SAN FRANCISCO STATE UNIVERSITY

LANDSCAPE FRAMEWORK + FOREST MANAGEMENT PLAN

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JANUARY 2018

SAN FRANCISCO STATE UNIVERSITY

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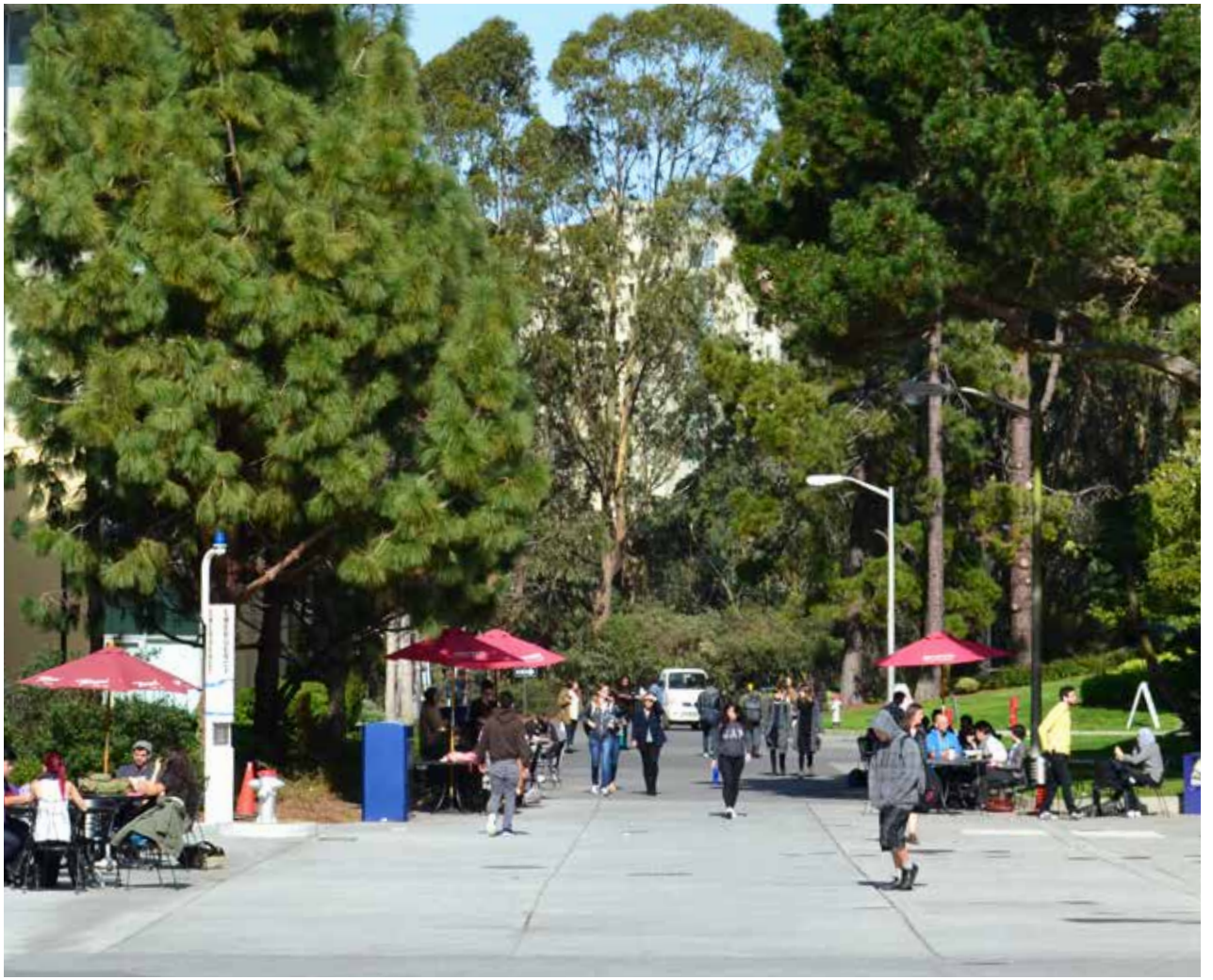
INTRODUCTION

INTRODUCTION

Executive Summary



This path through the pedestrian core of campus has mature trees and active edges, creating a welcoming environment for students, staff and visitors.

A beautiful campus landscape has the potential to live on in the memories of students, employees, and visitors. A thoughtful approach to campus long range planning and maintenance is therefore a powerful, essential component of a university's identity and success. In the case of San Francisco State University (SF State), the only 4 year public university in San Francisco, the Landscape Framework and Forest Management Plan (LFFMP) is a tool to assess the current conditions of the campus landscape and urban forest, and to provide landscape design guidelines for the university. These guidelines will provide a framework for a robust system of open spaces that address campus identity, ecology, and social function. In addition, this plan recognizes that the mixed forest zones on campus are in decline and identifies a reforestation strategy so that the campus forest can continue to be a thriving asset for current and future generations of university affiliates and city dwellers to enjoy.

From a natural stream canyon and creek bed, to farmland, to an urban university campus, SF State's landscape has evolved dramatically over the past several decades. Originally inhabited by the Native American Ohlone tribe, the Spanish named Lake Merced subsequent to their arrival in 1774 after "Our Lady of Mercy." Lake Merced was the original source of water for San Franciscans until the Hetch-Hetchy Dam was built. Portions of Lake Merced were filled in to create more land area and in the early 1900s many of the parcels formerly known as Lake Merced, including SF State, were divided and sold.

The adjacent map displays how natural landscape features, streams, and creeks of Lake Merced flowed through the campus and surrounding areas. Once the Muni M line operation started (1935) and Cox Stadium was built (1936), new development focused on 19th Avenue, and the stream canyon was filled to meet SF State's recreational needs. The campus continued to develop into the 1950s, with the first

The articulation of the campus landscape has the ability to create lasting memories for visitors, faculty, staff, students and alumni at San Francisco State University.

This historical map from 1905 obtained through the David Rumsey collection shows the current boundary of SF State in red and its relationship to the landscape ecology of the Lake Merced watershed.

The landscape in front of the new J. Paul Leonard Library and Sutro Library renovation and expansion showcases native plants that are hardy enough to withstand large volumes of pedestrian traffic while providing a contrasting color and texture from the surrounding buildings.

major academic buildings and the quad construction occurring at this time. Through the 1970s, the core of the campus developed, including academic buildings and the first student housing construction. In the early 2000s, SF State acquired University Park North and South expanding its residential resources. The Mashouf Wellness Center and the renovation of several academic buildings on campus are providing state of the art facilities for future students.

Several natural and built elements that exist on campus today are markers of SF State's history and the evolution of SF State from a dune landscape to an established, urban university.

There are a variety of powerful forces beyond a university's boundaries that impact a campus landscape. Climate change will alter the landscape and vegetation. Disparate design that relates to surrounding architecture may not contribute to a unified landscape vision. Solutions for some of these problems often result in quick changes that do not take into account larger vision and context. This plan is intended to take a more inclusive look at how the landscape functions at SF State in order to encourage a more holistic approach to campus landscape design going forward.

The LFFMP has been prepared under the direction of the Planning Advisory Committee (PAC) which is composed of faculty representatives, student representatives, and staff representatives from Physical Planning and Development, Grounds Operation, Office of the President and University Property Management. The resulting LFFMP is intended to be used as a tool to guide future landscape design and maintenance decisions. This plan will ultimately determine how improvements associated with specific projects can contribute to a larger vision of the campus open space system.

"Several natural and built elements that exist on campus today are markers of SF State's history and evolution from a dune landscape to an established, urban university."

This Landscape Framework Plan showcases the vision of SF State.

INTRODUCTION

Document Overview / User Guide

The design guidelines seek to reinforce landscape character in distinctive zones around campus such as the courtyard between Business and HSS.

This document is a framework for the open spaces and forest areas of SF State. It is meant to serve as a guide for future landscape design on campus, from a small scale residential garden to a new mixed-use development, the LFFMP should be consulted in order to implement campus landscape goals relating to everything from plant palettes to recommended maintenance practices. The document describes how the facilities and grounds management departments might implement the framework, and suggests plant palettes and compositions for designers working on projects at SF State.

The landscape guidelines are subdivided into distinct landscape zones. Each of these planting zones contain a variety of species that can be used to reinforce the character of that area. Additionally, conceptual designs for typologies demonstrate how these palettes can be applied in different ways. The following steps show how the Landscape Guidelines chapter is organized:

1. **Identify Where You Are On Campus:** Each landscape zone is outlined with a specific color and tab on the page that corresponds to geographic areas highlighted in the Framework Plan. For instance, if you are in the woodland zone section, the same green color will appear on the base map and the side tab.

2. **Refer to Palette**: Each landscape zone lists select plants that can be used in the landscape. This is a sampling of a larger palette located at the end of the Landscape Guidelines Chapter that describes all trees, shrubs, and groundcover proposed for the campus.

3. **Compose the Plant Material**: Based on the geographic zones and plant palettes, these exhibits suggest plant material composition and design through example illustrative sections that form typologies for plant groupings. Each illustrative section contains reference plant photographs.

1 IDENTIFY: CAMPUS LANDSCAPE ZONES

LEGEND

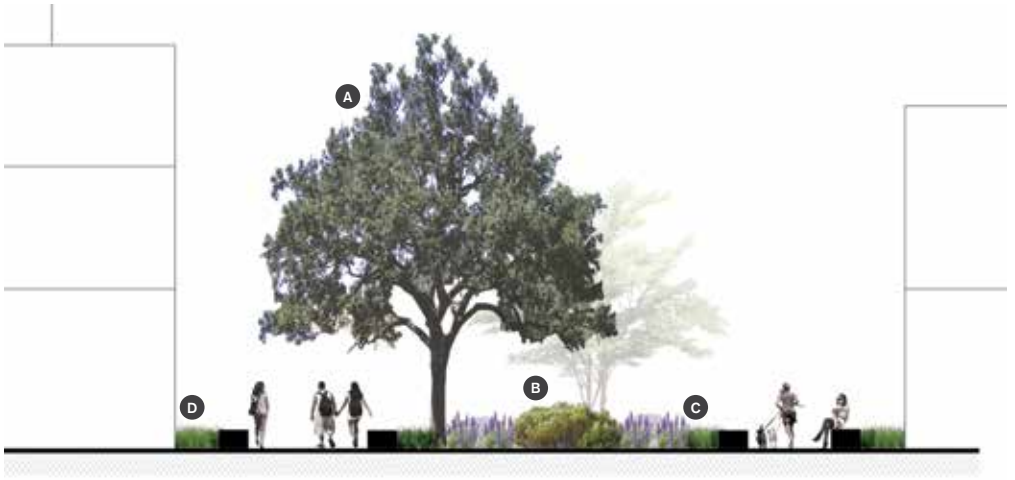
- formal streetscape
- ornamental edge
- woodland
- coastal
- botanical
- evergreen
- riparian

2 REFER: PLANT LIST

PLANT LIST

HABIT	SCIENTIFIC NAME	COMMON NAME	HEIGHT	NATIVE	LIGHT	WATER USE	LANDSCAPE TYPOLOGIES: RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	FORMAL	ORN	BOTANICAL
TREE	Acer circinatum	Vine maple	15'		●●○○	●●○○		●					
	Acer negundo	Boxelder maple	30-50'		●●●●	●●○○		●	●				
	Acer rubrum	Red Maple	30-50'		●●●●	●●○○	●		●	●	●	●	
	Adansonia grandidieri	Grandidier's baobab	80'		●●○○	●●○○							●
	Agathis Robusta												
	Aesculus californica	California horse-chestnut	16'		●●○○	●●○○		●					
	Alnus rhombifolia	White alder	80-100'		●●○○	●●○○	●		●				
	Alnus rubra	Red alder	79-120'		●●○○	●●○○	●		●				
	Aloe ferox	Cape Aloe	10'		●●○○	●●○○	●						●

3 COMPOSE: PLANT TYPOLOGY



A — *QUERCUS AGRIFOLIA* COAST LIVE OAK

B — *BACCHARIS PILULARIS* COYOTE BRUSH

C — *LUPINUS CHAMISSONS* BEACH LUPINE

D — *FESTUCA RUBRA* RED FESCUE

E — *ERIGERON GLAUCUS* SEASIDE DAISY

F — *ISOMERIS ARBOREA* BLADDERPOD

LANDSCAPE GUIDELINES

LANDSCAPE GUIDELINES

Existing Landscape Conditions

The landscape zones for SF State are shaped and informed by the existing campus' conditions diagrammed on the following pages: Circulation, Figure Ground, Social Spaces, Ecology and Priority Removals.

