

## **Recycled Water Solutions**

Anita Matlock

Area Sustainability Manager

The Intelligent Use of Water.™

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## **Increasing regulation**

- New Green Codes requiring use of non-potable and/or recycled water
- Stronger regulation in particular markets
  - US: California, Florida, Texas, Arizona
  - Worldwide: Australia, Israel, Spain
- Anticipate similar levels of regulation across the US





## **Challenges of non-potable water**

- High in chlorine
- Filtration
- High salt content

- Seasonal fluctuations
- Water pressure







## Non Potable Irrigation Equipment (Past)

Purple identification









## Legoland in 1998



- LEGOLAND in Carlsbad, CA under construction in 1998
- Rain Bird and other manufacturer's products were failing
- Determined recycled water with higher chlorine content
- Resigned rubber components to meet these site challenges

## Valves

### •EPDM diaphragm material is reliable in recycled water conditions, due to EPDM being chlorine and chemical resistant







http://www.rainbird.com/landscape/products/valves/htm

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## Legoland 2009-2011



- They had a history of spray heads failing due to the high chlorine content so LEGOLAND helped with our RD 1800 development
- They have been using the RD1800 since early 2011 and have had zero issues with their spray heads
- The site report is available in a short and long version on the RD1800 product page
  - http://www.rainbird.com/documents/turf/site Legoland-RD-short.pdf
  - http://www.rainbird.com/documents/turf/site Legoland-RD-long.pdf

## **RD1800?**

- An evolved spray head developed using modern technology to meet customer requirements for increasingly harsh applications.
  - 1. Appearance / aesthetics
  - 2. Cover
  - 3. Wiper seal and stem
  - 4. Flow-Shield<sup>™</sup> Technology
  - 5. Debris resistant ratchet ring
  - 6. Body
  - 7. Materials and components



## COVER

#### Patent Pending Unique Non-Potable Identification

- No clunky clip-on covers
- No purple ABS that reduces UV protecting carbon black content and gives away sprinkler location
- Stronger Material
  - Withstands operation range up to 100 psi
- New Look
  - "RD1800" **BOLD LETTERING**
  - Four bumper design vs. eight dot design





RD1800 Standard Cover



RD1800 Non-Potable Cover



#### **1800 Series Cover**

## WIPER SEAL AND STEM

## Bring on the Dirt

### Triple Coverage

Nearly three decades ago, the Rain Bird® 1800® Series and its co-molded wiper seal changed irrigation technology forever. With the RD1800, we've done it again with a precisely engineered, exclusive Triple-Blade Wiper Seal.

The RD1800's Top Seal flushes during pop-up



and wipes the stem clean during retraction, preventing external debris from entering. During operation, the RD1800's Primary Seal combines with the stem's surface to eliminate flow-by. The exclusive Third Blade provides another line of defense, in case the primary seal is damaged.

## **RATCHET RING**



### Racheting Up Reliability

The RD1800's ratchet mechanism was designed to easily adjust during installation, hold steady over time, provide greater debris resistance and be more flexible. While competitive rings become brittle, the RD1800 ratchet ring does not crumble when exposed to stress.

## **FLOW-SHIELD™ TECHNOLOGY**



## Exclusive Flow-Shield<sup>™</sup> Technology

Exclusive Flow-Shield<sup>™</sup> Technology provides up to 90% reduction in water loss when a nozzle is removed, preventing potentially costly and unacceptable run-off.

### **Exclusive Patent-Pending Design**

- Low-flow service indication stream
  - Install nozzles while operating

## **Eliminate Low Head Drainage**



### **Pressure Regulating Stem**

- PRS ensures optimal nozzle performance in high pressure systems - reduces water usage by 6-8% every 5 psi.
- Optimal performance means larger water droplets so less chance of blowing away.



## **RWS Root Watering System**

Irrigates tree/shrub at its roots promoting deep root growth and provides aeration

Eliminate run-off & surface roots



### **Need Pumps and Filtration?**



- Rain Bird manufacturers custom pumps and filtration systems\*
- Up to 10,000 GPM (14.4 MG per Day)
- From 3/4hp up to 150hp\*\*
- Integrated skid design
- SCADA capable & compatible

\*For Irrigation Systems & Transfer Pumps \*\* Consult with factory for larger hp

## **Pump Stations – Product Line**





Light Commercial (LC)









**D** Series



#### Intermediate Flow



Large Commercial



# **Rain Bird Water Harvesting**

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#### SUSTAINABLE IRRIGATION SOLUTION

#### **RAIN WATER HARVESTING SYSTEM FOR COMMERCIAL APPLICATIONS**

Three 7,500 Gallon Polyethylene Above Ground Storage Tanks (22,500 Gallon Combined Capacity)

50GPM @ 50PSI Rain Bird Water Harvesting Treatment And Control System



Roof Mounted Gutter System To Collect Rain Water

Water Harvesting System With Above Ground Tank



Rain Bird Drip Irrigation System

Harvested Water Irrigation On Turf Areas And Drip Zones With Rain Bird Irrigation Systems



**Rain Bird Rotor Irrigation System** 

#### SUSTAINABLE IRRIGATION SOLUTION

#### HVAC CONDENSATE HARVESTING SYSTEM FOR COMMERCIAL APPLICATIONS

Condensate Collection Pipe To Connect HVAC Systems To Water Storage Tank

Above Ground 8000 Gallon Corrugated Steel Storage Tank

25GPM @ 50PSI Rain Bird Water Harvesting Treatment And Control System



Water Harvesting System With Above Ground Tank

Four Roof Mounted HVAC Heating and Cooling Systems



Rain Bird Drip Irrigation System

Harvested Water Irrigation On Park Ways And Drip Areas With Rain Bird Irrigation Systems



