



Alliance *for* Water Efficiency

A SINGULAR VOICE AND A PLATFORM FOR WATER USE EFFICIENCY AND WATER CONSERVATION, BRINGING A CRITICAL PERSPECTIVE TO AN INCREASINGLY THIRSTY NORTH AMERICA.



WHY CARE ABOUT WATER EFFICIENCY AND CONSERVATION

Liesel Hans, Director of Programs

July 28, 2022

Alliance for Water Efficiency

AGENDA

1. Introduction to the Alliance for Water Efficiency
2. How water efficiency addresses other community issues (in addition to the water issues)

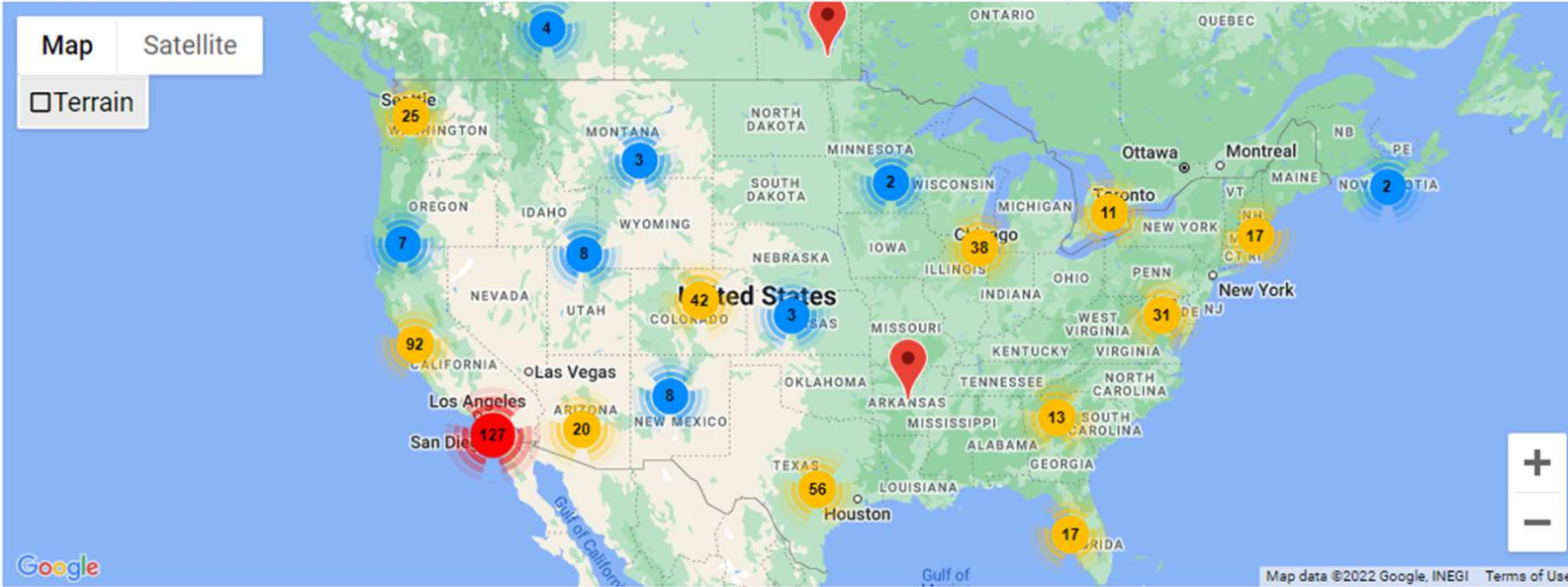
AWE: A VOICE FOR WATER EFFICIENCY

- Our mission is to promote an efficient and sustainable water future
- 530+ member organizations in 200 watersheds delivering water to over 50 million water users
- A unique network and forum for collaboration around policy, information sharing, education, and stakeholder engagement
- AWE provides training, research, and other resources for water efficiency professionals
- Visit allianceforwaterefficiency.org/membership to learn more



Member Directory

Type
 - Any - Apply Reset



Current AWE Members

- City of Elgin
- Kane County
- McHenry County

Anyone at your org can have a login for AWE resources!

OVERVIEW OF MEMBERSHIP BENEFITS

Membership in AWE allows you to...

- Learn about and influence public policy
- Leverage cutting-edge information, research and resources
- Develop, track and measure strategies with exclusive AWE tools
- Collaborate to develop research and tools
- Network with and learn from other professionals
- Have access to technical expertise and support

ADVISORY COMMITTEES

- **Education and Outreach**

- **Purpose:** *To increase support for and implementation of water conservation; and to help water utilities, government agencies and other stakeholders with their consumer education and conservation training efforts.*

- **Water Efficiency Research**

- **Purpose:** *To develop a research agenda and identify specific research projects; to identify funding partners and grants; and to review the progress of AWE-initiated research projects.*

- **WaterSense and Water Efficient Products**

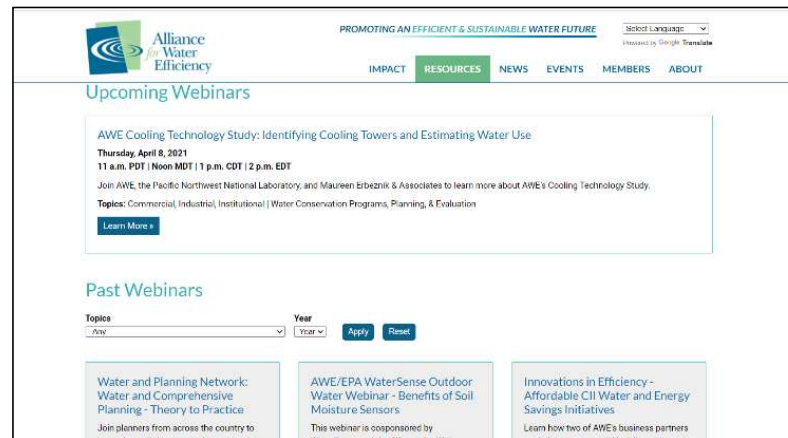
- **Purpose:** *To provide detailed recommendations to U.S. EPA on the development of WaterSense® labeled products and programs. This committee also reviews technical issues associated with products and appliances and evaluates national standards and specifications.*

WEBINARS AND RESOURCE LIBRARY

- Nearly 100 archived webinar recordings available for free.
- Vast Resource Library with 100+ articles on 15 major topics – most available to members only.
- Resource library topics include:
 - Commercial, Industrial, Institutional (CII)
 - Fixtures, Appliances and Equipment
 - Green Building
 - Metering and Submetering
 - Water and Energy
 - Water and Land Use Planning



*Login at allianceforwaterefficiency.org/user to access member-only materials.



The screenshot shows the website's navigation bar with the logo and the tagline "PROMOTING AN EFFICIENT & SUSTAINABLE WATER FUTURE". The main menu includes "IMPACT", "RESOURCES", "NEWS", "EVENTS", "MEMBERS", and "ABOUT".

