

Water Efficiency

Best Practices, Tools, & Resources

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Moulton Niguel Water District
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Water Supply

- Imported Water
 - Diemer Treatment Plant
 - Baker Treatment Plant
- Recycled Water



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

Rebates for Landscape Transformation

7.4 million square feet turf removed

Marketing

Cost effective & targeted



Water Shortage Contingency Plan

Choice not mandates

Education Programs

Workshops & customer service

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

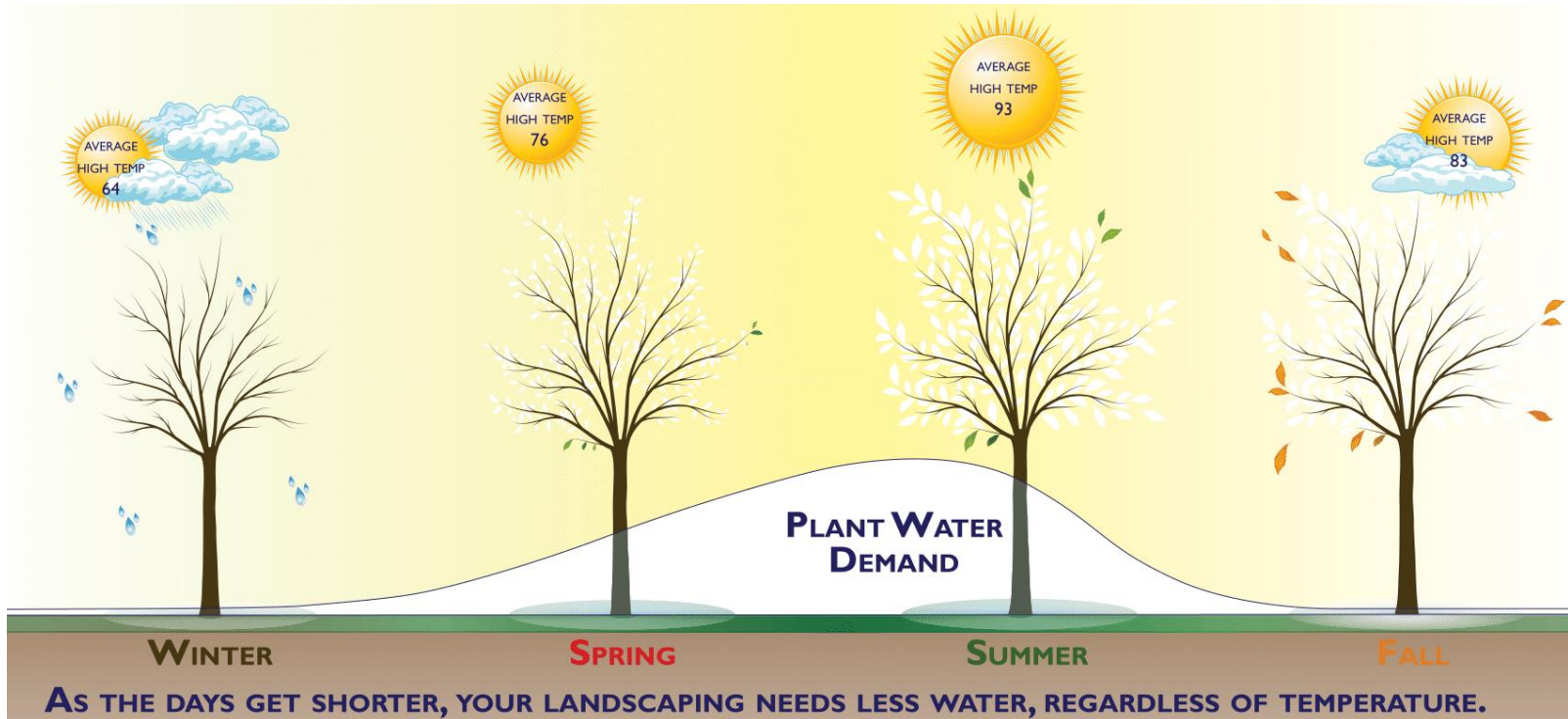
0.7 Plant Factor

0.62 Conversion
Factor

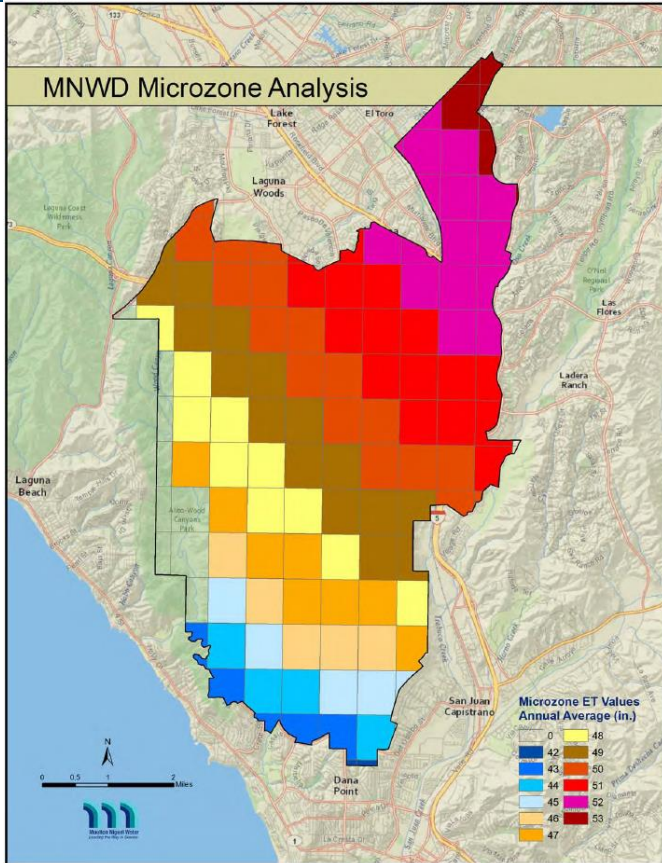
748 Conversion
Factor

Evapotranspiration Basics

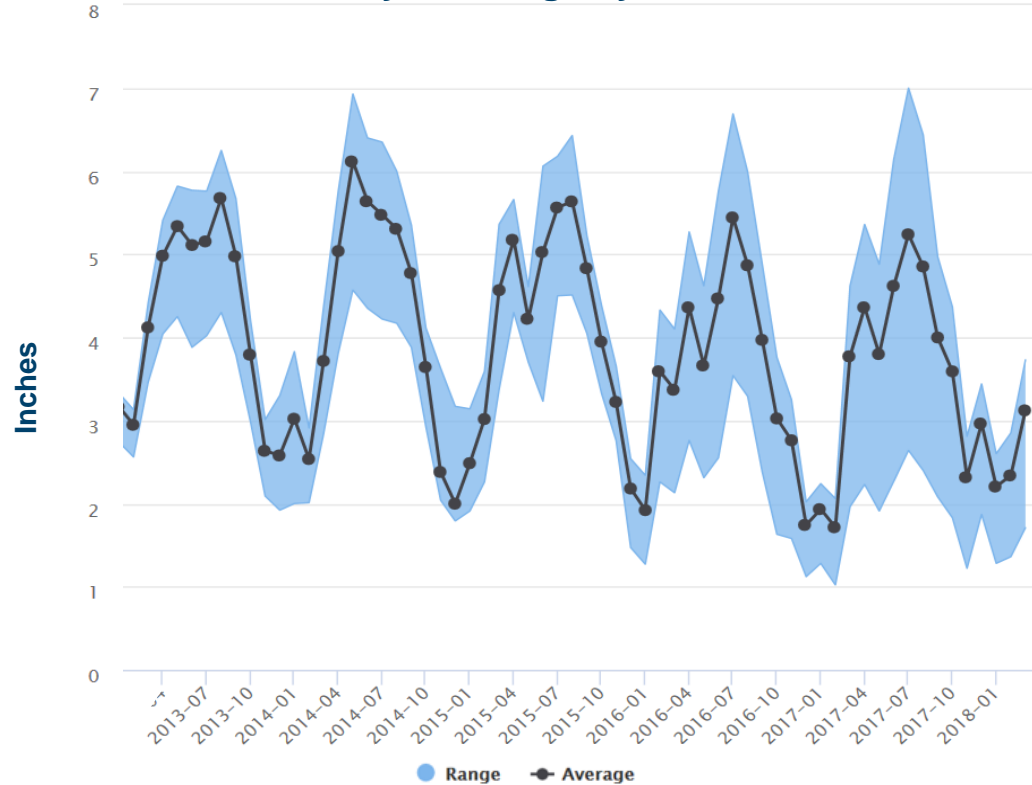
- 4 Factors: solar radiation, air temperature, relative humidity, wind speed