CIRCULATION

- Campus core circulation is limited to pedestrians, with bicycle and service access around the perimeter.
- SF State is bordered by large, urban streets with transit access (including 19th Avenue and Lake Merced Boulevard).
- Several east/west pedestrian paths through campus exist, however there is no direct north/ south pedestrian path through campus.

FIGURE GROUND

- The buildings at SF State range in scale from small, residential structures to large, multi-use facilities.
- More consistent building frontage exists on Holloway Avenue, while 19th Avenue, Buckingham Way, and Font Boulevard have building setbacks.

SOCIAL SPACES

- Social uses on campus include academic, recreational, athletic, residential, dining and event space.
- Large social spaces are located in the southern portion of campus and smaller courtyards dominate the north area.
- The pedestrian core of campus has the most concentrated zone of social spaces.

ECOLOGY

- There is a dense Eucalyptus forest surrounding Cox Stadium and a mixed forest surrounding Maloney Field.
- Mature Monterey Cypress trees dominate the quad landscape.
- Most of the soil on campus has been altered over time. There are some areas with native soil (shaded area).
- The steep, forested slopes on campus have shown the least amount of alteration over time, with other native soil in the UPN housing area.
- A hydrological network conveys stormwater from the higher elevations of campus down to the central valley.

PRIORITY TREE REMOVALS

- There are approximately 2872 trees on campus. A majority are in fair condition.
- Trees in poor condition are concentrated at sloped landscapes.
- The tree inventory system has categorized a number of priority removal species.[1] While some Pine, Cypress and Eucalyptus trees are defined as good and excellent, some are designated as priority 1 and 2 removals, with concentrated areas around Cox Stadium and Maloney Field.
- There are smaller zones of priority 1 and 2 removal in the pedestrian core and near the parking garage.
- For more information on the tree inventory definition of priorities, see implementation.

[1]Data culled from ArborPro Report drafted December 2015.

LANDSCAPE FRAMEWORK PLAN

LANDSCAPE GUIDELINES

Landscape Zones

Overall Vision

The overall landscape vision for SF State is informed by essential layers including soil, topography, slope, stormwater, circulation and campus social spaces. It has informed the three principles described below:

- **Celebrating Natural Ecology:** SF State is part of a larger ecological system that will be celebrated by diverse landscape zones on campus. These zones will illustrate plant material that can be found within the surrounding area and region, grounding the campus in its unique ecological heritage. By introducing specific ecological zones and managing the campus' urban forest, the vision for SF State's Landscape Framework will help foster long term ecological sustainability.
- **Strengthening Identity:** Landscape is an inherent part of campus identity. From the Monterey Cypress trees on the quad to the dramatic scale of the forest, the landscape vision strengthens the campus' unique identity and creates new landscape features to reinforce SF State's history and ecology.
- **Enhancing Functionality:** The functionality of campus as it relates to circulation, wayfinding and built form will be enhanced through the LFFMP. The vision works with the built form of campus, creating hierarchy around building entrances without emphasizing discrete landscapes. Circulation and wayfinding is emphasized with consistent streetscape treatments and landscape thresholds as campus entrance.

Within the context of these considerations, seven landscape zones are identified (see facing page), each with a defined character and landscape palette.

This area of the Lower Campus is in the Woodland Planting Zone.

Example of an area to be enhanced as part of the Botanical Planting Zone.

Existing North Campus lawn is removed as part of the Coastal Landscape Zone.

The lower valley will be enhanced with more water loving, native plants as part of the Riparian Zone.

CAMPUS LANDSCAPE ZONES

LEGEND

- formal streetscape
- ornamental edge
- woodland
- coastal
- botanical
- evergreen
- riparian

Ornamental Edge

Vision

The Ornamental Zones are primarily located along the thresholds and perimeters of campus. These areas are the gateways to SF State and should provide a strong identity through planting. Several of the plants in this category already exist on campus including Tree Ferns, Agave and Aloe. The combination of colors and textures should provide a visually distinctive zone that creates “thresholds” in the surrounding landscapes, emphasizing major circulation routes.

- Ornamental planting along campus edges should create visual consistency and evoke a park-like edge.
- Planting at main campus entries and thresholds should emphasize SF State colors and relate to site elements including informational signage.
- Trees along major pedestrian pathways should be planted to allow for views into campus, create directionality, and provide circulation cues.
- Planting along 19th Avenue should withstand heavy traffic and create a transition from the Muni stations and stops to SF State.

“ The combination of colors and textures should provide a visually distinctive zone...”

Precedent: A mass planting of succulents provides powerful visual interest.

Precedent: A mix of materials, shade and ornamental trees along this path creates a beautiful, functional space.

ORNAMENTAL TYPICAL THRESHOLD SECTION

A

PRUNUS 'KWANZAN'
KWANZAN CHERRY

B

CEANOTHUS SPP.
SOUTHERN CALIFORNIA LILACS

C

ACANTHUS
BEAR'S BREECHES

CAREX
SEDGE

ALOE ARBORESCENS
ALOE

Riparian

Vision

The Riparian Zone of campus, located in the Lower and Upper Valley floors, presents an opportunity for the campus to enhance natural stormwater management and celebrate its heritage as part of the Lake Merced ecology. A majority of the soil located in this zone is native and undisturbed, providing opportune conditions for the trees, shrubs, and groundcover selected for the riparian zone palette. The continuous area located below the Mixed Forest provides a condition for a protected riparian habitat. Additionally, the zone can be viewed from 19th Avenue, creating a visual connection to the natural assets of campus and their relationship to Lake Merced. Reintroducing this ecology to campus will provide places to learn, an efficient stormwater system for campus, and wildlife habitat. Educational signage, access points, and paths should be introduced to improve user experience in this zone.

- Thick vegetation in this area should be thinned out to allow for visual access and light through the corridor.
- Invasive species should be cleared to allow for native grasses, shrubs and trees to flourish.
- Bioswales should be designed in low areas to allow for stormwater run-off from the sloped, upper landscape to the valley floor.
- Planting should be designed in segments that allow water filtration and absorption.
- Where possible, create undisturbed spaces that attract wildlife including migratory birds and other fauna.

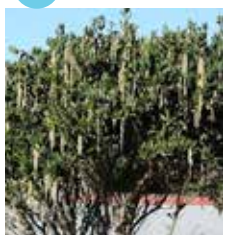
" ...opportunity for the campus to enhance natural stormwater management "

Precedent: Riparian planting along a path separates the habitat from pedestrians.

Precedent: Riparian planting in wet areas creates visual interest while enhancing opportunities for stormwater management.

RIPARIAN TYPICAL SECTION

A



GARRY ELLIPTICA 'JAMES ROOP'
COAST SILKTASSLE

B

SALIX LASIOLEPIS
ARROYO WILLOW

C

POPULUS FREMONTII
WESTERN COTTONWOOD

D

MIMULUS GUTTATUS
SEEP MONKEYFLOWER

E

ATHYRIUM FELIX-FEMINA
LADY FERN

F

IRIS DOUGLASIANA
DOUGLAS IRIS

Mixed Forest

Vision

The forest at SF State is one of the most defining campus features. Due to age and disease several trees in the forest are in critical condition and it is important to think strategically about a vision for reforestation. Located in the Lower and Upper Valley of campus, these areas are currently seen by many as barriers between the north and south. However, the future vision for the Mixed Forest Zone will serve as a permeable edge that unites North and South Campus through the valleys. The forest will serve as a vital ecological zone and learning resource. Existing species within this zone that are thriving should be nurtured and protected. Invasive and declining species, including Eucalyptus and Monterey Pine trees, should be strategically removed to allow for new planting to flourish. See the implementation chapter for more information on reforestation in this zone.

- All invasive species should be removed from the Mixed Forest.
- As trees die, new tree locations should be evaluated and identified to allow for more light and views into the forest.
- Tree inventory priority 1 & 2[1] trees should be prioritized for removal and replacement.
- New canopy trees should be planted strategically so that they do not compete for resources.
- Ground cover that assists with erosion control should be planted in masses along extreme slopes.
- A diversity of plants and trees should be planted along the forest edge to allow users to experience the Mixed Forest ecosystem.

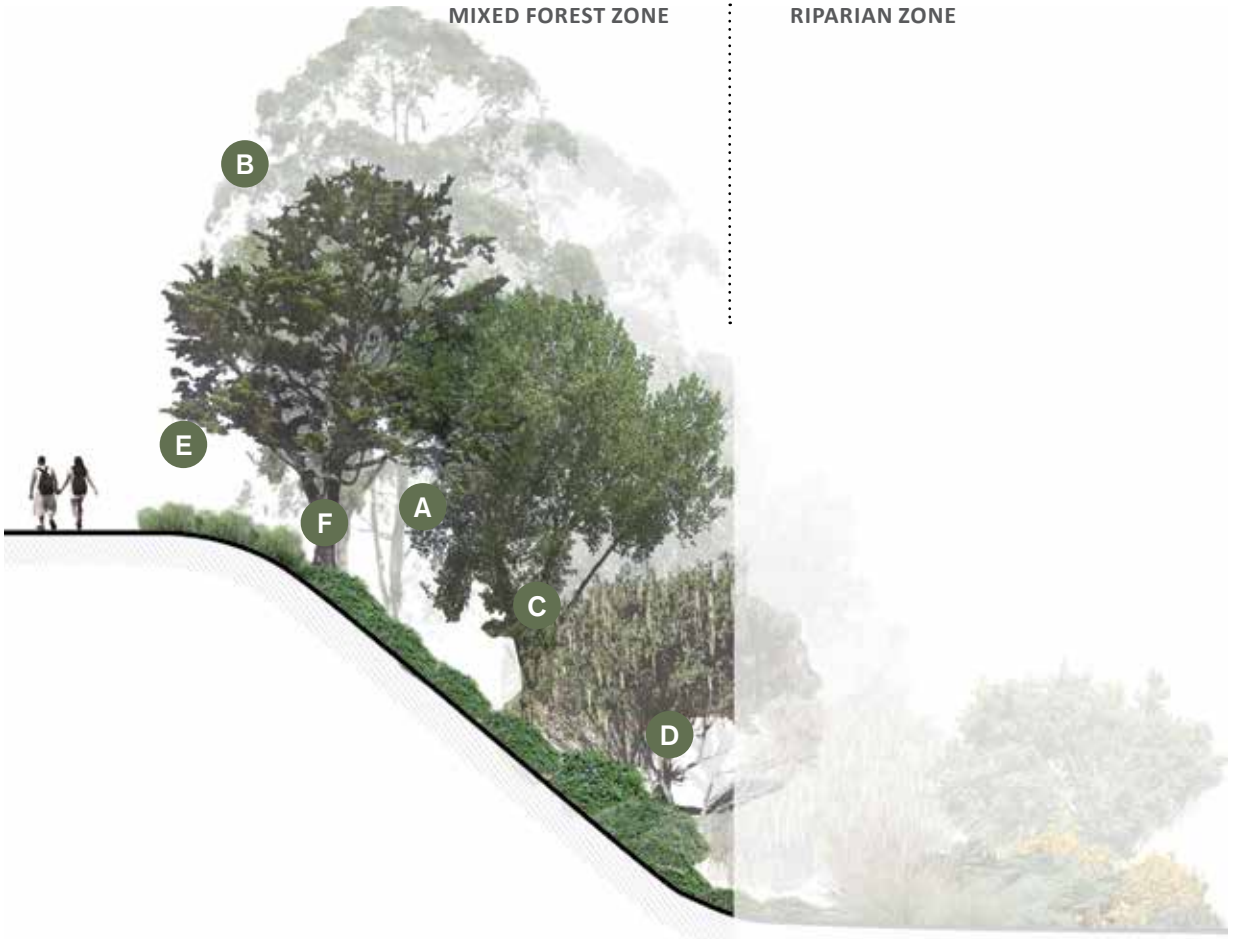
[1] Refer to tree inventory study and Implementation.

“ ...[The forest will serve as] a vital ecological zone and learning resource”

Precedent: In some areas, shrubs and groundcover may be unnecessary and difficult to maintain.

Precedent: A clearing in the forest would allow for sunny grasses to flourish.

