



Winchester Ranch

Tree Assessment

Prepared for:

David J. Powers & Associates
1871 The Alameda
San Jose CA 95126

Prepared by:

HortScience | Bartlett Consulting
325 Ray Street
Pleasanton CA 94566

September 12, 2018



HORT SCIENCE

BARTLETT CONSULTING

A Division of The F.A. Bartlett Tree Expert Company

Tree Assessment

Winchester Ranch
San Jose CA

Table of Contents

	Page
Introduction and Overview	1
Assessment Methods	1
Description of Trees	2
Suitability for Preservation	6
Tree Mitigation	8
Tree Preservation Guidelines	9

List of Tables

Table 1. Species present and tree condition.	2
Table 2. Suitability for preservation.	7
Table 3. Tree mitigation.	9

Attachments

Tree Assessment Form

Tree Assessment Plan

Tree Assessment

Winchester Ranch
San Jose CA

Introduction and Overview

David J. Powers & Associates are preparing environmental documents associated with the redevelopment of the Winchester Ranch site, located in San Jose, CA. Current site use consists of a mobile home park, parking, and associated landscape features. David J. Powers requested that HortScience | Bartlett Consulting prepare an assessment of trees currently located on the site. This report provides the following information:

1. A survey of trees currently growing on the site.
2. Estimate of mitigation requirements.

Assessment Methods

Trees were assessed in August and September 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-inches above grade. Where trees had more than one stem, trunk diameter was measured at 24-inches.
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.

Italian cypress trees were counted rather than individually assessed.

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

Description of Trees

Four hundred thirty-nine (439) trees were assessed, representing 80 taxa (Table 1). All of the trees appeared to have been planted. Species present were typical of landscape plants used in the San Jose area. Several weeping forms of trees were present. Orchard species included cherry, peach, avocado, orange and lemon. Coast live oak and Calif. bay are native to the San Jose area. It is possible that coast live oak #381 and Calif. bay #394 were indigenous to the site but it seems unlikely that tree #200 was indigenous.

Table 1. Species present and tree condition. Winchester Ranch. San Jose CA.

Common name	Scientific name	Condition				No. of Trees	
		Poor (1,2)	Fair (3)	Good (4)	Excell. (5)	Ordi- nance	Total
Jap. maple	<i>Acer palmatum</i>	3	12	10	1	6	26
Fern pine	<i>Afrocarpus falcatus</i>	1	18	--	--	2	19
Norfolk Island pine	<i>Araucaria heterophylla</i>	1	--	--	1	--	2
Marina madrone	<i>Arbutus 'Marina'</i>	1	--	--	--	--	1
Birch	<i>Betula pendula</i>	--	1	1	--	2	2
Calif. incense cedar	<i>Calocedrus decurrens</i>	2	1	--	--	2	3
Pecan	<i>Carya illinoensis</i>	--	1	--	--	1	1
Weeping blue Atlas cedar	<i>Cedrus atlantica 'Glauca pendula'</i>	--	--	1	--	--	1
Deodar cedar	<i>Cedrus deodara</i>	--	3	2	--	4	5
Weeping false cypress	<i>Chamaecyparis nootkatensis 'Pendula'</i>	--	1	--	--	1	1
Camphor	<i>Cinnamomum camphora</i>	--	--	1	--	--	1
Kumquat	<i>Citrus japonica</i>	--	1	--	--	1	1
Lemon	<i>Citrus limon</i>	4	14	4	--	4	22
Grapefruit	<i>Citrus paradisi</i>	1	1	--	--	1	2
Orange	<i>Citrus sinensis</i>	3	10	6	1	7	20
Tangerine	<i>Citrus tangerina</i>	--	1	--	--	--	1
Cordyline	<i>Cordyline australis</i>	1	3	2	--	4	6
Flowering dogwood	<i>Cornus florida</i>	--	--	1	--	--	1
Italian cypress	<i>Cupressus sempervirens</i>	--	--	5	--	--	5
Persimmon	<i>Diospyros kaki</i>	--	2	--	1	1	3
Elaeagnus	<i>Elaeagnus x submacrophylla</i>	--	1	--	--	1	1
Jap. loquat	<i>Eriobotrya japonica</i>	2	1	1	--	1	4
Fig	<i>Ficus carica</i>	3	3	1	--	2	7
Monterey cypress	<i>Hesperocyparis macrocarpa</i>	1	--	--	--	--	1
Hibiscus	<i>Hibiscus sp.</i>	1	--	--	--	1	1
English holly	<i>Ilex aquifolium</i>	1	2	1	1	1	5
Jacaranda	<i>Jacaranda mimosifolia</i>	2	2	--	--	4	4
Calif. black walnut	<i>Juglans hindsii</i>	--	2	--	--	1	2
Juniper	<i>Juniperus chinensis</i>	--	5	--	1	--	6
Hollywood juniper	<i>Juniperus chinensis 'Torulosa'</i>	16	14	2	--	23	32
Weeping blue juniper	<i>Juniperus scopulorum 'Tollesons'</i>	1	--	--	--	1	1
Crape myrtle	<i>Lagerstroemia cv.</i>	1	18	34	5	--	58
Glossy privet	<i>Ligustrum lucidum</i>	6	6	1	--	4	13
Sweetgum	<i>Liquidambar styraciflua</i>	--	--	1	--	--	1
Southern magnolia	<i>Magnolia grandiflora</i>	--	--	1	--	--	1
Star magnolia	<i>Magnolia stellata</i>	--	--	--	1	--	1
Crabapple	<i>Malus cv.</i>	--	--	1	--	--	1

