

# This presentation premiered at WaterSmart Innovations

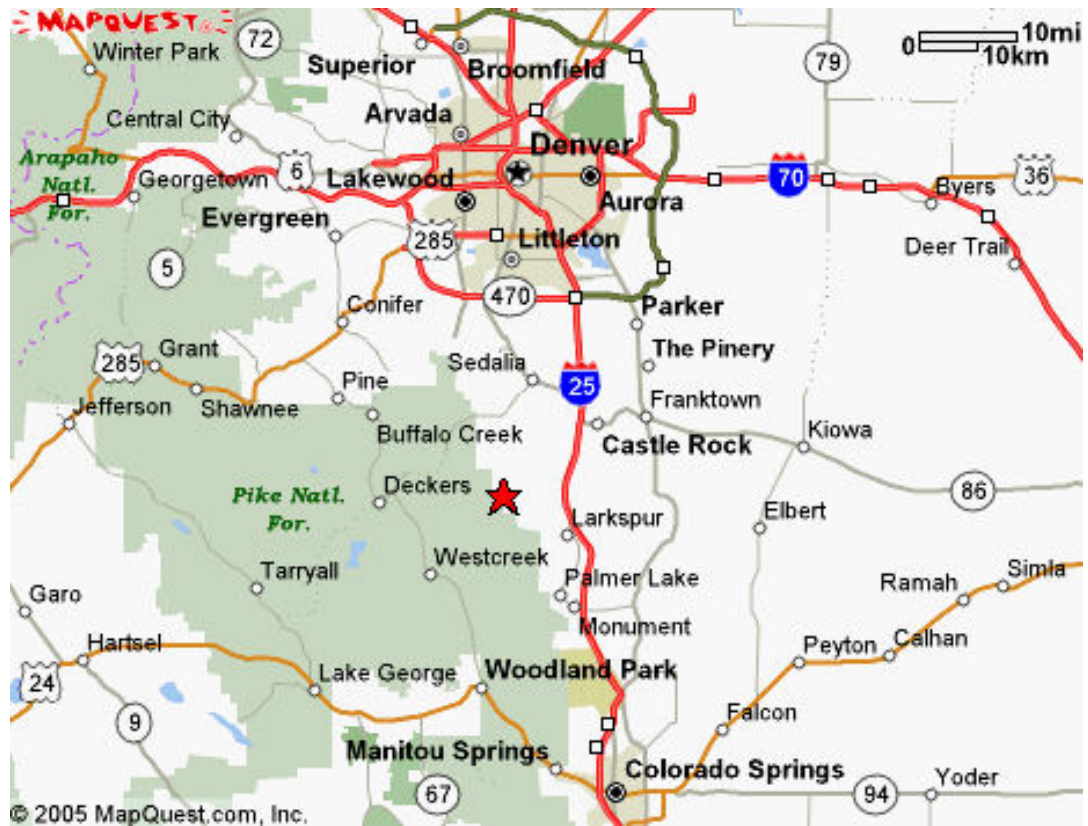
[watersmartinnovations.com](http://watersmartinnovations.com)



