; topped.
31	Brazilian pepper	11	No	2	Low	4' wide planter; adj. overhead lines; poor form & structure; topped; adj. pavement lifted.
32	Brazilian pepper	13	Yes	2	Low	4' wide planter; adj. overhead lines; poor form & structure; topped; adj. pavement lifted.
33	Brazilian pepper	11	No	2	Low	4' wide planter; adj. overhead lines; poor form & structure; topped; adj. pavement lifted.



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
34	Brazilian pepper	15	Yes	2	Low	4' wide planter; adj. overhead lines; poor form & structure; topped; adj. pavement lifted; multiple attachments @ 8'.
35	Brazilian pepper	8	No	2	Low	4' wide planter; adj. overhead lines; poor form & structure; topped.
36	Brazilian pepper	13	Yes	2	Low	4' wide planter; adj. overhead lines; poor form & structure; topped; adj. pavement lifted; multiple attachments @ 10'.
37	Brazilian pepper	16	Yes	2	Low	4' wide planter; adj. overhead lines; poor form & structure; topped; adj. pavement lifted.
38	Callery pear	15	Yes	2	Low	Poor form & structure; branch failures.
39	Callery pear	15	Yes	2	Low	Multiple attachments @ 7'; tipped back.
40	Jacaranda	13	Yes	3	Low	Large surface roots; lost central leader @ 9'; typical.
41	Jacaranda	11	No	3	Low	Large surface roots; lost central leader @ 8'; typical.
42	Jacaranda	14	Yes	3	Low	Large surface roots; codominant trunks @ 6'; multiple attachments @ 14'; typical.
43	Callery pear	17	Yes	2	Low	Poor form & structure; crown reduced.
44	Callery pear	12	Yes	2	Low	Poor form & structure; crown reduced.
45	Brisbane box	5	No	5	High	Narrow form.
46	Brisbane box	4	No	4	Moderate	Narrow form; lost central leader.
47	Brisbane box	5	No	5	High	Narrow form.
48	Brisbane box	4	No	4	Moderate	Narrow form; lost central leader.
49	Brisbane box	4	No	5	High	Narrow form.
50	Brisbane box	6	No	4	Moderate	Narrow form; codominant trunks @ 8'.



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
51	Evergreen pear	10	No	3	Low	Typical form & structure; multiple attachments @ 6'.
52	Evergreen pear	14	Yes	3	Low	Typical form & structure; multiple attachments @ 6'; adj. pavement lifted.
53	Evergreen pear	9	No	2	Low	Poor form & structure.
54	London plane	19	Yes	4	High	Slightly one-sided to N. & W.
55	London plane	5	No	5	High	Typical form & structure.
56	London plane	4	No	4	High	Typical form & structure; codominant trunks @ 7'.
57	London plane	4	No	5	High	Typical form & structure.
58	London plane	4	No	5	High	Typical form & structure.
59	London plane	6	No	5	High	Typical form & structure; multiple attachments @ 8'.
60	Callery pear	13	Yes	2	Low	8' wide planter; scaffold branch failure; tipped back; poor form & structure.
61	Callery pear	14	Yes	3	Low	8' wide planter; multiple attachments @ 6'; tipped back.
62	Callery pear	14	Yes	2	Low	8' wide planter; scaffold branch failure; tipped back; poor form & structure.
63	Southern magnolia	5	No	3	Low	4' wide planter; lost central leader.
64	Southern magnolia	5	No	3	Low	4' wide planter; lost central leader; long trunk wound.
65	Coast live oak	25	Yes	3	Low	Codominant trunks @ 6' & 8'; very rangy form; small leaves leads to thin canopy.
66	London plane	13	Yes	5	High	5' by 5' planter; good form & structure; pavement displaced.
67	Tuliptree	7	No	2	Low	5' by 5' planter; poor form & structure; lacks vigor.
68	Tuliptree	7	No	2	Low	Poor form & structure; lacks vigor.
69	Tuliptree	8	No	2	Low	Poor form & structure; lacks vigor.



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
70	Crape myrtle	8	No	5	High	3' by 3' planter; good form & structure.
71	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
72	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
73	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
74	Crape myrtle	7	No	5	High	3' by 3' planter; good form & structure.
75	Tuliptree	6	No	2	Low	Poor form & structure; lacks vigor.
76	Tuliptree	6	No	2	Low	5' by 5' planter; poor form & structure; lacks vigor.
77	Coast live oak	6	No	2	Low	Lost central leader; poor form & structure; small foliage.
78	Callery pear	12	Yes	2	Low	Typical form & structure; multiple attachments @ 6'; crown reduced.
79	Callery pear	14	Yes	2	Low	Typical form & structure; multiple attachments @ 6'; crown reduced.
80	Callery pear	13	Yes	2	Low	Typical form & structure; multiple attachments @ 6'; crown reduced.
81	Callery pear	6	No	2	Low	Small & stunted.
82	Callery pear	13	Yes	3	Low	Multiple attachments @ 7'; bowed apart.
83	Callery pear	12	Yes	3	Low	Multiple attachments @ 7'; bowed apart.
84	Evergreen pear	11	No	2	Low	Poor form & structure; very rangy form.
85	Evergreen pear	10	No	3	Low	Typical form & structure; rangy form.
86	Australian willow	10	No	2	Low	4' wide planter; multiple attachments @ 8'; lost central leader.
87	Australian willow	6	No	3	Low	4' wide planter; small crown; one-sided to N.
88	Australian willow	8	No	3	Low	4' wide planter; one-sided to N.
89	Australian willow	8	No	2	Low	4' wide planter; suppressed; poor form & structure.
90	Australian willow	9	No	3	Low	4' wide planter; rangy form; branch failure.