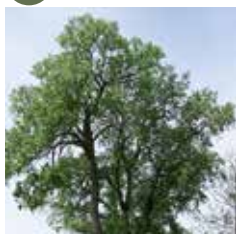
MIXED FOREST TYPICAL SECTION



A

QUERCUS AGRIFOLIA
COAST LIVE OAK

B



CUPRESSUS MACROCARPA
MONTEREY CYPRESS

C

GARRY ELLIPTICA 'JAMES ROOP'
COAST SILKTASSLE

D

CEANOTHUS GRISEUS
CARMEL CEANOTHUS

E

CAREX OBNUTA
SLOUGH SEDGE

F

CALAMAGROSTIS NUTKAENSIS
PACIFIC REEDGRASS

Woodland

Vision

A diversity of trees, shrubs, and groundcovers enhances existing heritage landscapes in the Woodland Zone and provides a variety of colors and textures that creates visual interest. The Woodland Zone is intended to create a park-like experience that allows for a diversity of planting typologies. The Quad is part of the Woodland Zone, but should be treated as a special entity as it provides an iconic landscape space critical to the identity of SF State.

- Place canopy trees in courtyards and along major pathways to provide shade and scale.
- Plant ornamental trees along pathways and within smaller courtyards for way-finding and visual interest.
- Courtyards should have an eclectic mix of woodland planting with a range of colors and textures.
- Woodland species planted around the borders of buildings should provide differing scale (such that windows are clear of planting materials but edges are consistent and share aesthetic qualities of surrounding Woodland Zones).
- Views across courtyards and the Quad should be kept intact.
- Small-scale, overly decorative planting should be avoided.
- Lawns should only be allowed in this zone where they are highly used, such as in the Quad.

"...The Woodland Zone is intended to create a park-like experience."

Precedent: An eclectic mix of understory Woodland plantings.

Precedent: An intimate pathway with lush Woodland species densly planted.

WOODLAND TYPICAL PATHWAY SECTION

A

CERCIS OCCIDENTALIS
WESTERN REDBUD

B

CUPRESSUS MACROCARPA
MONTEREY CYPRESS

C

ACHILLEA MILLEFOLIUM
YARROW

D

WOODWARDIA FIMBRIATA
GIANT CHAIN FERN

E

ARTEMISIA DOUGLASIANA
MUGWORT

F

RIBES SANGUINEUM
RED FLOWERING CURRANT

Woodland Continued

Precedent: This courtyard at UC San Diego provides lawn, traditional shade trees and drought tolerant shrubs.

Precedent: In some areas, no-mow fescue can replace lawn to provide a more drought tolerant landscape.

QUAD SECTION

A

LAWN

B

CUPRESSUS MACROCARPA
MONTEREY CYPRESS

C

BERGINIA SP.
ELEPHANT'S EAR

D

ACANTHUS MOLLIS
BEAR'S BREECH

Coastal

Vision

From Fort Funston to the Golden Gate Bridge, a rich coastal landscape ecology is visible throughout San Francisco's western edge. This dune ecosystem should be more evident on SF State's campus. In North and South Campus, a Coastal Zone will contain plants that do well in native, sandy soil. Trees should be used sparingly in the coastal zone to provide maximum views and permeability. However, some larger trees should be planted where shade is needed. The Coastal Zone experience should emphasize texture and color. The plants in the Coastal Zone tend to be the most drought tolerant; therefore they could potentially reduce maintenance and resources in some residential areas that currently have unused lawns.

- Canopy trees should be planted in courtyards to maximize shade where needed.
- The planting should dictate a hierarchy of spaces and suggest program. For example, smaller residential courtyards with mostly hardscape can be planted in a finer-grain than a large, residential gathering space.
- Low-maintenance practices for this zone should be implemented, as several of the shrubs and groundcover species do well with minimal care and intervention.
- Coastal paths should include consistent planting that is distinct from the courtyard zones. These plants should be hardy enough to withstand pedestrian and vehicular traffic.

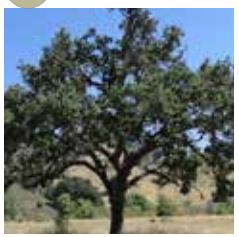
The campus has a rich ecological heritage as a dune landscape.

Precedent: Courtyards with large planters can include mass plantings that play with color and texture.

Precedent: Coastal planting can help create shade around seating areas.

COASTAL TYPICAL COASTAL SECTION

A



QUERCUS AGRIFOLIA
COAST LIVE OAK

B

BACCHARIS PILULARIS
COYOTE BRUSH

C

LUPINUS CHAMISSONS
BEACH LUPINE

Formal Streetscape

Vision

The Formal Streetscape Zone exists in a few strategic areas on campus, with a consistent edge on Holloway Avenue and Font Boulevard. These areas relate directly to the urban edge environments and provide a transition from an urban streetscape to a park-like campus environment. As these areas see heavy pedestrian and vehicular traffic, they should be planted with the same logic as one would plant a streetscape in any urban area.

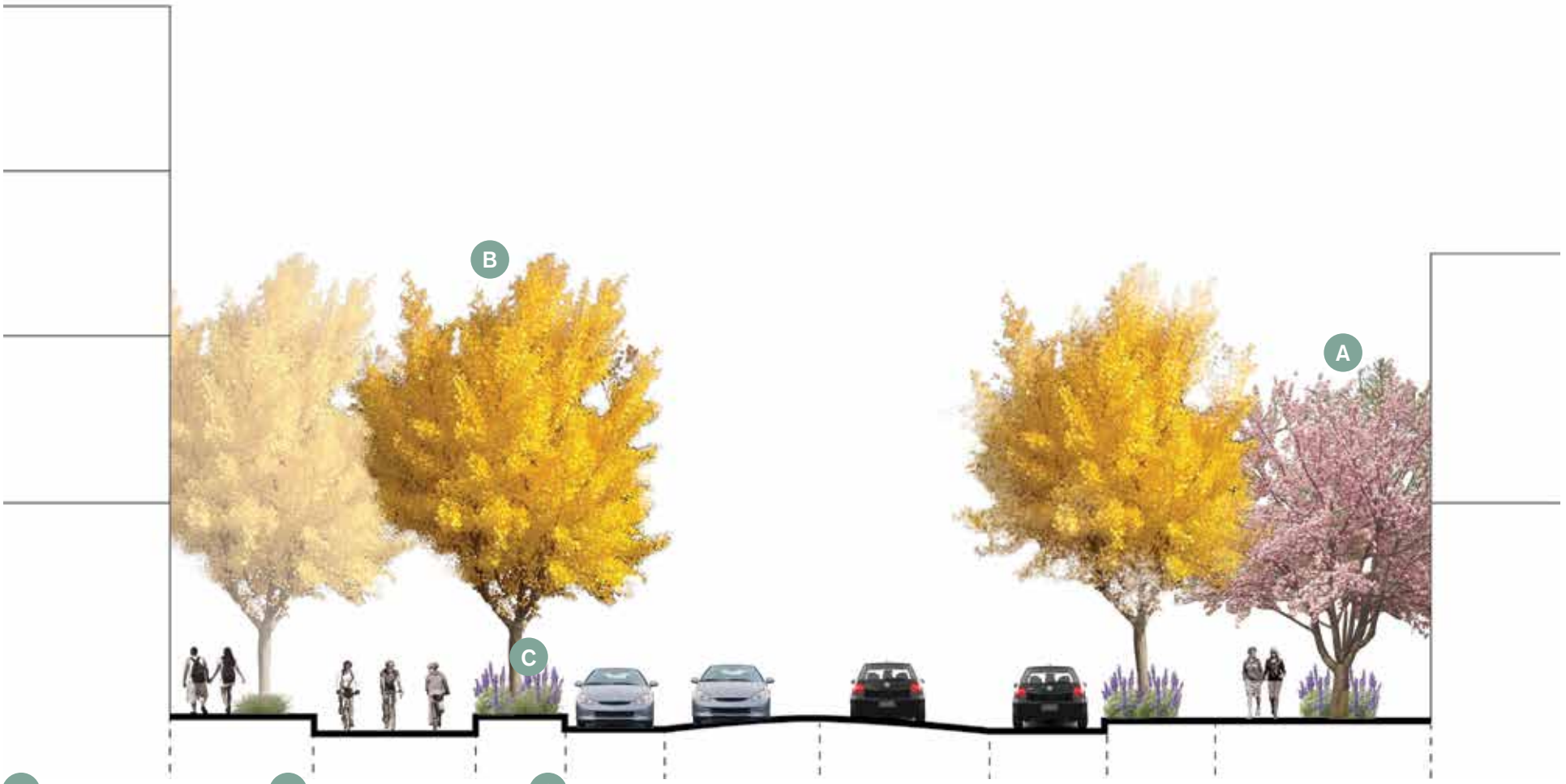
- Trees should be planted in a consistent row to create visual symmetry from one side of the street to another and demonstrate a consistent east-west corridor.
- Where there is room available, groundcover should provide visual interest and be hardy enough to withstand vehicular, bicycle and pedestrian traffic.
- Planting zones should be set back from buildings to allow for a comfortable sidewalk and minimal conflicts with buildings, awnings and fenestration.

" ...These areas relate directly to the urban edge environments"

Precedent: This combination of planting and paving creates a successful urban campus environment.

Precedent: A double allée of trees buffers noise and pollution.

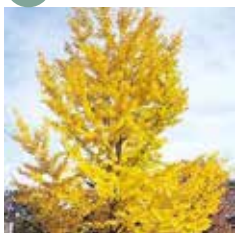
FORMAL TYPICAL SECTION



A

PRUNUS 'KWANZAN'
KWANZAN CHERRY

B



GINGKO BILOBA
GINGKO TREE

C

SALVIA LEUCANTHA
MEXICAN SAGE

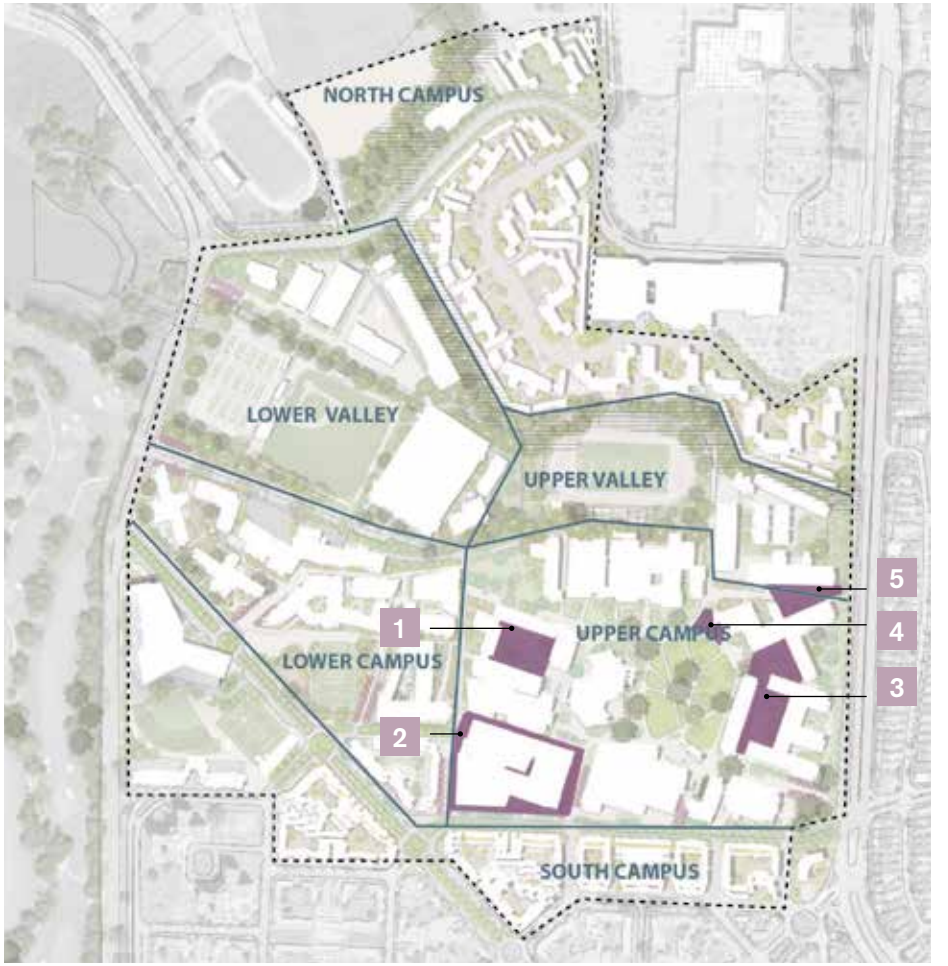
Botanical

Vision

The existing botanical zones on campus provide places for special collections to flourish and learning opportunities for students and visitors. The botanical areas are concentrated around existing specimens in the pedestrian core of campus. The Botanical Zone strengthens the existing tree specimens and provides a more robust shrub and ground cover structure. Botanical zones within the Mediterranean climate zones have been chosen to showcase the ecology of biomes that are similar to those found along the California coast. Mediterranean zones are characterized by hot dry summers and cold wet winters located between 30° and 45° latitude north and south of the equator. This can provide an outdoor laboratory to showcase plants from around the world and the effect of climate change on these biomes.

