



THE
UNIVERSITY
OF UTAH

INSTITUTIONAL WATER USE: STRATEGIES & SUCCESS

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Agenda

- Context
- Consumption
- Strategy
- Outcomes
- Next Steps

INSTITUTIONAL WATER
USE: STRATEGIES &
SUCCESS

CONTEXT: UofU KEY ATTRIBUTES

Utah's 10th Largest City

- ~700 acres
- 16.5 M square feet
- Manage all utilities after the “main” connections
 - Water
 - Electricity – Three substations
 - District Energy



CONTEXT: GROWTH & COMMITMENTS

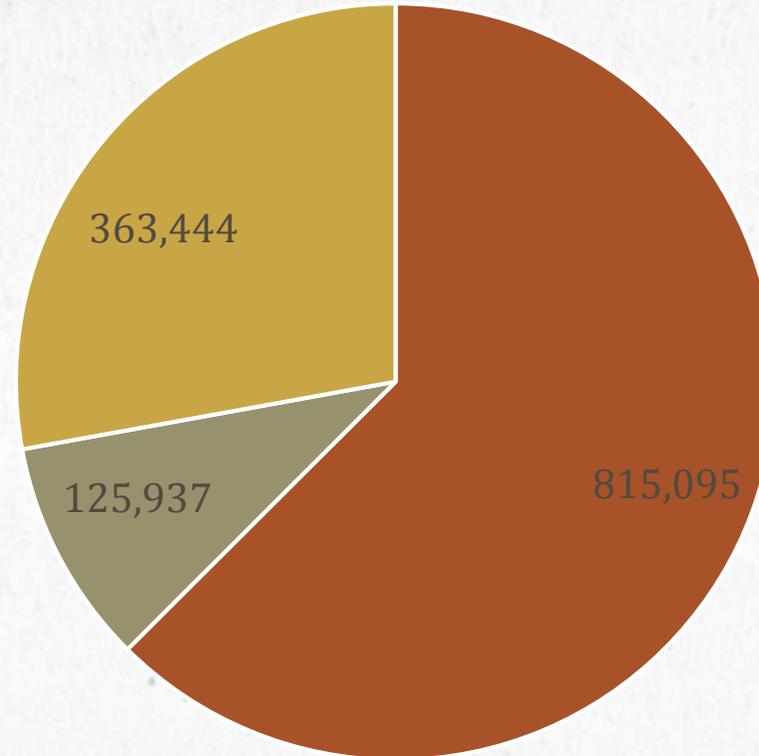
Conservation & Growth Management - 2.5% building floor area growth per year

