

# LAVC Urban Forest Master Plan

A Guide to Preserve and Enhance  
The Los Angeles Valley College Urban Forest

August 2011







# LAVC Urban Forest Master Plan

*Valley Glen, California*

August 18, 2011

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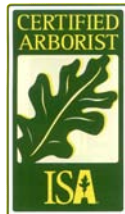
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# Table of Contents

I	PROJECT INTRODUCTION / EXECUTIVE SUMMARY.....	4
	A. Introduction	8
	B. Executive Summary	10
	C. Objectives	11
	D. Work Flow Schedule	14
II	INVENTORY .....	16
	A. Overview	20
	B. Objectives	20
	C. Inventory	22
	D. Observations	24
	E. Existing Conditions by District	30
III	ANALYSIS .....	62
	A. General Analysis and Evaluation	66
	B. Measure J Master Plan Landscape Analysis	98
IV	RECOMMENDATIONS .....	106
	A. Arboricultural Recommendations	110
	B. Cultural Recommendations	122
	C. Replacement Tree Species	128
	D. Tree Replacement Policy	148
	E. LAVC Tree Walk	150
V	DISTRICT / PROJECT SPECIFIC RECOMMENDATIONS .....	154
	A. Pruning and Removal Phases by Year	158
	B. Measure J Construction Projects	166
	C. Measure J Construction Project Recommendations	182
VI	REFERENCES .....	198
	A. Nursery Resources and Supplies	202
	B. Acknowledgements	204
	C. Bibliography	205
	D. Appendices	206
	E. Glossary	320
	F. Index	322









"The creation of a thousand **forests** is in one **acorn**."

*~Ralph Waldo Emerson*







# I. Project Introduction / Executive Summary

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## A. Introduction

## B. Executive Summary

## C. Objectives

1. *Long term report*
2. *Arborist report*
3. *CAD survey*
4. *Tree history*
5. *Booklet*

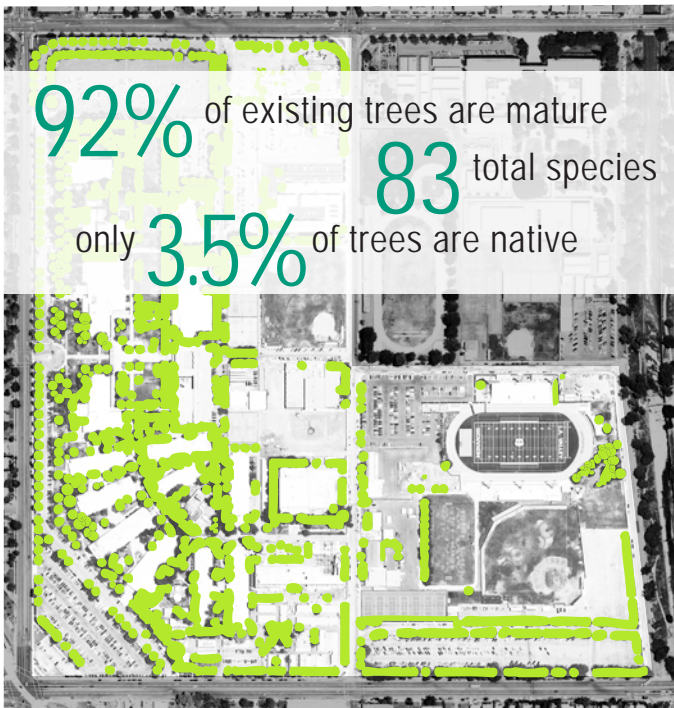
## D. Work Flow Schedule

# A. Introduction

In 2010, Steinberg Architects completed the 2010 Update to the 2003 Valley College Facilities Master Plan. As part of the master plan update, SWA Group developed the Landscape Master Plan and Guidelines which provided a strategic framework for future campus development projects. One of the core principles of the updated master plan was that of sustainability. The College has made a commitment to incorporate new sustainable practices and measure to limit the college’s environmental footprint. The Measure J Urban Forest Master Plan is a direct result of this commitment and will serve as a datum for the existing urban forest and a guidebook for the future growth of the LAVC Urban Forest. The Urban Forest Master Plan will provide the college with an all encompassing resource in the preservation, restoration and regeneration of their invaluable asset.

For more than 60 years, Los Angeles Valley College has occupied the 100+ acre site bordering the Tujunga Wash in Valley Glen, CA. In addition to the educational function, the campus is also used for special events and serves as a recreational facility for the surrounding community. LAVC’s community relationships are further strengthened as the campus is home to the San Fernando Valley Historical Museum. The campus’ urban forest is not only a vital part of LAVC’s identity, its stature is equally important for the surrounding community. Preservation of this valuable asset is crucial both to the community and the College.

The health and condition of the various mature and newly planted trees on campus have been evaluated to aid in the planning process. The future health of the trees will depend on protecting them during any construction process, providing a *suitable environment for their future growth* and providing proper maintenance.



URBAN FOREST INVENTORY

Through careful research, it has been determined that the trees of Los Angeles Valley College (LAVC) are a significant asset to the College. While all trees age, eventually decline, and die, proper care can extend their useful life. It has been determined that *most of the trees were planted at approximately the same time period* during significant construction phases for the campus. With the amount of construction that LAVC will undergo in the upcoming years from Measure J monies, the next generation’s urban forest will likely begin within the next few years. Having a strategic plan for such future development will help define tomorrow’s campus.

Professional research has indicated that there are no endangered species of trees on this campus despite the large quantity of trees growing here. The campus has continually evolved through various building and management programs, leading to a mixture of large mature trees. *The majority of the trees that comprise the Urban Forest and within this report are non-native exotic species trees, except for several California Live Oaks, Quercus agrifolia, California sycamore, Platanus racemosa.*





## LOS ANGELES VALLEY COLLEGE URBAN FOREST

*An urban forest is a forest or a collection of trees that grow within a city, town or a suburb.*

## B. Executive Summary

A mixture of 1,632 trees and over 84 species are planted on the Los Angeles Valley College property. Their sizes, health and condition are found within the Arborist's Spreadsheet located in the Appendices Section of this report.

The goal of the Los Angeles Valley College Urban Forest Master Plan is to provide a comprehensive long-term plan for LAVC's Urban Forest. The purpose of the LAVC Urban Forest Master Plan Report is to provide various entities with the resources needed to meet their personal goals, tasks or services associated with Los Angeles Valley College. Provided within the booklet are recommendations, references, tools and resources to be used as a guide to maintain and enhance the health of LAVC's Urban Forest.

- A. The Urban Forest Master Plan provides a framework for future development on campus and the role of the Urban Forest. This framework is to be used by Design-Build Teams and provides recommendations related to each of the Measure J projects, planting guidelines, construction specifications and a list of species suitable for the campus. Any development must adhere to the guidelines within the Urban Forest Master Plan.
- B. The Urban Forest Master Plan provides support documentation that can be used to identify and aide in the acquisition of funding.
- C. The Urban Forest Master Plan provides pruning, planting and removal recommendations for each tree which is to be used by the LAVC Maintenance Staff. A list of local tree nurseries and related product contacts are also provided.
- D. The Urban Forest Master Plan is a teaching tool for LAVC Faculty. Bringing students outdoors to explore LAVC's Urban Forest is a tradition that has been utilized by some of the current and former Faculty. The Master Plan Report can now continue this tradition and be more easily accessible to all Faculty, influencing many different areas of study.
- E. The Urban Forest Master Plan is meant to be a catalyst to spark community interest for LAVC.
- F. The Urban Forest Master Plan is a community education tool and perpetuates the tradition of Life-long Learning.
- G. The Urban Forest Master Plan provides a reference for artists, craftsmen and contractors that perform work on the campus.
- H. The Urban Forest Master Plan is meant to inspire and identify student research topics.
- I. The Urban Forest Master Plan is a unique resource that embodies the College's goal of education and sustainability. The Master Plan is to be used as an example to other educational facilities and can be utilized for public relations and marketing needs.
- J. The Urban Forest Master Plan is a bookmark in time for Historians and serves as a benchmark for the future urban forest.



## C. Objectives

- A. *Provide a comprehensive long-term plan for the Urban Forest at Los Angeles Valley College.* The College has a rich and varied Urban Forest that is an integral part of its identity and contributor to the quality of life on campus. The plan should employ both the technical expertise of an Arborist and the vision and planning methodologies of a campus planner and/or Landscape Architect. The plan should provide the College with the information and direction necessary for maintaining a rich and distinctive Urban Forest for the foreseeable future. The plan is divided into three parts:

### **ANALYSIS**

Analysis will provide an updated evaluation and digital plan of the existing trees. Diagrams will evaluate and display Arborist evaluations and master planning parameters, such as identity, climate and maintenance concerns.

### **PLANNING**

Analysis and existing Landscape Master Plan documents will lead to the creation of an Urban Forest Master Plan detailing near-term and long-term planting / re-planting and maintenance strategies.

### **GUIDELINES**

Guidelines will provide necessary information for care and maintenance of the Urban Forest. It will also include tree selections and re-planting techniques.

- B. *Arborist Report: Inventory and analysis of the existing trees' conditions.*

Inventory and analysis to include:

- a. **NUMBERING OF INDIVIDUAL TREES**
- b. **TREE SPECIES**
- c. **SIZE** (including diameter at breast height (DBH) and approximate overall height and width).
- d. Presence of obvious **DEFECTS** within the individual trees.
- e. Recommendation for **CONSERVATION** and removal based upon existing conditions.
- f. **PRIORITIES** for the removal and care of existing trees going forward
- g. Recommendation of **CARE GUIDELINES** (pruning, fertilization and specialized care otherwise) for existing trees recommended for conservation going forward
- h. **PROTECTION GUIDELINES** for the conservation of trees that will be encroached upon by proposed construction of future re-development operations
- i. Recommended list of **SUITABLE TREE SPECIES** for supplemental and new development planting

- C. *Digital CAD Survey*

CAD Survey of Tree locations and elevation at base of trunk, cross-referenced with Arborist Survey.

- D. *Assessment of Tree History*

### **a. EXISTING CONDITIONS**

- i. Diagrams and Analysis of campus history, related to trees.
- ii. Review of chronological development. Obtain and review historic aerial photography to assess the arboricultural development since 1959, the inception of the campus and this site.
- iii. Prepare an existing conditions statement about trees in the various zones within the campus.

## **b. ANALYSIS AND EVALUATION**

- i. Prepare an analysis and evaluation of existing trees on campus. Issues to be addressed include significant trees that exist today and those that may have been removed over time, the reason they were planted, their original character and what if anything has changed about them.
- ii. Prepare a list of trees, or groups of trees, on campus that retain existing character and integrity.
- iii. Submit a draft of the Existing Conditions and Analysis and Evaluation for review and input.

## *E. Landscape and Planning Booklet*

- a. Diagrams and analysis of Arborist evaluations (graphical analysis / summary of Arborist Report) and Coordination with Digital CAD Survey.
- b. Planning Analysis of Urban Forest, including Identity, Sustainability, Habitat, Climate, etc.
- c. Master Plan detailing near-term and long-term actions required to maintain and improve overall look and feel of Urban Forest.
- d. Timeline describing predicted course of actions, including likely tree replacements and general maintenance.
- e. Designs for near-term replacement plantings as deemed necessary in accordance with landscape master plan and developed guidelines. Guidelines for future replacement plantings.
- f. Final tree selection guidelines based on Arborist report and campus vision and identity.
- g. Tree planting and maintenance specifications and guidelines, including standard materials and products.
- h. Resources and contacts for tree supplies and purchases.

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## D. Work Flow Schedule

JUNE

# 2010

**Kick Off** Tuesday 6/22  
1pm- 3pm

STEINBERG / SWA / LAVC

Introductions  
Expectations and Goals  
Purpose  
Intended Uses  
Current Issues and Concerns  
Site Walk



Photo Inventory October 12, 2010

**Inventory** Saturday 6/26

ARBORIST / SURVEYOR

Tree Tagging and Identification  
Locations and Elevation

MARCH

# 2011

**Workshop #1** Wednesday 3/30  
1pm- 3pm

STEINBERG / SWA

General Overview  
Tree Master Plan Powerpoint  
Expectations and Goals  
Arborist Report  
Project Workplan Confirmation



Workshop #2 April 14, 2011

**Workshop #2** Friday 4/14

STEINBERG / SWA / PGA /  
ARBORIST

Preservation Landscape History  
Master Plan Progress Update  
General Dialogue with Client

APRIL

**Workshop #3**  
 STEINBERG / SWA / PGA /  
 ARBORIST  
 Preservation Update  
 Site Walk with Arborist

**Monday 5/2**  
**2pm- 4:30pm**



Arborist Site Walk May 2, 2011

**Workshop #4**  
 STEINBERG / SWA  
 Tree Master Plan Progress  
 Update

**Wednesday 5/11**  
**1pm- 3pm**

**Town Hall Meeting**

**Tuesday 5/24**  
**1pm- 3pm/ 6pm-8pm**

**Workshop #5**  
 STEINBERG / SWA / PGA /  
 ARBORIST  
 Draft Tree Master Plan  
 Presentation  
 Initial PGA Findings  
 Historical Perspective  
 Initial Recommendations  
 Discussion

**Wednesday 5/25**  
**1pm- 3pm**



Arborist Site Walk May 2, 2011

**Workshop #6**  
 STEINBERG/ SWA  
 College Comments  
 Download  
 Discussion

**Thursday 6/9**  
**10am- 12pm**



Town Hall Meeting May 24, 2011

**Week 15: August 18**

**FINAL TREE MASTER PLAN  
 DOCUMENT SUBMISSION**





*Trees* are much like *human beings* and enjoy each other's *company*. Only a few love to be alone."

~Jens Jensen





## II. Inventory

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### A. Overview

### B. Objectives

### C. Inventory

### D. Arborist's General Observations

*1. General Observations*

*2. Individual Tree Characteristics*

*3. Newly Planted Immature Trees*

### E. Existing Conditions by District

## A. Overview

The Los Angeles Valley College Tree Master Plan Inspection Report has been prepared as a follow-up to the inspection of the existing specimen trees within the Los Angeles Valley College campus in Valley Glen, California during the summer of 2010 and a follow up in the late spring of 2011. The purpose for the inspections and the development of this document has been to relate *recommendations for the existing trees' long-term dispositions including conservation (both absolute and short-term) or removal.*

Recommendations have been made herein for the *prioritization of the recommended removals a well as pruning for those trees recommended for conservation.* Tree care industry standards and best management practice methodologies have been related to guide the long-term pruning and care of the trees recommended for conservation as well as those trees to be planted as part of the re-forestation of the campus.

Recommendations have also been made herein for tree species possessing qualities that make them ideal for use in the context of the *re-forestation of the campus environment.* Recommendations for the introduction of tree species with both large and small stature size potential have been provided.

## B. Objectives

### *A. Inspect and review the existing inventory of trees within the site.*

#### **INVENTORY INSPECTION SHALL INCLUDE THE FOLLOWING:**

- a. Assign tree numbers.
- b. Identify tree species (Latin and Common Names).
- c. Record size including diameter of trunk at breast height (DBH), 4.5' and estimated overall heights and canopy widths of the individual trees.
- d. The presence of substantial defects and/or disease conditions within individual trees.
- e. Recommendations for conservation or removal of the individual trees based upon their species, general, and individual characteristics.
- f. Provide observations regarding the tree types that are planted in large quantities within the site including their general conditions as well as reasons for the desirability for their conservation or immediate or long-term removal as recommended.
- g. Recommend removal priorities by species.
- h. Refer to and recommend tree pruning methodologies / guidelines as well as priorities for pruning those species that require pruning going forward.
- i. Recommend species for planting for the long-term re-forestation of the campus environment based upon general species characteristics.
- j. Recommend methodologies for conservation of trees proposed for future encroachment within the context of the campus re-development projects going forward.

**BENCHMARK**  
 CITY OF LOS ANGELES BENCHMARK NO. 12-10888  
 SPIKE WEST CURB VERMONT AVENUE AT THE BCR  
 S/O FOUNTAIN AVENUE.  
 ELEVATION = 364.56 FEET (1985 ADJUSTMENT)  
 DATUM = NGVD 1929

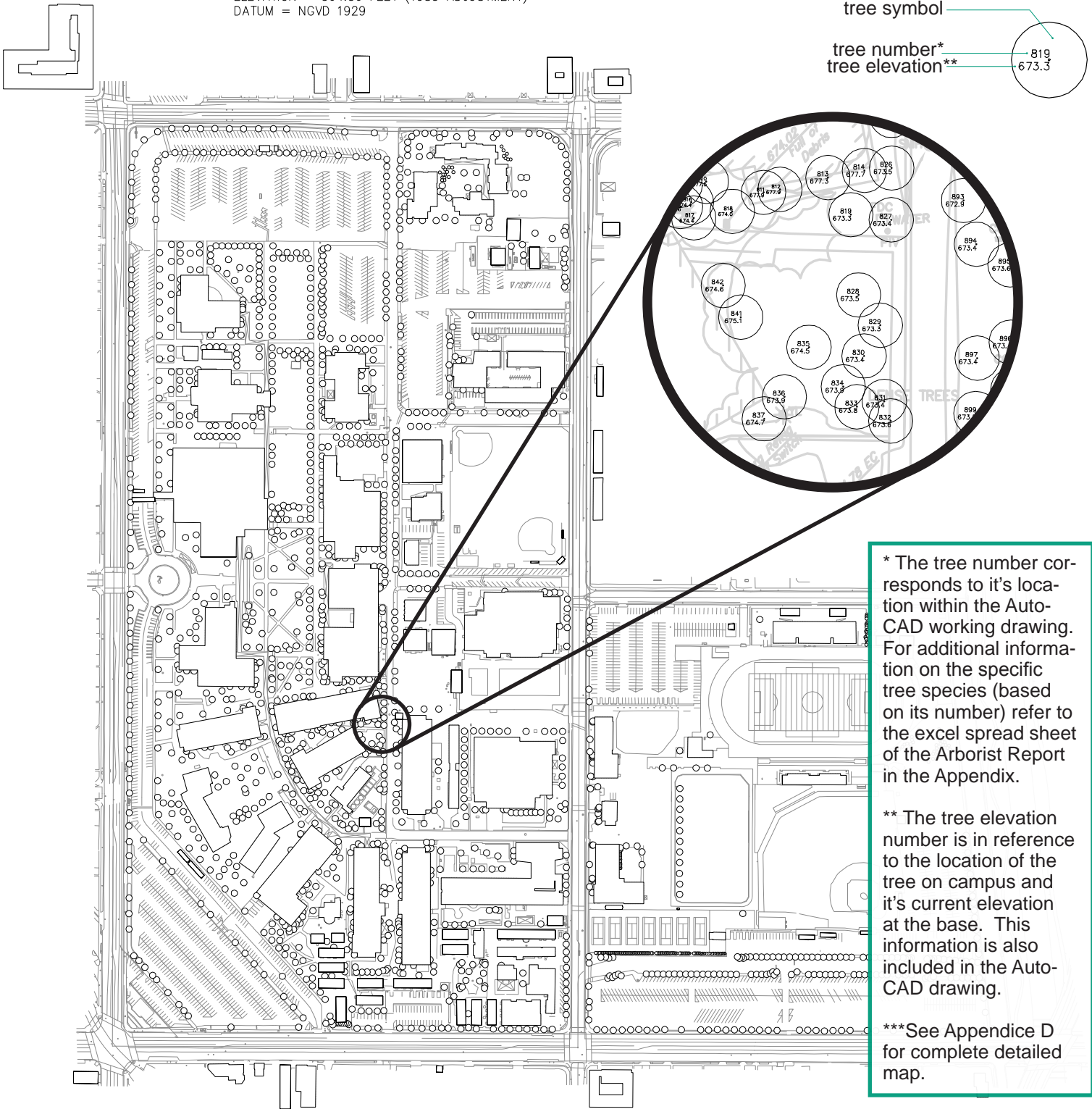
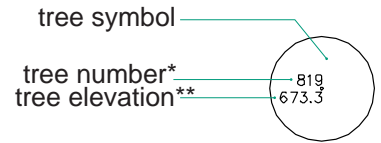


Figure 2.1 AutoCAD file of labeled existing trees within the campus



## C. Inventory

The *inventory began in Summer of 2010*. The Certified Arborist tagged and numbered each tree. Tags consisted of neon-orange flagging material and a metal plate. During the tagging of trees, the *Arborist identified species* in both Latin name and common name, *diameter at breast height* (DBH), *approximate height, approximate canopy, and presence of substantial defects*. Following the Arborist was the Licensed Survey team. The Surveyor identified the location and elevation at the base of the tree.

The inventory was catalogued into a spreadsheet with corresponding tree numbers relating to an AutoCAD file created by the Surveyor. The AutoCAD file shows the location, tree number and elevation. Refer to Appendices for Tree Map and CD-Rom.

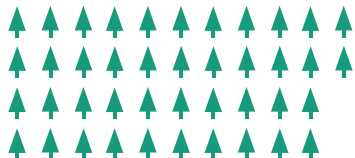
*A follow up to the survey was conducted in late Spring 2011*, when conditions were more suitable to identify health problems with the trees. Additional *categories of specific pruning methodology per tree, pruning cycles per tree, general maintenance per tree and proposed disposition and removal in years were included in the follow up survey*. The revised inventory also included trees that were recently planted and removed trees no long on campus.



Image of the tagging done for the Arborist's Inventory



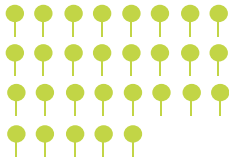
**42** species of evergreens  
**50%** OF THE TREES ON CAMPUS



**11** species of conifers  
**13%** OF THE TREES ON CAMPUS

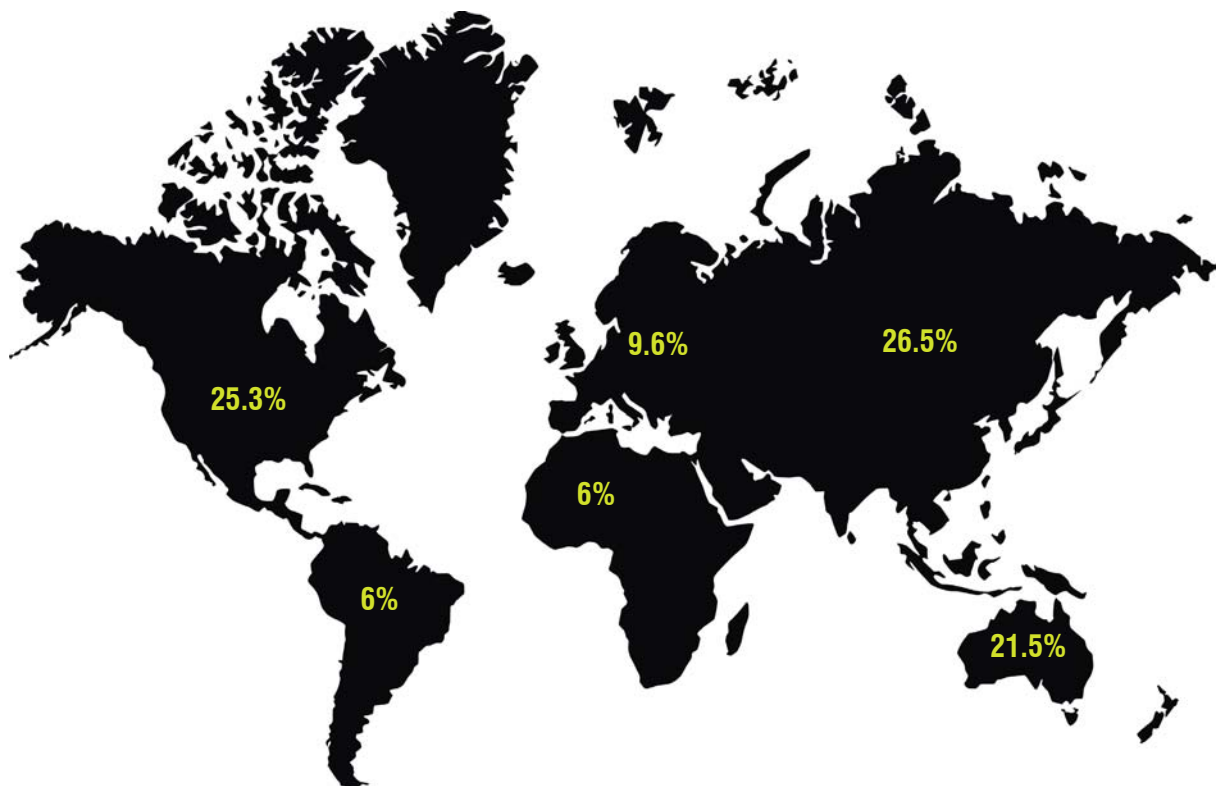


**29** species are deciduous  
**34.8%** OF THE TREES



**2** species of palms  
**2.2%** OF THE TREES ON CAMPUS

LAVC Urban Forest Composition

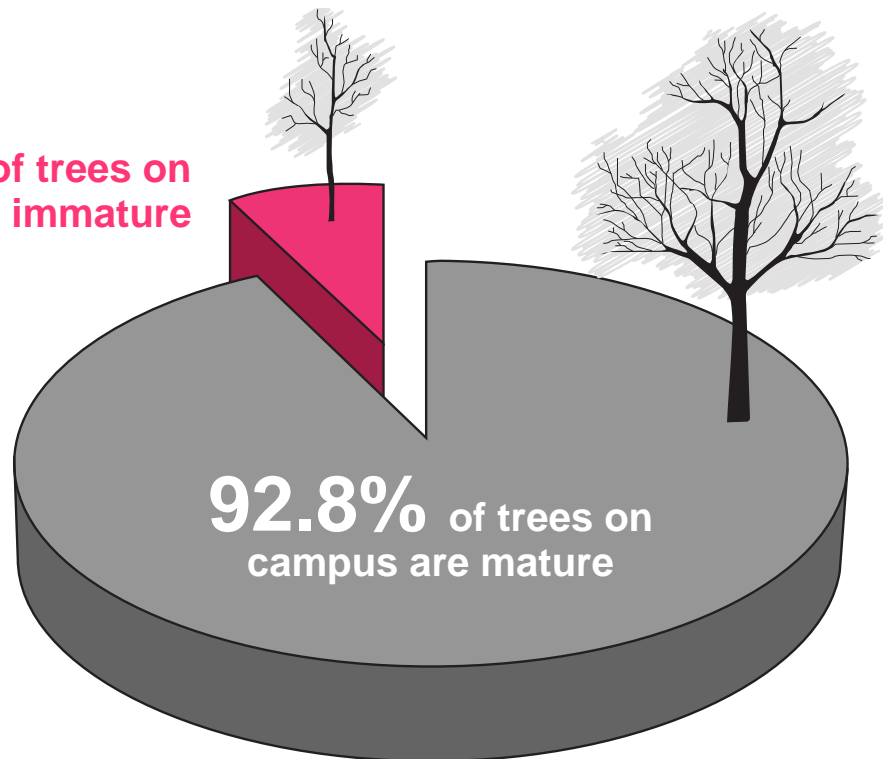


Global Urban Forest Composition

## D. Arborist's General Observations

1. Majority of the *existing trees are generally MATURE SPECIMENS that have been under-maintained* over the years.

**7.2%** of trees on campus are immature



2. Some of the *mature individual specimens have been non-selectively pruned* (topped) as a result of their proximity underneath and near overhead power lines resulting in defects and distortion of their natural shapes.





3. Many of the *individual trees possess defects related to the general structural conformity* of their species resulting in limb failure, inclusion and the presence of decay. These trees possess pre-disposition to failure.





4. Some species exhibit *disease symptoms* that are typically associated with their species. The worst of the disease conditions include Fireblight (*Pyrus* and *Ceratonia*), Bacterial Scorch (*Liquidambar*) and Verticillium Wilt (*Olea europaea*).





5. Some species exhibit senescence associated with their species and related stresses including *soil compaction, construction encroachment, and natural senescence*. These species include *Liriodendron tulipifera*, *Albizia julibrissen*, *Celtis sinensis*, and *Alnus rhombifolia*.



6. Some of the trees, both within the existing construction areas and areas that appear to have been within previous construction areas, have been encroached upon and *exhibit die back and general lack of vigor* as a result. Some are expected to stabilize and re-invigorate over time, some are expected to experience long-term decline eventually necessitating removal, and some may even die outright in the shorter term. The practical effects upon the trees have been *compaction of the soil in their root zones, actual root loss, drought stress, and mechanical wounding of their branch structures*.





7. Some of the recently planted immature trees, including the *Pinus halepensis* within the Child Development Center courtyard and to the south east of the Library have been planted in extreme close proximity, disregarding their eventual mature statures. Conservation of all individual trees in such grouping *would result in diminishment of the individual trees archetypal form, character, and structural integrity*. Some of these trees have been recommended for long-term removal based upon their planted proximities to each other.





8. Some of the trees are planted within areas that do not have adequate area for roots and water percolation. *Inadequate planting areas result in pavement upheaval* and do not allow the trees to grow to full potential and result in diminishment of the individual trees archetypal form, character, and structural integrity.





## E. Existing Conditions by District

### TREE EXISTING CONDITIONS – CULTURAL LANDSCAPE PERSPECTIVE

#### **DOMINANT TREES AND MINOR TREES**

Within each district, trees are divided into “dominant tree species” and “minor tree species.” To be classified as a dominant tree species a tree will be at or approaching maturity and have at least one of the following characteristics:

- A large number of the species.
- The tree has a form that is visually/physically dominant.
- There are either several large specimens; at least one very large specimen of the species, or the specimens of a species is distinguished for that particular species.
- The placement of the tree species is prominent.

The qualities of dominant trees are addressed in the discussion of each district.

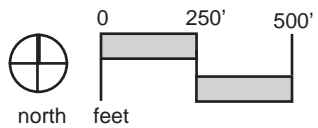
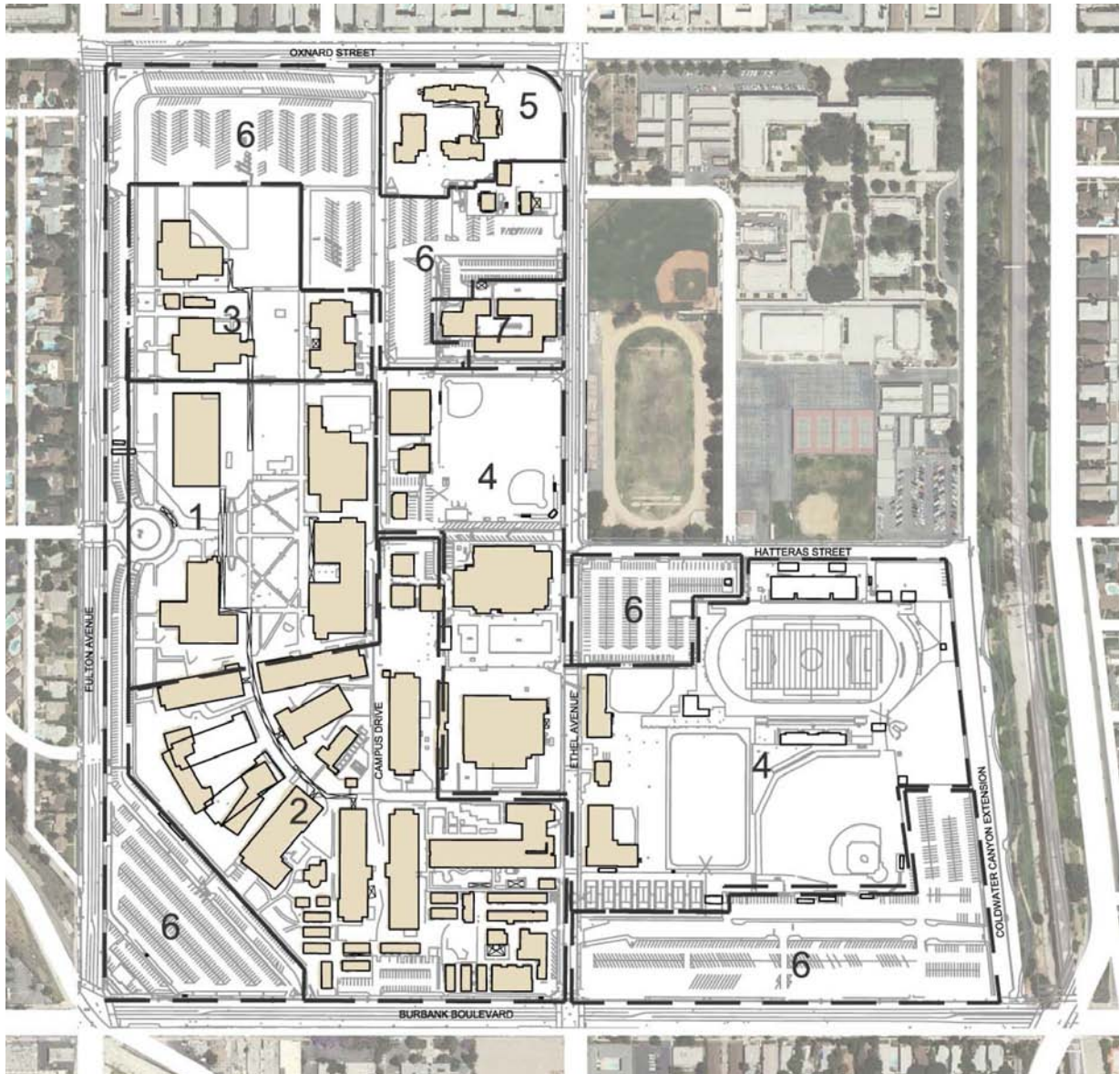
Minor tree species are trees which are small in number, located so that their form may not be fully realized or located so that their form is realized but not visually prominent – this may include species that are small in stature.

For each district, the trees of the Los Angeles Valley College (LAVC) campus are shown on lists of dominant and minor trees in Tables 1a through 7b. For the condition of trees, the primary reference is the 2010 Arborist Report. Summary condition comments are also noted here under each district.

Landscape spaces and buildings that are referred by name are illustrated on the key landscape spaces plan (see pg. 67)

# Key Map-Districts

## DOMINANT/MINOR TREES



### DISTRICTS

- DISTRICT 1 - Campus Core
- DISTRICT 2 - South Campus
- DISTRICT 3 - Arts District
- DISTRICT 4 - Physical Education
- DISTRICT 5 - Child Development
- DISTRICT 6 - Parking
- DISTRICT 7 - Sheriff / O & M

### LEGEND

SYMBOL	DESCRIPTION
2	District Number
— —	District Outline

## DISTRICT 1 – CAMPUS CORE

Planting at the Campus Core is dominated by orderly single species rows of trees. Buildings in this district are large and their layout generally orthogonal, set around the primary campus open space: Monarch Square. This orderly and generously-spaced building layout establishes a framework for equally orderly tree planting. Because most have ample room to grow, trees generally fulfill their natural form without competition for space from buildings or structures. The pattern of the planting in the Campus Core can be seen in District 1 Campus Core Dominant/Minor Tree Species plan.

Within the Campus Core, there are forty-one species of trees of which twelve are dominant tree species. All campus core trees are identified on Tables 1a and 1b along with their condition which is rated as good, fair, or poor.

# Campus Core-District 1

## DOMINANT/MINOR TREES



## Dominant Tree Species

Three of the twelve dominant trees are deciduous and one is a palm. Including the palm nine species are evergreen, four are coniferous. Four species are noted for being flowering trees. Several species within the group of dominant trees have a notable presence resulting from their form. Amongst them are the Bunya Bunya Pine (*Araucaria bidwillii*) which dominates the courtyard between the administration and foreign languages buildings (Figure E1-1). It is large (27" caliper and 40+' high), mature, and its form is typical of its species. In addition, the Mediterranean Fan Palms (*Chamaerops humilis*), while small in stature, are also both numerous and striking in form. They are located as foundation plantings at the west side of the campus center. Finally, at the southwest corner of the campus center are three Coast Redwoods (*Sequoia sempervirens*). These trees are already large - the tallest is 50' - and have the capacity to be significantly larger with age.

Several large rows of trees characterize District 1. They include the double staggered row of mature Tulip Trees (*Liriodendron tulipifera*) located between the Fulton Avenue parking and the walk on the west side of the campus core buildings. These large rows of trees help establish the image of the entry to the campus.<sup>1</sup> There are twenty-two Tulip Trees, most of which are more than 20" in caliper size and 40' tall. Mature Southern Magnolia trees (*Magnolia grandiflora*) are found in two locations: first, in a generally informal arrangement around the entry at the traffic circle at the Fulton Avenue entry and second, in a straight line on the east side of Monarch Square (Figure E1-2). This latter group of Southern Magnolias, have opposite them a similar large row of mature European Olives (*Olea europaea*). Together the Tulip Trees, Southern Magnolia, and European Olives account for two-thirds of the dominant tree species in the Campus Core. Of the remaining dominant tree species four African Cape Chestnuts (*Calodendron capense*) stand out because of their prominent location on the center line of the entry to Monarch Square. *However they are in decline, and their condition rating is poor (Figure E1-3).*

## Minor Tree Species

Within the minor tree group, nine of the twenty-nine species are deciduous, one is a palm, and eight are conifers. Eleven species of trees are flowering, have ornamental fruit or fall color. More than half the minor trees are represented by one tree of each species.

<sup>1</sup>See also District 6 Parking for trees along this edge that supplements the District 1 trees to create the character of the Fulton Avenue entry.

Table 1a-Campus Core Dominant Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Araucaria bidwillii</i>	Bunya Bunya Pine		X					
<i>Calodendron capense</i>	African Cape Chestnut			X	X			
<i>Chamaerops humilis</i>	Mediterranean Fan Palm						X	
<i>Cinnamomum camphora</i>	Camphor Tree	X						
<i>Eucalyptus sideroxylon</i>	Red Iron Bark	X				X		
<i>Juniperus tortulosa</i>	Twisted Juniper		X					
<i>Liriodendron tulipifera</i>	Tulip Tree			X	X			
<i>Magnolia grandiflora</i>	Southern Magnolia	X				X		
<i>Olea europaea</i>	European Olive	X						
<i>Pinus thunbergii</i>	Japanese Black Pine		X					
<i>Quercus lobata</i>	Valley Oak			X				X
<i>Sequoia sempervirens</i>	Coast Redwood		X					X



Table 1b-Campus Core Minor Trees

<u>Botanical Name</u>	<u>Common Name</u>	<u>Types</u>					
		Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm
<i>Albizia julibrissin</i>	Silk Tree			X	X		
<i>Arbutus unedo</i> 'Marina'	Marina Strawberry Tree	X			X		
<i>Cassia leptophylla</i>	Gold Medallion Tree	X					
<i>Cedrus atlantica</i>	Atlantic Cedar		X				
<i>Cedrus deodora</i>	Deodar Cedar		X				
<i>Celtis sinensis</i>	Chinese Hackberry			X			
<i>Ceratonia siliqua</i>	Carob Tree	X					
<i>Chitalpa speciosa</i>	Chitalpa			X	X		
<i>Dodonaea viscosa</i>	Hopseed Bush	X					
<i>Eriobotrya deflexa</i>	Loquat	X					
<i>Ficus lyrata</i>	Fiddle Leaf Fig	X					
<i>Ginkgo biloba</i>	Maidenhair Tree		X	X			
<i>Jacaranda acutifolia</i>	Jacaranda			X	X	X	
<i>Lagerstroemia indica</i>	Crape Myrtle			X	X	X	
<i>Liquidambar styraciflua</i>	Sweet Gum			X	X	X	
<i>Melaleuca quinquenervia</i>	Cajeput Tree	X			X		
<i>Picea pungens</i>	Blue Spruce		X				
<i>Pinus canariensis</i>	Canary Island Pine		X				
<i>Pinus halepensis</i>	Aleppo Pine		X				
<i>Pistacia chinensis</i>	Chinese Pistache		X				
<i>Podocarpus gracilior</i>	Yew Pine		X				
<i>Prunus cerasifera</i> 'Krauter	Purple Plum			X	X		
<i>Pyrus kawakamii</i>	Evergreen Pear	X			X		
<i>Quercus ilex</i>	Holly Oak	X					
<i>Quercus suber</i>	Cork Oak	X					
<i>Quercus virginiana</i>	Southern Live Oak			X			
<i>Tristania conferta</i>	Brisbane Box	X			X		
<i>Washingtonia robusta</i>	Mexican Fan Palm					X	
<i>Juniperus scopolorum</i> var.	Weeping Juniper		X				

## Character and Condition

The character of the urban forest in the Campus Core is highly varied, with a number of large tree species; it is dominated by the avenues of the three species described, and a small number of trees of distinguished form. These account for approximately two-thirds of the trees in this district. Additionally, only two of the forty-one tree types are native to California.

This district contains Monarch Square; the preeminent landscape open space on campus. This is the gathering place of large numbers of students who come here because of its proximity to the academic buildings, and for the ample shaded places to sit and relax with friends. Monarch Square is accessed from the west by the main entry to campus, and from the north and south from the two academic centers. Several of the straight walks are lined by one species on one side and a different species on the other. The vast majority of the trees are mature or past maturity, giving the Square an established feeling.

At the south end of Monarch Square, between the administration building and bookstore, is a roughly square area of the quad that has a character distinct from the main portion to its immediate north (Figure E1-4). It is referred to as the south quad portion of Monarch Square, and is comprised of tall deciduous Tulip Trees (*Liriodendron tulipifera*) providing a fairly consistent canopy, sense of enclosure, and a more intimate scale than in the main body of Monarch Square. It is bordered on the administration building side (west) by evergreen Olive trees (*Olea europaea*), and on the bookstore side by evergreen Southern Magnolias (*Magnolia grandiflora*).

Supplementing this arboricultural stock are several young trees, predominantly individual specimens. These include several oaks (Valley (*Quercus lobata*), Cork (*Quercus suber*) and Holly (*Quercus ilex*) Oaks) which are centrally located in the square and Cedars (*Cedrus atlantica* and *Cedrus deodora*) at the south end of the square. These will gain prominence with age as, at maturity, all are large trees.

Overall, the condition of most plants is good in the immediate term. However, several trees are in poor condition including African Cape Chestnut (*Calodendron capense*), several Olives, a small number of Southern Magnolias, Tulip Trees, Chitalpa (*Chitalpa speciosa*), and several Yew Pines (*Podocarpus gracilior*). For more details on the condition of trees, see the Arborist's Report.



*Figure E1-1. Fine Bunya Bunya Pine (Dominant Tree) next to the Administration Building.*



*Figure E1-2. The main pedestrian spine on the east side of Monarch Square with Southern Magnolia (Dominant Tree) on one side and European Olives (Dominant Tree) on the other.*



*Figure E1-3. An ailing African Cape Chestnut (Dominant Tree) in Monarch Square with young Deodar Cedars (Minor Tree) and Valley Oaks (Dominant Tree) beyond.*



*Figure E1-4. View of the south quad portion of Monarch Square.*



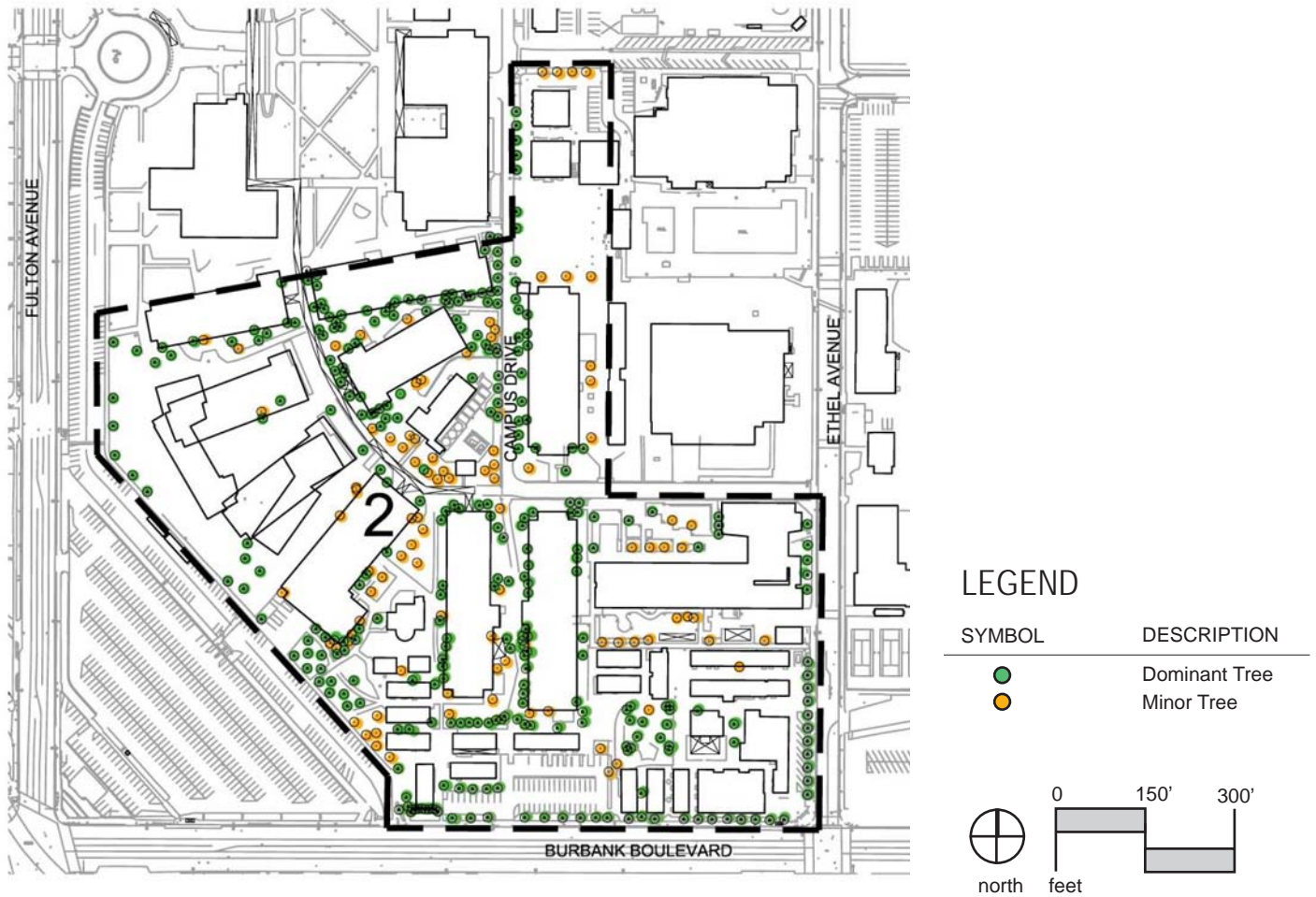
## DISTRICT 2 – SOUTH CAMPUS

The South Campus is a large area that encompasses the bungalows and the academic areas of journalism/business, math/science, engineering, foreign languages, behavioral and life sciences, humanities, and the planetarium as well as student services and the power plant for the campus. Planting in the South Campus exhibits a plethora of species, informal planting arrangements and trees in relatively confined spaces between buildings.

There are fifty-five tree species in the South Campus, the most of any district on campus. Of these, twenty-three are identified as dominant trees. The dominant trees account for eighty percent of the 374 trees in this district. These are identified in Tables 2a and 2b.

# South Campus-District 2

## DOMINANT/MINOR TREES



## Dominant Tree Species

Of the twenty-three dominant tree species in the South Campus, seven are deciduous, one is a palm, ten are trees with showy flowers or fall color, and four are conifers. Amongst its dominant trees, this district has a conspicuously high number of evergreen species and, in particular, broad leaf evergreens.

Three species account for approximately a third of the dominant trees in the South Campus: Canary Island Pine (*Pinus canariensis*), Yew Pine (*Podocarpus gracilior*), and Evergreen Elm (*Ulmus parvifolia*). All are evergreen. The Canary Island Pines (*Pinus canariensis*) are widely planted on campus and in district 2, amongst others. It is a signature species. This is partly because of its magnitude; it is 50' to 100' tall, is very upright so is planted between buildings, and generally is in excellent health. At fifty-six trees, there are more than twice as many Canary Island Pines in the South Campus than any other species of tree. The Canary Island Pines are located around and between the math/science and journalism/business buildings, along Ethel Avenue, and on the east side of the covered walkway. This latter group forms an informal avenue of trees on the east side of the covered walkway as it arcs past the behavioral sciences and humanities buildings.

The Yew Pines are located along the opposite side of the covered walkway, generously spaced, and following the arc of the structure from the engineering building up to the foreign languages building. They are also in scattered locations around the journalism/business building, at the southwest end of engineering, and fronting the behavioral sciences and humanities buildings. These Yew Pines are notably fine specimens of the species and generally are in excellent condition.

The Evergreen Elms (*Ulmus parvifolia*) are located in two parts of the South Campus; at the first quad and around the coffee house near the bungalows, and in an irregular and fairly dense row on the west side of the life sciences building. They are large trees with canopies commonly measuring 40' high and 35' wide. The Evergreen Elms in the first quad appear to be in poor condition approaching structural senescence, the other Evergreen Elms are in good condition.

The first quad is located between the bungalows southeast of the journalism building. In it are Evergreen Elms, Sweet Gums (*Liquidambar styraciflua*), and one Black Locust (*Robinia idahoensis*) (Figure E2-1). Two of these three species are deciduous; the Black Locust is flowering. Together these trees provide a high canopy over the quad with deep and welcoming shade that is attractive to individuals and small groups of students. The species that surround the first quad vary enormously from small flowering Golden Trumpet Trees (*Tabebuia chrysotricha*), a stiff young blue Atlantic Cedar, to one large mature London Plane (*Platanus acerifolia*) amongst others. These trees create an enveloping context for the centerpiece of the first quad.

The London Plane Tree mentioned above is as notable for its size as it is for its placement. It lies in a concrete tree ring, in a 25'-wide space between two bungalows. Its form is true to species as it towers above the single story buildings.



Perhaps the most striking specimen tree in the South Campus is the Moreton Bay Fig (*Ficus macrophylla*) located at the south west edge of the bungalow buildings near Burbank Boulevard (Figure E2-2). Given that these trees live for centuries, this tree appears to be an adolescent. Its canopy has the large umbrella-like form – 60’ wide and 35’ high – for which the species is known. Also a signature of the species is its prominent surface roots.

There are several large eucalyptus trees (*Eucalyptus sideroxylon* ‘Rosea’ and *Eucalyptus globulus*) sited amongst the closely spaced bungalows near building #1 along the Burbank Boulevard pedestrian entry. Though large, these trees are not as large as their species usually grow; and their forms seem to be affected by the close confines of the neighboring buildings. The two Tasmanian Blue Gums are visually prominent because they lie directly on this pedestrian route.

There are twenty-two Weeping Bottlebrush trees (*Callistemon viminalis*) in the South Campus. These are classified as small trees. On the LAVC campus as a whole, they are at or in some cases beyond the size anticipated for their species. While the species is generally regarded as being quick growing, at LAVC they appear also to be long-lived. Though not large in form, they appear to be exemplar of their species and so are regarded as dominant trees in the South Campus district.

The remaining dominant trees species reflect a significant variety of form, foliage color, size, and character. This eclectic variety appears to be emblematic of the urban forest of the South Campus.

### Minor Tree Species

There are thirty-two minor tree species. Of these, eleven are deciduous, five are conifers and sixteen are broad-leaf evergreens. There are no palms in the South Campus amongst the minor tree species. Fifteen species of trees are flowering or have ornamental fruit. Two-thirds of the minor trees are represented by only one or two trees of each species. Four varieties of fig tree are represented amongst the minor tree species listed in addition to the one in the dominant trees species of the South Campus.

Like the dominant trees, the minor tree species represents a vast array of forms and sizes.

Table 2a-South Campus Dominant Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Arbutus unedo 'Marina'</i>	Marina Strawberry Tree	X			X			
<i>Callistemon viminalis</i>	Weeping Bottlebrush	X			X			
<i>Ceratonia siliqua</i>	Carob Tree	X						
<i>Chamaerops humilis</i>	Mediterranean Fan Palm						X	
<i>Chorisia speciosa</i>	Floss Silk Tree			X	X			
<i>Cinnamomum camphora</i>	Camphor Tree	X						
<i>Eucalyptus globulus</i>	Blue Gum	X			X			
<i>Eucalyptus sideroxylon</i>	Red Iron Bark	X			X			
<i>Ficus macrophylla</i>	Moreton Bay Fig	X						
<i>Geijera parviflora</i>	Australian Willow	X						
<i>Ginkgo biloba</i>	Maidenhair Tree			X	X			
<i>Jacaranda acutifolia</i>	Jacaranda			X	X			
<i>Juniperus tortulosa</i>	Twisted Juniper		X					
<i>Lagerstroemia indica</i>	Crape Myrtle			X	X			
<i>Liquidambar styraciflua</i>	Sweet Gum			X				
<i>Liriodendron tulipifera</i>	Tulip Tree			X	X			
<i>Magnolia grandiflora</i>	Southern Magnolia	X			X			
<i>Olea europaea</i>	European Olive	X						
<i>Pinus canariensis</i>	Canary Island Pine		X					
<i>Platanus acerifolia</i>	London Plane			X				
<i>Podocarpus gracilior</i>	Yew Pine		X					
<i>Sequoia sempervirens</i>	Coast Redwood		X					X
<i>Ulmus parvifolia</i>	Evergreen Elm	X						

Table 2b-South Campus Minor Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Albizia julibrissin</i>	Silk Tree			X	X			
<i>Bauhinia purpurea</i>	Orchid Tree			X	X			
<i>Cedrus atlantica</i>	Atlantic Cedar		X					
<i>Cedrus deodora</i>	Deodar Cedar		X					
<i>Cupaniopsis anacardioides</i>	Carrotwood Tree	X			X			
<i>Eriobotrya deflexa</i>	Loquat	X						
<i>Ficus benjamina</i>	Weeping Fig	X						
<i>Ficus carica var.</i>	Fruiting Fig	X						
<i>Ficus nitida</i>	Indian Laurel	X						
<i>Ficus rubiginosa</i>	Rusty Leaf Fig	X						
<i>Fraxinus uhdei</i>	Evergreen Ash	X						
<i>Fraxinus velutina</i>	Modesto Ash			X				
<i>Koelreuteria paniculata</i>	Goldenrain Tree			X	X			
<i>Lagerstroemia faurei</i>	Crape Myrtle			X	X			
<i>Morus alba</i>	Mulberry			X	X			
<i>Murraya sp.</i>	Murraya Tree	X						
<i>Pinus halepensis</i>	Aleppo Pine		X					
<i>Pinus pinea</i>	Italian Stone Pine		X					
<i>Pinus thunbergii</i>	Japanese Black Pine		X					
<i>Pittosporum rhombifolia</i>	Queensland Pittosporum	X			X			
<i>Platanus racemosa</i>	California Sycamore			X			X	

Table 2b-South Campus Minor Trees (cont.)

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Prunus caroliniana</i>	Carolina Cherry	X			X			
<i>Pyrus kawakamii</i>	Evergreen Pear	X			X			
<i>Quercus agrifolia</i>	Coast Live Oak	X						X
<i>Quercus lobata</i>	Valley Oak			X				X
<i>Robinia idahoensis</i>	Black Locust			X	X			
<i>Sambucus sp.</i>	Elderberry			X	X			
<i>Schinus terebinthifolius</i>	Brazilian Pepper Tree	X			X			
<i>Tabebuia chrysotricha</i>	Golden Trumpet			X	X			
<i>Tristania conferta</i>	Brisbane Box	X			X			
<i>Tupidanthus calyptratus</i>	Umbrella Tree	X						
<i>Yucca gloriosa</i>	Spanish Dagger	X				X		



## Character and Condition

The placement of the species in the South Campus is informal, irregularly spaced, with a great mix of species. There are no evenly spaced single-species rows in the South Campus. One example of this plethora of species can be seen at the pedestrian space that lies between the business/journalism building and the math/science building. A curvilinear path passes through this space leading to building entries and through to other parts of the campus north and south. Within it are: Marina Strawberry Tree (*Arbutus unedo* 'Marina'), Canary Island Pine (*Pinus canariensis*), Weeping Bottlebrush (*Callistemon viminalis*), Floss Silk Tree (*Chorisia speciosa*), Mediterranean Fan Palm (*Chamaerops humilis*), Umbrella Tree (*Tupidanthus calyptratus*), and Orchid Tree (*Bauhinia purpurea*). Along with a diverse shrub layer the impression here is of a wild and eclectic garden with a botanical bent.

Four of the fifty-five species in the South Campus are California natives, accounting for four percent of the trees in this district. Notable amongst the natives are the California Sycamores (*Platanus racemosa*) trees, which are large or will be, in the future.

The condition of the trees is generally good though long-term, under-maintenance is evident. Several species are showing evidence of having passed the peak of maturity.

Dominant tree species in the South Campus that are prospering and in good condition include: Canary Island Pine, Floss Silk Tree, Jacaranda (*Jacaranda acutifolia*), Twisted Juniper (*Juniperis tortulosa*), European Olives (*Olea europaea*), London Plane Tree (*Platanus acerifolia*), and Coast Redwood (*Sequoia sempervirens*). Dominant tree species showing decline and/or failure include: Weeping Bottlebrush, Carob (*Ceratonia siliqua*), Camphor Tree (*Cinnamomum camphora*), Crape Myrtle (*Lagerstromia indica*), Tulip Tree (*Liriodendron tulipifera*), Southern Magnolia (*Magnolia grandiflora*) and Evergreen Elm (*Ulmus parvifolia*). Minor tree species exhibiting decline and/or failure include: Silk Tree (*Albizia julibrissin*), Weeping Fig (*Ficus benjamina*) and Rusty Leaf Figs (*Ficus rubignosa*), Evergreen Ash (*Fraxinus uhdei*) and Modesto Ashes (*Fraxinus velutina*), and the Evergreen Pear (*Pyrus kawakamii*). Notable amongst these are the Rusty Leaf Figs located along the curved portion of the covered walkway. These trees, which once screened the central plant, have been heavily pruned to the point of disfigurement, permanently altering their form and compromising their future.



*Figure E2-1. First Quad.*



*Figure E2-2. Moreton Bay Fig (Dominant Tree) near Building 1 and Burbank Blvd.*

## DISTRICT 3 – ARTS DISTRICT

The Arts District is smaller than either the Campus Core or the South Campus, and encompasses the theater arts, music, and arts buildings. Tree planting is dominated by the continuation of the avenues of trees described above under District 1 – Campus Core where they extend Monarch Square into the area known as the North Mall, and by planting associated with each of the three main buildings and their pedestrian paths.

Within the Arts District there are eighteen tree species of which seven are identified as dominant trees. The dominant trees account for eighty-eight percent of the 205 trees in this district. The dominant and minor trees are identified in Tables 3a and 3b.

### Dominant Tree Species

Of the seven dominant tree species in the Arts District, three are deciduous, one is a palm, three are flowering or have prominent fall color, and one is a conifer. Of these seven species four are evergreen, and they account for almost three quarters of the dominant trees in the Arts District.

## Arts District-District 3 DOMINANT/MINOR TREES



### LEGEND

SYMBOL	DESCRIPTION
	Dominant Tree
	Minor Tree

	0	150'	300'
north	feet		



Four species, largely laid out in rows, make up the vast majority of trees in the Arts District; these include Tulip Trees (*Liriodendron tulipifera*), Southern Magnolias (*Magnolia graniflora*), European Olives (*Olea europaea*), and Canary Island Pines (*Pinus canariensis*).

Similar to the Tulip Trees in the Campus Core, the Arts District has a double staggered row of them located west of the theater arts and music buildings (Figure E3-1). Tulip trees are also found in the large lawn area on the northeast side of the music building, where there is a generous landscape space primarily made up of trees, lawn and paths.

The Southern Magnolias in this district are mature specimens, positioned as extensions of the rows described under Campus Core; along the west side of the walk that lies in front of the arts building, cafeteria, and campus center. This row is the single longest row of any species within the body of the campus and extends from the southern-most edge of the Campus Core to the northern-most edge of the Arts District . Southern Magnolias are also found lining the eastern side of the walk on the west side of the North Mall near the music building, at the northwest corner of the music building, and in a gridded double row flanking the western entry to the theater arts building. The European Olives with their gray-green evergreen foliage surround the arts building. Some of these extend the row of Olives described in the Campus Core that line the east side of the walk in front of the arts building, cafeteria, and campus center (Figure E3-2). European Olives also line the walk along the western side of the North Mall extending the row emanating from Monarch Square past the location of the library.



Figure E3-1. Tulip Trees (Dominant Tree) on the west edge of campus.

The Canary Island Pines make up more than a quarter of all trees in the Arts District and wrap the north end of the North Mall and the northeast side of the music building. Canary Island Pines are found around the motion picture studio and TV building and also at a path that crosses the North Mall between the arts building and the music/theater arts buildings. This latter stand is grouped so that one can be amongst these trees while enjoying long views looking south across Monarch Square. They also provide a backdrop for the view in the reverse direction, from Monarch Square looking north. Unlike the other rows of Canary Island Pines that are characteristic of other districts, this cluster is somewhat irregular in its layout; at times two trees deep, at others three trees deep. These trees are also distinguished by being surrounded exclusively by open landscape space allowing their form to be natural; elsewhere they are next to asphalt parking lots, buildings or other structures. Because of these attributes, they are a fine stand of trees, one of the finest on campus (Figure E3-3).



## Minor Tree Species

Of the eleven minor tree species, four are deciduous, four are flowering trees, one is a palm, and three are conifers. More than half of the twenty-five individual minor trees are flowering including Chinese Magnolia (*Magnolia soulangeana*) and Crape Myrtle (*Lagerstroemia indica*). The Chinese Magnolias mark entries to the theater arts and music buildings on the side that faces the North Mall while the Crape Myrtles mark side entries on the three main buildings in this district. Two-thirds of the minor species are represented by one or two trees each.

## Character and Condition

The character of the tree planting in the Arts District is established by the dominant rows of each single species set around the North Mall. This pattern emphasizes the prominence of the North Mall, the only destination landscape space in this district. All others are spaces pedestrians travel through rather than linger.

With eighteen tree species, the tree palette of the Arts District has less than half the number of species of each of the first two districts. This is in part because the Arts District is smaller in area and because it was not planted to provide the great variety of species for teaching purposes as was the area around the buildings devoted to the sciences in the South Campus.

There is one tree native to California in the Arts District. Generally the campus is conspicuous in how few palms it has. In this district there are four Mediterranean Fan Palms (*Chamerops humilis*), relatively small trees, and one Mexican Fan Palm (*Washingtonia robusta*) which is large but by being a singleton is not seen in characteristic towering rows as it appears elsewhere in the Los Angeles area.

The condition of the trees is generally good though the relatively low level of maintenance during their lives is apparent. Two of the evergreens, Canary Island Pines (*Pinus canariensis*) and Southern Magnolias (*Magnolia graniflora*) are healthy and important contributors to the character of the Arts District and campus as a whole. Several of the dominant trees are in decline or have already failed; they include: the Chinese Hackberry (*Celtis sinensis*), some of the Tulip Trees (*Liriodendron tulipifera*), Olives (*Olea europaea*) and many of the Chinese Pistache (*Pistacia chinensis*). Amongst the minor tree species, some of the Yew Pine (*Podocarpus gracilior*) are in fair or poor condition.



Figure E3-2. Healthy European Olives (Dominant Tree) on the east side of the Art Building.



Figure E3-3. A fine stand of Canary Island Pines (Dominant Tree) at the north end of Monarch Square.

Table 3a-Art District Dominant Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Celtis sinensis</i>	Chinese Hackberry			X				
<i>Chamaerops humilis</i>	Mediterranean Fan Palm						X	
<i>Liriodendron tulipifera</i>	Tulip Tree			X	X			
<i>Magnolia grandiflora</i>	Southern Magnolia	X				X		
<i>Olea europaea</i>	European Olive	X						
<i>Pinus canariensis</i>	Canary Island Pine		X					
<i>Pistacia chinensis</i>	Chinese Pistache			X	X	X		

Table 3a-Art District Minor Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Alyogyne huegelii</i>	Blue Hibiscus	X			X			
<i>Betula sp.</i>	Birch			X				
<i>Chorisia speciosa</i>	Floss Silk Tree			X	X			
<i>Ficus lyrata</i>	Fiddle Leaf Fig	X						
<i>Ficus nitida</i>	Indian Laurel	X						
<i>Juniperus tortulosa</i>	Twisted Juniper		X					
<i>Lagerstroemia indica</i>	Crape Myrtle			X	X			
<i>Magnolia soulangiana</i>	Chinese Magnolia			X	X			
<i>Podocarpus gracilior</i>	Yew Pine		X					
<i>Sequoia sempervirens</i>	Coast Redwood		X					X
<i>Washingtonia robusta</i>	Mexican Fan Palm						X	

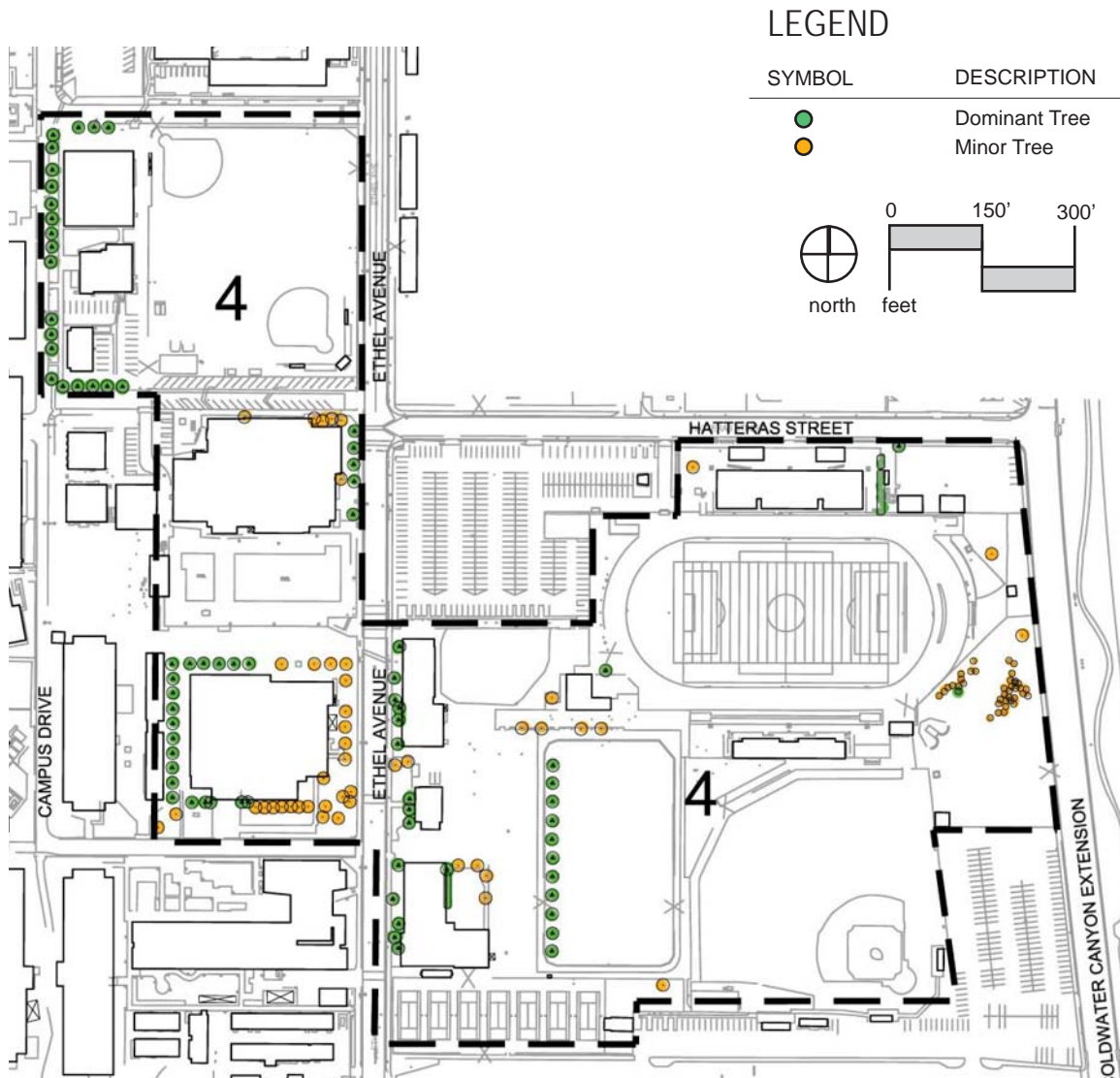
## DISTRICT 4 – PHYSICAL EDUCATION

The Physical Education district has large open expanses of ball fields and courts. The buildings of this district are located towards its west side, so that they relate to the other buildings on the western campus. The two largest buildings are the north and south gymnasiums. Trees occur in rows along roadways and at the edges of sports facilities; in addition there are a number of individual specimens planted without apparent relation to other trees.

Within the Physical Education district, there are twenty-three species of trees of which nine are dominant tree species. The dominant trees account for almost eighty percent of the 308 trees in this district. These are identified in Tables 4a and 4b.

# Physical Education-District 4

## DOMINANT/MINOR TREES





### Dominant Tree Species

Of the nine dominant species, five are planted in rows. They include Carob, Italian Cypress (*Cupressus sempervirens*), Evergreen Ash, Twisted Juniper and Evergreen Elm. Together these five species account for ninety percent of the dominant trees in the Physical Education district. Of the nine dominant species one is deciduous, two are flowering, three are conifers, and three are broadleaf evergreens. By far the most prevalent species is Italian Cypress; because it is columnar in form it is planted in tight rows forming tall hedges (Figure E4-1). They are located at the south side of the tennis courts, on the northeast side of the stadium, and the east side of the field house. Sixty-two percent of the dominant trees are Italian Cypress.

### Minor Tree Species

There are fourteen minor tree species within the Physical Education district. In contrast to the dominant trees half of these are deciduous, one is a palm, two are conifers and seven have ornamental flowers or foliage. About a third are represented by a single tree the rest occur in numbers ranging from two to twenty-nine. The minor trees are scattered throughout with the exception of the informal cluster of Canary Island and Aleppo Pines on the mound between the baseball diamond and the stadium, the Chinese Hackberry lining the northeast corner of the south gymnasium, and the Weeping Callistemon at the northeast corner of the north gymnasium.

Table 4a-Physical Education Dominant Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Ceratonia siliqua</i>	Carob Tree	X						
<i>Cupressus sempervirens</i>	Italian Cypress		X					
<i>Eucalyptus citriodora</i>	Lemon Scented Gum	X						
<i>Fraxinus uhdei</i>	Evergreen Ash	X						
<i>Juniperus tortulosa</i>	Twisted Juniper		X					
<i>Pistacia chinensis</i>	Chinese Pistache			X	X			
<i>Podocarpus gracilior</i>	Yew Pine		X					
<i>Pyrus kawakamii</i>	Evergreen Pear	X				X		
<i>Ulmus parvifolia</i>	Evergreen Elm	X						

Table 4b-Physical Education Minor Trees

<u>Botanical Name</u>	<u>Common Name</u>	<u>Types</u>						
		Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
<i>Alnus rhombifolia</i>	White Alder			X				
<i>Callistemon viminalis</i>	Weeping Bottlebrush	X				X		
<i>Celtis sinensis</i>	Chinese Hackberry			X				
<i>Chamaerops humilis</i>	Mediterranean Fan Palm						X	
<i>Cupaniopsis anacardioides</i>	Carrotwood Tree			X	X			
<i>Koelreuteria bipinnata</i>	Chinese Flame Tree			X	X			
<i>Liriodendron tulipifera</i>	Tulip Tree			X	X			
<i>Morus alba</i>	Mulberry			X	X			
<i>Pinus canariensis</i>	Canary Island Pine		X					
<i>Pinus halepensis</i>	Aleppo Pine		X					
<i>Pittosporum rhombifolia</i>	Queensland Pittosporum	X			X			
<i>Prunus caroliniana</i>	Carolina Cherry	X						
<i>Pyrus calleryana</i>	Flowering Pear			X		X		
<i>Tupidanthus calyptratus</i>	Umbrella Tree	X						

## Character and Condition

Because this district is characterized by large open spaces it is unlike the first three districts which each have prominent tree canopy over significant percentages of their area. One of the characteristics of the Physical Education district is the appearance of mature trees such as Lemon-Scented Gum (*Eucalyptus citriodora*) White Alders (*Alnus rhombifolia*), Tulip Trees, White Mulberry (*Morus alba*), Queensland Pittosporum (*Pittosporum rhombifolia*) and Umbrella Tree (*Tupidanthus calyptrate*), that are planted singly or in pairs (Figures E4-2). There are no trees native to California in this district.

The condition of trees in the Physical Education district is variable. Plants that are in good condition include the Lemon-Scented Gum, and some of each of the Italian Cypress, Evergreen Ash, Twisted Juniper, Evergreen Elm and Canary Island Pine. The most numerous species, Italian Cypress has been heavily pruned causing them to fail in the major row near the tennis courts; this accounts for 110 trees. Additionally, trees that are in decline or have already failed include Evergreen Ash, Twisted Juniper, Chinese Pistache, Evergreen Pear, Evergreen Elm, Tulip Trees, and Aleppo Pine.



Figure E4-1. Topped Italian Cypress (Dominant Tree) at the tennis court.



Figure E4-2. Lemon-Scented Gum (Dominant Tree) near the athletic fields.



## DISTRICT 5 – CHILD DEVELOPMENT

The Child Development district is newly reconstructed and is made up of a series of related buildings set around a courtyard. This district has ten species of trees, only one of which is a dominant tree species.

### Dominant Tree Species

The Canary Island Pines, located on the northwest and northeast corners, are the only mature trees of the district. They also define the northern-most occupied space on campus. Because of its purpose to serve families with children and its recent installation, the Child Development district has a distinctly different character to the rest of campus. The main unifying element to the rest of the campus is provided by the mature Canary Island Pines.

### Minor Tree Species

There are nine minor tree species. All are small because they are young. Three are deciduous, four are identified as flowering trees, and five are broadleaf evergreens. Notable amongst the newly planted trees is the tight spacing of the pines in the courtyard of the Child Development Center. As these trees mature, those with larger inherent stature and greater numbers will likely become dominant trees such as the California Sycamore and Aleppo Pines (Figures E5-1 and E5-2).

## Child Development -District 5 DOMINANT/MINOR TREES

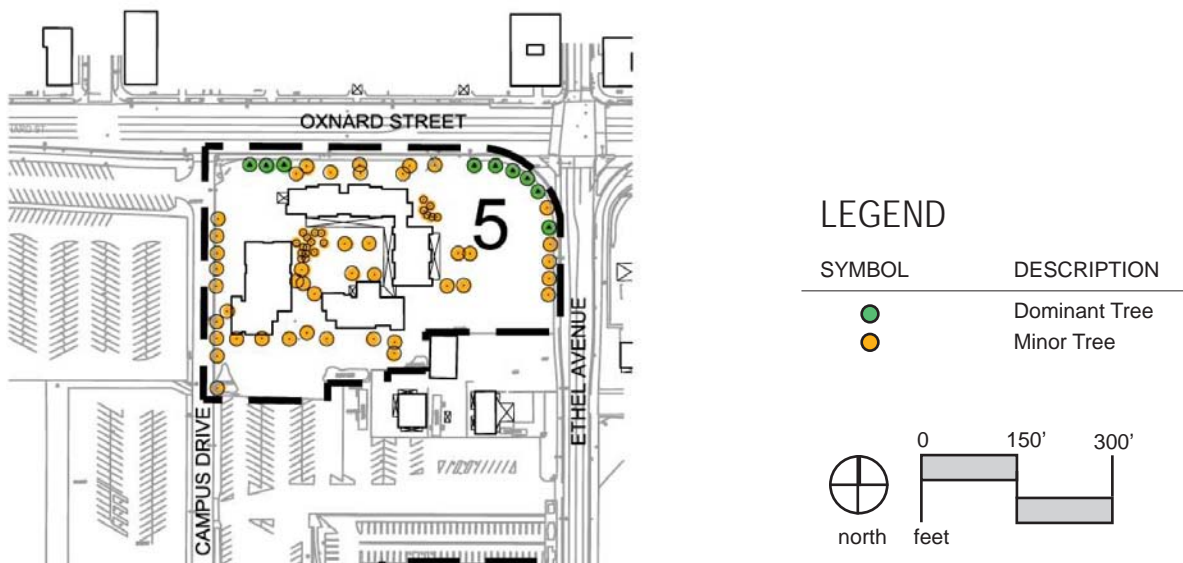


Table 5a-Child Development Dominant Trees

<u>Botanical Name</u>	<u>Common Name</u>	<u>Types</u>					
		Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm
<i>Pinus canariensis</i>	Canary Island Pine		X				

Table 5b-Child Development Minor Trees

<u>Botanical Name</u>	<u>Common Name</u>	<u>Types</u>					
		Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm
<i>Geijera parvifolia</i>	Australian Willow	X					
<i>Lagerstroemia indica</i>	Crape Myrtle			X	X		
<i>Olea europaea</i>	European Olive	X					
<i>Pinus halepensis</i>	Aleppo Pine		X				
<i>Platanus racemosa</i>	California Sycamore			X			X
<i>Pyrus kawakamii</i>	Evergreen Pear	X			X		
<i>Tipuana tipu</i>	Tipu			X	X		
<i>Tristania conferta</i>	Brisbane Box	X			X		
<i>Ulmus parvifolia</i>	Evergreen Elm	X					

Character and Condition

As these trees are young, they do not yet exert much of their ultimate character on the spaces associated with the Child Development district. One of the eight species in the Child Development district is native to California; California Sycamore.

The condition of the mature Canary Island Pines and the young trees are good.



Figure E5-2. Young Aleppo Pines (Minor Tree) at the Child Development Center.



Figure E5-1. Young California Sycamore (Minor Tree) at the Child Development Center.

## DISTRICT 6 – PARKING

The parking areas of LAVC are located on the perimeter of the site so that there is little or no vehicular circulation or parking within the core of the academic and administrative areas of the campus. The three main parking areas are along the entire frontage of Fulton Avenue including at the corner of Fulton and Burbank Boulevard (Lot A), along the Oxnard Boulevard frontage (Lot B) and separating the Child Development district from the campus (Lot D), and at the south east side of campus along Burbank Boulevard serving the athletics areas (Lot G).

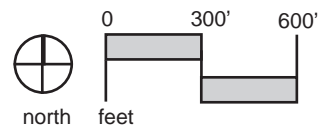
There are nine tree types within the Parking district of which six are dominant tree species. This is the only district where the number of species of dominant trees outnumber the quantity of minor tree varieties. Dominant trees account for ninety-eight percent of the trees in the Parking district.



## Parking-District 6 DOMINANT/MINOR TREES

### LEGEND

SYMBOL	DESCRIPTION
	Dominant Tree
	Minor Tree





## Dominant Tree Species

Of the six species of dominant trees in the Parking district, two are deciduous, three are flowering trees, and one is a conifer. Most species are large shade trees.

Almost half of the dominant trees are Sweet Gums. These large shade trees, with bright mid-green foliage, are planted in a row along the entire Fulton Avenue and Oxnard frontages except where the Child Development Center is located. This is the longest row of any species on campus. They are also located at the back (north side) of the parking near the tennis courts and baseball diamond in medians flanking the main internal drive (Figure E6-1). Most of these Sweet Gums are in the range of 30' to 40' tall and create a lush and shady appearance to the parking areas.

Evergreen Ash trees are located in rows enclosing the west, north and east sides of the parking along Oxnard (Lots B and C). They line both sides of the entry from Oxnard at Campus Drive. These trees are variably 20' to 30' tall and because they are in poor condition, their crowns are small for the species.

Aleppo Pines edge the long side of Lot G along Burbank Boulevard and on its western edge along Ethel Avenue (Figure E6-2). They are large evergreen trees, dark green in color, that because of the power lines along Burbank have been heavily pruned over the years detrimentally affecting their condition.

Cajeput Trees (*Melaluca quinquenervia*) are planted to mark sub-entry drives off the main internal drive at Lot G near Burbank Boulevard. They have grey-green foliage and light creamy tan bark that is papery in character.

The frontage along Coldwater Canyon Avenue that forms the eastern-most portion of campus at Lot F is edged with Crape Myrtles. In contrast to the majority of other trees species in the parking district, this is a small flowering tree. As a consequence, they do not provide the canopy of shade trees seen elsewhere in this district. They are in good condition.

A short row of Evergreen Pears are located mid-way on the east side of Campus Drive. They are small trees that delineate the road rather than a parking area. Their condition is good, unlike Evergreen Pears elsewhere on campus.

## Minor Tree Species

Six trees of three species make up the minor tree species in the Parking district. They are Silky Oak (*Grevillea robusta*), California Sycamore, and Mexican Fan Palm. Most are Silky Oaks (four trees) that lie between the Child Development Center and the Sheriff's facility.

## Character and Condition

The long rows of large trees dominate the character of the tree planting of the Parking district; dark green pines on Burbank, bright mid-green Sweet Gums on Fulton and Oxnard, and small flowering Crape Myrtles edge Coldwater Canyon Avenue. Because the parking is located on the perimeter of the campus, the visual impression of the college from the neighborhood is dominated by these lots and their associated tree planting. Large canopy trees dominate the edges and internal parking lot drives. During the preparation of this report, Lot A at the corner of Burbank and Fulton was under construction and most trees had been removed.

The condition of trees in the Parking district is variable. Notably, almost all the Evergreen Ash and Aleppo Pines are in poor condition. These two species comprise almost a third of the trees of this district. The remaining trees are generally in fair or good condition. Some are identified for removal in the long term.



Figure E6-1. Fine row of Sweet Gums (Dominant Tree) in Lot G.



Figure E6-2. Aleppo Pines (Dominant Tree) edge Lot G on Burbank Blvd.

Table 6a-Parking District Dominant Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Fraxinus uhdei</i>	Evergreen Ash	X						
<i>Lagerstroemia indica</i>	Crape Myrtle			X	X			
<i>Liquidambar styraciflua</i>	Sweet Gum			X				
<i>Melaleuca quinquenervia</i>	Cajeput Tree	X				X		
<i>Pinus halepensis</i>	Aleppo Pine		X					
<i>Pyrus kawakamii</i>	Evergreen Pear	X			X			

Table 6b-Parking District Minor Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
		<u>Types</u>						
<i>Grevillea robusta</i>	Silk Oak	X			X			
<i>Platanus racemosa</i>	California Sycamore			X				
<i>Washingtonia robusta</i>	Mexican Fan Palm						X	



## DISTRICT 7 – SHERIFF/OPERATIONS AND MAINTENANCE

The two buildings of this small district lie between Campus Drive and Ethel Avenue north of the softball fields. There are three species in this area, one is dominant.

### Dominant Tree Species

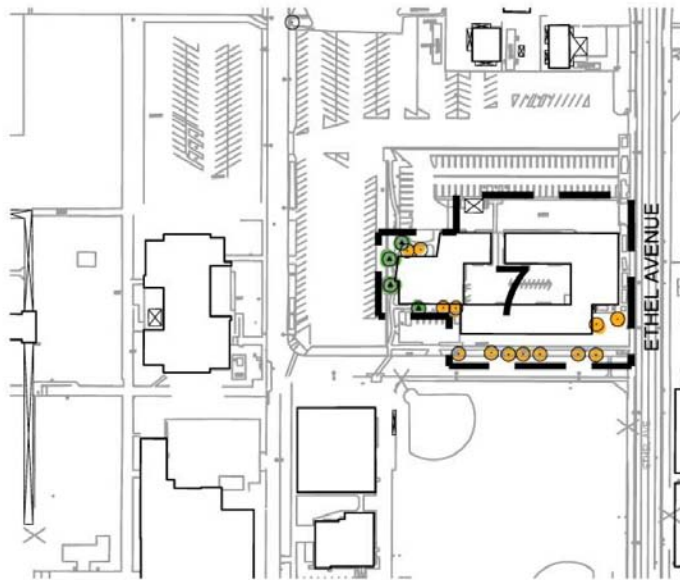
Crape Myrtles are planted on the west side of the Sheriff College is the only dominant tree species in this district. As small flowering trees, they are subservient to the building in scale and appear as foundation planting.

### Minor Tree Species

Pairs of Shoestring Acacia (*Acacia salicina*) are located on three of the four corners of this building complex. Their slender leaves hang vertically and have a different character to the mix of species elsewhere on campus. There is one Chinese Pistache on the south side of the buildings.

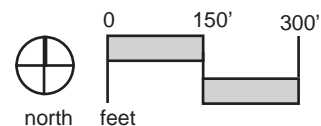
## Other & Sheriff -District 7

### DOMINANT/MINOR TREES



### LEGEND

SYMBOL	DESCRIPTION
	Dominant Tree
	Minor Tree



Character and Condition

The overall character of this district is dominated by its buildings and context of expanses of asphalt parking, rather than from its trees. This is largely because there are few trees – fourteen in all – and none of them are large in form. Instead the extant trees appear as foundation planting for the building.

The condition of the trees is generally good, though the Chinese Pistache on campus tend to be struggling suggesting that the environmental conditions of this site are not well-suited to the species.

Table 7a-Sheriff/Operations Dominant Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
<i>Lagerstroemia indica</i>	Crape Myrtle			X	X	X		

Table 7b-Sheriff/Operations Minor Trees

<u>Botanical Name</u>	<u>Common Name</u>	Broadleaf Evergreen	Conifer	Deciduous	Flowering/Fall Color	Ornamental Fruit	Palm	California Native
<i>Lagerstroemia indica</i>	Shoestring Acacia	X			X			
<i>Pistacia chinensis</i>	Chinese Pistache			X	X			





"If you think in terms of a year, ***plant a seed***; if in terms of ten years, ***plant trees***; if in terms of 100 years, ***teach the people.***"

~Confucius





# III. Analysis

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## A. General Analysis & Evaluation

*Cultural Landscape Methodology*

*Tree Analysis & Evaluation*

*Historic Overview*

*LAVC Campus Chronology*

*Purpose of the Cultural Landscape Component*

## B. Sherwood Engineering Analysis

*1. Water Conservation*

*2. Hydrologic Cycle*

*3. Heat Island Reduction*

*4. Eco Diversity*

# A. Generational Analysis and Evaluation

## CULTURAL LANDSCAPE METHODOLOGY

### CULTURAL LANDSCAPE METHODOLOGY

PGA conducted fieldwork to record the trees from the cultural landscape perspective during April of 2011. We walked all areas of the campus and, utilizing the 2010 Arborist's Report, made notes and took photographs of trees. Fieldwork was divided into districts of the campus. The districts are:

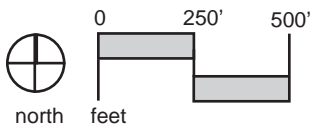
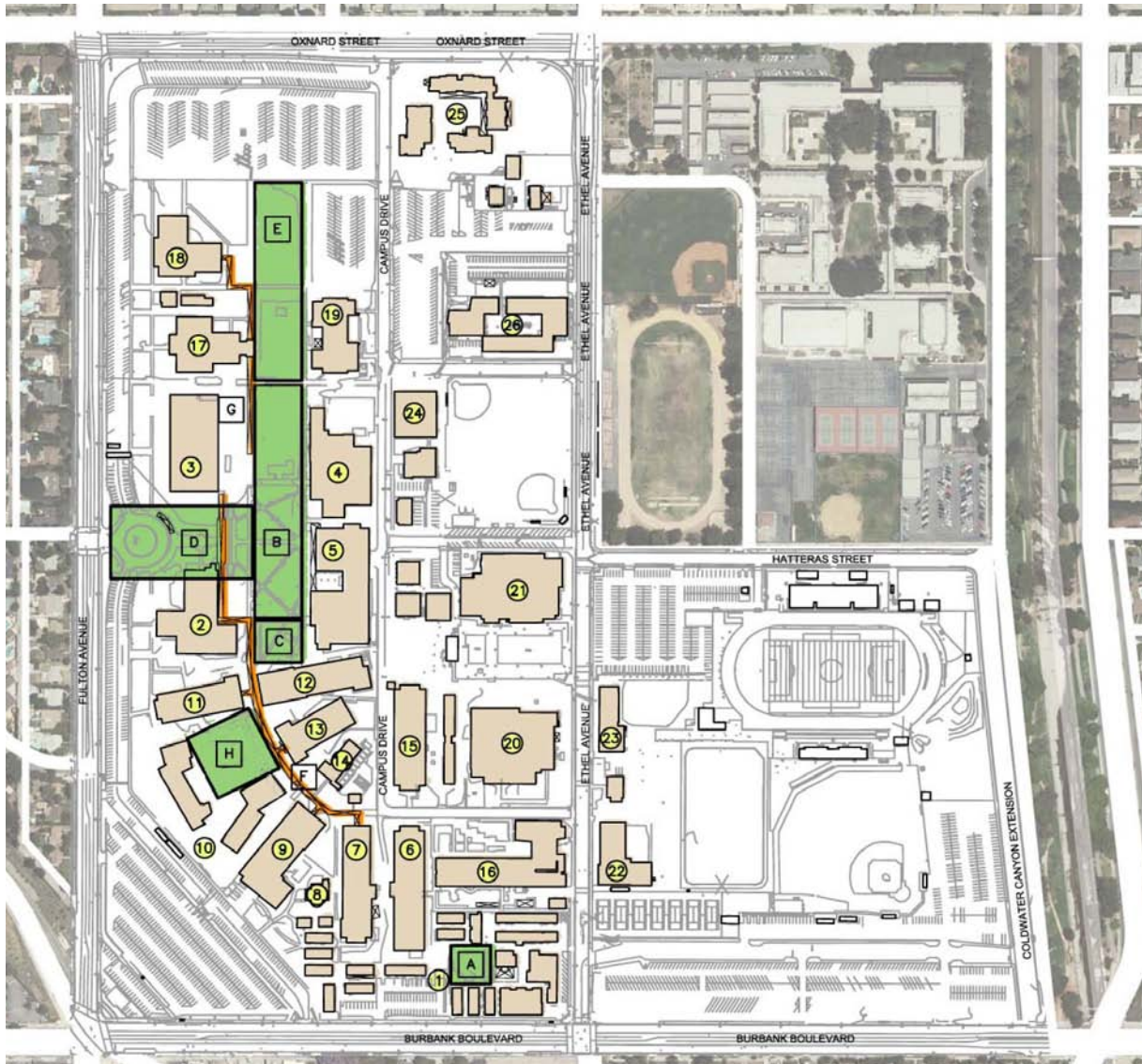
- 1) Campus Core
- 2) South Campus
- 3) Arts District
- 4) Physical Education
- 5) Child Development
- 6) Parking
- 7) Sheriff/Operations and Maintenance

Since there is an update to the Arborist's Report that addresses trees individually, we have focused on the character of the trees as it contributes to the appearance of the districts. Condition is described as good, fair or poor, as defined by the National Register of Historic Places program; additionally lists of trees identify dominant and secondary tree species by district.

Digital field photographs were taken of individual trees and groupings. These were used to augment the field data.

PGA studied historic photographs to determine the extent and character of vegetation and if it was existing during the period of significance. If one or more historic photographs showed a tree in the same location as it exists currently and if the existing tree was currently of sufficient size, we listed that plant as a character-defining feature.

# Key Landscape Spaces



## LEGEND

### KEY LANDSCAPE SPACES

- A First Quad
- B Monarch Square
- C South Quad within adjacent Monarch Square
- D Fulton Ave Campus Entry
- E North Mall
- F Covered Walkway
- G Covered Walkway
- H Student Services Plaza

### BUILDINGS

- 1. Bungalows
- 2. Administration
- 3. Library (site)
- 4. Cafeteria
- 5. Campus Center
- 6. Journalism/Business
- 7. Math/Science
- 8. Planetarium
- 9. Engineering
- 10. Student Services
- 11. Foreign Languages
- 12. Humanities
- 13. Behavioral Science
- 14. Power Plant
- 15. Life Sciences
- 16. Allied Health Science
- 17. Theater Arts
- 18. Music
- 19. Art
- 20. South Gym
- 21. North Gym
- 22. Gymnastic Center
- 23. Field House
- 24. Temporary Library
- 25. Child Development Center
- 26. Sheriff/Operations & Maintenance



# A. Generational Analysis and Evaluation (continued)

## TREE ANALYSIS & EVALUATION-CULTURAL LANDSCAPE PERSPECTIVE

### INTRODUCTION

In 1951 after the college had been in operation for two years at Van Nuys High School, the campus of Los Angeles Valley College was opened. To facilitate their opening at the new property, a number of temporary bungalow buildings were installed, first 33, then, by 1956, ultimately up to 45.

Permanent buildings were envisioned from the outset. Conceived in an act of master planning by Lester H. Hibbard and Harold G. Chambers, the majority of the campus was built during four phases from 1951 until 1973. Limited development has occurred since then, so it was during these initial phases that the enduring form and identity of the campus was created.

