

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com





It's Playoff Time: Comparing Weather Based Irrigation Controllers

Juan Zamora
Conservation Programs Specialist III

October 8, 2015





EASTERN MUNICIPAL WATER DISTRICT

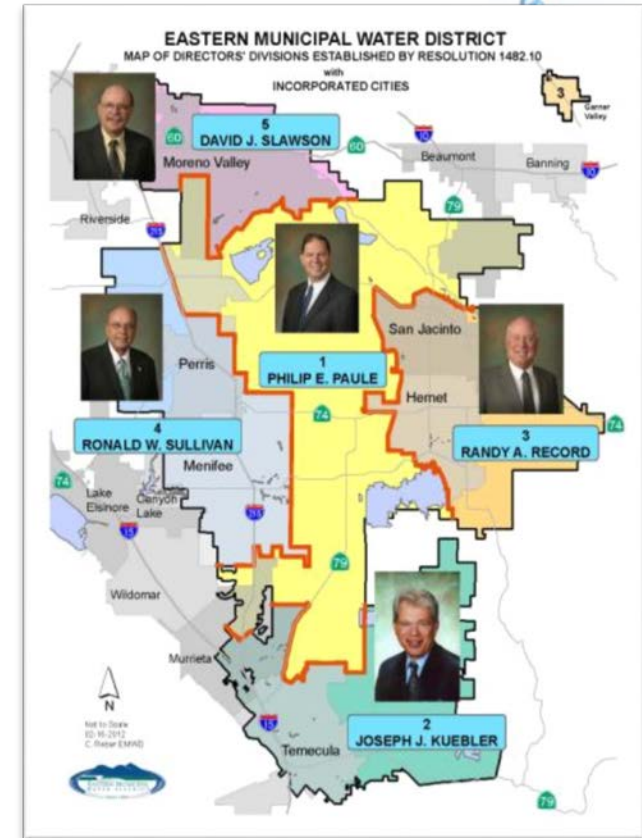
EMWD Overview



Overview of EMWD



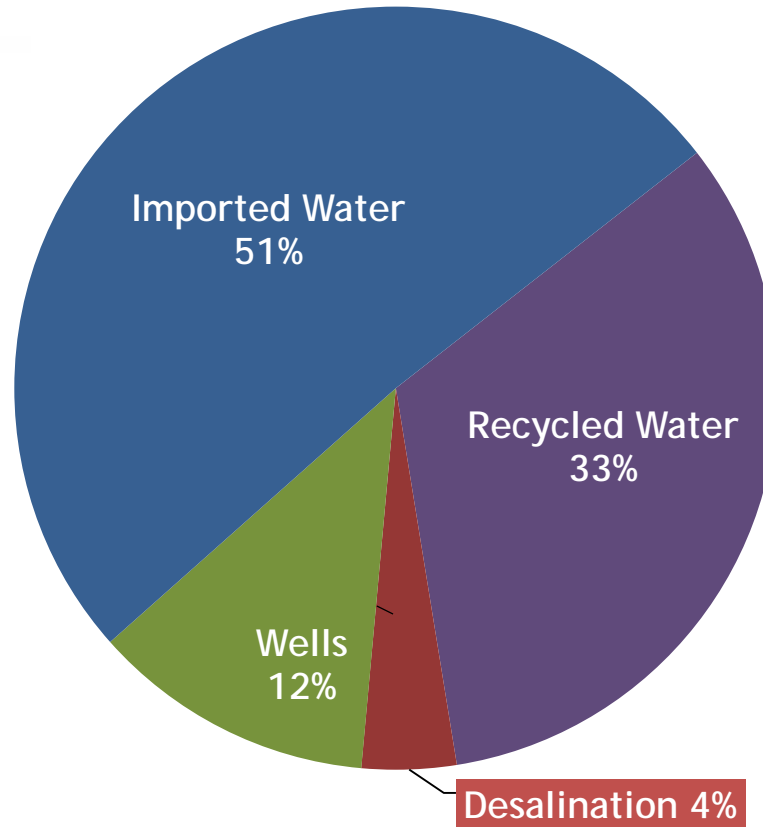
- Established in 1950
- Five publicly- elected board members
- 542 square miles
 - Cities served: Moreno Valley, Perris, Menifee, Murrieta, Temecula, Hemet, San Jacinto
- Population: 785,000
- Full service agency, serving:
 - Water / wastewater / recycled; wholesale and retail
- 140,000 water connections
- 229,000 sewer connections
- 300-plus recycled water connections
- One of 26 MWD member agencies



