Welcome to the 2019 Landscape Summit

Valley Water

Clean Water • Healthy Environment • Flood Protection

AGENDA

- Welcome from Valley Water Board of Directors Chair Linda LeZotte and Board Director Richard Santos
- State of the Valley's Water – Jerry De La Piedra
- Presentations
- Break – Opportunity to Network
- Presentations
- Closing Remarks
- Lunch

Valley Water

Clean Water • Healthy Environment • Flood Protection

Welcome to the 4th Annual Landscape Summit

Santa Clara Valley Water District

Board of Directors

Director Richard Santos

Board Chair Linda LeZotte

Valley Water

Clean Water • Healthy Environment • Flood Protection

State of the Valley's Water

Jerry De La Piedra

Assistant Officer

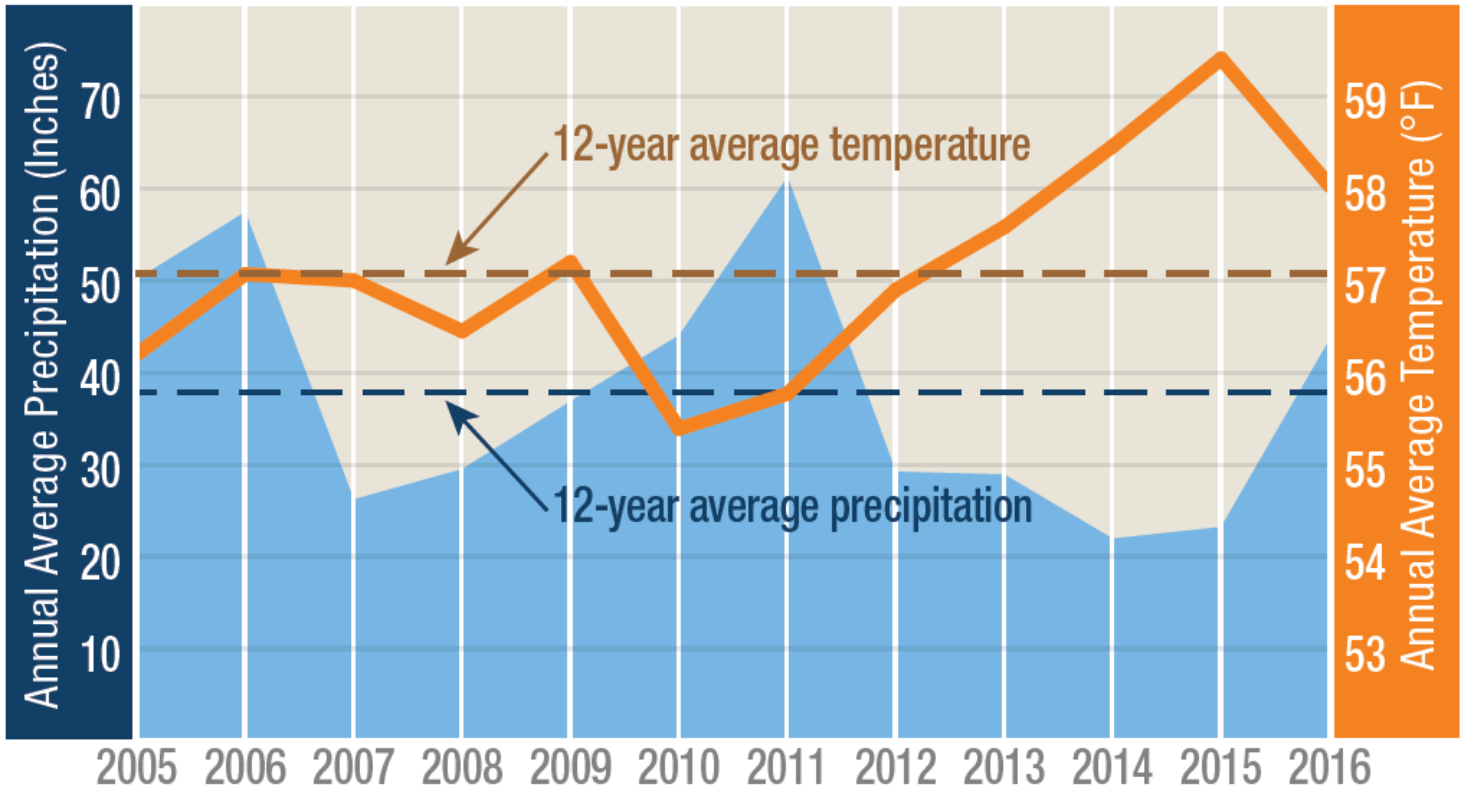
Water Supply Division

Santa Clara Valley Water District

Valley Water

Clean Water • Healthy Environment • Flood Protection

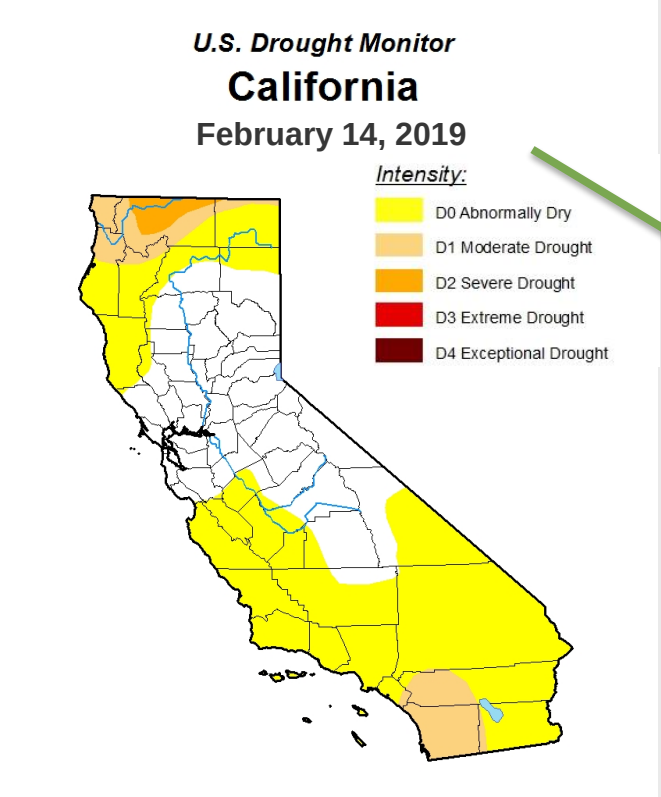
California's Historic 5 Year Drought

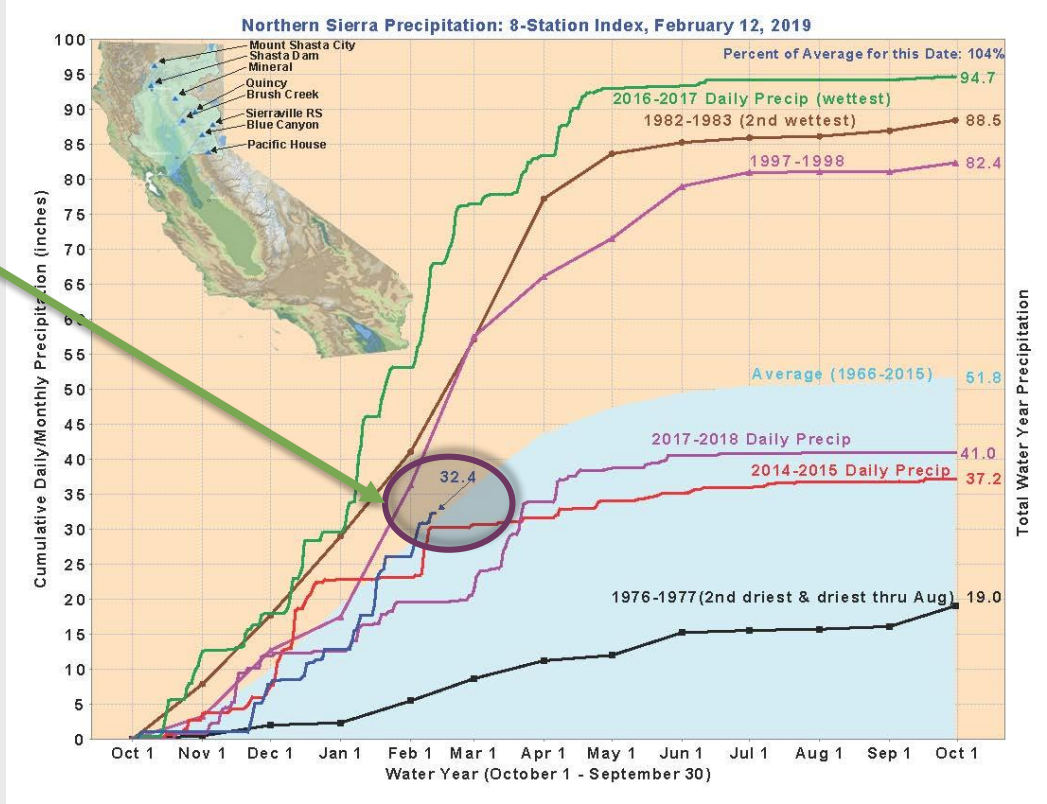


California has experienced near-record temperatures in recent years.
Source: California Department of Water Resources

Current Statewide Conditions

Due to recent storms across much of the state, snow and hydrologic conditions average or above average for this time of year. The US Drought Monitor shows only isolated drought conditions. Santa Clara County and the Sierra Nevada areas are not in dry or drought conditions according to the US Drought Monitor.

