

# This presentation premiered at WaterSmart Innovations

[watersmartinnovations.com](http://watersmartinnovations.com)



# Exercise Handouts

- Session includes an interactive exercise.
- To participate, please pick up a set of the printed handouts in the front of the room.
- There are a total of seven documents in the package.

# Model Water Efficient Landscape Ordinance (MWELO) and the New Normal for California Landscaping

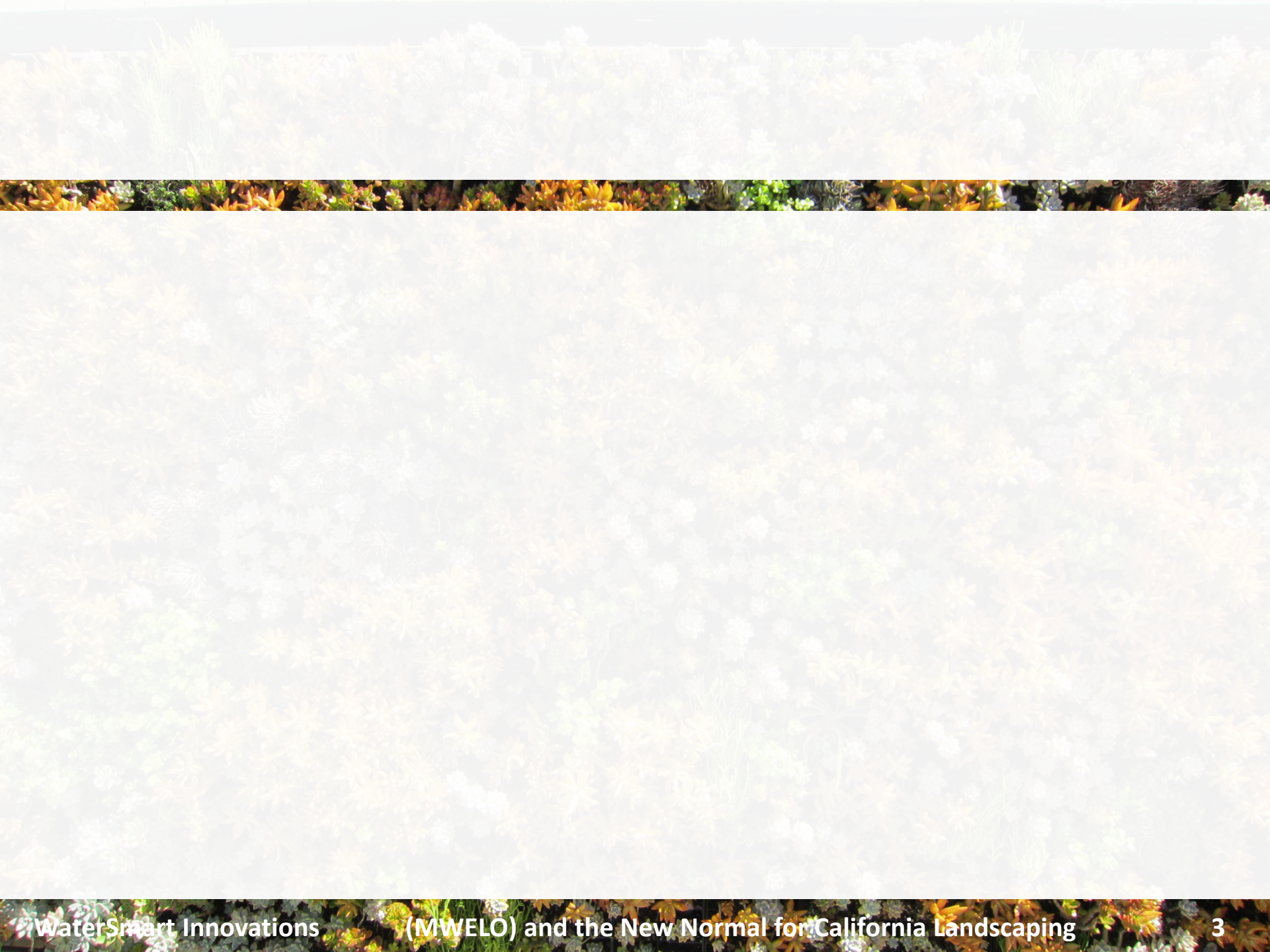


Kelly Schoonmaker, StopWaste

Ryan Stroupe, PG&E Pacific Energy Center









# Session Objectives

- To encourage others to offer WELO trainings.
- Session includes an interactive exercise.
  - To participate, please pick up a set of the printed handouts in the front of the room.
  - Handouts represent a WELO submittal package.
  - There are a total of seven documents in the package.
  - For this WELO submittal exercise, please review the documents and identify potential areas of non-compliance.



