

# Water Efficiency

## Best Practices, Tools, & Resources

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Moulton Niguel Water District  
October 25, 2018



# Water Supply

- Imported Water
- Recycled Water
- Local Reliability Projects



# Benefits of Efficiency and Conservation

- Save water and money
- Reduce runoff & avoid property damage
- Improve quality of local creeks and beaches
- Delay investment in infrastructure/storage
- Keep water rates low



# Integrated Demand Management



## Landscape Transformation

Turf Removal Rebate



## Marketing

Cost effective & targeted



## Water Shortage Contingency Plan

*Choice not mandates*



## Education Programs

*Workshops & customer service*



# Conservation – a California Way of Life

- Use Water More Wisely & Eliminate Water Waste
- Each CA urban water retailer receives a budget
- Efficiency standards for landscaped areas
- Required and enforceable after 2022
- Financial penalties for non-compliance



# Water Budget Based Rate Structure

- Most effective demand management tool
- Provides customized water budget for each meter
- Indicates efficient level of monthly water use
- Unit costs increase in higher tiers



# Outdoor Water Budget

- Outdoor Budget calculation elements:
  - Irrigable Area
  - Evapotranspiration (ET)
  - Plant Factor
  - Conversion Factor(s)
- Variation driven by changes in ET



Potable  
Water  
Budget

=



Irrigable Area

×



Monthly  
Evapotranspiration

×

0.7 × 0.62 ÷ 748

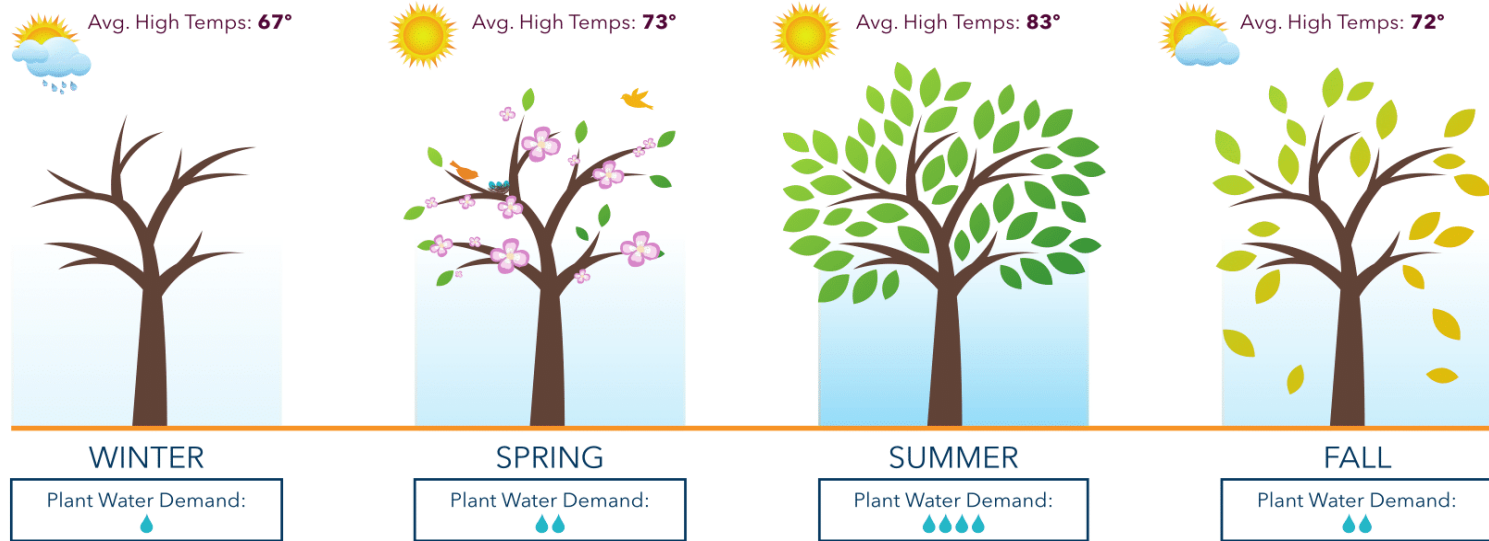
0.7 Plant Factor

0.62 Conversion  
Factor

748 Conversion  
Factor

# ET and Plant Water Demand

4 Factors: solar radiation, air temperature, relative humidity, wind speed

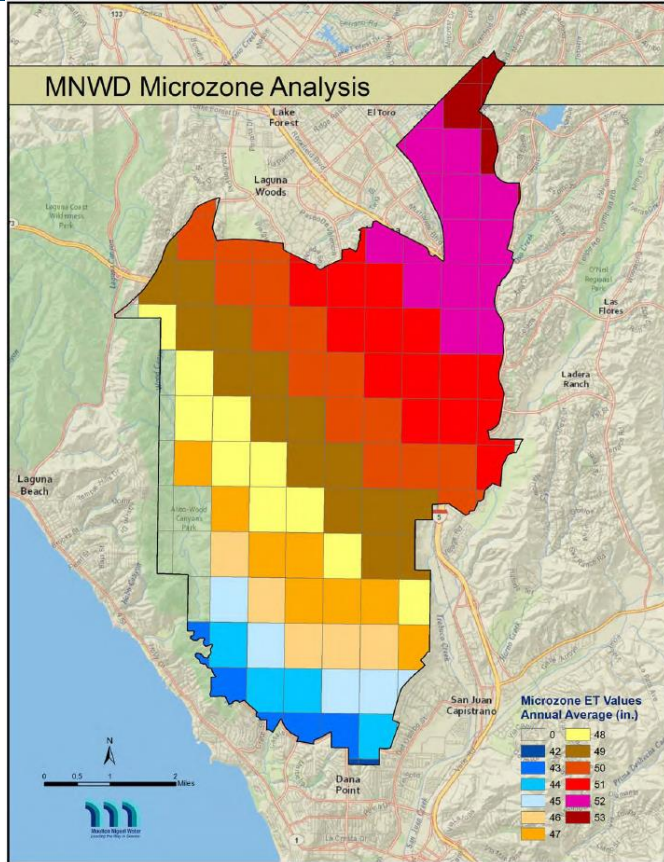


## Plants need less water in the fall.

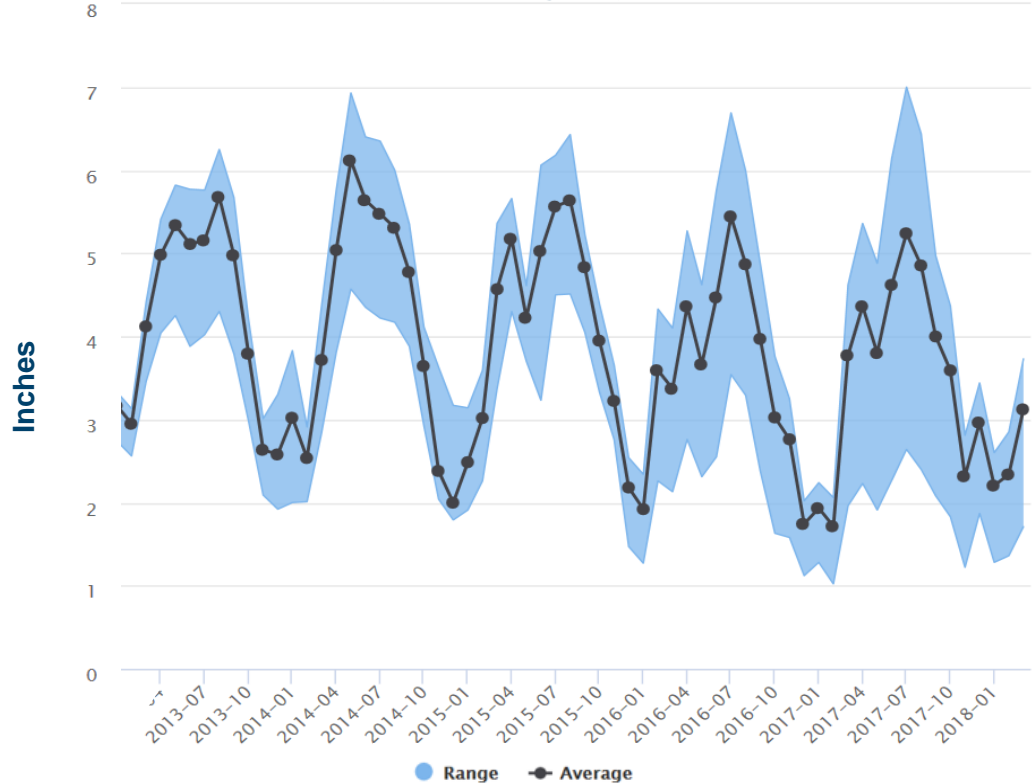
With shorter days and cooler nights, outdoor plants require less water in the fall. This seasonal change means less water is lost to the atmosphere through evapotranspiration (ET), making outdoor water budgets smaller. To keep your water use within budget and reduce your bill, decrease your outdoor watering today.



