



People's Park

Tree Assessment

Prepared for:
Capital Projects
University of California
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Introduction and Overview

People's Park was established in 1969 when numerous trees were planted. Some of the trees are now mature in development, declining due to insect or disease attack, and/or possess structural defects that might lead to failure. The University's Capital Projects unit requested that HortScience, Inc. assess existing trees located within the park. This report presents the following information:

1. Evaluation of tree health and structural condition.
2. Recommendations for action.

Survey Methods

Trees were evaluated in July 2014. The survey area included trees within the park as well as planted between sidewalk and curb. The survey method consisted of the following steps for all trees 6" or greater in diameter:

1. Identifying the species.
2. Measuring the diameter of the trunk at 54" above grade. Where trees had more than one stem, the diameter of each stem was measured.
3. Attaching a numerically coded metal tag to the trunk.
4. Visually assessing tree health and structural condition using a 6-point scale where 0=dead, 1=poor and 5=excellent condition.
5. Assessing the suitability for preservation as poor, moderate or good.
6. Recording the presence of defects in structure, insects or diseases and other aspects of development.
7. Verifying each tree's location on a map.

In general, tree #1 to 100 were located in the east side of the park; #101 to 155 in the west.

Description of Trees

One hundred fifty-five (155) trees were evaluated, representing 50 species (Table 1, following page). Most trees appeared to have been planted as part of the planting in the late 1960s. Several trees, however, were large enough to have been present prior to the park's establishment. Included in this group were coast redwood #79, silver dollar gum #147, and coast live oak #29.

Among trees assessed with a number of street trees on Haste Ave., Bowditch St. and Dwight Way. These trees were either located in narrow planting strips between curb and sidewalk or in small cut-outs in the sidewalk.

Several species are native to the Berkeley area: coast live oak, coast redwood, big-leaf maple, boxelder, valley oak, Fremont cottonwood, Calif. bay and species of willow. All trees, however, appeared to have been planted. None appeared to be indigenous to the site.

Table 1. Species present and tree condition. People's Park. Univ. of California. Berkeley CA.

Common name	Scientific name	Condition				No. of Trees
		Poor	Fair	Good	Excellent	
Bailey acacia	<i>Acacia baileyana</i>	1	--	1	--	2
Blackwood acacia	<i>Acacia melanoxyton</i>	1	1	--	--	2
Big-leaf maple	<i>Acer macrophyllum</i>	1	4	2	--	7
Boxelder	<i>Acer negundo</i>	--	1	--	--	1
Japanese maple	<i>Acer palmatum</i>	--	--	1	1	2
Norfolk Island pine	<i>Araucaria heterophylla</i>	--	--	1	--	1
White birch	<i>Betula pendula</i>	--	1	--	--	1
Calif. incense cedar	<i>Calocedrus decurrens</i>	--	2	--	--	2
Deodar cedar	<i>Cedrus deodara</i>	1	4	--	--	5
Camphor	<i>Cinnamomum camphora</i>	3	3	--	--	6
Cordyline	<i>Cordyline australis</i>	4	--	--	--	4
Smooth Arizona cypress	<i>Cupressus arizonica glabra</i>	--	--	--	1	1
Loquat	<i>Eriobotrya japonica</i>	--	--	1	--	1
Silver dollar gum	<i>Eucalyptus polyanthemus</i>	--	--	1	--	1
Evergreen ash	<i>Fraxinus uhdei</i>	--	2	1	--	3
Honey locust	<i>Gleditsia triacanthos f. inermis</i>	--	1	--	--	1
Monterey cypress	<i>Hesperocyparis macrocarpa</i>	--	1	1	1	3
Calif. black walnut	<i>Juglans hindsii</i>	--	2	--	1	3
Chinese juniper	<i>Juniperus monosperma</i>	--	1	--	--	1
Tan oak	<i>Lithocarpus densiflora</i>	1	--	--	--	1
Catalina ironwood	<i>Lyonothamnus floribundus</i>	--	1	--	--	1
Mulberry	<i>Morus alba</i>	--	1	--	--	1
Canary Island date palm	<i>Phoenix canariensis</i>	--	--	1	--	1
Canary Island pine	<i>Pinus canariensis</i>	1	--	--	--	1
Italian stone pine	<i>Pinus pinea</i>	--	2	--	--	2
Monterey pine	<i>Pinus radiata</i>	3	2	--	--	5
Japanese black pine	<i>Pinus thunbergii</i>	--	--	1	--	1
Torrey pine	<i>Pinus torreyana</i>	--	--	1	--	1
Victorian box	<i>Pittosporum undulatum</i>	1	6	--	--	7
White poplar	<i>Populus alba</i>	--	1	--	--	1
Fremont cottonwood	<i>Populus fremontii</i>	1	--	--	--	1
Purpleleaf plum	<i>Prunus cerasifera 'Atropurpurea'</i>	--	1	--	--	1
Plum	<i>Prunus domestica</i>	6	5	1	--	12
Almond	<i>Prunus dulcis</i>	1	--	--	--	1
Kwanzan cherry	<i>Prunus serrulata 'Kwanzan'</i>	--	1	--	--	1
Douglas-fir	<i>Pseudotsuga menziesii</i>	2	8	3	--	13
Coast live oak	<i>Quercus agrifolia</i>	--	7	9	2	18
Blue oak	<i>Quercus douglasii</i>	--	1	--	--	1
Holly oak	<i>Quercus ilex</i>	--	2	1	--	3

Table 1, continued. Species present and tree condition. People's Park. Univ. of California. Berkeley CA.