University (16.5M sq ft) committed to carbon neutrality by 2050

Salt Lake County air quality classified serious nonattainment

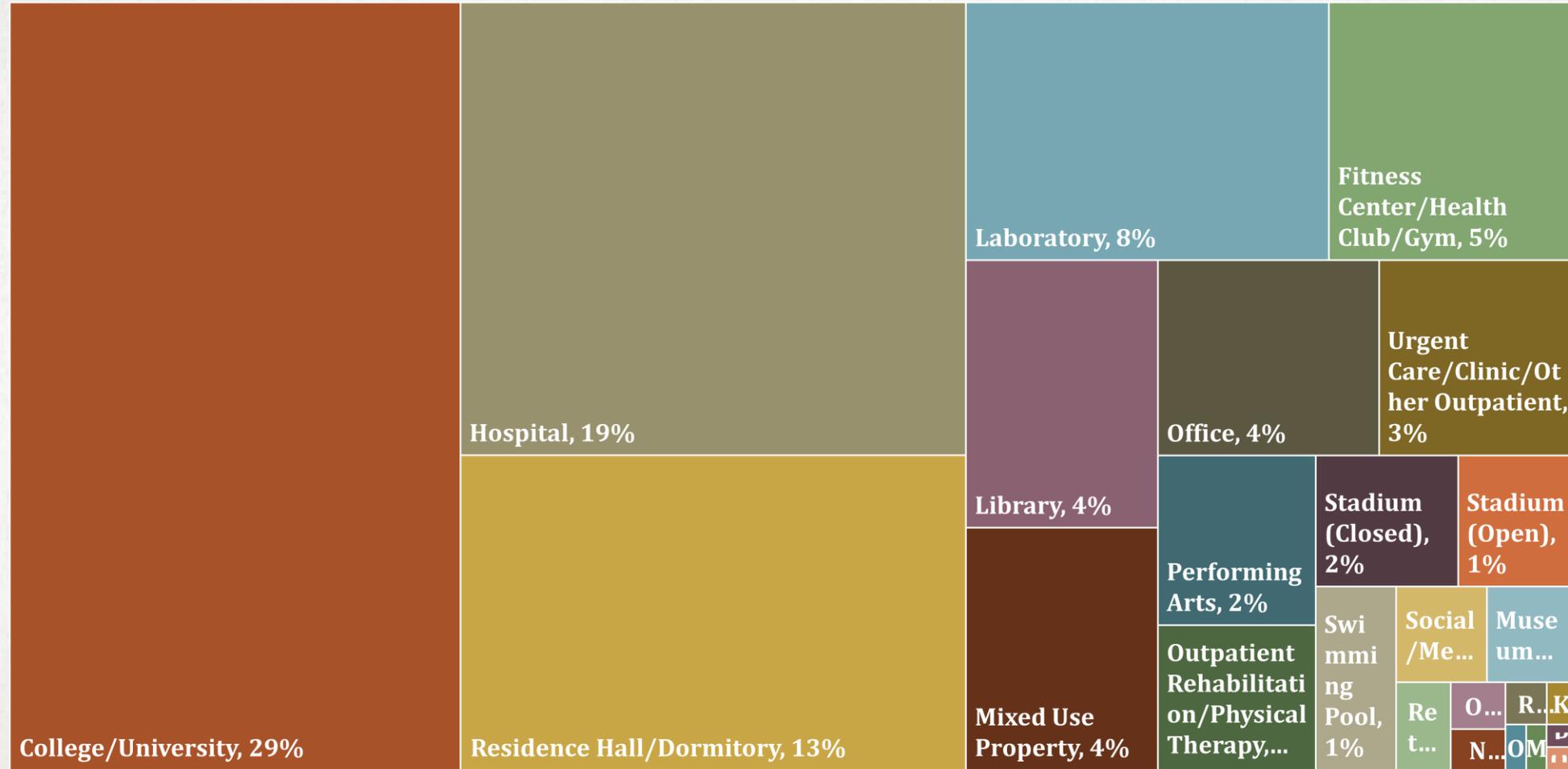


CONSUMPTION: CURRENT WATER USE

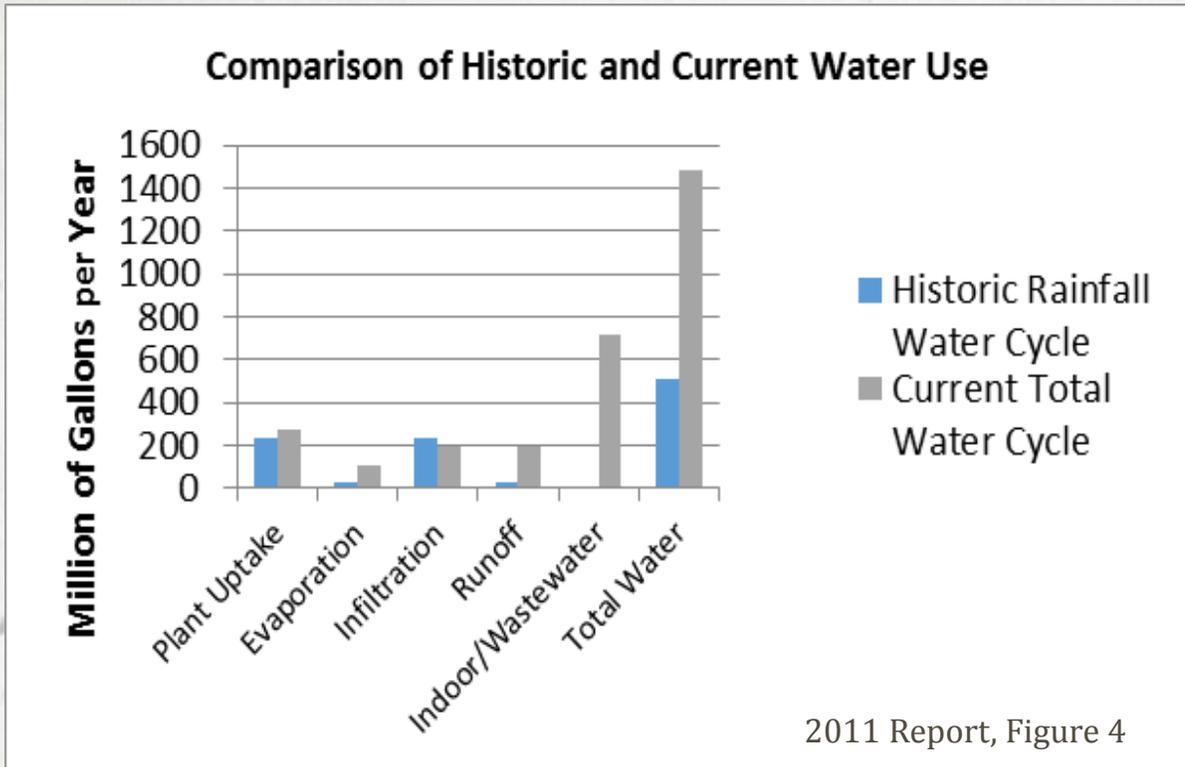


■ Domestic Water (CCF) ■ Cooling Water (CCF) ■ Irrigation (CCF)

CONSUMPTION: DOMESTIC WATER USE



STRATEGY: ASSESS/PURSUE WATER NEUTRAL



- **Establish aggressive 10 yr. goals in 2010**
 - Water neutral
- **Historic onsite precipitation**
 - 516 MG
- **Current total water consumption**
 - 969 MG (2011)
 - ≈950 MG (2017)
- **Balance**
 - 429 MG
 - Study and develop plan - 6 Tactics pursued.

