The Legacy of CALIFORNIA NURSERY Historic Park

the root of an industry

City of Fremont
California Nursery Historical Park

Volume 2: Tree Report & Urban Forestry Management Plan

Adopted December 12, 2017

CITY OF Fremont California

PGAdesign

LANDSCAPE ARCHITECTS

The Legacy of CALIFORNIA NURSERY Historic Park

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Urban Forest Management Plan

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California Nursery Historical Park
Fremont, CA

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April 2017

HORT SCIENCE

Urban Forest Management Plan

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Introduction and Overview

California Nursery Historical Park (CNHP) was donated to the City of Fremont in 1971. The site is a historical nursery, established in 1884, that originally occupied 463 acres. Plants from around the world were propagated and planted to test them for suitability for California's growing conditions. Today the site is 20.1 acres. It is a joint project of the City of Fremont and Math Science Nucleus.

The purpose of an Urban Forest Management Plan (UFMP) is to describe how the goals regarding the urban forest that are outlined in the CHNP Master Plan will be accomplished. It is a procedural document with a five- to ten-year time frame. City staff have asked for an action plan that is implementable. The UFMP for California Nursery Historical Park includes):

- General description of the characteristics and qualities of the urban forest;
- Guidelines for protecting the urban forest as site uses are enhanced;
- Strategies for recovering lost canopy cover and species diversity;
- Prioritized maintenance plan, including pruning, irrigation, soil management, and pest management;
- Components of a tree risk management policy and procedures.

Vision and Goals

The vision for the urban forest at CNHP is one that pays tribute to the rich horticultural history of the park's trees, while sustaining a healthy canopy cover for the benefit and enjoyment of the people of Fremont.

The primary goals for the CNHP urban forest are to

1. Protect and sustain the historic trees, including
    a. Landmark trees;
    b. Boxed oak forest;
    c. Orchard trees;
    d. Rows and groves of palms;
    e. Grove of yew trees adjacent to the boxed oak forest.
2. Plant new trees to replace trees that have been or will be lost over time.

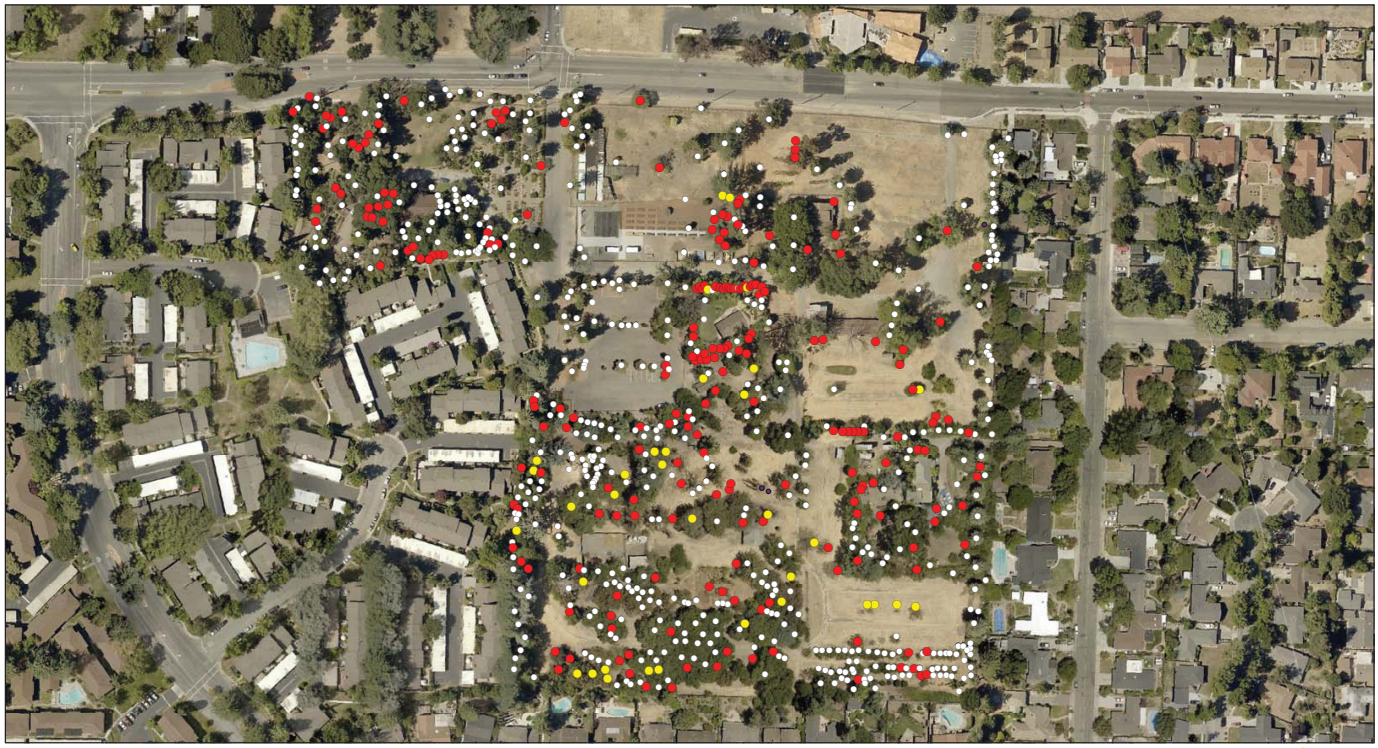
   a. Where landmark trees have died or will soon die, consider planting one or more commemorative tree(s) of the same species.
   b. To the extent reasonable, plant species to represent taxa that are either no longer present or are in poor condition and may not live for many more years.
   c. Consider expanding orchard plantings to continue the legacy of experimenting with tree fruit varieties.
   d. Consider augmenting the palm collection with other uncommon palm species that are adapted to the climate.
3. Remove trees in poor condition that cannot be restored with reasonable arboricultural treatments. Plan for replacement of lost canopy cover.
4. Develop and implement a tree risk management program by which trees posing unreasonable risk to staff and public are appropriately treated to abate the hazards. The site managers realize that having trees on the site requires accepting a tolerable level of risk to enjoy the benefits that the trees provide.
5. Implement an irrigation program that supplies adequate water to trees that cannot survive on natural rainfall alone.
6. Provide appropriate pruning treatments to develop and maintain structurally strong trees.
7. Protect and enrich the site soil to sustain tree root health and plant nutrition.
8. Provide a plant health care program to identify and manage debilitating tree pests.
9. Protect trees from injury and impact from construction activities during site improvement projects.

Status of the Urban Forest

Trees at CNHP have been studied at various time in recent history. Boy Scout Troup 143 inventoried the trees in 2006, documenting 412 trees of 112 species. In April 2014, HortScience arborists and City of Fremont staff completed a tree survey, which was augmented by HortScience arborist a few months later. Most recently, HortScience updated the tree condition assessments in May 2016. Trees on the Roeding property were added to the inventory in December 2016.

The tree population continues to change in response to environmental stress, particularly the recent drought, and tree age. This section summarizes the results of the 2014 and 2016 tree assessments.

The urban forest at CNHP consists of 823 trees (Fig. 1). The tree population at California Nursery is highly diverse; 130 taxa are represented, some of which are rarely seen in the region. The species most commonly present are coast live oak (13% of population), Canary Island date palm (8%), apricot (5%), yew (5%), windmill palm (5%), and kohuhu



Tree Inventory Map

Figure 1
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

180 Feet

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(*Pittosporum tenuifolium*, 4%). One-hundred-twelve species are represented by fewer than 20 individuals; for 76 species, only one or two trees are present. The distribution of the most common species are depicted in Fig. 2 and are provided in detail in Appendix 1.

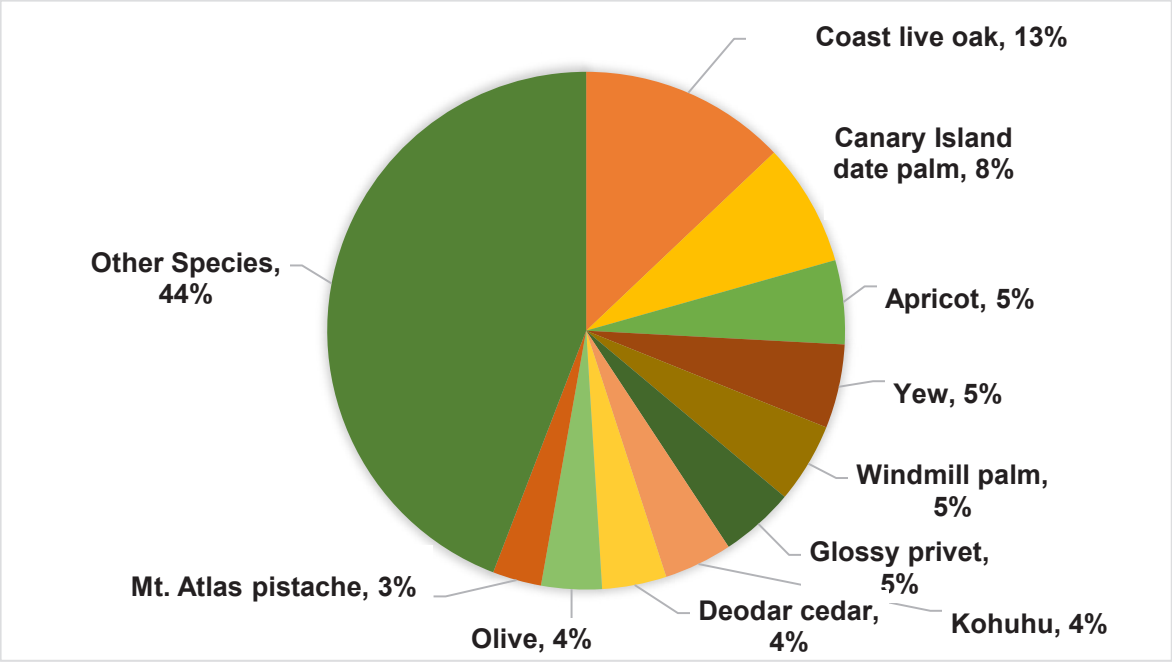


Figure 2: CNHP tree species composition by percent of population.

The health and structural condition of the trees ranged from good (30%), fair (38%) and poor (32%) (Fig. 3). The 'poor' condition category includes 35 trees that have died or failed since the 2014 inventory.

Although the condition within the entire tree population is fairly evenly divided among good, fair and poor ratings, the condition ratings within individual species is highly variable (Fig. 4). For instance, 90% of the Canary Island date palms are in good condition, while only 7% of the yews are in good condition. The palms are well adapted to the local climate and are somewhat drought tolerant. The yews, in contrast, are not drought tolerant and have declined due to lack of adequate water. Most of the native coast live oaks (53%), which are well adapted to the site, are in fair condition. The high percentage of trees in fair rather than good

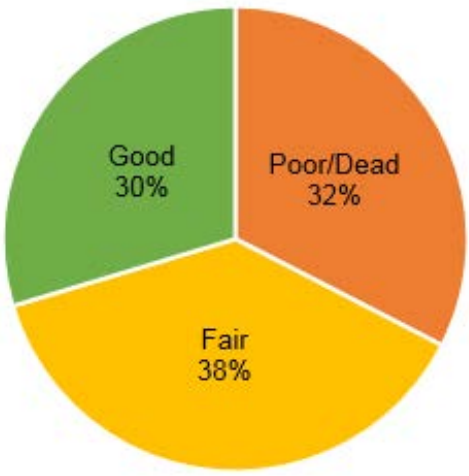


Figure 3: Tree condition ratings are fairly evenly divided among the tree population.

condition is primarily a reflection of compromised structural condition rather than reduced health.

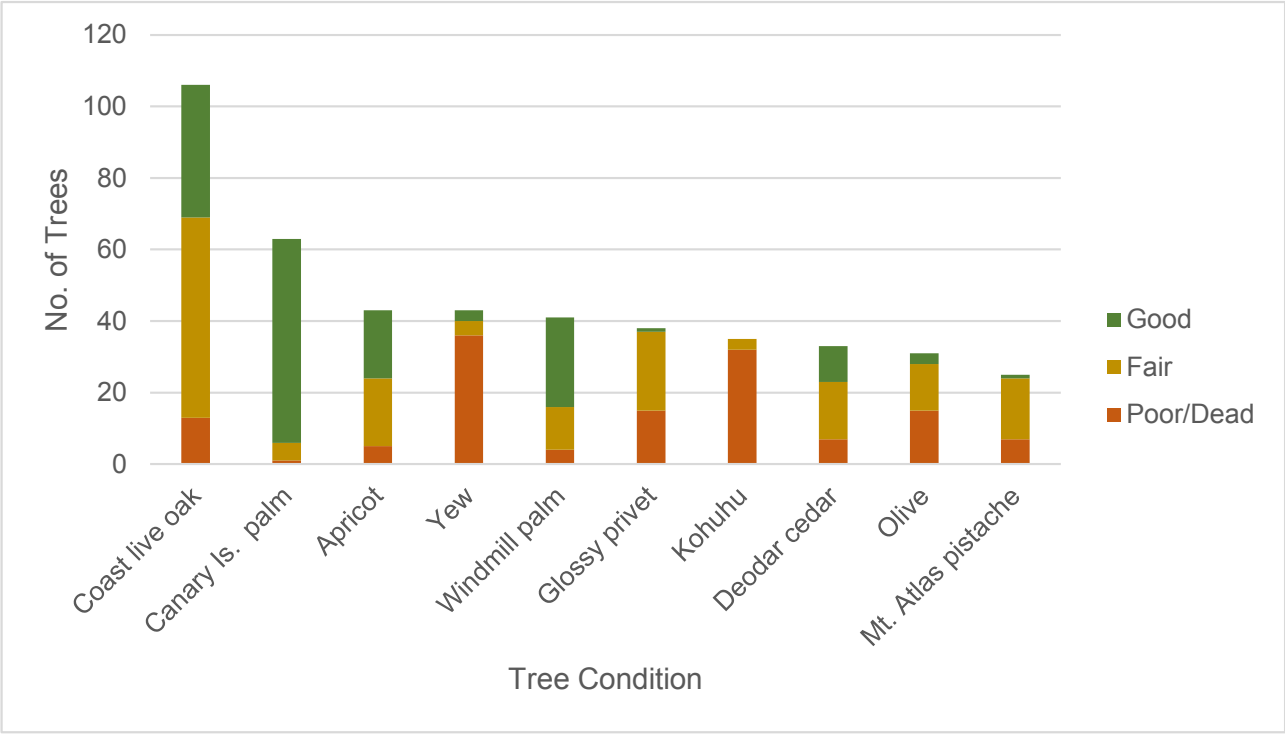


Figure 4: Tree condition ratings within each species are highly variable.

In general, species that are drought tolerant such as coast live oak, deodar and blue Atlas cedar, Canary Island date palm and Mt. Atlas pistache, tend to be in better condition than those requiring supplemental irrigation. Others had survived for many years without irrigation, but are declining rapidly because of the current drought and high temperatures, including elm, yew, Lombardy poplar, Fremont poplar, and magnolia.

Relatively few pests and diseases are present. The one London plane has sycamore scale which feeds sap in young foliage. Several coast live oaks have Ehrhorn scale on the lower side of shaded branches. Tortoise beetles cause foliage damage on *Eucalyptus*. None of these pest problems are significant to tree health at current populations.

Some trees are in poor condition because of significant structural defects that make them prone to failure. Defects include dead and broken branches, weak branch attachments, large girdling roots, excessive lean, cracks, codominant stem attachments with included bark, and decay. In some cases these conditions can be improved or mitigated through judicious pruning and installing support cabling systems.

Noteworthy Trees

Trees from all over the world were brought to the nursery for propagation, some of which were planted on the grounds and survive today. Unusual trees for the region included floss silk tree, Montezuma cypress, Guadalupe cypress, dawn redwood, Japanese red cedar, cockspur hawthorn, Queensland kauri, Queensland bottle tree, Senegal date palm, cliff date palm, Mt. Atlas pistache, prickly melaleuca, coral tree, and China doll.

The site has many noteworthy trees because of their large size, unique characteristics, and/or history. The City of Fremont designates certain specimens as Landmark trees if they have the following characteristics:

- Trees with trunk diameters over 4.5 feet when measured 4.5 feet from ground level,
- Excellent structure or unique structural character
- Excellent health
- High aesthetic appeal
- Good longevity

The first landmark trees were adopted by the City Council in 1972, many of which were located at California Nursery. The landmark tree list has been updated and added to a few times since then, most recently in 2012 to include 50 trees representing 14 species (Appendix 2, Fig. 5). Unfortunately between 1972 and 2010, seven landmark trees died and were removed, including Greek fir, copper beech, Colorado blue spruce, Japanese cryptomeria, David's maple, and two blue gum eucalyptus. Between 2012 and 2014, two more trees died: Kurrajong bottle tree and Lombardy poplar #525. Since 2014, one tree failed, Monterey cypress #531, and one died (Monterey cypress #540).

The remaining Landmark trees vary in condition between good to poor (Table 1). The most prominent trees are the Canary Island date palms that line the entry to the park and the eastern property line.

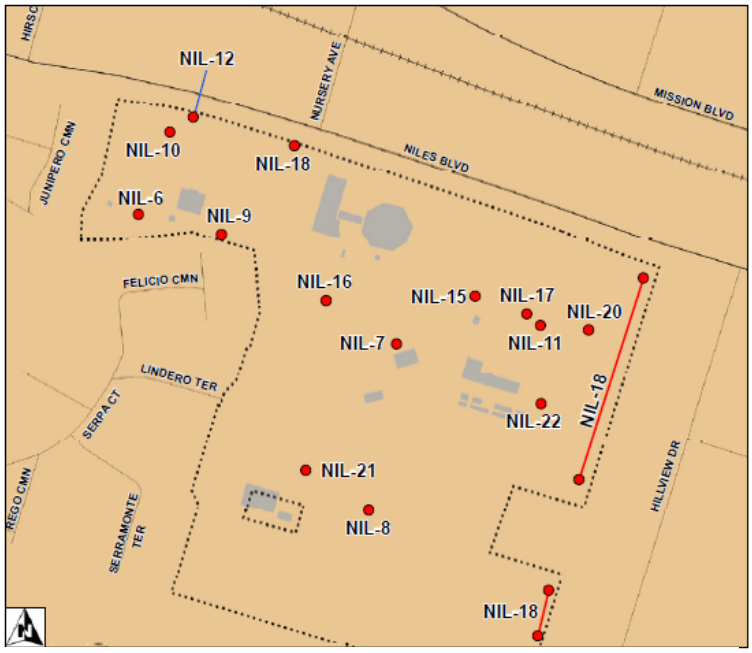


Figure 5. Map showing location of Landmark Trees at CNHP (Landmark Trees of the City of Fremont 2012).

Table 1: Status of City of Fremont Landmark Trees at CNHP.

Tag No.	Landmark No. (2012)	Species	Condition 2016
37	NIL-6	Bunya bunya	Good condition
	NIL-7	Forest kurrajong tree	Died, removed
529-531, 535, 540	NIL-8	Monterey cypress	#531 failed and removed; #540 dead; others in poor structural condition
117	NIL-9	Dwarf blue gum	Extensive basal decay.
61, 62	NIL-10	Prickly paperbark	Poor structural condition and health.
251, 364, 365, 372, 373	NIL-11	Canary Island pine	Good condition
738	NIL-12	Cork oak	Very poor condition.
263	NIL-15	Japanese zelkova	Good condition
174	NIL-16	Canary Islands juniper	Good condition
252	NIL-17	Queensland kauri pine	Fair condition
93, 94, 96, 165-167, 186; 270-279, 784, 286-291, 293, 295	NIL-18	Canary Island palm	Good condition
282, 294, 307	NIL-20	Siberian elm	Fair to poor condition
544	NIL-21	Senegal date palm	Good condition
525	NIL-22	Lombardy poplar	Dead

Because Landmark trees have and will continue to die, it is important to continue to nominate trees for Landmark status. CNHP with its diverse, mature tree population provides many possible candidates. Some trees suggested for consideration are provided in Table 2. Of particular note is the allée of boxed oak trees that have developed roots into the soil below and attained an impressive canopy (Photo 1).

Photo 1. Trees to consider for Landmark status are the coast live oak boxed forest (left), California black walnut #247 (below), and bald cypress #257 (bottom left).

Table 2: Notable trees to consider for nomination for Landmark status.

Tag No.	Species
27, 127, 211-214, 231, 497	Deodar cedar
44-46, 162	American elm
102, 107	Coast live oak
211	Incense cedar
246	Burr oak
247	California black walnut
257	Bald cypress
308-311	Pecan
453	Blue atlas cedar
613≈664	Boxed forest, coast live oak
516, 518, 520	Cliff date palm
77	Cockspur hawthorn
84	Dawn redwood
783	Mediterranean fan palm
489	Monterey cypress
65, 234	Mt. Atlas pistache
58	Portugal laurel
561-578	English spreading yew

Protecting the Urban Forest

As the CNHP Master Plan is implemented, site changes will occur that affect the urban forest. New facilities such as the Interpretive/Education Center, restrooms, parking lots, walkways as well as installation of utilities to service them will impact trees.

Construction will occur in seven phases over a period of years (Fig. 6). To the extent possible, these facilities will be designed to remove only trees in poor condition. In some cases it may be possible to transplant trees such as palms to other locations within the CNHP. The number of trees in each phase is shown in Table 3.

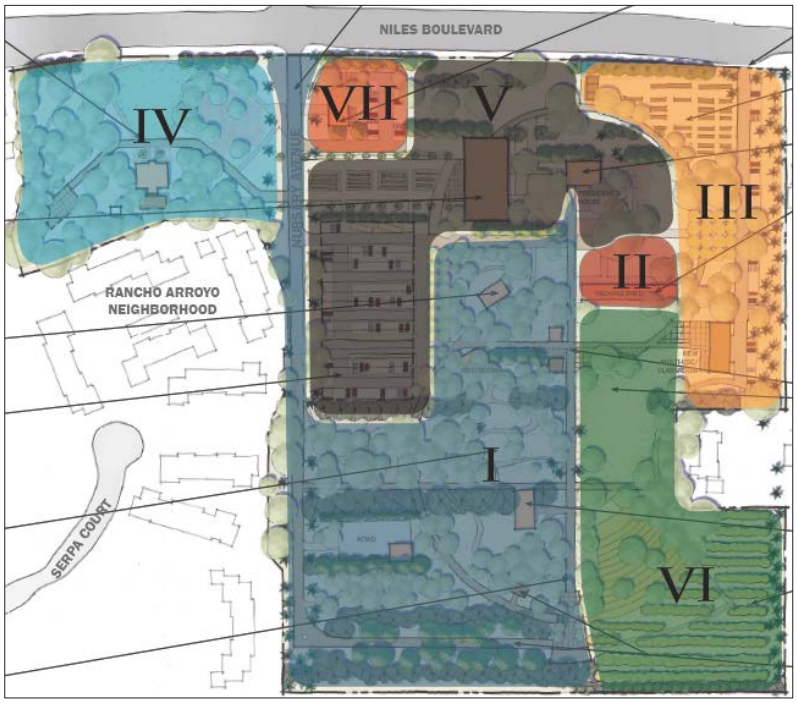


Figure 6. Preliminary CNHP phase plan by PGADesign identifies the approximate order in which portions of the Park will be renovated and enhanced.

Table 3. Number of Trees Present by Phase

Phase	No. of trees
1	337
2	3
3	50
4	167
5	92
6	131
7	13
Roeding Residence	28

The City of Fremont's tree preservation policy is defined in Municipal Code Chapter 18.215. In addition, the city's *Tree Policy Guidelines*, a 50-page document, describes policies and procedures for tree selection, establishment, maintenance and preservation.

The following guildelines are provided to retain trees in good condition during the design and construction of new facilities.

Project Design Phase

1. Inspect each tree within 50' of the project area. Identify trees suitable for preservation based on health, structural condition, and potential longevity.
2. Plot accurate locations of all trees to be preserved on all project plans. Focus on preserving trees that are in good condition.

3. Plan for tree preservation by designing adequate space around trees to be preserved. This is the TREE PROTECTION ZONE**:** No grading, excavation, construction or storage of materials should occur within that zone. Route underground services including utilities, sub-drains, water or sewer around the TREE PROTECTION ZONE. For design purposes, the TREE PROTECTION ZONE trees should be defined as the tree dripline.
4. No underground services including utilities, sub-drains, water or sewer should be placed in the TREE PROTECTION ZONE.
5. Consider the vertical clearance requirements near trees during design. Avoid designs that would require pruning more than 20% of a tree's canopy.
6. Prepare a Tree Protection Plan that identifies TREE PROTECTION ZONE for each tree and specifies work procedures to minimize injury to trees.

Demolition, Construction and Utility Installation

1. Tree protection fences should be installed to encompass the TREE PROTECTION ZONE**.** Fences should be installed prior to beginning demolition and remain until construction is complete.
2. No grading, excavation, construction or storage or dumping of materials should occur within the TREE PROTECTION ZONE.
3. Any root pruning within 20' of trees that is required for construction purposes should receive the prior approval of and be supervised. An arborist should assess the extent of tree injury and mitigation treatments.
    a. Do not cut roots of any size within 5' of tree trunks.
    b. Roots larger than 2" diameter should be left intact. Where possible, tunnel under roots. If root cutting cannot be avoided, a qualified arborist should observe and provide recommendations for action regarding effects of root removal on tree health and stability.
    c. Roots should be cut with pruners or hand saw to provide a flat and smooth cut.
4. Irrigate trees as needed that are affected by construction to provide adequate moisture to sustain tree health.
5. All contractors should conduct operations in a manner that will prevent damage to trees to be preserved.
6. Spoil from trench, footing, utility or other excavation should not be placed within the TREE PROTECTION ZONE, neither temporarily nor permanently.
7. All grading and excavation within 20' of trees should be conducted to minimize root injury to trees. The equipment should operate perpendicular to the tree and operate from outside the TREE PROTECTION ZONE.
8. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the project arborist so that appropriate treatments can be applied.
9. Any tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.

10. All tree work must comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. To the extent feasible tree pruning and removal should be scheduled outside of the breeding season. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.

Landscape Design and Construction

1. Irrigation systems must be installed so that no trenching severs roots larger than 1/2" in diameter within the TREE PROTECTION ZONE.
2. Soils that have been compacted during construction should be decompacted by tilling with a pneumatic air spade/air knife that leaves the tree roots intact. After de-compacting the soil, spread 2" compost over the soil surface and incorporate using the pneumatic air spade/air knife.
3. New plants to be installed should have similar water requirements as nearby retained trees.

Planting the Historic Trees of the Future

Because most of the trees at CNHP are mature, a strong effort needs to be made to plant new trees that integrate into the urban forest of the future. As much as we want to preserve them, individuals will continue to die and need to be replaced. New landscape plantings are planned as new facilities are constructed, existing ones are restored, and spaces for passive and active use areas are created.

Sustaining the urban forest at CNHP requires an active planting program to replenish trees that have been lost and to replace trees as they are removed or die. Successful urban forests start with good quality nursery stock and locally-adapted species that are planted in locations that will allow them to reach their potential size with a minimum amount of maintenance.

There are four components to planting for the CNHP's future urban forest:

1. Remove dead and declining trees to allow space for new plantings.
2. Selecting species adapted to the site conditions
3. Honoring the history of planting unique species from around the world
4. Using high quality nursery stock that will thrive after planting.

Tree removal and replacement

Trees, as living organisms, eventually reach old age, decline and die. Sometimes death occurs gradually as health slowly declines, and sometimes is happens quickly when structural failure occurs. An important component of tree management is removing and replacing trees to sustain the health and function of the urban forest over time.

Dead and declining trees, however, provide important wildlife habitat. We suggest therefore, that declining and dead trees be removed in use areas where they may pose a risk to people or where new facilities will be developed. Consider retaining dead and

declining trees along the perimeters of the property where no injury or damage would occur if they failed.

Dead and poor condition trees that are candidates for removal and replacement are identified by project phase (Appendix 3). Consider removing dead and dying trees only when each phase is undertaken. This will allow retaining trees for the wildlife value as long as possible. As each phase is implemented, reassess trees to identify any change in condition that would affect preservation or removal decisions. Exceptions to this are trees that are likely to fail and cause damage in their current situation (discussed further in Tree Risk Management section).

Select species adapted to site conditions

The adage, "Right tree, right place" represents the importance of making certain that the tree species and place it is planted are a good match. There three main factors to consider when selecting species for a site: site, social and economic.

> **Site factors** include both environmental conditions such as climate, soils and topography, as well as cultural conditions that are imposed on the site by people, such as utilities, pavement and pollution.
>
> **Social factors** include neighborhood and community values, species aesthetics, public safety, and characteristics that people may find objectionable such as fruit drop or bad odors.
>
> **Economic factors** include the costs of planting, establishing and maintaining that can vary among species. Species that require a long establishment period, have a high mortality rate during establishment, require frequent pruning to develop good structure, or are prone to pests that require treatment will increase costs. These cost should be compared to the benefits that the trees provide.

Tree species selection is a series of compromises. The best we can generally hope to achieve is to match species to the most important or limiting factors of a site. At this site key environmental factors include:

- Alkaline soil pH limits use of species requiring soil pH below 6.0.
- High evapotranspiration rates in summer and lack of summer rainfall limits use of species having moderate to high water requirements unless regular irrigation is supplied.
- Depending on the quality of the water applied, trees may need to be tolerant of salts or specific ions such as boron, chloride and sodium.
- Winter low temperatures to 21^{o}F, infrequently to 26-16^{o}F excludes subtropical and tropical species unless winter protection is provided.
- Variable exposure – sun, part sun or shade – depending on proximity to surrounding structures and tree canopy requires selection of species for exposure at the microscale.

Once the basic environmental conditions are considered, features associated with management and use become key concerns. Examples include:

- *Above-ground growing space limited by overhead utilities.* Keys for selection: mature tree height less than 25 feet.
- *Below-ground space limited due to soil volume.* Key for selection: small trees with some drought tolerance. Large growing trees will not grow to their mature size in a limited soil volume.
- *Narrow planting space between curb and sidewalk.* Key for selection: minimal litter and pavement-friendly rooting pattern, minimal basal flare, and mature trunk diameter less than two-thirds planting strip width.
- *Parking lot.* Keys for selection: good shade with resistance to sucking insects and fruit not eaten by birds.
- *No pest control available.* Key for selection: resistance to pests & disease significant to area.
- *Water quality.* Key for selection: tolerance to concentrations of boron, sodium and chloride in well water and recycled water.
- *High vandalism areas.* Key for selection: thorny trees; non-brittle trees not easily snapped when young.

Select species with historical significance

For a plant person, one of the most fascinating characteristics of CNHP is that it was a living laboratory for unusual and unfamiliar species. Plants from around the world were propagated and planted to test them for suitability for California's growing conditions. In 2006 Boy Sout Troup 143 indentified 412 trees comprising 112 species. There were 20 species then that are no longer present at the site. There are an additional 10 species that are in poor condition and probalby will not survive for long. It is likely that they did not survive because the site environmental conditions - most likely low winter temperatures and drought condition - were unfavorable. We suggest considering planting these in appropraite locations where the site can be managed to meet the horticultural requirements of the plant and the historical significance warrants the extra care required to sustain them (Table 4). In addition, planting new and unusual species for the region would continue to legacy of the nursery's living laboratory.

Photo 2. Japanese red cedar is an example of a declining tree scheduled to be removed in Phase 5 that could be considered for replacement planting.

Table 4: Unusual species lost from the urban forest or at risk at CNHP

Scientific Name	Common Name
Abies cephalonica	Greek fir
Abies numidica	Algerian fir
Abies pinsapo	Spanish fir
Acer capillipes	Red snake-bark maple
Acer davidii	David's maple
Acmena smithii	Lilipily
Agathis robusta	Queensland kauri
Archontophoenix	King plam
Brachychiton discolor	Queensland lacebark
Brachychiton polpulneus	Bottle tree
Calodendron capense	Cape chestnut
Chorisia speciosa	Floss silk tree
Corylus maxima	Hazelnut
Crinodendron sp.	Lantern tree
Cryptomeria japonica	Japanese red cedar
Cupresus guadalupensis	Guadalupe cypress
Eucalyptus botryoides	Bangalay mahogany
Fagus sylvantica	European beech
Juniperus cedrus	Canary Islands juniper
Hesperocyparis guadalupensis	Guadalupe cypress
Ligustrum ovalifolium	California privet
Magnolia acuminata	Cucumber tree
Paulownia tomentosa	Empress tree
Pinus edulis	Pinon pine
Platanus racemosa	Western sycamore
Quercus chrysolepis	Canyon live oak
Quercus virginiana	Southern live oak
Radermachera sinica	China doll
Sequoia sempervirens 'Pendula'	Weeping redwood
Strelitzia nicolai	Giant bird of paradise

Select quality nursery stock

There is no substitute for starting the life of a tree than using a quality plant. While good planting and aftercare practices can correct some problems CNHP should strive to obtain high quality plants that have the vigor to establish rapidly and the structure to support future growth.

All trees should be inspected before they are accepted to be sure they meet criteria for size and quality. They should meet the general specifications for size and proportion contained within the most recent edition of ANSI Z60.1 and the Guidelines Specifications for Nursery Tree Quality (www.urbantree.org/pdf/NurseryTreeSpecs1.pdf). Further, no matter the site of origin, stock type and size, a tree to be planted in the urban forest should have the following characteristics:

- True to type.
- A well-developed, healthy root system without kinked or circling roots.
- Height to trunk caliper ratio adequate to support the crown without staking.
- Adequate and well-developed taper.
- Good vertical and radial branch distribution.
- Good vigor, as indicated by foliage size and color; branch size, color and turgor; and smooth, bright bark (if normal for species).
- Free of injuries and wounds.
- Free of pests and disease.

Maintaining the Urban Forest

If nurturing the urban forest is the strategic objective of an urban forestry management plan, then maintenance activities are the tactics to achieve that goal. There is no question that healthy, structurally sound trees are greater assets than declining, compromised trees. The benefits provided by urban trees, from energy conservation to property values, are greatest when trees are in good condition. Maintenance treatments, from post-planting care to ultimate removal, maximize those benefits.

Like any other component of the infrastructure, trees require routine maintenance. The primary tasks are pruning, managing competing vegetation, irrigation, pest management, and, eventually, removal when they reach the end of their life span. The type of maintenance required depends on the age and species of the tree (Table 5).

Tree Pruning

Pruning is one of the most important treatments to develop and maintain a stable tree structure. It typically represents the greatest expenditure in tree maintenance as well. Pruning is the primary tree care activity that can either enhance or destroy the beauty

and structural stability of a tree. It is also one of the most hazardous activities. It is therefore very important that those engaged in pruning be well trained and have appropriate equipment and safety gear.

Table 5. Typical maintenance tasks and stages of tree development.

Stage of tree development	Maintenance task
Planting	Select tree and location.
	Prepare site and tree.
	Install tree.
	Improve soil conditions if needed
Young	Irrigate.
	Mulch soil surface.
	Prune to develop good structure.
	Maintain and remove stakes and ties.
	Manage pests.
	Fertilize.
	Control competing vegetation.
	Protect soil quality.
Mature	Irrigate.
	Inspect routinely for pests, defects in structure, and other problems.
	Prune to maintain clearance and structural stability.
	Install support systems.
	Manage pests.
	Control competing vegetation.
	Manage roots/infrastructure conflicts.
	Protect soil quality.
Decadent or dying	Determine if can be retained for wildlife value.
	Remove tree.
	Replace tree.

Pruning enhances tree health and structure and reduces the likelihood for failure thereby increasing longevity and enhancing safety. Based on the current inventory, we recommend pruning 407 trees over the next 5 to 10 years (Exhibit 3). The most

commonly required pruning treatments for mature trees are removal of dead and dying branches (crown cleaning), weight reduction on lateral branches, and pruning to reduce risk of tree failure. Pruning needs vary depending with tree species, age, size and history of care.

The primary document that establishes pruning standards *is Best Management Practices: Tree Pruning* (International Society of Arboriculture). All pruning should be in accordance with this document and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300). Anyone doing tree pruning at CNHP should be an International Society of Arboriculture (ISA). Certified Arborist or Tree Worker.

Time of pruning

Winter is generally the best time to prune most trees. Pines and eucalyptus should not be pruned between April and October to reduce the likelihood of attracting borers and bark beetles to the trees.

To the extent feasible tree pruning and removal should be scheduled outside of the breeding season. All tree work must comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. Breeding bird surveys should be conducted prior to tree work.

Types of pruning

Pruning should be undertaken with specific objectives. For CNHP the primary objectives are to reduce the risk of tree failure, to provide clearance for park activities, and to develop good structure in young trees that are planted.

Training young trees. Young trees should be trained to develop a sturdy, tapered trunk with well-spaced lateral branches proportional in size. Proper training when trees are young will greatly reduce pruning frequency, intensity and costs as they age, and reduce public risk from tree failures due to structural defects. The tree structure training process is accomplished by annual pruning over a 3-5 year period until the desired branch structure is established.

The first pruning following planting is primarily to restore a central leader in trees that were headed in the nursery and to remove branches broken or damaged during shipment. Care should be taken to avoid removal of excessive leaf area as this will slow tree growth. This work typically should involve no more than 3 cuts on any one tree.

Enhance tree structure and reduce likelihood for failure. For mature trees, this is the most important task to promote longevity and enhance safety.

- Reduce the risk of failure by removing or reducing the weight on dead, cracked or damaged branches that could fall onto use areas.
- Improve weight distribution by removing or reducing the length and weight of long, heavy horizontal branches or leaning trees.
- Develop and maintain good structure by subordinating branches that are competing with the central leader.

- Restore good structure to trees whose crown was damaged by dieback from drought or wind.

Provide clearance for park activities and visibility.