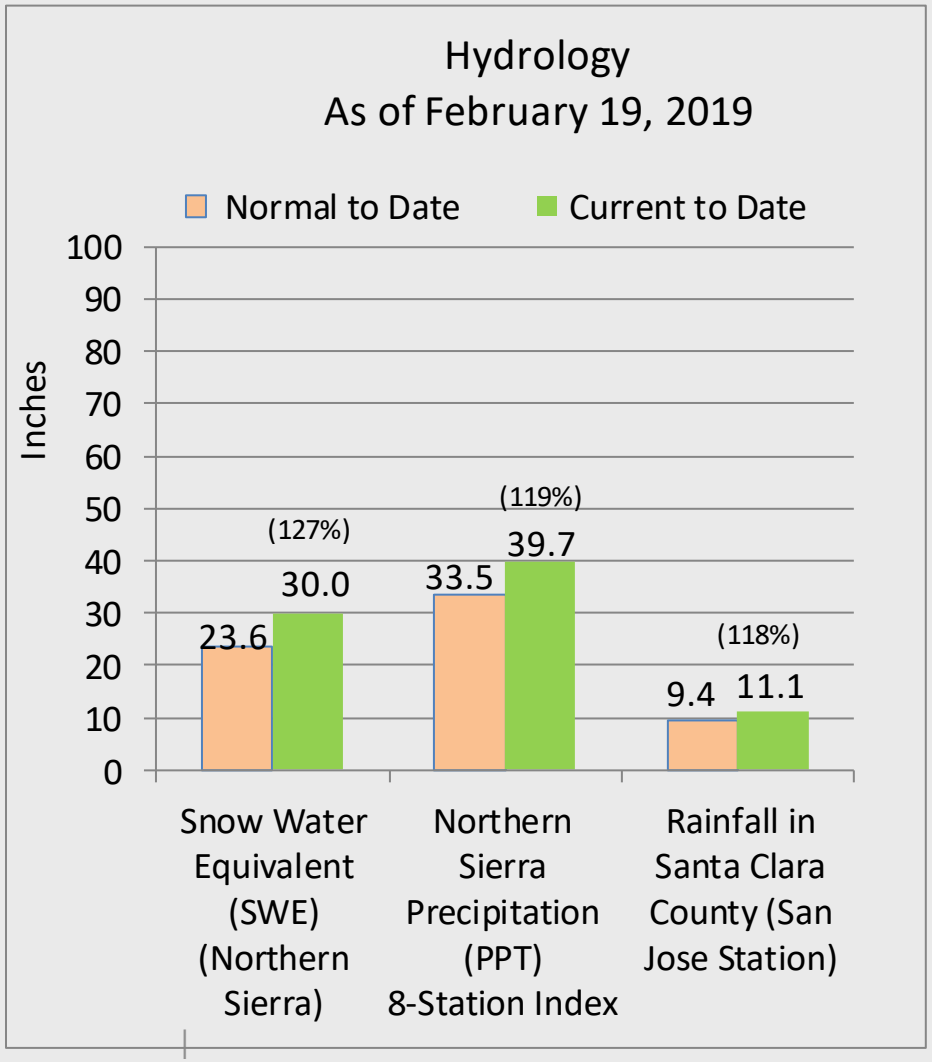


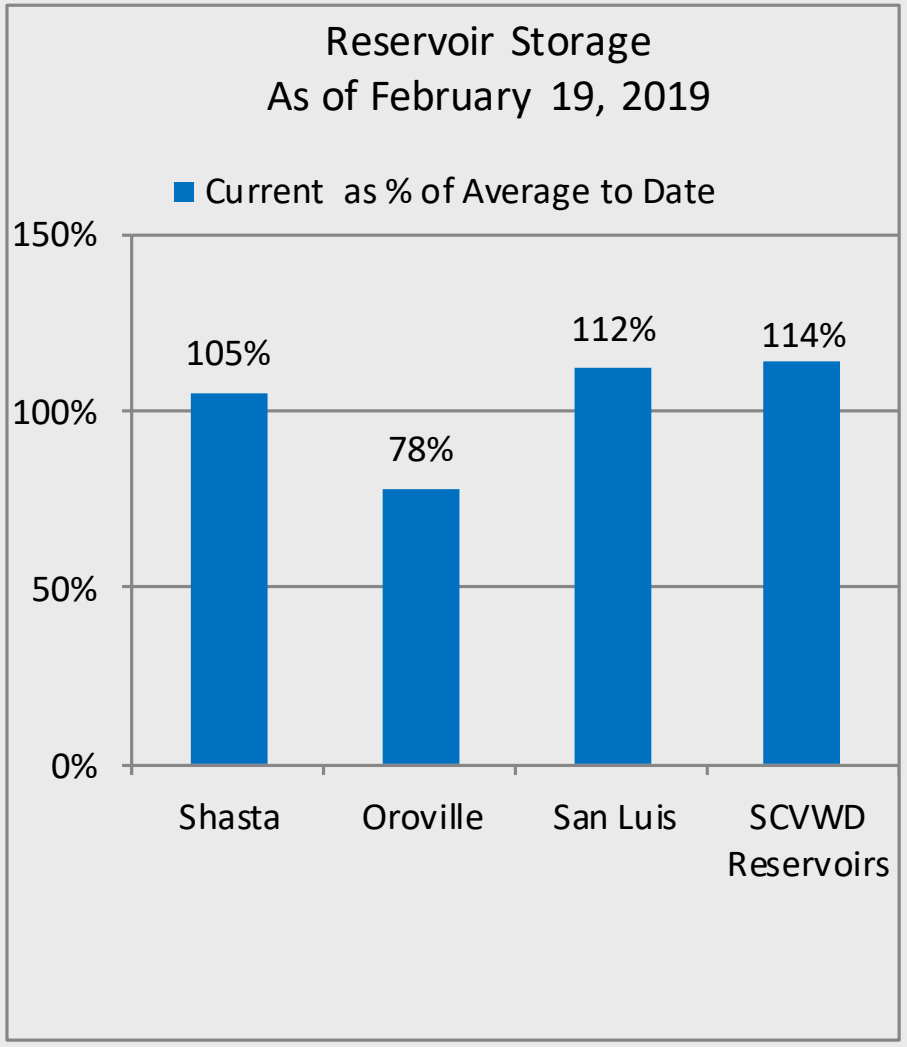


The current northern California snowpack is estimated to be at 127% of average. The next manual survey is March 1st.

2019/20 Hydrologic and Reservoir Conditions

HYDROLOGIC CONDITIONS ABOVE AVERAGE





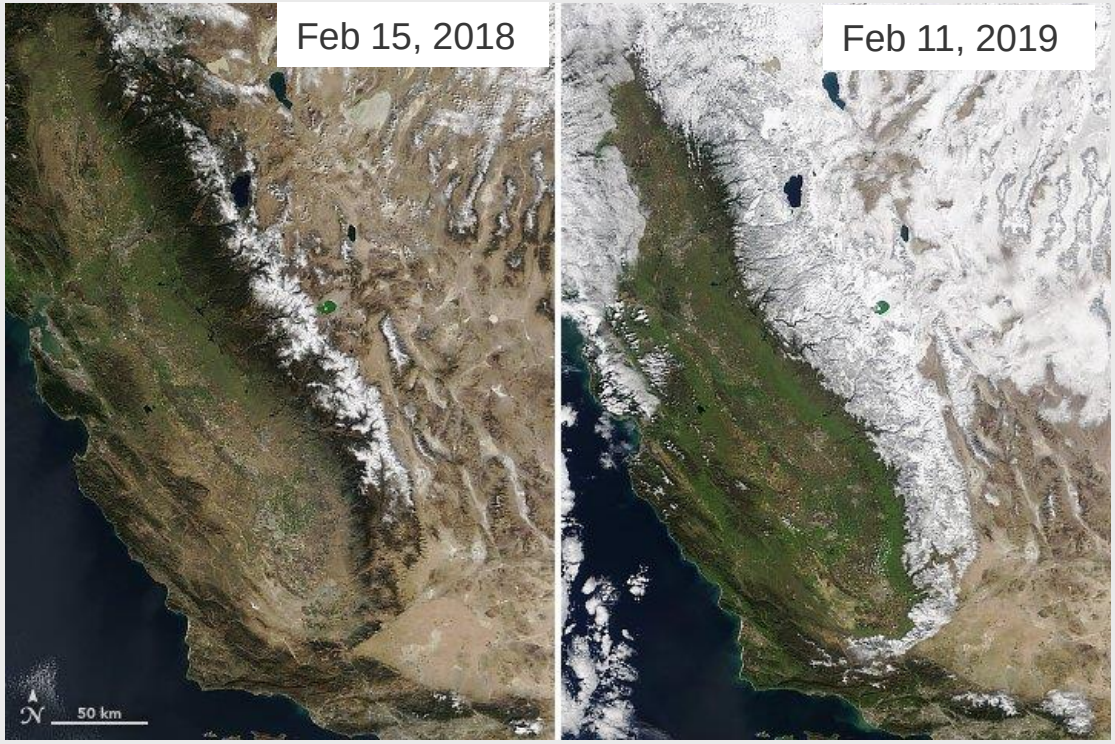
2018 Retail Water Use and Reductions

THE COMMUNITY HAS MET THE CALL FOR 20%!

2018	North County Ground water	South County Ground water	Treated Water	SFPUC	SJWC Surface	2018 Monthly Use	2018 Cumulative Use
Jan	3,905	1,312	5,868	2,727	206	**14,018**	**14,018**
Feb	4,467	1,276	5,584	2,972	363	**14,663**	**28,680**
Mar	3,675	1,298	5,359	3,281	1,079	**14,693**	**43,374**
Apr	3,457	1,466	7,348	3,353	1,165	**16,789**	**60,162**
May	4,756	2,035	10,369	4,181	1,388	**22,728**	**82,890**
Jun	5,342	2,164	11,958	4,603	1,030	**25,097**	**107,988**
Jul	5,963	2,361	12,862	4,926	538	**26,649**	**134,637**
Aug	5,925	2,333	12,910	5,212	286	**26,666**	**161,303**
Sep	5,902	2,051	11,499	4,145	218	**23,815**	**185,118**
Oct	5,428	1,949	10,360	4,237	459	**22,432**	**207,550**
Nov	5,114	1,608	7,956	3,411	568	**18,656**	**226,206**
Dec	3,467	1,252	5,464	2,840	911	**13,934**	**240,140**
Jan to Current Totals	**57,403**	**21,103**	**107,536**	**45,887**	**8,211**	**240,140**	
%Savings by Source of Supply	**33%**	**9%**	**15%**	**16%**	**-5%**	**20%**	

2019 Initial Local Outlook

35%	- Current SWP Allocation (35 TAF)
75%	- Initial CVP Allocation
~250 TAF	- Semitropic Storage
~350 TAF	- End of Year Groundwater Storage



Water Shortage Contingency Plan Stages

Projected 2019 EOY Storage →

Normal (Stage 1) *No water use reductions*	Above 300,000 AF
Alert (Stage 2) *0-10% reductions*	250,000 – 300,000 AF
Severe (Stage 3) *10% -20% reductions*	200,000 – 250,000 AF
Critical (Stage 4) *20% -40% reductions*	150,000 – 200,000 AF
Emergency (Stage 5) *40% -50% reductions*	Below 150,000 AF

End of Year (EOY) Groundwater Storage

SCVWD Board of Directors Response

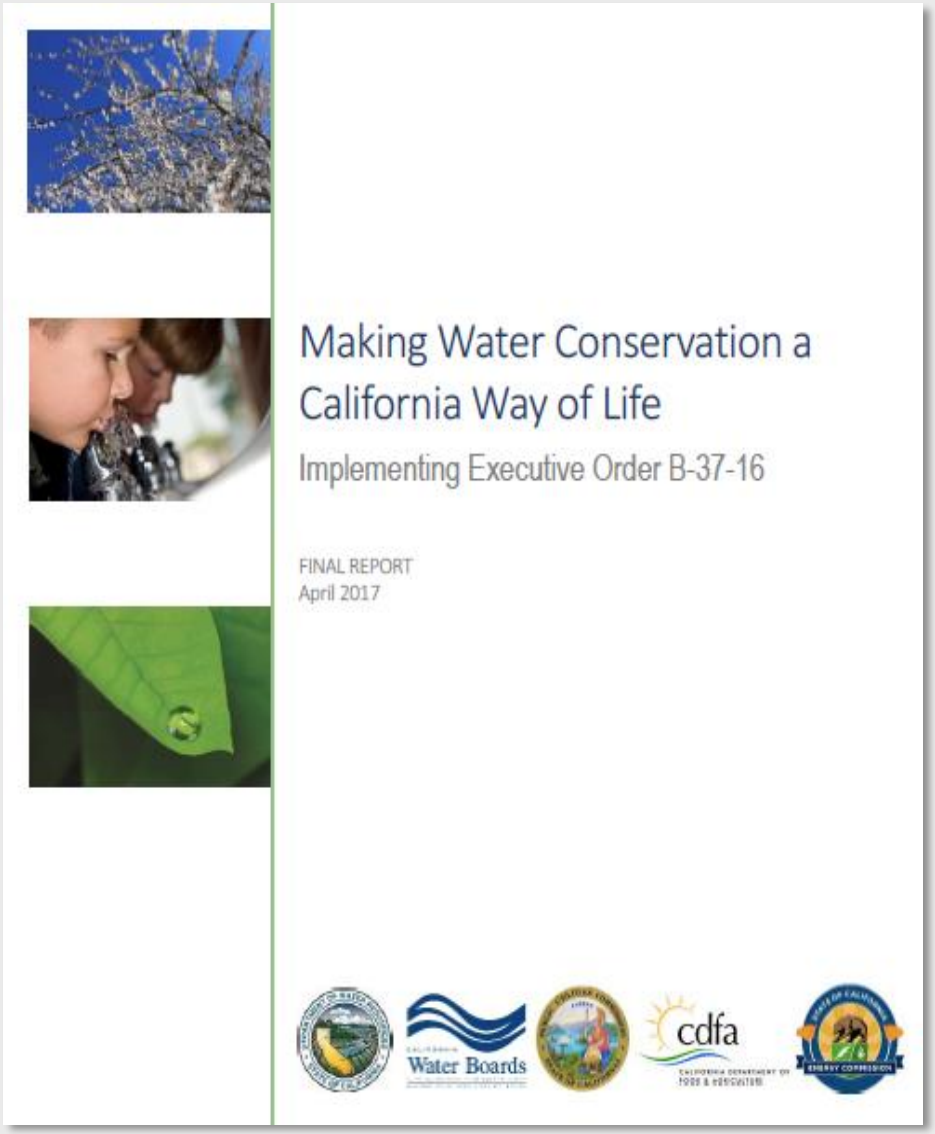
- June 13, 2017, the board extended the call for 20% reductions, but removed recommendations for mandatory actions by retailers and municipalities. They also recommended that many water waste restrictions be permanent and called for making water conservation a way of life. Continue to make conservation a way of life

State Transitions to Conservation as a Way of Life

Governor Executive Order

State Board **transitions away from monthly and annual percent reductions**

Move towards water use efficiency and water budgeting targets after 2020- performance based targets will be in place.



Since the 2018 Summit…

- Education/Outreach
  - SouthBayGreenGardens.org
  - Nursery/Irrigation supplier outreach
- Graywater Contractor Training

  (Starts **next week**; March 2019 **only!**)

  ecoact.org/greywatercertification/

- Graywater Direct Install Program

  for low-income, 60+, US veterans, or people with disabilities

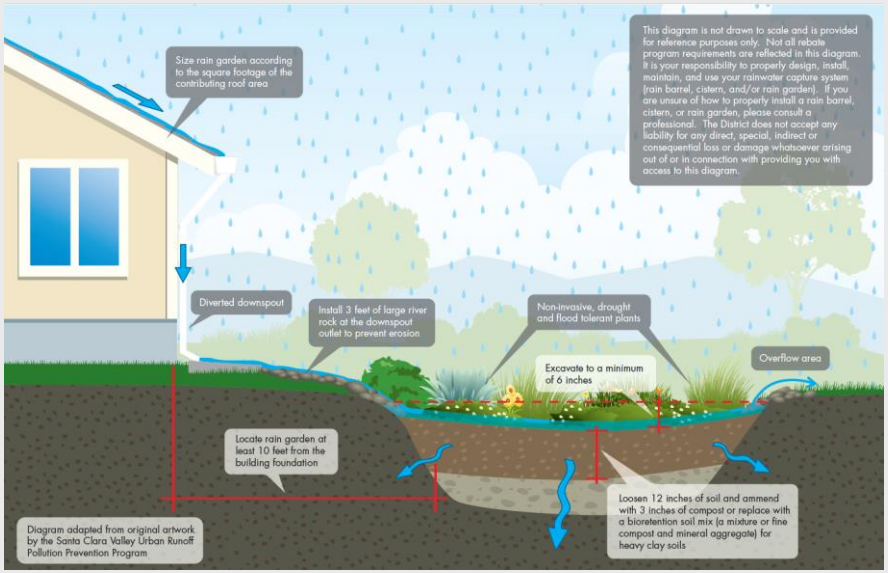
  ecoact.org/greywaterprogram/

  Free or low-cost systems

- Graywater Rebate still available

Since the 2018 Summit…

- Landscape Rebate Program Improvements:
  - Rainwater Capture Rebates:
    - Rain barrels
    - Cisterns
    - Rain gardens



- Research Efforts:
  - Study to quantify the water savings from Landscape Rebate Program was published online at https://www.valleywater.org/saving-water/studies-and-reports

Since the 2018 Summit…

- Water Wise Video Series
  - Lawn Care Tips
  - Leaf Mulching
  - Water Wise Landscape Maintenance
  - More to come!

- Landscape Maintenance Consultation Program Launched in May, 2018

- Landscape Design Assistance Program

Questions

Thank you so much!!

Questions?