# CA MWELO History

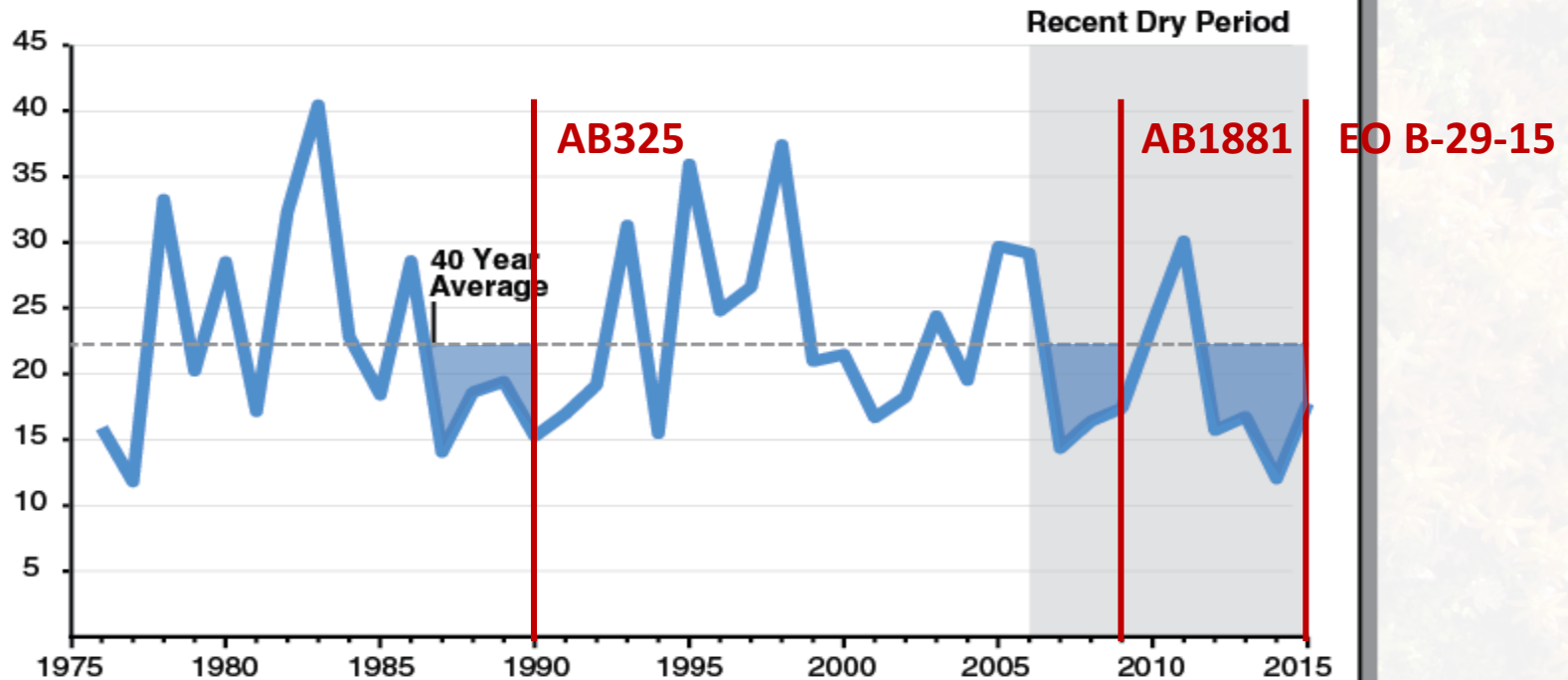
- What: California state ordinance regulating water use in **new** landscape construction with the goal of conserving water in the urban landscape.
- Why: Landscape accounts for an average of 50% of urban water use, 10% of overall water use and over 1% of all electric energy use in CA.
- How: All new permitted landscape construction over 500 sf; all renovations over 2,500 sf must comply with the ordinance

# CA MWELO Update History

Figure 1

## State's Precipitation Below Average in Recent Years

*Statewide Precipitation in Inches*





# How WELO Works

- **Performance-based measures**, such as
  - Calculate the Maximum Applied Water Allowance (MAWA) is based on reference ET
    - 0.55 ETo for residential
    - 0.45 ETo for non-residential
  - Then Estimate the Total Water Use (ETWU) based on their design.
  - Allows use of any plants as long as they meet budget
- **Prescriptive measures**, such as
  - Low-volume irrigation (with exceptions)
  - Mulch requirement: 3 inches
  - Compost: 4 CY/1,000 sf
- **Verification – Local Jurisdictions**
  - Plan review
  - Irrigation audit
  - Sometimes field inspection

For more details go to CA DWR web site:

<http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>



# WELO Training Logistics

- Extensive promotional outreach effort
- Collection of expertise (local)
- In-class exercises
- Simulcast to remote attendees
- File sharing
- Costs: Speakers, catering, venue
- Continuing Education Units

## Past and Future Training Dates

- June 29, 2016
  - In-person registrants: 129/77
  - Simulcast registrants: 123/65
- November 30, 2016
  - In-person registrants: 120/72
  - Simulcast registrants: 155/96
- June 15, 2017
  - In-person registrants: 96/58
  - Simulcast registrants: 160/88
- November 30, 2017
  - In-person registrants: TBD
  - Simulcast registrants: TBD



# Continuing Education Units

- American Institute of Architects
- American Institute of Certified Planners
- American Society of Landscape Architects
- American Water Works Association
- Bay-Friendly Qualified Professionals
- Irrigation Association
- National Association of Landscape Professionals





# Partnerships

- **Benefits**

- Increases outreach potential and expand audience
- Share costs and coordination effort
- Benefit of collective expertise

- **Potential partnership organizations**

- Water districts
- Waste management authorities
- Electric utilities
- Municipalities and other government agencies
- Professional organizations
  - Landscape architects, architects and other designers
  - Water, irrigation and related organizations
  - Plan reviewer organizations
  - Other professional organizations: USGBC, IFMA, BOMA