- Remove or shorten branches using reduction cuts to allow access for pedestrians and vehicles by raising the crown to 8 feet (2.5 meters) over the sidewalk and 14 feet (4.3 meters) over the street.

Restore canopy through coppicing

- For English spreading yews that have died back due to drought, pruning hard to remove dead stems and stimulate growth of new buds will help restore the canopy (photo 3).
- Prune to remove dead stems above new sprouts; allow to resprout.
- Two to three years after coppicing, inspect trees and determine if thinning to reduce stem density is needed.

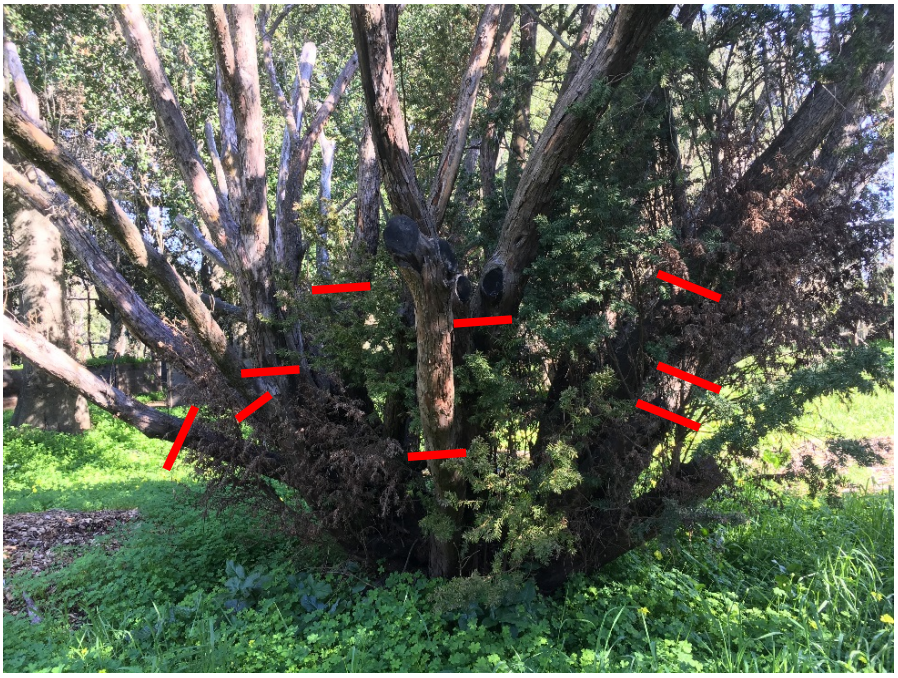


Photo 3. Coppice yews that have died back by pruning above live tissue using heading cuts.

Pruning activities that should be avoided include

- Topping unless used to manage wildlife tree or to coppice.
- Lacing-out, lions tailing or lightening the crown.
- Removing more than 20 percent of live foliage unless needed to adequately manage risk.

- Tipping back all branches.
- Pruning cuts larger than four inches in diameter unless needed to adequately manage risk.

Pruning to achieve stated objectives should employ primarily removal and reduction cuts. In the former, the entire branch is removed at its point of origin. The final cut should be made outside the branch collar. Where reduction cuts are made, a limb is shortened to a branch of similar or smaller size. The rule of thumb is that the lateral must be at least one-third the diameter of the limb being removed.

In general, heading cuts should be avoided. Cutting to a stub is rarely appropriate and should be the exception in routine pruning rather than the rule. Heading may be required during crown restoration.

Priority pruning recommendations for CNHP

At this time we recommend pruning 57 trees (Table 6). All pruning treatments should include crown cleaning to remove dead, dying and weak branches, and an aerial inspection to assess potential problems not visible from the ground. As each phase of the CNHP is developed, trees should be inspected and reevaluated for pruning needs.

Table 6. Trees recommended for pruning as first priority.

Phase	Tag #	Species	Trunk Diameter	Pruning Objective
1	376	Deodar cedar	21”	Prune to clean crown
1	401	Deodar cedar	33”	Prune to clean crown
1	410	Deodar cedar	35”	Prune to clean crown
1	411	Deodar cedar	29”	Prune to clean crown
1	434	Blue atlas cedar	25,19”	Prune to reduce risk of failure
1	443	Blackwood acacia	22”	Prune to reduce risk of failure
1	489	Monterey cypress	55"	Prune to reduce risk of failure
1	497	Deodar cedar	44"	Prune to reduce risk of failure
1	498	River she-oak	10"	Prune to improve form
1	506	River she-oak	11"	Prune to clean crown
1	529	Monterey cypress	50"	Prune to reduce risk for failure
1	534	River she-oak	26"	Prune to reduce risk of failure
1	536	River she-oak	19"	Prune to reduce risk of failure

Phase	Tag #	Species	Trunk Diameter	Pruning Objective
1	537	River she-oak	44"	Prune to reduce risk of failure
1	556	Coast live oak	22"	Prune to improve weight distribution
1	588	English spreading yew	36"	Prune to coppice
1	598	California black walnut	26"	Prune to coppice
1	601	English spreading yew	25 stems 4-8"	Prune to coppice
1	617	English spreading yew	7,6”	Prune to coppice
1	619	English spreading yew	8,7,6”	Prune to coppice
1	622	English spreading yew	13 stems 2-5"	Prune to coppice
1	625	Coast live oak	19"	Prune to improve weight distribution
1	632	Coast live oak	23"	Prune to improve weight distribution
1	652	Monterey cypress	38"	Prune to clean crown
1	653	Cork oak	19"	Prune to improve weight distribution
1	658	Cork oak	30"	Prune to improve weight distribution
1	659	Cork oak	28"	Prune to improve weight distribution
1	660	Mt. Atlas pistache	26"	Prune to improve weight distribution
3	282	Siberian elm	39”	Prune to reduce risk of failure
3	294	Siberian elm	47”	Prune to improve weight distribution
3	308	Pecan	24,20,18”	Prune to reduce risk of failure
3	309	Pecan	36”	Prune to reduce risk of failure
3	310	Pecan	16”	Prune to reduce risk of failure
3	311	Pecan	29	Prune to reduce risk of failure

Phase	Tag #	Species	Trunk Diameter	Pruning Objective
4	1	Coast live oak	24"	Prune to improve weight distribution
4	4	Coast live oak	14"	Prune to improve weight distribution
4	6	Coast live oak	15"	Prune to improve weight distribution
4	8	Coast live oak	11"	Prune to improve weight distribution
4	30	Olive	34"	Prune to reduce risk of failure
4	31	Olive	27"	Prune to reduce risk of failure
4	32	Olive	33"	Prune to reduce risk of failure
4	33	Olive	23"	Prune to reduce risk of failure
4	38	American elm	43"	Prune to reduce risk of failure
4	40	American elm	14”	Prune to improve weight distribution
4	44	American elm	22”	Prune to reduce risk of failure
4	61	Prickly melaleuca	59"	Prune to reduce risk of failure
4	62	Prickly melaleuca	55"	Prune to reduce risk of failure
4	65	Mt. Atlas pistache	32"	Prune to clean crown
4	77	Cockspur hawthorn	26"	Prune to clean crown
4	83	Deodar cedar	21"	Prune to clean crown
4	162	American elm	31”	Prune to reduce risk of failure
5	213	Deodar cedar	31”	Prune to clean crown
6	825	Deodar cedar	33”	Prune to reduce risk of failure
6	826	Deodar cedar	33”	Prune to reduce risk of failure
6	827	Deodar cedar	31”	Prune to reduce risk of failure
Residence	833	Coast live oak	44”	Prune to improve weight distribution

Phase	Tag #	Species	Trunk Diameter	Pruning Objective
Residence	852	Deodar cedar	43”	Prune to reduce risk of failure

Tree support systems

Tree support systems provide structural support to reduce the likelihood for tree failure. Treatments include cabling, bracing, guying and propping. Standards for installation and maintenance of these systems are defined in the American National Standards Institute (ANSI) A300 Part 3, and the ISA Best Management Practices Tree Support Systems: Cabling, Bracing and Guying (Smiley and Lilly 2001). Before installing support systems (Table 7), the tree should be pruned to reduce weight and balance the crown to the extent possible.

Photo 4. Coast live oak #621 has fallen so that the trunk is outside the box. A prop is needed to support the tree.

Table 7. Trees recommended for installation of a support system.

Phase	Tag #	Species	Trunk Diameter	Type of Support System
1	539	Cork oak	22"	Install prop
1	621	Coast live oak	21"	Install prop
1	530	Monterey cypress	50"	Install cable system
4	107	Coast live oak	25"	Install cable system
5	211	Incense cedar	41"	Install cable system

Advanced inspection

The tree inventory included a visual inspection of each tree from the ground. In some cases an advanced inspection is needed to assess the structural condition of the tree. The three types of advanced inspections recommended currently are (Table 8):

- Aerial inspection by an arborist to evaluate presence and severity of structural defects that may not be visible from the ground. Aerial inspections should be included any time an arborist is in a tree to provide pruning or installation of support systems.
- Decay testing to assess the presence and extent of internal decay that is not visible.
- Root collar inspection that removes the soil around the base of the tree to expose the buttress roots, and then tests the roots and lower trunk for presence and extent of internal decay.

Table 8. Trees recommended for advanced inspection.

Phase	Tag #	Species	Trunk Diameter	Type of Inspection
1	101	Deodar cedar	29"	Perform decay inspection
1	489	Monterey cypress	55"	Perform aerial inspection
1	530	Monterey cypress	50"	Perform aerial inspection
1	543	Monterey cypress	32"	Perform decay inspection
4	27	Deodar cedar	43"	Perform aerial inspection
4	51	Deodar cedar	48"	Perform aerial inspection
4	93	Canary Island date palm	38"	Perform aerial inspection
4	107	Coast live oak	25"	Perform aerial inspection
4	738	Cork oak	37,31,16”	Perform root collar inspection
5	166	Canary Island date palm	30”	Perform aerial inspection
5	211	Incense cedar	41”	Perform aerial inspection
6	825	Deodar cedar	33”	Perform aerial inspection
6	826	Deodar cedar	33	Perform aerial inspection
6	827	Deodar cedar	31”	Perform aerial inspection
7	750	Canary Island date palm	30"	Perform aerial inspection

Girdling roots

For three trees, there were visible surface roots circling the trunk that were girdling the tree. This condition can lead to tree decline and failure. Girdling roots often can be rectified by cutting with a saw and removing the section impacting the trunk (photo 5).

Photo 5. Remove the girdling root impacting tree #72.

One tree, a mature coast live oak #833 at the Roeding residence was being girdled by a chain wrapped around the trunk. The chain should be removed as soon as possible.

Table 9. Treatments for trees being girdled.

Phase	Tag #	Species	Trunk Diameter	Pruning Objective
1	380	Coast live oak	30	Remove girding root
4	72	Queensland bottle tree	12"	Remove girding root
4	146	Queensland bottle tree	19"	Remove girding root
Residence	833	Coast live oak	44”	Remove girding chain

Irrigation

The Mediterranean climate at CNHP provides average winter rainfall of 16 inches per year. The evapotranspiration rate averages 47 inches per year, leaving a shortfall of 31 inches of water per year. For trees to be successful in this environment, they must be able to control their water loss and survive eight to nine months of no rainfall. While there are many tree species at the site that are drought adapted such as the native coast live oak, tree species that are not native to Mediterranean or desert climates require irrigation.

The Park’s history as a testing grounds for plants from around the world has included species in its urban forest that are not adapted to drought. Those species must be irrigated if they are to grow and maintain good health. Many of the non-drought adapted species have already disappeared from the urban forest. Establishing an irrigation program is vital to halt the continued decline and loss of non-drought adapted trees.

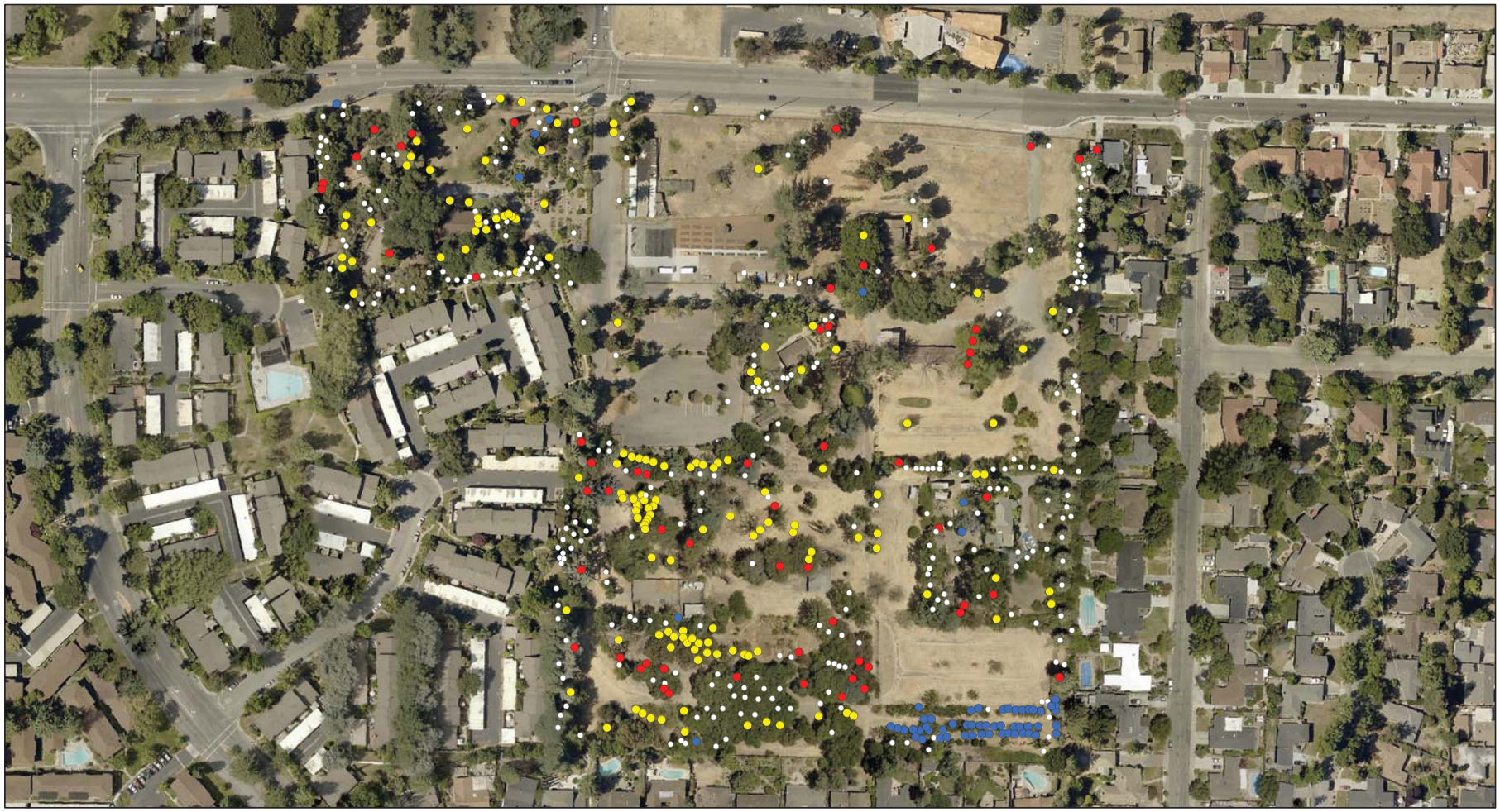
Trees requiring supplemental irrigation are identified in Appendix 3 and plotted on figure 7. They fall into one of three categories:

A Irrigate to lengthen the rainy season: approximately late spring and early summer

B Irrigate monthly during dry season, generally June to September

C Irrigate approximately every two weeks during the dry season, generally May through October.

Irrigation schedules should be adjusted depending on actual winter rainfall amount and distribution, and actual evapotranspiration rates as affected by temperatures, humidity and wind.



Irrigation Requirements of Trees

Figure 7
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

3. Colors indicate the irrigation requirements trees planned for preservation.

Irrigation Requirements

- No irrigation
- Irrigate late spring and lante summer
- Irrigate monthly June - Sept
- Irrigate every 2 weeks May - Oct

N

180 Feet

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There are several ways to supply irrigation water depending on frequency irrigation will be applied, access to a water source, and ability to install a permanent irrigation system. Options include:

- Install irrigation pipes with quick couplers on risers. Distribute water through impact spray heads over groups of trees requiring irrigation
- Place a series of drip hoses (e.g. leaky pipe) around target trees.
- In level areas without foot traffic, create berms around the tree dripline; fill basins with water from hoses.
- As new landscape in each phase is installed, include irrigation system for trees within that area. Bubblers or drip irrigation on a grid system tend to work best for established trees.

Soil management

A healthy, biologically diverse soil is required to sustain a healthy landscape. An important maintenance goal is to sustain the organic components of the soil, which will then provide nutrient elements as needed for healthy and attractive plants while avoiding excessive growth that might attract pests or need to be removed through pruning, edging or mowing. Landscape maintenance activities should be implemented to nurture biological activity, provide organic material, and protect soil from damage.

Protect soil from compaction by:

- Cultivating soil when it is moderately moist; wet and dry soils should not be cultivated.
- Scheduling maintenance operations that require driving equipment over the soil when the soil is dry.
- Confining traffic to paved areas.
- When temporary access is needed over non-paved areas, distribute the load over the soil with 6” thick coarse organic mulch or reusable planks.
- When constructing new facilities, limit traffic and storage areas and protect valuable soil resources from compaction.

Protect the soil from erosion by:

- Maintaining vegetative cover over the soil to the extent possible.
- Maintaining a minimum of three inches mulch cover over bare soil.
- Minimizing use of blowers in planting beds and on turf.
- Create leaf repositories in planting beds as appropriate.

The best mulch material is leaves and stems from pruning operations that has been chipped. Identify a location at the site where these materials can be stored and processed. Avoid removing organic materials that than be recycled on site.

Mature trees rarely need fertilization, especially if soil organic content is replenished continually by maintaining an organic mulch cover.

Plant health care

As medicine has become more holistic in its approach to human health and well-being, so too has arboriculture and urban forestry in its concern for plant health and performance. A plant health care approach to tree management considers the whole plant in relation to it growing environment over its entire life. Integrated pest management (IPM) is the foundation on which plant health care is based. IPM is a method of controlling plant pests combining biological, cultural and chemical controls. It relies on monitoring and a stepwise response, all in a context of ecological, social, and economic acceptability.

Relatively few pests and diseases were present at the time the tree inventory was conducted. The one London plane had sycamore scale which feeds sap in young foliage (photo 5). Several coast live oaks have Ehrhorn scale on the lower side of shaded branches. Tortoise beetles cause foliage damage on *Eucalyptus*. None of these pest problems are significant to tree health at current populations.

Developing an Integrated Pest Management program

Pest populations can sometimes increase to where significant plant damage does occur. In addition, new pests are introduced into the landscape occasionally that may compromise tree health. For these reasons it is important to have a tree health and pest monitoring program in place to identify developing problems and provide appropriate treatment before populations get out of hand. IPM includes the following concepts:

- A plant or landscape planting is a component of a functioning ecosystem. Hence, actions should be designed to develop, restore, preserve, or augment natural checks and balances, not necessarily to eliminate pest species.
- The mere presence of a pest organism does not necessarily constitute a pest problem. Acceptable population and damage levels must be determined.
- All possible pest control options should be considered before action is taken. Techniques employed should be as compatible with each other as possible.

An IPM program is based on certain operating principles.

1. Understand the biology of the plants involved, especially the manner in which they are influenced by the surrounding ecosystem.
2. Identify the key pests, know their biology, recognize the kind of damage they inflict, and study the economic and aesthetic consequences of control measures.
3. Identify the key environmental factors that impinge (favorably or unfavorably) upon pest species and potential pest species in the ecosystem.
4. Consider concepts, methods, and materials that, individually and in concert, will facilitate permanent suppression or restraint of pest and potential pest species.
5. Structure a program so that it can be adjusted to meet change or varying situations.

6. Seek the weak links in the life cycle and population structure of important pest species, and direct control practices as narrowly as possible at those weak links. Avoid broad impact on the plant ecosystem.
7. Whenever possible, employ methods that preserve, complement, and augment the biological dynamics that characterize the ecosystem. Whenever possible, diversify the ecosystem.
8. Monitor pests, natural enemies, and tree health regularly.
9. Anticipate unforeseen developments, move with caution, and be aware of the complexity of the landscape ecosystem and the changes that can occur within it.

Monitoring

Monitoring is a critical component of pest management for trees and shrubs. Regular inspection of plants for insect, disease, and cultural problems allows a landscape manager to pinpoint control actions. Population levels of predators and parasitoids as well as insect pests within a landscape will indicate whether or not control measures are needed.

It is essential to be able to distinguish pests from beneficial insects particularly in their immature stages. Growth and development of insects and plants can vary as much as two to three weeks from the "normal" time, depending on whether temperatures are above or below average. Insects often become a problem about the same time that certain plants in the area begin to grow or bloom.

Control Options

Maintenance of plant health and avoidance of stress factors are central tenets of IPM programs. Treatments aimed at these two goals can be applied at any time. Some of the most economical and effective management tactics are preventive and should be employed even before pests are observed. Three major types of control measures—biological, cultural, and chemical—contribute to a plant health care program.

Biological Control

Control by natural enemies can be effective, long-lasting, economical, and minimally disruptive to the ecosystem. Natural enemies include organisms that feed on (predators), parasitize (parasitoides), kill (pathogens) or displace pests (competitors). Biological control includes conservation of natural enemies by managing a plant or landscape in a manner that supports beneficial organisms. Where natural enemies are nonexistent or are present in numbers too low to provide effective control, they can be introduced.

Cultural Control

A number of maintenance practices or modifications of them can make the environment unfavorable for pest reproduction, movement, or survival. Other mechanical or physical practices may specifically combat plant pests or increase host resistance. Such controls, including some of the oldest cultural practices known, are usually more effective for preventing pest build-up than for correcting an existing pest problem.

In other cases, pest build-up may be prevented more effectively if the timing or specific method of a cultural practice is altered. Timing is often critical to the success of much cultural pest control. Certain practices are described here to indicate the range of possibilities.

Maintaining plant vigor not only enhances plant appearance but can increase tolerance to damage and infestation by borers. The goal is moderate plant vigor through careful management of nutrition, aeration, and moisture.

Pruning can reduce the likelihood of certain disease infections and pest infestation, or stop or slow them.

Sanitation in and around plants can remove or destroy the breeding, refuge, and overwintering sites of pests. Sanitation which usually involves removing infected, fallen twigs, leaves, and fruit, is effective against various insects, plant pathogens, rodents, and nematodes.

Mulching can often reduce splashing and the drops of mud that would protect spores deposited on plant surfaces. Mulches can effectively eliminate or reduce weeds in landscape plantings.

Traps can be used not only to monitor population levels but also as a means of control. Sticky, yellow surfaces are sometimes used in small areas to trap whiteflies. Mechanical traps can also be used to control rodents.

Chemical Control

In an IPM program, chemicals are used as a last resort when adequate pest control has not been possible using other means. When chemicals are used, the least toxic material to non-target organisms should be selected. Spot treatments should be applied rather than broad cover sprays. Highly selective rather than broad spectrum pesticides are preferable.

Tree Risk Management

The goal of a Tree Risk Management Program is to reduce the likelihood of personal injury and property damage posed by tree failures. This is accomplished by implementing a program of tree inspection and treatment that identifies the trees with the greatest potential to cause damage, and apply treatments to reduce their failure in a systematic way. It is recommended that CNHP develop such a plan.

Tree risk assessment is the systematic process of evaluating the potential for a tree or one of its parts to fail and, in so doing, injure people or damage property. All trees have the potential to fail. Even a structurally sound tree can fail if exposed to unusually strong winds. Under normal climatic conditions, however, most tree failures appear to involve specific defects of structure such as the presence of decay or weak branch attachments. These defects become significant in situations with saturated soil, strong winds, snow/ice loads and other extremes of climate. The most likely failure situation involves a combination of structural defects and unusual or severe weather. By regularly

examining trees for specific defects, evaluating their potential to fail, and applying appropriate treatments, safety can be enhanced.

Following are the key components of a risk management plan:

- Policy statement
- Goals of the program
- Standard of care statement
- Determination of acceptable risk
- Training and qualifications of risk assessors
- Rating system for assessing relative risk
- Risk assessment procedures
- Frequency of assessments
- Management options to mitigate risks
- Record keeping protocols
- How the program is funded
- Program assessment and reporting

Risk management policy

The first step in developing any risk management plan is to prepare a policy statement that frames the scope of the plan, assigns responsibility for managing the plan, and describes what is to be accomplished. A policy statement should include:

- A statement of commitment which says top officials believe the practice of risk management is important and identifies the overall purpose of risk management.
- A statement identifying who is responsible for risk management and what the person's authority is.
- A charge to identify and assess risks.
- A charge to select and implement risk control and financing measures.
- A charge to audit and report on risk management efforts.

Developing a tree risk assessment program

Developing a tree risk assessment program requires considerable planning before going into the field. Prior to actual implementation, management must frame the program to meet the organization's programmatic and budgetary goals. Questions to answer and decisions to make include:

- What are the goals of the program?
- How will the information be used?
- Which trees will be included in the assessment?

- When and how often will trees be inspected (inspection interval)?
- What risk rating system will be used?
- How will information be collected, recorded and managed?
- Who will perform the evaluations and how will they be trained?
- What are the field procedures?

It is not yet possible to quantify the risk of failure associated with trees. We lack the quantitative data necessary to develop such statistics. The standard of care for evaluating risk associated with tree failure is application of the arborist's experience and training to evaluate the structural condition of the tree, the site in which it grows, and weather conditions to which it is exposed in an objective manner.

The current standard for tree risk assessment is defined in *Best Management Practices: Tree Risk Assessment* (Smiley, Matheny and Lilly, ISA, 2011).

Inspecting trees for structural weaknesses

Visual examination from the ground of the tree structure for defects begins with an assessment of overall vigor and health, then focuses on an examination of roots, root crown, trunk, scaffold limbs and branches. A defect is a condition that reduces the structural stability of the tree or tree part. It may be a natural growth condition of the tree, such as branch attachments with included bark, or it may be caused by weather, site conditions, management activities, or pest activity. The severity of individual defects can be designated as severe, moderate, and low.

If the inspector identifies a tree in imminent danger of failing, immediate action must be taken. Action should be defined in the risk assessment procedures, and typically include informing appropriate personnel, restricting access to the target area, and implementing abatement treatments (pruning, removal, moving the target etc.) as soon as possible.

Some common characteristics to look for in trees are:

History of failure - Trees that have failed in the past tend to do so again. This is true for individual trees, as well as for trees within a stand. On individual trees, check for broken stubs, split out limbs; in stands, look for fallen trees.

Recent exposure - Trees that used to be protected by other vegetation or structures are more likely to fail if their neighbors are removed, leaving the tree more exposed to wind.

Root injury - Trees with root rot or severed roots (construction, sidewalk repair) are likely to fail.

Lack of basal flare - Lack of flare may indicate fill soil has been placed around the trunk. The tree should be checked further for decay in the buttress roots.

Cracks - Cracks in branches and trunks indicate areas of weakness.

Bark - Loss of bark, esp. in non-uniform patterns; buckled bark, horizontal cracks and "popping off" of pieces may indicate wood under tension or compression. Internal cracks may be indicated by bulges and ridges in the bark.

Decay - Decayed wood is weak and likely to fail. Look for discoloration, conks, mushrooms, cavities.

Crooks - Crooks are formed primarily as a result of pruning. Branches with crooks tend to break.

Seams - A seam is a line formed by included bark at branch junctions, or when two edges of woundwood meet at the center of a wound (behind which there may be decay). They indicate areas of weakness than should be checked further.

Narrow branch attachments with included bark - Branches with narrow angles of attachment do not form connective tissue between the branch and trunk. As tree size increases, the branches tend to split out.

Clustered scaffold branches (poor vertical distribution) - Where several scaffold branches of similar size arise from one level, weakness occurs.

Dead branches - Dead branches quickly decay, making them more likely to break out of the tree.

Limbs with poor taper, end weight - These limbs tend to break.

Topping - Branches in topped trees are likely to fail because of weak attachment of the regrowth, dense regrowth limiting taper formation, and decay in the headed branch.

There is no clear, universally accepted distinction among arborists for what constitutes a hazardous tree versus a non-hazardous tree. A tree is hazardous if it is structurally unsound and the risk of injury or damage exceeds the tolerable threshold. The assessment of likelihood of failure is one of professional judgment. Opinions often differ. Within an CNHP's tree risk management program, however, it is possible to define, as a matter of policy, what is considered hazardous based on the agency's risk rating system.

Tree failure risk rating systems allow the Park staff to rank the relative risk posed by each tree within a population. It is a management tool that helps staff:

- Identify the highest-risk trees so that they can be treated first.
- Determine what portion of the tree population can be treated with the budget available, and to what degree that would reduce risk of tree failure within the population.
- Assess the adequacy of the current budget to fund abatement treatments, and determine if additional funds are needed.
- Evaluate the difference between funding committed to risk management and the community's tolerance for risk.
- Schedule tree care activities in a systematic way.
- Demonstrate the agency is acting reasonably to protect public safety.

Tree risk reduction

Development of abatement options should be as systematic as evaluating the failure potential, considering the nature of the site, tree, and target. Where targets are mobile, such as picnic tables, it may be possible to move the target outside the fall zone of the

tree. For walkways or parking, it may be possible to restrict the use by realigning pathways or closing off parking areas. Fences may be needed to exclude use.

The purpose of the treatments applied to trees is to reduce the potential for the tree to fail. Treatments may include pruning, cabling, bracing, propping, modifying site conditions, or removing the tree.

After abatement treatments are applied, a follow-up evaluation should occur, for the potential for the tree to fail has changed. Treatment effects on neighboring trees should be evaluated as well. For instance, consider the effects of change in exposure to wind if a protecting tree is removed.

Retention of dead and decaying trees may be desirable because they provide wildlife habitat. Selection of suitable wildlife trees must consider the risk presented, as well as the stability of the tree and its value for wildlife. Retention of hazardous trees or tree parts, even those with significant wildlife value, is not appropriate in public use areas where risk of damage or injury is unacceptable.

Proactive methods to minimize risk of tree failure

A comprehensive tree risk management program should incorporate activities and treatments into the tree planting and maintenance program that foster structurally stable trees. Risk management is put into practice when appropriate tree species are selected for the site and good quality trees are planted with adequate space for the crown and roots to develop. Trees that receive proper early care, including training to develop a strong branch structure, have fewer defects when they mature, and therefore pose less risk than trees that are incorrectly pruned.

Proactive methods to minimize risk associated with trees include:

Right tree, right place

- Plant small trees under power lines.
- Plant species suited to the climate and site conditions.
- Plant species and cultivars with inherently strong structure.
- Plant trees in locations that provide adequate space for development.
- Avoid planting species that develop large buttress roots near pavement.

Select good quality planting stock

- Plant trees having good structure.
- Plant trees having root systems free from circling or kinked roots.

Plant properly and provide appropriate early care

- Modify adverse soil conditions prior to planting to enhance root development.
- Prune circling roots before planting.
- Plant at proper depth so that root collar is at finish grade.
- Prune young trees to develop strong branch structure.
- Stake properly when needed and remove stake as early as possible.

- Maintain a turf-free area around the base of tree to avoid damage from mowers and string trimmers.

Use proper maintenance practices

- Avoid wounding roots, trunk or structural branches.
- Prune properly; avoid topping, excessive thinning, flush cuts, large cuts.
- Avoid excessive irrigation and wetting trunk of root rot-sensitive species.
- Avoid creating new edges along stands that expose trees with poor taper and high live crown ratios to wind.
- Avoid excessive root removal, especially near the buttress.

Maintaining records

Observations, ratings and actions taken should be documented, as well as dates and names of assessors. This not only creates a record that demonstrates performance of duty of care, but it creates history that facilitates tree management, and provides a tool for analyzing and preparing budgets. Records also should be kept to document training activities for every person involved in tree care.

Summary and Conclusions

California Nursery Historical Park is unique site that is vegetated with a highly diverse population of 823 trees representing 130 taxa from around the world. Many of the trees were planted at the turn of the 20th century; others are progeny of those plantings. The site has many noteworthy trees because of their large size, unique characteristics and history. The City of Fremont City Council has adopted 40 trees as landmark trees.

Because many of the trees are not native to the area, preserving and sustaining this valuable resource requires on-going maintenance. Since 1973, seven landmark trees have died. Sixteen (14%) of the 117 species that the Boy Scout Troup 143 surveyed and identified (http://www.fremontica.net/CNCo/tree_inventory2.php) the trees in 2006 were absent in our inventory. We think that most have been lost because of lack of adequate irrigation. More drought-sensitive trees and species are likely to disappear if irrigation is not supplied in the future. In our view, supplying adequate water according to tree need is the most important maintenance task at this park.

The Urban Forest Management Plan outlines the maintenance tasks needed to sustain the trees, including as well as recommending a tree risk management program to support tree longevity while providing for public safety.

As future CNHP uses are discussed and plans prepared, design to include significant and unique trees that are in good condition. Trees require space for not only their canopies, but also their root systems. Planning for adequate space is the first step towards protecting and preserving trees.

We noted the presence of structural defects we could see from the ground that tend to be associated with tree failure. Pruning often can abate these problems and preserve trees. In some cases it may be necessary to remove trees where the risk to park workers and the public cannot be managed.

Trees change over time. Our recommendations represented the condition of the tree we could observe at the time of inspection. Annual tree inspections of trees in use areas are recommended to identify changes to tree health and structure. In addition, large trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces can exceed the strength of wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, decrease stability, and blow over defect-free trees. Although we cannot predict all failures, identifying and managing trees with observable defects is an important component of enhancing public safety.