Common name	Scientific name	Condition				No. of Trees
		Poor	Fair	Good	Excel- lent	
Valley oak	<i>Quercus lobata</i>	--	3	--	1	4
Lemonade berry	<i>Rhus integrifolia</i>	1	--	--	--	1
Black locust	<i>Robinia pseudoacacia</i>	--	--	1	--	1
Purple robe locust	<i>Robinia x ambigua</i> 'Purple Robe'	1	2	4	--	7
Pussy willow	<i>Salix caprea</i>	1	--	1	--	2
Willow	<i>Salix</i> sp.	3	--	--	--	3
Elderberry	<i>Sambucus canadensis</i>	--	--	1	--	1
Coast redwood	<i>Sequoia sempervirens</i>	--	3	5	2	10
Giant sequoia	<i>Sequoiadendron giganteum</i>	1	1	1	--	3
Calif. bay	<i>Umbellularia californica</i>	--	1	--	--	1
Mexican fan palm	<i>Washingtonia robusta</i>	--	--	2	--	2
Total, all trees assessed		34	71	41	9	155

Coast live oak (18 trees) was the most frequently occurring species. Trees were distributed across the site, more commonly on the south side rather than the north. Eleven had single trunks while 7 others had multiple stems that arose close to the ground. Trunk diameters ranged from 5" (#137) to 24" (#29). Tree condition ranged from fair (7 trees) to good (9) to excellent (#98, 137). The primary determinant of tree condition was form and structure, and was related to the amount of growing space.

Thirteen (13) Douglas-firs were present, concentrated in the northeast corner of the park, along Haste Ave. Trees had been planted close to one another, and formed a small grove. Trunk diameters ranged from 6" (#56) to 14" (#51). Tree condition ranged from poor (#56, 60) to fair (8 trees) to good (#50, 51, 63). Trees along Haste had been side-trimmed to clear the adjacent electrical lines. In general, trees would benefit from additional irrigation.

Twelve (12) plums were present, concentrated on the west side of the park. Trees ranged from 6" to 10" in diameter and were generally mature in form. Tree condition varied from poor (6 trees) to fair (5) to good (#128). Primary determinants of tree condition were form and structure. Many plums had good vigor but poor structure. Structure was associated with two or more trunks arising low on the tree and a history of pruning.

Ten (10) coast redwoods were present, divided between the east and west sides. One of the more prominent trees at People's Park was coast redwood #79 which was 63" in diameter. It was the largest tree assessed. Other redwoods were between 13" and 24". Condition ranged from fair (#77, 78, 81) to good (33, 79, 80, 117, 118) to excellent (#115, 116). The major determinant of tree condition was canopy density, particularly in the upper crown. Trees in fair condition had thin upper canopies often with twig dieback.

No other species was represented by more than 10 trees. Included in this group were:

- 7 semi-mature big-leaf maples were present ranging from 6" to 11" in diameter. Tree #19 was in poor condition, #9, 72, 96 were fair and #111 and 122 were good. Most trees had irregular crown form.
- 7 Purple Robe locusts were located in small sidewalk cutouts along Dwight Way. Trunk diameter ranged from 5" to 7". Tree condition varied from poor (#151) to fair (#27, 150) to good (#142, 143, 148, 149). Locusts were often overtopped by larger trees in the park and appeared to lack irrigation.
- Victorian box #16, 17 18 and 152, 153 and 154 were found in groups of 3 along Dwight Way. All were mature in development and in generally fair condition being crowded and suppressed. Tree #28 was also in fair condition.
- 6 camphors (#1, 2, 5, 6, 7 8) were street trees located between sidewalk and curb on Bowditch St. Trunks diameters ranged from 14" to 25". Trees had been root pruned and topped due to overhead electrical lines. Camphors #5, 6, 7 were poor with extensive canopy dieback. Trees #1, 2, 8 were fair.
- 5 Deodar cedars (#24, 25, 26, 68, 74) ranged from 8" to 15" (#24). Trees #24, 25, 26 were in a small group along Dwight Way. Condition was fair except for #25 which was poor.
- 5 Monterey pines were present on the east side of the park: #42, 52, 55, 58 and 64. Trunk diameters ranged from 13" (#52) to 29" (#55). Trees #52, 55 and 64 were in poor condition with poor form and structure. Pines #42 and 58 were fair.
- Cordyline #3, 4, 101, 103 were located in between sidewalk and curb along Bowditch St. and Haste Ave. All were in poor condition.
- Valley oaks #22, 89, 113, 155 ranged from 11" to 20" (#155). Trees #22, 89 and 113 were crowded by nearby trees and had thin canopies and rangy form as a result. Valley oak #155 was in the open and was in excellent condition.
- Calif. black walnuts #14, 15, 114 were semi-mature (10" or 11"). Trees #14 and 15 were in fair condition due to asymmetric crowns. Walnut #114 was in excellent condition.
- Evergreen ash #121, 144 and 146 were semi-mature in development. Trees #144 and 146 were in fair condition due to multiple attachments while #121 was good.
- Giant sequoias #82, 83, 84 formed a small group with several coast redwoods. Tree #83 was 21" and in poor condition; #82 was 27" and fair while #84 was 17" and good. Trees varied in the amount of canopy present and the intensity of infection by the canker disease *Botryosphaeria*.
- Holly oaks #13, 46 and 100 had two trunks that arose near ground level. Trees #13 and 100 were in fair condition; #46 was good.