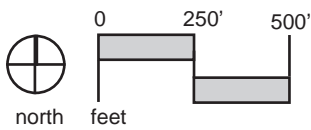
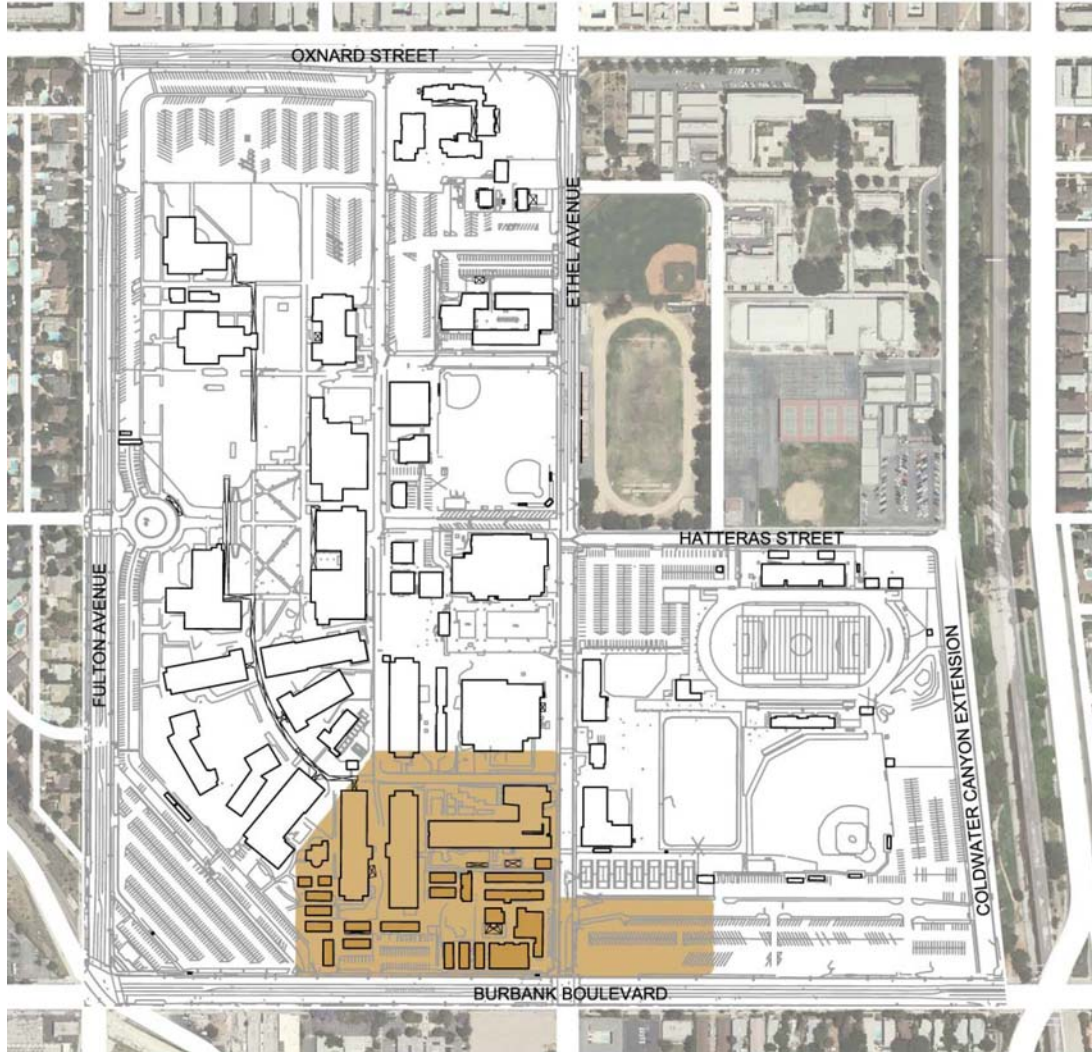
Ella Cass, editor of the Valley Star, the college newspaper, reflected the aspirations and intentions for the college in her editorial welcoming new students in 1950, the year before they moved to their new campus; “We would share with you our dreams... dreams of the huge campus, athletic plant, stadium, modern classrooms, and equipment...” All that she prophesied was in place by 1973 with the exception of the stadium.<sup>2</sup>

Based on historical aerial photography from 1949, 1953, 1960 and 1975, it is evident that the arboricultural development followed the sequence of construction that fulfilled the architectural vision of the master plan. The site development plans illustrate the incremental growth of the campus over time.<sup>3</sup>


<sup>2</sup>Dodson, James, Los Angeles Valley College: The First Year, originally told 6/5/77 and revised 12/11/86, page 13.

<sup>3</sup>All historic images are from the Campus Image Archives unless otherwise noted.

# Site Development: Period 1

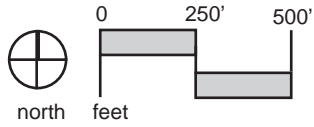
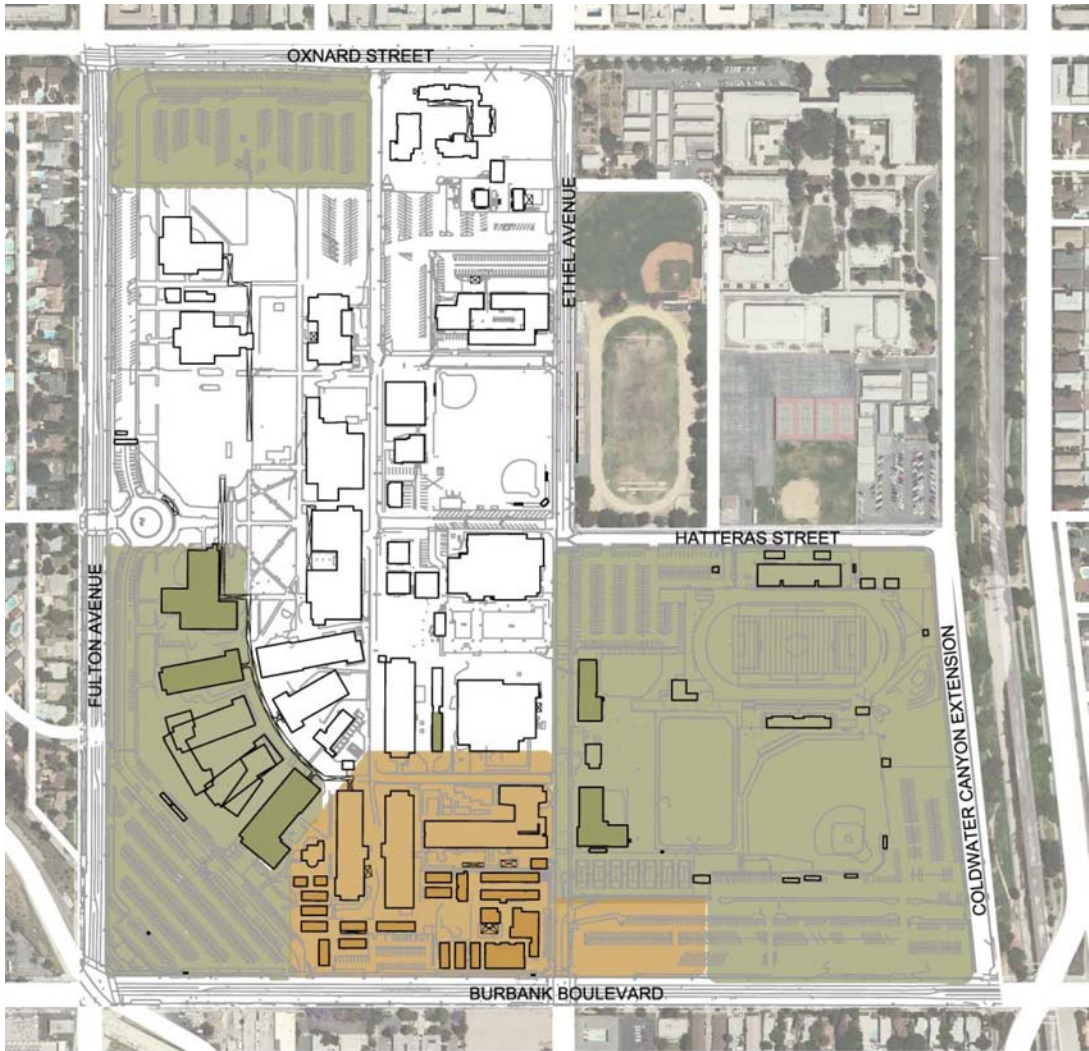


## LEGEND



SYMBOL	PERIOD
	1951-56 Temporary Buildings

Based on historical aerial photography from 1949, 1953, 1960, and 1975, it is evident that the arboricultural development followed the sequence of construction that fulfilled the architectural vision of the master plan. The site development plans illustrate the incremental growth of the campus over time.

# Site Development: Periods 1 & 2

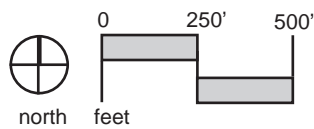
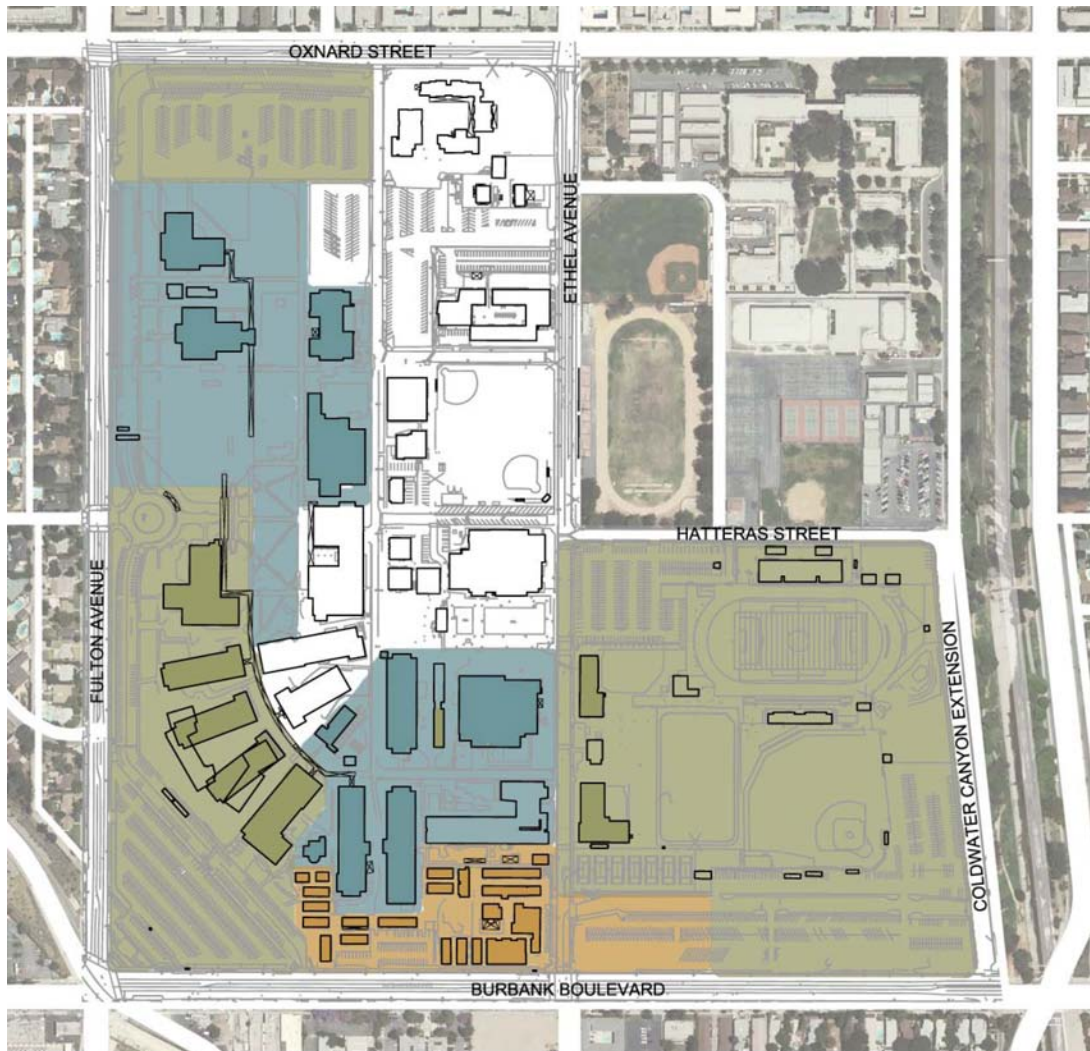


## LEGEND




SYMBOL	PERIOD
	1951-56 Temporary Buildings
	1951-59 Permanent Buildings/ Features



# Site Development: Periods 1-3

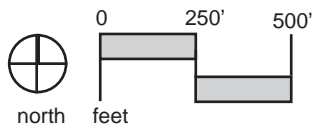
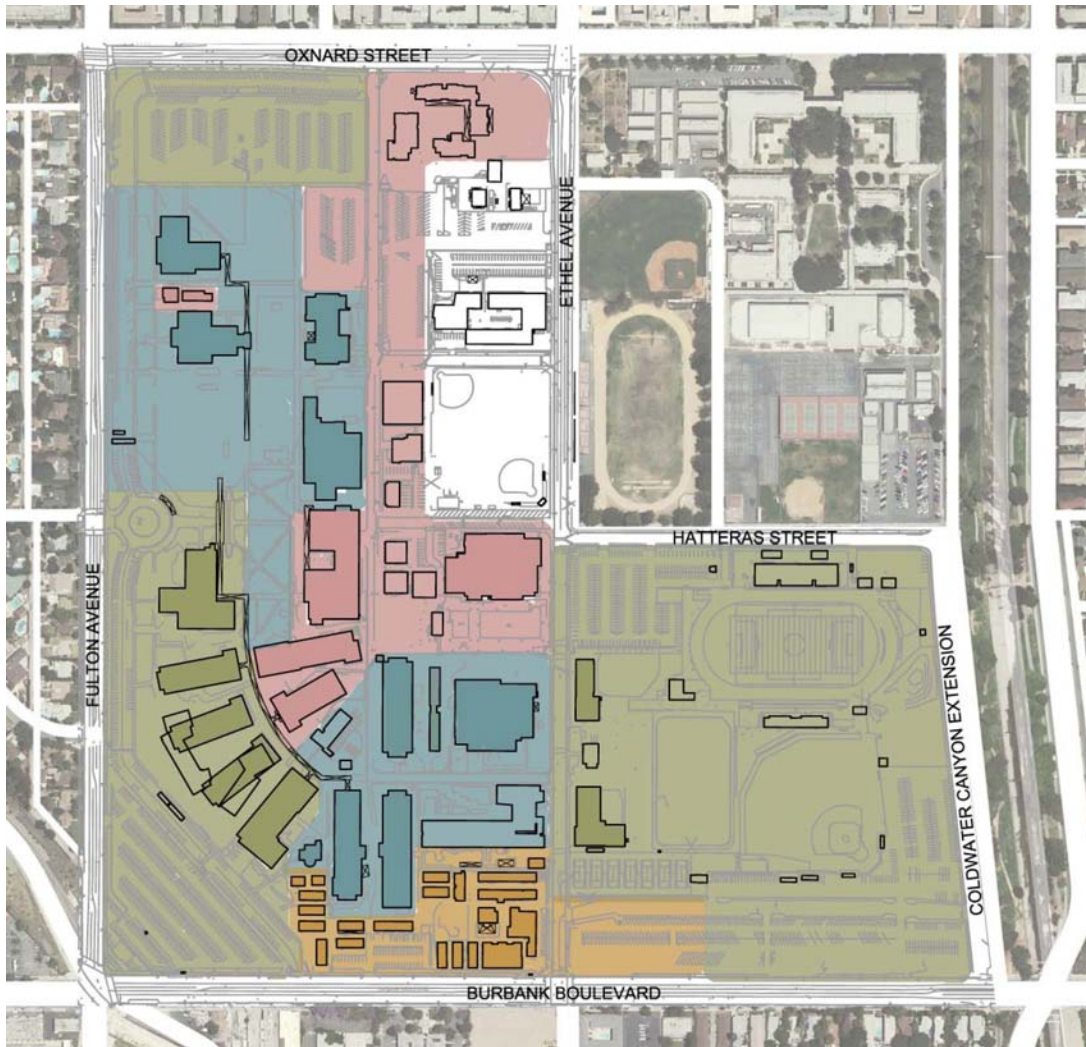


## LEGEND





SYMBOL	PERIOD
	1951-56 Temporary Buildings
	1951-59 Permanent Buildings/ Features
	1960-64 Permanent Buildings/ Features



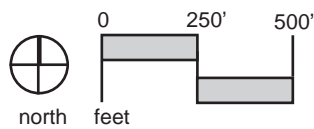
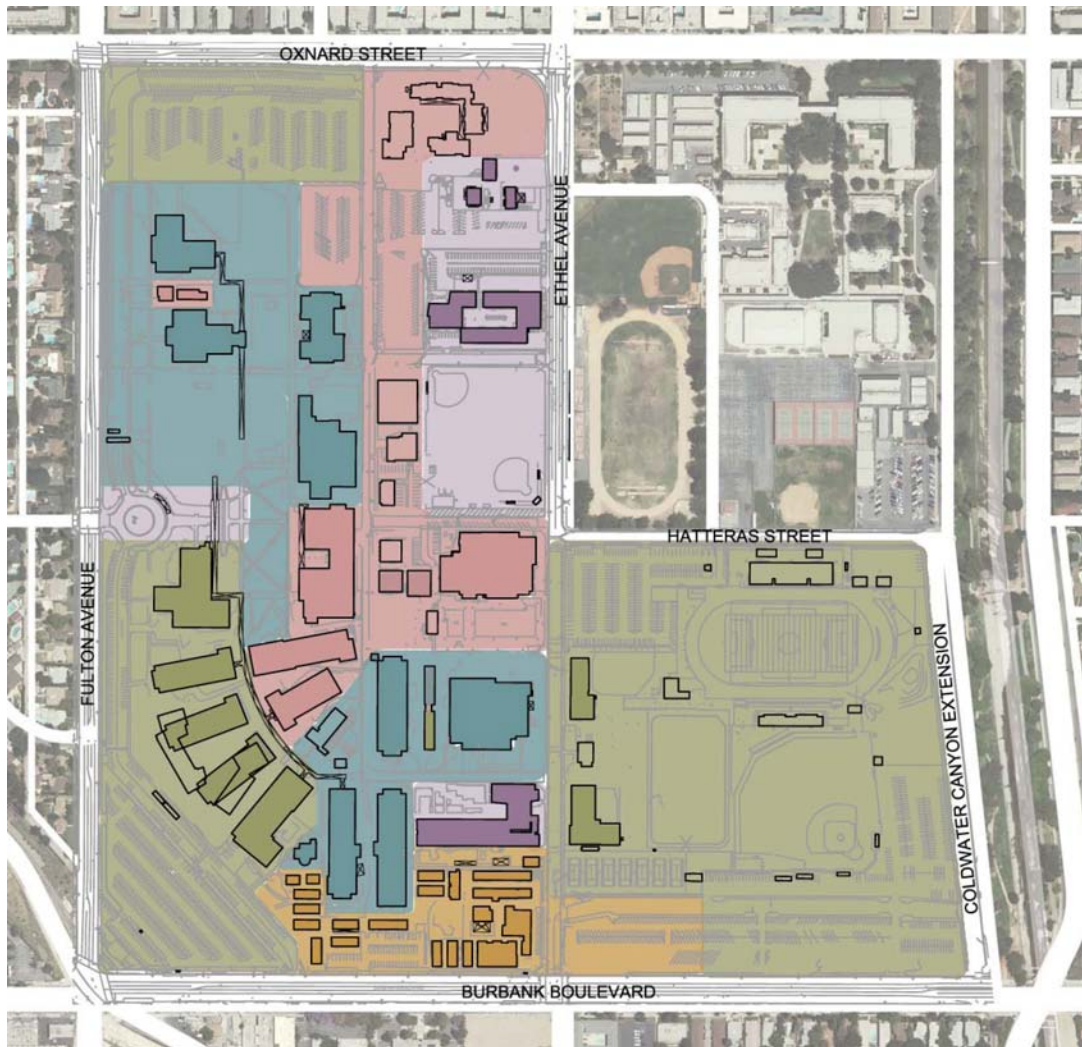
# Site Development: Periods 1-4








## LEGEND

SYMBOL	PERIOD
	1951-56 Temporary Buildings
	1951-59 Permanent Buildings/ Features
	1960-64 Permanent Buildings/ Features
	1965-73 Permanent Buildings/ Features

# Site Development: Periods 1-5

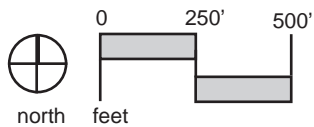
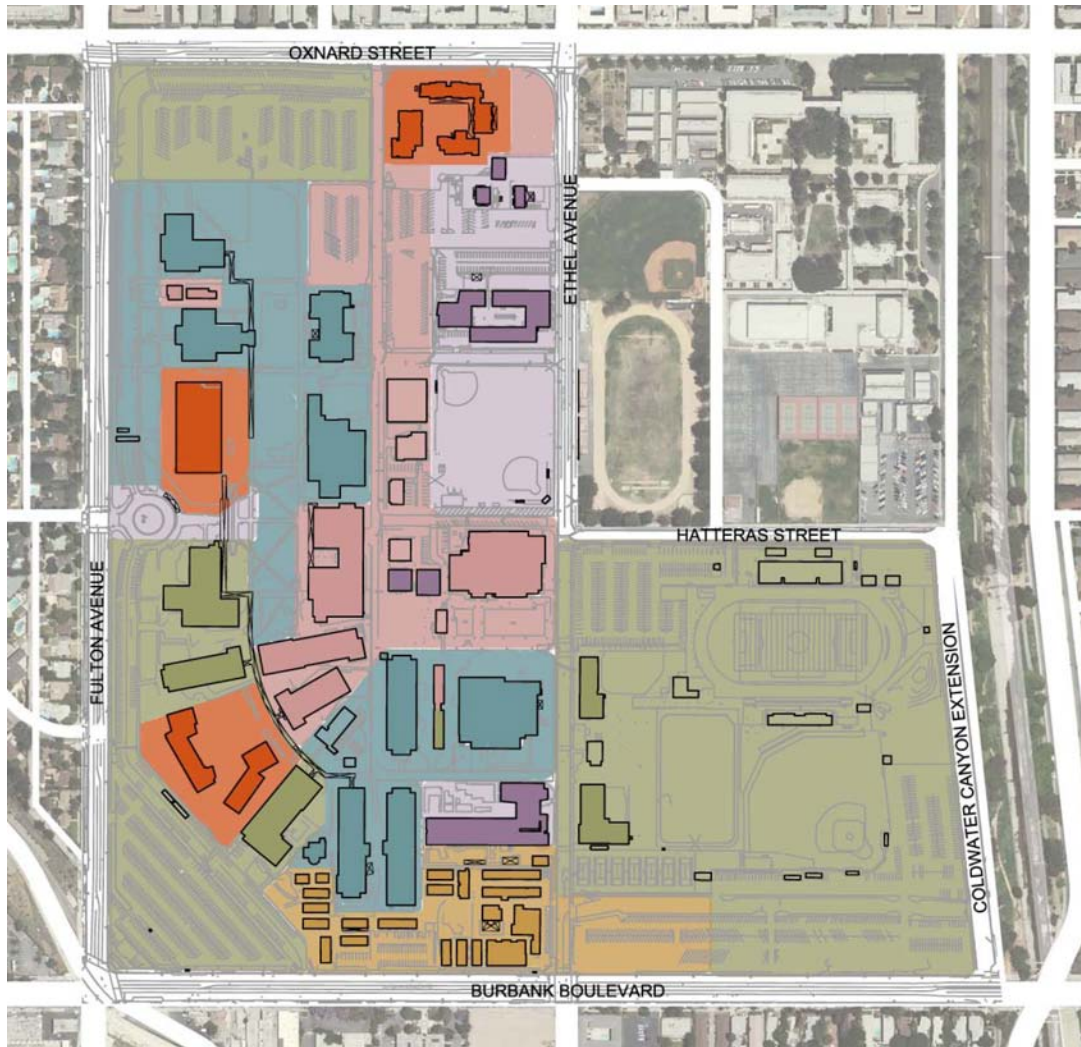


## LEGEND







SYMBOL	PERIOD
	1951-56 Temporary Buildings
	1951-59 Permanent Buildings/ Features
	1960-64 Permanent Buildings/ Features
	1965-73 Permanent Buildings/ Features
	1974-2009 Permanent Buildings/ Features



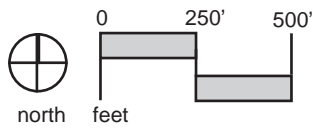
# Site Development: Periods 1-6



## LEGEND

SYMBOL	PERIOD
	1951-56 Temporary Buildings/ Features
	1951-59 Permanent Buildings/ Features
	1960-64 Permanent Buildings/ Features
	1965-73 Permanent Buildings/ Features
	1974-2009 Permanent Buildings/ Features
	2010-2012 Permanent Buildings/ Features

# Aerial View of the Campus 2008





## HISTORIC OVERVIEW

The college site lies next to the Tujunga Wash, a tributary of the Los Angeles River, in the southern San Fernando Valley in Los Angeles County, California.

The chronology below shows that the land was first used by non-native people as range land for livestock in the eighteenth and nineteenth centuries. By the early twentieth century, the deep alluvial soils that characterize the area also attracted farmers and orchardists. A comparison of aerial photographs that follow illustrates the development of the campus site from 1949 to today.

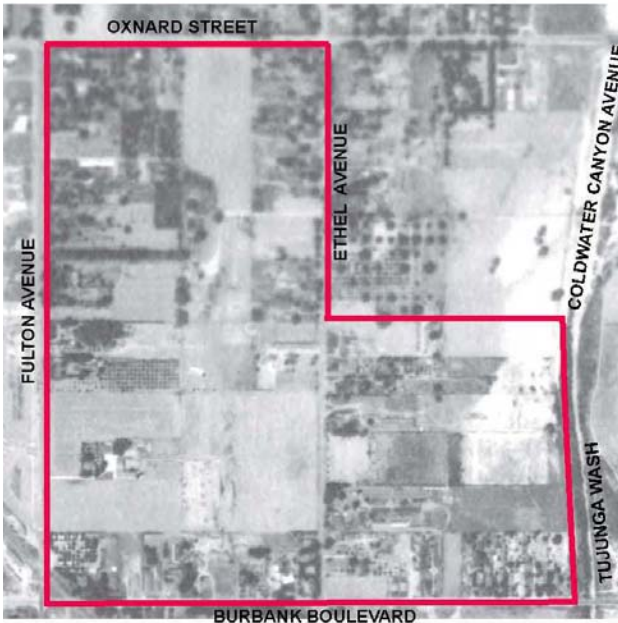


Figure A 0-1. This 1949 aerial view shows orchards and farms. The Tujunga Wash has natural banks north of campus.



Figure A 0-2. Farm land on the future LAVC site, before 1951.

The 1949 aerial photograph shows holdings that range in size from lots with frontages of around 150-feet up to 800-feet (Figure A 0-1). The land appears to have been used for open range with occasional wind rows of trees, enclosed fields for crops or livestock, and numerous small orchards having in the order of 30 to 150 trees (Figure A 0-2). Most houses within each holding were enclosed by gardens adjacent to and distinct from their farm land. The Tujunga Wash had natural creek banks north of Hatteras Street and was in a concrete channel south of Hatteras Street. The 1949 aerial is a snapshot in time that illustrates the beginning of a surge of growth and subdivision of land in the region.

On the 1953 aerial photograph the first campus buildings are evident in the area of the bungalows on Burbank Boulevard and at the two gymnasias on Ethel Avenue (today's field house and gymnastics center) (Figure A 0-3). A temporary outdoor auditorium is positioned northwest of the first quad in the middle of the bungalows. The auditorium and the layout of the bungalows respect the general alignment of and are set back from the locally low lying drainage way that runs north through the campus. It follows then, with the activity of the campus focused on its southern edge, that the address of the college at this time was 13161 Burbank Boulevard (Figures A 0-4).

By 1960, two of the permanent buildings of the Campus Core and four classroom buildings of the South Campus were complete (Figures A 0-5 and A 0-6). The library and administration building flank each side of the main Fulton Avenue entry that leads to the still undeveloped, future Monarch Square. It was at this time that the college changed its address to 5800 Fulton Avenue, reflecting the shift in the focus of activity on campus from the south to its west side. The Fulton Avenue address remains the college's address today. The 1960 aerial photograph shows planting associated with the permanent buildings as well as amongst the bungalows. It appears that the Tulip Trees (*Liriodendron tulipifera*) on the east side of the Fulton Avenue parking lots are newly installed while the Sweet Gums (*Liquidambar styraciflua*), present today along the street edge, are not yet planted.

The 1975 aerial photograph shows the full build-out of the master plan for the campus including parking lots, permanent buildings, and landscape spaces (Figure A 0-8). The trees have matured and street trees have been installed on Fulton Avenue, Oxnard (associated with the parking) and Burbank Boulevard east of Ethel Avenue. There does not appear to be street tree planting in front of the campus on Burbank Boulevard between Fulton and Ethel. Dense shade and screening trees around the central plant are particularly evident in the 1975 photograph.

The 1998 aerial photograph shows few changes to the layout of the campus (Figure A 0-9). The continued maturation of trees particularly in the South Campus and around the North Mall where there is a predominance of the tall Canary Island Pines (*Pinus canariensis*) is a conspicuous feature of this photograph.

The 2009 aerial photograph marks the first significant departure from the layout originally envisioned in the master plan (Figure A 0-10). Three of the permanent building have been or are in the throes of being replaced. The majority of the trees on campus are unaffected and are larger in size illustrating their continued growth.

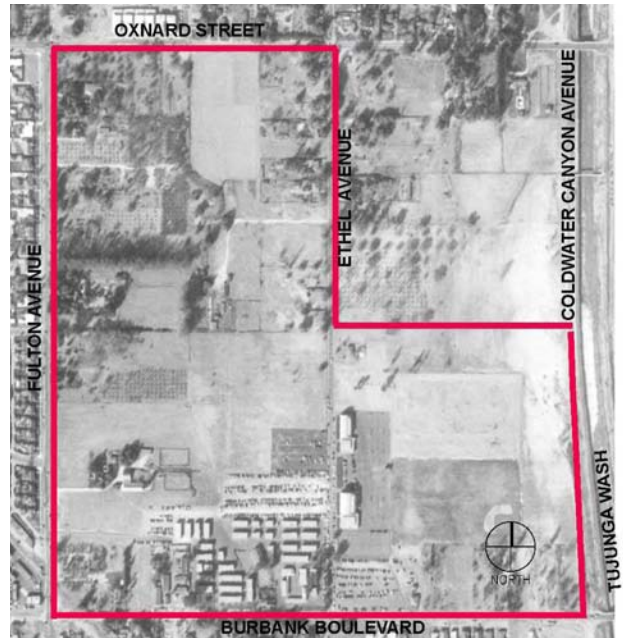


Figure A 0-3. This 1953 aerial view shows the bungalows and gymnasium center, Building 78, and the Field House in place.



Figure A 0-4. A view looking southwest over bungalows and one remaining farm house, circa 1950s.



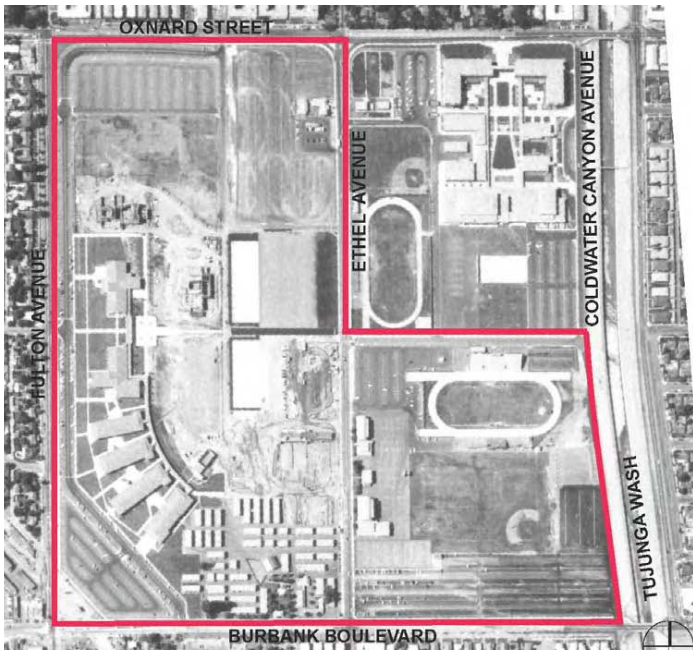


Figure A 0-5. This 1960 aerial view shows the form of the campus established as construction of permanent buildings proceeds.

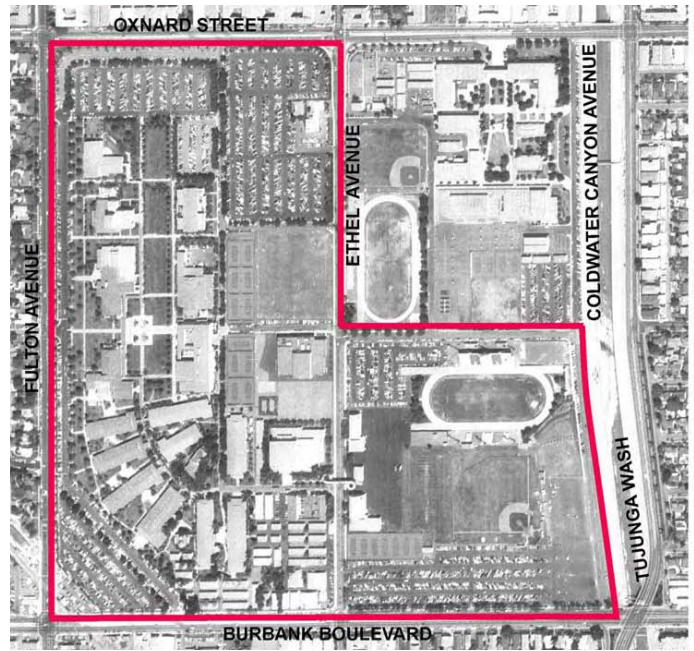


Figure A 0-8. This 1975 aerial view shows complete build out of the master plan.



Figure A 0-6. Aerial view of the campus around 1960.

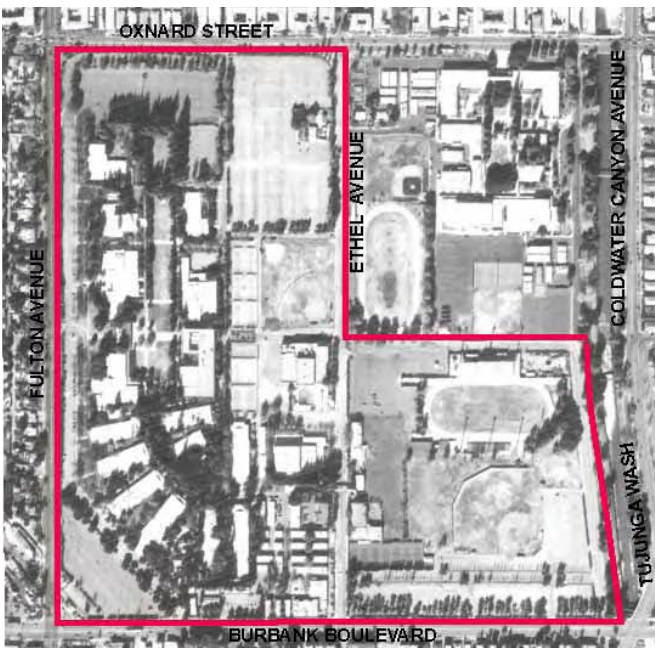


Figure A 0-9. This 1998 aerial view shows the maturation of the campus' urban forest.

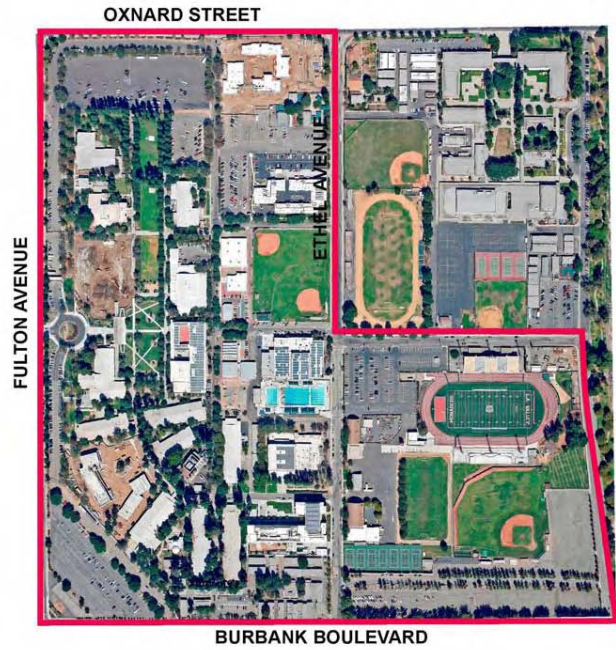


Figure A 0-10. This 2009 aerial view shows the construction of the Student Services Center almost complete and the new Library just beginning.



Figure A 0-7. The bungalows on Burbank Blvd with a Eucalyptus that pre-dates the campus, circa 1960.



## CHRONOLOGY OF THE PROPERTY OF THE LAVC CAMPUS

- 1769 Spain occupies California, including the
- 1797 San Fernando Mission established
- 1821 Overthrow of Spanish Rule to Mexican Rule
- 1833 The breakup of the missions including San Fernando Mission
- 1848 End of U.S.-Mexican War
- 1850 California becomes a State/Free State; Don Eulogio de Celes buys San Fernando Valley – 116,858 acres for \$20,000
- 1876 Bi-Centennial isolation ends; Southern Pacific Tunnel to San Fernando
- 1907-13 Walter Mulholland's aqueduct
- 1915-27 Annexation of the Valley to Los Angeles City (water)
- 1941-45 US involvement in World War II
- 1945-65 The return of GI's; Los Angeles Valley developed
- 1949 Los Angeles Valley College (LAVC) was founded on September 12. The College was officially chartered by the Los Angeles Board of Education in June 1949 and was located in the campus of Van Nuys High School.
- 1949 Original LAVC site considered: 45 acres between Chandler Boulevard and Magnolia Boulevard at Woodman Avenue
- 1949 Second LAVC site considered: 105 acres at Fulton Avenue, Burbank Boulevard, Coldwater Canyon Avenue, and Oxnard Street
- 1949 Intended permanent buildings to be Spanish Colonial in style
- 1949 Preferred architectural style changed to Ranch style, in part due to economic reasons.
- 1951 LAVC moved to its current location on Fulton Avenue in Valley Glen
- 1951-56 Temporary structures were increased from 33 to 45 to meet needs of increased enrollment

1959	Phase I of Master Building Plan by Lester H. Hibbard & Harold C. Chambers completed: Engineering (1959) Chemistry (demolished 2009) Physics (demolished 2009) Foreign Language (1959) Administration (1959) Library (1960; demolished 2009)
1961	Phase II of Master Building Plan completed Music (1961) Theater Arts (1961) Life Science (1962) Cafeteria (1961)
1963	Phase III of Master Building Plan completed Business-Journalism (1964) Math-Science (1964) Art (1964) Observatory/Planetarium (1964)
1973	Phase IV of Master Building Plan completed North (Women's) Gymnasium (1973) South (Men's) Gymnasium (1961) Behavioral Science (1965) Humanities (1965) Campus Center (1971)
1975-81	The aggregation of communities comprising the San Fernando Valley is 6th largest city in the US, population 1.3 million
2001	Proposition A is approved.
2003	Proposition AA is approved.
2008	Measure J is approved.
2008-09	Student Services Building
2010	Child Development Center
2012	Estimated projected completion of new library

## PURPOSE OF THE CULTURAL LANDSCAPE COMPONENT OF THE TREE MASTER PLAN

The purpose of this component of the master plan report is twofold. Firstly, to supplement the arboricultural and master planning components and to provide a broad historical perspective of the way in which the urban forest of the campus developed. Secondly, it provides an understanding of the form, size, extent, and character of the urban forest and in so doing, provides information relating to trees that are appropriate based on patterns of development of the campus. In the context of the overall character of the urban forest, the cultural landscape component of the master plan is specifically intended to guide decisions about tree species substitution and placement, where it is arboriculturally necessary.

The Secretary of the Interior's Standards are referred to and are intended to provide a framework for the inventory and analysis sections. The following sections titled Period of Significance, Integrity and Association define the extent to which this framework applies to the LAVC tree master plan.

The scope of this study is focused on the existing trees. As the campus has not been identified as a historic site, it does not include a context statement, preparation of a history of the college or related further study. To fully assess the significance of the trees of the LAVC, it would be customary to review it in the context of the development of community colleges in Los Angeles, in the state of California, and possibly across the nation. What is clear from this study, is that the diverse, mature and extensive urban forest is a significant contributor to the existing character of the college. In short the urban forest at LAVC is an important character-defining feature of the campus.

The phrase, "character-defining feature" is used to assess the urban forest as a whole and the trees that comprise it. It is broadly defined as "a prominent or distinctive aspect, quality, or characteristic of a cultural landscape. Land use patterns, vegetation, furnishings, decorative details and materials may be such features.<sup>4</sup> In relation to the trees at the LAVC campus, the term "character-defining feature" poses the question: what is it about the trees of the urban forest that is prominent, distinctive, and specific to this campus?

### PERIOD OF SIGNIFICANCE

The "period of significance"<sup>5</sup> identifies a period of time during which "the meaning or value ascribed to a cultural landscape [is analyzed,]... ..It normally stems from a combination of association and integrity".

As seen through its trees, the period of significance for the LAVC campus is from 1951 to 1973. This reflects the year the college moved to the present site through to the completion of the fourth phase of the master plan. During this 22-year time span the architectural, arboricultural, and landscape character of the campus was firmly established<sup>6</sup>.



## INTEGRITY

Integrity refers to authenticity rather than condition and is defined by the Secretary's Standards as; "the authenticity of a property's historic identity, evinced by the survival of physical characteristics that existed during the property's historic or prehistoric period. The seven qualities of integrity as defined by the National Register Program are location, setting, feeling, association, design, workmanship, and materials."<sup>4</sup> For a feature or site to have integrity, it must be physically present. Where relevant the integrity of the trees or groups of trees is addressed in by district in the following sections.

## ASSOCIATION

The criteria for establishing a place as historically significant is based in large part on association. As the focus of this report is to provide an overall framework in which to assess the patterns of development of the urban forest it is beyond its scope to apply the criteria for association<sup>8</sup>.

<sup>4</sup>Page 4. Birnbaum Charles A. and Christine C. Peters, eds. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Washington, D.C.: U.S. Department of the Interior, National Park Service, Cultural Resources, Heritage Preservation Services, 1996.

<sup>5</sup>Excerpt from the National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation.

<sup>6</sup>The National Register of Historic Places has instituted a framework that permits systematic assessment of cultural landscapes across the country. Properties that are recognized by being listed on the National Register are measured by their significance, integrity and age, amongst other qualities. When the National Register was created in 1966, it promulgated the policy that has become known as "the fifty year rule" by which a site must be fifty years old to be considered unless it has remarkable qualities that obviate this rule. The purpose of this study is not to evaluate either the campus as a whole or its trees in particular as being eligible for the National Register, but it is noteworthy that half of the period of significance is more than fifty years old, 1951 to 1961, while the second half, 1962 to 1973, is not.

<sup>7</sup>Birbaum, et al., page 5.

<sup>8</sup>The criteria are listed here for reference: "As defined by the National Historic Preservation Act of 1966 and the National Register criteria, to be eligible for the National Register a cultural landscape must possess the quality of significance in American history, architecture (interpreted in the broadest sense to include landscape architecture and planning), archeology, engineering and culture. To be eligible, a cultural landscape must be shown to be significant for one or more of the following Criteria for Evaluation:

- A. Associated with events that have made a significant contribution to the broad patterns of history, or
- B. Associated with the lives of persons significant in our past, or
- C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history."

Page, Robert R., Cathy A. Gilbert, and Susan A. Dolan. *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*. Washington D.C.: U.S. Department of the Interior, National Park Service, Park Historic Structure and Cultural Landscape Program, 1998. p. 71

## DISTRICT 1 – CAMPUS CORE

The Campus Core attained its form and appearance during the college's period of significance when the buildings were built – administration 1959, library 1959-60, cafeteria 1961, and the campus center 1971. The four buildings of this district are set around Monarch Square. The trees of the campus core appears to have been planted as part of the construction contract for these buildings or shortly thereafter. By the early 1970s, they were in place as seen in the oblique aerial photograph from the late 1960s (Figure A 1-1).

As seen in the 1960 vertical aerial photograph, the trees were planted in small sizes, so the character that they would ultimately acquire was initially barely apparent. The practice of the era was to start building on a clean slate, and as a result the Campus Core has no trees remaining from the pre-college days when the land was farmed (Figure A 1-2). When the campus core was first planted, the character was of sunny landscape spaces dominated by the presence of the nearby buildings. The absence of tree canopy meant that for much of the school year they would have been hot and relatively unprotected<sup>9</sup> (Figure A 1-3).

Today the composition and use of the landscape spaces and associated trees of the Campus remains unchanged from the time they were installed. The only notable difference from the 1950s and '60s is that the trees have matured. The appearance of the trees today is described under "Existing Conditions".



*Aerial Shot by Tom Homer*

*Figure A 1-1. Most buildings and plantings are in place by the late 1960s. Courtesy of "55 Years at Valley College: A Photo Retrospect"*

The qualities of the trees of the Campus Core that are character-defining, relate to how they contribute to this being the heart of campus. Four large permanent buildings, which are used by the student body as a whole, as opposed to students of a particular discipline, are sited around the primary landscape open space of the campus: Monarch Square (Figure A 1-4). The regular spacing of trees planted in long rows sets the framework defining the edges of this space (Figure A 1-5). The buildings further reinforce the definition of its rectangular shape. A secondary but important character-defining quality of the trees of the Campus Core district is the sheer number of species. Many are located as foundation planting associated with the four buildings (Figure A 1-6). Significant numbers of trees that represent recent plantings, supplement the mature trees that lie within Monarch Square. Additionally several individual species



Figure A 1-2. Removal of walnut trees to make way for LAVC, circa 1950.



Figure A 1-3. The first library during its construction. This view shows trees of Monarch Square have been planted, circa 1960.

are character-defining by virtue of their placement (rows), size and rarity (Bunya Bunya Pine - *Araucari bidwillii*), or contrasting form (Mediterranean Fan Palm - *Chamaerops humilis*). These patterns and individual species are significant because they are emblematic of the character of the urban forest associated with the permanent buildings that date to the period of significance of LAVC.

The known modifications to the trees of the Campus Core since the period of significance include the redesign and increased level of intensity of development of the entry from Fulton Avenue. Also the current reconstruction of the library, one of the four buildings of the Campus Core and the only one that will no longer date to the period of significance, along with the addition of trees within the formerly broad open lawn impact the character of Monarch Square. A further evolutionary change, rather than a modification, is the growth of the trees to fulfill the original vision for a shady and richly vegetated campus.

<sup>9</sup>Though not a tree species and so not a focus of this study, the widespread presence of lawn at Monarch Square and the large lawn panels on the west side of the administration and library buildings influenced and softened character of the landscape spaces.



The overall framework of long rows of evergreen trees defining the edges of Monarch Square remains a dominant feature of the Campus Core (Figures A 1-7 and A 1-8). The formerly expansive open character of Monarch Square is somewhat less open now as the Tulip Trees at its south end have matured, and several recent plantings of oaks, cedars and Aleppo Pines (*Pinus halepensis*) fill portions of it. Additionally, a number of species are dead or failing including several European Olives (*Olea europaea*) and the African Cape Chestnuts (*Calodendron capense*). The latter are significant because they marked the flagpole and central place within Monarch Square where flag raising ceremonies were held (Figure A 1-9). Redesigned in recent years, the flagpole has been moved, pavement re-configured, and the place has become a pass-through portion of Monarch Square rather than a destination within it. With the exception of one additional example in district 7, these are the only African Cape Chestnuts on campus.

Today the trees and associated landscape spaces of the Campus Core possess integrity to the period of significance because they retain the species mix, dominant rows of evergreens, secondary landscape spaces, and maturity of trees that is character-defining. The new library, under construction in 2011, will modestly diminish the integrity of the setting of Monarch Square though it replaces a building in this location so its effect will be limited. The integrity of location, feeling, association, and design remain intact.



Figure A 1-4. View to the southwest from the Fulton Ave entry across Monarch Square, 2011.



Figure A 1-7. Monarch Square looking south-southeast from the pine grove towards the campus center, circa early 1970s.



Figure A 1-5. The walk along the east side of Monarch Square viewed in the late 1980s or early 1990s.



Figure A 1-8. Monarch Square in the 1980s in an open lawn edged by evergreen trees.



## Character-Defining Features of the Campus Core

- Diversity of trees species (41 species)
- Maturity of the urban forest with the vast majority of species being fully grown or almost fully grown
- Orthogonal rows of regularly-spaced single-species evergreen trees including Southern Magnolias (*Magnolia grandiflora*) and European Olives (*Olea europaea*) shading the west facades of the cafeteria and campus center
- Large deciduous trees shading the west facades of the administration building and library
- Different broadleaf evergreen species on each side of primary campus walks around Monarch Square
- Bunya Bunya Pine (*Araucaria bidwillii*) specimen on the south side of the administration building
- African Cape Chestnuts (*Calodendron capense*) in Monarch Square
- Mediterranean Fan Palm (*Chamaerops humilis*) with its striking form marking building entries, corners, and the west side of the campus center
- Mature Tulip Trees (*Liriodendron tulipifera*) that provide canopy and enclosure that creates the southern portion of Monarch Square.



Figure A 1-6. Two coast redwoods and a Mexican fan palm contribute to the foundation planting near the southwest corner of the campus center.



Figure A 1-9. Former flagpole location in the plaza within Monarch Square with African Cape Chestnut trees.

## DISTRICT 2 - SOUTH CAMPUS

The first campus development was located at the bungalows within the South Campus district. With the exception of the area west of the original gymnasium (today's gymnastic and field houses), the only trees that predated the campus remained in the area of the bungalows. This is clearly seen in the late 1960s oblique aerial photograph and in the 1953 aerial. The most notable of these remaining trees is a large eucalyptus located near Burbank Boulevard. Additional trees were also located around some of the bungalows where formally houses that faced Burbank Boulevard between Fulton Avenue and Ethel Avenue were located. These latter trees appear to have been removed by around 1960.



Figure A 2-1. The heart of social activities in the first decade of the college was at the first quad. This circular barbeque is a planter today. Courtesy of "55 Years at Valley College: A Photo Retrospect".



Figure A 2-2. Very little planting or shade around the bungalows, circa early 1950s.

The earliest campus tree planting was at the first quad located between bungalows 45 and 37 on Burbank Boulevard (Figure A 2-1). This appears to have been the only new planting on campus in the initial years of the college.

The 1960 aerial photograph shows that the majority of the bungalows remained devoid of planting while the intensive permanent building program of the master plan was undertaken (Figure A 2-2). The possible exceptions to this include the Moreton Bay Fig (*Ficus macrophylla*) at the west end of the bungalows near Burbank Boulevard, and tree planting behind the coffee house near bungalow 42.

Most of the landscape spaces associated with permanent buildings appear to have had their courtyards planted within a few years after their construction was completed. The large number of species planted and the eclectic nature of their placement reflects the desire by early professors to immediately start using plants on campus as a teaching tool. Several disciplines appear to have used the campus as an outdoor classroom; most notably biology.

The original character of the spaces between the bungalows tends to have been defined by buildings rather than by trees because there were so few trees. In this context the first quad was an oasis of green and shade. This key space was originally almost twice its current size and included the one remnant London Plane Tree

(*Platanus acerifolia*) that now lies in a small space between bungalows 30 and 34. Because it was the central open space in south campus in the first decades of the campus, it was the heart of the outdoor social life of students and staff. The early aerial photographs (1949 and 1953) reflect a faint pattern of a locally low-lying drainage line on which the first quad sits. The line appears to extend north through the campus in a broad arc approximately midway between Fulton Avenue and Ethel Avenue. This may indicate a relatively shallow water table, translating into ample water for these trees.

Like the Campus Core, the original character of the trees and associated landscape spaces at the permanent buildings in the South Campus resulted from the installation of an entirely new landscape on a tabula rasa. Initially, there was little or no shade and the presence of buildings dominated until the trees began to grow large enough to influence and shape the character of spaces; about the mid 1970s (Figure A 2-3). Two evergreen species – Canary Island (*Pinus canariensis*) and Yew Pines (*Podocarpus gracilior*) – each form a row along one side of the covered walkway. Unlike the trees that line Monarch Square, the trees in each row are not regularly spaced because the space available did not permit it.

The aspects of the trees of the South Campus that are character-defining relate firstly, to their contribution to defining the heart of the first development on campus, and secondly, to them collectively comprising a virtual arboretum that

reflects the interests of early professors who intended to use the landscape of the campus as a laboratory for their classes.

Known modifications over time in the South Campus include infill of additional bungalows reducing the size and prominent Burbank Boulevard-placement of the first quad by half, removal of other bungalows as well as removal of the permanent chemistry and physics buildings, construction of the new student services buildings and the allied health and science building, and 2011 alterations to the parking lot on the corner of Burbank Boulevard and Fulton Avenue. The relatively uniform maturation of the canopy resulting from the campus being planted over a short number of its initial years reflects an evolutionary change.

Construction followed the original master plan and included the four large classroom buildings that radiate from the arc of the covered walkway as shown in the 1960 aerial photograph. Between these four buildings were landscape spaces made up of paved courtyards and generous areas of planting. These were in place by 1959. With the 1964 addition of the observatory/planetarium and 2009 removal of the chemistry and physics buildings, the repeat pattern of these spaces and what they offered from the point of view of teaching was lost.



Figure A 2-3. The south end of Campus Drive shows trees maturing towards their adult form.



The placement of the observatory/planetarium does not appear in the aerial views from around 1960 when much of the south campus construction, including the courtyards, was complete. It does, however, appear on the campus master plan. Planting around the observatory/planetarium has grown to obscure sight lines for viewing some parts of the night sky (Figure A 2-4).

The current character of the trees of the South Campus in the area of the bungalows is focused on the first quad. The trees are mature, cast a welcome shade and are an oasis in an otherwise aged and cramped section of campus. Several additional mature individual trees are located between the bungalows and a row of Maidenhair Trees (*Ginkgo biloba*) edge Ethel Avenue. The current character of the permanent buildings within the South Campus is dominated by the presence of the Canary Island Pines (*Pinus canariensis*) which are large, healthy and more plentiful than any other species in this district. The character is also shaped by the tremendous variety of species and forms of trees as well as their relatively informal placement (Figure A 2-5).

The trees of the South Campus possess integrity because they accurately reflect the original layout and purpose for which they were planted during the period of significance. The impact of the addition of the student services buildings changes the pattern and form of spaces created by the earlier two buildings and so diminishes the integrity of setting, location, feeling and design.

### Character-Defining Features of the South Campus

- Diversity of trees species (53 species) with an emphasis on broad-leafed evergreen trees
- Maturity of the urban forest with the vast majority of species being fully grown or almost fully grown
- Irregular spacing of species, often planted informally in small numbers
- First quad species including Evergreen Elms (*Ulmus parvifolia*), Sweet Gums (*Liquidambar styraciflua*), Black Locust (*Robinia idahoensis*), and London Plane (*Platanus acerifolia*)
- Large deciduous trees shading the west facades of the foreign languages and student services buildings
- Moreton Bay Fig (*Ficus macrophylla*)
- Canary Island Pines (*Pinus canariensis*)
- Weeping Bottlebrush (*Callistemon viminalis*)



Figure A 2-4. Two Planetarium with trees set back from the building, circa 1980.



Figure A 2-5. This aerial view from around 1980 shows the maturing urban forest.



## DISTRICT 3 – ARTS DISTRICT

The planting of the Arts District reflects the period of construction of its campus buildings – music and theater arts 1961, and art 1964. The original composition of the planting and function of the spaces are as originally laid out in the master plan. The large lawn at the North Mall, pedestrian circulation routes, and spaces associated directly with buildings were all in place by the mid to late 1960s, within the period of significance. There are no trees that date to the time when the land was farmed before the college arrived.

The character-defining qualities of the trees and landscape spaces of the Arts District are focused on their role in shaping the character of the North Mall. Because it continues the patterns established with long rows of trees and similar foundation planting at buildings it share much of the Campus Core's character and prominence (refer to discussion of character-defining qualities of the trees in the Campus Core). The stand of Canary Island Pines (*Pinus canariensis*) that lie between the music and art buildings is a distinguishing feature of this district (Figure A 3-1).

Maturation of the trees is the only significant known change to the trees of the Arts District during the last half century.

The current character of the trees and landscape spaces of the Arts District is very much as described in the “Existing Conditions” section of this study.

Since they reflect the original layout and purpose for which they were planted, the trees in this District possess integrity.

### Character-Defining Features of the Arts District

- Maturity of the urban forest
- Orthogonal rows of regularly-spaced single-species broadleaf evergreen trees including Southern Magnolias (*Magnolia grandiflora*) and European Olives (*Olea europaea*)
- Large deciduous trees shading the west facades of the music and theater buildings
- Different broadleaf evergreen species on each side of primary campus walks
- Stand of Canary Island Pines (*Pinus canariensis*) at north end of Monarch Square
- Canary Island Pines (*Pinus canariensis*) as edge definition of spaces



Figure A 3.1. Looking north towards the stand of Canary Island Pines at the juncture of Monarch Square and the North Mall, circa 1980s.

## DISTRICT 4 - PHYSICAL EDUCATION

The trees of the Physical Education district reflect a slow accumulation of plantings over time (Figure A 4-1). The 1952 gymnasium, known today as the gymnastic building and field house, were the first two permanent campus buildings constructed in this district. Initially, they had lawn panels in front of them and shortly after, foundation planting was added. No trees remain from the period before the college and no other trees were added by 1960 as seen in the 1960 aerial photograph. By 1975, a row of trees, probably Lemon Scented Gum (*Eucalyptus citriodora*), was established on the west side of the track, and the trees amongst the foundation planting of the 1952 buildings had matured.

The original character of the trees in the physical education district is dominated by rows of trees. Even though the rows are sizable they remain utterly subservient to the large fields and few voluminous buildings found here. Defining the edges of playing fields or courts, these rows are a character-defining feature of the trees of the Physical Education district. Additionally, there are occasional individual specimen mature trees that appear to be a signature feature of this district. Modifications came slowly to this district and by 1998 all the trees seen today, including the pines beyond the east end of the track, were in place. The trees in Lot G were newly planted and small and appear to be amongst the last planted in this district. One mature and stately Lemon Scented Gum remains from what appeared to be the 1975 row of them at the west end of the track. Trees do not hold the important shade-making role in the Physical Education district as they do in the Campus Core, South Campus, and Arts District because of the sheer size of the open spaces required for the ball fields and the desire for clear sight lines for spectators. Several of the rows and individual trees possess integrity because they reflect the period of significance and the original intended composition and use of species.



Figure A 4.1. Even without formal sport fields, sports were an early activity. This view from the early 1950s shows trees cleared soon after, to make way for campus structures.

### Character-Defining Features of the Physical Education District

- Long rows of evergreen trees such as columnar Italian Cypress (*Cupressus sempervirens*) and Evergreen Elms (*Ulmus parvifolia*) edging sport fields or courts.
- Individual specimen shade trees such as Lemon Scented Gum, White Mulberry (*Morus alba*) and Chinese Hackberry (*Celtis sinensis*).

## DISTRICT 5 – CHILD DEVELOPMENT

Because the Child Development Center was redesigned and built, opening in 2010, it does not reflect the pattern of development of the campus. While the new Child Development Center was under construction it was housed in temporary buildings to the southeast of the current site. The young trees of the new Child Development Center do not have integrity to the period of significance of the college.

## DISTRICT 6 – PARKING

The vast majority of parking lot trees were planted between 1960 and 1975 during the latter half of the period of significance. The Aleppo Pines (*Pinus halepensis*) of Lot G planted along Burbank Boulevard were a significant size by 1975 though the remaining trees within this large parking lot were planted later as is evidenced by their small size. The composition of species, their spacing, and the reason they were initially planted has not changed over time. The character-defining quality of the trees of the parking lots is shaped by their location at the perimeter of campus, their large size and regular spacing. They appear to have been planted for shade and to establish a public face of the college to the neighborhood that was verdant (Figure A 6-1).

There have been few modifications to the tree planting in the parking lots over time, though the declining condition of several of the species, notably Evergreen Ash (*Fraxinus uhdei*) and Aleppo Pine (*Pinus halepensis*), suggests that they are likely to change in the near future (Figure A 6-2). The current character of the trees of the Parking district is of large mature trees. The exception to this is the Evergreen Ash at the north end of campus (Lot B). The species is naturally a large tree but these specific trees have small crowns because of their poor condition. As well, the pruning performed on the Aleppo Pines on Burbank Boulevard has caused the form of these trees to be altered.

As most were installed during the period of significance the trees of the Parking district possess integrity.

### Character-Defining Features of the Parking District (All are contributing)

- Long rows of large shade trees at the perimeter of the campus and on the inner edge of the major parking lots.



Figure A 6.1. The Burbank Blvd edge of campus in the area of today's parking lot. Courtesy of "55 Years at Valley College: A Photo Retrospect."



Figure A 6-2. Ailing Ash trees at Campus Drive, 2011.



## DISTRICT 7 – SHERIFF/OPERATIONS AND MAINTENANCE

The two buildings of this small district are newly constructed and all tree planting associated with them are young and do not date to the period of significance of the campus. As a result, they do not possess integrity to the period of significance.



Figure A 8-1. An aerial view of campus with Fulton Ave in the foreground

## SUMMARY

The development of the architecture of the campus is the result of implementation of the master plan from 1951 to 1973. Similarly, the trees that comprise today's urban forest were installed as part of this vision.

There are five paramount, site-wide, character-defining qualities of the urban forest at the LAVC campus.

Firstly, the arboretum-like variety of trees, 86 species in all, materially contributes to the richness and diversity of landscape spaces. The size, maturity, and vigor of the trees is noteworthy, and is in part due to the conducive growing environment of the alluvial plain of the Tujunga Wash. The size, maturity, and vigor of the trees are important contributors to the appearance of today's arboretum. The loss of either the variety or the number of mature trees on campus would materially diminish the integrity of the arboretum as the whole.

The second main quality is that from the outset the campus was intended to be used for teaching in a plethora of ways.

The third is that the list of campus trees is dominated by exotic evergreen species. Looking at the numbers of species, (as opposed to the number of trees), most are evergreens, 51 or 62% of species. Of these, 37 are broadleaf evergreens, 12 are conifers, and two are palms. The overall impression of evergreen trees on campus is amplified when it is considered that the most numerous individual species is also evergreen.

The fourth main quality is the striking dominance of one species, the Canary Island Pine (*Pinus canariensis*). Due to its innate size at maturity, placement, and number of trees, it is the signature tree on campus.

The fifth and final main quality of the urban forest at LAVC is that because it was planted in a relatively short time-frame, it is now made up of a single generation of trees, most of which are at or near maturity. The significance of the character-defining trees, addressed by district above, have to do with their placement (such as in rows or as individual specimens), the prominence of their position (such as the Canary Island Pines enclosing the north end of Monarch Square), their pattern and distribution of the species (most Canary Island Pines are in Districts 2 and 3), and their health (ensuring their continued presence). Together these qualities create the richly textured variety of landscape spaces that is singularly specific to LAVC, unlike other community college campuses in the region.

The trees that survive from the period of significance that possess integrity are shown in the list titled "Summary of Contributing Resources of the Cultural Landscape of the LAVC Urban Forest." Several trees survive that possess diminished integrity because, due to their poor condition and/or altered landscape design of their immediate environments, they do not fulfill the role they once did. Trees that were removed, or affected by the construction of buildings built since the period of significance, predominantly in the last few years, no longer possess integrity.

The following summary list identifies "contributing resources." This is a term utilized by the Secretary of the Interior's Standards to help understand what role each feature has in the cultural landscape. Contributing resources are those that date to the period of significance and contribute materially to the character of the urban forest. Non-contributing trees are those that do not date to the period of significance and/or do not support or reinforce the patterns established during the period of significance. Non-contributing but compatible features are those that do not date to the period of significance but support the historic patterns established during the period of significance. At LAVC, because so little changed in the campus layout until recent years few species are regarded as non-contributing.

This study illustrates patterns in the planting design established by the master plan during the period of significance.

Two types of trees are of interest due to their near absence. There are very few California native trees that date to the period of significance and other than the Mediterranean Fan Palm (*Chamaerops humilis*) and a handful of Mexican Fan Palms (*Washingtonia robusta*), there are very few palms on campus. The rarity of these two plant types reflects the style of mid-century planting design and that the professors of the early college did not demand natives or palms for their classes.

While relatively little has changed on campus since the end of the period of significance, new plantings have been installed when new buildings were built. These include several new species, some of which were not previously known on campus, such as the Shoestring Acacia (*Acacia salacina*) and the Australian Willow (*Geijera parviflora*). These two species are both evergreens like the majority of species on campus but as they have narrow leaves that hang almost vertically, they contrast with the majority of broadleaf evergreen trees that predate them, such as the Camphor Tree (*Cinnamomum camphora*), figs, and Evergreen Elms (*Ulmus parvifolia*) where leaves are broad, often glossy, and do not hang vertically. Amongst the new plantings at Monarch Square are several kinds of oaks and cedars. When mature these will be large shade trees that are somewhat more drought tolerant than many species on campus. Some of the oaks are California natives. The majority of these newly introduced species are evergreen in accordance with the character of the majority of mature trees on campus.

The urban forest at LAVC is the result of a master planning vision and large-scale construction of the campus over a 22-year period. Due to relatively little change it possesses integrity to the period of significance. Its distinguishing features are the extraordinary diversity of trees, the near uniform maturity of the forest, and the large sizes of trees resulting from growing in fertile well-irrigated soils. The urban forest at LAVC is an asset to the campus and region (Figure A 8-1).

## CONTRIBUTING RESOURCES OF THE CULTURAL LANDSCAPE OF THE LAVC URBAN FOREST

### Campus-Wide Character-Defining Qualities

- Arboretum-like variety of trees with a predominance of trees that are mature, vigorous and large in size (for their species)
- Initial and continued use of the urban forest for teaching
- Predominance of exotic evergreen species
- Canary Island Pine (*Pinus canariensis*) as the signature tree on campus
- Urban forest comprising a single generation of trees

### District 1 – Campus Core

- Diversity of trees species (41 species)
- Maturity of the urban forest with the vast majority of species being fully grown or almost fully grown
- Orthogonal rows of regularly-spaced single-species evergreen trees including Southern Magnolias (*Magnolia grandiflora*) and European Olives (*Olea europaea*) shading the west facades of the cafeteria and campus center
- Large deciduous trees shading the west facades of the administration building and library
- Different broadleaf evergreen species on each side of primary campus walks around Monarch Square
- Bunya Bunya Pine (*Araucaria bidwillii*) specimen on the south side of the administration building



- African Cape Chestnut (*Calodendron capense*) in Monarch Square (integrity diminished)
- Mediterranean Fan Palm (*Chamaerops humilis*) with its striking form marking building entries, corners and the west side of the campus center
- Mature Tulip Trees (*Liriodendron tulipifera*) that provide canopy and enclosure that defines a southern space within/adjacent to Monarch Square.

## District 2 - South Campus

- Diversity of trees species (53 species in the South Campus) with an emphasis on broad-leafed ever green trees
- Maturity of the urban forest with the vast majority of species being fully grown or almost fully grown
- Irregular spacing of species, often planted informally in small numbers
- First quad species including Evergreen Elms (*Ulmus parvifolia*), Sweet Gums (*Liquidambar styraciflua*), Black Locust (*Robinia idahoensis*), and London Plane (*Platanus acerifolia*)
- Large deciduous shade trees shading the west facades of the foreign languages and student services buildings
- Moreton Bay Fig (*Ficus macrophylla*)
- Canary Island Pines (*Pinus canariensis*)
- Weeping Bottlebrush (*Callistemon viminalis*)

## District 3 – Arts District

- Maturity of the urban forest with species being fully grown or almost fully grown
- Orthogonal rows of regularly-spaced single-species evergreen trees including Southern Magnolias (*Magnolia grandiflora*) and European Olives (*Olea europaea*) shading the west facade of the arts building
- Large deciduous trees shading the west facades of the music and theater arts buildings
- Different broadleaf evergreen species on each side of primary campus walks especially around the North Mall
- Canary Island Pines (*Pinus canariensis*)

## District 4 - Physical Education

- Long rows of evergreen trees such as columnar Italian Cypress (*Cupressus sempervirens*) and Evergreen Elms (*Ulmus parvifolia*) edging sport fields or courts.
- Individual specimen shade trees such as Lemon Scented Gum (*Eucalyptus citriodora*), White Mulberry (*Morus alba*) and Chinese Hackberry (*Seltis sinensis*).

## District 6 – Parking

- Long rows of large shade trees at the perimeter of the campus and on the inner edge of the major parking lots.

## B. Measure J Master Plan Landscape Analysis

### SHERWOOD ENGINEERING ANALYSIS

As a follow up to the development of the Measure J Landscape Master Plan, SWA Group enlisted the services of Sherwood Engineering to provide metrics based on the build-out of the Los Angeles Valley College Landscape Master Plan. Sherwood Engineering considered four topics for their analysis; Water Conservation, The Hydrologic Cycle, Heat Island Reduction and Ecological Diversity. Some assumptions were made, as not all of the current information was available at the time of the analysis.

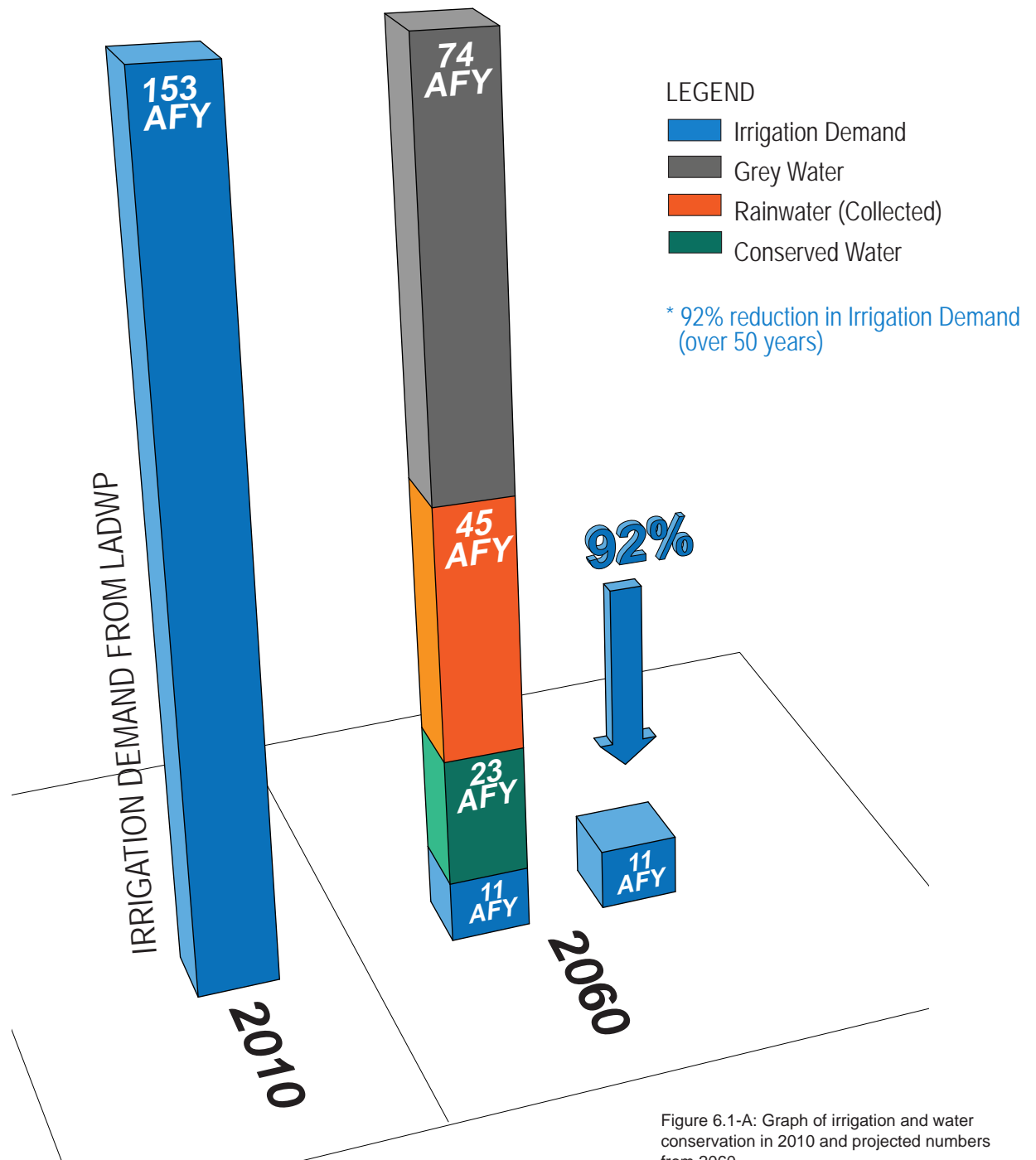


Figure 6.1-A: Graph of irrigation and water conservation in 2010 and projected numbers from 2060

# 1. WATER CONSERVATION

## *90% Reduction in Irrigation Demand (see Figure 6.1-A)*

### **A. IRRIGATION DEMAND**

Irrigation demand is 137,000 GPD or 153 acre-feet per year (AFY) based on the Utility Master Plan dated April 2010. If we spread this volume over the year and the site area of 105 acres, it equates to approximately 17.5-inches per year. This volume is equal over 100% of the total yearly rainfall of 17-inches.

### **B. GREYWATER REUSE**

Total site wastewater generation is 265,000 GPD based on Utility Master Plan dated April, 2010. Assuming 25% of this flow is non toilet flow or grey water, this equates to 74.2 acre-feet per year. Grey water capture and reuse requires minimal treatment for reuse in irrigation. Significant precedent exists for these systems in California and across the U.S. (precedents under separate submittal).

### **C. RAINWATER COLLECTION**

Total site area of 105 acres was taken from CAD base plan. We assumed 50% of hardscape is converted to pervious pavement or 17 (50% of 34 acres = 17) acres under the proposed master plan build out. This results in rainwater runoff from the property in the amount of approximately 13.2 acre-feet per year. Though, the playing fields are assumed to be under drained, we have further assumed that the under drainage system is replaced by a drain rock layer in the 2060 scenario which allows rainwater to infiltrate to the aquifer. In the 2060 scenario, impervious surfaces are assumed to be exclusively the building roof area of 19 acres as estimated from CAD plan. This results in a 34% impervious surface area in the 2060 scenario (17 acres + 19 acres / 104 acres = 34%). Studies from various texts and state stormwater manuals including: State of Virginia Stormwater Manual; WEF Manual of Practice No. 23; ASCE Manual and Report on Engineering Practice No. 87 and the Minnesota Pollution Control Agency, estimate that for surfaces with 34% impervious surface approximately 30% of precipitation runs off. Yearly rainfall depth is 17-inches per the Pierce College weather station data. Therefore, 17-inches x 105 acres x 30% = 44.6 acre-feet of runoff per year available for rainwater capture and reuse. Rainwater capture and reuse requires minimal treatment for reuse in irrigation and significant California and U.S. precedent exists as noted above.

### **D. CONSERVATION**

A 15% reduction in irrigation demand was assumed based on an increase in native planting; improved efficiency irrigation system controls and; distribution. This assumes that native planting is used, but not exclusively and; that irrigation technology will improve significantly over the 50 year build out period. The 15% was a token reduction on the low end of the range suggested by the LEED Water Efficient Landscaping Credit such as the statement that 'efficient irrigation systems can be 25-35% less water intensive than conventional systems'. 15% x 153 acre-feet total demand = 23 acre-feet

### **E. SUMMARY**

74.2 acre-feet grey water + 44.6 acre-feet rainwater + 23 acre-feet of conservation = 141.8 acre-feet

141.8 acre-feet demand offset / 153 acre-feet current demand = 92.7% reduction



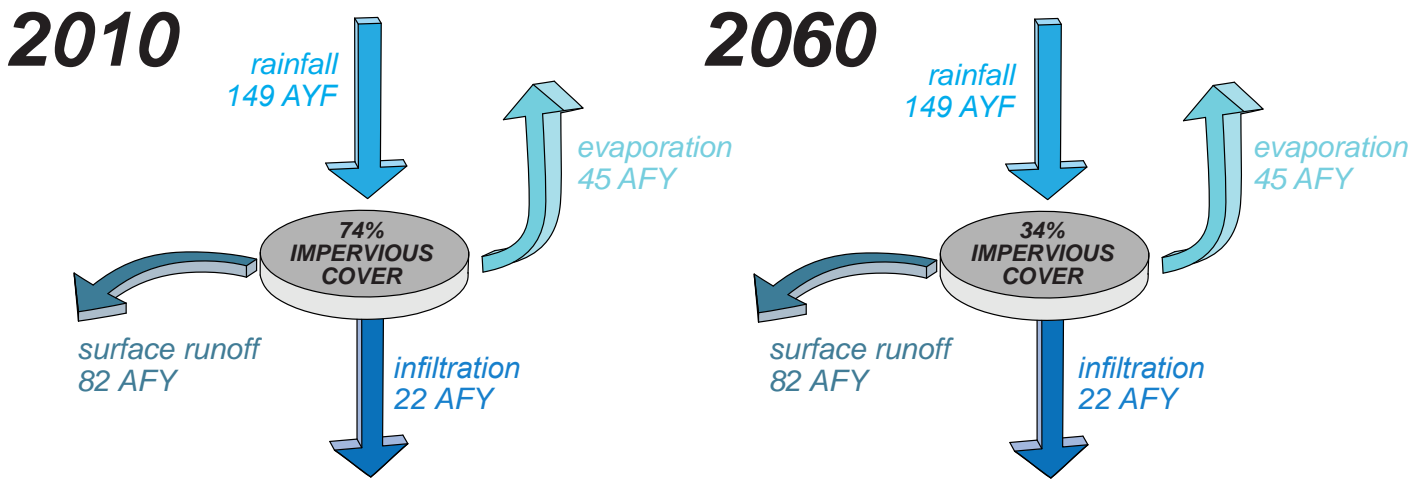


Figure 6.2-A: Diagrams illustrating how water is collected and discharged in relationship to impervious surface cover

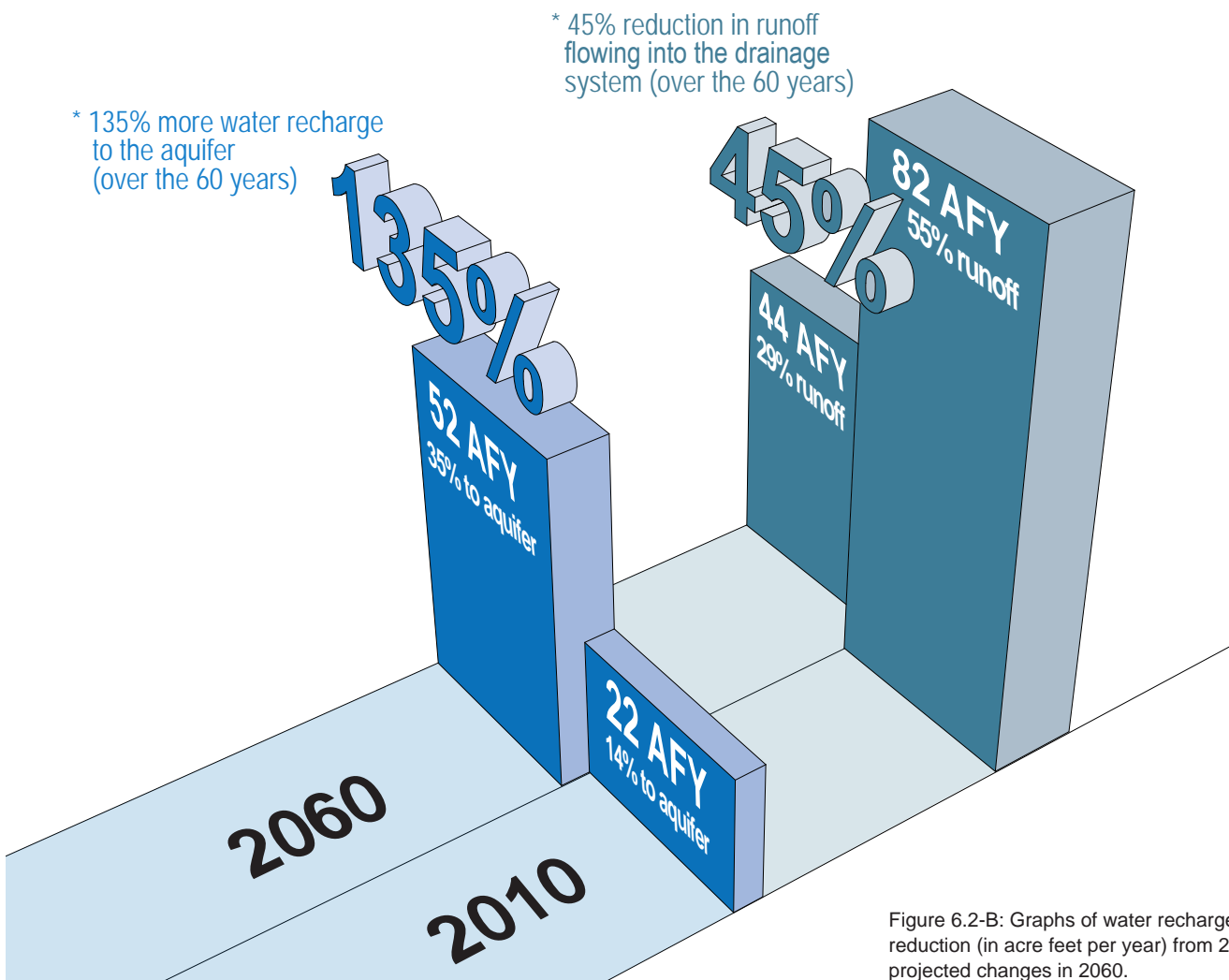


Figure 6.2-B: Graphs of water recharge and runoff reduction (in acre feet per year) from 2010 and the projected changes in 2060.

## 2. HYDROLOGIC CYCLE

*135% More Water to the Aquifer (see Figure 6.2-B)*

*45% Less Runoff to the Drainage System (see Figure 6.2-B)*

### A. 2010 EXISTING IMPERVIOUS SURFACES (SEE FIGURE 6.2-A)

The following areas were estimated from the AutoCAD base plan:

- 25 acres of playing fields which are under drained thus redirecting infiltrated precipitation to the stormwater pipe system and not to the aquifer. Thus this area is assumed to be impervious.
- 19 acres of impervious building area.
- 9 acres of impervious hardscape and walkways.
- 25 acres of impervious parking areas.
- 78 acres of total impervious surface / 105 acres total site area = 74% impervious.
- Yearly rainfall = 105 acres x 17-inches = 148.8 acre-feet
- Water to aquifer associated with 74% impervious surface (reference noted above) =  
 $15\% \times 148.8 \text{ AFY} = 22.4 \text{ AFY}$
- Water diverted from drainage system from a 74% impervious surface (reference noted above) =  
 $55\% \times 148.8 \text{ AFY} = 82 \text{ AFY}$

### B. 2060 PROPOSED IMPERVIOUS SURFACES (SEE FIGURE 6.2-A)

The following areas were estimated from the AutoCAD base plan:

- The playing fields were assumed to be reconstructed with a layer of drain rock to allow precipitation to infiltrate to the groundwater rather than being directed by the under drainage system and to stormwater pipes. As a result, these areas were assumed to be pervious.
- 50% of parking and walkways or 17 acres were assumed to be replaced with pervious pavements by the proposed full build out master plan.
- The resulting remaining impervious surface was assumed to be building roof tops or  
 $19 \text{ acres} + 17 \text{ acres} = 34 \text{ acres}$
- 36 acres impervious surface / 105 acres total site = 34.3%
- Water to aquifer associated with 34.3% impervious surface (reference noted above) =  
 $35\% \times 148 \text{ AFY} = 51.8 \text{ AFY}$
- Water diverted from drainage system from a 34.3% impervious surface (reference noted above) =  
 $30\% \times 148 \text{ AFY} = 44.4 \text{ AFY}$

### C. SUMMARY

Additional water to aquifer:  $51.8 \text{ AFY} - 22 \text{ AFY} = 29.8 \text{ AFY}$ ;  $29.8 / 22$   
= 135% increase

Water diverted from drainage system:  $81.4 \text{ AFY} - 44.4 \text{ AFY} = 37$   
AFY;  $37 / 81.4 = 45.4\%$



**2010**

EXPOSED BUILDING ROOF

26 ACRES OF HIGH ALBEDO HARDSCAPE

**2060**

\* 75% of pavement is now in shade

ENHANCED LANDSCAPE  
THREE ACRES SHADED HARDSCAPE

SOLAR SHADE  
THIRTEEN ACRES TOTAL SHADED HARDSCAPE MEETS LEED CREDIT 7.1

FIVE TO TEN DEGREES COOLER

45 ACRES OF HIGH ALBEDO HARDSCAPE  
REDUCES SURFACE TEMPERATURES BY TEN DEGREES FAHRENHEIT

INCREASED UNDERSTORY  
CREATES EVAPORATIVE COOLING OVER SIXTEEN ACRES OF LANDSCAPE

Figure 6.3-A: Sections illustrating the change in heat and temperature exposure with the increase in plantings and sustainable practices



### 3. HEAT ISLAND REDUCTION

*75% of Pavement in Shade (see Figure 6.3-A)*

#### **A. 2010 EXISTING CONDITIONS**

- The 25 acres of parking is assumed to be bituminous concrete and thus low albedo with minimal shading.
- Walkways were not included in this calculation because they were assumed to be medium or high albedo (concrete) under the current conditions based on aerial imagery review.
- It was not assumed that any roof tops are vegetated.

#### **B. 2060 PROPOSED CONDITIONS**

- Solar shading area was calculated by estimating the percentage of total parking spaces shown as shaded on the proposed master plan.
- This resulted in approximately 80% of the parking spaces.
- The parking study included in the Master Plan document identified 3200 total spaces under the proposed build out.
- Each parking space was assumed to be 200 square feet or 640,000 square feet total.
- 80% of 640,000 square feet = 11.8 acres of shaded parking area.
- It was assumed that all existing roof and pavement will be replaced by high albedo materials such as concrete, pavers, crushed stone, light colored roofing, etc.
- New high albedo surfaces: 25 acres of parking + 19 acres of roof top replaced by green roof or amended with high albedo surfacing = 44 acres

#### **C. LEED CREDIT 7.1 AND UNDERSTORY CALCULATION**

This credit requires that 50% of pavement surfaces are shaded. This was done by adding:

- 11.8 acres of shaded parking by shade structures
- 600 new trees were noted by SWA to be included in the Master Plan
- Each tree assumed to have 40-foot standard diameter canopy or 1256 square-feet by 2060
- Assumed that 25% of each tree canopy provides shade to a paved surface
- 1900 trees x 1256 square-feet per tree x 25% shading = 13.7 acres
- Shaded surfaces = 11.8 acres bny shade structures + 13.7 acres of new canopy shading
- Paved surfaces include 25 acres of parking + 9 acres of walkways = 34 acres total
- 25.5 acres (11.8 + 13.7 = 25.5) of shaded pavement / 34 acres pavement surfaces = 75%

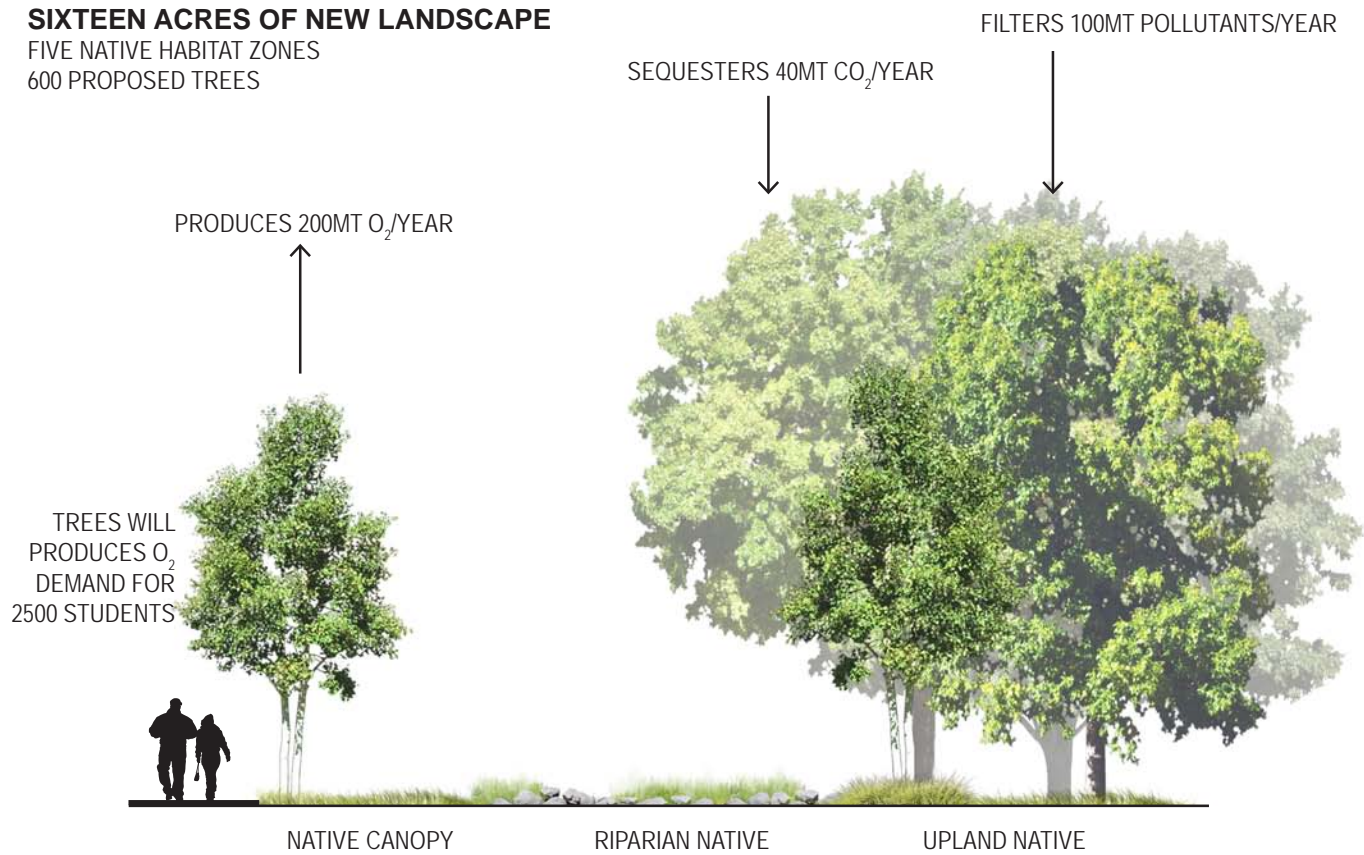
#### **D. GROUND PLANE COOLING**

A 5 to 10 degree reduction in surface temperatures resulting from high albedo materials versus low albedo materials is referenced by the University of Washington College of Forest Resources.

# SHERWOOD ENGINEERING ANALYSIS

\*55 acres of endangered habitat restoration

**SIXTEEN ACRES OF NEW LANDSCAPE**  
 FIVE NATIVE HABITAT ZONES  
 600 PROPOSED TREES



**SUPPORTS THE REGIONAL ECOLOGY OF:**  
 ENDEMIC BIRDS, 200 BUTTERFLY SPECIES, AND THE  
 HIGHEST DIVERSITY OF NATIVE BEE SPECIES IN THE U.S.

Figure 6.4-A: Section illustrating the planting characteristics of native upland and riparian habitats.



**HERMES COPPER BUTTERFLY**  
 Species population loss due to wildfires combined with isolation and small existing population size makes Hermes copper butterfly vulnerable to extinction or likely to become endangered within the foreseeable future throughout all or a significant portion of its range.<sup>1</sup> see appendix for citations



**MONARCH BUTTERFLY**  
 The Monarch overwinters in conifer groves. Recent illegal deforestation of these grounds have led to a drastic reduction in the butterfly's population. Efforts to classify it as a protected species and to restore its habitat are under way.<sup>2</sup>



**QUINO CHECKERSPOT BUTTERFLY**  
 The Quino checkerspot is the second subspecies of *Euphydryas editha* to be listed under the Endangered Species Act. In previous years it has been considered a fairly widespread subspecies occurring in coastal sage scrub habitat in southern CA and Baja California. However, its range is now limited to a few populations in Riverside and San Diego Counties.<sup>3</sup>



**NUTTALL'S WOODPECKER**  
 This woodpecker is of moderate conservation importance, primarily because of its limited range, low overall density, and its association with intact oak and riparian forests. As a primary cavity nester, this species provides nest sites for many other species.<sup>4</sup>

Figure 6.4-B: Images of endangered or threatened species native to the Southern California area.

## 4. ECOLOGICAL DIVERSITY

### *55 Acres of Endangered Habitat Restoration (see Figure 6-4.A)*

- These quantities represent the full master plan build out ecological benefits from the urban forest at Los Angeles Valley College.
- The claim of 40 acres of endangered habitat restoration is based on the full build Master Plan which will include 1900 trees and associated supporting landscape. 500-600 new trees were indicated by SWA, however since this included replacement trees, we assumed only 50% were new.  $1600 \text{ existing trees} + 300 \text{ new trees} = 1900 \text{ trees in 2060}$ .
- It is estimated that the final landscape at 2060 will be a native and diverse habitat of supporting indigenous fauna.
- The area of this proposed landscape was based on tree canopy. Again, each tree was estimated to be mature with a 40-foot diameter canopy.  $A 40\text{-foot diameter canopy} = 1256 \text{ square feet}$ .  $1256 \text{ square feet} \times 1900 \text{ trees} = 54.8 \text{ acres of habitat restoration}$ .

#### **A. LANDSCAPE ECOLOGICAL BENEFITS**

- A mature tree removes 120 lbs of particulates and pollution from the atmosphere each year as referenced by University of Washington College of Forest Resources.  $1900 \text{ total trees} \times 120 \text{ lbs per tree} = 114 \text{ tons of pollutants filtered per year}$ . Pollutants include; Sulfur Oxide, Nitrogen Oxide, Carbon Monoxide, CO<sub>2</sub>, Volatile Organic Compounds (VOCs), particulates (dust, metals, aerosols).
- A mature tree produces 260 lbs of O<sub>2</sub> per year as referenced by University of Washington College of Forest Resources.  $1900 \text{ total trees} \times 260 \text{ lbs per tree} = 247 \text{ tons of oxygen produced per year}$ .
- Two mature trees produce the oxygen needs of 1 adult. Each student spends a maximum of 8 hours per day on campus. Thus, 1 day or 24 hours of O<sub>2</sub> production by 2 trees on LAVC campus supplies a volume of O<sub>2</sub> equivalent to the demand of 3 students ( $1900 \text{ trees} / 2 \text{ trees per student} \times 3 \text{ student per 24 hour period} = 2850 \text{ students}$ ).
- A mature tree sequesters 5 metric tons of carbon dioxide per year as referenced by University of Washington College of Forest Resources.  $1900 \text{ total trees} \times 50 \text{ lbs per tree} = 47.5 \text{ tons of carbon sequestered per year}$ . Our research indicates carbon offset values range significantly between \$0.10 and \$10.00. However, the relatively small scale of the LAVC Urban Forest landscape based carbon sequestration is not the right strategy for the Carbon Credit Market. A land bank in the thousands of acres is the scale necessary.
- The native eco-region in the San Fernando Valley is a Coastal Sage or Chaparral which is characterized by Savannahs and Coast Live Oak. This habitat supports an endemic bird area; 200 species of butterflies and; highest diversity of native bee species in the U.S. This is all referenced by the World Wildlife Fund Report NA1201. Butterflies include: Quino Checkerspot and the Hermes Copper Butterfly. An example of an endemic bird is the Nuttall's Woodpecker (see Figure 6.4-B).





