

# This presentation premiered at WaterSmart Innovations

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# Sustainable Conservation through Collaboration and Analytics

**Stephanie Duer**, SLC Conservation Manager

**Kelly Kopp**, Professor, USU

**Peter Mayer**, Principal, Incent Systems

**Steve Whitesell**, Principal, Incent Systems

**Jason Craig**, Senior Associate, Incent Systems



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LAS VEGAS, NEVADA



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# Challenges

- Growing population, in both residential and commercial customer sectors
- Changes to water profile due to impacts from climate change
- No new water supplies
- Balancing environmental health and economic growth
- Balancing need to conserve with desire for revenue stability
- Building parity in conservation programs and outcomes across sectors



# A History of Collaboration

- Water Check
- Residential Survey
- School District Conservation Master Plan
- Water Conservation Master Plan
- Lawn Meter Targets
- CII Water Checks
  - Additional CII work?



# SHARED ANALYTICS TOOL

## CII

### SLCDPU CII Tool

[Search PUBS/CII Data](#)

#### Service 00000000

**Address:** 123 N Test Ave  
Salt Lake City, UT 84123

**Status:** Water-Sewer In Service

**Type:** Single Residence

**Number of apartments:** 1

**Exchange:** No Exchange

**Lawn sq. ft.:** 0

**Latitude, Longitude:** 40.xxxx, -111.xxxx

**Current customer:** [Lastname, Firstname](#)

#### NAICS

NAICS Two Digit: 11 - Agriculture, Forestry, Fishing and Hunting

NAICS Three Digit: 112 - Animal Production and Aquaculture

NAICS Four Digit: 1125 - Aquaculture

NAICS Five Digit: 11251 - Aquaculture

NAICS Six Digit: 112512 - Shellfish Farming

**Building and Lot Information:** 112511 - Finfish Farming and Fish Hatcheries

Lot Area (sf): 112512 - Shellfish Farming

Building Footprint (sf):

Total Building Area (sf):

## RESIDENTIAL WATERCHECK

### Data Query

#### Account Information

Provider: Alpine  
American Fork  
Bluffdale  
Cedar City

Provider Funding Agency:  CUWCD  JFWCD  METRO

Service ID:

Account ID:

City:

Zip Code:

Type of Property: [Any]

# Summer Occupants: < >

# Winter Occupants: < >

Year Participated in Water Check: 2016

Year House Built: < >

#### Water Usage

Usage Filter Type: please select

#### Physical Attributes

Lot Size (acres): < >

Total Landscape Area (sf): < >

Turf Area (sf): < >

Other Irrigated Area (sf): < >

Hardscape Area (sf): < >

#### Landscape and System Attributes

Controller Brand: [ANY]

Controller Model: [ANY]

Number of Programs: < >

Number of Zones: < >

Submit Clear

# Non-Residential Demand Management Challenges

- Diverse commercial, institutional, and industrial (CII) sector
  - SLCDPU has not historically maintained customer classification information for the CII sector
    - What type of commerce is associated with this meter?
    - What end uses are present on this site?
  - Water demands of CII customers is not well understood
    - What influences seasonal demand changes (if any)?
    - How do we connect end user to rate payer?
    - What is the water reduction potential per customer/classification?
    - How is CII water use similar to residential water use?
    - Are there use patterns that cross CII classifications?
-

## SLCDPU CII Tool

• [Search PUBS/CII Data](#)

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#### NAICS

NAICS Two Digit

NAICS Three Digit

NAICS Four Digit

NAICS Five Digit

NAICS Six Digit

**Building and Lot Int**

Lot Area (sf)