- Monterey cypress #119 was a young tree, 8" in diameter and in good condition. Cypress #109 was 31" and in good condition with a dense canopy but irregular form. Cypress #69 was 30" and in excellent condition. It is known as the "protest tree."
- Willows #125, 131 and 145 were overmature trees with multiple stems that arose near the ground. All were in poor condition. One of the main attachments of tree #125 was cracked and a fungal fruiting body was present near this point. Willow #145 had failed at the base leaving the two horizontal trunks 1' or 2' above the ground.
- Bailey acacias (#23, 112) were mature in development. Tree #112 was in good condition. Acacia #23 was in poor condition due to codominant trunks that have separated.
- Blackwood acacias #43 and 133 were mature in development. Tree #43 was failing at the base of the trunk and in poor condition. Tree #133 was fair.
- Calif. incense cedar #44 was 27" in diameter and in fair condition with a slight lean to the south. Tree #104 was located between the sidewalk and curb along Haste Ave. It was 30" in diameter and in fair condition. The tree was below the overhead power lines and had been topped as a result.
- Italian stone pines #86 and 140 were semi-mature and in fair condition. Tree #140 appeared to be failing to the north.
- Japanese maple #105 was 5" and in good condition. Maple #102 had multiple stems and was excellent. Both were located between sidewalk and curb along Haste Ave.
- Mexican fan palms #49 and 54 were semi-mature in development either 16" or 17" in diameter with 30' or 40' of clear trunk.
- Pussy (goat) willow #134 was 6" and in good condition. Tree #135 had 3 trunks (10", 10", 7") but was in poor condition as one of the basal attachments was cracked.
- Almond #67 was 9" in diameter and in poor condition.
- Black locust #106 was 10" and in good condition.
- Blue oak #97 was 7" and in fair condition.
- Boxelder #40 had two trunks (9", 8") and was in fair condition.
- Calif. bay #41 had two trunks (9", 8") and was in fair condition.
- Canary Island date palm #45 was 30' in diameter with 50' of clear trunk. It was in excellent condition.
- Canary Island pine #10 was 6" and had poor form and structure due to crowded growing conditions.
- Catalina ironwood #21 was 6" and fair.

- Chinese juniper #141 was 7" and fair.
- Elderberry #126 was a large shrub in good condition, located on the west side of the park.
- Fremont cottonwood #90 was 19" and poor. The tree was failing at the base.
- Honey locust #124 was 9" and fair.
- Japanese black pine #31 was 8" and good.
- Kwanzan cherry #47 was 7" and fair with a very thin canopy of foliage.
- Lemonade berry #20 was a large shrub with a trunk diameter of 8". Condition was poor due to its asymmetric form.
- Loquat #120 was 6" and in good condition.
- Mulberry #92 was 8" and in fair condition.
- Norfolk Island pine #132 was in good condition with a dense canopy and 4 stems that arose near ground level.
- Purpleleaf plum #30 was mature, fair condition with trunks of 10" and 8".
- Silver dollar gum #147 was large, mature and prominent, located along Dwight Way in the center of the park. Trunk diameter was 37". Tree condition was good.
- Smooth Arizona cypress #53 was 16" and in excellent condition.
- Tan oak #76 had trunks of 8" and 5" but was in poor condition,.
- Torrey pine #12 was 20" and in good condition.
- White birch #32 had trunks of 8" and 7" that arose at ground level then spread apart. Tree condition was fair.
- White poplar #129 had 3 trunks (#18, 14, 14). One trunk lean to the east while the others leaned to the southwest. Tree condition was fair.

Results for individual trees are located in the ***Tree Assessment Form*** (see ***Attachments***). Tree locations are noted by tree tag number in the ***Tree Assessment Map***.

Suitability for Preservation

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, 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 changes in the environment. For example, coast live oak and coast redwood are relatively adaptable while Monterey pine is more 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 (<http://www.cal-ipc.org/ip/inventory/weedlist.php?#key>) lists species identified as having being invasive. Berkeley is part of the Central West Floristic Province. Species identified as invasive that were present at People's Park property include blackwood acacia, cordyline, Canary Island date palm, purpleleaf plum, black locust, and Mexican fan palm.

Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to remain an asset to People's Park for years to come (Table 2).

Table 2. Tree suitability for preservation. People's Park. Univ. of California. Berkeley CA.

Good	Trees with good health and structural stability that have the potential for longevity at the site. Thirteen (13) trees had good suitability for preservation including coast live oak #98, 137; coast redwood #115, 116; Mexican fan palm #49, 54; Calif. black walnut #114, Canary Island date palm #45, Douglas-fir #63, Japanese maple #102, Monterey cypress #69, smooth Arizona cypress #53, and valley oak #155.
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 "good" category. Fifty-six (56) were rated as having moderate suitability for preservation including 11 coast live oak, 8 coast redwood, 7 Douglas-fir, Purple Robe locust #142, 143, 148, 149; evergreen ash #121, 144, 146; holly oak #13, 46; big-leaf maple #111, 122; giant sequoia #82, 84; plum #70, 128; Bailey acacia #112, elderberry #126; black locust #106; blue oak #97, Calif. bay #41, Calif. incense cedar #44, Deodar cedar #68, Japanese black pine #31, Japanese maple #105, loquat #120, Monterey cypress #119, Norfolk Island pine #132, pussy willow #134, silver dollar gum #147, and Torrey pine #12.
Poor	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-six (86) trees were rated as having poor suitability for preservation including 10 plum, 7 Victorian box, 6 camphor, 5 big-leaf maple, 5 Monterey pine, 5 Douglas--fir, 5 coast live oak, 4 cordyline, 4 Deodar cedar, 3 willow, 3 valley oak, and 3 Purple Robe locust.

We consider trees with good 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 ability to provide for continued care.

Summary and Recommendations

Almost all trees at People's Park were planted when the park was established in 1969 and shortly after. A wide diversity of species were installed, frequently planted very close together. Tree growth over time has been variable. Some trees had developed full crowns while others have poor form. Tree health has responded in a similar manner. Trees of some species are now mature in development.