Upcoming Webinars

AWE Cooling Technology Study: Identifying Cooling Towers and Estimating Water Use
 Thursday, April 8, 2021
 11 a.m. PDT / Noon MDT | 1 p.m. CDT | 2 p.m. EDT

Join AWE, the Pacific Northwest National Laboratory, and Maureen Erbezniak & Associates to learn more about AWE's Cooling Technology Study.
 Topics: Commercial, Industrial, Institutional | Water Conservation Programs, Planning, & Evaluation

[Learn More >](#)

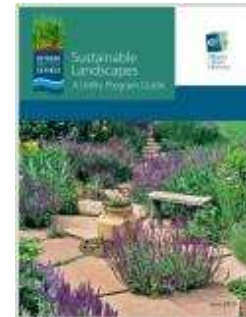
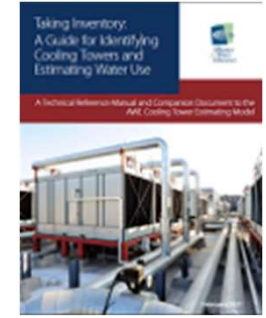
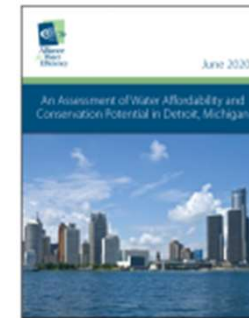
Past Webinars

Topics: Any | Year: | [Apply](#) [Reset](#)

Water and Planning Network: Water and Comprehensive Planning - Theory to Practice Join planners from across the country to learn about all the stages of incorporation.	AWE/EPA WaterSense Outdoor Water Webinar - Benefits of Soil Moisture Sensors This webinar is cosponsored by WaterSense and the Alliance for Water.	Innovations in Efficiency - Affordable CII Water and Energy Savings Initiatives Learn how two of AWE's business partners see between commercial buildings programs.
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AWE REPORTS

- Cooling Technology Study: **Cooling Tower** Estimating Model
- Two reports assessing **water affordability** and conservation potential for Detroit, Michigan and Long Beach, California.
- Use and Effectiveness of Municipal **Irrigation Restrictions During Drought**
- **Sustainable Landscapes: A Utility Program Guide**
- Landscape Transformation: Assessment of Water Utility Programs and Market Readiness Evaluation
- Water Efficiency and Conservation **State Scorecard**
- Transforming Water: **Water Efficiency as Infrastructure Investment**
- **Lower Water Bills: The City of Los Angeles Shows How Water Conservation and Efficient Water Rates Produce Affordable and Sustainable Use**



WHAT'S NEW AT AWE?

- Three **new research projects**:
 - AMI Leak Detection
 - Guidance Document for Estimating Water Savings and Benefits from Consumer Products
 - Assessment of Water Affordability and Conservation Potential in Houston, TX,
- **Upcoming research, tools and education programs**
 - Best practices for collaboration between water conservation and operations teams at water utilities
 - Estimating water savings from CII landscape transformations
 - Evaluation of Direct Install Program for households facing high utility bill burden in Long Beach, CA
 - Training on using the Water Loss module in AWE's Conservation Tracking Tool
 - Models and tools to create a Cooling Tower Water Efficiency Program
 - 2022 State Water Efficiency and Conservation Scorecard (Fall 2022)
- Scoping out **future research** related to:
 - Peak demand drivers and trends
 - Optimizing behavior change

COOLING TECHNOLOGIES PROJECT

Initiated by the AWE Water Efficiency Research Committee. AWE worked with the Pacific Northwest National Lab and Maureen Erbeznik & Associates to develop tools and resources to help AWE members create, or optimize, cooling tower water efficiency programs.

COOLING TOWER ESTIMATING MODEL (CTEM)

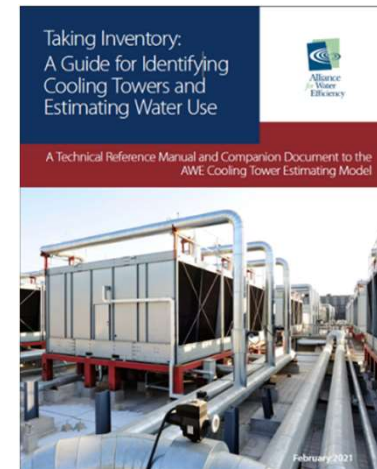
- An Excel-based tool that provides an estimated range of the number of water-cooled facilities, number of cooling towers, total cooling capacity, water use, and water conservation potential for a utility service area based on a minimal amount of input data.
- CTEM can also be used to develop a cooling tower inventory, a critical first step in creating or refining a cooling tower water efficiency program.

Upcoming Project Features (to be released in the coming weeks):

- Water Savings Potential of Implementing Alternative Cooling Technologies
- Cooling Tower Study Summary
- Cooling System Audit Form and Water Savings Opportunity Screening Tool
- Cooling Tower Market Penetration Worksheet

CTEM Results Estimates V2.1.1					
Base Input Results Estimates					
CTEM Results Estimates	Duty Factor: (% annual utilization)	8.8%	Estimate Results		Clear Results (Cannot Undo)
All results are estimates and based on North American dataset averages and statistical correlations.					
	Large-Scale Facilities	Commercial Facilities	Total Service Area		
# of Facilities	30	515	545		
# of Cooling Towers	193	1,095	1,288		
Cooling Capacity, tons	63,242	359,038	422,280		
Annual Cooling Load, tons/year	48,725,779	276,624,838	325,350,617	Range	Acre-feet/year
Consumptive Water Use, Mgal/year	77.0	476.3	553.3	534.9 - 585.6	1,698
Non-Consumptive Water Use, Mgal/year	72.0	397.0	469.0	445.7 - 488.0	1,439
Total Water Use, Mgal/year	149.0	873.3	1,022.3	980.6 - 1,073.7	3,137

*This data is for Oakland, MI with service population 1250000 compiled 4/6/2011 7:43:19 AM



WATER CONSERVATION TRACKING TOOL

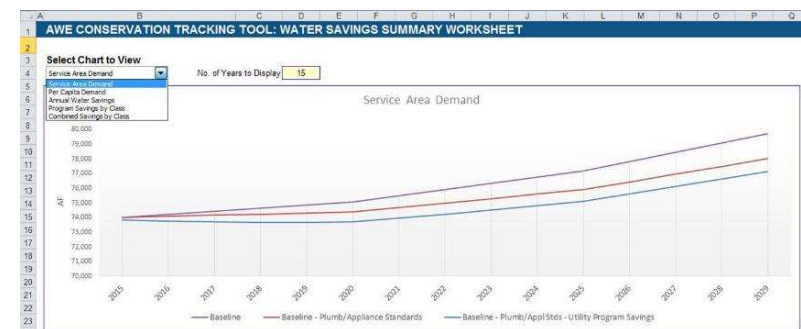
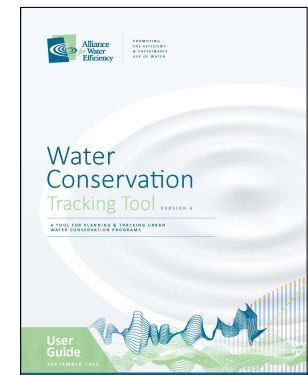
An Excel-based spreadsheet tool for evaluating the water savings, costs, and benefits of urban water conservation programs and for projecting future water demands.

The Tool can be used to:

- Quickly compare alternative conservation measures in terms of their water savings potential, impact on system costs, and potential benefits to utility customers.
- In the development of long-range conservation plans. It can be used to construct conservation portfolios containing up to 200 separate conservation program activities.
- As an accounting system for tracking the implementation, water savings, costs, and benefits of actual conservation activities over time.

New Features of Version 4.1 Include:

- Redesigned and streamlined user-interface with new functionality for sorting and filtering model results and customizing tables and charts.
- Ability to specify up to 200 separate conservation measures (previously capped at 50).
- Expanded conservation program library with 50 pre-defined conservation measures (previously ~30).
- Updated modules for specifying plumbing fixture efficiency codes and calculating passive water savings with the ability to incorporate both natural replacement and utility programs.
- New water loss management module for estimating the effect of water loss management on projected demand and estimating water savings, costs, and benefits of water loss management programs.



VIDEO COMMUNICATION RESOURCES

AWE produced two animated videos to help water agencies communicate with customers about the value of water service.

WATER: WHAT YOU PAY FOR

- Seeks to communicate the value of water service, by explaining why safe drinking water has a cost.
- Describes the water service a typical residential water bill covers, and the costs of delivering a consistent, reliable flow of safe and affordable drinking water to faucets.

GOOD QUESTION: WHY ARE MY RATES GOING UP?

- Seeks to communicate the impact of water conservation on rates, by explaining how conservation can help keep utility costs and customer water rates lower over time.
- Explains how conservation is a win-win - keeping utility costs down and money in customers' wallets - by avoiding unnecessary costs.
- Customization options for both videos are available for AWE members.