EMWD Water Supply Portfolio



FY 2015



Imported Water Supply from MWD:
76,897 AF
51%

- State Water Project - 3%
- Colorado River (untreated and treated)- 48%

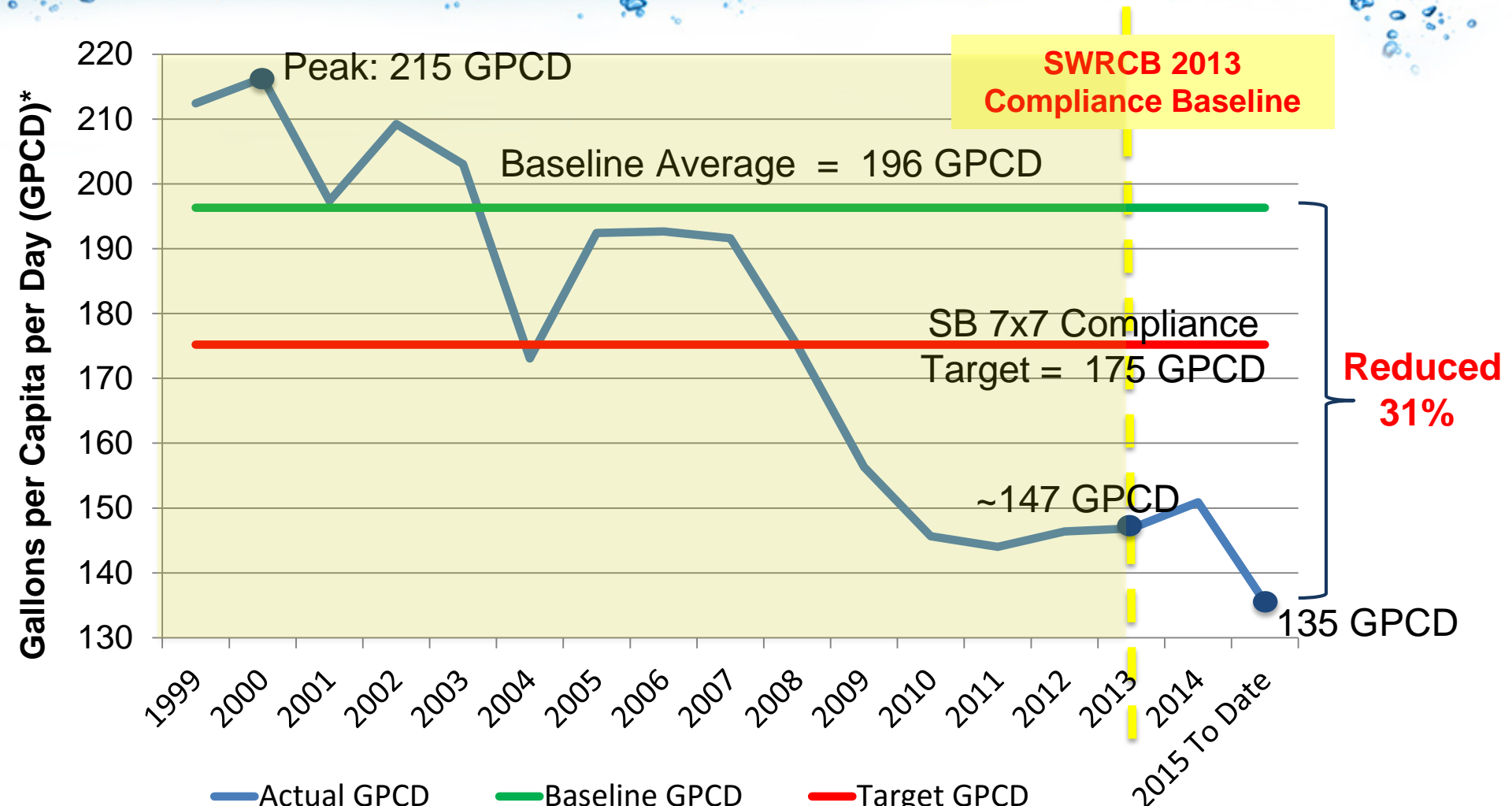
Local Water Supply:
74,884 AF
49%

- Recycled Water
- Groundwater Wells
- Desalination

- **Perris-Menifee Desalters**
 - Allows EMWD to treat brackish groundwater supplies
 - Funding partners include U.S. Bureau of Reclamation, Metropolitan Water District
- **Recycled Water**
 - EMWD is a national leader in recycled water usage
 - 2014: Reached 100 percent beneficial reuse
- **Groundwater**
 - 33 wells (21 domestic, 12 desalter)
 - High-quality supply in San Jacinto Valley



Water Use Efficiency



* Figures shown are total GPCD.



It's Playoff Time: Comparing Weather Based Irrigation Controllers

Turf Plots and Partners



- All products donated by each manufacturer



- 4 Turf Plots, 40' x 150' (6000sq.ft.)



- #1- Orbit controller with conventional pop-up sprayheads.




- #2- Rain Bird ESP-SMT controller with rotary nozzles and sub-surface drip around perimeter.

- #3- Toro TMC-212 controller with a XTRA Smart Precision Soil Moisture Sensor and precision rotary nozzles.

- #4- Hunter X-Core controller with a Solar Sync, MP Rotators and an Eco-Mat around perimeter.

EMWD Debuts New CIMIS Stations - Press Release



News from EMWD
Public and Governmental Affairs Department
951/928-3777, ext. 4219
FAX 951/928-6160
PublicandGovAffairs@emwd.org
P.O. Box 8300
Perris, CA 92572-8300

For Immediate Release
EMWD debuts technologically-advanced weather stations

