

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com

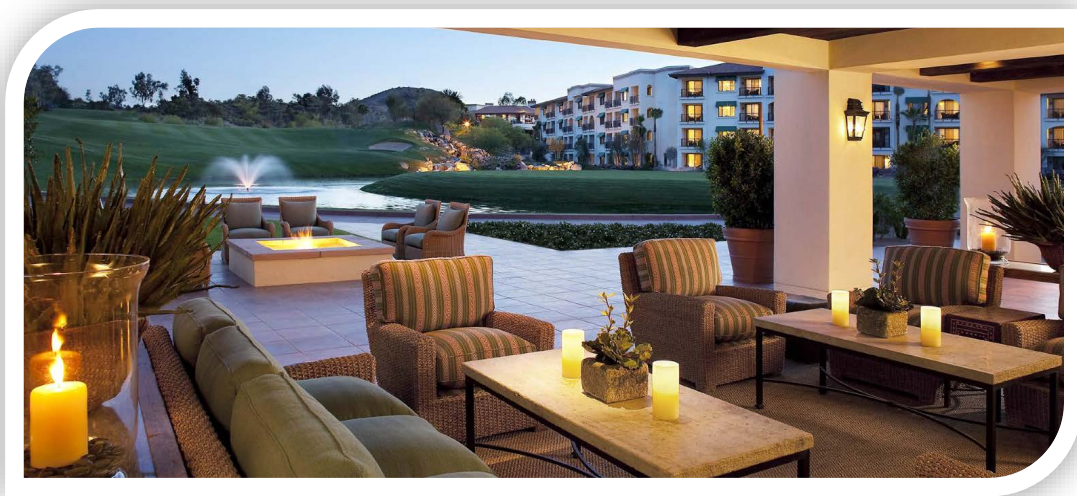




CII Audit Training

Joanne Toms, City of Glendale
Leeann Yacuel, Salt River Project





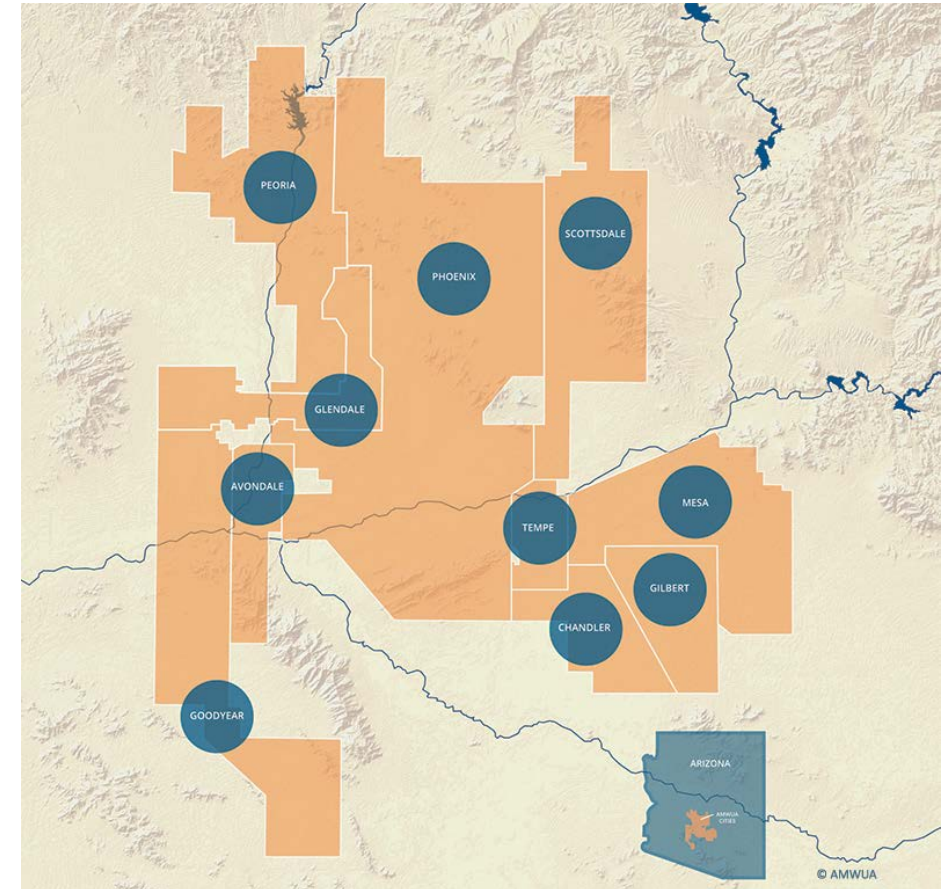
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Arizona Municipal Water Users Association