The University of California requested that HortScience assess trees in the park and recommend those that should be retained and removed. In so doing, I considered several factors:

1. Retaining trees in good health and structural condition that have the potential to be assets to park in the future. To do so I focused on trees with high and moderate suitability for preservation.
2. A design goal of thinning dense groves to permit more light to reach the ground and provide more growing space for remaining trees.
3. Removal of trees might be structurally unsound or at the end of their life.
4. Removing trees that were not vigorous or in declining health.

Based on the factors noted above, I recommend preservation of 76 trees and removal of 77 (Table 3). I've enclosed specifications for tree removal. In addition, I've recommend that a number of trees haven an aerial inspect, be pruned and have support systems installed (Table 3). Included in this group are: coast live oaks #29, 38, 39, 85, 88, 95 and 123; coast redwood #79 and 81; Monterey cypress #69 and 109; and silver dollar gum #147.

HortScience, Inc.



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Table 3. Proposed action. People's Park. Berkeley CA.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excell.	Proposed Action	Notes
1	Camphor	22	3	Preserve	Replace within next 10 years.
2	Camphor	25	3	Preserve	Replace within next 10 years.
3	Cordyline	7,6,6,4,4,4	2	Remove	Poor condition
4	Cordyline	11	2	Remove	Poor condition
5	Camphor	21	2	Remove	Poor condition; unlikely to recover.
6	Camphor	14	2	Remove	Poor condition; unlikely to recover.
7	Camphor	17	2	Remove	Poor condition; unlikely to recover.
8	Camphor	19	3	Preserve	Replace within next 10 years.
9	Big-leaf maple	11,9,8	3	Preserve	
10	Canary Island pine	6	2	Remove	Poor condition
11	Coast live oak	15	4	Preserve	
12	Torrey pine	20	4	Preserve	
13	Holly oak	13,12	3	Preserve	Cable codominant trunks.
14	Calif. black walnut	10	3	Remove	
15	Calif. black walnut	11	3	Remove	
16	Victorian box	7	3	Remove	
17	Victorian box	7	3	Remove	
18	Victorian box	9	3	Remove	
19	Big-leaf maple	6	2	Remove	Poor condition
20	Lemonade berry	8	2	Failed; December 2014	Unusual species.
21	Catalina ironwood	6	3	Preserve	Unusual species.
22	Valley oak	11,8,7	3	Preserve	
23	Bailey acacia	20,17	2	Remove	Poor structure; failure potential
24	Deodar cedar	15	3	Remove	Will never be a good tree, either singly or as a group.
25	Deodar cedar	8	2	Remove	Poor condition; will never be a good tree, either singly or as a group.
26	Deodar cedar	11	3	Remove	Will never be a good tree, either singly or as a group.
27	Purple robe locust	7	3	Preserve	
28	Victorian box	8,6,4	3	Remove	
29	Coast live oak	24,22,13	4	Preserve	Prune to improve form
30	Purpleleaf plum	10,8	3	Preserve	
31	Japanese black pine	8	4	Preserve	Unusual species.
32	White birch	8,7	3	Preserve	Likely to die within 10 years.
33	Coast redwood	16	4	Preserve	
34	Plum	6	2	Remove	Poor condition; unlikely to recover.

Table 3, continued. Proposed action. People's Park. Berkeley CA.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excell.	Proposed Action	Notes
35	Plum	7,4	2	Remove	Poor condition; unlikely to recover.
36	Plum	9	2	Remove	Poor condition; unlikely to recover.
37	Plum	7,5	2	Remove	Poor condition; unlikely to recover.
38	Coast live oak	14,8	3	Preserve	Prune to reduce 8" stem & improve form.
39	Coast live oak	15,14	3	Remove	Thin area?
40	Boxelder	9,8	3	Preserve	Prune to reduce or remove leaning stem.
41	Calif. bay	9,8	3	Preserve	Unusual species.
42	Monterey pine	25	3	Remove	
43	Blackwood acacia	22	2	Remove	Poor structure; failure potential
44	Calif. incense cedar	27	3	Preserve	
45	Canary Island date palm	30	4	Preserve	
46	Holly oak	8,8	4	Preserve	Install cable to support codominant stems.
47	Kwanzan cherry	7	3	Remove	
48	Douglas-fir	12	3	Preserve	
49	Mexican fan palm	17	4	Preserve	
50	Douglas-fir	12	4	Preserve	
51	Douglas-fir	14	4	Preserve	
52	Monterey pine	13	2	Remove	Poor condition
53	Smooth Arizona cypress	16	5	Preserve	
54	Mexican fan palm	16	4	Preserve	
55	Monterey pine	29	2	Remove	Poor structure; failure potential
56	Douglas-fir	6	2	Remove	Poor condition; thin grove
57	Douglas-fir	7	3	Remove	
58	Monterey pine	19	3	Remove	
59	Douglas-fir	7	3	Preserve	
60	Douglas-fir	9,7	2	Remove	Poor condition; thin grove
61	Douglas-fir	10	3	Preserve	
62	Douglas-fir	12	3	Remove	
63	Douglas-fir	10	4	Preserve	
64	Monterey pine	18,16,15	2	Remove	Poor structure; failure potential
65	Douglas-fir	7	3	Remove	
66	Douglas-fir	10	3	Remove	