"Knowing *trees*, I understand the meaning of *patience*. Knowing *grass*, I can appreciate *persistence*."

~Hal Borland



## IV. Recommendations

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### A. Arboricultural Recommendations

1. *Diagrams*
2. *Tree Conservation in Construction Impacted Areas*

### B. Cultural Landscape Recommendations

### C. Replacement Tree Species

### D. Tree Replacement Policy

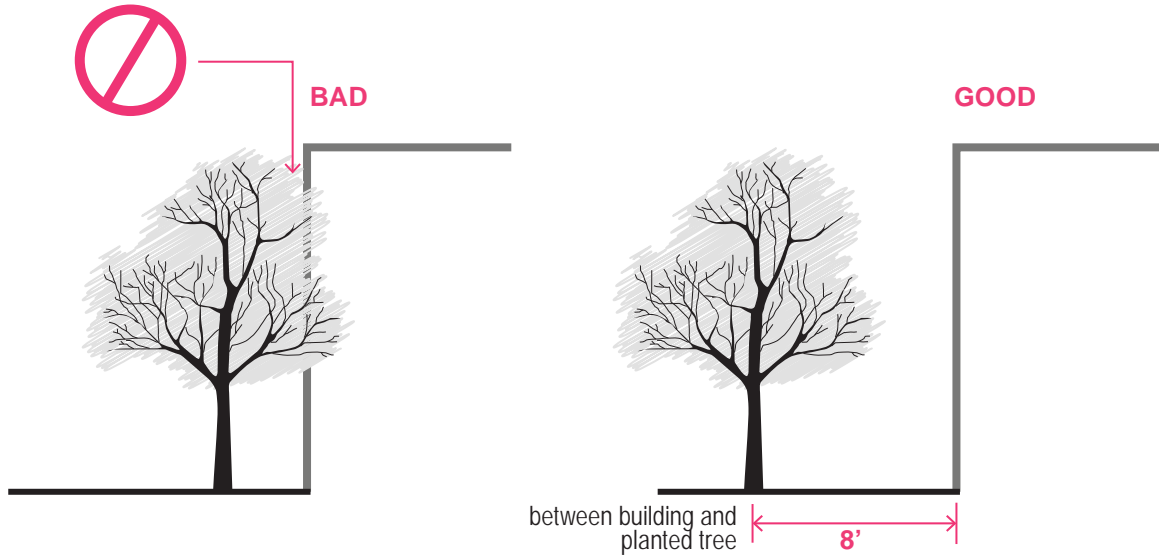
### E. LAVC Tree Walk

1. *Tree Walk Map*
2. *Tree Walk Signage (Marker)*

# A. Arboricultural Recommendations

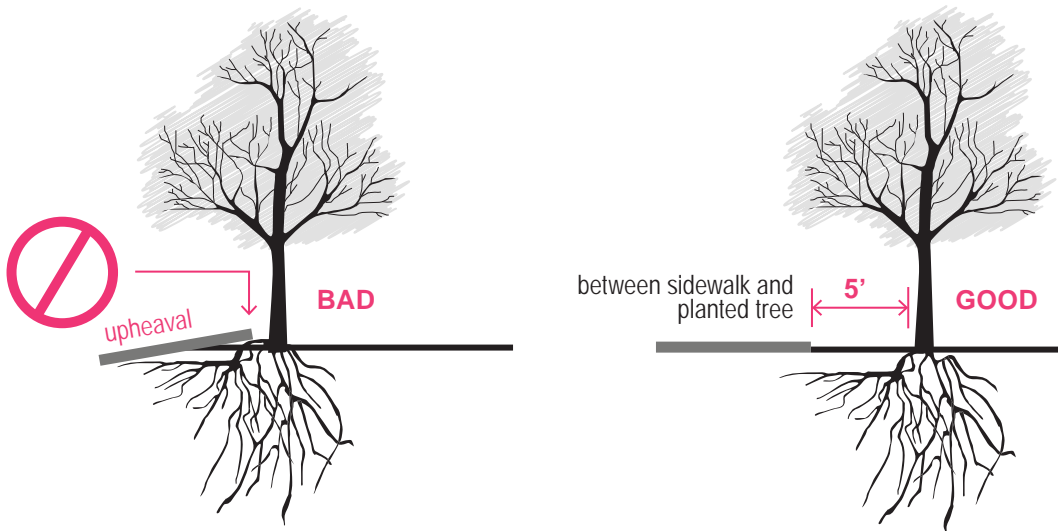
## 1. DIAGRAM: PLANTING PROXIMITY TO BUILDING

Proximity to Buildings should always be considered when selecting the plant species. Canopies provide obvious reasons why trees should be planted away from a building. Rootballs are not as obvious and aggressive roots can have damaging effects on the foundation. Depending on the species and growth habit, an approximate distance is 8' from the center of a tree to the building. Proper planting can decrease the needed maintenance for litter removal, pruning and repairs to buildings and also reduce liabilities.



## 2. DIAGRAM: PLANTING PROXIMITY TO SIDEWALK

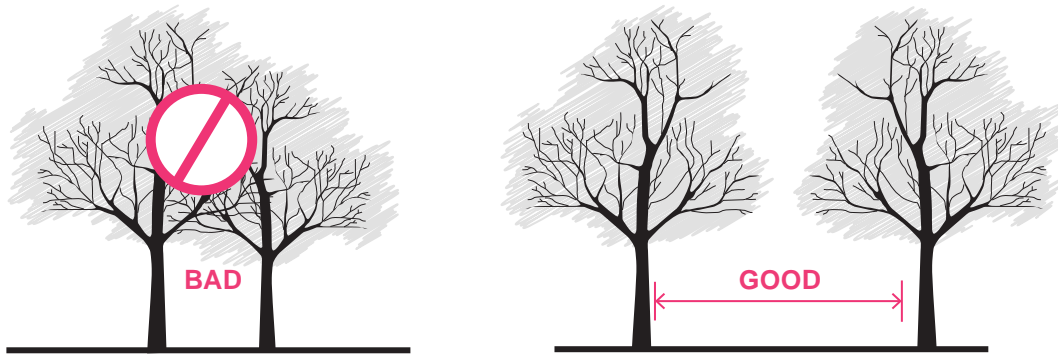
Proximity to sidewalks and hardscapes should also be considered when selecting the plant species. Roots can cause pavement upheaval if planted too close in proximity. Tree root control barriers, CU Structural Soils and Silva Cells are recommended to prevent pavement upheaval.





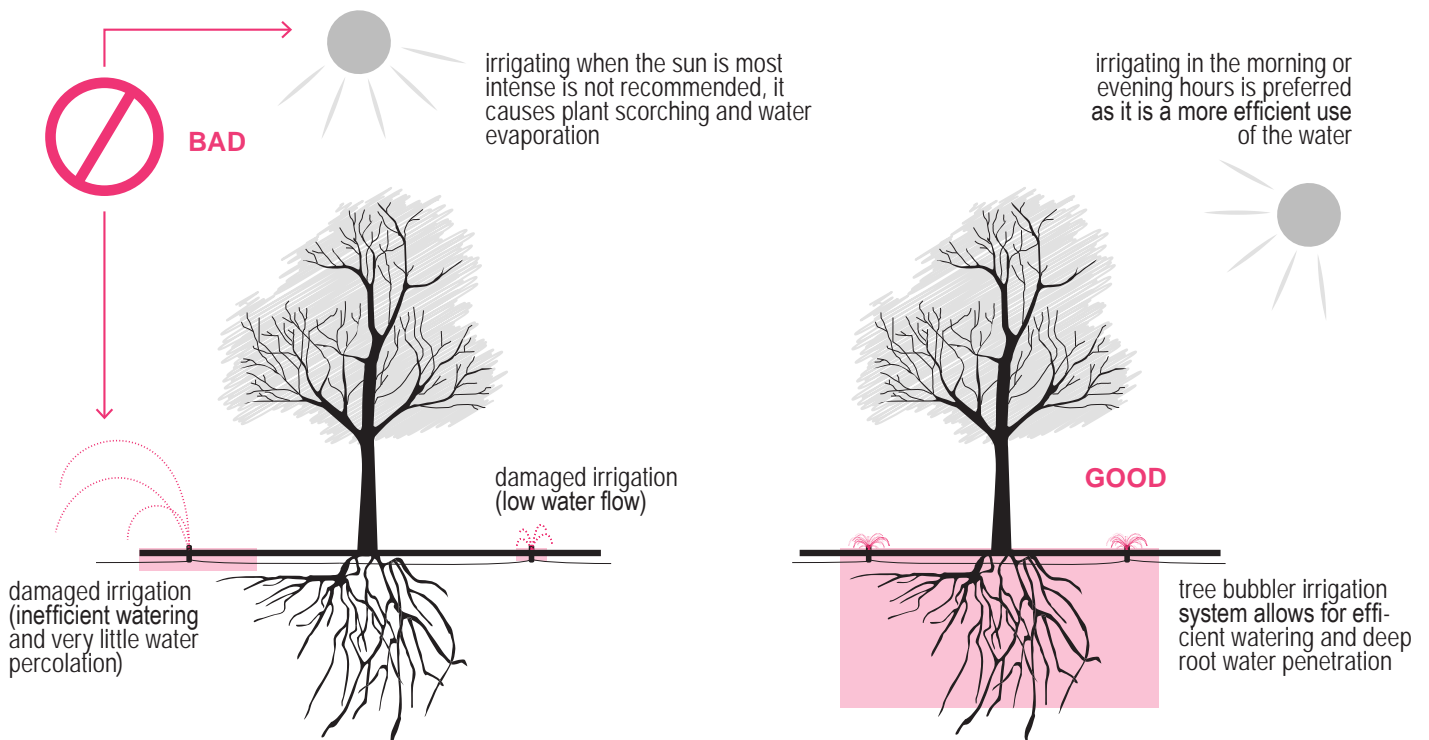
### 3. DIAGRAM: PLANTING DISTANCE BETWEEN TREES

Proper planting distance between trees is similar to the planting proximity to buildings. Inadequate distance between trees leads to poor form, increased pruning and limb failures. Trees are to be planted to achieve full growth and full growth needs adequate space.



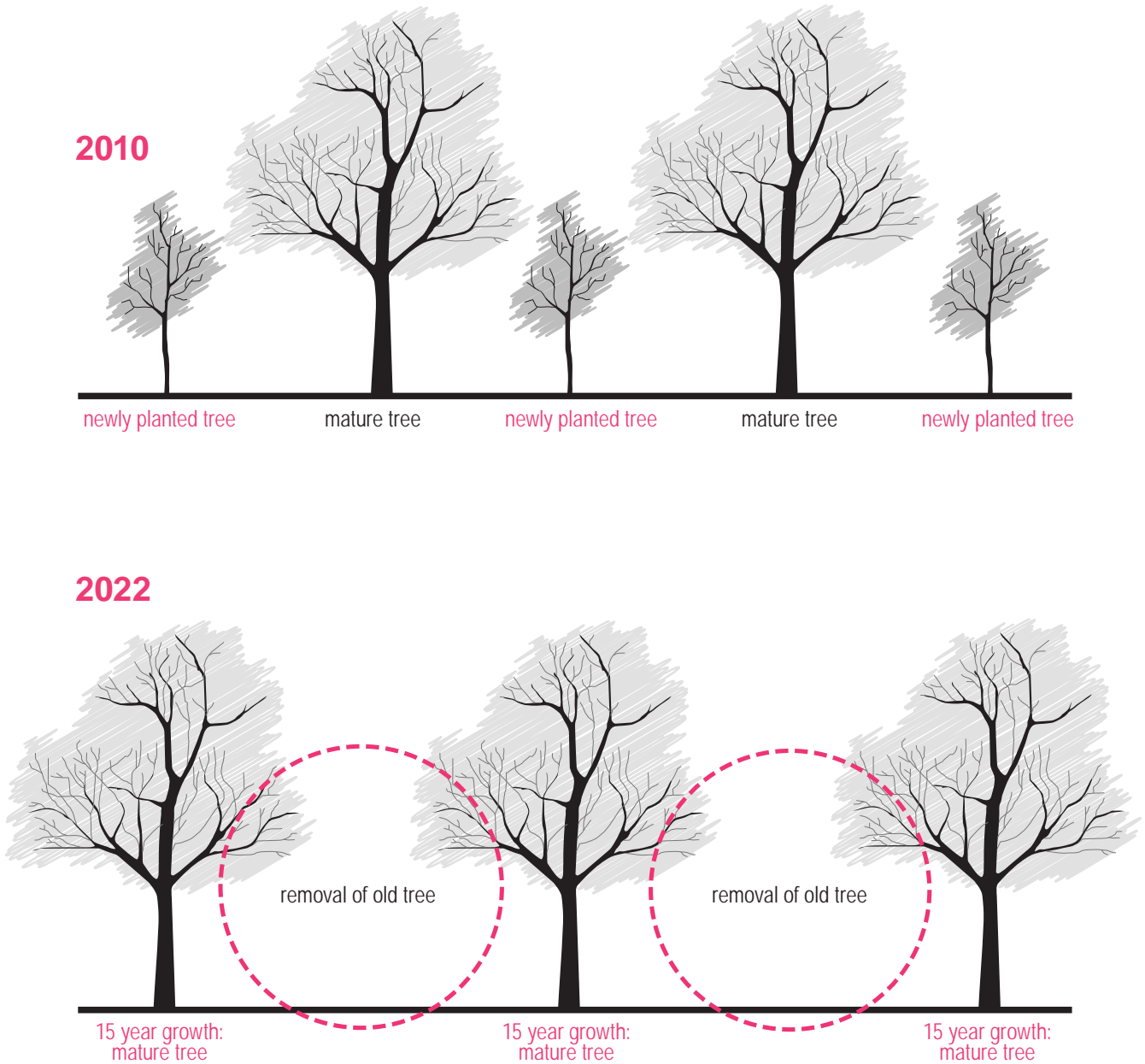
### 4. DIAGRAM: CAMPUS IRRIGATION SYSTEM

The Arborist has identified many trees that would benefit from an increase in irrigation. An irrigation audit is recommended to test the efficiency of the entire campus system and identify planting areas that do not receive adequate amounts of water, have broken or outdated equipment, and use water inefficiently.



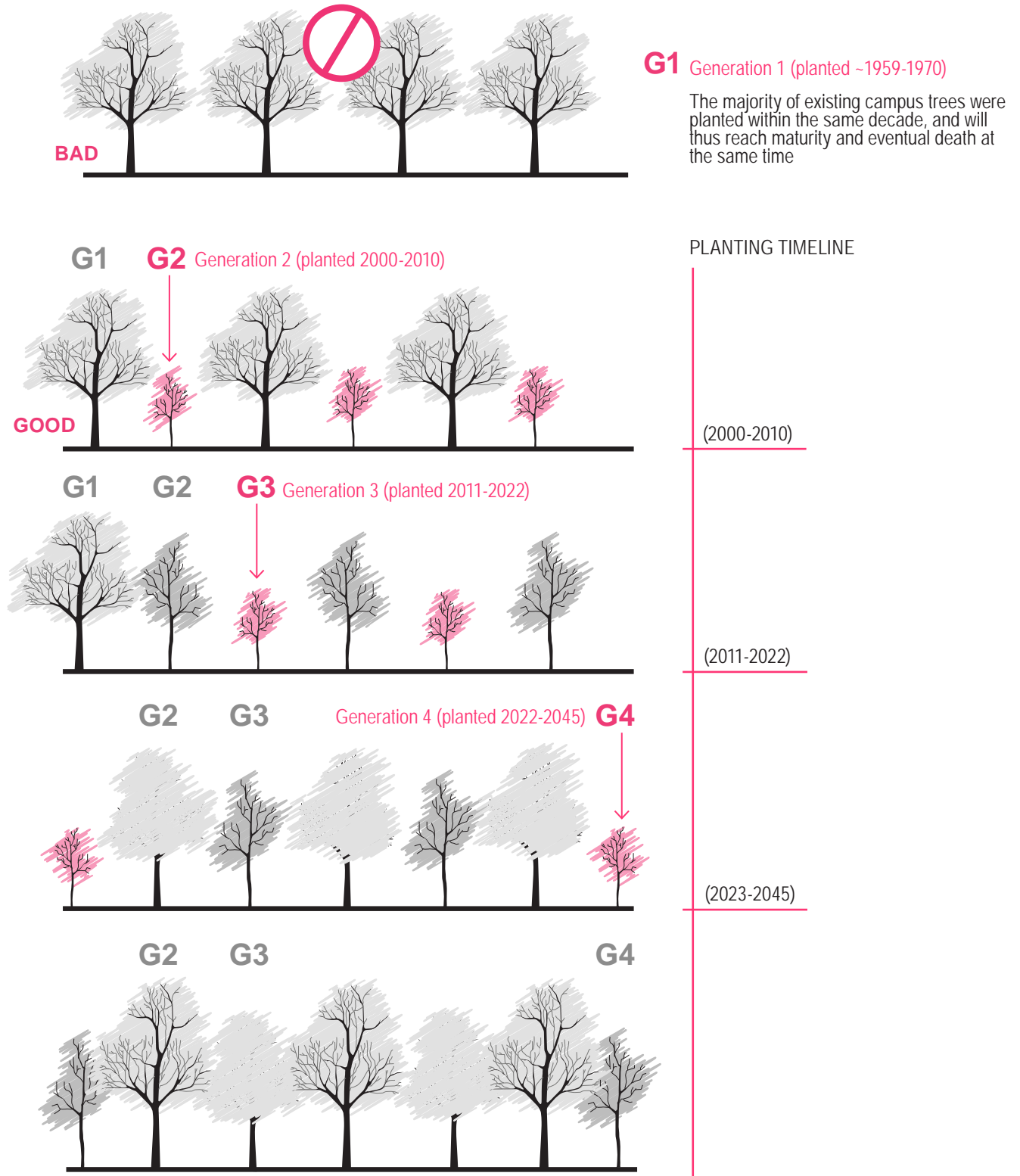
## 5. DIAGRAM: INFILL PLANTING TO MAINTAIN MATURE FOREST

When the character of a planting area is to be maintained, the mature trees that will eventually die are to be replaced with tree species of similar stature and esthetics. To maintain a mature forest, immature trees should be planted immediately and allowed to infill and establish themselves. Not planting infill trees between trees to be removed within 20 years now will result in an immature and unsightly urban forest when today's trees are removed and replaced.



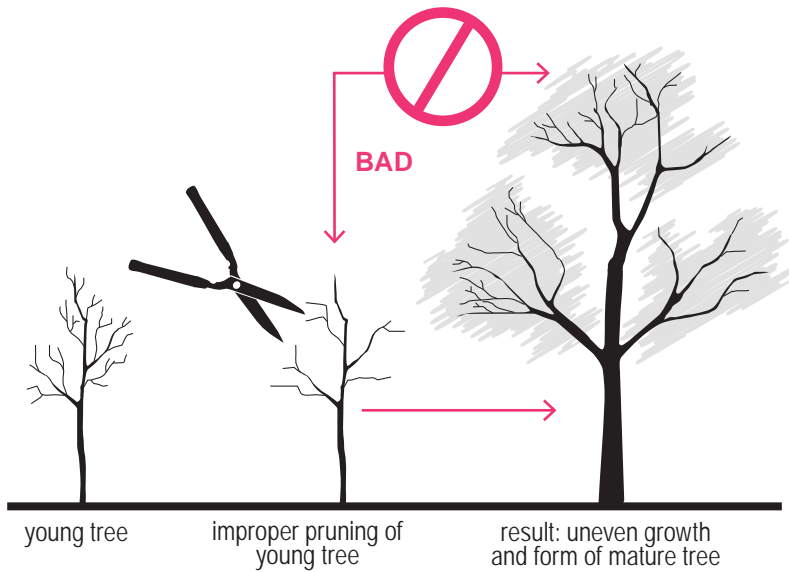
## 6. DIAGRAM: MULTI-GENERATIONAL FOREST

Establish a long term plan and maintain a multi-generational urban forest on the LAVC campus. Currently the majority of trees on campus were planted within the same decade. With a significant proportion of the campus' trees at or approaching maturity and eventual death at the same time, there is a need to begin planting trees in generations to maintain the mature esthetic. By planting multiple generations of trees, when a generation passes (or dies), the urban forest still contains mature trees.



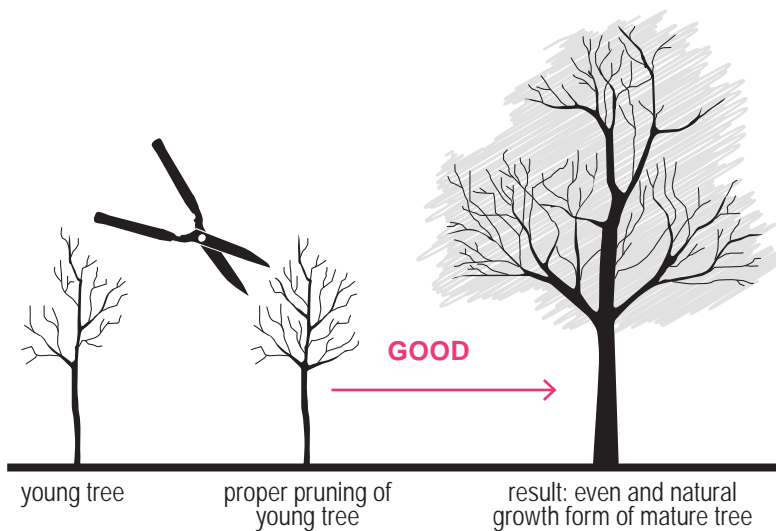
## 7. DIAGRAM: PROPER TREE PRUNING

All pruning and fertilization should adhere to the latest version of the ANSI 300, The American National Standard for Tree care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices, which was written to provide minimal performance standards for use in writing tree pruning specifications. Additionally the latest versions of the International Society of Arboriculture’s Best Management Practices, Tree Pruning, and Best Management Practices, Fertilization which were developed as companion publications, should be used to aid in the interpretation and implementation of the ANSI 300 standards. In unison these publications are intended as guides for practicing Arborist, tree workers, their supervisors, and people who employ their services. Please note that all trees should receive structural pruning to improve structural integrity and eliminate the presence of defects where they exist.



The individual trees of the following species that are proposed for conservation should receive the highest priority for pruning using the above referenced pruning methodologies.

- Podocarpus gracillior* (Yew Pine)
- Ulmus parvifolia* (Evergreen Elm)
- Pistacia chinensis* (Chinese Pistache)
- Liquidambar styraciflua* (Sweetgum)
- Pinus halepensis* (Aleppo Pine)



The individual trees of the following species that are proposed for conservation should receive the second highest priority for pruning.

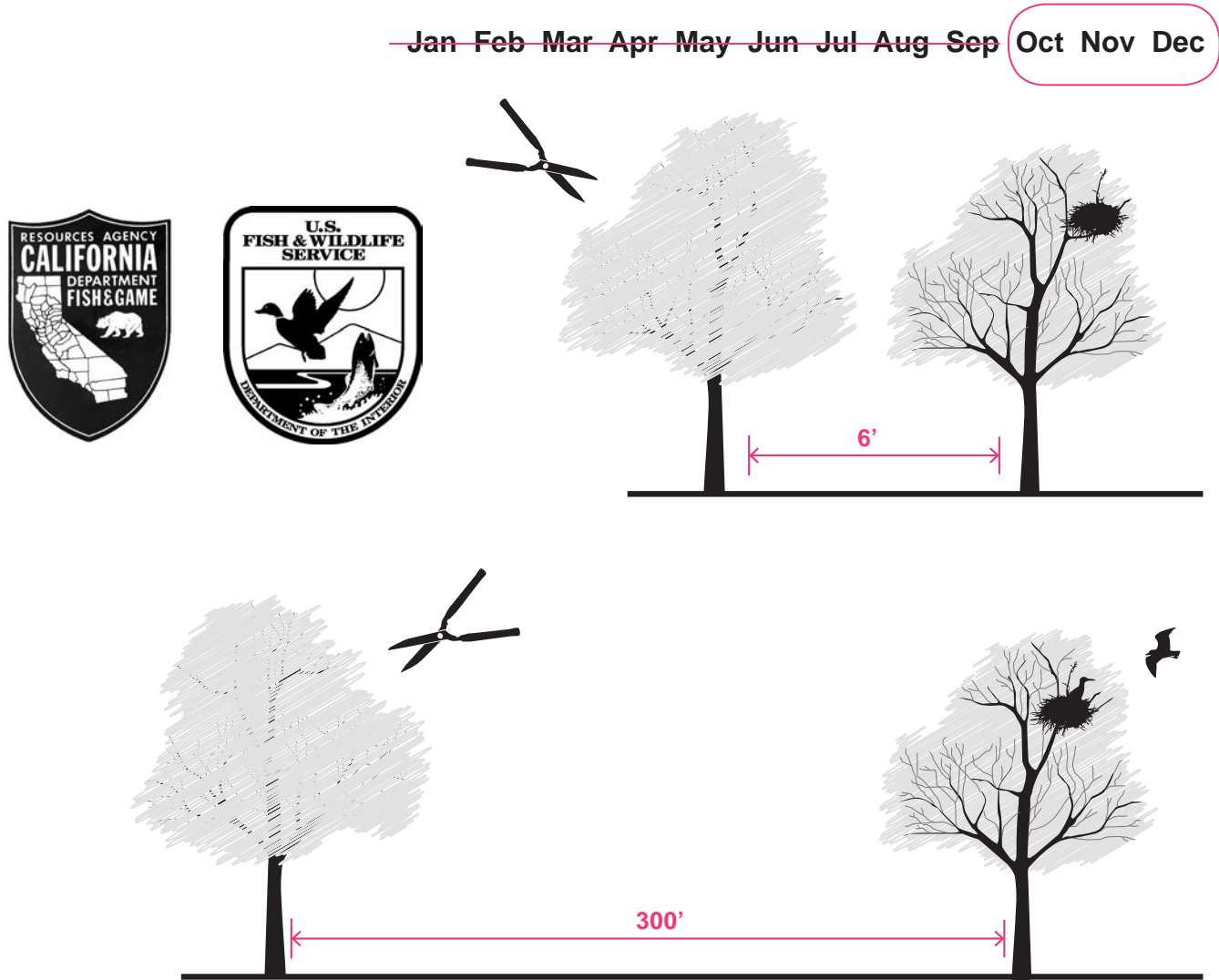
- Pinus canariensis* (Canary Island Pine)
- Cinnamomum camphora* (Camphor Tree)
- Sequoia sempervirens* (Coast Redwood)
- Albizzia julibrissen* (Silk Tree)
- Ginkgo biloba* (Maidenhair Tree)
- Koelreuteria binpinnata* (Golden Rain Tree)
- Celtis sinensis* (Chinese Hackberry)
- Jacaranda acutifolia* (Jacaranda)

The individual trees of the remaining species should be prioritized for pruning based upon the prominence of their locations and their general proximities to the larger groupings of the above referenced species.



## 8. DIAGRAM: HABITAT RESTRICTIONS REGARDING TREE MAINTENANCE

Under the Migratory Bird Treaty Act, nests are protected, and their preservation is enforced by the California Department of Fish and Game along with the U.S. Fish and Wildlife Service. As part of this Act, the pruning or removal of tree or plant species (with bird nests) is prohibited during nesting and breeding seasons (Jan 1<sup>st</sup>-Sep 30<sup>th</sup>). Only under certain circumstances (i.e. the protection of property from hazards) should pruning or removal occur during the breeding/nesting season.



### General Tree Pruning Guidelines and Non-Breeding Season Restrictions:

Two weeks prior to beginning pruning of species with potential nesting habitats, a qualified biologist needs to inspect for and record any nests or breeding activity. A week later, the biologist should survey again to ensure any young have completely left the nest and that there are no new nests started. Five days prior to pruning or maintenance, the Department of Fish and Game or US Fish and Wildlife Service must be notified.

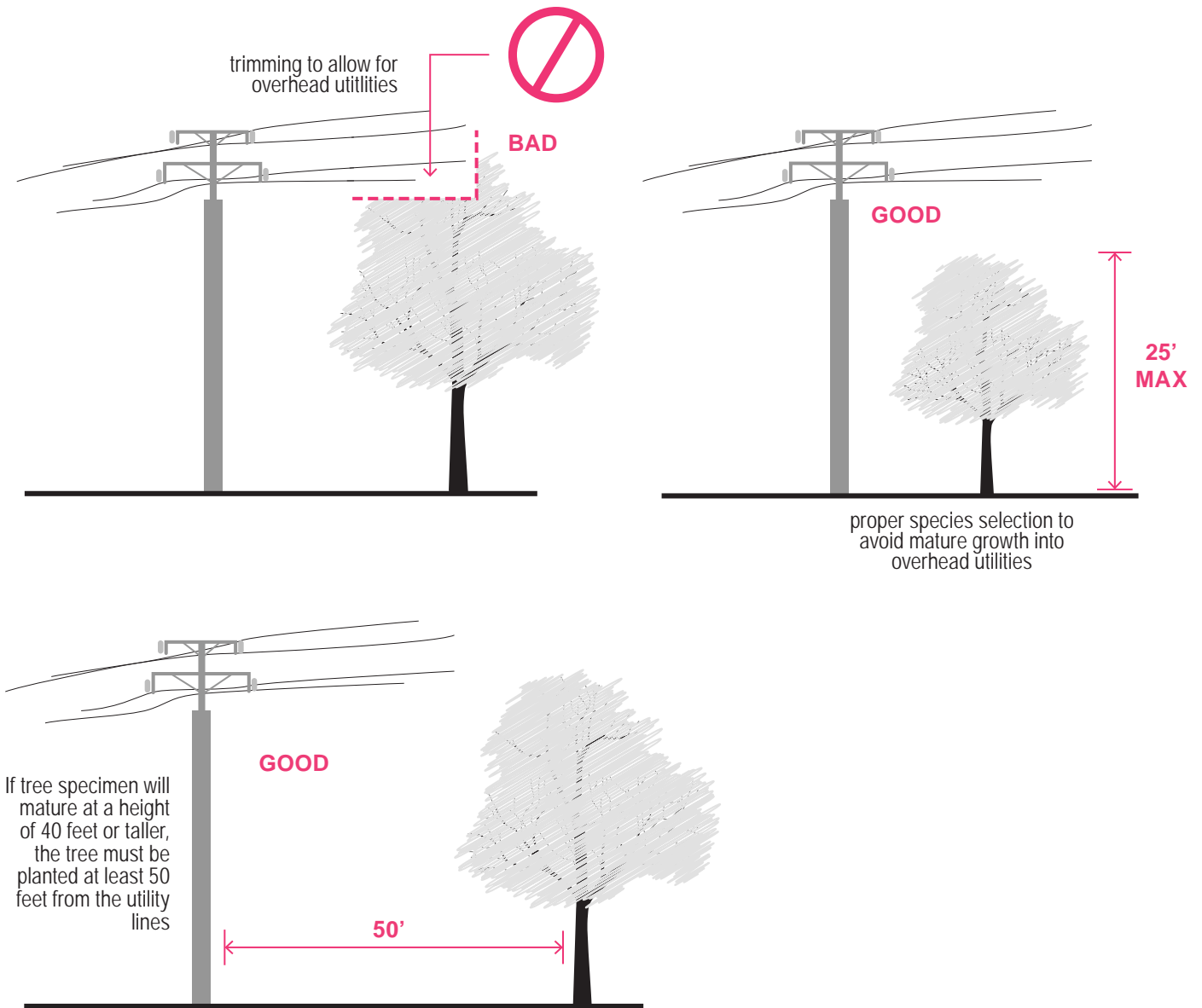
Tree pruning should not encroach within six feet of an unoccupied nest.

An unoccupied nest can be removed after it is documented by a qualified biologist.

Tree pruning should not encroach within 300 feet of an occupied nest. (source: lacounty.gov)

## 9. DIAGRAM: PLANTING IN PROXIMITY TO OVERHEAD UTILITIES

It is recommended to not plant trees near overhead utility lines. Excessive pruning to avoid contact with lines wastes money and also leads to growth problems with the trees.

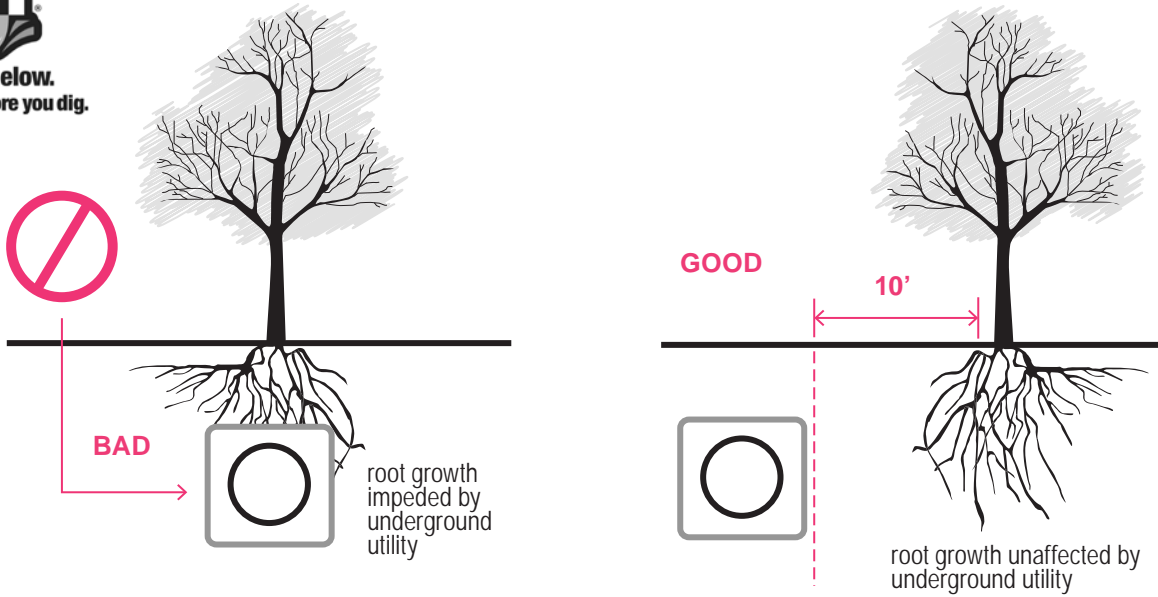


## 10. DIAGRAM: PLANTING IN PROXIMITY TO UNDERGROUND UTILITIES

Trees are to be planted at least 10' away from underground utilities. Call 811 before each digging at each job.

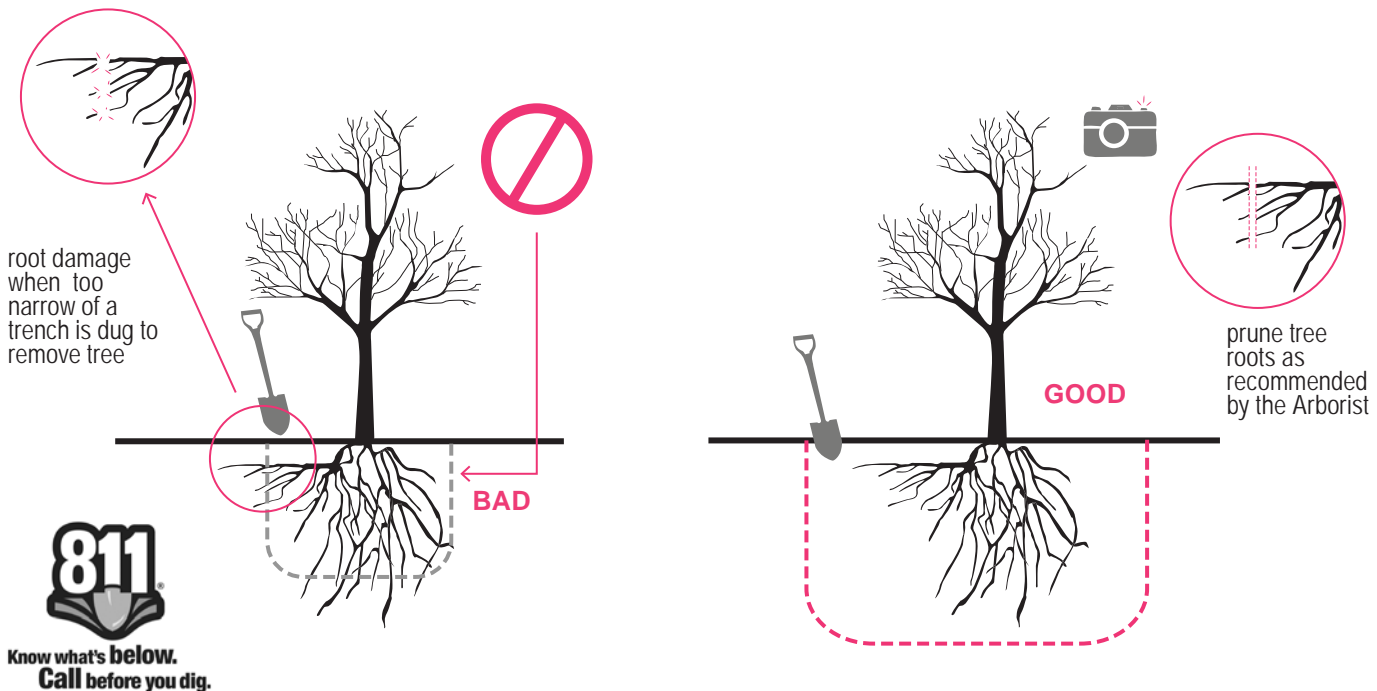


Know what's below.  
Call before you dig.



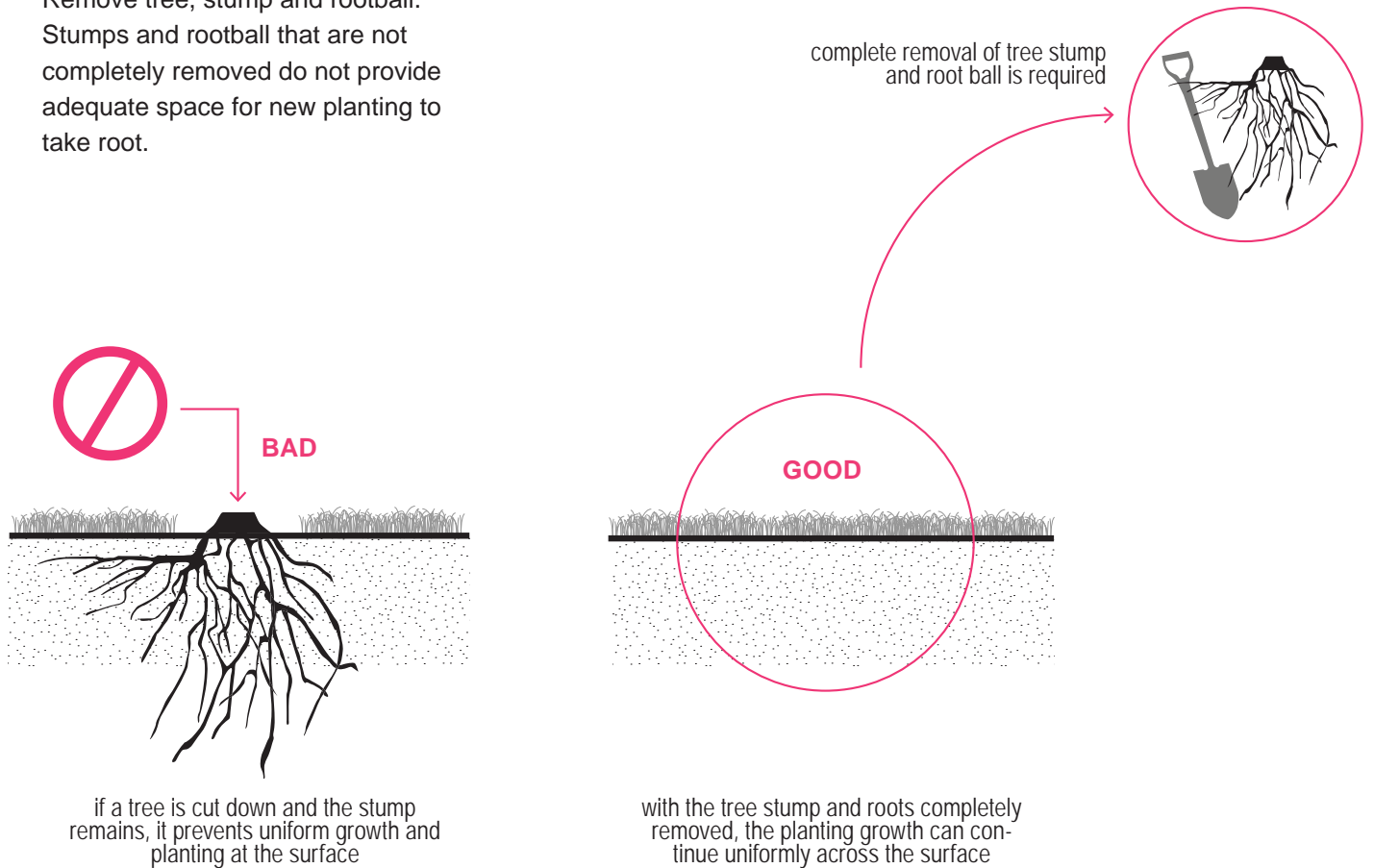
## 11. DIAGRAM: TRENCHING BENEATH THE DRIP LINE

When trenching required beneath the drip line, the services of a Certified Arborist is required. Arborist is to provide a survey of the trees within the construction limits of work containing photo documentation and canopy and root pruning recommendations. Call 811 before each digging at each job. Protection of the root zone is required.



## 12. DIAGRAM: TREE STUMP REMOVAL

Remove tree, stump and rootball. Stumps and rootball that are not completely removed do not provide adequate space for new planting to take root.



### ARBORIST RECOMMENDED PRIORITY FOR TREE REMOVALS

The following species are recommended as the highest priority of removals starting from highest priority to least. Not all trees within the species listed below are slated for removal. Refer to Arborist's Report within Appendices for individual tree recommendations.

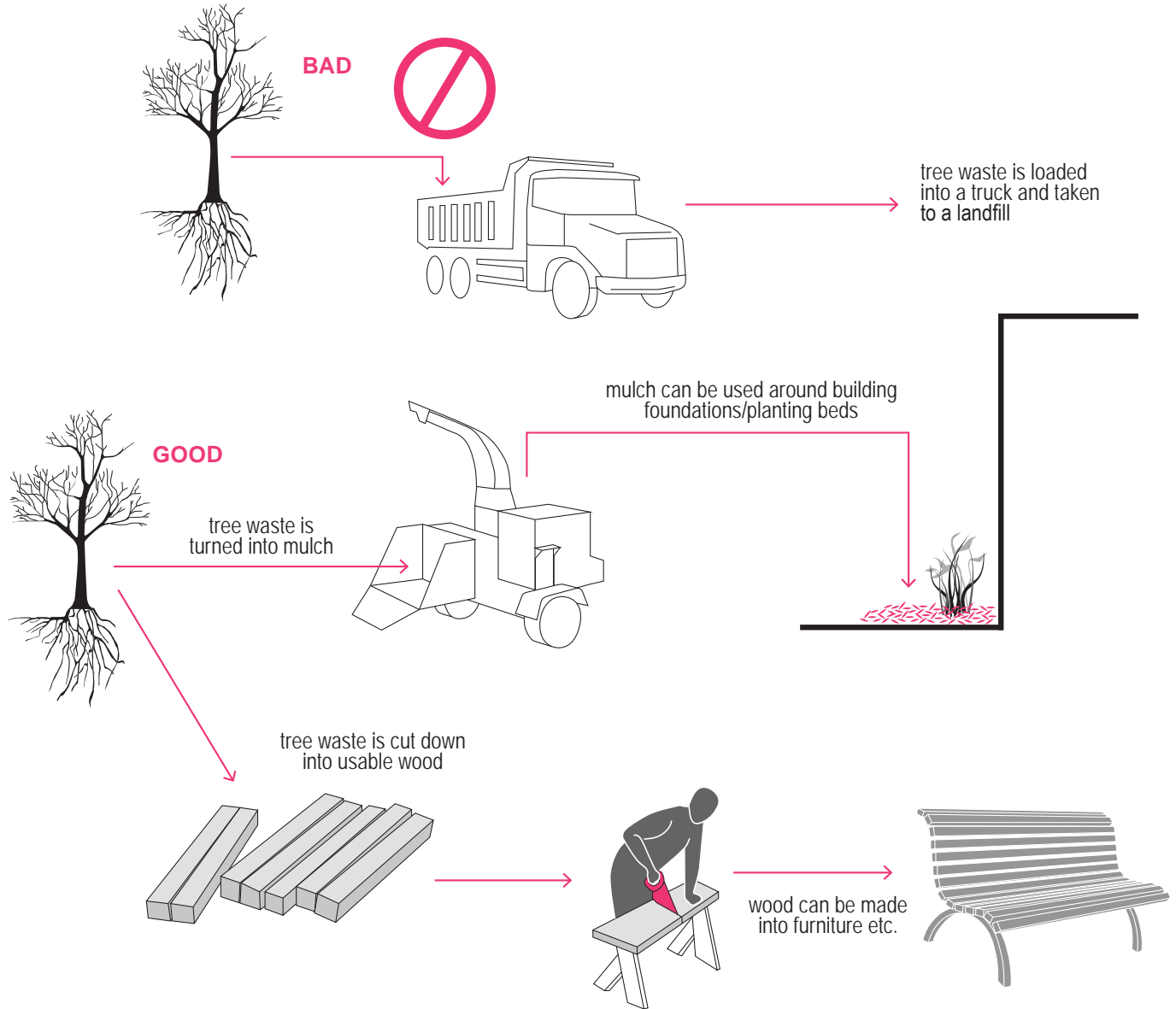
*Pinus halepensis* (Aleppo Pine)  
*Eucalyptus species* (Gum Tree)  
*Fraxinus uhdei* (Evergreen Ash)  
*Podocarpus gracillior* (Yew Pine)  
*Ceratonia siliqua* (Carob)  
*Ulmus parvifolia* (Evergreen Elm)  
*Pinus pinea* (Italian Stone Pine)  
*Liriodendron tulipifera* (Tulip Tree)

*Ficus species* (Fig Tree)  
*Cupressus sempervirens* (Italian Cypress)  
*Cupaniopsis anacardioides* (Carrotwood)  
*Liquidambar styraciflua* (Sweet Gum)  
*Albizzia julibrissen* (Silk Tree)  
*Celtis sinensis* (Chinese Hackberry)  
*Pyrus kawakamii* (Evergreen Pear)  
*Cinnamomum camphora* (Camphor Tree)



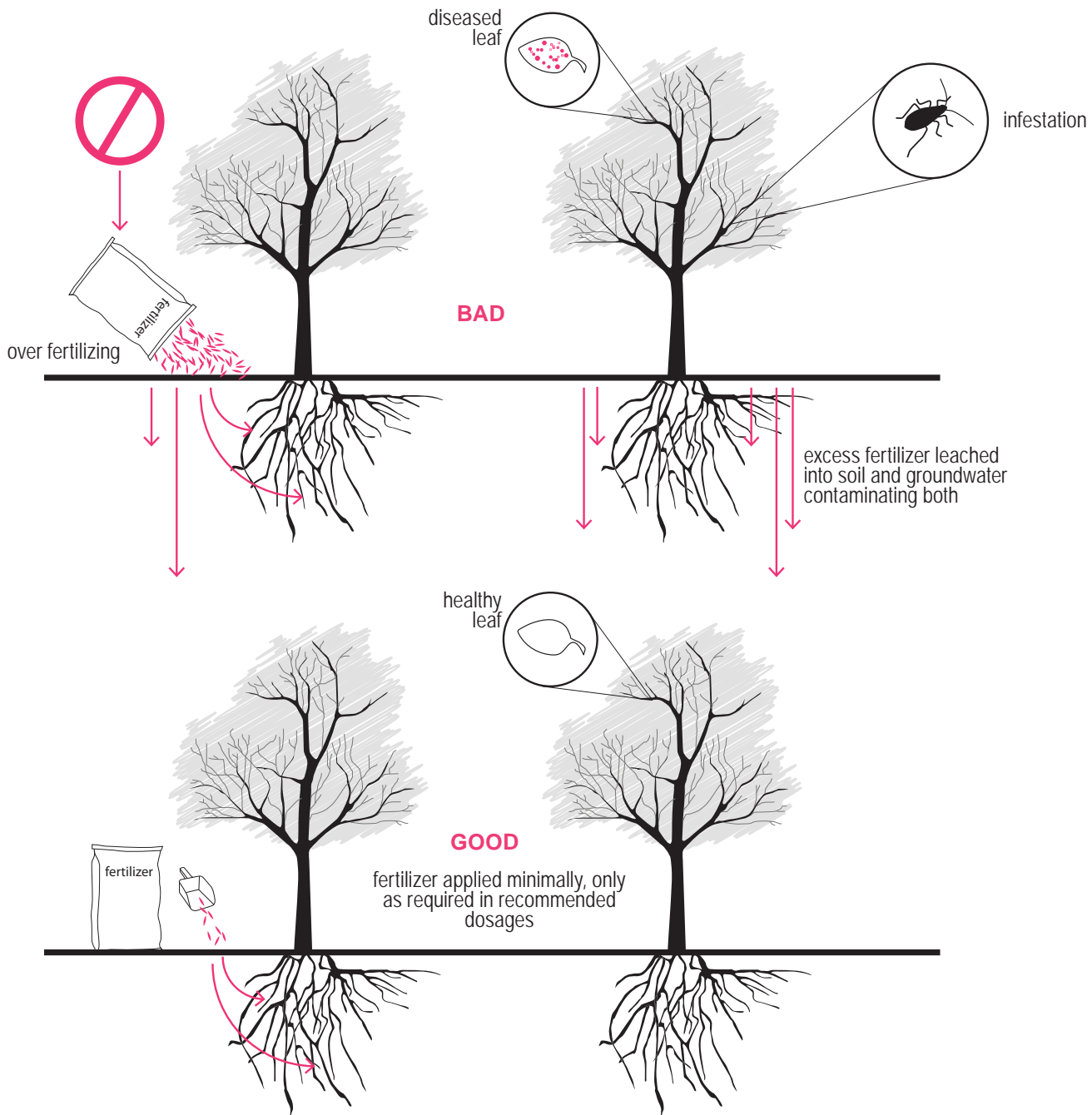
### 13. DIAGRAM: RECYCLED CONTENT OF URBAN FOREST

After pruning and removal: 100% of the greenwaste generated through routine maintenance is to be recycled. Mulch can be used for weed abatement and erosion control. Harvestable wood can be re-purposed as architectural and landscape features (i.e. benches, wall siding, etc.)



## 14. DIAGRAM: FERTILIZATION

Fertilization requirements for mature trees are minimal and should be undertaken only after serious forethought and consideration. Many disease and insect infestation issues are related to the over-application of fertilizers



### Fertilizer Recommendations:

For slow-to-medium drain soils, (clay, sandy clay, silty soils) fertilizer is rarely needed for native plants.

For fast-draining soils (sandy soils) fertilizing with a low nitrogen fertilizer may be necessary.

Where all the topsoil has been removed, compost, mulch, soil amendments, works, and small amounts of fertilizer probably will be needed to create new topsoil. (Provided by the Care & Maintenance of Southern California Native Plant Gardens)

## ARBORIST'S RECOMMENDATIONS FOR TREE CONSERVATION IN CONSTRUCTION IMPACTED AREAS

The following methodologies are recommended for *pro-actively conserving trees* that are located *within the vicinity of re-development projects* within the campus environment. For Construction Specifications, refer to Appendices section.

- a. *Potential encroachment of existing trees shall be considered* and identified in the planning process before the initiation of construction operations. A certified Arborist shall be included in the planning process to fully consider the extent of the encroachments upon trees in question in order to fully consider the survivability of any trees proposed for conservation in advance of the initiation of construction operations.
- b. *Trees identified as to be encroached within their drip-lines shall be slated for either removal or preservation* based upon the likely hood of their long-term optimal performance in the post-construction environment.
- c. *All trees proposed for long-term preservation shall be fenced*, using durable chain link fencing, to the limits of their drip-lines or where they are to incrementally encroached to the nearest point of encroachment.
- d. The *soil surface within the fenced enclosures shall be top-dressed with mulch for the duration of the construction operations period*. The mulch shall be placed to a depth of up to two-inches with the exception of the areas within two-feet of the trunks where the depth will be one-inch or less.
- e. *Access within the fenced areas encircling the trees shall be limited to tree maintenance personnel*. Fenced areas shall not be used for construction purposes including parking vehicles or equipment, storing materials, or otherwise. No importation or exportation of soil into or from within these locations shall be permitted.
- f. *Conserved trees shall be pro-actively maintained during the construction operations* period including irrigation, fertilization and pruning as determined by a certified Arborist to be beneficial. Contractor shall submit a proposed maintenance plan relating to these issues in advance of the initiation of construction operations relating. The maintenance plan shall be reviewed and approved by a certified Arborist in advance of the initiation of any construction operations.
- g. *Trees proposed for conservation shall be inspected by a certified Arborist on a monthly basis during the construction operations* period to ensure adherence to the plan particulars and to consider the advisability of any deviations to plan based upon field conditions as they may develop during construction operations period.
- h. *Prior to the initiation of landscape development, certified Arborist shall perform inspection to consider the condition of conserved trees* and relate their potential to maintain long-term viability in the context of the long-term establishment of the landscape. Under-performing trees or trees considered incapable of long-term viability shall be replaced.

## B. Cultural Landscape Recommendations

### CULTURAL LANDSCAPE RECOMMENDATIONS

#### INTRODUCTION

These recommendations have been prepared to provide a cultural landscape perspective and are intended to guide and support long-term management of the campus prepared elsewhere in the Urban Forest Master Plan.

#### Recommended Treatment Approach for LAVC

The Secretary of the Interior recognizes four recommended treatments for cultural landscapes. As the campus is not a designated historic district, nor is it undergoing a change of use, the strict application of the Secretary's Standards may have limited applicability. Regardless, having an understanding of the history of the college and specifically how and why today's urban forest developed allows a more fully informed approach to the overall Urban Forest Master Plan.

Should one or more of the Secretary's four recommended treatment types be applied to the campus of LACV the most applicable are "preservation" and "rehabilitation"<sup>10</sup>.

<sup>10</sup>The four treatment approaches include: preservation, rehabilitation, restoration, and reconstruction. Described in The Secretary of the Interior's Standards for Historic Properties as forming "the philosophical basis for responsible preservation practice and enable long-term preservation of a landscape's historic features, qualities, and materials, the approaches are defined as:

**Preservation:** the act or process of applying measures necessary to sustain the existing form, integrity, and material of a historic property. Includes stabilization work, where necessary, as well as ongoing preservation maintenance and repair of historic materials and features.

**Rehabilitation:** the act or process of making possible a compatible use for a property through repair, alteration, and additions while preserving those portions of features which convey its historical cultural, or architectural values.

**Restoration:** the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by removing features from other periods in its history and reconstruction missing features from the restoration period.

**Reconstruction:** the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.



## General Cultural Landscape Recommendations

These treatments apply to all areas within the campus boundary. They are intended to support other landscape treatments and work in conjunction with recommendations for specific areas.

1. Minimize potential impacts of development in areas on campus by working with developers and planners to find design solutions that create the least intrusive siting and character for new development in relation to the key landscape spaces on campus.
2. Establish a long term plan and maintain a multi-generational urban forest on the LAVC campus, with a significant proportion of the campus trees at or approaching maturity at any one time.
3. Avoid alterations that would impact views or vistas. New development and planting should incorporate extant view corridors around Monarch Square.
4. Retain and preserve the orthogonal layout of primary tree-lined paths at Monarch Square.
5. Minimize areas of ground disturbance - grading, soil compaction and alterations to the drainage patterns as far as these changes may impact existing trees intended to be retained.
6. Have a certified Arborist evaluate all existing trees, and prepare recommendations for maintenance, removal and replacement in accordance with these recommendations once each decade.
7. Develop and regularly update a master plant list for the campus that includes species similar in character to the original trees that are well-suited to the micro-climates existing at the college. Include new disease-resistant cultivars as substitutes for historic species when available, if they retain similar physical characteristics. Include review and input from a certified Arborist.
8. Develop recommendations for percentages of evergreen, coniferous and deciduous species for future plantings that are similar to those used on campus as recorded by the 2010 Arborist's Report (with 2011 update). This includes maintaining a generally similar balance of broadleaf evergreen trees, conifers, deciduous trees and flowering trees to original trees of the urban forest, both campus-wide and within each district.
9. Retain and/or maintain a similar balance of trees that are large in stature at maturity to those that are small as recorded by the 2010 Arborist's Report (with 2011 update). This includes a generally similar amount and distribution of shaded spaces around campus as is currently present.
10. Strive to protect and maintain the individual trees and tree groups identified as contributing resources/character defining features. This includes the root zone.

11. Campus policy is to replace trees at a 1:1 ratio. Establish and maintain a long term means of monitoring the implementation of this policy. The 2010 Arborist's Report shows trees for short and long term removal. The replacement plan should provide for new planting at a minimum of every two years to compensate for removed trees<sup>11</sup>.
12. Establish the goal of having 1,600 minimum trees on campus. Monitor and maintain the tree population to be within 5% of this number at all times.
13. Remove dead trees and tree limbs identified as potentially hazardous to individuals or resources, or as needed to restore previously existing contributing views or vistas.
14. Retain and preserve the relationship between mature trees and primary pedestrian paths around Monarch Square, the Fulton Avenue entry to campus and along the covered walkway.

### Specific Cultural Landscape Recommendations

1. In the Campus Core and Arts District (Districts 1 and 3), retain the pattern of long straight walks being edged with Southern Magnolias (*Magnolia grandiflora*) on one side and European Olives (*Olea europaea*) on the other. If one species exhibits decline due to disease which is likely to affect the others of this species, select a substitute broadleaf evergreen of similar stature to replace all of that species.
2. In the Campus Core, South Campus and Arts District, maintain a diverse plant palette suitable for use in teaching. This may include, but is not limited to:
  - Species that illustrate biomes including ecosystems native to California;
  - Various habitats for wildlife, especially pollinators;
  - Maintaining a clear night sky to as viewed from the viewing deck of the observatory within the defined observatory buffer zone.
3. Strive to maintain the arboricultural character of the first quad in the South Campus District. Consider restoring the first quad to its original size extending to the Burbank Boulevard frontage.
4. Provide shade trees on the west sides of buildings made up of species of similar sizes and density as exists today.
5. At the Fulton Avenue entry in the Campus Core (District 1), maintain an informal and generally symmetrical balance of trees on each side of the main pedestrian entry.

<sup>11</sup> For example if 16% of the existing urban forest of 1,620 trees are slated for incremental removal, plant 25 new trees every two years to compensate for removals.

6. In the South Campus (District 3), maintain the large diversity of species, and the pattern of groupings of trees of several species and sizes. Groupings of trees include 1-2 of each species represented by that grouping.
7. In the Arts District, retain the relationship of avenue plantings with the avenues of Monarch Square. For instance, where a straight row of one species, such as Southern Magnolia (*Magnolia grandiflora*), starts in the Arts district, continue it into the campus core in the same way as it currently exists.
8. In the Physical Education district, retain the pattern of long single-species rows of trees at the edges of fields and courts, and the pattern of individual or pairs of large specimen trees.
9. Where significant single-species rows of trees are identified by the Arborist for long term removal, interplant with the replacement species, matching spacing as many years as possible prior to removal of the original species, such as replacing Sweet Gum (*Liquidambar styraciflua*) and Tulip Trees (*Liriodendron tulipifera*).
10. In the Parking district, work with PG&E (or local utility company) to install power lines underground on the six perimeter streets, so that large perimeter trees can be planted without the impact of pruning to ensure clearance from wires.
11. Provide large shade trees in parking lots at a density replicating original trees.
12. Maintain the dominance of Canary Island Pines (*Pinus canariensis*) on campus. When planting Canary Island Pines, provide clearance from buildings to minimize the impact of pine needle litter on building maintenance.
13. Retain and protect, or if required due to site-wide poor health, replace with similar species, the significant stands of trees (their form and general size and character) including:
  - Canary Island Pines at the north end of Monarch Square between the Theater Arts and Art buildings
  - Avenue of trees including: Southern Magnolias, Olives (*Olea europaea*) and Canary Island Pines at Monarch Square and the North Mall, and Olives on the east side of the cafeteria
  - Perimeter rows of trees including, but not limited to: large deciduous trees that replicate the size, placement, character and density of existing trees (in lieu of the failing Sweet Gums and Tulip Trees)
  - First Quad trees
  - Canary Island Pines as the signature tree of campus
  - Yew Pine (*Podocarpus gracillior*) and Canary Island Pines along the southern portion of the covered walkway.
14. Retain, protect and plan for future continued accommodations of significant individual specimens, including: Bunya Bunya Pine (*Araucaria bidwillii*), Moreton Bay Fig (*Ficus macrophylla*), and London Plane Tree (*Platanus acerifolia*) near Burbank Boulevard
15. Use historically appropriate tree species<sup>12</sup> that satisfy the overriding goals of the Tree Master Plan, such as providing teaching opportunities and species with low water demand. The goal is to retain the overall vegetative character created by the trees on campus rather than retaining an identical species list to the one currently found on the campus. The following list of species are examples of historically appropriate tree species:

## Large stature species

<i>Brachychiton acerifolia</i> (Flame Tree)	<i>Podocarpus gracilior</i> (Yew Pine)
<i>Chorisia speciosa</i> (Floss Silk Tree)	<i>Ulmus parvifolia</i> (Evergreen Elm)
<i>Ficus macrophylla</i> (Moreton Bay Fig)	<i>Quercus agrifolia</i> (Coast Live Oak)
<i>Ficus rubiginosa</i> (Rusty Leaf Fig)	<i>Quercus ilex</i> (Holly Oak)
<i>Ficus benjamina</i> (Weeping Fig)	<i>Quercus lobata</i> (Valley Oak)
<i>Ginkgo biloba</i> (Maidenhair Tree)	<i>Quercus suber</i> (Cork Oak)
<i>Jacaranda acutifolia</i> (Jacaranda)	<i>Quercus virginiana</i> (Southern Live Oak)
<i>Liquidambar rotundiloba</i> (Fruitless Sweetgum)	<i>Quercus engelmannii</i> (Engelman Oak)
<i>Magnolia grandiflora</i> (Southern Magnolia)	<i>Quercus kelloggii</i> (California Black Oak)
<i>Metasequoia glyptostroboides</i> (Dawn Redwood)	<i>Quercus pilustrus</i> (Pin Oak)
<i>Pinus canariensis</i> (Canary Island Pine)	<i>Sapium sebiferum</i> (Chinese Tallow Tree)
<i>Plantanus acerifolia</i> (London Plane Tree)	<i>Tabeluia ipe</i> (Pink Trumpet)
<i>Plantanus racemosa</i> (California Sycamore)	<i>Tipuana tipu</i> (Tipu Tree)

## Small stature species

<i>Aesculus californica</i> (California Buckeye)	<i>Lycium floribundus</i> (Catalina Ironwood)
<i>Arbutus unedo</i> 'Marina' (Marina Strawberry Tree)	<i>Magnolia grandiflora</i> 'Little Gem' (Dwarf Magnolia)
<i>Bauhinia blakeana</i> (Orchid Tree)	<i>Prunus caroliniana</i> (Carolina Cherry)
<i>Callistemon citrinus</i> (Lemon Bottlebrush)	<i>Olea europaea</i> 'Swan Hill' (Swan Hill Olive)
<i>Cercis canadensis</i> (Redbud)	<i>Sophora secundiflora</i> (Texas Mountain Laurel)
<i>Chamaerops humilis</i> (Mediterranean Fan Palm)	<i>Stenocarpus sinuatus</i> (Firewheel Tree)
<i>Chitalpa taschkentensis</i> (no common name)	<i>Thevetia peruviana</i> (Yellow Oleander)
<i>Lagerstroemia x 'faurei'</i> (Crape Myrtle)	<i>Tristania laurina</i> (Water Gum)
<i>Laurus nobilis</i> (Grecian Bay Laurel)	

16. Retain and incrementally replace declining and/or failed trees along Campus Drive between the southeast center of the Campus Core and the north end of the Journalism/Business building.
17. Provide one or more "tree walks" on campus where trees have identifying name markers and brochures are made available that illustrate the historical, biological, ecological, and cultural contributions of the plants on campus.

<sup>12</sup>Based on the Existing Conditions and Analysis and Evaluation sections of the cultural landscape component of this report, "historically appropriate tree species" include using broadleaf evergreens of similar stature to replace broadleaf evergreens, large deciduous trees to replace large deciduous trees, etc.



## Special Considerations

### **Accessibility**

1. Develop guidelines for incorporating accessible design features, throughout the campus, that are compatible with the arboricultural character of the site. Follow Americans with Disabilities Act Accessibility Guidelines (ADAAG), and other applicable local guidelines.
2. Minimize disturbance to cultural resources when installing access facilities and systems.

### **Environmental**

1. Institute cultural and natural resource treatment and maintenance methods that are environmentally and culturally sensitive and sustainable over the long term.
2. Employ best management practices (BMPs) when thinning or removing trees.
3. Take into consideration life-cycle costing of materials to assess their long-term wearing capacity and maintenance costs. Consider materials that are non-toxic, durable, long-lived and low-maintenance.
4. Avoid altering the habitats of rare, threatened or endangered species or species of special concern. Evaluate the potential impact to wildlife habitat prior to undertaking any construction or vegetation removal.

### **Energy**

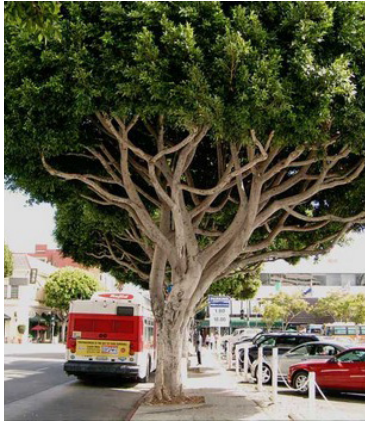
1. Develop guidelines that address appropriate sustainable design measures for the campus. Include:
  - How to reduce water use while maintaining the arboricultural character of the campus<sup>13</sup>
  - Strategies for storm water management,
  - Use of materials with recycled content,
  - Techniques for minimizing the use of herbicides and pesticides,
  - Other best practices recommended by the Green Building Council.
2. Consider expanding the master remote irrigation control system (RICS) to encompass the entire campus and requiring all new development to install compatible connections to this system.

<sup>13</sup>Water conserving measures should include the use of drought tolerant lawn species, drought tolerant trees, high efficiency irrigation systems, and the use of mulches and good maintenance.

# C. Replacement Tree Species

## ARBORIST'S RECOMMENDATIONS: LARGE STATURE

Large Stature Trees refer to the overall growth habit of the species which includes a mature height over 30' and a mature canopy over 30'. These specific species are recommended by the certified Arborist that conducted the Tree Inventory.



*Ficus species*  
Fig Tree



*Ginkgo biloba*  
Maidenhair Tree



*Jacaranda acutifolia*  
Jacaranda



*Liquidambar 'Rotundiloba'*  
Fruitless Sweetgum



*Magnolia grandiflora*  
Southern Magnolia



*Pinus canariensis*  
Canary Island Pine



*Platanus acerifolia*  
London Plane Tree



*Platanus racemosa*  
California Sycamore



*Podocarpus gracilior*  
Yew Pine



*Quercus agrifolia*  
Coast Live Oak



*Quercus ilex*  
Holly Oak



*Quercus suber*  
Cork Oak





*Quercus virginiana*  
Southern Live Oak



*Sapium sebiferum*  
Chinese Tallow Tree



*Sequoia sempervirens*  
Coast Redwood



*Tipuana tipu*  
Tipu Tree



*Tabebuia ipe*  
Pink Trumpet



*Tristania conferta*  
Brisbane Box



*Ulmus parvifolia*  
Evergreen Elm



## ARBORIST'S RECOMMENDATIONS: SMALL STATURE

Small Stature Trees refer to the overall growth habit of the species which includes a mature height less than 30' and a mature canopy less than 30'. These specific species are recommended by the certified Arborist that conducted the Tree Inventory.



*Acacia species*  
Acacia



*Arbutus unedo 'Marina'*  
Marina Strawberry Tree



*Cercis canadensis 'FP'*  
Forest Pansy Redbud



*Chitalpa tashkentsis*  
Chitalpa



*Eucalyptus ficifolia*  
Coral Gum



*Lagerstroemia x 'faurei'*  
Faurei Crape Myrtle



*Laurus nobilis*  
Grecian Bay Laurel



*Magnolia grandiflora 'LittleGem'*  
Dwarf Magnolia



*Olea eruopaea 'Swan Hill'*  
Swan Hill Olive



*Prunus caroliniana*  
Carolina Cherry



*Thevetia peruviana*  
Yellow Oleander



*Tristaniopsis laurina*  
Water Gum



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## MEASURE J MASTER PLAN RECOMMENDATIONS

The Measure J Master Plan provided a planting plan that is climate appropriate, focuses on the native and natural history, provides and considers maintenance requirements.



*Abies concolor*  
White Fir



*Acer macrophyllum*  
Big-leaf Maple



*Aesculus californica*  
California Buckeye



*Alnus rhombifolia*  
White Alder



*Calycanthus occidentalis*  
Spice Bush



*Cercis mexicana*  
Mexican Redbud



*Chilopsis linearis*  
Desert Willow



*Heteromeles arbutifolia*  
Toyon





*Juglans californica*  
Walnut



*Platanus racemosa*  
California Sycamore



*Platanus mexicana*  
Mexican Sycamore



*Populus fremontii*  
Fremont Cottonwood



*Pinus eldarica*  
Afghan Pine



*Quercus agrifolia*  
Coast Live Oak



*Salix laevigata*  
Red Willow



*Umbellularia californica*  
California Bay



## LAVC LANDSCAPE: PLANTING CONCEPT & CHARACTER (2009) RECOMMENDATIONS

Planting Concept & Character (2009) was provided by Lisa Gimmy Landscape Architecture with a focus on planting Mediterranean climate zones throughout the campus.



*Arbutus unedo*  
Strawberry Tree



*Calodendron capense*  
Cape Chestnut



*Cedrus atlantica* 'Glauca'  
Blue Atlas Cedar



*Cedrus deodara*  
Deodar Cedar



*Ceratonia siliqua*  
Carob Tree



*Laurus nobilis*  
Grecian Bay Laurel



*Liquidambar* 'Rotundiloba'  
American Sweet Gum



*Magnolia grandiflora*  
Southern Magnolia





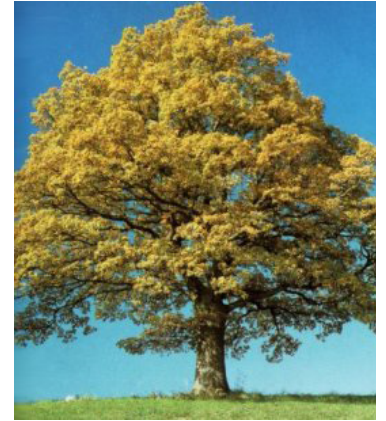
*Pinus canariensis*  
Canary Island Pine



*Pinus halepensis*  
Aleppo Pine



*Quercus ilex*  
Holly Oak



*Quercus robur*  
English Oak



*Quercus virginiana*  
Southern Live Oak



## LAVC LANDSCAPE: DOMINANT TREES

Dominant Tree Species are defined within Section II E. Existing Conditions by District. In summary, a tree that will be approaching maturity and is either numerous in quantity, visually/physically dominant, a large specimen and prominent placement.



*Araucaria bidwilli*  
Bunya Bunya Pine



*Arbutus unedo 'Marina'*  
Marina Strawberry Tree



*Callistemon viminalis*  
Weeping Bottlebrush



*Calodendron capense*  
African Cape Chestnut



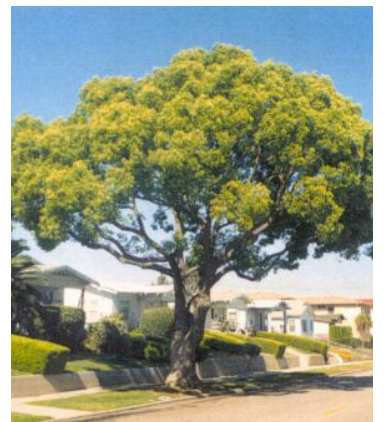
*Celtis sinensis*  
Chinese Hackberry



*Ceratonia siliqua*  
Carob Tree



*Chorisia speciosa*  
Floss Silk Tree



*Cinnamomum camphora*  
Camphor Tree



*Cupressus sempervirens*  
Italian Cypress



*Eucalyptus citriodora*  
Lemon Scented Gum



*Eucalyptus globulus*  
Blue Gum



*Eucalyptus sideroxylon 'Rosea'*  
Red Iron Bark





*Ficus macrophylla*  
Moreton Bay Fig



*Fraxinus uhdei*  
Evergreen Ash



*Geijera parvifolia*  
Australian Willow



*Ginkgo biloba*  
Maidenhair Tree



*Jacaranda acutifolia*  
Jacaranda



*Juniperus torulosa*  
Twisted Juniper



*Lagerstroemia indica*  
Crape Myrtle



*Liriodendron tulipifera*  
Tulip Tree



*Liquidambar styraciflua*  
Sweet Gum



*Magnolia grandiflora*  
Southern Magnolia



*Melaleuca quinquenervia*  
Cajeput Tree



*Olea europaea*  
European Olive



## LAVC LANDSCAPE: DOMINANT TREES

Dominant Tree Species are defined within section 3.1 Existing Conditions by District. In summary, a tree that will be approaching maturity and is either numerous in quantity, visually/physically dominant, a large specimen and prominent placement.



*Platanus acerifolia*  
London Plane Tree



*Pinus canariensis*  
Canary Island Pine



*Pinus thunbergii*  
Japanese Black Pine



*Pistacia chinensis*  
Chinese Pistache



*Podocarpus gracilior*  
Yew Pine, Fern Pine



*Pyrus kawakamii*  
Evergreen Pear



*Quercus lobata*  
Valley Oak



*Sequoia sempervirens*  
Coast Redwood



*Ulmus parvifolia*  
Evergreen Elm



## PATIO AND COURTYARD TREES

Patio and Courtyard trees provide shade and special interest while considering the maintenance requirement for litter on pavement.



*Acacia aneura*  
Mulga



*Acacia podalyriifolia*  
Pearl Acacia



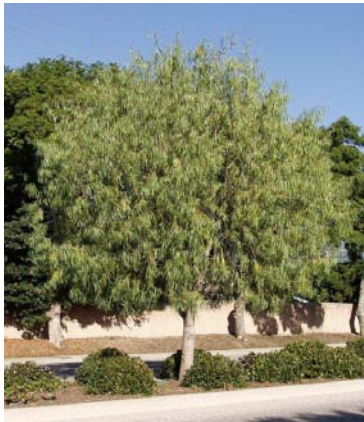
*Acca sellowiana*  
Pineapple Guava, Feijoa



*Agonis flexuosa*  
Peppermint Tree



*Arbutus unedo* 'Marina'  
Marina Strawberry Tree



*Geijera parviflora*  
Australian Willow



*Hymenosporum flavum*  
Sweetshade



*Michelia champaca*  
Champaca



*Michelia doltsopa*  
NCN



*Olea europaea* + CVS  
Olive



*Schefflera actinophylla*  
Queensland Umbrella Tree



## HABITAT TREES

Habitat Trees are species selected from the local planting communities that typically provide food and shelter for the local fauna.



*Arctostaphylos manzanita*  
Parry manzanita



*Calocedrus decurrens*  
Incesne Cedar



*Cupressus arizonica*  
Arizona Cypress



*Cupressus forbesii*  
Tecate Cypress



*Juglans californica*  
California Walnut



*Pinus coulteri*  
Coulter Pine



*Pinus sabiniana*  
Foothill Pine



*Quercus agrifolia*  
Coast Live Oak



*Quercus chrysolepis*  
Canyon Live Oak



*Quercus douglasii*  
Blue Oak



*Quercus engelmannii*  
Engelmann Oak



*Quercus lobata*  
Valley Oak



## FLOWERING TREES

Flowering Trees provide color, texture and seasonal interest to the landscape.



*Abutilon hybrids*  
Chinese Bellflower



*Aesulus californica*  
California Buckeye



*Albizia julibrissin*  
Silk Tree, Mimosa



*Alyogyne huegelii*  
Blue Hibiscus



*Bauhinia sp.*  
Orchid Tree



*Brachychiton sp.*  
Flame Tree



*Caesalpinia cacalaco*  
Cascalote



*Callistemon citrinus*  
Lemon Bottlebrush



*Callistemon viminalis*  
Weeping Bottlebrush



*Cercidium x 'Desert Museum'*  
Desert Museum Palo Verde



*Calodendron capense*  
Cape Chestnut



*Chionanthus retusus*  
Chinese Fringe Tree



# FLOWERING TREES

Flowering Trees provide color, texture and seasonal interest to the landscape.



*Chorisia speciosa*  
Floss Silk Tree



*Erythrina caffra*  
Coral Tree



*Grevillea robusta*  
Silk Oak



*Jacaranda acutifolia*  
Jacaranda



*Koelreuteria bipinnata*  
Chinese Flame Tree



*Koelreuteria paniculata*  
Goldenrain Tree



*Lagerstroemia fauriei*  
Japanese Crape Myrtle



*Magnolia x soulangeana*  
Saucer Magnolia



*Melaleuca linariifolia*  
Flaxleaf Paperbark



*Platanus torreyana*  
Empress Tree



*Leptosiphon*  
Queensland Pittosporum



*Sophora japonica*  
Japanese Pagoda Tree



## FLOWERING TREES

Flowering Trees provide color, texture and seasonal interest to the landscape.



*Spathodea campanulata*  
African Tulip Tree



*Stenocarpus sinuatus*  
Firewheel Tree



*Tabebuia chrysotricha*  
Golden Trumpet Tree



*Tabebuia impetiginosa*  
Pink Trumpet Tree



*Thevetia peruviana*  
Lucky Nut



## FRUITING AND EDIBLE TREES

Fruiting and Edible Trees provide fruits, leaves and nuts used for culinary purposes. Fruit producing trees shall not be planted above walkways and hardscape where fallen fruit will be a tripping hazard and maintenance issue.



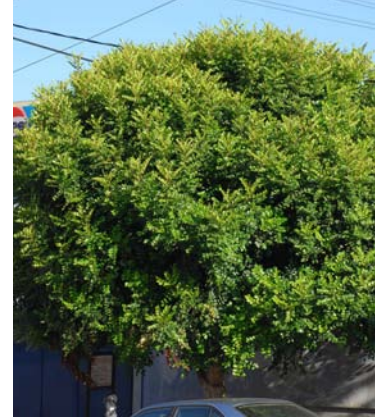
*Avocado sp.*  
Avocado Cultivars



*Banana sp.*  
Banana Cultivars



*Feijoa sellowiana*  
Pineapple Guava



*Ceratonia siliqua*  
Carob



*Citrus sp.*  
Citrus Cultivars



*Diospyros kaki*  
Chinese Persimmon



*Ficus carica*  
Edible Fig



*Laurus nobilis*  
Grecian Bay Laurel



*Musa x paradisiaca*  
Ornamental Banana



*Olea europaea spp.*  
Olive Cultivars



*Phoenix dactylifera*  
Date Palm



*Punica granatum*  
Pomegranate



## DECIDUOUS TREES

Deciduous Trees lose their leaves seasonally.



*Albizia julibrissin*  
Silk Tree, Mimosa



*Bauhinia x blakeana*  
Hong Kong Orchid Tree



*Calodendron capense*  
Cape Chestnut



*Cassia leptophylla*  
Gold Medallion Tree



*Catalpa sp.*  
Catalpa



*Celtis sinensis*  
Chinese Hackberry



*Cercis canadensis*  
Eastern Redbud



*Chorisia speciosa*  
Floss Silk Tree



*Erythrina caffra*  
Coral Tree



*Grevillea robusta*  
Silk Oak



*Jacaranda acutifolia*  
Jacaranda



*Koelreuteria bipinnata*  
Chinese Flame Tree



# EVERGREEN TREES

Evergreen Trees maintain their leaves year round.



*Aesulus californica*  
California Buckeye



*Albizia julibrissin*  
Silk Tree, Mimosa



*Bauhinia sp.*  
Orchid Tree



*Brachychiton sp.*  
Flame Tree



*Caesalpinia cacalaco*  
Cascalote



*Calodendron capense*  
Cape Chestnut



*Chionanthus retusus*  
Chinese Fringe Tree



*Chorisia speciosa*  
Floss Silk Tree



*Grevillea robusta*  
Silk Oak



*Jacaranda acutifolia*  
Jacaranda



*Koelreuteria bipinnata*  
Chinese Flame Tree

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## D. Tree Replacement Policy

The Los Angeles Valley College Campus Tree Replacement Policy is that *all trees removed are to be replaced on a one-to-one basis, removal-to-replacement*. Currently the campus forest is aging and the fact that most of the trees are of a similar age works against the forest. Additionally, the *campus has a goal to reach 1800 trees by the year 2022*. It is the policy of the LAVC that all Design and Construction Teams and sub-consultants be required to read and acknowledge the Tree Replacement Policy and the Urban Forest Master Plan.

Trees less than 4" in diameter at 4.5' above ground (DBH) shall be replaced one-to-one.

Trees 4"-12" in diameter at 4.5' above ground (DBH) shall be replaced one-to-one with a 36" box tree.

Trees 12"-24" in diameter at 4.5' above ground (DBH) shall be replaced one-to-one with a 72" box tree.

Trees 24" or greater in diameter at 4.5' above ground (DBH) shall be replaced one-to-one with an 84" box tree.

*Where possible, trees will be planted in the same manner and location as trees being removed, maintaining the campus identity.* When space is limited and inadequate space (i.e. too close to buildings, hardscape or another tree), conflicts with educational needs or conflicts with the design intent for trees to be installed on a one-to-one basis to the quantity of trees being removed, additional trees must be replanted within the Urban Forest Regeneration Zones.

**LAVC SPECIMEN TREE REPLACEMENT:** As identified within the Urban Forest Master Plan, within section 2.2a Existing Tree Species, specific trees are considered LAVC Specimen Trees. *Damage, improper care or negligence to these specimens during the construction process will result in Fines.* Each tree will be assessed and priced prior to the construction process. Fines will be paid to the LAVC Urban Forest Maintenance Fund.

### LAVC URBAN FOREST MAINTENANCE FUND:

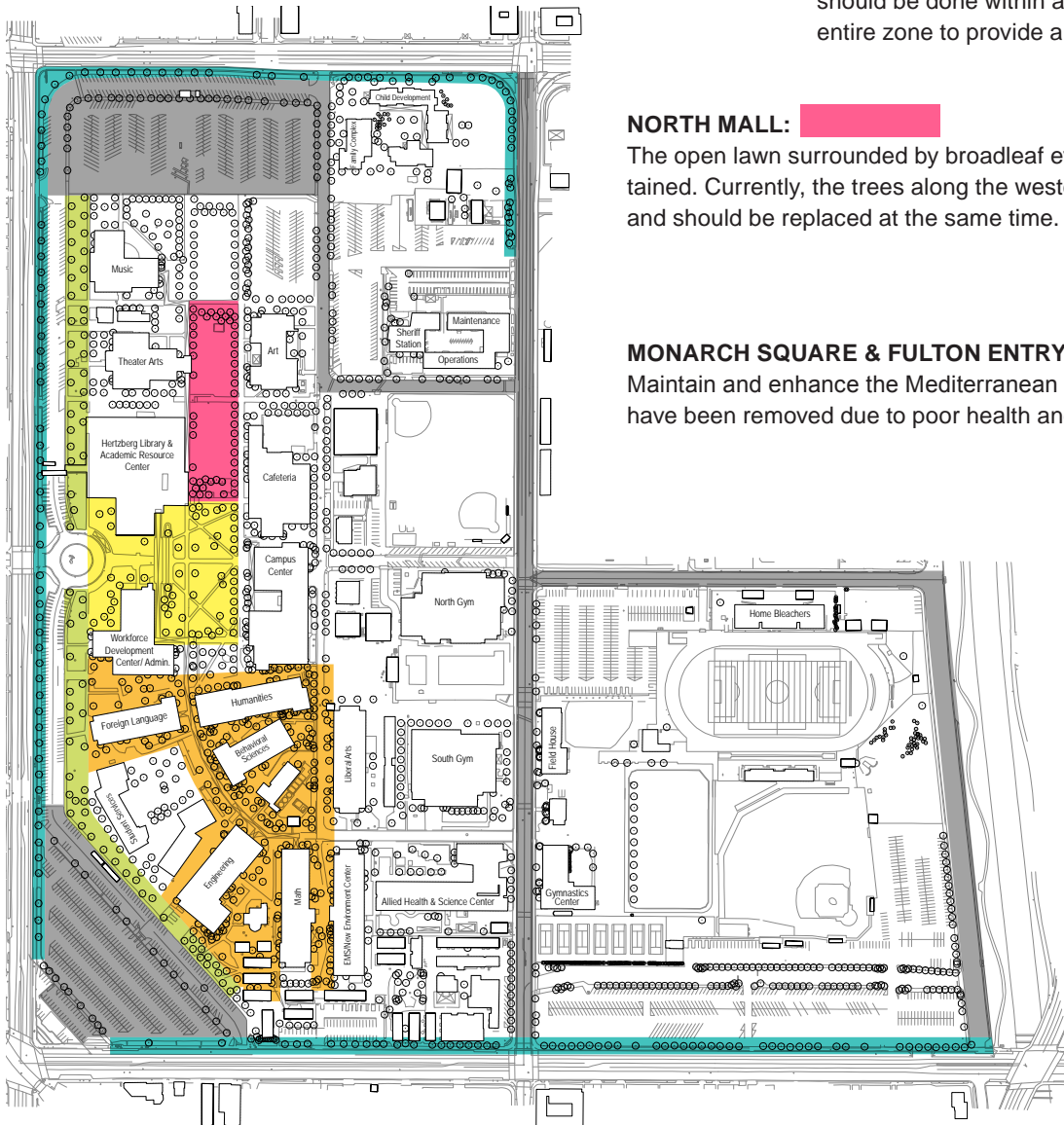
- A. This policy shall apply to an LAVC Urban Forest Maintenance Fund .
- B. Funds from the LAVC Urban Forest Maintenance Fund shall be expended only for the purposes enumerated below:
  1. *In support of replacing LAVC Specimen Trees* that have been damaged.
  2. *In support of planting trees within the Campus.* Such expenditures may include the cost of purchasing and planting trees, and preparing the land for planting, including the cost of installing irrigation improvements.
  3. *In support of the care, maintenance and preservation* of the LAVC Urban Forest.
  4. To offset the expense to the Campus making improvements that are necessary to create a reasonable alternative to removing an existing tree. It is intended that expenditures under this category only be made where, if not for the use of funds from the LAVC Urban Forest Maintenance Fund, there would be no reasonable alternative to removing the tree. It is not intended to be used where normal repairs to improvements to the Campus, though necessitated by the existence of a tree, constitute an ordinary and reasonable burden on the developer.
- C. The Maintenance & Operation Director shall *prepare an annual report accounting for the balance in the LAVC Urban Forest Maintenance Fund* and summarizing the use to which such fund was put during the preceding year.

## URBAN FOREST REGENERATION ZONES

The Urban Forest Regeneration Zones are areas within the campus that have a consistent identity which are to be replanted with like species to preserve the structure of the campus. When planting within the Regeneration Zones, multi-generational planting and infill planting should be done within a close time frame throughout the entire zone to provide a consistent planting esthetic.

### WEST PROMENADE:

The double row of *Liriodendron tulipifera* (Tulip Tree) should be replaced with a single species of similar stature to maintain the existing canopy.



### NORTH MALL:

The open lawn surrounded by broadleaf evergreen trees is to be maintained. Currently, the trees along the western edge are declining in health and should be replaced at the same time.

### MONARCH SQUARE & FULTON ENTRY:

Maintain and enhance the Mediterranean planting. Infill areas where trees have been removed due to poor health and liability concerns.

### INTERIOR PASSAGES:

Infill areas where trees have been removed due to poor health and liability concerns

### CAMPUS EDGE:

The perimeter of the Campus is comprised of mostly deciduous trees with seasonal interest and a life span of approximately twenty years. It is recommended to immediately plant replacement trees so there are mature trees when the existing trees require removal. Provide appropriate species along Burbank Boulevard where overhead utility lines are present

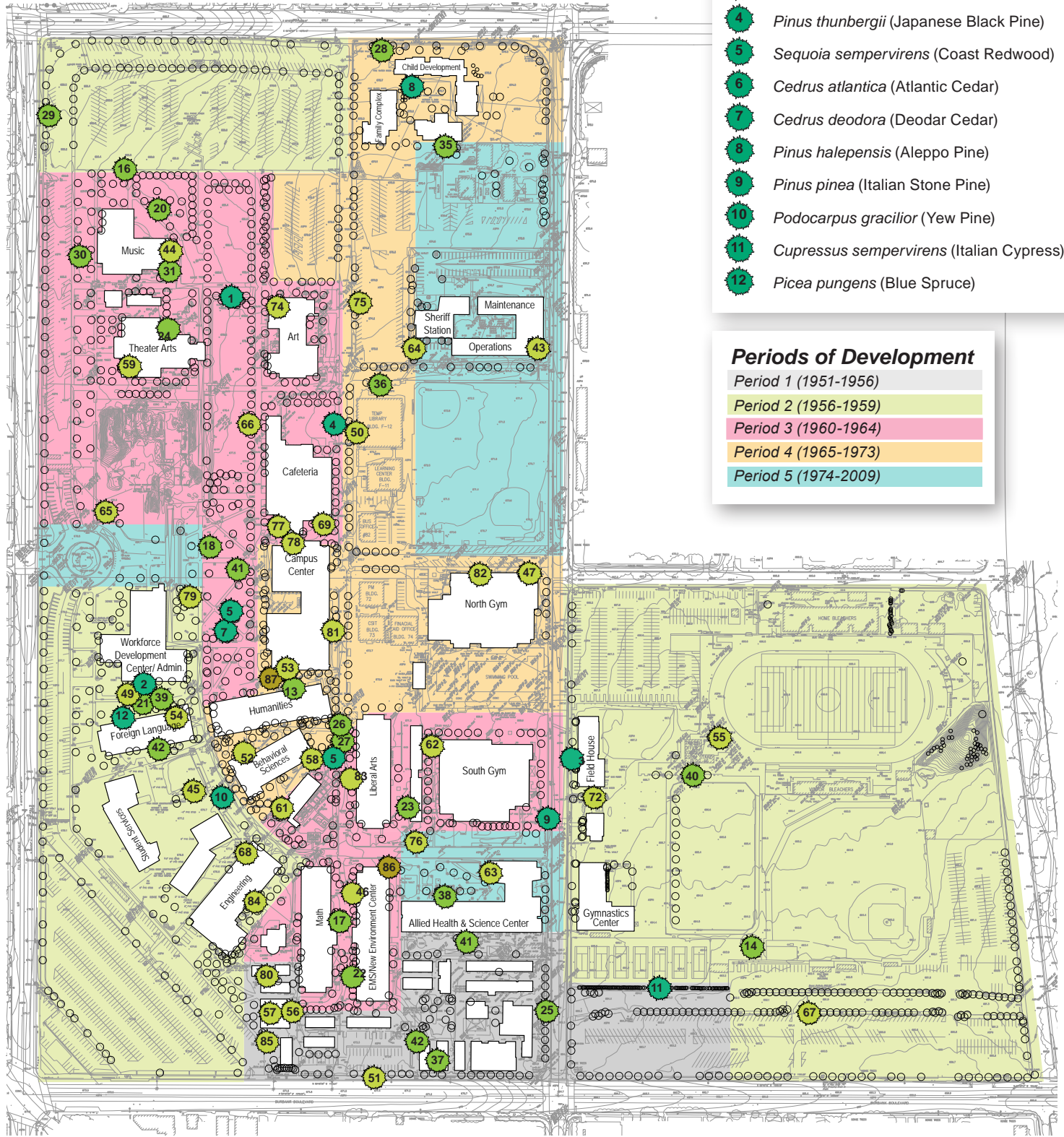
### CAMPUS ROADS & PARKING LOTS:

The interior roads should be planted with tree species that provide a consistent appearance throughout the entire length of a street, and also a species that can distinguish an area as vehicular.