# ET over Service Area



**Monthly ET Range by Microzone**



# How Variation in ET Affects Outdoor Water Budget



**moulton niguel**  
water district  
Customer Service (949) 831-2500  
Account Inquiries (949) 448-4050

## Special Message

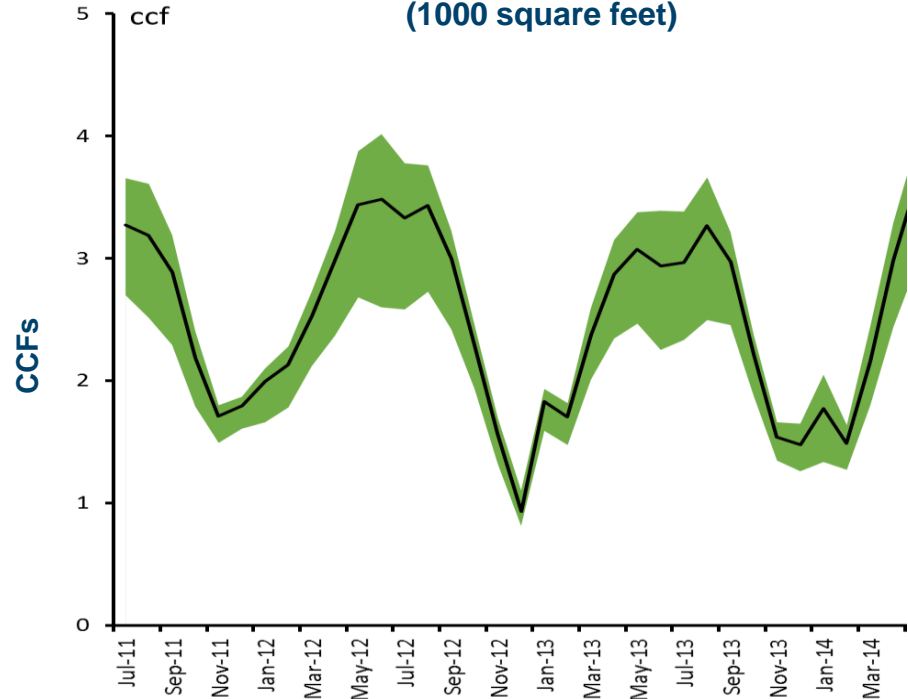
### Committed to Protecting our Environment!

Through our participation in a local creek clean-up event, and our water education partnership with the OC Coastkeeper, we are working hard to protect our environment and preserve Orange County's beaches, trails, and waterways.

Learn more at: [www.mnwd.com/newsroom](http://www.mnwd.com/newsroom).

Your water budget for 09/12/17 - 10/09/17 = **13 BU**  
Your current billed usage: 10  
Persons in household = 4 ET Total = 3.75  
Estimated landscape irrigation area = 2,009 sq feet

## Outdoor Budget Range (1000 square feet)



# Recycled Water

- Offsets Potable Consumption
- Dedicated Irrigation
- MWD On-Site Retrofit Program
- Agency Retrofit Programs
  - Determined by cost-effectiveness
  - Full or supplemental funding available





**Recycled Water Budget** =  ×  × 0.8 × 0.62 ÷ 748

Irrigable Area      Monthly Evapotranspiration      0.8 Plant Factor      0.62 Conversion Factor      748 Conversion Factor

# Commercial Rebates Procedure

- Special Procedure for Commercial Rebates
  - Create an account at socialwatersmart.com
  - Request a reservation
  - Receive letter to proceed
  - Purchase & install within 60 days
  - Complete application online

 | Rebate Application  THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

**REBATE PORTAL** Rebate Application

\* For commercial applications submitted prior to February 1, 2018, please [click here](#) to access the appropriate application submission portal.