Santa Clara Valley Water District

Annual Landscape Summit

ReScape California Rated Landscapes Program

February 28, 2019

Sarah Sutton, ASLA, LEED AP, ReScape Rater
Landscape Architect
President, ReScape California Board of Directors
rescape.sarah@gmail.com rescapeca.org

RESCAPE CALIFORNIA
Landscapes that Sustain and Inspire

Presentation Overview

Key Topics

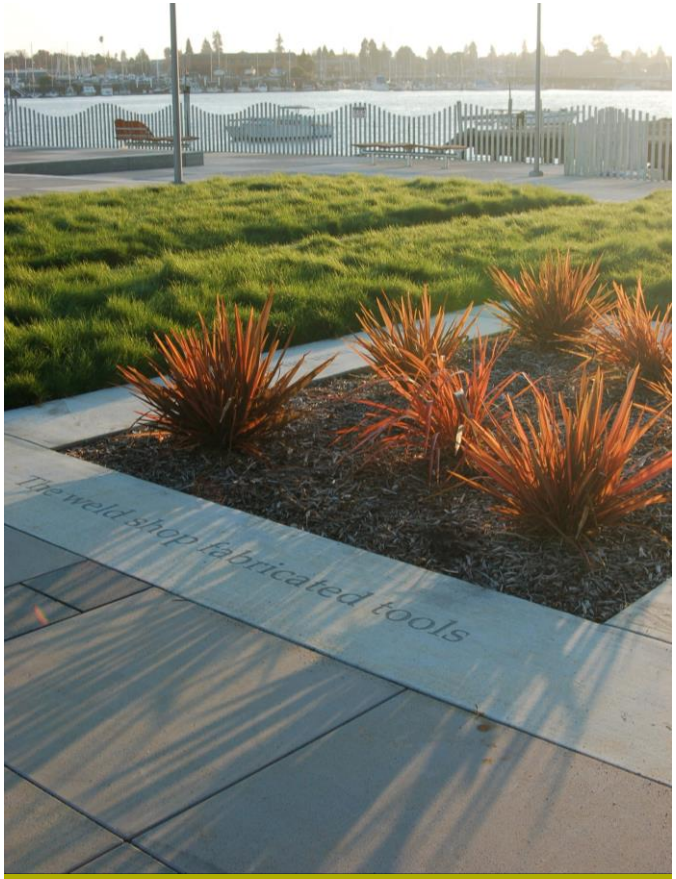
- ReScape California
- Rated Landscapes Program
- Emphasis on Maintenance
- Environmental Benefits
- Code Integration
- Comparisons to other Rating Systems

Station Center Family Housing, Union City

ReScape California

Brief History

- Rating system first developed by StopWaste
- Became program of the Bay-Friendly Landscape and Gardening Coalition 2009
- The Coalition rebranded as ReScape California 2015
- Merged with EcoLandscape California 2017



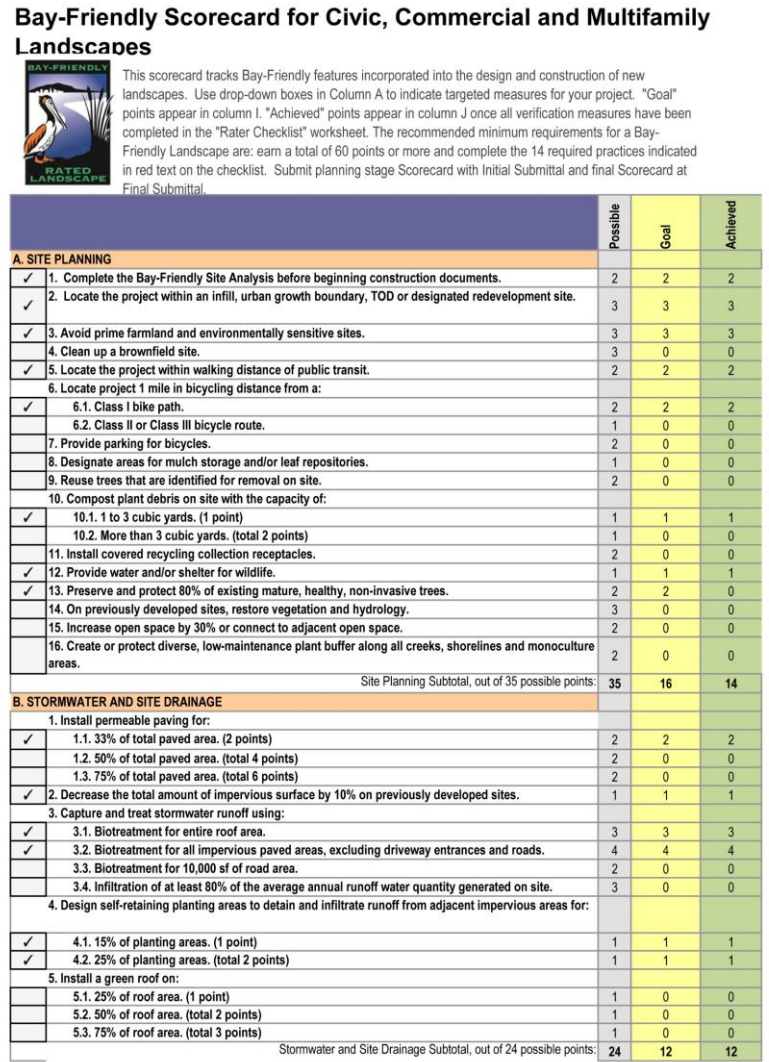
Cryer Site Park, Oakland

ReScape Rated Landscape Program

What is a Rated Landscape?

- Civic/ Commercial and Multi-Family Housing Landscapes
- Irrigated area >2500 SF
- Rater* works with owner and design team and fills out, submits scorecard to ReScape, including all verification documents
- 14 Required credits, plus a minimum score of 60 points
- ReScape reviews final application, issues rating

*3rd Party or In-house



Bay-Friendly Scorecard for Civic, Commercial and Multifamily Landscapes

This scorecard tracks Bay-Friendly features incorporated into the design and construction of new landscapes. Use drop-down boxes in Column A to indicate targeted measures for your project. "Goal" points appear in column I. "Achieved" points appear in column J once all verification measures have been completed in the "Rater Checklist" worksheet. The recommended minimum requirements for a Bay-Friendly Landscape are: earn a total of 60 points or more and complete the 14 required practices indicated in red text on the checklist. Submit planning stage Scorecard with Initial Submittal and final Scorecard at Final Submittal.

		Possible	Goal	Achieved
A. SITE PLANNING				
✓	1. Complete the Bay-Friendly Site Analysis before beginning construction documents.	2	2	2
✓	2. Locate the project within an infill, urban growth boundary, TOD or designated redevelopment site.	3	3	3
✓	3. Avoid prime farmland and environmentally sensitive sites.	3	3	3
	4. Clean up a brownfield site.	3	0	0
✓	5. Locate the project within walking distance of public transit.	2	2	2
	6. Locate project 1 mile in bicycling distance from a:			
✓	6.1. Class I bike path.	2	2	2
	6.2. Class II or Class III bicycle route.	1	0	0
	7. Provide parking for bicycles.	2	0	0
	8. Designate areas for mulch storage and/or leaf repositories.	1	0	0
	9. Reuse trees that are identified for removal on site.	2	0	0
	10. Compost plant debris on site with the capacity of:			
✓	10.1. 1 to 3 cubic yards. (1 point)	1	1	1
	10.2. More than 3 cubic yards. (total 2 points)	1	0	0
	11. Install covered recycling collection receptacles.	2	0	0
✓	12. Provide water and/or shelter for wildlife.	1	1	1
✓	13. Preserve and protect 80% of existing mature, healthy, non-invasive trees.	2	2	0
	14. On previously developed sites, restore vegetation and hydrology.	3	0	0
	15. Increase open space by 30% or connect to adjacent open space.	2	0	0
	16. Create or protect diverse, low-maintenance plant buffer along all creeks, shorelines and monoculture areas.	2	0	0
	Site Planning Subtotal, out of 35 possible points:	35	16	14
B. STORMWATER AND SITE DRAINAGE				
	1. Install permeable paving for:			
✓	1.1. 33% of total paved area. (2 points)	2	2	2
	1.2. 50% of total paved area. (total 4 points)	2	0	0
	1.3. 75% of total paved area. (total 6 points)	2	0	0
✓	2. Decrease the total amount of impervious surface by 10% on previously developed sites.	1	1	1
	3. Capture and treat stormwater runoff using:			
✓	3.1. Biotreatment for entire roof area.	3	3	3
✓	3.2. Biotreatment for all impervious paved areas, excluding driveway entrances and roads.	4	4	4
	3.3. Biotreatment for 10,000 sf of road area.	2	0	0
	3.4. Infiltration of at least 80% of the average annual runoff water quantity generated on site.	3	0	0
	4. Design self-retaining planting areas to detain and infiltrate runoff from adjacent impervious areas for:			
✓	4.1. 15% of planting areas. (1 point)	1	1	1
✓	4.2. 25% of planting areas. (total 2 points)	1	1	1
	5. Install a green roof on:			
	5.1. 25% of roof area. (1 point)	1	0	0
	5.2. 50% of roof area. (total 2 points)	1	0	0
	5.3. 75% of roof area. (total 3 points)	1	0	0
	Stormwater and Site Drainage Subtotal, out of 24 possible points:	24	12	12

ReScape Rated Landscape Program

Greenwood Park, Hayward

- 78 Rated Landscapes in the Bay Area
- Most in Alameda County
- 340 acres total
- 25 Pending Projects

ReScape Rated Landscape Program

Bay-Friendly

RATING MANUAL

for Civic, Commercial and Multifamily Landscapes

Version 4.1, August 2017

ReScape California | 1942 University Ave, Suite 104 | Berkeley, CA 94704 | info@ReScapeCA.org | ReScape.org

RESCAPE
CALIFORNIA

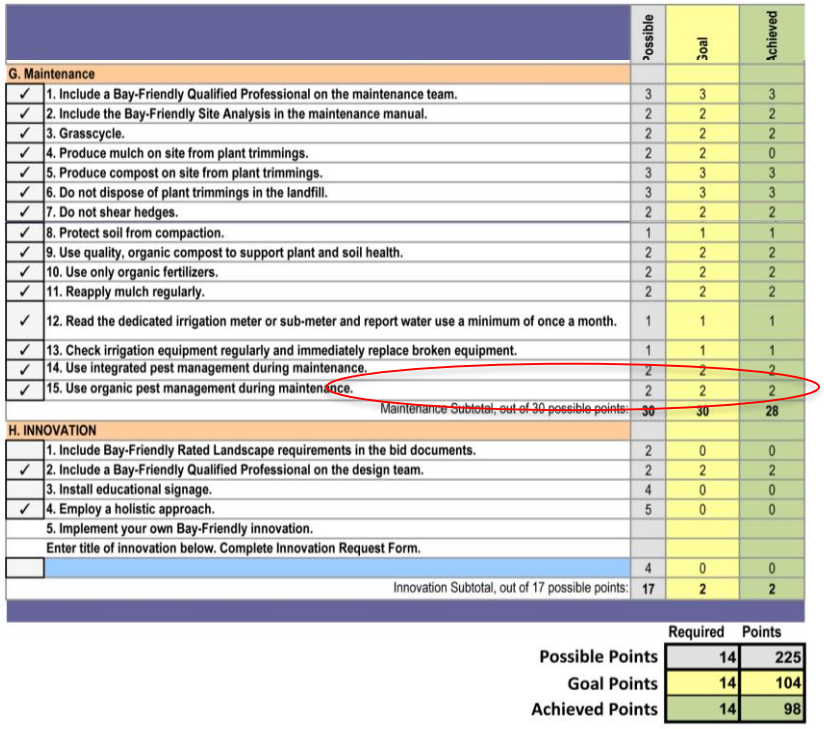
Comprehensive Training and Resources

- Rater Training
- Rating Tools
- Rater's Council
- Desk Audits
- Rater Support

Emphasis on Maintenance

Maintenance is Key

- Scorecard encourages holistic maintenance practices
- Maintenance Manual Template provides comprehensive framework
- Rated landscapes will soon require periodic recertification
- Focused Maintenance Training program



		Possible	Goal	Achieved
G. Maintenance				
✓	1. Include a Bay-Friendly Qualified Professional on the maintenance team.	3	3	3
✓	2. Include the Bay-Friendly Site Analysis in the maintenance manual.	2	2	2
✓	3. Grasscycle.	2	2	2
✓	4. Produce mulch on site from plant trimmings.	2	2	0
✓	5. Produce compost on site from plant trimmings.	3	3	3
✓	6. Do not dispose of plant trimmings in the landfill.	3	3	3
✓	7. Do not shear hedges.	2	2	2
✓	8. Protect soil from compaction.	1	1	1
✓	9. Use quality, organic compost to support plant and soil health.	2	2	2
✓	10. Use only organic fertilizers.	2	2	2
✓	11. Reapply mulch regularly.	2	2	2
✓	12. Read the dedicated irrigation meter or sub-meter and report water use a minimum of once a month.	1	1	1
✓	13. Check irrigation equipment regularly and immediately replace broken equipment.	1	1	1
✓	14. Use integrated pest management during maintenance.	2	2	2
✓	15. Use organic pest management during maintenance.	2	2	2
	Maintenance Subtotal, out of 30 possible points:	30	30	28
H. INNOVATION				
	1. Include Bay-Friendly Rated Landscape requirements in the bid documents.	2	0	0
✓	2. Include a Bay-Friendly Qualified Professional on the design team.	2	2	2
	3. Install educational signage.	4	0	0
✓	4. Employ a holistic approach.	5	0	0
	5. Implement your own Bay-Friendly innovation.			
	Enter title of innovation below. Complete Innovation Request Form.			
		4	0	0
	Innovation Subtotal, out of 17 possible points:	17	2	2