- Botanical Zones should preserve all existing specimen and include informational signage where appropriate.
- Planting in these areas should be limited to the Mediterranean Basin and the Mediterranean climate zones of sub-tropical South America and Africa and southwestern Australia.
- Groundcover and understory plants should showcase unique aspects of the regions described above, drawing from different color palettes and textures.
- Plants selected in these areas should adhere to sustainability principles and minimize resource inputs.
- The Garden of Remembrance is a stand-alone botanical zone with Japanese planting that should maintained as such.

" ...provide places for special collections to flourish"



1 Garden of Remembrance
2 California Coast
3 Southern Australia
4 South Africa & Chilean
5 Sub tropical South America

A

LEUCADENDRON ARGENTEUM
SILVER TREE

B

ALOE FEROX
CAPE ALOE

C

ALOE BLUE ELF
BLUE ELF ALOE

D

LEUCADENDRON DISCOLOR
FLAME TIPS

E

ELIGA TECTORUM
CAPE THATCHING REED

F

ARTEMESIA AFRA
AFRICAN WORMWORT

Planting Palette

The planting palette detailed on the following pages displays all of the plants that are suitable for use at SF State. The palette is organized by habit, from trees to shrubs to groundcover to vines. Each plant also contains information about its corresponding landscape typology, some of which overlap.

PLANT LIST

HABIT	SCIENTIFIC NAME	COMMON NAME	HEIGHT	SPREAD	LIGHT	WATER USE	LANDSCAPE TYPOLOGIES						
							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN. FORMAL		BOTANICAL
TREE	Acer circinatum [B]	Vine Maple	15-30'	5-25'	●●○○	●●○○		●					
	Acer negundo [B]	Box Elder Maple	30-50'	30-50'	●●●●	●●○○		●	●				
	Acer rubrum	Red Maple	40-70'	30-50'	●●●●	●●○○	●		●	●	●	●	
	Adansonia grandidieri	Grandidier's Baobab	80'	20-40'	●●○○	●●○○							●
	Agathis robusta	Queensland Kauri	80-100'	15-30'	●●●●	●●○○							●
	Aesculus californica	California Horse-Chestnut	10-30'	15-35'	●●○○	●●○○		●					
	Alnus rhombifolia [B]	White Alder	30-90'	20-70'	●●○○	●●○○	●		●				
	Alnus rubra [B]	Red Alder	50-90'	30-40'	●●○○	●●○○	●		●		●		
	Arbutus menziesii	Pacific Madrone	20-70'	20-50'	●●○○	●●○○		●					
	Cedrus atlantica	Atlas Cedar	40-60'	20-40'	●●○○	●●○○			●				
	Cedrus brevifolia	Cyprus Cedar	40-55'	30-40'	●●○○	●●○○							●
	Cedrus hortsmann	Hortsmann Atlas Cedar	8-12'	5-8'	●●●●	●●○○		●	●				
	Cercis occidentalis [B]	California Redbud	15'	10-15'	●●○○	●●○○		●	●				
	Cercocarpus betuloides	Mountain Mahogany	8-20'	5-20'	●●●○	●●○○							●
	Chamaerops humilis	Mediterranean Fan Palm	6-15'	6-15'	●●●○	●●○○							●
	Citrus 'Improved Meyer'	Improved Meyer Lemon	5-10'	10-20'	●●●●	●●○○							●
	Citrus 'Valencia'	Valencia Orange	15-20'	15'	●●○○	●●○○							●
	Cornus sericea [B]	Red Twig Dogwood	8-12'	12-15'	●○○○	●●○○	●						
	Corylus cornuta californica [N]	Western Hazelnut	6-12'	6-12'	●●●○	●●○○	●	●					
	Cotinus coggygria	Smoke Tree	10-15'	10-15'	●●●●	●○○○			●		●	●	
	Crataegus x lavallei	Lavalle Thorn	15-25'	10-18'	●●●●	●●○○					●		
	Cupressus macrocarpa	Monterey Cypress	25-50'	25-50'	●●○○	●●○○		●		●			
	Cupressus sempervirens	Mediterranean Cypress	40-70'	3-10'	●●○○	●●○○							●
	Cyathea cooperi	Australian Tree Fern	15-25'	8-15'	●●○○	●●○○							●
	Dicksonia antarctica	Soft Tree Fern	10-15'	8-12'	●○○○	●●●●							●
	Eriobotrya 'Deflexa'	Bronze Loquat	15-30'	15-25'	●●●●	●●●●			●			●	
	Eucalyptus deglupta	Rainbow Eucalyptus	100-125'	60-80'	●●○○	●●○○							●
	Ficus carica 'Mission'	Mission Fig	20-35'	20-35'	●●●●	●●○○							●
	Garrya elliptica 'James Roof'	James Roof Silktassel	8-15'	8-12'	●●○○	●●○○			●				
	Gingko biloba [N]	Ginkgo	30-80'	20-40'	●●○○	●●○○					●	●	
	Hakea laurina [N]	Pincushion Hakea	10-20'	10-20'	●●○○	●●○○							●
	Laurus nobilis [N]	Bay Laurel	15-40'	15-30'	●●○○	●●○○							●
	Leptospermum laevigatum [N]	Coastal Tea Tree	10-30'	10-30'	●●●●	●○○○							●

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PLANT LIST

HABIT	SCIENTIFIC NAME	COMMON NAME	HEIGHT	SPREAD	LIGHT	WATER USE	LANDSCAPE TYPOLOGIES						
							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN. FORMAL		BOTANICAL
TREE	Leucodendron argenteum [N]	Silver Tree	25-40'	15-20'	●●○○	●●○○							●
	Malus spp.	Apple Tree	15-30'	15-30'	●●●●	●●●●							●
	Magnolia stellata [B]	Star Magnolia	15-20'	10-15'	●●●●	●●●●		●	●				
	Magnolia soulangeana 'Black Tulip' [B]	Magnolia Black Tlp	15-20'	6-10'	●●●●	●●●●		●	●				
	Magnolia x alba [B]	White Champaca	25-30'	25-30'	●●●●	●●●●		●	●				
	Metasequoia glypptostroboiedes [B]	Dawn Redwood	30'-100'	15-30'	●●●●	●●●●		●					
	Myrica californica [N]	Pacific Wax Myrtle	3-18'	3-9'	●●○○	●●○○	●		●				
	Olea europaea [N]	Common Olive	25-35'	20-30'	●●○○	●●○○		●					
	Pinus canariensis	Canary Island Pine	50-80'	20-35'	●●●●	●○○○			●				
	Pinus radiata	Monterey Pine	50-80'	20-35'	●●○○	●●○○			●				
	Platanus racemosa	California Sycamore	30-80'	20-50'	●●○○	●●○○			●		●		
	Podocarpus gracilior	Fern Pine	20-35'	10-20'	●○○○	●●●○			●				
	Populus fremontii [B]	Fremont Cottonwood	40-80'	30-50'	●●○○	●●○○	●		●				
	Prunus ilicifolia	Hollyleaf Cherry	10-30'	10-25'	●●○○	●●○○		●					
	Prunus 'Kwanzan'	Japanese Flowering Cherry	20-25'	15-20'	●●●○	●●○○						●	
	Punica granatum	Pomegranate	10-20'	10-20'	●●○○	●○○○							●
	Quercus agrifolia	California Live Oak	20-70'	20-70'	●●○○	●●○○		●	●	●			
	Quercus lobata	Valley Oak	35-75'	30-50'	●●○○	●●○○		●	●	●			
	Salix exigua [B]	Narrowleaf Willow	10-20'	6-15'	●●○○	●●○○	●		●				
	Salix laevigata [B]	Red Willow	15-40'	15-35'	●●○○	●●○○	●		●				
	Salix lasiolepis [B]	Arroyo Willow	15-35'	15-20'	●●○○	●●○○	●		●				
	Taxus baccata	English Yew	30-60'	15-30'	●●●○	●●○○			●				
	Thuja plicata	Western Red Cedar	50-70'	15-25'	●●●○	●●○○			●				
	Tibouchina urvilleana	Princess Flower	8-15'	6-8'	●●○○	●●○○						●	
	Umbellaria californica	California Bay Tree	15-65'	15-65'	●●○○	●○○○						●	
	Vitex agnus-castus	Chaste Tree	10-15'	10-20'	●●●●	●●○○							●
	Wollemia nobilis	Wollemi Pine	30-100'	15-30'	●●○○	●●○○							●
SHRUB	Agathosma apiculata	Garlic Buchu	5'	4'	●●○○	●●○○							●
	Acanthus mollis	Bear's Breeches	3-5'	2-3'	●●○○	●●○○						●	
	Achillea millefolium	Common Yarrow	2-3'	2-3'	●●○○	●●○○		●	●	●			
	Agave 'Blue Flame'	Blue Flame	2-3'	3-4'	●●●●	●○○○						●	
	Allium unifolium	One-Leaf Onion	1-2'	<1'	●●●●	○○○○			●				
	Aloe arborescens	Torch Aloe	6-10'	6-8'	●●○○	●●○○						●	●
	Aloe 'Blue Elf'	Blue Elf	1-2'	1-2'	●●●●	●●○○						●	

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PLANT LIST

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							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
SHRUB	Aloe ferox	Cape Aloe	6-10’	3-5’	●●○○	●●○○	●						●
	Aloe spp.	Aloe	1’-35’	1-35’	●●○○	●●○○						●	
	Anigozanthos ‘Harmony’	Red-Yellow Kangaroo Paw	4-6’	2-3’	●●●●	●●○○							●
	Anigozanthos spp.	Kangaroo Paw	2-6’	1-3’	●●○○	●●○○							●
	Aphyllanthes monspeliensis	Blue Grass Lily	1’	1’	●●○○	●●○○							●
	Aquilegia formosa	Western Columbine	2-3’	1-2’	●●○○	●●○○	●	●	●				
	Arbutus unedo ‘Compacta’	Dwarf Strawberry Tree	6-8’	5-6’	●●●●	●○○○		●	●	●			
	Arctostaphylos ‘Howard McMinn’	Vine Hill Manzanita	6-10’	6-12’	●●●●	●○○○		●					
	Arctostaphylos ‘Pacific Mist’	Pacific Mist	2-3’	3-10’	●●●●	●○○○		●					
	Arctostaphylos ‘Sentinel’	Sentinel Manzanita	4-8’	4-8’	●●○○	●○○○		●					
	Arctostaphylos ‘Sunset’	Sunset Manzanita	3-5’	4-6’	●●○○	●●○○		●					
	Arctostaphylos spp.	Bearberry	1-10’	2-12’	●●○○	●●○○		●					
	Aristolochia californica	California Dutchman’s Pipe	10-15’	10’	●●○○	●●○○		●					
	Artemesia afra	African Wormwood	2-4’	2-3’	●●○○	●●○○				●			●
	Artemesia californica	California Sagebrush	3-8’	3-6’	●●○○	●●○○		●		●			
	Artemisia pycnocephala	Sandhill Sage	1-2’	1-3’	●●○○	●●○○				●			
	Atriplex lentiformis	Brewers Salt Bush	3-6’	3-6’	●●○○	●●○○	●						
	Baccharis glutinosa	Water Wally	3-6’	3-6’	●●○○	●●○○	●			●			
	Baccharis pilularis	Coyote Brush	3-5’	4-5’	●●○○	●●○○		●	●	●			
	Baccharis salicifolia	Mulefat	6-12’	3-9’	●●○○	●●○○	●	●	●	●			
	Banksia spinulosa	Hairpin Banksia	3-9’	3-6’	●●○○	●●○○				●			
	Begonia spp.	Begonia	1-3’	1-3’	●●●○	●○○○						●	
	Bergenia spp.	Bergenia	12-18”	18-24”	●●○○	●●○○					●	●	
	Boronia crenulata’Rosy Splendor’	Rosy Splendor	3-4’	2-3’	●●●●	●●○○					●	●	●
	Boronia crenulata ‘Shark Bay’	Shark Bay Aniseed Boronia	2-4’	2-4’	●●●○	●●○○							●
	Boronia megastigma ‘Jack Maguire’s Red’	Red Boronia	2-4’	1-2’	●●●●	●●○○							●
	Brodiaea spp. [N]	Cluster Lilies	1-2’	1-2’	●○○○	●●○○			●				
	Bulbine frutescens ‘Hallmark’	Hallmark Bulbine	1-2’	3-5’	●●●●	●●○○		●					
	Bupleurum fruticosum	Shrubby Hare’s Ear	5-8’	5-8’	●●○○	●○○○				●			
	Calochortus albus [N]	White Globe Lily	8-30”	1’	●●○○	●○○○	●	●					
	Calochortus amabilis [N]	Golden Globe Lily	6-18”	6-12”	●●○○	●●○○	●	●					
	Calochortus spp. [N]	Mariposa Lily	6-24”	6-24”	●●○○	●●○○		●					
	Calycanthus occidentalis	Spice Bush	6-12’	6-12’	●●○○	●●○○		●					