Appendix 1: Summary of Tree Species and Condition Ratings

Appendix 1

Summary of Tree Species and Condition Ratings

Condition Ratings and Frequency of Occurrence of Trees

California Nursery, Fremont, CA

Common Name	Scientific Name	Condition				Total
		Dead (0)	Poor (1-2)	Fair (3)	Good (4-5)	
Algerian fir	*Abies numidica*	-	-	1	-	**1**
Spanish fir	*Abies pinsapo*	1	-	-	-	**1**
Purple-leaf acacia	*Acacia baileyana* 'Purpurea'	-	-	-	1	**1**
Blackwood acacia	*Acacia melanoxylon*	1	1	4	2	**8**
Bigleaf maple	*Acer macrophyllum*	-	1	-	-	**1**
Japanese maple	*Acer palmatum*	-	2	2	2	**6**
Silver maple	*Acer saccharinum*	-	3	-	1	**4**
California buckeye	*Aesculus californica*	-	-	-	1	**1**
Red horsechestnut	*Aesculus* x *carnea*	-	-	-	1	**1**
Queensland kauri	*Agathis robusta*	-	-	1	-	**1**
River she-oak	*Allocasuarina cunninghamiana*	-	4	5	1	**10**
Black alder	*Alnus glutinosa*	1	-	-	-	**1**
Bunya-bunya	*Araucaria bidwillii*	-	-	1	1	**2**
Norfolk Island pine	*Araucaria heterophylla*	-	-	1	-	**1**
Bottle tree	*Brachychiton populneus*	-	-	1	-	**1**
Queensland bottle tree	*Brachychiton rupestris*	-	-	1	1	**2**
Guadalupe palm	*Brahea edulis*	-	-	-	2	**2**
Pindo palm	*Butia capitata*	-	1	-	2	**3**
Incense cedar	*Calocedrus decurrens*	1	3	2	1	**7**
Cape chestnut	*Calodendrum capense*	-	-	-	1	**1**
Pecan	*Carya illinoinensis*	-	-	4	-	**4**
Blue atlas cedar	*Cedrus atlantica* 'Glauca'	-	-	3	4	**7**
Deodar cedar	*Cedrus deodara*	-	7	16	10	**33**
Carob	*Ceratonia siliqua*	-	-	1	-	**1**
Mediterranean fan palm	*Chamaerops humilis*	-	-	-	1	**1**
Floss silk tree	*Chorisia speciosa*	-	-	1	1	**2**
Orange	*Citrus sinensis*	-	-	1	-	**1**
Cabbage palm	*Cordyline australis*	-	3	1	1	**5**
Dracaena palm	*Cordyline stricta*	-	-	1	-	**1**
Hazelnut	*Corylus maxima*	-	-	-	1	**1**
Cotoneaster	*Cotoneaster lacteus*	-	-	1	-	**1**
Cockspur hawthorn	*Crataegus crus-galli*	-	-	1	-	**1**
Japanese red cedar	Cryptomeria japonica	1	2	1	-	**4**
Italian cypress	*Cupressus sempervirens*	-	-	1	1	**2**
Persimmon	*Diospyros kaki*	-	2	6	1	**9**
Loquat	*Eriobotrya japonica*	1	5	9	-	**15**
Coral tree	*Erythrina lysistemon*	-	1	1	-	**2**
Silver dollar tree	*Eucalyptus cinerea*	-	-	1	-	**1**
Blue gum	*Eucalyptus globulus*	-	-	-	1	**1**
Compact blue gum	*Eucalyptus globulus* 'Compacta'	-	-	1	-	**1**

Condition Ratings and Frequency of Occurrence of Trees
California Nursery, Fremont, CA

Common Name	Scientific Name	Condition				Total
		Dead (0)	Poor (1-2)	Fair (3)	Good (4-5)	
White ironbark	*Eucalyptus leucoxylon*	-	3	-	-	**3**
Silver dollar gum	*Eucalyptus polyanthemos*	-	-	1	1	**2**
Swamp mahogany	*Eucalyptus robusta*	-	1	1	-	**2**
Fig	*Ficus carica*	-	-	1	-	**1**
Raywood ash	*Fraxinus angustifolia* 'Raywood'	-	-	-	1	**1**
Evergreen ash	*Fraxinus uhdei*	-	-	1	-	**1**
Ginkgo	*Ginkgo biloba*	-	-	1	-	**1**
Silk oak	*Grevillea robusta*	-	1	-	-	**1**
Guadalupe cypress	*Hesperocyparis guadalupensis*	-	-	-	3	**3**
Monterey cypress	*Hesperocyparis macrocarpa*	1	5	1	1	**8**
Kentia palm	*Howea forsteriana*	-	-	-	1	**1**
California black walnut	*Juglans hindsii*	-	2	3	1	**6**
English walnut	*Juglans regia*	-	-	-	1	**1**
Chinese juniper	*Juniperus chinensis*	-	-	-	1	**1**
Hollywood juniper	*Juniperus chinensis* 'Kaizuka'	-	-	1	-	**1**
Canary Is. juniper	*Juniperus cedrus*	-	-	1	1	**2**
Chinese flame tree	*Koelreuteria bipinnata*	-	1	-	-	**1**
Glossy privet	*Ligustrum lucidum*	-	15	22	1	**38**
Catalina ironwood	*Lyonothamnus floribundus*	-	1	-	-	**1**
Southern magnolia	*Magnolia grandiflora Magnolia*	-	2	2	1	**5**
Saucer magnolia	x *soulangiana Malus*	-	-	1	-	**1**
Apple	*domestica*	2	4	-	-	**6**
Crabapple Mayten	*Malus sylvestris*	-	1	-	-	**1**
Flaxleaf paperbark	*Maytenus boaria*	-	3	2	-	**5**
Prickly melaleuca	*Melaleuca linariifolia*	-	-	-	2	**2**
Dawn redwood	*Melaleuca styphelioides*	-	2	-	-	**2**
Mulberry	*Metasequoia glyptostroboides*	-	1	-	1	**2**
Myoporum	*Morus* sp.	-	1	-	-	**1**
Olive	*Myoporum laetum*	-	2	-	-	**2**
Sweet olive	*Olea europaea*	-	15	13	3	**31**
	Osmanthus fragrans	-	-	1	-	**1**
Canary Island date palm	*Phoenix canariensis*	-	1	5	57	**63**
Senegal date palm	*Phoenix reclinata*	-	-	-	1	**1**
Cliff date palm	*Phoenix rupicola*	-	-	-	3	**3**
Chinese photinia	*Photinia serrulata*	-	1	1	1	**3**
Colorado spruce	*Picea pungens*	-	2	1	-	**3**
Canary Island pine	*Pinus canariensis*	-	8	5	2	**15**
Aleppo pine	*Pinus halepensis*	1	-	-	-	**1**
Italian stone pine	*Pinus pinea*	-	-	-	1	**1**
Japanese black pine	*Pinus thunbergiana*	-	1	1	-	**2**

Condition Ratings and Frequency of Occurrence of Trees

California Nursery, Fremont, CA

Common Name	Scientific Name	Condition				Total
		Dead (0)	Poor (1-2)	Fair (3)	Good (4-5)	
Mt. Atlas pistache	*Pistacia atlantica*	1	6	17	1	**25**
Chinese pistache	*Pistacia chinensis*	-	-	2	1	**3**
Kohuhu	*Pittosporum tenuifolium*	4	28	3	-	**35**
Victorian box	*Pittosporus undulatum*	1	-	2	1	**4**
London plane	*Platanus* x *hispanica*	-	-	1	-	**1**
Fremont cottonwood	*Populus fremontii*	-	3	-	-	**3**
Lombardy poplar	*Populus nigra* 'Italica'	1	3	-	-	**4**
Apricot	*Prunus armeniaca*	1	4	19	19	**43**
Cherry	*Prunus avium*	-	1	5	5	**11**
Carolina cherry laurel	*Prunus caroliniana*	-	1	1	-	**2**
Purpleleaf plum	*Prunus cerasifera*	-	2	-	1	**3**
Plum	*Prunus domestica*	1	6	11	-	**18**
Almond	*Prunus dulcis*	-	1	-	-	**1**
Hollyleaf cherry	*Prunus ilicifolia*	-	1	-	-	**1**
Catalina cherry	*Prunus ilicifolia* subsp. *lyonii*	-	-	-	1	**1**
English laurel	*Prunus laurocerasus*	-	-	1	-	**1**
Portugal laurel	*Prunus lusitanica*	-	-	1	1	**2**
Peach	*Prunus persica*	-	1	-	-	**1**
Nectarine	*Prunus persica*	-	-	-	2	**2**
Douglas fir	*Pseudotsuga menziesii*	-	1	-	-	**1**
Pomegranate	*Punica granatum*	-	-	1	-	**1**
Coast live oak	*Quercus agrifolia*	1	12	56	37	**106**
Holly oak	*Quercus ilex*	-	1	1	3	**5**
Valley oak	*Quercus lobata*	-	-	1	-	**1**
Burr oak	*Quercus macrocarpa*	-	-	-	1	**1**
Cork oak	*Quercus suber*	-	1	3	1	**5**
China doll	*Radermachera sinica*	-	1	-	-	**1**
Italian buckthorn	*Rhamnus alaternus*	-	2	-	-	**2**
African sumac	*Rhus lancea*	-	5	-	-	**5**
Black locust	*Robinia pseudoacacia*	-	3	-	1	**4**
California pepper	*Schinus molle*	-	3	5	1	**9**
Coast redwood	*Sequoia sempervirens*	-	-	5	1	**6**
Giant sequoia	*Sequoiadendron giganteum*	-	-	1	-	**1**
Queen palm	*Syagrus romanzoffianum*	-	1	1	-	**2**
Australian bush cherry	*Syzygium paniculatum*	-	-	2	2	**4**
Bald cypress	*Taxodium distichum*	1	-	-	3	**4**
Montezuma cypress	*Taxodium mucronatum*	-	-	-	1	**1**
Yew	*Taxus baccata* cvs.	10	26	4	3	**43**
Eastern arborvitae	*Thuja occidentalis*	-	1	1	-	**2**
Windmill palm	*Trachycarpus fortunei*	-	4	12	25	**41**

Condition Ratings and Frequency of Occurrence of Trees
California Nursery, Fremont, CA

Common Name	Scientific Name	Condition				Total
		Dead (0)	Poor (1-2)	Fair (3)	Good (4-5)	
Winged elm	Ulmus alata	-	1	-	-	**1**
American elm	*Ulmus americana*	-	8	3	1	**12**
Camperdown elm	*Ulmus glabra* 'Camperdownii'	-	-	1	-	**1**
Chinese elm	*Ulmus parvifolia*	-	-	1	-	**1**
Siberian elm	*Ulmus pumila*	-	1	2	-	**3**
California bay	*Umbellularia californica*	-	1	9	-	**10**
California fan palm	*Washingtonia filifera*	-	-	-	3	**3**
Mexican fan palm	*Washingtonia robusta*	-	-	5	5	**10**
Spanish dagger	*Yucca gloriosa*	-	-	-	1	**1**
Sawleaf zelkova	*Zelkova serrata*	-	-	-	1	**1**
Total		**31**	**237**	**311**	**244**	**823**

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Appendix 2:
Landmark Trees

Appendix 2

Landmark Trees

LANDMARK TREES

City of Fremont

LANDMARK TREES

OF THE

CITY OF FREMONT

Printed: August 2012

Landscape Architecture Division
Community Services Department

Landmark Trees

introduction

Drawings: Phillip Eaker

In May of 1966, the City of Fremont, sponsored by the City Beautiful Committee, adopted a tree preservation ordinance to encourage and promote the preservation of trees. In August of 1970, the City Beautiful Committee received approval by the city council to conduct a survey of specimen trees for the final selection of outstanding landmark trees. The survey indicated the findings of 124 landmark trees to be preserved under resolution no. 3027, adopted in May 16, 1972. Several locations of the original 124 trees were inaccessible or hidden from public view. As a result, the list was reduced to sixty.[1]

The first publication containing the sixty landmark trees was published in 1973. The pages were black and white and each tree had beautifully hand-drawn sketches for visual reference. Since then, the publication has been a living encyclopedia of Fremont's natural heritage. New trees were given landmark status by City Council over the years, but the publication remained the same.

Almost 40 years later, in August 2010, the City's landmark trees were revisited. Several did not survive the test of time and some suffered from urbanization. However, the majority of the original sixty still exists today and continues to tower above Fremont's changed landscape. The original sets of trees along with new additions are included in this updated version of the Landmark Trees publication. On June 19, 2012, the City Council approved the de-listing of 42 missing or dead landmark trees and added to the landmark list 23 new qualifying trees. This updated book will hopefully encourage citizen stewardship for the protection of the city's great trees.

"No town can fail of beauty, though its walks were gutters and houses hovels, if venerable trees make magnificent colonnades along its streets."

Henry Ward Beecher, Proverbs, 1887

The Importance of Landmark Trees

Landmark or historical trees provide a rich heritage and a vital link to the City of Fremont's past. They offer references to a point in time, particularly for the younger generations, on "where we've been, where we are and where we're going."[2]

The location of landmark trees in Fremont coincides with the clustering of old farm ranches, nurseries, orchards and wineries in the Irvington and Warm Springs District. These trees provided a skyline relief from the broad plain of the original farming areas from the bay to the hills. Many of the landmark trees are located on land developed by pioneer families such as Shinn, Rock, Leland, Stanford, Vallejo, Patterson and Chadbourne.[2]

Trees play a major role in providing and maintaining future identity with the community. They provide softness to streets, and are often the only spokesmen for the community's character. Besides contributing natural beauty and tranquility, they also provide environmental benefits. Trees screen unsightly areas, limit the impact of air pollution, and reduce traffic noise and solar radiation. In short, trees are a direct means of reinforcing human dignity, and provide contrast to the world of cars, signs, wires, sounds and gases. A tangible cooperative community effort can provide for the continuity of this valuable resource.[2]

To sum it up: no place is complete without trees. A home without trees is charmless. A street without trees is shadeless. A park without trees is purposeless. A country without trees is hopeless.[2]

How a Tree Qualifies for Landmark Status

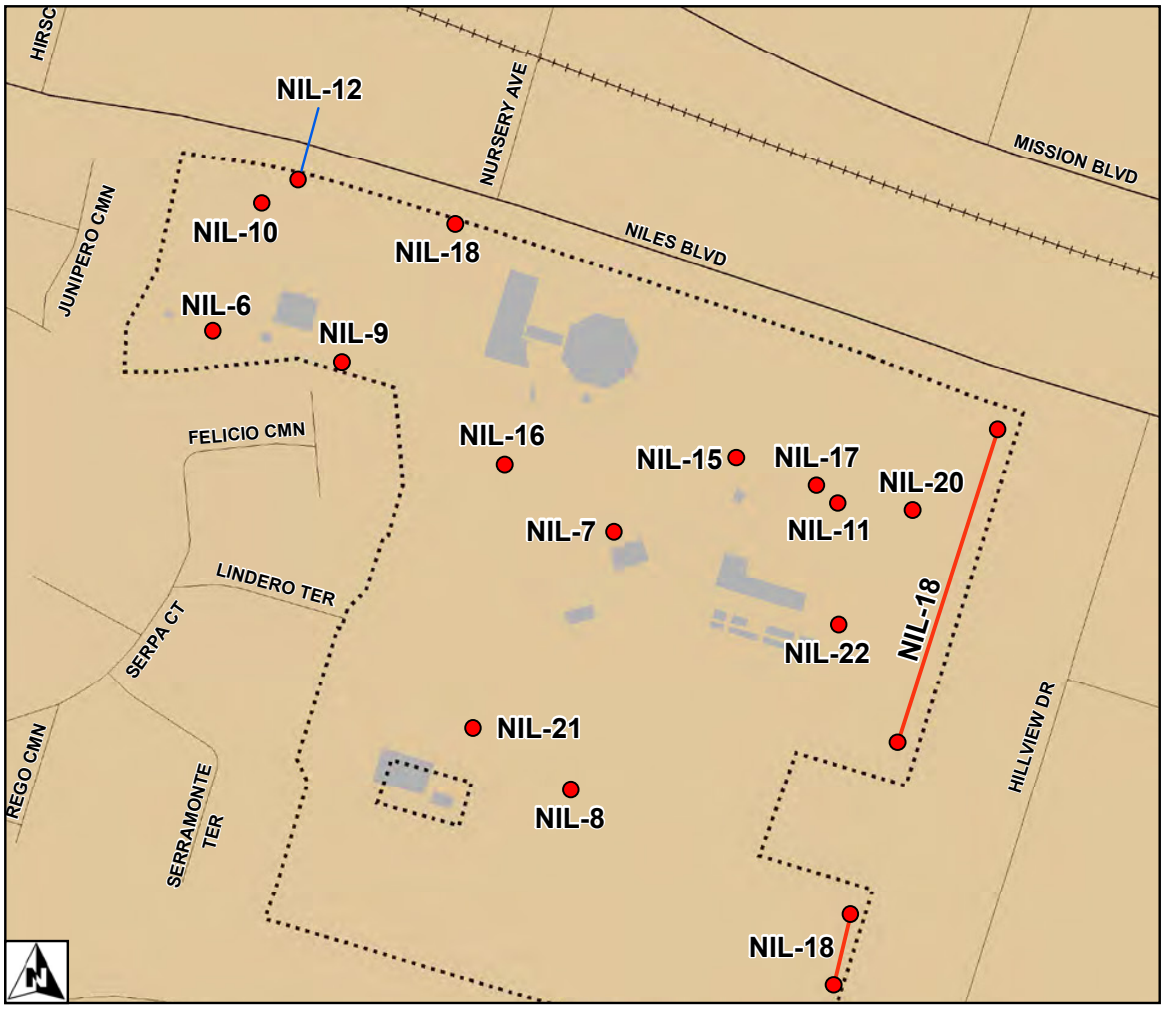
Today, a tree will presumptively qualify for landmark status if it meets the following criteria as spelled out in the City Tree Preservation Ordinance No. FMC 4-5112.

A tree meeting all of the following criteria qualifies for designation as a landmark tree:

a) The tree has a DBH is 54 inches or greater;
b) The tree's structure and character exemplify its species or it has an extraordinary form caused by environmental influences;
c) The tree is free, or can practicably be made to be free, of any structural defect posing a threat or injury to persons or of substantial damage to property;
d) The tree has substantial aesthetic appeal, or its lack of such appeal can be remedied by standard arboricultural practices; and
e) The tree has a probability of at least 50 percent that it will for survive more than 5 years from date of landmarking while retaining substantial aesthetic appeal.

If a tree does not meet the criteria as stated previously, it may still qualify for landmark designation if the tree meets any of the following criteria:

a) The tree has important historic significance in that:
    1. It is associated with events that have made a significant contribution to local state or national cultural heritage; or
    2. It is associated with the life of a person important to local, state or national history.
b) The tree is a native tree or a tree of exceptional adaptability to the Fremont Area which has a special significance to the community;
c) The tree has an especially prominent and beautiful visual impact;
d) The tree is one of a group of trees that as a group meets one or more of the criteria for landmark tree designation;
e) Any other factor causing the tree to have a special and important significance to the community.[3]



California Nursery Company Introduction

36501 Niles Boulevard

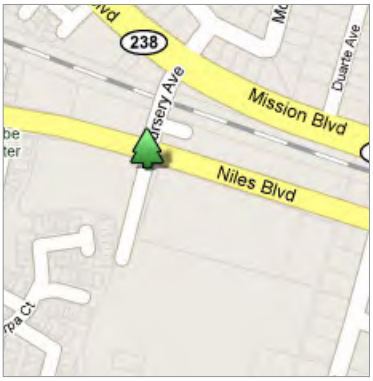
The California Nursery Company was once a grand nursery operation covering 463 acres when it was established in 1884.[9] It brought notable presence to the East Bay and was "significantly associated with the evolution of the nursery industry on a statewide level."[10]

Today, the 20.1 acre nursery remains a public property available to visitors to enjoy the historic landmark trees and buildings.[9] There are fourteen species of landmark trees located throughout the site as of 2012.

To read more about the California Nursery Company, please refer to Appendix F.

Agathis robusta
Queensland Kauri Pine

36501 Niles Boulevard
Niles District



Approximate location on map.


Close-up detail of the peeling bark of a Queensland Kauri Pine.


Photo Taken: February 2011

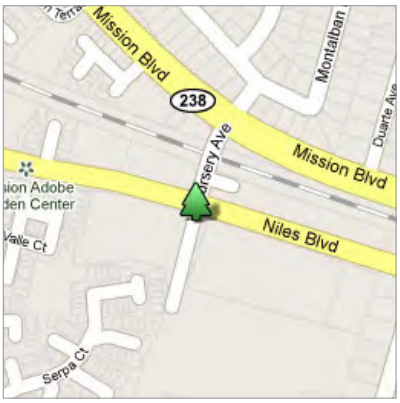
NIL-17 TREE INFORMATION/June 2012

HEIGHT: 40 ft.
SPREAD: 35 ft.
DBH: 1 ft.
QUANTITY: 1
NATIVE TO: Eastern Queensland, Australia
LANDMARK DATE: June 19, 2012

The Queensland Kauri Pine is located in the California Nursery and is a rare specimen in the Bay Area. There are only two populations in its native Queensland where these trees are extensively found. This tree is characterized by a multicolored peeling bark and a very straight trunnk. According to Gold Coast Nursery, its leaves are 2-5 cm wide and 5-12 cm long. In the past, the Queensland Kauri Pine was extensively logged for its high quality soft wood.

Araucaria bidwillii
Bunya Bunya

36501 Niles Boulevard
Niles District



Approximate location on map.


Green alternate leaves.


Photo Taken: August 2010

NIL-6 TREE INFORMATION/August 2010

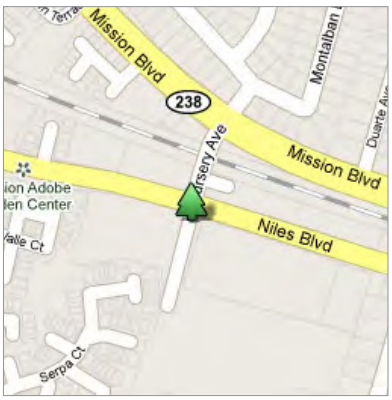
HEIGHT: 60 ft.
SPREAD: 30 ft.
DBH: 4 ft. 2 in.
QUANTITY: 1
NATIVE TO: Australia
LANDMARK DATE: March 17, 1972

This landmark tree can be found in the historic California Nursery Company near the experimental vegetable garden. The top of this tree broke off during a storm in 1980s.

The Bunya Bunya, native to Austalia, is a conifer that is planted in coastal and valley regions of California. It has a dense, wide-spreading, pyramidal crown with horizontal branches that dip gradually downward and turn up at the tips.[8]

Brachychiton rupestris
Forest Kurrajong Tree

36501 Niles Boulevard
Niles District



Approximate location on map.


Produces bell-shaped flowers.


Photo Taken: July 2010

NIL-7 TREE INFORMATION/September 2010

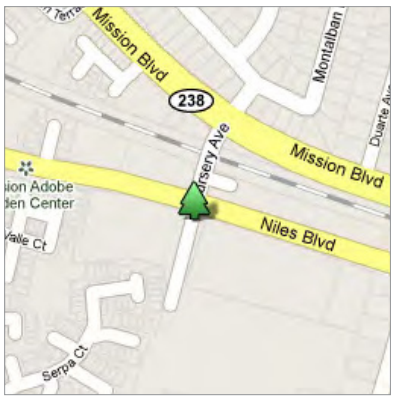
HEIGHT: 30 ft.
SPREAD: 25 ft.
DBH: 2 ft. 3 in.
QUANTITY: 1
NATIVE TO: Australia
LAST INVENTORIED: March 17, 1972

This landmark Kurrajong Bottle Tree can be found in the California Nursery Company near the Vallejo Adobe.

This tree is a broadleaf evergreen native to Australia. It stands out among other landmark trees because of its odd bottle-shaped trunk that bulges at the base. This tree produces bell-shaped whitish flowers that appear around May to June, followed by canoe-shaped woody brown pods.[6]

Cupressus macrocarpa
Monterey Cypress

36501 Niles Boulevard
Niles District



Approximate location on map.


Scale-like leaves.


Photo Taken: Septemper 2010

NIL-8 TREE INFORMATION/September 2010

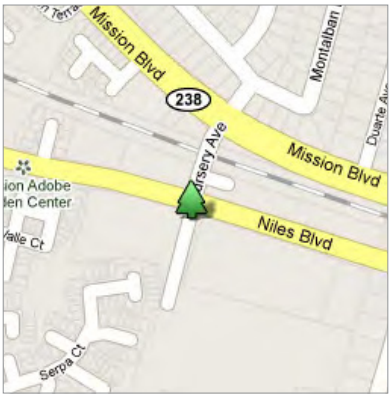
HEIGHT: Average 55 ft.
SPREAD: Average 45 ft.
DBH: Average 4 ft.
QUANTITY: Grouping of 5
NATIVE TO: Monterey Peninsula
LAST INVENTORIED: March 17, 1972

The City has five Monterey Cypresses located in the California Nursery Historical Park near the landmark Senegal Date Palm.

The Monterey Cypress is an evergreen tree native to the Monterey Peninsula. It is there that the Monterey Cypress's famous irregular windswept appearance makes a popular scenic look-out along the famous 17-mile drive. Monterey Cypresses have deep-green, cord-like foliage and globular cones that grow up to one inch in diameter.[12]

Eucalyptus globulus 'Compacta'
Dwarf Blue Gum

36501 Niles Boulevard
Niles District



Approximate location on map.


The trunk of this tree was cut in half and now has a gaping hole making it highly susceptible to disease and decay.


Photo Taken: August 2010

NIL-9 TREE INFORMATION/August 2010

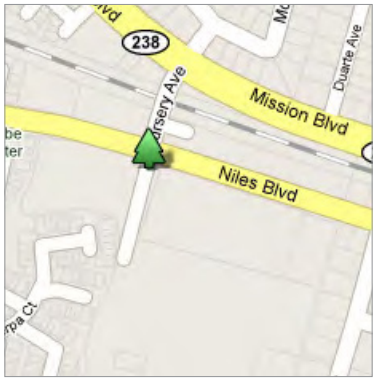
HEIGHT: 15 ft.
SPREAD: 26 ft. 5 in.
DBH: 3 ft. 7 in.
QUANTITY: 1
NATIVE TO: Australia
LANDMARK DATE: March 17, 1972

Similar to the Blue Gum, Dwarf Blue Gums are characterized with dark green sickle-shaped leaves and fibrous peeling bark.[13] This particular Dwarf Blue Gum was the mother tree bred by John Rock in the 1800s. It was propagated and sold all over California. Dwarf Blue Gums are used for low screening and is often planted next to larger blue gums for monarch butterly habitat.

Unfortunately, due to the development of nearby land the tree's health has been in decline. The trunk of the tree was cut in half making it highly susceptible to decease and decay.

Juniperus cedrus
Canary Islands Juniper Pine

36501 Niles Boulevard
Niles District



Approximate location on map.


Close-up detail of the bark of a Canary Island Juniper Pine.


Photo Taken: February 2011

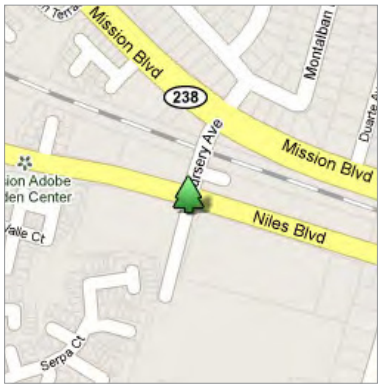
NIL-16 TREE INFORMATION/June 2012

HEIGHT: 25 ft.
SPREAD: 10 ft.
DBH: 1 ft. 8 in, 1 ft.
QUANTITY: 1
NATIVE TO: Western Canary Islands
LANDMARK DATE: June 19, 2012

This landmark Canary Islands Juniper Pine can be found in the parking lot of the California Nursery. This tree is special because, according to the International Union for Conservation of Nature and Natural Resources, it is an endangered species due to over-grazing, deforestation and fires. Therefore, its rarity is an outstanding trait for a landmark tree. According to the IUCN Red List of Threatened Species, there are about 572 trees remaining on the Canary Islands (Spain) and 40 trees remaining in Madeira (Portugal).

Melaleuca styphelioides
Prickly Paperbark

36501 Niles Boulevard
Niles District



Approximate location on map.


Sessile unstalked leaves with pointy tips.


Photo Taken: July 2010

NIL-10 TREE INFORMATION/August 2010

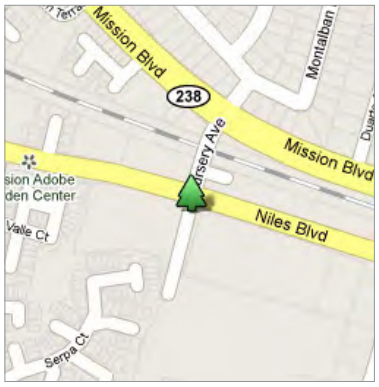
HEIGHT: Average 60 ft.
SPREAD: Average 39
DBH: Average 4 ft 5 in.
QUANTITY: 2
NATIVE TO: Australia
LANDMARK DATE: March 17, 1972

These two landmark Melaleucas are located near the California Nursery's main office building and the landmark Cork Oak. Each of these Melaleucas were observed to have multiple trunks.

The Prickly Paperbark is an evergreen tree native to Australia. It has deep roots, dense pendulous branches, light green leaves and clusters of creamy white flowers that appear from summer through fall.[14]

Phoenix canariensis
Canary Island Date Palm

36501 Niles Boulevard
Niles District



Approximate location on map.

Canary Island Palms at the entrance of the California Nursery.

Photo Taken: May 2012

NIL-18 TREE INFORMATION/June 2012

HEIGHT: 60 ft.

SPREAD: 35 ft.

DBH: avg 3 ft. 8 in.

QUANTITY: row of 19, set of 7

NATIVE TO: Canary Islands

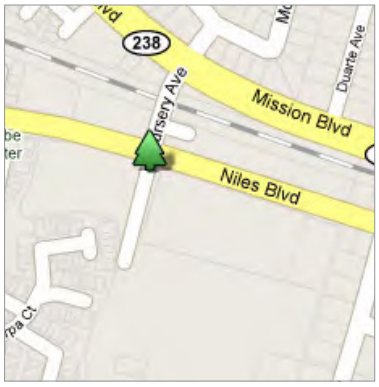
LANDMARK DATE: June 19, 2012

These Canary Island Date Palms exemplify old age and were planted when the California Nursery Company thrived under John Rock and the Roeding Family in the late 1880s to late 1900s. Many of these palms are single-trunked, but a few multi-trunked specimens are amongst the set.

A row of 19 landmark palm trees are located near the Lander's House and another set of 7 are located at the entrance to the California Nursery.

Phoenix reclinata
Senegal Date Palm

36501 Niles Boulevard
Niles District



Approximate location on map.


View of the multi-trunk structure of the Senegal Date Palm.

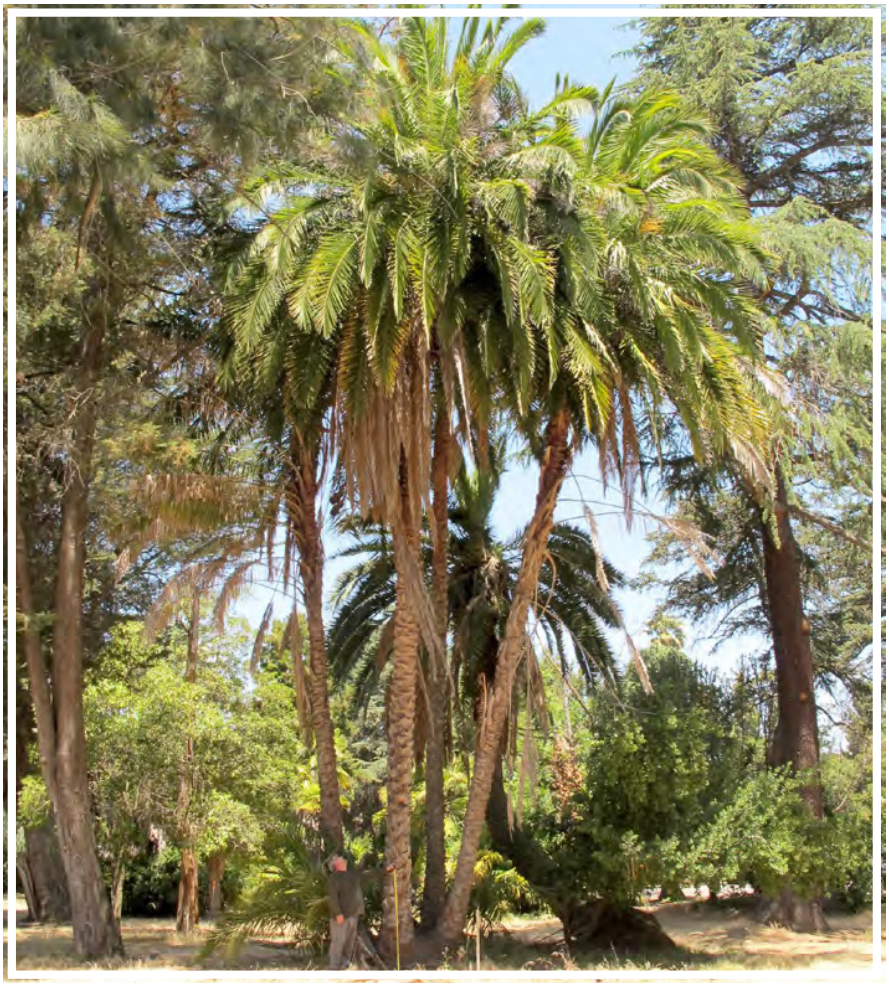


Photo Taken: May 2012

NIL-21 TREE INFORMATION/June 2012

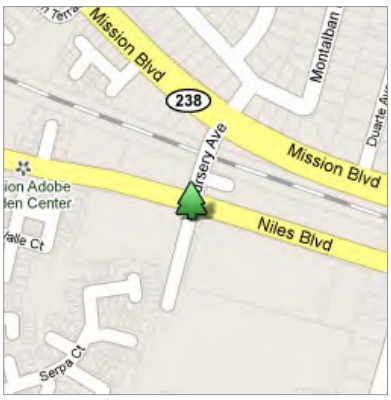
HEIGHT: 54 ft.
SPREAD: 25 ft.
DBH: avg. 1 ft 5 in.
QUANTITY: 1
NATIVE TO: Africa
LANDMARK DATE: June 19, 2012

The Phoenix reclinata is on the Register of California Big Trees. According to the Western Sunset Western Garden Book, the Senegal Date Palm can grow up to 30 feet. However, this specimen located in the California Nursery is 54 feet tall. The Senegal Date Palm produces offshoots, which allows it to regenerate quickly.

This landmark specimen is located towards the rear of the nursery near the landmark Monterey Cypresses.

Pinus canariensis
Canary Island Pine

36501 Niles Boulevard
Niles District



Approximate location on map.


Cone of a Canary Island Pine.


Photo Taken: September 2010

NIL-11 TREE INFORMATION/September 2010

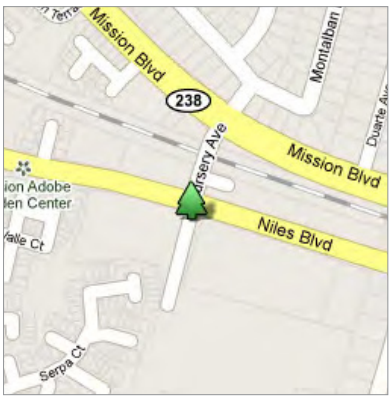
HEIGHT: 75 ft.
SPREAD: 48 ft.
DBH: 3 ft. 7 in.
QUANTITY: 2 Groups Totalling 6 Trees
NATIVE TO: Canary Islands off of Western Africa
LANDMARK DATE: March 17, 1972

There are two groups of landmark Canary Island Pines on the California Nursery Company property. One landmark tree is located near the historic Landers House and is visible from Niles Boulevard. The group of five Canary Island Pines is located near the Vallejo Adobe.

This tree is pyramidal in shape with distinctive tiers of branches and whorls representing one year's growth.[15] Canary Island Pines have 3 needles per fascicle bundle.

Quercus suber
Cork Oak

36501 Niles Boulevard
Niles District



Approximate location on map.


Multiple-trunk and
wide branching pattern.


Photo Taken: September 2010

NIL-12 TREE INFORMATION/November 2010

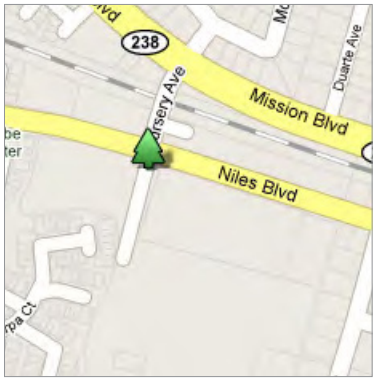
HEIGHT: 35 ft.
SPREAD: 45 ft.
DBH: 5 ft. 8 in.
QUANTITY: 1
NATIVE TO: Western Mediterranean & North Africa
LANDMARK DATE: March 17, 1972

This landmark Cork Oak is located in the California Nursery Company along Niles Boulevard. It has an unique split trunk branching structure that is not common among Cork Oaks.

The Cork Oak is an evergreen tree whose thick cork bark is cut from the trunks on an average of every twelve years. The cork is often used as wine bottle toppers and flooring, among other purposes. The tree regenerates a new layer of cork bark, making it a renewable resource. [7]

Zelkova serrata
Japanese Zelkova

36501 Niles Boulevard
Niles District



Approximate location on map.

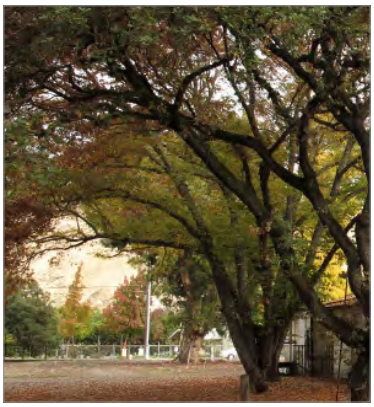

The Sawleaf Zelkova displaying its colorful leaves in the fall.


Photo Taken: February 2011

NIL-15 TREE INFORMATION/June 2012

HEIGHT: 50 ft.
SPREAD: 35 ft.
DBH: 4ft. 3 in.
QUANTITY: 1
NATIVE TO: Japan
LANDMARK DATE: June 19, 2012

The Sawleaf Zelkova, also known as the Japanese Zelkova, is a deciduous tree native to Japan. It has wide spreading branches and a colorful display of yellow to dark red leaves before they drop. Just as its name suggests, the margins of its leaves are serrated.

This zelkova is located behind the Lander's House in the California Nursery. It provides a bountiful amount of shade when its leaves are apparent.

came a great experimental farm, where all varieties of plants, secured from various countries, were tested and those suited to the climate and soil conditions of California were distributed throughout the state."[10] In 1893, the California Nursery Company took first prize at the Columbian Exposition for its exhibit of roses, and furnished Golden Gate Park with about 600 deciduous trees and shrubs in that same year. The nursery's land was divided into acres that served different purposes such as the cultivation of over 600 varieties of roses, experimental efforts, and for ornamental plants and trees. Its immense stock of plants drew attention from the Washington Press, where in 1898, the nursery was commented on having the most variety of trees, plants, shrubs, flowers, etc, "than at any other [nursery] in the United States."[9]

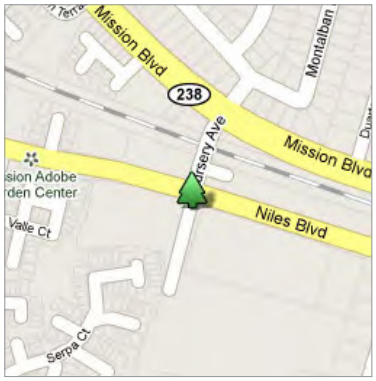
After the ownership of John Rock, the nursery was sold to William J. Landers on August 17, 1899. John Rock continued to serve as the manager until his death in August 1904 when William V. Eberly took over the position. Under Lander's ownership, the nursery was commissioned to supply palm trees for the "Avenue of Palms" at the 1915 Panama-Pacific International Exposition in San Francisco. In 1917, Landers sold the nursery to the George C. Roeding Company.[9]

The Roeding Family was well-known for their nursery businesses in Fresno, Modesto and Sacramento. When George C. Roeding Sr. acquired the California Nursery Company, it became the headquarters for the wholesale of fruit and ornamental trees. In 1928, George Jr. became the owner following his father's death. He opted to shift the business to the retail production of roses and bulbs. From 1939-1940, The California Nursery Company provided plants for the Golden Gate Park International Exposition on Treasure Island. The nursery prospered from demands for fruit trees in residential orchards and wartime properties to garden supply and landscape services until its bankruptcy in 1968.[9]

The California Nursery covered 463 acres of land when it was established in 1884. Due to residential and industrial development, the nursery presently covers 20.1 acres under the ownership of the City of Fremont. The grounds were leased to Mission Adobe Nursery for retail business and Naka Nursery for wholesale business. Many of the buildings that were built during its heyday, such as the Vallejo Adobe(1842), Tankhouse remnant(1890), Office Building(1907), President's House(1907), and Garden Store(1932), still exist on the historical nursery grounds. Presently, the California Nursery is home to nine of the City'shistorical landmark trees.[9]

Populus nigra 'Italica'
Lombardy Poplar

36501 Niles Boulevard
Niles District



Approximate location on map.

View of the canopy and numerous sprouts growing from the branches.