Table 3, continued. Proposed action. People's Park. Berkeley CA.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excell.	Proposed Action	Notes
67	Almond	9	2	Remove	Poor condition
68	Deodar cedar	13	3	Remove	Will never be a good tree, either singly or as a group.
69	Monterey cypress	30	5	Preserve	
70	Plum	7	3	Remove	
71	Coast live oak	17	4	Preserve	
72	Big-leaf maple	11	3	Preserve	
73	Coast live oak	20	4		
74	Deodar cedar	12	3	Remove	Will never be a good tree, either singly or as a group.
75	Douglas-fir	9	3	Preserve	
76	Tan oak	8,5	2	Remove	Poor condition
77	Coast redwood	16	3	Remove	Thin area?
78	Coast redwood	22	3	Remove	Thin area?
79	Coast redwood	63	4	Preserve	Perform aerial inspection.
80	Coast redwood	15	4	Remove	Thin area?
81	Coast redwood	16,14	3	Preserve	Inspect attachment; possible cable system
82	Giant sequoia	27	3	Remove	
83	Giant sequoia	21	2	Remove	Poor condition; thin grove
84	Giant sequoia	17	4	Preserve	
85	Coast live oak	13,12	3	Preserve	Remove or reduce 12" stem on W.
86	Italian stone pine	19	3	Remove	
87	Coast live oak	17	3	Remove	Thin area?
88	Coast live oak	22	4	Preserve	Install cable to support codominant stems.
89	Valley oak	13	3	Remove	
90	Fremont cottonwood	19	2	Remove	Poor structure; failure potential
91	Plum	10,9,6	3	Remove	
92	Mulberry	8	3	Remove	
93	Plum	6,4	2	Remove	Poor condition; unlikely to recover.
94	Coast live oak	18	4	Preserve	
95	Coast live oak	15,14	3	Preserve	
96	Big-leaf maple	8	3	Remove	Thin area?
97	Blue oak	7	3	Preserve	Unusual species.
98	Coast live oak	20	5	Preserve	
99	Coast live oak	14	3	Preserve	
100	Holly oak	6,5	3	Remove	

Table 3, continued. Proposed action. People's Park. Berkeley CA.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excell.	Proposed Action	Notes
101	Cordyline	8,7,5	2	Remove	Poor condition
102	Japanese maple	7,6,6,5,5,5,4	5	Preserve	
103	Cordyline	5,5,4	2	Remove	Poor condition
104	Calif. incense cedar	30	3	Remove	Too big for space; center of tree dead due to overhead lines
105	Japanese maple	5	4	Preserve	
106	Black locust	10	4	Preserve	
107	Plum	8,7	3	Remove	
108	Plum	8,6	2	Remove	Poor condition; unlikely to recover.
109	Monterey cypress	31	3	Preserve	
110	Plum	7,5,4	3	Remove	
111	Big-leaf maple	6,6,5	4	Remove	Proximity to sidewalk?
112	Bailey acacia	17	4	Preserve	Plan to replace within 10 years.
113	Valley oak	12	3	Remove	
114	Calif. black walnut	10	5	Preserve	
115	Coast redwood	13	5	Preserve	Mulch area with wood chips
116	Coast redwood	24	5	Preserve	Mulch area with wood chips
117	Coast redwood	23	4	Remove	Axe tree
118	Coast redwood	16	4	Remove	Thin area?
119	Monterey cypress	8	4	Preserve	
120	Loquat	6	4	Preserve	
121	Evergreen ash	8	4	Preserve	
122	Big-leaf maple	7	4	Remove	
123	Coast live oak	13,13	4	Preserve	Install cable to support codominant stems.
124	Honey locust	9	3	Remove	
125	Willow	17,15,15,13,12	2	Failed; December 2014	Poor structure; failure potential
126	Elderberry	6,6,5,5	4	Preserve	Unusual species.
127	Plum	8,5,5	3	Preserve	
128	Plum	6,5,4,4,4	4	Preserve	
129	White poplar	18,14,14	3	Remove	Poor structure; failure potential
130	Coast live oak	12	4	Preserve	
131	Willow	18,16,13,10	2	Preserve	Poor condition. Consider reducing & restructuring the crown to retain tree in the short-term.
132	Norfolk Island pine	5,5,4,4	4	Preserve	Unusual species.
133	Blackwood acacia	15,15	3	Remove	Poor structure; failure potential

Table 3, continued. Proposed action. People's Park. Berkeley CA.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excell.	Proposed Action	Notes
134	Pussy willow	6	4	Preserve	
135	Pussy willow	10,10,7	2	Remove	Poor structure; failure potential
136	Big-leaf maple	9,7,6	3	Preserve	
137	Coast live oak	5	5	Preserve	
138	Coast live oak	13,11,10,6	4	Preserve	
139	Coast live oak	12	3	Preserve	
140	Italian stone pine	15	3	Remove	
141	Chinese juniper	7	3	Preserve	Unusual species.
142	Purple robe locust	6	4	Preserve	Prune to improve structure.
143	Purple robe locust	5	4	Preserve	Prune to improve structure.
144	Evergreen ash	5,4,4	3	Remove	
145	Willow	17,15	2	Preserve	Unusual form
146	Evergreen ash	11	3	Remove	Too large for space.
147	Silver dollar gum	37	4	Preserve	Prune to reduce length & weight on long branches, particularly over street.
148	Purple robe locust	7	4	Preserve	Prune to improve structure.
149	Purple robe locust	7	4	Preserve	Prune to improve structure.
150	Purple robe locust	7	3	Preserve	
151	Purple robe locust	5	2	Remove	Poor condition; unlikely to recover.
152	Victorian box	4,4	2	Remove	Poor condition
153	Victorian box	5,4,3	3	Remove	
154	Victorian box	4,4,3,3,3	3	Remove	
155	Valley oak	20	5	Preserve	

Attachments

Specifications for Tree Removal

Tree Assessment Form

Tree Assessment Map



Tree Removal Specifications

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Qualifications

An I.S.A. (International Society of Arboriculture) Certified Arborist or Tree Worker is to be present on the project site at all times. Tree removal company must have a State of Calif. Contractor's License for Tree Service (C61-D49) and provide proof of workman's compensation and general liability insurance.

Objective

Remove specified trees and grind the stump of each.