# E. Los Angeles Valley College Tree Walk

## TREE WALK MAP

TREE WALK: Los Angeles Valley College Urban Forest



### Conifer

- 1 *Pinus canariensis* (Canary Island Pine)
- 2 *Araucaria bidwillii*, (Bunya Bunya Pine)
- 3 *Juniperus tortulosa* (Twisted Juniper)
- 4 *Pinus thunbergii* (Japanese Black Pine)
- 5 *Sequoia sempervirens* (Coast Redwood)
- 6 *Cedrus atlantica* (Atlantic Cedar)
- 7 *Cedrus deodora* (Deodar Cedar)
- 8 *Pinus halepensis* (Aleppo Pine)
- 9 *Pinus pinea* (Italian Stone Pine)
- 10 *Podocarpus gracilior* (Yew Pine)
- 11 *Cupressus sempervirens* (Italian Cypress)
- 12 *Picea pungens* (Blue Spruce)

### Periods of Development

Period 1 (1951-1956)

Period 2 (1956-1959)

Period 3 (1960-1964)

Period 4 (1965-1973)

Period 5 (1974-2009)



### Deciduous

- 13 *Albizia julibrissin* (Silk Tree)
- 14 *Alnus rhombifolia* (Southern Magnolia)
- 15 *Bauhinia purpurea* (Orchid Tree)
- 16 *Betula sp.* (Birch)
- 17 *Brachychiton populneus* (Bottle Tree)
- 18 *Calodendron capense* (African Cape Chestnut)
- 19 *Carya species* (Marina Strawberry Tree)
- 20 *Celtis sinensis* (Chinese Hackberry)
- 21 *Chitalpa speciosa* (Chitalpa)
- 22 *Chorisia speciosa* (Floss Silk Tree)
- 23 *Fraxinus velutina* (Modesto Ash)
- 24 *Ficus lyrata* (Fiddle Leaf Fig)
- 25 *Ginkgo biloba* (Maidenhair Tree)
- 26 *Koelreuteria bipinnata* (Australian Willow)
- 27 *Koelreuteria paniculata* (Goldenrain Tree)
- 28 *Lagerstroemia indica* (Crape Myrtle)
- 29 *Liquidambar styraciflua* (Sweet Gum)
- 30 *Liriodendron tulipifera* (Tulip Tree)
- 31 *Magnolia soulangiana* (Chinese Magnolia)
- 35 *Morus alba* (Mulberry)
- 36 *Pistacia chinensis* (Chinese Pistache)
- 37 *Platanus acerifolia* (London Plane Tree)
- 38 *Platanus racemosa* (California Sycamore)
- 39 *Prunus cerasifera* 'Krauter Vesuvius' (Purple Plum)
- 40 *Pyrus calleryana* (Evergreen Ash)
- 41 *Quercus lobata* (Valley Oak)
- 42 *Robinia idahoensis* (Black Locust)
- 43 *Sambucus canadensis* (Elderberry)
- 44 *Tabebuia chrysotricha* (Golden Trumpet)

### Evergreen

- 45 *Acacia salicina* (Shoestring Acacia)
- 46 *Alyogyne huegelii* (Blue Hibiscus)
- 47 *Arbutus unedo* (Mediterranean Fan Palm)
- 48 *Arbutus unedo* 'Marina' (Marina Strawberry Tree)
- 49 *Callistemon viminalis* (Twisted Juniper)
- 50 *Castanospermum australe* (Tulip Tree)
- 51 *Cassia leptophylla* (Gold Medallion Tree)

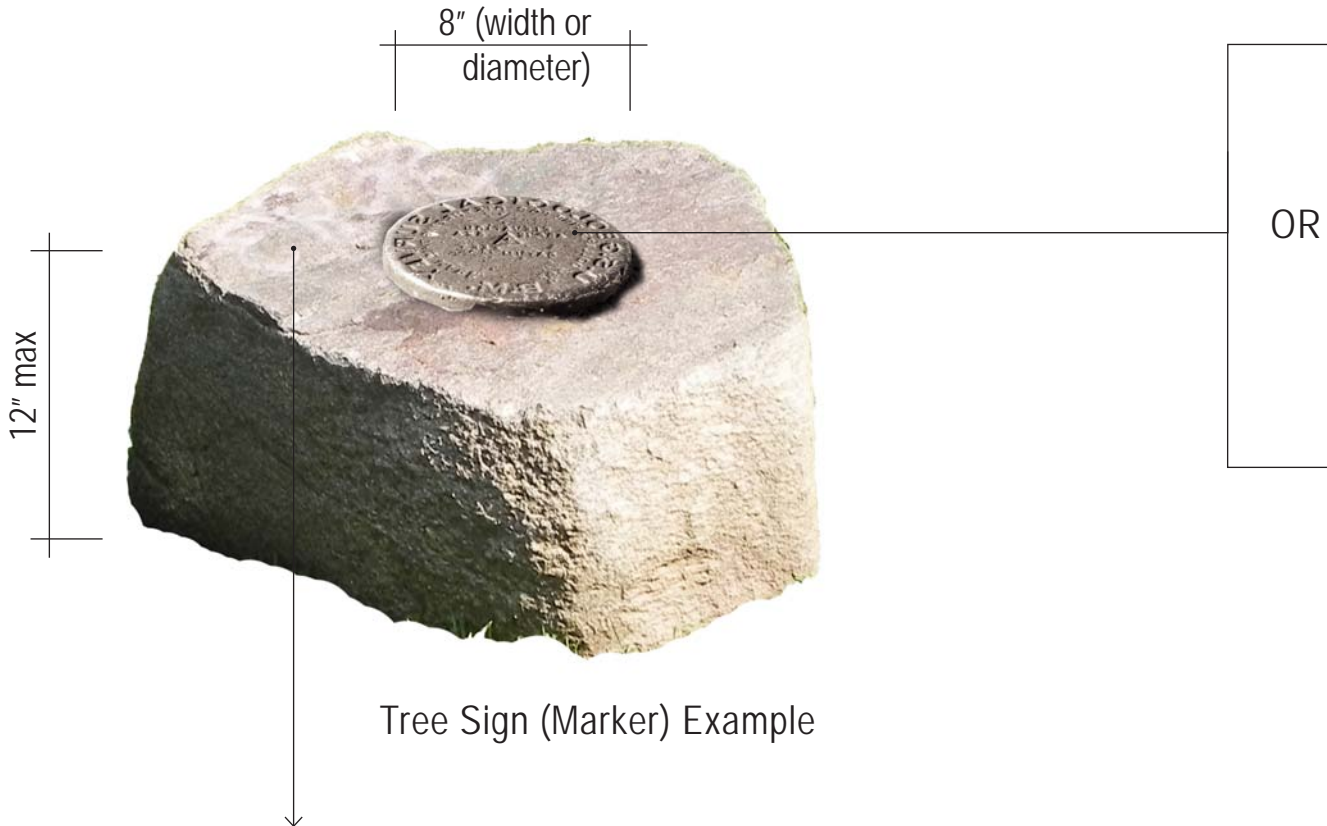
### Evergreen (Cont)

- 52 *Ceratonia siliqua* (Carob Tree)
  - 53 *Cinnamomum camphora* (Camphor Tree)
  - 54 *Cupaniopsis anacardioides* (Carrotwood)
  - 55 *Dodonaea viscosa* (Hopseed Bush)
  - 56 *Eriobotrya deflexa* (Loquat)
  - 57 *Eucalyptus citriodora* (Lemon Scented Gum)
  - 58 *Eucalyptus globulus* (Carob Tree)
  - 59 *Eucalyptus sideroxylon* 'Rosea' (Red Iron Bark)
  - 60 *Ficus benjamina* (Weeping Fig)
  - 61 *Ficus microcarpa* 'Retusa' (Blue Gum)
  - 62 *Ficus nitida* (Indian Laurel)
  - 63 *Ficus rubiginosa* (Rusty Leaf Fig)
  - 64 *Fraxinus uhdei* (Evergreen Ash)
  - 65 *Geijera parviflora* (Jacaranda)
  - 66 *Grevillea robusta* (Silk Oak)
  - 67 *Jacaranda acutifolia* (Jacaranda)
  - 68 *Magnolia grandiflora* (Southern Magnolia)
  - 69 *Melaleuca quinquenervia* (Cajeput Tree)
  - 70 *Murraya species* (Murraya Tree)
  - 71 *Olea europaea* (European Olive)
  - 72 *Picea pungens* (London Plane Tree)
  - 73 *Pittosporum rhombifolia* (Queensland Pittosporum)
  - 74 *Pittosporum undulatum* (London Plane Tree)
  - 75 *Prunus caroliniana* (Carolina Cherry)
  - 76 *Pyrus kawakamii* (Evergreen Pear)
  - 77 *Quercus agrifolia* (Coast Live Oak)
  - 78 *Quercus ilex* (Holly Oak)
  - 79 *Quercus suber* (Cork Oak)
  - 80 *Quercus virginiana* (Southern Live Oak)
  - 81 *Schinus terebinthifolius* (Brazilian Pepper Tree)
  - 82 *Tristania conferta* (Brisbane Box)
  - 83 *Tupidanthus calyptratus* (Umbrella Tree)
  - 84 *Ulmus parvifolia* (Evergreen Elm)
  - 85 *Yucca gloriosa* (Spanish Dagger)
  - 86 *Ficus macrophylla* (Moreton Bay Fig)
- ### Palm
- 87 *Chamaerops humilis* (Mediterranean Fan Palm)
  - 88 *Washingtonia robusta* (Mexican Fan Palm)

# E. Los Angeles Valley College Tree Walk

## TREE WALK SIGNAGE (MARKER)

Identification signage for the Urban Forest Trees are in-ground stone markers with a metal plaque or datum that will include information such as tree species latin name, common name, species family, and the associated tree number (from the tree walk). Plaques can also include information about historical events, or be in dedication/memorial to an individual or individuals. These markers are buried in the ground near the base of the identified Tree. Provide one or more “tree walks” on campus where trees have identifying name markers and brochures are made available that illustrate the historical, biological, ecological, and cultural contributions of the plants on campus.



Tree Sign (Marker) Example



Stone Sample: Glacier/Turquoise Boulder (KRC Rock)  
 Quartzite- light green to dark green in color  
 Sharply angular and irregular



Stone Sample: Kino Blue (Southwest Boulder)  
 Granite- rusty brown, red, grey and blue in color  
 Angular boulder



Marker Example: Datum (includes identification information) Material: Engraved Metal



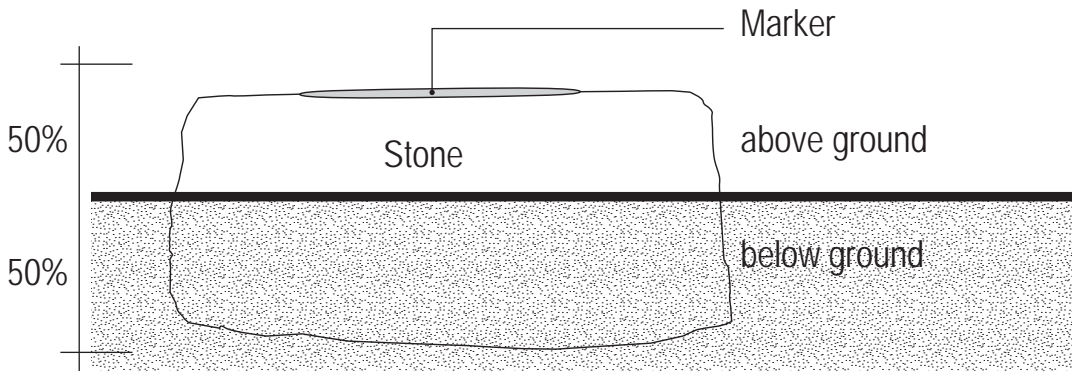
LAVC Example: Datum identification marker



Marker Example: Plaque (can include identification information, dedication, in memoriam, etc.) Material: Bronze



LAVC Example: Information plaque marker



Section Cut: In Ground Sign (Marker)







"Other holidays repose on the *past*. Arbor Day *proposes the future*."

~J. Sterling Morton





## V. District/Project Specific Recommendations

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### A. Pruning and Removal Phases by Year

*Immediate*

*3-5 years*

*5-10 years*

*10-20 years*

### B. District Specific Recommendations

### C. Measure J Construction Project Recommendations

# A. Pruning and Removal Phases by Year

**IMMEDIATE** pruning and removal is recommended within the next two years.

Arboricultural Recommendations:

*Priority of pruning is given to mature trees to remove imminent liabilities and hazards. The removal of dead and dying branches should be performed on an expedited basis.* The removal of dead and dying branches is not intended to improve the performance of mature trees but is rather considered a safety measure. All of the *newly planted immature trees within the campus should be prioritized for structural pruning immediately* to eliminate the presence of defects and to encourage the development of maximum structural integrity as they develop increased stature. Attention to the elimination of defects and the development of archetypal form and character are essential in the earliest stages of tree establishment in order to increase their long-term structural integrity, to optimize their archetypal form, and long-term growth potential. Trees are to be trained into a desirable form and provide the optimal conditions for healthy growth. Trees properly trained when immature require minimal corrective pruning when mature. Pruning of newly planted trees is recommended for all construction projects to remove torn or broken branches while training newly planted trees are recommended for the second or third year once trees have been given a chance to establish themselves. *Trees within this phase have a recommended pruning cycle of every 2-3 years to thin, clean and reduce the canopy, repeat as recommended.*






*Removal of trees during this phase is recommended for trees that are dead and trees that provide an extreme liability that pruning cannot correct.*

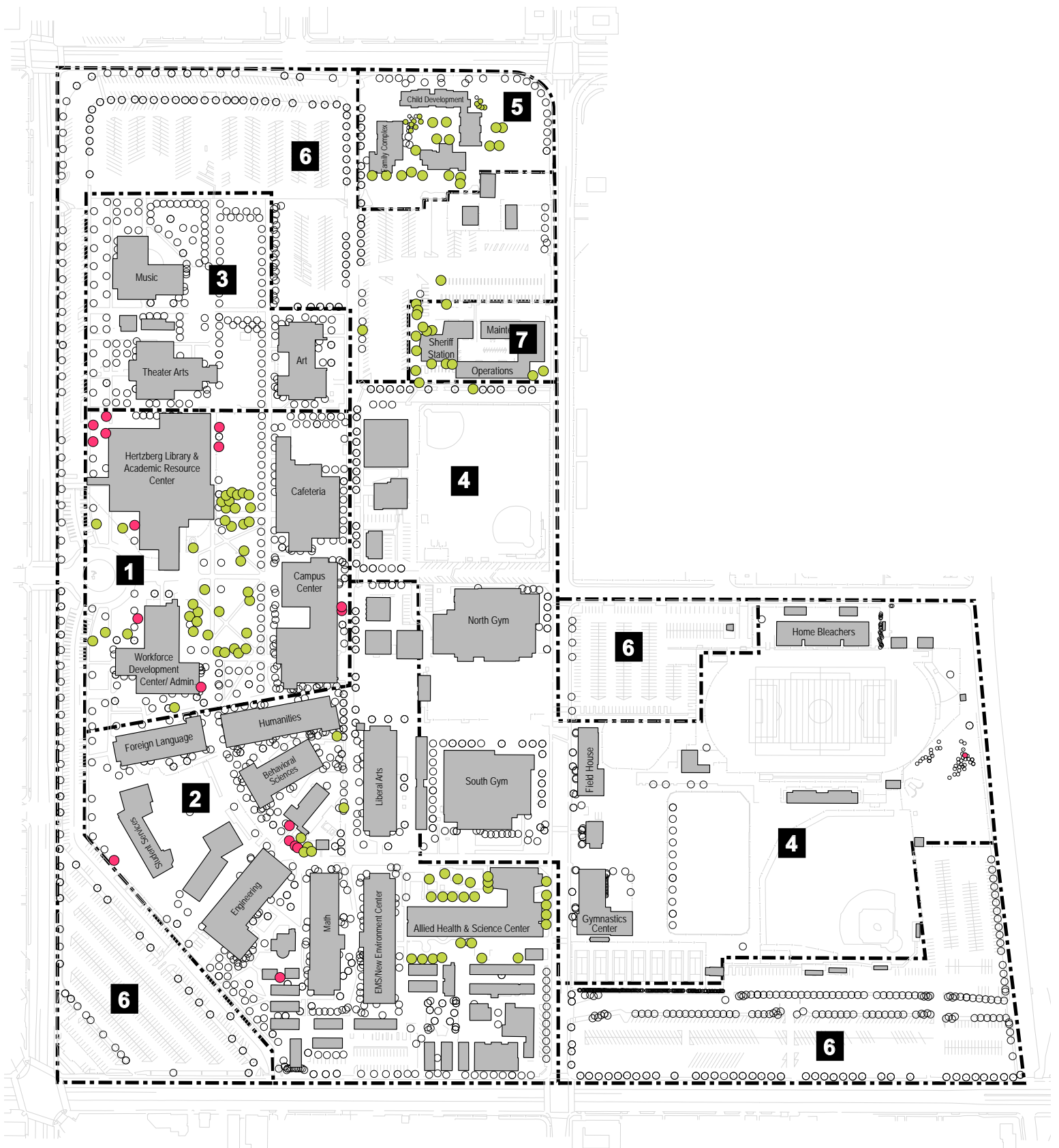
## INDIVIDUAL TREE RECOMMENDATIONS

The individual trees are referred for recommended conservation or removal within the accompanying Excel Spreadsheet tree roster index found in the Appendices section. *Refer to recommended tree pruning methodologies / guidelines as well as priorities for pruning* those species that require pruning going forward.

## LEGEND

---

-  Remove
-  Prune
-  Existing Trees on Campus
-  District boundary
-  District Number





# A. Pruning and Removal Phases by Year

Pruning and removal is recommended within **3 TO 5 YEARS**.

*Trees within this phase have a recommend Pruning Cycle of every 3-5 years to thin, clean and reduce the canopy, repeat as recommended. Trees are also recommended for pruning to suppress competing leaders*






Removal of trees within this phase are classified as 'Conserve / Long-term removal 3-5 years' and 'Remove 1' within the Arborist's recommendations. *Removal is due to trees that exhibit decay, fireblight, severe inclusion, severe lean, systemic decline and xyllela related decline.*

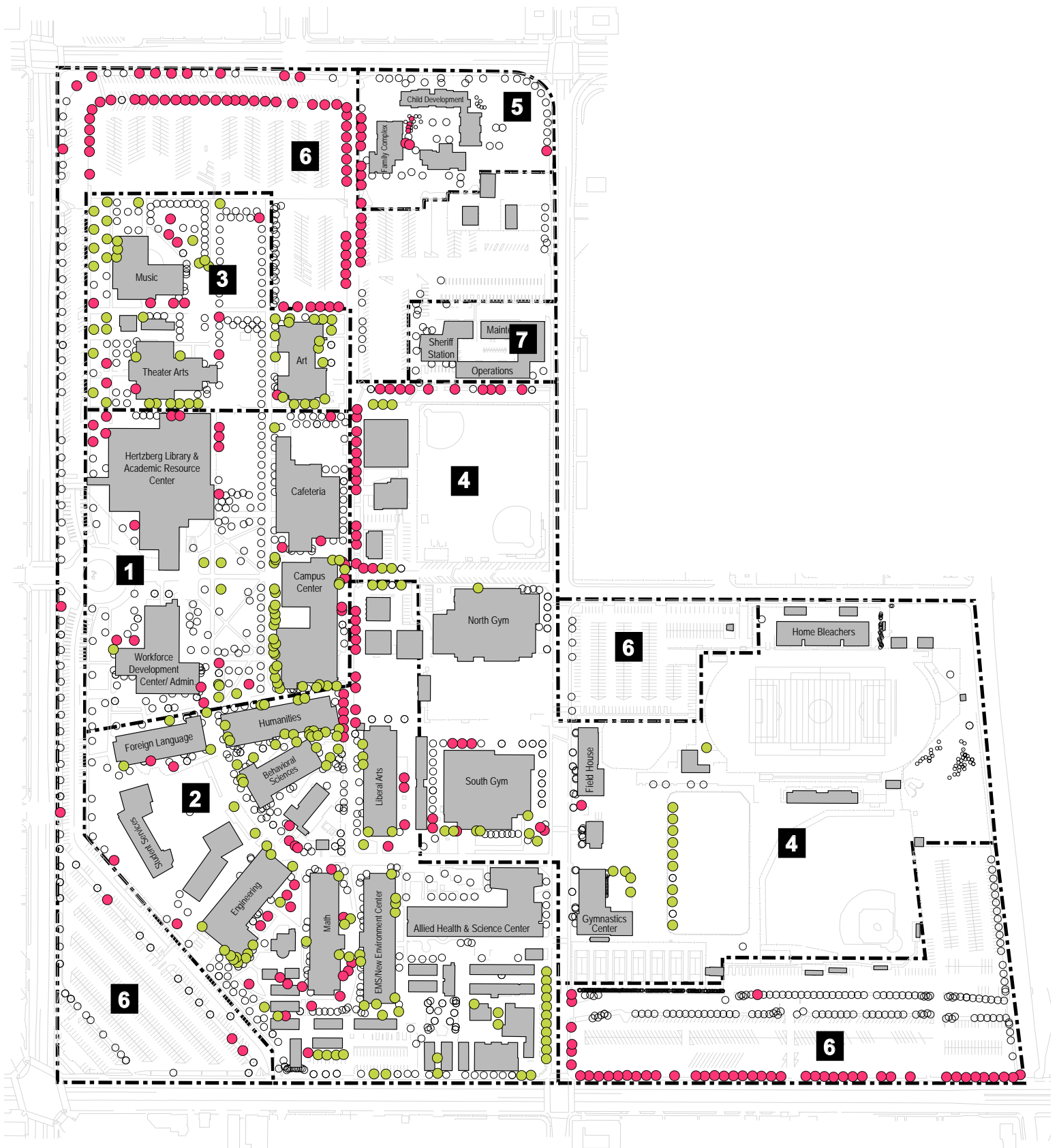
## INDIVIDUAL TREE RECOMMENDATIONS

The individual trees are referred for recommended conservation or removal within the accompanying Excel Spreadsheet tree roster index found in the Appendices section. *Refer to recommended tree pruning methodologies / guidelines as well as priorities for pruning* those species that require pruning going forward.

## LEGEND

---

-  Remove
-  Prune
-  Existing Trees on Campus
-  District boundary
-  District Number



# A. Pruning and Removal Phases by Year

Pruning and removal is recommended within **5 TO 10 YEARS**.

*Trees within this phase have a recommend Pruning Cycle of every 5-7 years to thin, clean and reduce the canopy, repeat as recommended. Every tree within the Urban Forest is to have received pruning at the completion of this phase. Repeat pruning from the IMMEDIATE pruning phase will also reoccur during this phase.*






Removal of trees within this phase are classified as ‘Conserve / Long-term removal 5-10 years’ and ‘Remove 2’ within the Arborist’s recommendations. *Removal is due to trees that exhibit systemic decline, structural senescence, severe inclusion, fire blight and advanced decay.*

## INDIVIDUAL TREE RECOMMENDATIONS

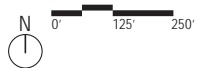
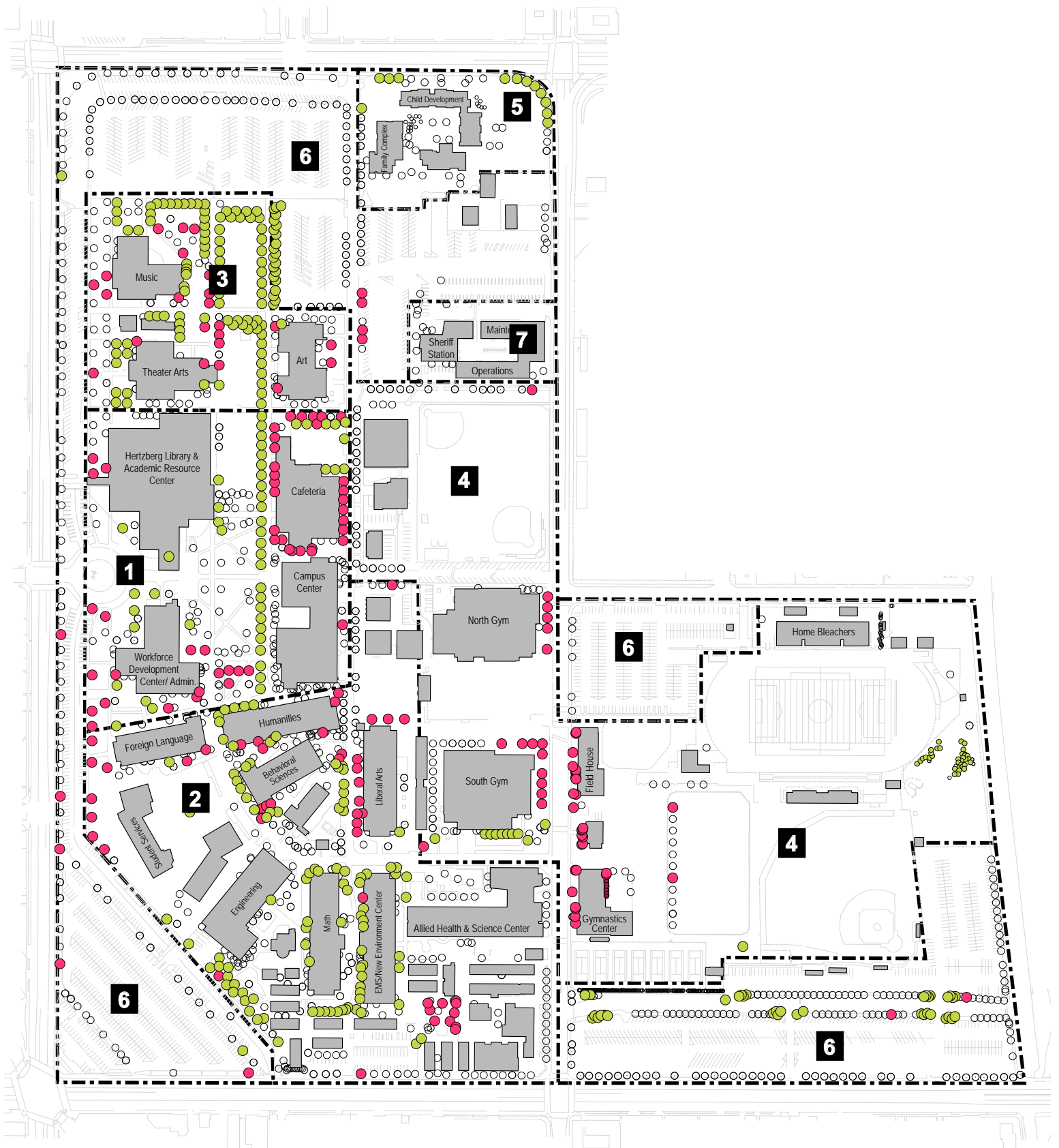
The individual trees are referred for recommended conservation or removal within the accompanying Excel Spreadsheet tree roster index found in the Appendices section. *Refer to recommended tree pruning methodologies / guidelines as well as priorities for pruning* those species that require pruning going forward.

## LEGEND

---

-  Remove
-  Prune
-  Existing Trees on Campus
-  District boundary
-  District Number





# A. Pruning and Removal Phases by Year

Pruning and removal is recommended within **10 TO 20 YEARS**.

*Although there are no trees shown for pruning recommendations within this phase, all trees will need pruning.* Refer to Arborist's recommendation for Pruning Cycles for the phases spanning IMMEDIATE, 3-5 years and 5-10 years for trees to be pruned.






*Removal of trees within this phase are classified as 'Conserve / Long-term removal 10-20 years' and 'Remove 3' within the Arborist's recommendations.* The majority of the trees are the *Liquidambar styraciflua* (Sweet Gum) which suffer from Xylella related die back.

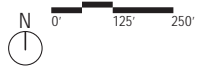
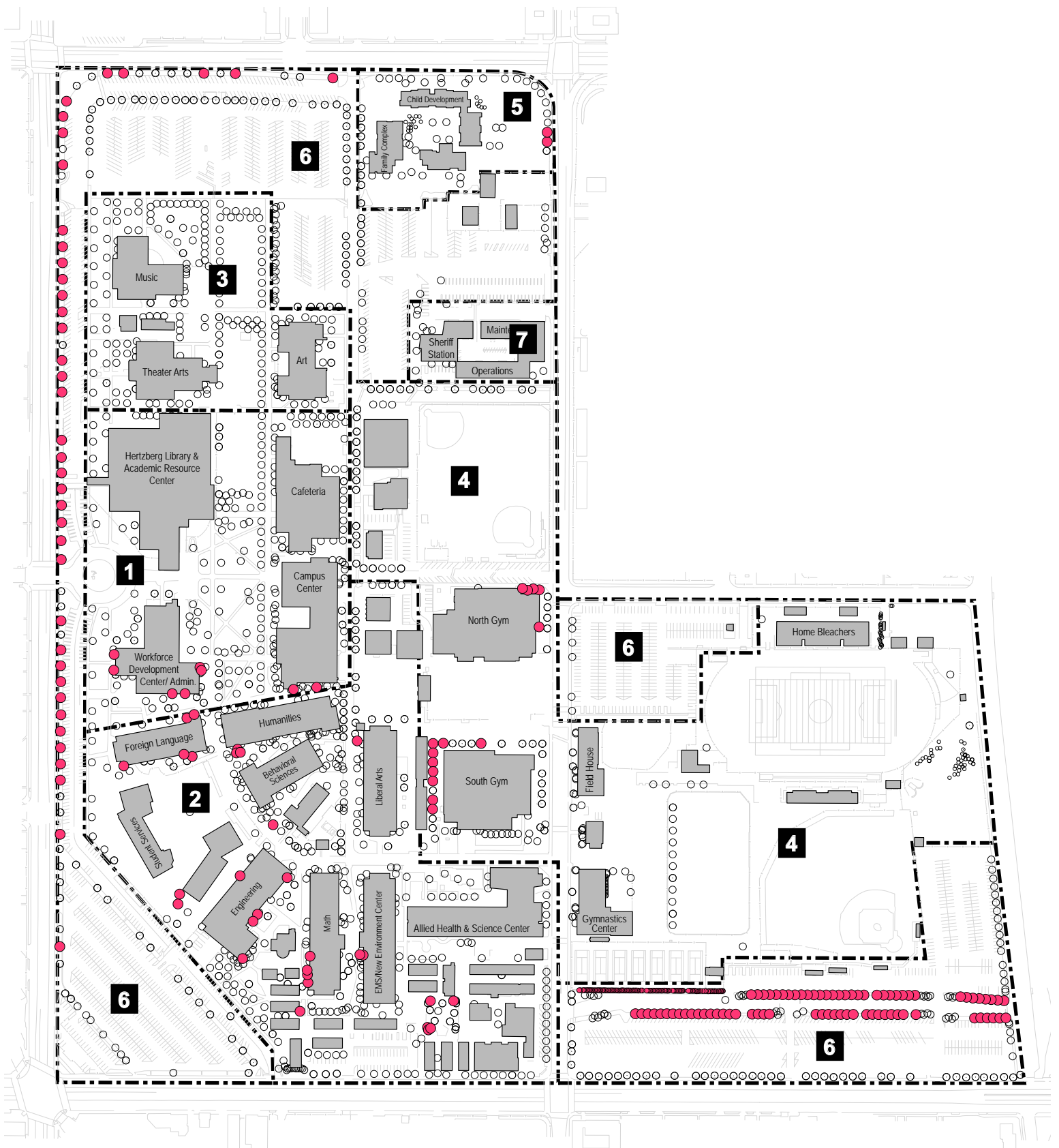
## INDIVIDUAL TREE RECOMMENDATIONS

The individual trees are referred for recommended conservation or removal within the accompanying Excel Spreadsheet tree roster index found in the Appendices section. *Refer to recommended tree pruning methodologies / guidelines as well as priorities for pruning* those species that require pruning going forward.

## LEGEND

---

-  Remove
-  Prune
-  Existing Trees on Campus
-  District boundary
-  District Number





## B. District Specific Recommendations

### CAMPUS CORE - DISTRICT 1

Species with a notable presence are *Araucaria bidwillii* (Bunya Bunya Pine), *Chamaerops humilis* (Mediterranean Fan Palm) and the *Sequoia sempervirens* (Coast Redwoods). Significant care should be given to preserve these species.

Retain, protect and plan for future continued accommodations of significant individual specimens, including: Bunya Bunya Pine (*Araucaria bidwillii*).

At the Fulton Avenue entry in the Campus Core, maintain an informal and generally symmetrical balance of trees on each side of the main pedestrian entry.

The structure of the north south rows of trees that line the sidewalks and pathways is to be maintained. Due to the poor health of some of the *Olea europaea* (European Olive), a replacement species with a similar form is to be planted.

*Calodendron Capense* (African Cape Chestnut) is slated for pruning within 3-5 years.

*Liriodendron tuliferas* (Tulip Trees) between the Fulton Avenue parking lot and the western most building are slated for removal within 5-10 years. Additional species, or like species, should be planted to infill the Tulip Trees immediately and existing trees are to be removed once newly planted trees mature.







Removal of Arborist recommended trees due to hazard or trees considered dead should be removed immediately.

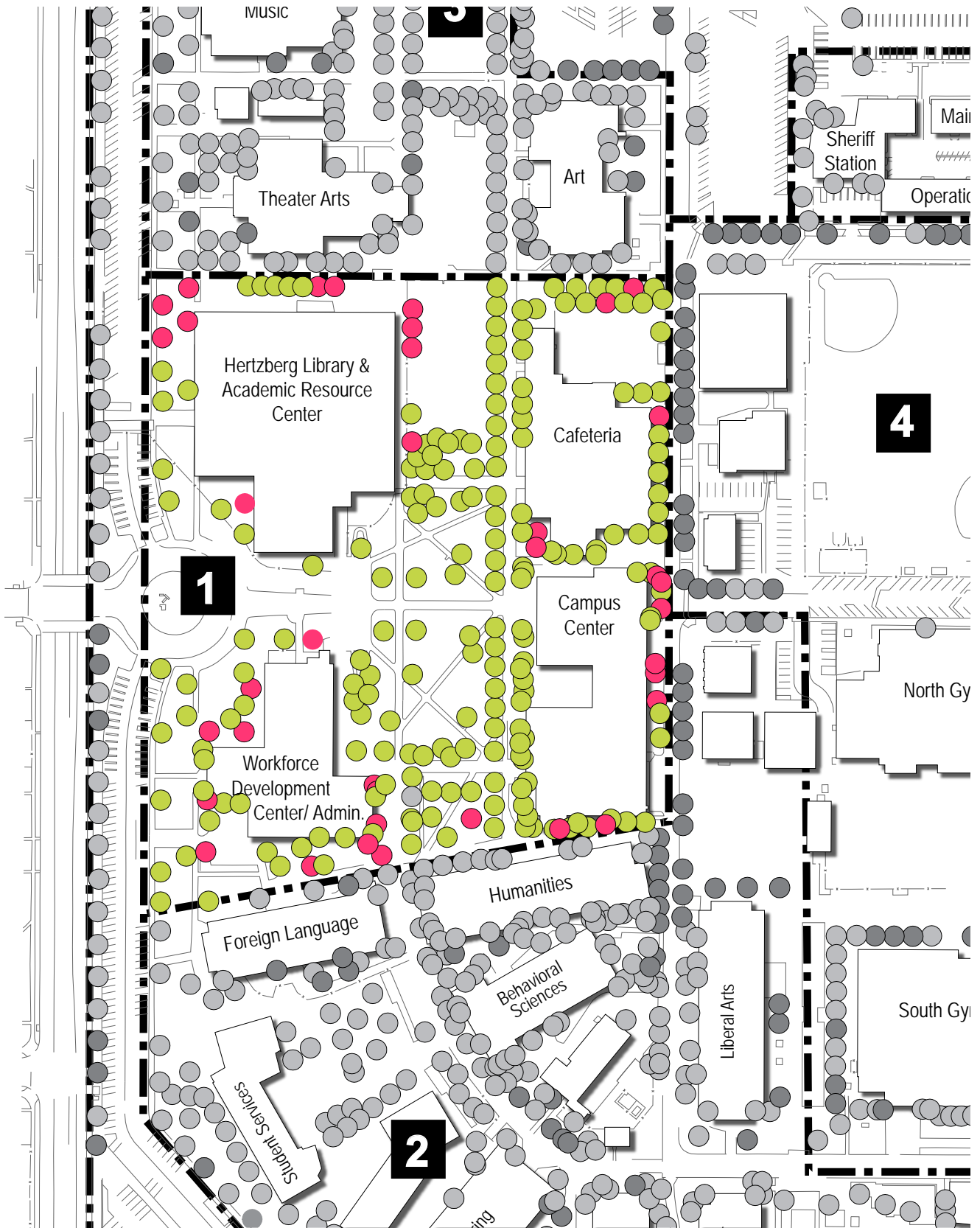
Newly planted trees should be pruned immediately for proper growth, as recommended by the Arborist.

Rows of *Magnolia grandiflora* (Southern Magnolia) are to be pruned within 5-10 years, as recommended by the Arborist.

### LEGEND

---

-  Tree to be removed
-  Tree to be conserved
-  Tree to be removed (out of focus area)
-  Tree to be conserved (out of focus area)
-  District boundary
-  District Number



## B. District Specific Recommendations

### SOUTH CAMPUS - DISTRICT 2

Species with a notable presence are *Ficus macrophylla* (Moreton Bay Fig), *Sequoia sempervirens* (Coast Redwood), *Arbutus unedo* (Strawberry Tree), *Chamaerops humilis* (Mediterranean Fan Palm), *Chorisia speciosa* (Floss Silk Tree), *Ulmus parvifolia* (Evergreen Elm), *Podocarpus gracilior* (Yew Pines), *Pinus canariensis* (Canary Island Pine), *Callistemon viminalis* (Weeping Bottlebrush) and the mature *Quercus agrifolia* (Coast Live Oak). Significant care should be given to preserve these species.

Retain, protect and plan for future continued accommodations of significant individual specimens, including: Moreton Bay Fig (*Ficus macrophylla*), and London Plane Tree (*Platanus acerifolia*) near Burbank Boulevard

This part of campus is considered the Arboretum with a variety of trees singularly planted. When considering planting new trees in this part of campus, the Campus Arboretum should be considered with an effort to plant a mix of species from various parts of the world.

The informal planting style should be maintained with new tree planting. Adequate space needs to be provided from trees, hardscape, buildings and existing trees.

The Planetarium Building is situated within the South Campus and is dwarfed by many mature trees. The educational needs of the Planetarium need to be met. Refer to Planetarium Expansion Building recommendations on the following pages for additional details.

The row of Evergreen Elms should be continued to the north during the construction of the Sustainable Mall.

The new south campus entrance and turn-around is to be around the existing Moreton Bay Fig. Extreme care should be given to maintain the tree as a beloved species on campus. Impact to the root zone should be minimized and pruning within the rootzone should be done only under the supervision of a Certified Arborist.







A few of the Eucalyptus species are a hazard and need immediate removal.

Newly planted trees should be pruned immediately for proper growth, as recommended by the Arborist.

Additional pruning is recommended for many of the mature species that are adjacent to buildings, as recommended by the Arborist.

Retain and incrementally replace declining and/or failed trees along Campus Drive between the southeast center of the

### LEGEND

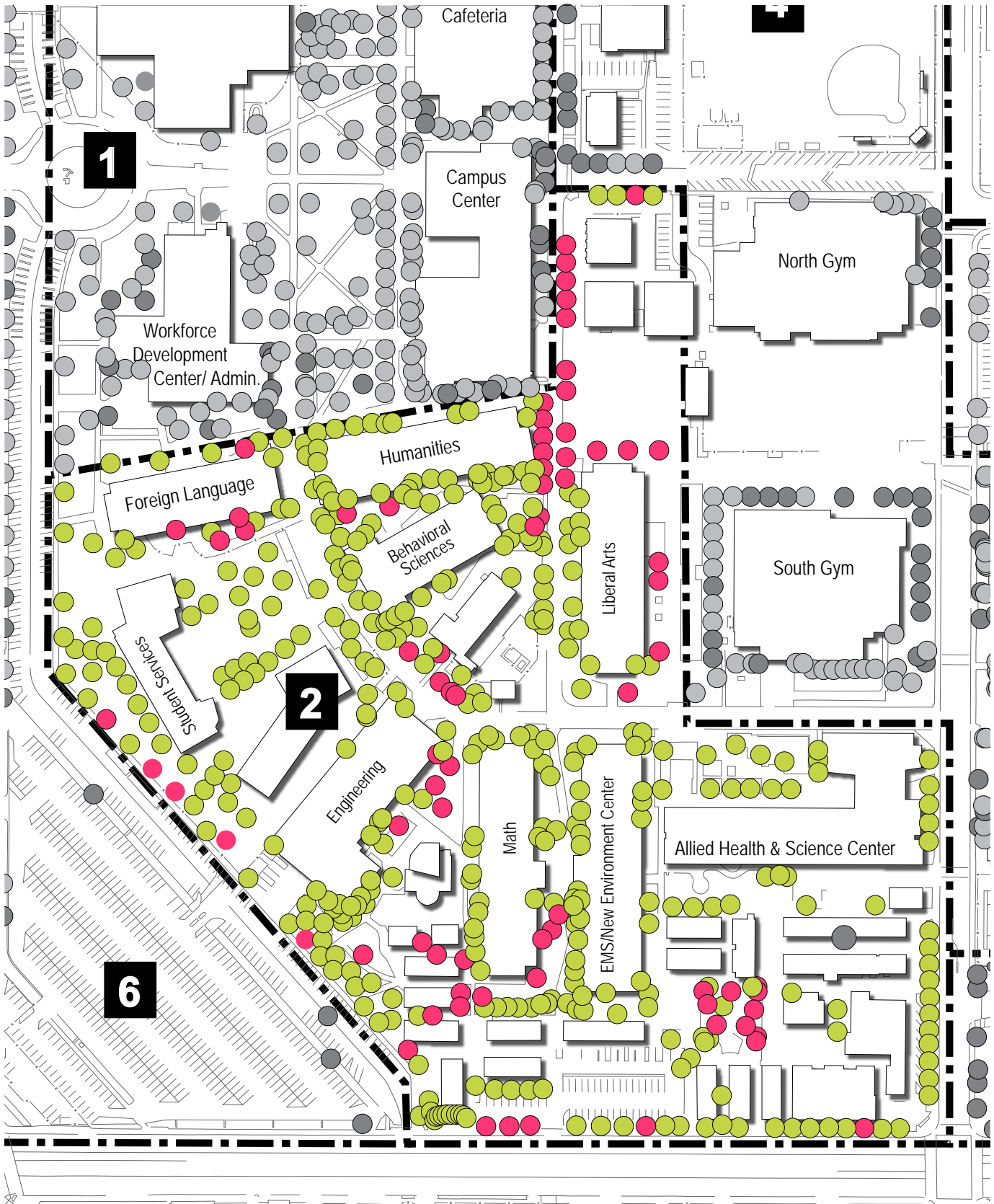
-  Tree to be removed
-  Tree to be conserved
-  Tree to be removed (out of focus area)
-  Tree to be conserved (out of focus area)
-  District boundary
-  District Number

Campus Core and the north end of the Journalism/Business building.

Strive to maintain the arboricultural character of the first quad in the South Campus District. Consider restoring the first quad to its original size extending to the Burbank Boulevard frontage.

Maintain the large diversity of species, and the pattern of groupings of trees of several species and sizes. Groupings of trees include 1-2 of each species represented by that grouping.





# PLANETARIUM BUILDING EXPANSION EAST DECK PANORAMA

N  
|

NE  
|



SE  
|

S  
|



Fraxinus uhdei #595

Fraxinus uhdei #598

Albizzia julibrissin #596

Albizzia julibrissin #597

Pinus canariensis #575

Pinus canariensis #574

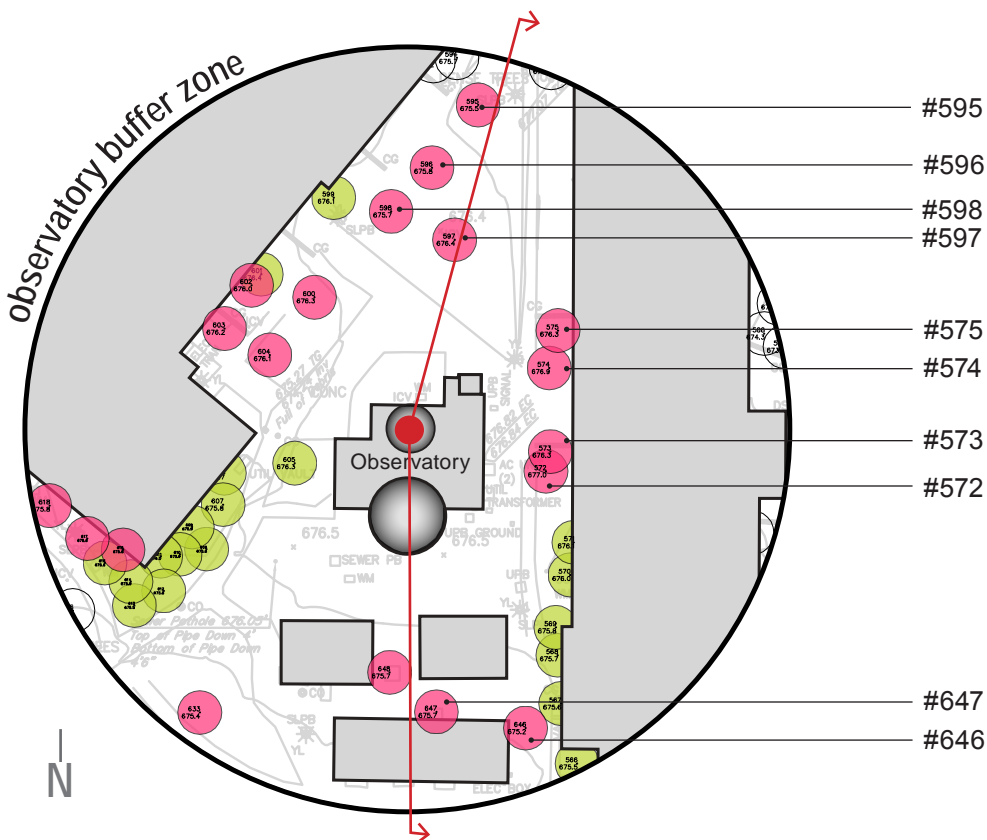
Chamaerops humilis #573

Pinus canariensis #572

Eucalyptus globulus #646

Eucalyptus s. rosea #647

## East Deck Field of Vision



East Deck Field of Vision

●  
Tree obstructs view of  
Observatory

●  
Tree does not obstruct view  
but has potential to block the  
view in the future. Trees growth  
should be monitored.



Observatory Buffer Zone -  
300' diameter zone surrounding  
the Observatory in which trees  
can have an impact on the  
Observatory's view to the sky.

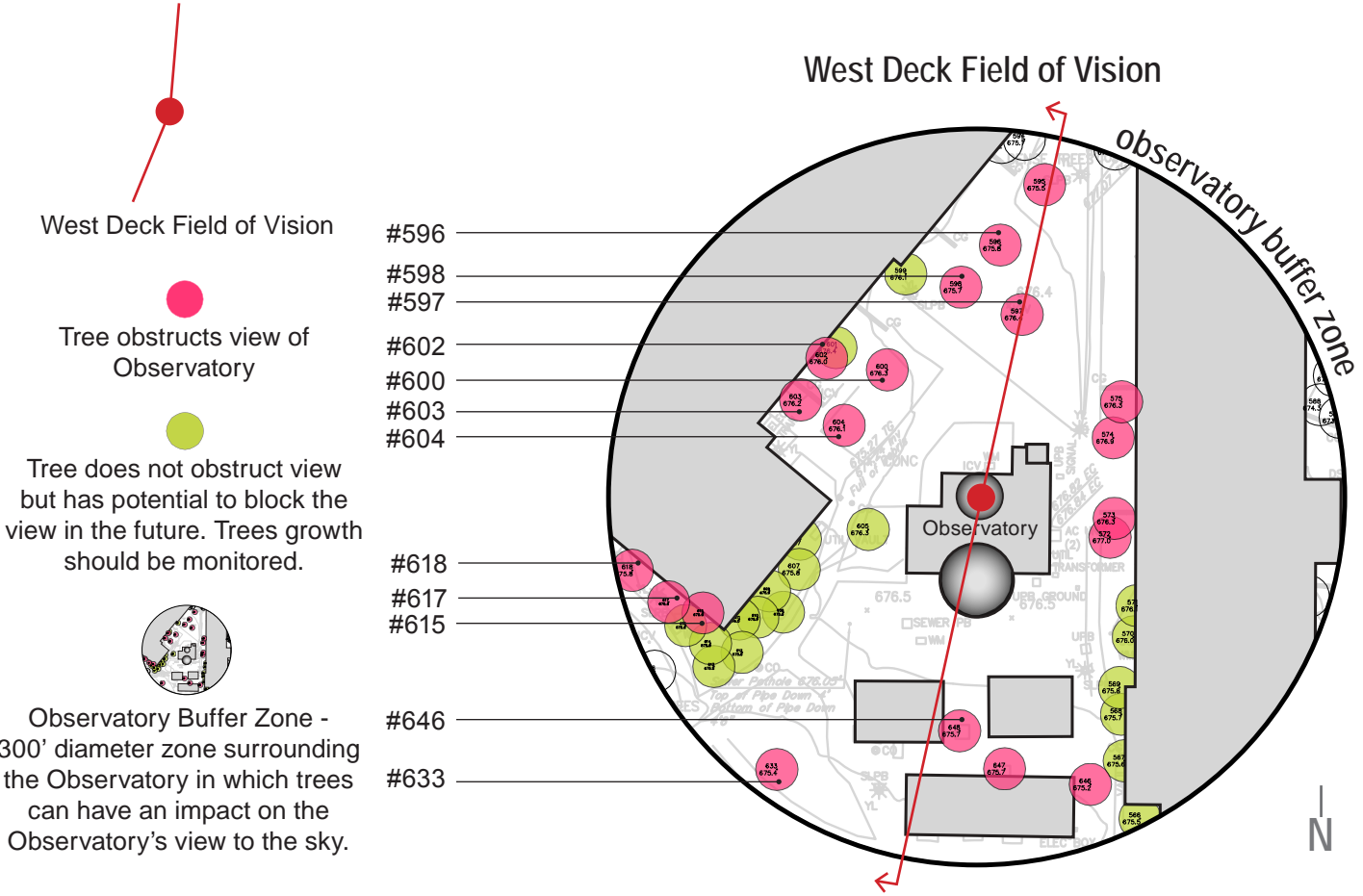
# PLANETARIUM BUILDING EXPANSION WEST DECK PANORAMA

S                      SW                      WEST                      NW                      N



- Podocarpus gracilior #615
- Pinus pinea #633
- Callistemon viminalis #603
- Fraxinus uhdei #604
- Callistemon viminalis #602
- Fraxinus uhdei #600
- Fraxinus uhdei #598
- Albizia julibrissen #596
- Albizia julibrissen #597
- Pinus thunbergii #635
- Podocarpus gracilior #617
- Podocarpus gracilior #618

## West Deck Field of Vision





## B. District Specific Recommendations

### ARTS DISTRICT - DISTRICT 3

Species with a notable presence are *Magnolia grandiflora* (Southern Magnolia) and *Pinus canariensis* (Canary Island Pine). Significant care should be given to preserve these species.

Rows and stands of trees dominate character of this part of campus. Maintain rows and stands of trees. Replace Olives with plantings that are like in form.

*Liriodendron tuliferas* (Tulip Trees) between the Fulton Avenue parking lot and the Theater Arts building are slated for removal within 5-10 years. Additional species, or like species, should be planted to infill the Tulip Trees immediately and existing trees are to be removed once newly planted trees mature.







Remove trees per Arborist's recommendations.

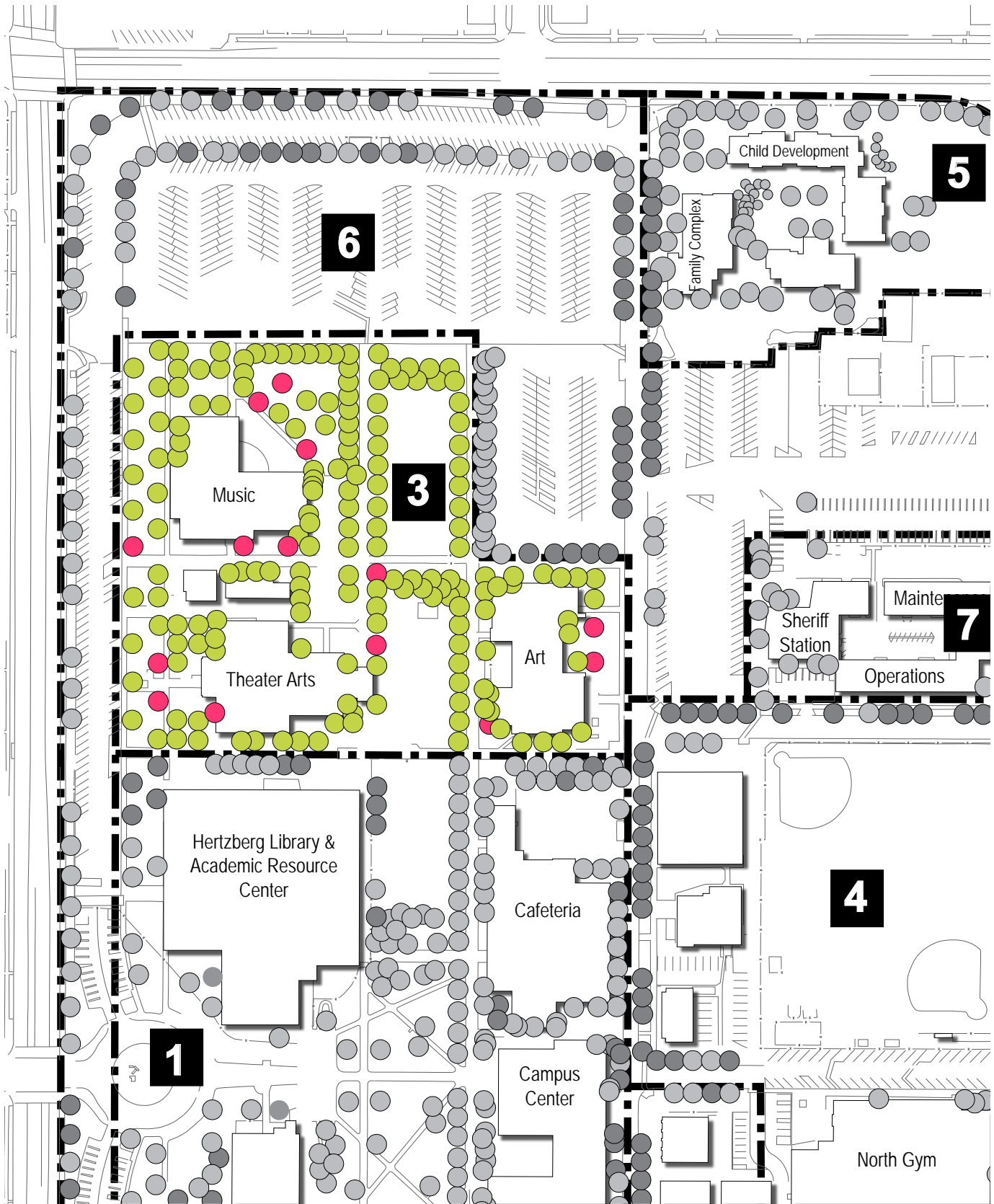
The Arborist recommends pruning for many of the mature species in this district.

In the Arts District, retain the relationship of avenue plantings with the avenues of Monarch Square. For instance, where a straight row of one species, such as Southern Magnolia (*Magnolia grandiflora*), starts in the Arts district, continue it into the campus core in the same way as it currently exists.

### LEGEND

---

-  Tree to be removed
-  Tree to be conserved
-  Tree to be removed (out of focus area)
-  Tree to be conserved (out of focus area)
-  District boundary
-  District Number



## B. District Specific Recommendations

### PHYSICAL EDUCATION - DISTRICT 4

*Eucalyptus citriodora* (Lemon Scented Gum) and the newly planted trees should be maintained.

The introduction of the Alumni Walk needs to consider planting trees that flower during commencement.

Although the rows of *Melaleuca quinquinerva* (Cajeput Trees) and *Liquidambar styraciflua* (Sweet Gums) are outside the boundary, they should be considered part of the backdrop for this district.







*Ceratonia siliqua* (Carob Trees) are recommended for removal. Removal is to be coordinated with the construction of the Sustainable Mall. Continue Evergreen Elm row north.

Many of the trees in this district are recommended for removal within 5-20 years. Planting to replace these species should be implemented with the new Master Plan construction.

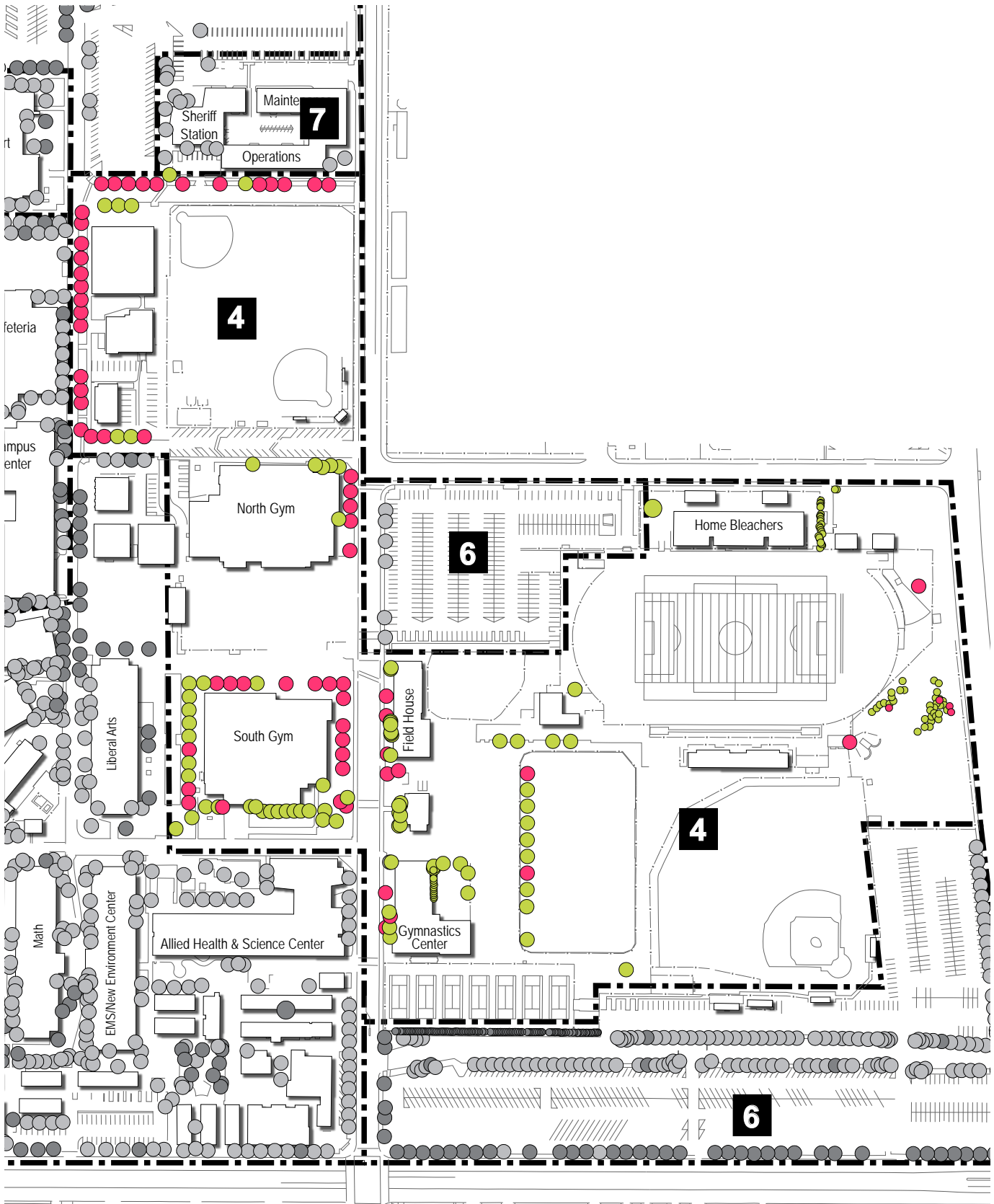
In the Physical Education district, retain the pattern of long single-species rows of trees at the edges of fields and courts, and the pattern of individual or pairs of large specimen trees.

### LEGEND

---

-  Tree to be removed
-  Tree to be conserved
-  Tree to be removed (out of focus area)
-  Tree to be conserved (out of focus area)
-  District boundary
-  District Number





## B. District Specific Recommendations

### CHILD DEVELOPMENT - DISTRICT 5

The allee of trees along the drive way is recommended for removal within 3-5 years. Planting along this should be done within the same planting season to create an eventual canopy.







Newly planted trees should be pruned immediately for proper growth, as recommended by the Arborist.

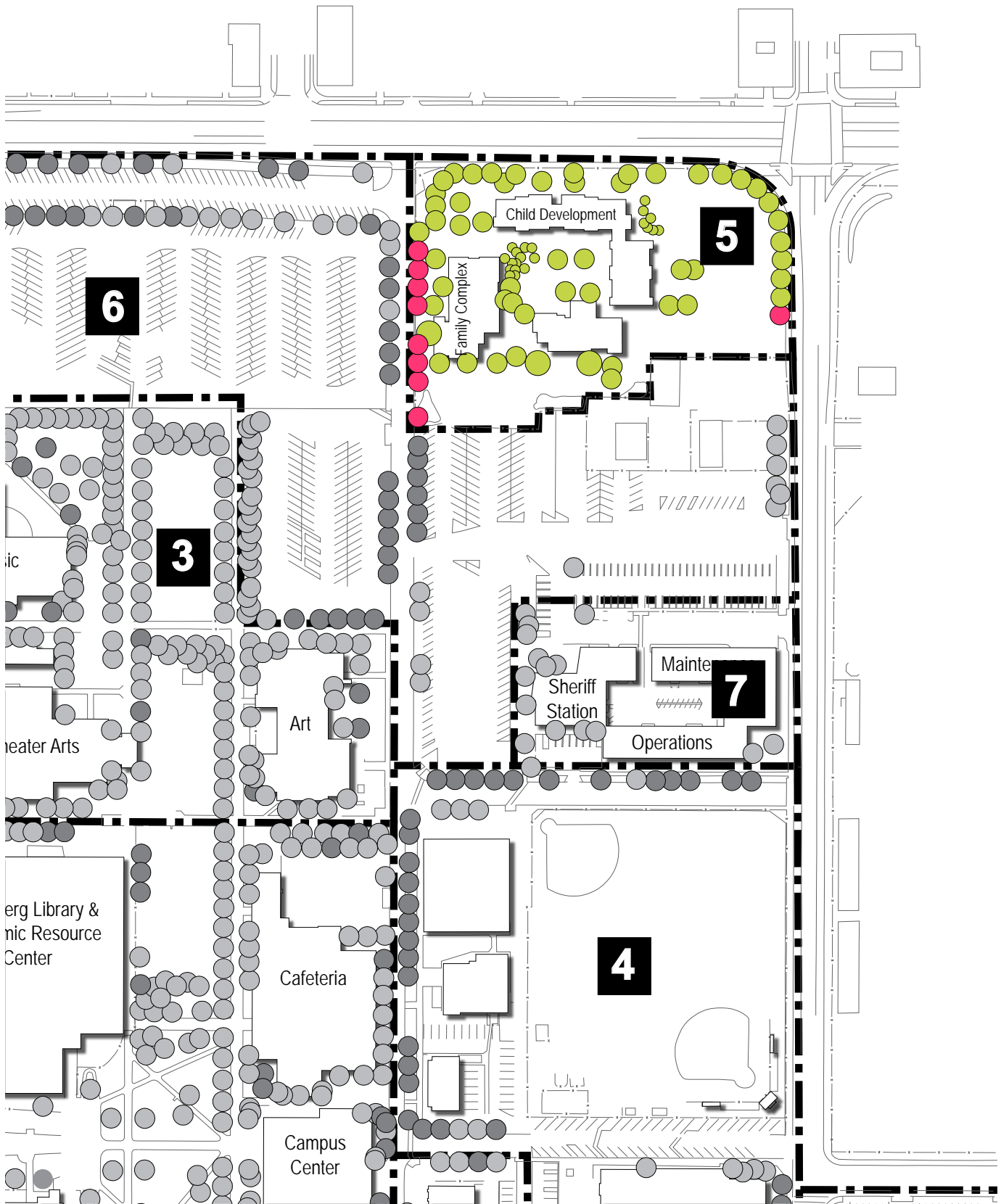
Newly planted Aleppo Pines should be removed within 3-5 years per the Arborist's recommendation. Growth will over-crowd the space which will lead to trees with poor form. Refer to 3-5 year Pruning and Removal Phase and Arborist's recommendations for specific species to be removed.

Continue the native planting in this district.

### LEGEND

---

-  Tree to be removed
-  Tree to be conserved
-  Tree to be removed (out of focus area)
-  Tree to be conserved (out of focus area)
-  District boundary
-  District Number





## B. District Specific Recommendations

### PARKING - DISTRICT 6

Species with a notable presence are *Liquidambar styraciflua* (Sweet Gums). These species should start to be infilled within 5 years while considering a 10-20 year removal of the mature Sweet Gums.

Newly planted trees should be pruned immediately for proper growth, as recommended by the Arborist.







Trees with similar form and seasonal interest should be planted in lieu of the Sweet Gums.

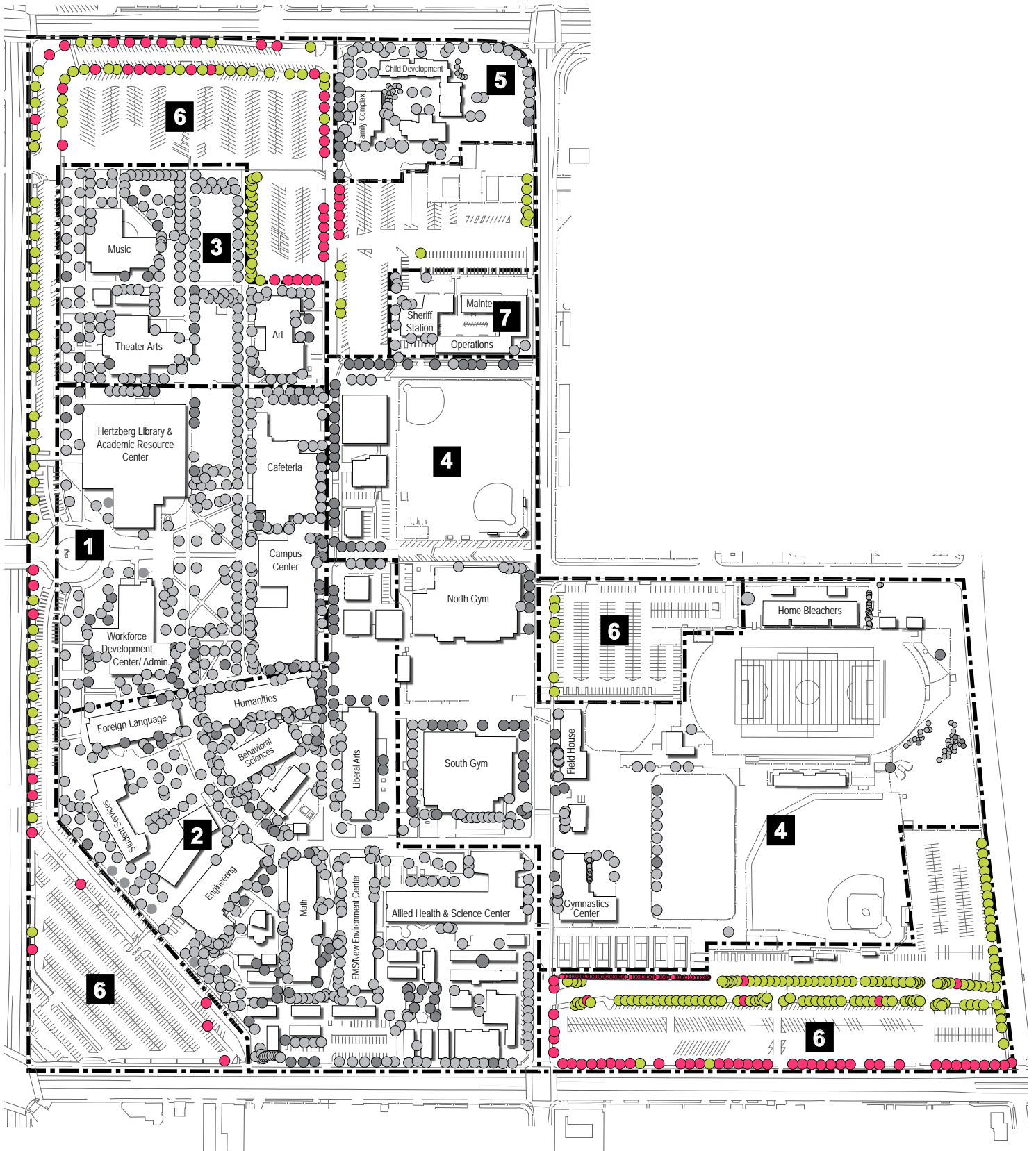
In the Parking district, work with PG&E (or local utility company) to install power lines underground on the six perimeter streets, so that large perimeter trees can be planted without the impact of pruning to ensure clearance from wires.

Provide large shade trees in parking lots at a density replicating original trees.

### LEGEND

---

-  Tree to be removed
-  Tree to be conserved
-  Tree to be removed (out of focus area)
-  Tree to be conserved (out of focus area)
-  District boundary
-  District Number









## B. District Specific Recommendations

### OTHER & SHERIFF - DISTRICT 7

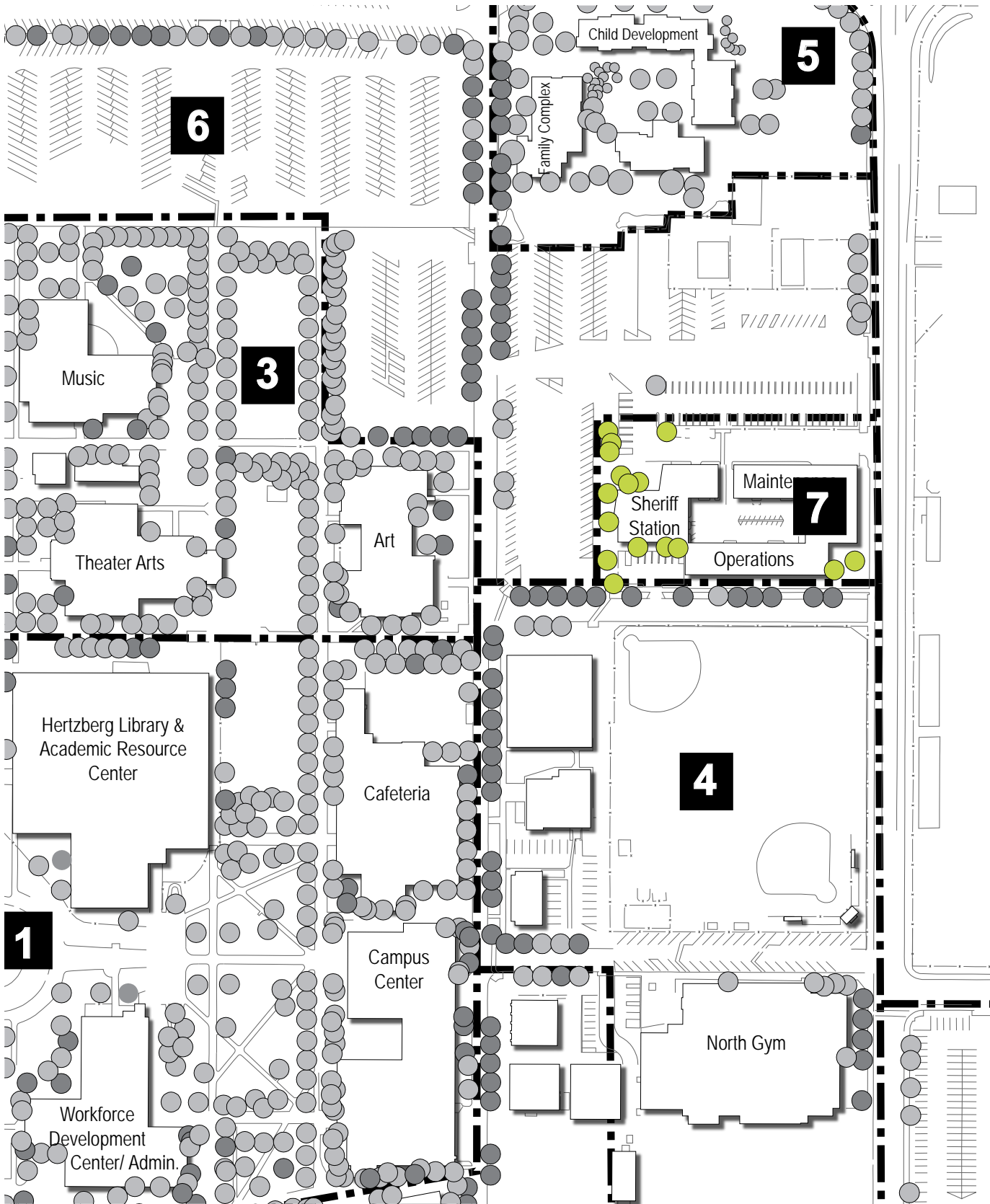
Newly planted trees should be pruned immediately for proper growth, as recommended by the Arborist.

### LEGEND

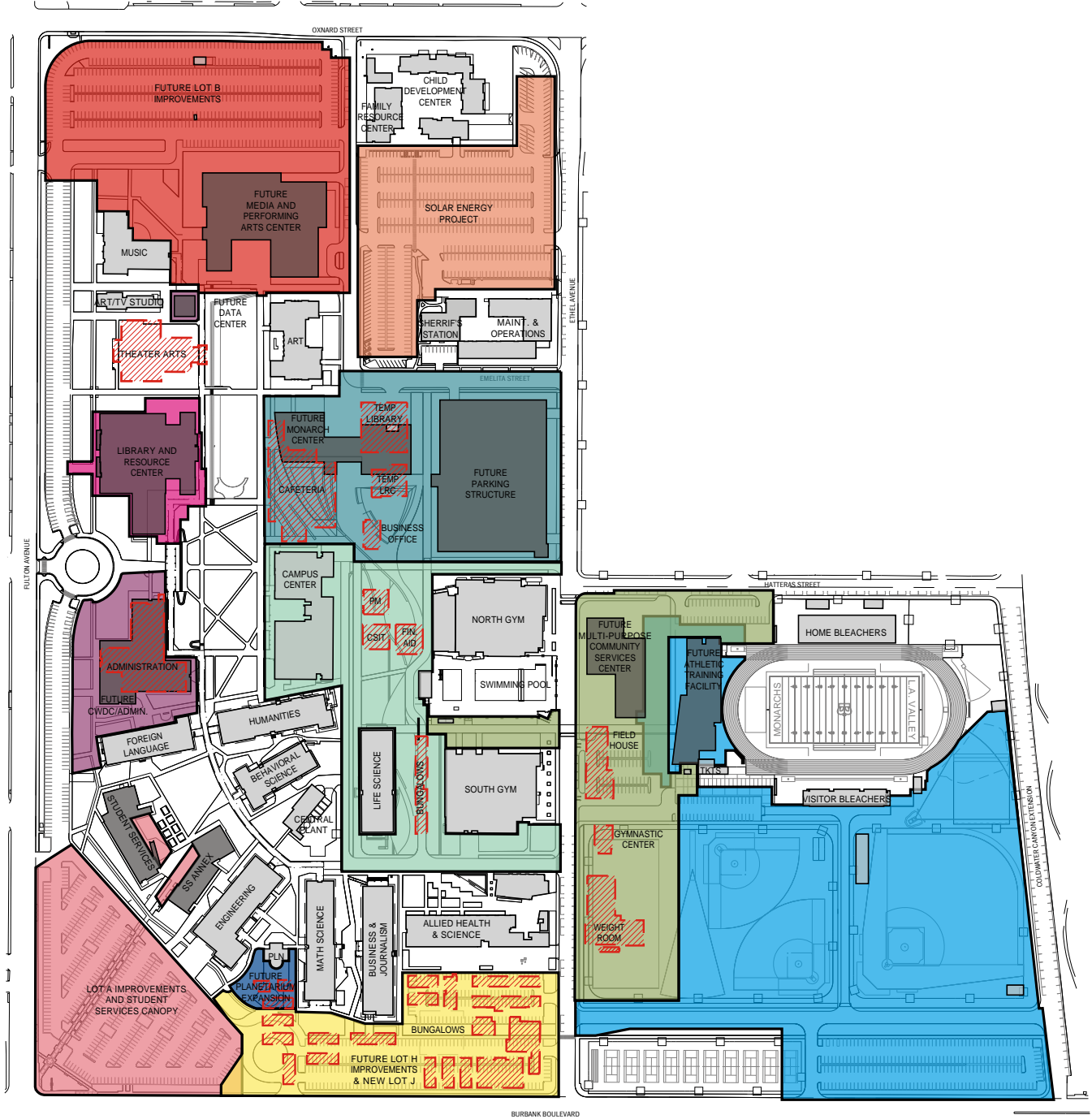
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-  Tree to be removed
-  Tree to be conserved
-  Tree to be removed (out of focus area)
-  Tree to be conserved (out of focus area)
-  District boundary
-  District Number



















# C. Measure J Construction Project Recommendations



# Legend

---

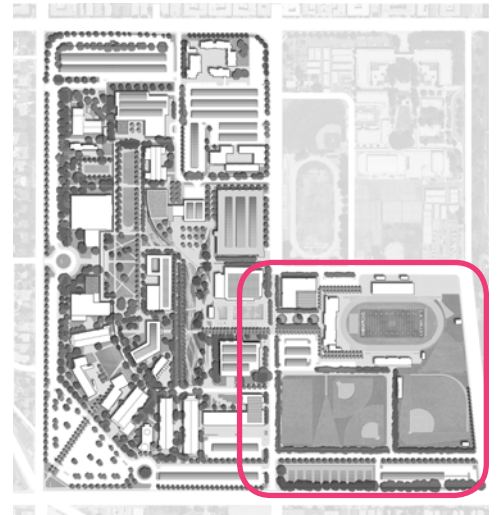
-  Library and Resource Center
-  Solar Energy Project
-  Lot A Improvements and Student Services Canopy
-  Athletic Training Facility
-  Work Force Development Ctr./Admin. Building
-  Monarch Center/Parking Structure
-  Media and Performing Arts Center and Lot B Improvements
-  Multi-Purpose Community Services Center
-  Planetarium Expansion
-  Campus Center/Sustainable Mall
-  Lot H Improvements and New Lot J
-  Existing Building
-  Future Building
-  Building to be Demolished



# ATHLETIC TRAINING FACILITY

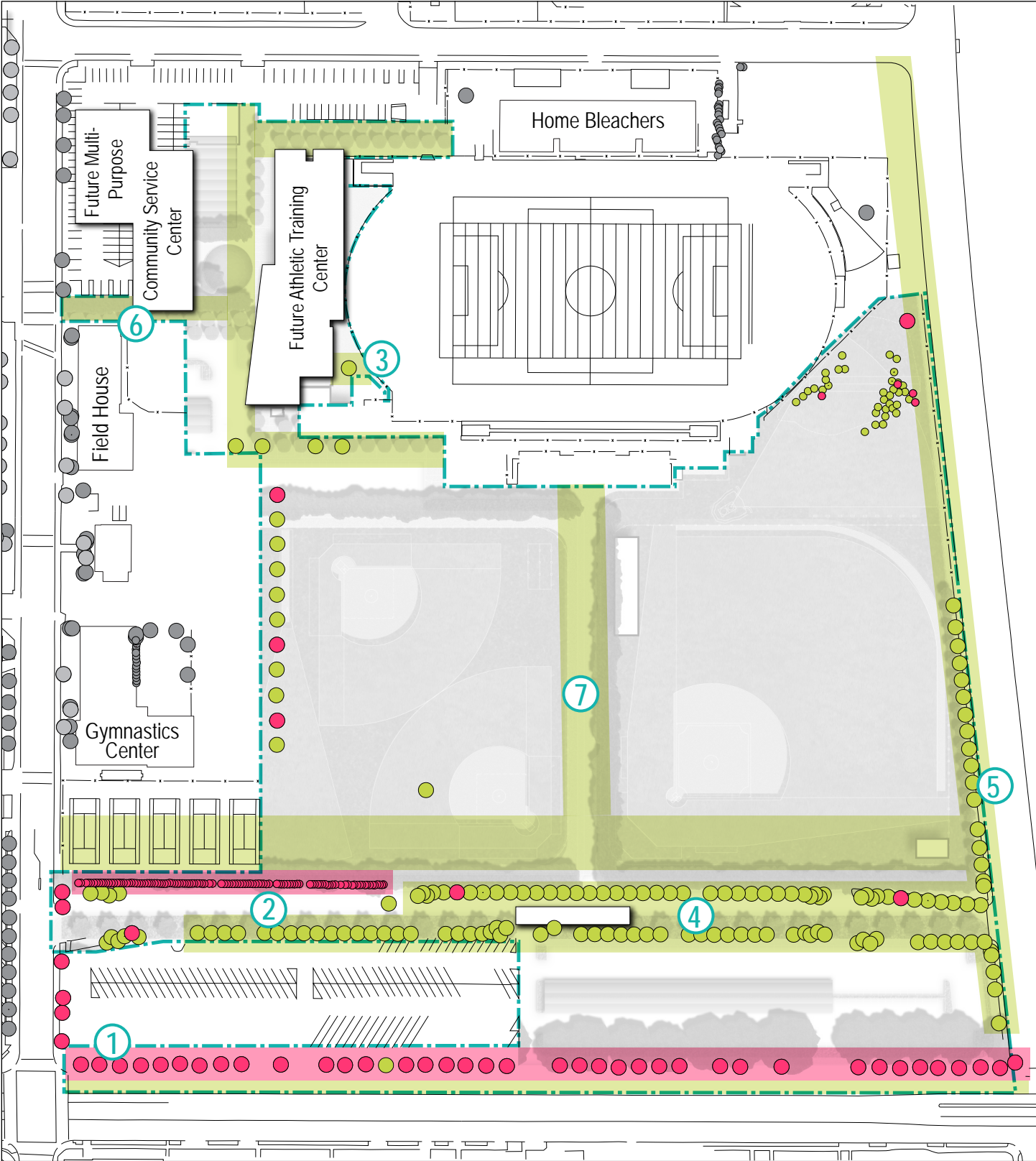
## Recommendations:

- ① Remove row of *Pinus halepensis* (Aleppo Pine) along Burbank Blvd. Replace with species that is appropriate for the overhead utilities.
- ② Remove row of *Cupressus sempervirens* (Italian Cypress) along south end of tennis courts.
- ③ Preserve and protect *Eucalyptus citriodora* (Lemon Scented Gum) during Athletic Training Facility Construction.
- ④ Preserve and protect double row of *Liquidambar styraciflua* (American Sweetgum) and *Meleleuca quinquinervia* (Cajeput Tree).
- ⑤ Preserve row of *Lagerstroemia indica* (Crape Myrtle). Continue *Lagerstroemia indica* (Crape Myrtle) planting along Coldwater Canyon extension street.
- ⑥ Provide framework for 'Alumni Walk' terminus at Stadium with trees that flower in May-July. The selected trees also serve as a connection between the academic and sports sections of campus.
- ⑦ Provide shade for baseball and softball bleachers.
- ⑧ Remove trees recommended by the Arborist for removal.



## LEGEND

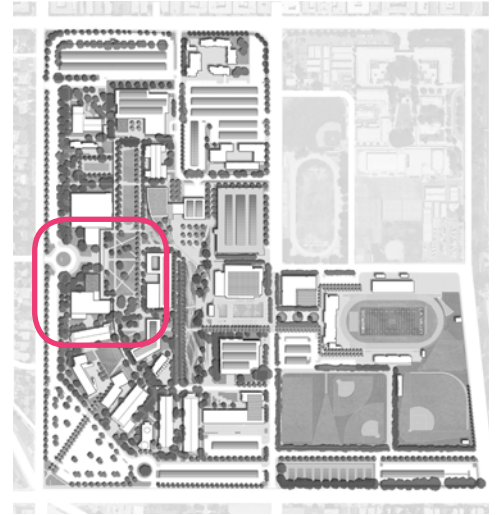
- Tree to be removed
- Tree to be protected
- Tree to be removed (out of focus area)
- Tree to be protected (out of focus area)
- Area of focus
- Area for tree removal
- Area for protection



# WORKFORCE DEVELOPMENT CENTER / ADMINISTRATION BUILDING

## Recommendations:

- 1 Planting to preserve the character of the LAVC entry with a symmetrical planting layout and with similar tree types.
- 2 Infill *Liriodendron tulipifera* (Tulip Tree) to create a full, double row of evenly symmetrical plantings, north and south of the traffic circle to be consistent.
- 3 Preserve and protect *Araucaria bidwilli* (Bunya Bunya Pine).
- 4 Remove trees recommended by the Arborist for removal.

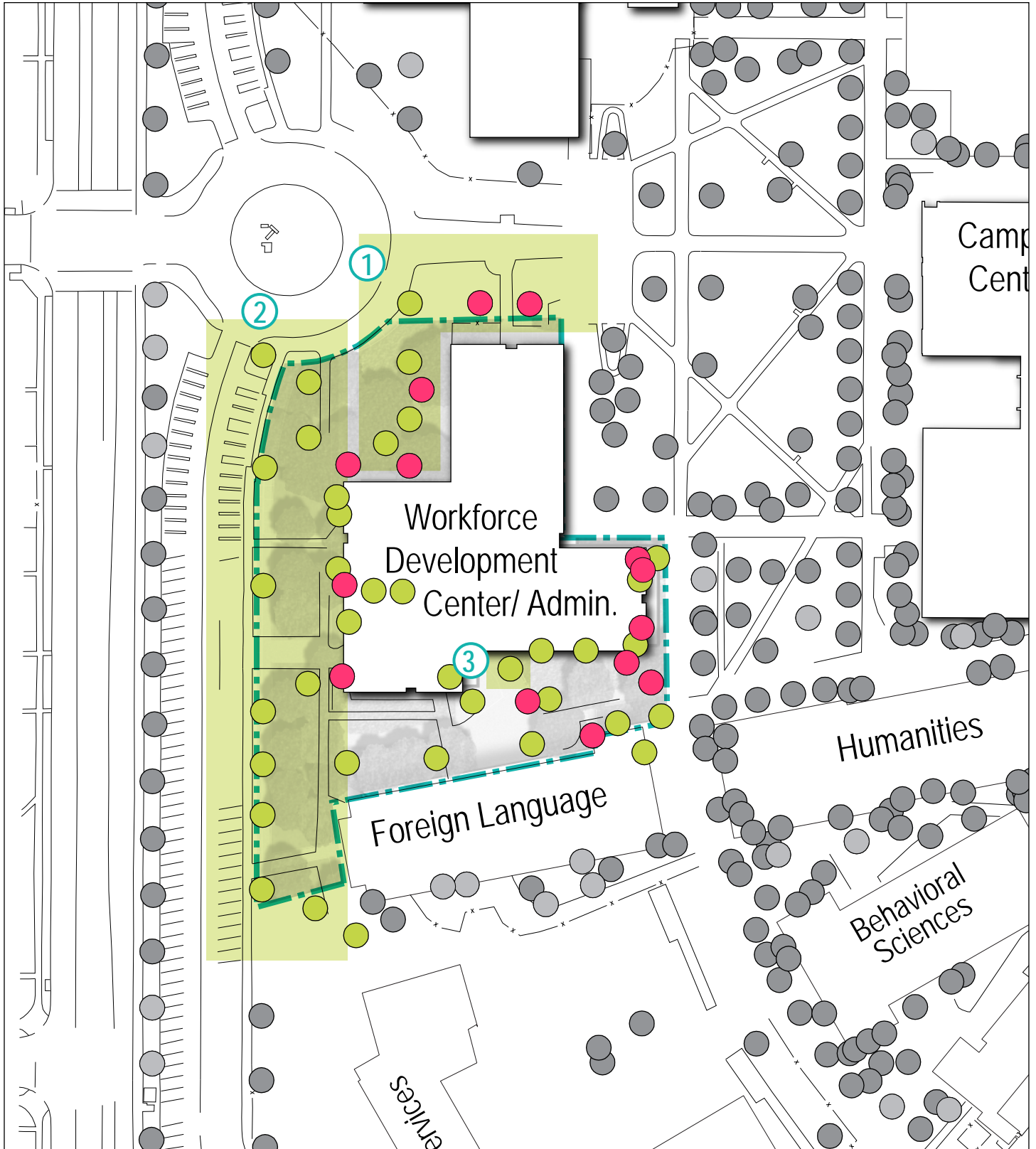


## LEGEND

- Tree to be removed
- Tree to be protected
- Tree to be removed (out of focus area)
- Tree to be protected (out of focus area)
- Area of focus
- Area for tree removal
- Area for protection



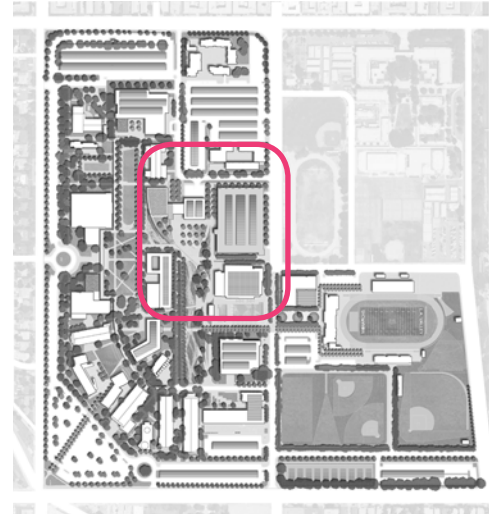
# WORKFORCE DEVELOPMENT CENTER / ADMINISTRATION BUILDING



# MONARCH CENTER / PARKING STRUCTURE

## Recommendations:

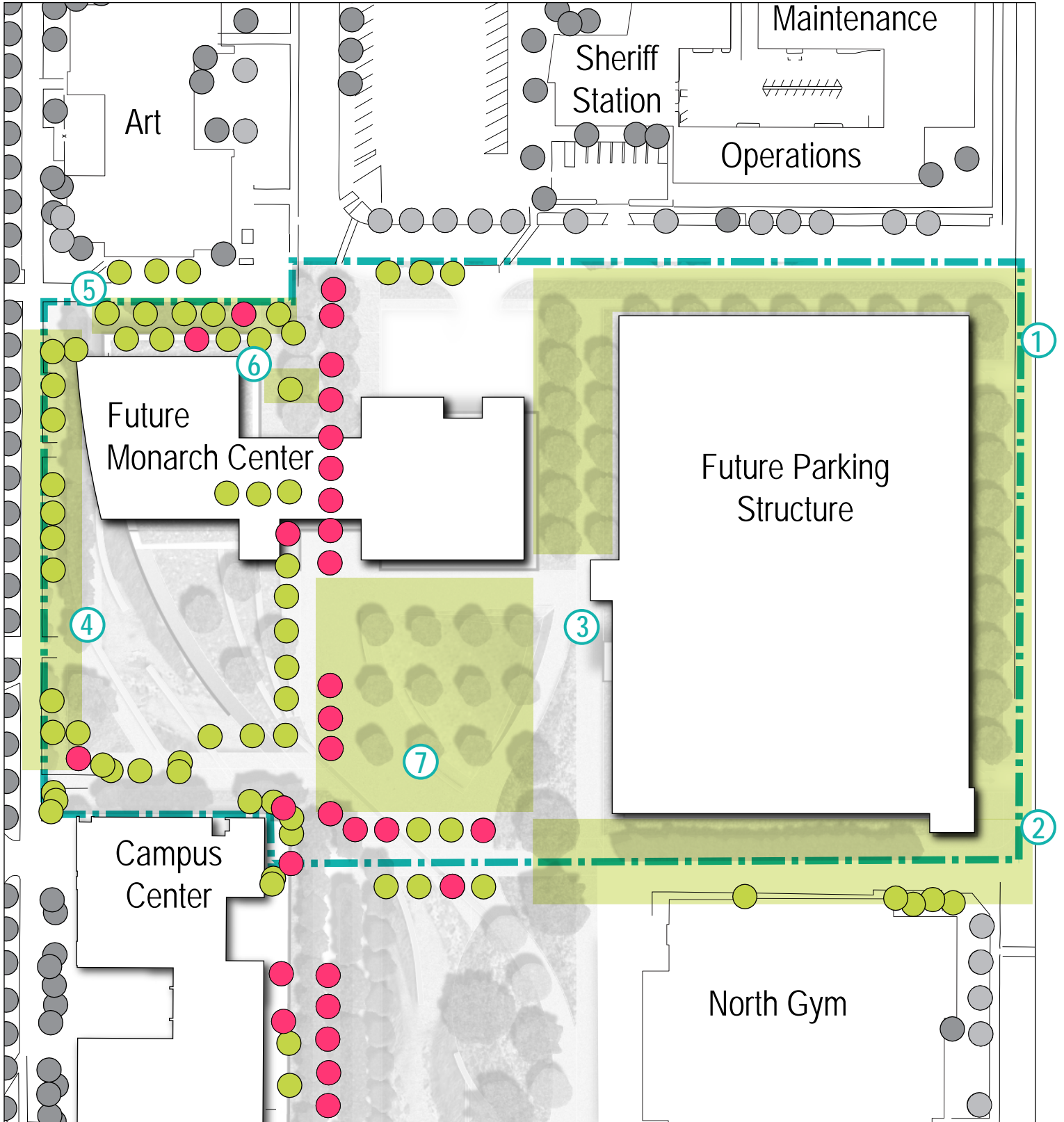
- ① Install trees along north, east and west perimeter of Parking Structure to mitigate height.
- ② Install trees along south perimeter of Parking Structure. Trees to provide pedestrian scale and to be north half of promenade.
- ③ Install Courtyard type trees within the 'Student Events Plaza' (which serves as the end cap to the 'Sustainable Mall'), the entrance to the parking structure, and the bridge between the new and old campus landscapes.
- ④ Begin regeneration of *Olea europaea* (European Olive).
- ⑤ Prune and begin regeneration of double row of *Liquidambar styraciflua* (American Sweetgum).
- ⑥ Preserve specimen of *Pinus thunbergii* (Japanese Black Pine).
- ⑦ Create dialogue between 'Student Events Plaza', 'Sustainable Mall' and 'North Mall'.
- ⑧ Remove trees recommended by the Arborist for removal.