## Implementation of an Advanced Demand Side Leak Detection and Irrigation Efficiency Program

Emily Coll, Water Efficiency Specialist





# CASTLE PINES

METROPOLITAN DISTRICT



## Water Conservation Plan

Peak Day Demand Reduction = 16%

### PROBLEM

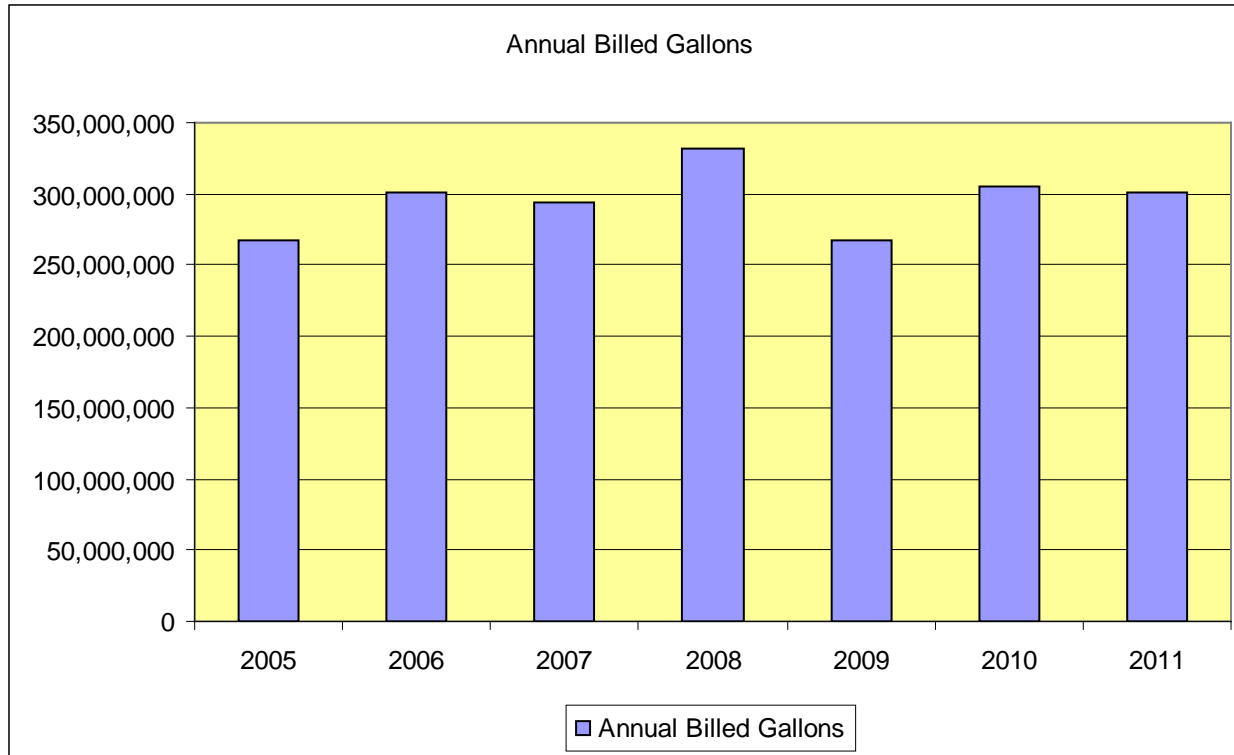
Leaks, irrigation inefficiencies, diminished effectiveness  
for conservation programs

Example – Winter leak = 674,000



# CASTLE PINES

METROPOLITAN DISTRICT



# CASTLE PINES

METROPOLITAN DISTRICT

Program	2008 Savings (k Gals)	2009 Savings (k Gals)	2010 Savings (k Gals)
Slow the Flow 2007	1,387	5,872	924
Slow the Flow 2008	-	340	-74
Slow the Flow 2009	-	-	-165
ET Rebate 2007	1,025	5,871	3,762
ET Rebate 2008	-	361	172
ET Rebate 2009	-	-	-78
ET Rebate 2010	-	-	-986
ET Irr Audit 2010	-	-	-797
ET Education 2009	-	-	54
ET Cont Prog Edu	-	-	56
<b>Totals</b>	<b>2,412</b>	<b>12,444</b>	<b>2,868</b>

**Cumulative Total**

**17,724**

A decorative graphic at the bottom of the page showing a splash of water with bubbles and ripples, set against a light blue background.

## Program Objectives

- Reduce gallons associated with leaks
- Reduce gallons associated with irrigation inefficiencies
- Increase system impact from conservation programs