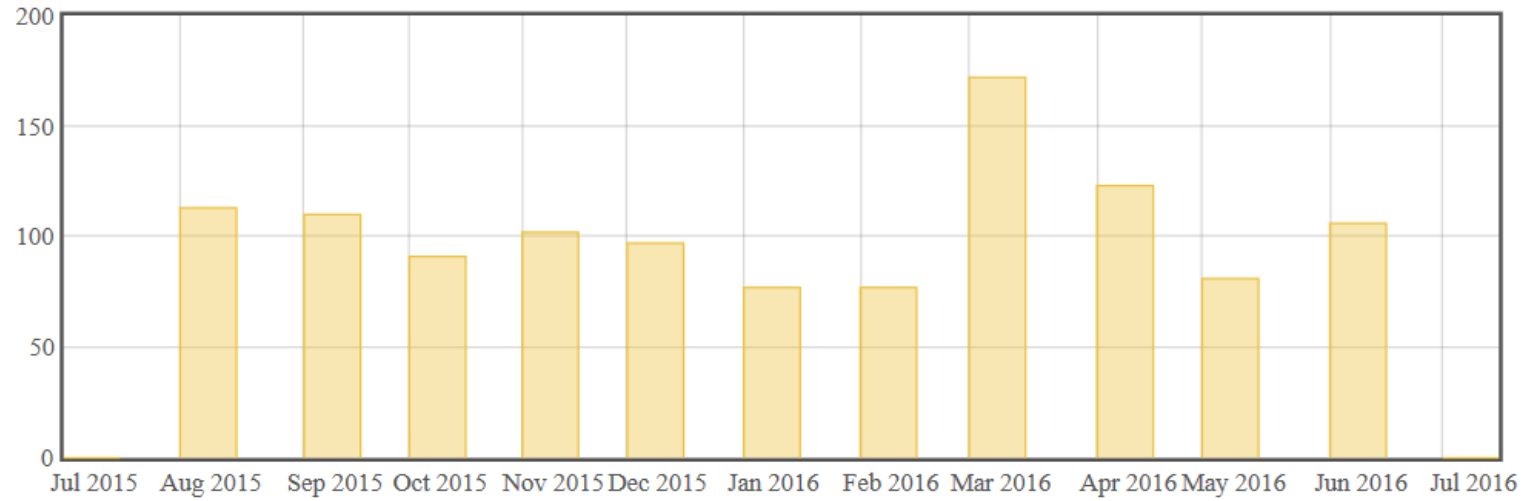
Building Footprint (sf)

Total Building Area (sf)

## CII Analytics Tool

- Enhance understanding of Commercial/Industrial/Institutional sector water use
- Provide customer use tracking and evaluation information
- Improve programming to CII sector
- Integrate platform for parallel research and programming, including data from Water Checks, WaterMAPS, and GIS
- Identify savings potential by sector and connection
- Expand programming and engagement

## Water Consumption Last 13 Months (CCF)



The values you submitted were successfully processed.