Explore water conservation with our water use calculator

Want to conserve water? Not sure where to start? Our Water Calculator quickly estimates how much water your household uses and compares it to a similar average and a highly efficient home.

The Water Calculator also shows you where to begin your home water conservation efforts. Throughout Home Water Works, you will find useful tips and resources for saving water and money without sacrificing comfort or convenience.

[Use the Water Calculator](#)



- Customizable!
- <https://home-water-works.org/>

LEARNING LANDSCAPES

- Lesson 1: “It’s Our Water”
- Lesson 2: “Planting for our Climate”
- Lesson 3: “Our Great Outdoors and Water Use”

- Learning Landscapes Grantees
 - Eugene Field Elementary School
Chicago, IL

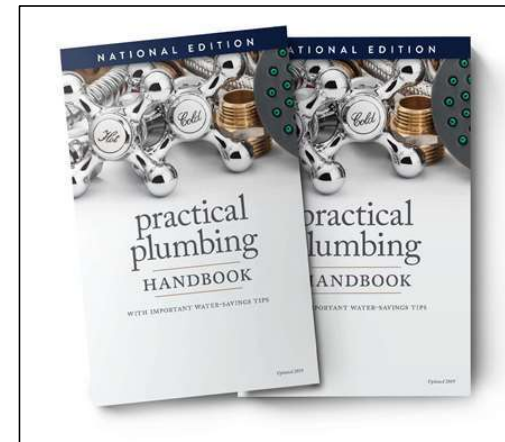


CUSTOMER GIVEAWAYS

Hardcopy manuals to distribute within your service area.

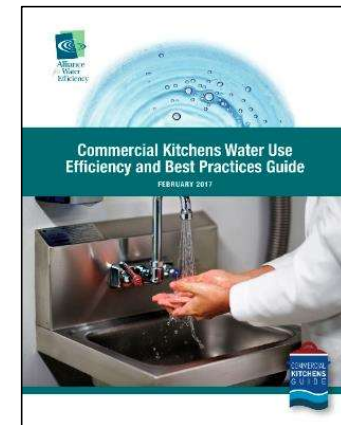
PRACTICAL PLUMBING HANDBOOK

- An excellent resource to distribute to your customers. The handbook provides user-friendly instructions on how to repair and perform preventative maintenance on the fixtures in your home. Prices are as follows:
 - Qty 1 - 100: \$3.00 per unit
 - Qty 101 - 500: \$2.75 per unit
 - Qty 501 and above: \$2.50 per unit



COMMERCIAL KITCHENS GUIDES

- Great offering for restaurants in your service area. Specifically designed for members of the commercial kitchens, food service, and hospitality industries.
- Covers day-to-day best practices, case study summaries, and strategies for efficient management of the most common high-use equipment.
- Copies available for \$6 apiece with a 20% discount for orders of \$25 or more

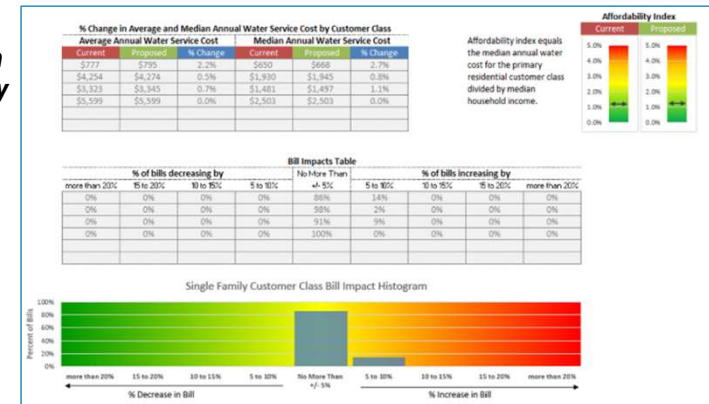


FINANCING SUSTAINABLE WATER

Financing Sustainable Water is an AWE initiative created to provide practical information to guide utilities from development through implementation of rate structures that balance revenue management, resource efficiency and fiscal sustainability.

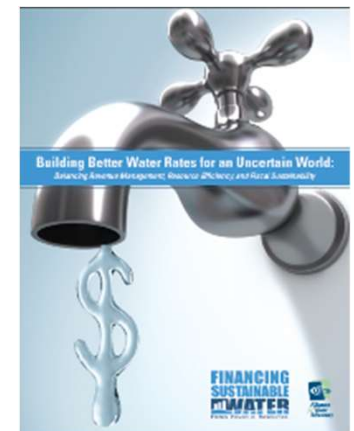
SALES FORECASTING AND RATE MODEL

- Analytical tool that can explicitly model the effects of rate structures.
 - **Customer Consumption Variability** – weather, drought/shortage, or external shock
 - **Demand Response** – Predicting future block sales (volume and revenue) with empirical price elasticities
 - **Drought Pricing** – Contingency planning for revenue neutrality
 - **Probability Management** – Risk theoretic simulation of revenue risks
 - **Fiscal Sustainability** – Sales forecasting over a 5 Year Time Horizon



BUILDING BETTER WATER RATES FOR AN UNCERTAIN WORLD

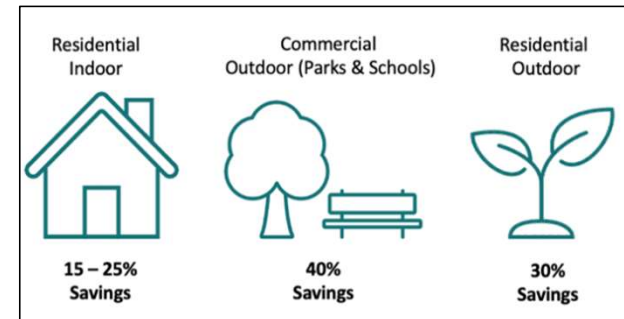
- Handbook providing the background and concepts needed to develop, evaluate, and implement an effective rate structure
 - Ratemaking Principles and Concepts
 - Steps for Building a Better (Efficiency-Oriented) Rate Structure
 - Implementing an Efficiency-Oriented Rate Structure
 - Public Engagement and Communications
 - Financial Policies and Planning for Improved Fiscal Health



MEMBER-ONLY DISCOUNTS

DIGITAL PLATFORMS

- **WaterWays Rebate Platform**
 - A cloud-based solution for water efficiency program delivery and management. WaterWays accepts online, digital applications for water efficient product rebates and irrigation audit schedule information.
- **Open Channel Systems**
 - The Open Channel System combines business analytics with conservation and communications tools to comprehensively manage finished water.
- **ConserveTrack**
 - ConserveTrack is a conservation platform and a software toolbox. The platform can quickly configure a custom system specifically for your utility with minimal cost.



MEMBER-ONLY DISCOUNTS (CONT'D)

WATER SAVING DEVICES

- **Flume Whole Home Water Monitors**
 - Flume pinpoints water use with down-to-the-minute data to catch leaks and provide source-specific water use reports and insights to both customers and utilities..
- **Rachio Smart Irrigation Controllers**
 - Rachio controllers are certified by EPA WaterSense and SWAT tested. These cutting-edge devices allow users to check on and run their sprinklers from anywhere in the world on a smartphone (or with the Rachio web app).



AWE IS HERE TO HELP!

- Technical assistance on specific water efficiency initiatives, programs, and strategies.
- Letters of support to legislative and regulatory bodies on water efficiency issues that affect your utility.
- Opportunities to collaborate on research projects on topics that help reach your water conservation and efficiency goals.

