This presentation premiered at WaterSmart Innovations

watersmartinnovations.com
“SMART” Controller Pilot Study

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Water Conservation Supervisor
Aurora Water
Question:

- What are the potential benefits of SMART controllers to Aurora residents under 3 different scenarios?
  - Scenario 1: Install smart controller, utilize default inputs for precipitation rates by head type, manual input of soil, exposure (sun/shade), walk away.
  - Scenario 2: Install smart controller, program all data based on assessment, provide full controller management for 2 growing seasons.
  - Scenario 3: Install smart controller, program data based on assessment, upgrade all zones to PRS-SAM with Rotator nozzles. Provide full controller management for 2 growing seasons.
Aurora, Colorado = Semi-arid
Aurora

- Population – 360,000
- Total Connections – 84,262
- Residential Connections – 77,015
- Storage Capacity – 156K acre feet in 12 reservoirs
Efficiency & Rebate History?

Irrigation Rebate Trends

- # of Rebates
- Rebate Value

- Years: 2004-2016
- Rebate Value: $0-$70,000.00
Pilot Parameters

Champagne Condo Association

- Turf (full sun): 81,733 sq.ft.
- Turf (partial sun): 134,652 sq.ft.
- Shrubs/Perennials: 6,893 sq.ft.
- Xeriscape: 8,797 sq.ft.
- Trees: 27,210 sq.ft.
Pilot Parameters

ET Water 205W 24 Controller

Flow Data

Scenario 1

Scenario 2

Scenario 3
Analysis Methodology

• **Recommended Water Use (RWU)**
  
  - Evapotranspiration – Precip = RWU

![Square Feet of Irtgated Area]

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**Champagne Condo Association**

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AURORA
Analysis Methodology
Weather Data

Turf RWU (inches)

INCHES OF SUPPLEMENTAL IRRIGATION (TURF)

YEAR


33.94 30.75 37.98 26.56 27.12 27.03 36.66
Pilot Funding

- Total customer costs (includes management fees & labor) before rebate: $31,578.46
  - Scenario 1: $3,760
  - Scenario 2: $3,760
  - Scenario 3: $24,058.46

- Total Rebate: $15,599.50
  - 50% of the controller cost after install: $3,900
  - 50% of the controller cost at end of second growing season: $3,900
  - 100% of the materials cost for head and nozzle upgrade: $7,799.50 (Scenario 3 – 15 zones)
So, how’d it go?

2015 Change in Percent of RWU

- Scenario 1: 32%
- Scenario 2: -30%
- Scenario 3: -39%

2015 Percent of RWU

- Scenario 1: 187%
- Scenario 2: 125%
- Scenario 3: 116%

5 Year Median = 155%
100% of RWU
So, how’d it go?

**2016 Change in Percent of RWU**

- Scenario 1: -16%
- Scenario 2: -50%
- Scenario 3: -61%

**2016 Percent of RWU**

- Scenario 1: 139%
- Scenario 2: 105%
- Scenario 3: 94%

5 Year Median = 155%

100% of RWU
## Return on Investment

### Customer's Return on Investment

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Theoretical Water Cost w/out Upgrade</th>
<th>2016 Water Cost</th>
<th>Pilot Cost</th>
<th>ROI (years)</th>
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Program Impact – New Rebate Program

Residential:
- Up to $300 max
- 50% at time of install
- 25% after first growing season if metric is met
- 25% after second growing season if metric is met

Commercial/Large Properties
- Up to $15K max
- 50% at time of install
- 25% after first growing season if metric is met
- 25% after second growing season if metric is met
Lessons Learned

- Site selection
- Weather station variability
- Analysis methodology
Questions?