### NAICS

Two Digit

Three Digit

Four Digit

Five Digit

Six Digit

Mixed Use

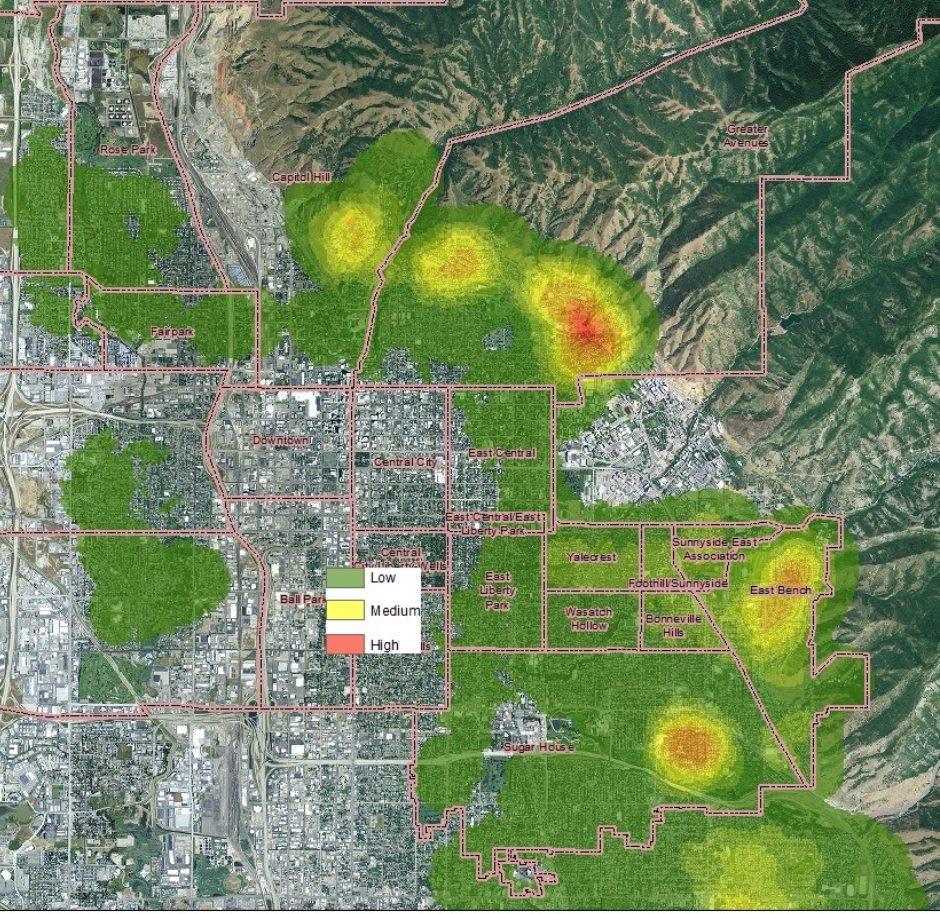


# RESIDENTIAL DEMAND MANAGEMENT CHALLENGES

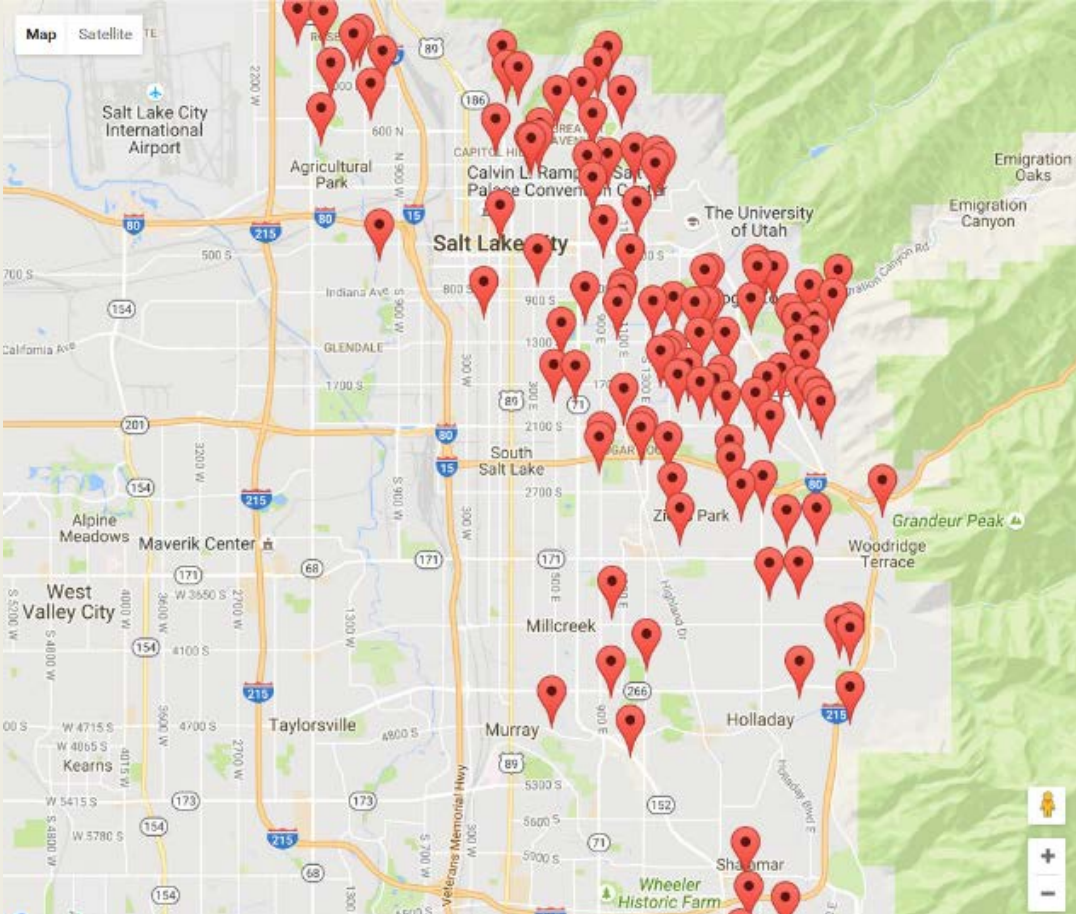
- Familiarity with irrigation system and controller
- Uncertainty about plant requirements
- Weak and muddled pricing signal
- Ongoing support
- Are we reaching the “right” customers