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

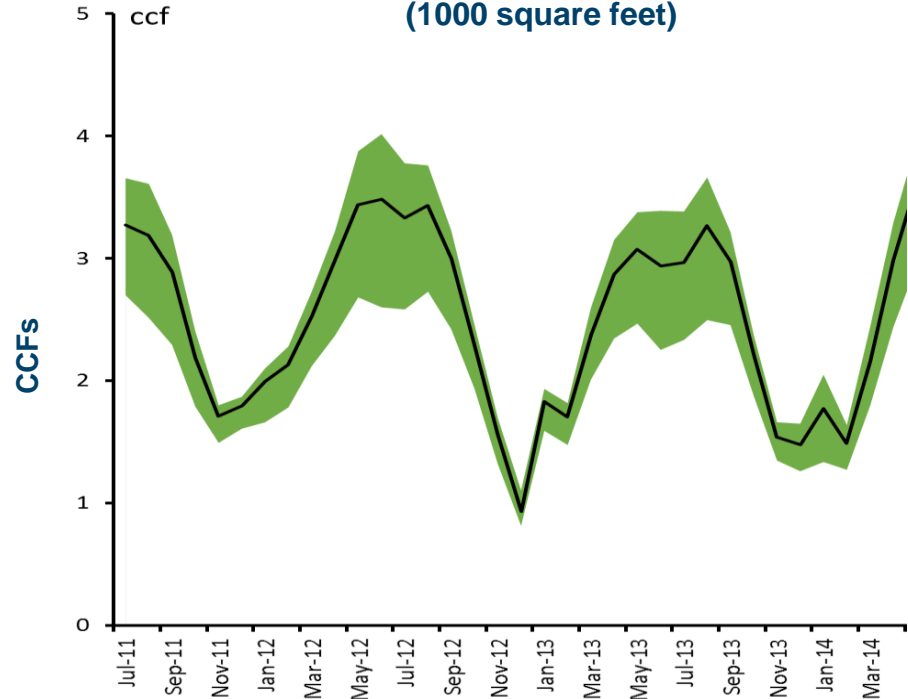
Committed to Protecting our Environment!

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.

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**

$$\begin{array}{c} \text{Irrigable Area} \\ \times \\ \text{Monthly Evapotranspiration} \\ \times \\ 0.8 \text{ Plant Factor} \\ \times \\ 0.62 \text{ Conversion Factor} \\ \div \\ 748 \text{ Conversion Factor} \end{array}$$

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



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)