	Required	Points
Possible Points	14	225
Goal Points	14	104
Achieved Points	14	98

Emphasis on Maintenance

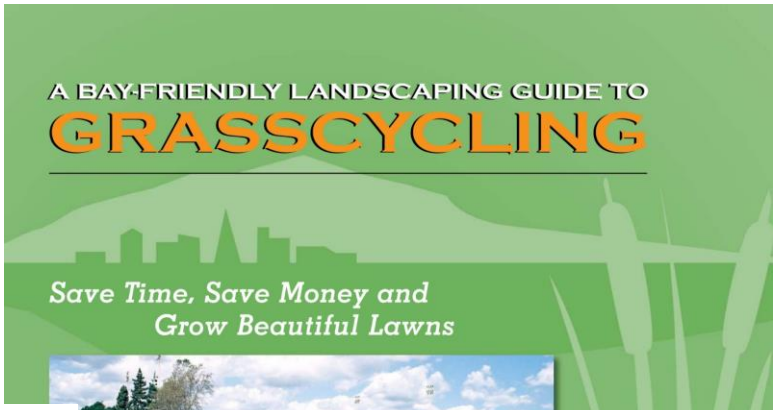
Maintenance Credits on Scorecard

- G.1 Include a Bay-Friendly Qualified Professional on the maintenance team.
- G.2 Include the Bay-Friendly Site Analysis in the maintenance manual.
- G.3 Grasscycle.
- G.4 Produce mulch on site from plant trimmings.
- G.5 Produce compost on site from plant trimmings.
- G.6 Do not dispose of plant trimmings in the landfill.
- G.7 Do not shear hedges.
- G.8 Protect soil from compaction.
- G.9 Use quality, organic compost to support plant and soil health.
- G.10 Use only organic fertilizers.
- G.11 Reapply mulch regularly.
- G.12 Read the dedicated irrigation meter or sub-meter and report water use a minimum of once a month.
- G.13 Check irrigation equipment regularly and immediately replace broken equipment.
- G.14 Use integrated pest management during maintenance.
- G.15 Use organic pest management during maintenance.

Emphasis on Maintenance

Maintenance Resources and Tools

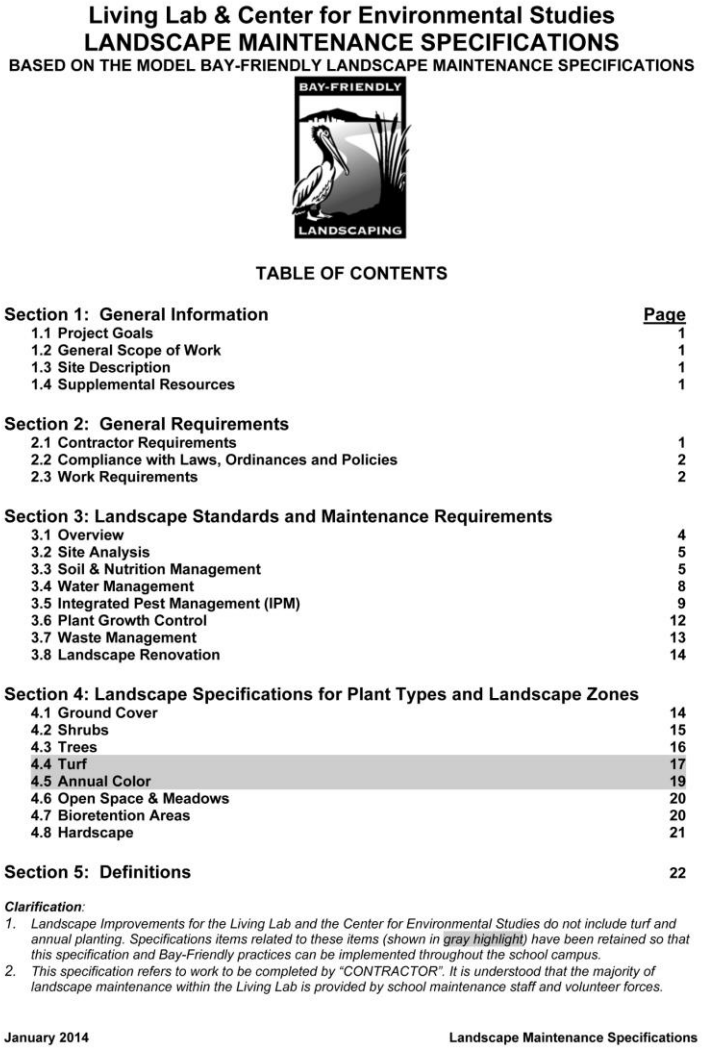
- Landscaping Guides and Case Studies
- Spanish version for Grasscycling and Mulch



Emphasis on Maintenance

Maintenance Resources and Tools

- Landscape Maintenance Manual/Specifications Template
- Encourage clients to prepare and use for:
  - Accurate maintenance bids
  - Quality care to preserve investment



Living Lab & Center for Environmental Studies
LANDSCAPE MAINTENANCE SPECIFICATIONS
BASED ON THE MODEL BAY-FRIENDLY LANDSCAPE MAINTENANCE SPECIFICATIONS

BAY-FRIENDLY LANDSCAPING

TABLE OF CONTENTS

Clarification:

1. *Landscape Improvements for the Living Lab and the Center for Environmental Studies do not include turf and annual planting. Specifications items related to these items (shown in gray highlight) have been retained so that this specification and Bay-Friendly practices can be implemented throughout the school campus.*
2. *This specification refers to work to be completed by "CONTRACTOR". It is understood that the majority of landscape maintenance within the Living Lab is provided by school maintenance staff and volunteer forces.*

Environmental Benefits

Reduces

- Planting and Construction Waste
- Water & Energy Use
- Erosion & Sedimentation
- Flood & Fire Risk
- Hazardous Chemicals
- Greenhouse Gases

Environmental Benefits

Improves

- Soil Health
- Water Quality in Creeks & the Bay
- Places for Pollinators
- Connections with Nature

Environmental Benefits

Protects Public Health & Water Quality

» Over 33% of non-agricultural pesticides are used on landscapes and along roadways in California

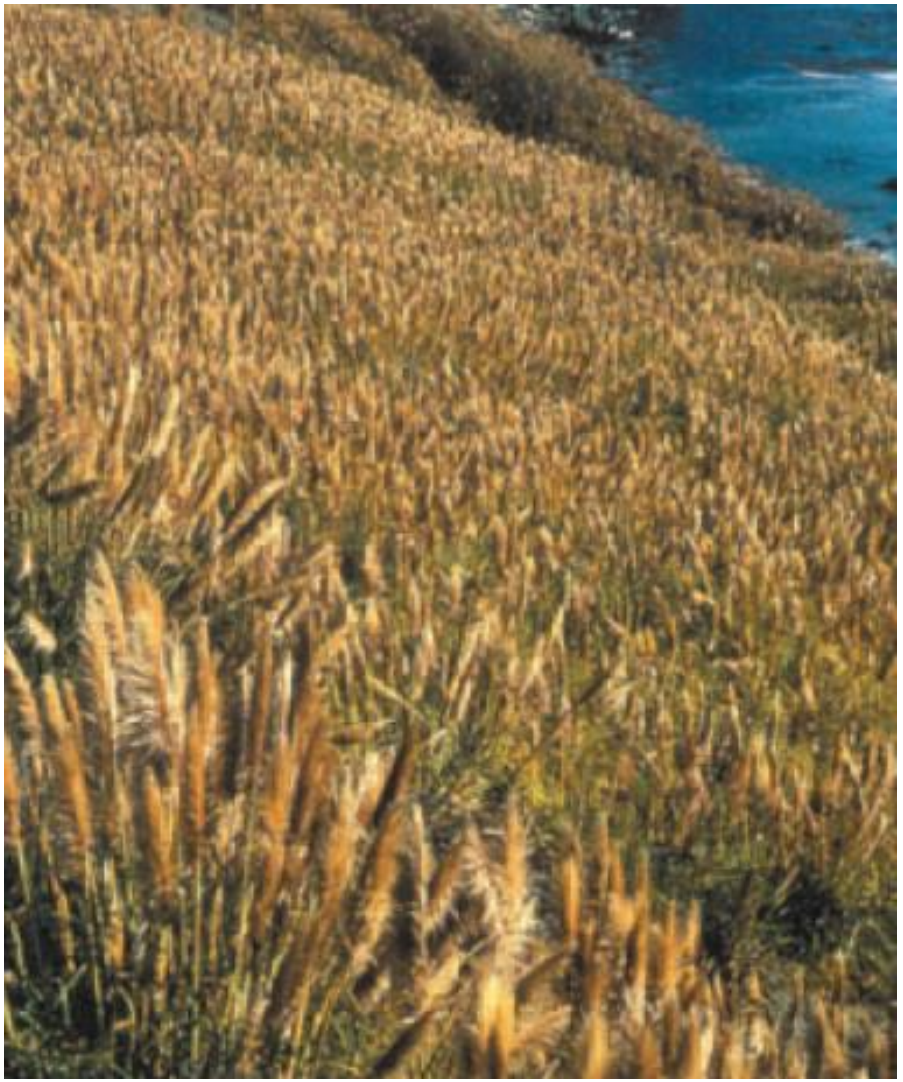
»Glyphosphate (Roundup) listing as a carcinogen recently backed by the state appeals court

Environmental Benefits

Prevents Introducing Invasive Plants

» Annual economic impact of invasive plants on California's economy = $2.4 billion

» Money spent annually removing invasive plants in California = $80 million



Environmental Benefits

Metrics from Rated Landscapes:

- 50%–90% water savings compared to an existing conventional landscape
- 30%–70% maintenance labor savings
- 85%–95% weed suppression without toxic chemicals
- 70%–80% reduced runoff
- 117 metric tons/acre greenhouse gas reduction - equal to taking 22 cars off the road for a year

Regulatory Requirements

Holland Park, Hayward

- Get Recognition for complying!
  - **California Water Efficient Landscape Ordinance (WELO)**
  - **C.3 Stormwater Management Requirements**
- Recognized as a Stormwater BMP by the SF Bay Regional Water Quality Control Board

Regulatory Requirements

- AB 32 – Greenhouse Gas Initiatives
- Green Building innovation credit with GPR Homes
- Water Efficient Landscape Ordinance (WELO) is required by CAL Green
- Supports Construction & Demolition Debris Diversion (SF, San Jose and Alameda Counties)

Rated Benefits for Cities/Agencies

Comprehensive Program

- Helps local agencies meet traditionally “siloed” environmental goals:
  - Reduce Greenhouse Gas emissions
  - Conserve Water & Energy
  - Reduce Stormwater Runoff
  - Reduce Air Pollution
  - Reduce Waste & Increase Recycling
  - Create Healthier Communities

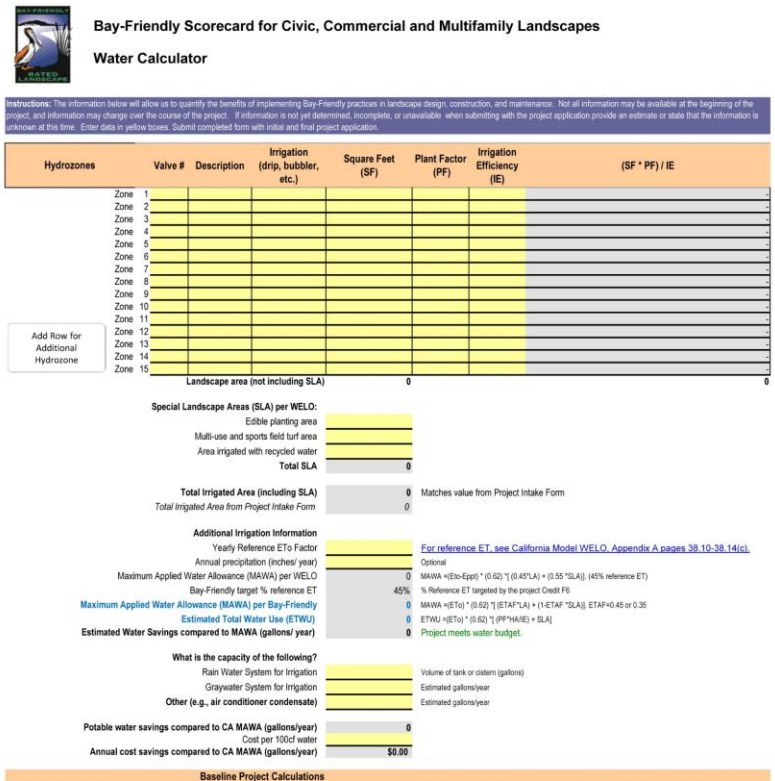
Rated Benefits for Cities/Agencies

Castro Valley Library

- Cities have adopted Bay-Friendly as a Standard – especially for civic landscapes
- Landscapes can be rated by a third party for quality control (like LEED or Green Point Rated Homes)
- Removes some of the burden of enforcement or verification from City/Agency staff

WELO Compliance

- Scorecard updated to 2015 WELO
- Does not replace WELO, reinforces requirements
- Credit F.9 (R) “Meet Your local CA WELO” to ensure compliance



Bay-Friendly Scorecard for Civic, Commercial and Multifamily Landscapes

Water Calculator

Instructions: The information below will allow us to quantify the benefits of implementing Bay-Friendly practices in landscape design, construction, and maintenance. Not all information may be available at the beginning of the project, and information may change over the course of the project. If information is not yet determined, incomplete, or unavailable when submitting with the project application provide an estimate or state that the information is unknown at this time. Enter data in yellow boxes. Submit completed form with initial and final project application.