Perris, CA (July 9, 2013)— Eastern Municipal Water District recently unveiled two new weather stations in its service area as part of an on-going state program to collect and distribute weather information to assist irrigators in managing water resources.

The weather stations, located at the Moreno Valley Ranch Golf Course and at the Perris Valley Regional Water Reclamation Facility, are part of the California Irrigation Management Information System (CIMIS), which is operated through the Department of Water Resources.

EMWD invested in the two weather stations and is actively pursuing a location for a third in the San Jacinto Valley. The new weather stations will provide an additional data to CIMIS's large network of weather stations throughout the state.

As part of EMWD's tiered rate structure, outdoor water budgets are calculated using a percentage of evaporation and transpiration (ET) times the landscaped area. The weather stations play a pivotal role in calculating the evapotranspiration for the microclimate the weather station is located in. Additional stations within EMWD's boundaries help to provide an extremely accurate basis for calculating the budget allocations in customer's water bills.

The Department of Water Resources describes evapotranspiration as "the loss of water to the atmosphere by the combined process of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water your crops, plants, lawn, garden, and trees need for healthy growth and productivity."

The Perris location includes a 24,000 square-foot grass-landscaped area required by the Department of Water Resources to improve the accuracy of the weather station readings. The grass area is used as a demonstration facility for water efficient irrigation equipment and a number of different Smart Irrigation Controllers.