**NEW APPLICANT**  
*Why do I have to register?*

Email\*


Confirm Email\*

Password\*

*Note: You can always reset your password via email*

Confirm Password\*

The box below protects your information from unauthorized access:

I'm not a robot 


**RETURNING APPLICANT**

Email\*

Password\*

[Forgot your password?](#)

The box below protects your information from unauthorized access:

I'm not a robot 

**Sign In**

# Commercial High Efficiency Device Rebates



**Weather Based  
Irrigation Controller**



**High Efficiency  
Rotating Nozzles**



**Premium High  
Efficiency Toilets**



**Ultra Low Flow  
Efficiency Urinals**



**Soil Moisture  
Sensors**



**Rain Barrels  
& Cisterns**



**High Efficiency  
Large Rotors**



**Ice  
Machines**



# Turf Removal & Spray-to-Drip

## Commercial Turf Removal



- Replace grass with drought-tolerant or native plants
- Requires Pre- and Post-Inspection
- Starts at \$1 per square foot
- Agency supplemental funding available (ex. MNWD = \$2/sf)
- See agency for application details

## Commercial Spray-To-Drip



- Replace traditional sprinkler system with inline drip
- Starts at \$0.20 per linear foot
- Requires Pre- and Post-Inspection
- Agency supplemental funding available (ex. MNWD = \$0.40/sf)

# Landscape Transformation Program

- Must convert to low-flow irrigation system or cap
- Plant density must be 5 plants per 100 square feet
- Bare soil must be covered by at least 3" of mulch
- At least 1 sustainability (runoff retention) feature
- Site must be free from invasive species
- Site must be 100% permeable to air and water