STRATEGY: PRIMARY TACTICS & FEEDBACK

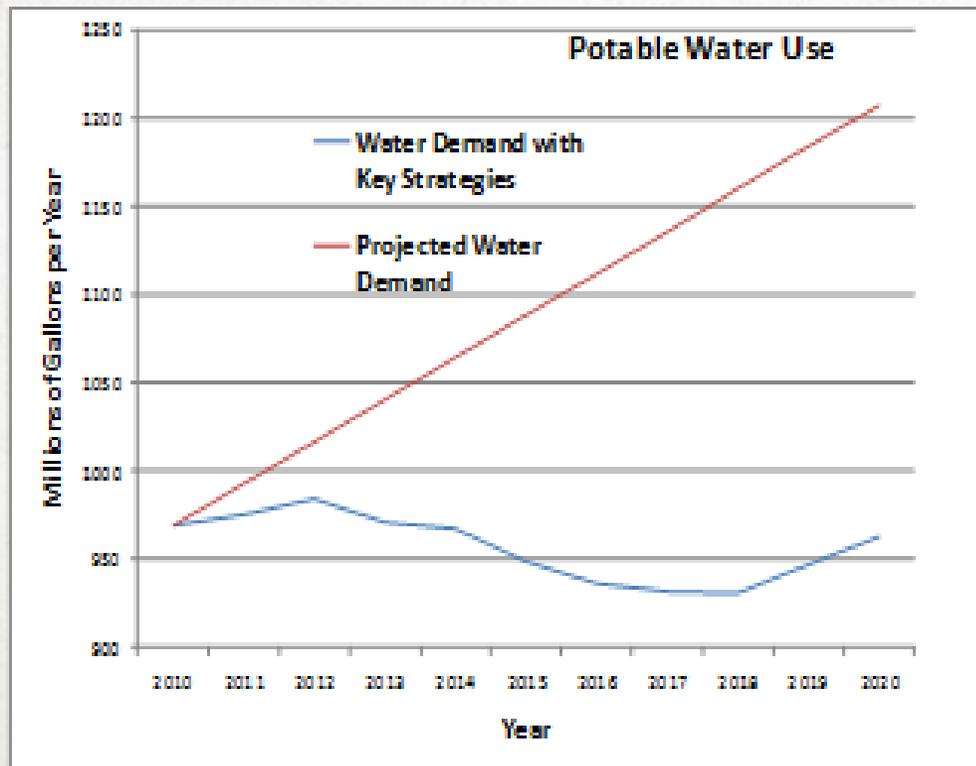
1. New buildings
 - a) Require all new buildings use 30 percent less water – **partial success through DFCM & LEED standards**
 - b) Dual plumb all new buildings – **pilot projects (NHMU & S. J. Quinney College of Law) – further study needed**
2. Existing buildings
 - a) Replace existing toilets with 1.28 gpf – **partial success**
 - b) Replace fixtures with low use – **partial success with showers, lavatories**
3. Convert one percent of existing turf to xeriscape per year – **success, ongoing**
 - a) New building conversions
 - b) One acre+ per year in stand alone projects.