Photo Taken: May 2012

NIL-22 TREE INFORMATION/June 2012

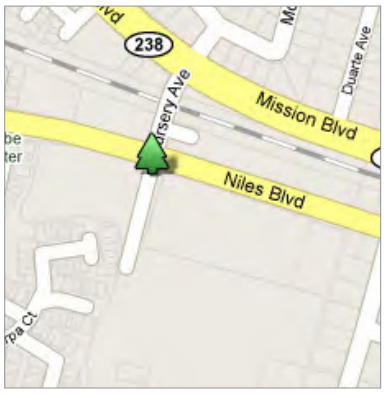
HEIGHT: 55 ft.
SPREAD: 20 ft.
DBH: 5 ft. 4 in.
QUANTITY: 1
NATIVE TO: Europe
LANDMARK DATE: June 19, 2012

This landmark Lombardy Poplar has a wide girth of about 64 inches. It is located towards the back of the California Nursery. This poplar, in comparsion to the other poplars in the nursery, is in good health.

Lombardy Poplars have bright green, 4 inch leaves that turn golden yellow in the fall. They are widely used as windbreaks and skyline enhancement.

Ulmus pumila
Siberian Elm

36501 Niles Boulevard
Niles District



Approximate location on map.


One of the three landmark Siberian Elms with a split-trunk.


Photo Taken: May 2012

NIL-20 TREE INFORMATION/June 2012

HEIGHT: 65 ft. (tallest)
SPREAD: 45 ft.
DBH: 3 ft. 1 in.
QUANTITY: 3
NATIVE TO: Russia, northern China
LANDMARK DATE: June 19, 2012

The California Nursery is home to three landmark Siberian Elms. They are located between the Landers House and the row of 19 landmark Canary Island Date Palms (NIL-18).

The Siberian Elm has smooth dark green leaves that grow up to 2 inches long. This tree is resistant to the Dutch elm disease and can endure various extreme climates. It also produces papery, winged seeds.

Appendix F.

The California Nursery Company

The California Nursery Company was once a grand nursery operation that brought notable presence to the East Bay and was "significantly associated with the evolution of the nursery industry on a statewide level."[10]

The California Nursery Company's history dates back to Jose de Jesus Vallejo(1797-1882) who served as the administrator of the old Mission San Jose and military commander of San Jose. He owned Rancho Arroyo de la Alameda which comprised 17,705 acres of land spreading west of Alameda Creek. Vallejo's property included a mill that gave name to a town called Vallejo Mills, later re-named Niles when the railroad was established in 1869. J.J. Vallejo sold a third of his land but was still able to retain title to his property after surviving extensive development in the region in the 1850s. However, on July 1862, he was forced to give up about 11,000 acres of his land due to legal debts to Jonas G. Clark, a San Francisco merchant and real estate speculator. J.J. Vallejo's rancho property was formed into the present-day Niles District of Fremont and the majority of Union City. [9]

On November 10, 1884, Jonas G. Clark sold 463.38 acres of land to John Rock, the founder of the California Nursery Company in 1865. Under the ownership of John Rock, the nursery "be-

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The Legacy of CALIFORNIA NURSERY Historic Park

the root of an industry

Appendix 3: Recommended Action for Trees

Appendix 3

Recommended Action for Trees

HORT SCIENCE

California Nursery Historic Park Urban Forest Management Plan
Recommended Action for Trees
2016

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	101	Deodar cedar	29"	4			Perform decay inspection	
1	323	Bald cypress	9	5				B
1	324	Loquat	10	2		x		
1	325	Kohuhu	11	2		x		
1	326	Kohuhu	13	2		x		
1	327	Kohuhu	10,9	2		x		
1	328	Kohuhu	15	2		x		
1	329	Pindo palm	21	1		x		
1	330	Japanese maple	13	3				B
1	331	Loquat	9	2		x		
1	332	Windmill palm	7	4				B
1	333	Loquat	13	2		x		
1	334	Queen palm	10	3				B
1	335	Silver dollar gum	23	3				
1	336	Kohuhu	12, 10, 7	2		x		
1	337	Kohuhu	8	2		x		
1	338	Kohuhu	8	2		x		
1	339	Kohuhu	9	2		x		
1	340	Kohuhu	6	0		x		
1	341	Mexican fan palm	20	3				
1	342	Kohuhu	9,7	2		x		
1	343	Kohuhu	10,9	2		x		
1	344	Kohuhu	7	2		x		
1	345	Kohuhu	11	2		x		
1	346	Kohuhu	10,10	2		x		
1	347	Kohuhu	7	2		x		
1	348	Kohuhu	8	2		x		
1	349	Kohuhu	11,8	3		x		
1	350	Kohuhu	6	2		x		
1	351	Kohuhu	14,9,5	2		x		
1	352	Kohuhu	5	2		x		
1	353	Kohuhu	6,5	0		x		

California Nursery Historic Park Urban Forest Management Plan
Recommended Action for Trees
2016

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	354	Kohuhu	9,6	2		x		
1	355	Kohuhu	14,11	2		x		
1	356	Kohuhu	9	2		x		
1	357	Kohuhu	10	2		x		
1	358	Olive	17	1		x		
1	359	Cabbage palm	8	2		x		
1	360	Bottle tree	6	3				A
1	361	Mexican fan palm	12	3				
1	362	Kentia palm	12	4				B
1	363	Cabbage palm	10,10,9	3				A
1	364	Canary Island pine	31	1	Landmark	x		
1	365	Canary Island pine	27	2	Landmark	x		
1	367	Windmill palm	8	4				B
1	368	Kohuhu	10,8	2		x		
1	369	Kohuhu	10	2		x		
1	370	Kohuhu	11,7	2		x		
1	371	Valley oak	15	3				A
1	372	Canary Island pine	19	2	Landmark	x		
1	373	Canary Island pine	20	2	Landmark	x		
1	374	Chinese photinia	10,10,9	1		x		
1	375	Cabbage palm	7,7,5,4	2		x		
1	376	Deodar cedar	21	3			Prune to clean crown	
1	377	Deodar cedar	14	3				
1	378	Blue atlas cedar	21	3				A
1	379	California pepper	15	3				
1	380	Coast live oak	30	3			Remove girding root	
1	381	Kohuhu	17	3				B
1	382	California bay	9,9,8	3				A
1	383	California bay	,10,10,9,8,9,9,	3				A
1	384	California pepper	14	2		x		
1	385	Kohuhu	9,9	0		x		
1	386	Olive	25	3				

California Nursery Historic Park Urban Forest Management Plan
Recommended Action for Trees
2016

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	387	Italian cypress	11	3				
1	388	Kohuhu	13,11	0		x		
1	389	Mulberry	10	1		x		
1	390	Mexican fan palm	29	3				
1	391	Bald cypress	26	0		x		
1	392	Coast live oak	6	4				
1	393	Black locust	10,9	2		x		
1	394	Olive	5	2		x		
1	395	Black locust	18	2		x		
1	397	Coast live oak	10,8	3		x		
1	398	Coast live oak	17,12	4				
1	399	Mt. Atlas pistache	15,9	2				A
1	400	Coast live oak	15	2		x		
1	401	Deodar cedar	33	3			Prune to clean crown	
1	402	California bay	11,8,7,6,4	3				
1	403	Coast live oak	17	3				
1	404	Windmill palm	10	2		x		
1	405	Windmill palm	9	2				B
1	406	Windmill palm	7	3				B
1	407	Windmill palm	6	3				B
1	408	Windmill palm	7	3				B
1	409	Windmill palm	10	2				B
1	410	Deodar cedar	35	3			Prune to clean crown	
1	411	Deodar cedar	29	3			Prune to clean crown	
1	412	Victorian box	6	4				B
1	413	Deodar cedar	30	4				
1	414	Windmill palm	7	3				B
1	415	Windmill palm	6	3				B
1	416	Windmill palm	9	3				B
1	417	Windmill palm	7	3				B
1	418	Windmill palm	6	3				B
1	419	Windmill palm	7	2				B

California Nursery Historic Park Urban Forest Management Plan
Recommended Action for Trees
2016

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	420	California bay	11	3				A
1	421	California bay	50	3				A
1	422	Deodar cedar	33	3				
1	423	Incense cedar	18,4	2				B
1	424	California fan palm	30	4				
1	425	California fan palm	30	4				
1	426	Hollyleaf cherry	6,6,5,5,4,4	2				
1	427	Coast live oak	19	3				
1	428	Deodar cedar	26	3				
1	429	Coast live oak	6	2				
1	430	California bay	14,12	2				A
1	432	Mt. Atlas pistache	18	2				A
1	433	Chinese elm	18	3				B
1	434	Blue atlas cedar	25,19	3			Prune to reduce risk of failure	A
1	436	Incense cedar	19	0		x		
1	437	Incense cedar	18,11	0		x		
1	438	Coast live oak	7	2				
1	439	California pepper	9	1		x		
1	440	Coast live oak	21	4				
1	441	Blackwood acacia	7	4				
1	442	Blackwood acacia	18	3				
1	443	Blackwood acacia	22	3			Prune to reduce risk of failure	
1	444	Blackwood acacia	7	2				
1	445	Plum	5	3				
1	446	Coast live oak	12,6	4				
1	447	California fan palm	6	4				
1	448	Plum	6	2				
1	449	Coast live oak	5,3	3				
1	450	Coast live oak	7	3				
1	451	Holly oak	6"	3				

California Nursery Historic Park Urban Forest Management Plan
Recommended Action for Trees
2016

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	453	Blue atlas cedar	33"	4	Consider			A
1	454	Glossy privet	10"	0		x		
1	455	Plum	24"	3				
1	456	Mt. Atlas pistache	20"	1		x		
1	457	Plum	6"	3				
1	458	Southern magnolia	36"	2				B
1	459	Plum	11"	1		x		
1	460	Coast live oak	7"	3				
1	461	Coast live oak	10,9	3				
1	462	Mt. Atlas pistache	7"	3				A
1	463	Coast live oak	12"	3				
1	464	Coast live oak	24"	3				
1	465	Sweet olive	12"	3				B
1	466	Loquat	12"	3				
1	467	Coast live oak	25"	3				
1	468	Coast live oak	20"	3				
1	469	Chinese pistache	13"	3				
1	470	Blue atlas cedar	38"	4				A
1	471	Windmill palm	9"	4				B
1	472	Windmill palm	6"	4				B
1	473	Windmill palm	6"	4				B
1	474	Windmill palm	8"	4				B
1	475	Windmill palm	7"	4				B
1	476	Windmill palm	9"	4				B
1	477	Windmill palm	7"	4				B
1	478	Windmill palm	7"	4				B
1	479	Windmill palm	6"	4				B
1	480	Blackwood acacia	9"	4				
1	481	Windmill palm	9"	4				B
1	482	Windmill palm	8"	4				B
1	483	Windmill palm	10"	4				B
1	484	Windmill palm	7"	4				B

California Nursery Historic Park Urban Forest Management Plan
Recommended Action for Trees
2016

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	485	Windmill palm	7"	4				B
1	486	Windmill palm	6"	4				B
1	487	Windmill palm	6"	4				B
1	488	Windmill palm	6"	4				B
1	489	Monterey cypress	55"	2			Prune to reduce risk of failure; aerial inspection	A
1	490	Mexican fan palm	14"	3				
1	491	Mexican fan palm	16"	4				
1	492	English spreading yew	20"	1		x		
1	493	Coast live oak	8"	3				
1	494	Spanish fir	19"	0		x		
1	495	English spreading yew	14"	0		x		
1	496	Blackwood acacia	20"	0		x		
1	497	Deodar cedar	44"	4	Consider		Prune to reduce risk of failure	
1	498	River she-oak	10"	3			Prune to improve form	B
1	499	English spreading yew	23"	1		x		
1	501	Kohuhu	23"	2				B
1	502	Mexican fan palm	19"	4				
1	503	Cabbage palm	7"	4				A
1	504	River she-oak	12"	4				B
1	505	River she-oak	7"	3				B
1	506	River she-oak	11"	3			Prune to clean crown	B
1	507	Fremont cottonwood	36"	1		x		
1	509	Colorado spruce	10"	1		x		
1	510	Colorado spruce	11"	2				B
1	511	Colorado spruce	9"	2				B
1	515	Deodar cedar	16"	2				
1	516	Cliff date palm	36"	4				B
1	525	Lombardy poplar	64"	0	Landmark	x		
1	526	River she-oak	18"	2		x		B
1	527	Guadalupe palm	18"	4				B

California Nursery Historic Park Urban Forest Management Plan
Recommended Action for Trees
2016

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	528	Guadalupe palm	21"	5				B
1	529	Monterey cypress	50"	2	Landmark		Prune to reduce risk for failure; aerial inspection	A
1	530	Monterey cypress	50"	4	Landmark		Install support system	A
1	531	Monterey cypress	49"	0	Landmark	Gone		
1	532	River she-oak	25"	1		x		B
1	533	River she-oak	23"	3				B
1	534	River she-oak	26"	3			Prune to reduce risk of failure	B
1	535	Monterey cypress	48"	1	Landmark	x		
1	536	River she-oak	19"	2			Prune to reduce risk of failure	B
1	537	River she-oak	44"	2			Prune to reduce risk of failure	B
1	538	Coast live oak	35"	3				
1	539	Cork oak	22"	3			Install prop	
1	540	Monterey cypress	27"	0	Landmark	x		
1	541	Glossy privet	10"	3				
1	542	Victorian box	4"	0		x		
1	543	Monterey cypress	32"	2	Landmark		Perform decay inspection	A
1	544	Senegal date palm	65" Cluster	4	Landmark			B
1	545	Canary Island date palm	28"	3				
1	546	Incense cedar	10"	0		x		
1	547	Coast live oak	11"	3				
1	548	Chinese pistache	7"	4				
1	549	Coast live oak	32"	4				
1	550	English spreading yew	15"	4				B
1	551	California pepper	6"	2				
1	552	California bay	13"	3				A
1	553	Coast live oak	37"	0		x		
1	554	Coast live oak	16"	2				
1	555	Coast live oak	21"	3			Build box around tree	

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Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	556	Coast live oak	22"	4			Prune to improve weight distribution	
1	557	Glossy privet	24"	3				
1	558	California black walnut	7"	3				C
1	559	Coast live oak	7"	3				
1	560	Bigleaf maple	13"	2				B
1	561	English spreading yew	36"	3				B
1	562	English spreading yew	36"	3				B
1	563	English spreading yew	24"	3				B
1	564	English spreading yew	18"	3				B
1	565	English spreading yew	7"	3				B
1	566	English spreading yew	24"	2				B
1	567	English spreading yew	18"	3				B
1	568	English spreading yew	24"	3				B
1	569	English spreading yew	12"	3				B
1	570	English spreading yew	18"	3				B
1	571	English spreading yew	36"	3				B
1	572	English spreading yew	18"	3				B
1	573	English spreading yew	24"	3				B
1	574	English spreading yew	36"	3				B
1	575	English spreading yew	24"	3				B
1	576	English spreading yew	36"	3				B
1	577	English spreading yew	18"	3				B
1	578	English spreading yew	40"	3				B
1	579	Mt. Atlas pistache	7"	3				A
1	580	Mt. Atlas pistache	8"	3				A
1	581	Loquat	7"	3				
1	582	Italian buckthorn	11"	2				A
1	583	Loquat	8"	3				
1	584	Mt. Atlas pistache	8,6,6,4	1		x		
1	585	Mt. Atlas pistache	12"	3				A
1	586	Mt. Atlas pistache	27"	3				A

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	587	Purpleleaf plum	24"	1		x		B
1	588	English spreading yew	36"	1			Prune to coppice	B
1	589	Douglas fir	7"	1		x		
1	590	English spreading yew	36"	0		x		
1	591	English spreading yew	44"	0		x		
1	592	English spreading yew	42"	0		x		
1	593	English spreading yew	31"	0		x		
1	594	Persimmon	7"	3				B
1	595	Persimmon	8"	4				B
1	596	Persimmon	7"	3				B
1	597	Persimmon	6"	3				B
1	598	California black walnut	26"	1			Prune to coppice	C
1	599	Persimmon	7"	2				B
1	600	Coast live oak	27"	4				
1	601	English spreading yew	25 stems 4-8"	1			Prune to coppice	B
1	602	Coast live oak	9"	4				
1	603	Coast live oak	8"	3				
1	604	Coast live oak	6"	3				
1	605	California black walnut	23"	4				C
1	606	Purpleleaf plum	6,4,4,2,2,1	2		x		B
1	607	English spreading yew	6,5,5,4,4	0		x		
1	608	English spreading yew	7,7,6,5,5,5,4,4	0		x		
1	609	Plum	4,3,3	3				
1	610	Holly oak	6"	4				
1	611	Canary Island pine	18"	2		x		
1	612	Coast live oak	24"	3	Consider			
1	613	Coast live oak	35"	3	Consider			
1	614	Coast live oak	27"	3	Consider			
1	615	Coast live oak	29"	3	Consider			
1	616	Coast live oak	21"	3	Consider			
1	617	English spreading yew	7,6	2			Prune to coppice	B
1	618	English spreading yew	15 stems 4-6"	3				B

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
1	619	English spreading yew	8,7,6	2			Prune to coppice	B
1	620	Coast live oak	26"	4	Consider			
1	621	Coast live oak	21"	2	Consider		Install prop	
1	622	English spreading yew	13 stems 2-5"	2			Prune to coppice	B
1	623	Coast live oak	21"	3	Consider			
1	625	Coast live oak	19"	2	Consider		Prune to improve weight distribution	
1	626	Coast live oak	29"	4	Consider			
1	627	English spreading yew	7,6,5	3				B
1	628	English spreading yew	8,7,5,5,4	3				B
1	629	Coast live oak	31"	4				
1	630	Mt. Atlas pistache	5,4,3	4				A
1	631	Coast live oak	29"	3	Consider			
1	632	Coast live oak	23"	2	Consider		Prune to improve weight distribution	
1	633	Coast live oak	24"	3	Consider			
1	634	Coast live oak	20"	3	Consider			
1	635	Coast live oak	17"	3	Consider			
1	636	Coast live oak	24"	3	Consider			
1	637	Coast live oak	22"	3	Consider			
1	638	Coast live oak	22"	3	Consider			
1	639	Coast live oak	30"	4	Consider			
1	640	Coast live oak	6,4	3				
1	641	California bay	8,7,5	3				A
1	642	Loquat	6"	3				
1	643	Loquat	9"	3				
1	644	Loquat	9"	3				
1	645	Loquat	7"	3				
1	646	Loquat	7,5,4	3				
1	647	Loquat	6,5,3	3				
1	648	Italian buckthorn	7"	2				A
1	649	English spreading yew	7,6,4	1		x		

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1	650	English spreading yew	8,7	1		x		
1	651	Glossy privet	8,7,3	1		x		
1	652	Monterey cypress	38"	3	Consider		Prune to clean crown	A
1	653	Cork oak	19"	3			Prune to improve weight distribution	
1	654	Mt. Atlas pistache	15"	3				A
1	655	Olive	8"	3				
1	656	English spreading yew	28 stems 3-14'	0		x		
1	657	Coast live oak	7"	4				
1	658	Cork oak	30"	3			Prune to improve weight distribution	
1	659	Cork oak	28"	4			Prune to improve weight distribution	
1	660	Mt. Atlas pistache	26"	3			Prune to improve weight distribution	A
1	661	Mt. Atlas pistache	21"	3				A
1	662	Blue atlas cedar	39"	4				A
1	663	Coast live oak	21"	3	Consider			
1	664	Coast live oak	23"	3	Consider			
1	665	Mt. Atlas pistache	8"	3				A
1	666	Coast live oak	9"	4				
1	667	Mt. Atlas pistache	7"	3				A
1	668	Coast live oak	7"	4				
1	669	Holly oak	7"	4				
1	670	Holly oak	6"	4				
1	671	Loquat	6,7,5	0		x		
1	672	Mt. Atlas pistache	6"	2		x		
1	673	Coast live oak	28"	3				
1	674	Coast live oak	13"	2			Build box around tree	
1	675	Mt. Atlas pistache	10"	0		x		
1	676	Mt. Atlas pistache	9,6,6,4,3	3				A
1	784	Carob	6,4,4,4,4	3				

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Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
2	319	Silver maple	33	2		x		
2	320	Silver maple	31	2		x		
2	321	Silver maple	35	1		x		
3	266	Blue atlas cedar	14	3				A
3	267	Canary Island date palm	31	5				
3	268	Mt. Atlas pistache	6"	3				A
3	269	Fig	12	3				A
3	270	Canary Island date palm	50	4	Landmark			
3	271	Canary Island date palm	36	4	Landmark			
3	272	Canary Island date palm	36	4	Landmark			
3	273	Canary Island date palm	39	4	Landmark			
3	274	Canary Island date palm	38	4	Landmark			
3	275	Canary Island date palm	45	5	Landmark			
3	276	Canary Island date palm	44	5	Landmark			
3	277	Canary Island date palm	31	4	Landmark			
3	278	Canary Island date palm	33	4	Landmark			
3	279	Canary Island date palm	30	4	Landmark			
3	280	Glossy privet	11	4				
3	281	Fremont cottonwood	80	2		x		
3	282	Siberian elm	39	3	Landmark		Prune to reduce risk of failure	B
3	283	Glossy privet	17	3				
3	284	Canary Island date palm	38	4	Landmark			
3	285	Black locust	9	4				
3	286	Canary Island date palm	32	4	Landmark			
3	287	Canary Island date palm	40	4	Landmark			
3	288	Canary Island date palm	28	4	Landmark			
3	289	Canary Island date palm	27	4	Landmark			
3	290	Canary Island date palm	38	4	Landmark			
3	291	Canary Island date palm	44	4	Landmark			
3	292	Lombardy poplar	48	2		x		
3	293	Canary Island date palm	51	4	Landmark			

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
3	294	Siberian elm	47	3	Landmark		Prune to improve weight distribution	B
3	295	Canary Island date palm	37	4	Landmark			
3	296	Canary Island date palm	38	4	Landmark			
3	297	Canary Island date palm	32	4	Landmark			
3	298	Canary Island date palm	26	4	Landmark			
3	299	Canary Island date palm	38	4	Landmark			
3	300	Canary Island date palm	30	4	Landmark			
3	301	Canary Island date palm	32	3	Landmark			
3	302	Canary Island date palm	45	4	Landmark			
3	303	Canary Island date palm	44	3	Landmark			
3	304	Coast live oak	13	2		x		
3	305	Coast live oak	7,2	2				
3	306	Coast live oak	7,6	2				
3	307	Siberian elm	19,19	2	Landmark			B
3	308	Pecan	24,20,18	3	Consider		Prune to reduce risk of failure	A
3	309	Pecan	36	3	Consider		Prune to reduce risk of failure	A
3	310	Pecan	16	3	Consider		Prune to reduce risk of failure	A
3	311	Pecan	29	3	Consider		Prune to reduce risk of failure	A
3	312	Loquat	15	2		x		
3	313	Black alder	8	0		x		
3	314	Coral tree	29	2				B
3	322	Glossy privet	5,4,3,3,2,2,2	2		x		
4	1	Coast live oak	24"	3			Prune to improve weight distribution	
4	2	Plum	21"	1		x		
4	4	Coast live oak	14"	3			Prune to improve weight distribution	

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
4	5	Canary Island pine	17"	3				
4	6	Coast live oak	15"	3			Prune to improve weight distribution	
4	7	Coast live oak	20"	4				
4	8	Coast live oak	11"	3			Prune to improve weight distribution	
4	9	Coast live oak	18"	4			Monitor insects	
4	10	Mt. Atlas pistache	24"	3				A
4	11	Mt. Atlas pistache	26"	3				A
4	12	Coast live oak	21"	3				
4	13	Plum	9"	3				
4	14	Mexican fan palm	21"	4				
4	15	Southern magnolia	36"	3				B
4	16	Southern magnolia	32"	2				B
4	17	Olive	9"	3				
4	18	Olive	14	2				
4	22	Southern magnolia	32"	3				B
4	23	Bald cypress	9"	5				B
4	24	Southern magnolia	27"	4				B
4	25	Coast live oak	11"	3				
4	27	Deodar cedar	43"	4	Consider		Perform aerial inspection	
4	28	Coast live oak	10"	4				
4	29	London plane	18"	3			Monitor insects	B
4	30	Olive	34"	3			Prune to reduce risk of failure	
4	31	Olive	27"	3			Prune to reduce risk of failure	
4	32	Olive	33"	3			Prune to reduce risk of failure	
4	33	Olive	23"	3			Prune to reduce risk of failure	
4	34	Glossy privet	7"	3				

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
4	35	Glossy privet	10"	2				
4	36	Olive	37"	4				
4	37	Bunya-bunya	55"	4	Landmark			A
4	38	American elm	43"	2			Prune to reduce risk of failure	B
4	39	American elm	14	1		x		B
4	40	American elm	14	2			Prune to improve weight distribution	B
4	41	American elm	14"	2				B
4	42	American elm	12"	2				B
4	43	American elm	9"	2				B
4	44	American elm	22	3	Consider		Prune to reduce risk of failure	B
4	45	American elm	32"	2	Consider			B
4	46	American elm	20	2	Consider			B
4	47	Norfolk Island pine	6"	3				B
4	48	Olive	20	2				
4	49	Olive	30	2				
4	50	Plum	11"	3				
4	51	Deodar cedar	48"	3			Perform aerial inspection	
4	52	Coast live oak	18	4				
4	53	Mt. Atlas pistache	23"	3				A
4	54	Olive	6"	3				
4	55	Olive	6"	2				
4	56	Olive	6"	1		x		
4	57	Olive	8"	2				
4	58	Portugal laurel	40"	4	Consider			B
4	59	Persimmon	17"	3				B
4	60	Persimmon	12"	3				B
4	61	Prickly melaleuca	59"	2	Landmark		Prune to reduce risk of failure	A

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
4	62	Prickly melaleuca	55"	2	Landmark		Prune to reduce risk of failure	A
4	63	Deodar cedar	25"	3				
4	64	Coast live oak	6"	4				
4	65	Mt. Atlas pistache	32"	3	Consider		Prune to clean crown	A
4	66	Olive	12"	2		x		
4	67	Olive	7"	2		x		
4	68	Olive	6"	2		x		
4	69	Olive	8"	2		x		
4	70	Olive	9"	3				
4	71	Montezuma cypress	9"	5				B
4	72	Queensland bottle tree	12"	4			Remove girding root	B
4	74	Chinese juniper	7"	4				
4	75	Canary Island date palm	22"	4				
4	76	Canary Island date palm	30"	4				
4	77	Cockspur hawthorn	26"	3	Consider		Prune to clean crown	B
4	78	Canary Island date palm	45"	5				
4	80	California pepper	19"	4				
4	81	Olive	9"	4				
4	82	Guadalupe cypress	9"	5				A
4	83	Deodar cedar	21"	4			Prune to clean crown	
4	84	Dawn redwood	25"	5	Consider			C
4	85	Apple	6"	2				C
4	86	Myoporum	19"	2				
4	87	Apple	6"	2				C
4	88	Plum	20"	2				
4	90	Red horsechestnut	21"	4				B
4	91	Persimmon	23"	3				B
4	92	Saucer magnolia	15"	3				B
4	93	Canary Island date palm	38"	2	Landmark		Aerial inspection	
4	94	Canary Island date palm	37"	5	Landmark			
4	95	Purple-leaf acacia	9"	4				

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
4	96	Canary Island date palm	33"	4	Landmark			
4	97	Coral tree	13"	3				B
4	98	Cape chestnut	6"	4				A
4	99	Kohuhu	16"	2				
4	100	Canary Island date palm	13"	4				
4	102	Coast live oak	31"	5	Consider		Monitor insects	
4	104	Coast live oak	8"	5				
4	106	Coast live oak	9"	3				
4	107	Coast live oak	25"	3	Consider		Install support system	
4	108	Mayten	12"	3				B
4	109	Holly oak	6"	2				
4	110	Plum	10"	3				
4	111	Plum	14"	2				
4	112	Cotoneaster	10"	3				
4	113	Plum	7"	3				
4	114	Coast live oak	11"	4				
4	115	Olive	9"	1		x		
4	116	Coast live oak	17"	3				
4	117	Compact blue gum	113"	3	Landmark			
4	118	Coast live oak	8"	3				
4	119	Glossy privet	6"	3				
4	120	Glossy privet	5"	3				
4	121	Glossy privet	9"	3				
4	122	Portugal laurel	25"	3	Consider			B
4	123	Glossy privet	6"	3				
4	124	Glossy privet	6"	3				
4	125	Glossy privet	6"	3				
4	126	Coast live oak	9"	2				
4	127	Deodar cedar	34"	4	Consider			
4	128	Carolina cherry laurel	8"	2				A
4	129	Glossy privet	8"	2				
4	130	Plum	18"	2				

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
4	131	American elm	17"	3				B
4	132	English yew	25"	3				
4	133	English laurel	12"	3				B
4	134	American elm	7"	5				B
4	135	Japanese maple	10"	4				B
4	136	Japanese maple	7"	3				B
4	137	Dracaena palm	25"	3				
4	138	Coast live oak	8"	3				
4	139	Pindo palm	23"	5				B
4	140	Pindo palm	19"	4				B
4	141	Olive	23"	3				
4	142	Italian cypress	20"	5				
4	143	English yew	28"	4				B
4	144	Plum	13"	3				
4	145	Plum	26"	3				
4	146	Queensland bottle tree	19"	3			Remove girding root	B
4	147	Purpleleaf plum	12"	4				B
4	148	Plum	15"	3				
4	149	Japanese maple	16"	4				B
4	150	Ginkgo	12"	3				B
4	151	English yew	15	4				B
4	152	Australian bush cherry	28	3				B
4	153	Australian bush cherry	39	3				B
4	154	Australian bush cherry	24	4				B
4	155	Australian bush cherry	13	4				B
4	157	Blue gum	31	4				
4	158	Olive	16	2				
4	159	Glossy privet	18	3				
4	160	Olive	19	1		x		
4	161	Black locust	25	2		x		
4	162	American elm	31	3	Consider		Prune to reduce risk of failure	B

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Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
4	200	Canary Island date palm	19	5				
4	733	Glossy privet	6,4,4,4,3,2	3				
4	734	Almond	8,7,3	2				C
4	735	Mexican fan palm	32"	3				
4	736	Deodar cedar	28"	4				
4	737	California pepper	16,15,14	3				
4	738	Cork oak	37,31,16	2	Landmark		Perform root collar inspection	
4	739	Canary Island date palm	17"	5				
4	740	Italian stone pine	24,23	4				
4	741	Coast live oak	7,6	4				
4	742	Coast live oak	7"	5				
4	743	Mayten	11"	3				B
4	745	Giant sequoia	14"	3				B
4	746	Olive	15"	3				
4	747	Victorian box	1,1,1,1,1,1,1	3				B
4	748	Canary Island date palm	30"	4				
4	754	Windmill palm	12"	4				B
5	166	Canary Island date palm	30	3	Landmark		Aerial inspection	
5	167	Canary Island date palm	24	5	Landmark			
5	168	Blue atlas cedar	31	4				A
5	170	Glossy privet	25	3				
5	171	Deodar cedar	35	3				
5	172	Incense cedar	16,10	3				
5	173	Floss silk tree	8"	3				
5	174	Canary Islands juniper	9,8,8	4	Landmark			
5	175	Mexican fan palm	22"	5				
5	176	Canary Islands juniper	8,6	3				
5	177	Hollywood juniper	8"	3				
5	178	Canary Island pine	23"	4				
5	179	Canary Island pine	18"	3				
5	180	English yew	11"	3				B

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Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
5	181	Catalina cherry	7"	4				
5	182	Blackwood acacia	16"	3				
5	183	Floss silk tree	8"	4				
5	184	Olive	8,6,6	4				
5	185	Incense cedar	23"	4				
5	186	Canary Island date palm	21"	5	Landmark			
5	187	Windmill palm	6"	3				B
5	188	Olive	6,4	3				
5	189	Windmill palm	6"	4				B
5	190	Windmill palm	6"	4				B
5	191	California pepper	18	3				
5	192	California pepper	22	3				
5	193	Guadalupe cypress	10"	4				A
5	194	Peach	8"	2		x		
5	195	Mayten	9"	2		x		B
5	196	Flaxleaf paperbark	15"	4				
5	197	Flaxleaf paperbark	17"	4				
5	198	Windmill palm	8"	4				
5	199	Mexican fan palm	16"	5				
5	201	Windmill palm	7"	4				
5	202	Windmill palm	7"	4				
5	203	California buckeye	11"	4				
5	204	Algerian fir	24"	3				B
5	211	Incense cedar	41	3	Consider		Install support system	B
5	212	Deodar cedar	23	3	Consider			
5	213	Deodar cedar	31	4	Consider		Prune to clean crown	
5	214	Deodar cedar	33	3	Consider			
5	215	Coast live oak	7	4				
5	216	Aleppo pine	29	0		x		
5	217	Japanese red cedar	8	0		x		
5	218	Japanese red cedar	11	2		x		B
5	219	Japanese red cedar	9	2		x		B

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
5	220	Japanese red cedar	16	3				B
5	221	Canary Island pine	19	3				
5	222	Canary Island pine	21	3				
5	223	Canary Island pine	18	3				
5	224	Canary Island pine	13	1		x		
5	226	Canary Island pine	12	1		x		
5	227	Canary Island pine	12	1		x		
5	228	Deodar cedar	19	3				
5	229	Deodar cedar	14	2		x		
5	230	Deodar cedar	19	2		x		
5	231	Deodar cedar	25	2		x		
5	232	Glossy privet	24	2		x		
5	233	Glossy privet	8	3				
5	234	Mt. Atlas pistache	26"	3	Consider			A
5	235	Coast live oak	7	4				
5	236	Coast live oak	5	3				
5	237	Glossy privet	35	3				
5	238	Glossy privet	50	2		x		
5	239	Glossy privet	34	3				
5	240	Silver dollar gum	35	4				
5	241	Glossy privet	12	3				
5	242	Deodar cedar	7	2		x		
5	243	Bunya-bunya	16	3				A
5	244	Mt. Atlas pistache	34"	2		x		
5	245	Olive	12	3				
5	246	Burr oak	34	4	Consider			A
5	247	California black walnut	51	3	Consider			C
5	248	Catalina ironwood	31	1		x		
5	249	Glossy privet	35	2		x		
5	251	Canary Island pine	43	4	Landmark			
5	252	Queensland kauri	12	3	Landmark			B
5	253	Canary Island date palm	43	4				

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
5	254	Swamp mahogany	31	3				A
5	255	Canary Island date palm	27	4				
5	256	Canary Island date palm	34	4				
5	257	Bald cypress	27	4	Consider			
5	258	White ironbark	38	1		x		
5	259	White ironbark	46	2		x		
5	260	White ironbark	38	2		x		
5	261	Canary Island date palm	31	5				
5	262	Canary Island date palm	33	5				
5	263	Sawleaf zelkova	42	4	Landmark			B
5	264	Silk oak	30	2		x		
5	265	Queen palm	9	2				B
5	753	Deodar cedar	7"	4				
5	783	Mediterranean fan palm	clump	4	Consider			
6	315	Coast live oak	21	3				
6	316	California bay	18	3				A
6	317	Evergreen ash	9	3				B
6	517	Raywood ash	7"	4				B
6	518	Cliff date palm	35"	4				B
6	519	Glossy privet	7"	3				
6	520	Cliff date palm	21"	4				B
6	521	Hazelnut	7"	4				B
6	522	Plum	21"	0		x		
6	523	Persimmon	10"	1		x		
6	524	Glossy privet	30"	1		x		
6	677	Coast live oak	10,8,4	4				
6	678	Coast live oak	19"	5				
6	679	Coast live oak	15"	4				
6	680	Silver maple	12"	4				B
6	681	Canary Island date palm	36"	5				
6	683	Apple	23"	0		x		
6	684	Apricot	21"	0		x		C

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
6	685	Apple	15,8,8,7	0		x		
6	686	Apricot	4,4,4,3,2	3				
6	687	California black walnut	9,8	2		x		
6	688	Apricot	2,2,2,2,2	4				
6	689	Apricot	3,2,2,1	3				
6	690	Apricot	5,3,2,2,2	4				
6	691	Apricot	5,4,3,3	4				C
6	692	Apricot	3,3,2,1,1	4				
6	693	Apricot	3,2,2,1,1	3				
6	694	Apricot	4,2,2,1	4				
6	695	Apricot	4,3,2,2,1,1	4				
6	696	Apricot	5,5,4,2,1,1	4				
6	697	Apricot	2,2,2,1,1,1,1,1	3				C
6	698	Apricot	4,2,1,1,1	3				C
6	699	Apricot	4,4,3,3	3				C
6	700	Apricot	4,4,2,1,1	4				C
6	701	Apricot	5,4	4				C
6	702	Apricot	12,6	3				C
6	703	Apricot	2,2,1,1,1,1	4				C
6	704	Apricot	2,2,1,1,1,1	3				C
6	705	Apricot	7	2				C
6	706	Apricot	10	2				C
6	707	Apricot	5,4,3,3	4				C
6	708	Apricot	4,2,2	3				C
6	709	Apricot	2,1,1,1,1,1,1	4				C
6	710	Apricot	2,2,1,1,1,1,1	3				C
6	711	Apricot	1,1,1,1,1,1,1	4				C
6	712	Apricot	3,3,1	3				C
6	713	Cherry	3,2,2,2	4				C
6	714	Cherry	4,3,2,2,1	3				C
6	715	Apple	3,2,2,2	2				C
6	716	Coast live oak	13"	5				