Hydrozones	Valve #	Description	Irrigation (drip, bubbler, etc.)	Square Feet (SF)	Plant Factor (PF)	Irrigation Efficiency (IE)	(SF * PF) / IE
Zone 1							
Zone 2							
Zone 3							
Zone 4							
Zone 5							
Zone 6							
Zone 7							
Zone 8							
Zone 9							
Zone 10							
Zone 11							
Zone 12							
Zone 13							
Zone 14							
Zone 15							
Landscape area (not including SLA)				0			0

Add Row for Additional Hydrozone

Special Landscape Areas (SLA) per WELO:		
Edible planting area		
Multi-use and sports field turf area		
Area irrigated with recycled water		
Total SLA	0	
Total Irrigated Area (including SLA)	0	Matches value from Project Intake Form
Total Irrigated Area from Project Intake Form	*0*	
Additional Irrigation Information		
Yearly Reference ETo Factor		For reference ET, see California Model WELO, Appendix A pages 38.10-38.14(c).
Annual precipitation (inches/ year)		Optional
Maximum Applied Water Allowance (MAWA) per WELO	0	MAWA =(Eto-Eppt) * (0.62) *[(0.45*LA) + (0.55 *SLA)]. (45% reference ET)
Bay-Friendly target % reference ET	45%	% Reference ET targeted by the project Credit F6
Maximum Applied Water Allowance (MAWA) per Bay-Friendly	0	MAWA =(ETo) * (0.62) *[(ETAF*LA) + (1-ETAF *SLA)]. ETAF=0.45 or 0.35
Estimated Total Water Use (ETWU)	0	ETWU =(ETo) * (0.62) *[(PF*HA/IE) + SLA]
Estimated Water Savings compared to MAWA (gallons/ year)	0	Project meets water budget.
What is the capacity of the following?		
Rain Water System for Irrigation		Volume of tank or cistern (gallons)
Graywater System for Irrigation		Estimated gallons/year
Other (e.g., air conditioner condensate)		Estimated gallons/year
Potable water savings compared to CA MAWA (gallons/year)	0	
Cost per 100cf water		
Annual cost savings compared to CA MAWA (gallons/year)	$0.00	

Baseline Project Calculations

- Tool within Rated Landscape Project Application
- Assembles & calculates WELO water budget & data
- Cross-checks with site information
- Part of Rated Landscape submittal reviewed by Rater to ensure WELO compliance

WELO Compliance

Credits that Meet or Exceed 2015 WELO

- C.1 Submit Laboratory soil analysis results and recommendations for compost and organic fertilizers
- C.2 Complete the Bay-Friendly Soil Management Plan
- **C.8 Protect all planting areas with a minimum of 3 inches of mulch (R)**
- **C.9 Incorporate quality organic compost into the soil, at a rate of: 4 or 6CY/1000sf (R)**
- C.10 Install sheet mulch for weed control or lawn conversion
- **E.2 Do not plant species listed by Cal-IPC's Don't Plant a Pest brochure (R)**
- **E.5 Install climate adapted plants in street medians (R)**
- **E.6 Limit turf to recreational areas (R)**
- **E.8 Group plants in hydrozones(R)**
- F.1 Plumb irrigation systems water features for recycled water
- **F.3 Install a weather based (evapotranspirtation) or soil moisture based controller including a rain shut off device (R)**
- **F.4 Install low volume irrigation in required areas (R)**
- **F.6 Choose climate adapted plants to meet a water budget of 35% or 45% of reference ET. (R)**
- **F.7 Install dedicated landscape water meter for projects with an irrigated area greater than 1,000sf (R)**
- **F.8 Conduct an irrigation audit (R)**
- **F.9 Meet your local CA WELO (R)**

Recognition

Independence Plaza, 2012
Alameda
176,160 square feet

BAY-FRIENDLY RATED LANDSCAPE 90

Jack Capon Village, 2014
Alameda
13,484 sq ft

BAY-FRIENDLY RATED LANDSCAPE 109

Parrot Village, 2013
Alameda
159,000 sq ft

BAY-FRIENDLY RATED LANDSCAPE

Shinsei Gardens, 2009
Alameda
56950 square feet

BAY-FRIENDLY RATED LANDSCAPE 85

VF Outdoor, 2012
Alameda
373,812 sq ft

BAY-FRIENDLY RATED LANDSCAPE 124

Albany Civic Center, 2010
Albany
11,500 Square feet

BAY-FRIENDLY RATED LANDSCAPE 93

Buchanan St Median, 2005
Albany
12,850 square feet

BAY-FRIENDLY RATED LANDSCAPE 67

Memorial, Ocean View & Terrace Park, 2008
Albany
5 acres

BAY-FRIENDLY RATED LANDSCAPE 74

Comparison to Other Programs

Prescriptive System

- Easy to use Scorecard
- Provides framework for implementing sustainable landscape design, construction and maintenance

Comparison to Other Programs

	ReScape Rated	WELO	Sustainable Sites
Mulch	Requires Recycled	Requires Recycled	Recycled Preferred
Compost	Required	Required	
Reduce Waste	Required		
Plant Spacing	Natural Spacing		
No Invasive Plants	Required	Recommended	Required
Climate Adapted Plants	Required	Recommended	
Hydrozones	Required	Required	Recycled
Low Volume Irrigation	Required	Required	
Irrigation Audit	Required	Required	

Comparison to Other Programs

LEED

Verified via documentation

Sustainable Sites

Verified via documentation

ReScape Rated

Field verification + documentation where appropriate

- More streamlined
- More reliable
- Regionally focused

Thank You! Questions?

Santa Clara Valley Water District
Annual Landscape Summit

ReScape California Rated Landscape Program

February 28, 2019

Sarah Sutton, ASLA, LEED AP, ReScape Rater
Landscape Architect
President, ReScape California Board of Directors
rescape.sarah@gmail.com rescapeca.org

RESCAPE CALIFORNIA
Landscapes that Sustain and Inspire

Maintenance and Design of Bioretention and Other Green Stormwater Infrastructure

Nicholas Ajluni, QSP/BFQP
Senior Environmental Inspector
City of San José Environmental Services Department

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

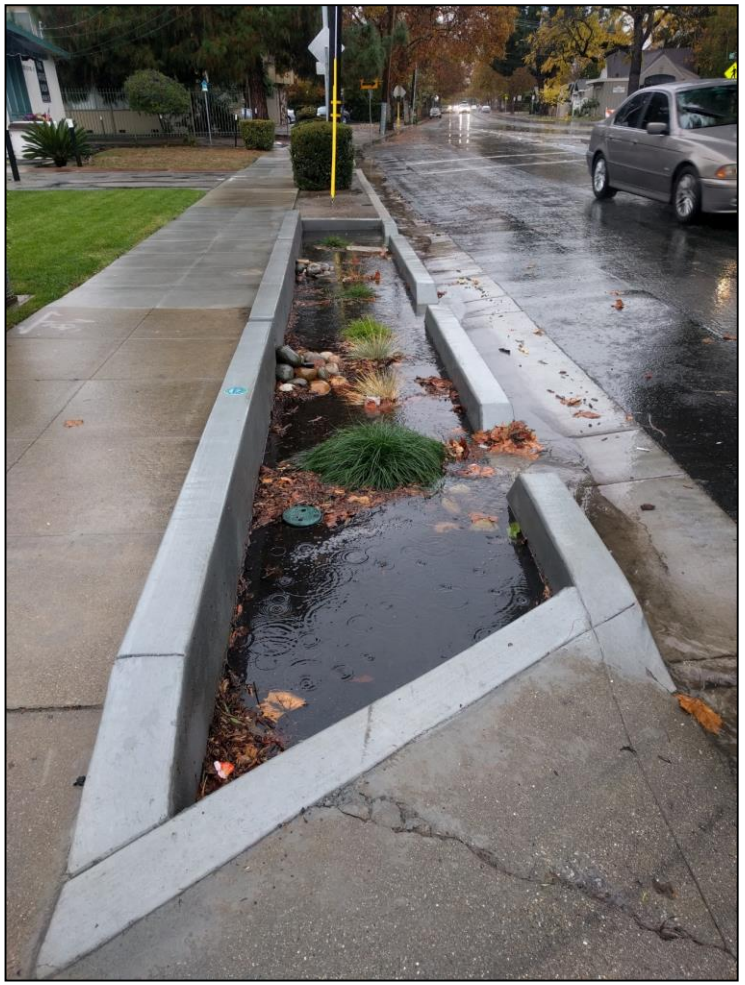
Environmental Services

Delivering world class utility services and programs to improve our health, environment, and economy.

Table of Contents

Introduction to Green Stormwater Infrastructure (GSI)

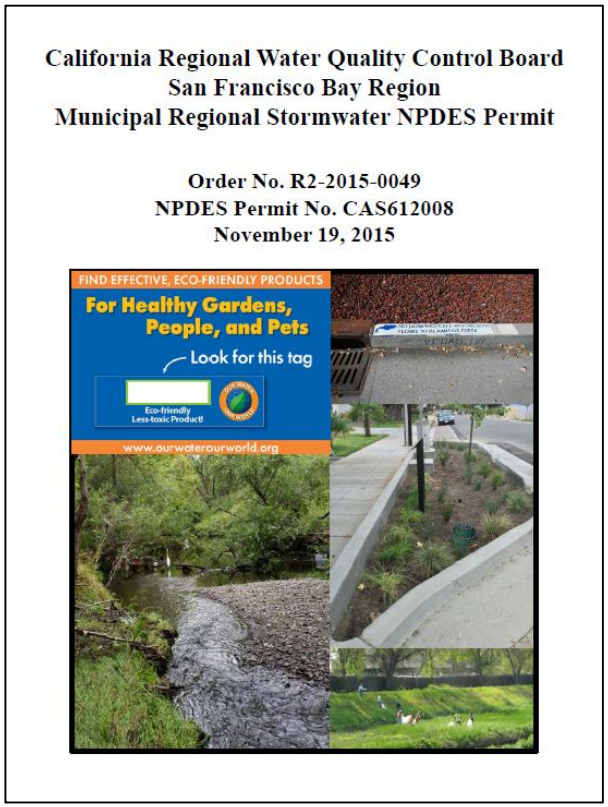
- Low Impact Development
- Required on most new and redevelopment projects
- Uses vegetation, soils, and natural processes to clean and control stormwater runoff
  - Mimics natural systems
  - Increases water quality
  - Reduces flooding
  - Creates habitat
  - Creates green spaces in communities
  - Can be used for traffic calming



Reasons Behind GSI

Regulatory Drivers

Provision C.3 of San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP)



Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP)

- Partnership of 15 agencies
- Provides consistency among agencies
- Developed the C3 Handbook
  - Standardizes design and maintenance

GSI in San José

- ~ 2,500 installations
- ~ 500 sites
- Several hundred under construction
- Located on private development, public projects, and grant funded projects

Types of Landscaped-based GSI

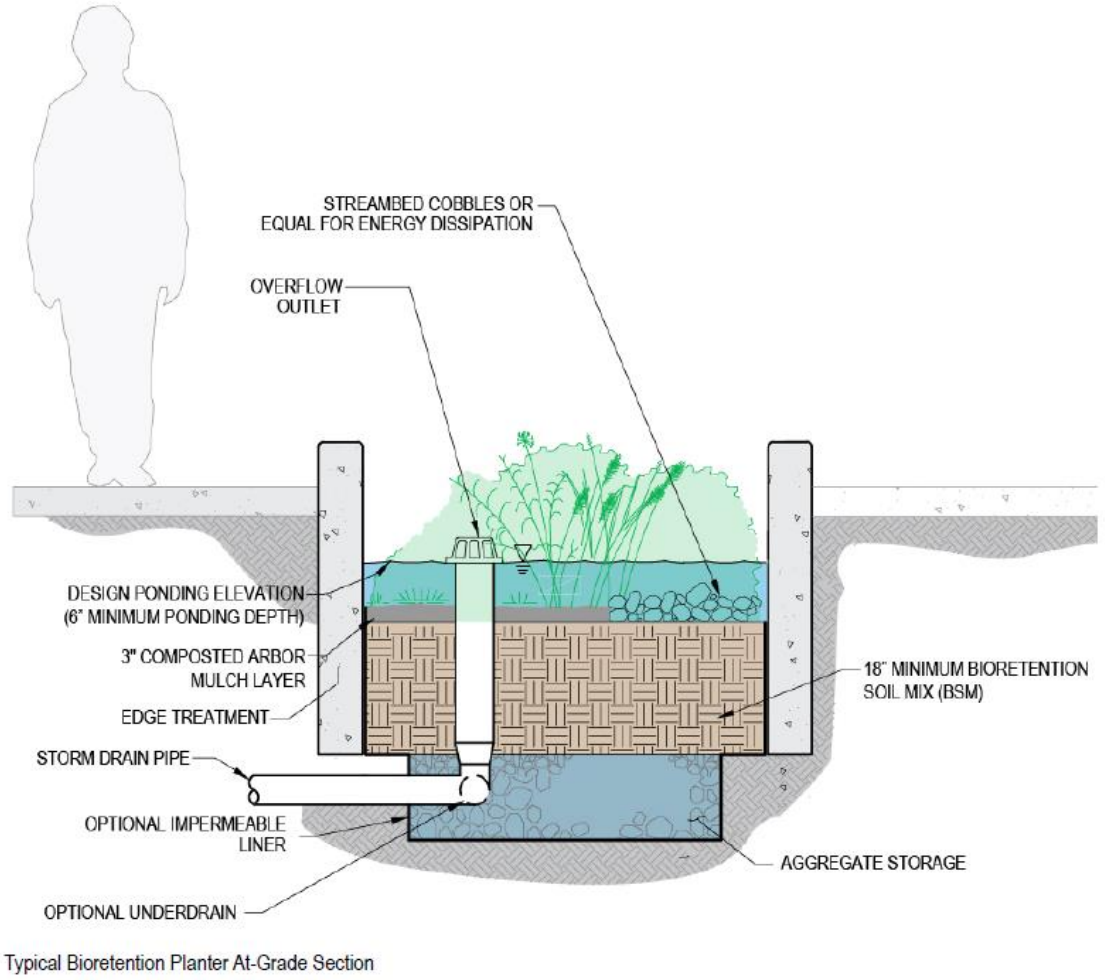
- Bioretention and Flow Through Planters
- Tree Well Filter Systems
- Detention Basins
- Green Roofs