STRATEGY: PRIMARY TACTICS & FEEDBACK

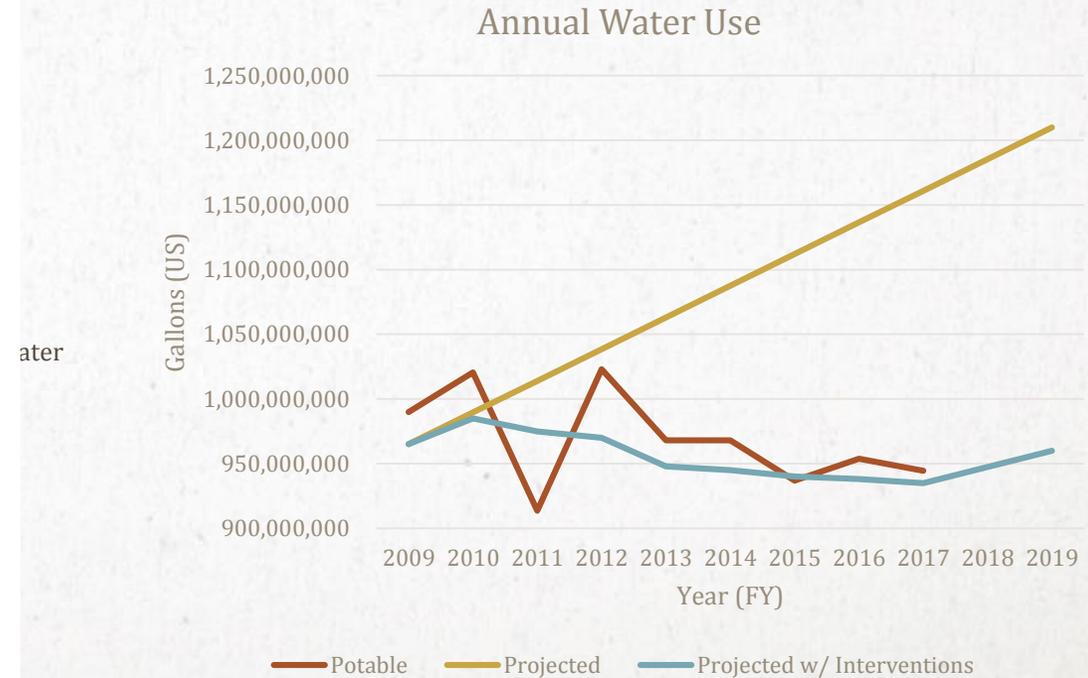
4. Increase the efficiency of new building cooling by 10 percent – **success through standards and energy efficiency efforts.**
5. Use non potable water for irrigation – **success**
 - a) Use well water for irrigation – **well irrigation started in 2014, planned growth for the program**
 - b) Capture rainwater – **pilot projects (NHMU)**
 - c) Use well water for process water – **planned**
6. Increase infiltration of precipitation to balance water usage and reduce storm water runoff – **partial success**
 - a) New standards for storm water management (Retain 10yr)
 - b) HPER mall redesign