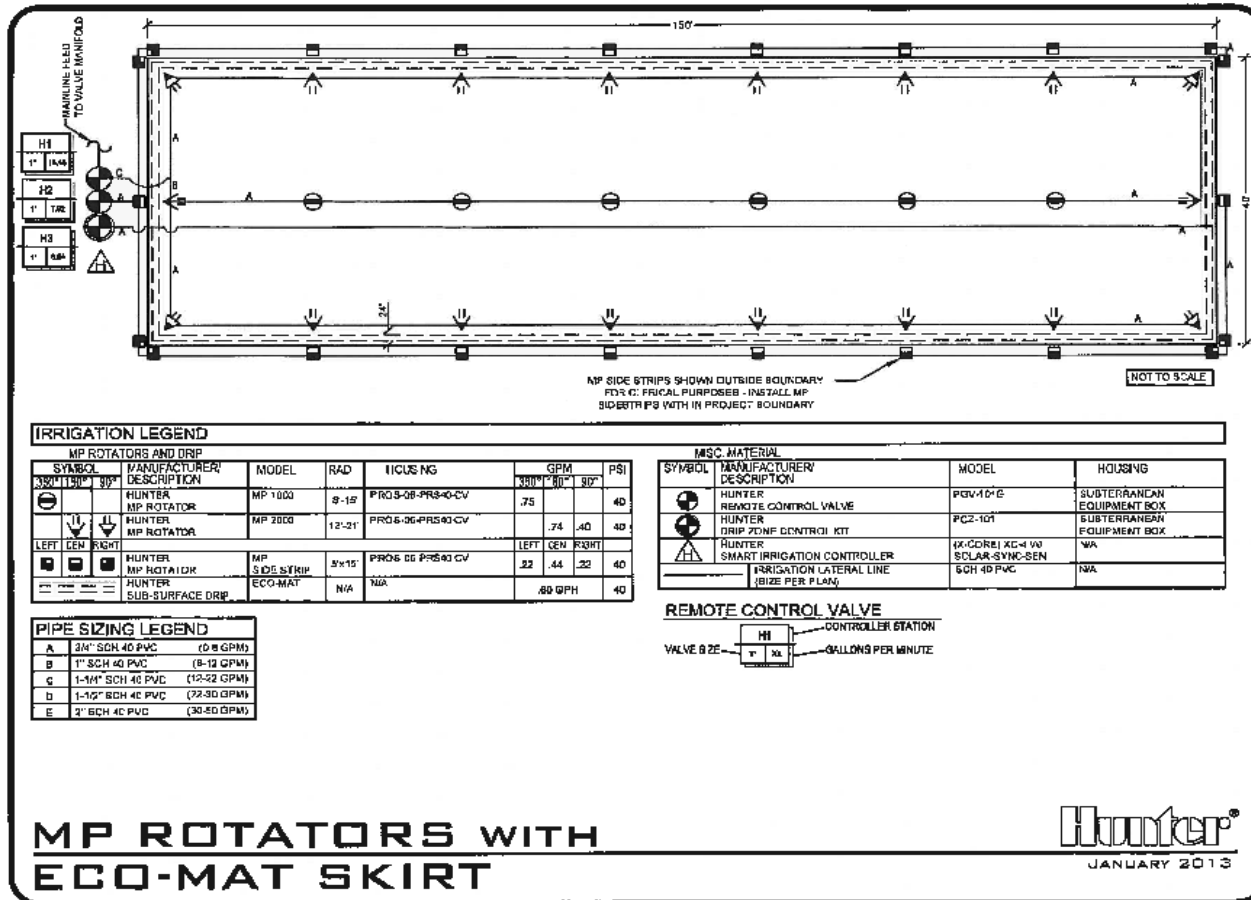
"Since we have to maintain this turf site, we viewed this as a great opportunity to use this as a demonstration facility," EMWD's Conservation Programs Supervisor Stacy Rodriguez said. "This will allow us to ensure the accuracy of the Smart Controllers and low-precipitation nozzles that our customers can receive rebates toward."



Four types of Nozzles and two examples of subterranean drip



Irrigation Plan by manufacturer



- Each manufacturer supplied their own Irrigation Layout
- Labor performed by Excel Landscape Co.