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
91	Australian willow	8	No	3	Low	6' wide planter; typical form & structure.
92	Australian willow	8	No	3	Low	Bowed W.
93	Australian willow	6	No	2	Low	3' wide planter; suppressed; poor form & structure; lost central leader.
94	Australian willow	6	No	2	Low	4' wide planter; suppressed; poor form & structure; lost central leader.
95	Jacaranda	12	Yes	2	Low	Multiple attachments @ 7'; poor form & structure.
96	Jacaranda	8	No	3	Low	Typical form & structure.
97	Jacaranda	9	No	3	Low	Typical form & structure.
98	Jacaranda	8	No	3	Low	Typical form & structure.
99	Jacaranda	10	No	3	Low	Lost central leader @ 12'.
100	Crape myrtle	9	No	4	High	Multiple attachments @ 6'.
101	Crape myrtle	10	No	4	High	Multiple attachments @ 6'.
102	Koelreuteria	13	Yes	1	Low	Declining; ext. dead bark; crown reduced.
103	Koelreuteria	11	No	2	Low	Declining; center of crown dead; lacks vigor.
104	Crape myrtle	9	No	4	High	Typical form & structure.
105	Crape myrtle	7	No	4	High	Typical form & structure.
106	Crape myrtle	9	No	5	High	Typical form & structure; multiple attachments @ 6'.
107	Crape myrtle	9	No	4	High	Typical form & structure.
108	Crape myrtle	10	No	5	High	Typical form & structure; multiple attachments @ 6'.
109	Crape myrtle	8	No	4	Moderate	One-sided to N. & W.
110	Jacaranda	12	Yes	3	Low	Codominant trunks @ 6'; rangy form.
111	Jacaranda	11	No	3	Low	Large surface roots; multiple attachments @ 7'.
112	Flowering cherry	6	No	2	Low	Canker @ base; decay @ base; small crown.
113	Australian willow	8	No	2	Low	4' wide planter; adj. to overhead lines; leans E.; long trunk wound.