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
6	717	Canary Island date palm	33"	4				
6	718	Canary Island date palm	34"	4				
6	719	Canary Island date palm	29"	4				
6	720	Coast live oak	22,12	3				
6	722	Coast redwood	21"	3				C
6	723	Coast redwood	28"	4				C
6	724	Coast redwood	11"	3				C
6	725	Coast redwood	53"	3				C
6	726	Coast redwood	41"	3				C
6	727	Coast redwood	19"	3				C
6	728	Canary Island date palm	40	4				
6	729	Canary Island date palm	33"	5				
6	730	Canary Island date palm	26"	4				
6	731	Guadalupe cypress	15"	5			Remove ivy	A
6	755	Apricot	2,2,1,1	3				C
6	756	Apricot	3,2,1,1	4				C
6	757	Apricot	2,2,1,1	3				C
6	758	Cherry	1,1,1,1	4				C
6	759	Cherry	1,1,1,1	3				C
6	760	Apple	5,4,4,3	1		x		
6	761	Cherry	2,2,1,1,1,1	4				C
6	762	Cherry	2,2,1,1,1,1	4				C
6	763	Cherry	1,1,1,1	4				C
6	764	Cherry	2,1,1,1,1	3				C
6	765	Cherry	2,1,1,1	2				C
6	766	Cherry	4	3				C
6	767	Cherry	2,2,1,1	3				C
6	768	Nectarine	4,2,2,1	4				C
6	769	Nectarine	3,2,2,1	4				C
6	770	Apricot	2,2,1,1	4				C
6	771	Apricot	4,3,2,3,1,1	4				C
6	772	Apricot	5,3,2	4				C

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
6	773	Apricot	3,2,2,1	3				C
6	774	Apricot	3,3,2,1.1	3				C
6	775	Apricot	3,3,2,1,1,1	3				C
6	776	Apricot	6	4				C
6	777	Apricot	3,2,2	3				C
6	778	Apricot	3,3,3,1	3				C
6	779	Apricot	2,2,1,1,1	2				C
6	780	Apricot	14	1		x		
6	781	Apricot	2,1,1,1,1	4				C
6	782	Apricot	2,1,1,1,1	3				
6	810	Dawn redwood	46	1				C
6	812	Silver dollar tree	24	3				
6	813	Orange	7,7,5	3				C
6	814	Loquat	6,5,5	1		x		
6	815	Cabbage palm	10,7,7,4	2				A
6	816	Glossy privet	7,3,2	2				
6	817	Glossy privet	9	2				
6	818	Glossy privet	12	2				
6	819	Fremont cottonwood	32	1		x		
6	820	Glossy privet	7	3				
6	821	Glossy privet	6,6	3				
6	822	Coast live oak	10	3				
6	823	Kohuhu	7	3				B
6	824	Glossy privet	6	2				
6	825	Deodar cedar	33	3			Prune to reduce risk of failure; perform aerial inspection	
6	826	Deodar cedar	33	3			Prune to reduce risk of failure; perform aerial inspection	

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
6	827	Deodar cedar	31	3			Prune to reduce risk of failure; perform aerial inspection	
6	828	Carolina cherry laurel	7	3				A
6	829	California bay	6,5,5	3				A
6	830	Coast live oak	12	4				
6	831	Swamp mahogany	27	2				A
6	832	English walnut	7	4				B
6	834	Myoporum	6	1		x		
6	836	African sumac	7,5	2				
6	837	African sumac	6	2				
6	838	African sumac	8,6,4,3	2				
6	839	African sumac	7,6,5,5,5,3	2				
6	840	Glossy privet	6	2				
6	841	African sumac	6,5,4	2				
6	842	Eastern arborvitae	11,8	3				B
6	843	Eastern arborvitae	10,9,8,6,5,5	2				B
6	859	Canary Island date palm	25	4				
6	860	Canary Island date palm	32	4				
6	861	Canary Island date palm	36	4				
6	862	Glossy privet	8,4,4,4	3				
6	863	Victorian box	10	3				B
6	864	Kohuhu	7,7,6,6,5,3,3,3	2				B
6	865	Coast live oak	9	3				
6	866	Mayten	7	1		x		B
7	163	Japanese black pine	8	3				B
7	164	Crabapple	6	2				B
7	165	Canary Island date palm	21	5	Landmark			
7	205	Glossy privet	26	3				
7	206	Chinese photinia	32	4				
7	207	Camperdown elm	16	3				
7	208	California pepper	26	3				

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
7	209	Spanish dagger	40	4				A
7	210	China doll	14	1		x		
7	749	Canary Island date palm	35"	5				
7	750	Canary Island date palm	30"	3			Perform aerial inspection	
7	751	Chinese photinia	13,12	3				B
7	752	Glossy privet	15,14,12,5	2				
Residence	801	Coast live oak	12	3				
Residence	802	Chinese pistache	7	3				
Residence	803	Chinese flame tree	8,4	2				B
Residence	804	Coast live oak	12,7,6,6	4				
Residence	805	Coast live oak	7,5	4				
Residence	806	Coast live oak	6	4				
Residence	807	Coast live oak	10	3				
Residence	808	Coast live oak	10	3				
Residence	809	Coast live oak	8,7,7,7,6,6,4	3				
Residence	811	Pomegranate	10	3				A
Residence	833	Coast live oak	44	4			Prune to improve weight distribution; remove girding chain	
Residence	835	Coast live oak	10	4				
Residence	844	Blackwood acacia	10,8	3				
Residence	845	Japanese maple	10	2				
Residence	846	Japanese maple	11,7	1		x		
Residence	847	Japanese black pine	8	2				
Residence	848	Windmill palm	7	3				
Residence	849	Windmill palm	7	3				
Residence	850	Winged elm	18	1		x		
Residence	851	Windmill palm	8	3				
Residence	852	Deodar cedar	43	4			Prune to reduce risk of failure	
Residence	853	Canary Island date palm	28	4				

Phase	Tag #	Species	Trunk Diameter (inches)	Condition (0=dead; 5=excellent)	Significant Trees	Remove due to poor condition	Treatment Recommended (2016)	Irrigate
Residence	854	Deodar cedar	14	2				
Residence	855	Deodar cedar	19	2				
Residence	856	California black walnut	14,6	3				
Residence	857	Canary Island date palm	31	4				
Residence	858	Canary Island date palm	35	4				
Residence	867	Mayten	12	2				

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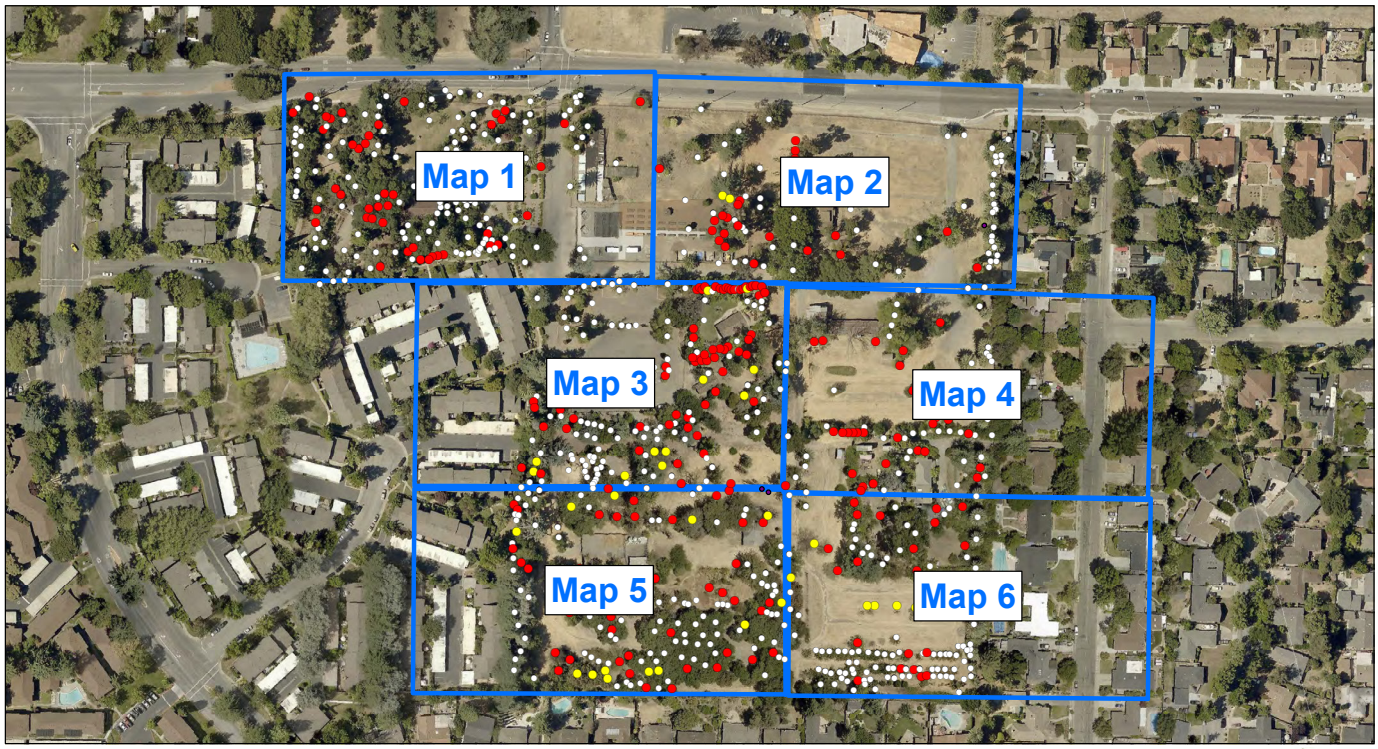
Appendix 4:
Tree Inventory Maps

Appendix 4

Tree Inventory Maps



Tree Inventory Map

Map Key
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

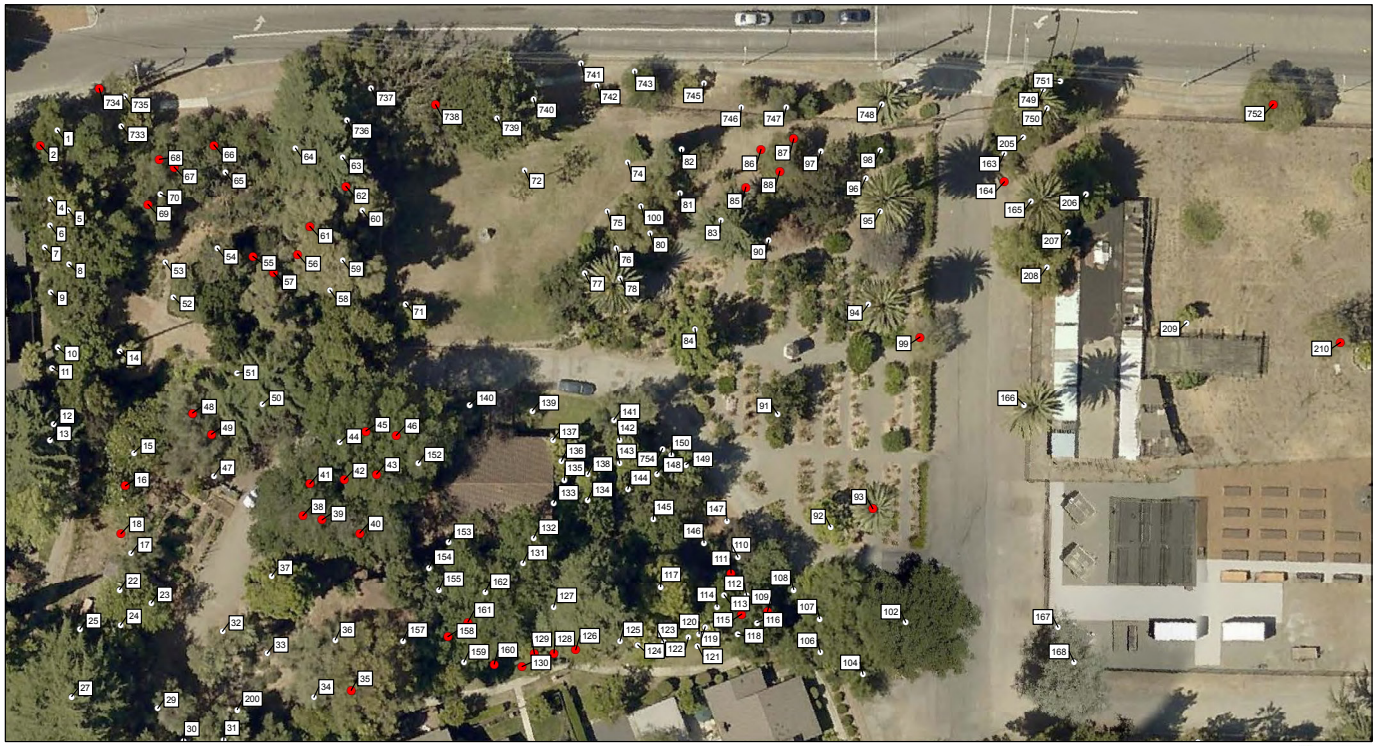
Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition
- Map Number

N

180 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596



Tree Inventory Map

Map 1
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

50 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596

Tree Inventory Map

Map 2
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

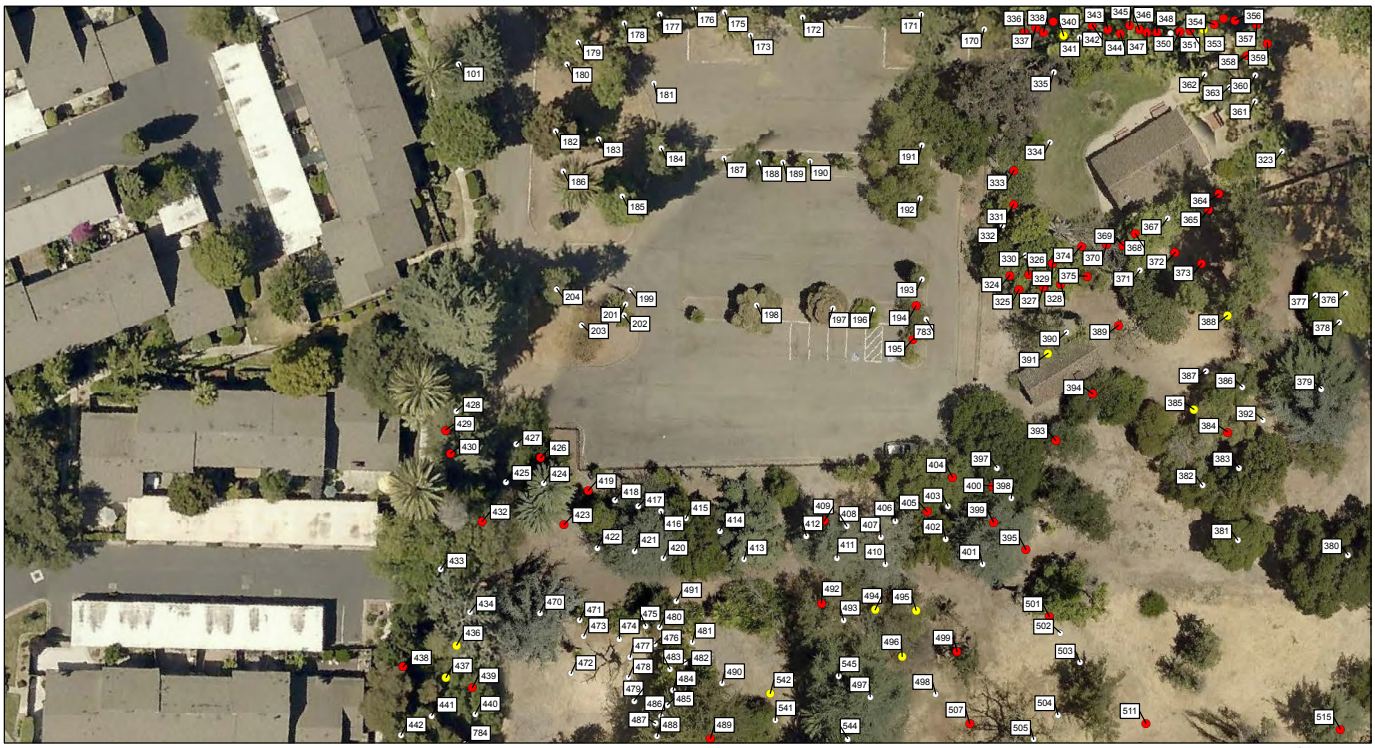
Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

50 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596



Tree Inventory Map

Map 3
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

50 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596

Tree Inventory Map

Map 4
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

50 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596

Tree Inventory Map

Map 5
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

50 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596

Tree Inventory Map

Map 6
California Nursery Historic Park
Fremont, CA

Prepared for:
City of Fremont

March 2017

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

50 Feet

HORT SCIENCE
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Pleasanton, CA 94566
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Fax (925) 484-0596

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The Legacy of CALIFORNIA NURSERY Historic Park

the root of an industry

Appendix 5:
Tree Inventory Report

Tree Inventory Report

California Nursery Historical Park
Fremont, CA

Prepared for:
PGA Design
444 17th Street
Oakland, CA 94612

Prepared by:
HortScience, Inc.
325 Ray Street
Pleasanton, CA 94566

October 15, 2014

HORT SCIENCE

Tree Inventory Report
California Nursery Historical Park
Fremont, CA

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Fremont, CA

Introduction and Overview
PGA Design is developing a Master Plan for the California Nursery Historical Park in Fremont, CA. The site is a historical nursery, established in 1884, that originally occupied 463 acres. Plants from around the world were propagated and planted to test them for suitability for California's growing conditions. Today the site is 20.1 acres owned by the City of Fremont. HortScience, Inc. was asked to prepare a **Tree Inventory Report** for the site to aid in planning the park.

This report provides the following information:

1. A survey of trees within and adjacent to the proposed project area.

2. An assessment of each tree's health, invasiveness and initial management recommendations.

Tree Inventory Methods
Trees were inventoried on April 24, 2014 by HortScience arborists and City of Fremont staff, and also in June and July by HortScience arborists. Trees had previously been tagged, the trunk diameter measured, and locations mapped. The survey procedure consisted of the following steps:

1. Identifying the tree as to species;
2. Evaluating the health and structural condition using a scale of 1 – 5:

   5 - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.

   4 - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.

   3 - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.

   2 - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.

   1 - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
3. Describing the characteristics of each tree.

Description of Trees
Seven hundred fifty-six (756) trees were assessed. Descriptions of all trees and a map are found in the *Exhibits*.

The tree population at California Nursery was highly diverse; 122 taxa were represented (Table 1). The species most commonly present were coast live oak (13% of population), Canary Island date palm (8%), apricot (6%), yew (6%), windmill palm (5%), and lemonwood (5%). Seventy-four species were represented by only one or two trees.

Table 1: Condition ratings and frequency of occurrence of trees.
California Nursery, Fremont, CA

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Algerian fir	*Abies numidica*	-	-	1	**1**
Spanish fir	*Abies pinsapo*	-	1	-	**1**
Purple-leaf acacia	*Acacia baileyana* 'Purpurea'	-	-	1	**1**
Blackwood acacia	*Acacia melanoxylon*	2	3	2	**7**
Bigleaf maple	*Acer macrophyllum*	1	-	-	**1**
Japanese maple	*Acer palmatum*	-	2	2	**4**
Silver maple	*Acer saccharinum*	3	-	1	**4**
California buckeye	*Aesculus californica*	-	-	1	**1**
Red horsechestnut	*Aesculus x carnea*	-	1	-	**1**
Queensland kauri	*Agathis robusta*	-	1	-	**1**
River she-oak	*Allocasuarina cunninghamiana*	3	6	1	**10**
Black alder	*Alnus glutinosa*	1	-	-	**1**
Bunya-bunya	*Araucaria bidwillii*	-	1	1	**2**
Norfolk Island pine	*Araucaria heterophylla*	-	1	-	**1**
Bottle tree	*Brachychiton populneus*	-	1	-	**1**
Queensland bottle tree	*Brachychiton rupestris*	1	1	-	**2**
Guadalupe palm	*Brahea edulis*	-	-	2	**2**
Pindo palm	*Butia capitata*	1	-	2	**3**
Incense cedar	*Calocedrus decurrens*	3	3	1	**7**
Cape chestnut	*Calodendrum capense*	-	-	1	**1**
Pecan	*Carya illinoinensis*	-	4	-	**4**
Blue atlas cedar	*Cedrus atlantica* 'Glauca'	-	3	4	**7**
Deodar cedar	*Cedrus deodara*	3	14	10	**27**
Carob	*Ceratonia siliqua*	-	1	-	**1**
Mediterranean fan palm	*Chamaerops humilis*	-	-	1	**1**
Floss silk tree	*Chorisia speciosa*	-	1	1	**2**
Cabbage palm	*Cordyline australis*	2	2	1	**5**
Hazelnut	*Corylus maxima*	-	-	1	**1**
Cotoneaster	*Cotoneaster lacteus*	-	1	-	**1**
Cockspur hawthorn	*Crataegus crus-galli*	-	1	-	**1**
Japanese cedar	*Cryptomeria japonica*	-	2	1	**3**
Italian cypress	*Cupressus sempervirens*	-	1	1	**2**
Persimmon	*Diospyros kaki*	-	8	1	**9**
Loquat	*Eriobotrya japonica*	3	11	-	**14**
Naked coral tree	*Erythrina coralloides*	1	1	-	**2**
Blue gum	*Eucalyptus globulus*	-	-	1	**1**
Compact blue gum	*Eucalyptus globulus* 'Compacta'	-	1	-	**1**
White ironbark	*Eucalyptus leucoxylon*	1	2	-	**3**

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Silver dollar gum	*Eucalyptus polyanthemos*	-	1	1	**2**
Swamp mahogany	*Eucalyptus robusta*	-	-	1	**1**
Fig	*Ficus carica*	-	1	-	**1**
Raywood ash	*Fraxinus angustifolia* 'Raywood'	-	-	1	**1**
Evergreen ash	*Fraxinus uhdei*	-	1	-	**1**
Ginkgo	*Ginkgo biloba*	-	1	-	**1**
Silk oak	*Grevillea robusta*	1	-	-	**1**
Guadalupe cypress	*Hesperocyparis guadalupensis*	-	-	3	**3**
Monterey cypress	*Hesperocyparis macrocarpa*	2	5	1	**8**
Kentia palm	*Howea forsteriana*	-	-	1	**1**
California black walnut	*Juglans hindsii*	1	2	2	**5**
Canary Island juniper	*Juniperus cedrus*	-	1	1	**2**
Chinese juniper	*Juniperus chinensis*	-	-	1	**1**
Hollywood juniper	*Juniperus chinensis* 'Kaizuka'	-	1	-	**1**
Glossy privet	*Ligustrum lucidum*	10	19	1	**30**
Catalina ironwood	*Lyonothamnus floribundus*	1	-	-	**1**
Southern magnolia	*Magnolia grandiflora*	2	2	1	**5**
Saucer magnolia	*Magnolia x soulangiana*	-	1	-	**1**
Apple	*Malus domestica*	6	-	-	**6**
Crabapple	*Malus sylvestris*	1	-	-	**1**
Mayten	*Maytenus boaria*	-	3	-	**3**
Flaxleaf paperbark	*Melaleuca linariifolia*	-	-	2	**2**
Prickly melaleuca	*Melaleuca styphelioides*	2	-	-	**2**
Dawn redwood	*Metasequoia glyptostroboides*	-	-	1	**1**
Mulberry	*Morus alba*	1	-	-	**1**
Myoporum	*Myoporum laetum*	-	1	-	**1**
Olive	*Olea europaea*	15	13	3	**31**
Sweet olive	*Osmanthus fragrans*	-	1	-	**1**
Canary Island date palm	*Phoenix canariensis*	1	5	51	**57**
Senegal date palm	*Phoenix reclinata*	-	-	1	**1**
Cliff date palm	*Phoenix rupicola*	-	-	3	**3**
Chinese photinia	*Photinia serrulata*	1	1	1	**3**
Colorado spruce	*Picea pungens*	2	1	-	**3**
Canary Island pine	*Pinus canariensis*	7	6	2	**15**
Aleppo pine	*Pinus halepensis*	1	-	-	**1**
Italian stone pine	*Pinus pinea*	-	-	1	**1**
Monterey pine	*Pinus radiata*	-	1	-	**1**
Mt. Atlas pistache	*Pistacia atlantica*	7	17	1	**25**
Chinese pistache	*Pistacia chinensis*	-	1	1	**2**
Lemonwood	*Pittosporum tenuifolium*	30	4	-	**34**
Victorian box	*Pittosporus undulatum*	-	1	1	**2**

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
London plane	*Platanus x hispanica*	-	1	-	**1**
Fremont cottonwood	*Populus fremontii*	2	-	-	**2**
Lombardy poplar	*Populus nigra* 'Italica'	3	-	-	**3**
Apricot	*Prunus armeniaca*	5	19	19	**43**
Cherry	*Prunus avium*	1	5	5	**11**
Carolina cherry laurel	*Prunus caroliniana*	1	-	-	**1**
Purpleleaf plum	*Prunus cerasifera*	1	1	1	**3**
Plum	*Prunus domestica*	7	12	-	**19**
Almond	*Prunus dulcis*	1	-	-	**1**
Hollyleaf cherry	*Prunus ilicifolia*	1	-	-	**1**
Catalina cherry	*Prunus ilicifolia* subsp. *lyonii*	-	-	1	**1**
English laurel	*Prunus laurocerasus*	-	1	-	**1**
Portugal laurel	*Prunus lusitanica*	-	1	1	**2**
Peach	*Prunus persica*	1	-	-	**1**
Nectarine	*Prunus persica*	-	-	2	**2**
Douglas fir	*Pseudotsuga menziesii*	-	1	-	**1**
Coast live oak	*Quercus agrifolia*	13	50	32	**95**
Holly oak	*Quercus ilex*	1	1	3	**5**
Valley oak	*Quercus lobata*	-	1	-	**1**
Burr oak	*Quercus macrocarpa*	-	-	1	**1**
Cork oak	*Quercus suber*	1	3	1	**5**
China doll	*Radermachera sinica*	-	1	-	**1**
Italian buckthorn	*Rhamnus alaternus*	2	-	-	**2**
Black locust	*Robinia pseudoacacia*	1	2	1	**4**
California pepper	*Schinus molle*	4	4	1	**9**
Coast redwood	*Sequoia sempervirens*	-	5	1	**6**
Giant sequoia	*Sequoiadendron giganteum*	-	1	-	**1**
Queen palm	*Syagrus romanzoffianum*	1	1	-	**2**
Australian brush cherry	*Syzygium paniculatum*	-	2	2	**4**
Bald cypress	*Taxodium distichum*	1	-	3	**4**
Montezuma cypress	*Taxodium mucronatum*	-	-	1	**1**
Yew	*Taxus baccata cvs.*	14	26	3	**43**
Windmill palm	*Trachycarpus fortunei*	2	11	25	**38**
American elm	*Ulmus americana*	8	3	1	**12**
Camperdown elm	*Ulmus glabra* 'Camperdownii'	-	1	-	**1**
Chinese elm	*Ulmus parvifolia*	-	1	-	**1**
Siberian elm	*Ulmus pumila*	1	-	2	**3**
California bay	*Umbellularia californica*	-	9	-	**9**
California fan palm	*Washingtonia filifera*	-	-	2	**2**
Mexican fan palm	*Washingtonia robusta*	-	4	5	**9**
Fan palm	*Washingtonia sp.*	-	1	1	**2**

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Spanish dagger	*Yucca gloriosa*	-	-	1	**1**
Sawleaf zelkova	*Zelkova serrata*	-	-	1	**1**
Total		**188**	**332**	**236**	**756**

Tree size ranged from 6" in trunk diameter to 113"; average trunk diameter was 20". The largest single trunked tree was 80" diameter Fremont cottonwood #281. There were many large trees on the site: 143 trees had trunk diameters exceeding 30".

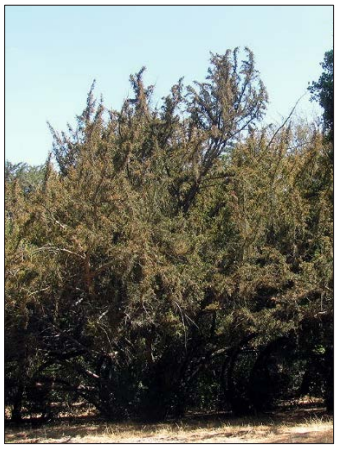


Photo 1: Drought tolerant coast live oak #250 (left) was green and healthy. In contrast, yew #571 (right) was brown and defoliating due to drought stress.

Among all trees, 31% were in good condition (rating 4-5); 44%, fair (rating 3); and 25% in poor condition (rating 1-2). Condition rating distribution varied by species. In general, species that were drought tolerant such as coast live oak, deodar and blue Atlas cedar, elm, and Mt. Atlas pistache, tended to be in better condition than those requiring supplemental irrigation (Photo 1). Others had survived for many years without irrigation, but were declining rapidly because of the current drought and high temperatures, including yew, Lombardy poplar, Fremont poplar, and magnolia.

Of the 95 coast live oaks, the most common species, 34% were in good condition. Tree in poor and fair condition generally had structural defects present that downgraded their ratings. Average diameter of the single stemmed trees was 18" with a maximum of 47" and a minimum of 5"; however, 12% of coast live oaks were multi-stemmed. Several of the coast live oaks were stored in boxes for long enough that roots broke through to the ground (Photo 1).

The second most common species was Canary Island palm. Of the 57 trees, 51 (89%) were in good condition. In contrast, of the 43 yews, only three were in good condition (7%).

Photo 2: Coast live oaks planted in containers in the 1940's have rooted into the ground.

Relatively few pests and diseases were present. The one London plane had sycamore scale which feeds sap in young foliage. Several coast live oaks had Ehrhorn scale on the lower side of shaded branches. Tortoise beetles caused foliage damage on *Eucalyptus*. None of these pest problems were significant to tree health.

Some trees were in poor condition because of significant structural defects that make them prone to failure. Defects included dead and broken branches, weak branch attachments, large girdling roots, excessive lean, cracks, codominant stem attachments with included bark, and decay. Examples are provided in Fig. 1.

City of Fremont Municipal Ordinance No. 2481 defines all trees with a trunk diameter of 6" or greater as *Protected*. Based on this definition, all 756 trees qualified as *Protected*.

Noteworthy trees

Trees from all over the world were brought to the nursery for propagation, some of which were planted on the grounds and survive today. Unusual trees for the region included floss silk tree, Montezuma cypress, Guadalupe cypress, dawn redwood, Japanese red cedar, cockspur hawthorn, Queensland kauri, Queensland bottle tree, Senegal date palm, cliff date palm, Mt. Atlas pistache, prickly melaleuca, coral tree, and China doll. Illustrations of some of these trees are provided in Fig. 2.

The site has many noteworthy trees because of their large size, unique characteristics, and/or history. The City of Fremont designates certain specimens as landmark trees if they have the following characteristics:

- Trees with trunk diameters over 4.5 feet when measured 4.5 feet from ground level,
- Excellent structure or unique structural character
- Excellent health
- High aesthetic appeal
- Good longevity

The first landmark trees were adopted by the City Council in 1972, several of which were located at California Nursery. The landmark tree list has been updated and added to a few times since then, most recently in 2012 (Table 2). Unfortunately between 1972 and 2010, seven landmark trees died and were removed. Between 2012 and the current assessment, two more trees died: Kurrajong bottle tree and Lombardy poplar #525 (Photo 3). Photographs of selected Landmark trees are provided in Fig. 3.

Photo 3: Landmark Lombardy poplar (left) died this summer, presumably from drought stress.

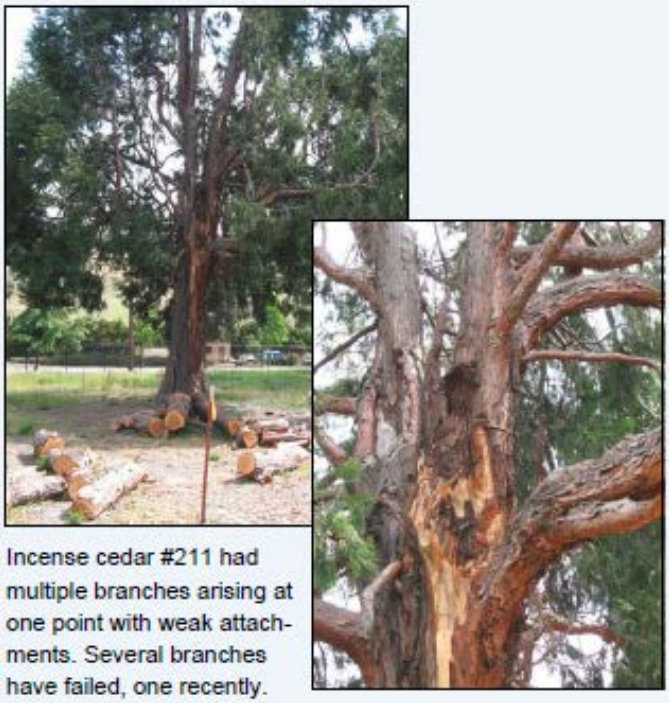
Landmark forest kurrajong (right) tree had died previously and was removed before our inventory.

Photos are from *Landmark Trees of the City of Fremont.*

Locations of selected notable trees, including Landmark trees, are plotted in Fig. 4.

Fig. 1 Examples of trees in poor condition due to structural defects.

Queensland bottle tree #72 with girdling and kinked roots.



Incense cedar #211 had multiple branches arising at one point with weak attachments. Several branches have failed, one recently.

Mt. Atlas pistachio i#244 s likely to fail due to extensive decay in the tower trunk at he attachment of two co-dominant stems.

Canary Island pines #372 and 373 have dead branches and are leaning over use areas.

Monterey cypress #529 has dead and broken branches hanging over the building. Nearby cypess # 531, 535, and 540 also had significant defects. These are Landmark trees.

Table 2: City of Fremont Landmark Trees at California Nursery. 2012.

Tag No.	Landmark No.	Tree
37	NIL-6	Bunya bunya
Removed	NIL-7	Forest kurrajong tree
529-531, 535, 540	NIL-8	Monterey cypress
117	NIL-9	Dwarf blue gum
61, 62	NIL-10	Prickly paperbark
251	NIL-11	Canary Island pine
738	NIL-12	Cork oak
263	NIL-15	Japanese zelkova
174	NIL-16	Canary Island juniper
252	NIL-17	Queensland kauri
93, 94, 96, 165-167, 186; 270-279, 784, 286-291, 293, 295	NIL-18	Canary Island palm
307	NIL-20	Siberian elm
544	NIL-21	Senegal date palm
525 (dead)	NIL-22	Lombardy poplar

Fig. 2: Examples of notable trees.

California black walnut #247, 51"

Coast live oak #250, 47"

Japanese cedar (#218-220) is an unusual species.

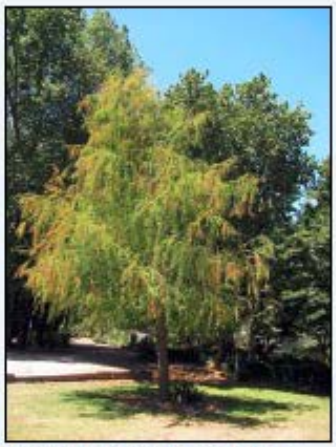
There were several large, beautiful deodar and Atlas cedars, including #413

Dawn redwood #84. is an unusual species for the region.

Floss silk tree #173 is an unusual species in the region.

Cliff date palm #516 (shown) and 520 are uncommon in

Cockspur hawthorn #77 is an unusually large specimen.



Montezuma cypress #71 is an unusual species in the region.

Fig. 3: Examples of City of Fremont LandmarkTrees

Queensland Kauri pine #252 (left); Canary Island Pine #251.

Monterey cypress #530, 531 were unfortunately in poor condition.

Canary Island juniper #174.

Sengal date palm #544.

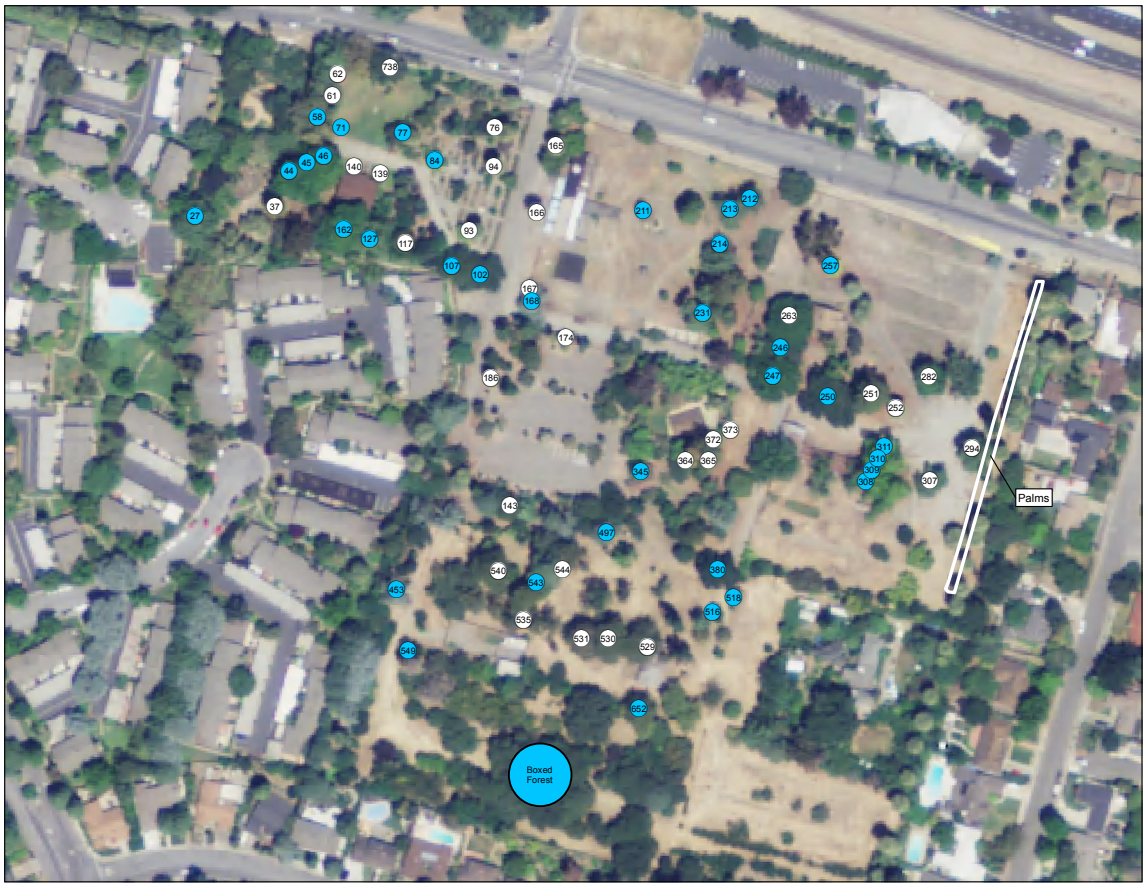
26 Canary Island date palms planted in the late 1880 to early 1900s.