Table 1, continued. Species present and tree condition. Winchester Ranch. San Jose CA.

Common name	Scientific name	Condition				No. of Trees	
		Poor (1,2)	Fair (3)	Good (4)	Excell. (5)	Ordinance	Total
Apple	<i>Malus domestica</i>	1	2	--	--	1	3
Mayten	<i>Matenus boaria</i>	8	5	1	--	3	14
China berry	<i>Melia adzerach</i>	1	--	--	--	1	1
Oleander	<i>Nerium oleander</i>	3	4	--	--	1	7
Olive	<i>Olea europaea</i>	2	2	--	--	2	4
Avocado	<i>Persea americana</i>	--	6	1	--	1	7
Photinia	<i>Photinia</i> x 'Fraseri'	--	4	--	--	--	4
Blue Colorado spruce	<i>Picea pungens</i> 'Glauca'	--	--	1	1	--	2
Spruce	<i>Picea</i> sp.	--	1	--	--	--	1
Canary Island pine	<i>Pinus canariensis</i>	6	4	--	--	9	10
Aleppo pine	<i>Pinus halepensis</i>	1	--	--	--	1	1
Mugo pine	<i>Pinus mugo</i>	--	1	--	--	1	1
Monterey pine	<i>Pinus radiata</i>	10	1	--	--	10	11
Scots pine	<i>Pinus sylvestris</i>	1	--	--	--	1	1
Chinese pistache	<i>Pistachia chinensis</i>	1	--	1	--	1	2
Pittosporum	<i>Pittosporum tenuifolium</i>	7	1	--	--	4	8
Tobira	<i>Pittosporum tobira</i>	--	1	--	--	1	1
Victorian box	<i>Pittosporum undulatum</i>	9	3	--	--	3	12
Apricot	<i>Prunus armenianca</i>	1	1	--	--	--	2
Cherry	<i>Prunus avium</i>	4	1	--	--	1	5
Carolina laurel	<i>Prunus caroliniana</i>	1	3	--	--	--	4
Purpleleaf plum	<i>Prunus cerasifera</i> 'Atropurpurea'	--	--	--	2	--	2
Plum	<i>Prunus domestica</i>	3	1	--	--	2	4
Plum - peach	<i>Prunus domestica</i>	--	1	--	--	--	1
Hollyleaf cherry	<i>Prunus ilicifolia</i>	1	--	--	--	1	1
Peach	<i>Prunus persica</i>	3	4	--	--	--	7
Evergreen pear	<i>Pyrus kawakamii</i>	--	2	--	--	--	2
Coast live oak	<i>Quercus agrifolia</i>	--	2	--	--	2	2
Red oak	<i>Quercus rubra</i>	--	2	--	--	--	2
Cork oak	<i>Quercus suber</i>	--	1	--	--	1	1
Corkscrew willow	<i>Salix matsudina</i> 'Torulosa'	--	1	--	--	1	1
Coast redwood	<i>Sequoia sempervirens</i>	--	6	1	1	8	8
Queen palm	<i>Syagrus romanzoffiana</i>	--	--	2	--	--	2
Brush cherry	<i>Syzigium paniculatum</i>	--	9	--	--	2	9
Yew	<i>Taxus</i> sp.	--	1	2	1	3	4
Windmill palm	<i>Trachycarpus fortunei</i>	--	--	2	--	2	2
Water gum	<i>Tristaniopsis laurina</i>	1	9	--	--	5	10
Elm	<i>Ulmus</i> sp.	--	1	--	--	1	1
Calif. bay	<i>Umbellularia californica</i>	--	1	--	--	--	1