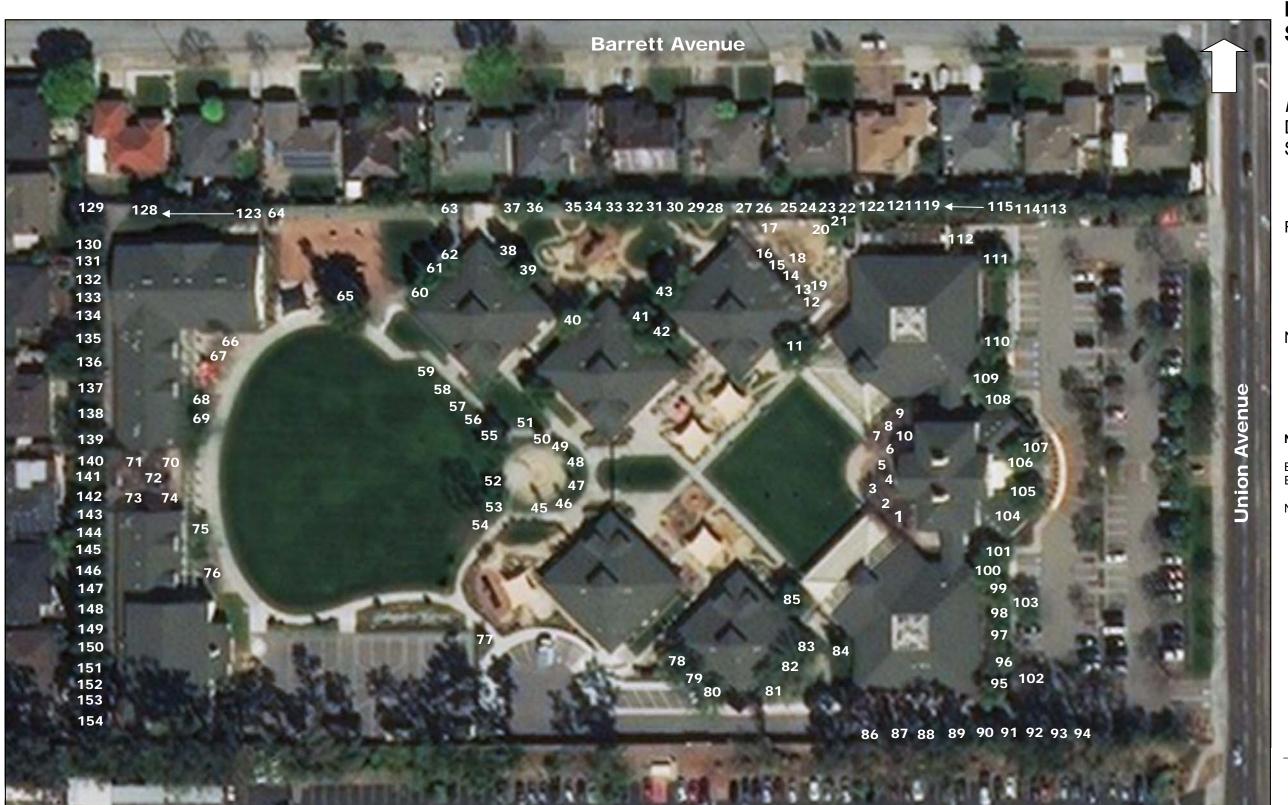
TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
114	Australian willow	8	No	2	Low	4' wide planter; adj. to overhead lines; strong lean E.
115	Australian willow	10	No	3	Low	4' wide planter; adj. to overhead lines; multiple
						attachments @ 6' to 8'.
116	Australian willow	11	No	3	Low	4' wide planter; adj. to overhead lines; lost central
						leader.
117	Australian willow	8	No	3	Low	4' wide planter; adj. to overhead lines; multiple
		_		_		attachments @ 6'.
118	Australian willow	9	No	3	Low	4' wide planter; adj. to overhead lines; multiple
440	Ataslisas!!!	0	NI-	0	1	attachments @ 10'.
119	Australian willow	9	No	2	Low	4' wide planter; adj. to overhead lines; leans N.;
120	Australian willow	8	No	2	Low	pushes against wall; pavement displaced. 4' wide planter; adj. to overhead lines; leans E.; long
120	Australian Willow	0	INO	2	LOW	trunk wound with decay.
121	Australian willow	10	No	2	Low	4' wide planter; adj. to overhead lines; leans N.;
121	Additional willow	10	140	_	LOW	pushes against wall; lost central leader.
122	Australian willow	6	No	3	Low	4' wide planter; adj. to overhead lines; one-sided to S.
						, ,
123	Coast redwood	18	Yes	4	Moderate	1' from wall; side-trimmed; good form; thin canopy.
124	Coast redwood	14	Yes	4	Moderate	1' from wall; side-trimmed; okay form; thin canopy.
125	Coast redwood	13	Yes	3	Low	1' from wall; topped.
126	Coast redwood	13	Yes	3	Low	1' from wall; topped.
127	Coast redwood	16	Yes	3	Low	1' from wall; topped.
128	Coast redwood	19	Yes	4	Moderate	1' from wall; side-trimmed; base pushes against wall.
129	Coast redwood	23	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure.



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
130	Coast redwood	20	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
131	Coast redwood	16	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
132	Coast redwood	15	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
133	Coast redwood	12	Yes	3	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
134	Coast redwood	12,12	Yes	3	Moderate	4' from wall; side-trimmed; codominant trunks @ base; vertical; thin canopy.
135	Coast redwood	13	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
136	Coast redwood	13	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
137	Coast redwood	14	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
138	Coast redwood	13	Yes	3	Low	4' from wall; side-trimmed; typical form & structure; thin canopy.
139	Coast redwood	15	Yes	3	Moderate	4' from wall; side-trimmed; topped; thin canopy.
140	Coast redwood	14	Yes	3	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
141	Coast redwood	17	Yes	3	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
142	Coast redwood	19	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.



TREE No.	SPECIES	TRUNK DIAMETER (in.)	ORDINANCE SIZE?	CONDITION 0=dead 1=poor 5=excel.	SUITABILITY for PRESERVATION	COMMENTS
143	Coast redwood	19	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
144	Coast redwood	14	Yes	3	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
145	Coast redwood	18	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
146	Coast redwood	17	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
147	Coast redwood	18	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
148	Coast redwood	18	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
149	Coast redwood	22	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
150	Coast redwood	21	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
151	Coast redwood	18	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
152	Coast redwood	16	Yes	4	Moderate	4' from wall; side-trimmed; typical form & structure; thin canopy.
153	Coast redwood	12	Yes	5	High	4' from wall; side-trimmed; typical form & structure.
154	Coast redwood	9	No	5	High	4' from wall; side-trimmed; typical form & structure.



Tree Inventory Plan

Harker School San Jose, CA

Prepared for:
David J. Powers & Associates
San Jose, CA

February 2018

No Scale

Notes:

Base map provided by: FSRI

Numbered tree locations are approximate.



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