Commercial Spray-To-Drip



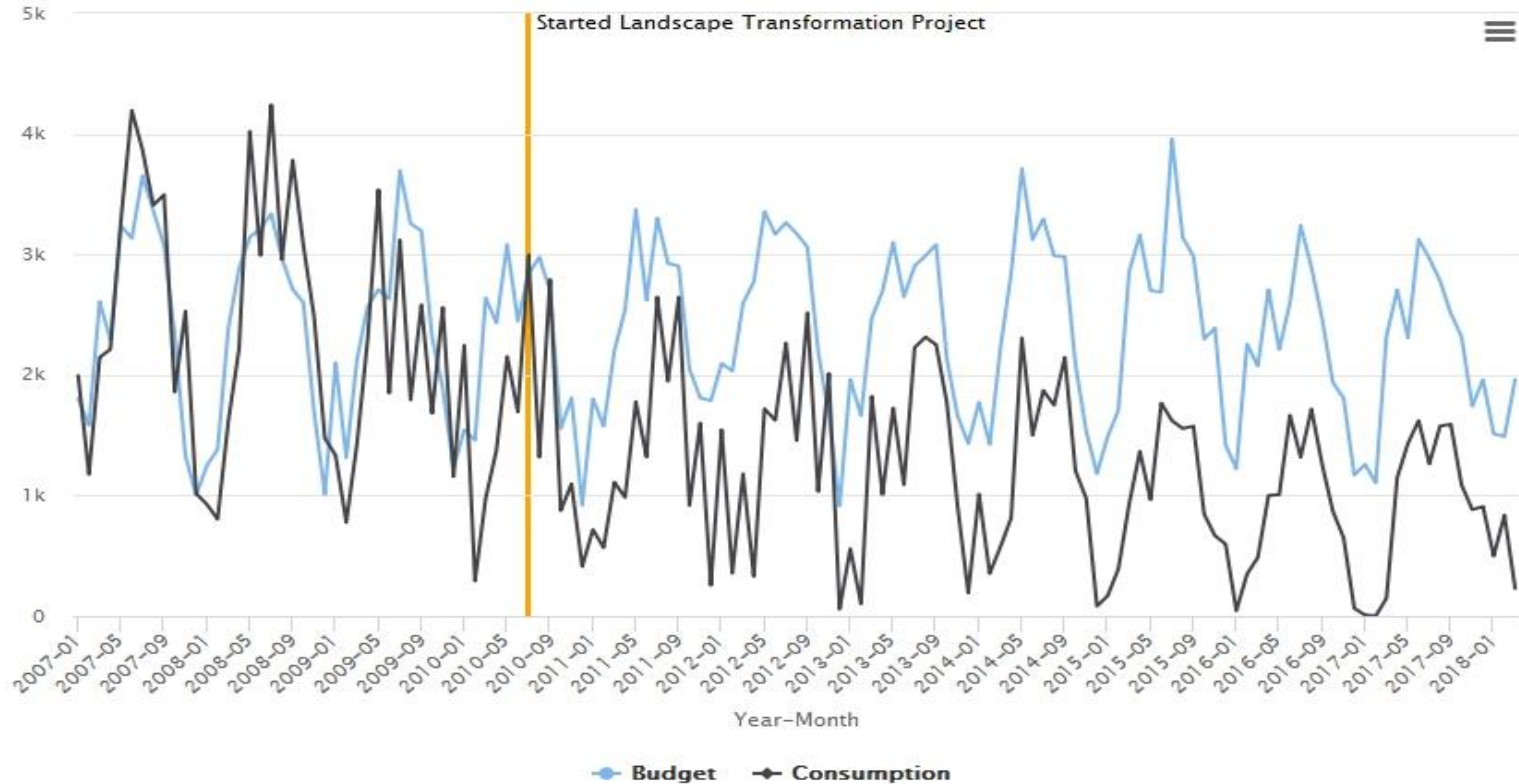
- Replace traditional sprinkler system with inline drip
- Starts at \$0.20 per linear foot
- Requires Pre- and Post-Inspection
- Agency supplemental funding available (ex. MNWD = \$0.40/sf)

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

- Find examples of:
 - Drought-tolerant, native plants
 - Efficient irrigation systems
- Local gardens:
 - ETWD demonstration garden
 - Niguel Botanical Preserve
 - Saddleback College



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 assessments
- Performance-based approach
- Look for opportunities to convert non-functional areas
- Great communication!

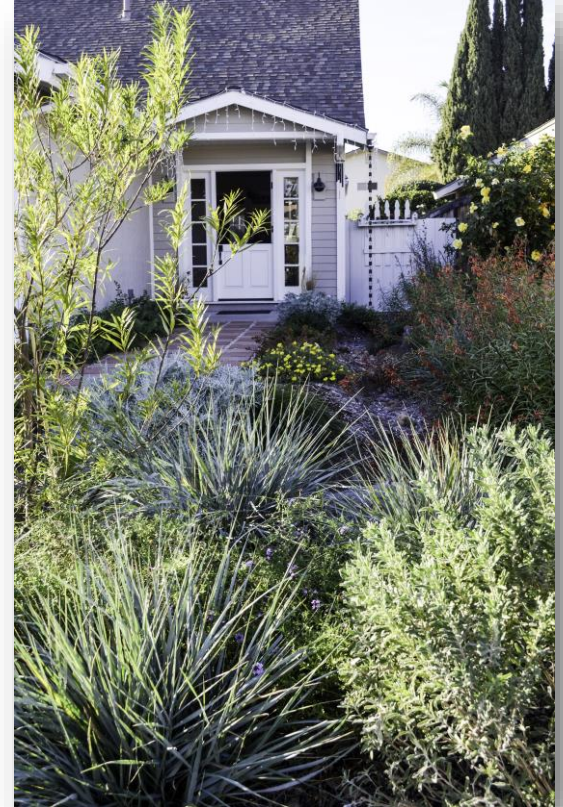
Performance-Based Irrigation Management Contract Template