All four plots are cool season turf



Orbit



Toro



Rainbird



Hunter

Each plot is individually controlled & metered



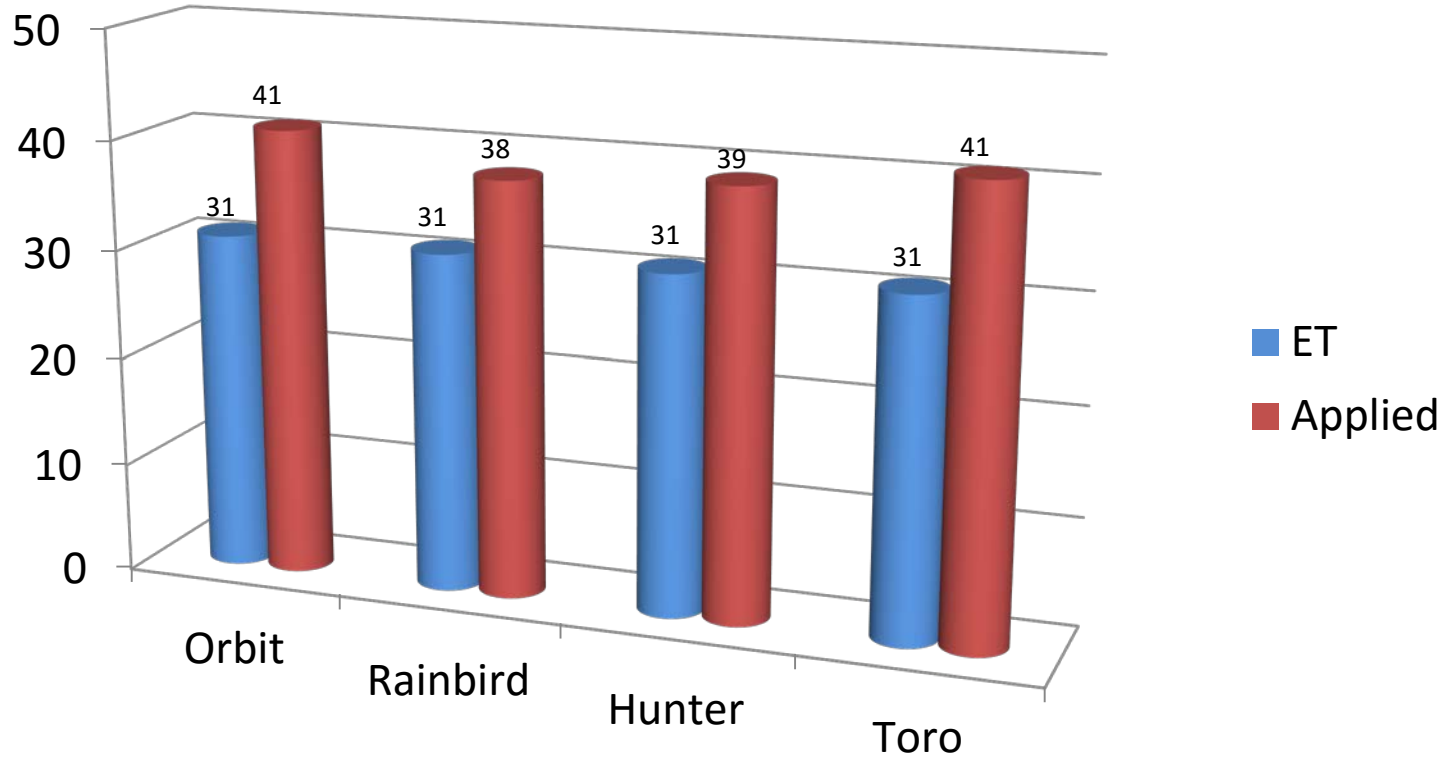
Turf Test Plots



Application vs. ET

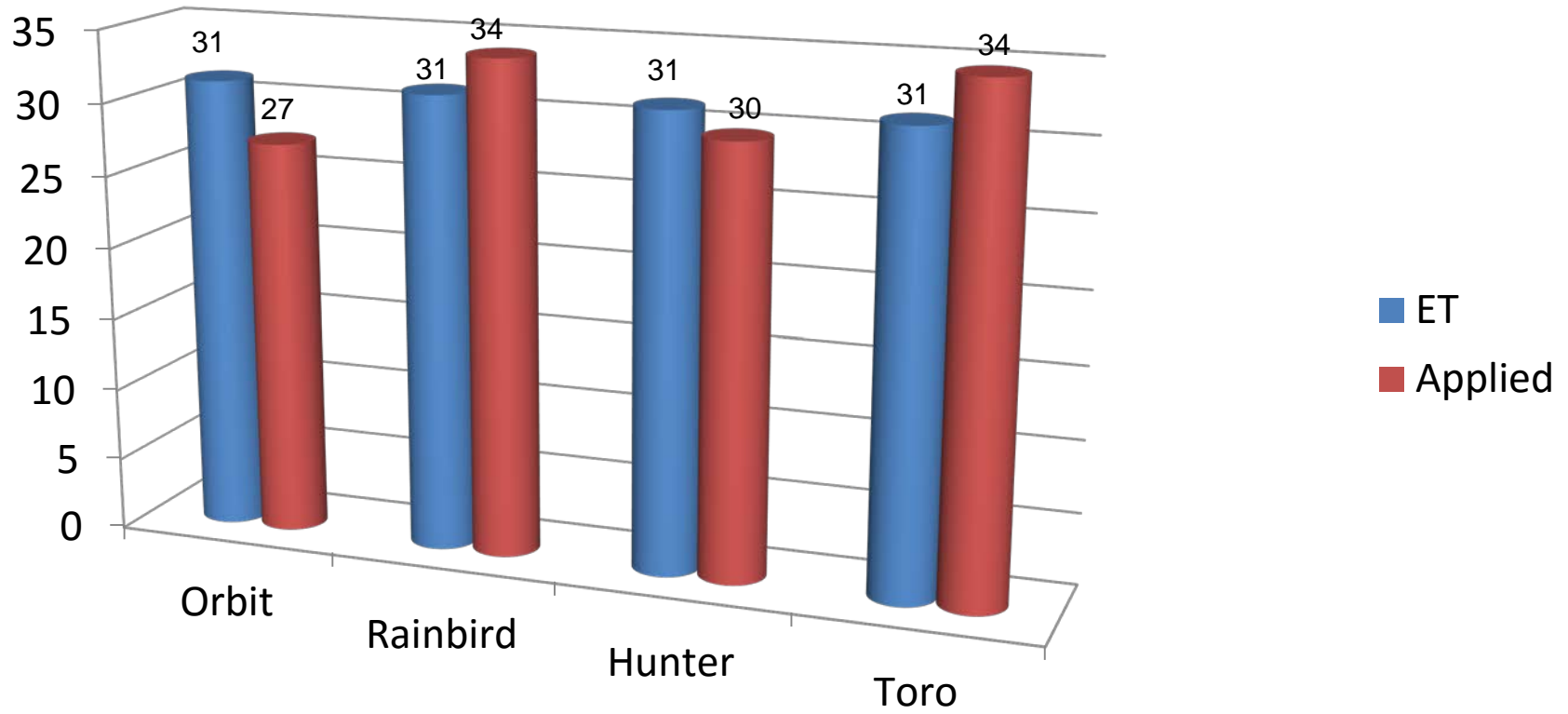


- July 1, 2013 - Dec. 31, 2013



Application vs. ET

- January 1, 2014 - June 30, 2014



- *July 1, 2013 - June 30, 2014*
- Orbit applied 9% more than ET
- Rainbird applied 16% more than ET
- Hunter applied 9% less than ET
- Toro applied 20% more than ET



Questions?

Juan Zamora
Conservation Programs Specialist III
Eastern Municipal Water District

951-928-3777 x-4384
zamoraj@emwd.org