# Teaching Approach

- Selective overview
- Applying concepts
- Working within restrictions of WELO
- Variety of speakers/expertise/perspectives
- Feedback: answer key
- Working in teams
- Training resources



# Collection of Experts

- WELO expert to provide overview of ordinance
- Code reviewer to discuss compliance issues
- Water budget calculation expert
- Irrigation expert
- Compost expert
- Landscape designer
- Water/Energy perspective



# Training Resources

- Title 23 (MWELO) extract
- Appendix B – Sample Water Efficient Landscape Worksheet.
- DWR’s Water Budget Workbook
- BayFriendly Landscape and Gardening Guides
- Water Use Classification of Landscape Species (WULCOLs)
- Jennifer’s plant catalog



# In-class Plan Review Exercise

Whether you're a plan checker or redlining drawings in a firm, you will need to review drawings for WELO compliance. This exercise is meant to provide "real-world" exposure to a pretty good MWELo submittal. However, the package does not meet all MWELo requirements. There are at least 21 mistakes or omissions. Can you find them all?

## **Instructions:**

Using the City of Menlo Park checklist included in the documents, you will verify that the project is in compliance with the ordinance and meets all the requirements. Working with a classmate, you will identify and correct any errors on the drawings and documents. Document your work as follows:

- Errors: show revisions on drawings or documents
- Omissions: note on back of this sheet
- Summarize your findings by checking the pass/fail boxes on the Menlo Park Checklist.

# Documents for Plan Review Exercise

1. [WELO-exercise-writeup FINAL.docx](#)
2. [Layout-plan](#)
3. [WaterUseCalculations](#)
4. [Irrigation-plan](#)
5. [Planting-plan](#)
6. [Plant-list](#)
7. [Checklist](#)



# Plan Review Exercise Write Up

- Problem statement
- List of documents
- Additional tools
- Questions

[Back to document list](#)

Name: \_\_\_\_\_  
if applying for CEU's, scan and email the entire exercise packet to kschoonmaker@stopwaste.org

## MWELo and the New Normal for California Landscaping Design Review Exercise

Whether you're a plan checker or redlining drawings in a firm, you will need to review drawings for WELo compliance. This exercise is meant to provide "real-world" exposure to a pretty good MWELo submittal. However, the package does not meet all MWELo requirements. There are at least 19 mistakes or omissions. Can you find them all?

### Instructions:

Using the City of Menlo Park checklist included in the documents, you will verify that the project is in compliance with the ordinance and meets all the requirements. Working with a classmate, you will identify and correct any errors on the drawings and documents. Document your work as follows:

- Errors: show revisions on drawings or documents
- Omissions: note on back of this sheet
- Summarize your findings by checking the pass/fail boxes on the Menlo Park Checklist.

The document set includes (make sure you have all pieces):

- Menlo Park Checklist (completed by applicant)
- Water Use Calculations
- Planting Plan
- Layout Plan
- Irrigation Plan
- Plant list (all plants low water using unless otherwise specified)

Additional tools and resources you may need to verify compliance:

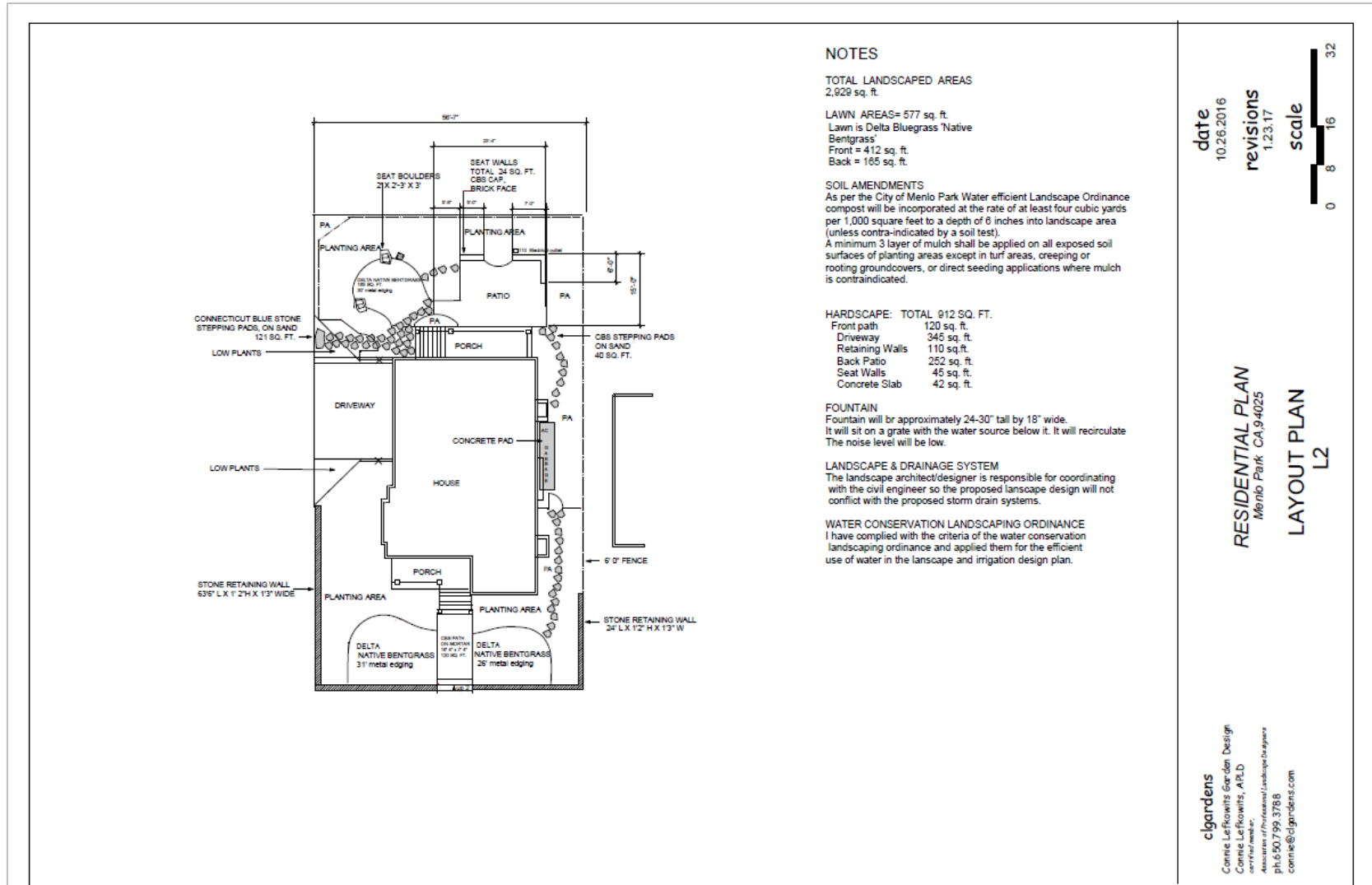
- DWR WELo ordinance, including appendices
- WUCOLS list (xls)
- Calculator
- DWR Water Use Calculator (xls)
- Water Efficient Landscape Worksheet (Appendix B)