## LEGEND

- Tree to be removed
- Tree to be protected
- Tree to be removed (out of focus area)
- Tree to be protected (out of focus area)
- Area of focus
- Area for tree removal
- Area for protection

MONARCH CENTER / PARKING STRUCTURE

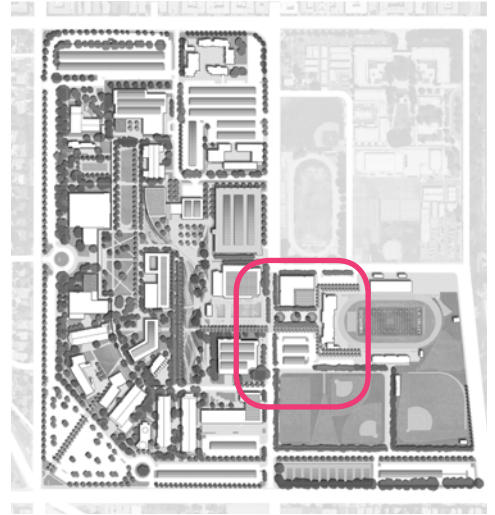




# MULTI-PURPOSE COMMUNITY SERVICES CENTER

## Recommendations:

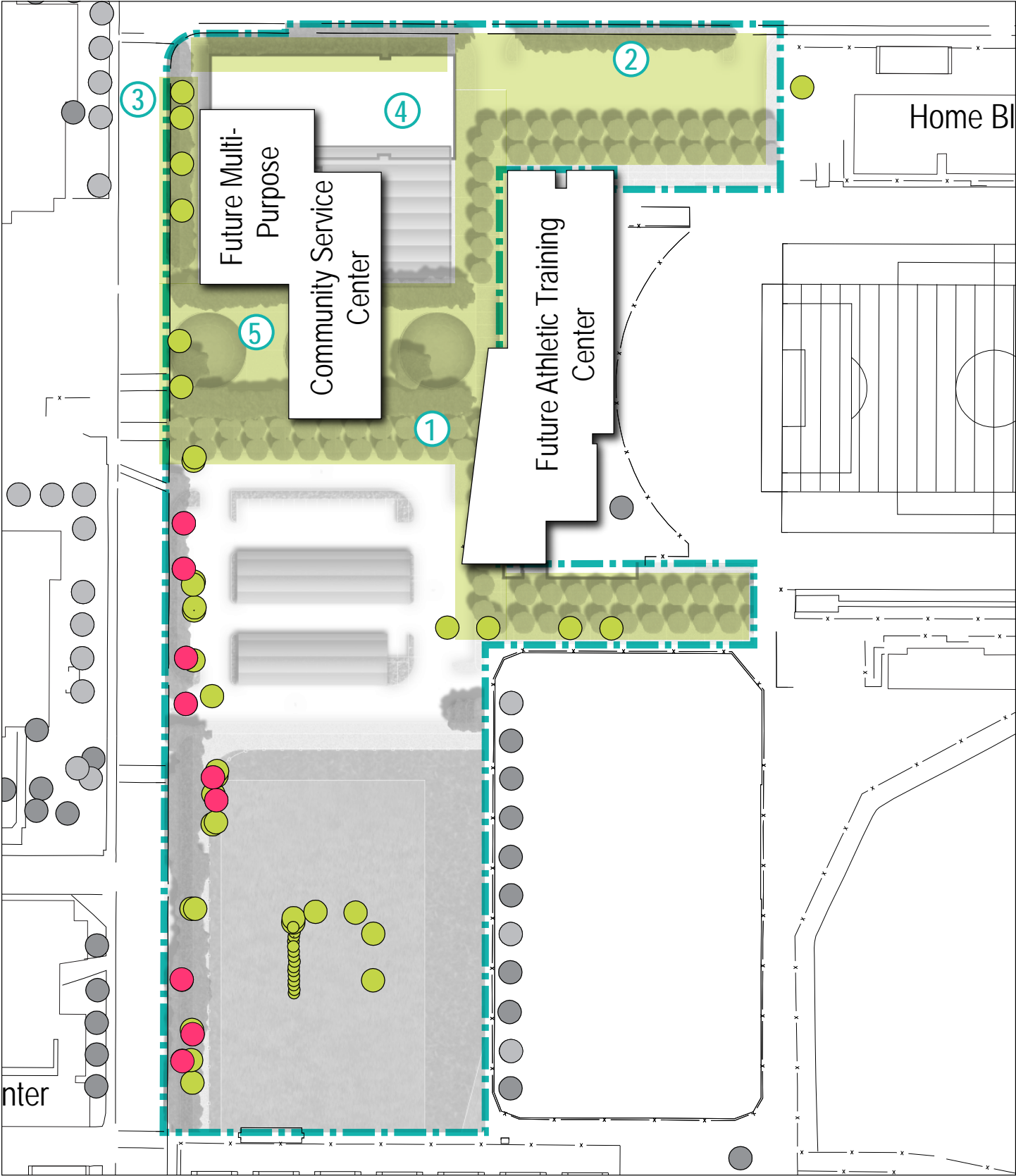
- ① Provide framework for 'Alumni Walk' terminus at Stadium with trees that flower in May-July. The selected trees also serve as a connection between the academic and sports sections of campus.
- ② Install shade trees for parking lots.
- ③ Infill *Lagerstroemia indica* (Crape Myrtle) planting with hybrid variety.
- ④ Continue streetscape along northside of building.
- ⑤ Install large stature trees within the 'Athletic Events Plaza'
- ⑥ Remove trees recommended by the Arborist for removal.



## LEGEND

- Tree to be removed
- Tree to be protected
- Tree to be removed (out of focus area)
- Tree to be protected (out of focus area)
- ▭ Area of focus
- ▭ Area for tree removal
- ▭ Area for protection

MULTI-PURPOSE COMMUNITY SERVICES CENTER



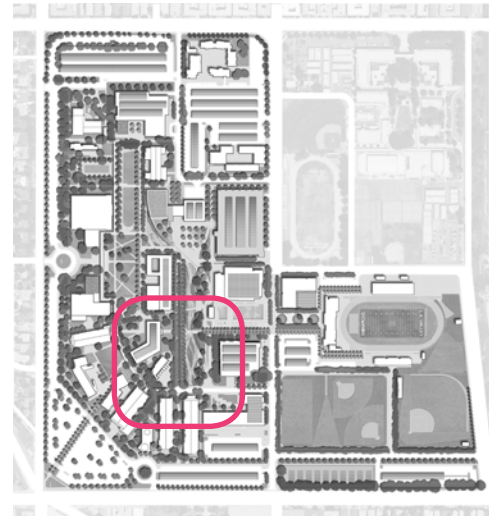
# PLANETARIUM BUILDING EXPANSION

Recommendations:

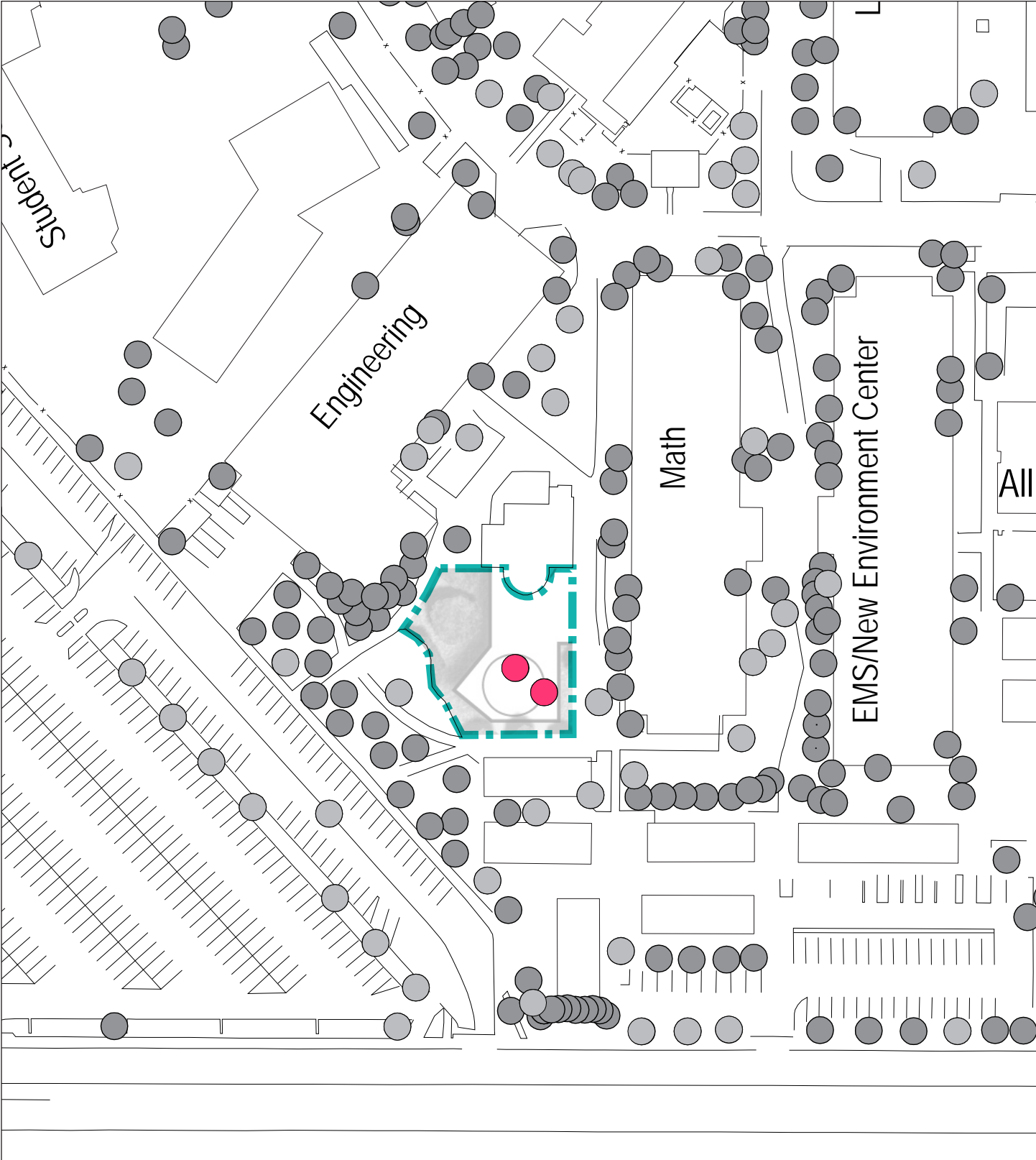
- 1 Do not install trees that have a mature height taller than the guard rail on the observation deck.
- 2 Remove trees identified by panoramic photo study.
- 3 Remove trees as recommended by the Arborist to remove.

## LEGEND

- Tree to be removed
- Tree to be protected
- Tree to be removed (out of focus area)
- Tree to be protected (out of focus area)
- ▭ Area of focus
- ▭ Area for tree removal
- ▭ Area for protection



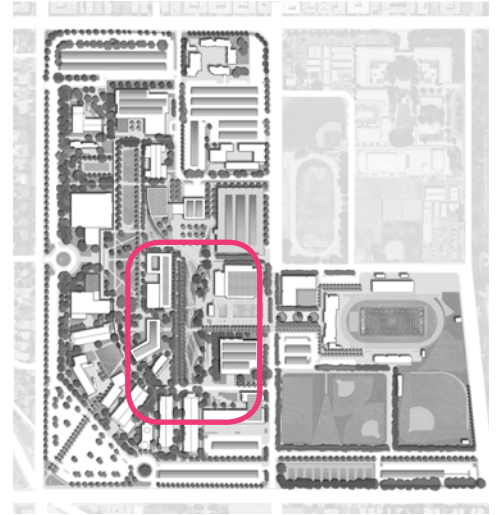




# CAMPUS CENTER / SUSTAINABLE MALL / MONARCH CENTER SITE IMPROVEMENTS

## Recommendations:

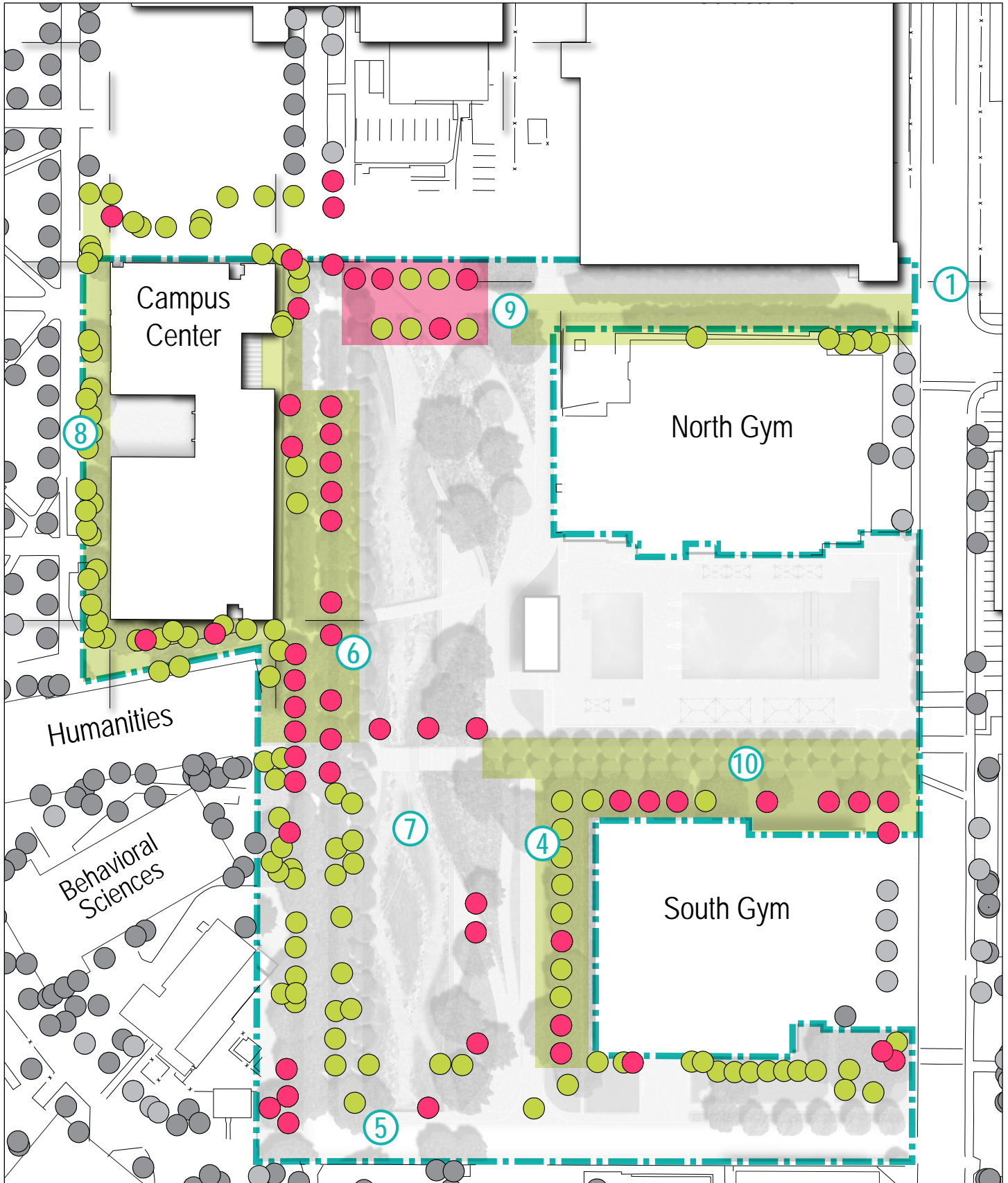
- ① Continue tree planting on south side of road that was started with the Parking Structure construction.
- ② Preserve specimen of *Sequoia sempervirens* (Coast Redwood).
- ③ Preserve specimen of *Washingtonia robusta* (Mexican Fan Palm).
- ④ Prune *Fraxinus uhdei* (Evergreen Ash).
- ⑤ Preserve specimen of *Quercus lobata* (ValleyOak).
- ⑥ Continue promenade of trees from the south, which will be along the west side of the Sustainable Mall and the back of the Campus Center.
- ⑦ Provide riparian and upland habitat species within the Sustainable Mall for Southern California landscapes.
- ⑧ Prune trees within Monarch Square and secondary path.
- ⑨ Remove trees to create dialogue between 'Student Events Plaza' and 'Sustainable Mall'
- ⑩ Provide framework for beginning of the 'Alumni Walk'
- ⑪ Remove trees recommended by the Arborist to remove.



## LEGEND

- Tree to be removed
- Tree to be protected
- Tree to be removed (out of focus area)
- Tree to be protected (out of focus area)
- Area of focus
- Area for tree removal
- Area for protection

# CAMPUS CENTER / SUSTAINABLE MALL / MONARCH CTR. SITE IMPROVEMENTS

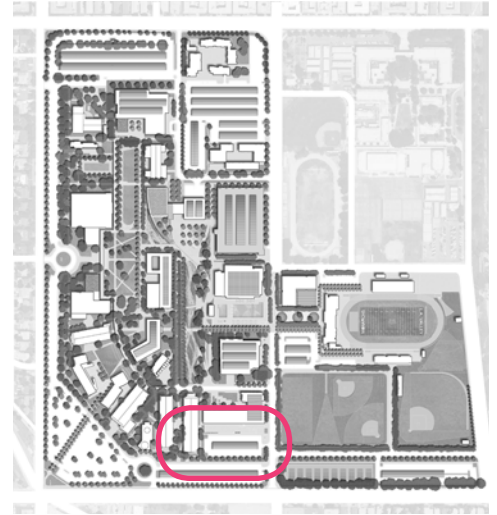




## PARKING LOTS H & J

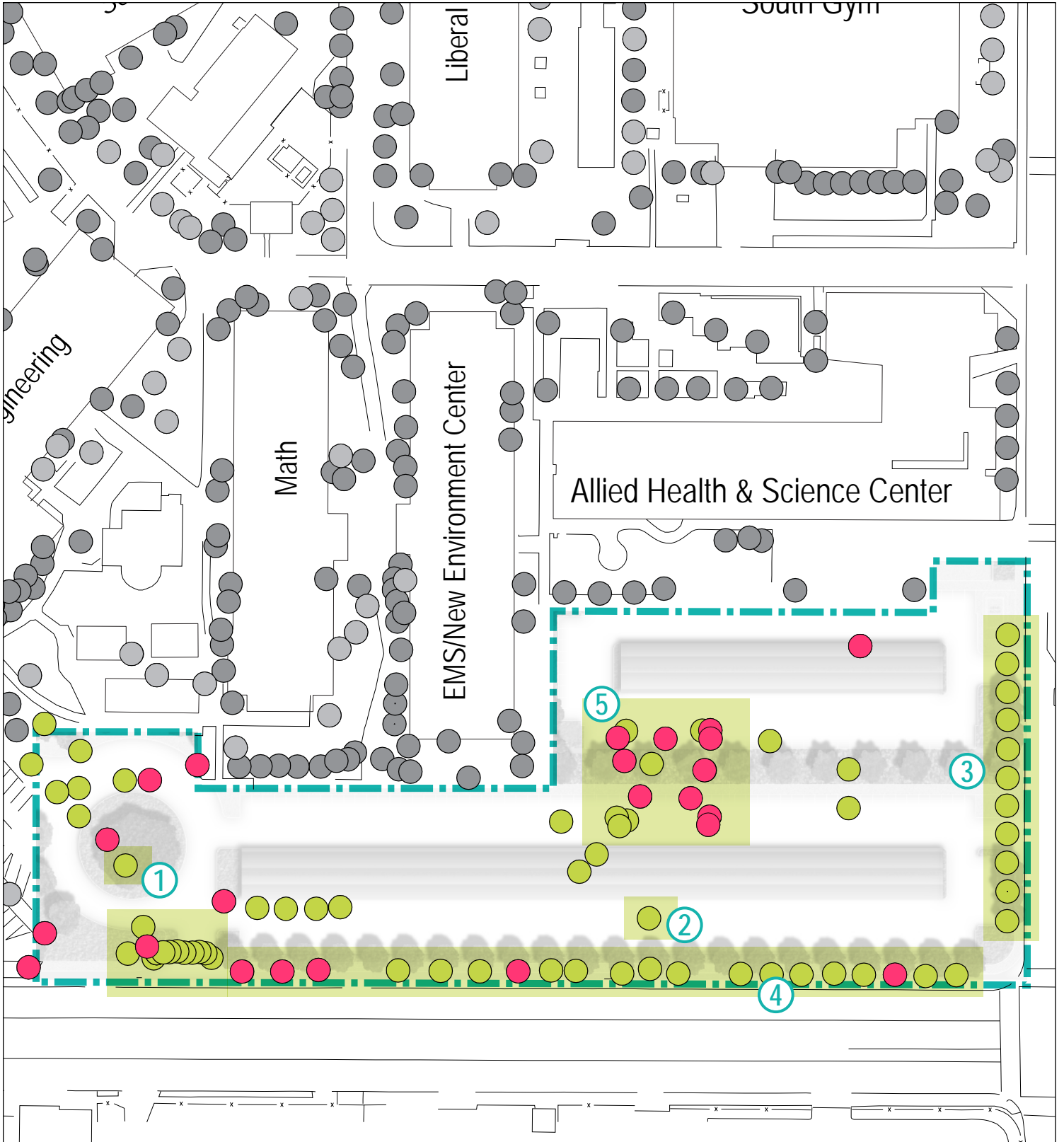
Recommendations:

- ① Preserve and protect specimens of *Ficus macrophylla* (Moreton Bay Fig) as a feature of the turn around. All trenching beneath the dripline is to be under the supervision of a certified Arborist.
- ② Preserve and protect specimen of *Platanus acerifolia* (London Plane Tree).
- ③ Preserve and protect row of *Ginkgo Biloba* (Maidenhair Tree).
- ④ Infill street trees along Burbank Boulevard to create a continuous planting. Overhead utility lines limit species selection.
- ⑤ Revisit layout of parking lot to accommodate for the preservation of specimen trees. Strive to maintain the arboricultural character of the first quad in the South Campus District. Consider restoring the 'First Quad' to its original size extending to the Burbank Boulevard frontage.
- ⑥ LAVC to provide direction of the development at the 'First Quad'.
- ⑦ Remove all trees recommended by the Arborist for removal.



### LEGEND

- Tree to be removed
- Tree to be protected
- Tree to be removed (out of focus area)
- Tree to be protected (out of focus area)
- Area of focus
- Area for tree removal
- Area for protection







*“Suburbia* is where the developer *bulldozes* out the trees, then *names the streets* after them.”

~Bill Vaughn



## VI. References

---

### A. Nursery Resources & Supplies

### B. Acknowledgements

### C. Bibliography

### D. Appendices

1. *Existing Tree Conditions*
2. *Master Format Construction Specifications*
3. *Arborist's Existing Inventory Spreadsheet*
4. *Survey of Trees*

### E. Glossary

### F. Index



# A. Nursery Resources and Supplies

## Plant Material Resources

### Nurseries

GroWest Nurseries  
1700 GroWest Avenue  
Riverside, CA 92504  
951-780-1552

Valley Crest Tree Company  
24151 Ventura Boulevard  
Calabasas, CA 91302  
818-223-8500

Pardee Tree Nursery  
30970 Via Puerta del Sol  
Oceanside, CA 92057  
760-630-5400

Norman's Nursery  
8665 Duarte Road  
San Gabriel, CA 91775  
626-285-9795

El Nativo Growers  
200 S. Peckham Road  
Azusa, CA 91702  
626-969-8449

Tree of Life Nursery  
33201 Ortega Highway  
San Juan Capistrano, CA 92675  
949-728-0685

Native Sons  
379 El Camp Road  
Arroyo Grande, CA 93420  
805-481-5996

Monrovia Nursery  
18331 East Foothill Boulevard  
Azusa, CA 91702  
800-999-1101

Native Grow Nursery  
30900 Rancho Viejo Road  
Suite 100  
San Juan Capistrano, CA 92675  
949-481-9090

Tree Movers  
Senna Tree Company  
3115 Foothill Boulevard  
Suite M #140  
La Crescenta, CA 91214  
818-957-5755

Valley Crest Tree Care Services  
24151 Ventura Boulevard  
Calabasas, CA 91302  
818-223-8500

## Landscape Accessories

### Irrigation Products and Auditor

Ewing Irrigation Distributors  
4552 Colorado Boulevard  
Los Angeles, CA 90039  
818-551-9550

Root Control Barriers  
UB 36-2 (Deep Root)  
530 Washington Street  
San Francisco, CA 94111  
800-458-7668

RP Series Root Barriers (NDS)  
851 North Harvard Avenue  
Lindsay, CA 93247  
877-301-5242

BioBarrier (Typar)  
70 Old Hickory Boulevard  
Old Hickory, TN 37138  
800-257-6687

### Tree Stakes

Sullivan & Mann Lumber Company  
17671 Irvine Boulevard  
Tustin, CA 92780  
800-640-4020

### Tree Guying Hardware

Duckbill Tree Guy (Foresight Products)  
6430 East 49th Drive  
Commerce City, CO 80022  
800-325-5360

System TG-4B (Tree Guy)  
4001 West Carriage Drive  
Santa Ana, CA 92704  
714-545-7444

### Tree Straps

Original Treestrap (GCS Inc.)  
401 Elm Avenue, Suite 100  
North Wales, PA 19454  
800-360-3584

### Structural Soils

CU Structural Soil (Gail Materials)  
1256 Magnolia Avenue  
Corona, CA 92879  
951-279-1095

Silva Cell (Deep Root)  
530 Washington Street  
San Francisco, CA 94111  
800-458-7668

## **ArborPro**

Urban Forest Management Software

P.O. Box 18071

Anaheim Hills, CA 92817

877-844-3282

**GPS Tree and Asset Inventories:** Data is collected using the Global Positioning System for accurate location of sites in the field.

**Certified Arborist Data Collection:** ISA certified field and management staff.

**Management Software:** ArborPro management software is the most progressive and easy to use system for daily workflow and historical record keeping; designed with the latest mapping capabilities for point and click operation from the office or the field.

**Urban Forest Master Planning:** Forecasting, planning and implementation of steps necessary for a healthy and lasting urban landscape.

**Arborist Consulting:** Utilize our staff's field knowledge to assess, identify, and help solve urban forest issues.

**GIS Consulting:** Assistance with Geographic Information Systems implementation and customization.

**Outdoor Asset Management:** Our software can assist in managing common outdoor assets to schedule maintenance, maintain work records, and track daily crew activity for a variety of landscape features including turf management, lighting, control valves, storm sewers, hydrants and more.

**Data Conversions:** ArborPro is familiar with nearly all past and current inventory systems. Our firm can take old or unsupported database records and convert them to ArborPro. Historical records are maintained and new work history is captured and added to each site.

## B. Acknowledgments

### LAVC TREE HUGGER USER GROUP (T.H.U.G.S)

#### Administration

- Dr. Sue Carleo, LAVC President
- Dr. Sandy Mayo, VP Academic Affairs

#### Faculty & Staff

- Enrique Aniceto, Biology
- Jack Epling, Maintenance & Operations
- David Falk, Planetarium  
(Earth Science & Anthropology)
- Don Gauthier, Earth Science & Anthropology
- Dana Lubow, Library
- Tom Lopez, Director Maintenance & Operations
- Douglas Marriot, Cooperative Education
- Larry Nakamura, Biology
- Israel Ortiz, Computer Center
- Lynn Polasek, Biology
- La Vergne Rosow, Humanities
- Karen Roy, Biology

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- Nicole Hutchinson
- Juli Ann Giron

#### LACCD

- George Leddy, Sustainability Group

#### Yang Management

- Robert Tellez

#### Steinberg Architects

- David Hart
- Joe Sion
- Shawna Upp

#### SWA Group

- Gerdo Aquino
- Oliver Seabolt
- Michael Hee
- Liz Lagedrost

#### PGA Design

- Cathy Garrett
- Maura Baldwin

#### Certified Arborist

- Jim Borer

#### Mollenhauer Group

- Bill Nailing

#### Sherwood Engineering

- Bry Sarte



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Photographs provided by the Los Angeles Valley College (LAVC) Dept of Public Relations.

Photographs provided by the San Fernando Valley Library.

Photographs provided by LaVergne Rosow.

### INTERNET CITATIONS

1. Hermes Copper Butterfly; <http://www.fws.gov/carlsbad/TEspecies/HCB.htm> (Accessed June 2011)  
Image downloaded from flick.com
2. Monarch Butterfly; [http://en.wikipedia.org/wiki/Monarch\\_\(butterfly\)](http://en.wikipedia.org/wiki/Monarch_(butterfly)) (Accessed June 2011)  
Image downloaded from flick.com
3. Quino Checkerspot Butterfly; <http://essig.berkeley.edu/endins/quino.htm> (Accessed June 2011)  
Image downloaded from flick.com
4. Nuttall's Woodpecker; [http://www.allaboutbirds.org/guide/Nuttalls\\_Woodpecker/id](http://www.allaboutbirds.org/guide/Nuttalls_Woodpecker/id) (Accessed June 2011)  
Image downloaded from flick.com

# D. Appendices

## TREE MAPPING ALPHABETICAL BY LATIN NAME

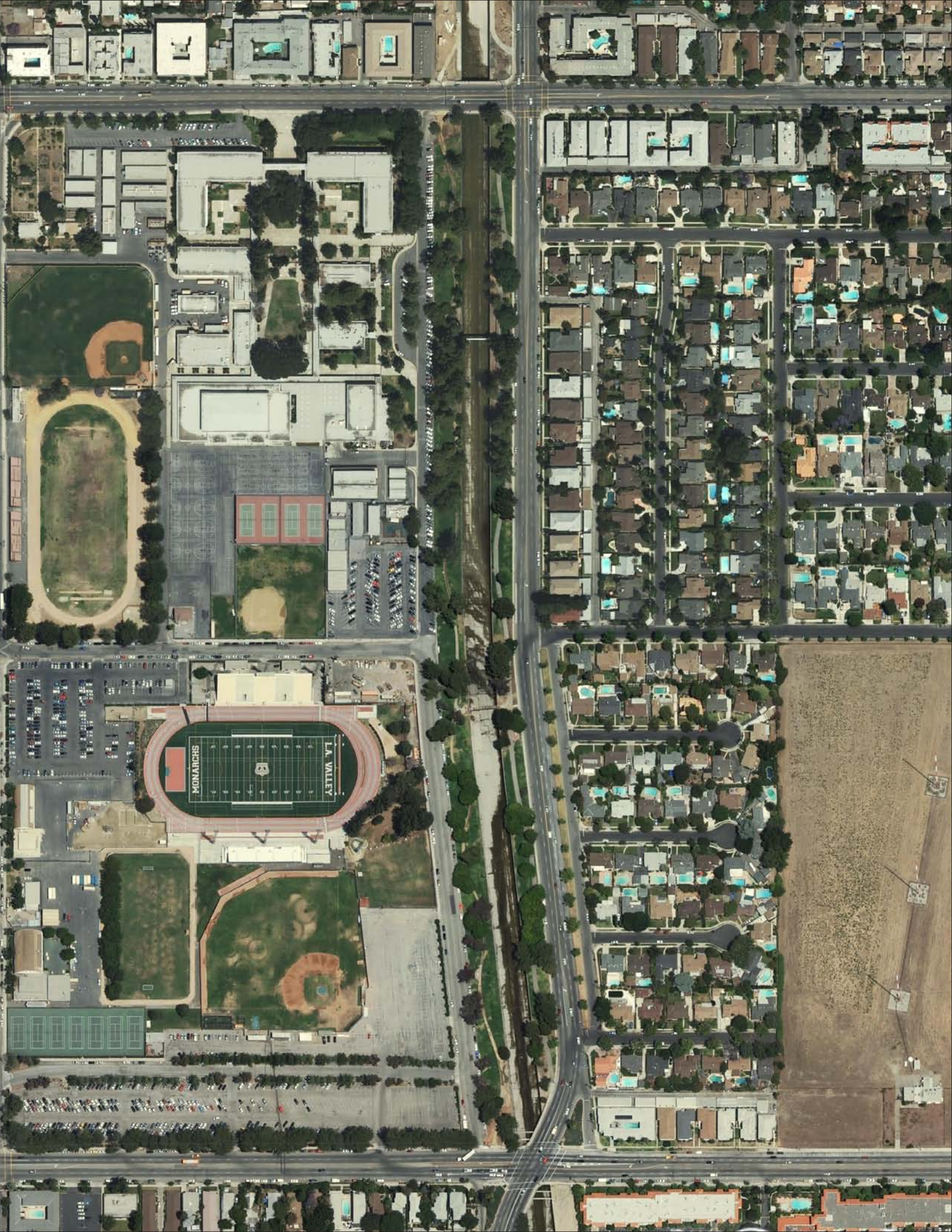
<i>Acacia salacina</i>	Shoestring Acacia	p. 210
<i>Albizzia julibrissen</i>	Silk Tree	p. 211
<i>Algyone hueglijii</i>	Blue Hibiscus	p. 212
<i>Alnus rhombifolia</i>	White Alder	p. 213
<i>Araucaria bidwillii</i>	Bunya Bunya Pine	p. 214
<i>Arbutus unedo</i> ‘Marina’	Marina Strawberry Tree	p. 215
<i>Arbutus unedo</i>	Strawberry Tree	p. 216
<i>Bauhinia purpurea</i>	Orchid Tree	p. 217
<i>Betula sp.</i>	Birch	p. 218
<i>Callistemon viminalis</i>	Weeping Bottlebrush	p. 219
<i>Calodendron capense</i>	African Cape Chestnut	p. 220
<i>Carya sp.</i>	Fruiting Fig	p. 221
<i>Cassia leptophylla</i>	Gold Medallion Tree	p. 222
<i>Cedrus atlantica</i>	Atlantic Cedar	p. 223
<i>Cedrus deodora</i>	Deodar Cedar	p. 224
<i>Celtis sinensis</i>	Chinese Hackberry	p. 225
<i>Ceratonia siliqua</i>	Carob	p. 226
<i>Chamaerops humilis</i>	Mediterranean Fan Palm	p. 227
<i>Chitalpa speciosa</i>	Chitalpa	p. 228
<i>Chorisia speciosa</i>	Floss Silk Tree	p. 229
<i>Cinnamomum camphora</i>	Camphor Tree	p. 230
<i>Cupaniopsis anacardioides</i>	Carrotwood	p. 231
<i>Cupressus sempervirens</i>	Italian Cypress	p. 232
<i>Dodonaea viscosa</i>	Hopseed Bush	p. 233
<i>Eriobotrya deflexa</i>	Bronze Loquat	p. 234
<i>Eucalyptus citriodora</i>	Lemon-Scented Gum	p. 235
<i>Eucalyptus globulus</i>	Blue Gum	p. 236
<i>Eucalyptus sideroxylon</i> ‘Rosea’	Red Iron Bark	p. 237
<i>Ficus benjamina</i>	Weeping Fig	p. 238
<i>Ficus lyrata</i>	Fiddleleaf Fig	p. 239
<i>Ficus macrophylla</i>	Moreton Bay Fig	p. 240
<i>Ficus microphylla</i> ‘Retusa’	Indian Laurel	p. 241
<i>Ficus rubiginosa</i>	Rusty Leaf Fig	p. 242
<i>Fraxinus uhdei</i>	Evergreen Ash	p. 243
<i>Fraxinus velutina</i>	Modesto Ash	p. 244
<i>Geijera parviflora</i>	Australian Willow	p. 245
<i>Ginkgo biloba</i>	Maidenhair Tree	p. 246
<i>Grevillea robusta</i>	Silk Oak	p. 247
<i>Jacaranda acutifolia</i>	Blue Jacaranda	p. 248
<i>Juniperus tortulosa</i>	Twisted Juniper	p. 249
<i>Koelreuteria bipinnata</i>	Chinese Flame Tree	p. 250
<i>Koelreuteria panniculata</i>	Golden Rain Tree	p. 251

<i>Lagerstroemia indica</i>	Crape Myrtle	p. 252
<i>Lagerstroemia indica</i> X 'Faurei'	Faurei Crape Myrtle	p. 253
<i>Liquidambar styraciflua</i>	Sweet Gum	p. 254
<i>Liriodendron tulipifera</i>	Tulip Tree	p. 255
<i>Magnolia grandiflora</i>	Southern Magnolia	p. 256
<i>Magnolia soulangiana</i>	Chinese Magnolia	p. 257
<i>Melaleuca quinquinerva</i>	Cajeput Tree	p. 258
<i>Morus alba</i>	White Mulberry	p. 259
<i>Murraya</i> sp.	No Common Name	p. 260
<i>Olea europaea</i>	European Olive	p. 261
<i>Picea pungens</i>	Spruce	p. 262
<i>Pinus canariensis</i>	Canary Island Pine	p. 263
<i>Pinus halepensis</i>	Aleppo Pine	p. 264
<i>Pinus pinea</i>	Italian Stone Pine	p. 265
<i>Pinus thunbergii</i>	Japanese Black Pine	p. 266
<i>Pistacia chinensis</i>	Chinese Pistache	p. 267
<i>Pittosporum rhombifolia</i>	No Common Name	p. 268
<i>Pittosporum undulatum</i>	Victoria Box	p. 269
<i>Platanus acerifolia</i>	London Plane Tree	p. 270
<i>Platanus racemosa</i>	California Sycamore	p. 271
<i>Podocarpus gracilior</i>	Yew Pine	p. 272
<i>Prunus carolinianna</i>	Carolina Laurel Cherry	p. 273
<i>Prunus cerasifera</i> 'Krauter Vesuvius'	Purple Plum	p. 274
<i>Pyrus calleryana</i>	Flowering Pear	p. 275
<i>Pyrus kawakamii</i>	Evergreen Pear	p. 276
<i>Quercus agrifolia</i>	Coast Live Oak	p. 277
<i>Quercus ilex</i>	Holly Oak	p. 278
<i>Quercus lobata</i>	Valley Oak	p. 279
<i>Quercus</i> sp.	Oak	p. 280
<i>Quercus suber</i>	Cork Oak	p. 281
<i>Quercus virginiana</i>	Southern Live Oak	p. 282
<i>Robinia idahoensis</i>	Black Locust	p. 283
<i>Sambucus nigra</i> 'Canadensis'	Elderberry	p. 284
<i>Schinus terebinthifolius</i>	Brazilian Pepper Tree	p. 285
<i>Sequoia sempervirens</i>	Coast Redwood	p. 286
<i>Tabebuia chrysatha</i>	Golden Trumpet Tree	p. 287
Tipuanu tipu	Tipu Tree	p. 288
<i>Tristania conferta</i>	Brisbane Box	p. 289
<i>Tupidanthus calyptratus</i>	Umbrella Tree	p. 290
<i>Ulmus parvifolia</i>	Evergreen Elm	p. 291
<i>Washingtonia robusta</i>	Mexican Fan Palm	p. 292
<i>Yucca gloriosa</i>	Spanish Dagger	p. 293







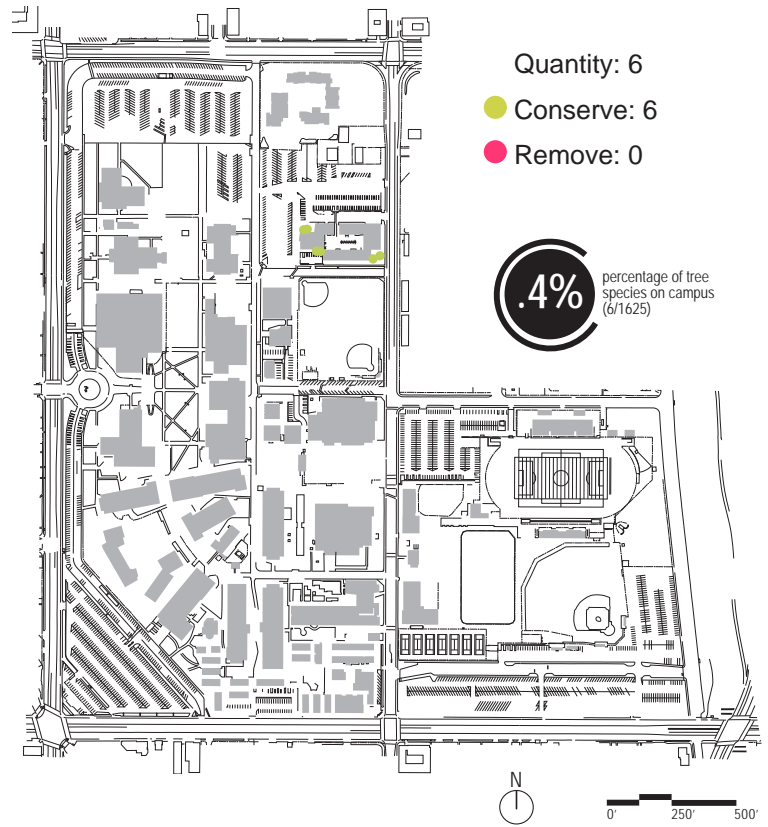




*Acacia salacina*

## Shoestring Acacia

Fast growing tree, 20-40 ft. tall, to 15 ft. wide with semiweeping habit. Leaves are dark green, narrow, grow up to 3 in. long. Flowers are cream-colored balls that bloom most of the year, but heaviest in fall and winter.





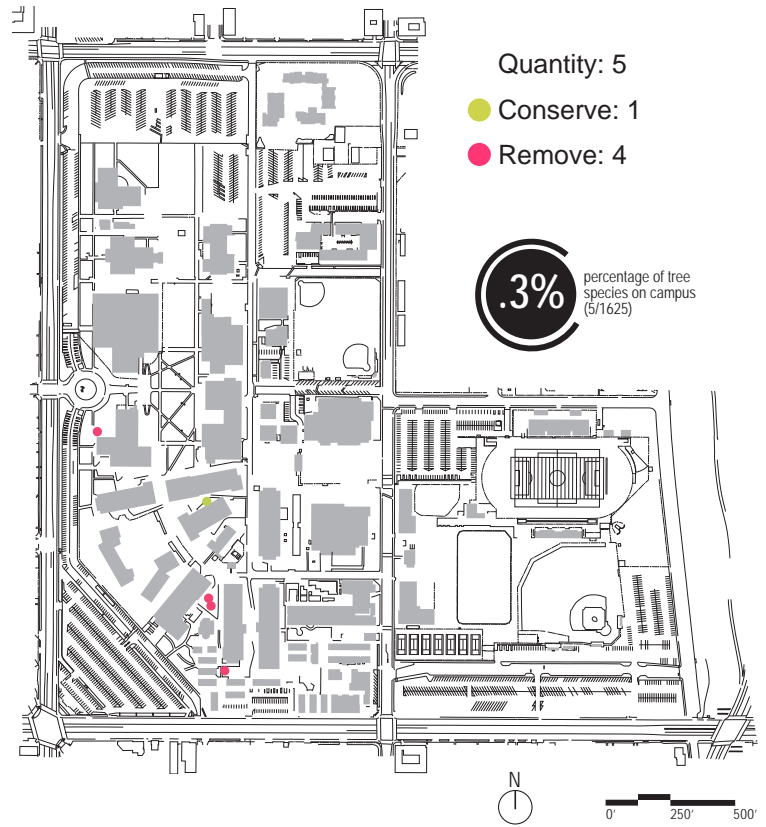
# *Albizzia julibrissen*

## Silk Tree

“A medium to large size deciduous tree that commonly develops a low broad branching habit 25-40 ft. tall, with an equal width. Large feathery leaves are bipinnately divided, grow to 12-18 in. long and create a light and airy canopy. Large numbers of showy flowers grow in terminal clusters and cover the tops of these trees in mid summer. The flower color varies in intensity from pale pink to deep rose. Countless numbers of brown seed pods, 2-3 in. long, develop in late fall, persist into winter and are considered unsightly by many people. Seeds germinate readily in understory plantings, resulting in undesired seedlings.

This species is native to many parts of Iran, India, China and Japan. Throughout its natural range in China, silk tree grows in foothills and valleys at elevations ranging from 1,000-6,000 ft. within broad leaved deciduous forests. Annual rainfall ranges from 40-60 inches; winter frost is common. It is a highly adaptable plant that can grow in temperate or subtropical climate regions around the world, becoming easily naturalized in some areas.

Silk tree is widely grown as an ornamental shade tree in coastal, inland, valley and low to intermediate desert regions throughout California. It tolerates a variety of soil types, including clay and calcareous and contributes to soil fertility through nitrogen fixation. It is a fast growing species that is sun, heat and cold tolerant. Growth is best with regular soil moisture, however, too much water can lead to excessive growth and weak branching.



Silk tree is one of the most colorful canopy trees for urban and rural landscapes. It can be grown as a single or multiple trunk specimen for use in lawns, patios, parking lots and in raised planters. Ample space is needed to accommodate large rooting potential. Young plants have a low branching structure and will need pruning to attain greater height; mature plants produce heavy leaf and seedpod litter.” (B. Perry 2010)



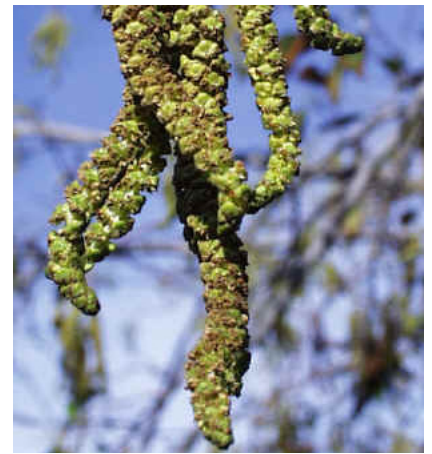
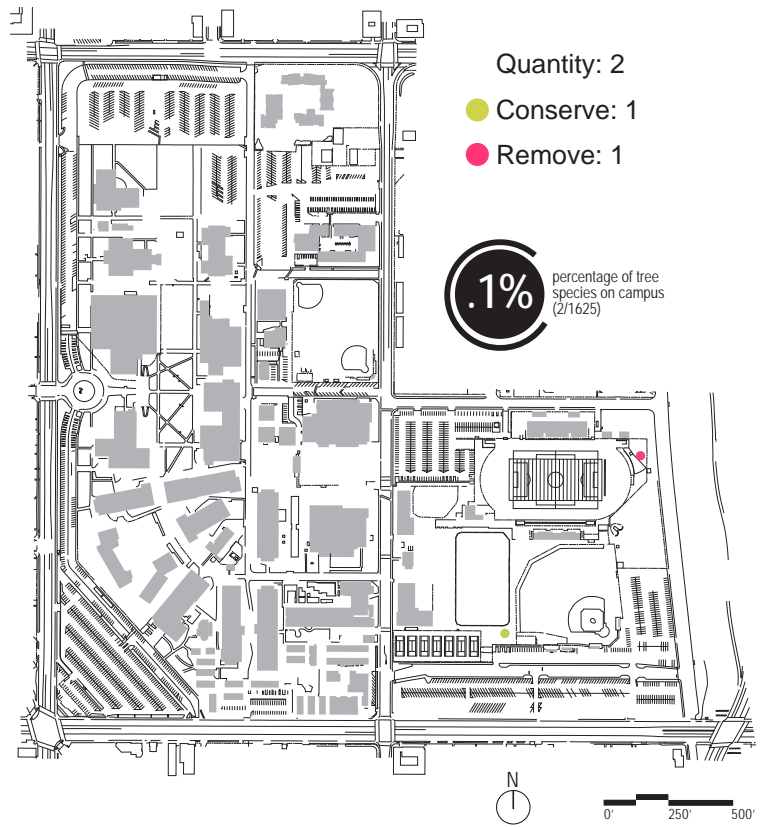


# *Alnus rhombifolia*

## White Alder

“White Alder is the most widespread western species that grows across California into the northwest United States, British Columbia and Idaho where it grows in mountains and foothills, mostly away from the coast and near streams and rivers. It is fast growing, particularly when young, and typically reaches heights of 40-70 ft., developing a pyramidal form and dense foliage habit. Leaves are deep green with coarsely serrated margins; bark is grayish white with distinct ‘eye-like’ markings where branches join the trunk.

White alder has long been recognized as a durable and fast growing tree that provides quick landscape results. It has become the most widely cultivated alder as a shade tree in California and is grown in many warm and dry climate zones where it is sustained with generous amounts of water. As with other species, it easily develops large surface roots and produces abundant leaf litter in autumn. It is used in restoration and habitat improvement projects in riparian areas.” (B. Perry 2010)

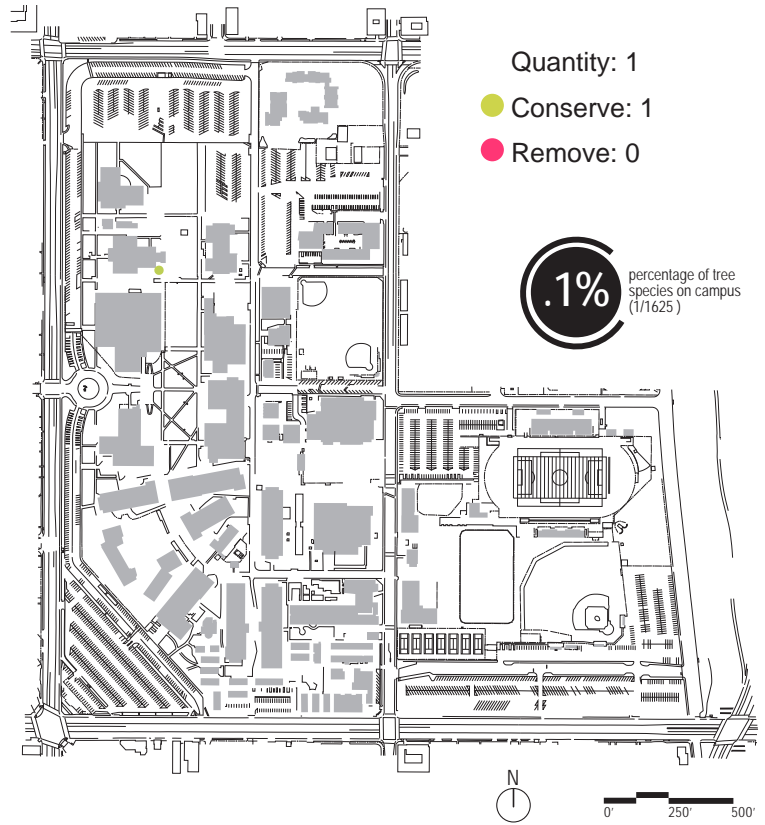




## *Alyogyne huegelii*

### Blue Hibiscus

“Australian native hardy to about 23°F. Upright, to 5-8 ft. tall and wide, with deeply cut, rough-textured dark green foliage. Glossy-petaled flowers 4-5 in. across, lilac blue to deep purple. Blooms off and on all year; individual flowers last 2 to 3 days. Pinch or prune as needed to keep it compact. Variable from seed.” (Sunset 2007)





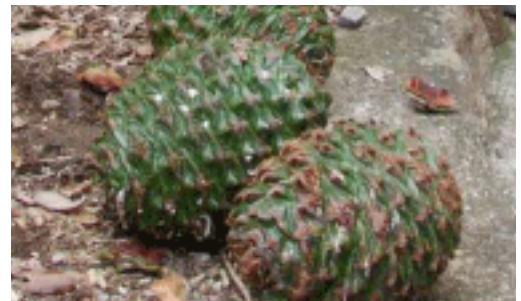
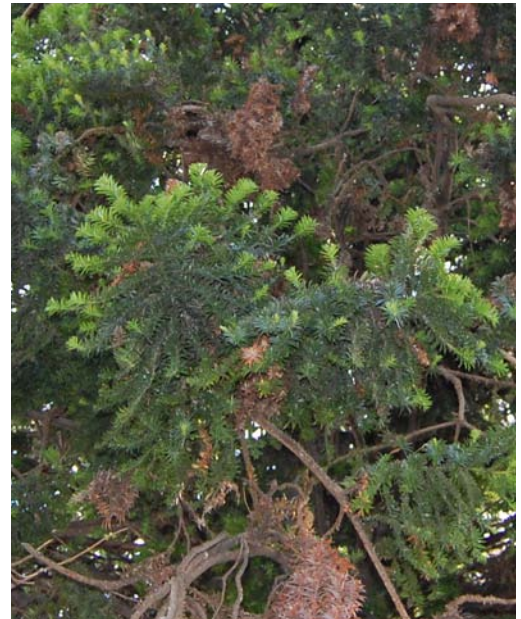
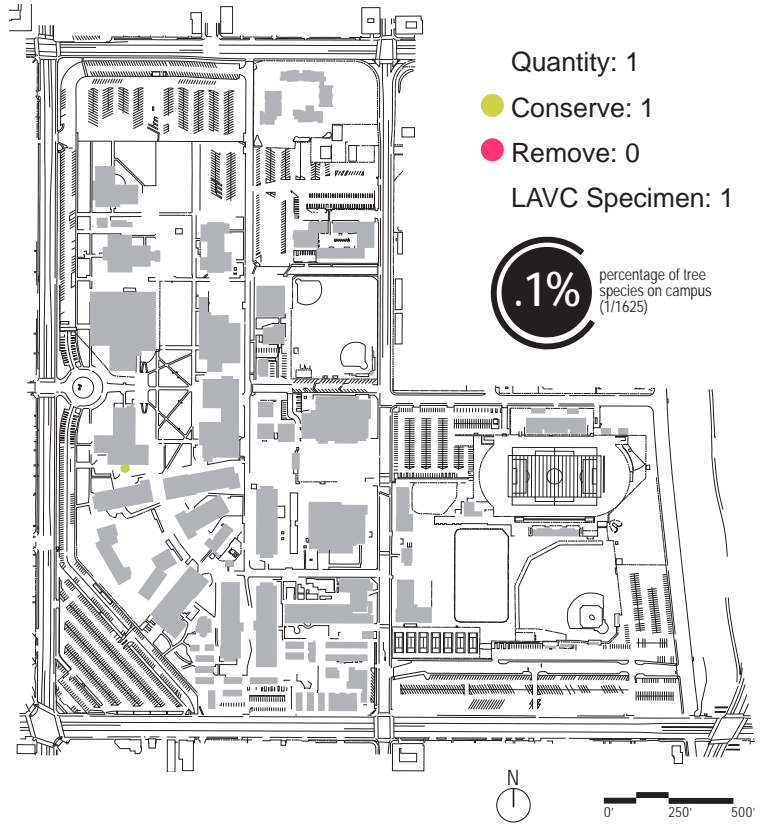
*Araucaria bidwilli*

## Bunya Bunya Pine

“An Australian species of large size, capable of achieving monumental scale to 60-70 ft. tall. Leaves are 2-3 in. long, sharply pointed and deep green.

Fruit can grow as large as a cantaloupe, weigh up to 8 pounds and become a hazard as they fall.

Bunya-bunya is the most popular species of Araucaria in California that shows good tolerance to heat and cold. Over time it develops a massive trunk and should be given ample space to mature. Old and stately specimens can be found in large parks and gardens where they are appreciated as a unique landscape feature.” (B. Perry 2010)

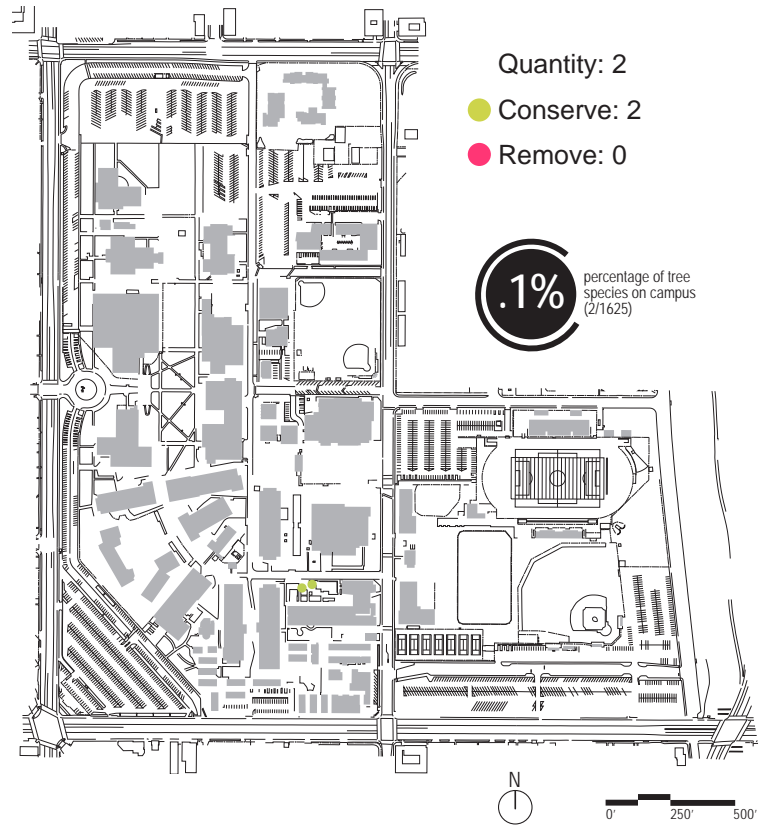




## *Arbutus unedo* 'Marina'

### Marina Strawberry Tree

"A medium sized evergreen tree, developing an upright habit and capable of growing 20-30 ft. tall, 15-20 ft. wide. Dark green leaves, 3-4 in. long, have lightly toothed margins and contrast well against deep cinnamon-brown bark of the trunk and branches. Pendulous clusters of attractive rose colored flowers occur heaviest in mid to late winter; showy red-orange strawberry-like fruit mature in fall. This hybrid of unknown parentage was first discovered in San Francisco in 1984 and has since become a highly popular tree for landscape and garden uses throughout California's coastal, inland and valley communities. It grows best within the climate and soil conditions of northern California where more rainfall occurs and summers are less intense. However, it has shown good adaptability to drier and warmer conditions of southern California with regular moisture most of the year, and in well-drained soils. It is grown as a low branching specimen tree and a single trunk canopy tree in courtyards and woodland and Mediterranean style gardens." (B. Perry 2010)





*Arbutus unedo*

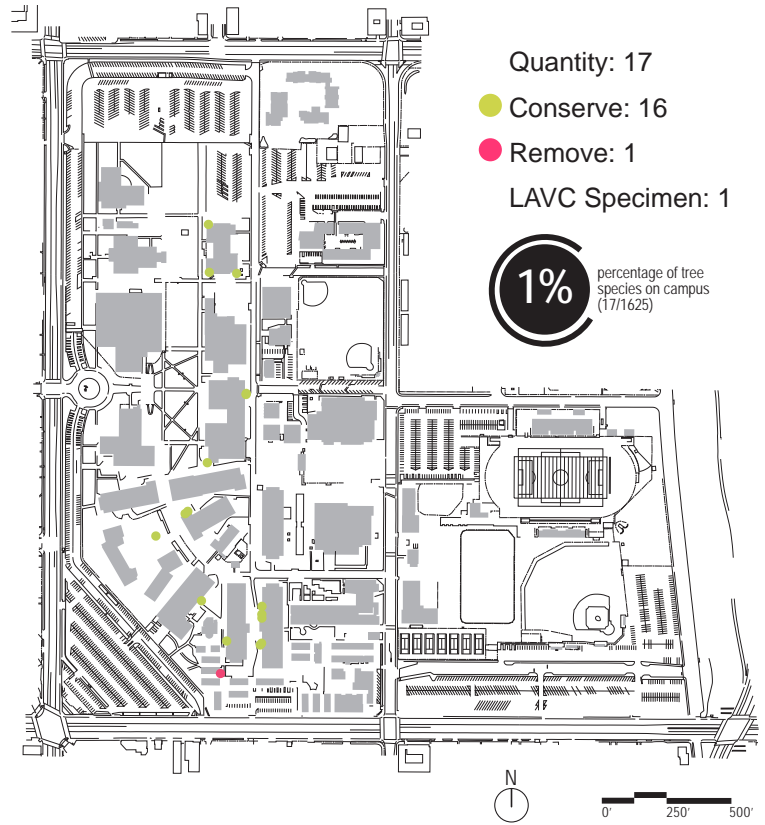
## Strawberry Tree

General Species Observation by Arborist:  
Nearly universally recommended for conservation.  
Long lived species with minimal stature.

“A large shrub to medium sized tree, growing 15-30 ft. tall and as wide. Trunks and branches are twisting and covered with rough brown bark. Evergreen foliage is comprised of leathery dark green leaves with toothed margins, 2-3 in. long. Clusters of white to pink urn-shaped flowers are noticeable in late fall and early winter. Showy red to yellow fruit occur in winter and can create a litter problem on pavement. Fruit is edible and sometimes used in preserves.

Strawberry tree comes from Europe and north Africa, with the greatest occurrence in dry foothills, canyons and slopes around the Mediterranean Sea. It is a tough and durable species, tolerant of heat, cold and less moisture in the summer. It grows in both slightly acid to slightly alkaline soils, but always does best with good drainage.

This species of strawberry tree is perhaps one of the best large shrubs or small trees for California gardens. It grows slowly, but provides garden value for many years. Young plants need time and pruning garden value for many years. Young plants need time and pruning to develop good shape and character. Large specimens can be seen in older



gardens where they are highly valued for their interesting form, trunk and bark characteristics. It is commonly used as a specimen plant in courtyards, raised planters and around lawns. It grows well in coastal, inland and valley habitats, and can adapt to high and low desert areas where it needs protection from extreme heat, wind and aridity.” (B. Perry, 2010)

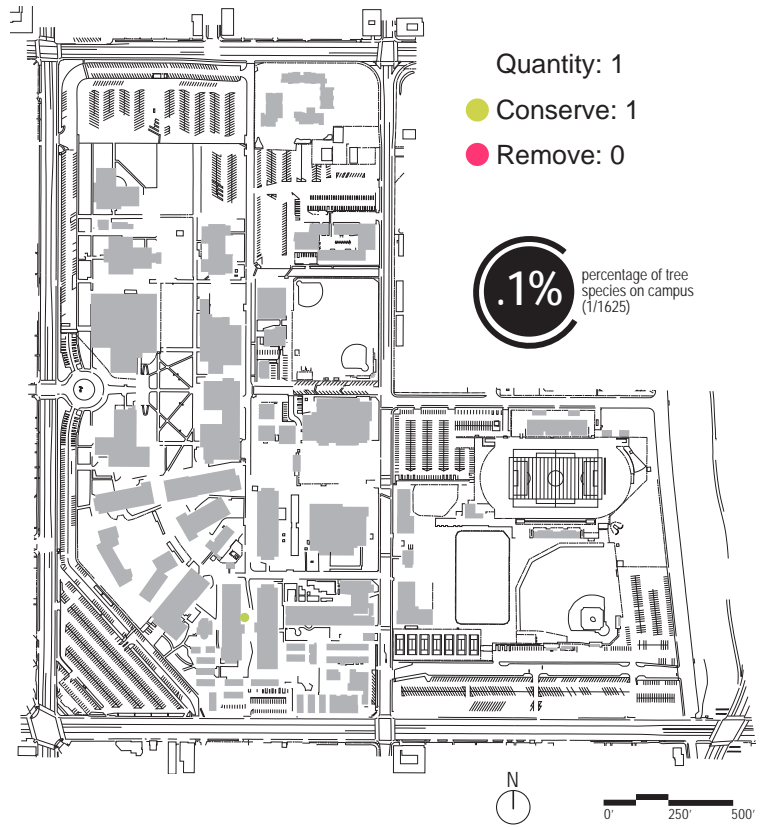




# *Bauhinia purpurea*

## Orchid Tree

“A hybrid selection discovered in Canton, China that develops into a small tree, 20-25 ft. tall with a broad canopy. Flowers are the largest of orchid trees, reaching 5-6 in. wide and dark magenta-pink. Leaves are the largest of this group, growing 6-8 in. long with 2 large lobes. It is mostly a deciduous tree but can be semi-evergreen in mild climates. Hong Kong orchid tree is noted for its rich flower color and use as a medium size tree for streets and residential gardens. It needs good support and pruning to achieve a strong trunk and balanced shape or it will become top heavy and develop a leaning habit. It is well suited to warm and sunny micro-climates in coastal zones and in low frost inland areas of southern California. It grows well in low deserts with regular water. Best flowering occurs winter through spring and sporadically into late fall.” (B. Perry 2010)

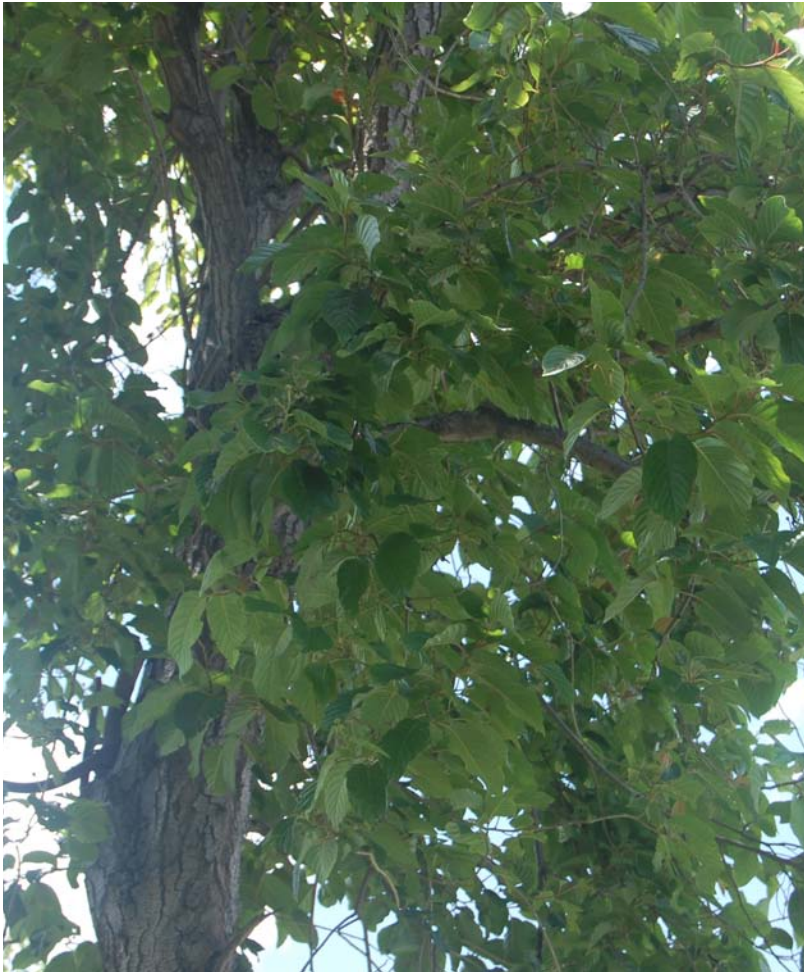
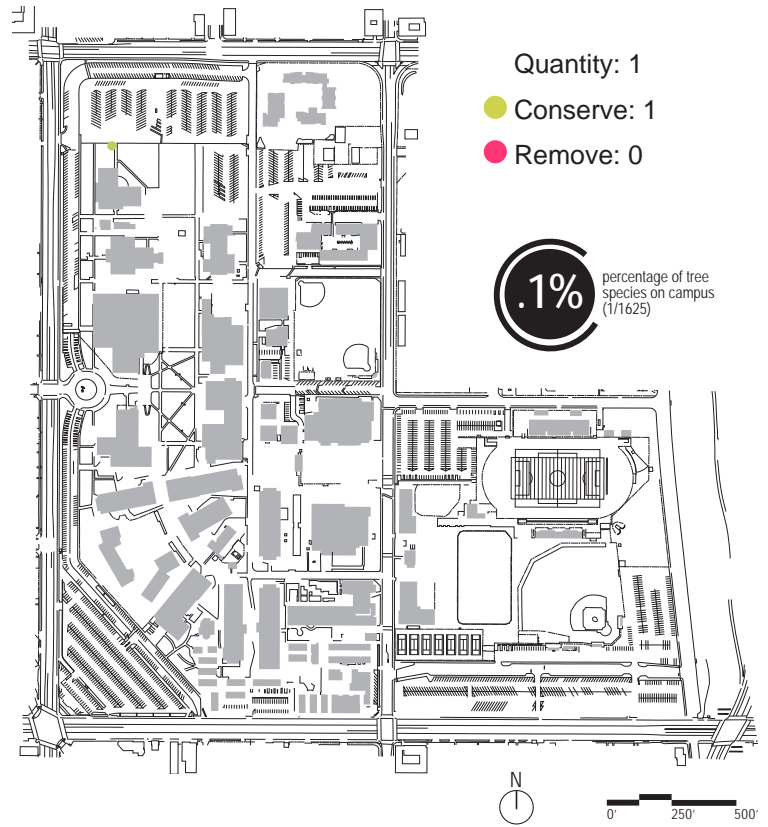




*Betula sp.*

## Birch

“Deciduous trees and shrubs including about 60 species that are widely distributed throughout cool and moist climate zones across the Northern Hemisphere. Several species and cultivars are grown in California gardens; two are the most popular and widely grown throughout the state where they are commonly associated with lawns, water and woodland style landscapes.” (B. Perry 2010)





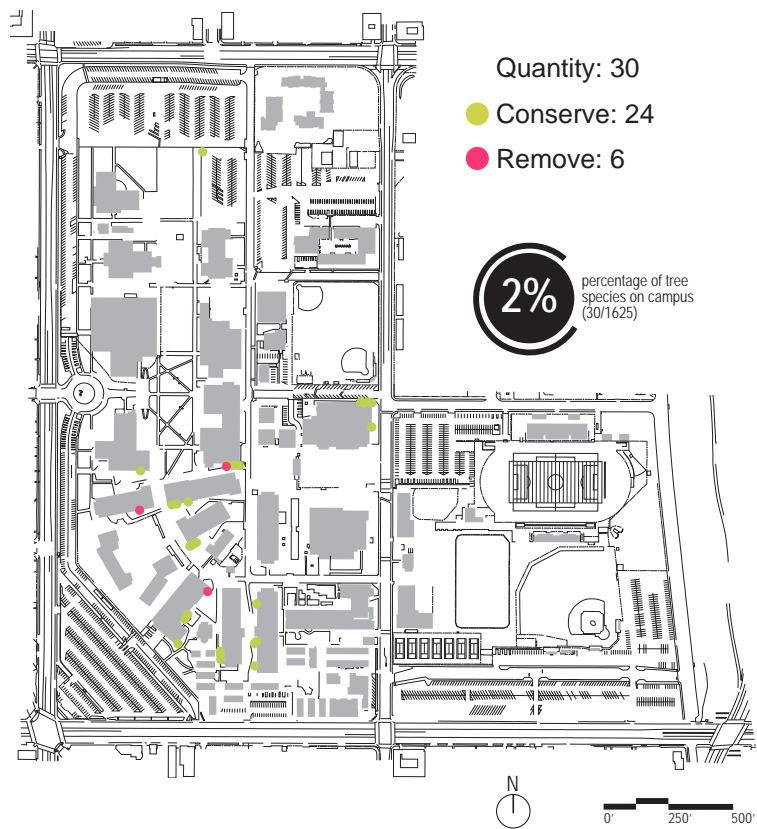
## *Callistemon viminalis*

### Weeping Bottlebrush

General Species Observation by Arborist: Generally recommended for conservation / long-term removal. Pruning to create building profile clearance and locations underneath other species has resulted in minimal foliage canopy density.

“A medium sized tree developing an upright form, 20-30 ft. tall. Young plants grow for many years into narrow columnar plants, 10-15 ft. wide, but become increasingly broad, eventually reaching 20-25 ft. in width. Foliage is comprised of soft narrow pale green leaves that hang from drooping branches to create a weeping appearance. Red flowers are showy in early to mid spring and occur intermittently throughout warm months of the year.

Weeping bottlebrush comes from stream banks and coastal plains across eastern Australia where it grows with regular moisture and mild temperatures. However, like other bottlebrush species, it has proven to be widely adaptable in cultivation and is planted in coastal, inland and valley locations throughout California where it tolerates 20-25°F temperatures. It is commonly used as a street and parking lot tree, background screen and weeping accent plant. It is also grown in low desert areas as a lawn tree where it can receive ample irrigation water.” (B. Perry 2010)



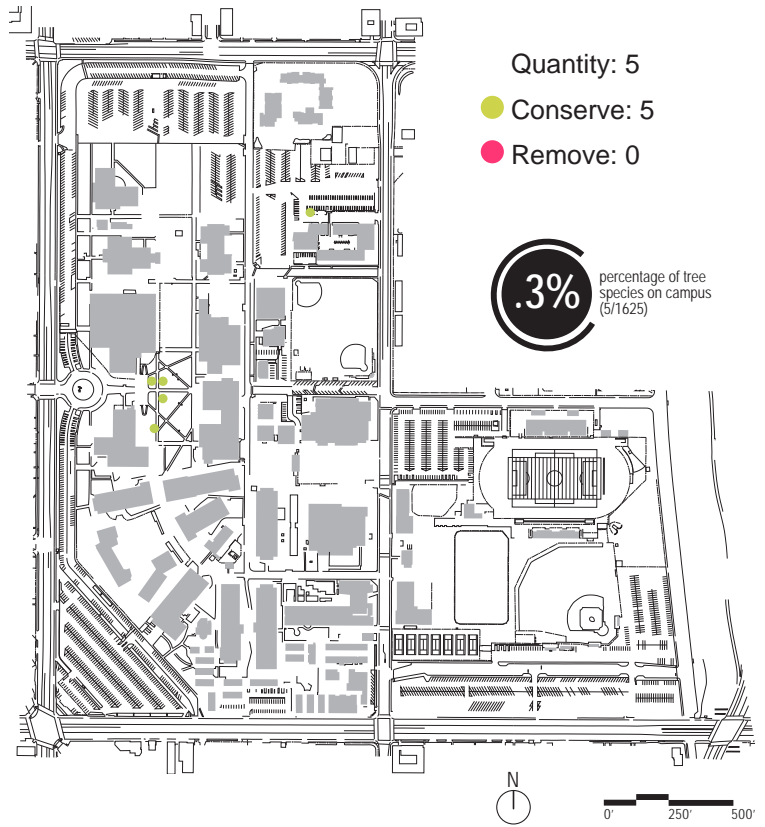


# *Calodendrum capense*

## African Cape Chestnut

“Cape chestnut comes from mild climate zones of southern and eastern Africa where it grows in moist forest riparian habitats. It is the only species in the genus *Calodendrum* and is well known as a flowering accent tree in coastal and frost free inland gardens of southern California. It matures into a broad dome-shaped form with a moderate growth rate to 25-40 ft. tall. Glossy deep green leaves range from 4-5 in. long, 1-2 in. wide and drop during the winter shortly ahead of new growth.

Cape chestnut grows best in rich soils with regular water and is commonly used as a lawn tree where it provides moderate to dense shade. It produces large clusters of pink flowers that cover the entire tree anytime from late spring to mid summer. Flowering is sometimes inconsistent from tree to tree and young trees are highly sensitive to seasonal frosts.” (B. Perry 2010)





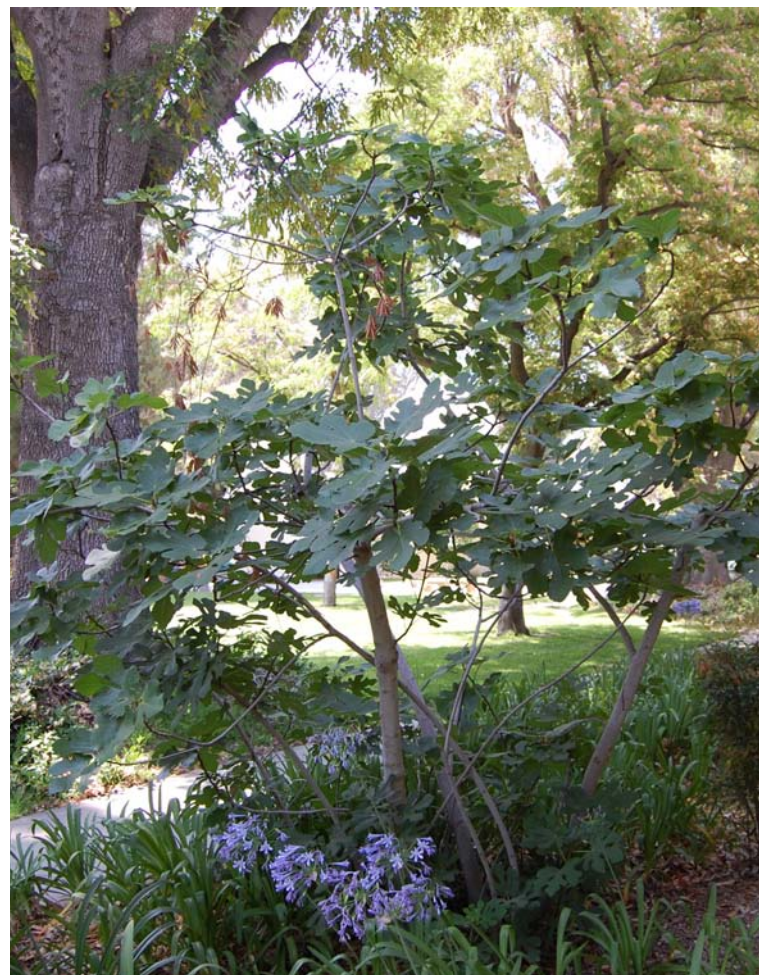
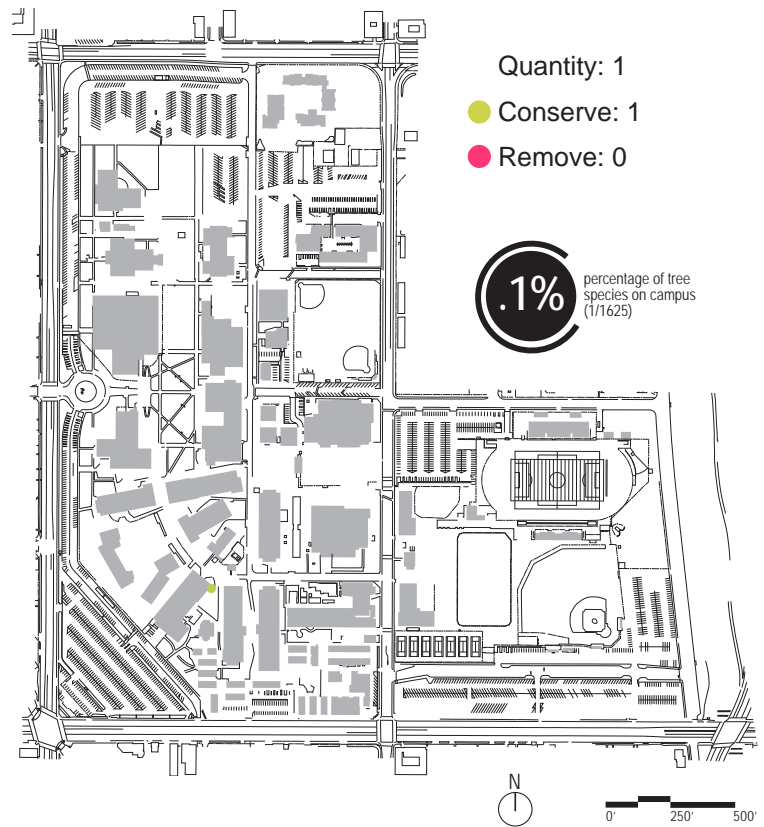
*Carya sp.*

## Fruiting Fig

“A tall deciduous tree with an upright branching habit that can grow 60-75 ft. tall and develop a rounded crown 30-45 ft. across. Dark green foliage is comprised of pinnately divided leaves with 11-17 pairs of 2-3 in. long leaflets that turn bright yellow in fall. Flowers are insignificant, however, the nut-type fruit that matures by end of summer is highly valued for commercial uses and by wildlife.

Pecan is native to the southeastern United States and northern Mexico where it grows in floodplains, moist woodlands and riparian zones in rich well-drained soils and mostly with ample moisture. It is a hardwood species that has long been recognized for its edible nuts, timber and ornamental character. Over the years, it has been widely grown in California on a commercial basis as well as in public and residential landscapes and gardens.

Pecan grows best in deep soils with regular water from spring through the end of summer. It is well adapted to cold winters and warm summers. In California, it does best in inland and valley areas that experience frost and prolonged summer heat. It is a fast growing tree that is well suited to park and open space plantings. It needs room to grow and should be planted away from paving to avoid potential root damage. They are sometimes planted as street trees, but their fruit and heavy leaf fall require frequent maintenance. A number of new trees occur in urban areas as a result of the nuts being buried by squirrels and birds. Pecan leaves contain a toxic substance called juglone that is released when leaves start to decompose. This makes them unsuitable for composting. Leaf fall into ponds should be quickly removed.” (B. Perry, 2010)

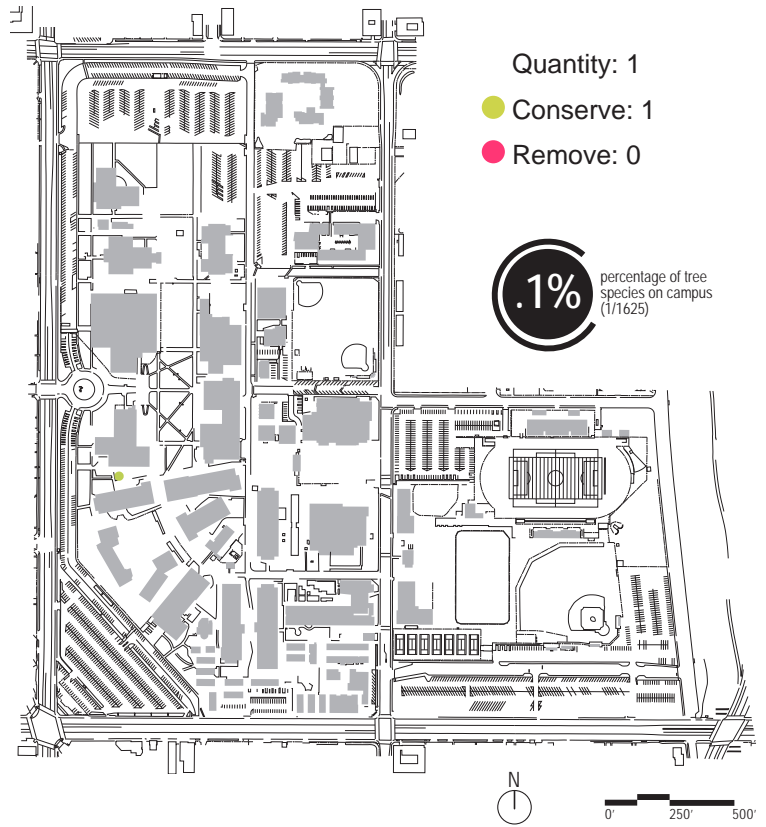




# Cassia leptophylla

## Gold Medallion Tree

“A dome-shaped deciduous tree with handsome foliage and clusters of bright yellow flowers. It grows 20-30 ft. tall and 25-30 ft. wide. Deep green foliage is comprised of pinnately divided leaves with 1-2 in. long leaflets that produce moderate understory shade. Five-petaled flowers are intense lemon-yellow, grow to 2 in. across and occur in large circular clusters in early summer. Bean pods containing seeds grow 12-18 in. long and mature brown in fall. Gold medallion tree is one of the top flowering accent plants in southern California gardens and in sheltered micro-climates beyond. Native to Brazil, it grows well in warm summer zones, but is sensitive to winter temperatures below 25-30°F. It grows at a moderate growth rate and needs good support and pruning to develop a strong trunk for its broad canopy shape. Young trees are sparse and awkward for the first 5-7 years before filling in and becoming more substantial in mass. Gold medallion tree grows well in lawns and is suited for parks and residential scale landscapes. It is often featured near entries and courtyards.” (B. Perry 2010)

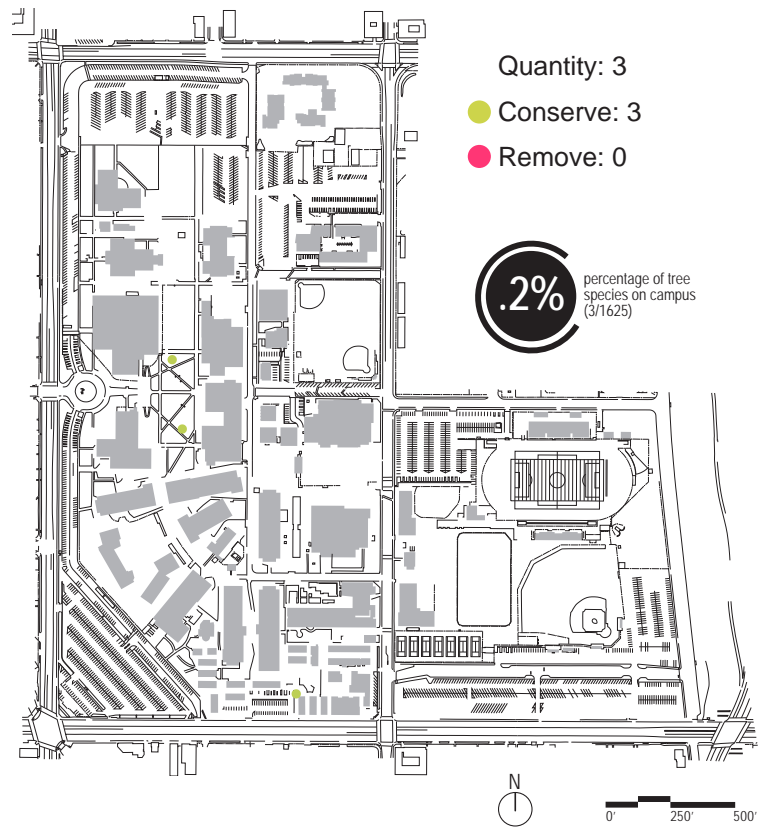




## *Cedrus atlantica*

### Atlantic Cedar

“A coniferous tree native to the Atlas and Riff Mountains of Morocco and Algeria, where it grows between 3,200 to 7,200 ft. in elevation. It is found in semi-Mediterranean climate zones that are characterized by cool and moist winters, including some snow, and warm and dry summers. Throughout its range it grows as an upright tree to 50-70 ft. tall and has stiff short needles that vary in color from dark green to glaucous blue. Branches on this species grow outward and upward and do not droop at the tips. All species and cultivars perform best in rich and well-drained soils with regular moisture from winter through spring. Established plants show good resistance to drought and can survive with low amounts of supplemental moisture during the summer.” (B. Perry 2010)





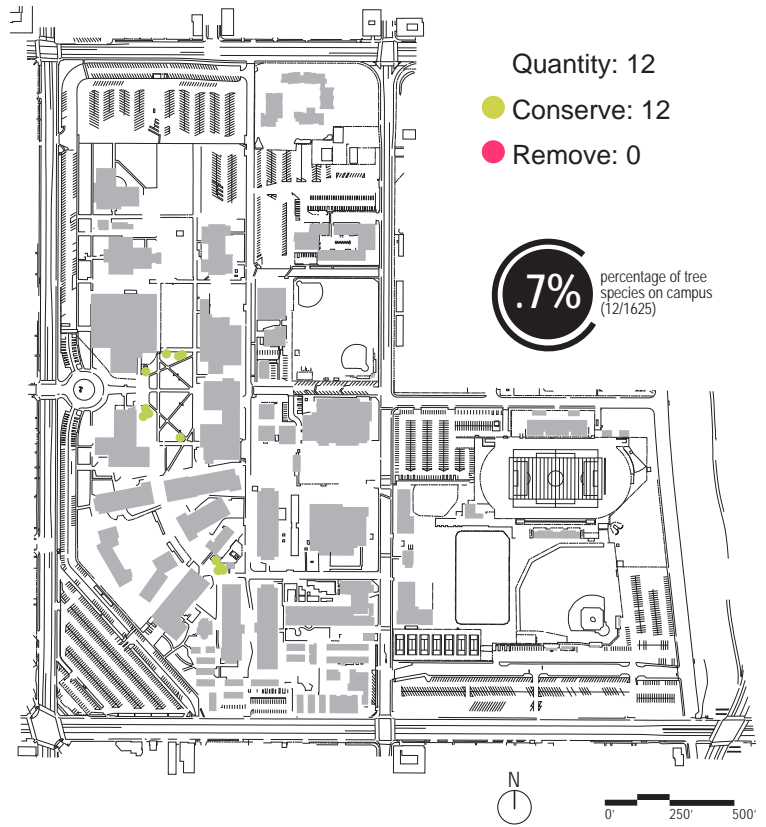
# Cedrus deodora

## Deodar Cedar

“A large coniferous tree found growing on mountain slopes of the Hindu Kush range and western Himalayas of Pakistan and India. Throughout this range it occurs on rocky slopes and ridges at elevations ranging from 3,600 to 10,200 ft., where it is adapted to moist winters with snow and summer heat with drought. It can live for several hundred years and become a very large tree, capable of reaching heights near 150 ft. in its native habitat.

From a landscape perspective, deodar cedar is a graceful tree with soft textural character; both branch tips and the tree top droop to produce a slightly weeping habit. It has been planted throughout California and many older specimens exist in community parks and gardens, and have become monumental in scale and historic in age. Some of these trees have reached 60-80 ft. in height and tower over other landscape plantings.

Deodar cedar grows best in loam soils with regular moisture during the winter months. However, it has proven to be tolerant of heat, aridity and seasonal drought when grown in warmer and drier areas of southern California. It should be planted in spaces that can accommodate its large size.” (B. Perry 2010)



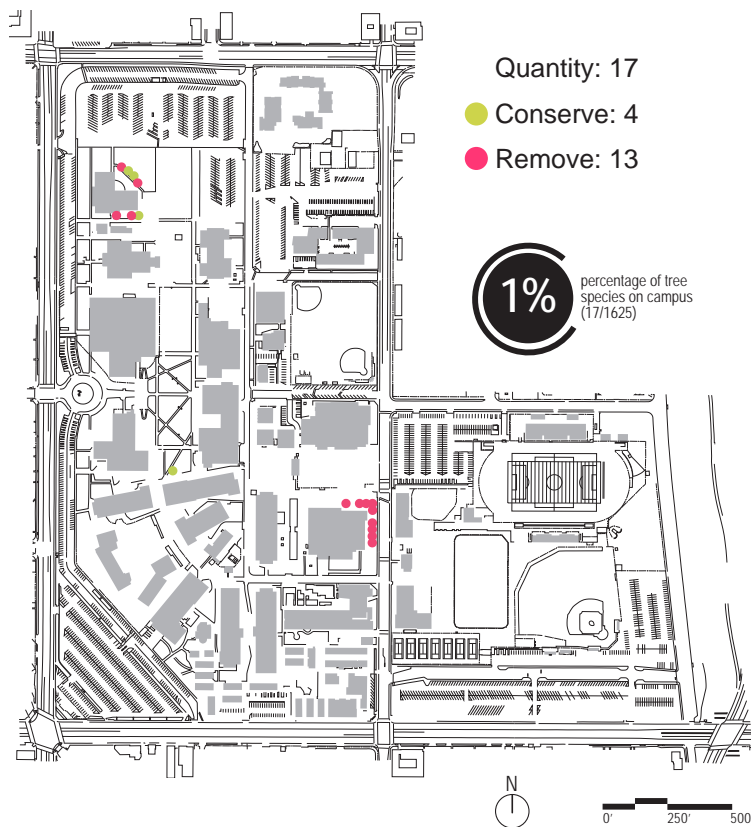


## *Celtis sinensis*

### Chinese Hackberry

General Species Observation by Arborist: Some removals and some conservation / long-term removals. Removals related to defects and systemic decline as a result of poor pruning methodologies, construction encroachment, and drought stress.

“A group of evergreen and deciduous trees and shrubs, including 70 species from many parts of the world. Several tree species are grown in California where they are appreciated for their adaptability to harsh conditions, including heat, wind, aridity and poor soils. These tolerances have led to their widespread use in intermediate deserts and rural communities for shelter and shade plantings. Established plants can endure long periods of drought, however, plants grown in desert landscapes do best with regular summer water. All species produce small fruit that attracts birds when they mature in late fall.” (B. Perry, 2010)





# Ceratonia siliqua

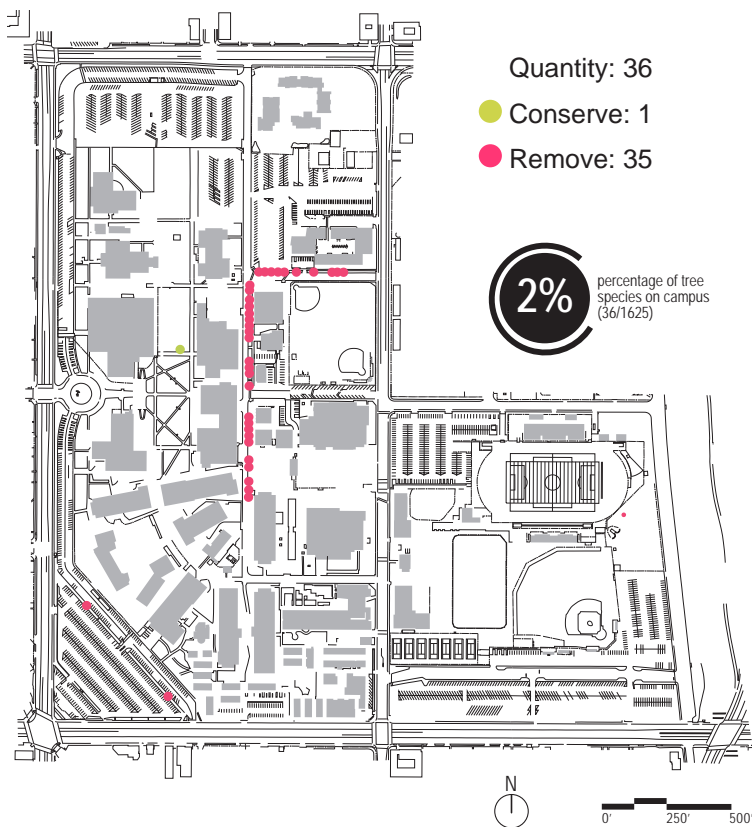
## Carob

General Species Observation by Arborist: Universally recommended for removal as a result of the presence of defects including advanced decay (already having resulted in limb failure and collapse). The gross nature of the decay makes it impossible to remediate through pruning or other care methodologies. The pervasive presence of fireblight, a bacterial disease condition that is a regional issue related to this species, makes the conservation of this species highly impractical.

“A medium to large evergreen tree growing 25-30 ft. tall and as wide with a broad canopy habit. Foliage produces dense shade and is comprised of dull green leathery leaves that are divided into 4-10 round leaflets. Flowers occur in late spring and are unpleasantly pungent. Long bean-like fruit develop over summer and mature into dark brown pods, 5-7 in. long. This fruit contains a high percentage of sugar and protein which is a valuable source for food products.

Carob tree is native to the Mediterranean region where it grows in greatest numbers and to largest sizes on rocky soils and in foothills near the coast. It is well adapted to areas with warm summers in California and struggles with cold and wet winters. It prefers full sun, good drainage and low amounts of summer water.

Carob tree is a tough and durable plant that is well adapted to inland, valley and low desert environments. It is widely



used along highways as a large shrub, as a shade tree in parking lots and in rural areas. It is not suited for lawns as regular water leads to excessive growth and heavy branches that are prone to breakage with age. Provide ample space for its potential size and roots; seasonal flower odor and leaf and pod litter can become a nuisance.” (B. Perry 2010)





## *Chamaerops humilis*

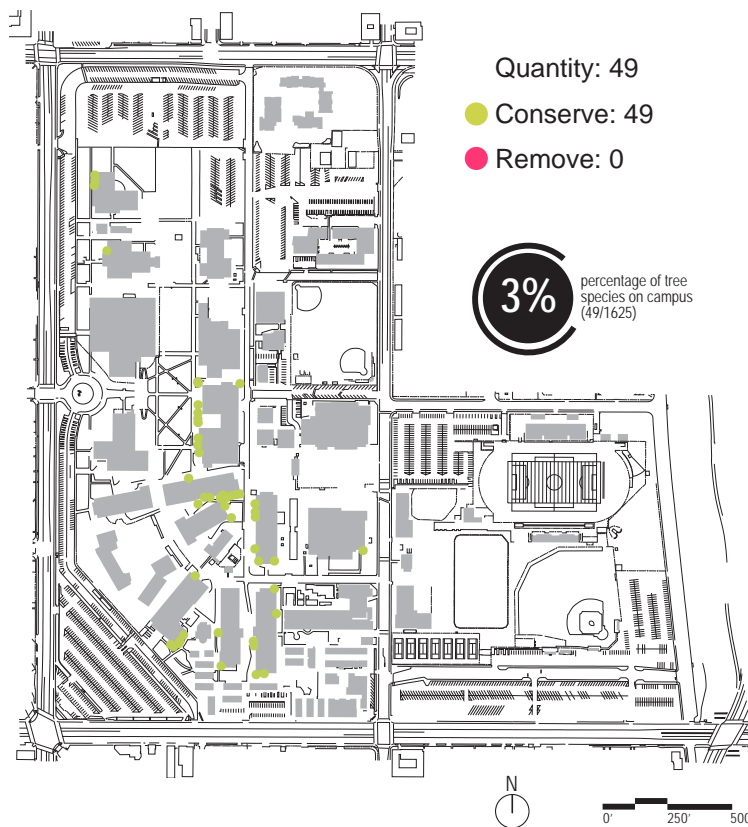
### Mediterranean Fan Palm

General Species Observation by Arborist: Clumping palm species universally recommended for conservation. Minimal stature and long life span make it desirable.