Table 1, continued. Species present and tree condition. Winchester Ranch. San Jose CA.

Common name	Scientific name	Condition				No. of Trees	
		Poor (1,2)	Fair (3)	Good (4)	Excell. (5)	Ordinance	Total
Calif. fan palm	<i>Washingtonia filifera</i>	--	--	--	2	2	2
Mexican fan palm	<i>Washingtonia robusta</i>	--	--	--	4	3	4
Xylosma	<i>Xylosma congestum</i>	1	--	--	--	--	1
Yucca	<i>Yucca filimentosa</i>	5	4	--	--	6	9
Total, all trees assessed		121	208	87	23	155	439

The 12 most frequently occurring species comprised 241 of 439 trees (56%). Fourteen (14) species were represented by five to nine trees while 56 species were represented by less than five trees.

Crape myrtle was the most frequently occurring taxa with 58 trees. This small flowering tree was present throughout the site, particularly along the south property bordering I-280 (Photo 1). Trees were young and semi-mature in development with trunk diameters between 2- and 7-inches. Tree condition was generally good (34 trees) with five trees in excellent condition. Eighteen (18) trees were in fair condition due largely to a history of topping and/or lack of irrigation.



Photo 1. Crape myrtles along the south property line.

Thirty-two (32) Hollywood junipers were present (Photo 2). This large evergreen shrub was found in unpruned, sheared, and poodle-balled forms. Most trees were mature in development. Tree condition was generally poor and fair. Trees in poor condition were likely to be found located in sites without adequate growing space.



Photo 2. Hollywood junipers with limited growing space.

Twenty-six (26) Japanese maples were present throughout the site, generally in front yards. Tree form ranged from natural to clipped to sheared. Trees were young and semi-mature in development. Trunk diameters varied from 2- to 13-inches. About 50% of maples had more than one stem that arose close to the ground. Tree condition was generally either fair or good, depending upon irrigation and intensity of pruning.

Twenty-two (22) lemons were present throughout the site, often in crowded growing conditions. Tree form ranged from natural to sheared. Trunk diameters ranged from 3- to 7-inches. About 50% of lemons had more than one stem that arose close to the ground. Tree condition was generally fair.

Nineteen (19) fern pines were present (Photo 3). Almost all were located between mobile homes and had been sheared into geometric forms. Trunk diameters varied from 4- to 11-inches. Essentially all trees were in fair condition.

Photo 3. Fern pine sheared into a cube.



Twenty (20) oranges were present (Photo 4). As with the lemons, trees were often crowded, clipped, and sheared. Trunk diameters ranged from 4-inches to 10-inches. Approximately 70% of oranges had multiple stems. Tree condition was generally fair and good.

Photo 4. Orange tree in small garden area.



Fourteen (14) mayten trees were present. Trunk diameters ranged from 3- to 15-inches. Most trees were small and suppressed. Tree condition was a mix of poor and fair.

Thirteen (13) glossy privets were present. Typical form is a small tree with numerous stems. Most trees were in either poor or fair condition due largely to history of pruning and crowded growing conditions.