In addition, please answer the following questions:

1. How much compost (total cubic yards) should be installed on this project? How would you verify in the field?
2. How much mulch (total cubic yards) should be installed on this project? Verification?
3. Bonus soil question: What else should be included in the notes on compost and mulch to ensure a successful project?

# Layout Plan

[Back to document list](#)



## NOTES

TOTAL LANDSCAPED AREAS  
2,829 sq. ft.

LAWN AREAS= 577 sq. ft.  
Lawn is Delta Bluegrass 'Native Bentgrass'  
Front = 412 sq. ft.  
Back = 165 sq. ft.

### SOIL AMENDMENTS

As per the City of Menlo Park Water efficient Landscape Ordinance compost will be incorporated at the rate of at least four cubic yards per 1,000 square feet to a depth of 6 inches into landscape area (unless contra-indicated by a soil test).  
A minimum 3 layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.

### HARDSCAPE: TOTAL 912 SQ. FT.

Front path 120 sq. ft.  
Driveway 345 sq. ft.  
Retaining Walls 110 sq. ft.  
Back Patio 252 sq. ft.  
Seat Walls 45 sq. ft.  
Concrete Slab 42 sq. ft.

### FOUNTAIN

Fountain will be approximately 24-30" tall by 18" wide.  
It will sit on a grate with the water source below it. It will recirculate.  
The noise level will be low.

### LANDSCAPE & DRAINAGE SYSTEM

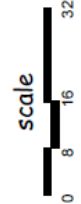
The landscape architect/designer is responsible for coordinating with the civil engineer so the proposed landscape design will not conflict with the proposed storm drain systems.

### WATER CONSERVATION LANDSCAPING ORDINANCE

I have complied with the criteria of the water conservation landscaping ordinance and applied them for the efficient use of water in the landscape and irrigation design plan.

date  
10.26.2016

revisions  
1.23.17



RESIDENTIAL PLAN  
Menlo Park CA 94025

LAYOUT PLAN  
L2

cgardens  
Connie LeFrowits Garden Design  
Connie LeFrowits, A.P.L.D.  
certified member  
Associate of Professional Landscape Designers  
ph.650.799.3788  
connie@cgardens.com



# Water Use Calculations

- ETWU calculated for each hydrozone
- MAWA

## Water Use Calculations

Zone 1: Low water, 368 sq. ft.  
 Zone 2: Moderate water, 395 sq. ft.  
 Zone 3: Moderate water, 143 sq. ft.  
 Zone 4: SLA, 648 sq. ft.  
 Zone 5: Moderate water, 430 sq. ft.  
 Zone 6: Moderate water, 642 sq. ft.  
 Zone 7: Low water, 128 sq. ft.  
 Zone 8: Low water, 175 sq. ft.

Zone	Plant Factor	Irr.	Irr. Eff.	ETAF (PF/IE)	Area	ETAF x Area	ETWU
1	.2	Drip	0.81	0.25	368 s.f.	92	2,453
2	.5	Drip	0.81	0.62	395 s.f.	245	6,529
3	.5	Drip	0.81	0.62	143 s.f.	89	2,364
4	Special landscape area			1	648 s.f.	648	17,276
5	.2	Drip	0.81	0.25	430 s.f.	108	2,866
6	.5	Drip	0.81	0.62	642 s.f.	398	10,612
7	.2	Drip	0.81	0.25	128 s.f.	32	853
8	.2	Spray	0.75	0.27	175 s.f.	47	1,260
<b>TOTALS</b>					2,929 s.f.		44,212 gal/yr
<b>TOTAL SPECIAL LANDSCAPE AREA</b>					648 s.f.		