Bioretention and Flow-Through Planters

- Most common GSI
- Allows ponding, infiltration and adsorption to slow storm runoff and filter pollutants

Bioretention Design

- Requires:
  - Appropriate plants
  - 3” mulch
  - Flow dissipation
  - 18” Biotreatment soil mix (BSM)
  - Minimum 6” ponding
  - Drains within 72 hours



Typical Bioretention Planter At-Grade Section

Bioretention Design

- Biotreatment Soil Mix
- Appendix C of SCVURPPP C3 Handbook
- Must:
  - Infiltrate between 5-10 inches per hour
  - Support vigorous plant growth
  - Contain 60-70% sand and 30-40% compost

Tree Well Filter

- May use BSM or a proprietary soil mix
- Allowed under special conditions where space is limited
- Removes pollutants and also slows runoff

Detention Basins

- Larger projects
- Hydromodification systems intended to match pre-development flows
- Collect sediment and reduce peak storm flows

Green Roofs

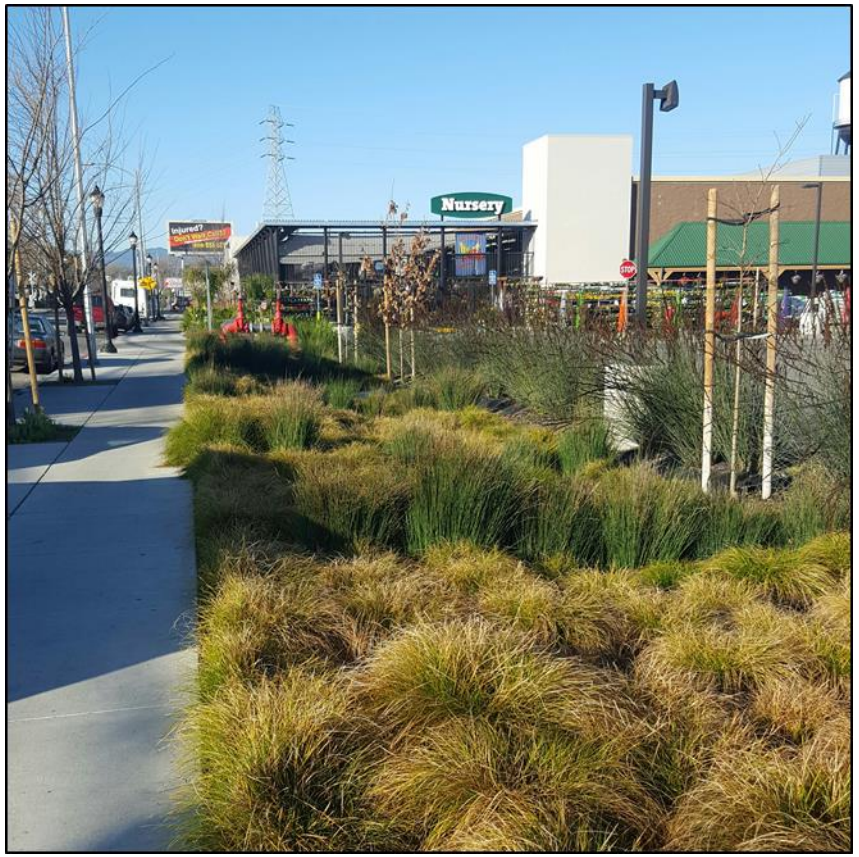
- Allows adsorption to slow storm runoff and filter pollutants
- Reduces energy costs
- Reduces urban heat island effect
- Provides urban greening

San Jose GSI Maintenance Field Guide

- Guidance on:
  - Site visit preparation
  - Inspection checklists
  - Maintenance Standards
  - Maintenance Guidelines
  - Helpful Resources

Bioretention Plant Communities

- SCVURPPP C3 Handbook Appendix D provides guidance on:
  - Species selection and placement in hydrozones
  - Creating diverse plant palette
  - Mimicking natural, native flora



Bioretention Plant Maintenance

- More natural, less manicured is better
- Prune based on species needs
- Light pruning during dormancy for most species
- Special water needs
- Proper plant spacing
- Do not fertilize

Bioretention Pruning

Bioretention Weed Management Do's

Bioretention Weed Management Don'ts

Bioretention Mulch Do's

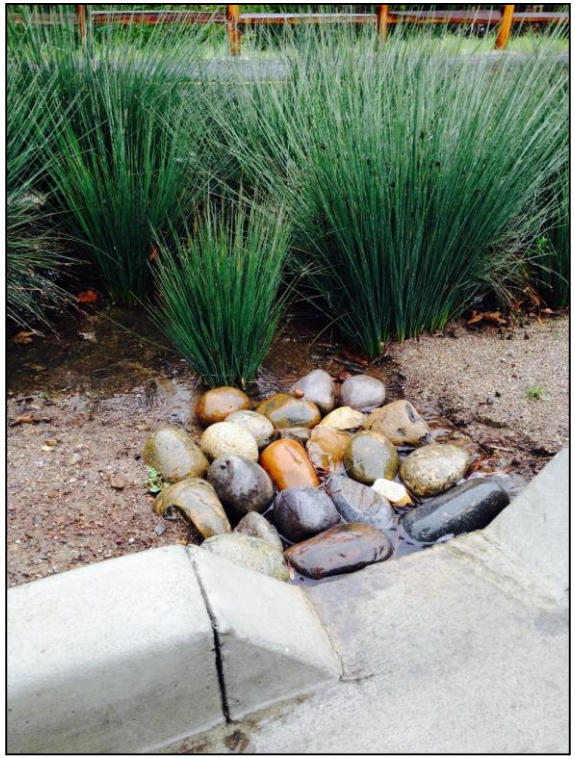
Bioretention Mulch Don’ts

Bioretention Soil Maintenance

- Biotreatment Soil Mix (BSM)
- Promote infiltration by removing fine sediment, scarify if needed
- Prevent standing water
- Add compost and mulch as needed

Bioretention Erosion and Sedimentation

- Maintain 4-6” cobble or flow dissipators at inlets and outlets to prevent erosion
- Periodically remove sediment from cobble
- Use geotextile filter fabric under cobble
- Stagger plantings to prevent channelization
- Ensure adequate mulch depth to dissipate flow



Bioretention Litter and Debris

Bioretention Foot Traffic and Soil Compaction

Take-Aways

- Regular maintenance can reduce long term costs
- Many native species do well with little pruning and no fertilization
- GSI implementation will continue to grow regionwide
- Follow Bay Friendly Landscape Principles

Useful Training Resources

- City of San Jose Stormwater Program - http://www.sanjoseca.gov/stormwater
- South Bay Green Gardens - https://www.southbaygreengardens.org
- Santa Clara Valley Urban Runoff Pollution Prevention Program - http://scvurppp-w2k.com/new_dev.shtml
- ReScape California/Bay Friendly - https://rescapeca.org/
- UC Master Gardeners - http://mgsantaclara.ucanr.edu
- CA Native Plant Society - https://calscape.org/

"When we try to pick out anything by itself, we find it hitched to everything else in the Universe" – John Muir

Thank You!

For questions, feel free to contact me:
Nick Ajluni
Email: Nick.Ajluni@sanjoseca.gov
Phone: 408-535-3503

Break time

ruskin gardens

Estate Garden Management

Ensuring the Success for a Sustainable Landscape through Partnership between Design, Installation, and Maintenance

By Jenn Simmons & Amy Palmer

Meet Our Team

Estate Garden Management

Amy Palmer
VP, Estate Gardening

Jenn Simmons
Director of Operations
Senior Garden Manager

Rene Hernandez
Senior Crew Supervisor

Alfredo Gonzales
Irrigation Manager


What does is take?

What does is take?

It Takes a Team

It Takes Time

It Takes A Team

Client

Landscape Architect

Installation Contractor

It Takes A Team

Client

Landscape Architect

Installation Contractor

Garden Manager

It Takes A Team

Client

Landscape Architect

Installation Contractor

Garden Manager

Irrigation Manager

It Takes A Team

Client

Landscape Architect

Installation Contractor

Garden Manager

Irrigation Manager

Crew Supervisor

Gardener

It Takes A Team

Client

Landscape Architect

Installation Contractor

Garden Manager

Irrigation Manager

Crew Supervisor

Gardener

Arborist

It Takes A Team

Client

Landscape Architect

Installation Contractor

Garden Manager

Irrigation Manager

Crew Supervisor

Gardener

Arborist

Seasonal Color

Edible Specialist

Pest & Disease

Landscape Lighting

Typical Team – Don't Blame Them


Client


Landscape Architect


Installation Contractor


Garden Manager


Irrigation Manager


Crew Supervisor


Gardener


Arborist


Seasonal Color


Edible Specialist


Pest & Disease


Landscape Lighting

ruskin gardens

Key Role, Often Missing: Garden Manager

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Aesthetic Direction

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Prioritizing Work and Directing Crew

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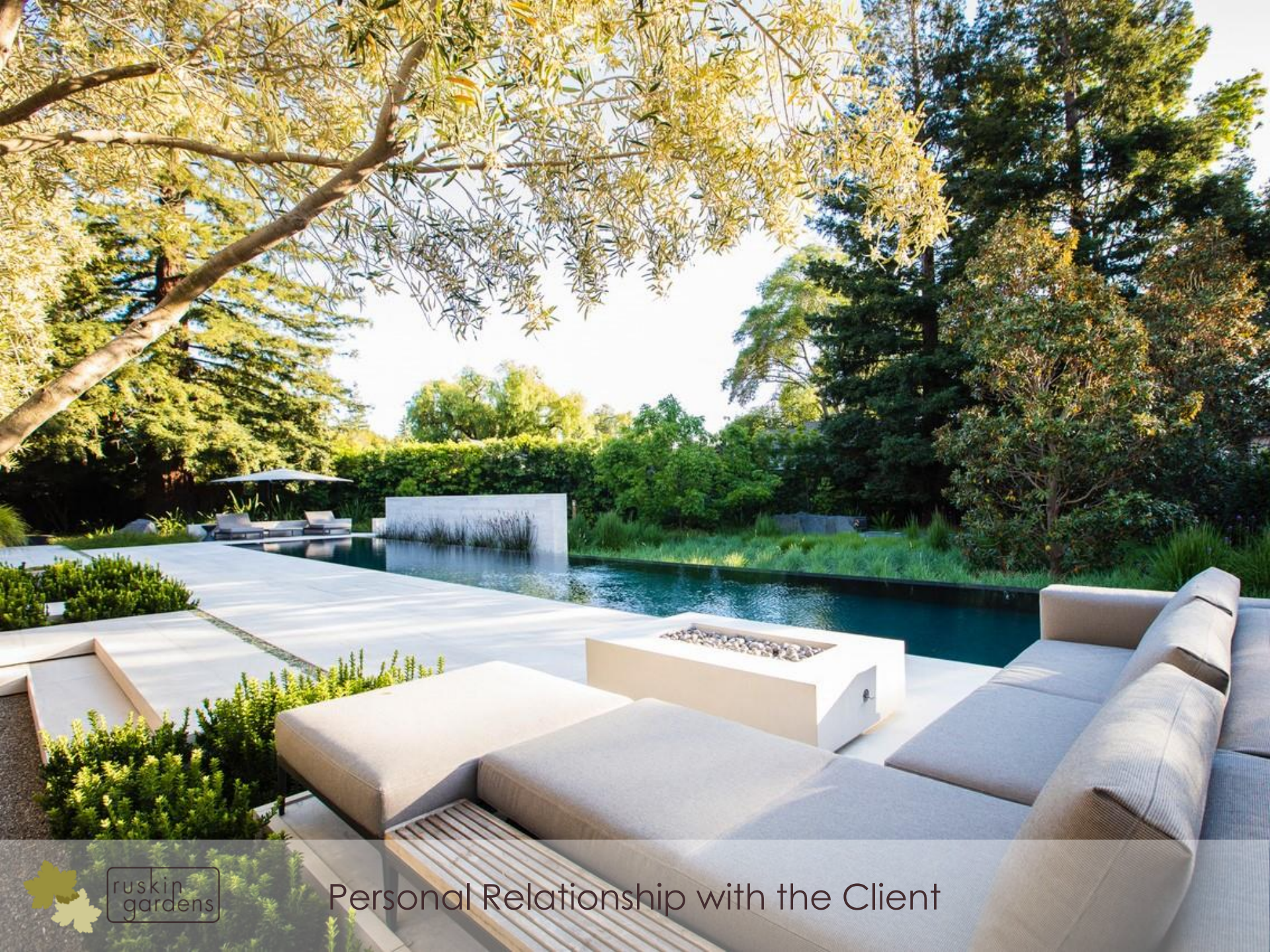
Communicating