Specifications

1. Prior to the start of any tree work, the Contractor will meet with the University's project manager to review operations, haul routes, storage areas and work procedures.
 2. Trees to be removed will be marked with identifying paint on the north side of the trunk.
 3. All operations shall adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and CAL-OSHA Tree Work Safety Regulations, CAL-OSHA (Title 8, Article 12, Tree Work, Maintenance or Removal).
 4. Tree(s) to be removed that have branches extending into the canopy of tree(s) to remain shall be removed in a manner that causes no damage to the tree(s) and understory to remain.
 5. Grind stumps and roots as completely as possible within site constraints, and in no event shall the wood remaining exceed a minimum of twelve inches (12") below grade and an eighteen-inch (18") radius from the stump on all sides (360°). Backfill hole with resulting chip/soil residue to approximately 6 inches above grade; compact fill as much as possible.
 6. All wood debris shall be hauled off-site.
 7. Brush may be chipped and chips spread in the existing mulched area surrounding trees to a depth not to exceed 4-6 inches. A 12-inch radius from the base of any remaining trees shall remain free of chips.
 8. The Contractor shall conduct operations in a manner that will prevent damage to, including, but not limited to, adjacent properties, trees, buildings, vegetation, equipment, utilities and vehicles. If any such injury should occur, the Contractor shall make necessary recovery to the injured party.
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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
1	Camphor	22	3	Low	Street tree; under power lines; root pruned.
2	Camphor	25	3	Low	Street tree; under power lines; root pruned; large base; sidewalk lifted.
3	Cordyline	7,6,6,4,4,4	2	Low	Between sidewalk & curb; multiple attachments @ base; basal wounds; lack vigor.
4	Cordyline	11	2	Low	Between sidewalk & curb; lacks vigor.
5	Camphor	21	2	Low	Street tree; under power lines; ext. twig dieback; dying.
6	Camphor	14	2	Low	Street tree; under power lines; twig dieback; thin canopy; okay form.
7	Camphor	17	2	Low	Street tree; under power lines; twig dieback; thin canopy; breaking curb; basal cavity on E.
8	Camphor	19	3	Low	Street tree; under power lines; okay form; breaking curb.
9	Big-leaf maple	11,9,8	3	Low	Codominant trunks @ 1' & 3'; one-sided to W.; okay tree.
10	Canary Island pine	6	2	Low	Narrow & upright; lacks vigor.
11	Coast live oak	15	4	Moderate	One-sided to E.; sinuous trunk; 4' from sidewalk.
12	Torrey pine	20	4	Moderate	Typical form & structure; laterals sweep upright; narrow form.
13	Holly oak	13,12	3	Moderate	Codominant trunks @ 3' twist around one another; high crown; could be cabled.
14	Calif. black walnut	10	3	Low	Codominant trunks @ 5' & 9'; crowded; bowed & one-sided to S.
15	Calif. black walnut	11	3	Low	Codominant trunks @ 4' & 5'; leaning & one-sided to S.
16	Victorian box	7	3	Low	1 of 3; corrected lean & one-sided to SE.
17	Victorian box	7	3	Low	1 of 3; center tree; codominant trunks @ 5'.
18	Victorian box	9	3	Low	1 of 3; one-sided to W.
19	Big-leaf maple	6	2	Low	Poor form & structure; long trunk wound on SE.; leans W.

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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
20	Lemonade berry	8	2	Low	Poor form & structure; leans W.; base outside of dripline.
21	Catalina ironwood	6	3	Low	Leans SW.
22	Valley oak	11,8,7	3	Low	Multiple attachments @ 3'; one-sided to S.; crowded.
23	Bailey acacia	20,17	2	Low	Poor form & structure; codominant trunks @ 1'; separated; good vigor.
24	Deodar cedar	15	3	Low	1 of 3; one-sided to SE.; codominant trunks @ 7'; 1 stem with broad sweep; 4' from sidewalk.
25	Deodar cedar	8	2	Low	1 of 3; center tree; one-sided to N.; narrow & upright; 4' from sidewalk.
26	Deodar cedar	11	3	Low	1 of 3; one-sided to SW.; narrow & upright; 4' from sidewalk.
27	Purple robe locust	7	3	Low	3' by 3' cutout; codominant trunks @ 6"; one-sided to S.; lifting sidewalk.
28	Victorian box	8,6,4	3	Low	Typical form & structure; multiple attachments @ base; sweep upright.
29	Coast live oak	24,22,13	4	Moderate	4' from sidewalk; multiple attachments @ 1'; twist then graft together @ 8'; high crown.
30	Purpleleaf plum	10,8	3	Low	Codominant trunks @ 1'; multiple attachments @ 4'; old.
31	Japanese black pine	8	4	Moderate	Typical form & structure; leans SW.
32	White birch	8,7	3	Low	Codominant trunks @ base with cavity in center; okay vigor.
33	Coast redwood	16	4	Moderate	Good form & structure; upper canopy thin.
34	Plum	6	2	Low	Poor form & structure.
35	Plum	7,4	2	Low	Poor form & structure; cavity.
36	Plum	9	2	Low	Poor form & structure; cavity.
37	Plum	7,5	2	Low	Poor form & structure; twig dieback.