MAWA: 50,722 gal/yr	<b>PASS!</b>
ETWU: 44,212 gal/yr	

Palo Alto Annual ETo = 43 in.

[Back to document list](#)

# Irrigation Plan

## Irrigation Legend

Quantity	Symbol	Description	Part Number
<b>Sprinklers</b>			
1	☼	Rain Bird SQ H.F. - 4 - 1804 40 psi 4.5 foot radius	
1	☼	Rain Bird SQ QTR - 4 - 1804 40 psi 4.5 foot radius	
<b>Backflow Devices</b>			
1	⊕	Fabco red. pressure backflow preventer	Series 860 - 1"
<b>Control Valves</b>			
8	⊕	Hunter 1" globe valve	ICV-101G
<b>Y-Strainers / Filters</b>			
8	⊕	Amiad 3/4" wye filter	
<b>Irrigation Accessories</b>			
1	⊕	Hunter Pro iHC 12 station indoor WIFI timer	HUPHC12I
1	⊕	Hunter RAIN-CLIK	
12	⊕	Flush point	
8	⊕	40 psi drip pressure regulator	
4	⊕	Nibco 1" isolation valve (ball or gate)	
1	⊕	1" Hunter Flow Meter	HLHFC100F
<b>Mainline Pipe</b>			
115 ft	—	Schedule 40 PVC	
<b>Lateral Line Pipe</b>			
340 ft	—	Schedule 40 PVC	
<b>Sleeves</b>			
20 in. ft.	—	Sleeve 2" Class 200 PVC	
<b>Drip Tubing</b>			
2,113 in. ft.	—	1/2" Netafim inline emitter tubing	TLCV4-12
830 in. ft.	—	1/2" blank polyethylene tubing	
TBD	—	Netafim Micro Tubing Adaptor	TLMTUBEADP

Total landscape area: 2,929 sq. ft.  
Soil type: Sandy clay

**Application Rates**  
Drip in planted areas: 0.48 in/hr  
Drip in lawns: 0.64 in/hr  
Sprinklers on paths: 2.0 in/hr

### Designer's Statement:

This plan complies with the criteria of the Water Efficient Landscaping Ordinance and applies them accordingly for the efficient use of water in this irrigation design plan.

*Lori D. Palmquist*

January 24, 2017

Lori D. Palmquist, CID, CIC, CLIA, CLWM  
Certification ID: 006658  
Irrigation Design and Consultation  
510-374-6360  
Irrigation Association Certification:  
Irrigation Designer, Irrigation Contractor,  
Irrigation Auditor, and Landscape Water Manager



## Irrigation Notes

- All planted areas are dripped with Netafim TLCV4-12 grid. The emitter spacing is 12", and the row spacing is 16".
  - Ensure that all plants have one emitter positioned on the root ball. Use the Netafim Micro Tubing Adaptor plugged into a nearby Netafim inline emitter, and run 1/4" drip tube onto root ball, and stake down.
  - The drip zones have drip lines drawn in marking the positions of all the drip tubing.
  - The three flagstone paths are watered by Rain Bird sprinklers with SQ nozzles in them. They are pressure regulated at the valve to 40 psi.
- Valves**
- Valves are 1" Hunter ICV-101G in-line valves. They are to be installed per installation detail.
  - All drip valves require the wye filter immediately downstream of them. They also require a 40 psi pressure regulator downstream of the filter.
  - The two sprinkler valves have a 40 psi pressure regulator downstream of the valve.
- Pipes and Polyethylene Tubing**
- The mainline pipe is 1" schedule 40 PVC. It is 1" from the point of connection all the way to the valve manifold.
  - Run 1/2" blank polyethylene tubing from each valve to beginning of Netafim grid for each zone.
  - The supply and exhaust headers for each sub-grid consists of 1/2" blank polyethylene tubing. See example drawings on the Notes and Details page.
  - All drip tubing is color-coded to match its hydrozone.



Zone 1  
Low water use  
368 sq. ft.  
276 in. ft. tubing

Zone 2  
Moderate water use  
395 sq. ft.  
296 in. ft. tubing  
2.0 gpm

Zone 3: lawn  
Moderate water use  
143 sq. ft.  
143 in. ft. tubing

Zone 4  
Low water use  
648 sq. ft.  
486 in. ft. tubing  
3.2 gpm

Zone 5: lawn  
Moderate water use  
430 sq. ft.  
430 in. ft. tubing  
2.9 gpm

Zone 6  
Moderate water use  
642 sq. ft.  
482 in. ft. tubing  
3.2 gpm

Zone 7  
Low water use  
128 sq. ft.  
Sprinklers  
3.4 gpm

Zone 8  
Low water use  
175 sq. ft.  
Sprinklers

Lori Palmquist, CID, CLIA, CLWM  
5157 Clinton Avenue  
Riverside, CA 92505  
951-374-6360

Book for

**SHEET DESCRIPTION:**  
Color Irrigation Plan

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**PROJECT:**  
Residential Irrigation Plan  
Mesa Park, CA 92523