- 10 large municipalities in Maricopa County, Arizona
- AMWUA members serve nearly 3.5 million people – more than 50 percent of the state's population
- Multiple sources of water: Salt River Project, Colorado River; reclaimed water; and groundwater
- Advocate and leader on water issues
- Protect members' ability to provide assured, safe, and sustainable water supplies to their communities
- Work collaboratively to find effective solutions
- Commercial Programs Workgroup established in 2016



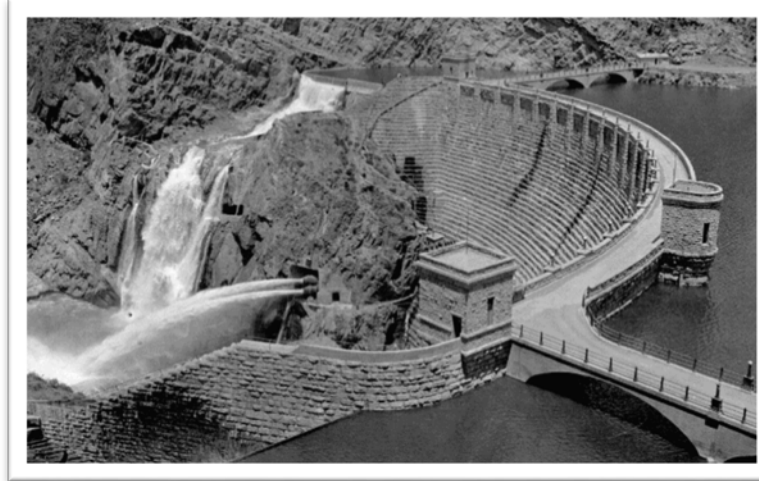
Salt River Project

The Association – Formed in 1903 to provide water through reclamation projects

- SRP provides around 800,000 acre-feet of water annually to 10 cities in a 375-square-mile area

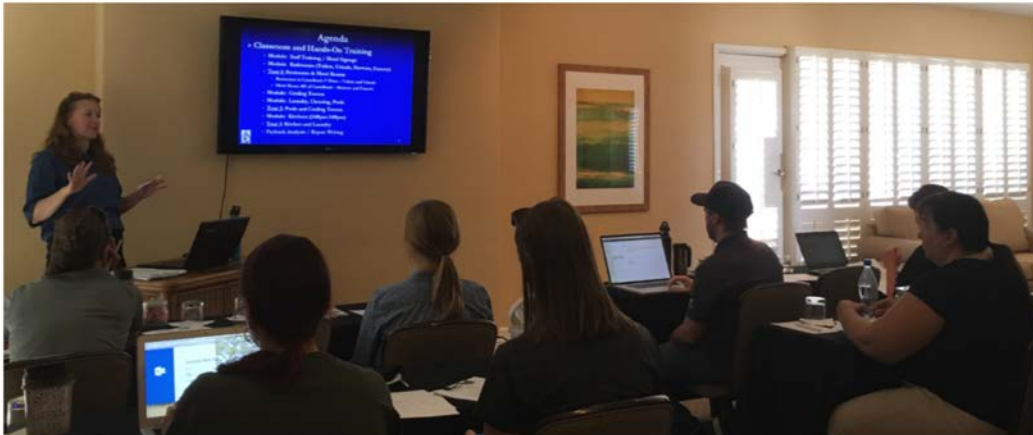
The District – First power to the Valley in 1909 from Roosevelt Dam

- Built additional hydropower through the 1930s
- Serve around a million power customers



Maddaus Water Management Inc.