# Residential Water Use by Tier

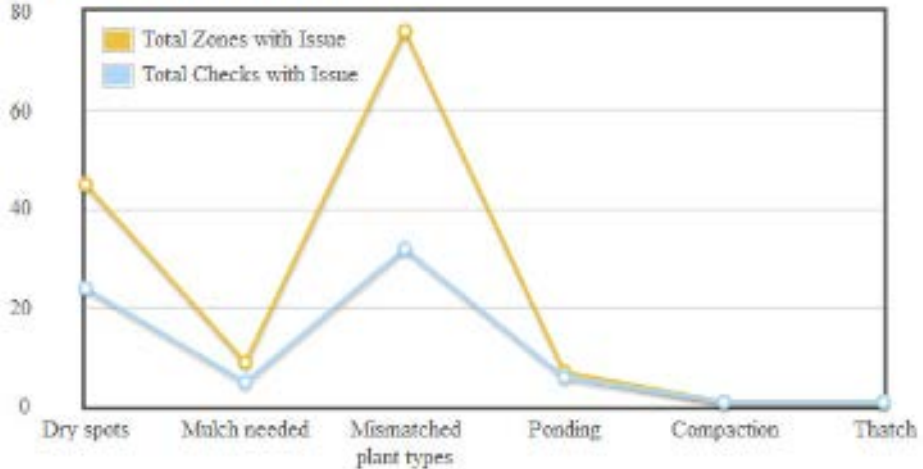


# Pattern of WaterCheck Requests

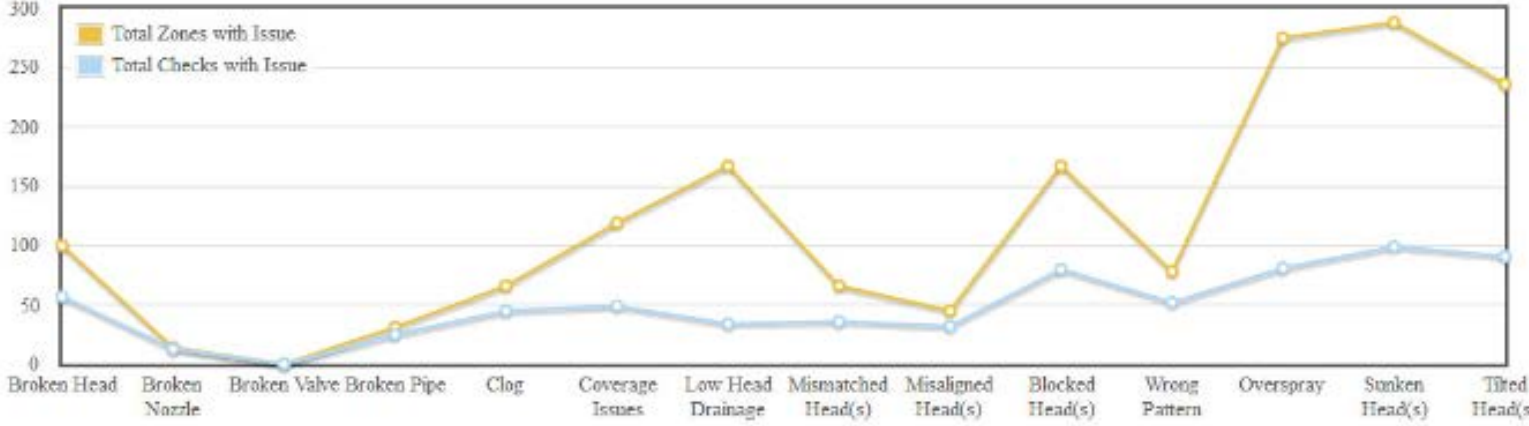


# WATER CHECK REPORTING


**Landscape Issues Identified**



**Irrigation System Issues Identified**



# Water Check Report



**WATERCHECK** **SLOW THE FLOW**

**USU Water Check Program**

Thank you for participating in this Water Check program. This is a free service offered to the customers of participating water agencies in Salt Lake County. It is sponsored by Metropolitan Water District, Salt Lake City Public Utilities, Sandy City, and Central Utah Water Conservancy District.

A series of evaluations and tests have been performed on your irrigation system. We have determined how much water your irrigation system emits in a given amount of time (precipitation rate), the soil absorption rate, and the uniformity of water distribution through an area (distribution uniformity).

**Root Depth**  
Healthy lawn roots should have a depth of 8 to 12 inches or more. Through deeper, infrequent watering, your lawn will be more able to tolerate extreme temperatures and decreased amounts of water.  
Your lawn root system is about \_\_\_\_\_ inches deep.


**Water Infiltration Rate**  
If water is applied faster than the soil is able to absorb it, irrigation turns into runoff. Clay soils absorb water very slowly, whereas sand can absorb it very quickly. By knowing your soil type, a watering schedule can be adjusted to maximize the amount of water absorbed by your lawn, instead of losing it to run-off. Your soil type will determine how many cycles you will need in your irrigation schedule.  
Your soil type is \_\_\_\_\_.

**Precipitation Rate**  
Sprinkler precipitation rate is a measure of how many inches of water per hour are emitted on your landscape. Different systems and different sprinkler heads will have different precipitation rates. This rate will determine how long you need to run your sprinklers.  