---

**REVISIONS:**  
None

---

**DATE:**  
1/24/2017

**JOB NUMBER:**  
1

**DRAWN BY:**  
LP

**CHECKED BY:**  
CL

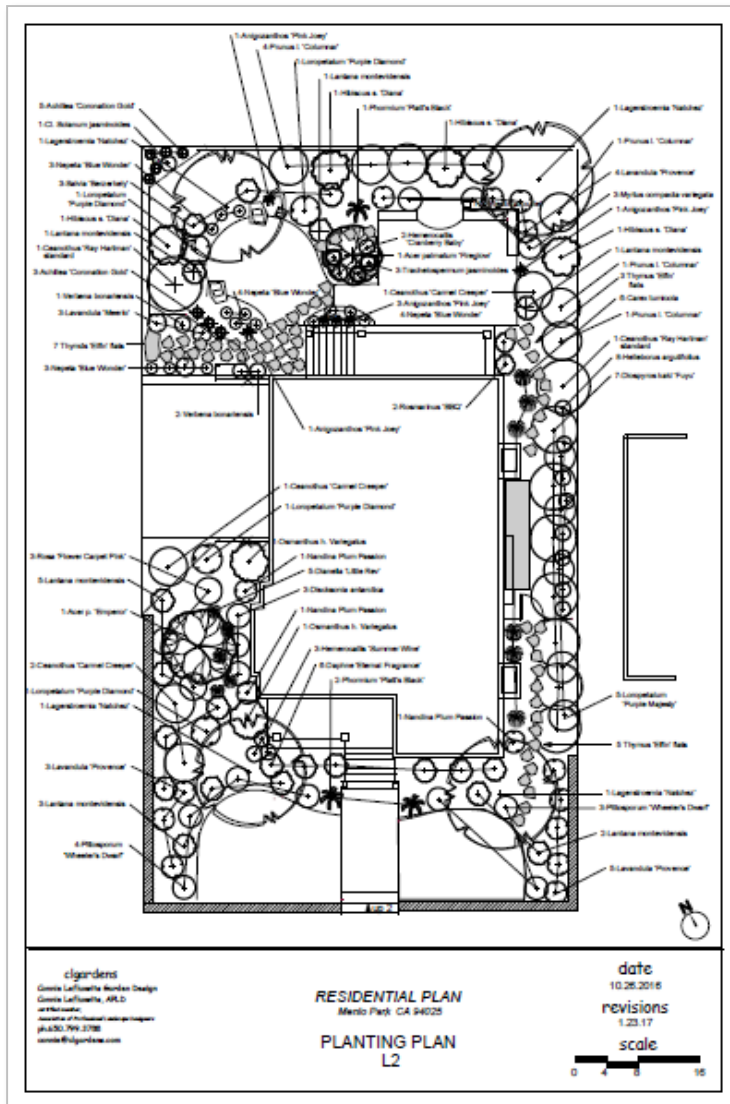
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**SCALE:**  
1" = 8'

**SHEET:**  
L3



# Planting Plan and Plant List



**Webb Plants 1.23.17**  
**Plant Legend** 06/06/17

Code	Botanical Name	Quantity	Size	Remarks
<b>Trees</b>				
ACE FIR	<i>Acer palmatum</i> 'Fireglow'	2	20"	moderate water
CEA RAY	<i>Ceanothus</i> 'Ray Hartman', Standard	2	15 Gallon	
DIO KAF	<i>Diospyros kaki</i> 'Fuyu'	7	15 Gallon	
LAG NAT	<i>Lagerstroemia</i> 'Natchez'	4	24" Box	
<b>Shrubs</b>				
CEA CAR	<i>Ceanothus griseus horizontalis</i> 'Carmel'	6	5 Gallon	
DAP ETE	<i>C. Daphne</i> 'Eternal Fragrance'	6	5 Gallon	
DIC ANT	<i>Dicksonia antarctica</i>	3	5 Gallon	high water
HIB SYR	<i>Hibiscus syriacus</i> 'Diana'	3	15 Gallon	
LAV PRO	<i>Lavandula X intermedia</i> 'Provence'	9	5 Gallon	
LOR PUR	<i>Loropetalum</i> 'Purple Diamond'	5	3 Gallon	
LOR PUR	<i>Loropetalum</i> 'Purple Majesty'	3	5 Gallon	
MYR COM	<i>Myrtus communis</i> 'Variegata'	3	5 Gallon	
NAN PLU	<i>Nandina domestica</i> 'Plum Passion'	3	5 Gallon	
OSM VAR	<i>Osmunda h.</i> 'Variegata'	2	5 Gallon	moderate water
PIT WEE	<i>Pittosporum tobira</i> 'Wheeler's Dwarf'	6	5 Gallon	
PRU CAR	<i>Prunus caroliniana</i> 'Column'	5	15 Gallon	
RHAVAR	<i>Rhamnus alaternus</i> 'Variegata'	2	15 Gallon	
ROS BAR	<i>Rosa m. o.</i> 'Baroque'	2	5 Gallon	
SAL BER	<i>Salvia microphylla</i> 'Benzekely'	3	5 Gallon	
<b>Ground covers</b>				
THY ELF	<i>Thymus serpyllum</i> 'Elfin'	10	Flat	
TRA JAS	<i>Trachelospermum jasminoides</i>	3	1 Gallon	moderate water
<b>Vines</b>				
SOL JAS	<i>Solanum jasminoides</i>	1	5 Gallon	
<b>Perennials</b>				
ACH COR	<i>Achillea X filipendula</i> 'Coronation Col'	3	1 Gallon	
ANI PIN	<i>Anigostemum f.</i> 'Pink Joey'	5	1 Gallon	
DIA LIT	<i>Dianella caerulea</i> 'Little Rev'	5	1 Gallon	moderate water
HEL LIV	<i>Helleborus argutifolius</i>	8	1 Gallon	
HEM CRA	<i>Hemerocallis</i> 'Cranberry Baby'	3	1 Gallon	moderate water
HEM SUM	<i>Hemerocallis</i> 'Summer Wine'	3	1 Gallon	moderate water
LAN MON	<i>Lantana montevidensis</i>	12	5 Gallon	