Siberian elm #307.

Prickly paperbark #61, 62 was declining.

Dwarf blue gum #117; unfortunately most of the trunk was dead.

Cork oak #738 was in severe decline.



SignificantTree Map

California Nursery
Fremont, CA

Prepared for:
PGA Design

October 16, 2014

Notes:
1. Basemap 2012 NAIP image.

2. Tree locations are approximate.

Legend

- Landmark Trees
- Notable Trees

N

150 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596

Summary and Conclusions

California Nursery Historical Park is unique site that is vegetated with a highly diverse population of 756 trees representing 122 taxa from around the world. Many of the trees were planted at the turn of the 20th century; others are progeny of those plantings. The site has many noteworthy trees because of their large size, unique characteristics and history. The City of Fremont City Council has adopted 40 trees as landmark trees.

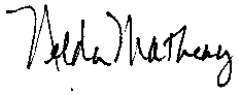
Because many of the trees are not native to the area, preserving and sustaining this valuable resource requires on-going maintenance. Since 1973, seven landmark trees have died. Sixteen (14%) of the 117 species that the Boy Scout Troup 143 surveyed and identified (http://www.fremontica.net/CNCo/tree_inventory2.php) the trees in 2006 were absent in our inventory. We think that most have been lost because of lack of adequate irrigation. More drought-sensitive trees and species are likely to disappear if irrigation is not supplied in the future. In our view, supplying adequate water according to tree need is the most important maintenance task at this park.

We recommend that as future park uses are discussed and plans prepared, design to include significant and unique trees that are in good condition. Trees require space for not only their canopies, but also their root systems. Planning for adequate space is the first step towards protecting and preserving trees.

We noted the presence of structural defects we could see from the ground that tend to be associated with tree failure. Pruning often can abate these problems and preserve trees. In some cases it may be necessary to remove trees where the risk to park workers and the public cannot be managed.

Trees change over time. Our inspections represented the condition of the tree we could observe at the time of inspection. Annual tree inspections of trees in use areas are recommended to identify changes to tree health and structure. In addition, large trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces can exceed the strength of wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, decrease stability, and blow over defect-free trees. Although we cannot predict all failures, identifying and managing trees with observable defects is an important component of enhancing public safety.

HortScience, Inc.



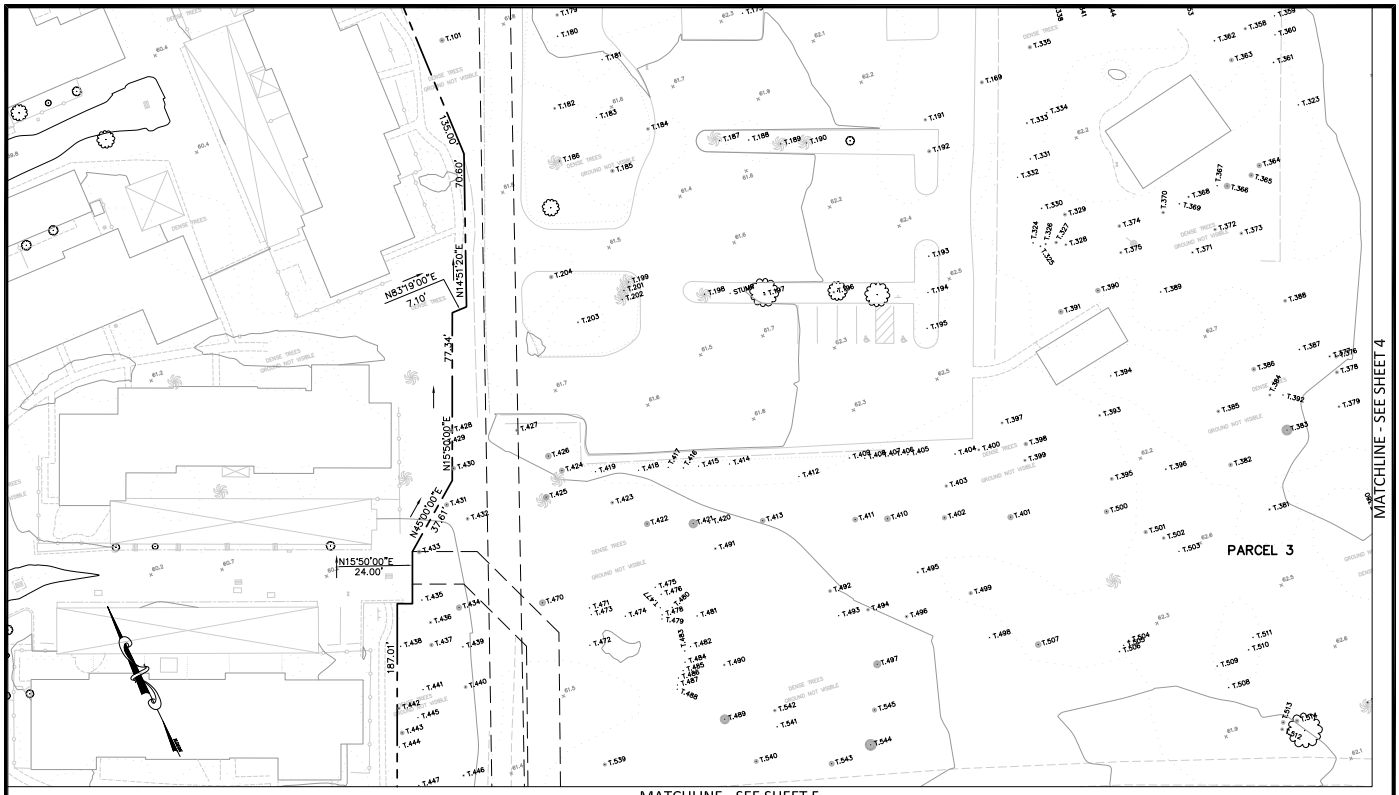
Nelda Matheny
Board Certified Master Arborist WE195B
Registered Consulting Arborist 243

Appendix 5 Exhibits:
Existing Conditions and Assessment Maps

Appendix

Tree Inventory Maps

Tree Assessment



GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

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Approved --- City Engineer Date

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN LEE TOLLERS
No. 27959
CIVIL
STATE OF CALIFORNIA

CALIFORNIA NURSERY MASTER PLAN

EXISTING CONDITION - TREE INVENTORY

CITY OF Fremont

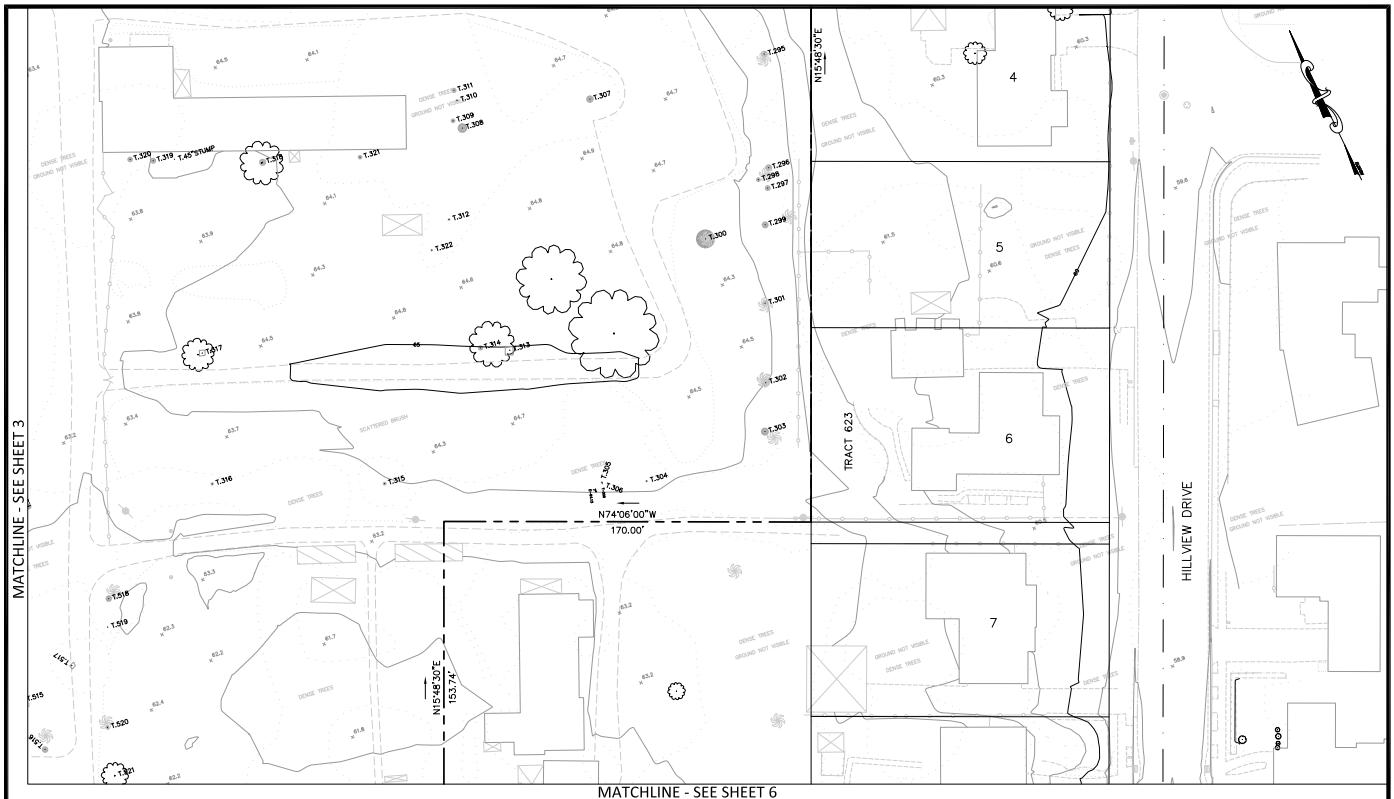
COMMUNITY SERVICES DEPARTMENT

LANDSCAPE ARCHITECTURE

Approved --- Senior Engineer	Date	Recommended---Project Manager	Date

Designed By:	
Drawn By:	
Date:	
Project No.:	8837(PWC)
CAD File:	

SHEET 3 OF 6



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REGISTERED PROFESSIONAL ENGINEER
BENJAMIN LEE TOLLERS
No. 27959
CIVIL
STATE OF CALIFORNIA

CALIFORNIA NURSERY MASTER PLAN

EXISTING CONDITION - TREE INVENTORY

CITY OF Fremont

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LANDSCAPE ARCHITECTURE

Approved --- Senior Engineer	Date	Recommended---Project Manager	Date

Designed By:	
Drawn By:	
Date:	
Project No.:	8837(PWC)
CAD File:	

SHEET 4 OF 6

Tree Assessment

California Nursery Historical Park
Fremont, California
April - August 2014

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
2	Plum	21	2	Extensive twig and branch dieback.
4	Coast live oak	14	3	Asymmetric; bows heavily to west; trunk base located outside of dripline.
5	Canary Island pine	17	3	Replaced leader; good vigor.
6	Coast live oak	15	3	Asymmetric; bows heavily to east; trunk base located outside of dripline.
7	Coast live oak	20	4	Multiple attachments at 9'; full crown.
8	Coast live oak	11	3	Asymmetric; bows heavily to east; trunk base located outside of dripline.
9	Coast live oak	18	4	Multiple attachments at 15'; full crown; Ehrhorn scale.
10	Mt. Atlas pistache	6,6,5,5,4,4	3	Rodent damage; multiple trunks arise at ground level.
11	Mt. Atlas pistache	6,6,5,5,4,5	3	Rodent damage; multiple trunks arise at ground level.
12	Coast live oak	21	3	Codominant trunks arise at 1'; very narrow attachment; crown asymmetric to north.
13	Plum	9	3	Crown one sided to south.
14	Mexican fan palm	21	4	80' brown trunk.
15	Southern magnolia	36	3	Multiple stems arise at 3'; cavity at base with small opening on W.; wide crown; somewhat thin.
16	Southern magnolia	32	1	3 trunks; extensive basal decay; declining; very thin.
17	Olive	9	3	Poor form and structure; thin crown; bowed trunk; twig dieback.
18	Olive	14	2	Extensive dieback; poor form; crown to north.
22	Southern magnolia	32	3	Multiple attachments at 3'; thin.
23	Bald cypress	9	5	Excellent health and structure.
24	Southern magnolia	27	4	Multiple attachments at 2'; full crown; minor decay.
25	Coast live oak	11	3	Suppressed form; narrow attachment at 4'.
27	Deodar cedar	43	4	Low laterals sweep upright at 5'; center stem has narrow codominant attachment at 25'.
28	Coast live oak	10	4	Good young tree; multiple attachments at 3'.
29	London plane	18	3	Suppressed form to west; twig dieback; sycamore scale; cabled to telephone pole.

Tree Assessment

California Nursery Historical Park
Fremont, California
April - August 2014

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
30	Olive	34	3	Multiple attachments at 4'; bee hive in center of attachments; upright laterals bow to outside of center.
31	Olive	27	3	Suppressed crown bows to east; codominant at 5'.
32	Olive	33	3	Codominant at 5'; upright stem to west has ext. decay; crown is separating.
33	Olive	23	3	Small crown bows to south; poor form and structure.
34	Glossy privet	7	3	High crown; multiple attachments at 8'.
35	Glossy privet	10	2	Crossing branches; poor form and structure.
36	Olive	37	4	Multiple attachments at 5'; full but thin crown.
37	Bunya-bunya	55	4	Slight lean south; minor dead branches.
38	American elm	43	2	3 trunks arising at ground level; sulfur fungus; history of branch failure.
39	American elm	14	1	Heavy bow to east; almost dead.
40	American elm	14	2	Heavy bow to east; thin crown.
41	American elm	14	2	Upright form; thin crown.
42	American elm	12	2	Bows to west.
43	American elm	9	2	Bows to south.
44	American elm	22	3	Codominant at base; smaller stem could be removed; thin crown.
45	American elm	32	2	Multiple attachments at 2' with narrow attachment; high thin crown.
46	American elm	20	2	Crown bows east; thin crown.
47	Norfolk Island pine	6	3	Corrected form.
48	Olive	20	2	Suppressed crown to west; thin crown.
49	Olive	30	2	Suppressed to west; multiple attachments at base.
50	Plum	11	3	Suppressed form.
51	Deodar cedar	48	3	5 trunks; flat top; multiple attachments at 2'; no central leader.
52	Coast live oak	18	4	Wide codominant attachment at 7'.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
102	Coast live oak	31	5	Codominant trunks with included bark; full dense crown; minor sap sucker damage; Ehrhorn scale.
104	Coast live oak	8	5	Good young tree.
106	Coast live oak	9	3	Codominant at base; suppressed heavily to south.
107	Coast live oak	25	3	Cracked codominant attachment at 12'; bolt and cable; otherwise good tree.
108	Mayten	12	3	Good tree; but suppressed; multiple attachments at 5'.
109	Holly oak	6	2	High narrow crown; poor form.
110	Plum	10	3	Poor branch structure.
111	Plum	14	2	Decay on upright stems.
112	Cotoneaster	10	3	Shrub; multiple attachments at base.
113	Plum	7	3	Multiple attachments at 1' with included bark.
114	Coast live oak	11	4	Ok form; crowded; leaf spot.
115	Olive	9	1	Few leaves.
116	Coast live oak	17	3	Multiple attachments at base with seam below attachment.
117	Dwarf blue gum	113	3	Extensive basal decay; healthy crown; tortoise beetle damage; 75% of circumference dead.
118	Coast live oak	8	3	Codominant at 5'; leans against fence; crowded.
119	Glossy privet	6	3	High narrow crown; codominant at base.
120	Glossy privet	5	3	High narrow crown.
121	Glossy privet	9	3	High narrow crown; codominant at base.
122	Portugal laurel	25	3	Multiple attachments at base; crowded.
123	Glossy privet	6	3	High narrow crown; codominant at base.
124	Glossy privet	6	3	High narrow crown.
125	Glossy privet	6	3	High narrow crown; codominant at base.

Tree Assessment
California Nursery Historical Park
Fremont, California
April - August 2014

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
126	Coast live oak	9	2	Crown bows to east; poor form; twig dieback.
127	Deodar cedar	34	4	Excellent form and structure; history of branch failure.
128	Carolina cherry laurel	8	2	Extensive twig and branch dieback.
129	Glossy privet	8	2	High narrow crown; poor form.
130	Plum	18	2	Multiple attachments at base; twig and branch dieback.
131	American elm	17	3	Crooked form; thin crown.
132	Yew	25	3	Multiple attachments at base; open grown; epicormic growth.
133	English laurel	12	3	Twig and branch dieback; prune dead branches.
134	American elm	7	5	Excellent upright form; good young tree.
135	Japanese maple	10	4	Codominant at base; minor twig dieback.
136	Japanese maple	7	3	Codominant at 6'; close to building.
137	Cabbage palm	25	3	Multiple attachments at base; close to building.
138	Coast live oak	8	3	Codominant at base; suppressed form.
139	Pindo palm	23	5	3' brown trunk; good young tree.
140	Pindo palm	19	4	3' brown trunk; slightly off color.
141	Olive	23	3	Crown with dieback bows to east.
142	Italian cypress	20	5	Excellent health and structure; not typical form.
143	Yew	28	4	Multiple attachments at base; open grown.
144	Plum	13	3	Multiple attachments at 5'; twig and branch dieback.
145	Plum	26	3	Poor form and structure.
146	Queensland bottle tree	19	3	Girdling roots; curved trunk.
147	Purpleleaf plum	12	4	Good health; poor branching structure.
148	Plum	15	3	Poor form and structure.
149	Japanese maple	16	4	Good young tree; crowded.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
196	Flaxleaf paperbark	15	4	Multiple attachments at 7'; low branch at 5'; full dense crown.
196.1	Mediterranean fan palm	clump	4	No tag; large clump of many stems; 8' tall.
197	Flaxleaf paperbark	17	4	Multiple attachments at 6'; full dense crown.
198	Windmill palm	8	4	10' brown trunk; narrow base.
199	Mexican fan palm	16	5	70' brown trunk; excellent form and structure.
200	Canary Island date palm	19	5	2' brown trunk height; full crown; in raised boxed.
201	Windmill palm	7	4	20' brown trunk; corrected form.
202	Windmill palm	7	4	30' brown trunk; corrected form.
203	California buckeye	11	4	Low branching; low crown; good young tree.
204	Algerian fir	24	4	Crooked form; replaced leader; seam on trunk 2.5' long on SW.
205	Glossy privet	26	3	Multiple attachments at 3'; good form; trunk decay.
206	Chinese photinia	32	4	Multiple attachments at ground; good form; trunk decay.
207	Camperdown elm	16	3	Unique distorted form; asymmetric crown; branch failures.
208	California pepper	26	3	Asymmetric form; full crown leans west.
209	Spanish dagger	40	4	Multiple attachments at 1'; full dense crown; old boxed specimen rooted above ground.
210	China doll	14	3	Good form; trunk sweeps east; large surface roots; girdling roots.
211	Incense cedar	41	3	Multiple large branch failures; one recent large branch failure; included bark between attachments.
212	Deodar cedar	23	3	Good form; codominant at 35'; crown somewhat open on west.
213	Deodar cedar	31	4	Good form; crown somewhat open on east; branch failures to 6"; broken branches to 6" still attached in crown.
214	Deodar cedar	33	4	Good form; crown somewhat open on east; branch failures to 6".
215	Coast live oak	7	4	Good young tree.
216	Aleppo pine	29	2	Severe decline; thin crown; branch dieback; trunk leans southeast.

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California Nursery Historical Park
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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
218	Japanese cedar	11	3	Narrow form; small branch dieback.
219	Japanese cedar	9	3	Narrow form; small branch dieback.
220	Japanese cedar	16	4	Good form and structure; full crown; minor branch dieback.
221	Canary Island pine	19	3	Tall narrow form; suppressed crown on northwest.
222	Canary Island pine	21	3	Tall narrow form; suppressed crown on southeast; minor branch dieback.
223	Canary Island pine	18	3	Tall narrow form; high crown; branch dieback.
224	Canary Island pine	13	1	Poor form and structure; trunk with severe bow to northwest.
226	Canary Island pine	12	1	Poor form and structure; trunk with severe bow to north.
227	Canary Island pine	12	1	Poor form and structure; trunk with severe bow to north.
228	Deodar cedar	19	3	Good form; thin crown; lost top.
229	Deodar cedar	14	1	Poor form and structure; trunk with severe bow to southeast.
230	Deodar cedar	19	2	Poor form; thin crown; branch failures.
231	Deodar cedar	25	3	Trunk and crown leans south; heavy weight on south side of crown needs to be reduced;
232	Glossy privet	24	2	Multiple attachments at 1'; narrow form; included bark in attachments; wire embedded in trunk.
233	Glossy privet	8	3	Multiple attachments at 1'; narrow form; included bark in attachments; hose bib at base of trunk .
234	Mt. Atlas pistache	26	3	Crown somewhat thin; crown leans north towards Niles Blvd.; large branch failure on south.
235	Coast live oak	7	4	Good young tree; trunk with minor bow.
236	Coast live oak	5	3	Trunk leans north.
237	Glossy privet	35	3	Multiple attachments at 1'; narrow form; included bark in attachments; pipe embedded in trunk.
238	Glossy privet	50	2	Multiple attachments at 1'; narrow form; included bark in attachment; chain link fabric embedded in trunk.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
283	Glossy privet	17	3	Multiple attachments at 3' with included bark; narrow form; branch dieback.
284	Canary Island date palm	38	4	35' brown trunk height; full crown.
285	Black locust	9	4	Good young tree; central leader form.
286	Canary Island date palm	32	4	20' brown trunk height; full crown; cluster of palms.
287	Canary Island date palm	40	4	40' brown trunk height; full crown; cluster of palms.
288	Canary Island date palm	28	4	25' brown trunk height; full crown; cluster of palms.
289	Canary Island date palm	27	4	30' brown trunk height; full crown; cluster of palms.
290	Canary Island date palm	38	4	35' brown trunk height; full crown; cluster of palms.
291	Canary Island date palm	44	4	18' brown trunk height; full crown; cluster of palms.
292	Lombardy poplar	48	2	Over mature; thin crown; decay in trunk; branch dieback.
293	Canary Island date palm	51	4	30' brown trunk height; full crown; ivy on trunk.
294	Siberian elm	47	4	Good form; full crown; branch failures.
295	Canary Island date palm	37	4	50' brown trunk height; full crown; ivy on trunk.
296	Canary Island date palm	38	4	50' brown trunk height; full crown; cluster of palms.
297	Canary Island date palm	32	4	30' brown trunk height; full crown; cluster of palms.
298	Canary Island date palm	26	4	5' brown trunk height; full crown; cluster of palms.
299	Canary Island date palm	38	4	35' brown trunk height; full crown.
300	Canary Island date palm	30	4	30' brown trunk height; full crown; with cluster of 4 small palms ≈ 105" diameter taken together.
301	Canary Island date palm	32	3	Brown trunk height 50'; round-headed.
302	Canary Island date palm	45	4	Brown trunk height 50'; full crown.
303	Canary Island date palm	44	3	Brown trunk height 50'; round-headed.
304	Coast live oak	13	2	Multiple attachments at 2'; bark wounds; ivy on trunk.
305	Coast live oak	7,2	2	Codominant at base; upright stems; crowded by adjacent trees.

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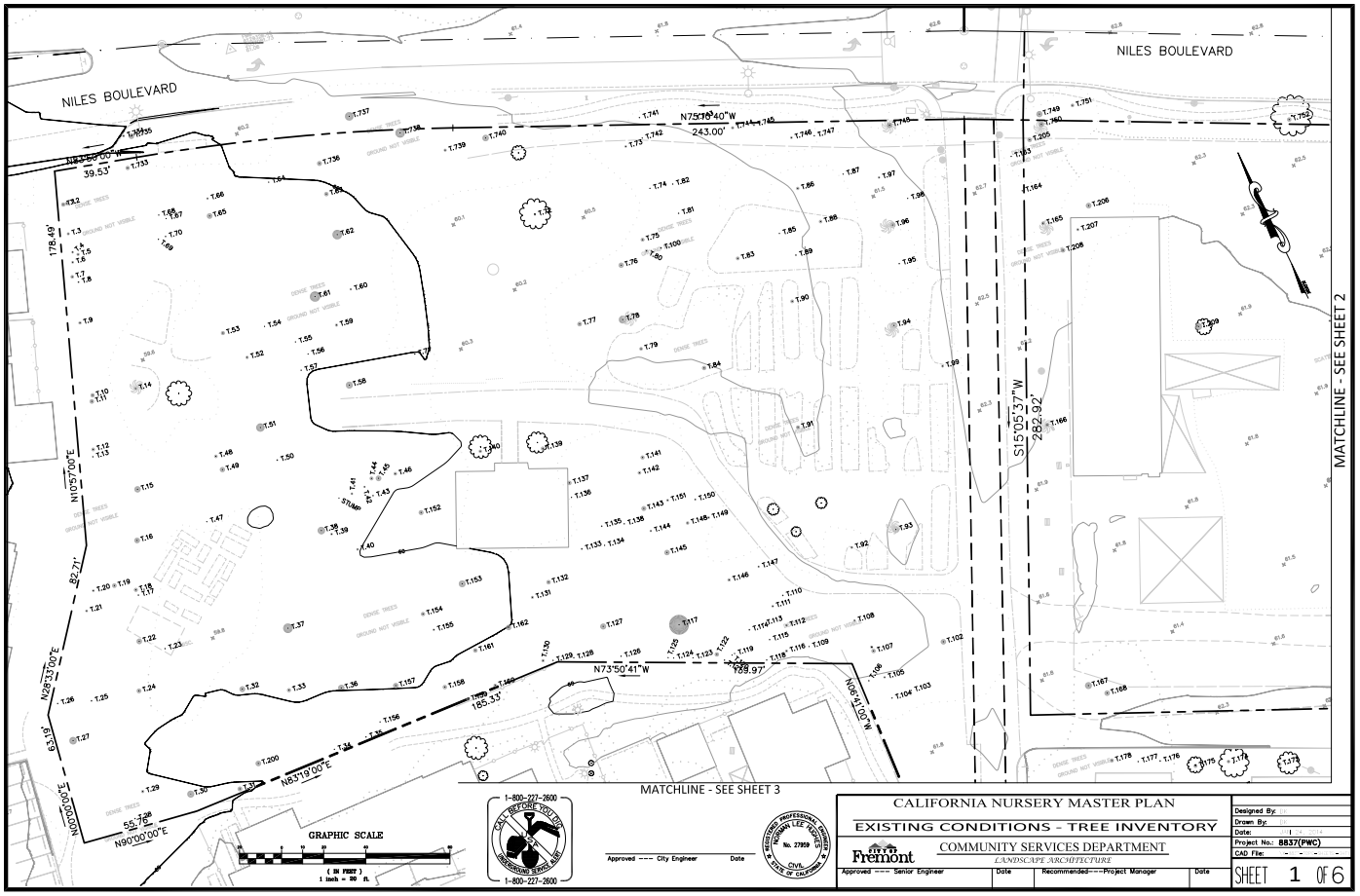
Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
306	Coast live oak	7,6	2	Codominant at base; two upright stems.
307	Siberian elm	19,19	2	Multiple attachments at base; basal cavities; topped.
308	Pecan	24,20,18	3	Multiple attachments at base; large branch failure; topped; decay at old wounds.
309	Pecan	36	3	Lowest branch at 15'; one sided to NW.
310	Pecan	16	3	Lowest branch at 17'; upright habit; low vigor.
311	Pecan	29	3	Codominant at 12'; trunk lean to N; one-sided to NE.
312	Loquat	15	2	Codominant at 8'; broken, decayed central leader; decay at branch wounds.
313	Black alder	8	2	36" box; suppressed on NE side; branch decay.
314	Naked coral tree	29	2	Multiple attachments at 2'; low vigor; dead branches; twig dieback; was boxed.
315	Coast live oak	21	3	Multiple attachments at base; crossing stems; full canopy.
316	California bay	18	3	Ivy on trunk; upright stems; full canopy.
317	Evergreen ash	9	3	24" box; codominant at 4'; thin canopy; tortoise beetle.
319	Silver maple	33	2	Topped; decay at old wounds; low vigor.
320	Silver maple	31	2	Trunk lean to N; multiple attachments at 5'; topped.
321	Silver maple	35	1	Codominant at 4'; almost dead; basal decay.
322	Glossy privet	5,4,3,3,2,2,	2	Multiple attachments at base; upright stems; chlorotic.
323	Bald cypress	9	5	Trunk lean corrected; lowest branch at 3'; thin canopy.
324	Loquat	10	2	Trunk lean to N; woodpecker damage; suppressed on S side.
325	Lemonwood	11	2	Multiple attachments at 3'; upright stems ; branch decay; suppressed canopy.
326	Lemonwood	13	2	Codominant at 3'; decay in trunk wound; suppressed.
327	Lemonwood	10,9	2	Codominant at 2'; upright stems; suppressed canopy.
328	Lemonwood	15	2	Trunk lean to W; decay at base; upright stems; suppressed canopy.
329	Pindo palm	21	1	Trunk lean to S; decay at 5'; almost dead.
330	Japanese maple	13	3	Multiple attachments at 3'; upright stems; one- sided to N.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NILES BOULEVARD
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185.33'
N73°50'41"W
928.97'
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282.92'
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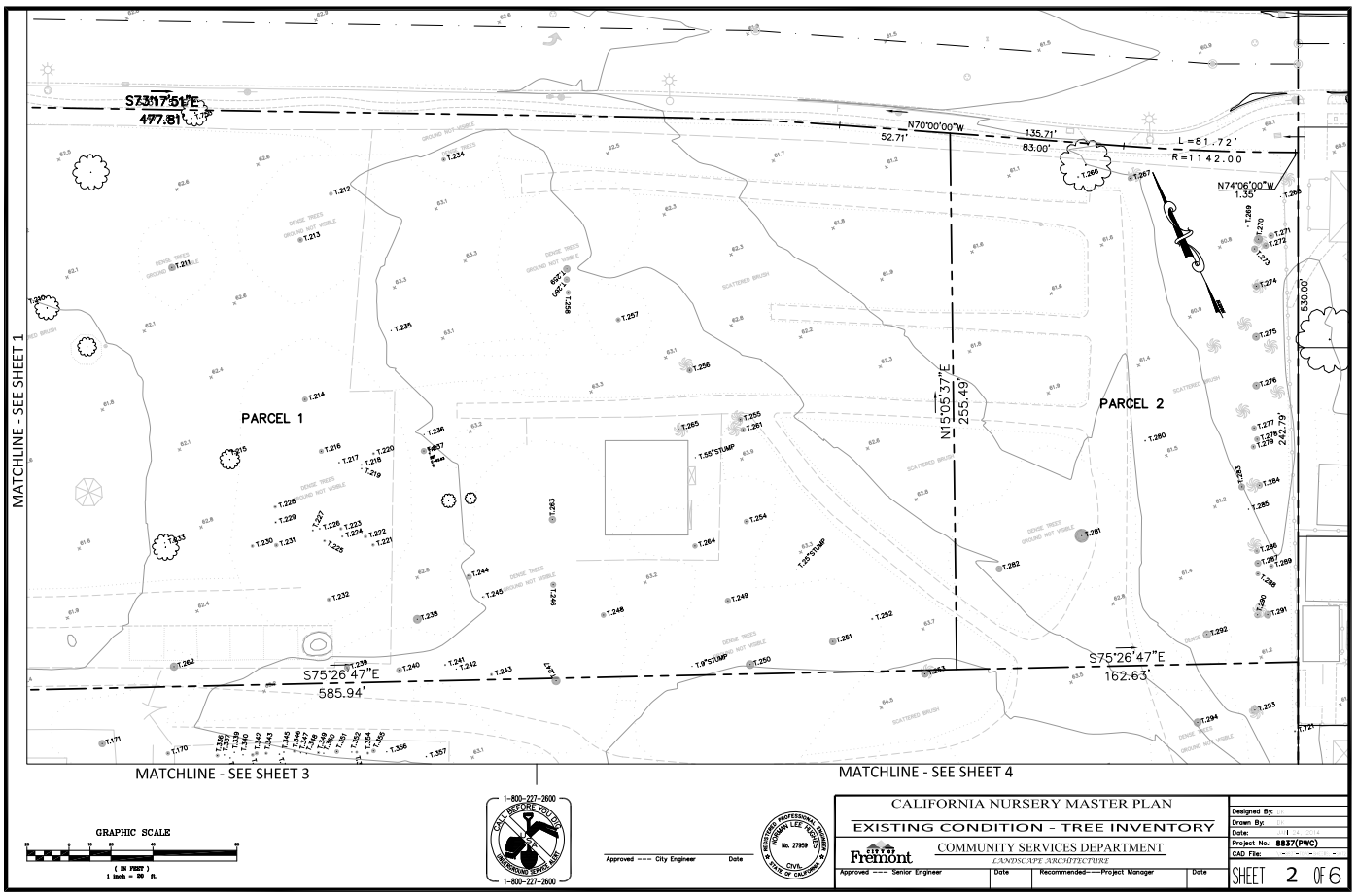
MATCHLINE - SEE SHEET 3
GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.
1-800-227-2600
CALL BEFORE YOU DIG
1-800-227-2600
Approved ---- City Engineer
Date
No. 27959
CIVIL
STATE OF CALIFORNIA
CALIFORNIA NURSERY MASTER PLAN
EXISTING CONDITIONS - TREE INVENTORY
Fremont
COMMUNITY SERVICES DEPARTMENT
LANDSCAPE ARCHITECTURE
Approved --- Senior Engineer
Date
Recommended---Project Manager
Date
Designed By:
Drawn By:
Date:
Project No.: 8837(PWC)
CAD File:
SHEET 1 OF 6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PARCEL 2
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19"STUMP
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MATCHLINE - SEE SHEET 3
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GRAPHIC SCALE
(IN FEET)
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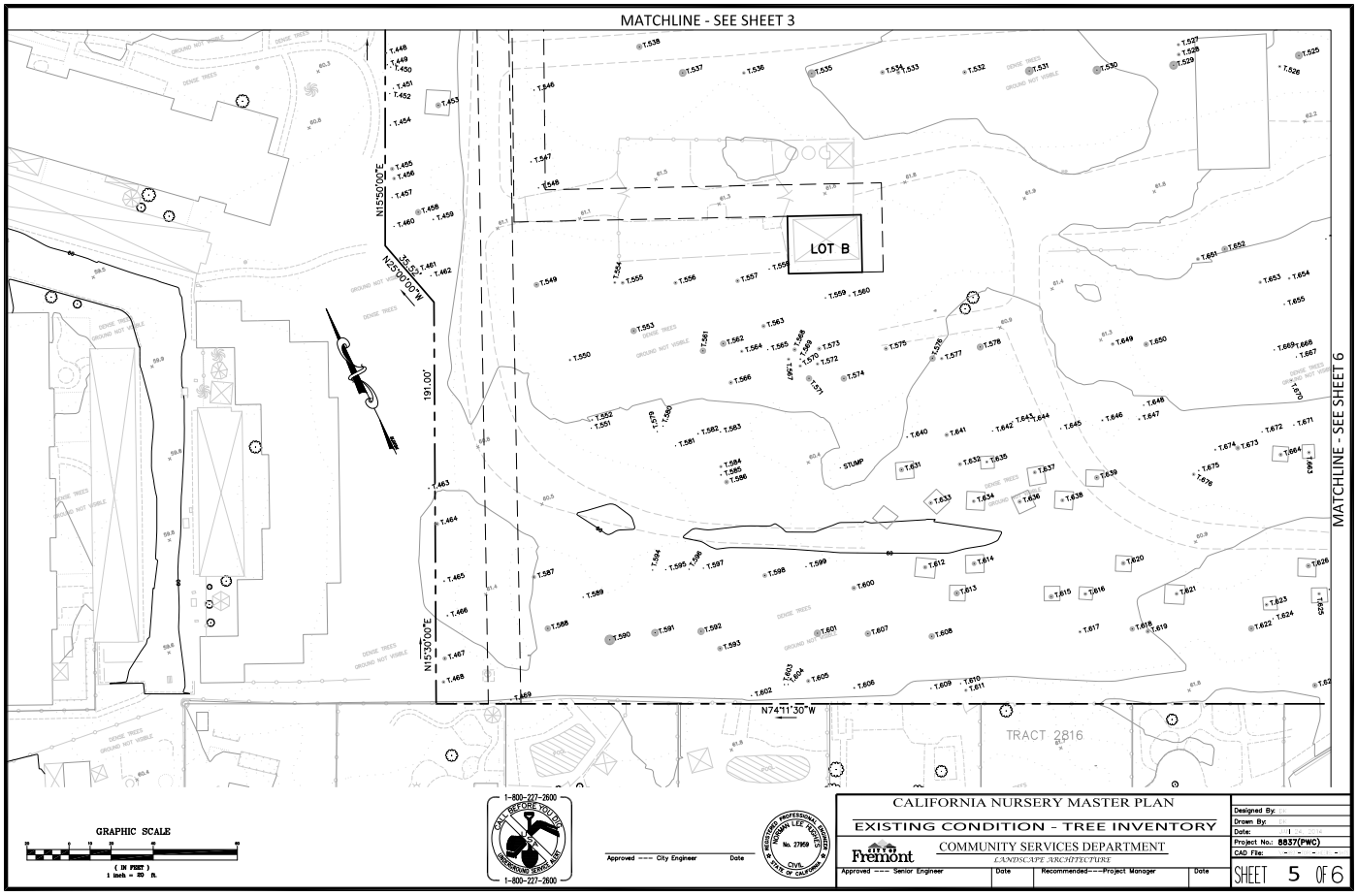
Drawn By:
Date:
Project No.: 8837(PWC)
CAD File:
SHEET 2 OF 6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MATCHLINE - SEE SHEET 6
GRAPHIC SCALE
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1 inch = 80 ft.
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CALL BEFORE YOU DIG
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Approved --- City Engineer
Date
REGISTERED PROFESSIONAL ENGINEER
BENJAMIN LEE TALBERT
No. 27959
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Date
Designed By:
Drawn By:
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Project No.: 8837(PWC)
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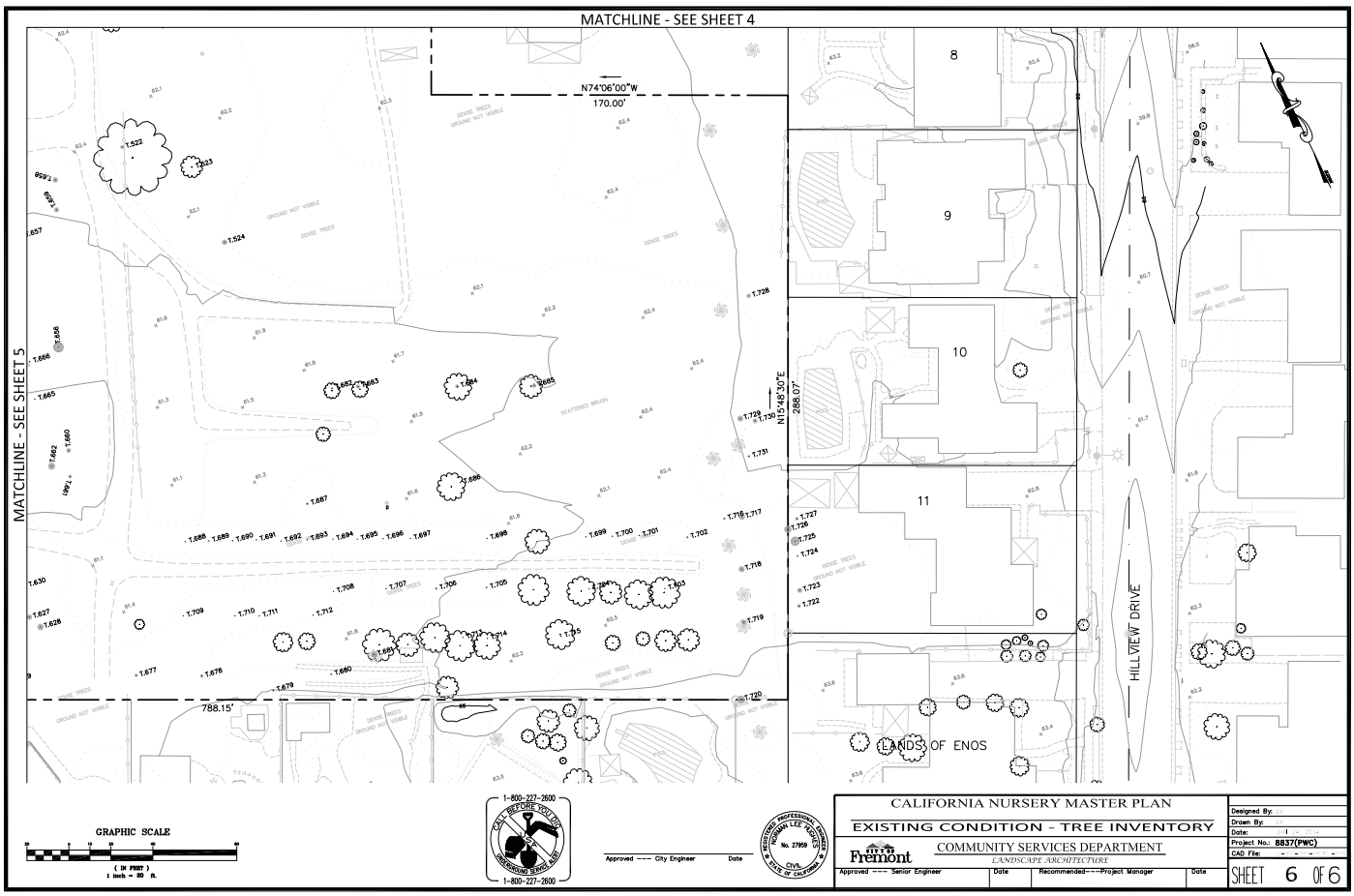
SHEET 5 OF 6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1 inch = 80 ft.
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BENJAMIN LEE TALBERT
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CALIFORNIA NURSERY MASTER PLAN
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COMMUNITY SERVICES DEPARTMENT
LANDSCAPE ARCHITECTURE
Approved --- Senior Engineer
Date
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Project No.: 8837(PWC)
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SHEET 6 OF 6