Spray (or pop-up) sprinkler heads usually apply more water than do rotor (or rotating) heads per period of time. This means that rotor heads will usually need to run longer than spray heads. Remember that while spray heads don't move and all the water they emit is applied to the same area, rotor heads oscillate and cover a greater area. The water emitted must be distributed accordingly.  
Your precipitation rate is \_\_\_\_\_ inches/hour (spray), \_\_\_\_\_ inches/hour (rotor).

**Distribution Uniformity (DU)**  
This measures a sprinkler system's capacity to apply water evenly over the surface of a landscape. If the amount of water emitted by an irrigation system is not completely uniform (100%), some areas of the landscape will receive more water than others. This measurement can be improved through proper maintenance, adjustments and repair to your system. Please refer to the "Walk-Through Site Evaluations: Explanation and Suggestions" for items that can be attended to in your landscape.  
Your Distribution Uniformity (efficiency) is \_\_\_\_\_ % (spray), \_\_\_\_\_ % (rotor).

**Water Pressure**  
Dynamic pressure is the water pressure measurement while water is in motion through the sprinkler head. Each model of sprinkler head has a specific range of pressures at which optimum performance is achieved. In general, spray heads work best between 20 to 50 pounds per square inch (psi). Water pressure for rotor heads should be between 30 to 80 psi. Refer to the "Walk-Through Site Evaluations: Explanation and Suggestions" for recommendations on your system's pressure.  
Your Water Pressure is \_\_\_\_\_ psi (spray), \_\_\_\_\_ psi (rotor).

Utah State University extension Sandy Public Utilities



**SLOW THE FLOW** **Sandy PUBLIC UTILITIES** **Utah State UNIVERSITY extension**

**RECOMMENDED IRRIGATION SCHEDULE**

Name/Address: \_\_\_\_\_  
Date: \_\_\_\_\_

Do not irrigate October through April. Use this irrigation schedule as a guide. The weather during the Spring and Fall varies considerably. If the weather is extra hot, adjust your controller by adding a watering day. If it is cloudy or cool, adjust your controller by deleting a day. Turn off your timer in the rain. If you need additional help please call USU Extension Services at (801) 468-3170.