## 2-Part Program

1. Decrease latency of meter reading
2. Data Management analytics – AquaHawk Alerting™



CASTLE PINES

METROPOLITAN DISTRICT

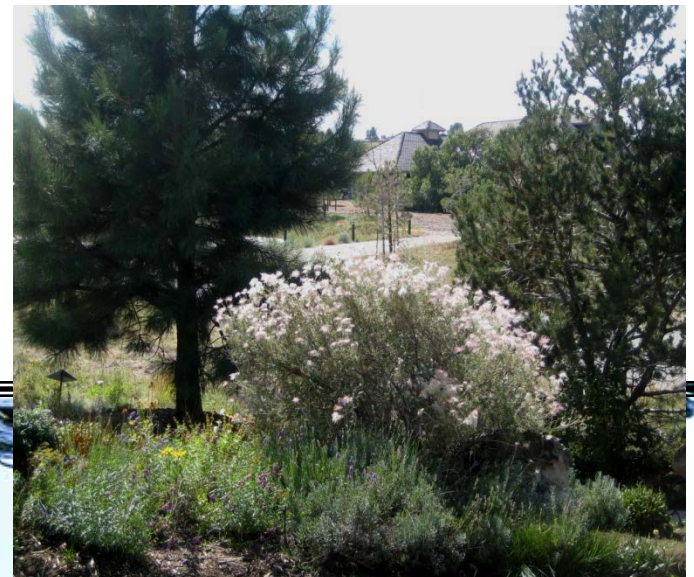
**BIG BROTHER**



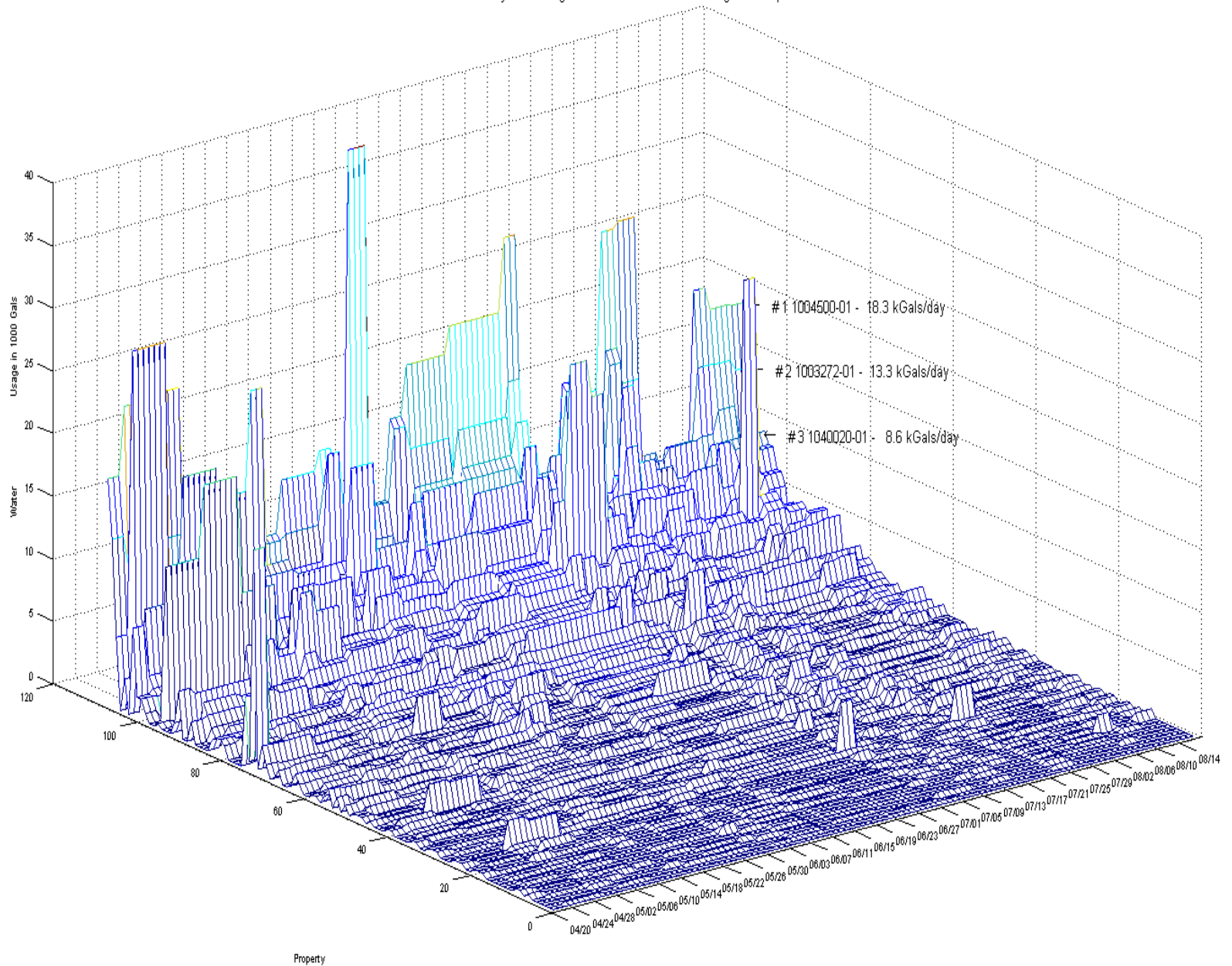
**IS WATCHING**

## AquaHawk Alerting™ Software Program

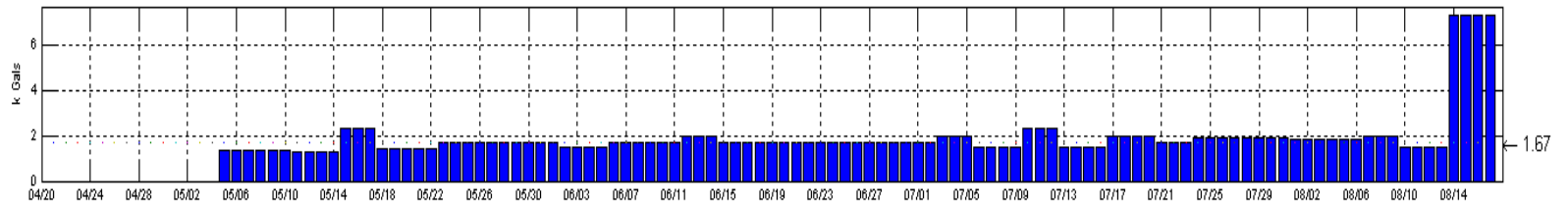
- Historical usage for each account
- Landscape plant material specifics
- Series of statistical analyses
- **Usage correlated to irrigation requirement**



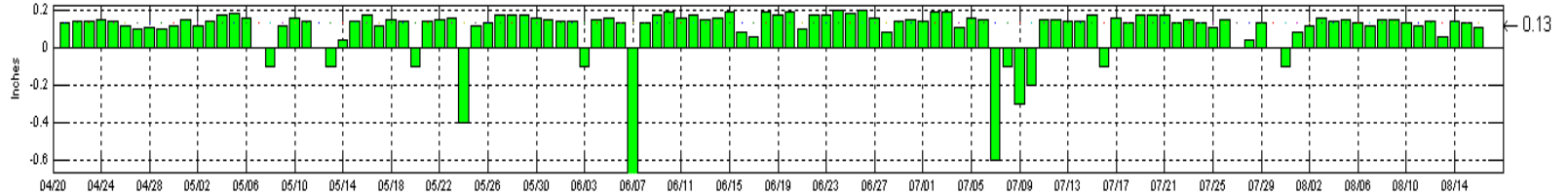
119 Day Prior Usage for CPMD Common Area Irrigation Properties