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							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
SHRUB	Calycanthus floridus	Sweetshrub	6-12’	6-12’	●●○○	●●○○	●	●	●				
	Calystegia macrostegia ssp. macrostegia ‘Anacapa Pink’	Island Morning Glory	1’	20-30’	●●○○	●●○○		●					
	Carissa macrocarpa [B]	Natal Plum	6-10’	6-10’	●●○○	●○○○							●
	Carpenteria californica	Bush Anemone	6-8’	4-5’	●●○○	●●○○		●	●				
	Ceanothus ‘ Far Horizons’	Far Horizons Ceanothus	4-6’	6-10’	●●○○	●●○○		●					
	Ceanothus ‘Joyce Coulter’	Joyce Coulter Ceanothus	2-3’	3-10’	●●○○	●●○○		●					
	Ceanothus ‘Ray Hartman’	Ray Hartman Wild Lilac	10-20’	10-20’	●●○○	●●○○		●					
	Ceanothus ‘Skylark’	Blue Mountain Lilac	3-5’	3-5’	●●○○	●●○○		●		●			
	Ceanothus ‘Julia Phelps’	Small Leaf Mountain Lilac	5-7’	5-7’	●●○○	●●○○				●			
	Ceanothus thyrsiflorus [N]	Blueblosson Ceanothus	6-15’	6-15’	●●●●	●●○○		●		●			
	Ceanothus thyrsiflorus var. griseus [N]	Carmel Ceanothus	3-15’	4-15’	●●●●	●●○○		●		●			
	Chlorogalum pomeridianum [N]	Soap Lily	2-3’	1-3’	●●●●	●○○○		●	●	●			
	Chondropetalum tectorum	Small Cape Rush	2-3’	2-4’	●●○○	●○○○				●			●
	Chorizema ‘Bush Flame’	Flame Pea	2-3’	2-3’	●●●●	●○○○				●			●
	Cistus spp.	Rockrose	2-4’	4-5’	●●●●	●○○○		●		●			
	Clarkia concinna [N]	Clarkia ‘Pink Ribbons’	12-18”	1-2’	●○○○	●●○○		●		●		●	
	Clarkia spp.	Clarkia	1-3’	1-2’	●○○○	●●○○		●	●	●		●	
	Coleonema pulchellum	Pink Breath of Heaven	4-6’	4-5’	●●●○	●●●○	●	●					
	Coleonena pulchellum ‘Sunset Gold’	Golden Breath of Heaven	2-4’	4-6’	●●●●	●●●○		●				●	●
	Collinsia heterophylla [N]	Purple Chinese Houses	6-18”	3-6”	●●●●	●●●○		●	●			●	
	Coprosma repens	Coprosum	4-6’	4-6’	●●○○	●○○○				●			
	Coreopsis maritima [N]	Beach Coreopsis	1-3’	1-4’	●●●●	●○○○			●				
	Correa ‘Ray’s Tangerine’	Tangerine Australian Fuschia	2-3’	2-3’	●●●●	●○○○		●					
	Crassula corymbulosa ‘Shark’s Tooth’	Crassula ‘Sharks Tooth’	6-10”	1-2’	●●●○	●●○○							●
	Datura wrightii [N]	Sacred Datura	3-6’	3-5’	●●○○	●●○○	●		●				
	Dichelostemma ida-maia [N]	Firecracker Brodiaea	1-3’	6”	●●○○	●●○○		●	●				
	Dichelostemma spp.	Dichelostemma	6-24”	1-2’	●●○○	●●○○	●	●	●				
	Dorycnium hirsutum	Hairy Canaryflower	1-2’	2-4’	●●●●	●○○○		●					
	Dudleya spp. (except brittonii and pulverulenta)	Dudleya	4-18”	4-18”	●●●●	●○○○		●				●	●
	Dudleya ‘Frank Reinelt’	Frank Reinelt Dudleya	6-12”	6-12”	●●●○	●○○○			●			●	●
	Dudleya virens ssp. hassei	Catalina Island Dudleya	6-8”	8-12”	●●●●	●●○○			●			●	●
	Epilobium canum	Catalina Fuschia	18-30”	18-30”	●●●●	●○○○	●	●				●	
	Epipactis gigantea [N]	Stream Orchard	1-3’	2-5’	●●○○	●●○○	●		●				

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							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
SHRUB	Erica baueri	Bridal Health	3-4’	2-3’	●●●●	●○○○							●
	Ericameria ericoides [N]	Mock Heather	3-4’	3-4’	●●●●	●○○○							●
	Erica verticillata	Marsh Heath	4-6’	2-3’	●●●●	●●●○		●					●
	Erigeron glaucus [N]	Seaside Daisy	4-12”	1-2’	●●○○	●●●○		●	●	●			
	Eriogonum latifolium [N]	Coast Buckwheat	1-3’	1-3’	●●○○	●○○○			●	●			
	Eriogonum umbellatum var. polyanthum [N]	Sulfur Buckwheat	1’	1-2’	●●○○	●○○○		●	●	●			
	Eriogonum fasciculatum [N]	California Buckwheat	2-3’	2-3’	●●●○	●●○○			●	●			
	Eriogonum grande var. rubescens [N]	San Miguel Island Buckwheat	1-2’	2-3’	●●●●	●●○○			●	●			
	Eriophyllum confertiflorum [N]	Golden Yarrow	18-30”	12-18”	●●●●	●○○○		●	●	●			
	Eriophyllum staechadifolium [N]	Seaside Wooly Sunflower	2-5’	3-5’	●●●●	●●○○		●	●	●			
	Erysimum franciscanum [N]	San Francisco Wallflower	1-2’	1-2’	●●●●	●●●○	●	●		●			
	Eschscholzia spp. [N]	California Poppy	1-3’	1-3’	●●●○	●●○○		●	●	●		●	
	Euthamia occidentalis [N]	Western Goldenrod	3-5’	1-5’	●●●○	●●●●	●			●			
	Galvezia speciosa [N]	Island Snapdragon	1-4’	2-10’	●●○○	●○○○		●	●			●	
	Geranium macrorrhizum ‘Album’	Rock Cranesbill	1-2’	3-4’	●●●●	●○○○						●	
	Gilia capitata [N]	Globe Gilia	1-3’	1-3’	●●●○	●●●○	●		●				
	Grevillea ‘Honey Gem’	Honey Gem Grevelia	9-12’	6-9’	●●●●	●●○○							●
	Grindelia stricta [N]	Coastal Gumweed	6”-5’	1-5’	●●●○	●●○○	●	●				●	
	Helianthus annuus	Common Sunflower	3-10’	18-36”	●●●○	●●●○			●				
	Helichrysum italicum	Curry Plant	6-24”	6-36”	●●●●	●●○○							●
	Heteromeles arbutifolia [N]	Toyon	6-18’	6-12’	●●○○	●●○○		●					
	Heterotheca sessiliflora spp. bolanderi ‘San Bruno Mountain’ [N]	San Bruno Mountain Golden Aster	8-10”	18”	●●●○	●●○○			●				
	Heuchera micrantha [N]	Alum Root	2-3’	2-3’	●●●○	●●○○		●					
	Holodiscus discolor [N]	Cream Bush	5-9’	3-6’	●●●○	●●●●			●				
	Iris douglasiana[N]	Douglas Iris	9-36”	2-4’	●●○○	●●●○	●	●	●	●			
	Ischyrolepis subverticillata	Broom Restio	4-6’	3-5’	●●●○	●●●○							●
	Isomeris arborea [N]	Bladderpod	3-4’	3-4’	●●●○	●○○○				●			
	Isopogon formosus	Rose Coneflower	4-6’	3-4’	●●●●	●○○○					●	●	
	Iva hayesiana [N]	Hayes Iva	2-4’	6-9’	●●●○	●●○○	●						
	Juncus spp. (except ‘acutus’) [N, B]	California Gray Rush	1-3’	1-3’	●●●○	●●●●	●		●				
	Keckiella cordifolia [N]	Climbing Penstemon	3-6’	3-6’	●●○○	●●○○		●	●				
	Kniphofia spp.	Red-Hot Poker	3-4’	2-3’	●●●○	●●●○							●
	Lavandula ‘Goodwin Creek Grey’	Goodwin Creek Lavender	2-3’	2-4’	●●●●	●●○○		●					

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							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN. FORMAL		BOTANICAL
SHRUB	Lavatera assurgentiflora [N]	Island Mallow	5-10'	5-10'	●●●○	●○○○							●
	Layia platyglossa [N]	Coastal Tidytips	6-24"	6-24"	●●●●	●○○○			●				
	Leonotis leonurus	Lion's Tail	4-8'	4-6'	●●●●	●○○○			●				
	Lepechinia hastata [N]	Mexican Pitcher Sage	4-6'	4-6'	●●○○	●○○○		●					
	Leucadendron discolor	Piketberg Conebush	6-8'	4-6'	●●●●	●●●○							
	Lilium pardalinum [N]	Panther Lily	1-4'	2-3'	●●○○	●●●●							●
	Limnanthes douglasii [N]	Douglas Meadowfoam	6-12"	6-12"	●●●○	●●●○			●				
	Linanthus spp. [N]	Linanthus	3-12"	6-12"	●●●○	●●●○							●
	Lonicera involucrata [N]	Twinberry Honeysuckle	3-8'	3-5'	●●●○	●●●●				●			
	Lupinus albifrons [N]	Silver Bush Lupine	3-4'	3-4'	●●●●	●●○○		●	●				
	Lupinus chamissonis [N]	Silver Dune Lupine	4-6'	3-4'	●●●○	●●○○				●			
	Madia elegans	Tarweed	2-5'	6-24"	●●●●	●○○○			●				
	Mahonia aquifolium [N]	Oregon Grape-Holly	3-6'	2-6'	●●●○	●●●○		●					
	Malva assurgentiflora [N]	Island Mallow	4-12'	5-12'	●●●○	●●○○		●					
	Melica imperfecta [N]	Coast Range Melic	1-3'	1-3'	●●●○	●●○○		●	●				
	Mentha longifolia	Horse Mint	1-3'	1-2'	●●●●	●●●○							●
	Mentha spicata	Spearmint	1-2'	2-3'	●●●●	●●●○							●
	Mentzelia lindleyi 'Blazing Star' [N]	Lindley's Blazing Star	1-3'	1'	●●●○	●●○○			●				
	Mimulus aurantiacus [N]	Bush Monkey Flower	2-4'	2-4'	●●●○	●●○○			●	●			
	Mimulus cardinalis [N]	Scarlet Monkey Flower	2-3'	1-3'	●●●○	●●●●	●		●				
	Mimulus guttatus [N]	Seep Monkey Flower	1-4''	1-4'	●●●○	●●●●	●		●				
	Monardella villosa [N]	Coyote Mint	1-2'	2-3'	●●●○	●○○○							●
	Monardella macrantha [N]	Red Monardella	6-12"	1-2'	●●●○	●●●○		●					
	Morella californica [N]	California Wax Myrtle	10-30'	10-20'	●●●○	●●○○			●				
	Oenothera elata [N]	Hooker's Evening Primrose	1-5'	1-3'	●●●○	●●○○	●		●				
	Olearia lepidophylla	Club Moss Daisy Bush	2-5'	1-4'	●●○○	●●○○							●
	Origanum dictamnus	Dittany of Crete	6-12"	2-3'	●●●●	●●○○							●
	Pelargonium cucullatum	Wild Mallow	2-5'	2-4'	●●○○	●●●○							●
	Pelargonium tomentosum	Perppermint-Scented Geranium	1-3'	2-4'	●●○○	●●●○							●
	Penstemon centranthifolius [N]	Scarlet Bugler	1'-3'	1-2'	●●●○	●○○○		●	●				
	Penstemon heterophyllus [N]	Foothill Penstemon	1-3'	2-4'	●●●●	●●○○		●					
	Penstemon spectabilis	Showy Penstemon	2-4'	3-4'	●●○○	●●●○		●					
	Petromarula pinnata	Cretan Rock Lettuce	1-2'	2-3'	●●●●	●○○○							●