Zones #	Lawn Other	Lawn Other	Lawn Other	Lawn Other	Lawn Other	Lawn Other	Lawn Other	Lawn Other	Lawn Other
Plant Type	Spray Rotor	Spray Rotor	Spray Rotor	Spray Rotor	Spray Rotor	Spray Rotor	Spray Rotor	Spray Rotor	Spray Rotor
Irrigation Type	Drip	Drip	Drip	Drip	Drip	Drip	Drip	Drip	Drip
Minutes/Cycle									
Cycles/day									
TOTAL Minutes									
DATE BETWEEN WATERING:									
May									
June									
July									
August									
September									

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

white copy - customer      yellow copy - water check program

**WATERCHECK**  
Water Check Program Irrigation Schedule - Submitter

# HOA Water Check

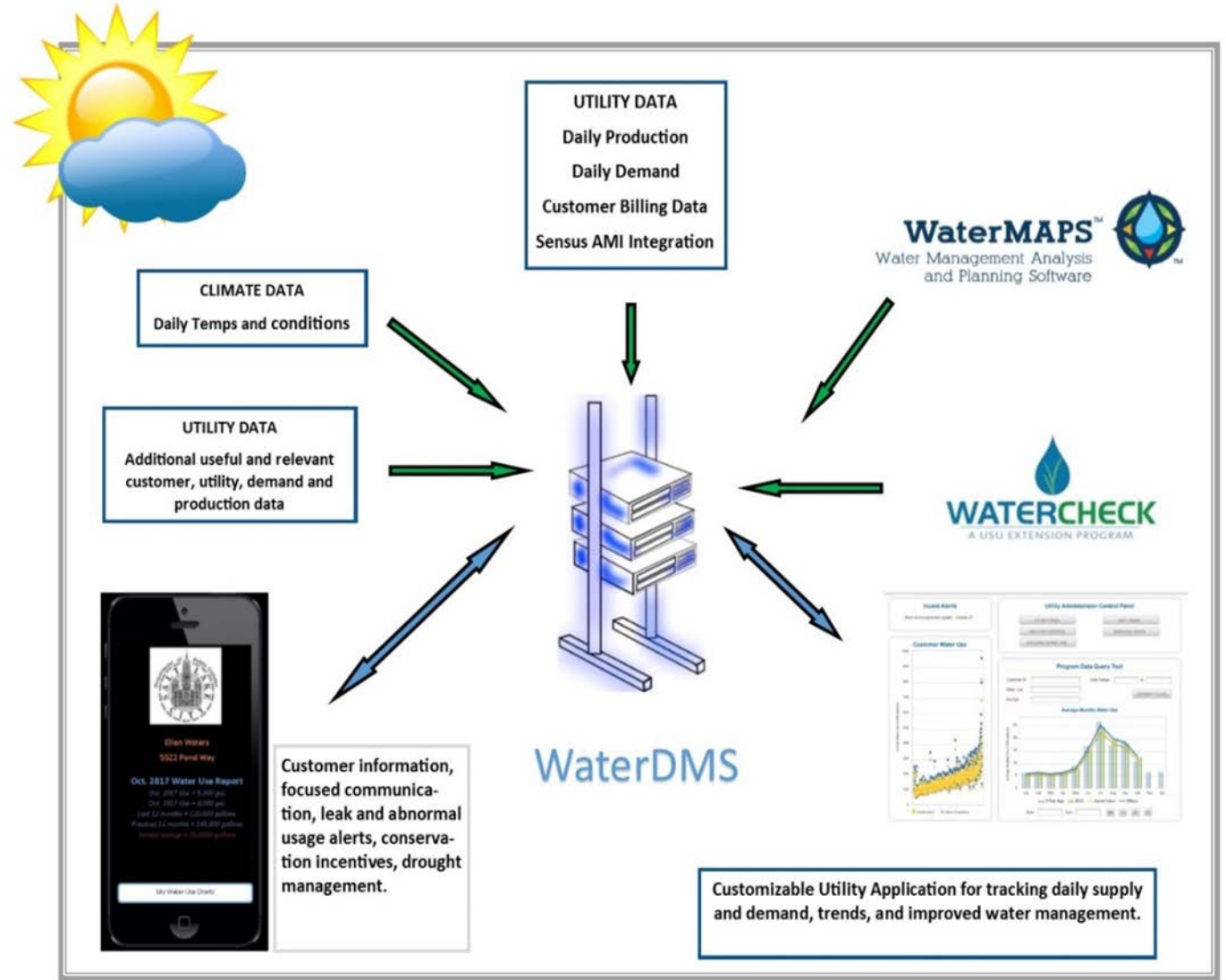


# Project Applications

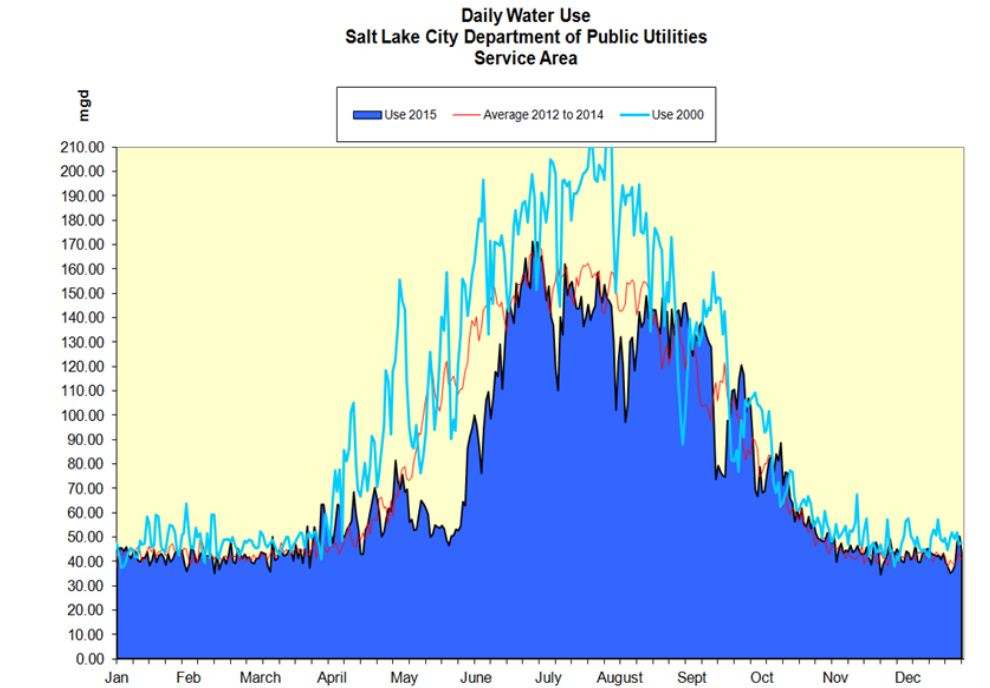
Improved integration of various data streams, including climate, hydrology, water demand

Development of tools, including public portals, to enhance consumer understanding of water use

Enhance collaborative programs such as WaterChecks and implement WaterMAPS



What we have learned is that there is not one solution to the issue of sustainable water demand reduction, *unless that one solution is to learn and share more.*



“Water savings are measured in gallons, not ideas.”

Amy Vickers



# Contact Information

**Stephanie Duer**, SLC Conservation Manager

[stephanie.duer@slcgov.com](mailto:stephanie.duer@slcgov.com)

**Kelly Kopp**, Professor

[kelly.kopp@usu.edu](mailto:kelly.kopp@usu.edu)

**Peter Mayer**, Incent Systems, Inc.

[peter.mayer@incentystems.com](mailto:peter.mayer@incentystems.com)

**Steve Whitesell**, Incent Systems, Inc.

[sw@incentystems.com](mailto:sw@incentystems.com)