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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
38	Coast live oak	14,8	3	Moderate	Codominant trunks @ base; 14" good form but bowed S.; 8" bowed flat to W.
39	Coast live oak	15,14	3	Low	Codominant trunks @ 4'; high crown; both stems bowed NE.
40	Boxelder	9,8	3	Low	Codominant trunks @ 1' with cavity in attachment; 1 stem vertical; 1 stem leans NW.
41	Calif. bay	9,8	3	Moderate	Irregular form; lower trunk bowed NE.; codominant trunks @ 3'; good vigor.
42	Monterey pine	25	3	Low	Okay form; thinning canopy; red turpentine beetle.
43	Blackwood acacia	22	2	Low	Failing @ base to E.; leans E.; codominant trunks @ 12' with seam to base on N.
44	Calif. incense cedar	27	3	Moderate	Leans S.; typical form & structure; branch failure.
45	Canary Island date palm	30	4	High	50' clear trunk.
46	Holly oak	8,8	4	Moderate	Codominant trunks @ 2'; nice tree; cable if retain.
47	Kwanzan cherry	7	3	Low	Typical form & structure; largely defoliated.
48	Douglas-fir	12	3	Moderate	One-sided to W.; has potential.
49	Mexican fan palm	17	4	High	40' clear trunk; leans SW.
50	Douglas-fir	12	4	Moderate	Side-trimmed.
51	Douglas-fir	14	4	Moderate	Side-trimmed.
52	Monterey pine	13	2	Low	Poor; upper canopy dead; small & non-vigorous.
53	Smooth Arizona cypress	16	5	High	Nice.
54	Mexican fan palm	16	4	High	30' clear trunk; slight bow S.
55	Monterey pine	29	2	Low	Poor form & structure; multiple attachments @ 6'; rangy form.
56	Douglas-fir	6	2	Low	Poor; bleeding; no vigor.
57	Douglas-fir	7	3	Moderate	Lost central leader @ top.

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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
58	Monterey pine	19	3	Low	Good form; slight lean N.; thin canopy.
59	Douglas-fir	7	3	Moderate	Good form & structure; thin canopy; could be better.
60	Douglas-fir	9,7	2	Low	Side-trimmed; codominant trunks @ 4'; thin canopy.
61	Douglas-fir	10	3	Moderate	Side-trimmed; replaced central leader; crowded.
62	Douglas-fir	12	3	Low	Side-trimmed; swollen @ base; crowded.
63	Douglas-fir	10	4	High	Good form & structure; flat area @ base.
64	Monterey pine	18,16,15	2	Low	Poor; multiple attachments @ 3'; red turpentine beetle; girdling root; irregular form.
65	Douglas-fir	7	3	Low	Good form & structure but suppressed; small.
66	Douglas-fir	10	3	Low	Crook mid-crown where lost central leader; narrow & slender.
67	Almond	9	2	Low	Poor form & structure; bowed flat to N. over sidewalk; stubbed back.
68	Deodar cedar	13	3	Moderate	Crook mid-crown; one-sided to N.
69	Monterey cypress	30	5	High	Good form & structure; protest tree.
70	Plum	7	3	Moderate	Too shady; codominant trunks @ 4'.
71	Coast live oak	17	4	Moderate	Leans SW.; otherwise good.
72	Big-leaf maple	11	3	Low	Bowed S.; high crown.
73	Coast live oak	20	4	Moderate	Partly corrected lean W.; 4' from sidewalk.
74	Deodar cedar	12	3	Low	Narrow & upright due to crowding; no vigor.
75	Douglas-fir	9	3	Moderate	Good form & structure; high crown.
76	Tan oak	8,5	2	Low	Poor form & structure; codominant trunks @ base.
77	Coast redwood	16	3	Moderate	Good form; upper canopy thin.
78	Coast redwood	22	3	Moderate	Good form; upper canopy thin.
79	Coast redwood	63	4	Moderate	Codominant trunks @ 15' & above; trunk wound on S.; upper canopy okay. Needs aerial inspection.

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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
80	Coast redwood	15	4	Moderate	Good form & structure; thin canopy.
81	Coast redwood	16,14	3	Moderate	Codominant trunks @ 4'; thin upper canopy.
82	Giant sequoia	27	3	Moderate	Good form; lost central leader @ top?
83	Giant sequoia	21	2	Low	Good form; but very thin canopy.
84	Giant sequoia	17	4	Moderate	Good form; minor <i>Botryosphaeria</i> .
85	Coast live oak	13,12	3	Low	Codominant trunks @ base with 3rd stem removed; 13" vertical & good; 12" bowed W. Reduce or x 12" if retain.
86	Italian stone pine	19	3	Low	Leaning & bowed S.; thin canopy.
87	Coast live oak	17	3	Low	Bowed S.; high wide crown.
88	Coast live oak	22	4	Moderate	Codominant trunks @ 6' with included bark; separating; otherwise good. Cable if retain.
89	Valley oak	13	3	Low	Slight lean & one-sided to S.; lost central leader @ 22'.
90	Fremont cottonwood	19	2	Low	Failing @ base to SE.; base outside of dripline; thin canopy.
91	Plum	10,9,6	3	Low	Multiple attachments @ 1' with included bark; good vigor; poor structure.
92	Mulberry	8	3	Low	Rangy form; bowed N.
93	Plum	6,4	2	Low	Poor form & structure; codominant trunks @ base.
94	Coast live oak	18	4	Moderate	Series of codominant trunks attachments sweep upright leaving narrow form; no basal flare.
95	Coast live oak	15,14	3	Low	Codominant trunks @ 2' with included bark; 15" vertical; 14" bowed flat to E.; could be pruned.
96	Big-leaf maple	8	3	Low	Bowed S.; codominant trunks @ 5'; high crown.
97	Blue oak	7	3	Moderate	Good form; thin canopy.
98	Coast live oak	20	5	High	Codominant trunks @ 16'; good tree.
99	Coast live oak	14	3	Low	Codominant trunks @ 4' & 6'; bowed S.; flat-topped.
100	Holly oak	6,5	3	Low	Codominant trunks @ 1'; high thin canopy.