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
53	Mt. Atlas pistache	23	3	Codominant at 3'; suppressed form; twig and branch dieback.
54	Olive	6	3	Good vigor; suppressed.
55	Olive	6	2	Thin crown; suppressed; twig dieback.
56	Olive	6	1	Twig and branch dieback.
57	Olive	8	2	Crown bows to south; suppressed; twig dieback.
58	Portugal laurel	40	4	Codominant trunks arise H77at 1'; stem to east seems to separating from canopy; full beautiful crown.
59	Persimmon	17	3	Multiple trunks arise from ground level; suppressed form to south; male.
60	Persimmon	12	3	3 trunks arise from ground level; suppressed form to south; female.
61	Prickly melaleuca	59	2	Multiple attachments at base; history of branch failure; heavy long lateral limb to south has crack; poor form and structure.
62	Prickly melaleuca	55	2	Stem to east has large area of decay with heavy weight to east; upright stem has on form.
63	Deodar cedar	25	3	Good upright form; replaced leader.
64	Coast live oak	6	4	Good young tree.
65	Mt. Atlas pistache	32	3	Codominant at base; cracked branch; clean crown.
66	Olive	12	2	Suppressed form; very thin crown.
67	Olive	7	2	Poor form; suppressed to west.
68	Olive	6	2	Base outside dripline; poor form and structure.
69	Olive	8	2	Base outside dripline; poor form and structure.
70	Olive	9	3	Good vigor; crown suppressed to south.
71	Montezuma cypress	9	5	Excellent health and structure.
72	Queensland bottle tree	12	3	Girdling roots; leaning.
74	Chinese juniper	7	4	8' tall with foliage to the ground; opening pruned in canopy with bench inside.
75	Canary Island date palm	22	4	3' brown trunk; good health; crowded.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
76	Canary Island date palm	30	4	3' brown trunk; good health; crowded.
77	Cockspur hawthorn	26	3	Multiple attachments at 2'; twig and branch dieback; 2" thorns on old wood.
78	Canary Island date palm	45	5	20' brown trunk.
80	California pepper	19	4	Codominant at 5'; nice crown.
81	Olive	9	4	Crown corrected to west; otherwise good crown.
82	Guadalupe cypress	9	5	Excellent form and structure; full dense crown.
83	Deodar cedar	21	4	Good form and structure; history of branch failure; hanger and cracked branch.
84	Dawn redwood	25	5	Excellent health and structure.
85	Apple	6	2	Sap sucker damage; twig dieback; decay in stem to east; wilted.
86	Myoporum	19	3	Multiple attachments at 6'; extensive thrips damage.
87	Apple	6	2	Extensive dieback; multiple attachments at 8'.
88	Plum	20	2	Codominant at base is cracked; extensive sprouts.
90	Red horsechestnut	21	3	Codominant at base; twig dieback.
91	Persimmon	23	3	Multiple attachments at base; twig and branch dieback.
92	Saucer magnolia	15	3	Codominant at 1'; dieback on east side of crown.
93	Canary Island date palm	38	2	60' brown trunk; trunk narrows at 18'; nesting holes in trunk.
94	Canary Island date palm	37	5	60' brown trunk.
95	Purple-leaf acacia	9	4	Good health and structure; full crown.
96	Canary Island date palm	33	3	50' brown trunk; trunk narrows at 20'.
97	Naked coral tree	13	3	Multiple stems arise at 1'; shrubby form.
98	Cape chestnut	6	4	Multiple attachments at 6'; good young tree.
99	Lemonwood	16	2	Multiple stems arise at 4'; very thin; poor color.
100	Canary Island date palm	13	4	Good health; crowded.
101	Deodar cedar	29	3	Dead top; basal decay suspected; crack at old trunk wound.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
150	Ginkgo	12	3	Codominant stems at 9'; narrow upright form.
151	Yew	15	4	Multiple attachments at 6-8'; full crown; narrow form.
152	Australian brush cherry	28	3	Multiple trunks arising at ground level; narrow form; decay in trunks.
153	Australian brush cherry	39	3	Multiple trunks arising at ground level; narrow form; distorted crown.
154	Australian brush cherry	24	4	Codominant at 1.5'; full crown; small branch dieback.
155	Australian brush cherry	13	4	Suppressed crown on northwest; minor branch dieback.
157	Blue gum	31	4	Good form; high crown; moderate lean to southeast; multiple branch attachments at 25'.
158	Olive	16	2	Severe trunk decay; decay in 16" stem; asymmetric form.
159	Glossy privet	18	3	Codominant at 2'; narrow form; included bark between attachments.
160	Olive	19	1	Poor form and structure; severe dieback.
161	Black locust	25	2	Multiple attachments; thin crown; decay in trunk; included bark between attachments; branch dieback.
162	American elm	31	3	Codominant at 3'; thin crown, but tree still leafing out; branch failures.
163	Monterey pine	8	3	Bonsai form; full crown; trunk parallels ground, root failure.
164	Crabapple	6	2	Root ball lose; poor form; branch dieback.
165	Canary Island date palm	21	5	50' brown trunk height; full crown.
166	Canary Island date palm	30	3	50' brown trunk height; smaller crown; monitor for Fusarium wilt disease; suspect decay in upper trunk.
167	Canary Island date palm	24	5	3' brown trunk height; full crown; seedling.
168	Blue atlas cedar	31	4	Good form; crown somewhat thin; small branch dieback; several branches removed on southeast.
170	Glossy privet	25	3	Multiple attachments at 1-4'; thin crown; branch dieback.
171	Deodar cedar	35	3	Good form; open form; thin crown.

Tree Assessment
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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
172	Incense cedar	16,10	3	Codominant trunks at 1'; slight lean SW.
173	Floss silk tree	8	3	One sided S.
174	Canary Island juniper	9,8,8	4	Multiple attachments at 4'; minor dieback.
175	Mexican fan palm	22	5	60' of brown trunk.
176	Canary Island juniper	8,6	3	Dieback in upper crown.
177	Hollywood juniper	8	3	Slight lean E.; lateral S.
178	Canary Island pine	23	4	Good form; long laterals S. & W.
179	Canary Island pine	18	3	Crook at 30'; thinning crown.
180	Yew	11	3	Trunk wounds; fair structure.
181	Catalina cherry	7	4	Trunk wound N.; full canopy.
182	Blackwood acacia	16	3	Slight lean SW.; trunk wounds.
183	Floss silk tree	8	4	Good form; thin canopy.
184	Olive	8,6,6	4	Multiple attachments at 2'; good form; 9" stem bowed SE.
185	Incense cedar	23	4	Leans S.; top turns upright; full crown.
186	Canary Island date palm	21	5	45' of brown trunk; good form and structure.
187	Windmill palm	6	3	15' of brown trunk; penciling at 10'.
188	Olive	6,4	3	Codominant trunks at 4'; fair structure.
189	Windmill palm	6	4	15' of brown trunk; good form.
190	Windmill palm	6	4	15' of brown trunk; good form.
191	California pepper	18	3	Thin crown; multiple attachments at 2'.
192	California pepper	22	3	Thin crown; multiple attachments at 2'.
193	Guadalupe cypress	10	4	Good form and structure; slight curve in trunk.
194	Peach	8	2	Extensive dieback; poor structure.
195	Mayten	9	3	Multiple attachments at 5'; twig dieback; broken upright stem.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
239	Glossy privet	34	3	Multiple attachments at 1'; narrow form; included bark in attachment; chain link fabric embedded in trunk.
240	Silver dollar gum	35	4	Multiple attachments at 3'; good form; crown leans west.
241	Glossy privet	12	3	Multiple attachments at ground; narrow form; included bark in attachment.
242	Deodar cedar	7	2	Severe decline; thin crown.
243	Bunya-bunya	16	3	Good form; thin crown; girdling roots; old boxed specimen rooted above ground; staking
244	Mt. Atlas pistache	34	2	Severe decline; branch dieback; decay in trunk below main attachments.
245	Olive	12	3	Crown somewhat suppressed; codominant at 9'; branch dieback.
246	Burr oak	34	4	Multiple attachments at 5; good form; full crown; broad spreading crown.
247	California black walnut	51	4	Massive crown; multiple attachments at 6'; heavy lateral on southeast; branch dieback.
248	Catalina ironwood	31	1	Almost dead.
249	Glossy privet	35	2	Multiple attachments at 3'; narrow open form; included bark in attachment.
250	Coast live oak	47	4	Massive crown; tree has significant lean to southwest; most of crown is southwest of the trunk; prune to reduce weight and prop tree for supplemental support.
251	Canary Island pine	43	4	Massive tree; good form; somewhat open crown; several branch failures. Landmark tree.
252	Queensland kauri	12	3	High crown; thin; sparse branches; narrow form; codominant at 14'. Landmark tree.
253	Canary Island date palm	43	5	45' brown trunk height; full crown.
254	Swamp mahogany	31	4	Good form; codominant at 6'; included bark between main attachments.
255	Canary Island date palm	27	5	35' brown trunk height; full crown; near #261.
256	Canary Island date palm	34	4	35' brown trunk height; full crown; trunk somewhat seeps to east.
257	Bald cypress	27	4	Good form and structure; full crown; nice specimen.
258	White ironbark	38	1	Poor form; branch dieback; branch failures; basal decay.
259	White ironbark	46	3	Poor form; branch dieback; large branch failures; red gum lerp psyllid; attached to #260 at base.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
260	White ironbark	38	3	Poor form; branch dieback; branch failures; red gum lerp psyllid; attached to #259 at base.
261	Canary Island date palm	31	5	40' 'brown trunk height; near #255.
262	Canary Island date palm	33	5	7' brown trunk height.
263	Sawleaf zelkova	42	4	Multiple attachments at 4' with included bark; good form; broad spreading crown.
264	Silk oak	30	2	Misshapen, flat crown on north; branch failures; poor structure.
265	Queen palm	9	2	22' brown trunk height; small crown; multiple trunk wounds with decay.
266	Blue atlas cedar	14	3	Full crown; good form; large kinked roots; boxed specimen rooted above ground.
267	Canary Island date palm	31	5	1' brown trunk height; full crown.
268	Mt. Atlas pistache	6	3	Suppressed form; tree leans west.
269	Fig	12	3	Good form; trunk divides at 1'; full crown.
270	Canary Island date palm	50	4	60' brown trunk height; full crown; cluster of palms.
271	Canary Island date palm	36	4	40' brown trunk height; full crown; cluster of palms.
272	Canary Island date palm	36	4	40' brown trunk height; full crown; cluster of palms.
273	Canary Island date palm	39	4	35' brown trunk height; full crown; cluster of palms.
274	Canary Island date palm	38	4	40' brown trunk height; full crown; bend in trunk at 20".
275	Canary Island date palm	45	5	40' brown trunk height; full crown.
276	Canary Island date palm	44	5	43' brown trunk height; full crown.
277	Canary Island date palm	31	4	33' brown trunk height; full crown; cluster of palms.
278	Canary Island date palm	33	4	35' brown trunk height; full crown; cluster of palms.
279	Canary Island date palm	30	4	28' brown trunk height; full crown; cluster of palms.
280	Glossy privet	11	4	Multiple attachments at 3' with included bark; narrow form.
281	Fremont cottonwood	80	2	Thin crown; decay in trunk; branch dieback in crown; top 50% of one trunk dead.
282	Siberian elm	39	4	Codominant at 2'; spreading crown; branch failures.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
331	Loquat	9	3	Round headed canopy; dead branches; lowest branch at 10'.
332	Windmill palm	7	4	Frost damage; upper trunk lean to N corrected; heavy skirt.
333	Loquat	13	2	Trunk lean to NW; hollow at base; thinning crown; low vigor; girdling roots.
334	Queen palm	10	3	Brown trunk height 25'; frost damage.
335	Silver dollar gum	23	3	Trunk lean to N; branch failures; heavy end weight.
336	Lemonwood	12, 10, 7	2	Multiple attachments at base; branch failures: decay in main stems.
337	Lemonwood	8	2	Trunk lean to S; decay in main stem.
338	Lemonwood	8	2	Trunk lean to W; decay in trunk.
339	Lemonwood	9	2	Trunk lean to NE; decay in trunk.
340	Lemonwood	6	2	Trunk lean to E; decay in base.
341	Mexican fan palm	20	3	Brown trunk height 90'; small canopy.
342	Lemonwood	9,7	2	Codominant at 1' ; decay at base and stems; dead branches; trunk lean to W.
343	Lemonwood	10,9	2	Codominant at 1'; trunk galls; decay at old branch wounds.
344	Lemonwood	7	2	Decay at base; trunk lean to SW.
345	Lemonwood	11	2	Decay at base; trunk lean to E.
346	Lemonwood	10,10	2	Codominant at 1'; decay at base; trunk lean to E.
347	Lemonwood	7	2	Upright stem; decay at 3'.
348	Lemonwood	8	2	Trunk lean to W; lowest branch at 12'; decay in branch.
349	Lemonwood	11,8	3	Codominant at 3'; decay in trunk wounds; suppressed canopy.
350	Lemonwood	6	2	Trunk lean to W; suppressed canopy.
351	Lemonwood	14,9,5	2	Multiple attachments at base; decay in main stems.
352	Lemonwood	5	2	Trunk lean to E; decay at base.
353	Lemonwood	6,5	2	Codominant at base; low vigor; suppressed canopy.
354	Lemonwood	9,6	2	Codominant at base; decay at old wounds.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
355	Lemonwood	14,11	2	Decay in main stems; trunk lean to SE.
356	Lemonwood	9	2	Decay at base; trunk lean to SE.
357	Lemonwood	10	2	Trunk lean to S; lowest branch at 10'; cactus at base.
358	Olive	17	2	Decay at base; single stem; lean to S.
359	Cabbage palm	8	2	One-sided to SW; dead branches in canopy.
360	Bottle tree	6	3	One sided to W; suppressed by olive.
361	Fan palm	12	3	2' brown trunk; seedling.
362	Kentia palm	12	4	Brown trunk height 25'; frost damage; shrubs and brush at base.
363	Cabbage palm	10,10,9	3	Multiple attachments at base; lean to S.
364	Canary Island pine	31	1	Branch dieback; thin; dying; one sided on S; suppressed on W.
365	Canary Island pine	27	2	Leaning to w; suppressed canopy.
367	Windmill palm	8	4	One sided to E; frost damage.
368	Lemonwood	10,8	2	Codominant at 2'; decay at base and stems; topped.
369	Lemonwood	10	2	Trunk lean to NE; decay at base.
370	Lemonwood	11,7	2	Codominant at 3'; trunk lean to N; decay in base; branch failures.
371	Valley oak	15	3	Trunk lean to W; one-sided to W; low vigor.
372	Canary Island pine	19	2	Leaning to W; trunk canker; thin; branch dieback; chlorotic needles.
373	Canary Island pine	20	2	Leaning to SW; thin; branch dieback; chlorotic needles.
374	Chinese photinia	10,10,9	1	Thinning canopy; almost dead.
375	Cabbage palm	7,7,5,4	2	One sided to W; leaf spot; branch dieback.
376	Deodar cedar	21	3	Suppressed on W; dead branches in lower canopy.
377	Deodar cedar	14	3	Codominant at base with #376; one sided to N; suppressed canopy.
378	Blue atlas cedar	21	3	One-sided to W.
379	California pepper	15	2	Trunk lean to W; suppressed canopy.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
380	Coast live oak	30	3	Trunk lean to W; branch failure; girdling root with borers above in trunk.
381	Lemonwood	17	3	Codominant at 5'; topped; branch decay.
382	California bay	9,9,8	3	Multiple attachments at 3'; one sided to W.
383	California bay	10,10,10,9,	3	Multiple attachments at base; decay at base; upright stems.
384	California pepper	14	2	Trunk lean to W; poor structure and form; decay.
385	Lemonwood	9,9	2	Trunk lean to W; dead branches in canopy.
386	Olive	25	3	Topped; branch failures.
387	Italian cypress	11	3	Multiple attachments at 7'; upright stems; low vigor.
388	Lemonwood	13,11	2	Multiple attachments at 3'; decay; dieback.
389	Mulberry	10	1	Multiple attachments at 5'; extensive dieback; thin; crack at scaffold branch attachment.
390	Mexican fan palm	29	3	Brown trunk height 75': crook in upper trunk; frost damage.
391	Bald cypress	26	2	Low vigor; dead branches.
392	Coast live oak	6	4	Strong central leader; ivy on trunk.
393	Black locust	10,9	3	One sided to W; codominant stems at 1' and 6'.
394	Olive	5	2	Suppressed; branch failure.
395	Black locust	18	3	Cavity at base; bowed to W.
397	Coast live oak	10,8	3	Codominant at 3'; trunk lean to NE; suppressed canopy.
398	Coast live oak	17,12	4	Ivy on trunk; one-sided to E; Ehrhorn scale; codominant trunks at 2'.
399	Mt. Atlas pistache	15,9	2	Codominant at 3'; one-sided to S; dead branches.
400	Coast live oak	15	2	Sprouting stump.
401	Deodar cedar	33	3	Dead ivy stems on trunk; bleeding wounds; thinning canopy; dead branches.
402	California bay	11,8,7,6,4	3	Multiple attachments at 2'; upright stems.
403	Coast live oak	17	3	Codominant at 7'; trunk lean to E; somewhat thin.
404	Windmill palm	10	2	Growing into oak canopy.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
405	Windmill palm	9	3	Suppressed canopy.
406	Windmill palm	7	3	Frost damage; trunk lean to N.
407	Windmill palm	6	3	Frost damage; upright form.
408	Windmill palm	7	3	Frost damage; upright form.
409	Windmill palm	10	3	Frost damage; trunk lean to S.
410	Deodar cedar	35	3	One sided to S; somewhat thin.
411	Deodar cedar	29	3	One sided to N; branch failures; somewhat thin.
412	Victorian box	6	4	Codominant at 5'; multiple pruning wounds.
413	Deodar cedar	30	4	Large crown; lowest branch at 8'; symmetrical canopy; weeping form, somewhat
414	Windmill palm	7	3	Frost damage; trunk lean to E.
415	Windmill palm	6	3	Frost damage; trunk lean to NE.
416	Windmill palm	9	3	Frost damage; upright form.
417	Windmill palm	7	3	Frost damage; trunk lean to SE.
418	Windmill palm	6	3	Frost damage; trunk lean to SE.
419	Windmill palm	7	2	Frost damage; trunk lean to SE; top bowed over.
420	California bay	11	3	Thin canopy; suppressed by #421.
421	California bay	50	3	Stump sprout; multiple stems arise a ground level; upright stems; one sided on N.
422	Deodar cedar	33	3	Upright form; full canopy; small branch dieback where shaded by adjacent tree.
423	Incense cedar	18,4	3	Dead branches in canopy; one sided to S.
424	California fan palm	30	4	Brown trunk height 50'.
425	California fan palm	30	4	Brown trunk height 30'.
426	Hollyleaf cherry	3,2,2	2	Multiple attachments at base; growing at base of #424.
427	Coast live oak	19	3	Thinning canopy; multiple attachments at 5'.
428	Deodar cedar	26	3	One-sided to E; thinning canopy.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
429	Coast live oak	6	2	Codominant at 7'; suppressed canopy.
430	California bay	14,12	3	Codominant at 1'; branch wounds; ivy at base.
432	Mt. Atlas pistache	18	2	Thin; twig and branch dieback; ivy on trunk.
433	Chinese elm	18	3	Lower trunk covered with ivy; one-sided to N.
434	Blue atlas cedar	25,19	3	Codominant at 2'; upright stems; dead branches; branch failures; branch wounds; top thin.
436	Incense cedar	19	2	One-sided to S; dead branches; suppressed by cedar.
437	Incense cedar	18,11	2	One-sided to S; dead branches; suppressed by cedar.
438	Coast live oak	7	2	One-sided to N; suppressed on S.
439	California pepper	9	1	Irregular form; extensive twig and branch dieback.
440	Coast live oak	21	4	Multiple attachments at 3'; one sided to S.; low branch over path damaged by trucks.
441	Blackwood acacia	7	4	One-sided to S; lowest branch at 14'; strong central trunk.
442	Blackwood acacia	18	3	Ivy at base; codominant stems at 18'; top bowed towards house.
443	Blackwood acacia	22	3	One-sided to SW; wide-spreading upper crown with heavy lateral branches.
444	Blackwood acacia	7	2	Low vigor; crowded in location; lean to N.
445	Plum	5	3	Seedling; many sprouts along trunk.
445.1	Carob	6,4,4,4,4	3	No tag; probably a stump sprout; sapsucker damage; shrubby form.
446	Coast live oak	12,6	4	One-sided to SW.
447	Fan palm	6	4	Seedling; 1' brown trunk.
448	Plum	6	2	Seedling; many basal sprouts.
449	Coast live oak	5,3	3	Codominant at 1'; upright stems.
450	Coast live oak	7	3	Trunk lean to SW; scrubby.
451	Holly oak	6	3	Small high crown; slight lean W..
453	Blue atlas cedar	33	4	Multiple attachments at 20'; slightly thin crown; in reconstructed nursery box.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
454	Glossy privet	10	1	Multiple attachments at base; base covered in ivy; twig and branch dieback; almost dead.
455	Plum	24	3	Multiple attachments at base; slightly thin crown; on fence line; many sprouts.
456	Mt. Atlas pistache	20	2	Poor form; trunk bends E. with branches touching the ground.
457	Plum	6	3	Multiple attachments at base; slightly thin crown; on fence line.
458	Southern magnolia	36	2	Multiple attachments at base; cavity with decay in between stems; thin canopy; twig
459	Plum	11	2	Multiple attachments at base; leans SE.; crowded by 458.
460	Coast live oak	7	3	Narrow upright form; slightly thin crown; on property line.
461	Coast live oak	10,9	3	Codominant at base; slight lean E.; crowded by adjacent trees.
462	Mt. Atlas pistache	7	3	Trunk bows NE. with branches touching the ground.
463	Coast live oak	12	3	Top bowed to E.; dense crown; base on property line; engulfed in ivy.
464	Coast live oak	24	3	Multiple attachments at base; trunk and scaffolds covered in ivy; base on property line; dense crown.
465	Sweet olive	12	3	Base covered in ivy; on property line; asymmetrical crown E.; leaf tip burn.
466	Loquat	12	3	Codominant at 2'; covered in ivy; crowded form; twig dieback.
467	Coast live oak	25	3	Codominant at 2'; dense crown; leans E.; covered in ivy.
468	Coast live oak	20	3	Dense crown; covered in ivy; asymmetrical crown SE..
469	Chinese pistache	13	3	Codominant at 2'; nice form; twig dieback throughout crown.
470	Blue atlas cedar	38	4	Slightly thin crown; lost central leader; fair structure; stub cuts.
471	Windmill palm	9	4	12' brown trunk height.
472	Windmill palm	6	4	18' brown trunk height; slightly yellow frond tips.
473	Windmill palm	6	4	15' brown trunk.
474	Windmill palm	8	4	18' brown trunk.
475	Windmill palm	7	4	6' brown trunk height; nice tree.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
476	Windmill palm	9	4	5' brown trunk height; nice tree.
477	Windmill palm	7	4	17' brown trunk height; corrected lean.
478	Windmill palm	7	4	18' brown trunk height; slightly yellow fronds tips.
479	Windmill palm	6	4	18' brown trunk height; slightly yellow fronds tips.
480	Blackwood acacia	9	4	Good form and structure.
481	Windmill palm	9	4	20' brown trunk height; growing in cluster with four other palms; slightly yellow fronds tips.
482	Windmill palm	8	4	17' brown trunk height; slightly yellow fronds tips.
483	Windmill palm	10	4	14' brown trunk height; slightly yellow fronds tips.
484	Windmill palm	7	4	18' brown trunk height; slightly yellow fronds tips.
485	Windmill palm	7	4	19' brown trunk height; slightly yellow fronds tips.
486	Windmill palm	6	4	16' brown trunk height; slightly yellow fronds tips.
487	Windmill palm	6	4	16' brown trunk height; slightly yellow fronds tips.
488	Windmill palm	6	4	18' brown trunk height; slightly yellow fronds tips.
489	Monterey cypress	55	3	Good form; fair structure; multiple attachments high in crown; history of branch failure; trunk wound on S. from base to 10' from codominant stem failure.
490	Mexican fan palm	14	3	12' brown trunk height; nice crown; trunk wound at base and 3'.
491	Mexican fan palm	16	4	13' brown trunk height; nice form; crippled fronds.
492	Yew	20	1	Very thin crown; mostly dead.
493	Coast live oak	8	3	Codominant at 6'; slightly thin crown; leans S. away from 494.
494	Spanish fir	19	3	Lost central leader; dogleg in trunk where leader was lost and replaced; slightly thin crown; suppressed form; dead branches.
495	Yew	14	2	Very thin crown; brown needles; drought stressed.
496	Blackwood acacia	20	2	Codominant at 15' and 26'; slightly thin crown; twig dieback; leans E. away from 497; declining.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
497	Deodar cedar	44	4	Nice form; slightly thin crown; history of branch failure; 80' tall.
498	River she-oak	10	3	Thin crown; twig dieback; rangy form; trunk wounded with axe.
499	Yew	23	2	Very thin crown; brown needles; dead limbs.
501	Lemonwood	23	3	Multiple attachments at 2'; dense crown; dead stem; trunk wounds with decay in 2 stems.
502	Mexican fan palm	19	4	60' brown trunk height; nice crown.
503	Cabbage palm	7	4	Codominant at 5'; compact form; new shoots at base.
504	River she-oak	12	4	Nice form; codominant stems high in crown hic; group of 3 trees.
505	River she-oak	7	3	Narrow form; grown through nursery pot.
506	River she-oak	11	3	Codominant high in crown; corrected lean S.; trunk bleed at 4'; group of 3 trees.
507	Fremont cottonwood	36	1	Thin crown; twig and branch dieback; history of branch failure; ivy to 20'.
509	Colorado spruce	10	2	Almost dead.
510	Colorado spruce	11	3	Thin crown; twig dieback; crook in trunk.
511	Colorado spruce	9	2	Twig and branch dieback; very thin crown.
513	Lombardy poplar	25	1	Almost dead.
514	Lombardy poplar	25	1	Almost dead.
515	Deodar cedar	16	3	Codominant at 12'; stems twist together; slightly thin crown; trunk wound on E. at 2'.
516	Cliff date palm	36	4	25' brown trunk height; slightly dry fronds.
517	Raywood ash	7	4	Good form and structure; growing through nursery box.
518	Cliff date palm	35	4	20' brown trunk height; slightly dry fronds; unusual basal shape.
519	Glossy privet	7	3	Multiple attachments at base; topped at 5'; still in nursery box.
520	Cliff date palm	21	4	19' brown trunk height; slightly dry fronds; slight lean NE.
521	Hazelnut	7	4	Nice form; bend in trunk; out of nursery box.
522	Plum	21	1	Almost dead.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
523	Persimmon	10	3	Multiple attachments at 5'; slightly thin crown; twig dieback.
524	Glossy privet	30	2	Multiple attachments at base; mostly dead.
526	River she-oak	18	2	Poor form and structure; significant trunk wound from tip to base.
527	Guadalupe palm	18	4	15' brown trunk height; nice tree; stippling on fronds.
528	Guadalupe palm	21	5	12' brown trunk height; nice tree.
529	Monterey cypress	50	3	Foliage thinning; fair form; history of large branch failure on S; broken branches hanging over building; twig dieback.
530	Monterey cypress	50	4	Codominant at 7'; stub cuts in lower canopy.
531	Monterey cypress	49	2	Leaning S.; dieback in upper crown; trunk wound on S. from base to 8'.
532	River she-oak	25	1	Poor form and structure; trunk wound with decay from base to tip; dead branches.
533	River she-oak	23	3	Codominant at 27'; wound where branch failed with bee activity; history of branch failure;
534	River she-oak	26	3	Codominant at 26'; twig and branch dieback; history of branch failure.
535	Monterey cypress	48	2	Thin crown; history of branch failure; brown needles; trunk wound from codominant failure on E.; leaning S.; trunk decay.
536	River she-oak	19	3	Thin crown; twig dieback; upright form.
537	River she-oak	44	2	Codominant at base; history of branch failure; trunk wound on W. from branch failure; decay from base to 9'.
538	Coast live oak	35	3	Multiple attachments at 8'; spreading form with end weight; suppressed on E.
539	Cork oak	22	3	Significant lean S.; suppressed by adjacent tree.
540	Monterey cypress	27	3	Poor form and structure; trunk wound with decay from base to 8'; foliage browning.
541	Glossy privet	10	3	Multiple attachments at 1'; suppressed on N.; twig dieback; wilted.
542	Victorian box	4	3	Seedling growing in decayed trunk of dead tree; wilted.
543	Monterey cypress	32	3	Codominant at 12' with narrow attachment ; corrected lean S.; Nice form.
544	Senegal date palm	65 Cluster	4	4 trees; beautiful cluster.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
545	Canary Island date palm	28	3	Partial root failure; trunk sweeps towards W.; dead fronds.
546	Incense cedar	10	2	Poor form and structure; lost central leader; dieback.
547	Coast live oak	11	3	Codominant at 3'; fair structure; nice form.
548	Chinese pistache	7	4	Good form and structure; codominant stems at 12'.
549	Coast live oak	32	4	Multiple attachments at 4'; nice form; growing on mound (formerly nursery box?).
550	Yew	15	4	Multiple attachments at 3'; spreading form; some dieback.
551	California pepper	6	2	Partial failure at base; crown touching ground.
552	California bay	13	3	Multiple attachments at base; dense crown; trunk wound with decay on main stem from base to 12'.
553	Coast live oak	37	1	All but dead.
554	Coast live oak	16	2	Codominant at base; one stem dead; trunk bends toward ground.
555	Coast live oak	21	3	Multiple attachments at 13'; nice form; slightly thin crown; outgrew nursery box.
556	Coast live oak	22	4	Codominant at 20'; asymmetrical form.
557	Glossy privet	24	3	Multiple attachments at base; slightly thin crown; stem dieback.
558	California black walnut	7	3	Lost central leader; poor form; twig dieback.
559	Coast live oak	7	3	Codominant at 7'; crowded by adjacent tree; minor twig dieback.
560	Bigleaf maple	13	2	Dead top; trunk wound with decay from base to 15'.
561	Yew	36	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
562	Yew	36	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
563	Yew	24	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
564	Yew	18	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
565	Yew	7	3	Base outside dripline; drought stressed; twig dieback.
566	Yew	24	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
567	Yew	18	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
568	Yew	24	3	Codominant at 1'; spreading form; drought stressed; twig dieback.
569	Yew	12	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
570	Yew	18	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
571	Yew	36	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
572	Yew	18	3	Codominant at base; drought stressed; twig dieback.
573	Yew	24	3	Multiple attachments at base; drought stressed; twig dieback.
574	Yew	36	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
575	Yew	24	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
576	Yew	36	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
577	Yew	18	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
578	Yew	40	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
579	Mt. Atlas pistache	7	3	Poor form and structure; crowded form.
580	Mt. Atlas pistache	8	3	Poor form and structure; crowded form; twisted trunk.
581	Loquat	7	3	Dense crown; slight lean SW..
582	Italian buckthorn	11	2	Multiple attachments at 2'; dead stems; dieback.
583	Loquat	8	3	Multiple attachments at base; dense crown; crowded form.
584	Mt. Atlas pistache	18	2	Multiple attachments at base; crowded form; twig and branch dieback.
585	Mt. Atlas pistache	12	3	Multiple attachments at base; crowded form; twig dieback.
586	Mt. Atlas pistache	27	3	Multiple attachments at base; crowded form; twig dieback.
587	Purpleleaf plum	24	3	Multiple attachments at base; spreading form; twig dieback.
588	Yew	36	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
589	Douglas fir	7	3	Narrow upright form; thin crown; twig dieback.
590	Yew	36	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.
591	Yew	44	3	Multiple attachments at base; spreading form; drought stressed; twig dieback.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
592	Yew	42	2	Multiple attachments at base; spreading form; drought stressed; twig and branch dieback.
593	Yew	31	2	Codominant at base; spreading form; drought stressed; twig and branch dieback.
594	Persimmon	7	3	Codominant at 5'; nice form.
595	Persimmon	8	4	Codominant at 12'; nice form.
596	Persimmon	7	3	Multiple attachments at 8'; twig dieback; nice form.
597	Persimmon	6	3	Codominant at 7'; nice form.
598	California black walnut	26	3	Multiple trunks arise at 1'; slightly thin crown; defoliating.
599	Persimmon	7	3	Codominant at 8'; crowded form.
600	Coast live oak	27	4	Codominant at 10'; nice form; sap sucker damage; minor dieback.
601	Yew	25 stems 4-	1	Dead top; epicormics from base.
602	Coast live oak	9	4	Crowded; leans W.; good young tree.
603	Coast live oak	8	3	Crowded; asymmetric crown.
604	Coast live oak	6	3	Crowded; narrow form; small crown.
605	California black walnut	23	4	Corrected lean E.; crook at 10'; dieback to 3".
606	Purpleleaf plum	6,4,4,2,2,1	2	Multiple attachments at 2'; dead top.
607	Yew	6,5,5,4,4	1	Mostly dead; epicormics from base.
608	Yew	7,7,6,5,5,5,	2	Multiple attachments at base; suppressed form; dead top; some epicormics.
609	Plum	4,3,3	3	Multiple attachments at 4'; suppressed form; leans NW.; moderate dieback.
610	Holly oak	6	4	One sided E.; good young trees.
611	Canary Island pine	18	3	Leans SW. over fence line; fair structure.
612	Coast live oak	24	3	Boxed oak; multiple attachments at 10'; bark checking; upright with lateral SW.
613	Coast live oak	35	3	Boxed oak; multiple attachments at 12'; one sided with heavy lateral limbs S..
614	Coast live oak	27	3	Boxed oak; multiple attachments at 15'; upright but narrow form.
615	Coast live oak	29	3	Boxed oak; leans S.; new box notched around 4" root; yellow jackets at base.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
616	Coast live oak	21	3	Boxed oak; suppressed form; leans with crown bowed SE.
617	Yew	7,6	2	Codominant trunks at base; leans E.; mostly dead above.
618	Yew	15 stems 4-	3	Multiple attachments at base; vigorous epicormics at base; dieback in upper crown.
619	Yew	8,7,6	2	Multiple attachments at base; suppressed; leans E.
620	Coast live oak	26	4	Boxed oak; slight lean E.; good form and structure.
621	Coast live oak	21	2	Boxed oak; failed at base; 6-8" upright sprouts.
622	Yew	13 stems 2-	2	Multiple attachments at base; epicormics at base; dead top.
623	Coast live oak	21	3	Boxed oak; narrow form; one sided S.
625	Coast live oak	19	2	Boxed oak; leans W.; very asymmetric crown.
626	Coast live oak	29	4	Boxed oak; good form and structure; seam in attachment at 20'.
627	Yew	7,6,5	3	Multiple attachments at base; moderate dieback.
628	Yew	8,7,5,5,4	3	Multiple attachments at base; leans E to horizontal; moderate dieback.
629	Coast live oak	31	4	Codominant trunks at 5'; included bark; good form.
630	Mt. Atlas pistache	5,4,3	4	Multiple attachments at base; one sided E.; looks like volunteer.
631	Coast live oak	29	3	Boxed oak; multiple attachments at 15'; slight lean S.; thin canopy.
632	Coast live oak	23	2	Boxed oak; leans W.; poor form; thin crown.
633	Coast live oak	24	3	Boxed oak; multiple attachments at 15'; branches fused at attachments.
634	Coast live oak	20	3	Boxed oak; multiple attachments at 12'; upright, narrow form; thin crown.
635	Coast live oak	17	3	Boxed oak; small crown; upright form.
636	Coast live oak	24	3	Boxed oak; multiple attachments at 12'; one sided S.; dead wood to 3".
637	Coast live oak	22	3	Boxed oak; codominant trunks at 15'; trunks fused below attachment; one sided N.
638	Coast live oak	22	3	Boxed oak; multiple attachments at 15'; very one sided S.
639	Coast live oak	30	4	Boxed oak; multiple attachments at 12'; one sided NE.; seam in attachment.
640	Coast live oak	6,4	3	Codominant trunks at base; suppressed form; 4" stem bowed W. to horizontal.