Staff & Advisors



Ron Burke
President and CEO



Rachel DeBruin
Development Manager



Liesel Hans
Director of Programs



Jeffrey Hughes
Director of Operations



Liam McCarthy
Membership and Outreach Manager



Brad Spilka
Program Planner



Mary Ann Dickinson
Technical Advisor



John Koeller
Technical Advisor



Peter Mayer
Technical Advisor



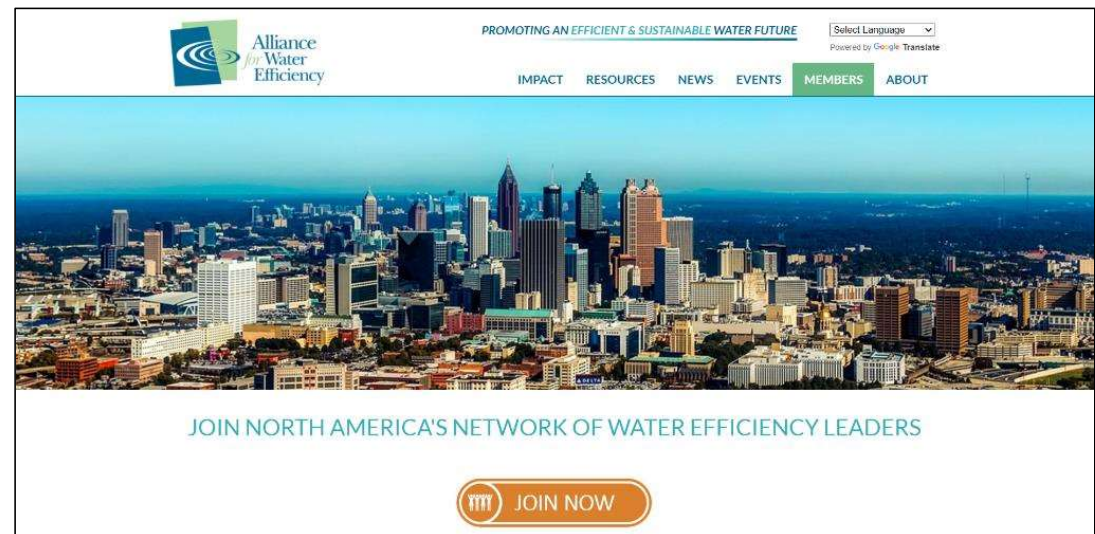
Thomas Pape
Technical Advisor

MEMBERSHIP QUESTIONS?

Contact:

Liam McCarthy
Membership and Outreach Manager
liam@a4we.org
773-360-5100

<http://a4we.org/membership>



WHY CARE ABOUT HOW MUCH WATER YOUR CUSTOMERS USE?



WATER EFFICIENCY: MORE THAN A TOILET REBATE

- Water efficient fixtures and appliances
- Landscapes, agriculture, and irrigation
- Commercial, industrial and institutional (CII) strategies
- Process efficiency, including efficiencies in wastewater management
- Advanced water metering
- Smart/connected/automated technologies
- Water loss and leak management
- Behavioral science
- Customer service and communications
- Education and engagement
- Policies and regulations
- Water reuse and recycling
- Rainwater/stormwater capture and use
- Building, plumbing and land use codes/regulations
- Drought/water shortage management
- Rates and system impacts fees
- Affordability and equity
- Partnership building
- Workforce development
- ...and connects to many priorities across a community.

WATER EFFICIENCY HELPS UTILITIES AVOID COSTS

- Sustained reductions and peak demand mitigation, can help avoid, reduce, or delay new capital costs related to new/expanded water and wastewater infrastructure
- In the short-term, can achieve savings through operational costs, including energy costs
- Can also achieve long-term cost benefits from less water entering the wastewater and/or stormwater systems

Example: Seattle Public Utilities, \$75M in conservation and efficiency avoided \$800M in new supply costs
 Credit: Bruce Flory, Seattle Public Utilities

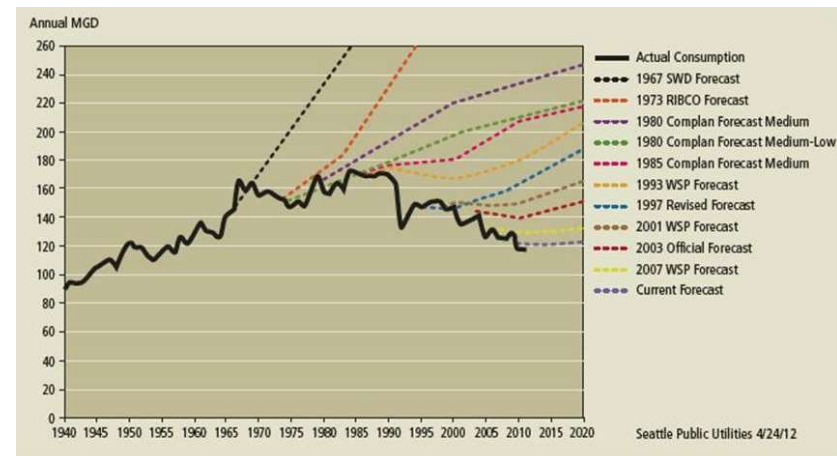
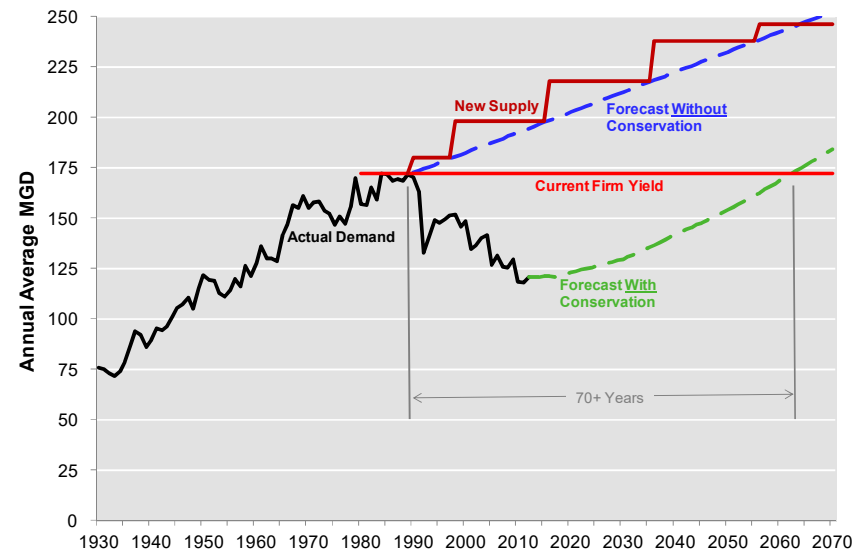


Figure 60. Example of delaying or downsizing a capital facility, peak demand/capacity in million gallons per day