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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
101	Cordyline	8,7,5	2	Low	Street tree; multiple attachments @ base; decay @ base.
102	Japanese maple	7,6,6,5,5,5,4	5	High	Street tree; multiple attachments @ base; 2' wide planter; good form & structure.
103	Cordyline	5,5,4	2	Low	Street tree; multiple attachments & decay @ base.
104	Calif. incense cedar	30	3	Low	Street tree; multiple attachments @ 4'; topped for overhead power lines; twig & branch dieback in center of town.
105	Japanese maple	5	4	Moderate	Street tree; codominant trunks @ 5' with included bark.
106	Black locust	10	4	Moderate	Typical form & structure; codominant trunks @ 6'; broken branch.
107	Plum	8,7	3	Low	Good vigor; poor structure; codominant trunks @ base; separated.
108	Plum	8,6	2	Low	Okay vigor; poor structure.
109	Monterey cypress	31	3	Low	Lost central leader @ 6'; multiple attachments @ that point; open center; twig & branch dieback to 2".
110	Plum	7,5,4	3	Low	Good vigor; poor structure.
111	Big-leaf maple	6,6,5	4	Moderate	3' from sidewalk; multiple attachments @ 3'; high crown.
112	Bailey acacia	17	4	Moderate	Lost central leader @ top; minor twig & branch dieback.
113	Valley oak	12	3	Low	Codominant trunks @ 6'; crowded; thin canopy.
114	Calif. black walnut	10	5	High	Good form & structure.
115	Coast redwood	13	5	High	Good form & structure.
116	Coast redwood	24	5	High	Good form & structure; exposed surface roots.
117	Coast redwood	23	4	Moderate	Axe tree.; good form & structure; slightly thin.
118	Coast redwood	16	4	Moderate	Good form & structure; crowded.
119	Monterey cypress	8	4	Moderate	Good form & structure; slender; narrow & upright; slight lean SE.
120	Loquat	6	4	Moderate	Typical form & structure; lifted; multiple attachments @ 4'.

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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
121	Evergreen ash	8	4	Moderate	Typical form & structure; good vigor.
122	Big-leaf maple	7	4	Moderate	Typical form & structure.
123	Coast live oak	13,13	4	Moderate	Codominant trunks @ 3' with included bark; sweep upright; cable if retain.
124	Honey locust	9	3	Low	Poor form & structure; flat-topped.
125	Willow	17,15,15,13,12	2	Low	Multiple attachments @ base; lean apart; cracked @ base; sulfur fungus @ old pruning wound @ base on N.
126	Elderberry	6,6,5,5	4	Moderate	Big shrub; multiple attachments @ base; arching form.
127	Plum	8,5,5	3	Low	Good vigor; poor structure.
128	Plum	6,5,4,4,4	4	Moderate	Okay tree.
129	White poplar	18,14,14	3	Low	Multiple attachments @ base; 1 stem leans sharply E.; 2 others slight lean SW.
130	Coast live oak	12	4	Moderate	Leans N.; otherwise good form & structure.
131	Willow	18,16,13,10	2	Low	Codominant trunks @ base; multiple attachments @ 4'; rangy irregular form.
132	Norfolk Island pine	5,5,4,4	4	Moderate	Multiple attachments @ base; good vigor.
133	Blackwood acacia	15,15	3	Low	Codominant trunks @ 3' with included bark; good vigor.
134	Pussy willow	6	4	Moderate	Good form & structure; thin canopy.
135	Pussy willow	10,10,7	2	Low	Codominant trunks @ base & above; upright; thin canopy; base attachment cracked on S.
136	Big-leaf maple	9,7,6	3	Low	1' from fence; codominant trunks @ base & 2'; wide form.
137	Coast live oak	5	5	High	Good young tree; codominant trunks @ 5'.
138	Coast live oak	13,11,10,6	4	Moderate	Codominant trunks @ base & 2'; low wide crown.
139	Coast live oak	12	3	Moderate	Multiple attachments @ 5"; thin canopy.
140	Italian stone pine	15	3	Low	Severe girdling roots; partially corrected lean N.
141	Chinese juniper	7	3	Low	Scraggly.

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TREE No.	SPECIES	TRUNK DIAMETER (in.)	CONDITION 1=poor 5=excellent	SUITABILITY for PRESERVATION	COMMENTS
142	Purple robe locust	6	4	Moderate	Street tree; codominant trunks @ 6'.
143	Purple robe locust	5	4	Moderate	Street tree; good form & structure.
144	Evergreen ash	5,4,4	3	Moderate	Poor form & structure; codominant trunks @ 1' & 2'.
145	Willow	17,15	2	Low	Partial failure to W. & S.; good vigor.
146	Evergreen ash	11	3	Moderate	Street tree; lifting sidewalk; slight bow S.
147	Silver dollar gum	37	4	Moderate	Big tree; good form & structure for species; 4' from sidewalk; codominant trunks @ 12'; prune to retain; reduce long branches on S. over street.
148	Purple robe locust	7	4	Moderate	Street tree; good form & structure; lifting sidewalk.
149	Purple robe locust	7	4	Moderate	Street tree; codominant trunks @ 7' & 8'; lifting sidewalk.
150	Purple robe locust	7	3	Low	Street tree; codominant trunks @ 7'; cracked on E.; narrow & upright.
151	Purple robe locust	5	2	Low	Street tree; poor form & structure; bowed S.; long trunk wound.
152	Victorian box	4,4	2	Low	1 of 3; 4' from sidewalk; poor form & structure; very thin canopy.
153	Victorian box	5,4,3	3	Low	1 of 3; center tree; 4' from sidewalk; multiple attachments @ base; high rangy crown.
154	Victorian box	4,4,3,3,3	3	Low	1 of 3; 4' from sidewalk; codominant trunks @ 1' & 2'; high crown.
155	Valley oak	20	5	High	Good form & structure; rounded form.