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PLANT LIST

HABIT	SCIENTIFIC NAME	COMMON NAME	HEIGHT	SPREAD	LIGHT	WATER USE	LANDSCAPE TYPOLOGIES						
							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
SHRUB	Phacelia tanacetifolia [N]	Lacy Phacelia	1-3’	1-2’	●●●○	●●○○							●
	Phacelia spp.	Phacelia	6-48”	6-48”	●●●○	●○○○		●	●				
	Philadelphus lewisii [N]	Wild Mock Orange	4-10’	4-8’	●●●○	●●○○	●		●				
	Philotheca verrucosa ‘Starbright’	Fairy Wax Flower	3-4’	3-4’	●●○○	●●○○							●
	Phlomis fruticosa	Jerusalem Sage	2-4’	3-5’	●●●●	●●○○						●	●
	Phlomis tuberosa ‘Amazone’	Sage-Leaf Mullein	3-5’	2-3’	●●●●	●○○○							●
	Phormium tenax ‘Radiance’	New Zealand Flax	6-8’	4-6’	●●○○	●●●○							●
	Platystemon californicus [N]	Cream Cups	6-12”	6-18”	●●●●	●○○○		●	●				
	Protea cynaroides	King Protea	3-5’	3-5’	●●●●	●●○○							●
	Protea magnifica x longifolia	Possum Magic	6-8’	4-6’	●●●●	●●○○							●
	Ranunculus californicus [N]	California Buttercup	1-3’	1-3’	●●○○	●●○○		●	●				
	Rhamnus californica [N]	California Coffeeberry	3-9’	3-9’	●●○○	●●○○		●		●			
	Rhododendron occidentale [N]	Western Azalea	6-9’	6-9’	●●○○	●●●○	●	●					
	Rhus aromatica [N]	Fragrant Sumac	2-8’	4-10’	●●●○	●●○○							●
	Rhus integrifolia [N]	Lemonade Berry	6-10’	4-8’	●●○○	●●○○		●	●				
	Rhus trilobata [N]	Fragrant Sumac	2-10’	3-8’	●●○○	●●○○		●					
	Ribes aureum var. gracillimum [N]	Golden Currant	3-6’	3-6’	●●○○	●●○○							●
	Ribes malvaceum [N]	Pink Chaparral Currant	3-8’	3-8’	●●○○	●●○○		●					
	Ribes sanguineum [N]	Red Flowering Currant	6-12’	4-8’	●●○○	●●○○		●					
	Ribes sanguineum var. glutinosum [N]	Pink-Flowered Currant	3-9’	3-4’	●●○○	●●●○		●					
	Rosmarinus officinalis	Rosemary	2-6’	2-4’	●●●●	●●○○							●
	Rosmarinus officinalis ‘Tuscan Blue’	Tuscan Blue Rosemary	4-6’	2-4’	●●●●	●●○○							●
	Rubus parviflorus [N]	Western Thimbleberry	4-8’	4-8’	●●○○	●●●●				●			
	Rubus ursinus [N]	Pacific Blackberry	2-5’	3-9’	●●○○	●●●●	●	●	●				
	Rupicapnos africana	African Cherry	6”	8”	●●●●	●●○○							●
	Salvia ‘Bee’s Bliss’ [N]	Bee’s Bliss Sage	1-2’	6-8’	●●●●	●●○○			●		●		
	Salvia ‘Dara’s Choice’ [N]	Dara’s Choice Creeping Sage	1-3’	3-9’	●●●○	●○○○			●				
	Salvia ‘Mrs. Beard’ [N]	Mrs. Beard Sage	18-24”	4-6’	●●●○	●●○○		●	●				
	Salvia africana-lutea	Beach Salvia	4-8’	6-8’	●●●●	●●○○							●
	Salvia clevelandii [N]	Cleveland Sage	3-5’	6-8’	●●○○	●●○○		●					
	Salvia leucantha	Mexican Bush Sage	4-6’	4-6’	●●●●	●●●○					●	●	
	Salvia leucophylla [N]	San Luis Purple Sage	3-5’	6-8’	●●●●	●○○○		●					
	Salvia mellifera [N]	Black Sage	3-5’	4-6’	●●●○	●●○○		●					

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							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
SHRUB	Salvia mellifera 'Terra Seca' N	Dry Earth Black Sage	1-2'	4-6'	●●●●	●○○○		●					
	Salvia officinalis	Kitchen Sage	2-3'	2-3'	●●●●	●●○○							●
	Salvia spathacea N	Hummingbird Sage	1-2'	3-5'	●●○○	●●○○		●	●				
	Sambucus canadensis N	American Black Elderberry	5-12'	5-12'	●●○○	●●●○	●						
	Santolina spp. N	Santolina	1-2'	2-5'	●●●●	●●○○							●
	Satureja mimuloides N	Monkeyflower Savory	3-4'	3-6'	●●○○	●●●○	●	●					
	Satureja spp. N	Savory	6-24"	1-3'	●●○○	●●●○	●	●					
	Scrophularia californica N	California Bee Plant	2-5'	1-3'	●●○○	●●○○		●		●			
	Senecio kleiniiformis	Spear Head	6-12"	6-12"	●●○○	●●○○							●
	Senecio mandraliscae	Kleinia	1-3'	2-3'	●●●●	●●○○							●
	Senecio radicans 'Fish Hooks'	String of Bananas	6-12"'	6-12"	●●●○	●●○○							●
	Senecio talinoides	Blue Fingers	1-1.5'	1-2'	●●●○	●○○○						●	
	Sidalcea spp. (except calycos spp. rhizomata)	Checkerbloom	1-3'	1-3'	●●○○	●●●○			●				
	Sidalcea calycosa ssp rhizomata N	Point Reyes Checkerbloom	1-3'	1-3'	●●○○	●●●●			●	●			
	Sidalcea malviflora N	Checkerbloom	3-12"	3-12"	●●○○	●●○○				●			
	Solidago N	Goldenrod	1-3'	1-3'	●●●○	●●○○	●		●				
	Solidago velutina N	Threenerve Goldenrod	9-36"	1-2'	●●●○	●●○○			●				
	Stylomecon heterophylla N	Wind Poppy	6-24"	1-2'	●●○○	●●○○		●					
	Symphoricarpos albus N	Common Snowberry	3-6'	3-6'	●●○○	●●○○			●				
	Symphoricarpos spp. N	Snowberry	2-6'	2-6'	●●○○	●●○○		●	●				
	Symphyotrichum chilense N	Pacific Aster	1-3'	1-3'	●●●○	●●○○	●	●	●				
	Tanacetum camphoratum	Camphor Tansy	1-2'	1-3'	●●●●	●●○○		●	●				
	Tetratheca ericifolia 'Heathland Gem'	Black Eyed Susan Heathland Gem	1-2'	1-3'	●●○○	●●●○							●
	Teucrium fruticans 'Azureum'	Bush Germander	3-6'	3-6'	●●●●	●●○○							●
	Thalictrum fendleri var. polycarpum N	Fendler's Meadow Rue	2-4'	2-3'	●○○○	●●●●		●					
	Trichostema lanatum N	Wolly Blue Curls	3-5'	2-4'	●●●●	●●○○		●					
	Triteleia hyacinthina N	White Brodiaea	1-3'	1-3'	●●●○	●●●●	●						
	Triteleia spp. N	Triteleia	1-2'	1-2'	●●●○	●●○○	●	●	●				
	Tulbaghia violacea	Society Garlic	1-3'	1-2'	●●●●	●○○○							●
	Vella spinosa	Vella	8-18"	1-2'	●●●●	●●○○							●
	Venegasia carpesioides N	Canyon Sunflower	3-5'	3-5'	●●○○	●●○○		●					
	Verticordia staminosa	Wongan Featherflower	1-3'	1-3'	●●●○	●●○○							●
	Wyethia spp. N	Mule's Ears	1-3'	1-3'	●●●○	●●○○			●				

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PLANT LIST

HABIT	SCIENTIFIC NAME	COMMON NAME	HEIGHT	SPREAD	LIGHT	WATER USE	LANDSCAPE TYPOLOGIES						
							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
SHRUB	Zauschneria [N]	California Fuchsia	1-3’	1-3’	●●●○	●●○○			●				
GRASS	Agrostis exarata [N]	Spike Bentgrass	1-4’	1-4’	●●○○	●●○○							
	Aristida purpurea var. purpurea	Purple Three-Awn	18”-3’	18”-3’	●●○○	●●○○			●				
	Bothriochloa barbinodis	Cane Bluestem	2-5’	2-4’	●●○○	●●○○			●				●
	Bouteloua curtipendula [N]	Sideoats Grama	18-36”	18-36”	●●●●	●●○○	●	●		●			
	Bouteloua gracilis [B]	Blue Grama Grass	6-12”	6-12”	●●●●	●○○○			●				
	Bromus carinatus [N]	California Brome	1-5’	1-2’	●●○○	●●○○		●	●				
	Bromus carinatus ssp. maritimus	Coastal California Brome	18”-3’	1’	●●○○	●●○○		●	●	●			
	Calamagrostis spp. [N]	Ornamental Grass	2-4’	2-3’	●●○○	●●○○		●	●				●
	Calamagrostis nutkaensis [N]	Pacific Reedgrass	3-4’	3-4’	●●●○	●●●●		●	●				
	Carex barbarae [N]	Santa Barbara Sedge	1-3’	1-3’	●●○○	●●●○		●					
	Carex buchananii [B]	Leatherleaf Sedge	1-3’	1-3’	●●○○	●●○○		●				●	
	Carex nudata [N]	Dudley’s Sedge	1-2’	1-2’	●●○○	●●●●		●					
	Carex obnuta [B]	Slough Sedge	12-18”	12-18”	●●○○	●●○○	●			●			
	Carex pansa [B]	California Meadow Sedge	8-10”	8-10”	●●○○	●○○○				●			
	Carex praegracilis [N]	California Field Sedge	6-18”	1-2’	●●○○	●●●○		●	●				
	Carex testacea [B]	Orange Sedge	1-2’	1-2’	●●○○	●●○○			●				
	Carex tumulicola [N]	Foothill Sedge	6-12”	1-3’	●●○○	●●●○		●	●				
	Carex, all except ‘spissa’ [B]	San Diego Sedge	4-18”	6-12”	●●○○	●●○○			●				
	Distichlis Spicata [N, B]	Sea Shore Salt Grass	6-12”	1-3’	●●●●	●●○○	●			●			
	Deschampsia cespitosa [N]	California Hairgrass	2-3’	1-2’	●●○○	●●●○	●	●					
	Elymus triticoides [N]	Creeping Wild Rye	1-4’	1-4’	●●●●	●○○○	●						
	Festuca californica [N]	California Fescue	2-3’	1-2’	●●○○	●●○○		●	●		●	●	
	Festuca rubra [N]	Red Fescue	1-2’	1-3’	●●○○	●●○○			●				
	Helictotrichon sempervirens	Blue Oat Grass	2-3’	1-3’	●●●●	●●●○							●
	Hordeum brachyantherum [N]	Meadow Barley	2-3’	6-18”	●●●●	●●●○		●					
	Juncus effusus [N, B]	Common Bog Rush	1-4’	1-4’	●●●○	●●●●	●						
	Juncus patens [N, B]	California Gray Rush	1-2’	1-2’	●●○○	●●○○	●						
	Juncus xiphioides [N, B]	Iris Leaved Rush	1-3’	1-6’	●●○○	●●●●	●						
	Leymus condensatus	Giant Wild Rye	3-9’	2-8’	●●●●	●●○○			●				
	Muhlenbergia capillaris [N]	Pink Muhlygrass	2-3’	2-3’	●●●○	●●○○						●	
	Muhlenbergia rigens [N]	Deer Grass	3-5’	3-5’	●●●○	●●○○	●						
	Nassella spp.	Needle Grass	1-3’	1-3’	●●●○	●●○○		●	●				