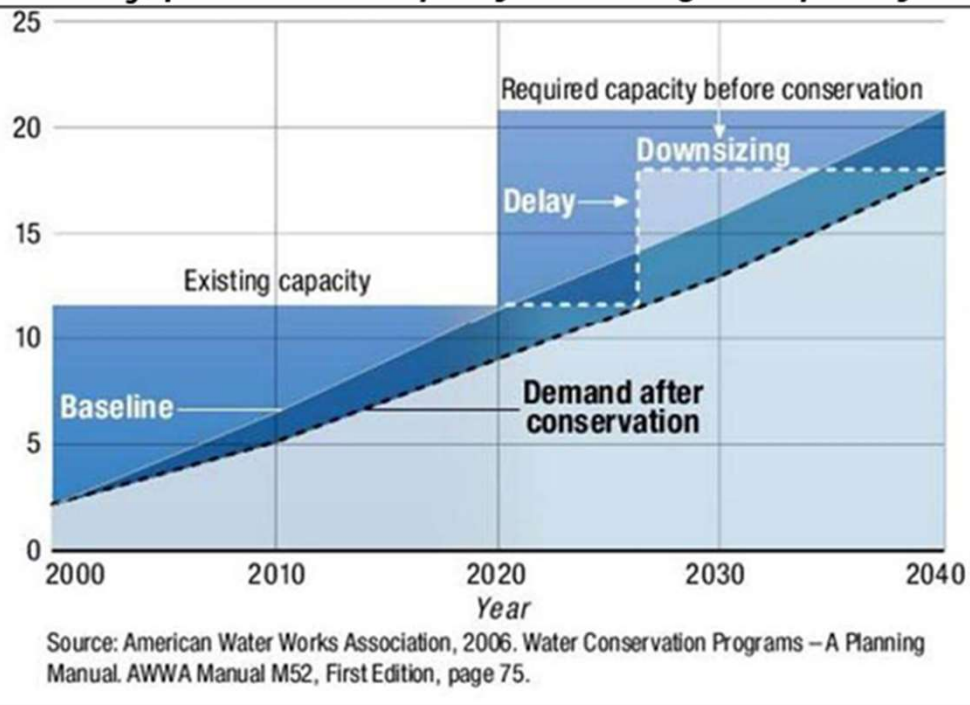
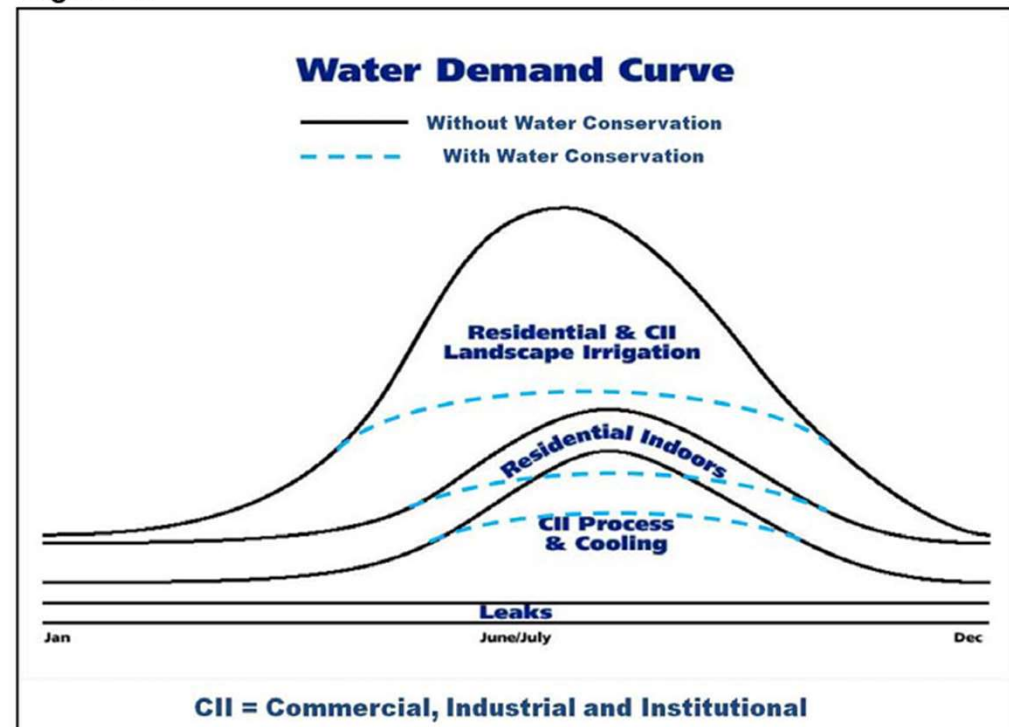


Figure 61



Source: <https://www.countyofkane.org/Documents/Quality%20of%20Kane/2040%20Plan/waterResources.pdf>

IF WE USE LESS, WON'T RATES GO UP?

- Efficiency/conservation is sometimes blamed for financial challenges
- However, efficiency/conservation can lead to lower or stable water bills even as rates increase.

	Avoided Costs	And bills are...
Westminster, CO	\$592M	47% lower
Tucson, AZ	\$244M	12% lower
Gilbert, AZ	\$344M	6% lower
Los Angeles, CA	\$11B	27% lower

<https://www.financingsustainablewater.org/water-efficiency/when-everyone-conserves-everyone-saves>



THE GLOBE AND MAIL

Reduced water use drains Toronto's funds for infrastructure upgrades

Raleigh Public Record

Raleigh's Water Conundrum: Conservation v. Rates

WATER EFFICIENCY SAVES MONEY

- Water efficiency is an investment in future service reliability, environmental stewardship, and economic viability.
- Timely rate adjustments are key for revenue stability; adjustment are sometimes postponed until there is a crisis
- Enacting rate increases to offset reduced volumes can be politically unpopular; encourage messaging that conveys what is driving the rate increase
- Focus proactive communications on the value of service and communicate about projects needed to maintain that service into the future



“Every gallon saved is a gallon that doesn’t need to be pumped, treated or delivered – those savings are reflected in your water bill.
Conservation helps slow the rise of water rates over the long-term.”

WATER EFFICIENCY MAKES WATER MORE AFFORDABLE

- Access to clean, reliable, affordable water is necessary for all
- Recent AWE research:
 - Detroit: 7% of annual income goes to water, some up to 40% for some households
 - Replace old toilets & save 14%
 - Long Beach: 3% of annual income, some up to 24% for some households
 - Replace old toilets + clothes washers & save 13%
 - Add turf replacement: 22% bill savings

Revealed: millions of Americans can't afford water as bills rise 80% in a decade



More than two-fifths of residents in some US cities live in neighbourhoods with unaffordable bills. Illustration: Erre Gálvez/The Guardian

Exclusive: analysis of US cities shows emergency on affordability of running water amid Covid-19 pandemic

Advertisement

<https://www.theguardian.com/us-news/2020/jun/23/millions-of-americans-cant-afford-water-bills-rise>

WATER EFFICIENCY IMPROVES CUSTOMER SATISFACTION

... keeping customers happy lowers operating costs and ultimately saves utilities money.

"As with other companies, providing good customer service has efficiency-enhancing benefits [...], such as lower direct and employee engagement costs of dealing with dissatisfied customers and it generates greater customer trust and cooperation from customers"

Kelly School of Business 2021 Study

...customer satisfaction survey reveals customers are happiest when they are in control of their use and in communication with their utility.

"The thing that really differentiates the top utilities, they provide the customer some form of choice"

2015 UtilityDive article

"Electric utilities are going to need the support of their customers if they want to meet zero-carbon goals, and that process begins and ends with strong customer engagement and awareness for proactive sustainability programs," said Andrew Heath, managing director of utilities intelligence at J.D. Power.

J.D. Power Press Release 2021

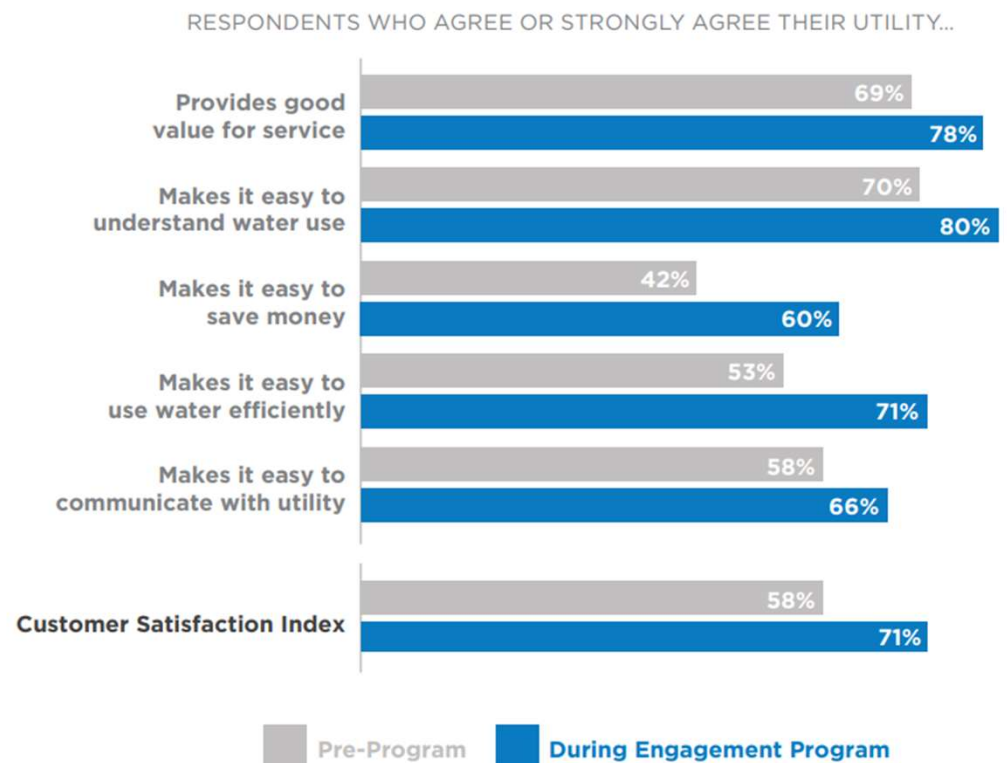


- **Water efficiency** creates positive engagement with and experiences for customers. **Water efficiency** increases customer satisfaction.
- WaterSmart survey of ~24k customers across 26 utilities before and during a **water efficiency-focused** customer engagement program