#### **Rain Bird Spray Irrigation System**

## **Support**

### **Technical expertise**

- Irrigation
- Industrial

### Training

- Lunch and Learn/Brown Bags including CEU credits
- Webinars
- Classes

### **Commitment to the Intelligent Use of Water**

# Take Advantage of Local Rebates from Water Agencies

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### Landscape Rebates www.socalwatersmart.com



# Water Savings Incentive Program

- "Pay for performance"
- Goals
  - Encourage custom projects that can provide long-term water savings
  - Landscape as well as CII projects
  - Encourage water management as a standard business practice

# **Thank You**

### **Contact Information:**

Anita Matlock Area Sustainability Manager Rain Bird Corporation

951.314.1740 amatlock@rainbird.com

# Water Use Efficiency at Home and the Office

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# The Big 3: Sprinkler Performance Conversion to Drip Smart, Weather-Based Controllers

# Sprinkler Performance Features in the body and nozzle performance in real world

## **Eliminate Low Head Drainage**



### **Pressure Regulating Stem**

- PRS ensures optimal nozzle performance in high pressure systems - reduces water usage by 6-8% every 5 psi.
- Optimal performance means larger water droplets so less chance of blowing away.



### **Rain Bird HE-VAN Key Features and Benefits**





- The droplets are visible larger and more defined than traditional spray nozzles.
- Lower trajectory:
  - The HE-VAN-15 has a trajectory that is more than 15% lower than other nozzles



### Benefit:

Greater wind resistance.

## **Performance:**

## **Using Water Conserving Fixed-Spray Nozzles**



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## Benefits for Designers/Specifiers: <u>The Intelligent Use of Water™</u>

- Reduce run-off and erosion
  - Low precipitation rate of 0.6 in/hr

### Excellent uniformity

 Multiple rotating streams deliver closein watering and even coverage throughout the radius range.

### Unsurpassed design flexibility

 Expanded radius and matched precipitation rate across radii and patterns. Can also be zoned with 5000 Series MPR Nozzles.



## **NEW: 5000 Plus w/ Pressure Regulating Stem Option**

### Saves water, time and money

- Eliminates head to head pressure variation
- Perfect 45 psi
- Eliminates misting
- Improves distribution uniformity





5000 Plus Series Rotor

Green rubber cover

Poppet Shown in Fully Opened Position

Rain Bird 5000 Plus with PRS

## 5000 Plus PRS – Side by side comparison



#### Another rotor @ 75psi

### 5000 Plus PRS @ 75psi

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# **Landscape Drip Irrigation**



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## Why use Landscape Drip?

Drip irrigation products deliver water slowly, at low pressure, at or near the root zones of the landscape plant material.



## Applications – Sparse Plantings

## **Sparse Plantings**

- Medians
- Narrow planting beds
- High traffic areas
- Slopes

## **Point Source:**

- Watering of specific plants
- Emitters (single and multiple outlet)
- PC Modules / Bubblers





## Applications – Dense Plantings

### **Dense Plantings**

- Narrow planting beds
- Medians
- Slopes

## **Total Coverage/Broadcast:**

- 100% Coverage is required
- Micro-Sprays
- XF Dripline





## Rain Bird Drip Irrigation Product Overview

### Control Zone Components





### Distribution Components



### Emission Devices







## Landscape Drip Conversion Guide





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## **Introduction to Smart Controllers**

*In the beginning...*We watered our yards...

## **Evapotranspiration (ET)**

- Evaporation of water from the soil or plants surfaces and transpired from leaves.
  - It is typically measured in inches
- Weather conditions affect ET:
  - Rainfall
  - Solar radiation
  - Temperature
  - Wind
  - Humidity





## **Option 1- Residential/ Light Commercial** ESP-SMT Smart Controller (a simple/on-site approach)

- On-site Weather Stationing (2 factors of ET: temp and rain measured LIVE). 13 stations
- 3 factors of historical data programmed into the clock reference by zip code and date: solar radiation, wind speed and humidity
- Zone by zone site specific inputs to calculate Actual ET for your site (slope, shade factor, soil type, plant type, density, root depth, sprinkler type, "thirstiness")
- Factors in watering restrictions (allowable watering days and times)

Therefore this controller calculates the irrigation schedule for you, without user guess work as is traditional time based controllers

![](_page_45_Picture_6.jpeg)

### Option 2: ETC-LX ET Manager<sup>™</sup> Upgrade Kit for ESP-LXME and ESP-LXD

![](_page_46_Picture_1.jpeg)

### IQ<sup>™</sup> v2.0 Central Control System (for ESP-LXME or ESP-LXD)

![](_page_47_Figure_1.jpeg)

# Take Advantage of Local Rebates from Water Agencies

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## Example: MWD Rebates

- Rebates for irrigation equipment, turf removal
- Water Savings Incentive Program for customized projects

### Landscape Rebates www.socalwatersmart.com

![](_page_50_Picture_1.jpeg)

# Water Savings Incentive Program

- "Pay for performance"
- Goals
  - Encourage custom projects that can provide long-term water savings
  - Landscape as well as CII projects
  - Encourage water management as a standard business practice

# For More Information

### Questions:

Carolyn Schaffer, Program Manager (213) 217-6244 <u>cschaffer@mwdh2o.com</u>

### Info on MWD's service area

www.mwdh2o.com/mwdh2o/pages/memberag/member02.html

### MWD's conservation website

www.bewaterwise.com

# **Thank You**

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