“A clumping fan palm that is the only member of the genus *Chamaerops*. It is native to the Mediterranean region where it inhabits coastal cliffs, foothills and sandy seashores. It is adapted to strong winds, salt spray and periodic occurrences of snow. Soils are often poor and rocky, but typically well-drained. Most rainfall occurs in the winter, ranging from 20-30 inches, with extended periods of drought occurring throughout summer and fall.

Mediterranean fan palm is the toughest and most durable palm in cultivation. It tolerates temperatures below 10°F and heat above 115°F. It grows across California in coastal, inland, valley and desert zones, where it can grow to specimen sizes. It develops numerous trunks of varying heights from its base; some trunks can grow 10-20 ft. tall. Leaves are pale green, 2-3 ft. across and cut in the shape of a fan. Leaf bases are covered with many sharply pointed spines that can be hazardous when pruning fronds. Golden-yellow flowers grow on tight panicles 8-12 in. long, but are mostly hidden by the foliage. Colorful orange fruit mature in summer at the base of foliage.

Mediterranean fan palm is ideal as a natural specimen type plant for use in raised planters, large containers and in



courtyards. It is a signature plant for Mediterranean style gardens in combination with olives, pomegranates, lavender and rosemary. It is capable of absorbing and retaining moisture within its fibrous tissue which it uses to withstand extended periods of heat and drought. Period summer watering easily sustains this species.” (B. Perry 2010)

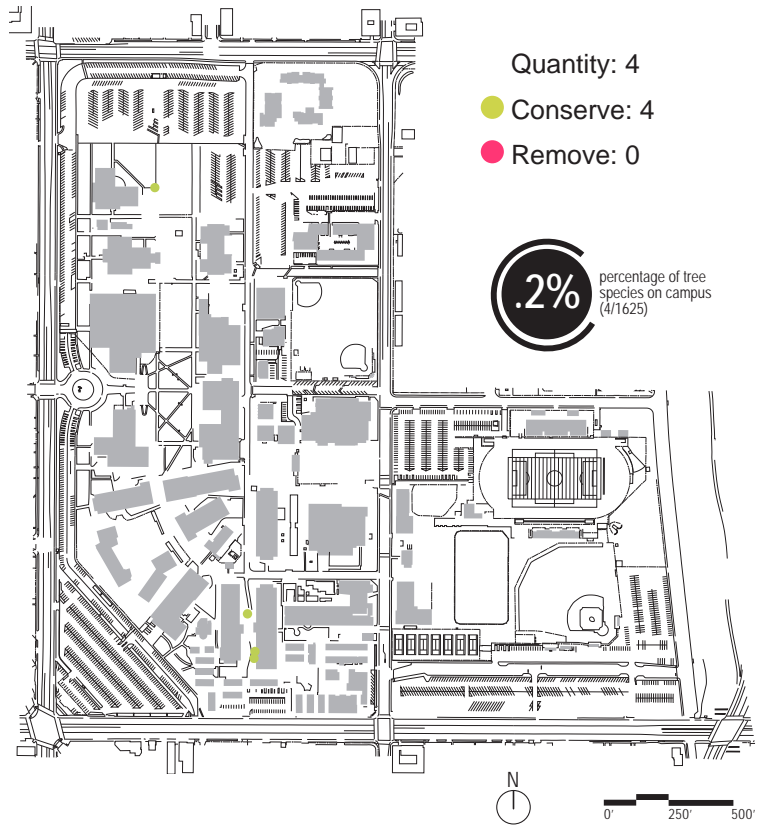




# *Chorisia speciosa*

## Floss Silk Tree

“This spectacular flowering tree is native to Brazil and Argentina and was introduced into the Los Angeles County Arboretum in the 1950s. Since that time, it has become one of the standout color accent trees within the warm inland climate zones of southern California. A combination of warm summer temperatures and a bit of late season moisture stress combine to stimulate these trees into a mass of flowering by late September, October and early November. In youth, the green colored trunk of this species is often covered with dense spines, and its branching habit is lanky and irregular. Over time, the spines can become fewer as the trunk swells into a bottle-shape and the branching fills out in a more regular canopy habit. This species eventually reaches 40-50 ft. tall and as wide, becoming a dramatic accent feature throughout the suburban landscape. Within its natural range, no two silk floss trees appear to have identical flower color and markings. Flower petals are mostly bicolor, ranging from light pink to orchid or purple, with the base being creamy-white with dark spots. Varieties chosen for garden and landscape cultivation are propagated from the seeds of preferred specimens, however, these trees are quite variable in terms of the darkness of flower color and density of spines on trunks. Grafted varieties are now in cultivation that offer more consistent flower color and bark character.” (B. Perry 2010)



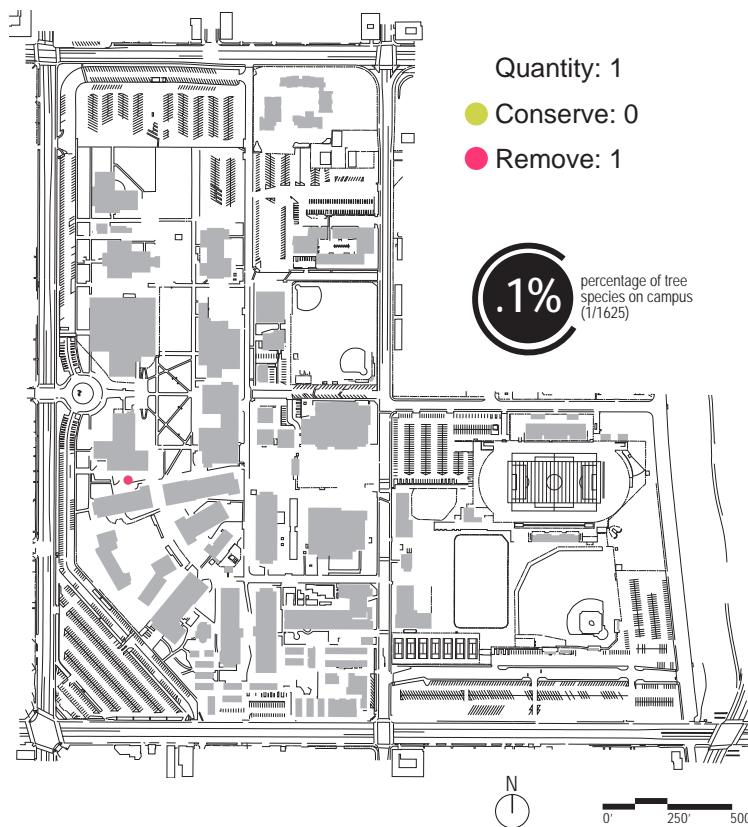


## *Chitalpa speciosa*

### Chitalpa

“A medium size deciduous tree developing a canopy shape, growing rapidly to 20-30 ft. tall and as wide. Foliage is comprised of medium green leaves that grow 4-5 in. long, to 1 in. wide and produce intermediate levels of shade. Trumpet-shaped flowers are pink to white, with purple markings and occur in showy clusters from late spring into early summer.

Chitalpa is a genus hybrid between *Catalpa bignonioides*, common catalpa, and *Chilopsis linearis*, desert willow. It combines the larger flower size of the former species, with the linear leaves and desert adaptations of the later. As a result, this hybrid provides a highly attractive combination of flowers, foliage and adaptations to many growing conditions. It is grown as a low branched specimen for use in courtyards and as a single trunk tree that is planted as a street and shopping center tree. It tolerates frost, sun and heat, and low amounts of water during the summer. However, it has proven to grow well in lawns and with regular moisture, where careful pruning helps keep excessive growth in balance.” (B. Perry, 2010)





# *Cinnamomum camphora*

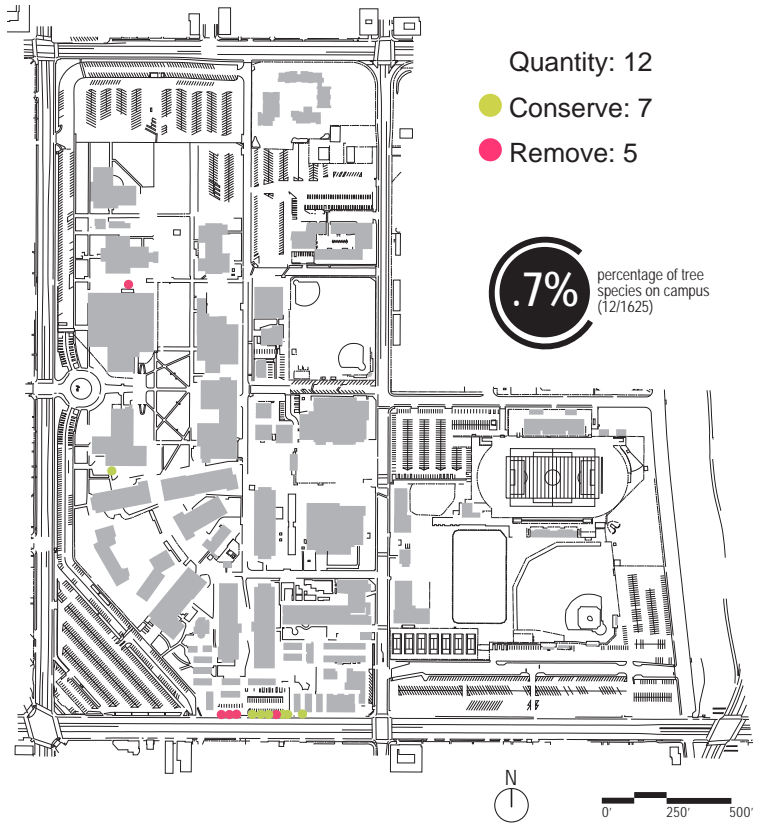
## Camphor Tree

General Species Observation by Arborist: Some recommended removals and some conservation. Based upon individual trees' levels of systemic performance. Recommended removal trees' levels of systemic performance may be related to drought stress, verticillium wilt (disease), or construction / root trauma and related decline.

"A slow growing evergreen tree with a full canopy habit that can eventually reach monumental sizes, ranging from 30-40 ft. tall and spreading 25-50 ft. across. New foliage growth is bright yellow-green, maturing to medium green and producing dense shade. Leaves grow 2-3 in. long with a tapered point; flowers are insignificant and small black berry-type fruit drop in mid winter.

Camphor tree is one of 250 species found within this genus, but the only one that is grown for landscape and garden use in California. It comes from mild climate zones of Asia where it receives abundant moisture and endures light frost conditions. In California it is tolerant of drier and cooler conditions, but performs best when planted in loam soils with regular moisture throughout the year. It is a slow to moderate growing species that needs generous space to grow and mature. Trees begin to reach large scale specimen size after 25-30 years of growth.

Camphor trees are widely planted in lawns, parks, green-



belts and sometimes as street trees. They are suitable for both residential and commercial landscape and gardens. They develop large root systems that can become problematic with surface irrigation and in tight spaces. Mature trees are appreciated for their summer shade and broad branching habit." (B. Perry 2010)



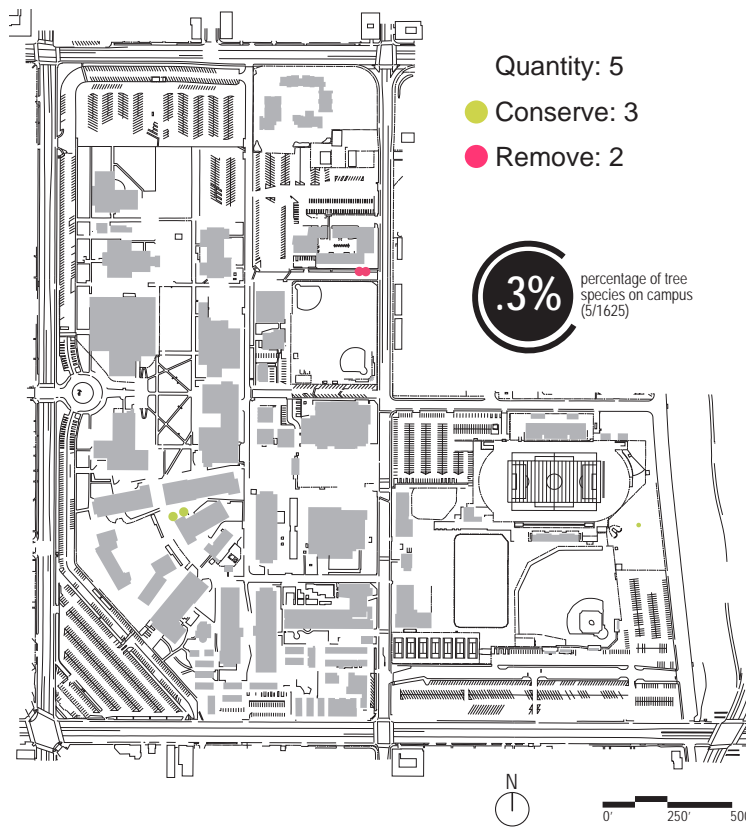


# *Cupaniopsis anacardioides*

## Carrotwood

General Species Observation by Arborist: Recommended for both removal and conservation based upon condition of individual trees.

“A small to medium size evergreen tree with dense foliage, a dome-shaped habit and growing 30-40 ft. tall, 25-30 ft. wide. Leathery dark green leaves are pinnately divided into 2-12 leaflets that each grow 3-4 in. long. Panicles of attractive yellow flowers develop in late fall through winter; large quantities of yellowish seed capsules develop on older trees and ripen with sticky orange-coated seeds in spring. Carrotwood is native to Australia, Indonesia and New Guinea, where it grows in coastal zones and is adapted to salt spray, wind, sandy soils and short periods of inundation. It was originally introduced into California as a low-litter producing tree to be grown for shade as a street tree and around pools. As many plantings matured, more and more trees started producing heavy crops of seed capsules that became problematic on pavement and in other pedestrian areas. Since carrotwoods are propagated in nurseries from seed, capsule production varies from tree to tree. Carrotwood tree is still a viable choice for landscape and garden use in California, particularly in low frost zones in coastal, inland and valley zones. It grows best in deep soils with moderate water, and requires little pruning to develop a balanced canopy shape.” (B. Perry 2010)



# Cupressus sempervirens

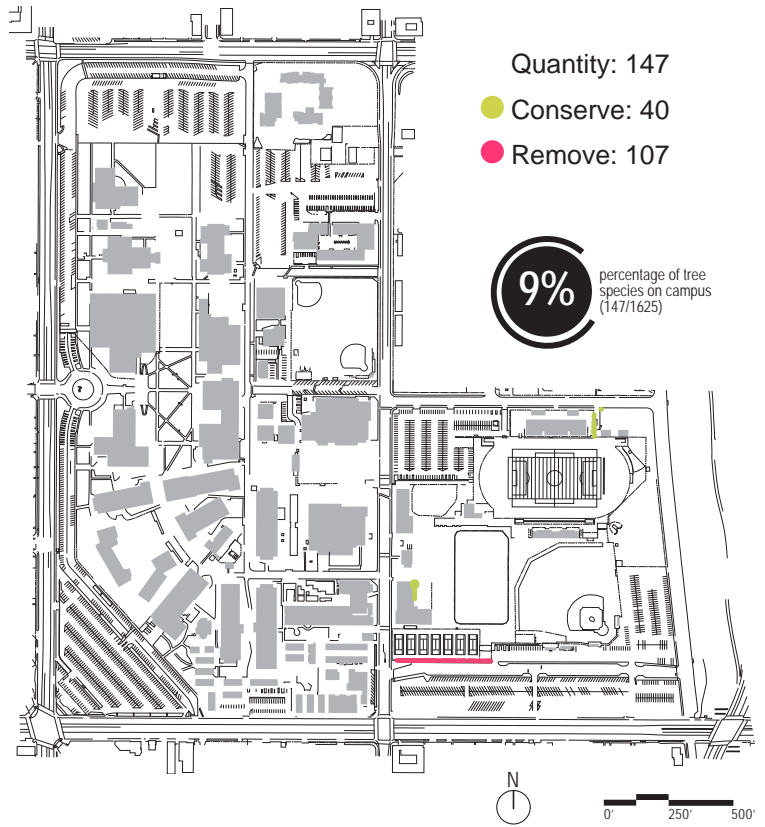
## Italian Cypress

General Species Observation by Arborist: Some recommendations for removal and some recommendations for conservation. Recommendations for removal relate to those individual specimens that screen the south side of the existing tennis courts which exhibit the pervasive presence of Seridium Canker. This condition is a fungal disease condition. The presence of the disease condition relates to frequent pruning seemingly intended to minimize the size of the individual trees in question. Other groupings and specimens within the campus, including those near the football offices appear to be free of the canker regardless of their experiencing similar pruning methodologies. The recommended removals of the individual specimens in question are large in quantity but small in general stature.

“A large evergreen tree with a variable growth habit that can mature between 40-60 ft. tall. Scale-like foliage is deep green; persistent bark is rough and medium to dark brown. Hard brown fruit grow to 1 in. diameter and persist in clusters for many months.

This species is found across southern Europe, including the Mediterranean region, as well as western Asia. It grows in forest and woodland communities where it develops into many forms, ranging from broad and open, to narrow and columnar. The true species is seldom found in cultivation, instead several cultivars with consistent vertical shape and variations in foliage color have become widely planted. Italian cypress is the quintessential signature plant of Mediterranean gardens around the world. Its vertical habit and cylindrical shape, in combination with its tall height, makes it a natural accent and feature element in any landscape. It is commonly used in formal plantings, as a sentry elements nearby entries, a punctuation feature next to towers and in rows along driveways where it creates tall walls and screens.

In California, Italian cypress grows well in a variety of soil types, including clayey and calcareous. It grows faster with moderate amounts of moisture, but can withstand drier conditions as it matures. It is well suited to warm coastal, intermediate and interior valley regions across the state, and has proven to be hardy in intermediate and low desert zones.” (B. Perry 2010)



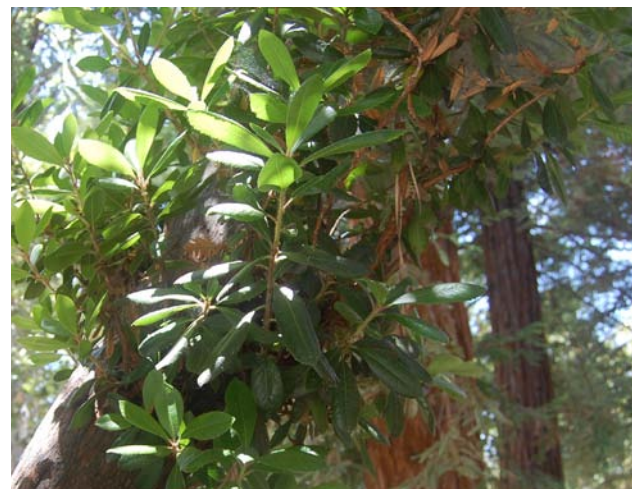
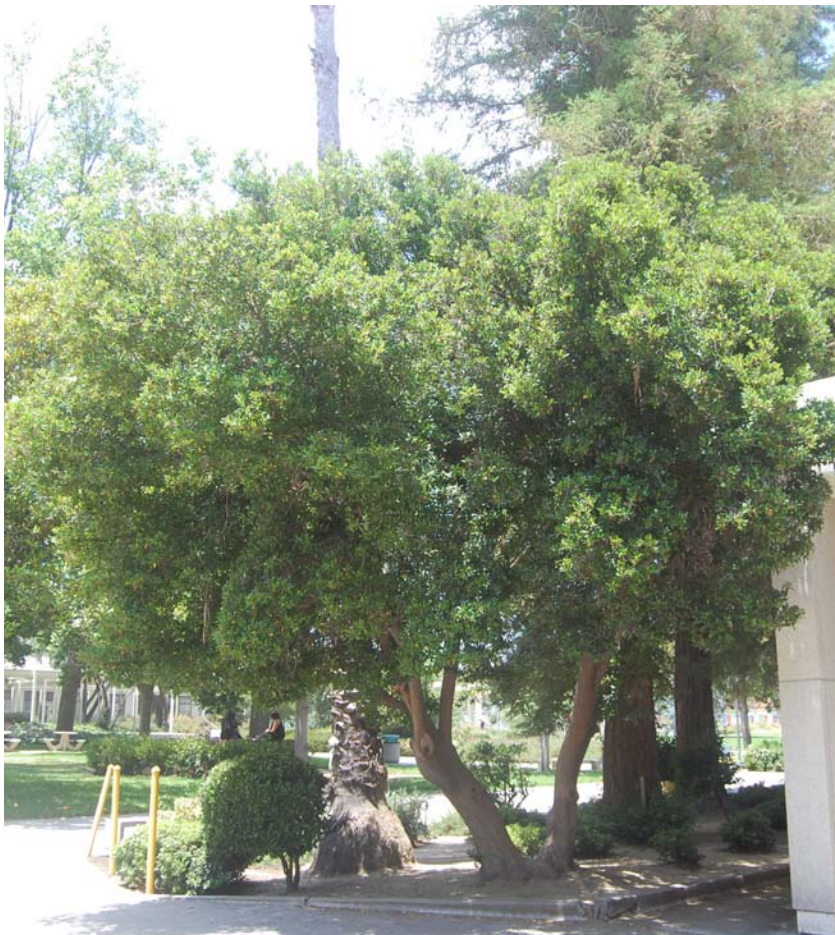
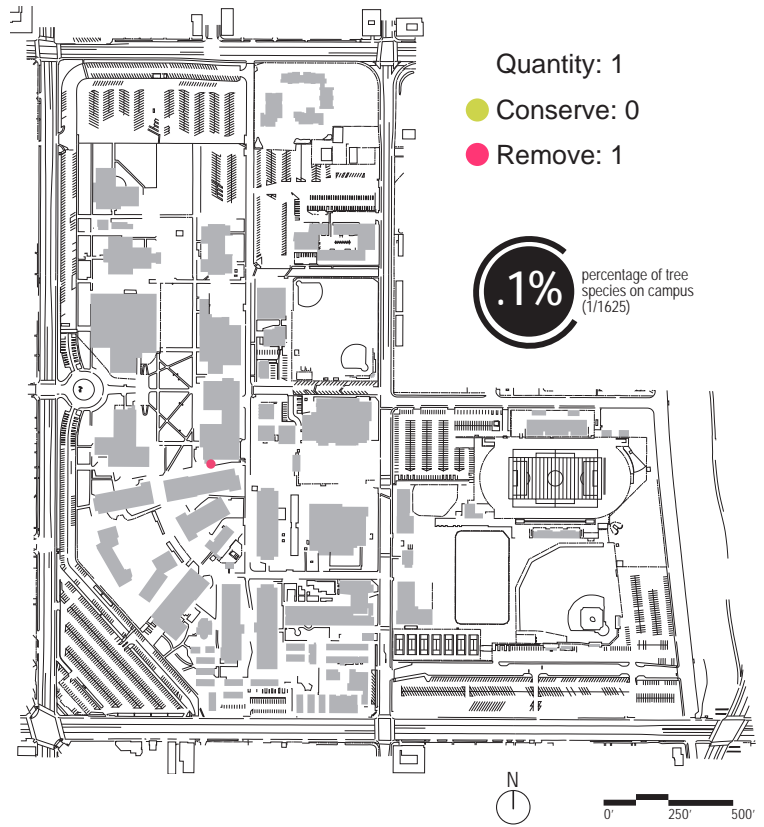


# *Dodonea viscosa*

## Hopseed Bush

“Hopseed bush is one of 68 species in the genus *Dodonea* and is the most popular choice for use in California landscapes. It is an evergreen plant that is widely distributed in coastal and arid regions of the world where it exhibits different foliage and growth characteristics. Preferred selections for cultivation have a bigger leaf size and grow into large shrubs or small trees, reaching heights of 12-18 ft. while spreading 6-12 ft. wide. Foliage is comprised of long narrow leaves, 3-4 in. long, to 1/2 in. wide. Flowers are inconspicuous, but large numbers of pinkish seed capsules provide accent character in spring.

Hopseed bush is a tough and adaptable plant that tolerates heat, cold, reduced summer moisture and many types of soils. It can be grown throughout California, including intermediate and low deserts, and is valued for its rapid growth rate. It can be clipped or trained into a low branched tree and is widely used as a screen and slope plant. These plants can be relatively short-lived, 10-15 years in some instances, particularly if over watered.” (B. Perry 2010)



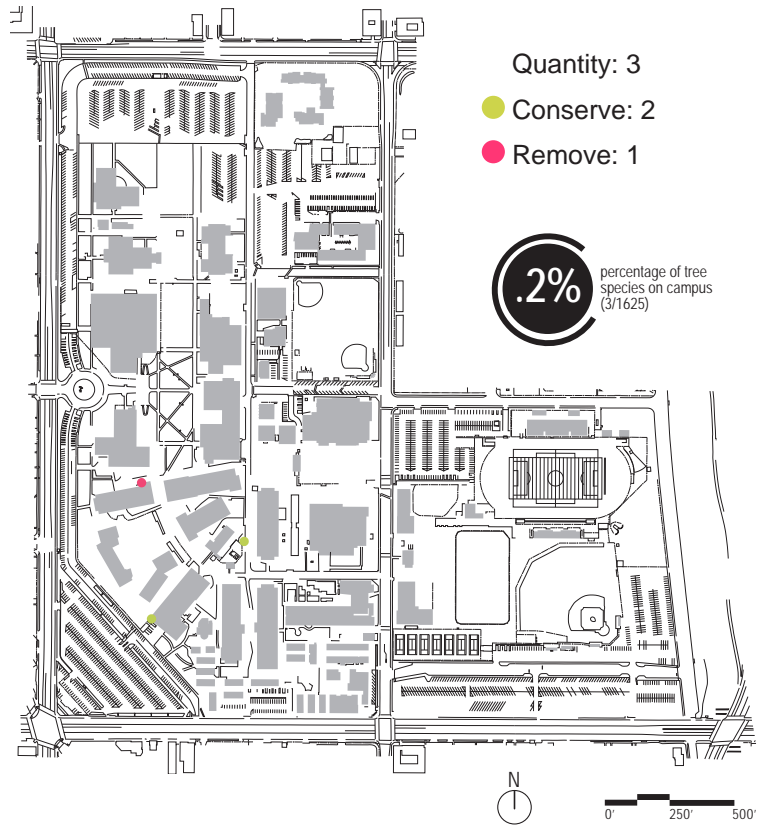


# *Eriobotrya deflexa*

## Bronze Loquat

“A large mounding shrub to medium size evergreen tree, growing 25-30 ft. tall and as wide. Leaves are large, 8-10 in. long by 2-3 in. wide and margins coarsely serrated. Colorful red-bronze new growth occurs at the ends of branches in the early to mid spring for strong color value; most leaves eventually mature to dark green. Large clusters of creamy-white flowers remain largely unnoticed; small inedible fruit mature after flowering.

Bronze loquat is considered to be a relatively clean, an attractive foliage plant and a good size for many residential and commercial spaces. It is commonly grown as a single-trunk tree for street plantings, as a courtyard and patio shade tree and for background areas where its colorful foliage provides contrast to other plantings. It is best suited to coastal, inland and valley zones, but will tolerate low and intermediate desert climates with regular water. It is sometimes grown as a large shrub and clipped as a formal hedge along walls and fences.” (B. Perry 2010)





# *Eucalyptus citriodora*

## Lemon-Scented Gum

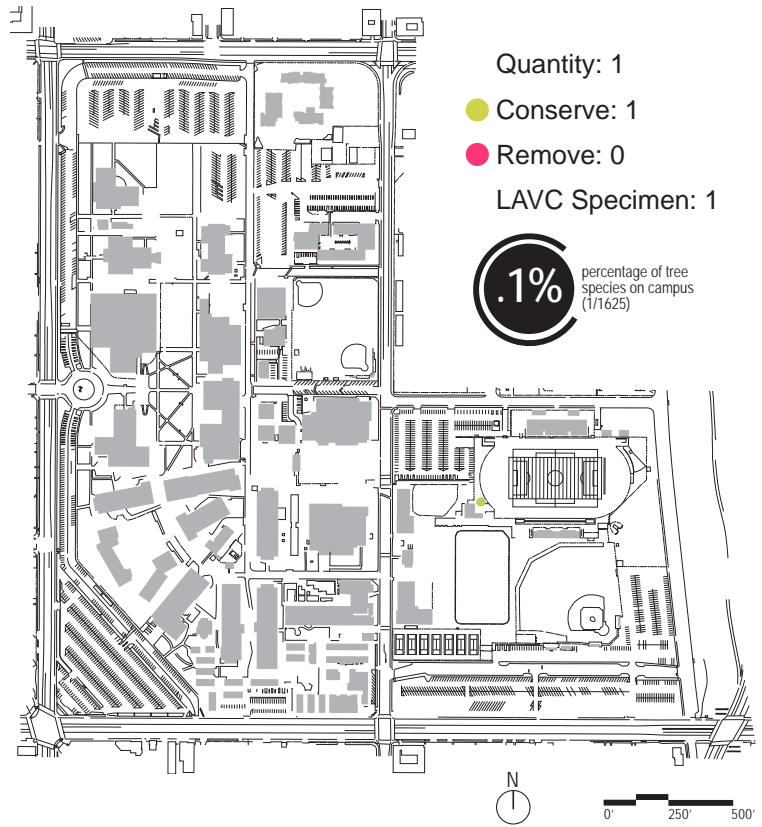


General Species Observation by  
Arborist: Generally recommended for removal based upon extremely mature form and severe defects. Least mature specimens only are recommended for conservation.

“A medium to large size tree with a smooth and elegant trunk character growing up to 70-100 ft. high and 25-40 ft. wide. Deciduous bark drops in early summer to reveal new pinkish to white bark beneath. Medium green leaves are 4-7 in. long and exude a strong lemon scent when crushed. Large clusters of white flowers occur in late fall through early winter and are mostly inconspicuous.

This species is native to two areas in Queensland, Australia where it grows from the coast to inland foothills in frost-free zones. Throughout this range it shows wide adaptability to different soil types and grows best with regular water.

Lemon-scented gum is one of the most widely recognized and valued eucalyptus species for California landscapes. It is easily recognized by its smooth bark and graceful stance. Over time it can develop a full canopy, large trunk and heavy roots that can damage pavement in confined spaces. It does best in areas with good drainage and adapts well to regular water when grown in lawns, or reduced amounts of summer moisture in greenbelts and parks. Many attractive plantings have been achieved using this species in parks, open spaces and greenbelts. It is often planted in tight groupings that leads to tall trunks and canopies. To date, it has shown little susceptibility to bark beetles or species of lerp psyllid.” (B. Perry 2010)





# *Eucalyptus globulosa*

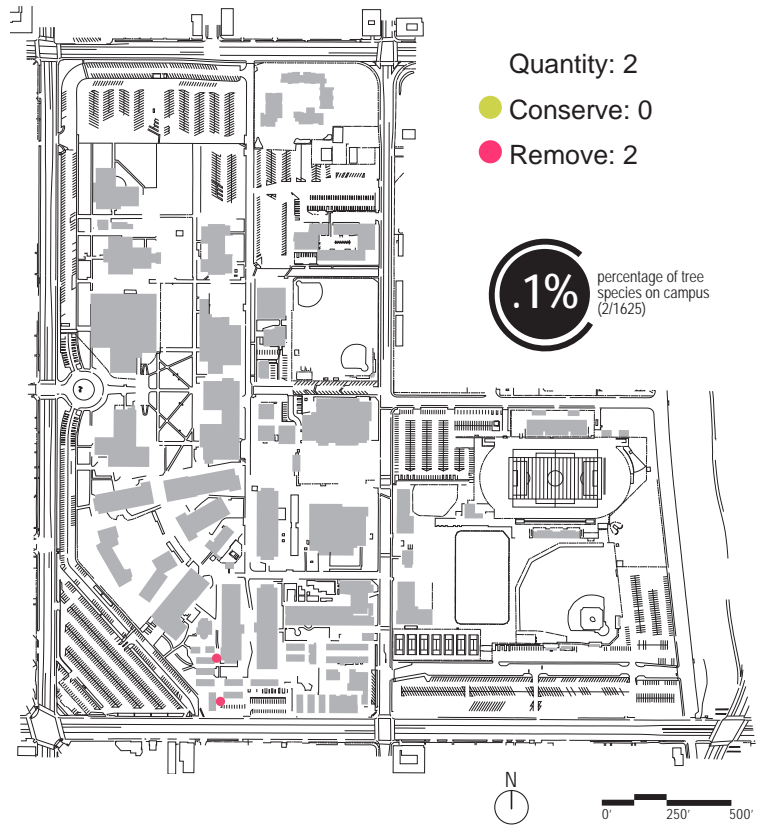
## Blue Gum

General Species Observation by Arborist: Generally recommended for removal based upon extremely mature form and severe defects. Least mature specimens only are recommended for conservation.

“A large tree with massive trunks and branches, capable of growing over 60-120 ft. tall, 40-60 ft. wide. Trunks are covered with long strips of peeling brown bark. Juvenile foliage is very gray-green; adult leaves grow 10-12 in. long, are heavily curved and sea-green in color. Numerous hard seed capsules develop in winter and have a distinctive glaucous coating; creamy-white flower stamen are noticeable when viewed up close.

Blue gum is native to forests of southern and eastern Australia and Tasmania. It grows in cool and moist climate zones, from sea level to 1,500 ft. in elevation and where there is frequent rainfall and seasonal frosts. It has proven highly adapted to warmer and drier climate conditions in ornamental landscapes.

Blue gum eucalyptus was imported into California to be grown as a source of timber for railroad ties and as a shelter belt tree across the state. There are occurrences of naturalization from these early plantings resulting in the loss of native habitat. Currently, this species is not widely



planted, but many historic stands and specimens still exist in rural areas and communities. It produces an abundance of bark, leaf and pod litter, and is highly susceptible to bark beetles and psyllids.” (B. Perry 2010)





# *Eucalyptus sideroxylon* 'Rosea'

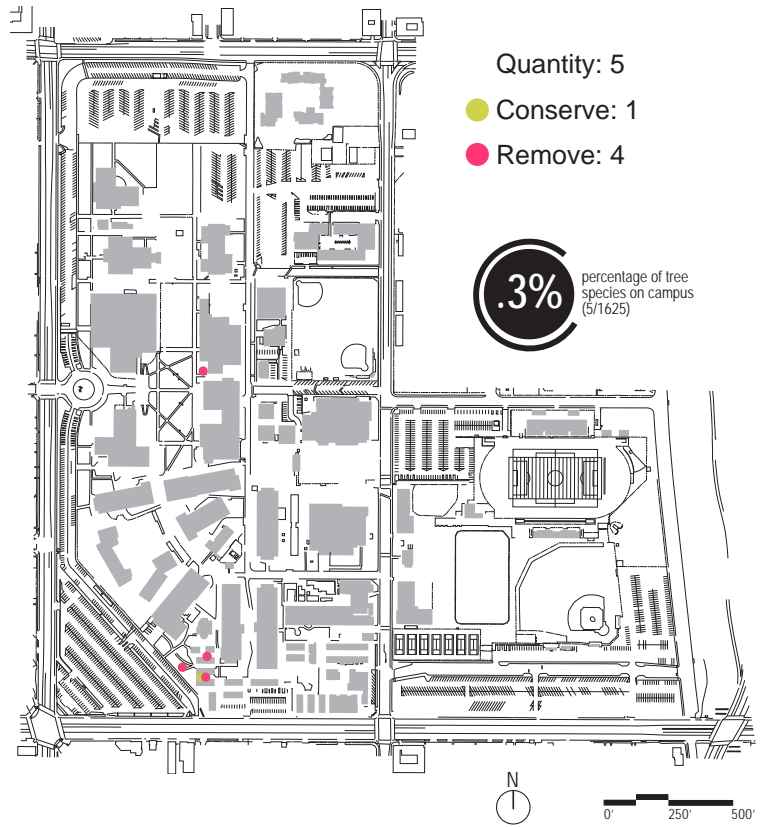
## Red Iron Bark

General Species Observation by Arborist: Generally recommended for removal based upon extremely mature form and severe defects. Least mature specimens only are recommended for conservation.

"A medium to large size tree growing 35-100 ft. tall with an upright crown spreading 40-65 ft. wide. Bark on trunks is persistent and dark red-brown in color. Foliage occurs on pendulous branchlets and is comprised of long pointed leaves that vary in color from gray-green to medium green. Flowers occur in winter and range from creamy-white to deep rose. Rose colored varieties provide moderate flower accent value.

This species occurs in inland areas of southeastern Australia, on low plains and foothills, to 3,500 ft. in elevation. It is typically found growing in poor and shallow soils comprised of sand, gravel or clay, and in moist climate zones where seasonal frosts are common. It has proven highly adapted to warmer and drier climate conditions in California landscapes.

Red ironbark is a popular landscape tree noted for its distinctive bark, foliage and flower character. It is well suited to large landscape spaces in commercial, institutional and park settings. Flower color in this species is highly vari-



able; red flowering forms are referred to as *E. s.* 'Rosea' and are the most popular. Varieties with very gray foliage and dark re-brown bark are also common. This species has shown low impact or susceptibility to species of eucalyptus lerp psyllids or bark beetles." (B. Perry 2010)





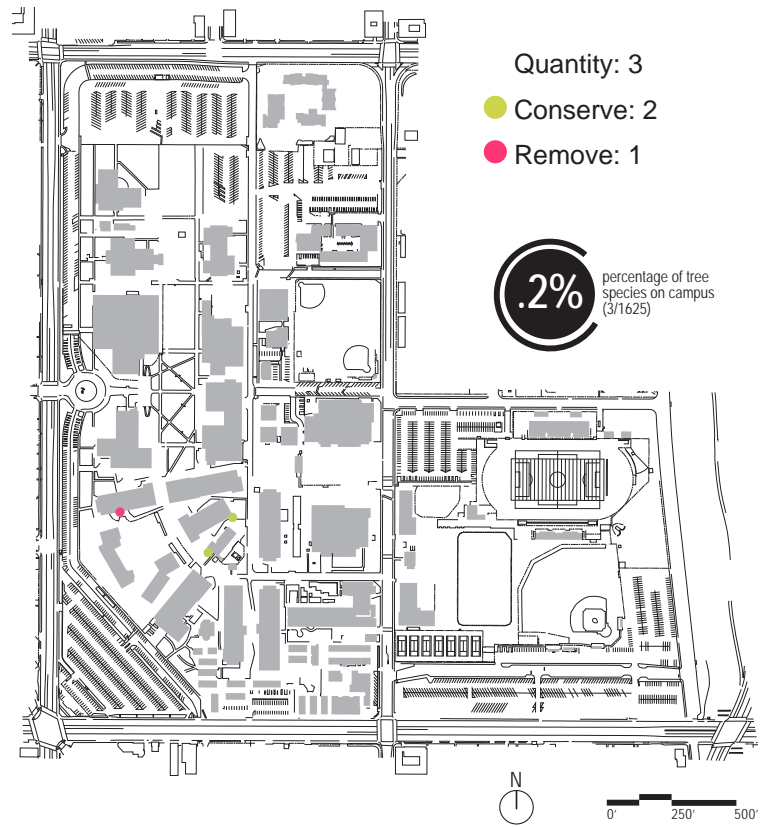
# Ficus benjamina

## Weeping Fig

General Species Observation by Arborist: Recommended for removal and / or conservation based upon individual structural integrity and characteristics.

“A large evergreen shrub to medium size tree that commonly develops a low branching structure and spreading canopy habit. Landscape specimens can grow 25-40 ft. high; plants grown in containers and clipped for hedges can be maintained between 12-18 ft. tall, 6-8 ft. wide. Oval shaped leaves have a long pointed apex, are bright glossy-green and hang in a weeping manner. Native to southeast Asia and northern Australia, it is extremely frost sensitive and best suited to coastal zones and protected microclimates in inland locations. Ironically, with regular water it shows the greatest tolerance among other figs of heat and full sun, when grown in low desert zones such as the Coachella Valley.

Benjamin fig is one of the most popular evergreen fig species for commercial and residential scale landscapes and gardens. It has been commonly grown as a lawn tree, courtyard specimen and for parkway and entryway planters. However, many people are unfamiliar with its potentially large size and aggressive roots and often underestimate the amount of space that is needed as the tree matures. The impact of extensive roots and the prolific production of berry-like fruit can cause difficulties in confined planting areas. This species can be planted in tight rows and clipped regularly to function as a tall hedge or barrier plant. Additionally, it grows well in large pots where root systems are confined, and diligent pruning can control its size and shape its branching character.” (B. Perry 2010)





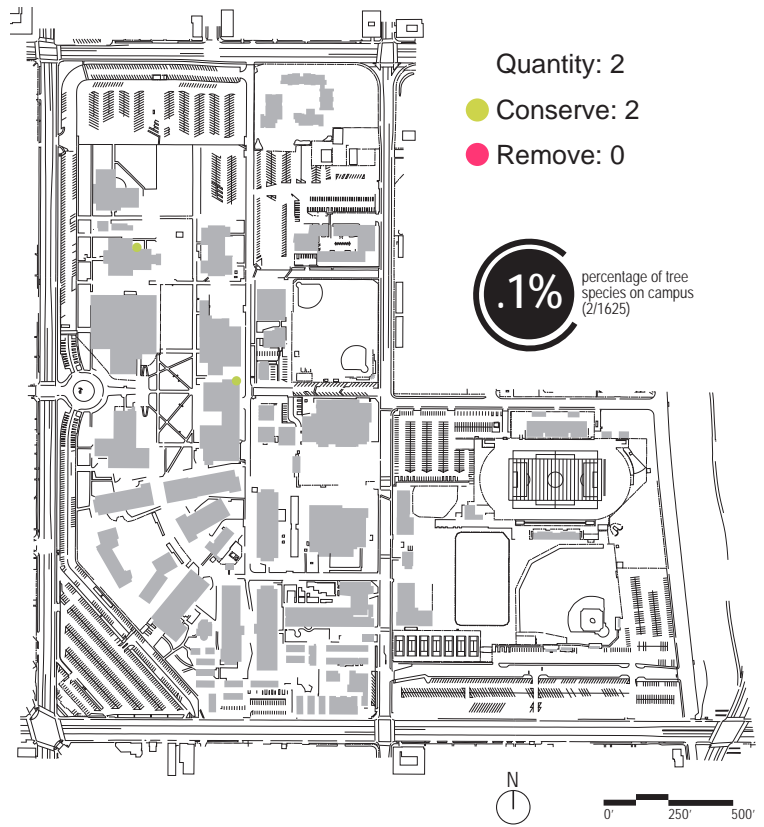
# Ficus lyrata

## Fiddleleaf Fig

General Species Observation by Arborist: Recommended for removal and / or conservation based upon individual structural integrity and characteristics.

“A large evergreen shrub to medium size tree capable of growing 15-20 ft. tall with an equal spread. Foliage is comprised of very large and stiff leaves that vaguely resemble the shape of a fiddle. These leaves can grow 12-15 in. long and mature to dark glossy green.

This dramatic foliage plant comes from tropical climate zones in west and central Africa. Both its character and adaptability make it widely suited to coastal and frost-free micro-climates of southern California where it provides a bold and tropical influence. It grows best in rich soils, with regular moisture and protection from hot sun exposures. It is a slow growing plant that will develop woody stems and trunks covered with brown bark. Like other evergreen figs, this species adapts well to containers and is a feature plant both indoors and outdoors.” (B. Perry 2010)





# Ficus macrophylla

## Moreton Bay Fig

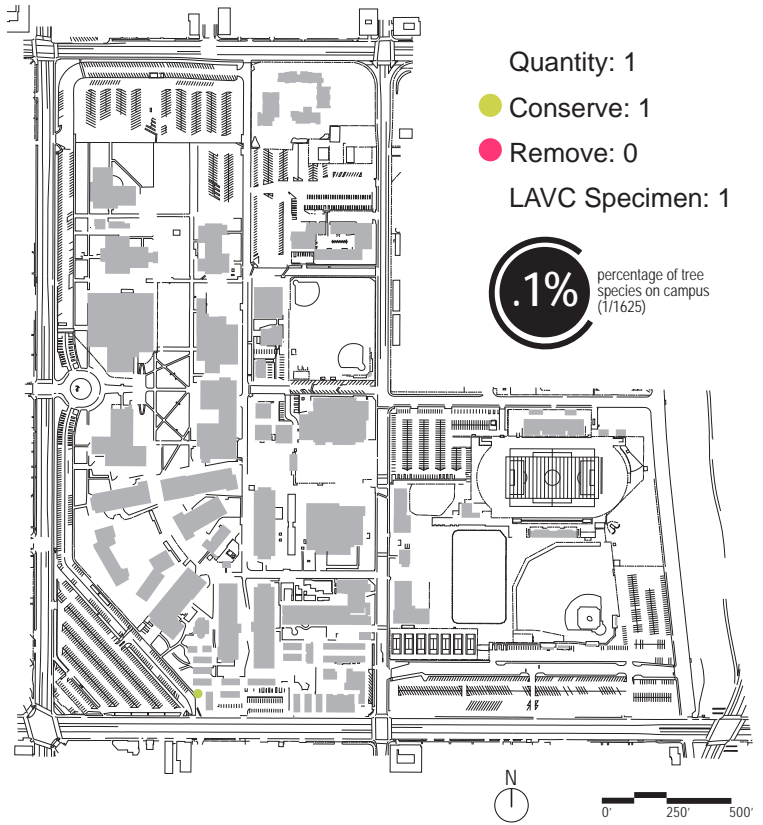


Quantity: 1

General Species Observation by Arborist:  
Recommended for removal and / or conservation based upon individual structural integrity and characteristics.

“The largest growing evergreen fig in cultivation that can reach monumental sizes with a massive spreading branch structure and large surface roots. Many older plants that exist in coastal communities across southern California have reached heights over 70 ft. tall and spread up to 120-150 ft. wide. However, it is more common for these trees to grow to 60 ft. tall and 80 ft. wide. Foliage is comprised of thick oval leaves to 10 in. long. The tops of the leaves are dark glossy green the bottom is covered with fine brown hairs.

It was probably due to inexperience as well as the desire to grow large subtropical trees in the 19th and 20th century that many Moreton Bay figs have been planted in mild climate areas of California. A number of these trees have survived and have grown to become landmark and historic plants in many cities, often requiring changes to accommodate their massive sizes. In addition to specimens that exist in large parks and public spaces, there are examples of street tree plantings that are both unique in mass and challenging to maintain. Such trees can be a poignant reminder of designing landscapes to have a lasting legacy



for future generations.

Moreton Bay fig is native to subtropical climates of northeastern Australia where it grows to monumental sizes. It is best suited to become a specimen feature in parks and other public spaces with lots of room. Young trees do best in loam soils with regular moisture.” (B. Perry 2010)





# *Ficus microcarpa* 'Retusa'

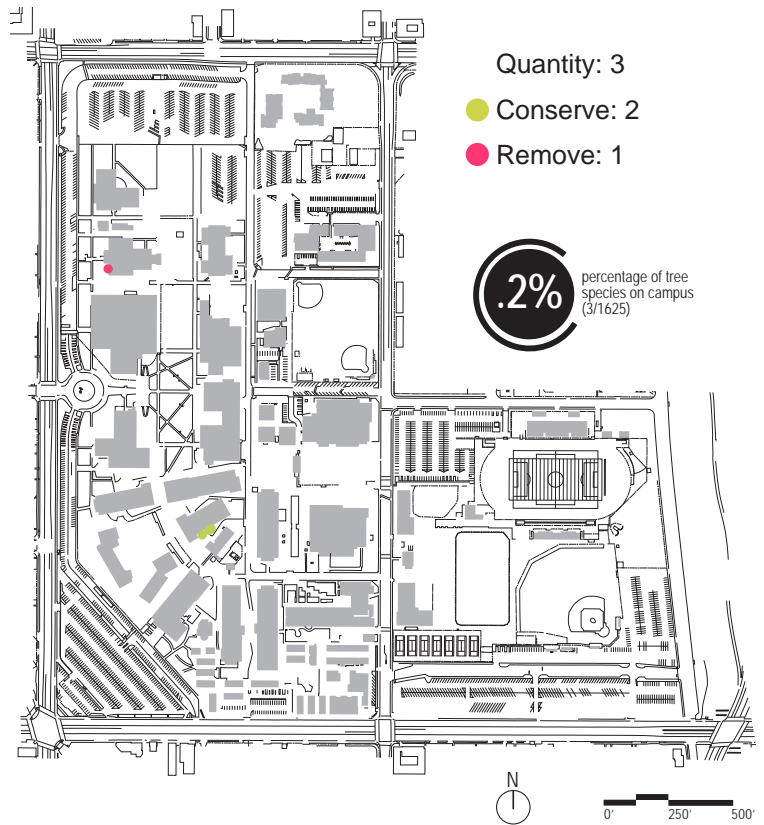
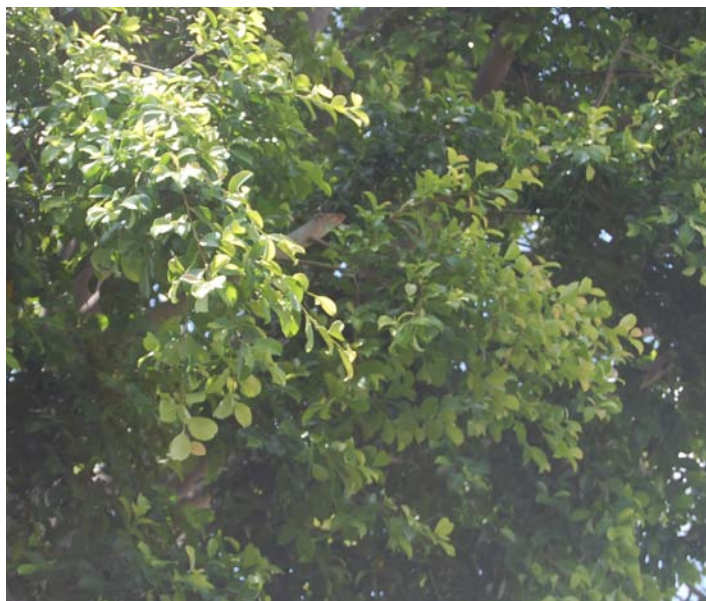
## Indian Laurel Fig

General Species Observation by Arborist: Recommended for removal and / or conservation based upon individual structural integrity and characteristics.

“A medium to large size evergreen tree with a dense foliage habit, growing 25-40 ft. tall and as wide. New leaves are bright green and grow 2-4 in. before maturing to dark green. Foliage on smaller branches droop in a pleasant weeping manner.

For many years Indian laurel fig was the most commonly planted evergreen fig in southern California. It was grown in parks and medians, as well as commercial landscapes and for street trees. Over time it was discovered to become too large for many spaces, particularly in sidewalk planters where root damage became extensive. Many trees have been removed from these locations, however, this species has proven to be tolerant of root pruning and heavy trimming of the canopy. Currently, there are many mature and attractive plantings that are sustained through heavy maintenance.

Indian laurel fig can be planted in tightly spaced rows to provide a dense screen or barrier, 15-20 ft. tall and 8-10 ft. wide. Crowded growing conditions of these trees helps to keep them at smaller sizes, but extensive shearing is needed each year. This species shows enough tolerance of cold to be grown in the Central Valley, and of heat to grow well in the Coachella Valley when provided with regular water.” (B. Perry, 2010)





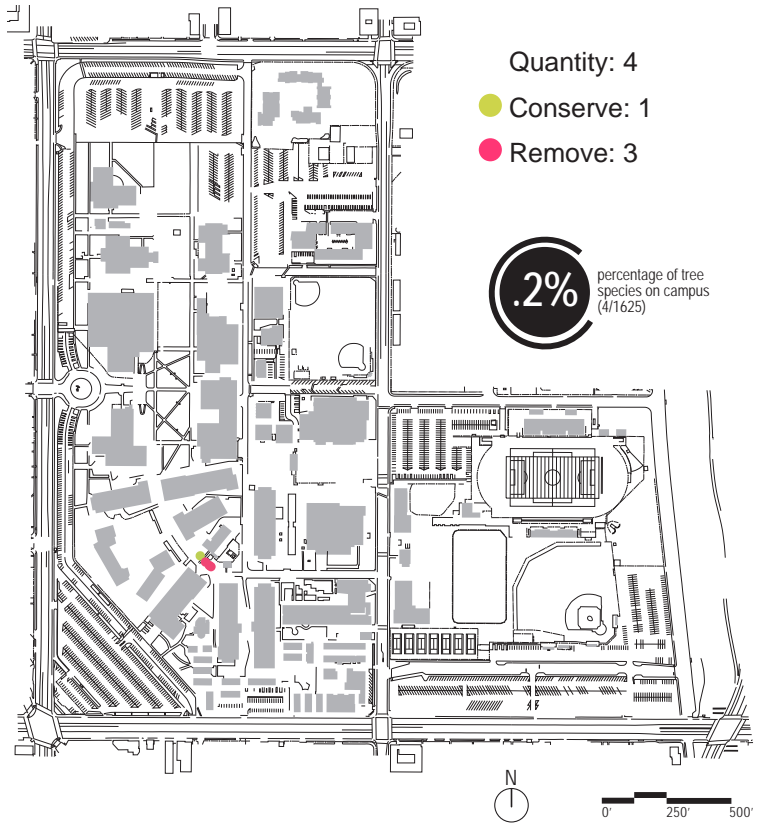
# *Ficus rubignosa*

## Rusty Leaf Fig

General Species Observation by Arborist: Recommended for removal and / or conservation based upon individual structural integrity and characteristics.

“A large evergreen tree with a heavy branching structure and broad-dome growth habit that can reach heights of 30-50 ft. and grow 40-50 ft. wide. Foliage is dense and comprised of 4-7 in. long dark green leaves that have a thick layer of red-brown fuzzy hairs in large numbers in late spring.

Rustyleaf fig is native to northeastern Australia where it is known as the Port Jackson fig. In comparison to other evergreen species, this tree has the darkest foliage character, partly as a result of the brown hairs on its leaves. It is a popular species where broad-leaf evergreen type trees are preferred. As a result, it has been widely planted in parks, school campuses and along parkways and greenbelts in many parts of southern California from Santa Barbara to San Diego. An attractive plant for foliage accent uses, but not commonly available.” (B. Perry 2010)





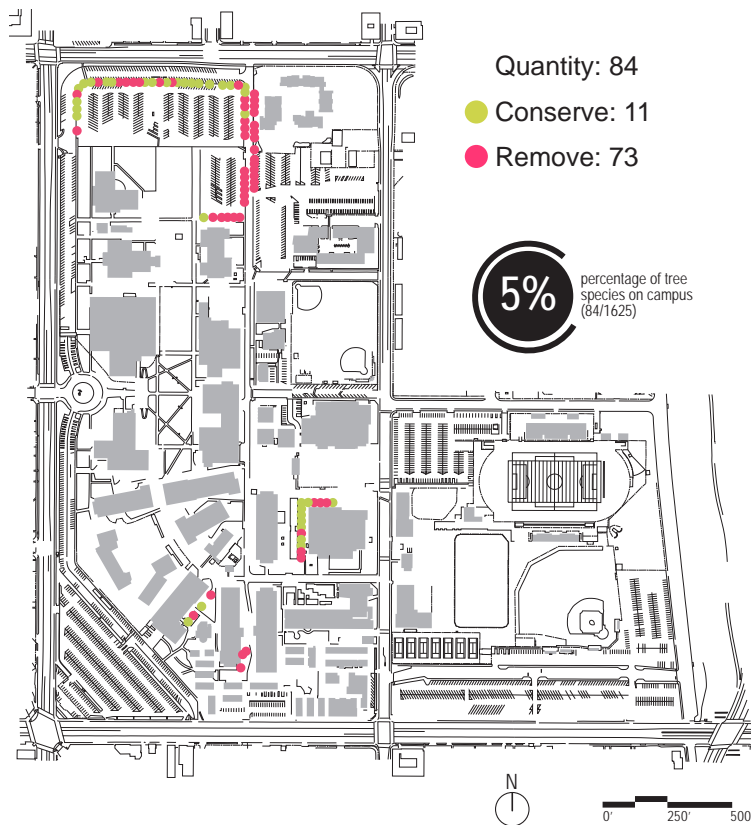
## *Fraxinus uhdei*

### Evergreen Ash

General Species Observation by Arborist: Nearly universally recommended for removal as a result of pervasive defects including evidence of previous branch failures, severe decay, and inclusion. The presence of inclusion represents internalized defects predisposing branch unions to catastrophic failure and collapse.

“A robust deciduous tree that can grow into large specimen sizes, reaching heights of 60-80 ft. tall and spreading 45-60 ft. wide. Foliage produces dense shade that is comprised of medium green leaves that are pinnately divided into 5-9 large leaflets. Flowers are insignificant; female trees produce an abundance of seeds. Foliage turns bright yellow to gold during fall.

Evergreen ash was introduced into California from Mexico and was first thought to be the ideal shade tree for warm climate zones of southern California. Many trees were planted along streets, in residential and commercial properties and in parks where they were valued for their fast growth, uniform shape and abundant shade. It also showed a remarkable range of adaptation and was planted in coastal areas and in low deserts with regular water. The eventual size of these trees revealed the tendency to develop large root systems that easily damaged nearby pavement and shaded out lawn. Older trees ultimately needed skilled pruning every 4-5 years to maintain good branching



integrity and overall tree size.

Evergreen ash continues to be a viable choice as a shade tree in parks and large scale greenbelts, and among open space plantings where its fast growth rate achieve quick results.” (B. Perry 2010)



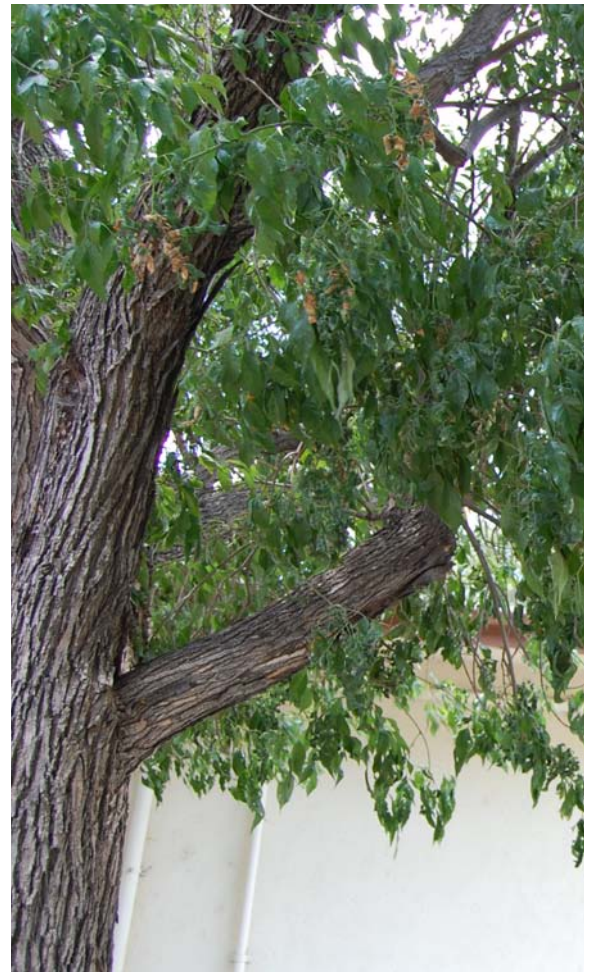
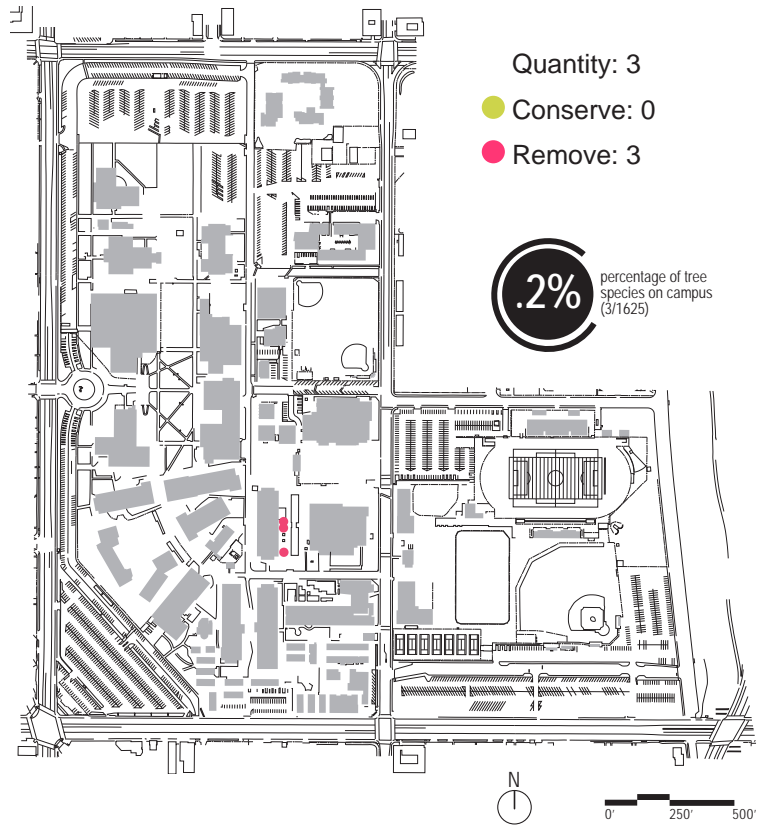


# Fraxinus velutina

## Modesto Ash

General Species Observation by Arborist: Nearly universally recommended for removal as a result of pervasive defects including evidence of previous branch failures, severe decay, and inclusion. The presence of inclusion represents internalized defects predisposing branch unions to catastrophic failure and collapse.

“A medium to large deciduous tree that develops a broad canopy and rough textured bark. It is a fast growing species that grows 35-40 ft. tall, spreading to 30 ft. wide and producing intermediate shade. Leaves are divided into 3-7 leaflets with toothed margins that will turn yellow in fall. Arizona ash grows throughout several southwestern states and Mexico where it survives in hot and arid climate zones by growing near water. It has proven to be best suited to inland and interior areas, away from the coast and where damp spring conditions predisposes it to anthracnose.” (B. Perry 2010)





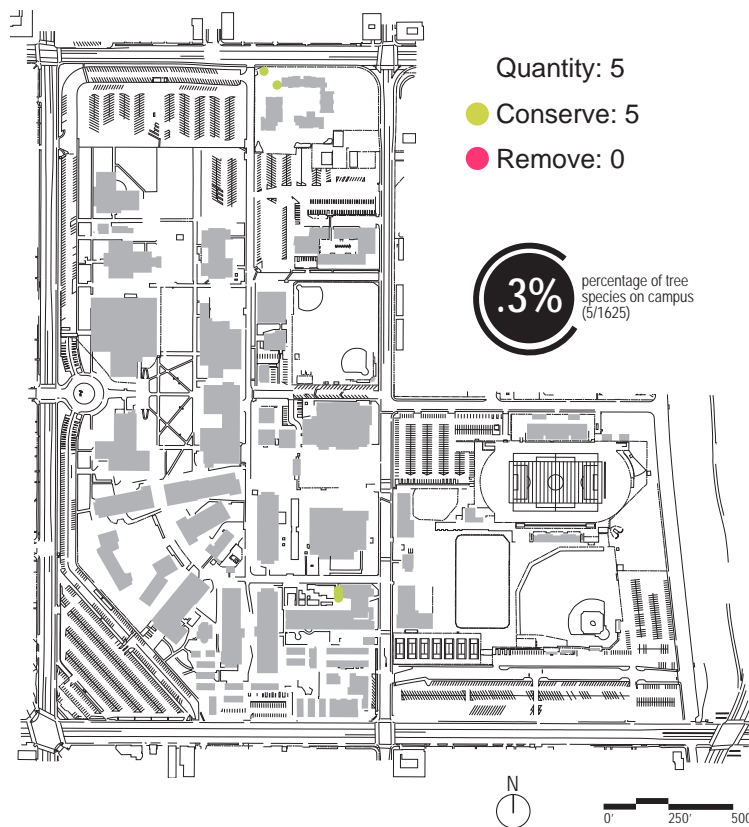
## *Geijera parvifolia*

### Australian Willow

“A medium evergreen tree growing with an upright habit, 20-35 ft. tall, 20-30 ft. wide. Older trees can develop a broad canopy shape to 40 ft. across. Narrow pale green leaves grow 4-6 in. long, to 3.8 in. wide and hang downward from branches to create a weeping character. Inconspicuous clusters of small creamy-white flowers occur in late fall to early winter.

Australian willow is native to interior regions of Australia where it grows in semi-arid climate zones within woodland and open forest plant communities. Across its range, annual rainfall varies between 6-15 in. and long periods of drought are common.

Australian willow is one of seven known species of *Geijera*; the other members of the genus are adapted to subtropical and tropical habitats and are not found in cultivation. This tree typically grows in deep well-drained heavy to sandy loam soils, and has shown a tolerance for alkaline conditions. In California landscape and gardens, Australian willow has proven to be a graceful tree that has an upright habit in youth before becoming more rounded with age. Young plants develop a low branching habit that can be pruned off to achieve taller trunk proportions. It is commonly used in parking lots, parkways and medians and lawns where its foliage color and character contrasts with other ornamental tree species. It grows rapidly and is adapted to coastal, inland and valley communities with moderate amounts of water from winter through spring and less during summer. When grown in low desert zones it requires regular moisture to survive intense heat and aridity.” (B. Perry 2010)





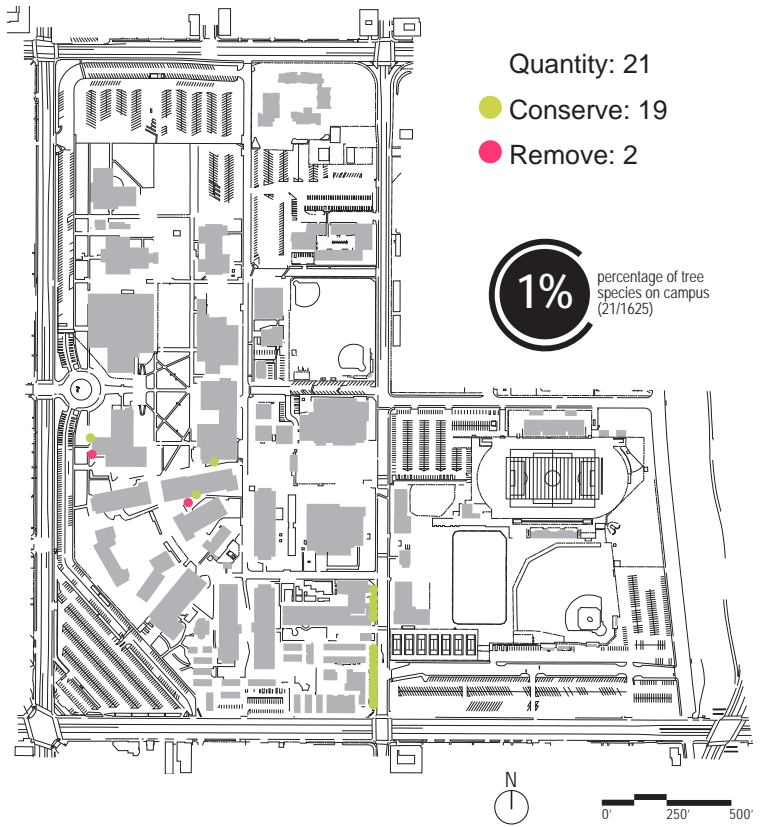
# Ginkgo biloba

## Maidenhair Tree

General Species Observation by Arborist: Generally recommended for conservation. Individual removal(s) are recommended based upon severe defects only and not general characteristics.

“A deciduous tree of several unique distinctions. It is one of the oldest angiosperms on the planet, surviving as a species for more than 200 million years. It once grew world-wide until declining to several small populations in central China where it was discovered and introduced into cultivation. It is the only member of the genus, Ginkgo, and family, Ginkgoaceae and has both male and female plants. It has broad fan-shaped leaves that are winter deciduous like most broad-leaf gymnosperms, but is more closely related to conifers.

Maidenhair tree is a slow growing plant with an irregular and mostly upright habit to 45-60 ft. tall. Foliage is comprised of medium green fan-shaped leaves, 3-4 in. across, that turn golden-yellow in fall. It is a dioecious species with male and female plants. Male plants produce inconspicuous flowers; female plants produce large quantities of edible nuts in the late fall that are covered with a fleshy membrane. Fruit can litter the ground and the fleshy membrane has a highly offensive odor when stepped on or crushed. Ginkgo trees are naturally adapted to areas with cool and moist winters and warm summers. In cultivation, they grow fastest and to larger sizes when planted in deep soils and provided with regular water. However, they have proven



to be widely adaptable and are grown with widespread success in most parts of the state. They are planted in parks, as street trees and lawn trees in residential settings. They are also used as an accent plant in woodland and Asian style plantings, and sometimes planted in containers to stunt their growth and display them as bonsai specimens. They are among the most colorful fall foliage accent plants in California. To avoid problems with fruit, a number of male cultivars have been introduced and are widely available.” (B. Perry 2010)





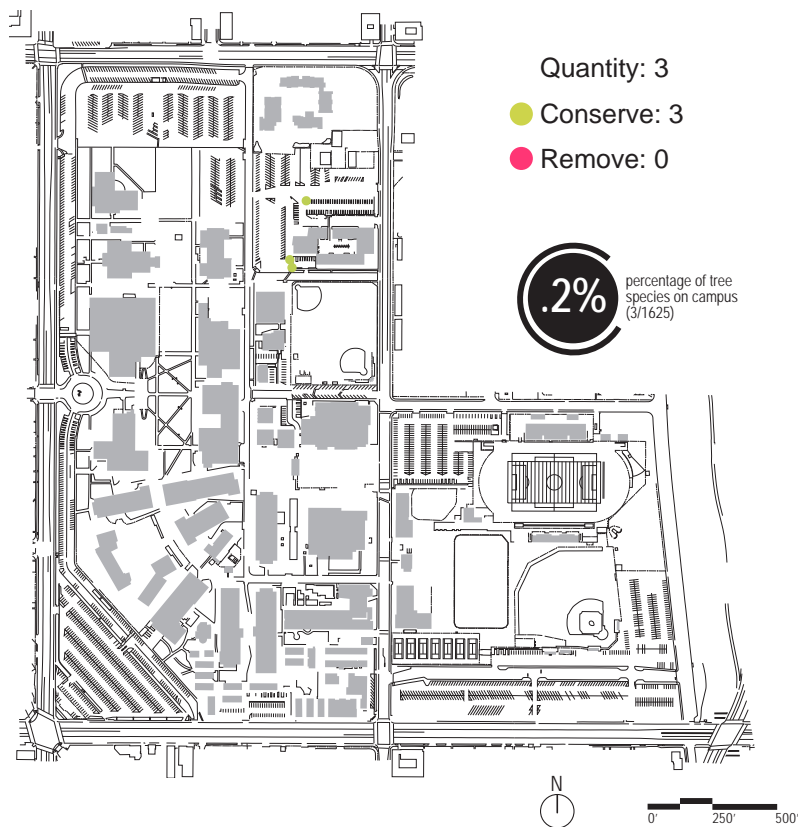
## *Grevillea robusta*

### Silk Oak

“A large and fast growing tree capable of reaching monumental sizes with an upright habit 40-75 ft. tall, 25-35 ft. wide. Pinnately divided leaves range 6-12 in. long, are dark green above, white below and create a soft fern-like appearance. Large clusters of deep orange flowers on 6-8 in. long racemes occur in spring while many trees are briefly deciduous. Flowers are very striking and produce heavy amounts of nectar for birds.

Silky oak is the largest species of *Grevillea* in landscape use. It is native to subtropical rainforests and along seasonal streams in moist fertile soils of eastern Australia. Rainfall averages 40-60 in. per year. mean maximum temperature ranges from 82-86°F and winter frosts occur only occasionally.

Experience in California landscapes and gardens has shown that this species can tolerate much more frost and drier conditions than is indicated by its natural habitat. It thrives in deep soils with regular winter moisture from winter through spring and is widely grown in coastal, inland, valley and low desert areas across the state. Good soil and moisture conditions lead to the fastest growth and largest sizes as well as an abundance of leaf litter. Established trees show good tolerance of dry summer conditions. It is best used in large spaces, such as parks and wide medians, where its eventual size and character can be appreciated.” (B. Perry 2010)





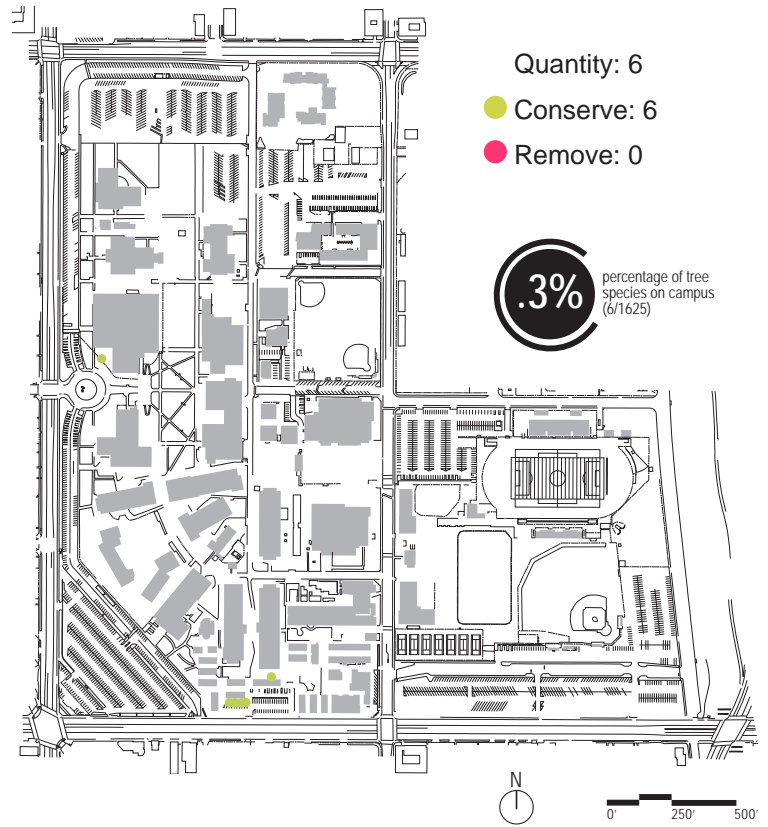
# Jacaranda acutifolia

## Blue Jacaranda

General Species Observation by Arborist: Generally recommended for conservation.

“A medium size deciduous tree with spectacular late spring flowering character. It commonly grows with an open branching habit into a broad canopy shape, 25-40 ft. tall, 25-35 ft. wide. Foliage is comprised of fern-like pinnately divided leaves that produce a graceful and soft textured appearance. Large numbers of colorful purple flowers grow on 8-12 in. long terminal panicles when the tree is deciduous. Flowering peaks over a two week period, during which time the ground below the canopy can become covered with spent flowers. Clusters of 2-3 in. diameter green seed pods develop in early summer and mature to brown by fall.

Jacaranda is one of an estimated 30-45 species in this genus consisting of evergreen and deciduous trees native to tropical America. It comes from Bolivia and Argentina, and is the only species widely grown in California landscapes and gardens where it is best adapted to warm climate zones, well-drained soils and regular water. These adaptations have enabled it to become one of the most widely planted flowering accent trees throughout southern California where it responds to warm spring conditions. It can be grown in warmer micro-climates further north and in valley areas where it responds to warm spring conditions. It can be grown in warmer micro-climates further north and in val-



ley areas where temperatures remain 25°F and above. It can be planted in low desert zones such as the Coachella Valley where it needs high amounts of supplemental water. Jacarandas are commonly planted as street trees, in parks, open space areas and in residential gardens. They grow well in lawns and should be given generous space to accommodate their size at maturity.” (B. Perry 2010)





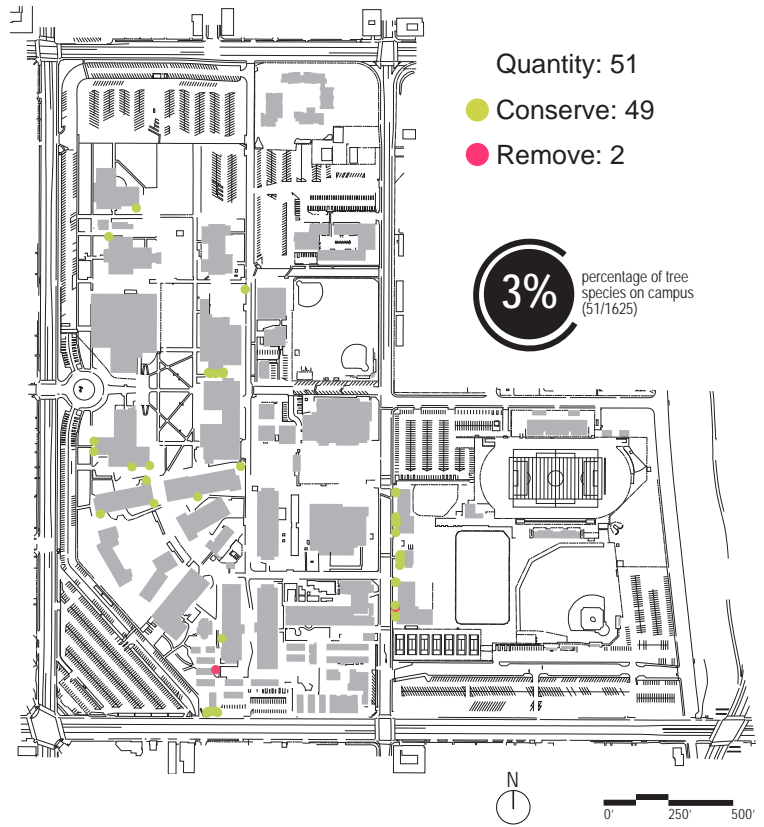
# *Juniperous chinensis* 'Tortulosa'

## Twisted Juniper

General Species Observation by Arborist: Generally recommended for conservation / long-term removal. Individual specimens exhibit generally vigorous growth habits even though their lower canopies are devoid of dense foliage. In many cases their locations adjacent to buildings and as under-story plants beneath the Canary Island Pine canopies render them to be thinner than typically would be the case. They are generally reluctant to sprout growth from latent nodes (develop foliage within the lower and inner canopies) and therefore their general appearance should be expected to decline as they continue to grow in overall stature over time.

"This is a highly variable species of juniper. It is native to Asia, with the heaviest occurrence found in the central to northern portions of China, from 5,000-10,000 ft. in elevation. The climate within central regions is often cool and moist; rainfall varies between 40-70 in. annually. Northern latitudes and higher elevations have very cold winters with periods of physiological drought when temperatures freeze the ground. Summer are warm with an average high of 75-80°F in temperature.

Throughout its natural range, Chinese juniper grows mostly as a tree and can reach heights of 60 ft. tall. However, it also occurs as a small to medium size shrub and sometimes develops a trailing branch habit. These variations have led to the propagation of trees, shrubs and ground



covers for ornamental plantings that offer deep green, pale green and variegated foliage colors.

J. c. 'Tortulosa' (J. c. 'Kaizuka'), Hollywood juniper, is a large shrub to small tree with strongly twisting to upright reaching branches, 15-25 ft. tall. Deep green scale-like foliage. Widely planted as a specimen and sentry plant." (B. Perry, 2010)



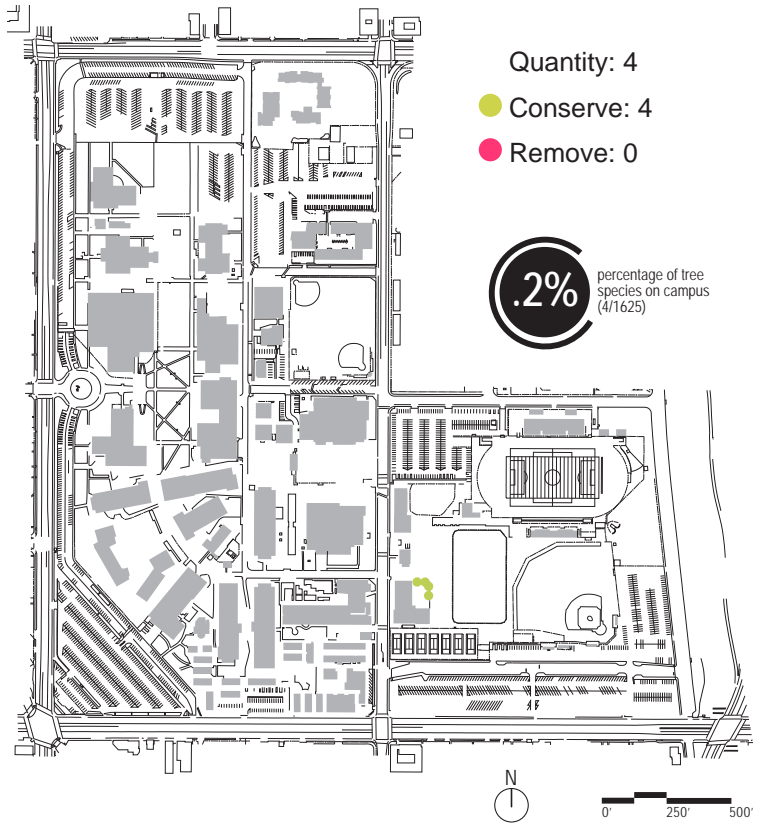
# *Koelreuteria bipinnata*

## Chinese Flame Tree

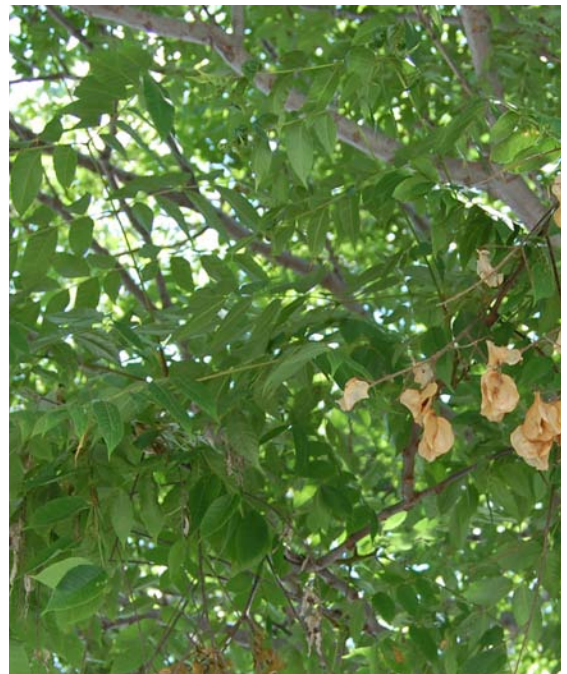
“A medium to large size deciduous tree that develops a broad canopy shape, 25-45 ft. high and as wide. Foliage consists of 12-18 in. long bipinnately divided leaves comprised of 6-10 pairs of serrated leaflets, each growing 2-4 in. long. Large numbers of tiny yellow flowers grown on 12-18 in. long terminal racemes and produce intense color value in early fall. Flowers are replaced by large papery seed capsules that range in color from pale salmon to pink-red. Seed capsules provide good color value on the tree through late fall.

Chinese flame tree is a popular landscape tree for coastal, inland and valley zones of California, and particularly where temperatures remain below 20°F in winter months. It is a moderate to fast growing species that grows best in large spaces. It shows good tolerance to summer heat and can be grown in low and intermediate desert zones where it does best with good moisture and protection from hot summer sun.

Chinese flame tree is commonly planted in parks, parkways, residential lawns and for street-side landscapes with adequate space. As with other trees planted in lawns, it will often develop surface roots in response to frequent watering, particularly when planted in heavier soil conditions that restrict deep root development. Flowers occur in such profuse numbers that they will drop, covering the ground in yellow. Seed capsules also provide significant color value.



However, this species is seedling grown and seeds come from different sources. As a result, the consistency and predictability of the seed capsule color is hard to determine. Large plantings of this species often includes trees that produce very colorful deep pink seed capsules, while other develop disappointingly pale salmon or even yellow-green capsules.” (B. Perry 2010)

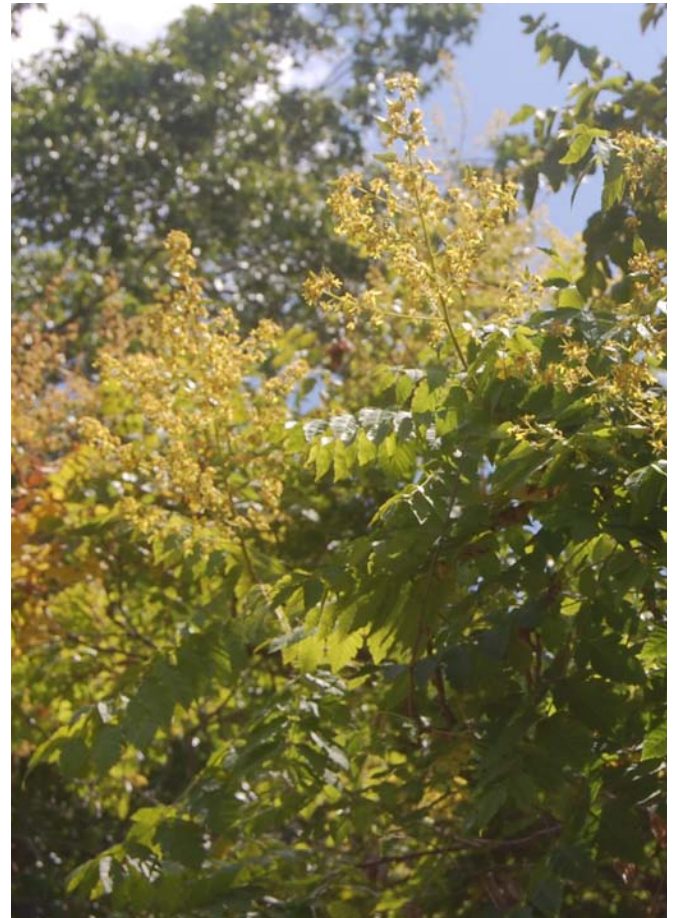
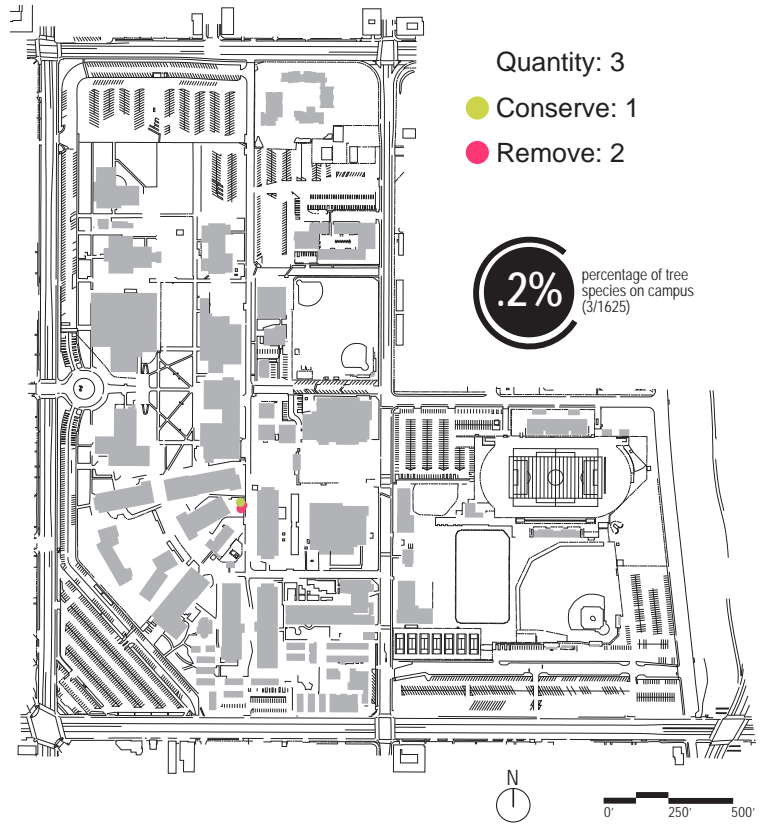




# *Koelreuteria paniculata*

## Goldenrain Tree

“A small to medium sized deciduous tree, growing slowly to 20-25 ft. tall and as wide. Native to China and Korea, it is adapted to temperate climate conditions, including cold temperatures to 14°F. Leaves are pinnately divided and grow 12-15 in. long, with 4-5 pairs of lobed-edged leaflets, each growing 2-3 in. long. Vary showy tiny yellow flowers grow on 12-18 in. long terminal racemes in early summer. Large clusters of pale green seed capsules mature by mid summer before turning brown and persisting into fall. Goldenrain tree has many of the same qualities and uses as other species of *Koelreuteria*. With its greater tolerance to cold, it is better adapted and more widely grown throughout central and northern California climate zones. However, it also shows good tolerance of heat, alkaline soils and short periods of drought, and has been planted in low and intermediate desert zones with some success. It is considered to be a premium street and lawn tree and has been the subject of horticultural interest.” (B. Perry 2010)





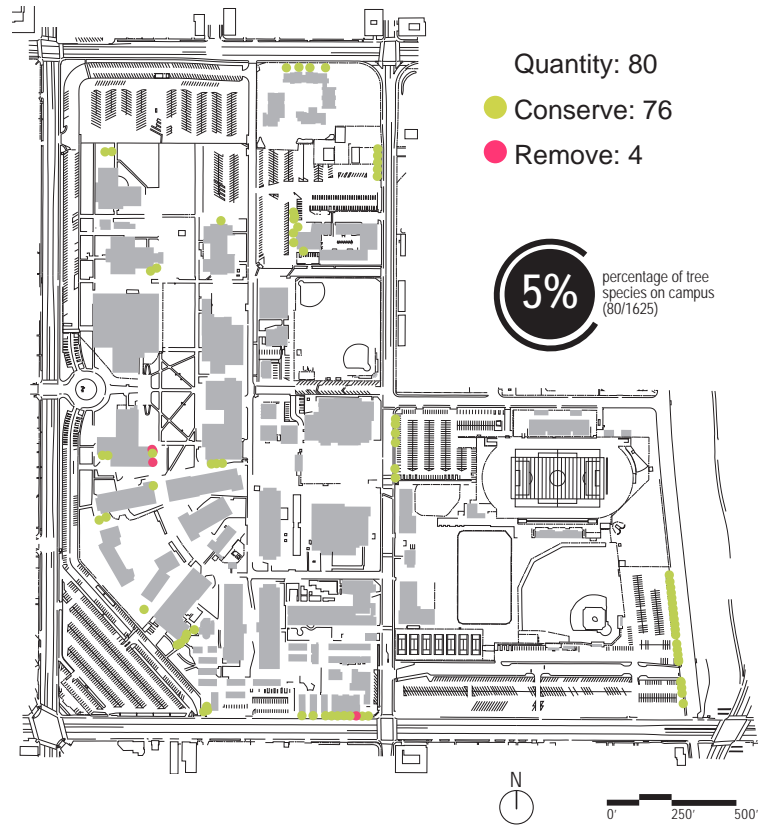
# Lagerstroemia indica

## Crape Myrtle

General Species Observation by Arborist: Nearly universally recommended for conservation. A few individual specimens have been recommended for removal based upon severely declining systemic performance as a result of their dispositions as under-stories to larger trees.

“This species of crape myrtle is native to central and eastern China and Korea where it grows in cool and moist climate zones in mixed forest plant communities. Throughout its range it can be found growing as large shrubs to small trees and with varying flower colors. It has a natural multi-trunk growth habit with deciduous creamy to gray bark color, oval to oblong leaves, 1-3 in. long and bright orange fall color.