Created with GardenSoft PlantMaster - [www.gardensoft.com](http://www.gardensoft.com)

# Plan Review Checklist

## OUTDOOR WATER USE EFFICIENCY CHECKLIST

### City of Menlo Park Water Efficient Landscape Ordinance OUTDOOR WATER USE EFFICIENCY CHECKLIST

**To Be Completed by Applicant** Page 1 of 2

Verify that the subject project meets the specified requirements of the Water Conservation in Landscaping Ordinance.

Signature \_\_\_\_\_ Date \_\_\_\_\_

**Project Information**

New Construction  Rehabilitated  Other:  
 Single Family  Multi-Family  Commercial  Institutional  Irrigation only  Industrial  Other:

Applicant Name (print): Nicholas and Laura Webb Contact Phone #: \_\_\_\_\_

Project Site Address: 590 Fremont Street Menlo Park, CA 94025

Project Area (sq. ft. or acre): \_\_\_\_\_ # of Units: 1 # of Meters: 1

For a single-family project, or a single-family development project, enter this information on an average, per unit basis. For all other projects, input an aggregate value for the entire project.	Total Landscape Area (sq. ft.):	2,929 sq. ft.	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Turf Irrigated Area (sq. ft.): (native turf, moderate water use)	573 sq. ft.	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Non-Turf Irrigated Area (sq. ft.):	2,356 sq. ft.	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Irrigated Special Landscape Area (SLA) (sq. ft.):		<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Water Feature Surface Area (sq. ft.):		<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)	

Landscape Parameter	Requirements	Project Compliance	(Pass) (Fail)
Plant Material	Low water using plants are installed for at least 75% of plant area	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, See Special Landscape Area and/or Recycled Water Area	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Turf	≥ 75% of the landscape area is turf (Residential ONLY)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, See Water Budget
There is no turf in parkways < 10 feet wide		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, if adjacent to a parking strip	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
All turf is planted on slopes ≥ 35%		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Hydrozones	Plants are grouped by Hydrozones	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Compost	At least 4 cubic yards per 1,000 sq ft to a depth of 6 inches	<input type="checkbox"/> Yes <input type="checkbox"/> No, See Soil Test	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Mulch	At least 3 inches of mulch on exposed soil surfaces	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Irrigation System	Use of automatic irrigation controllers that use evapotranspiration or soil moisture sensor data and utilize a rain sensor	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Irrigation controllers do not lose programming data when power source is interrupted	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Irrigation system includes pressure regulator	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Manual shut-off valves are installed near the connection to the water supply	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Metering	All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher	<input type="checkbox"/> Yes <input type="checkbox"/> No, Audit to be performed after construction	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Areas < 10 feet shall be irrigated with subsurface irrigation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, but there is no runoff or overspray	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Separate irrigation meter (Residential ONLY)	<input checked="" type="checkbox"/> Yes, not required if < 5,000 sq ft <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Swimming Pools / Spas	Separate irrigation submeters for landscape areas ≥ 1,000 sq ft (Commercial ONLY)	<input type="checkbox"/> Yes <input type="checkbox"/> No, N/A	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Cover required for new pools and spas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No, no new pool or spa	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Water Feature	Recirculating	<input type="checkbox"/> Yes <input type="checkbox"/> No, N/A	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Project Information	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Documentation (per section 692.3)	Water Efficient Landscape Worksheet (optional if ≥ 2,500 sq ft of landscape area)	<input checked="" type="checkbox"/> Prepared by professional <input type="checkbox"/> Other	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)

[Agency Name, Address, Telephone#, Fax #]

## OUTDOOR WATER USE EFFICIENCY CHECKLIST

Page 2 of 2

Documentation (per section 692.3) Continued	Soil Management Report (optional if < 2,500 sq ft of landscape area)	<input type="checkbox"/> Prepared by professional <input checked="" type="checkbox"/> Other	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Landscape Design Plan (optional if < 2,500 sq ft of landscape area)	<input checked="" type="checkbox"/> Prepared by professional <input type="checkbox"/> Other	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Irrigation Design Plan (optional if < 2,500 sq ft of landscape area)	<input checked="" type="checkbox"/> Prepared by professional <input type="checkbox"/> Other	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
	Grading Design Plan (optional if < 2,500 sq ft of landscape area)	<input type="checkbox"/> Prepared by professional <input checked="" type="checkbox"/> Other	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)
Audit	Post-Installation audit completed	<input type="checkbox"/> Completed by professional <input checked="" type="checkbox"/> Other	<input type="checkbox"/> (Pass) <input type="checkbox"/> (Fail)