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							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
GRASS	Pennisetum spathiolatum	Slender Veldt Grass	1-4’	1-2’	●●●●	●●○○		●	●				
	Rhynchospora latifolia	Swamp sedge	1-3’	2-3’	●●●●	●●○○	●						
	Sesleria autumnalis	Autumn Moor Grass	1-2’	1-2’	●●○○	●●●○							●
	Sesleria caerulea	Blue Moor Grass	6-12”	8-12”	●●○○	●●●○							●
	Sisyrinchium spp. [N]	Sisyrinchium	6-24”	6-24”	●●●●	●●●○			●				
	Sisyrinchium bellum [N, B]	Blue-Eyed Grass	1-2’	1-2’	●●○○	●●●●	●		●				
	Sisyrinchium californicum [N, B]	Yellow Eyed Grass	9-12”	6-12”	●●○○	●●●●	●		●				
	Sporobolus airoides [N]	Alkali Sacaton	3-4’	1-2’	●●○	●●●○	●						
	Sporobolus heterolepis	Prarie Dropseed	2-3’	2-3’	●●●●	●●○○	●	●					
	Stipa arundinacea	New Zealand Wind Grass	1-3’	1-3’	●●●●	●●○○		●					
	Stipa gigantea	Giant Feather Grass	1-2’	2-3’	●●●●	●●●○		●					
	Stipa pulchra [N]	Purple Needle Grass	2-4’	6-24”	●●●●	●●○○		●					
	Stipa ramosissima	Pillar of Smoke	4-6’	2-3’	●●●●	●●●○		●					
GROUND COVER	Arctostaphylos edmundsii	Sur Manzanita	3”	3-12’	●●○○	●●○○		●					
	Arctostaphylos hookeri	Hooker’s Manzanita	1-6’	6’	●●○○	●●○○		●		●			
	Arctostaphylos pumila	Sandmat Manzanita	18”-5’	3-5’	●●●●	●●○○		●					
	Arctostaphylos uva-ursi	Kinnikinnick	6-12”	15’	●●○○	●●○○		●					
	Artemisia douglasiana	California Mugwort	3-4’	2-4’	●●○○	●●○○	●	●					
	Asarum caudatum	Wild Ginger	3-6”	18-30”	●●○○	●●○○	●						
	Asclepias syriaca	Common Milkweed	2-4’	9-12”	●●●●	●●○○			●				
	Aster chilensis	California Aster	2-4’	1-4’	●●●●	●○○○			●	●			
	Asteriscus maritimus	Gold Coin Daisy	1-3’	2-4’	●●●●	●○○○			●				
	Ceanothus ‘Centennial’	Centennial Ceanothus	6-12”	4-6’	●●●○	●●○○		●	●				
	Fragaria chiloensis [N, B]	Beach Strawberry	6-12”	1-3’	●●●○	●●○○		●	●	●			
	Fragaria vesca [N, B]	Woodland Strawberry	3-9”	1-3’	●●●○	●●●○	●		●				
	Frangula californica [N, B]	California Coffeeberry	6-10’	6-10’	●●●○	●●○○		●		●			
	Grevillea lanigera ‘Coastal Gem’	Coastel Gem Grevillea	12-18”	4-6’	●●●●	●○○○						●	●
	Helichrysum petiolare	Licorice Plant	6-9”	6-36”	●●●○	●●○○							●
	Hypericum calycinum	St. John’s Wart	1-2’	1-2’	●○○○	●○○○			●				
	Iberis sempervirens	Candytuft	6-12”	1-3’	●●●●	●●●○							●
	Lessingia filaginifolia ‘Silver Carpet’ [N]	Silver Carpet	6-12”	6-8’	●●●●	●○○○			●				
	Lupinus albifrons var. collinus [N]	Dwarf Silver Bush Lupine	6-12”	1-2’	●●●●	●●○○			●				
	Nemophila menziesii [N]	Baby Blue Eyes	6”	6”	●●●○	●●●○		●	●				
	Origanum ‘Betty Rollins’	Ornamental Oregano	6-12”	6-12”	●●●○	●●○○							●

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							RIPARIAN	WOODLAND	EVERGREEN MIX	COASTAL MIX	ORN.	FORMAL	BOTANICAL
GROUND COVER	Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet Rosemary	1'	6-8'	●●●●	●●○○							●
	Salvia sonomensis [N]	Creeping Sage	8-12"	3-6'	●●●●	●●○○		●					
	Senecio rowleyanus	String of Pearls	3-6"	3-6"	●●●○	●●○○							●
	Soleirolia soleirolii	Baby's Tears	3-6"	3-6'	●●●○	●●●○							●
	Stachys byzantina	Lamb's Ears	9-18"	1-4'	●●●●	●●○○							
	Thymus vulgaris	Garden Thyme	6-18"	6-18"	●●●●	●○○○							●
FERN	Adiantum spp.	Maidenhair Fern	6-30"	6-30"	●●○○	●●●○	●						
	Athyrium felix-femina	Lady Fern	2-3'	2'	●○○○	●●○○	●	●					
	Blechnum cartilagineum	Gristle Fern	2-5'	2-5'	●○○○	●●●○			●				
	Blechnum spicant [B]	Deer Fern	1-3'	1-2'	●●●○	●●●○	●		●				
	Dicksonia antarctica	Tasmanian Tree Fern	8-15'	6-12'	●○○○	●●●○						●	
	Dropteris arguta [N]	Wood Fern	2-3'	2-3'	●●○○	●●○○	●	●	●				
	Platycerium bifurcatum	Elkhorn Fern	2-3'	2-3'	●●●○	●●●○			●				
	Platycerium grande	Staghorn Fern	3-6'	3-6'	●●●○	●●●○			●				
	Polypodium californicum [N, B]	California Polypody Fern	1-2'	1-3'	●●○○	●●●○		●					
	Polystichum munitum [N]	Western Sword Fern	3-6'	3-6'	●●○○	●●●○	●						
	Woodwardia fimbriata [N]	Giant Chain Fern	4-6'	4-6'	●●○○	●●●●	●	●					
VINE	Ceratocapnos claviculata	Climbing Corydalis	1-3'	N/A	●●○○	●●○○							●
	Ceropegia woodii	Rosary Vine	2-3'	N/A	●●○○	●○○○							●
	Clematis spp.	Clematis	6-20'	N/A	●●●○	●●○○		●				●	●
	Hardenbergia violacea 'Happy Wanderer' [N]	Purple Vine Lilac	10-15'	N/A	●●○○	●●○○							●
	Jasminum multipartitum	Starry Jasmine	4-6'	N/A	●●●●	●○○○						●	
	Muehlenbeckia complexa	Wire Vine	15'	N/A	●●●○	●●●○						●	

X [N] = native to california

X [B] = bioswale appropriate

IMPLEMENTATION

IMPLEMENTATION

Introduction

This section outlines projects that help prioritize and direct efforts to implement the LFFMP. This includes ongoing implementation related to strategies for reforestation, planting massing/beds maintenance strategies and management of the tree inventory system.

Improvements on courtyards like this one on 19th Avenue could have a lasting impact due to its high visibility and access to transit.

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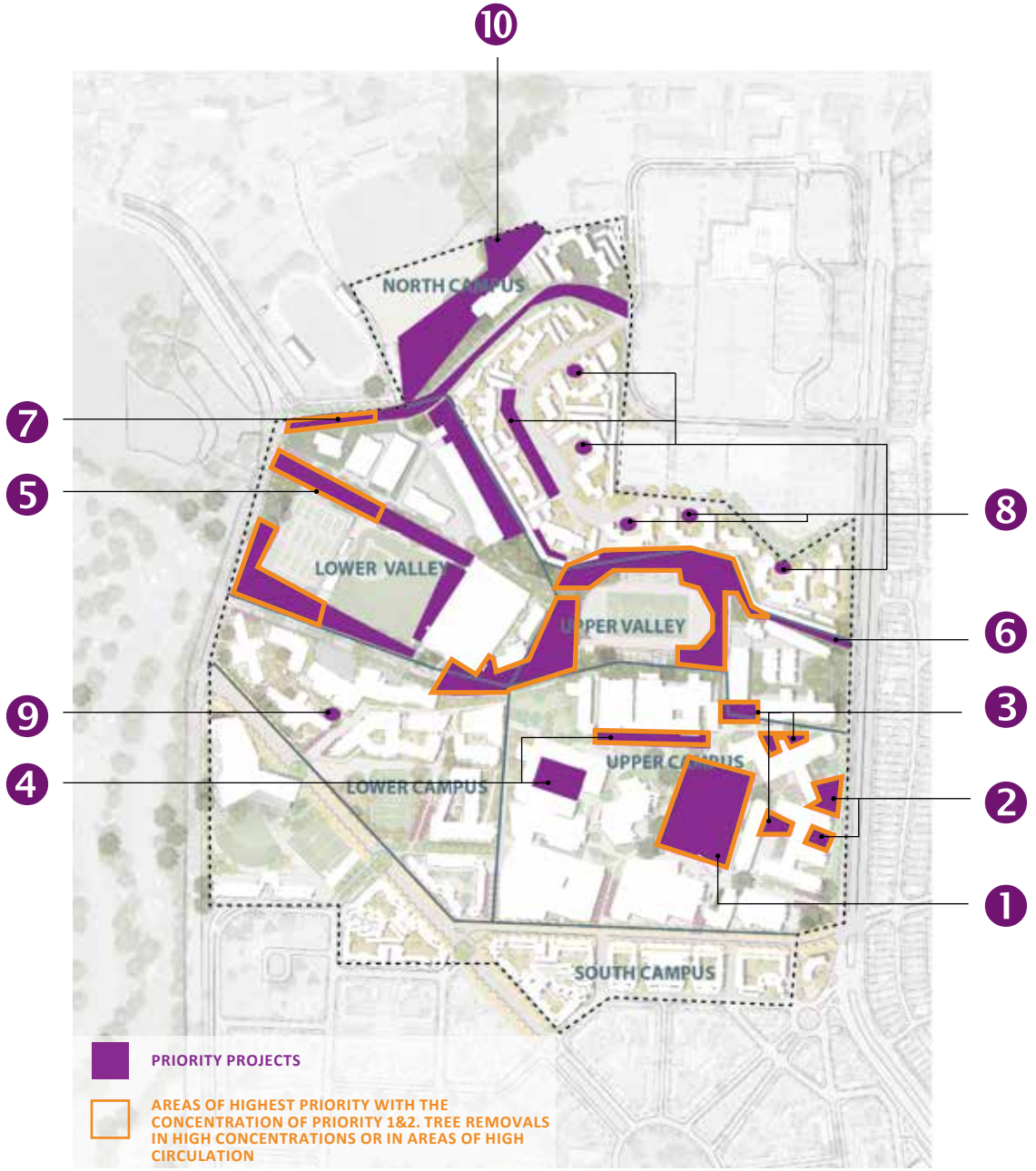
IMPLEMENTATION

Implementation Priority Zones

The implementation map on this page illustrates priority project areas for the LFFMP. These projects are broken down into two phases: 0-5 years and 5-10 years. All of these priorities are directly related to protecting and maintaining ecological zones on campus. Actions in these areas include removing and replacing existing trees that are priority 1 and 2 removal specimens according to tree inventory system, and replanting in some zones that have had trees removed in recent years.

In the long term, utility relocation should be coordinated with reforestation. As many of the trees on campus that sit above an extensive utility network are being removed, it will be difficult to find sites to plant new trees that provide a satisfactory environment for root growth and development. This is especially relevant in the pedestrian core of campus and along 19th Avenue.



1 Quad: As Monterey Pine trees are removed from the Quad, Monterey Cypress planting should become a priority in the next 5 years.

2 19th Avenue: Due to the recent removal of large species in this courtyard on 19th Avenue, specimens should be selected for planting within the next 5 years.

3 Pedestrian Core Courtyards: A concentration of trees in this area are priority 1 and 2 removals and should be removed and replaced within the next 5 years.

4 Memorial Grove and Garden of Remembrance: Monterey Pines in the Memorial Garden are in the process of being removed and should be replaced within the next 5 years.

5 Lower Valley: Several Monterey Pines in this area have been removed and should be replanted within the next 5 years so as not to create a wind tunnel.

6 North Bank of Upper Valley: Several of the trees in this zone will be removed along this hillside including Eucalyptus and Monterey Pine species.

7 Buckingham Avenue: Several street trees are in poor condition and should be removed and replaced within the next 5 years.

8 UPN: Large trees in this area are candidates for priority 1 and 2 removal, especially in courtyards, and should be replanted within the next 5 years.

9 Core Housing: Several Dawn Redwood species are scheduled for removal within the next year and should be replaced within the next 5 years.

10 Sutro Library: Several of the trees in this area have been recently removed or are planned for removal in the next 5 years.

IMPLEMENTATION

Landscape Management Strategies

Strategies for Reforestation

The strategies for reforestation at SF State fall under three main categories: Protect and Preserve, Maintain, and Reforest. These strategies range from small changes in maintenance to long term initiatives.

Protect + Preserve

The strategies in this section address protecting and preserving the existing forest at several scales, from individual trees to campus-wide policy initiatives.