For many years, cultivars of *L. indica* were highly popular in California as ornamental trees in commercial and residential plantings. These were relatively slow growing and highly susceptible to powdery mildew near the coast.” (B. Perry 2010)

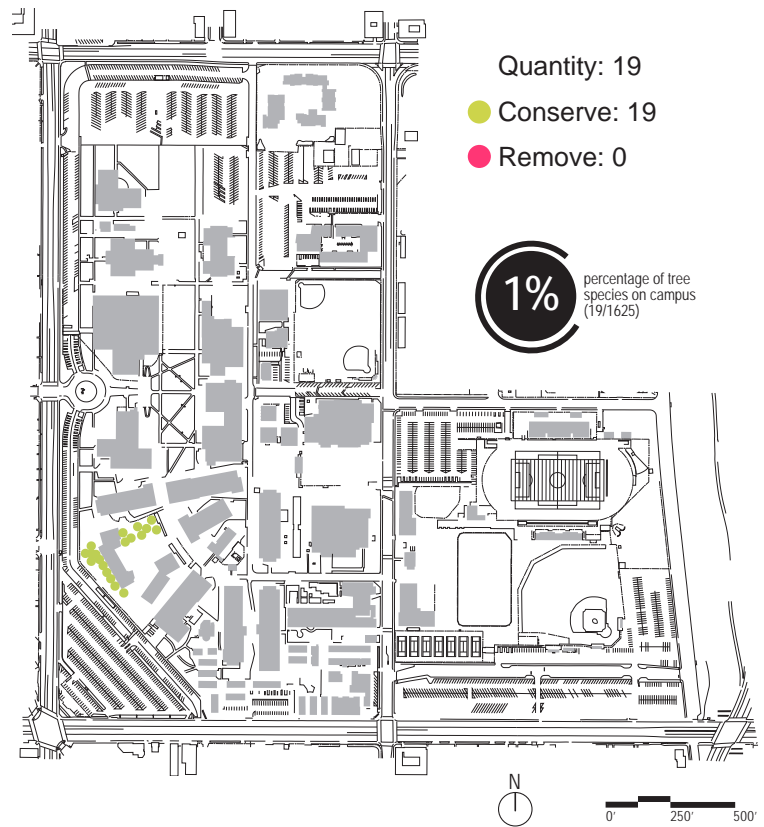




## *Lagerstroemia indica x faurei*

### Faurei Crape Myrtle

“The crossing of *Lagerstroemia fauriei* and *Lagerstroemia indica* was introduced by the U.S. National Arboretum. These selections have become among the most widely grown in California in recent years and are noted for their robust growth and increased resistance to mildew. Most cultivars grow with multiple branches that make them suited for use as large size shrubs or multi-trunk specimen trees. They can be trained to grow with a single trunk and to develop an arching and spreading canopy as they mature. All have large 3-4 in. long leaves, dense flower panicles, colorful brown to cream and gray bark and offer a range of flower colors in the summer. They grow best when planted in full sun, in loamy soils and with regular water. However, they have proven to adapt well to partial shade, high summer temperatures, aridity and moderate supplemental water.” (B. Perry 2010)





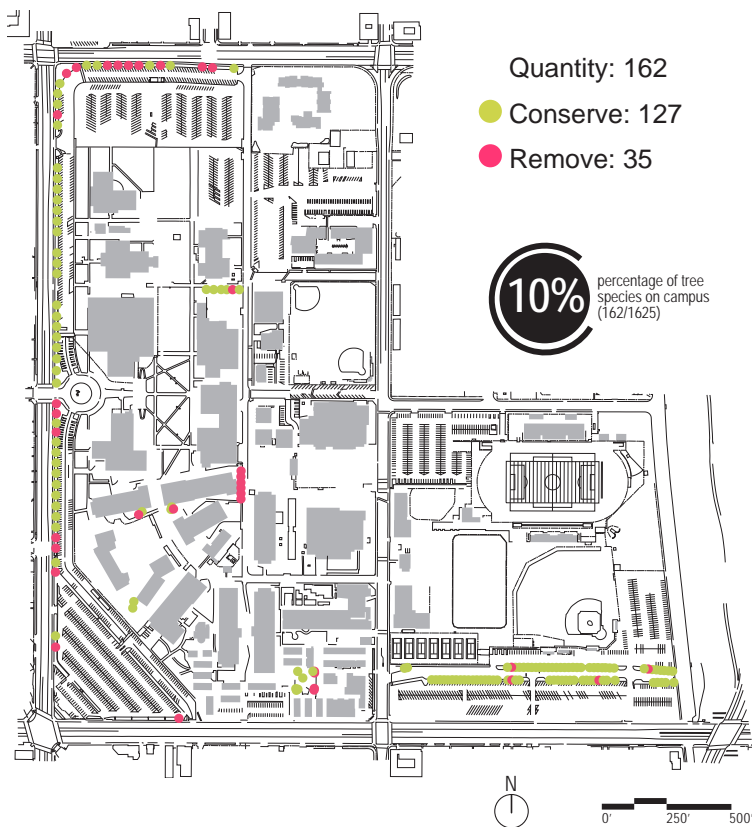
# Liquidambar styraciflua

## Sweet Gum

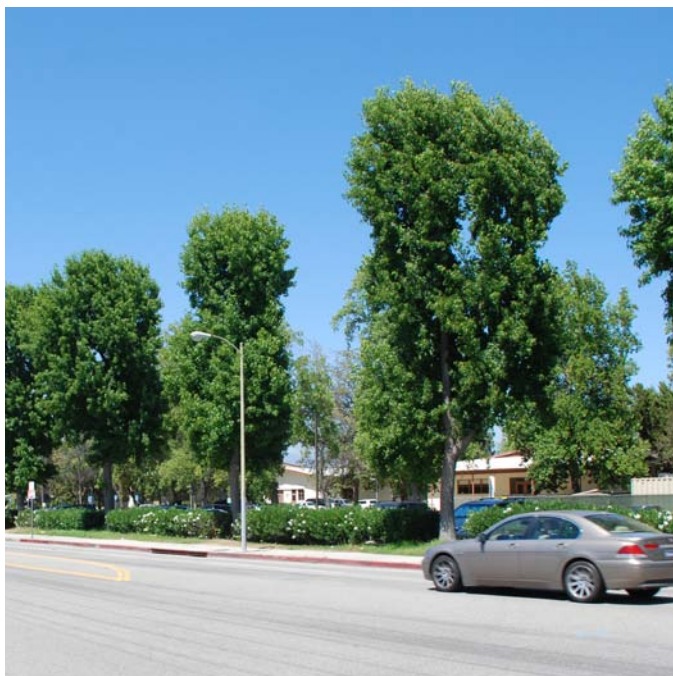
General Species Observation by Arborist: Primarily recommended for conservation / long-term removal as a result of bacterial scorch disease conditions. A smaller number of individual specimens are recommended for removal based upon the presence of obvious symptoms of bacterial scorch, systemic decline, and / or structural defects. Rate of the development of additional symptoms of bacterial scorch shall dictate the future rate of additional removals.

“A large deciduous tree growing with an upright habit, 40-60 ft. tall, 20-25 ft. wide. Leaves are divided into 5-7 lobes with serrated margins, and turn many colors in fall, including yellow, orange, red and burgundy. Hard round seed pods develop in large numbers on mature trees resulting in heavy litter during winter.

American sweet gum tree is native to flood plains and low elevation woodlands throughout the southeastern United States. It is adapted to cold winters, warm summers, alluvial soils and regular moisture. It has proven to be highly adaptable to many soil types and exposure conditions when grown in California, and is planted in coastal, inland and valley zones across the state. Young trees are tall and slender while mature trees develop a broader branching habit and extensive root system.



American sweet gum in the most commonly planted species in the genus Liquidambar, both in California and elsewhere. Horticultural interest has led to the introduction of numerous cultivars that have different foliage characteristics, fall colors and levels of pod productions.” (B. Perry 2010)





# *Liriodendron tulipifera*

## Tulip Tree

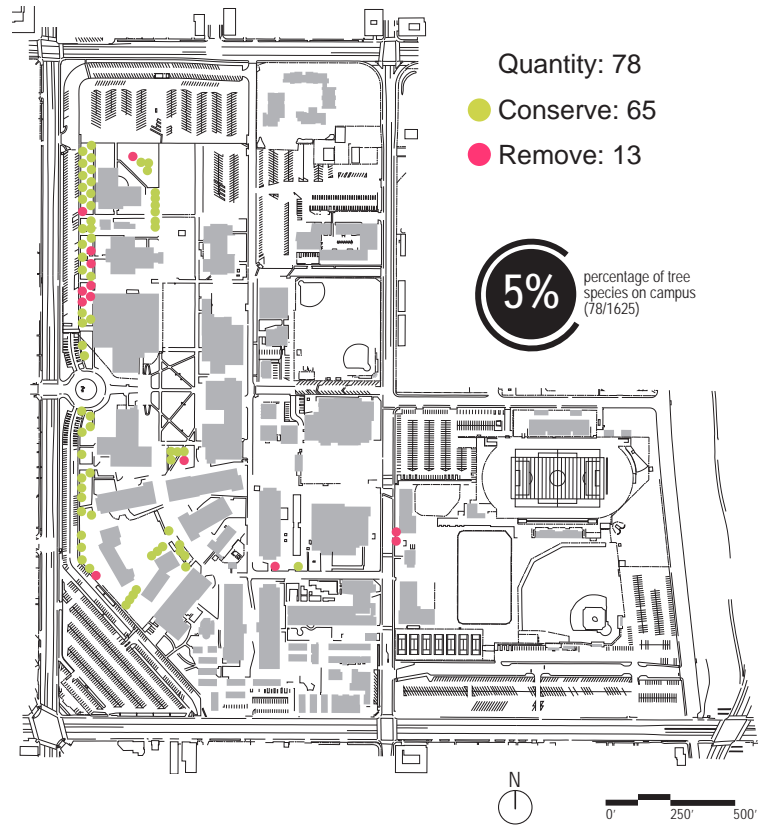
General Species Observation by Arborist: Some specimens are recommended for removal with many specimens recommended for conservation / long-term removal based upon their declining systemic performance. The declining performance appears to be as a result of construction encroachment, drought stress including as a result of soil compaction, and structural defects. Only the worst individual trees are recommended for removal at this time.

“A large deciduous tree with a tall growth habit, 60-80 ft. tall, 25-40 ft. wide. Foliage is comprised of distinctly lobed leaves, 4-6 in. across, bright green above and pale beneath. Attractive tulip-shaped flowers have yellow petals with orange markings; but are hidden within foliage and seldom noticed.

Native throughout the eastern and southern United States, tulip tree grows under a variety of habitat conditions.

Within its range, it grows best and to largest sizes in moist soils with good drainage. It is not well adapted to aridity and moisture stress. When planted in California it shows highest adaptation to climate zones with cool winters, moist spring conditions and warm summers.

Tulip tree makes a good park and open space tree, particularly when planted in turfgrass with regular irrigation.



It is commonly grown in both residential and commercial spaces where it provides good summertime shade. Foliage will turn bright yellow-gold under cool fall temperatures.” (B. Perry 2010)





# Magnolia grandiflora

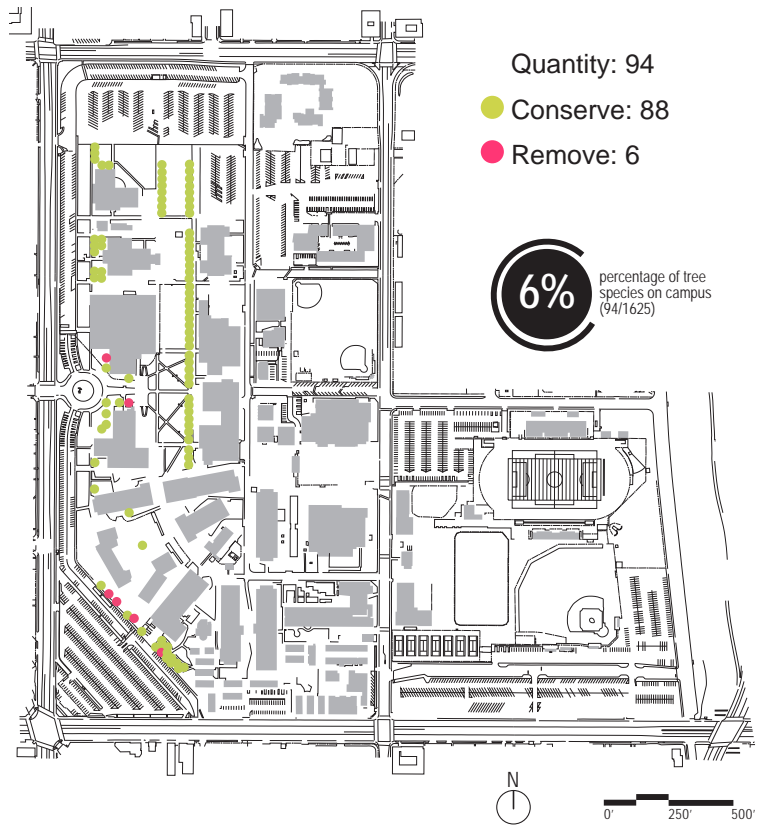
## Southern Magnolia

General Species Observation by Arborist: Recommended for conservation. Some individual specimens exhibit drought and / or construction related distress but are expected to respond to care with vigorous growth. A few construction encroached specimens exhibit severe decline (near administration and within library construction compound) and are recommended for removal.

“A large evergreen tree with an upright growth habit, 60-80 ft. tall, 40-60 ft. wide. Dense foliage is comprised of large glossy dark green leaves; striking pure white flowers with large petals are fragrant and commonly grow 8-10 in. across. Large woody cones mature in summer and hold colorful red seeds.

Southern magnolia is one of the most widely planted broad leaf evergreen trees in California. It is native to the southeastern United States where it grows in well-drained soils, along streams and near swamps, and in areas that receive 40-60 in. of annual rainfall. Winters are cool to 15-20°F and summers are warm to 80-90°F.

Southern magnolia is a bold plant that develops a stately and monumental character as it matures. It is popular in commercial and institutional settings where its long life span and ultimate size greatly adds to the overall scale and



mass of the landscape. It needs generous space to accommodate its potential size and heavy surface rooting habit, and is a popular park, open space, specimen and estate tree. Dozens of cultivars have been introduced over the years that offer variations in growth habit, size, foliage and flowering character.” (B. Perry 2010)



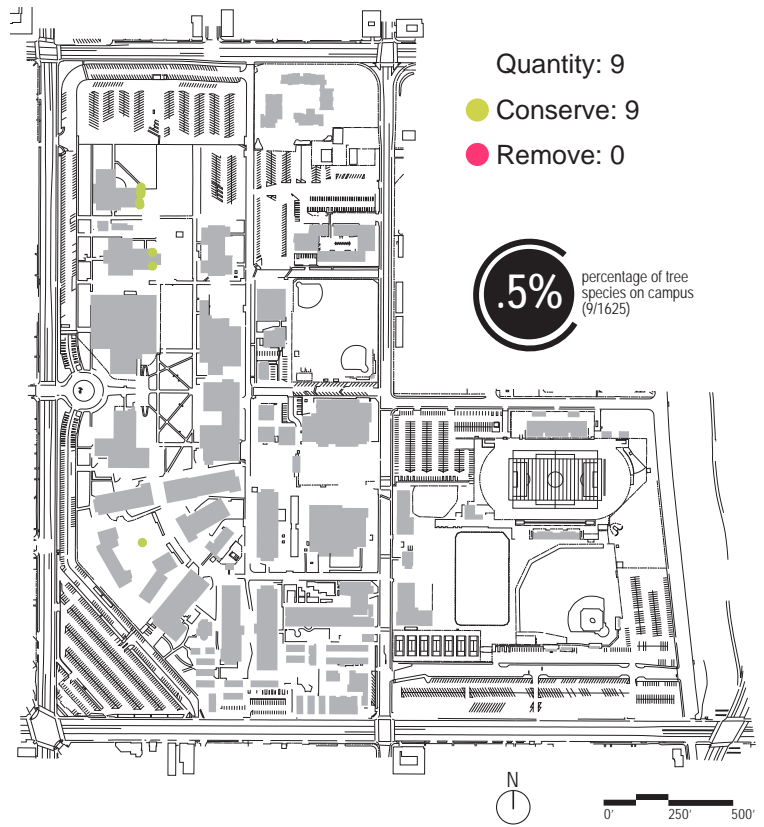


# *Magnolia soulangiana*

## Chinese Magnolia

“A large deciduous shrub to small tree of hybrid origin with stiff and irregular branching and 5-7 in. long medium green leaves. It is widely popular for its colorful display of tulip and saucer-shaped flowers in late winter to early spring. It is best adapted to cool and moist climate zones, particularly in northern California, but is grown in cool micro-climates in warmer and drier areas. It prefers rich soils and regular moisture. Many cultivars are available that offer a range of flower characteristics. Most types grow between 15-25 ft. tall and as wide; flowers range from white to shades of pink and purple blended with white.

Saucer magnolia is commonly planted in woodland and Asian style gardens to provide seasonal accent character in understory locations and among evergreen plants. With age it can be pruned into a low branching tree and become a prominent focal point when in bloom.” (B. Perry 2010)



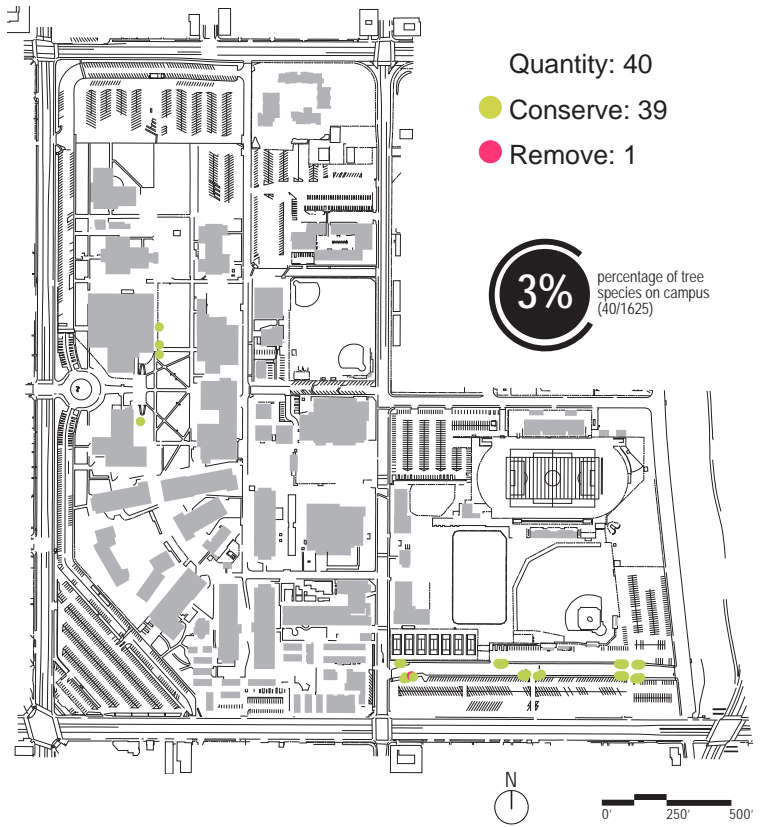


# Melaleuca quinquenervia

## Cajeput Tree

General Species Observation by Arborist: Nearly universally recommended for conservation. A few individual specimens that exhibit severe defects have been recommended for removal.

“A medium to large tree with a tall and upright form, growing 25-40 ft. high, 15-25 ft. wide. Firm leathery leaves are 2-3 in. long, pale green and are lance-shaped with a pointed tip; noticeable creamy-white flowers occur in large brush-like clusters at the ends of branches from late summer into fall. Attractive bark is white to tan, and develops into thick spongy layers that can be peeled off like paper. This species grows in large stands with coastal habitats of eastern Australia. It commonly occurs along stream banks and within estuaries and marshes that are subject to extended periods of flooding. It is sensitive to cold; temperatures below 25°F will damage new growth and can kill young plants. It tolerates a wide range of soils, including silts, clays, loams and low to moderate levels of salinity. Cajeput tree is a very popular tree for California landscapes and gardens due to its upright form and distinctive papery bark. It is naturally adapted to coastal regions where it grows well with moderate amounts of supplemental moisture. Its leathery leaf character and thick bark enables it to withstand heat and aridity in inland and low desert regions,



but regular moisture is recommended. It grows fast and performs well in narrow spaces between buildings as well as in lawn situations. It is useful as a street tree or as a multi-trunk specimen in courtyards and residential gardens. It often develops large surface roots when planted in heavy soils and in areas with surface moisture.” (B. Perry 2010)



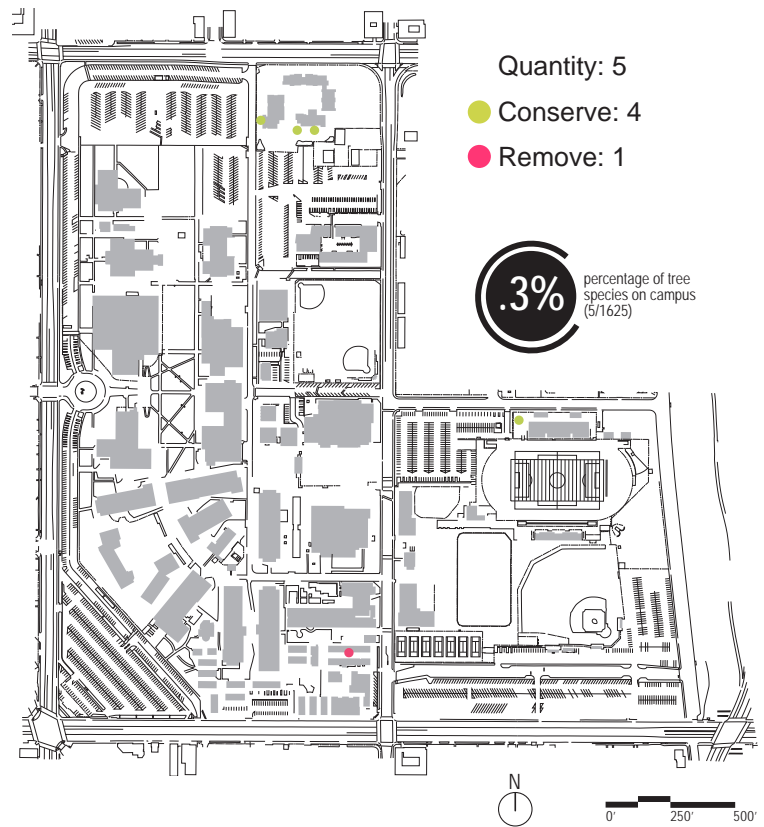


## *Morus alba*

### White Mulberry

“A medium to large deciduous tree, 30-60 ft. tall, spreading 30-50 ft. across. Medium green leaves grow 8-10 in. across and are deeply lobed. Flowers are insignificant however, large quantities of raspberry-type fruit are produced in mid spring to early summer. Fruit is edible, but messy, staining pavement and clothes.

White mulberry is native to central China and is a member of the mixed deciduous forest plant community where it grows on hills and alluvial plains above 1,500 ft. in elevation. The climate is cold and moist during winter with 40-60 in. of annual rainfall; summers are short and warm. This species is widely known for its role in silk worm cultivation. In California gardens, fruiting species are seldom grown due to maintenance needs. Instead, several fruitless and weeping cultivars have been planted for ornamental character and tolerance of difficult landscape conditions. Mulberries typically develop a strong surface root system causing problems for lawns and paving. They use high amounts of water, but trees growing in neglected areas indicate an adaptability to seasonal rain and periodic watering. They can be cut back hard in late fall to control size and will quickly regrow each year.” (B. Perry 2010)

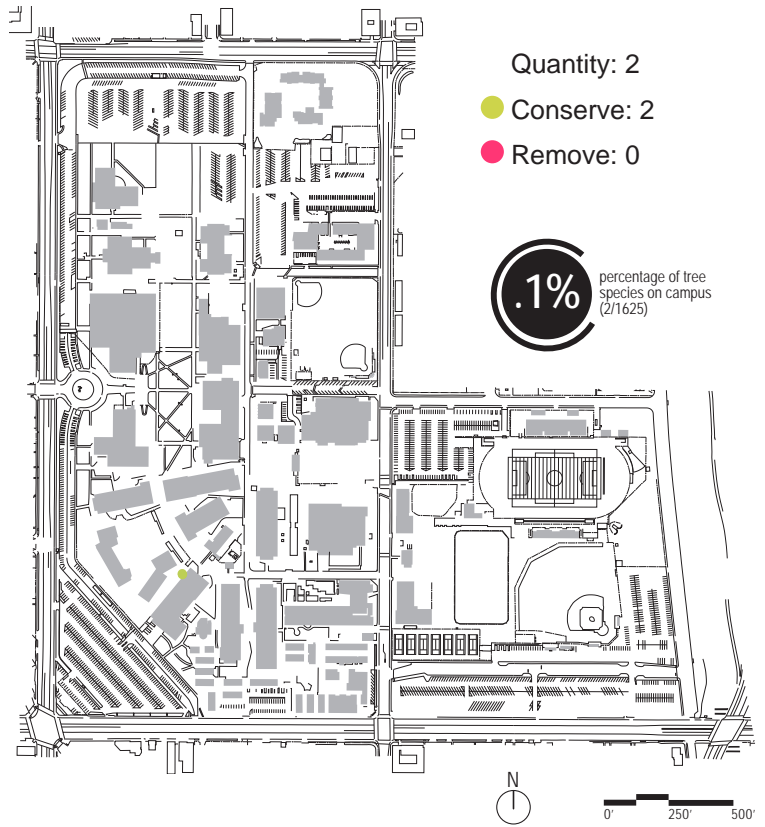




*Murraya sp.*

## No Common Name

“Native to Southeast Asia. Open habit; fast grower to 6-15 ft. tall and wide. Good as hedge, filler, foundation plant. Sometimes grown as small single- or multi-trunked tree. Has graceful, pendulous branches with glossy dark green leaves divided into three to nine oval, 1-2 in. leaflets. Blooms in late summer and fall (sometimes in spring), with white, 3/4 in., bell-shaped blossoms with jasmine fragrance. On mature plants, small red fruits follow flowers. Needs rich soil, frequent feeding. Slowly recovers beauty after cold winters. Blooms attract bees.” (Sunset, 2007)





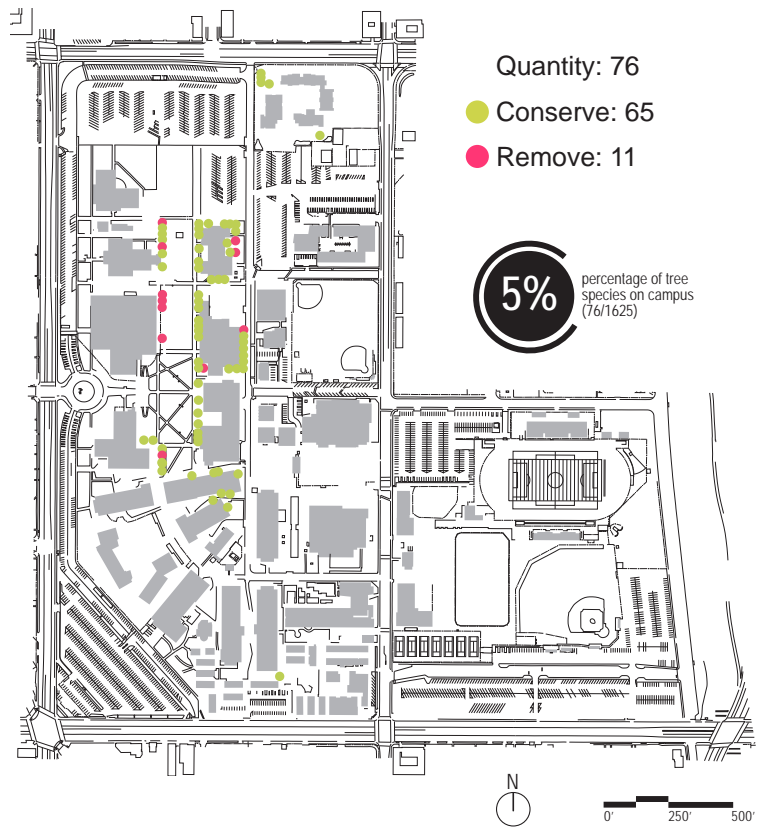
# *Olea europaea*

## European Olive

General Species Observation by Arborist: Recommended for both removal and conservation. Individual specimens recommended for removal possess structural defects that diminish their structural integrity or symptoms of a serious disease condition (Verticillium Wilt) that diminishes their prospect for vigorous systemic performance over time. More individual specimens within site could be expected to become subject to the disease conditions over time and could require more removals in future.

“A distinctive evergreen tree growing with an upright habit, 25-35 ft. tall, spreading 20-30 ft. wide. Mature trees can develop long spreading branches and stout trunks. Leaves are pale green above and covered with fine white to brown fuzz below. Large numbers of creamy-yellow flowers occur in mid spring followed by heavy crops of green olive-type fruit that mature to black by fall.

The olive is one of the most widely recognized trees around the world. It is one of 20 species in the genus *Olea*, and native to the Mediterranean region where it is adapted to many soil types, including calcareous, as well as sun, heat and summer drought. It has been cultivated for over two thousand years and has a rich and varied history as a plant of religious significance and oils since early civilization. It continues to be one of the most symbolic and characteristic garden plants in Mediterranean regions around the world. In California, the olive is grown extensively in valley areas for its fruit and oil. Additionally, it is one of the most popular ornamental trees that is planted in coastal, inland, valley and desert regions where it is often used as a specimen plant in courtyards, raised planters and along entry drives.



Established plants do well with low amounts of supplemental water; young plants grow more quickly if watered regularly. Mature trees develop picturesque branches and large gnarled trunks that flair out at the base, requiring sufficient growth space. They tolerate heavy pruning to manage size and are sometimes clipped into formal and large scale topiary shapes. Old fruiting orchard trees have been transplanted over the years into landscape and gardens to become instant specimen plants.

Olives pose several challenges when planted in ornamental landscapes. Pollen from flowers is highly allergenic to many people. Large quantities of fruit ripen and fall each year and can stain pavement. Numerous suckers grow from the base of the trunk and root system, eventually becoming large and extensive. These issues can be addressed through good planning and maintenance, and the planting of low flowering and non-fruiting cultivars that produce far less pollen and fruit.” (B. Perry 2010)

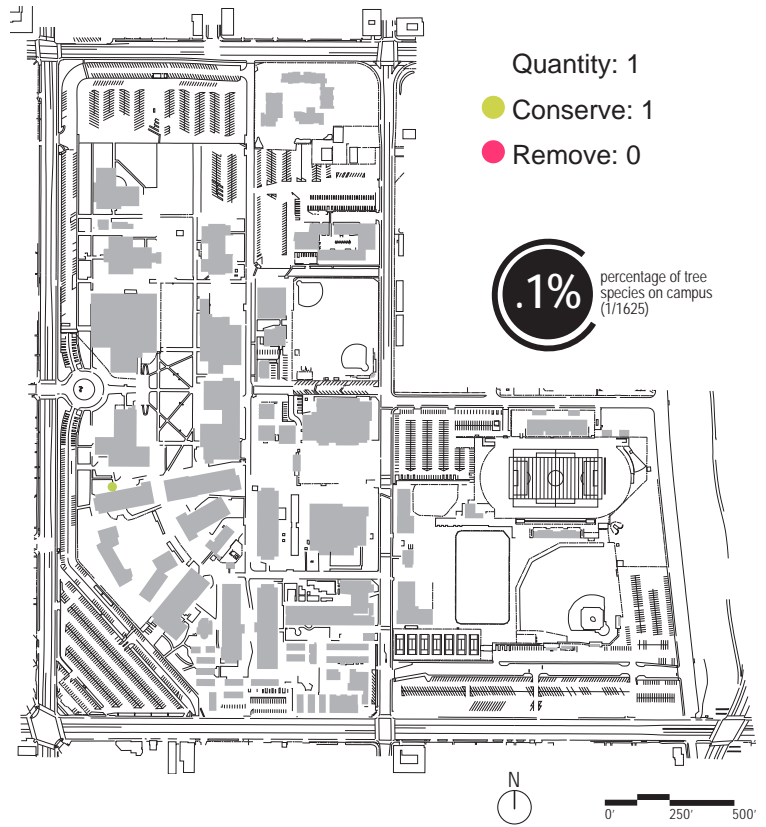




# *Picea pungens*

## Colorado Spruce

“Native to Rocky Mountain region. In gardens, reaches 30-60 ft. tall, 10-20 ft. wide; in the wild, grows to a possible 100 ft. tall, 25-35 ft. wide. Very stiff, regular, horizontal branches form a broad pyramid. Foliage of seedlings varies in color from dark green though all shades of blue green to steely blue. Poor choice for Puget Sound region, where lack of winter cold leads to severe aphid infestations. Though out its range, subject to an aphid that forms galls. Prefers dry soil.” (Sunset, 2007)





# *Pinus canariensis*

## Canary Island Pine

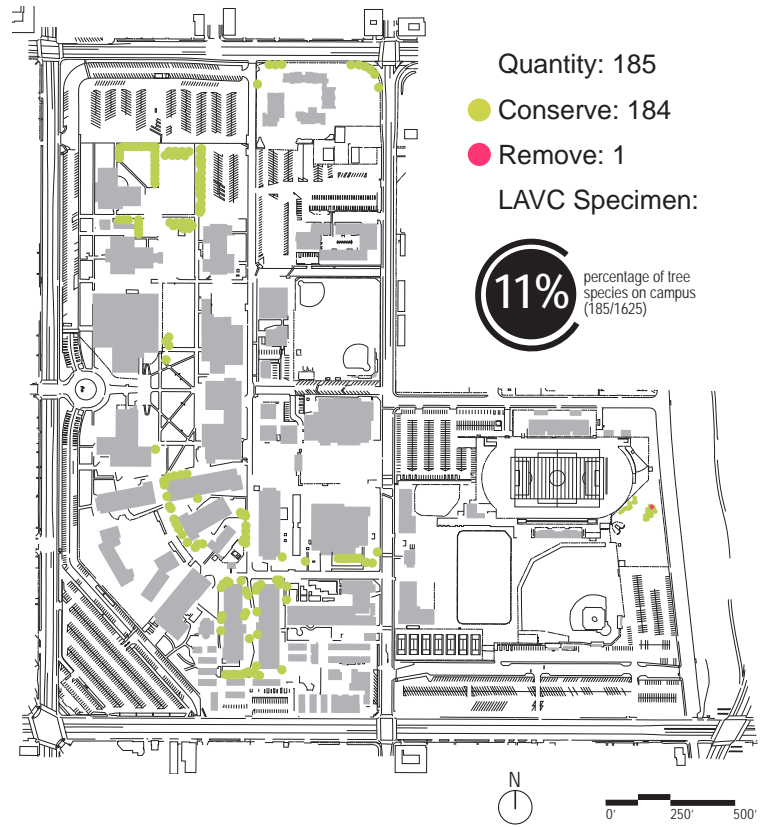


General Species Observation by Arborist: Nearly universally recommended for conservation. Species possess excellent long-term viability in nearly all circumstances.

“A tall growing tree with a distinctive upright habit. This is a fast growing species, quickly reaching 40-60 ft. tall and can mature to 100 ft. and more. Branches are grouped in whorls around the central trunk creating a formal and symmetrical appearance. Deep green needles grow 9-14 in. long and occur in bundles of three.

This pine is native to the rocky slopes of the Canary Islands, between 2,000 and 8,000 ft. in elevation. Annual rainfall can be as little as 10 inches, however, coastal clouds bring fog and mist that reduce summer temperatures and moisture stress. Soils are neutral to slightly acidic.

Canary Island pine is a highly adaptable tree. It widely planted in coastal, inland and valley areas throughout California. It is naturally adapted to well-drained soils with moderate to low amounts of moisture. However, it is also commonly planted in turf grass where regular irrigation enables it to grow more quickly and to larger sizes. Young trees are tall, narrow and can have a sparse open appearance; mature trees become dense and larger in circumfer-



ence. It grows with variable success in low desert regions where regular water is needed.

Canary Island pine is commonly used as a vertical accent tree for tall buildings and in spaces that cannot accommodate broad canopy trees. It is well suited to parks, medians, street tree plantings and large public spaces that can accommodate its mature size.” (B. Perry 2010)





# Pinus halepensis

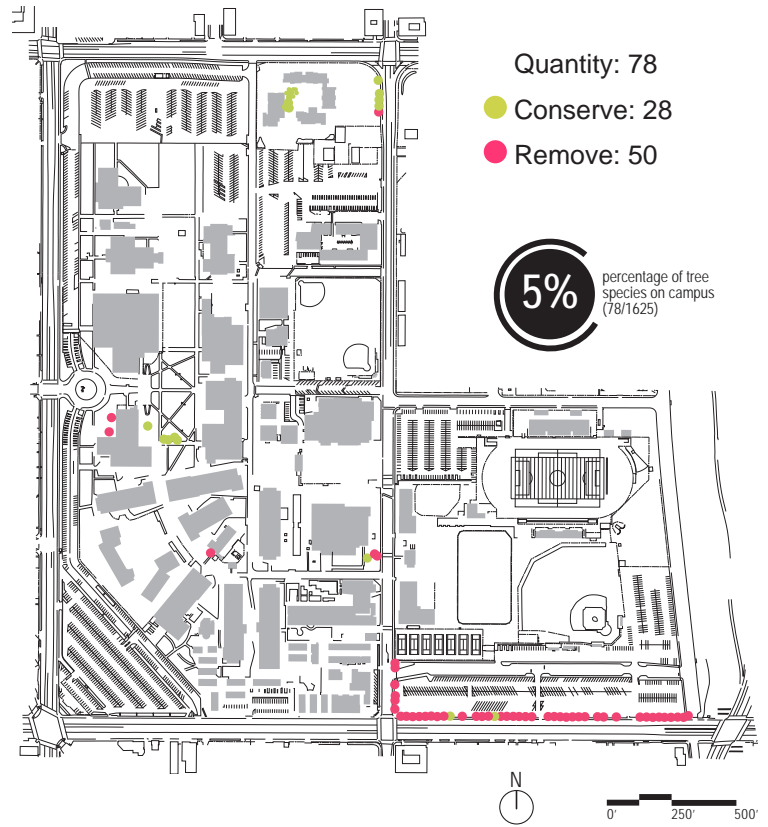
## Aleppo Pine

General Species Observation by Arborist: The largest concentrated planting of this pine is along the Burbank Boulevard frontage to the south of the parking facility and tennis court construction project. The vast majority of the individual trees therein are recommended for removal based upon the presence of severe defects that create hazards for catastrophic failure, line clearance pruning methodologies as a result of their locations underneath the DWP overhead utility lines, and encroachment into their root zones as a result of the tennis court development project. The size of these trees makes the nature of the defects extremely serious in nature.

“A fast growing tree with an irregular branching habit, reaching 30-60 ft. tall and 20-40 ft. wide. Light green needles occur in bundles of 2 and grow 2-4 in. long. Young plants have very flexible and wispy branches and tend to lean or be influenced by wind; mature plants develop a strong trunk and rounded crown.

Aleppo pine is a hard pine species native to coastal and inland foothills throughout the Mediterranean region where it grows in soils that vary from sandy and slightly acidic to calcareous. Throughout this range the climate is similar to southern California where winter rainfall varies between 10-20 in. with long periods of summer drought.

This species has been widely used for many years in landscapes throughout California, from coastal and inland zones to communities situated in high, moderate and low deserts. It shows a wide tolerance for heat, wind, aridity



and poor soils with average drainage; it is one of the most adaptable types for warm climate regions. This is a highly variable species in terms of its growth habit where it can be seen in the landscape as an upright, broad or spreading tree. It is often used as a large background screen, as a roadside tree and in rural areas where it tolerates neglect. It grows best in full sun, in well-drained soils and with low amounts of supplemental summer water. Mature Aleppo pines achieve monumental sizes and are quite handsome in parks and open spaces.” (B. Perry 2010)

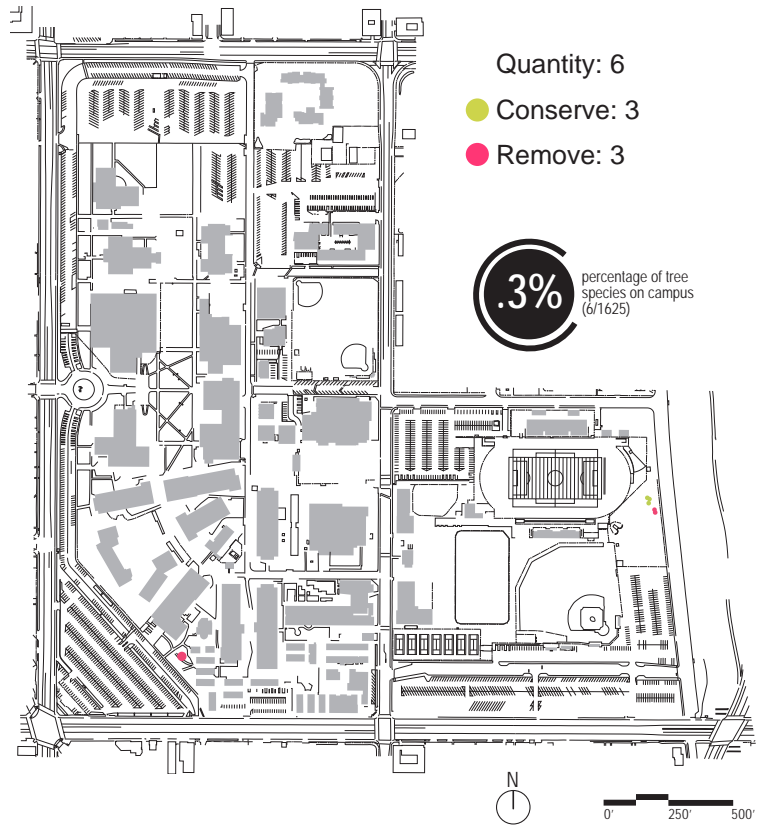


# *Pinus pinea*

## Italian Stone Pine

“A large soft pine species that develops a round dome shape when young and eventually a tall broad crown as it matures. Specimens in California commonly grow 40-50 ft. tall; older trees reach 80 ft. and taller, with 40-50 ft. wide canopies. Dark green needles are 5-8 in. long, occur in bundles of 2 and persist for 2-4 years. Cones grow to 4-6 in. in size and are rounded to broadly oval in shape. Thick heavily fissured red-brown bark is common on older plants. The Italian stone pine is native to coastal habitats of the Mediterranean region where it shows a preference for sandy, well-drained and slightly acid soils. Annual rainfall throughout this range varies from 15-30 in., with long dry summers. In California it has proven to adapt to many climates and soil types, including conditions found in intermediate and low desert communities. It grows quicker with regular water, although can grow well in areas where it receives only low amounts of supplemental water in the summer.

This species is a popular choice for large landscape spaces in coastal, inland and valley areas across the state. In warm valley areas, it reaches monumental sizes when planted in deep soils and given regular water. Mature trees are among the most massive and striking landscape features in many communities. Plant in sunny locations, on well draining soils and with ample space for both roots and canopy.” (B. Perry 2010)





# *Pinus thunbergii*

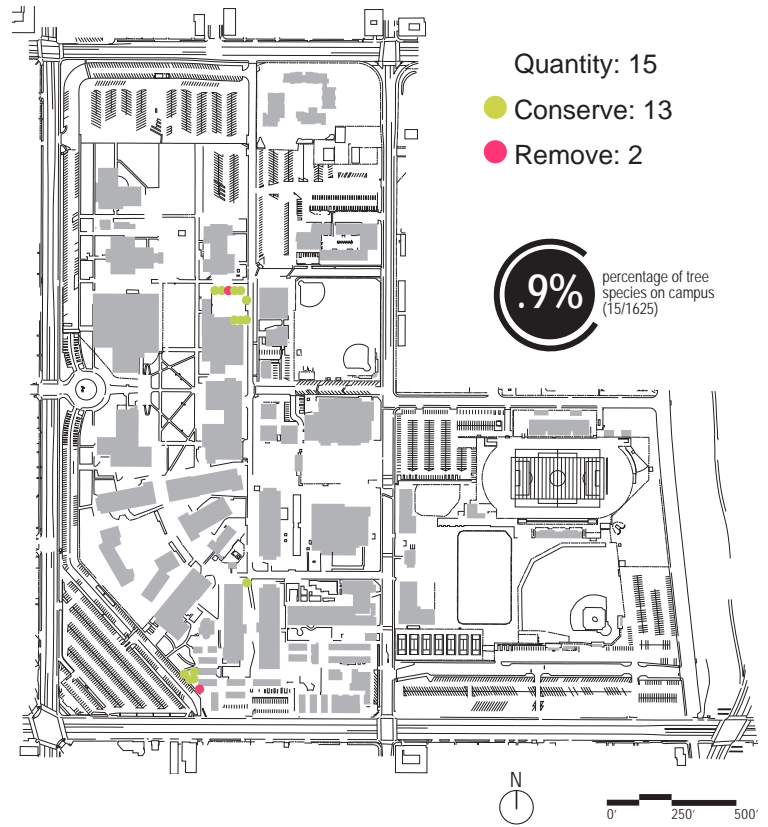
## Japanese Black Pine

General Species Observation by Arborist: Generally recommended for conservation. Spider mite infestation within many of the individual specimens requires treatment.

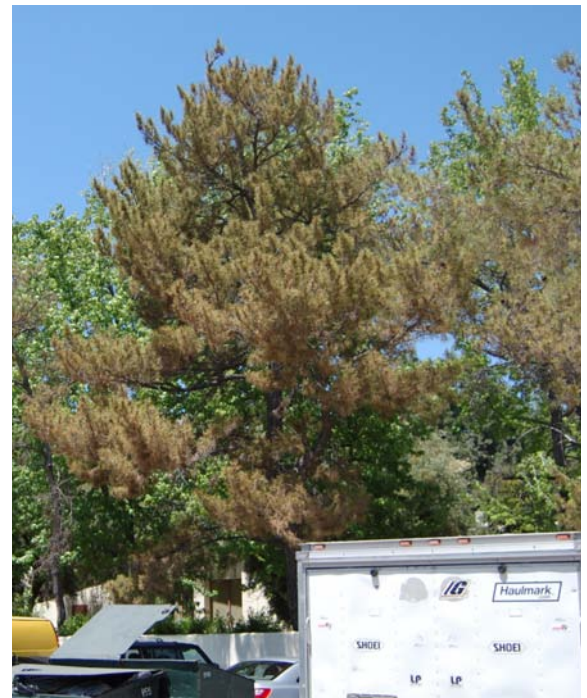
“A dense coniferous tree with stiff dark green needles, growing with a broadly conical form to varying sizes depending upon climate and soil conditions. Plants growing in cool climate zones, with regular moisture and rich soils can quickly reach 60-80 ft. tall and more; trees grown in warmer and drier climates grow slower to 40-50 ft. tall. Needles are grouped in fascicles of 2 grow 4-5 in. long and persist 3-4 years; new candle growth is white and quite attractive. Small cones are 2-4 in. long and occur in large numbers.

Japanese black pine is a hard pine species that is native to temperate climate zones in Japan and South Korea, where it is the dominant pine in coastal forests to inland areas at 5,000 ft. in elevation. It has great symbolic value in Japan where it is extensively used in gardens. It is highly adapted to regular moisture in rich and fast draining soils.

In California, the Japanese black pine has proven to grow well in most climate zones, including intermediate deserts. It naturally grows best in northern California and at higher elevations with more rainfall and cool winters. However, it is a popular tree throughout the state and is grown in



many garden settings where it is often pruned into sculptural shapes for accent value. This is a robust tree that can grow to large sizes when it is not pruned, and can become a handsome specimen tree and a good forest tree in larger plantings. Avoid hot and sunny exposures in warmer climate zones and provide regular water.” (B. Perry 2010)





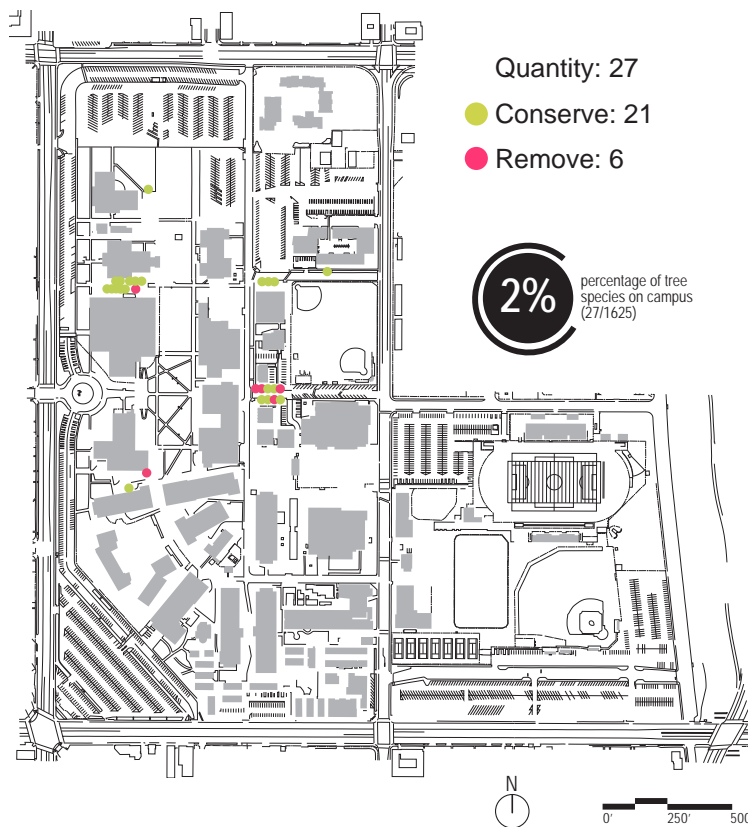
## *Pistacia chinensis*

### Chinese Pistache

General Species Observation by Arborist: Generally recommended for conservation. Individual specimens with defects (decay) are recommended for removal.

“A medium size deciduous species tree with a round dome habit and typically growing 25-35 ft. tall and as wide. Some older specimens can reach up to 50-60 ft. tall. Medium green foliage is comprised of pinnately divided leaves with 6-7 pairs of 2-2 1/2 in. long leaflets. Leaves turn bright orange-red and yellow in fall for a very showy display. A dioecious species that produces loose panicles of inconspicuous small flowers; female flowers can develop showy dark red berries that are visible after leaves fall.

Chinese pistache is native to cool and moist climate zones of central and western China where it grows in mixed forest communities. In California landscapes and gardens, it has shown great adaptability to a wide range of soil conditions and readily adapts to inland, valley and desert climates with regular moisture. It is widely planted as a shade tree in lawns, as a street and parking lot tree and in park landscapes.” (B. Perry 2010)



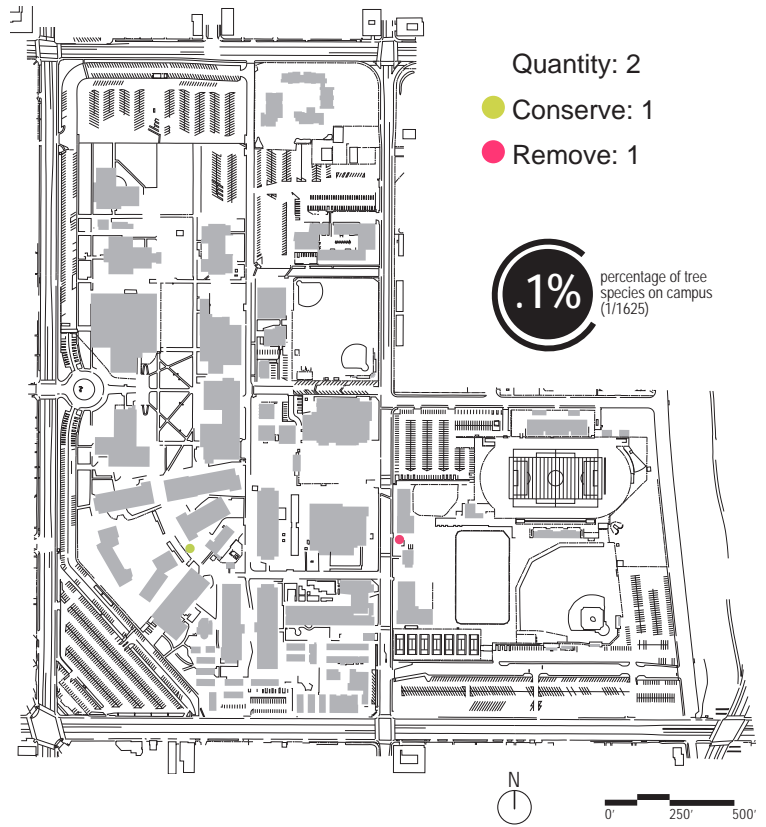


# *Pittosporum rhombifolium*

## Queensland Pittosporum

“A small to medium size tree that grows with a dense and bushy habit, and has a slow to moderate rate, to 20-35 ft. tall, spreading to 25 ft. wide. Foliage is comprised of bright green diamond-shaped leaves, 3-4 in. long, having toothed margins and glossy surfaces. Noticeable clusters of white flowers occur in fall, followed by clusters of colorful orange berries that mature throughout fall and persist into winter. This species comes from rainforest and woodland associations mostly near the coast of northeastern Australia where it grows best in moist conditions, on well-drained and organic soils and in sun to part shade. For many years *Queensland pittosporum* has been used as a small scale patio, plaza and street tree throughout coastal and adjacent inland areas of California. However, the abundance of sticky berries led to problems in paved areas and many street plantings never developed good character or consistent form. Trees planted in good soils and with regular irrigation do best.

*Queensland pittosporum* is recommended to provide diversity and accent character on slopes, in parks and greenbelt plantings, where it can provide color and screening value. Plant in full sun, in areas that are irrigated on a regular basis and where leaves and berries can fall into the understory.” (B. Perry 2010)



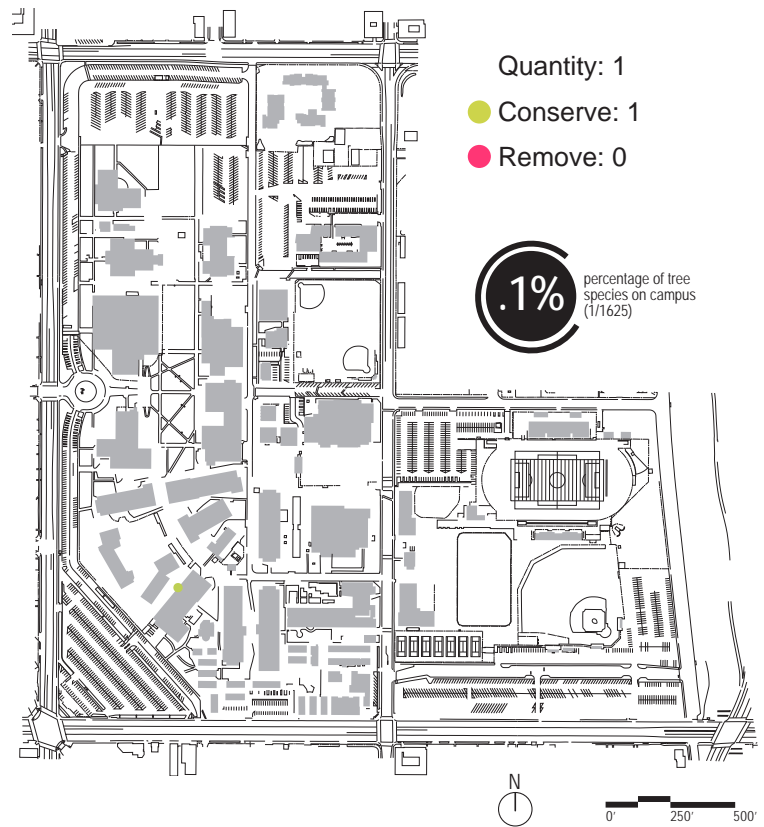


## *Pittosporum undulatum*

### Victorian Box

“A robust species with a fast growing rate that matures into a large shrub or medium size tree, reaching heights of 25-40 ft. and 25-30 ft. wide. Foliage is comprised of 4-6 in. long dark green leaves that have undulating margins. Clusters of highly fragrant white to cream colored flowers occur in early spring that provide a strong garden impact. Large numbers of conspicuous round fruit mature in late spring; some are orange while others are yellowish.

Victorian box is native to eastern Australia where it grows in a variety of habitats, including rainforests, woodlands and wet and dry sclerophyll forests with a distinct preference for acid soil conditions. It has been a popular plant in California landscapes and gardens since the 1850s, where it shows the strongest range of adaptability to mild coastal and adjacent inland climate zones. It can be grown in cooler interior and valley climate zones in protected microclimate locations. It grows fastest and to larger sizes with regular moisture and in sunny to part-shade conditions. However, it has been a popular slope, screen and highway plant that tolerates neglect and inconsistent irrigation. Victorian box is a lush foliage plant. It has long been appreciated as a large scale screen plant in perimeter landscape areas where it can be left to grow naturally or be clipped and maintained as a formal hedge. As plants mature they can be pruned into a low branching tree with a dense canopy. Many large specimens seen in landscapes today were originally planted as screens that have become trees.” (B. Perry 2010)





# *Platanus acerifolia*

## London Plane Tree

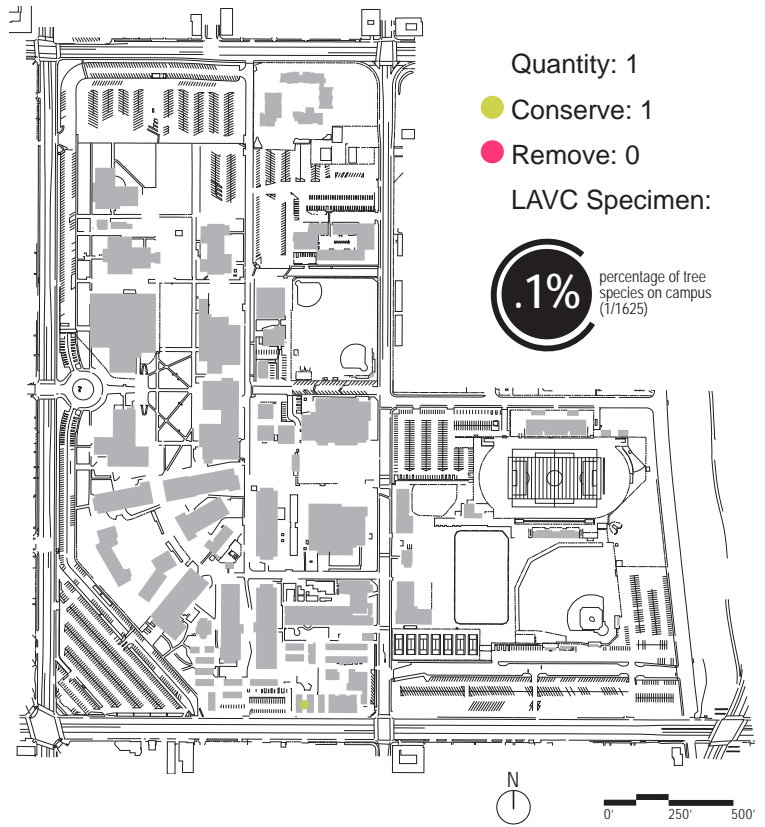


General Species Observation by  
Arborist: Recommended for conservation.

“A large deciduous tree growing with a uniform branching structure; 40-80 ft. tall, 30-40 ft. wide. Papery leaves are palmately lobed; new growth is medium green and covered with fine stellate hairs that can cause irritation to the skin. Bark on older trees flakes off to reveal patches of olive-green, gray and cream beneath.

London plane tree comes from the 17th century hybridization of *Platanus orientalis*, Oriental sycamore and *Platanus occidentalis*, American sycamore. It grows with great uniformity and shows high tolerance to urban conditions. It is one of the most commonly planted trees in urban areas around the world where it is used in formal plantings along boulevards, in plazas and parks. Many trees are maintained through a pruning technique called pollarding that produces a lower canopy and branching structure.

London plane tree is best adapted to cool and moist winters with warm summers, sunny exposures and regular moisture.” (B. Perry 2010)





## *Platanus racemosa*

### California (Western) Sycamore

General Species Observation by Arborist: Recommended for conservation.

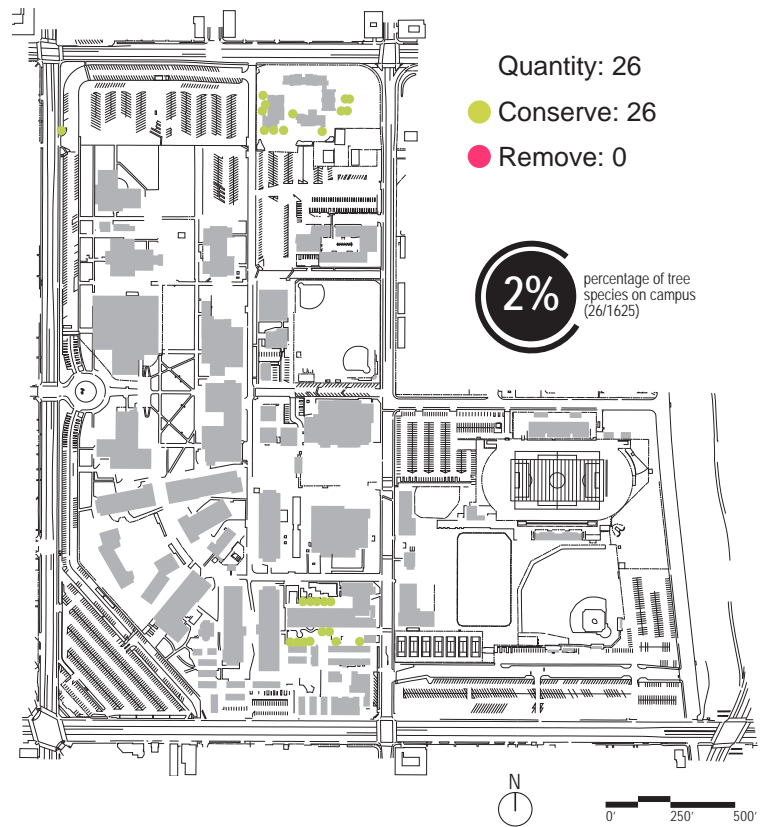
“A large majestic tree, growing with a twisting trunk and branch habit, 40-80 ft. tall, 30-50 ft. wide. Foliage is comprised of large flattened leaves with deeply cut lobes resembling the shape of a hand. Leaves turn pale brown and orange by the end of summer. Bark peels and flakes off to reveal interesting mottled colors of white, tan and cream beneath.

Western sycamore grows in riparian habitats throughout the coastal ranges, from the San Francisco bay area, south into Baja California, as well as within the southern portions of the Sierra Nevada foothills below 6,500 ft. elevation.

Throughout this range it often develops into one of the most identifiable and majestic native trees within riparian and oak woodland plant communities. It is widely adaptable and survives with varying amounts of moisture; plants that develop in drier areas are typically smaller in size.

To many people, the western sycamore is a signature species of California landscapes and gardens. Young plants develop angular branching character; older specimens can attain a unique and sculptural stature. The best growth from this species occurs with generous amounts of winter moisture and when planted on alluvial and well-drained soils. It performs well in coastal, inland and valley landscapes throughout most of the state, however, it struggles in deserts regions.

Old specimens of western sycamore are often celebrated as landmark trees due to their size and character. Sometimes several trees are planted together to form a multi-trunk landscape feature. Like other species of *Platanus*, western sycamore generates a large volume of leaf litter that can completely cover understory plantings.” (B. Perry 2010)





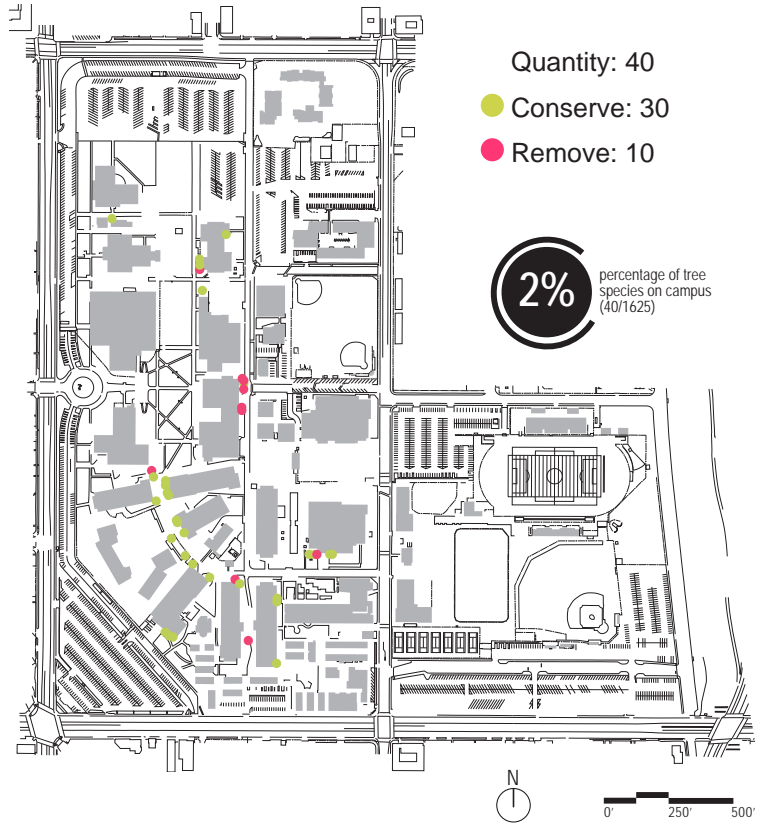
# Podocarpus gracilior

## Yew Pine

General Species Observation by Arborist: Generally recommended for conservation. It is considered to possess long-term viability as a result of its general structural integrity and lack of pests. A small number of individual specimens are recommended for removal based upon the presence of substantial defects within the root collars and / or branch structures.

“An evergreen tree growing with an upright habit, 25-50 ft. tall, 15-20 ft. wide. Linear dark green leaves, 1/2 in. wide, 3-4 in. long, grow in a whorl-like manner along branches. Yew pine is highly adaptable to many planting conditions and is widely grown throughout California in coastal, valley and low desert zones. It is native to temperate climate zones of China and Japan, and is naturally suited to areas with cool and moist winters and warm summers. It does best in well-drained loam soils with regular moisture, and in sunny or semi-shaded exposures.

When planted in the lawn, yew pine becomes a tall tree with outward growing branches, provided a coniferous appearance. It can be clipped into tall and narrow shapes for formal uses along colonnades and for tall perimeter screens.” (B. Perry 2010)

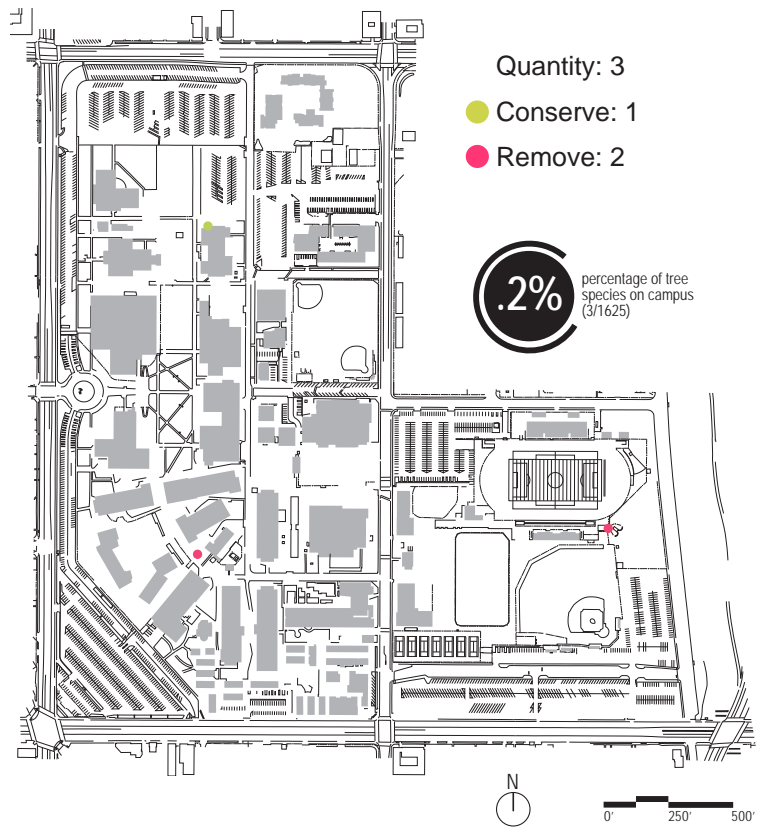




## *Prunus caroliniana*

### Carolina Laurel Cherry

“A large evergreen shrub to medium tree growing quickly to 15-20 ft. tall, eventually reaching 35 ft. in height. Foliage is comprised of glossy deep green leaves, 2-4 in. long that grow in opposite pairs on slender stems. Large brush-like clusters of creamy-white flowers are colorful during late winter and early spring. Large purple-black berries mature mostly in summer, are inedible and stain pavement. Carolina laurel cherry comes from cool and moist climates from North Carolina to Texas where it grows as an understory plant in woodlands and scrublands. It is a highly adaptable species that grows in coastal, inland and valley zones across California, including desert regions, as a large hedge or shade tree. Young plants grow with regular water; established plants can tolerate short periods of moisture stress. This species is often planted as a foundation plant or background shrub where it can eventually grow into a dense canopy tree. It is available as a standard tree and used in lawns and for street tree planting.” (B. Perry 2010)





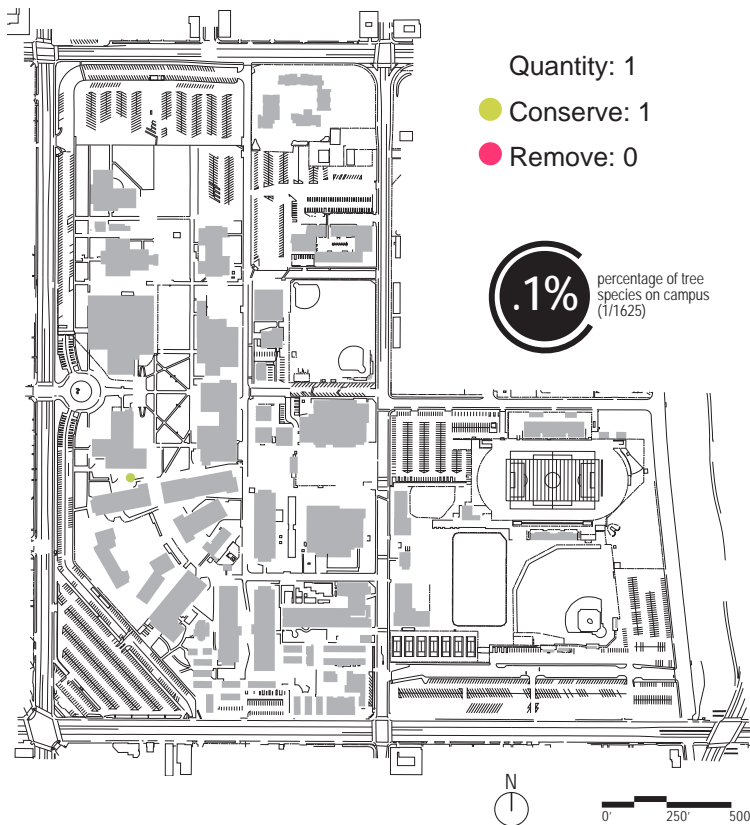
## *Prunus cerasifera* 'Krauter Vesuvius'

### Purple Leaf Plum

"A deciduous tree of hybrid origin from Eurasia growing 25-30 ft. tall and as wide. Leaves have finely serrated margins and are predominantly medium to dark green; white flowers cover the tree in early spring and are highly showy. Small fruit, 7/8 in. to 1 1/3 in. in diameter vary in color from green to red and purple.

While the exact origin and parentage of purple leaf plum is uncertain, it has become the source of more than a dozen purple foliage cultivars that use this plant as a rootstock. Several cultivars have been selected and developed in California that produce variations in fruit and show different adaptations to climate conditions across the state. All types do best in loamy soils with regular moisture where they quickly develop and provide rich color contrast to other landscape plants.

*P. c.* 'Krauter Vesuvius' has single light pink flowers and almost purple-black foliage that is the darkest color of all flowering plums. This is a seedling selection discovered in Bakersfield that shows greater tolerance of heat and drought conditions, and has been widely planted throughout the southwest. It is a smaller tree, growing 18-20 ft. tall, 12-15 ft. wide." (B. Perry 2010)





# *Pyrus calleryana*

## Flowering Pear

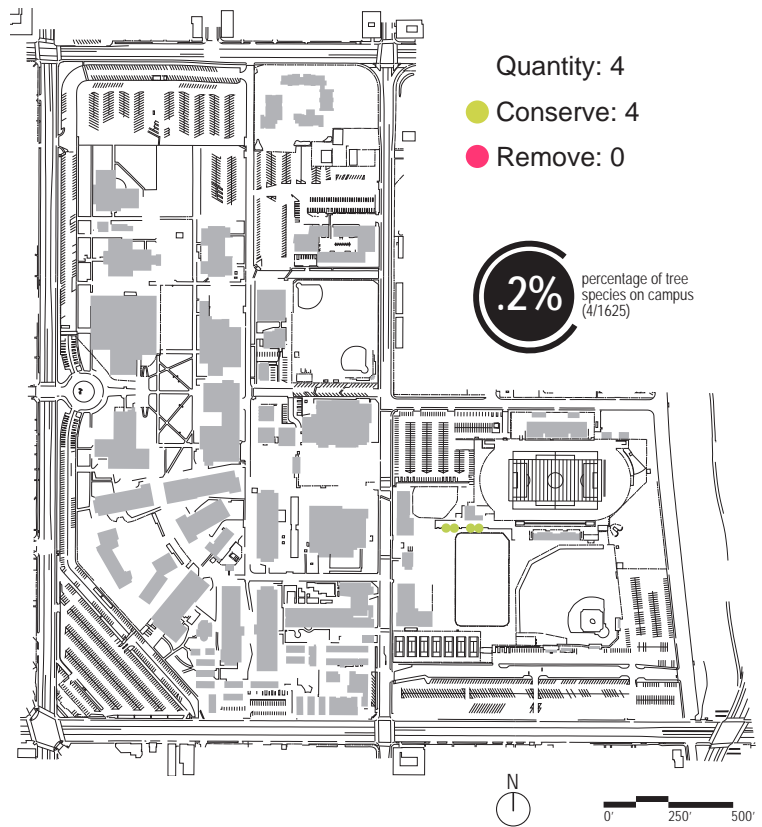
General Species Observation by Arborist: Removal and / or conservation / long-term removal recommended. Majority of individual specimens exhibit symptoms associated with fireblight and are recommended for removal. Those that do not exhibit the symptoms associated with fireblight should be expected to become exposed to the disease as they mature further over time requiring eventual removal.

“A robust and deciduous tree with an upright and symmetrical branching habit and spiny stems, 35-50 ft. tall, 30-40 ft. wide.

Glossy dark green foliage produces dense summer shade and turns colorful bright red to maroon in fall. Leaves grow to 3 in. long and have finely serrated margins.

Callery pear is native to China, Taiwan, Vietnam and Japan, and was introduced into the United States in the early 1900s. Following its introduction, it was widely grown in many eastern and southeastern states where a number of seedling cultivars were selected over the years that provide variations in size, habit and fall color. It is best suited to temperate climate conditions with cool and moist winters, including snow, and highly adaptable to summer heat when provided with regular moisture. It shows good tolerance to air pollution, poor drainage and compacted soils in urban environments.

Callery pear and several cultivars are commonly grown throughout California except in desert and mild coastal areas of southern California. It is frequently planted in lawns,



parks and greenbelts, and is a popular street and parking lot tree. It becomes covered in bright white flowers in spring and produces rich purple-red to bright red fall color following cold nighttime temperatures. It is considered to be less susceptible to fireblight than *P. kawakamii*, however, most trees are still afflicted to some degree. Branch angles on this tree and several cultivars are quite narrow and subject to wind failure as trees become older.” (B. Perry 2010)





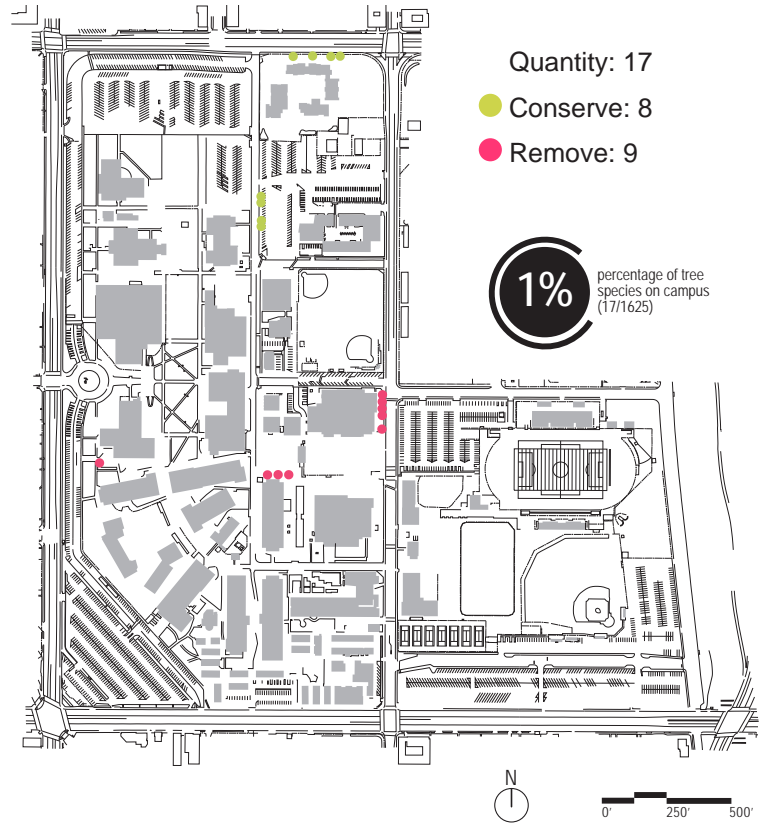
# *Pyrus kawakamii*

## Evergreen Pear

General Species Observation by Arborist: Removal and / or conservation / long-term removal recommended. Majority of individual specimens exhibit symptoms associated with fireblight and are recommended for removal. Those that do not exhibit the symptoms associated with fireblight should be expected to become exposed to the disease as they mature further over time requiring eventual removal.

“A medium size deciduous tree developing a dome-shaped habit and growing 20-30 ft. tall and as wide. Oval leaves with a pointed apex grow 2-4 in. long, have glossy surfaces, emerge bright green and darken to deep green with age. Clusters of pure white flowers cover the tree in mid to later winter often while the tree is briefly deciduous.

Evergreen pear has been a highly popular flowering canopy tree widely planted in California in both residential and commercial landscape and gardens. It is commonly planted as a flowering accent tree in lawns, courtyards and entries, and is sometimes espaliered to grow along walls. Endemic to Taiwan, it is almost evergreen in mild coastal climate zones with new growth occurring as last years leaves drop. It is best suited to areas with cool and moist winters and regular moisture throughout the year. It shows good tolerance of sun, heat and many soil types, making it adaptable



to a wide range of planting situations. Over the years it has proven to be highly susceptible to fireblight which has led to loss and disfigurement of many trees. This is cause for caution when deciding to plant evergreen pear in new landscapes.” (B. Perry 2010)





# Quercus agrifolia

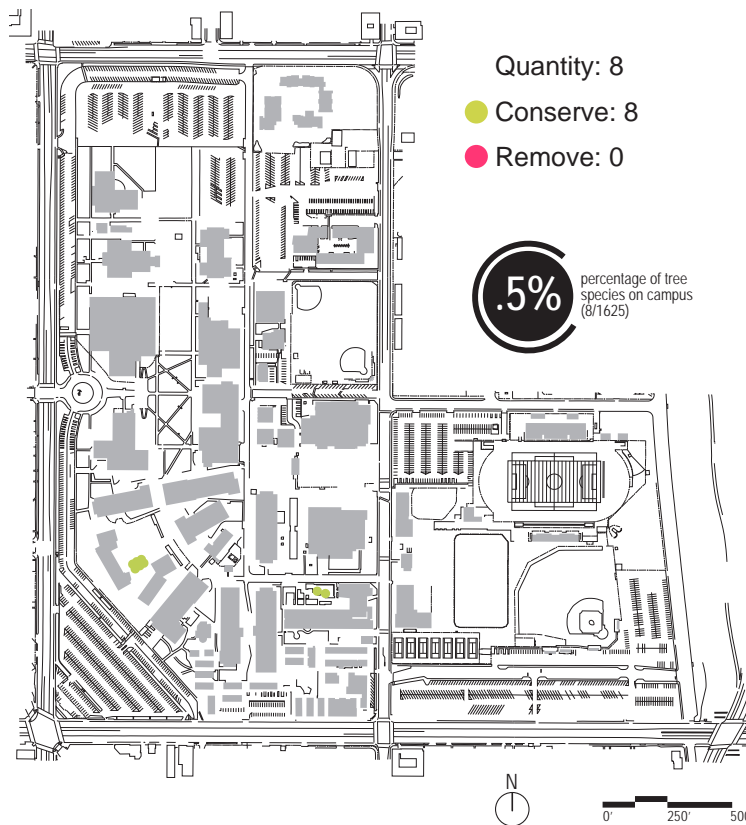
## Coast Live Oak

General Species Observation by Arborist: Generally recommended for conservation including both mature and immature specimens.

“A medium to large tree with a moderate growth rate, 30-60 ft. tall with a spreading habit 40-70 ft. wide. Leaves are dark green, grown in 1-3 1/2 in. long, cupped in shape and have spiny margins; acorns are narrow and grow 1-2 in. long.

Coast live oak is native throughout the coastal mountain ranges from Mendocino County to Baja California. It grows on foothill slopes and in valleys from sea level to 5,000 ft. in elevation, in mixed evergreen forests and oak woodland plant communities. In drier locations, it is commonly found adjacent to seasonal streams and in the broadleaf chaparral plant community. In recent years it has suffered extensive losses in northern and central California due to pathogens causing sudden oak death.

Coast live oak is one of the most widely known and planted California native trees. It has proven to be highly adaptable to ornamental landscapes and grows relatively quick when planted in well-drained soils with low to moderate amounts of supplemental water. It combines well with many native species as well as plants from Mediterranean climate regions, and has the potential to become a monumental



scale spindel over time. It needs ample space to mature and works well in large scale settings such as parks, open spaces and for re-vegetation plantings. It has historically been planted as a street tree where it provides a bold canopy and dense shade when mature.” (B. Perry 2010)





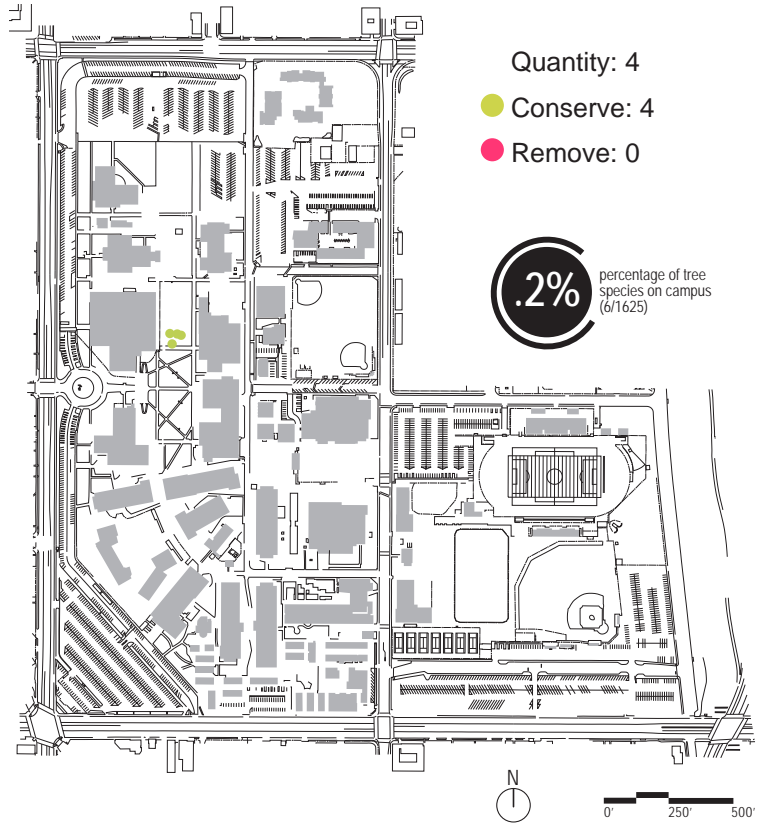
# Quercus ilex

## Holly Oak

General Species Observation by Arborist: Generally recommended for conservation including both mature and immature specimens.

“A large evergreen tree growing 30-60 ft. tall and as wide with a dense foliage habit comprised of leathery leaves that are dull green above, white below and have intermittent spines on the margins. Pointed acorns are round, 1 in. long with the base often covering half the nut. Young trees develop an upright habit for the first 15-20 years before broadening into a rounded shape.

Holly oak comes from the Mediterranean region to the western Himalayas where heat, cold and seasonal drought are common. It is a highly adaptable species that grows equally well on calcareous and slightly acidic soils. Throughout its natural range, it is a member of the oak woodland and maquis plant associations which are similar to California’s woodland and chaparral habitats. Since its introduction to California around 1858, holly oak has become a widely planted tree in ornamental landscapes and gardens. It shows greater tolerance to heat and aridity than native oak species, and is grown in coastal, inland, valley and desert areas. It grows well with regular water when planted lawns and is a popular choice for parks, open space plantings and as a street tree.” (B. Perry 2010)





# Quercus lobata

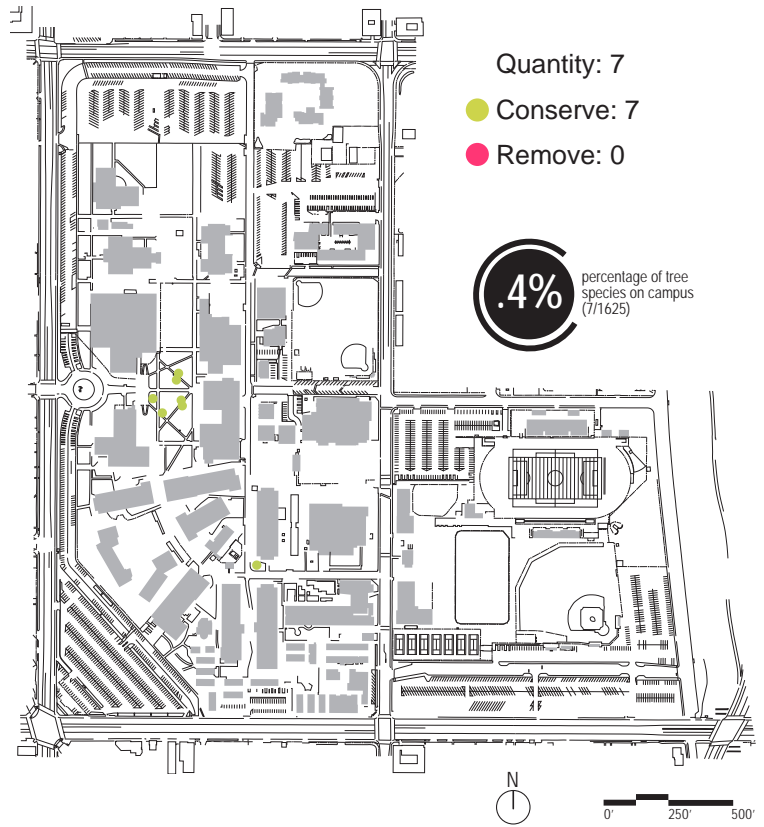
## Valley Oak

General Species Observation by Arborist: Generally recommended for conservation including both mature and immature specimens.

“A large deciduous tree with a moderate to fast growth rate, 50-70 ft. tall and as wide. Leaves are dark green above, lighter below and deeply lobed; acorns range from 1-2 in. long and are held by a hard rough base. Trunks and branches become massive in size and are covered by heavily fissured bark.

Valley oak grows across the entire length of California from the north coast ranges throughout the central valley, Sierra Nevada foothills and across southern California to Baja California. It also grows on Santa Cruz and Santa Catalina Islands. It is highly adapted to Mediterranean climate conditions with wet winters and dry summers, and grows to its largest sizes in deep valley soils with access to ground water. Throughout this range it is often the dominant tree species in grassland and woodland communities.

Valley oak has experienced a long history of disturbance and loss in California due to grazing, agriculture and urbanization. The ongoing expansion and development of communities into areas populated by valley oaks continue to place trees at risk. This species shows high sensitivity to changes brought about by grading, soil compaction and summer irrigation. Conservation of existing trees is often best achieved by minimizing disturbance and preserving as



much area and natural habitat conditions as possible. Valley oak is a desirable landscape tree for use in parks, open spaces and greenbelts. It grows best in sunny exposures, loam soils and with good drainage conditions. It can be successfully established with moderate supplemental moisture for the first few years as trees become established; ultimately these trees will do well with reduced summer moisture.” (B. Perry 2010)



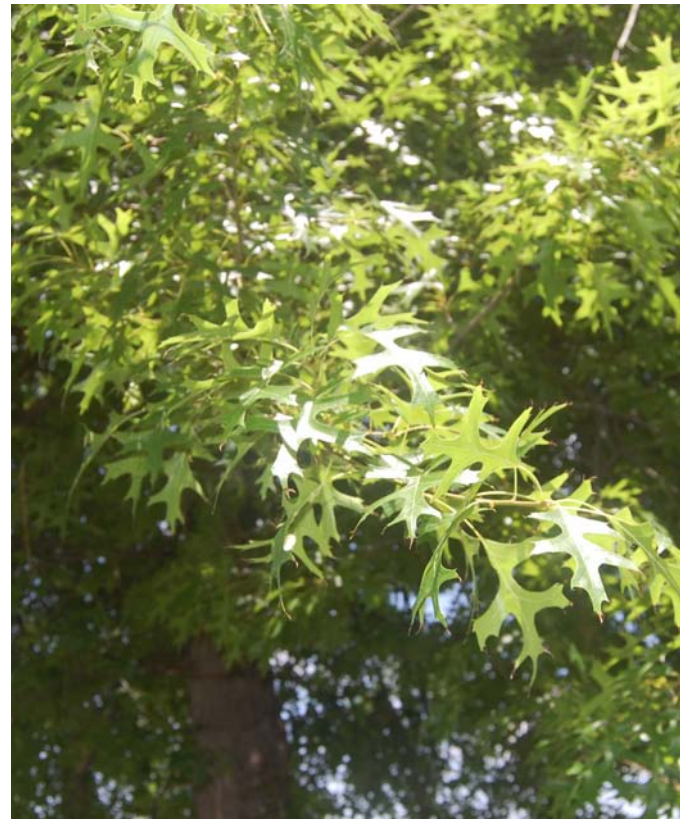
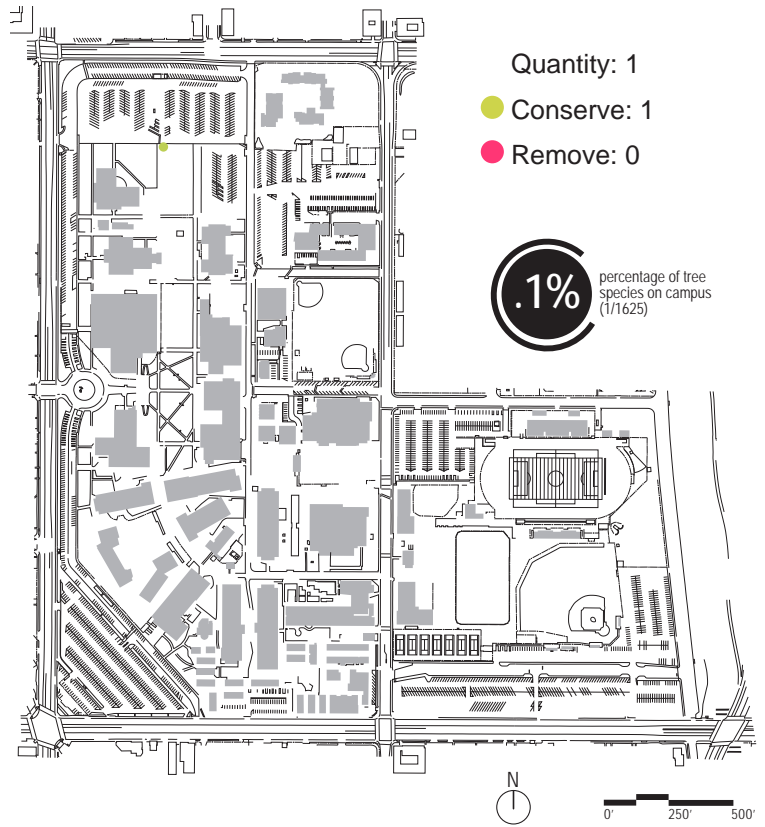


*Quercus sp.*

## Oak

General Species Observation by Arborist: Generally recommended for conservation including both mature and immature specimens.

“The genus *Quercus* includes both evergreen and deciduous trees and shrubs, including over 600 species that occur in many climate zones throughout the Northern Hemisphere. More than 70 species are native to the United States with 20 species growing naturally across California. Throughout this range, oaks have a long history of use for timber, construction and furniture as well as have been celebrated for their majestic character and size. Oaks are deeply associated with the identity of California due to the large expanses of oak grassland and oak woodland plant communities that occupy foothills and valleys across the state. In these communities they contribute to soil development, provide food and shelter for wildlife and are climax species in mature ecosystems. In addition to their natural benefits, mature oaks are among the most widely recognized and valued trees within ornamental landscape settings. In spite of this, many native trees have been lost or removed through grazing, agriculture and urban growth.” (B. Perry 2010)





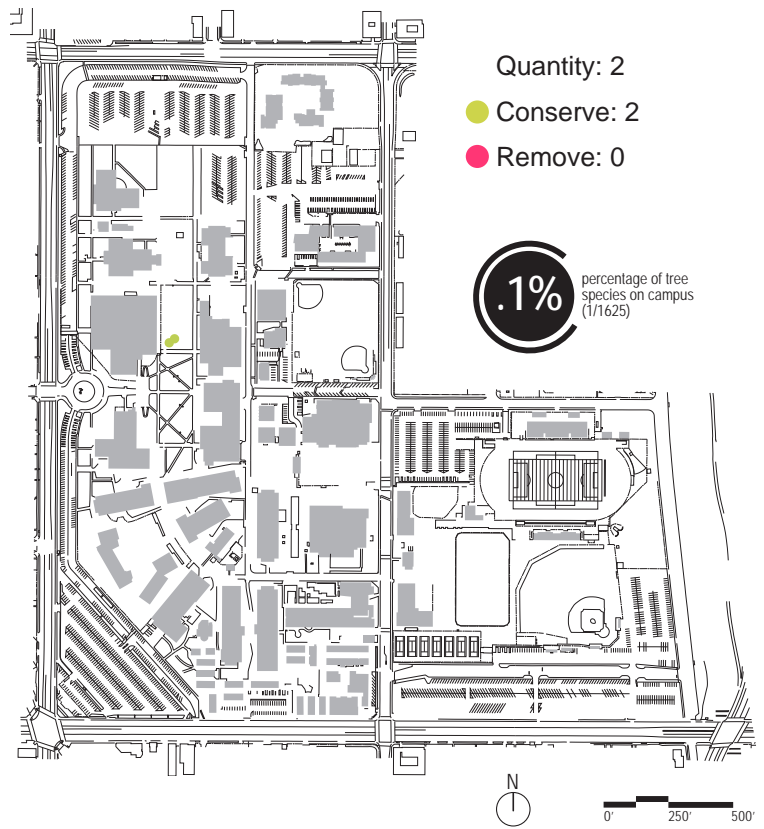
# Quercus suber

## Cork Oak

General Species Observation by Arborist: Generally recommended for conservation including both mature and immature specimens.

“A large evergreen tree slowly growing 30-60 ft. tall and 40-50 ft. wide. Pale green leathery leaves have heavily serrated margins and occasional spines; acorns grow to 1 1/4 in. long and are held by a heavily fringed base. Trunks and branches are covered by thick bark that is the source of cork for commercial uses.