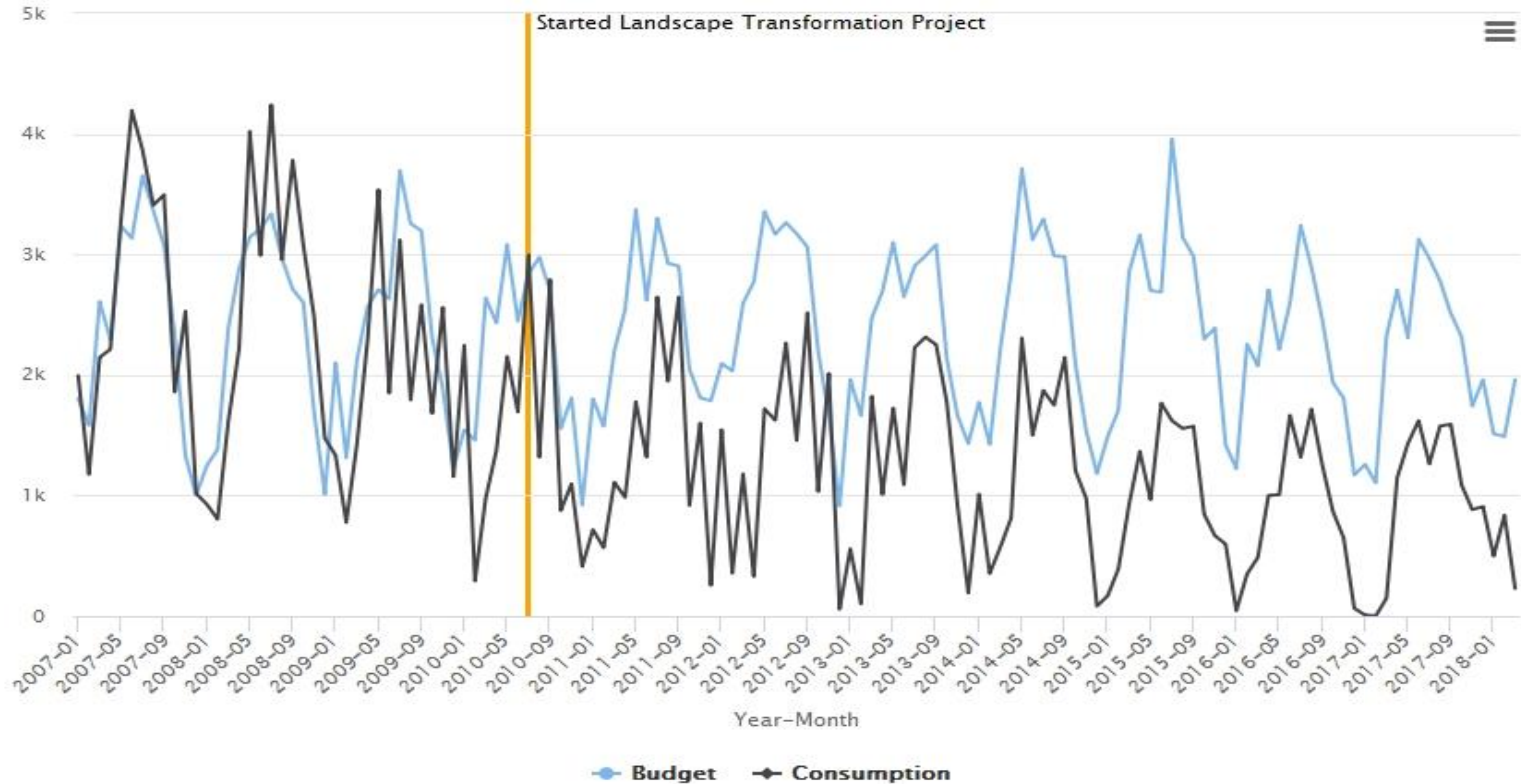


# Case Study: Ocean Ranch HOA

- Large landscape transformation project
  - Removed dead shrubs & turf grass
  - Converted 2.3 million sq. ft. overall
- Keys to success
  - Forward-thinking Landscape Committee
  - Project champion
  - Inclusive planning approach
  - Frequent community updates



# Ocean Ranch HOA: Budget to Actual Use





# Demonstration Garden - Continued

- Find examples of:
  - Drought-tolerant, native plants
  - Efficient irrigation systems
- Local gardens:
  - ETWD demonstration garden
  - SCWD demonstration garden
  - Niguel Botanical Preserve
  - Reata Park (SJC)





# Water Management – Best Practices

- Regular meter reads
  - Interval depends on meter technology
  - AMI metering technology
- Understand outdoor budget equations
- Utilize ET reference resources
- Implement weather-based irrigation technology
- Regular irrigation system site-walks
- Performance-based approach
- Convert non-functional turf
- Great communication

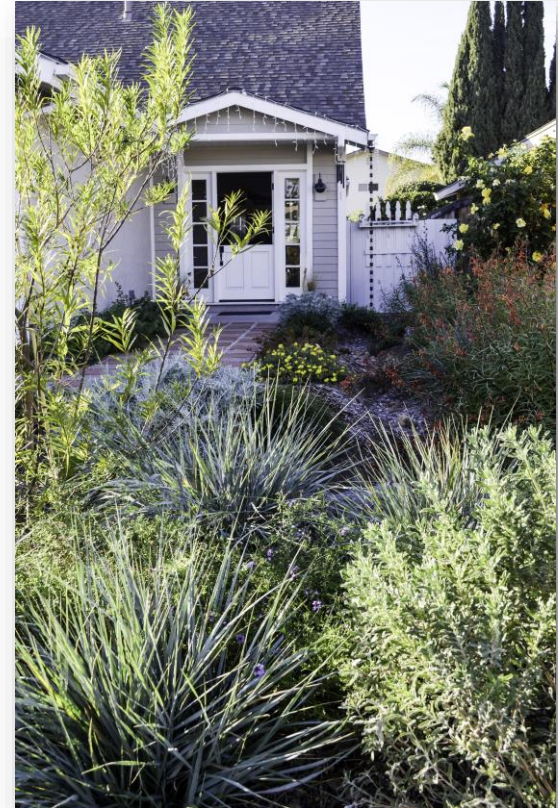
## Performance-Based Irrigation Management Contract Template