**Auditor:**

**Materials Received and Reviewed:**

- Project Information
- Water Efficient Landscape Worksheet
- Residential Outdoor Water Use Efficiency Checklist
- Post-Installation Audit
- Landscape Design Plan
- Soil Management Report
- Irrigation Design Plan
- Grading Design Plan

**Date Reviewed:**

Follow up required (explain): \_\_\_\_\_

**Date Resubmitted:** \_\_\_\_\_

**Date Approved:** \_\_\_\_\_

**Dedicated Irrigation Meter Required:**

**Meter sizing:**

Drip irrigation  
 Plant palette  
 Grading  
 Pool and/or spa cover  
 Dedicated irrigation meter  
 Other: \_\_\_\_\_

**Comments:**

---

**Selected Definitions:**

**ETo** Reference evapotranspiration means the quantity of water evaporated from a large field of four-to-seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of estimating water budgets so that regional differences in climate can be accommodated.

**SLA** Special Landscaped Area. Includes edible plants, areas irrigated with recycled water, surface water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

**Professional** Professional is a "certified professional" or "authorized professional" that is a certified irrigation designer, a certified landscape irrigation auditor, a licensed landscape architect, a licensed landscape contractor, a licensed professional engineer, or any other person authorized by the state to design a landscape, an irrigation system, or authorized to complete a water budget, irrigation survey or irrigation audit.

**Water Feature** A design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied).

[Agency Name, Address, Telephone#, Fax #]



# Exercise Questions



**In addition, please answer the following questions:**

1. How much compost (total cubic yards) should be installed on this project? How would you verify in the field?
2. How much mulch (total cubic yards) should be installed on this project? Verification?
3. Bonus soil question: What else should be included in the notes on compost and mulch to ensure a successful project?

# Plan Review Activity

What issues would you explore as part of this exercise?



# Answer Key Pt.1

## **Mistakes on Planting Plan**

- Plant water-use values not on planting plan (these are on a separate sheet)
- Hydrozones not on planting plan (these are on the irrigation plan)
- Compliance statement is not signed

## **Mistakes on Irrigation Plan**

- Controller not located on plan
- Rain sensor not located on plan
- No backflow preventer at POC
- No static pressure noted on plan
- No pressure regulation on the sprinkler zones
- Some of the zones don't show the flow in gpm (three are missing)
- Size of irrigation main not shown
- Size of sprinkler zone laterals not shown



# Answer Key Pt.2

## Missing Documents

- Soil Management Report
- Irrigation Maintenance Schedule, and Irrigation Controller Schedule (these are being requested by the city to be turned in with the Certificate of Completion at the end of the project)

## Mistakes in Layout Plan

- Should specify recycled mulch in notes.
- Water conservation statement is not signed

## Mistakes in Calcs

- Zone 1 is supposed to be moderate, not low (Solanum makes it moderate)
- Zone 4 is supposed to be low, not SLA (Pomegranates need to be on their own zone to qualify as SLA)
- Zone 6 is supposed to be high, not moderate (Dicksonia makes it high)
- Zone 5 is supposed to be moderate, not low
- Zone 7 is supposed to be spray



# Training Lessons Learned

- Include in-class exercises to reinforce concepts
- Conduct water budget calculation exercise twice
- Make exercises real-world but achievable in limited time (review vs. design)
- To stay on schedule, roll questions to end-of-class forum
- Originally included vendors area
- Have developed our own resources – workshops provide good testing ground

# Next WELO Workshop



November 30, 2017

- In-person in SF
- Simulcast

PG&E and StopWaste present:



## WELO and the New Normal for the California Landscape

San Francisco, CA • November 30, 2017

The updated California Model Water Efficient Landscape Ordinance (WELO) has been in effect throughout the state for over a year.

### The new WELO:

- Affects all new permitted landscape construction over 500 square feet
- Is required by CALGreen
- Significantly reduces applied water allowances
- Requires compost on all projects



➤ **Join us for a free, one-day workshop on the new statewide WELO.**

The workshop will be a combination of lecture and hands-on exercises, giving attendees a thorough understanding of what's required by ordinance and how to comply with it. The workshop will be simulcast via the internet.

### Location:

PG&E Pacific Energy Center  
851 Howard Street  
San Francisco, CA 94103

### Date & Time:

Thursday, November 30, 2017  
8:30am to 4:30pm

### Speakers Include:

- Ron Alexander – Principal, R. Alexander Associates, Inc.
- Jennifer de Graaf, RLA – Principal, de Graaf Design Associates
- Christine Hawkins – Specification Manager, Hunter Industries
- Lori Palmquist, CID, CIC, CLIA, CLWM – Partner, WaterWonk

**REGISTER TO ATTEND IN PERSON**

<http://66.198.243.12/event-details?EventID=17866>

**REGISTER TO ATTEND VIA WEBINAR**

<http://66.198.243.12/event-details?EventID=17867>



This training is being developed through a partnership between PG&E and StopWaste and is free to the public.



**STOPWASTE**  
at home • at work • at school

CEU's available: ASLA, AWWA, AIA, AICP/APA, Bay-Friendly, CLCA/NALP, IA



# Discussion/Q&A

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