A Water Smart Landscape Program



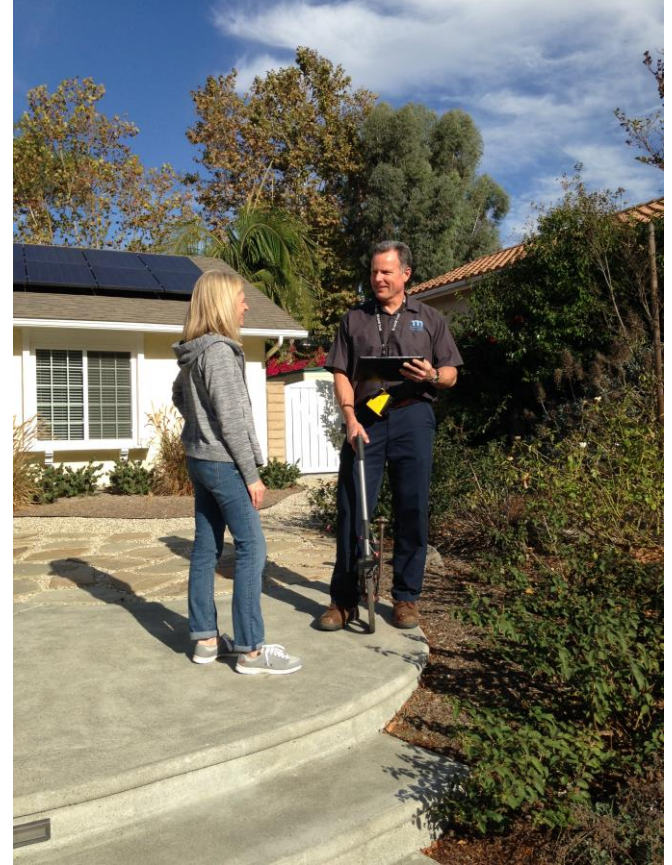
HOAs & Water-Efficient Landscapes

- Drought-era policies protect water-efficient landscapes
- HOAs cannot prohibit:
 - Drought-tolerant landscapes
 - Artificial turf or synthetic surface that resembles grass
- HOAs cannot enact rules to restrict water-efficient landscapes
- HOAs cannot impose a fine against an owner who reduces or eliminates watering their vegetation, if:
 - Governor OR local government declares a drought-related state of emergency



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



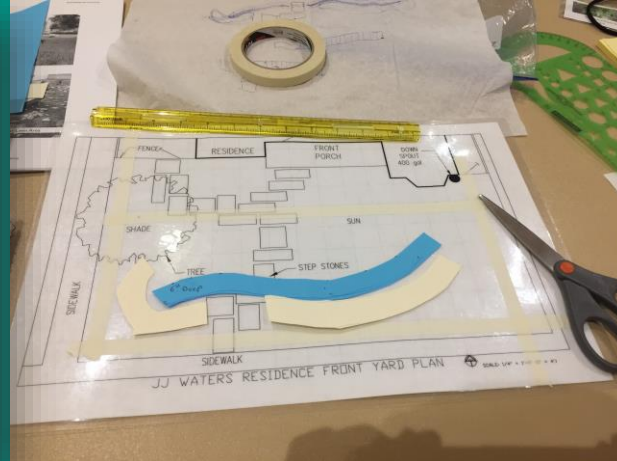
Commercial Portals

- 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
- Native Plant Specialist Certification
- Certified Landscape Irrigation Auditor



Stormwater Partnership

- Collaborative Partnership with MNWD, county, cities, NGOs
- Utilize integrated data sets and expanded water efficiency programming
- Successful projects with OC Public Works, OC Codelab, and CA Data Collaborative
- All agencies are members of CaDC



CALIFORNIA
DATA
COLLABORATIVE

create an **CODELAB** ng, supp

EXPERIMENTING WITH CODE
IN ORANGE COUNTY

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!