FIGURE 1. Opportunities to increase trust and build support



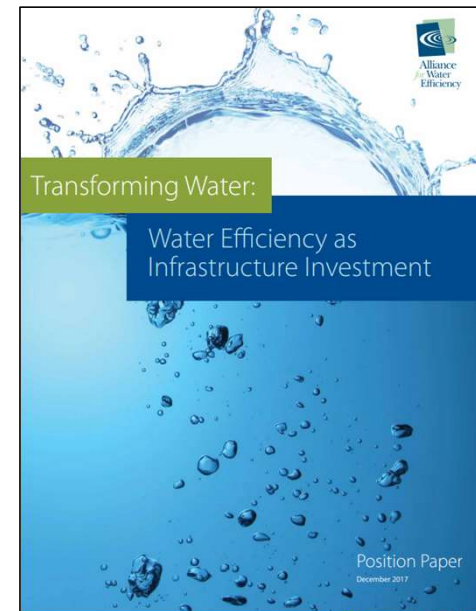
FIGURE 2. Satisfaction indicators increased after engagement



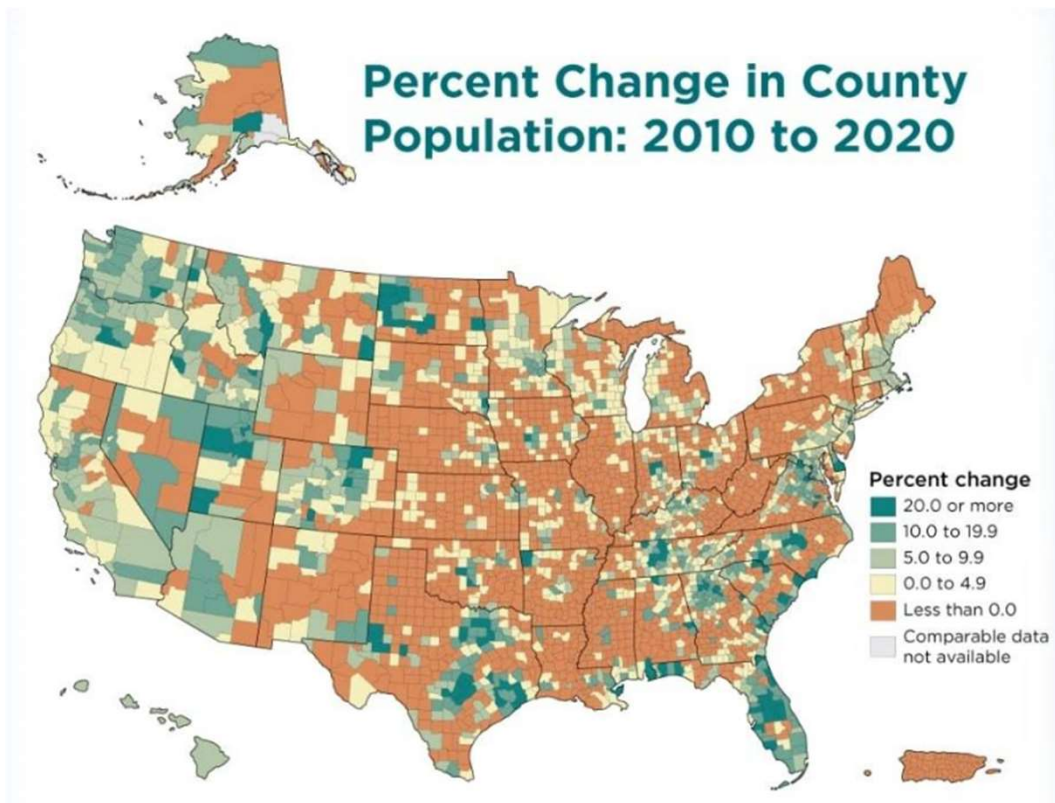
Credit: WaterSmart (VertexOne) 2017 Utility Benchmark Report: Customer Satisfaction

WATER EFFICIENCY HELPS YOUR LOCAL ECONOMY

- “You’re not selling water; you are selling civilization.”
- All businesses rely on water; water efficiency helps insulate businesses from rising water and energy costs
- Can connect to small business campaigns and economic recovery efforts
- Economic impact of investing in water efficiency:
 - 2017 AWE study:
 - 2.5-2.8 multiplier for economic output
 - 1.3-1.5 multiplier for gross domestic product
 - 12-26 jobs for every \$1M invested
- Help with corporate social responsibility initiatives/requirements/reporting
- Support local agriculture

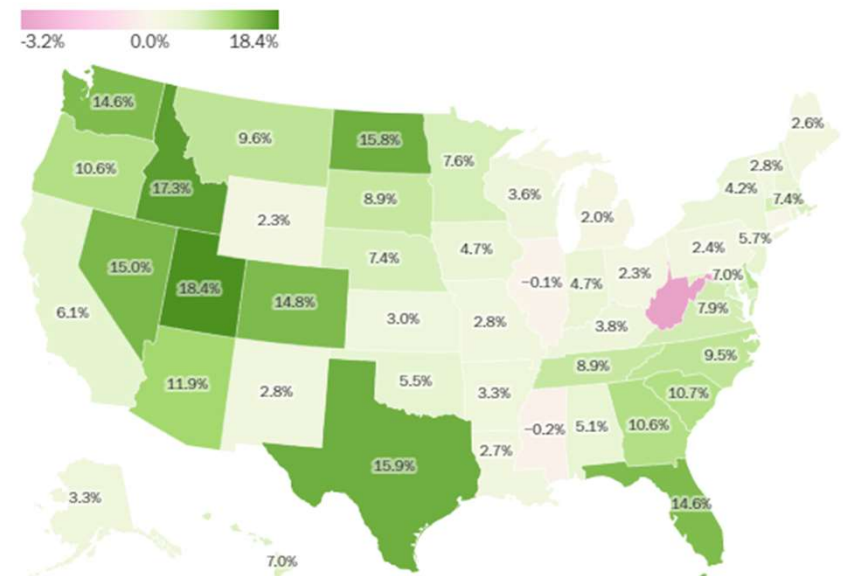


WATER EFFICIENCY HELPS WITH POPULATION GROWTH



Map of population growth in the United States. Photo courtesy of U.S. Census Bureau.