A Water Smart Landscape Program



# HOAs & Water-Efficient Landscapes

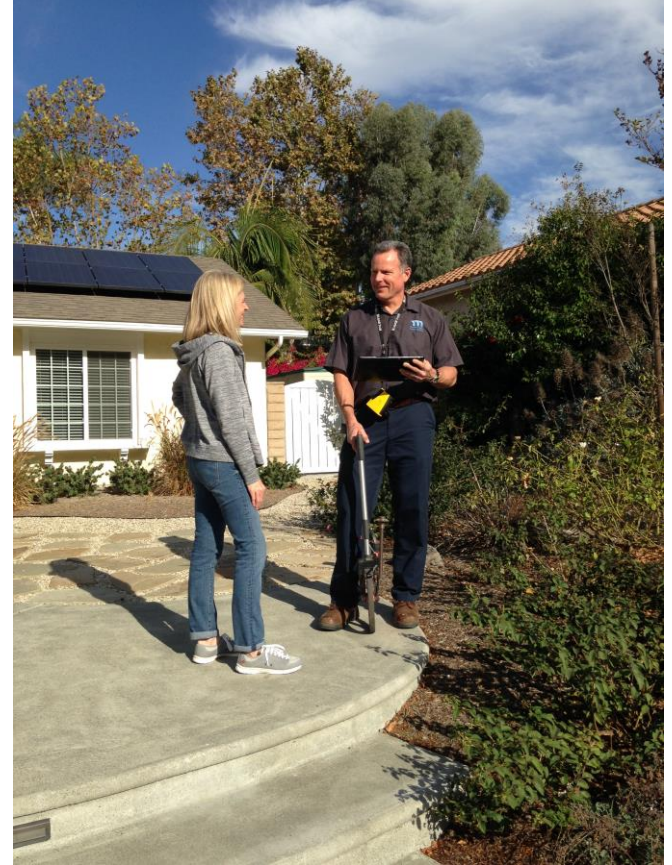
- Policies protect water-efficient landscapes
- HOAs cannot prohibit or enact rules that restrict:
  - Drought-tolerant landscapes that replace turf
  - Artificial turf or synthetic surfaces that resemble grass
  - Compliance with water-efficiency landscape ordinances
- HOAs cannot impose a fine against an owner who reduces or eliminates watering their vegetation, if the:
  - Governor and/or local government declares a drought-related state of emergency



**CA Civil Code §4735. Low Water-Using Plants and Artificial Turf.**

# Commercial & Landscape Site Visits

- On-site Assistance from Water Efficiency staff
  - Help identifying leaks
  - Opportunities to increase efficiency
- Free MWD Large Landscape Audits
  - Identifies water conservation measures
  - Estimates potential water and money savings
  - Calculates ROI for specific devices



# Commercial Portals

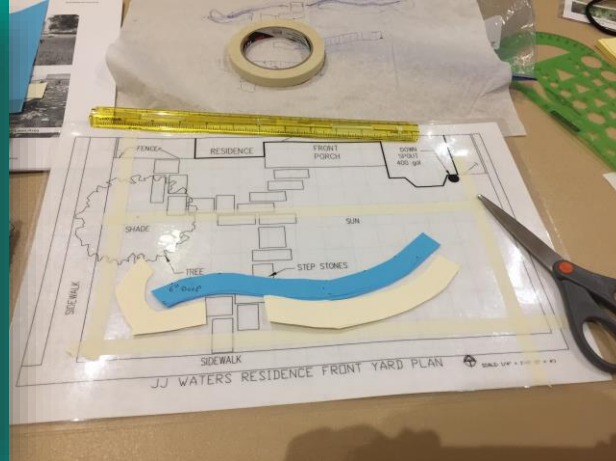
- Online Bill Pay
- View Current & Past Water Use
- Water Efficiency Tips & Resources
- Receive Leak Alerts
- Manage Water Portfolio





# Professional Landscaper Training

- Qualified Water Efficient Landscaper Certification
- Watershed Wise Landscape Professional Certification
- Certified Landscape Irrigation Auditor
- Bilingual Training Institute (Instruction in Spanish)
- CLCA Mastering Water Efficient Landscapes





# Opportunities to Outreach, Partner, and Pilot

- Build sustainable communities
- Utilize outreach channels
  - Customer portals
  - Newsletters
  - Events
- Develop Water Saving Pilot Programs
  - Master Valve & Flow Sensors
  - Your ideas?



Thank you!