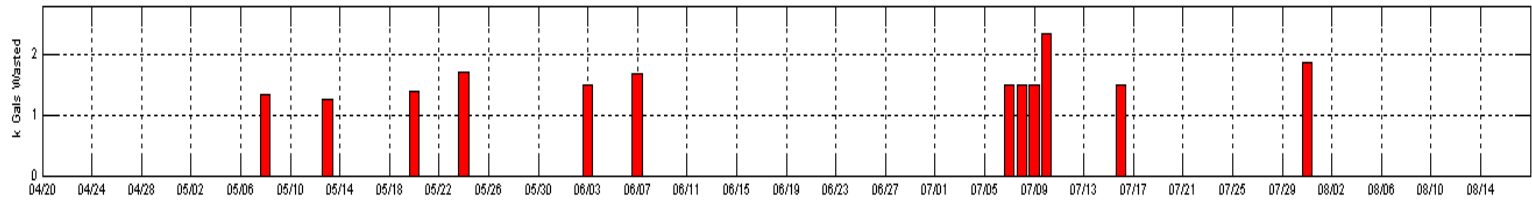
119 Days of Use - Prop ID 1000679-03



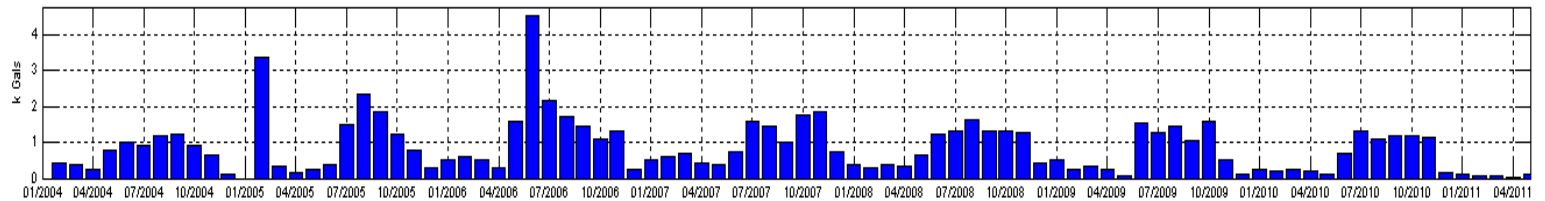
119 Days of IR



Irrigation Over Use



7 Years Daily Prior Use - Prop ID 1000679 Meter ID - 13668470 Class - Custom Homes Code C



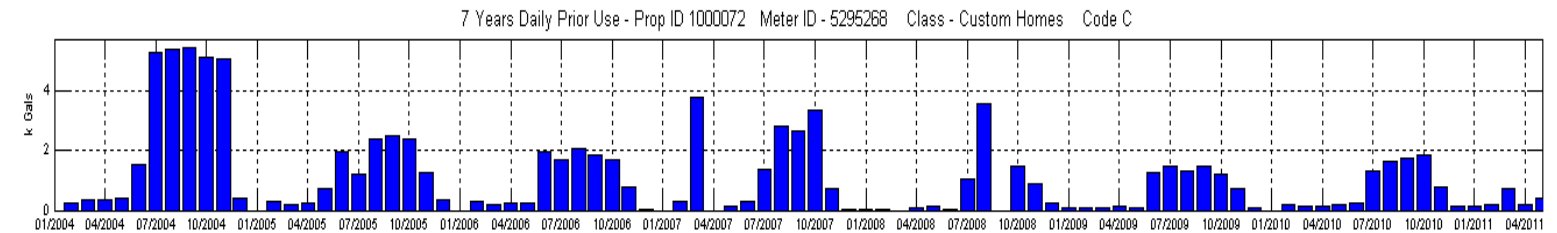
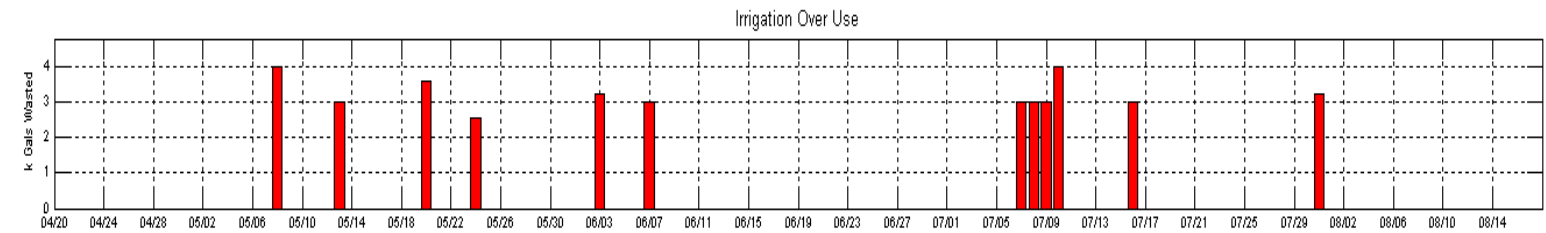
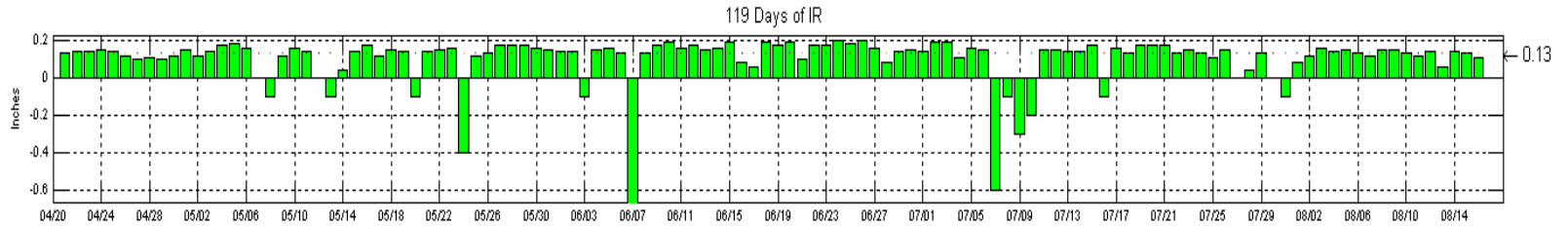
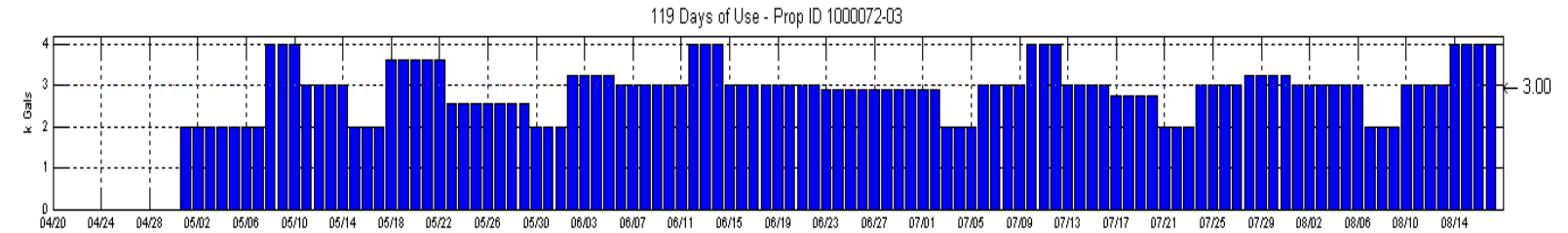
Mean is 1.71-- Median is 1.67-- Max is 2.33-- MaxDate is 05/13/2012-- Last is 7.33

#3 Prop ID 1000679-03 Cal IRR Area = 13,686 Sq Ft of turf

OverUse = 1333 1250 1400 1714 1500 1667 1500 1500 1500 2333 1500 1875 Gals

OverUse Total = 19,073 Gals

Irr Usage = 52,583 Gals 1000679-03



Mean is 2.69-- Median is 3.00-- Max is 4.00-- MaxDate is 05/06/2012-- Last is 4.00

# 10 Prop ID 1000072-03 Cal IRR Area = 21,617 Sq Ft of turf

OverUse = 4000 3000 3600 2571 3250 3000 3000 3000 4000 3000 3250 Gals

OverUse Total = 38,671 Gals

Irr Usage = 80,000 Gals 1000072-03

## Program Results

- Prevented the loss of 12.44 AF
- Avoided Cost = \$186,600.00
- 12/6/2011 to 10/01/2012



## Success Stories – Prevented Loss

1. Broken pipe = due to freezing = 358,000
2. Malfunctioning water softener = 135,000
3. Leak in main irrigation line = 574,000





## Side-effects

- Program targeting
  - Irrigating during/after rainfall event
- State Support = Here comes AMI!!



www.ck12.org



**Thank you**  
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