ruskin gardens

Personal Relationship with the Client

ruskin gardens

Key Role, Often Missing: Irrigation Manager

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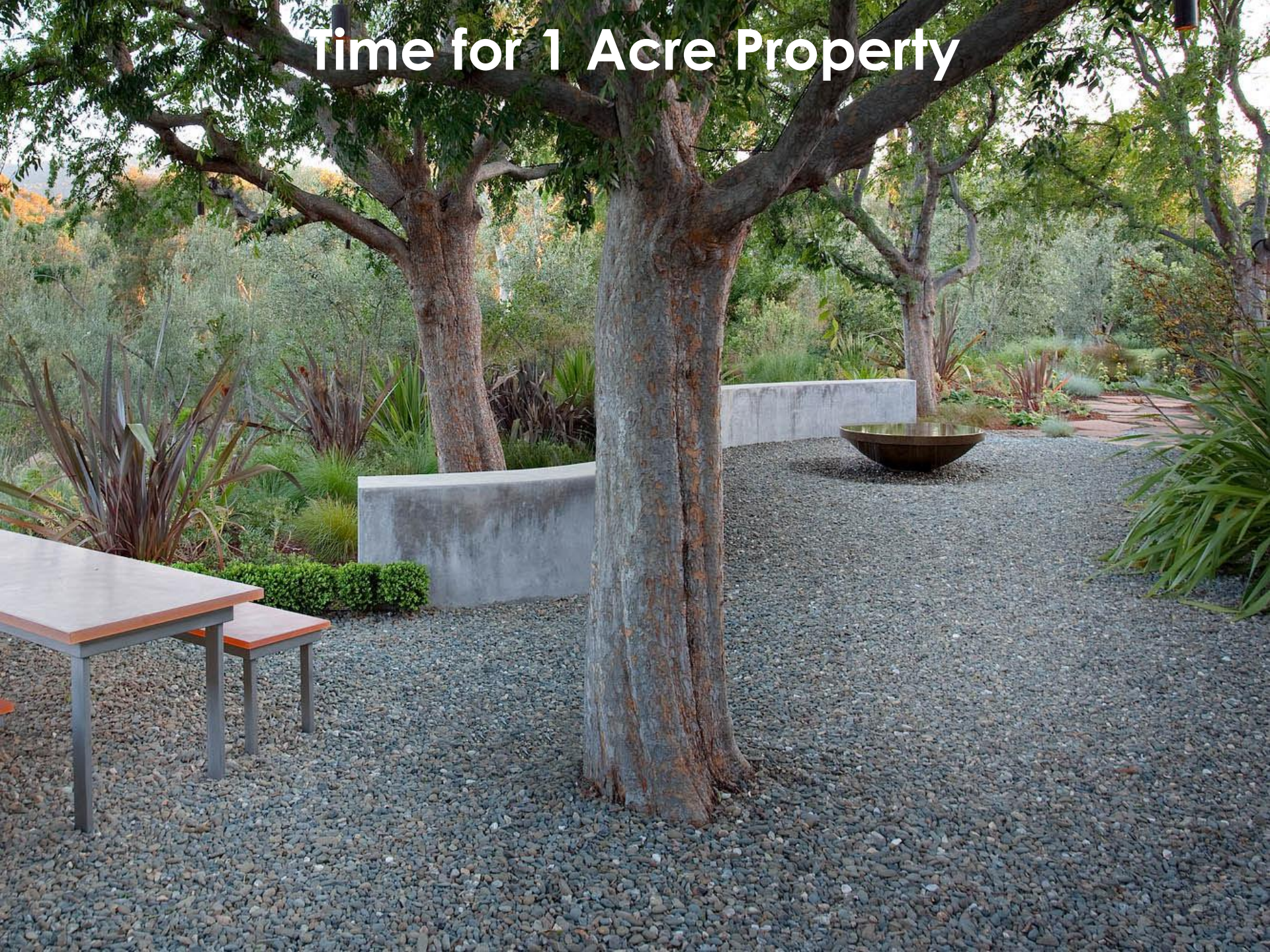
Irrigation Inventory Before Problems Happen

It Takes Time

A lot more time than we think.

Here is an example for a 1 acre property.


Time for 1 Acre Property

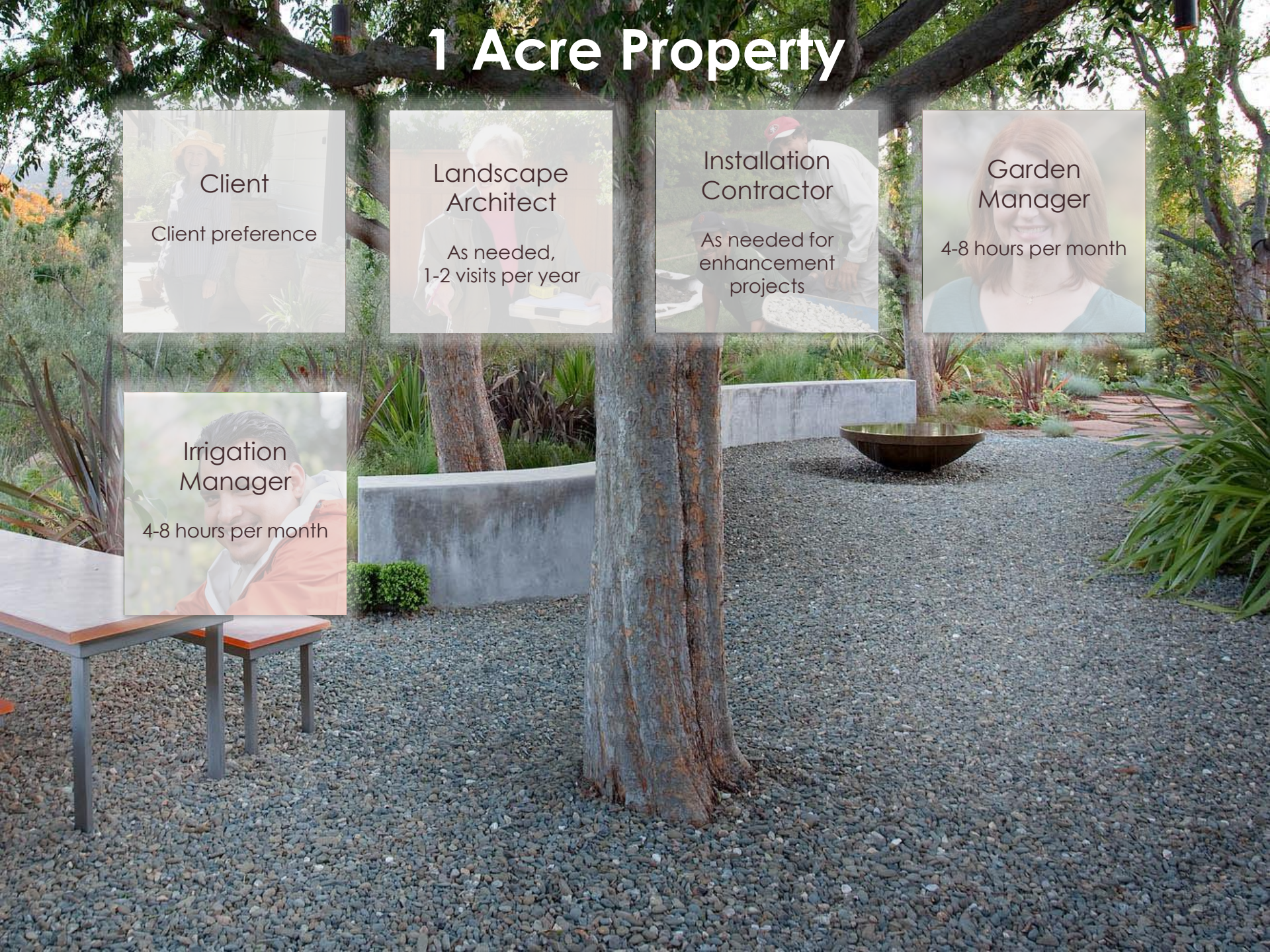
Time for 1 Acre Property

Client	Landscape Architect	Installation Contractor
Client preference	As needed, 1-2 visits per year	As needed for enhancement projects

Time for 1 Acre Property

Client	Landscape Architect	Installation Contractor	Garden Manager
Client preference	As needed, 1-2 visits per year	As needed for enhancement projects	4-8 hours per month

1 Acre Property



Client

Client preference

Landscape Architect

As needed,
1-2 visits per year

Installation Contractor

As needed for enhancement projects

Garden Manager

4-8 hours per month

Irrigation Manager

4-8 hours per month

Time for 1 Acre Property

Client

Client preference

Landscape Architect

As needed,
1-2 visits per year

Installation Contractor

As needed for enhancement projects

Garden Manager

4-8 hours per month

Irrigation Manager

4-8 hours per month

Crew Supervisor

16-32 hours per month

Gardener

16-32 hours per month

Time for 1 Acre Property

Client

Client preference

Landscape Architect

As needed,
1-2 visits per year

Installation Contractor

As needed for enhancement projects

Garden Manager

4-8 hours per month

Irrigation Manager

4-8 hours per month

Crew Supervisor

16-32 hours per month

Gardener

16-32 hours per month

Arborist

1-4 days per year

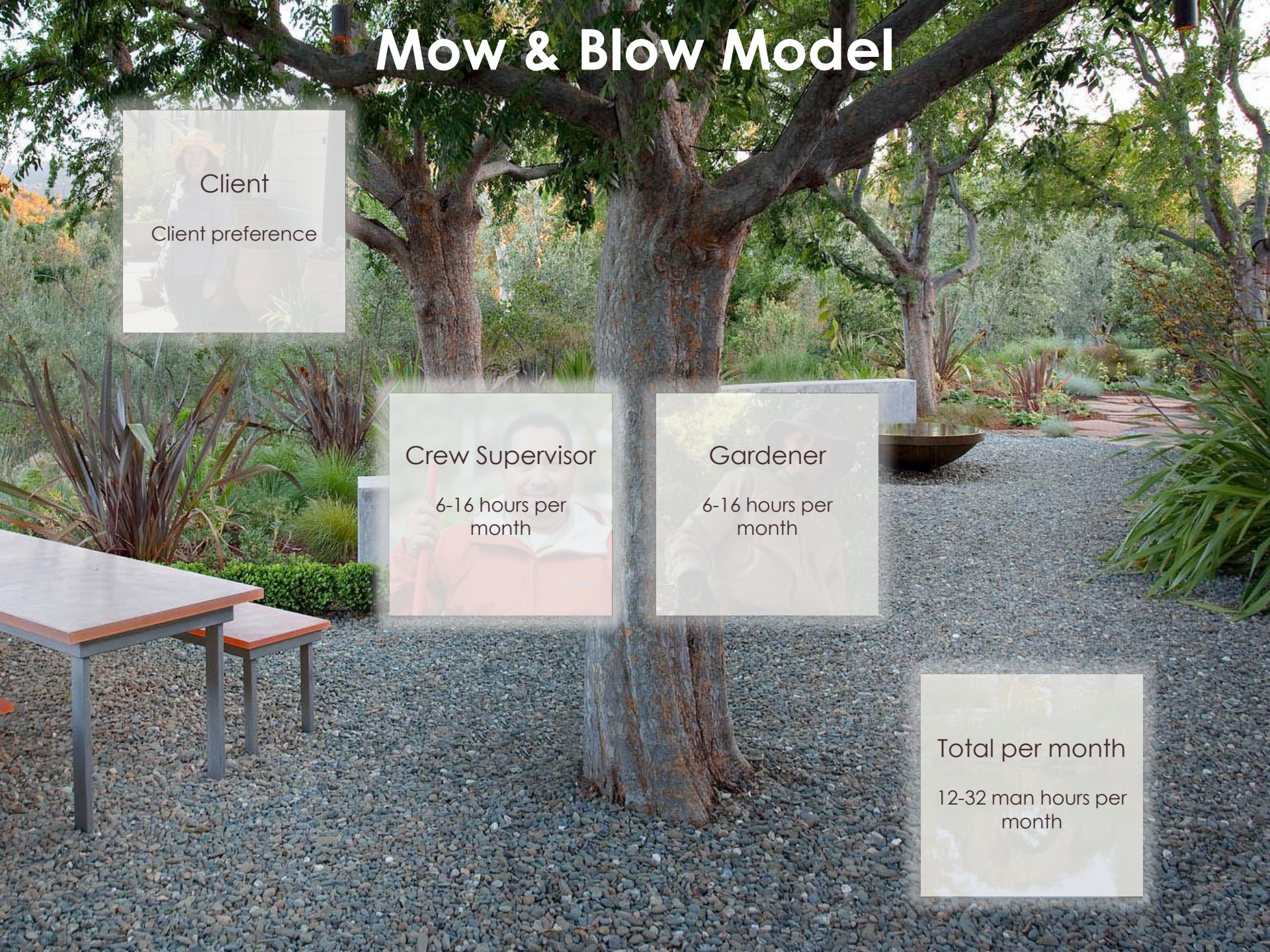
Time for 1 Acre Property

Client Client preference	**Landscape Architect** As needed, 1-2 visits per year	**Installation Contractor** As needed for enhancement projects	**Garden Manager** 4-8 hours per month
Irrigation Manager 4-8 hours per month	**Crew Supervisor** 16-32 hours per month	**Gardener** 16-32 hours per month	**Arborist** 1-4 days per year
Seasonal Color & Edible Specialist Client preference	**Pest & Disease Control** 1-4 visits per month	**Landscape Lighting** 1-2 days per year	

Time for 1 Acre Property

Client Client preference	**Landscape Architect** As needed, 1-2 visits per year	**Installation Contractor** As needed for enhancement projects	**Garden Manager** 4-8 hours per month
Irrigation Manager 4-8 hours per month	**Crew Supervisor** 16-32 hours per month	**Gardener** 16-32 hours per month	**Arborist** 1-4 days per year
Seasonal Color & Edible Specialist Client preference	**Pest & Disease Control** 1-4 visits per month	**Landscape Lighting** 1-2 days per year	**Total per month** 40-100 man hours per month

Mow & Blow Model



Client

Client preference

Crew Supervisor

6-16 hours per month

Gardener

6-16 hours per month

Total per month

12-32 man hours per month

Improving on Mow & Blow

- Hire a contractor to do irrigation checks 2ce per year in February and June.
- Add in an Arborist 1ce or 2ce per year to prune trees and smaller plants. Ask him/her to walk through and give feedback.
- Add a winter clean-up, pruning, compost and mulch 1ce per year.
- Identify someone to play Garden Manager role: maybe the landscape designer, maybe a solo-fine gardener, maybe the client themselves.