STRATEGY: UofU SUSTAINABILITY INITIATIVE 2010 TO 2020

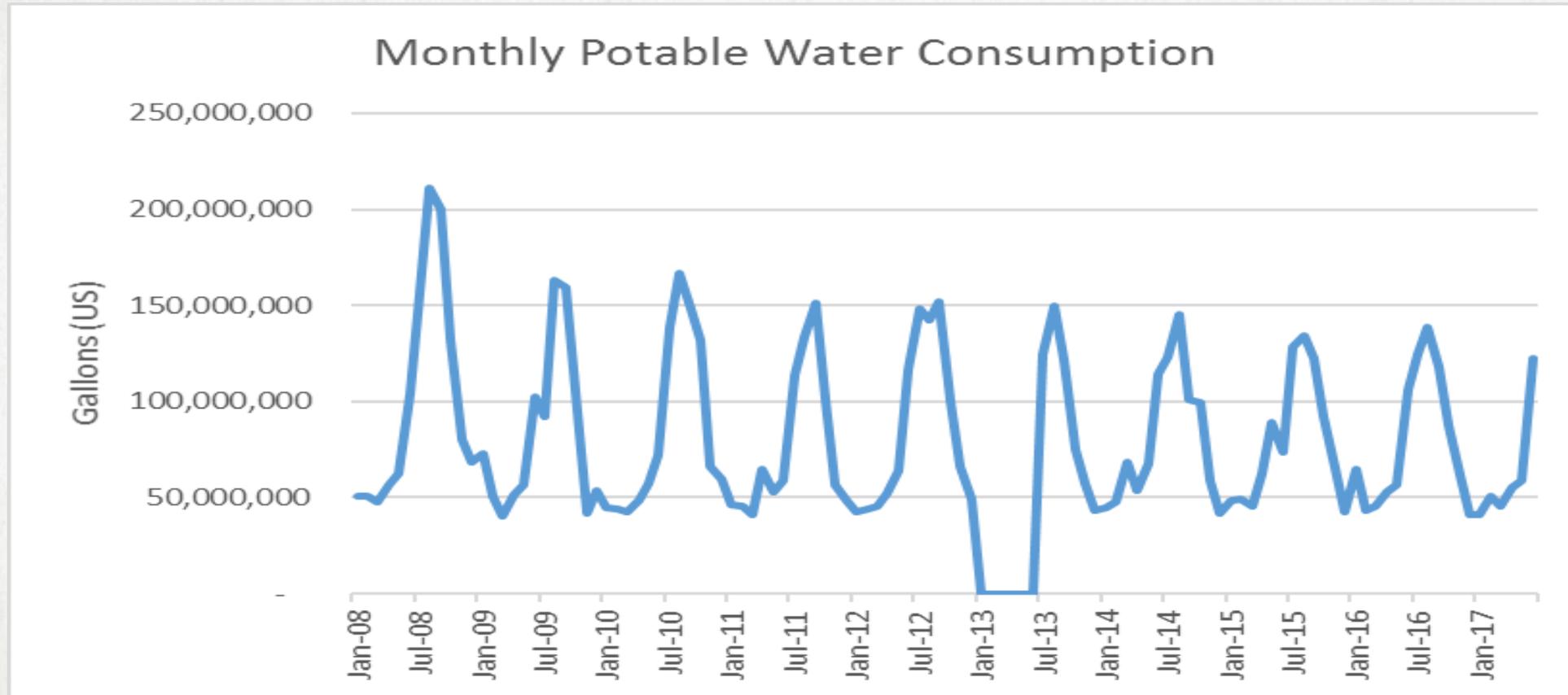
2010 - INITIAL PROJECTIONS



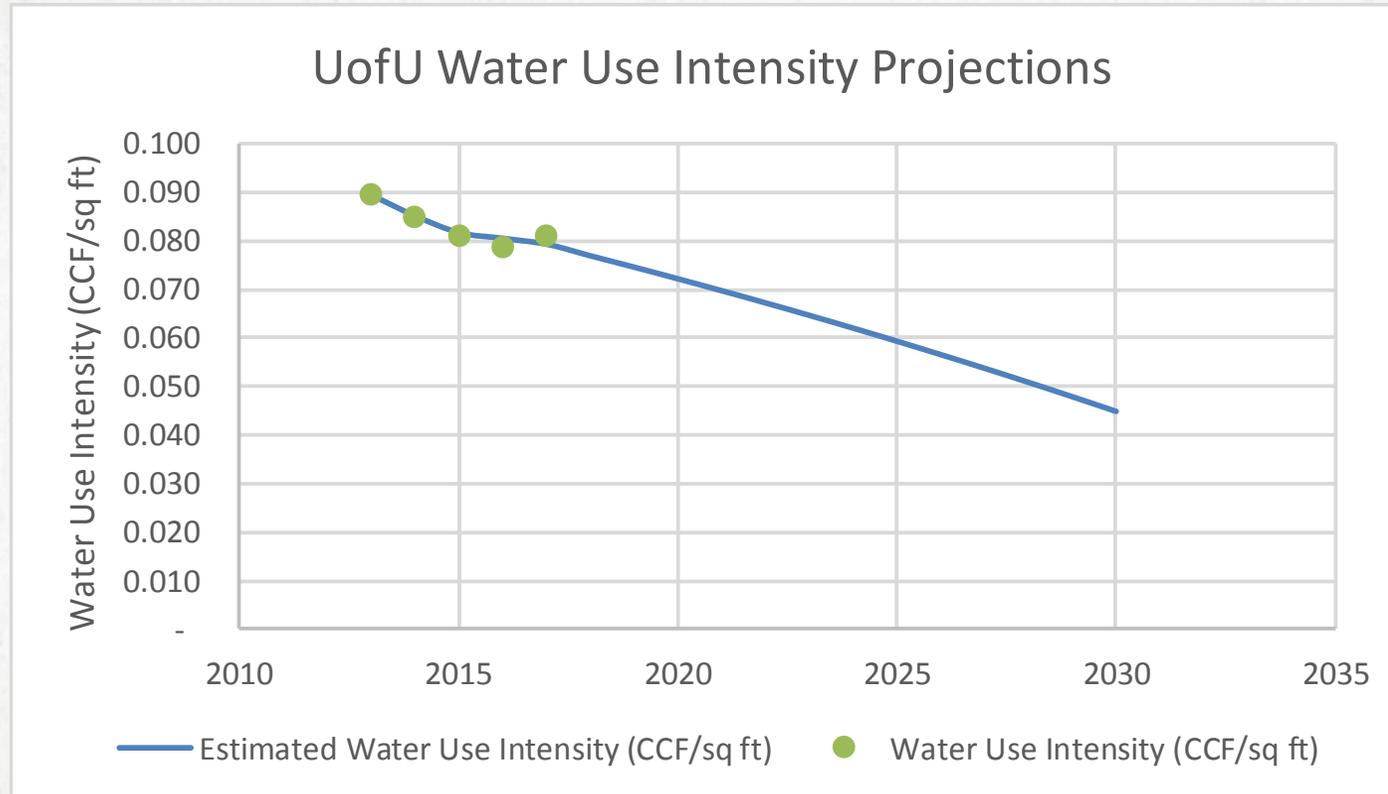
CURRENT PROGRESS



OUTCOMES: DOMESTIC WATER CONSUMPTION



OUTCOMES: WATER USE INTENSITY

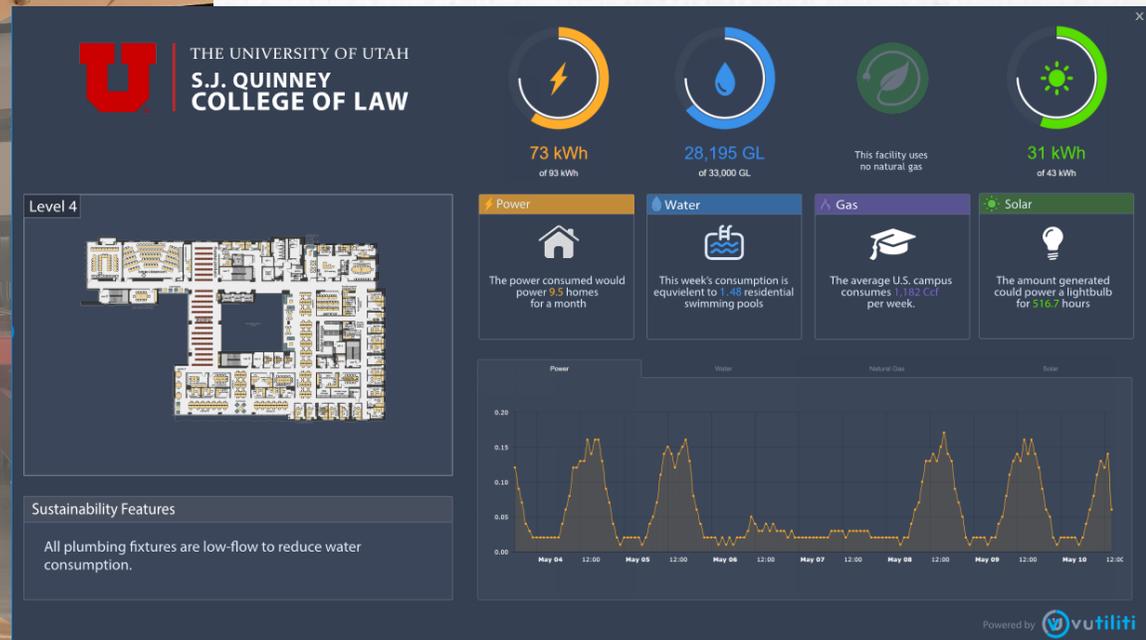


UofU FM S&E Water Performance, 2018-07

OUTCOMES: ROOM FOR IMPROVEMENT

- Installation and integration of building level water meters