U.S. population change, 2010-2020



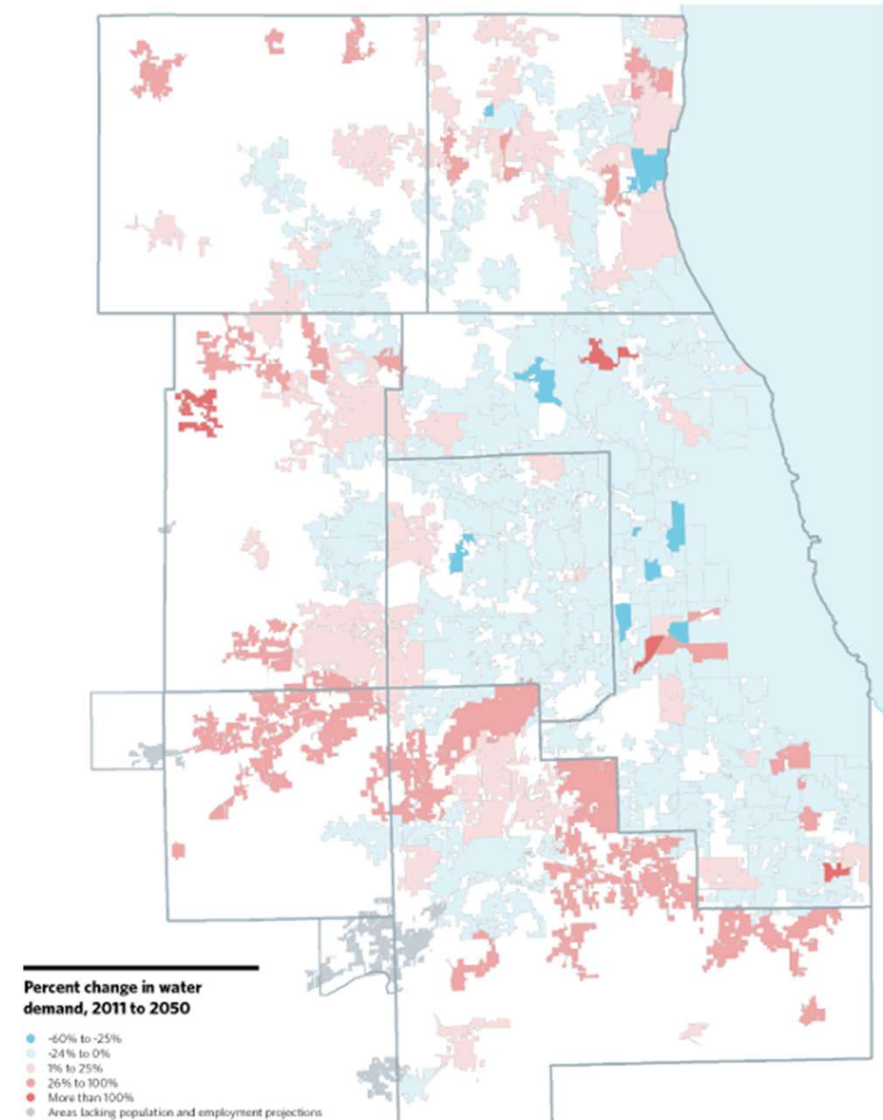
Map: Mark Frieser/staff • Source: U.S. Census Bureau • [Get the data](#)

Table 3.1. Percent change in water demand by county, 2011 and 2050

County	Total Use, MGD		Percent Change
	2011	2050	
Cook	804	740	-9%
DuPage	91	91	-1%
Kane	48	65	26%
Kendall	9	18	51%
Lake	78	73	-6%
McHenry	23	32	27%
Will	77	109	29%

Source: CMAP ON TO 2050 Regional Water Demand Forecast.

Figure 3.5. Percent change in total water demand by forecasted municipality, 2011-50


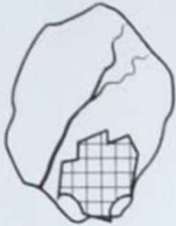



STRATEGIES TO COPE WITH GROWTH

- **Codes and regulations.** These dictate the minimum standards for new development AND redevelopment
 - Appliances and fixtures
 - Plumbing system design – The [IAPMO Water Demand Calculator](#) & [AWE Study on Connection Fees and Meter Size](#)
 - Landscapes
 - Irrigation systems
 - Potable and non-potable reuse
 - Metering/sub-metering
- **State adoption of stronger plumbing efficiency standards.**
- **Impact fees.**
- **Offsets/Water-neutral growth.** For example, see AWE's [Net Blue report and ordinance here](#).
- **Integrate water and land use planning**
 - Water-Planning network – [Get plugged in here](#). Email water@planning.org to get involved.
 - Other resources: [Incorporating water into comp plans, metrics to measure progress](#),
 - [Growing water smart workshops](#)
 - AWE recent webinar:
 - [Integrating Land Use and Water Management](#): Nationwide Planning and Practice March 2022
- **Additional Resources:**
 - [EPA WaterSense Homes](#)
 - [Water Efficiency Rating Score \(WERS\)](#)
 - [LEED](#)

Figure 66. 10,000-Acre Watershed Accommodating 10,000 Houses

- Land use planning can realize benefits of
 - lower demands,
 - less distribution infrastructure,
 - and manage stormwater

Scenario A	Scenario B	Scenario C
		
<p>10,000 houses built on 10,000 acres produce: 10,000 acres x 1 house x 18,700 ft³/yr of runoff = 187 million ft³/yr of stormwater runoff Site: 20% impervious cover Watershed: 20% impervious cover</p>	<p>10,000 houses built on 2,500 acres produce: 2,500 acres x 4 houses x 6,200 ft³/yr of runoff = 62 million ft³/yr of stormwater runoff Site: 38% impervious cover Watershed: 9.5% impervious cover</p>	<p>10,000 houses built on 1,250 acres produce: 1,250 acres x 8 houses x 4,950 ft³/yr of runoff = 49.5 million ft³/yr of stormwater runoff Site: 65% impervious cover Watershed: 8.1% impervious cover</p>

WATER EFFICIENCY CAN HELP MANAGE RAINWATER

- Minimize Combined-Sewer Overflows (CSO)
- Landscape transformations can reduce runoff and support pollinators & wildlife habitat
 - Rain gardens, turf replacement, permeable surfaces
 - Improve stormwater quality & health of waterways
- Rainwater capture and water reuse can reduce demands on sewer systems and limit nutrient discharges