Cork oak is native the western and central Mediterranean region and parts of north Africa where it is well adapted to heat, aridity and drought, and prefers rocky and slightly acidic soils. It was introduced into California in the mid 1800s and has been widely planted across the state in warm climate zones, including low and intermediate deserts, as a park, greenbelt and specimen tree. It thrives in deep well-drained soils with low amounts of summer water.” (B. Perry 2010)





*Quercus virginiana*

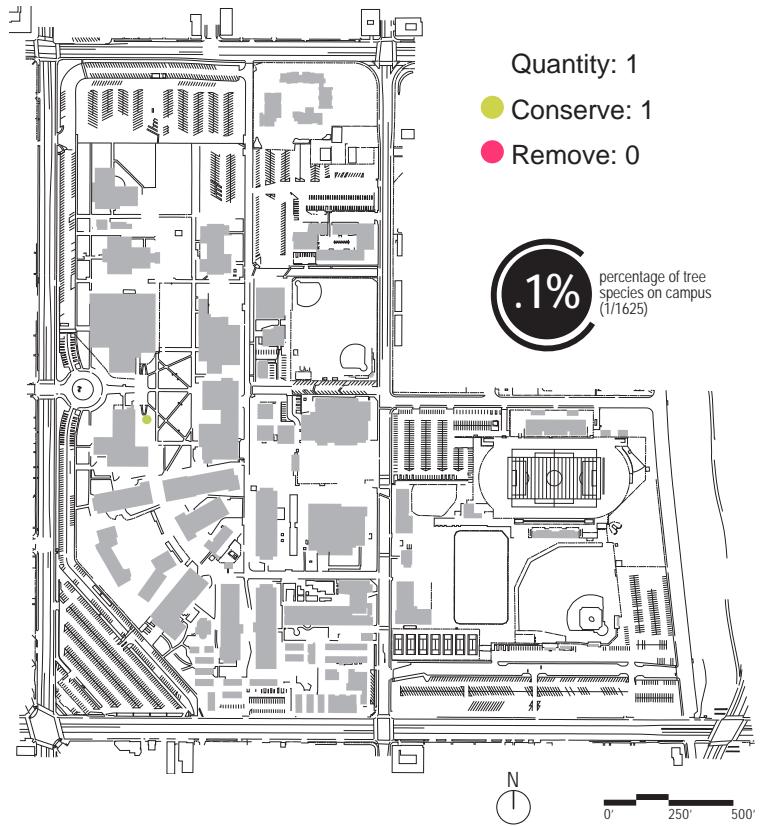
## Southern Live Oak

General Species Observation by Arborist: Generally recommended for conservation including both mature and immature specimens.

“A large evergreen to partially deciduous tree with a broad branching habit that can eventually grow 40-70 ft. tall and to 90 ft. wide. Foliage is comprised of narrow leaves with smooth margins, 2-5 in. long, dark green above and pale below. Acorns can reach 1 in. long with a strong spine at the tip.

Native to coastal plain habitats throughout the southeastern United States as well as eastern Mexico and Cuba, southern live oak grows on sandy soils and under humid climate conditions. Winter rainfall ranges from 25-40 in., summer droughts are common.

Southern live oak is a durable plant that is grown throughout California as a park and specimen tree in large spaces. In contrast to its native environment, it has proven to grow well as a lawn tree with regular moisture in low and intermediate deserts where it tolerates heat, aridity and wind.” (B. Perry 2010)



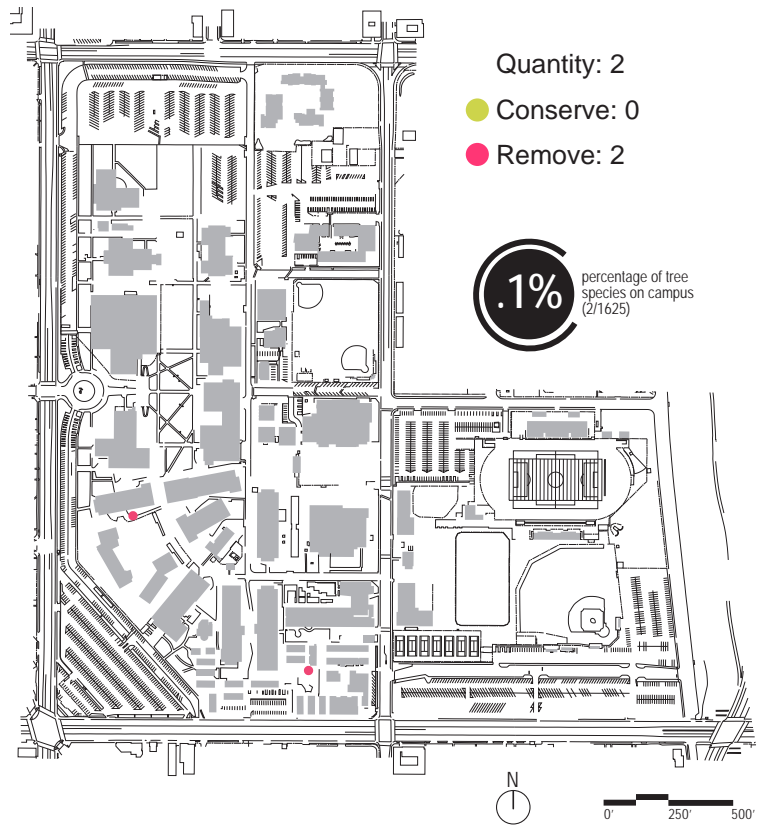


# *Robinia idahoensis*

## Idaho Locust

“A deciduous tree of hybrid origin between *R. pseudoacacia* and *R. viscosa* that grows with an upright habit, 30-35 ft. tall, 20-25ft. wide. Clusters of light pink flowers grow in early spring.

Two cultivars of this hybrid tree are most widely cultivated in California landscapes and gardens where they provide flower color and uniform growth habits. *R. x a.* ‘Idahoensis’, Idaho Locust, grows 30-40 ft. tall and has deep pink flowers in 4-5 in. long hanging panicles.” (B. Perry 2010)





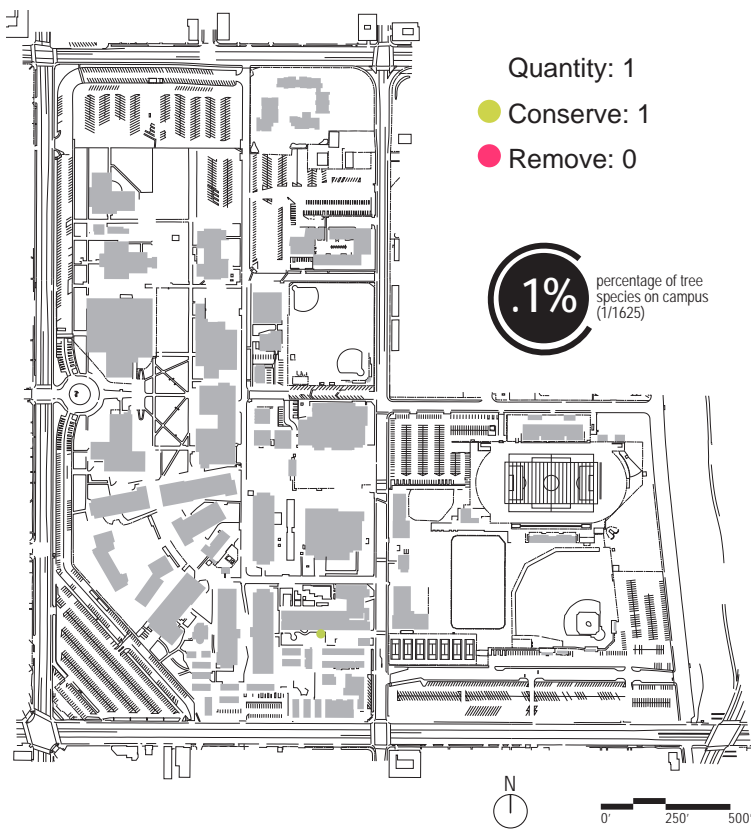
# *Sambucus nigra* 'Canadensis'

## Black Elderberry

"A mounding shrub to small tree growing 10-25 ft. tall with an equal spread. Foliage is comprised of medium green leaves that are pinnately divided into 7-9 leaflets. Large clusters of tiny creamy-yellow flowers occur in umbel-like heads in spring and summer; colorful black berries mature by fall and attract many birds. Berries can be cooked and used in jellies, pies and for wine making.

Black elderberry is native to parts of Europe, North Africa and Asia, with several subspecies occurring in North America. Several cultivars are grown in cooler and moister climate zones of northern California for their berries and ornamental character.

Several subspecies are native to western North America from British Columbia south to Baja California." (B. Perry 2010)

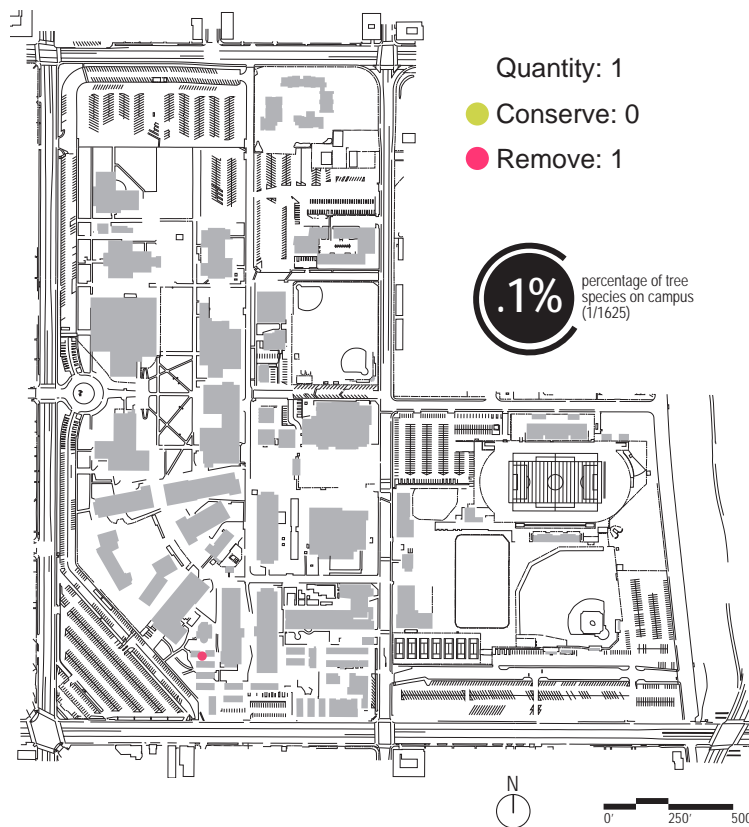




## *Schinus terebinthifolia*

### Brazilian Pepper Tree

“A large shrub to medium size evergreen tree, 20-30 ft. tall and as wide. Dense foliage is comprised of dark green leaves that are pinnately divided into many rounded leaflets with distinct parallel veins and a pungent odor when crushed. Large clusters of creamy-yellow flowers occur in late summer; showy red berries mature in fall and winter. This species is native to mild climate zones of South America, including Brazil, Argentina, Paraguay and Uruguay. It is more sensitive to cold than other pepper species and performs best in coastal and inland landscapes throughout California where temperatures stay above 25°F. It is planted in low desert regions where it can tolerate high temperatures and aridity if provided with regular moisture. Brazilian pepper is valued as a shade tree for use in parking lots, courtyards and raised planters in both residential and commercial spaces. Experience has shown it needs generous space as it matures and seed litter can be extensive. One of its best uses is as a screen plant along highways where it can grow as a large mounding shrub under difficult conditions. Too much water can lead to fast growth and weak branches that can be too heavily damaged during winds. Seeds will occasionally germinate in moist garden areas; it is a highly invasive species in Florida and Hawaii.” (B. Perry 2010)

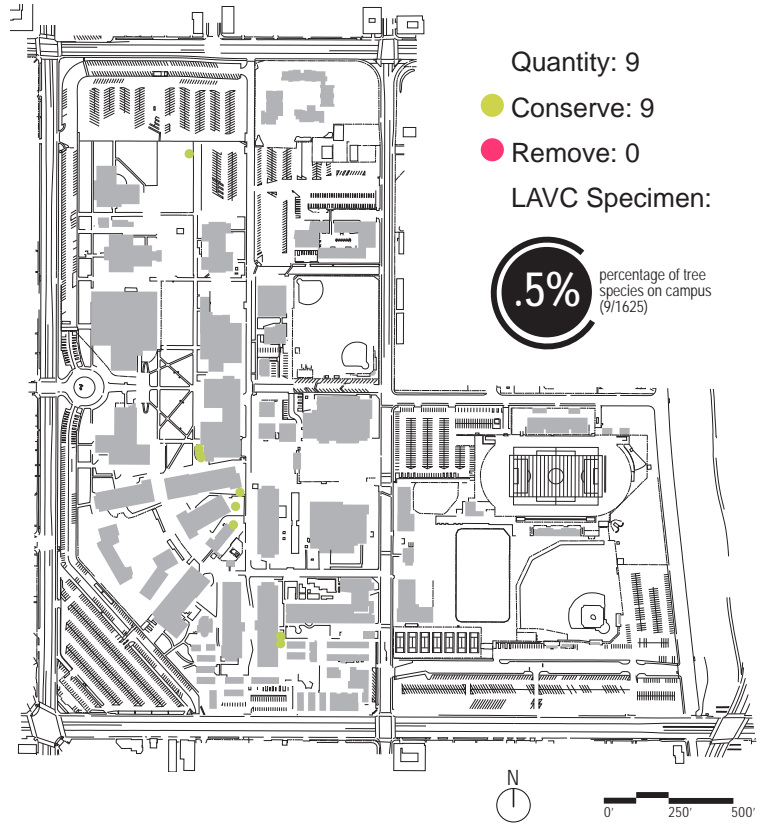




# Sequoia sempervirens

## Coast Redwood

“A medium to large size deciduous tree that commonly develops a low broad branching habit 25-40 ft. tall, with an equal width. Large feathery leaves are bipinnately divided, grow to 12-18 in. long and create a light and airy canopy. Large numbers of showy flowers grow in terminal clusters and cover the tops of these trees in mid summer. The flower color varies in intensity from pale pink to deep rose. Countless numbers of brown seed pods, 2-3 in. long, develop in late fall, persist into winter and are considered unsightly by many people. Seeds germinate readily in understory plantings, resulting in undesired seedlings. This species is native to many parts of Iran, India, China and Japan. Throughout its natural range in China, silk tree grows in foothills and valleys at elevations ranging from 1,000-6,000 ft. within broad leaved deciduous forests. Annual rainfall ranges from 40-60 in.; winter frost is common. It is a highly adaptable plant that can grow in temperate or subtropical climate regions around the world, becoming easily naturalized in some areas. Silk tree is widely grown as an ornamental shade tree in coastal, inland, valley and low to intermediate desert regions throughout California.” (B. Perry 2010)



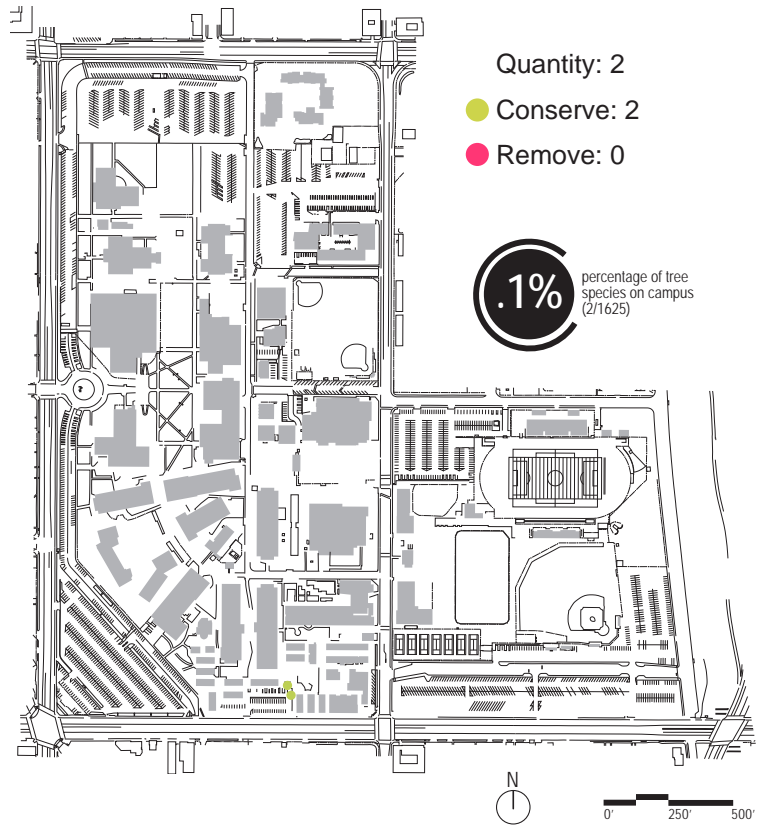


# *Tabebuia chrysostricha*

## Golden Trumpet Tree

“A small to medium sized deciduous tree that develops with a low branching habit, 20-30 ft. tall and as wide. Dark green leaves are palmately divided into 3-5 leaflets; bright yellow tubular flowers with maroon pinstripes on their petals occur in round clusters in early spring. Long seed pods develop in late spring and can persist for many months. Small stems, young seed pods and undersides of leaflets are covered with fuzzy hairs.

Golden trumpet tree is native to Brazil where it can reach 50 ft. in height. In southern California it grows with an irregular branching habit, often resulting in trees of varying size and shape. It is very effective as a specimen in patios and gardens, and commonly planted as a small scale street tree.” (B. Perry 2010)

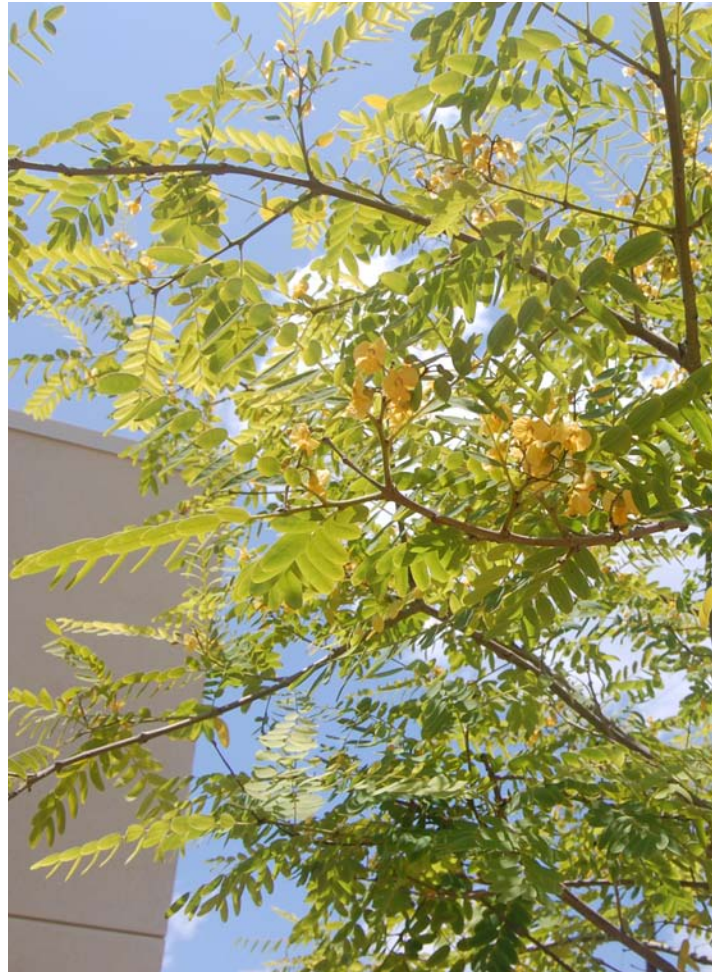
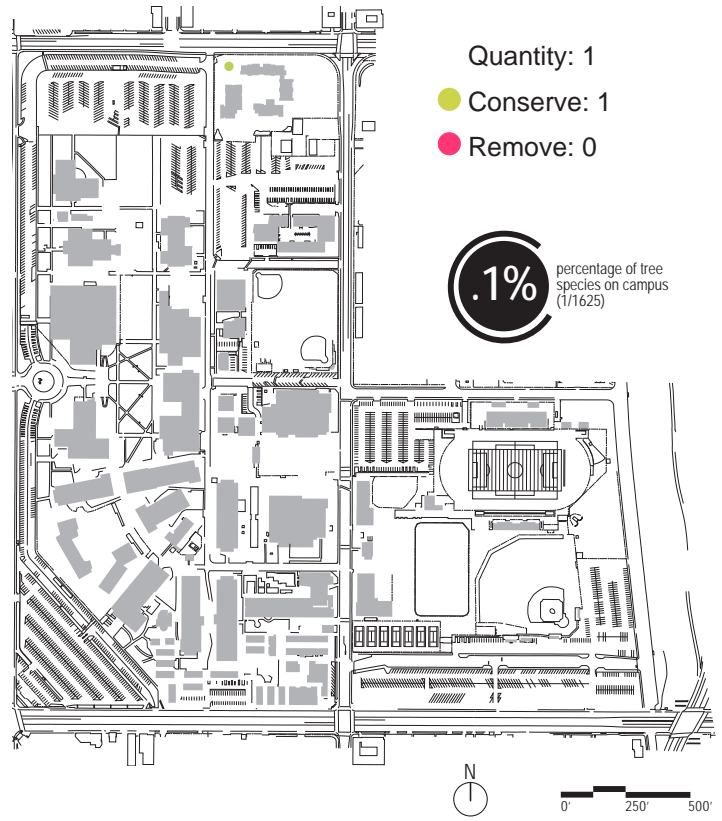




# Tipuanu tipu

## Tipu Tree

“A large deciduous tree growing with a broad and spreading canopy, 40-60 ft. tall and 35-50 ft. wide. Deep green foliage is comprised of pinnately divided leaves with 11-21 pairs of oblong leaflets. Flowers are golden-yellow and grow in open racemes at the ends of branches in early summer. Winged seed pods emerge green and mature to brown by end of summer. Tipu tree is the only species in the genus Tipuana and is native to South America where it is widely grown as a park and boulevard tree in many cities. In California it grows best in mild climate zones with wet winters and warm summers which results in fast growth and abundant flowering. It is commonly planted as a lawn tree for shade in inland and valley areas, and eventually becomes a stately tree of large sizes that needs ample space to spread and accommodate its roots. Young trees need good staking and pruning to manage long stem growth.” (B. Perry 2010)





# *Tristania conferta*

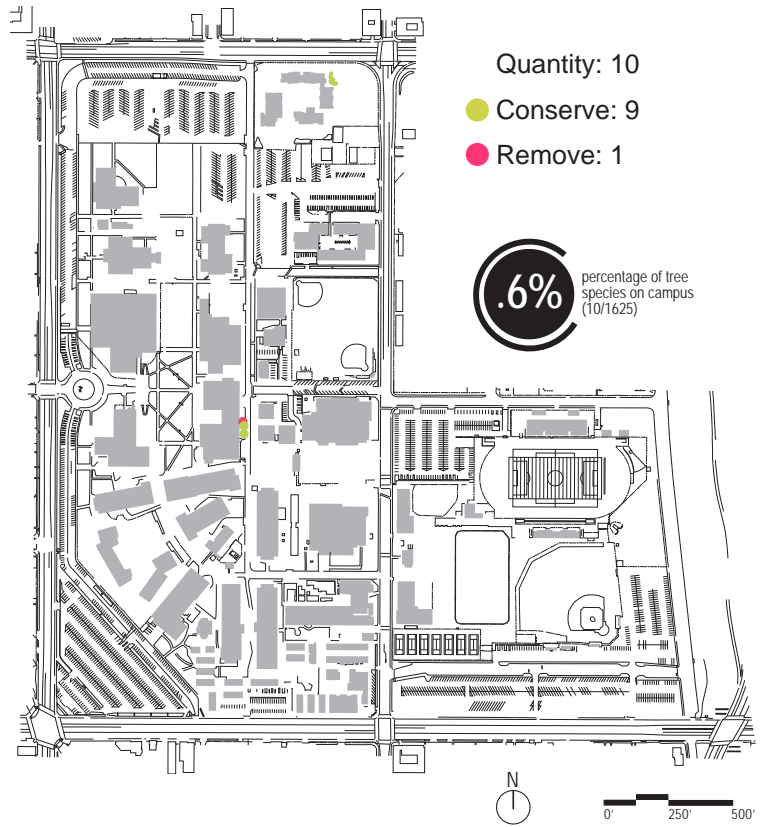
## Brisbane Box

General Species Observation by Arborist: Generally recommended for conservation.

“A medium to large evergreen tree, growing 35-45 ft. tall and 25-35 ft. wide, having distinctive red-brown bark on trunks and branches. Foliage is comprised of large 4-6 in. long leathery leaves, deep green above and pale green below. Inconspicuous lusters of creamy-white flowers occur in late spring.

Brisbane box is native to the moist coastal and inland habitats of eastern Australia where it grows from sea level to 2,500 ft. elevation. It grows best in fertile well-drained soils and in valleys and on slopes where it receives 35-70 in. of annual rainfall. It often grows in transitional areas between coastal rainforests and adjacent eucalyptus forests in areas that are relatively frost-free. In California landscape, Brisbane box is best suited to coastal and mild inland and valley locations. Young plants are sensitive to frost; mature plants survive temperatures to 25°F. Young trees grow quickly when planted in loam soils and are provided with regular moisture; mature trees can endure drier conditions, but summer watering is needed in warmer inland locations to maintain good health and character.

Brisbane box is closely related to eucalyptus and exhibits similar foliage, pod and bark characteristics. It is commonly planted as a dense shade tree in parks, medians and lawns. Additionally, it is planted as a street tree where it needs generous space to mature. Leave, bark and seed pods produced on large trees create an abundance of litter.



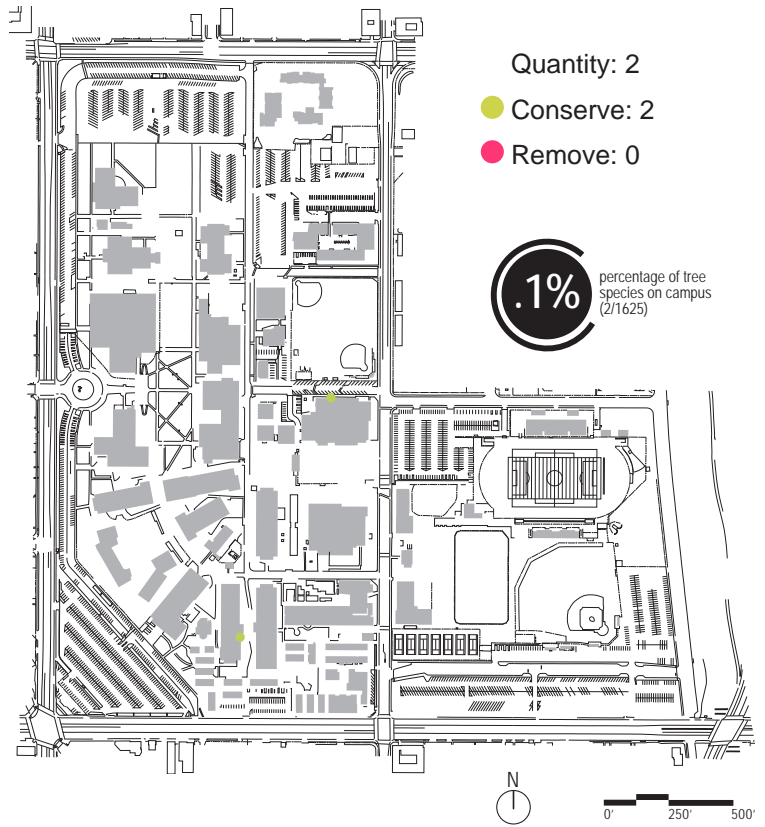


# *Tupidanthus calyptratus*

## Umbrella Tree

“A large evergreen mounding shrub to multi-stemmed tree with a dense foliage habit, 15-25 ft. tall and as wide. Leaves are palmately divided into 9-13 drooping leaflets that are dark glossy green above and pale below. Leaflets can reach 7-9 in. long, 2-3 in. wide and are distinctly trough-shaped. Large woody flower clusters develop in compound umbels in winter, but do not provide ornamental value.

Mallet flower is native to tropical climate zones of southern Asia and India. It develops as a dense shrub with multiple low branches that can be pruned to achieve a specimen plant as it matures. Its dark green leaves and large foliage character make it suited for use in subtropical garden plantings and as a background and screen plant. The foliage appearance of this species is very similar to *S. actinophylla*, Queensland umbrella tree, but it develops a stronger mounding habit and does not produce colorful flowers.” (B. Perry, 2010)





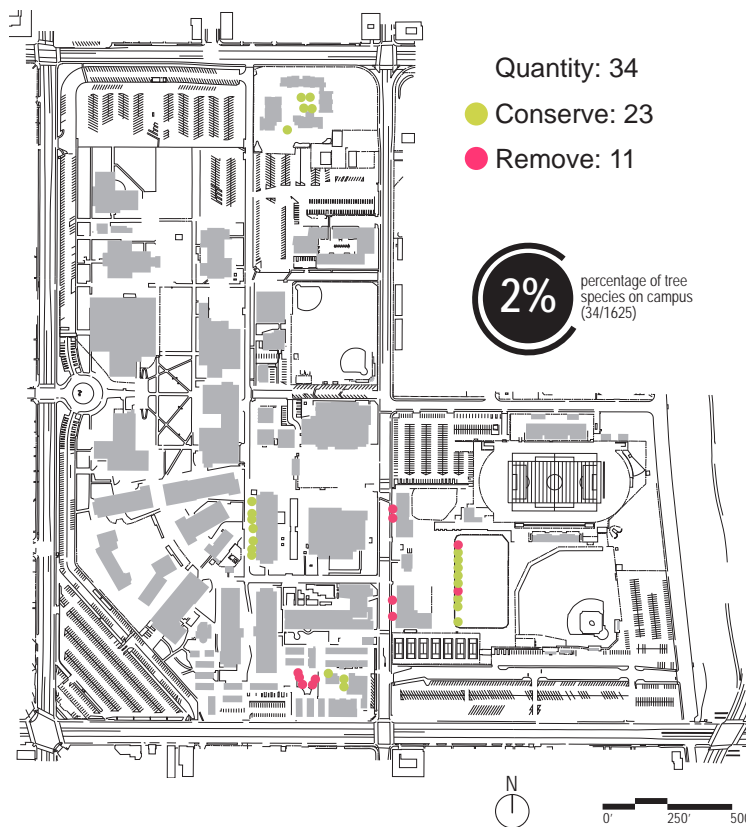
# *Ulmus parvifolia*

## Chinese Evergreen Elm

General Species Observation by Arborist: Recommended for removal and conservation based upon individual characteristics. Reasons for removal, where recommended, relate to presence of defects resulting from power line clearance pruning methodologies and decay caused by mechanical wounds, limb failures, and / or poor structural conformity.

“A large deciduous tree growing with a broad and spreading canopy form, 40-60 ft. tall and 40-70 ft. wide. Trunks release patches of bark to reveal an attractive mottled pattern of colors and shapes; branchlets at the tips of the canopy often develop a weeping habit. New leaves are bright green with a reddish tinge before darkening and producing a dense canopy of shade. Mature leaves reach 1-2 1/2 in. long, have serrated margins and a pointed apex.

Chinese evergreen elm is native to cool and moist climate conditions in China, Korea and Japan and has proven to be one of the most resistant species to Dutch Elm Disease. As a result, it is one of the most commonly grown elm species in California where it is planted as a shade tree in parks, green belts and lawns where sufficient space is provided to accommodate its large size. It is a fast growing tree that is semi-evergreen in mild climate zones. It is adaptable to many climate and



moisture conditions and is successfully grown throughout the state, including intermediate and low deserts. Chinese evergreen elms grow into stately and monumental scale tree. Horticultural interest has led to the introduction of several cultivars that grow to different sizes and have varying leaf characteristics.” (B. Perry 2010)



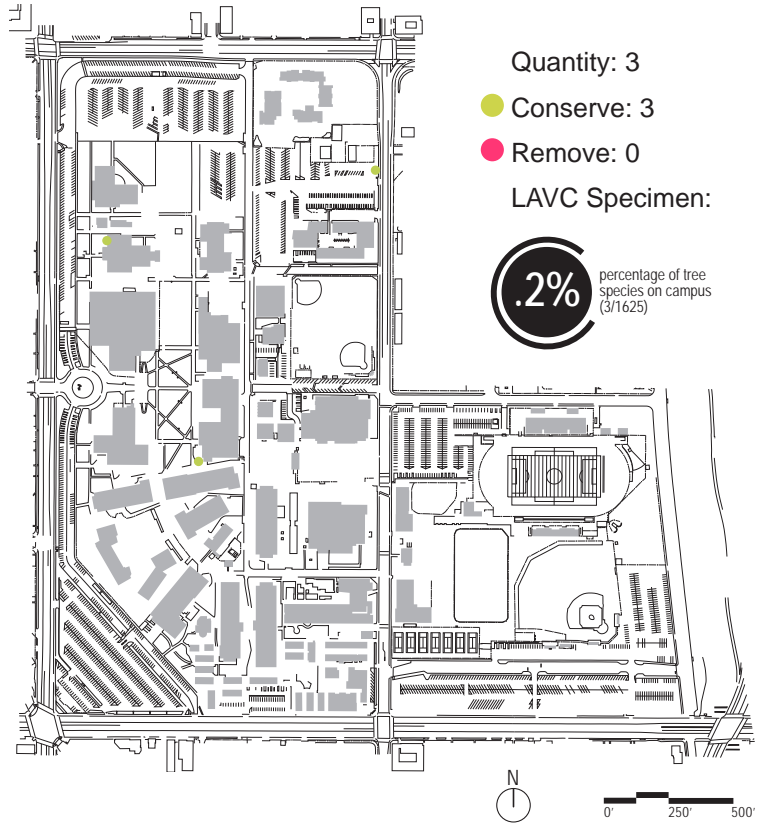


# Washingtonia robusta

## Mexican Fan Palm

“A tall tree that can develop a remarkable slender and tapered trunk to heights ranging from 60-100 ft. tall. Leaves are dark glossy green, fan-shaped and measure 3-4 ft. across. Long flower inflorescences with tiny cream colored flowers occur in late spring, followed by heavy seed production.

Mexican fan palm is native to riparian and oasis habitats in northwestern Mexico in the states of Sonora and Baja California. Many historic plantings of this species exist across southern California that have become visual landmarks that can be seen over long distances. The eventual size and height of this species makes it well suited for use in commercial and public spaces near tall buildings and in groupings that serve as a landscape focus. Seeds easily germinate and often produce many seedlings in ornamental landscape that are very difficult to remove. Additionally, this species has escaped and become naturalized in California’s riparian and desert wash habitats. It is rated as moderately invasive by Cal IPC.” (B. Perry 2010)

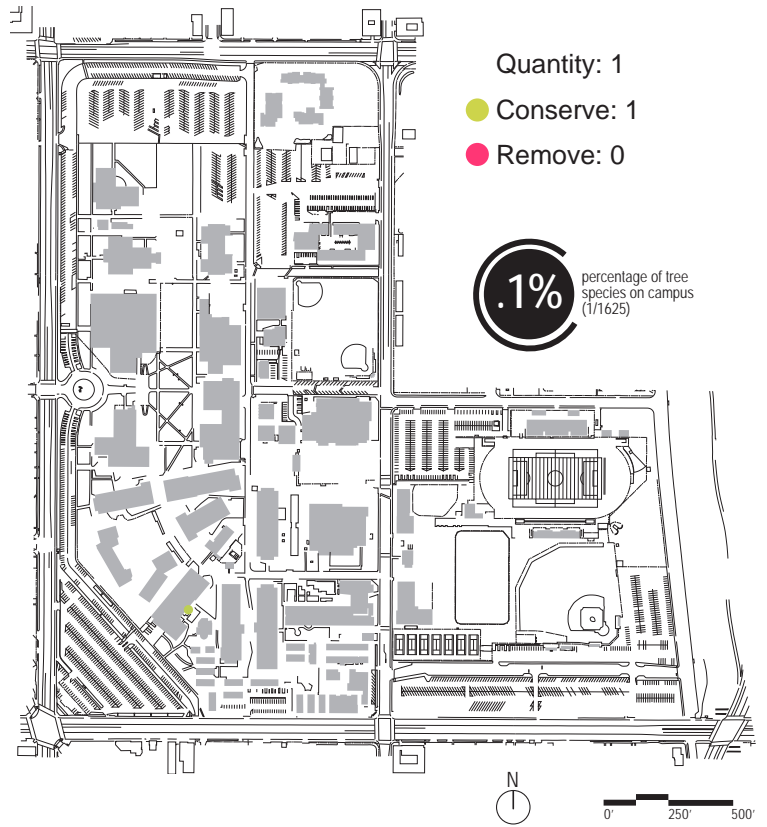




# *Yucca gloriosa*

## Spanish Dagger

“A slow growing yucca that slowly develops a woody trunk that is sometimes branched, reaching 8-10 ft. in height. Pale blue-green leaves grow 2 in. wide, 2-3 ft. long and have soft pointed tips. Fragrant creamy-white flowers hang down from spikes that grow above the foliage. Spanish dagger is native to the southeastern United States from Louisiana to Florida and Georgia, where it grows on coastal dunes. It is a popular species of yucca for landscape use due to its size, flowering character and less hazardous foliage. It grows best in sunny exposures, in well-drained soils and with regular water; established plants are very drought tolerant.” (B. Perry 2010)



# MASTER FORMAT CONSTRUCTION SPECIFICATIONS

LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA

## SECTION 01 56 39

### TEMPORARY TREE & PLANT PROTECTION

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work for Temporary Tree & Plant Protection, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
  - 1. Protecting and maintaining existing trees and vegetation not specifically designated for removal, to remain.
  - 2. Protection shall be extended to trees and/or vegetation located within or directly adjacent to the Project Site, whether the tree trunk and/or vegetation are located within the designated Limits of Work.
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
  - 1. Section 328400 – Irrigation Systems.
  - 2. Section 329300 – Exterior Plants.
  - 3. Section 329360 – Palm Tree Planting.
  - 4. Section 329400 – Landscape Planting Accessories.
  - 5. Section 329643 – Tree Transplanting.

##### 1.2 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
  - 1. USDA – United States Department of Agriculture.
  - 2. ASTM – American Society for Testing & Materials.
  - 3. ANSI – American National Standards Institute.
  - 4. ISA – International Society of Arboriculture.
- B. Definitions:
  - 1. Tree – A woody perennial plant which usually has (but not limited to) a single dominant trunk and has a mature height of fifteen-feet (15') or more and has a trunk diameter (caliper) of three-inches (3") or more when measured at twenty-four-inches (24") above the finished grade.
  - 2. Drip-line – The outermost extent of the tree's foliated canopy, which encompasses the tree leaves or fronds, trunk, branches, roots, and soil. In no case shall a drip line encompass an area under a tree canopy, which is less than ten-feet (10') in diameter. Since each tree is unique in size, scale, and form, the delineated drip-line of each tree shall be refined at the discretion of the Landscape Architect.
  - 3. Injury – Bruising, scarring, tearing, gouging, or breaking of roots, branches, or trunk(s), soil compaction around the drip-line, or contamination around the drip-line which results in the decline to the health of the tree.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

4. Root Zone– The soil volume surrounding a plant containing the roots.
- C. Reference Standards:
1. *American National Standard for Tree Care Operation, Tree, Shrub, and Other Woody Plant Maintenance (ANSI A300)*, American National Standards Institute, Latest Edition.
  2. *American National Standard for Tree Care Operations (ANSI Z133)*, American National Standards Institute, Latest Edition.
  3. *Tree Pruning Guidelines*, International Society of Arboriculture, 1995 Edition.
  4. *Pruning Standards for Shade Trees*, National Arborists Association, Latest Edition.

**1.3 SUBMITTALS**

- A. Contractor shall provide site photographs or videotape, sufficiently detailed and described, of existing conditions of trees and vegetation, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing, tree pruning, or tree protection. Submit photographs or videotape to the Landscape Architect prior to commencement of Work.
- B. Product Data: Submit complete and legible materials list of items to be provided for Work described herein this Section.
- C. Submit complete detailed schedule and description of Work to be done within drip-line, (if any), including list of equipment to be used.
- D. Submit schedule and description of proposed pruning and/or other remedial work to existing plant materials. Submit qualifications describing years of experience and list of similar projects completed for the following:
  1. A State of California licensed Pest Control Advisor shall propose application of all herbicides or pesticides.
  2. A Certified Arborist shall propose pruning of trees or other vegetation. The Certified Arborist shall have a minimum of five (5) year's post-certification experience performing pruning and observation work for projects of comparable size with trees of similar size and nature.
  3. Tree Pruning Company, and List of Certified Tree Workers, who will perform Work relating to requirements herein this Section. Tree Pruning Company shall have a minimum of five (5) years experience specializing in performing the work of this Section for projects of comparable size with trees of similar size and nature.

**1.4 QUALITY ASSURANCE AND CONTROL**

- A. Pre-Installation Conference: Conduct conference at Project Site.
- B. Pruning and remedial work shall be done under the direct supervision of an Arborist certified by the International Society of Arborists (ISA); or Arborist who is a member in good standing in the American Society of Consulting Arborists, in compliance with ISA and ANSI Standards. Arborist shall be on Site continuously while existing trees or roots are being pruned or remedial work is being performed.

**1.5 PROJECT SITE CONDITIONS**

- A. Arborist Evaluation: Prior to commencement of Work, Contractor is to obtain the services of a certified Arborist to evaluate the health of the trees within the project's scope. Additionally, at

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

completion of Work, Contractor is to obtain the services of a the same certified Arborist to evaluate the health of the trees protected in place within the project's scope. Photo documentation and written descriptions are required.

- B. Contractor shall become aquatinted with existing site conditions, verifying quantities and locations of all protected trees and vegetation, and other information as may be necessary. Notify the Landscape Architect of unsatisfactory conditions, in writing, prior to commencement of Work.
- C. **Tree Flagging:** Prior to commencement of Work, Contractor shall flag existing trees and vegetation to remain and protected throughout the duration of Work. Adequately flag tree trunks with bright-colored tape (neon colors preferred). Verify flagged trees and vegetation with the Landscape Architect.
- D. **Traffic:** Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during tree-pruning or tree-protection operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways, if required, by authorities having jurisdiction.
- E. Locate above utilities prior to any Work, and perform Work in a manner which will avoid possible damage. Notify utility locator service for area where Project is located before site clearing where applicable. Notify the Landscape Architect if conflicts exist.
- F. **Improvements on Adjoining Property:** Authority for performing indicated removal and alteration Work on property adjoining Owner's property shall be obtained by the adjoining property Owner(s) prior to commencement of Work.
- G. **Protect existing Work and Work of other trades:** Damage to existing construction caused by Work of this Section shall be promptly repaired and/or replaced at the expense of the Contractor.
- H. **Environmental Requirements:** Perform actual pruning operations (if needed) during those seasons suitable for the specific tree type, in accordance with locally acceptable horticultural practices.
- I. **Pre-Tree Pruning/Tree Protection Conference:** Contractor shall conduct a Pre-Tree Pruning/Tree Protection Conference at the Project Site with Certified Arborist (who will be on-site supervising the Work of the Project) and the Landscape Architect.
  - 1. Contractor shall be responsible for notifying parties, in writing, at least seven (7) days in advance to schedule the Conference.
  - 2. Contractor shall provide to parties in attendance within seven (7) days a written legible inventory of Work to be accomplished, including species (botanical and common name), location, size, specific pruning needs or tree protection needs as identified during the Conference, recommended pruning or tree protection methods to meet the identified needs, and any additional conditions noted.

**1.6 SCHEDULE**

- A. Install Tree Protection Barricades prior to commencement of Work.
- B. Work shall be done according to approved Schedule.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

**1.7 GUARANTEE**

- A. Contractor shall Guarantee that plants covered under the Provisions of this Section shall be healthy and in a flourishing condition of active growth for two (2) years from the date of Final Acceptance.
- B. Requirements of the guarantee shall apply if failure of the Contractor to take specified precautions and Work within restrictions of this Section contributes to the destruction, decline, or injury to a tree to remain, in the judgment of the Landscape Architect.
- C. If a tree designated to be protected accordingly is destroyed or injured so that in the judgment of the Landscape Architect it should be replaced, it shall be removed at the expense of the Contractor. Contract shall pay compensation to the Owner of the property where the tree was located at the rate as specified herein this Section (see Compensation).

**1.8 COMPENSATION**

- A. Contractor shall replace existing plant material designated to remain that dies or sustained injury from the result of the Contractor's negligence to provide adequate required protection, pruning, or maintenance during the course of construction operations.
- B. Trees: Contractor shall thoroughly remove damaged tree, including trunk, branches, and roots, at no cost to the Owner, and at the direction of the Landscape Architect.
  - 1. Contractor shall furnish and install per requirements in Section 329300 – Exterior Plants, with an equal size tree (in height, spread, and caliper), and of the same form, species, and in the same quantity as those tree(s) that were damaged, at the direction of the Landscape Architect. Compensation shall include the actual cost of the item boxed out of the ground; transportation or delivery of boxed item to the site; unloading, planting and staking; maintenance, including watering, fertilizing, pruning, pest control, and other care to bring replacement to same general condition of the original item.
- C. Other Plant Material (other than Trees): Contractor shall replace other vegetation (other than trees) that died or sustained injury from the result of the Contractor's negligence to provide adequate required vegetation protection, pruning, or maintenance during the course of construction operations. Compensation shall be awarded to the Owner as follows:
  - 1. Contractor shall thoroughly remove damaged vegetation at no cost to the Owner, and at the direction of the Landscape Architect.
  - 2. Contractor shall furnish and install per requirements in Section 329300 – Exterior Plants, with equal size plant material as those which damaged ((5) gallon container stock minimum (as applicable)) of the same form, species, and in the same quantity as vegetation that was damaged, at the direction of the Landscape Architect.

**PART 2 - PRODUCTS**

**2.1 TREE PROTECTION MATERIALS**

- A. Barricade for Protection of Existing Vegetation:
  - 1. Fabric: Utility (snow) type fencing, minimum four-feet (4'-0") high, consisting of a vinyl meshed fabric in a bright orange color. Fabric shall be approved by the Landscape Architect.

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

2. Posts: Metal or wood, sufficient in gauge (as appropriate) and size to support the fabric material in a taut and plumb condition. Posts shall be subject to approval by the Landscape Architect.
  3. Signs: Posted plastic laminated signs, attached to fabric fencing, with words "WARNING-KEEP OUT-TREE PROTECTION ZONE".
- B. Mulch: Where available, Contractor shall stockpile and reuse shredded wood chips produced from on-site tree removals and remedial work, if chips are disease free and acceptable to the Landscape Architect. Where on-site chips are not available, Contractor shall provide Shredded Wood Mulch as specified in Section 329400 – Landscape Planting Accessories.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- A. Provide erosion-control measures as needed to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.

#### **3.2 TREE AND VEGETATION PROTECTION**

- A. Protect existing trees and other vegetation indicated to remain in place against the following:
  1. Storage or parking of automobiles or other vehicles.
  2. Stockpiling of building materials, refuse, or excavated materials.
  3. Use of trees as support posts, power posts, or sign posts, anchorage for ropes, guy wires, or power lines, or other similar functions.
  4. Dumping of poisonous materials on or around plant roots, trunks, branches, or foliage. Such materials include, but are not limited to, paint, petroleum products, dirty water, or other deleterious materials.
  5. Cutting, breaking, or shinning of roots caused by utility trenching, foundation digging, placement of curbs and trenches, and other miscellaneous excavation without prior written approval by the Landscape Architect.
  6. Damage by skinning or bruising of bark on trunks or branches, caused by maneuvering vehicles or stacking material or equipment too close to the plant.
  7. Compaction of the soil within the drip-line of the plants due to movement of trucks or grading machines, pedestrian or vehicular traffic, storage of equipment or materials.
  8. Excessive water or heat from equipment, utility line construction, or burning of trash under or near vegetation to remain.
  9. Damage to root system from flooding, erosion, and excessive wetting and drying resulting from watering and other operations.
- B. Prior to commencement of construction activities, the Contractor shall erect and maintain a temporary fenced barricade around the drip-line of individual trees, around perimeter drip-line of groups of trees, or around other vegetation to remain.
  1. Prevent damage to roots during installation of barricade posts. Space posts approximately 4'-0" on-center (O.C.) and securely attach fabric.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

2. Barricades shall be installed plumb, taut, and sturdy to prevent unauthorized access around drip-line of trees and protected vegetation. Repair sagging or damaged barricades immediately.
  3. Immediately after barricade fencing is installed, cover entire soil area inside of the fence area with a four-inch (4") layer of mulch. Keep mulch eighteen-inches (18") away from root crown. Irrigate protected trees and vegetation to a moist soil depth of eighteen-inches (18") deep.
  4. During the course of construction, relocation of the barricade may be required to facilitate construction. Contractor shall relocate barricade as directed by the Landscape Architect at no additional expense to the Owner.
  5. Remove barricade when construction operations are complete or when directed by the Landscape Architect.
- C. Irrigation: Contractor shall supply fresh potable water in adequate amounts and rates of application as required to maintain the health of protected plant material throughout the duration of the construction operations. Contractor shall maintain a watering schedule and document dates and duration of irrigation applications.
1. Construct a temporary watering basin, as required, on the surface of the existing undisturbed grade, with imported soil, to aid in the retention of water around existing protected trees and planting.
- D. Do not excavate within drip line of trees, unless approved, in writing, by the Landscape Architect.
- E. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.
1. Cover exposed roots with burlap and water regularly.
  2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
  3. Coat cut faces of roots more than 1-1/2 inches in diameter with emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
  4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.
- F. Protect root systems of existing trees and vegetation from damage due to chemically injurious materials in solution caused by run-off or spillage during mixing or placement of construction materials, and drainage of stored materials.
- G. Protect root systems from flooding, erosion, excessive wetting or drying resulting from de-watering or other operations.
- H. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by the Landscape Architect.
1. Employ a qualified arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
  2. Replace trees that cannot be repaired and restored to full-growth status, as determined by the qualified Arborist.

**3.3 CLEARING AND GRUBBING**

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
  2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
  3. Completely remove stumps, roots, obstructions, and debris extending to a depth of eighteen-inches (18") inches below exposed sub-grade.
  4. Use only hand methods for grubbing within drip line of remaining trees.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

**3.4 PRUNING AND REMEDIAL WORK**

- A. Pruning and remedial work shall be done under continuous supervision of the approved Arborist, according to approved submittals, and per ANSI A300 Pruning Standards.
- B. Provide pruning, cabling and bracing, irrigation, pest and disease control and other remedial treatments as recommended by the approved Arborist, required to assure the long-term health of the trees and existing vegetation, and the safety of persons and property.

**3.5 LANDSCAPE ESTABLISHMENT PERIOD**

- A. Keep areas within tree protection barricades free from weeds, trash, and debris. Do not use herbicides.
- B. Maintain mulch layer and protective devices throughout entire duration of Contract.



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**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

**SECTION 32 96 43**

**TREE TRANSPLANTING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work for Tree Transplanting, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
  - 1. Transplanting trees and vegetation.
  - 2. Protecting and maintenance of transplanted trees and vegetation.
  - 3. Protection shall be extended to trees and/or vegetation specified for transplant and preservation at the location directed by the Owner.
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
  - 1. Section 015639 – Temporary Tree & Plant Protection.
  - 2. Section 328400 – Irrigation Systems.
  - 3. Section 329200 – Exterior Plants.
  - 4. Section 329360 – Palm Tree Planting.
  - 5. Section 329400 – Landscape Planting Accessories.

**1.2 DEFINITIONS AND APPLICABLE STANDARDS**

- A. References:
  - 1. USDA – United States Department of Agriculture.
  - 2. ASTM – American Society for Testing & Materials.
  - 3. ANSI – American National Standards Institute.
  - 4. ISA – International Society of Arboriculture.
- B. Definitions:
  - 1. Plant Material(s): Refers to living plant species, inclusive of palm trees, as indicated in the Contract Drawings.
  - 2. Planting Area (PA): As denoted on the Contract Drawings, shall refer to areas to be installed with Plant Material (s), or areas where existing vegetation shall be protected.
  - 3. Amended Planting Backfill Mixture: Refer to Section 329113 – Soil Preparation.
  - 4. Balled and Burlapped Stock: Healthy, vigorous exterior plants with firm, natural balls of earth in which they are grown, with ball size not less than diameter and depth recommended by ANSI Z6.1 for type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum laced as recommended by ANSI Z60.1.
  - 5. Balled and Potted Stock: Healthy, vigorous exterior plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of exterior plant required.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

6. Bare-Root Stock: Healthy, vigorous exterior plants grown with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for type and size of exterior plant required.
  7. Clump: Where three (3) or more young trees were planted in a group and have grown together as a single tree mass having three (3) or more main stems or trunks.
  8. Finish Grade: Elevation of finished surface of planting soil.
  9. Sub-grade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.
  10. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
  11. Apical Meristem (AM): The node of growth from which the emerging live fronds appear.
  12. Frond Pineapple: The natural appearing expanded section found at the top of the trunk, just below the fronds, resembling a "pineapple" in texture, usually formed in the shape of a bell.
  13. Tree: A woody perennial plant which usually has (but not limited to) a single dominant trunk and has a mature height of fifteen-feet (15') or more and has a trunk diameter (caliper) of three-inches (3") or more when measured at twenty-four-inches (24") above the finished grade.
    - a. Tree shall also refer to palm species, where palms are measured in height to the apical meristem, per Section 329360 – Palm Tree Planting.
  14. Drip-Line: The outermost extent of the tree's foliated canopy, which encompasses the tree leaves or fronds, trunk, branches, roots, and soil. In no case shall a drip line encompass an area under a tree canopy, which is less than ten-feet (10') in diameter. Since each tree is unique in size, scale, and form, the delineated drip-line of each tree shall be refined at the discretion of the Landscape Architect.
  15. Injury: Bruising, scarring, tearing, gouging, or breaking of roots, branches, or trunk(s), soil compaction around the drip-line, or contamination around the drip-line which results in the decline to the health of the plant material.
  16. Root Zone: The soil volume surrounding a plant containing the roots.
- C. Reference Standards: Plant Material shall be true to botanical and common name as indicated in the following:
1. *An Annotated Checklist of Woody Ornamental Plants of California, Oregon, and Washington*, (Number 4091), McClintock and Leiser, Division of Agricultural Sciences, University of California, 1979.
  2. *American Standard for Nursery Stock*, ANSI Z60.1-1966, edition approved November 6, 1996, American Association of Nurserymen, and American National Standards Institute.
  3. *American Joint Committee on Horticultural Nomenclature*, 1942 Edition of Standardized Plant Names.
  4. *Hortus III*, 1976 Edition, Liberty Hyde Bailey Hortorium, Cornell University.
  5. *The Hillier Gardener's Guide to Trees and Shrubs*, 4th Edition, 1978.
  6. *Manual of Cultivated Conifers*, Den Ouden & Boon, 1978.
  7. *Datascape Guide to Commercial Nomenclature*, American Nurserymen Publishing Co., Chicago, IL, 1994.
- D. Measurements:
1. SQ/FT: Measurement, in square-foot.
  2. O.C.: Measurement used for On-Center spacing.
  3. Apical Meristem (AM) Height: Measurement used to determine the height of Palm Trees, from the natural ground line of the Palm Tree to the node of growth of the emerging fronds. Apical Meristem Height is illustrated in the Palm Planting Detail noted in the Contract Drawings. The Apical Meristem measurement shall be determined from the final installed above-grade height of the Palm Tree (as the Palm Tree may be installed at various depths in the excavated planting hole to insure a consistent measurement above-

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

grade). The Apical Meristem Height maybe referenced as the “Clear Trunk (CT)” height by some nursery suppliers.

4. Clear Wood (CW): Measurement from the bottom of the Frond Pineapple to the Ground Level. Clear Wood maybe referenced as the “Brown Trunk (BT)” height by some nursery suppliers.

**1.3 SUBMITTALS**

- A. General: Submit each item in this Article in four (4) bound Submittal Booklets.
- B. Each Submittal Booklet under this Section shall be tabbed into specific sections, containing clearly identified (through yellow highlighter or other identification methods) and legible information on the following landscape information indicated in this Article:
  1. List of transplanted Plant Materials.
  2. Description of Plant Material, for each species and each individual indicated in the Contract Drawings, submitted in the following format:

<p>(Provide Color Photograph of Plant Material here)</p> <p>(Note: Photograph shall include a person, tape measurer, or other scaled reference).</p>	
<i>Project Name:</i>	
<i>Botanical Name:</i>	
<i>Common Name:</i>	
<i>Form (Multi, Standard, etc.):</i>	
<i>Container Size (as applicable:)</i>	
<i>Overall Height (provide Apical Meristem Height for Palms):</i>	
<i>Spread:</i>	
<i>Caliper (as applicable):</i>	
<i>ID from Contract Drawings:</i>	
<i>Supplying Nursery Name:</i>	
<i>Contact Name at Nursery:</i>	
<i>Nursery Address:</i>	
<i>Nursery Phone Number:</i>	
<i>Date of Nursery Photo:</i>	
<i>Comments/Remarks:</i>	





**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

- C. Qualification data for firms and persons specified in the “Quality Assurance and Control” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architects and owners, and other information specified.
- D. Transplanting schedule, indicating anticipated locations and dates for each type of planting and when transplanted trees are to be re-planted. Schedule to consider time of year for transplanting, transplanting methods, and follow-up care and maintenance.
- E. Location of storage/staging of transplanted trees.
- F. Location of re-planting of transplanted trees.
- G. Submittals under this Article will be rejected without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if the required information is missing or not presented in the format as requested.
- H. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

**1.4 QUALITY ASSURANCE AND CONTROL**

- A. Refer to Section 329300 – Exterior Plants, for requirements herein under this Article.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. General: Do not prune Plant Material before delivery, except as approved by the Landscape Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damages. Do not bend or bind-tie Plant Material in such a manner as to destroy natural shape.
  - 1. Immediately after digging field-grown Plant Material wrap root systems in wet burlap or other suitable material to keep root system constantly moist until installation at the Project Site.
  - 2. Deliver freshly dug field-grown Plant Material with firm, natural balls of earth of sufficient depth to include fibrous and feeding roots, meeting or exceeding requirements of ANSI Z60.1 for root ball diameter.
- B. Handling Plant Materials:
  - 1. Handle balled and burlap Plant Material stock by the root ball.
  - 2. Handle container-grown Plant Materials only by their containers.
  - 3. DO NOT handle Palm Tree(s) by its fronds or root ball.
  - 4. DO NOT drop any Palm Tree(s).
  - 5. DO NOT bind or handle Palm Trees(s) directly with wire or rope at any time. Pad trunk of Palm Tree(s) whenever using hoisting cables, chains, slings, or straps.
  - 6. Should the Contractor engage in handling any Palm Tree(s) by unacceptable method(s), Landscape Architect shall reserve the right to reject any of the mishandled Palm Tree(s). Contractor shall replace rejected Palm Tree(s) with approved Palm Tree, at no additional cost to the Owner.
- C. Deliver Plant Material only after preparations for planting have been completed and install immediately. If planting is delayed more than six (6) hours after delivery, set Palm Tree(s) in

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

shade, protect from weather and mechanical damage, and keep roots moist. Do not remove container-grown Palm Tree stock from containers before time of planting.

**1.6 COORDINATION, SCHEDULING, AND OBSERVATIONS**

1. Refer to Section 329300 – Exterior Plants, for requirements herein under this Article.
2. Recommendations for transplanting of trees including the following:
  - a. Time of year for transplanting.
  - b. Avoid moving plants on very hot, dry, or windy days.
  - c. Transplanting methods.
  - d. Follow-up care and maintenance.
3. Selection and Tagging of Plants: Owner's representing will select and tag at the site, those plants to be transplanted to new locations.

**1.7 PROJECT SITE CONDITION**

1. Refer to Section 329300 – Exterior Plants, for requirements herein under this Article.

**1.8 SUBSTITUTIONS**

1. Plant Materials substituted and installed by the Contractor, without prior written approval by the Landscape Architect, may be rejected. Contractor shall not be entitled to be compensated by the Owner where the Contractor has installed rejected substitutions without receiving prior written approval.
2. Contract Price: Substituted Plant Materials under this Section shall not increase the Contract price.

**1.9 WARRANTY**

- A. General: The Warranty indicated herein this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract, and shall be in addition to, and run concurrent with, other guarantees or warranties made by the Contractor under requirements of the Contract Documents.
- B. Warranty: Contractor shall warrant living Plant Materials under this Section for a period of two (2) years after date of Substantial Completion. Warrant against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by the Owner; abnormal weather conditions unusual for the Warranty Period; or incidents which are beyond the Contractor's control.
- C. Replacement of Plant Material:
  1. Replace Plant Materials exhibiting conditions which are determined to be unacceptable due to workmanship by the Contractor, at no cost to the Owner, per the direction of the Landscape Architect.
  2. Remove and replace dead or dying Plant Material immediately unless required to plant in the succeeding planting season.
  3. Contractor shall be held responsible for a maximum of two (2) replacement of each failed Plant Material after Final Acceptance during the Warranty Period.
    - a. Closely match replacements to adjacent specimens of the same species. Apply requirements of this Specification to replacements.

**1.10 FINAL ACCEPTANCE AND LANDSCAPE ESTABLISHMENT PERIOD**



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

- A. Refer to Section 329813 – Landscape Establishment Period.

**PART 2 - PRODUCTS**

**2.1 BACKFILL MIX FOR TRENCHES**

- A. Composition
  1. 3/4 part Native soil excavated from trench
  2. 1/8 part Peat Moss
  3. 1/8 part Nitrogen-treated sawdust

**2.2 ORGANIC SOIL AMENDMENT AND CHEMICAL SOIL AMENDMENT COMPONENTS**

- A. Refer to Section 329113 – Soil Preparation

**2.3 MISCELLANEOUS MATERIALS**

- A. Refer to Section 329360 – Palm Tree Planting

**2.4 ORGANIC AMENDMENTS AND CHEMICAL ADDITIVES:**

- A. Refer to Section 329113 – Soil Preparation.

**2.5 BACKFILL MIX FOR TRENCHES**

- 3/4 part Native soil excavated from trench
- 1/8 part Peat moss
- 1/8 part Nitrogen-treated sawdust

**2.6 EQUIPMENT**

- A. Pruning Tools: Use only sharp, clean tools, sterilized prior to use on job site.
- B. Transplanting Tools: Contractor's option. Size of vermier spade, if used, is to be large enough to encompass fibrous feeder roots of each plant, consistent with standard nursery sizes for the plant being relocated.
- C. Vehicles: Do not drive onto or operate on site a vehicle carrying dirt or plant debris from another site. Wash all dirt and mud from tires prior to entering job site.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. NO WORK UNDER THIS SECTION SHALL COMMENCE UNTIL SUBMITTALS UNDER THIS SECTION HAVE BEEN REVIEWED ACCORDINGLY BY THE LANDSCAPE ARCHITECT.

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

- B. Prior to commencing Work under this Section, Contractor shall examine previously installed Work from other trades and verify that such Work is complete and to the point where Work herein may commence properly. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. Installation practices of the transplanted Plant Materials shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted horticultural practices, as judged by the Landscape Architect.
  - 1. Soil moisture levels prior to planting shall be no less than seventy-five-percent (75%) of field capacity. The determination of adequate soil moisture for planting shall be in the sole judgment of the Landscape Architect, and their decision shall be final.
    - a. If the soil moisture level is found to be insufficient for planting installation, planting pits shall be filled with water and allowed to drain before commencing planting operations.
    - b. Any Planting area that may become compacted in excess of eighty-five-percent (85%) relative compaction (due to construction operations or other activities during the Contract) shall be tilled and thoroughly cross-ripped to a minimum depth of nine-inches (9") to alleviate the condition, taking care to avoid all existing subsurface utilities, drainage, etc.
    - c. Do not commence planting installation prior to acceptance of Soil Preparation (per Section 329113).
- D. Contractor shall notify the Landscape Architect, in writing on the anticipated commencement date and length of duration of the landscape installation.
- E. Preparation of Planting Installation: Lay out individual transplanted Plant Material locations and areas for multiple plantings. Stake locations, outline areas, and gain the Landscape Architect's acceptance prior to commencing physical planting installations. Contractor shall make minor adjustments to the planting layout as required, per the direction of the Landscape Architect.
- F. No more transplanted Plant Materials shall be distributed in the planting area on any day than can be installed and watered on that day. Transplanted Plant Material shall be planted and watered immediately after the removal of their containers, as applicable.
- G. Contractor shall protect existing and new improvements and systems installed prior to planting installation. Maintain protection in place until completion of Work and Landscape Establishment Period.
- H. Finish Grades for planting areas shall have been established (per Section 312219 – Landscape Grading) prior to Work under this Section. Verify that grades are within one-inch plus or minus (1"+/-) of the required finish grade, and that all the proper soil amendments and fertilizers have been furnished and installed accordingly as specified (per Section 329113 – Soil Preparation).
  - 1. Maintain positive surface drainage of all planted areas throughout the duration of the Contract.
- I. Pre-Planting: Where transplanted Plant Materials are to be pre-planted to permit site improvements to be installed around them, Contractor shall be responsible for the accurate layout and placement of those transplanted Plant Materials, as measure to their centerlines. Confirm designated pre-planting operations with Landscape Architect prior to commencing Work. Contractor shall also be responsible for the protection of pre-planted transplanted Plant Materials while other Work is taking place around them. Provide regular irrigation, as necessary, prior to installation and functioning of irrigation systems (per Section 328400 – Irrigation Systems).



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

**3.2 MATERIALS TO BE TRANSPLANTED**

- A. General: Transplant all plantings as shown on the Contract Drawings. Proceed with transplanting operations based upon Owner-accepted and Certified Arborist approved schedule and methods.

**3.3 PREPARATION**

- A. Trunk Preparation: Work shall be completed after tagging of Palm Trees and prior to digging the root ball.
  - 1. Refer to Section 329300 - Exterior Plants.
  - 2. Refer to Section 329300 – Palm Tree Planting.
  
- B. Pruning and Preparation of Fronds:
  - 1. Pruning shall conform to ANSI A300-Part 1 Pruning Standards.
  - 2. Disease Prevention: Exercise caution while pruning Palm Trees to prevent spread of vascular diseases/pathogens. Dip pruning tools in a sterilizing agent before commencing pruning operations. Regularly dip pruning tools during the course of pruning operations, and before moving from one Palm Tree to another.
    - a. Replace any Palm Tree that shows symptoms of vascular disease during Warranty Period with matching specimen that is disease-free.
  - 3. Equipment: Hand or pole loppers shall be used for pruning. Do not use chain-type saws for pruning of Palm Trees.
  - 4. Pre-Inspection Pruning: Palms shall be rejected if they are found to have been pruned within five (5) months prior to review by the Landscape Architect as specified herein.
  - 5. De-fronding and tying work of the transplanted Palm Trees shall be completed prior to digging the Palm Tree for the transplanted stock.
  - 6. In preparing transplanted Palm Trees for delivery, remove additional dead fronds created after trunk preparation. Randomly reduce transplanted Palm Tree crown per standard nursery practices; cleanly trim and remove green fronds below a horizontal position, leaving a 4" stub. Shape of overall transplanted Palm Tree canopy, when reduced, shall be no less than ninety (90) degrees total (forty-five (45) degrees each way from centerline of transplanted Palm Tree).
  - 7. Drench transplanted Palm Tree crown with Fungicide (as specified in Section 329360 – Palm Tree Planting), according to Manufacturer's current printed instructions.
  - 8. After fungicide application, carefully gather the remaining fronds and tie together in two (2) locations around the crown in an upright position. Caution shall be taken not to bind or injure the crown.
    - a. Provide a minimum number of rotations of the tying twine around the frond bunch to adequately hold the fronds for transport and the first few months after planting.
    - b. After tying, the tips of the fronds shall be 'hedged-off" above the crown approximately 1/4 to 1/2 of the frond length.
      - 1) Submit documentation that the transplanted Palm Trees have been reviewed by a licensed horticulturist or qualified plant pathologist, as requested. Documentation shall indicate that transplanted Palm Trees are disease-free.
  
- C. Digging the transplanted Palm Tree Root Ball for Field-Grown Stock:
  - 1. When digging out the transplanted Palm Tree root ball, no excavation shall be done closer than twenty-four-inches (24") to the trunk at ground level, and the excavation shall not extend below the major root system to a minimum depth of six-feet (6'). The bottom of the root ball shall be cut off square and perpendicular to the trunk below the major root system. Under no condition shall the size of the root ball be cut down in width and/or depth.

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

2. Contractor shall not free-fall, drag, roll, nor abuse the transplanted Palm Tree nor put strain on the crown at any time. A protective device shall be used around the trunk of the transplanted Palm Tree while lifting and relocating it, so as not to scar or skin the trunk. This device shall consist of either a rubber or leather sling made out of timbers sufficiently sized to withstand the cable/choker pressure. At no time with the transplanted Palm Trees be balled out and laid on the ground with root ball left exposed to direct sunlight and air. The root ball shall be kept moist and shaded at all times.

**D. Root Pruning Before Transplanting:**

1. General: Avoid root pruning to prevent disruption of nutrients, water uptake, and natural stability of the root system. Root pruning procedures as noted is initiated when root of two-inches (2") and larger in diameter are encountered during the course of transplanting.
2. Approval: No root pruning shall be performed without the approval of an ISA Certified Arborist. Notify the Project Arborist if root pruning becomes necessary during the course of construction. Review of root pruning method shall be made with the Landscape Architect and Project Arborist before work is performed.
3. Equipment: All roots are to be cut with a saw, lopping shears, or approved cutting device to leave a clean cut surface at the root end. Splintered or shredded ends shall be unacceptable. Do not cut main lateral roots or tap roots; cut only smaller roots that interfere with transplanting. Cut roots with sharp pruning instruments. Do not use chain-type saws for root pruning of transplanted Palm Trees.
4. Time Period: Perform root pruning during the dormant season, at least one [1] growing season prior to transplanting.
5. Trenching: Dig trench around entire circumference of plant material, severing all roots extending into the trench as follows:

Tree Caliper	Rootball Diameter	Trench Width	Trench Depth
3 in.	36 in.	8 in.	24 in.
4 in.	48 in.	8 in.	24 in.
5 in.	60 in.	12 in.	30 in.
6 in.	72 in.	12 in.	30 in.
8 in.	96 in.	12 in.	30 in.

6. Treatment of Roots: Cut all roots cleanly. Do not crush roots or permit splitting or tearing away of bark. Treat all cuts with standard nursery tree wound sealant. Do not use asphaltic compounds. Completely remove all roots within the trench area. Keep area moist and or covered with moist soil until permanent backfill is placed or as directed by Project Arborist.
7. Backfilling of Trenches:
  - a. After completion of all root pruning and treatment, backfill trench with backfill mix.
  - b. Prior to bulk-blending backfill mix, remove all weeds, debris, stones larger than two-inches (2") diameter and all other extraneous materials from native soil excavated from trench.
  - c. Tamp backfill mix solidly around the exposed rootball and roots. When trench is approximately 2/3 full, water thoroughly to saturate rootball and eliminate all air pockets. Install remaining backfill mix in sufficient quantity to provide a finish grade one-inch (1") higher than existing finish grade. Re-water to settle final placement of backfill mix.

**3.4 DIGGING FOR TRANSPLANTATION**

- A. Trenching: Dig a trench outside the trench previously dug for root pruning.





**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

- B. Protection:
  - 1. Do not damage new roots formed the previous year. Do not permit cracking of rootball or loss of soil.
  - 2. Protect the rootball by completely wrapping with burlap per standard nursery practice. Wrap rootball as necessary.

**3.5 RE-PLANTING**

- A. Locations: As directed by the Landscape Architect at the project site.
- B. Procedure: Refer to 'Planting Plant Material' in Section 329200 – Exterior Plants.

**3.6 CLEAN UP AND PROTECTION**

- A. During installation operations, keep Work area in an orderly and safe condition. Contractor shall remove trash caused from his Work on a weekly basis throughout the duration of the Work.
- B. Protect landscaping from damage due to landscape operations, operations by other Contractors and trades, and trespassers. Maintain protection during installation and landscape establishment periods. Treat, repair, or replace damaged landscape work and directed.
- C. Upon completion of his Work under this Section, the Contractor shall remove rubbish, waste, debris, excess construction materials, and other items resulting from construction operations off-site as described herein this Section and directed by the Landscape Architect.
- D. Scars, ruts, or other marks in the ground caused by the Contractor's Work shall be repaired.
- E. Remove equipment and implements of service, and leave the entire Project Site area in a neat, clean, and Owner-approved condition.

**3.7 FINAL REVIEW**

- A. Final Review under this Section shall be performed upon completion of the Landscape Establishment Period. Refer to Section 329813 – Landscape Establishment Period, for requirements.

**END OF SECTION**

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

**SECTION 32 98 13**

**LANDSCAPE ESTABLISHMENT PERIOD**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete Landscape Establishment Period, as specified during progress of the Work, after installation, for a designated period after Preliminary Acceptance, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
  - 1. Establishment of Landscape Installation, for a given duration as specified herein this Section.
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
  - 1. Section 312219 – Landscape Grading.
  - 2. Section 328400 – Irrigation Systems.
  - 3. Section 329113 – Soil Preparation.
  - 4. Section 329200 – Lawns & Grasses.
  - 5. Section 329300 – Exterior Plants.
  - 6. Section 329360 – Palm Tree Planting.
  - 7. Section 329400 – Landscape Planting Accessories.

**1.2 DEFINITIONS AND APPLICABLE STANDARDS**

- A. References:
  - 1. USDA – United States Department of Agriculture.
  - 2. ASTM – American Society for Testing & Materials.
  - 3. ANSI – American National Standards Institute.
  - 4. ISA – International Society of Arboriculture.
- B. Standards:
  - 1. American National Standard for Tree Care Operation, Tree, Shrub, and Other Woody Plant Maintenance (ANSI A300), American National Standards Institute, Latest Edition.
  - 2. American National Standard for Tree Care Operations (ANSI Z133), American National Standards Institute, Latest Edition.
  - 3. Tree Pruning Guidelines, International Society of Arboriculture, 1995 Edition.
  - 4. Pruning Standards for Shade Trees, National Arborists Association, Latest Edition.

**1.3 SUBMITTALS**

- A. General: Submit each item in this Article in four (4) bound Submittal Booklets for review by the Landscape Architect.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

- B. Submittal Booklets: Each Submittal Booklet under this Section shall be tabbed into specific sections, containing clearly identified and legible (through yellow highlighter or other specific identification methods) information indicated herein this Article.
1. Quality Control Submittals:
    - a. Schedule of maintenance operations and monthly status report, including list of equipment, materials proposed for the job, and watering schedule(s).
    - b. Licenses, permits and insurance required by the local jurisdiction, the State, or Federal government, pertaining to Work under this Section.
      - 1) Pesticide Applicator: Valid California Qualified Applicator Certificate (QAC), with “B – Landscape Maintenance” Category, as administered by the California Department of Pesticide Regulation (DPR).
      - 2) Employer of the California Qualified Applicator Certificate (QAC), with “B – Landscape Maintenance” Category:
        - a) The company which employs the person holding the QAC must possess a Maintenance Gardener Pest Control Business License, as administered by the California Department of Pesticide Regulation (DPR).
    - c. Monthly record of herbicides, insecticides and disease control chemicals used for the Project.
    - d. Written application recommendation by a licensed agricultural pest control advisor for weed, pest and disease controls restricted by the Director of Agriculture proposed for this Work.
  2. Project Closeout Submittal:
    - a. Include in a single 3-ring binder a Landscape Maintenance Manual for use by the Owner, containing an indexed collection of all schedules, records and permits listed above, including documentation of accepted condition of planting and irrigation at Final Acceptance.
- C. Scaled Shop Drawings: Not Required.
- D. Field-Constructed Mock-ups: Not Required.
- E. Qualification Data: Submit names for firms and persons specified in the “Quality Assurance and Control” Article to demonstrate their capabilities and experience on similar Landscape Planting Accessories installations.
- F. Submittals under this Article will be rejected and returned without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested. Partial Submittals will not be accepted.
- G. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

**1.4 QUALITY ASSURANCE AND CONTROL**

- A. Qualifications:
1. Valid California C-27 (Landscaping Contractor) License.
  2. Experience: Contractor or sub-contractor performing Work under this Section shall have a full-time employee assigned to the Project as foreman for the duration of the Contract. Employee shall have a minimum of four (4) years experience in landscape maintenance supervision, with experience or training in entomology, pest control, soils, fertilizers and plant identification. Employee shall speak English fluently.

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

3. Labor Force: Landscape maintenance labor force shall be thoroughly familiar with, and trained in, the Work to be accomplished, and shall perform the task in a competent, efficient manner acceptable to the Owner.
- B. Requirements:
1. Supervision: Landscape Maintenance Foreman shall directly supervise the Work force during duration indicated herein this Section. Notify Owner of changes in supervision.
  2. Identification: Provide proper identification during duration for landscape maintenance firm's vehicles and labor force. Be uniformly dressed in a manner satisfactory to the Owner.

**1.5 PROJECT/SITE CONDITIONS**

- A. Site Visit: At beginning of the designated Landscape Establishment Period, visit and tour the site with the Owner's Representative, Landscape Architect, and other interested parties, to clarify the scope of Work, and understand existing project/site conditions.
- B. Documentation of Conditions: Document the general condition of installed plant materials, recording those which are healthy and thriving, and unacceptable materials which are damaged, dead, and/or dying and in need of replacement.
- C. Irrigation System: Document general condition of existing irrigation system, making sure that faulty, improper, and/or non-functioning irrigation materials or equipment are reported.

**1.6 SEQUENCING AND SCHEDULING**

- A. Perform Work under Landscape Establishment Period during hours mutually agreed upon between Owner and Contractor.
- B. Work force shall be present at the Project Site at a minimum duration of at least once per week, and at other times, as necessary, to perform specified Work, in accordance with the approved schedule under the Landscape Establishment Period.

**1.7 WARRANTY**

- A. Specific Requirements: Refer to the following Sections:
1. Section 328400 – Irrigation Systems.
  2. Section 329200 – Lawns & Grasses.
  3. Section 329300 – Exterior Plants.
  4. Section 329360 – Palm Tree Planting.
  5. Section 329400 – Landscape Planting Accessories.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. A. General: Materials and equipment as required to perform Work under this Section shall be provided by Contractor.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

- B. Water: Clean, potable and fresh, as available from Owner.
- C. Fertilizers:
  - 1. Fertilizer Tablets: Tightly compressed, slow-release and long-lasting complete fertilizer tablets, bearing manufacturer's label of guaranteed analysis of chemicals present. Refer to Section 329113 – Soil Preparation, for requirements.
  - 2. Balanced, once-a-season application, controlled-release Fertilizer(s), with a blend of coated prills which supply controlled-release nitrogen, phosphorus and potassium, and uncoated, rapidly soluble prills containing nitrogen and phosphorus.
- D. Herbicides, Insecticides, and Fungicides:
  - 1. Provide materials with original manufacturers' containers, properly labeled with guaranteed analysis.
  - 2. Use non-staining materials.
- E. Replacement Tree Guys, Stakes, Ties and Wires: Match originally accepted existing materials installed on the Project.

**2.2 EQUIPMENT**

- A. A. General: Use only the proper tool(s) required for each task under this Section. Maintain tools in sharp, properly-functioning condition. Clean and sterilize pruning tools prior to usage.
- B. Insect/Disease Prevention: Provide measures to prevent introduction of insect or disease-laden materials onto the Site. Refer to Section 329300 – Exterior Plants.

**PART 3 - EXECUTION**

**3.1 DURATION OF LANDSCAPE ESTABLISHMENT PERIOD**

- A. Following satisfactory completion of all items included on the Landscape Punch List, the contracted Landscape Establishment Period shall commence and progress.
- B. Duration:
  - 1. A minimum of 120 calendar days.

**3.2 COMMENCING THE LANDSCAPE ESTABLISHMENT PERIOD**

- A. Preliminary Review: As soon as landscape installation is substantially completed per the Contract Documents, Contractor shall arrange to hold a preliminary review on-site with the Landscape Architect, Owner, and other interested parties to evaluate the condition and execution of the completed Work. Evaluation of the Work shall be executed by the Landscape Architect through a "Landscape Punch List".
- B. Date of Review: Notify Landscape Architect at least five (5) working days prior to anticipated Date of Review.
- C. Commencing the Landscape Establishment Period: The date on which the Landscape Architect determines that the landscape installation is substantially-complete, whereas outstanding Work

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

included on the Landscape Punch List is addressed and satisfactorily completed to the satisfaction of the Landscape Architect.

**3.3 PREPARATION**

- A. Protection:
  - 1. Protect new landscape planting areas from damage during duration of Landscape Establishment Period, until Final Acceptance.
  - 2. Provide temporary protection fences, barriers and signs, as required, for protection.
  
- B. Replacements:
  - 1. Immediately treat or replace plant materials as directed, which become damaged or injured as a result of Contractor's operations or negligence, per the Landscape Architect, at no additional cost to Owner.
  - 2. Replacement plant materials shall match size and variety of plant material being replaced.

**3.4 PLANTING ESTABLISHMENT**

- A. Watering Basins:
  - 1. Maintain watering basins around the perimeter of the installed plant materials so that enough water can be applied to establish and maintain adequate soil moisture through the root zone of the plant materials. Re-dish and tamp basins accordingly which have become damaged or have failed since installation.
  - 2. For supplemental hand watering of watering basins, use a water wand to break the water force. Do not permit use of "jet" type watering equipment. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.
  - 3. Mulch: Maintain originally specified thickness of mulch material to reduce evaporation and frequency of watering.
  - 4. During rainy season, open basins to allow surface drainage away from the root crown where excess water may accumulate. Restore watering basins at end of rainy season.
  - 5. At the end of the rainy season, re-dish and tamp watering basin at trees and shrubs.
  
- B. Settlement of Plant Materials: Reset/replant sunken or settled plant materials to proper grades and in upright position.
  
- C. Weed Control:
  - 1. Planting areas throughout site shall be weed-free at all times, including areas between plants and along watering basins.
  - 2. Use only recommended and legally-approved herbicides to control and maintain weed growth.
  - 3. Avoid frequent soil cultivation that destroys shallow roots and breaks the seal of pre-emergent herbicides.
  
- D. Pruning:
  - 1. Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached, and which have vertical spacing of eighteen-inches (18") to forty-eight-inches (48") and radial orientation so as not to overlay each another.
  - 2. Prune trees to eliminate diseased or damaged growth, and narrow "V-shaped" branch forks that lack strength. Reduce toppling and wind damage by thinning-out crowns.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

3. Prune trees to maintain growth within space limitations, maintaining a natural appearance and balancing crown with roots.
  4. No stripping of lower branches of young trees shall be permitted.
  5. Retain lower branches in a "tipped back" or pinched condition to promote caliper trunk growth. Do not cut back to fewer than six (6) buds or leaves on such branches. Only cut lower branches flush with the trunk after the tree is able to stand erect without staking or other support.
  6. Thin out and shape evergreen trees when necessary to prevent wind and storm damage. Do primary pruning of deciduous trees during the dormant season. Do not permit any pruning of trees prone to excessive "bleeding" during growth season.
  7. Prune damaged trees or those that constitute health or safety hazards at any time of year as required.
  8. Make pruning cuts clean and close to the trunk, without cutting into the branch collar. "Stubbing" will not be permitted. Cut smaller branches flush with trunk or lateral branch. Make larger cuts one-inch (1") diameter or larger parallel to shoulder rings, with the top edge of the cut at the trunk or lateral branch.
  9. Branches too heavy to handle shall be precut in three (3) stages to prevent splitting or peeling of bark. Make the first two (2) cuts eighteen inches (18") or more from the trunk to remove the branch. Make the third cut at the trunk to remove the resulting stub.
  10. Do not prune or clip shrubs into balled or boxed forms unless specifically called for by design.
  11. Clip shrubs to be hedged when branches project two-inches (2") beyond limit of clipped hedge shown on the Contract Drawings.
  12. Take extreme care to avoid transmitting disease from one infected plant to another. Properly sterilize pruning tools before going from one infected plant to other plant materials.
- E. Staking and Guying of Trees:
1. Adjustments: Inspect stakes and guys periodically (minimum once per month) throughout duration of Landscape Establishment Period to check for rubbing of staking materials on trunks or branches causing bark wounds.
  2. Repair and replace faulty staking and guying materials as shown and as specified.
- F. Maintenance of Existing Plant Materials to Remain:
1. General: Conform to applicable paragraphs regarding pruning, watering, spraying and fertilizing of new plant materials as indicated herein this Section.
  2. Symptoms: Be alert to symptoms of construction damage to existing plantings as evidenced by wilting, un-seasonal or early flowering or loss of leaves, and insect or disease infestation due to declining vigor.
  3. Notification: Submit in writing of evidences of declining vigor immediately upon discerning the problem. Take appropriate interim measures to mitigate the severity of the problem as specified in this Section.
  4. Proposal: Submit written proposal and cost estimate for the correction of all conditions before proceeding with permanent correction Work.

### **3.5 GROUNDCOVER ESTABLISHMENT**

- A. Irrigation:
1. Check for moisture penetration throughout the root zone at least twice a month.
  2. Water as frequently as necessary to maintain healthy growth of groundcovers.
- B. Weed Control:

**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

1. Control weeds, preferably by hand removal, with pre-emergent herbicides and with selective systemic herbicides.
  2. Minimize hoeing of weeds in order to avoid plant damage.
- C. Fertilization:
1. Recently installed plant materials: Verify with Owner actual completion date of planting installation and rate of prior application of fertilizers.
  2. New Plant Materials: Place Planting Tablets (per Section 329113 – Soil Preparation) beside the root ball about one-inch (1”) from root tips.
  3. Established Plant Materials: Do not use complete fertilizers unless soil test shows specific nutrient deficiencies.
- D. Mowing and Edging:
1. Edge groundcovers to keep in bounds. Trim top growth as necessary to achieve an overall even appearance.
  2. Ground covers which lend themselves to mowing shall be mowed to specified height above finished grade in order to renew growth, improve density and attractiveness.
- E. Replacements:
1. Replace dead and missing plants after obtaining Owner's agreement to pay for replacement.
  2. Damages due to Contractor's negligence shall be paid for without charge to Owner.

**3.6 INSECTS, PESTS, AND DISEASE CONTROL**

- A. Inspection: Inspect plant materials for signs of stress, damage and potential trouble from the following:
1. Presence of insects, moles, gophers, ground squirrels, snails and slugs in planting areas.
  2. Discolored or blotching leaves or needles.
  3. Unusually light green or yellowish green color inconsistent with normal green color of leaves.
- B. Personnel: Only licensed, qualified, trained personnel shall perform spraying for insect, pest and disease control.
- C. Application: Spray with extreme care to avoid all hazards to any person or pet in the area or adjacent areas.

**3.7 IRRIGATION SYSTEM**

- A. General:
1. Repair without additional charge to Owner damages to Irrigation System caused by Contractor's operations. Perform repairs within one (1) watering period.
  2. Report promptly to Owner accidental damage not resulting from Contractor's negligence or operations.
  3. Twice a month, use a probe or other acceptable tool to check the rootball moisture of representative plants as well as the surrounding soil.
- B. Cleaning and Monitoring the System:
1. Continually monitor the irrigation systems to verify that they are functioning properly as designed. Make program adjustments required by changing field conditions.



**LOS ANGELES VALLEY COLLEGE  
5800 FULTON AVENUE  
VALLEY GLEN, CALIFORNIA**

2. Prevent spraying on windows, building walls, by balancing the throttle control on the remote control valves and the adjustment screws on the sprinkler heads. Do not allow water to atomize and drift.

**3.8 TERMINATION OF THE LANDSCAPE ESTABLISHMENT PERIOD**

- A. Final Acceptance Procedure:
  1. Work will be accepted by the Landscape Architect upon satisfactory completion of all Work, including Landscape Establishment Period, but exclusive of replacement of materials under the Warranty Period.
  2. Submit a written request to Landscape Architect for review for Final Acceptance at least five (5) working days prior to anticipated Final Review date, which is at the end of the Landscape Establishment Period.
- B. Corrective Work:
  1. Work requiring corrective action or replacement shall be performed within ten (10) calendar days after the Final Review.
  2. Perform corrective Work and materials replacement in accordance with the Contract Documents, Work shall be made by the Contractor at no cost to the Owner.
  3. After corrective Work is completed, the Contractor shall again request a Final Review for Final Acceptance as outlined above.
    - a. Continue maintenance of all landscaped areas until such time as all corrective measures have been completed and accepted.
- C. Conditions for Acceptance of Work at End of Landscape Establishment Period:
  1. Each plant shall be alive and thriving, showing signs of growth and no signs of stress, disease, or any other weaknesses.
  2. Replace plant materials not meeting these conditions. An additional Warranty Period equal in length to the original shall be commenced for all such plants and planted areas.
- D. Final Acceptance Date: The date on which the Landscape Architect issues a Letter of Final Acceptance. Upon Final Acceptance, the Owner will assume responsibility for maintenance of the Work beyond the Landscape Establishment Period.

**3.9 CLEANING**

- A. General: Dispose of pruned plant materials, vacuum turf grass clippings and leaves, sweep walkways and rake smooth mulched areas. Remove from the site containers and other evidence of maintenance activities.

**3.10 CLOSE OUT**

- A. Landscape Maintenance Record:
  1. Submit binder to Owner with documentation and records required and utilized during the Landscape Establishment Period.
- B. Keys and Identification: Return keys and identification materials supplied by Owner for the purpose of site access.

**END OF SECTION**

## E. Glossary

**Association** – the relationship between a past event, activity, or person and a cultural landscape.

**Canopy** – The upper structure, leaves and stems, of larger woody plants and the area shaded by it.

**Character Defining Feature** – a prominent or distinctive aspect, quality, or characteristic of a cultural landscape that contributes significantly to its physical character.

**Condition Assessment** – a method for describing the current conditions of a cultural landscape measured against an applicable standard or guideline, whereby condition is usually expressed as a rating of good, fair, or poor.

**Chronology** - the sequential order of relevant past events.

**Cultural Landscape Character** – the sum of all visual aspects, features, materials, and spaces associated with a cultural landscape's history.

**Cultural Landscape Perspective** - viewing a landscape through the prism of its past. This is based on practices that have influenced the development of the landscape in terms of patterns of land use, stylistic preferences, and the use of materials.

**Cultural Landscape** – a geographic area, including both cultural and natural resources associated with a past event, activity, or person, or that exhibits other cultural or aesthetic values.

**Deciduous** – Describes plants that shed their leaves seasonally and the leaves shed.

**Design** – the combination of elements that create the form, plan, space, structure, and style of a cultural landscape.

**Diameter at Breast Height (DBH)** – Diameter of trunk at 4.5' above ground level.

**Elevation** – Relation to sea level of bottom of trunk at finished surface of planting soil.

**Evaluation** - Process by which the significance of a cultural landscape, cultural landscape characteristic or feature is judged.

**Existing Conditions** – the present physical state of a cultural landscape.

**Feature** – a type of landscape characteristic.

**Feeling** – a cultural landscape's expression of the aesthetic or sense of a particular period in time.

**Integrity** – the authenticity of a property's identity, evinced by the survival of physical characteristics that existed during the property's past. The seven qualities of integrity as defined by the National Register Program are location, setting, feeling, association, design, workmanship, and materials.

**Leader** – The dominant shoot of a plant, e.g. the main trunk.

**Location** – the place where a cultural landscape was constructed or the place where the past event(s) occurred.

**Mulch** – A loose layer either natural or man-made, composed of organic or mineral materials, placed on top of soil near plants for weed and plant predator suppression, for insulation against heat or cold near roots of plants, and to conserve water in dry areas.

**Perennial** – A plant which lives for more than two years and, when mature, produces flowers annually.

**Period of Significance** – the span of time for which a cultural landscape attains significance.

**Planting Areas** – Areas to be installed with Plant Material, or areas with existing vegetation.



**Preservation Landscape Architect** – specialist in the science and art of landscape architecture with advanced training in the principles, theories, concepts, methods, and techniques of preserving cultural landscapes.

**Reclaimed Water** – Water from a wastewater plant treated two or three times. The resulting water is available for beneficial uses such as landscaping.

**Riparian** – Streamside.

**Rootball** – The root system of a plant.

**Setting** – the physical environment of a cultural landscape or the character of the place in which a property played a role.

**Significance** - The meaning or value ascribed to a structure, landscape, object, or site. It normally stems from a combination of association and integrity.

**Soil** – Natural, unconsolidated, mineral and organic material occurring on the surface of the Earth; it is a medium for the growth of plants.

**Soil Preparation** – Work required to make a complete and thorough preparation of the planting soil, including soil amendment products and imported topsoil, as required, to make up deficiencies in quantity of soil available on site.

**Specimen Tree** – a tree that exemplifies the characteristics of its species or, that, due to its placement, exhibits prominent aspects of its species.

**Topsoil** – Surface layer of soil, may contain many living organisms.

**Treatment recommendations** – suggested advice of appropriate and beneficial work or tasks to be carried out to achieve a particular goal.

**Tree** – A plant with one or more woody stems (trunks) taller than about 20 feet. A small tree is generally under 20 feet tall.

**Urban Forest** – A forest or collection of trees that grow within a city, town or suburb.

# F. Index

## A

Association 82, 205, 320

## C

Canopy 104, 320

Character Defining Feature 320

Chronology 65, 320

Condition Assessment 320

Cultural Landscape 30, 65, 66, 68, 83, 95, 122, 123, 124, 205, 320

Cultural Landscape Character 320

Cultural Landscape Perspective 30, 68, 320

## D

DBH 10, 20, 22, 148, 320

Deciduous 34, 35, 41, 42, 43, 49, 51, 52, 55, 59, 61, 145, 151, 218, 235, 320

Design 14, 148, 204, 205, 320

## E

Elevation 12, 320

Evaluation 3, 11, 65, 66, 68, 83, 126, 205, 320

Existing Conditions 3, 10, 11, 19, 30, 84, 91, 103, 126, 136, 138, 320

## F

Feature 320

Feeling 320

## I

Integrity 82, 83, 320

## L

Leader 320

Location 320

## M

Mulch 119, 320

## P

Perennial 320

Period of Significance 82, 320

Planting Areas 29, 320

Preservation Landscape Architect 321

## R

Reclaimed Water 321

Riparian 104, 321

Root ball 118, 321

## S

Setting 321

Significance 82, 320, 321

Soil 202, 321

Soil Preparation 321

Specimen Tree 148, 321

## T

Topsoil 321

Treatment recommendations 321



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