- Develop a tree risk management policy and plan by which trees posing unreasonable risk to campus users are appropriately treated to abate the hazards. The site managers affirm that having trees on the campus requires accepting a tolerable level of risk to enjoy the benefits that the trees provide. Continue to systematically review potential tree hazards through inspections by a qualified tree risk assessor and recording observations and ratings in tree inventory database.
- Consider tree preservation and protection a priority when designing and constructing new campus projects and renovating existing infrastructure. When construction occurs near trees, create a tree protection plan with specifications to protect trees from injury and identify required treatments to sustain health and structural stability.
- Establish a fund through contributions from alumni, faculty, staff and student groups that is dedicated to planting and maintaining trees. This fund could also serve to educate about the value and stewardship of trees.
- Develop opportunities and partnerships with volunteer student groups and staff to plant trees and participate in fostering the campus's urban forest.
- Develop a comprehensive online interface of the campus forest. Staff, students and faculty could access the site to find out more about the trees surrounding them including general tree identification (genus and species) and status as a memorial or heritage tree. This can be done through using the tree inventory software.
- Preserve existing forest and other natural areas by removing invasive species and trees in poor condition and planting suggested species in their place.
- The facilities department should establish definitions of Heritage, Landmark, Memorial, Specimen and Historic trees based on noteworthy characteristics and values, and policies to enforce their protection. At a minimum, these trees should be defined similar to the San Francisco Department of Public Works Code for Significant and Landmark Trees.
- Protect soil in landscape areas from erosion, degradation, and compaction to sustain landscape health and nutrition.

Maintain

Maintaining the existing forest primarily focuses on observation and inspections of individual specimens.

- Establish standards and best management practices for pruning, tree risk assessment, planting, staking, irrigation, fertilization, and soil management for use by staff, volunteers and contractors.
- Based on tree and landscape inspections and updates to the tree inventory database, develop recommendations and priorities for tree planting, pruning and other maintenance. The budget for tree planting and trimming should be evaluated based on future impacts and the vision for campus landscape.
- Maintenance staff should be encouraged, through continuing education policy and funding, to participate in education opportunities and outreach efforts where possible such as those provided by the International Society of Arboriculture.
- Foster soil health by protecting from erosion and compacts. Where appropriate, apply and maintain 3" coarse organic amendment over soil surfaces in landscape areas.
- Continue to monitor tree health and structure throughout campus and to record the data in the tree inventory.
- Pest management should be accomplished using an integrated plant health care approach that emphasizes plant health protection and least toxic pest control treatments.
- Pruning shall be conducted with safety, tree health and aesthetics in mind (and in that order). For pruning best practices, refer to the ISA Best Management Practices: Tree Pruning.
- Pruning treatments should focus on developing a stable structure from the time the trees are planted until maturity.

As a general guideline, trees less than 7 years old may require structural pruning every one to two years to establish a dominant leader where appropriate, to select and maintain the lowest permanent branch, and to select and establish scaffold branches. Trees 7-20 years may benefit from structural pruning every two to five years, depending on the species and condition. Trees 20 years and older may receive maintenance pruning every five to seven years to remove dying, dead or defective branches from crown.

- Trees adjacent to roadways, walkways, signs, street lights and major courtyards should be inspected for safety and clearance issues annually and pruned as necessary to provide required clearance.
- Topping, hat racking, etc. should be avoided and used only where no other treatments are available to reduce risk and abate hazards. Trees pruned in this manner should be inspected and pruned annually to manage regrowth and weight distribution.

Reforest

This section outlines how to plant and protect new trees on campus.

- Plan forested areas so there is adequate species and age diversity to sustain a resilient forest, avoiding any monoculture planting.
- Review plant palette to confirm species selection. Species spacing, light exposure and companion species needs should be matched to the conditions at the planting site. Consultation with an arborist or horticulturist is recommended.
- As priority 1 and 2 trees are removed from the forest, they should be replaced on a one-for-one basis with species from the approved plant list ***at the same time as tree removal***.
- Aim to increase campus tree canopy cover by 20% over the next 10 years through strategic planting.
- New trees to be planted should be grown to meet the Guideline Specifications for Nursery Tree Quality. Tree size may range from containers to transplants that have experienced one to two years of growth.
- Planting should occur in the late fall through early spring.
- Adhere to the planting details and specifications provided by the International Society of Arboriculture.
- Verify where water is available before planting any new trees and design the appropriate water delivery system so as not to conflict with existing and future root systems.
- Prior to planting, collect soil samples for analysis by an accredited laboratory. Design the pre-planting soil treatments, amendments and/or fertilization based on laboratory results and requirements of the species to be planted.
- Irrigate new plants as frequently as necessary to maintain healthy growth. Adjust frequency and length of time of irrigation cycles according to site soil conditions, changing seasons and weather conditions.
- Provide adequate protection from wildlife browsing including fencing where trees are at risk of damage.
- Protect new plantings from competition with weeds by providing appropriate weed control.
- The need for tree stakes should be evaluated and executed on an “as needed” basis. In all cases, remove the nursery stake. Temporary staking may be required for new trees in windy conditions until roots develop into the soil to support the tree. Only trees which are not self-supporting should be staked, using two or three poles, or guyed. Tree stakes and guys shall be inspected annually, adjusted and removed as soon as tree is established in the landscape and can stand on its own, usually within one to two years after planting.
- After planting, protect exposed soil surfaces with coarse organic mulch placed 3-4” deep.
- Tree selection should be appropriate for the location on campus based on the following criteria:
  - height and spread
  - building clearance
  - debris production that could conflict with storm drains and gutters
  - longevity
  - future stability (i.e. shallow and invasive roots on streets, sidewalks, building foundations, utilities)

Planting Massing

Parts of the campus planting massing, lawns, and trees are suffering. The following is a summary of key issues that have been observed around campus along with suggested strategies to address them.

Issue 1

Planting masses typically associated with building foundation plantings are overgrown or outdated in many areas around campus. Many of these suffer from over-shearing or simply being at the end of their life cycle.

Strategy 1

Replace old shrub plantings with masses selected from the new planting palettes. These planting masses should be thought of as the edges of the planting zone they are part of, rather than the perimeter of a particular building.

Issue 1

Strategy 1

Issue 2

Excessive maintenance resources are being consumed on trimming superfluous growth on shrubs and groundcover.

Strategy 2

Begin replacement of all shrubs and groundcover that are not “self-heading,” reducing the need for continual trimming/ pruning.

Issue 2

Strategy 2

Issue 3

Conventional fertilizers typically create a flush of growth in the spring season after application causing the need for additional trimming and pruning later.

Strategy 3

Begin transition to humic-based fertilizers that build soil structure and quality and leads to more consistent support of plant materials throughout the year, thereby reducing the need to supplement with conventional fertilizing.

Issue 4

Over-watering from either applying excessive amounts of water to a given planting type or over-spraying on to paved areas because of misaligned irrigation heads is a problem in many areas throughout campus.

Strategy 4

Conduct an Irrigation Systems Audit to rate the efficiency of each landscape zone. Reprogramming with up-to-date controllers that accommodate soil type and profile, season length of sunlight hours, precipitation, temperature, and resulting evapotranspiration, should reconcile runtimes and volumes. Valves, heads and manifolds should be inspected and upgraded to elevate efficiency. Periodic water quality testing should be routine, given the water sourcing.

Issue 5

Trees are getting damaged at their bases where lawn mowers hit them.

Strategy 5

Remove lawn from the bases of trees and replace with shrub or mulch beds. Adjust irrigation as needed.

Issue 3

Strategy 3

Issue 4

Strategy 4

CHAPTER TITLE

Section Title

Tree Inventory Data and Management

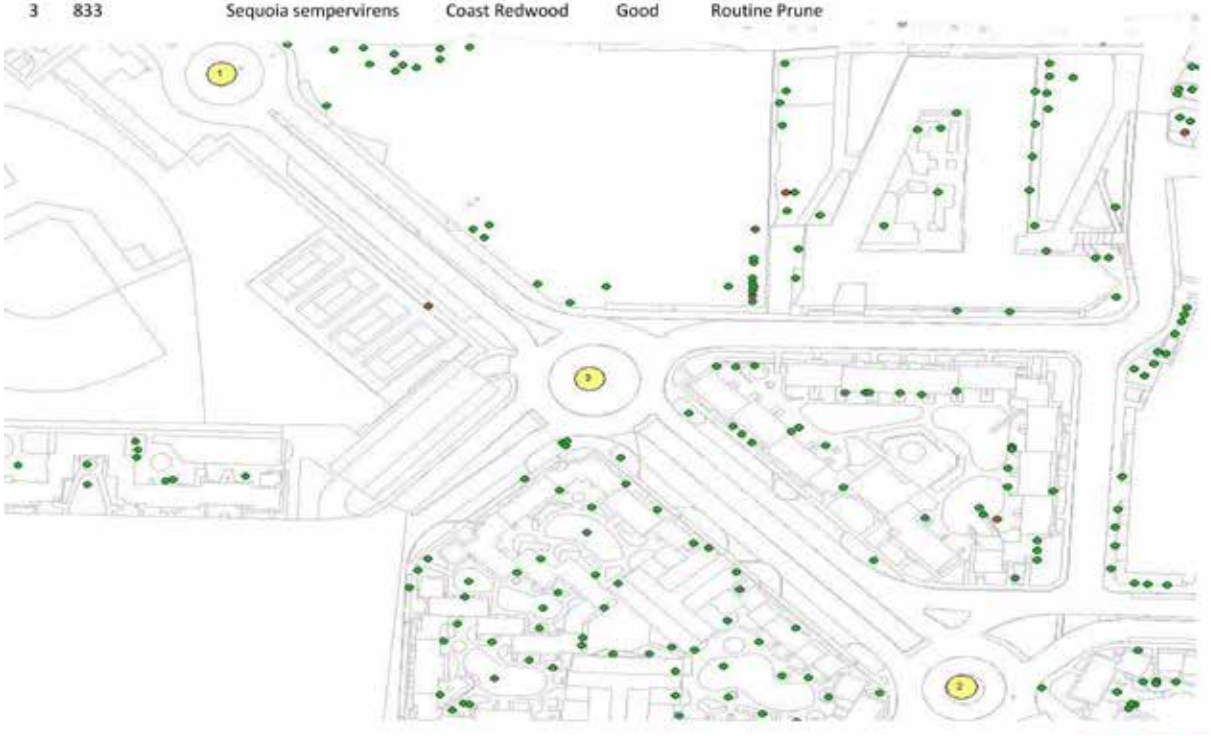
This section outlines recommendations for ongoing use of the tree inventory database to ensure its maximum benefit.

The tree inventory has categorized a number of priority removal species. Priority 1 Trees are defined as those trees that are designated for removal that have defects that cannot be cost-effectively or practically treated. The majority of the trees in this category have a large percentage of a dead crown, and pose an elevated level of risk or failure. Any hazards that could be seen as potential dangers to persons or property and seen as potential liabilities would be in this category. Trees that should be removed but do not pose liability as great as the first priority will be identified as priority 2. This category would need attention as soon as “priority 1” trees are removed.

The campus trees should be evaluated by the maintenance team twice a year, ideally with the use of the zones denoted by the tree inventory. Each zone should have a spreadsheet and numbered map exported from the tree inventory listing all the trees and their current condition. The team should assess the trees for (1) condition (2) recommended maintenance and (3) notes from the field. The spreadsheets should be updated into the tree inventory directly after the review.

Maintenance should be performed with priority given to areas/trees flagged with the highest level of concern. After maintaining a tree with a high level of concern, the date and method of tree maintenance should be recorded in the tree inventory database. Trees with a low level of concern or with routine maintenance do not need to be updated with the date or type of maintenance performed on a perfunctory basis in the tree inventory database.

Point	ID	treetag	Botanical_Name	Common_Name	Condition	Rec Maint
Font Blvd						
1	394	472	Sequoia sempervirens	Coast Redwood	Fair	Routine Prune
2	814		Sequoia sempervirens	Coast Redwood	Good	Training Prune
3	833		Sequoia sempervirens	Coast Redwood	Good	Routine Prune



This is an example of the tree inventory map for the Font Boulevard section of campus. Each area of campus designated by the tree inventory system is accompanied by a map and table.

Trees that have been removed should be eliminated from the data base and new trees that are planted should be added.

Once every five years, a certified arborist (team) should review trees either throughout the entire campus or, if the University prefers, break the campus down into zones and stagger the tree review year by year until the campus is fully complete. WRT recommends doing the full campus at one time. The certified arborist/team should be well versed in the tree inventory software so that the findings of their review will provide a thorough update to the SFSU campus forestry management database. In this way, the database will be consistently updated and renewed by the SFSU maintenance team and professional service; this will ensure that the database remains a useful and accurate source for assessing forestry priorities, planning maintenance operations, and providing a living record of the campus forest structure.

This maps all of the priority one and two species for removal from the tree inventory system as of February 2017. This information changes on a regular basis.

ACKNOWLEDGMENTS

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