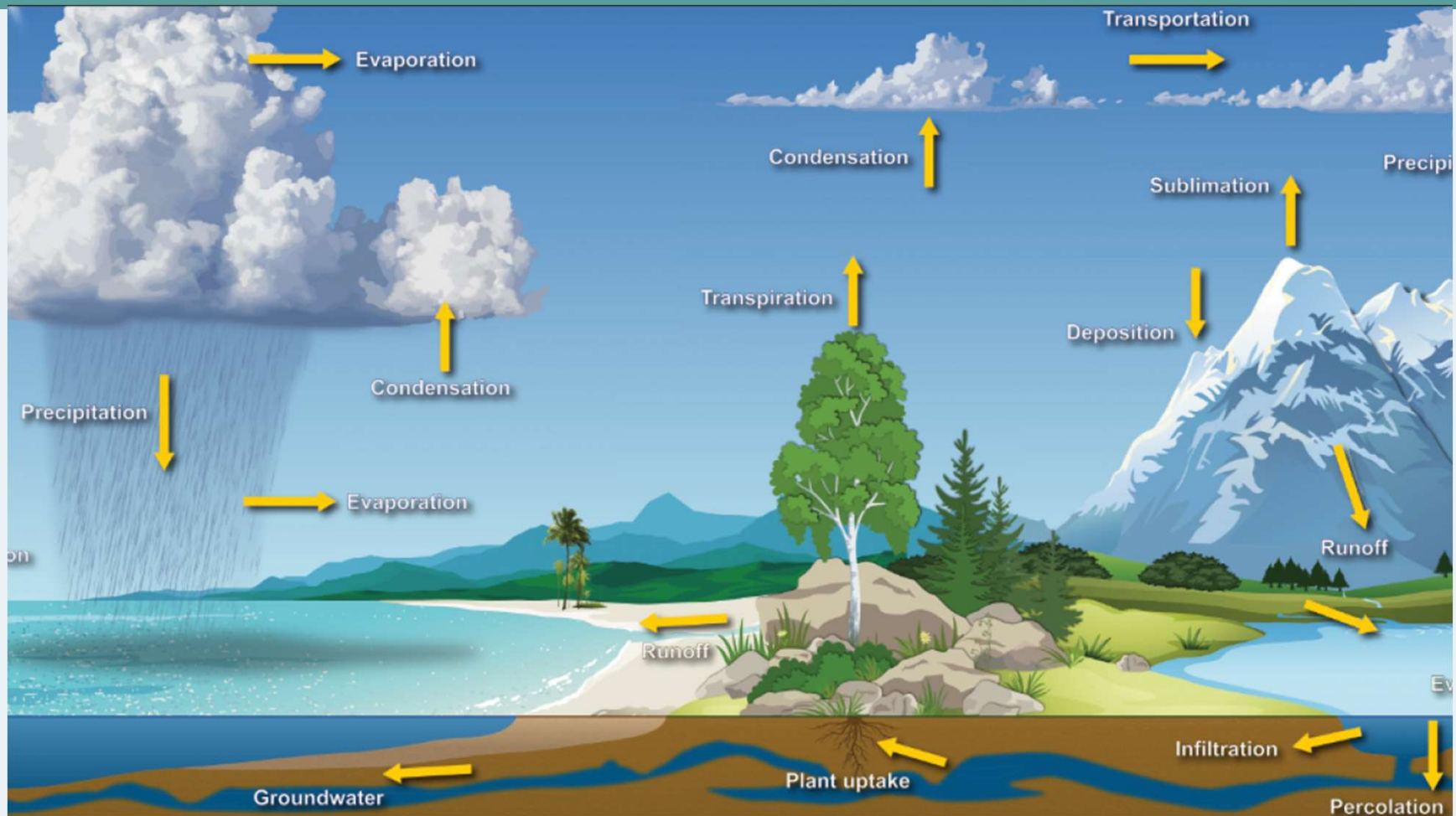
Rain City Strategy approved

On November 5, 2019, City Council unanimously approved an ambitious green rainwater infrastructure and urban rainwater management initiative called the Rain City Strategy.

The strategy and its action plans reimagine how we can manage rainwater, representing a significant opportunity to take bold strides toward becoming a water-sensitive city.

BUT WE HAVE TOO MUCH WATER, SO WHO CARES?

- Stormwater/flood water isn't the same as drinking water. It takes significant money and resources to pump, treat and deliver safe, potable water
- Drought currently affects much of North America; project that more watersheds will face drought because of climate change
- Water efficiency helps water-rich areas cope with periodic summer droughts and limit peak demand that escalate infrastructure costs
- Water efficiency can create valuable community connections to better manage through water shortages, which can be caused by water quality issues too.
- Water efficiency can increase capacity to manage rainwater (which is expected to increase in many areas)



Water cycle | National Oceanic and Atmospheric Administration
<https://www.noaa.gov/education/resource-collections/freshwater/water-cycle>

WATER EFFICIENCY IS NECESSARY TO ADAPT TO CLIMATE CHANGE

What may come to the region?

- Longer growing seasons
- More extreme heat
- More drought & wildfire
- More intense storms, flooding
- More evaporation
- Wetter winter/springs
- Less rainfall during the summers
- Increased variability

The Great Lakes Region Is Not a 'Climate Haven'

The water-rich U.S. region may have cooler temperatures and sit high above sea level. But it can't be a refuge for anyone if it doesn't take action now to adapt to its own changing climate.



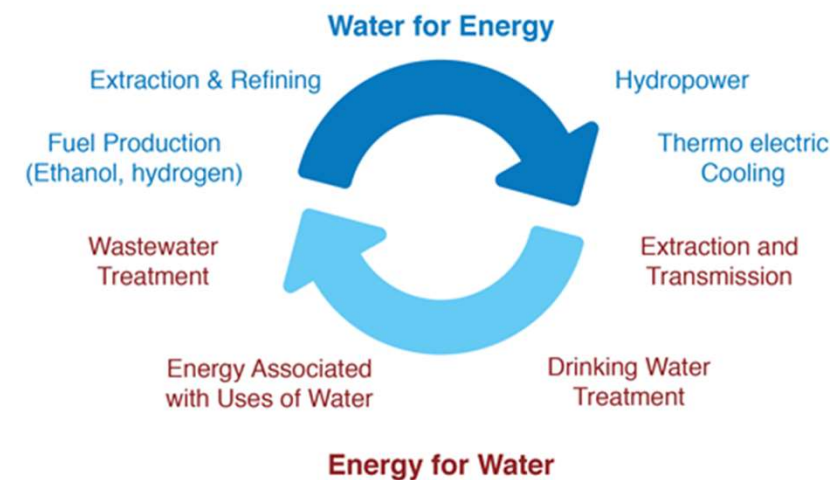
On August 2nd, 2014, residents of Toledo, Ohio awoke to urgent warnings not to drink or use their tap water. Half a million people were unable to drink their water, cook with it, or brush their teeth. The cause? Toxins from a harmful algal bloom growing in Lake Erie.

Groundwater supplies, where drinking water is pulled from, are projected to decline by 18% due to less snow in the winters, a longer spring, and increased demand for water due to higher temperatures.

"This is absolutely concerning," Jayne Knott, a research associate at the UMass-Boston School for the Environment and another author of the report, told the *Globe*. "We depend on groundwater for our drinking water."

WATER EFFICIENCY MITIGATES CLIMATE CHANGE

- Saving water saves energy and reduces greenhouse gas emissions (GHG)
- Combat climate change by reducing GHG emissions
 - Embedded energy to pump and treat water
 - Energy to heat and cool water
- Improve air quality (reduced power plant pollution)
- Lower utility bills
 - Less hot water use saves both energy and water
- Water efficiency can be more cost-effective than energy efficiency
- Advance energy equity/affordability
- Help businesses improve their bottom lines
- Increase property value



WATER EFFICIENCY PROTECTS THE ENVIRONMENT

British Columbia

B.C. study links low river flows with lower chinook salmon productivity



Study of 22 generations of fish in Nicola River highlights importance of freshwater conditions, author says

[Brenna Owen](#) · The Canadian Press · Posted: Jan 21, 2022 8:48 AM PT | Last Updated: January 21



DEPARTMENT

Colorado's Fly-Fishing Industry Faces the Growing Threat of Climate Change

Are the state's guides, outfitters, and anglers ready?



Nicholas Hunt
5280 May 2022

[Home](#) / [2021](#) / [May](#) / Survival of migrating juvenile salmon depends on stream flow thresholds

Survival of migrating juvenile salmon depends on stream flow thresholds

New understanding of relationship between stream flows and salmon survival provides a critical tool for balancing water needs in the highly managed Sacramento River

May 20, 2021

By Tim Stephens

PRESS RELEASE | DECEMBER 14, 2021

Conservation groups intervene in permit case to protect Tennessee's Duck River from unchecked water withdrawals

The proposed withdrawals could lead to an additional 19 million gallons of water being pumped from the Duck River each day

WATER EFFICIENCY HAS MULTIPLE BENEFITS:

- Keeps costs down for the utility and the ratepayer in the long-term.
 - Lowers water bills -> benefit to customers, supports affordability
 - Minimizes the need for infrastructure expansion
- Improves customer satisfaction & creates positive relationships with community
- Helps reduce severity of, manage through and/or prepare for a water shortage – whatever the cause may be
- Is a critical pathway to address climate change: reducing energy use and corresponding greenhouse gas emissions.
- Protects the environment including our lakes, bays, rivers, and aquifers. Nature thanks you.
- Can provide benefits and address challenges to wastewater and stormwater systems
- Is a complementary strategy with water reuse/“right water, right use”
- Is often far more cost-effective than other water supply resources
- Improves resiliency of water systems

IF YOU CARE ABOUT...

- Utility costs
- Affordability for your customers
- Peak demand and infrastructure costs
- Public perception/customer satisfaction
- Getting community support for other things
- A changing climate
- Fewer headaches during droughts
- The environment
- Managing rain and stormwater
- Dealing with less wastewater



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Alliance *for* Water Efficiency

Thank You!