 - Building real-time dashboards
- Water Use Intensity by building
 - Generate a specific and measured understanding of water use intensity
 - Prioritize opportunities
- Water efficiency standards for all projects
- Improved leak detection
- Address industrial processes
 - Research processes
 - Building Cooling

REAL-TIME DASHBOARDS



Vutiliti Dashboard at Law Building

NEXT STEPS: POTENTIAL CONSTRAINTS

- Water rights
 - Surface & Ground
- Budget
 - Relative expense
 - Projected rate increases
- Regulations and costs to reuse indoor water (grey) for other processes or toilet flushing
- Regulations and costs for treatment to reclaim water for irrigation or other uses



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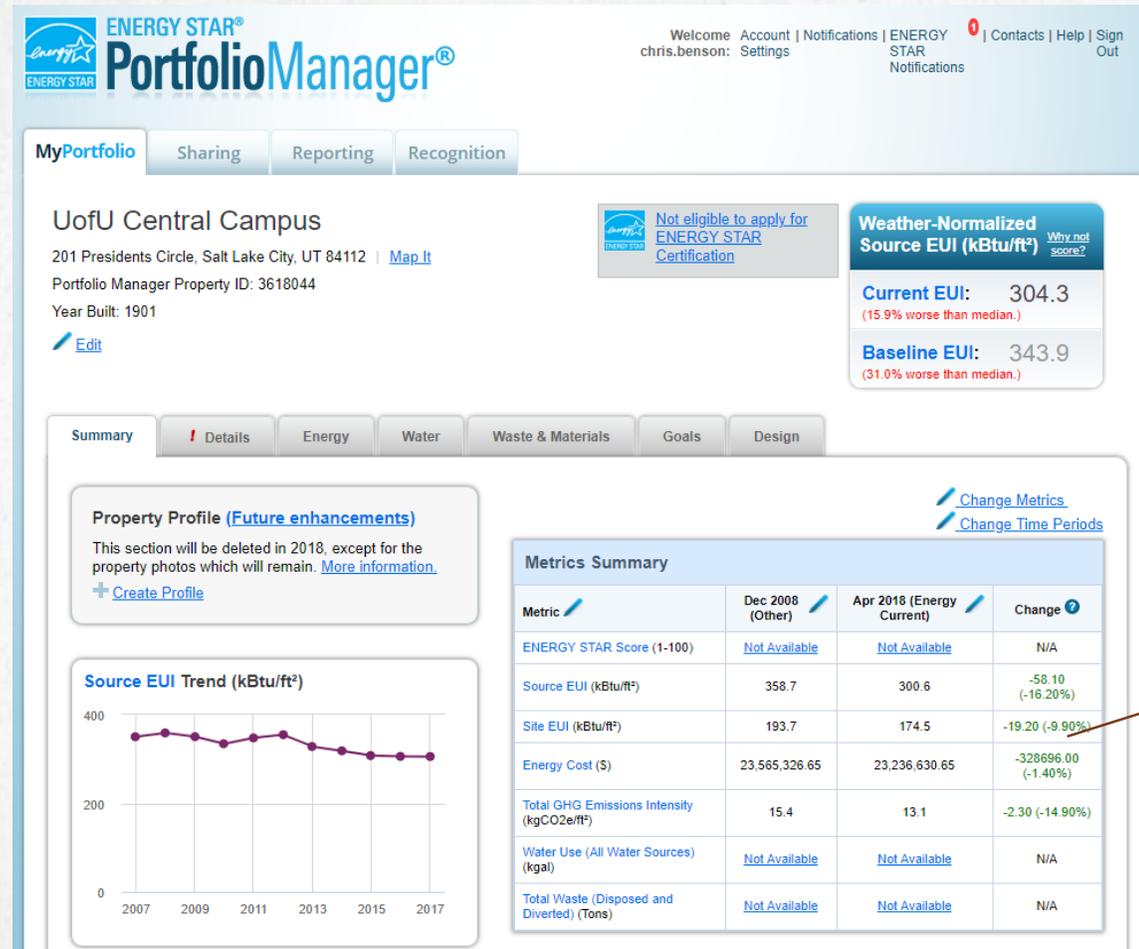
Address:

V Randall Turpin Bldg

1795 E South Campus Dr

Salt Lake City, UT 84112

OUTCOMES: PART OF A BIGGER PICTURE

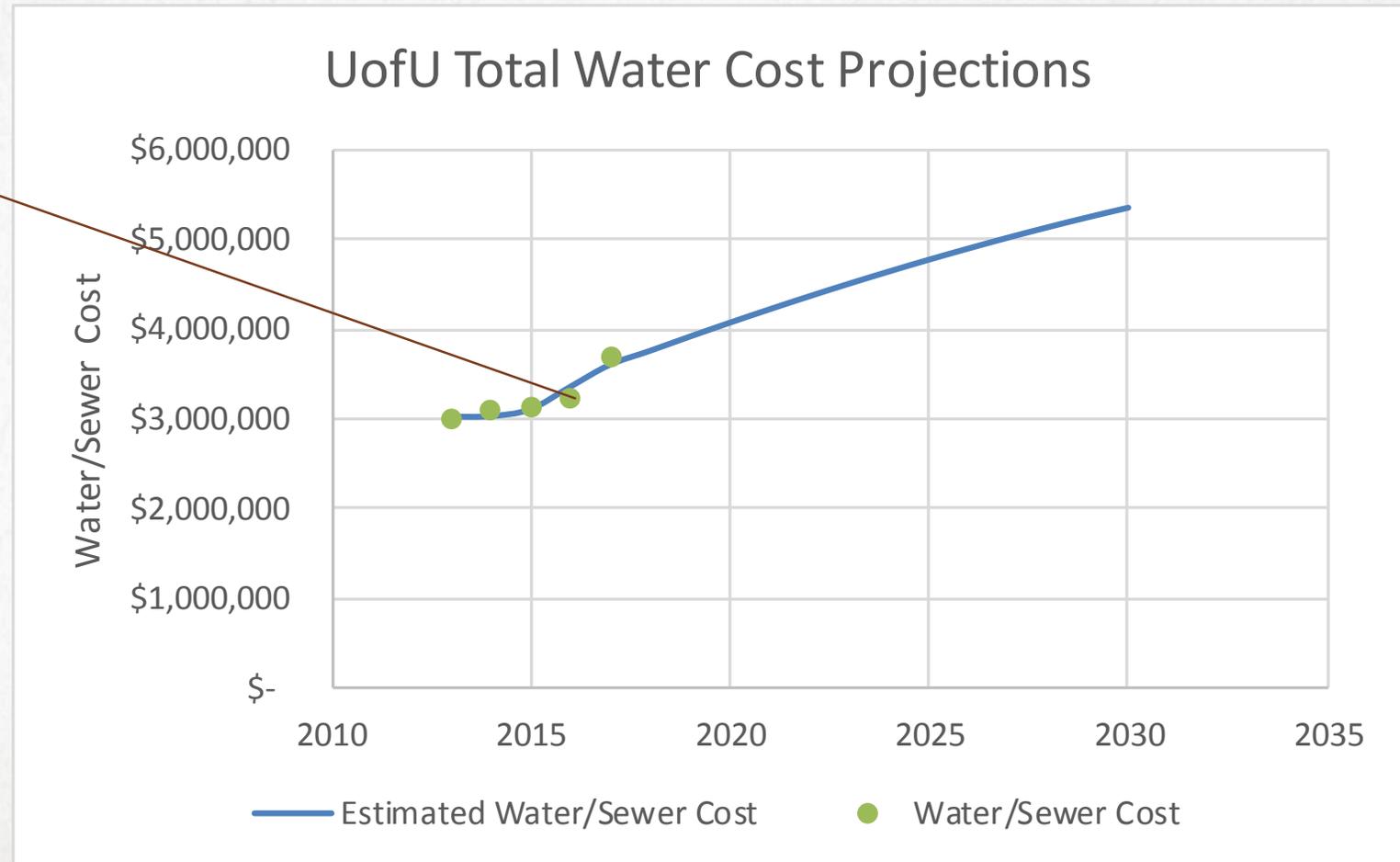


16.2% EUI reduction. On track for BBC goal

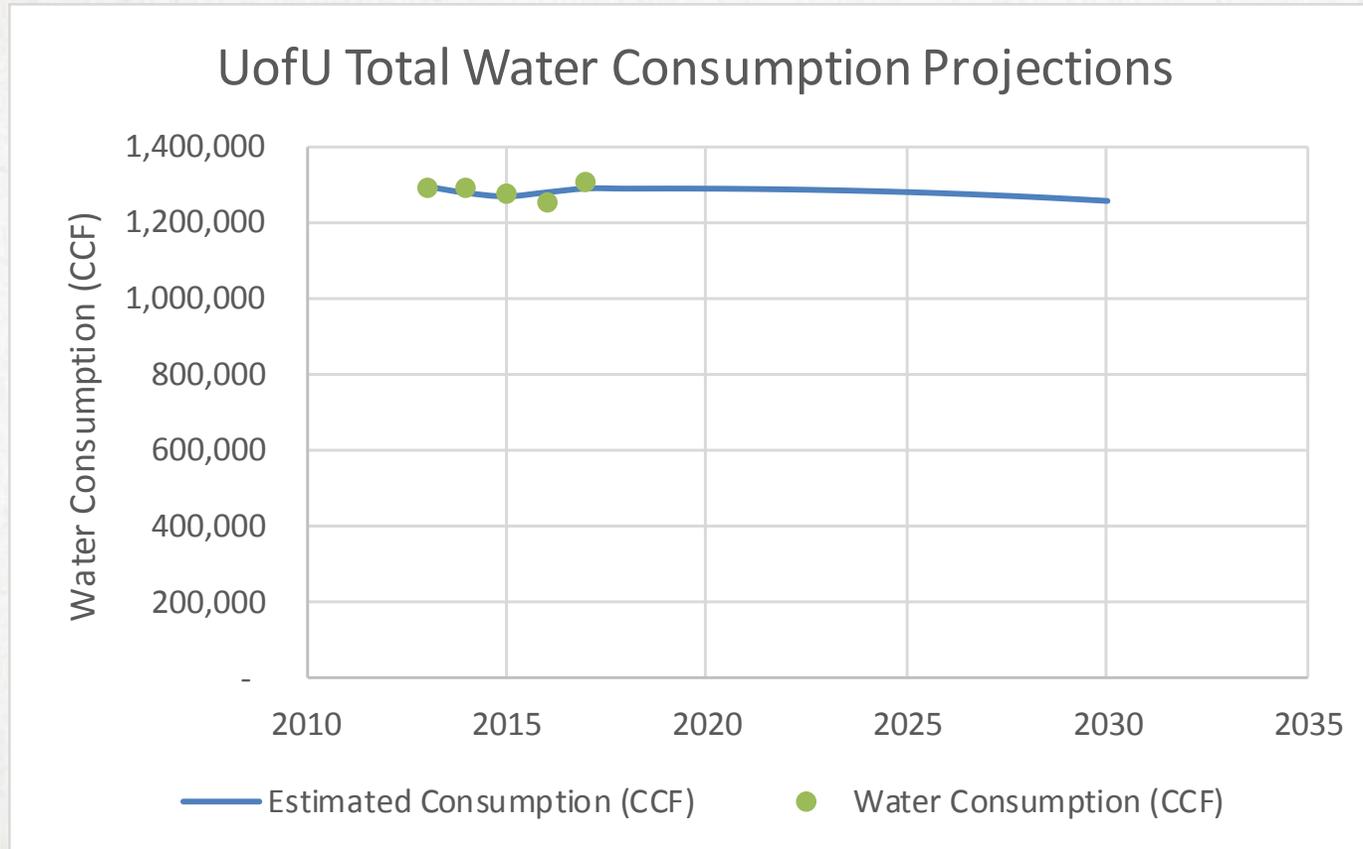
Energy Star Portfolio Manager Dashboard, University of Utah, 2018-07

BIG INCREASES TO WATER/SEWER BY SLC

SLC water/sewer rate increases have been big. Expect more annually for coming years



PROJECTED: SLOW REDUCTIONS TO WATER CONSUMPTION



FY19 CHANGES TO AUXILIARY BILLING RATES (AS % OF TOTAL COST)