- 20+ years of serving clients
- Over 300 projects
- Approximately 100 professional papers
- Published four books



Timeline and Training

First Round of Audits with Hotels:

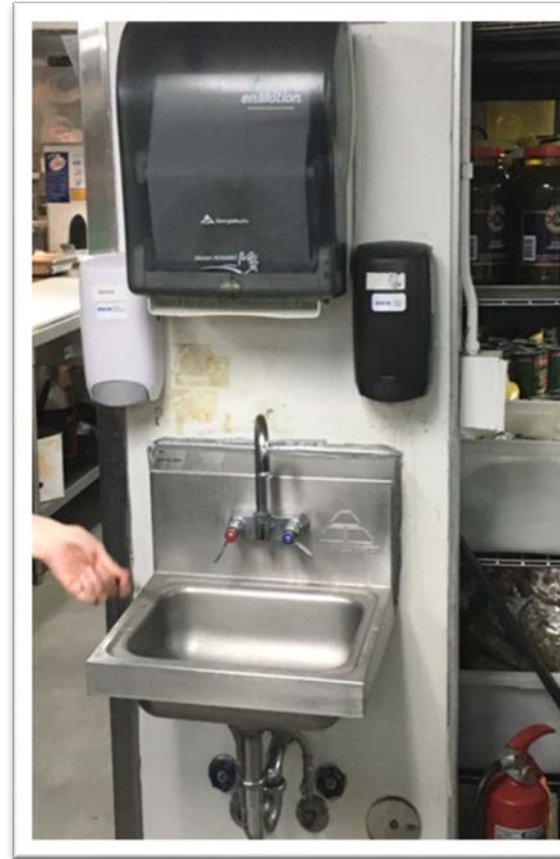
- August 2017 - SRP key account manager contact
- September 2017 - Pre-audit webinar and conducted audits (Part class time and part field time)
- Late September 2017 - Audit follow up with MWM (2 sessions)
- December 2017 and January 2018 - Presented hotel management with report

Second Round of Audits with High School and Grocery Store:

- April 2018 - Pre-audit webinar with MWM
- May 2018 - Conducted audits
- July 2018 - Post-audit webinar with MWM
- August and September 2018 - Presented high school director of operations and grocery store regional manager with reports



Walkthrough



Dear Guest,

We are committed to the conservation of energy and our natural resources. We invite you to help us preserve our environment by participating in our sustainability program.

If you wish to reuse your towels, simply hang the towels up. A hanging towel means, "I'll use it again". A towel on the floor means, "Please exchange".

Our practice is to change your bed linen every third day and upon departure. **If you would like your sheets changed each day of your stay**, we will gladly accomodate you. Simply call Housekeeping at ext. 2718.

Thank you for helping us conserve our natural resources.



Hotel #1 Findings and Data

- 5,000 Visitors per day
- 700+ Employees
- 251,664 sq. ft. of landscape
- 744 Rooms and 760 bathrooms
- Water park



2016 Total Water Consumption: 65,049,106 Gallons

Hotel #1 Recommended Projects

- Replace 1.6 gpf tank toilet in guest room
- Replace 4, 1.6 gpf flush valve in lobby restrooms
- Replace leaking 1 gpm spray rinse valve with .91 gpm
- Turf replacement

Water Savings	212,352 gallons
Projected Costs	\$15,575
Annual Cost Savings	\$6,498

AVERAGE PAYBACK OF 2.4 YEARS

Landscape Calculation

HOTEL #1

251,664 sq. ft. of Irrigated Landscape

- Commercial and landscape not differentiated
- 7,372,306 Gal/Year requirement
- Overwatering turf
- Recommended pilot turf replacement
- Follow landscape water budget