Twelve (12) Victorian box trees were present. Typical form is a small multi-stem tree. Almost all trees were in poor condition.

Eleven (11) Monterey pines were present. Ten trees were in poor condition while #384 was fair. Several trees in the southeast corner of the site were either leaning or bowed to the south. Trunk diameters ranged from 16- to 39-inches.

Ten water gums were present. Nine were in fair condition while #313 was poor.

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

- Orchard species such as kumquat (1 tree), grapefruit (2), tangerine (1), persimmon (3), fig (7), apple (3), avocado (7), apricot (2), cherry (5), plum (4), plum – peach mix (1), and peach (7).
- Palm trees included Calif. fan (2), Mexican fan (4), Queen (2) and windmill (2).
- Large trees included cork oak #387 (46-inches), coast redwood #406 (45-inches), elm #413 (45-inches), coast redwood #239 (44-inches), Deodar cedar #379 (44-inches), coast redwood #404 (43-inches), and coast redwood #217 (40- and 30-inches).

Also present but not individually tagged and assessed were an additional 122 Italian cypress trees. Trees ranged from 6- to 20-feet tall. All were less than 6-inches in diameter. Trees could not be tagged due to the dense foliage present along the trunk.

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). One-hundred fifty-five (515) trees were identified as being ordinance size. 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, coast live oak and coast redwood are tolerant of construction impacts while Monterey pine, fern pine, and Japanese maple 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. Cordyline, fig, English holly, mayten, olive, Victorian box, purpleleaf plum, and Mexican fan palm are 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. Winchester Ranch. San Jose CA.

High	Trees with good health and structural stability that have the potential for longevity at the site. Twenty (20) trees were rated as having good suitability for preservation including: crape myrtle #1, 150,151, 152, 328; Mexican fan palm #180, 252, 253, 316; Calif. fan palm #59, 78; purpleleaf plum #43q, 433; Blue Colorado spruce #71, Chinese holly #98, coast redwood #239, Japanese maple #105, juniper #132, orange #163, persimmon #76, star magnolia #142, yew #197, and Norfolk Island pine #415.
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. One hundred and four (104) trees were rated as having moderate suitability for preservation including: 36 crape myrtle, 11 Japanese maple, 6 orange, 5 avocado, 5 Italian cypress, and 5 lemon.
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. Three hundred and twelve (312) trees were rated as having poor suitability for preservation including: 30 Hollywood juniper, 19 fern pine, 15 lemon, 14 crape myrtle, 12 Japanese maple, 12 orange, 11 Victorian box, and 10 glossy privet.

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.

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:

Diameter of Tree to be Removed	Type of Tree to be Removed			Minimum Size of Each Replacement Tree
	Native	Non-Native	Orchard	
12 inches or greater	5:1	4:1	3:1	15-gallon container
6 - 11 inches	3:1	2:1	none	15-gallon container
less than 6 inches	1:1	1:1	none	15-gallon container
x:x = tree replacement to tree loss ratio Note: Trees with a circumference of greater than or equal to 38" (=12.1" diameter) shall not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees. One 24-inch box tree = two 15-gallon container trees.				

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.

I estimate a total of 561 trees are present at Winchester Ranch including 439 assessed trees and 122 Italian cypresses. Trees were categorized by type (native, non-native, orchard) and diameter (Table 3). Fruit trees were categorized as orchard trees.

Were all trees to be removed as part of development, mitigation requirements would be based on Table 3.

Table 3. Estimated tree mitigation. Winchester Ranch. San Jose CA.

Diameter Class (in.)	Type			Total
	Native	Non-native	Orchard	
≥12	2	132	21	115
6 to <12	1	111	34	146
<6	--	108	30	138
Italian cypress	--	122	--	122
Site, totals	3	473	85	561

Tree Preservation Guidelines

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

Design recommendations

1. 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.
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.

HortScience | Bartlett Consulting



James R. Clark, Ph.D.
Certified Arborist WE-0846A
Registered Consulting Arborist #357

Attachments

Tree Assessment Form

Tree Assessment Plan