Tree Assessment
California Nursery Historical Park
Fremont, California
April - August 2014

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
641	California bay	8,7,5	3	Multiple trunks arising from ground level; upright form; kissing trunks.
642	Loquat	6	3	Suppressed form; small crown.
643	Loquat	9	3	Dieback; trunk wounds.
644	Loquat	9	3	One sided N.; trunk wound.
645	Loquat	7	3	Upright form; small crown.
646	Loquat	7,5,4	3	Multiple attachments at 2'; upright but overshadowed.
647	Loquat	6,5,3	3	Multiple attachments at 1'; crowded but upright.
648	Italian buckthorn	7	2	Dead top; wilted.
649	Yew	7,6,4	1	Multiple attachments at base; dead top; epicormics from base.
650	Yew	8,7	1	All but dead.
651	Glossy privet	8,7,3	1	Almost dead.
652	Monterey cypress	38	3	Good form; dieback to 3".
653	Cork oak	19	3	Corrected lean SW.; twig dieback in upper canopy.
654	Mt. Atlas pistache	15	3	Codominant trunks at 7'; crown bowed SE.
655	Olive	8	3	Codominant trunks at base; stems twisted around each other; crown bowed SE.
656	Yew	28 stems 3-	2	Multiple attachments at base; extensive dieback; no epicormics.
657	Coast live oak	7	4	Codominant trunks at 5'; seam in attachment.
658	Cork oak	30	3	Roots exposed; one sided E.; dieback throughout crown.
659	Cork oak	28	4	Roots exposed; leans W.; spreading crown.
660	Mt. Atlas pistache	26	3	Leans E.; trunk outside crown.
661	Mt. Atlas pistache	21	3	Good vigor; poor form and structure.
662	Blue atlas cedar	39	4	Good form and structure; 8" lateral SW.; twig dieback.
663	Coast live oak	21	3	Boxed oak; slight lean SE.
664	Coast live oak	23	3	Boxed oak; one sided S. with 10" & 12" heavy lateral limbs S.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
665	Mt. Atlas pistache	8	3	Small, high crown.
666	Coast live oak	9	4	Slight sweep from base; high crown; good young tree.
667	Mt. Atlas pistache	7	3	Suppressed; leans S.; crook at 5'.
668	Coast live oak	7	4	Crowded; high crown; good young tree.
669	Holly oak	7	4	Crowded; upright, narrow form.
670	Holly oak	6	4	Crowded; upright; one sided S.
671	Loquat	6,7,5	3	Multiple attachments at base; one stem dead.
672	Mt. Atlas pistache	6	2	Suppressed; crown bowed S. to horizontal.
673	Coast live oak	28	3	Was once boxed; roots exposed; low lateral E.
674	Coast live oak	13	2	Was once boxed; exposed roots; small, thin crown.
675	Mt. Atlas pistache	10	2	Suppressed; crown bowed E. to horizontal.
676	Mt. Atlas pistache	9,6,6,4,3	3	Multiple attachments at base; suppressed; bowed S. to horizontal.
677	Coast live oak	10,8,4	4	Multiple attachments at 3'; seam in attachment.
678	Coast live oak	19	5	Slight lean N.; large pruning wound E.
679	Coast live oak	15	4	Codominant trunks at 6'; large branch removed E.
680	Silver maple	12	4	Multiple attachments at 18'; good form.
681	Canary Island date palm	36	5	12' of brown trunk; good form and structure.
683	Apple	23	1	All but dead.
684	Apricot	21	1	Nothing but basal suckers remain.
685	Apple	15,8,8,7	2	Topped at 6'; crown formed by 3" epicormics.
686	Apricot	4,4,4,3,2	3	Multiple attachments at 2'; vigorous epicormics.
687	California black walnut	9,8	2	Codominant trunks at 3'; dead top.
688	Apricot	2,2,2,2,2	4	Multiple attachments at 2'; spreading form; vigorous epicormics.
689	Apricot	3,2,2,1	3	Multiple attachments at 2'; vigorous epicormics.

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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
690	Apricot	5,3,2,2,2	4	Multiple attachments at 1'; spreading form; vigorous epicormics.
691	Apricot	5,4,3,3	4	Multiple attachments at 2'; spreading form; vigorous epicormics.
692	Apricot	3,3,2,1,1	4	Multiple attachments at 2'; spreading form; vigorous epicormics.
693	Apricot	3,2,2,1,1	3	Multiple attachments at 2'; branch wounds; vigorous epicormics.
694	Apricot	4,2,2,1	4	Multiple attachments at 3'; spreading form; vigorous epicormics.
695	Apricot	4,3,2,2,1,1	4	Multiple attachments at 3'; spreading form; vigorous epicormics.
696	Apricot	5,5,4,2,1,1	4	Multiple attachments at 3'; spreading form; vigorous epicormics.
697	Apricot	2,2,2,1,1,1,	3	Multiple attachments at 1'; low branching; vigorous epicormics.
698	Apricot	4,2,1,1,1	3	Multiple attachments at 2'; spreading form; vigorous epicormics.
699	Apricot	4,4,3,3	3	Multiple attachments at 2'; W. half of tree pruned; vigorous epicormics.
700	Apricot	4,4,2,1,1	4	Multiple attachments at 2'; spreading form; vigorous epicormics.
701	Apricot	5,4	4	Codominant trunks at 4'; open form.
702	Apricot	12,6	3	Large pruning wounds; trunk decay; mostly epicormics.
703	Apricot	2,2,1,1,1,1	4	Multiple attachments at 2'; one sided W.; vigorous epicormics.
704	Apricot	2,2,1,1,1,1	3	Multiple attachments at 3'; some dieback; vigorous epicormics.
705	Apricot	7	2	Large trunk wound where stem failed; trunk decay.
706	Apricot	10	2	Trunk wounds with decay; dieback in upper canopy.
707	Apricot	5,4,3,3	4	Multiple attachments at 1'; spreading form; vigorous epicormics.
708	Apricot	4,2,2	3	Multiple attachments at 3'; open center; vigorous epicormics.
709	Apricot	2,1,1,1,1,1,	4	Multiple attachments at 2'; spreading form; vigorous epicormics.
710	Apricot	2,2,1,1,1,1,	3	Multiple attachments at 1'; open center; vigorous epicormics.
711	Apricot	1,1,1,1,1,1,	4	Multiple attachments at 2'; spreading form; vigorous epicormics.
712	Apricot	3,3,1	3	Multiple attachments at 2'; open center; vigorous epicormics.
713	Cherry	3,2,2,2	4	Multiple attachments at 3'; upright form.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
714	Cherry	4,3,2,2,1	3	Multiple attachments at 2'; old topping points.
715	Apple	3,2,2,2	2	Multiple attachments at 2'; thin canopy.
716	Coast live oak	13	5	Good form and structure.
717	Canary Island date palm	33	4	25' of brown trunk; good form.
718	Canary Island date palm	34	4	20' of brown trunk; trunk sweeps at 10'.
719	Canary Island date palm	29	4	35' of brown trunk; good form; bird nesting hole in trunk.
720	Coast live oak	22,12	3	Codominant trunks at base; embedded fence; good form.
722	Coast redwood	21	3	One sided S.; dieback to 4".
723	Coast redwood	28	4	Good form; thinning crown.
724	Coast redwood	11	3	Suppressed; dieback.
725	Coast redwood	53	3	Codominant trunks at 8'; thin in upper canopy.
726	Coast redwood	41	3	One sided N.; thin upper canopy.
727	Coast redwood	19	3	Suppressed; crown bowed E.
728	Canary Island date palm	40	4	40' of brown trunk; trunk sweeps W.
729	Canary Island date palm	33	5	55' of brown trunk; good form and structure.
730	Canary Island date palm	26	4	35' of brown trunk; suppressed beneath #729; slight lean E.
731	Guadalupe cypress	15	5	Good form and structure; engulfed in ivy.
733	Glossy privet	6,4,4,4,3,2	3	Multiple attachments at base; narrow attachments; growing around guy wire.
734	Almond	8,7,3	2	Multiple attachments at base; dieback throughout crown.
735	Mexican fan palm	32	3	40' of brown trunk; penciling at 18'; small crown.
736	Deodar cedar	28	4	Strong central trunk; detached, hanging branch; one sided N.; twig dieback.
737	California pepper	16,15,14	3	Multiple attachments at base; decay in 16" stem; topped for overhead utilities.
738	Cork oak	37,31,16	2	Multiple attachments at 4'; extensive dieback; epicormics.
739	Canary Island date palm	17	5	No brown trunk yet; good young tree.

Tree Assessment
California Nursery Historical Park
Fremont, California
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Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
740	Italian stone pine	24,23	4	Codominant stems at 4'; included bark; pruned for overhead utilities.
741	Coast live oak	7,6	4	Codominant trunks at 3'; narrow attachment with seam & included bark.
742	Coast live oak	7	5	Codominant trunks at 4'; good young tree.
743	Mayten	11	3	Small crown; trunk wound S.; dieback.
745	Giant sequoia	14	3	Dieback of 40% of branches.
746	Olive	15	3	Large sun scald wound N.; dieback in upper crown.
747	Lemonwood	1,1,1,1,1,1,	3	Topped hard at 3'; sprouted new canopy.
748	Canary Island date palm	30	4	35' of brown trunk; good form and structure.
749	Canary Island date palm	35	5	4' of brown trunk; good young tree but under overhead utilities.
750	Canary Island date palm	30	5	40' of brown trunk; good form; fig growing in pineapple.
751	Chinese photinia	13,12	3	Codominant trunks at base; moderate dieback ; beneath overhead utilities.
752	Glossy privet	15,14,12,5	2	Multiple attachments at 1'; narrow attachments; very thin in upper canopy.
753	Deodar cedar	7	4	Good young tree; close to overhead utilities.
754	Windmill palm	12	4	Multiple attachments at base; nice little group.
755	Apricot	2,2,1,1	3	Multiple attachments at 1'; open center; vigorous epicormics.
756	Apricot	3,2,1,1	4	Multiple attachments at 1'; spreading form; vigorous epicormics.
757	Apricot	2,2,1,1	3	Multiple attachments at 4'; spreading form.
758	Cherry	1,1,1,1	4	Multiple attachments at 3'; good form.
759	Cherry	1,1,1,1	3	Multiple attachments at 4'; small crown.
760	Apple	5,4,4,3	1	All but dead.
761	Cherry	2,2,1,1,1,1	4	Multiple attachments at 4'; good form.
762	Cherry	2,2,1,1,1,1	4	Multiple attachments at 4'; good form.
763	Cherry	1,1,1,1	4	Multiple attachments at 4'; good form.
764	Cherry	2,1,1,1,1	3	Multiple attachments at 4'; small crown.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Comments
1	Coast live oak	24	3	One-sided to west.
765	Cherry	2,1,1,1	2	Mostly dead.
766	Cherry	4	3	Small crown.
767	Cherry	2,2,1,1	3	Dieback but epicormics.
768	Nectarine	4,2,2,1	4	Multiple attachments at 2'.
769	Nectarine	3,2,2,1	4	Multiple attachments at 2'; good form.
770	Apricot	2,2,1,1	4	Multiple attachments at 1'; good form.
771	Apricot	4,3,2,3,1,1	4	Multiple attachments at 4'; open center.
772	Apricot	5,3,2	4	Multiple attachments at 4'; spreading form.
773	Apricot	3,2,2,1	3	Multiple attachments at 2'; one sided W.
774	Apricot	3,3,2,1.1	3	Multiple attachments at 4'; one sided E.
775	Apricot	3,3,2,1,1,1	3	Multiple attachments at 3'; small crown.
776	Apricot	6	4	Multiple attachments at 4'; good form.
777	Apricot	3,2,2	3	Multiple attachments at 3'; small crown.
778	Apricot	3,3,3,1	3	Multiple attachments at 3'; small crown.
779	Apricot	2,2,1,1,1	2	Multiple attachments at 1'; small crown.
780	Apricot	14	1	All but dead.
781	Apricot	2,1,1,1,1	4	Multiple attachments at 3'; spreading form.
782	Apricot	2,1,1,1,1	3	Multiple attachments at 3'; thin crown.
797	Plum	2	3	Multiple stems from base; many sprouts.

MEMO

Date: **June 2, 2016**

To: **Chris Patillo, PGA Design**
Roger Ravenstad, City of Fremont

From: **Nelda Matheny**

Subject: **California Nursery**

We have completed our update of the trees at California Nursery. The purpose of this memo is to summarize the major changes since our original inventory in the spring of 2014. A comparison of tree conditions ratings is provided in Table 1. Locations of dead trees and trees in poor condition are plotted on the attached Tree Assessment Map.

Table 1: Comparison of number of trees by condition category in 2014 and 2016.

Date	Dead	Poor	Fair	Good
2014	-	187	332	237
2016	30	210	285	230

1. Tree condition has declined over the past two years, primarily due to water stress.

2. Thirty trees have died, primarily due to water stress.
   - Ten were yews that were primarily located around the boxed oak forest.
   - Landmark oak #250 and Monterey cypress #531 failed and were removed.

3. 210 trees were in poor condition. In most cases, we recommend removing trees in poor condition because they are unlikely to respond to treatments and recover good health within a few years' time. The primary exception at this site are yews that could be coppiced and allowed to re-sprout (assuming they are irrigated). Some of the olives currently in poor condition could be pruned and monitored for recovery.

4. The attached Tree Assessment Map shows the spatial orientation of the trees in poor condition and those that are dead. This could be used to evaluate potential tree removals in key use areas. While you may not want to remove all poor condition trees, I do recommend removing those in public use areas. Prime examples are the Landmark Canary Island pines at the Adobe and the Monterey cypress trees in the future picnic area.

Suggestions for further discussion

1. Many of the Landmark trees are either gone or in poor condition. It would be good to review those, determine if some should be removed from Landmark status. Treatments such as pruning, cabling and irrigation may prolong the life of some. Perhaps other noteworthy trees could be nominated.

2. It would be good to have a discussion about which trees in poor condition you would prefer retaining. For instance,

- Suppressed, misshapen trees along the property lines may have value for screening.
- Retention of unique trees may be considered if arboricultural treatments could prolong life and abate potential hazards. We need to identify which trees fall into that category.

3. Roger and I discussed providing input on specific irrigation requirements. I'm wondering how you would like me to provide those guidelines? I could classify trees according to water use, then use color codes on a map to show their spatial orientation. That would give you some idea of how to group water zones.

We now have the trees plotted in GIS. It is a relatively easy process to prepare color-coded maps according to the type of information you want. Just let me know what you need. The tag numbers can be shown as well.

I will also provide a spreadsheet of trees, updated condition, and recommendations for removal and treatment after we have a chance to discuss.

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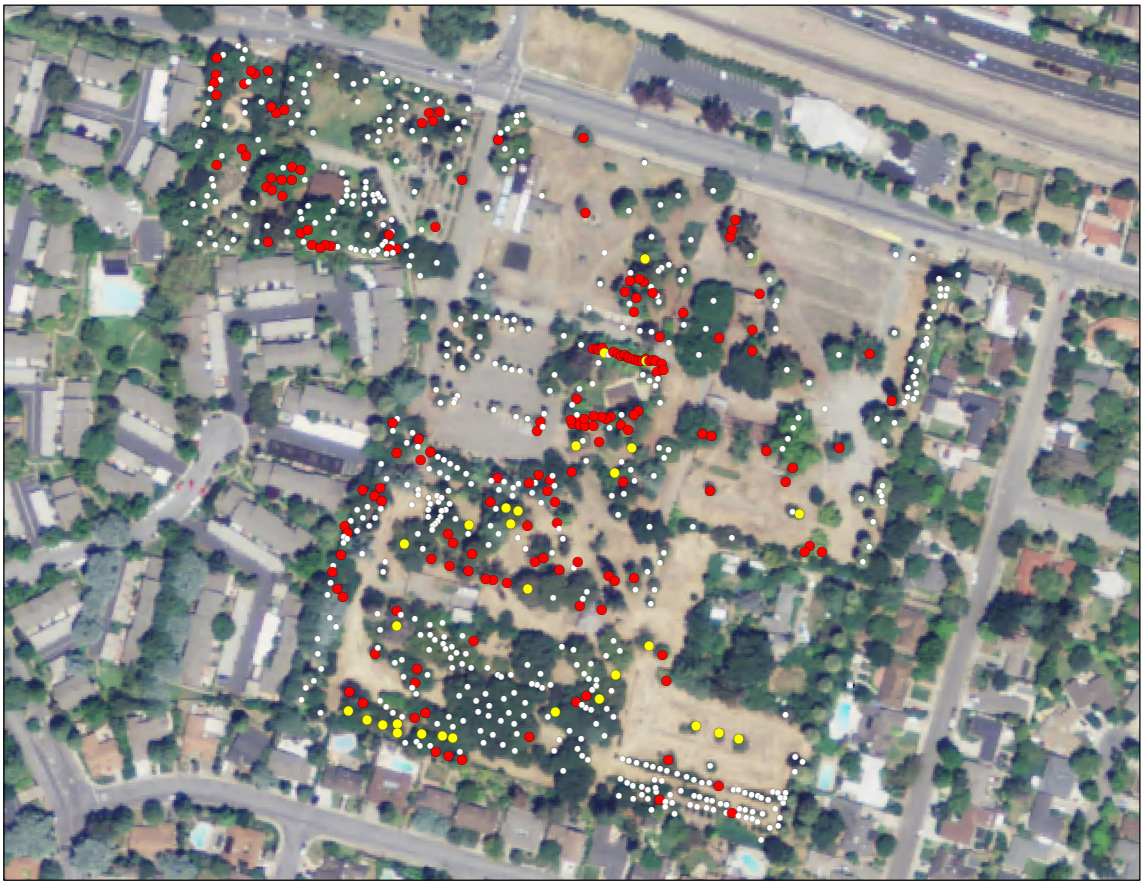
phone 925.484.0211 | fax 925.484.5096



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The Legacy of CALIFORNIA NURSERY Historic Park
the root of an industry

Appendix 6:
Tree Inventory Report

Tree Inventory Report

California Nursery Historical Park
Roeding Property
Fremont, CA

Prepared for:
City of Fremont
39550 Liberty St.
Fremont CA 94538

Prepared by:
HortScience, Inc.
325 Ray Street
Pleasanton, CA 94566

December 2016

HORT SCIENCE

Tree Inventory Report
California Nursery Historical Park
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Introduction and Overview
PGA Design is developing a Master Plan for the California Nursery Historical Park in Fremont, CA. The site is a historical nursery, established in 1884, that originally occupied 463 acres. A Tree Inventory Report for the 20.1 acres owned by the City of Fremont was prepared by HortScience, Inc. in October 2014. Recently HortScience was asked to inventory the trees on the adjacent Roeding property.

This report provides the following information:

1. An inventory of trees on the Roeding property.

2. An assessment of each tree's health and condition.

Tree Inventory Methods
Trees were inventoried on November 3, 2016. The survey procedure consisted of the following steps:

1. Identifying the tree as to species;
2. Tagging trees with a numerically coded metal tag and recording each tree location on a map;
3. Measuring the trunk diameter at a point 54" above grade;
4. Evaluating the health and structural condition using a scale of 1 – 5:

   5 - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.

   4 - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.

   3 - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.

   2 - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.

   1 - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.

5. Describing the characteristics of each tree.

Description of Trees
Sixty-seven (67) trees were assessed. Descriptions of all trees and a map of their approximate locations are found in the *Exhibits*.

The tree population at the Roeding property was highly diverse; 29 taxa were represented (Table 1). The species most commonly present were coast live oak (18% of population), glossy privet (12%), deodar cedar (7%), and Canary Island date palm (7). Twenty-three species were represented by only one or two trees (79% of taxa present).

Table 1: Condition ratings and frequency of occurrence of trees.
California Nursery, Roeding Property, Fremont, CA

Common Name	Scientific Name	Condition			Total
		Poor (1-2)	Fair (3)	Good (4-5)	
Blackwood acacia	*Acacia melanoxylon*	-	1	-	**1**
Japanese maple	*Acer palmatum*	2	-	-	**2**
Deodar cedar	*Cedrus deodara*	2	3	1	**6**
Orange	*Citrus sinensis*	-	1	-	**1**
Cabbage palm	*Cordyline australis*	1	-	-	**1**
Loquat	*Eriobotrya japonica*	1	-	-	**1**
Silver dollar tree	*Eucalyptus cinerea*	-	1	-	**1**
Swamp mahogany	*Eucalyptus robusta*	1	-	-	**1**
California black walnut	*Juglans hindsii*	-	1	-	**1**
English walnut	*Juglans regia*	-	-	1	**1**
Chinese flame tree	*Koelreuteria bipinnata*	1	-	-	**1**
Glossy privet	*Ligustrum lucidum*	5	3	-	**8**
Mayten	*Maytenus boaria*	2	-	-	**2**
Dawn redwood	*Metasequoia glyptostroboides*	1	-	-	**1**
Myoporum	*Myoporum laetum*	1	-	-	**1**
Winged elm	*Ulmus alata*	1	-	-	**1**
Canary Island date palm	*Phoenix canariensis*	-	-	6	**6**
Japanese black pine	*Pinus thunbergiana*	1	-	-	**1**
Chinese pistache	*Pistacia chinensis*	-	1	-	**1**
Tawhiwhi	*Pittosporum tenuifolium*	1	1	-	**2**
Victorian box	*Pittosporus undulatum*	-	1	-	**1**
Fremont cottonwood	*Populus fremontii*	1	-	-	**1**
Carolina cherry laurel	*Prunus caroliniana*	-	1	-	**1**
Pomegranate	*Punica granatum*	-	1	-	**1**
Coast live oak	*Quercus agrifolia*	-	6	6	**12**
African sumac	*Rhus lancea*	5	-	-	**5**
Eastern arborvitae	*Thuja occidentalis*	1	1	-	**2**
Windmill palm	*Trachycarpus fortunei*	-	3	-	**3**
California bay	*Umbellularia californica*	-	1	-	**1**
Total		**27**	**26**	**14**	**67**

For the 46 single-trunked trees, size ranged from 6” in trunk diameter to 46”; average trunk diameter was 17”. The largest single trunked tree was 46” diameter dawn redwood #810. Fourteen trees had trunk diameters exceeding 24”. There were 21 trees with two or more trunks.

Among all trees, 23% were in good condition (rating 4-5); 37%, fair (rating 3); and 40% in poor condition (rating 1-2). Condition rating distribution varied by species. Trees in best condition included coast live oak #833, deodar cedar #852, and Canary Island date palms #853, 857-861 (photos 1-3).

Photo 1. Coast live oak #833 was a 44" diameter tree in good condition. The chain that was girdling the trunk should be removed as soon as possible (arrow).

Photo 2. 43" diameter deodar cedar #852 was in good condition.

Photo 3. Canary Island date palms #857-859 were three of the six palms in good condition.

Trees in fair and poor condition tended to have poor form and structure, often due to crowding and being overgrown by adjacent vegetation. Trees close to the fence had wire embedded in the trunk. Visually significant deodar cedars #825-827 were in fair condition (photo 4). Because of extensive branch breakage they will require significant pruning and regular care to reduce the risk of future failures. Mature Fremont cottonwood #819 (32" trunk diameter, photo 5) and dawn redwood #810 (46" trunk diameter) were almost dead, most likely due to drought.

Photo 4. Mature deodar cedars #825-827 were in fair condition due to dieback, a history of branch failure and presence of broken and hanging branches. A close-up of broken branches in tree #827 is shown in inset.

Relatively few pests and diseases were present. Decay fungi were present on orange #813, loquat #814, and coast live oak #833. Myoporum thrips had defoliated and killed the apical shoots of myoporum #834.

Photo 5. Fremont cottonwood #819 was almost dead.

Protected trees

City of Fremont Municipal Ordinance No. 2481 defines all trees with a trunk diameter of 6" or greater as *Protected*. Based on this definition, all 67 trees qualified as *Protected*.

Summary and Conclusions

The Roeding property was vegetated with a diverse population of 67 trees representing 29 taxa from around the world. For the 46 single-trunked trees, size ranged from 6" in trunk diameter to 46"; average trunk diameter was 17". Fourteen trees had trunk diameters exceeding 24". There were 21 trees with two or more trunks.

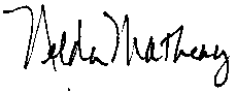
Among all trees, 23% were in good condition (rating 4-5); 37%, fair (rating 3); and 40% in poor condition (rating 1-2). Mature trees in best condition included deodar cedar #852 and Canary Island date palms #853, 857-861 which were located near the east property line. Coast live oak #833 was a large, attractive tree that was being girdled by a chain around the trunk. This chain should be removed as soon as possible to avoid further damage to the tree.

Trees in fair and poor condition tended to have poor form and structure, often due to crowding and being overgrown by adjacent vegetation. Two large trees are unlikely to survive another year: Fremont cottonwood #819 and dawn redwood #810. Both were in severe decline, due in large part to drought.

We noted the presence of structural defects we could see from the ground that tend to be associated with tree failure. Pruning often can abate these problems and preserve trees. In some cases it may be necessary to remove trees where the risk to park workers and the public cannot be managed.

Trees change over time. Our inspections represented the condition of the tree we could observe at the time of inspection. Annual tree inspections of trees in use areas are recommended to identify changes to tree health and structure. In addition, large trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces can exceed the strength of wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, decrease stability, and blow over defect-free trees. Although we cannot predict all failures, identifying and managing trees with observable defects is an important component of enhancing public safety.

HortScience, Inc.



Nelda Matheny
Board Certified Master Arborist WE195B
Registered Consulting Arborist 243

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Appendix 6 Exhibits:
Tree Assessment Map and Forms

Exhibits

Tree Inventory Map
Tree Assessment Form

Tree Assessment Map

Roeding Property
California Nursery
Fremont, CA

Prepared for:
City of Fremont

November 2016

Notes:
1. Basemap provided by City of Fremont.

2. Tree locations are approximate.

Legend

- Dead trees
- Trees in poor condition
- Trees in good and fair condition

N

40 Feet

HORT SCIENCE
325 Ray Street
Pleasanton, CA 94566
Phone (925) 484-0211
Fax (925) 484-0596

Tree Assessment

Roeding Property
California Nursery, Fremont
November 3, 2016

HORT SCIENCE

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
801	Coast live oak	12	3	Low	Multiple attachments arise from base; base embedded in fence; dense full crown.
802	Chinese pistache	7	3	Moderate	Trunk engulfed in ivy; multiple attachments arise from 8 feet; good dense crown.
803	Chinese flame tree	8,4	2	Low	Base embedded in fence; codominant stems arise from 2'; dead branches to 4" stems.
804	Coast live oak	12,7,6,6	4	Moderate	6" lateral embedded in the fence; wide attachments with included bark at 2 1/2'; good dense crown.
805	Coast live oak	7,5	4	Moderate	Multiple attachments arise from base; base embedded in fence; good dense crown.
806	Coast live oak	6	4	Moderate	Base embedded in fence; good dense crown; shaded by #805.
807	Coast live oak	10	3	Moderate	Base embedded in fence; good dense crown.
808	Coast live oak	10	3	Moderate	Base embedded in fence; good dense crown.
809	Coast live oak	8,7,7,7,6,6,4	3	Moderate	Multiple attachments arise from base; base embedded in fence; good dense crown.
810	Dawn redwood	46	1	Low	Little live foliage; all but dead.
811	Pomegranate	10	3	Low	Base and trunk engulfed in ivy; history of improper pruning.
812	Silver dollar tree	24	3	Low	Multiple attachments arise from 15'; trunk leans south; interior dieback.
813	Orange	7,7,5	3	Moderate	Multiple attachments arise from 3'; twig and branch dieback; decay fungus growing on several branches.
814	Loquat	6,5,5	1	Low	Multiple attachments arise from base; fungus growing throughout lower trunk; little live foliage.
815	Cabbage palm	10,7,7,4	2	Low	Privet growing out of base; multiple attachments arise from base.

Tree Assessment

Roeding Property
California Nursery, Fremont
November 3, 2016

HORT SCIENCE

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
816	Glossy privet	7,3,2	2	Low	Growing from base of dracaena; multiple attachments arise from base and 7'.
817	Glossy privet	9	2	Low	No tag; engulfed in blackberries and wisteria and throughout canopy; little live foliage.
818	Glossy privet	12	2	Low	Base embedded in fence; multiple attachments arise from 6' and 8'; sparse interior crown; history of improper pruning.
819	Fremont cottonwood	32	1	Low	All but dead; extensive cavity in trunk.
820	Glossy privet	7	3	Low	Lost central leader; narrow attachment at 6'; crossing branches; good full growth.
821	Glossy privet	6,6	3	Low	Multiple attachments arise from base; narrow attachments; crossing branches; good full growth.
822	Coast live oak	10	3	Moderate	Ivy growing in crown; poor structure with good full growth.
823	Tawhiwhi	7	3	Low	Bowed trunk; dieback; good growth with poor structure.
824	Glossy privet	6	2	Low	Bowed trunk to the south; growth is epicormic sprouts.
825	Deodar cedar	33	3	Moderate	In a group of three; leaning south; all the laterals are on the southern side; almost no interior growth.
826	Deodar cedar	33	3	Moderate	In a group of three; leaning west; all laterals are on the western side; almost no interior growth; history of branch failure; unhealed wound at 35'.
827	Deodar cedar	31	3	Moderate	In a group of three; no central leader; all the laterals are on the exterior side; almost no interior growth; history of branch failure; hangers.
828	Carolina cherry laurel	7	3	Moderate	Multiple attachments arise from 5'; wood embedded in base; bowed trunk.
829	California bay	6,5,5	3	Moderate	Multiple attachments arise from base; suppressed by #825 - 827.

Tree Assessment

Roeding Property
California Nursery, Fremont
November 3, 2016

HORT SCIENCE

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
830	Coast live oak	12	4	Moderate	Codominant attachments at 8'; suppressed by the swamp mahogany; good full growth.
831	Swamp mahogany	27	2	Low	Large dead wood in canopy; history of improper pruning; history of branch failures.
832	English walnut	7	4	Moderate	Good form and structure; good full growth.
833	Coast live oak	44	4	Moderate	Gorgeous full canopy; chain girdling trunk, should be cut immediately; fungus in old pruning wound at base of lateral limb to the south; heavy laterals; sprouts from pruned limb to the west.
834	Myoporum	6	1	Low	Growing out of failed container; extensive thrips throughout canopy.
835	Coast live oak	10	4	Moderate	Good form and structure; growing in a broken box container.
836	African sumac	7,5	2	Low	Growing in a group of several trees; multiple attachments arise from base; suppressed poor form.
837	African sumac	6	2	Low	Growing in a group of several trees; multiple attachments arise from base; suppressed; poor form and structure.
838	African sumac	8,6,4,3	2	Low	Growing in a group of several trees; multiple attachments arise from base; suppressed; poor form and structure.
839	African sumac	7,6,5,5,5,3	2	Low	Growing in a group of several trees; multiple attachments arise from base; suppressed; poor form and structure.
840	Glossy privet	6	2	Low	Growing in a group of several trees; multiple attachments arise from base; suppressed; poor form and structure.
841	African sumac	6,5,4	2	Low	Tagged on fence; codominant branch attachments at 12'.
842	Eastern arborvitae	11,8	3	Low	Multiple stem attachments arise from base; leaning south; heavy outer crown.

Tree Assessment

Roeding Property
California Nursery, Fremont
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HORT SCIENCE

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
843	Eastern arborvitae	10,9,8,6,5, 5	2	Low	Multiple stem attachments arise from base and 2'; leaning south; heavy outer crown; history of branch failure, plumbago throughout crown.
844	Blackwood acacia	10,8	3	Low	Multiple stem attachments arise from base; base engulfed in ivy; wide basal attachment with decay.
845	Japanese maple	10	2	Low	Decay on upright leaders; little live foliage.
846	Japanese maple	11,7	1	Low	Decay in codominant stem attachment at 3 1/2'; roots encircling; little live foliage.
847	Japanese black pine	8	2	Low	Enlarged or swollen base; one-sided on north; dieback.
848	Windmill palm	7	3	Low	Growing in a failed container; leaning east; base and container embedded in ivy.
849	Windmill palm	7	3	Low	Growing in a failed container; base and container embedded in ivy.
850	Ulmus alata	18	1	Low	Lost central leader; decay in stump; little live foliage.
851	Windmill palm	8	3	Moderate	Good upright form and structure; chlorotic growth.
852	Deodar cedar	43	4	High	History of failure; pruned on the northern side for power line clearance; spreading form and structure; low lateral limbs.
853	Canary Island date palm	28	4	High	50' tall; in row of several palms; good form and structure.
854	Deodar cedar	14	2	Low	Trunk turns horizontal at 4'; very poor form.
855	Deodar cedar	19	2	Low	Topped at 10' with two sprouts growing from attachment; very poor form.
856	California black walnut	14,6	3	Low	Base engulfed in bamboo; crowded crown.
857	Canary Island date palm	31	4	High	50' tall; in row of several palms; good form and structure.

Tree No.	Species	Trunk Diameter (in.)	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
858	Canary Island date palm	35	4	High	50' tall; in row of several palms; good form and structure.
859	Canary Island date palm	25	4	High	50' tall; in row of several palms; good form and structure.
860	Canary Island date palm	32	4	High	No tag; base and trunk engulfed in ivy; 50' tall; in row of several palms; good form and structure.
861	Canary Island date palm	36	4	High	Base and trunk engulfed in ivy; 50' tall; in row of several palms; good form and structure.
862	Glossy privet	8,4,4,4	3	Low	Multiple attachments arise from base; stump sprout; full crown.
863	Victorian box	10	3	Low	Base and trunk engulfed in ivy; dieback to 4" stems; multiple attachments arise from 4'.
864	Tawhiwhi	7,7,6,6,5,3,3,3	2	Low	Central leader is dead; decay in attachments; multiple attachments arise from base.
865	Coast live oak	9	3	Moderate	No tag; base and trunk not visible; good form and structure.
866	Mayten	7	1	Low	Base engulfed in ivy; all but dead.
867	Mayten	12	2	Low	Base engulfed in ivy; dieback in crown.

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Appendix 2:
Landmark Trees

Excerpts from Landmark Trees of the City of Fremont:

Introduction
The Importance of Landmark Trees
How a Tree qualifies for Landmark Status
California Nursery Company (Section)

LANDMARK TREES

City of Fremont

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