Resorts Most Positive Reception was to Landscape Findings

Hotel #2 Findings and Data

- 3,000 Visitors per day
- 800+ Employees
- 394,388 sq. ft. of landscape
- In-house laundry
- 740 Rooms
- 8 Pools



2016 Total Water Consumption: 105,194,813 Gallons

Hotel #2 Recommended Projects

- Replace all diaphragms in McArthur women's restrooms
- Install foot pedal in kitchen hand wash sink
- Replace all 1 gpm spray rinse valves with .91 gpm in kitchen
- Check remodeled rooms for toilet issues
- Improve conservation signage in guest rooms

Water Savings	572,904 gallons
Projected Costs	\$3,635
Annual Cost Savings	\$20,877

AVERAGE PAYBACK OF .2 YEARS

Landscape Calculation

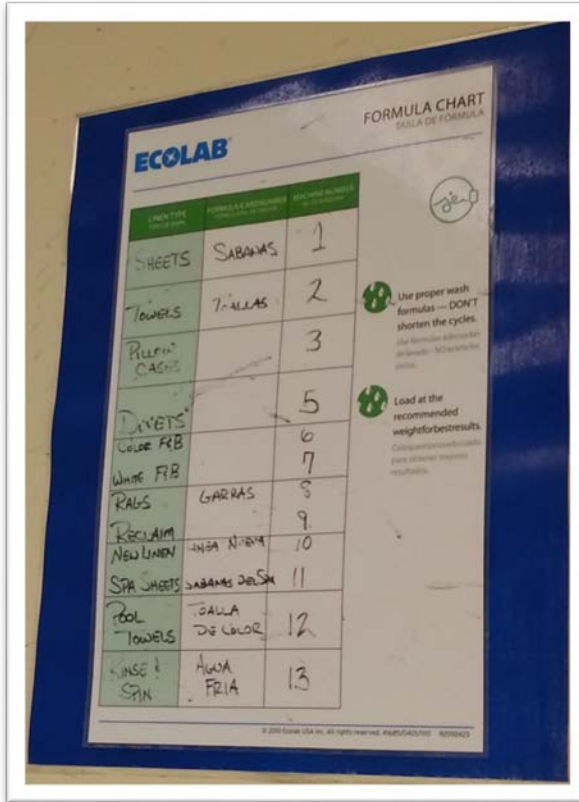
HOTEL #2

394,388 sq. ft. of Irrigated Landscape

- Commercial and landscape not differentiated
- Moving forward in submetering
- 12,863,326 Gal/Year requirement
- Sewer credit potential
- Pilot turf replacement
- Follow landscape water budget



Walkthrough



FORMULA CHART
TARJETA DE FORMULA

ITEM TYPE	FORMULA & MEASUREMENT	WASHING NUMBER
SHEETS	SABANAS	1
TOWELS	TALLAS	2
PLUMING CLOTHS		3
DIAPERS		5
COLORED FIB		6
WHITE FIB		7
RAGS	GARRAS	8
RECLAIM NEW LINEN	USHA N-204	9
SPA SHEETS	SABANAS DE SPA	11
POOL TOWELS	PAJALA DE COLOR	12
RINSE & SPIN	AGUA FRIA	13

Use proper wash formulas — DON'T shorten the cycles.
Use formulas approved by Ecolab — NO shortcuts please.

Load at the recommended weight for best results.
Colours and patterns may vary from colour images.