We Want to Give This Talk

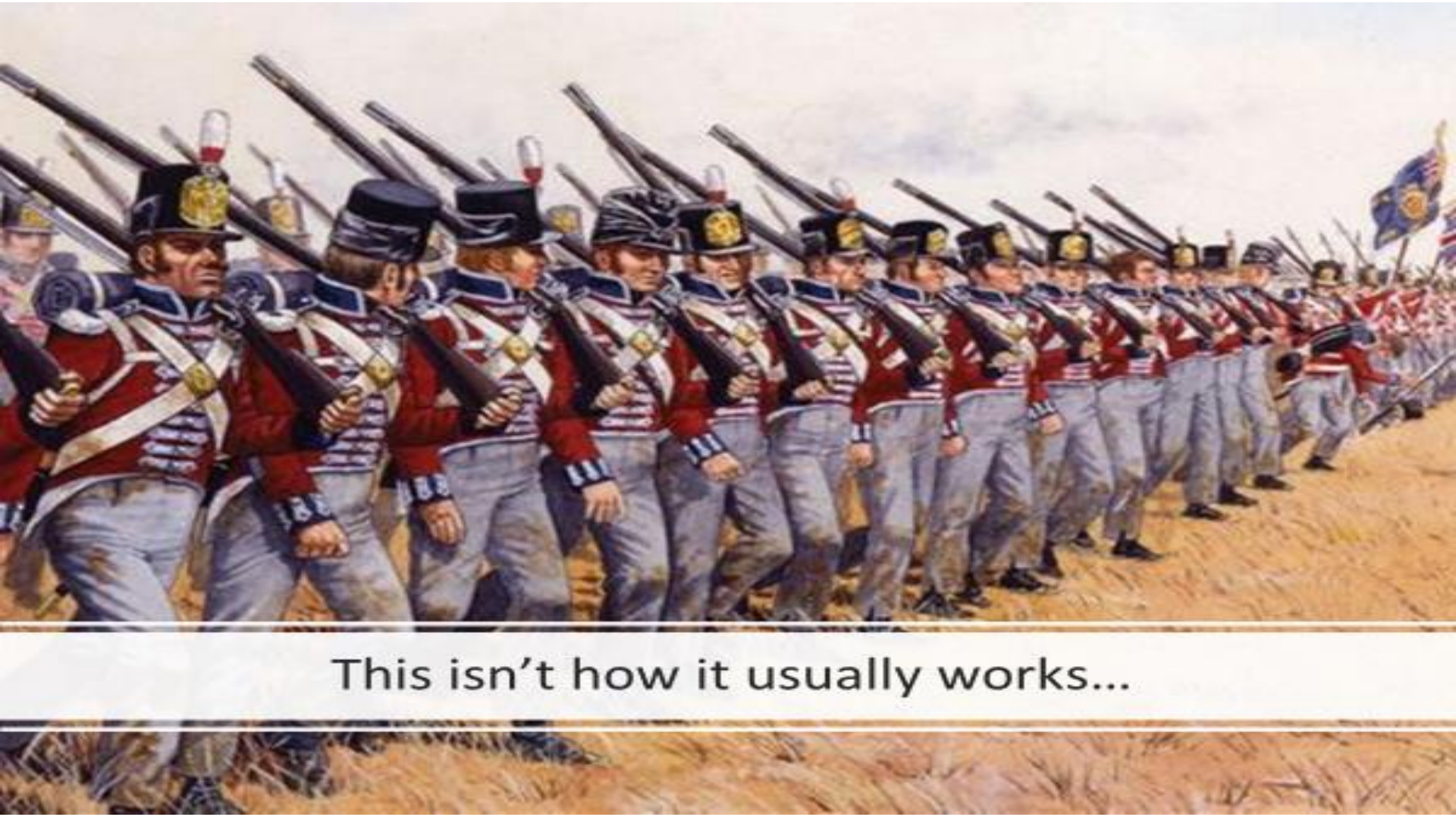
- If there are any interested audiences, we want to give this talk. We love talking about this and know there are many ways to do it.

We are Hiring!

- Want to be a Garden Manger?

Questions

FIRE-SAFE LANDSCAPING


This isn’t how it usually works…

A Natural Progression…

Embers are the worst.

- Small pieces of burning material
- Carried up to a mile
- Causing new fires where they land

Fire-resistant vegetation and strategic plantings

Why we want it: Resist the spread of fire to structures

Bonus: Fire resistant plants are often drought tolerant

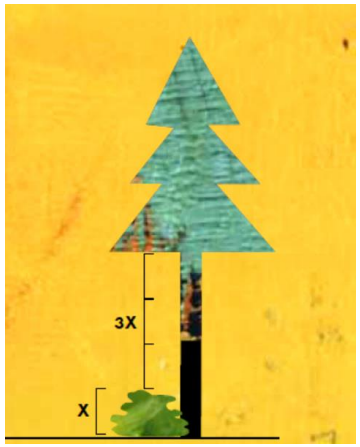
Common fire-prone plants

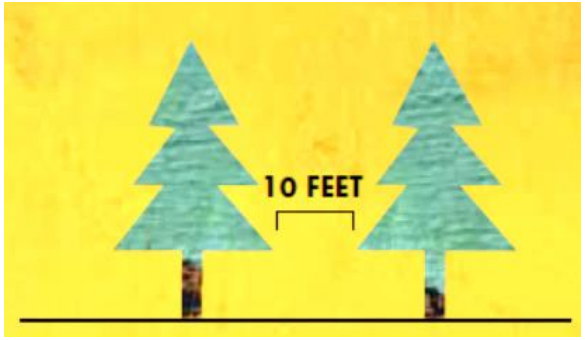
Should be avoided or removed from:

Defensible Space zones or areas close to roads and driveways.

If removal is not an option:

Intensive maintenance may be required.





Care & Maintenance:

- Remove all limbs within 6' of the ground, or 1/3 the height
- Remove all dead wood and twiggy growth regularly
- Provide canopy separation
- Remove all "ladder fuels" growing below
- Remove fallen leaves or twigs regularly
- Remove debris from roofs, and repeat regularly during fire-season

Disclaimer

- This list is not comprehensive
- Only identifies species most common in our area.
- In (mostly) alphabetical order…

BLACK ACACIA, ARBORVITAE, and CEDARS

- Not ideal for street plantings or near living areas.
- Extremely fire prone.
- Should not be planted in the defensible space zone.

- **Recommendation:** Remove
- **Fire Resistance:** Poor
- **Native:** No

Care & Maintenance:

- **Specimens should be spaced**
- **Maintained free of all dead twigs and needles**
- **Lower limbs removed to provide ground separation.**

BAMBOO, CHAMISE, and GREASEWOOD

- Very fire prone.
- Remove all plants within 30' of structures.
- Space remaining Chaparral within 100' of structures.
- Maintain completely free of dead twigs and leaves.

- **Recommendation:** Remove
- **Fire Resistance:** Poor
- **Native:** Bamboo**,** No. Chamise and Greasewood, Yes

BLACK SAGE and CALIFORNIA BUCKWHEAT

- Salvia mellifera and Erigonum fasciculatum

- **Recommendation:** Avoid
- **Fire Resistance:** Poor
- **Native:** Yes

CALIFORNIA BAY

- May contribute significantly to wildfires.
- All Bay Laurel trees within 30' of structures should be removed.
- A primary host for the Sudden Oak Death pathogen
  - Remove any Bay laurel within 30' of any Live oak or Black oak.

- **Recommendation:** Remove
- **Fire Resistance:** Poor
- **Native:** Yes

CHAPARRAL PEA and GIANT CHINQUAPIN

- Pickeringia montana and Chrysolepis chrysophylla

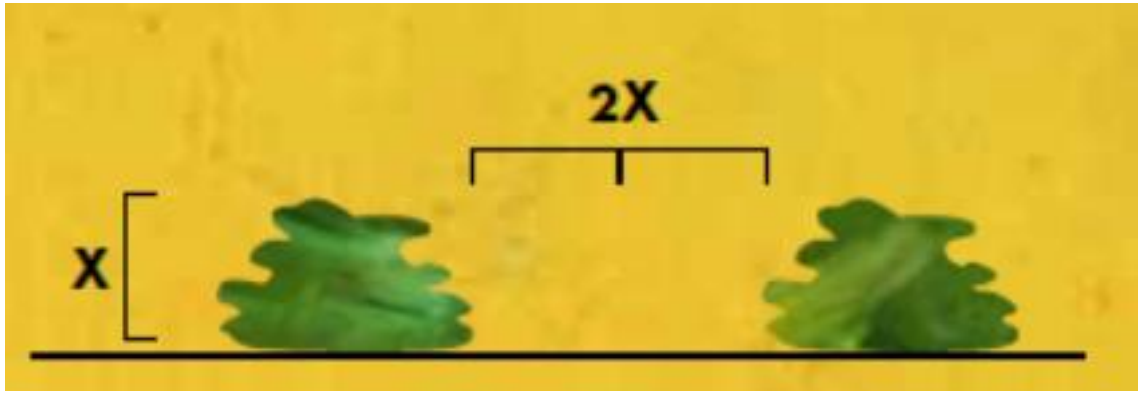
  - **Recommendation:** Avoid
  - **Fire Resistance:** Poor
  - **Native:** Yes

COASTAL SAGEBRUSH and COYOTE BRUSH

- Artemisia californica
- Should be removed within 30' of structures.

- **Recommendation:** Avoid
- **Fire Resistance:** Poor
- **Native:** Yes

Care & Maintenance:



- Separation of plants from 30' to 100' of structures is important.
- Maintain completely free of dead twigs and leaves.
- Slightly more fire resistant with indirect watering once a week.

CYPRESS and FALSE CYPRESS

- Evergreen trees or large shrubs.
- Many of the species are adapted to fire
    - Hold their seeds until trees are killed by a fire,
    - Seeds are then released to colonise the bare ground.
    - **Recommendation:** Remove
    - **Fire Resistance:** Poor
    - **Native:** No

DOUGLAS-FIR and EVERGREEN HUCKLEBERRY

- Pseudotsuga menziesii and Vaccinium ovatum

- **Recommendation:** Avoid
- **Fire Resistance:** Poor
- **Native:** Yes

EUCALYPTUS, FIR, HEMLOCK, LARCH, & PALM

- Common blue gum eucalyptus is a moderate invasive.
- All eucalyptus species are prone to fire.
- Trees within 100' of structures should be removed.

- **Recommendation:** Remove
- **Fire Resistance:** Poor
- **Native:** No

FOUNTAIN GRASS, PAMPAS, and JUBATA

- Popular drought tolerant grass
- This grass is fire prone

  - **Recommendation:** Remove
  - **Fire Resistance:** Poor
  - **Native:** No

FRENCH, SCOTCH, SPANISH BROOM, & GORSE

- Can colonize grassland and open canopy forest.
- Displaces native plant and forage species.
- Makes reforestation difficult. A strong competitor.
- Can dominate a plant community.

  - **Recommendation:** Remove
  - **Fire Resistance:** Poor
  - **Native:** No

Care & Maintenance:

- [illegible]
- Remove.

- Fire prone invasive.
- Remove.

- Fire prone invasive.
- Remove.

JUNIPERS

- Conifer in the cypress family.
- Hardy, versatile, and drought-tolerant.
- **One of the most fire prone species.**
- Junipers should be removed within 30' of structures
  - and 15' of roadways/driveways.
- Period.

- **Recommendation:** Remove
- **Fire Resistance:** Poor
- **Native:** No

Care & Maintenance:

- Any junipers remaining (from 30' to 100') must be maintained…
  - Completely free of dead needles and twiggy material
  - Irrigated every 2 weeks
  - Thinned and separated into individual bushes.

MANZANITA, PINE, TAN OAK, and SCRUB OAKS

- Keep widely spaced and regularly maintained
  - Thin and prune out ALL dead branches and twigs.
- **Neglected manzanita can contribute significantly to wildfires**
  - it should be avoided in the defensible space zone.

  - **Recommendation:** Remove
  - **Fire Resistance:** Poor
  - **Native:** Yes

ROSEMARY, SPRUCES, and YEW

- Irrigated and well maintained rosemary is relatively fire resistant.
- Volatile oil content and tendency to collect dead material
- Rosemary should be removed within 30' of structures.

  - **Recommendation:** Remove
  - **Fire Resistance:** Poor
  - **Native:** No

Combustible groundcovers …

- Mulches may support smoldering combustion for more than an hour
- Separate from structures by a minimum of 5’
- Fences, too.

A fence is a fuse…

Does it help to lift the fence panel?

13 mph

Even with top of mulch)

2 in above mulch

4 in above mulch)

6 in above hardwood mulch

Home Ignition Zone

1

Create a ‘fire-free’ area within five feet of the home, using non-flammable landscaping materials.

2

Consider that first foot for mineral soil.

3

Embers collect where you might normally find accumulations of leaves or needles.

4

Mulch around trees (but limb them up).

End of Summit

1)Thank you so much for attending! Enjoy lunch, go network and visit tables.

2) Keep an eye out for our follow up emails in the coming weeks.

3) Please turn in your Feedback Forms