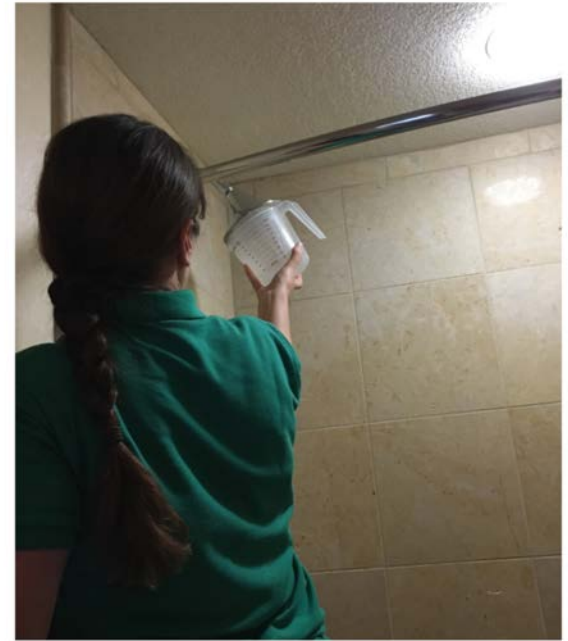
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Hotel #3 Findings and Data

- 240 Visitors per day
- 120 Employees
- 772,592 sq. ft. of facility
- 59,949 sq. ft. of landscape
- 320 Rooms
- On-site laundry
- Pool, lap pool, & spa

-Corporate office decided to go from chlorine to salt treatment in pool



2016 Total Water Consumption: 7,666,000 Gallons

Hotel #3 Recommended Projects

- Replace a pre-rinse spray valve using 1 gpm or greater with a 0.91 gpm
- Retrofit parts in all urinals to go from 1.0 gpf to 0.5 gpf
- Convert to high efficiency tank toilets and flush valves
- Install foot pedals for all handwashing sinks in kitchen areas
- Fix the water leaks near the backflow area of the 60 lb extractor
- Install a submeter on the bleed line at your cooling tower and reuse condensate water

Water Savings	163,958 gallons
Projected Costs	\$14,075
Annual Cost Savings	\$2,573

AVERAGE PAYBACK OF 5.5 YEARS

Landscape Calculation

HOTEL #3

59,949 sq. ft. of Landscape

- Mostly desert landscaping, some turf and some artificial turf
- Recommended landscape water budget and turf replacement
- Recommended Smartscape Training



Findings and Data

GROCERY STORE

- 3,000 Customers per day
- Commercial kitchens (deli, bakery, meat department, produce washing)
- 100 Employees
- 5 Restrooms
- Starbucks
- Florist
- Pharmacy counter
- 2 Cooling towers



2017 Total Indoor Water Consumption: 4,692,000 Gallons

Grocery Store Recommended Projects

- Repair several leaks
- Repair 1.6 gpf flush valve toilets (8)
- Replace older pre-rinse spray valve (7)
- Replace faucet aerators with 0.5 gpm aerators (9)
- Add INSTANT-OFF water savers at hand wash sinks

Water Savings	726,185 gallons
Projected Costs	\$3,915
Annual Cost Savings	\$7,320

AVERAGE PAYBACK OF 0.5 YEARS

High School Recommended Projects

- Repair leak on Cooling Tower 1
- Consider installation of new dishwasher in kitchen
- Repair leak in sink foot pedal in agricultural processing room
- Repair leaking showerhead in locker room



Get Your Feet Wet

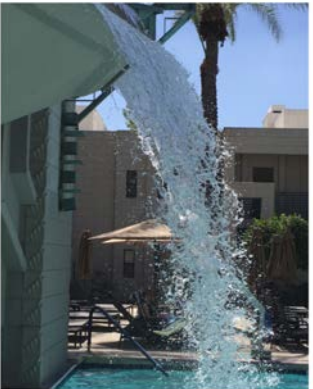


- You don't have to be an expert
- Take notes and photos
- Use tools
- Be respectful of their time
- Create a Rock star report



Ripple Effect

- Flagstaff – Working with Maddaus Water Management, Inc.
- Glendale Water Efficiency Partner Program
- Glendale and Gilbert – Grocery store audits
- Phoenix - Hospitals
- Surprise - Brewery
- Tempe - High school audits



Experience with the Consultant

- Water audit tool was helpful overall, but needed some fine-tuning
- Trouble creating formulas for water savings on custom projects
- Maddaus team hands-on and willing to help
- Reception from participants was excellent



The End – Any Questions?

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