# Investing in Water Efficiency

2022 National Water and Wastewater Conference – Halifax, Nova Scotia

November 7, 2022

Alliance *for* Water Efficiency

# ALLIANCE 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 of water efficiency experts and practitioners
- A forum for collaboration around policy, information sharing, education, and stakeholder engagement
- **AWE provides education, training, research, and other resources for water efficiency professionals**
- Visit [allianceforwaterefficiency.org/membership](allianceforwaterefficiency.org/membership) to learn more

FINANCING SUSTAINABLE WATER
Rates. Revenue. Resources.

homewaterworks

## WATER EFFICIENCY IS PART OF THE SOLUTION

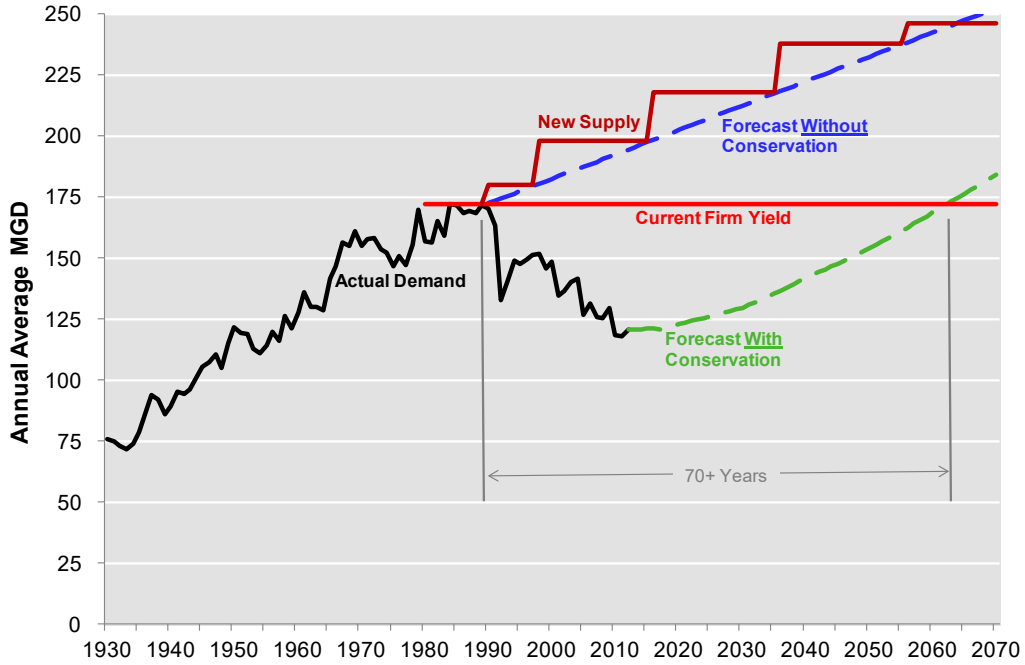
# Alliance *for* Water Efficiency

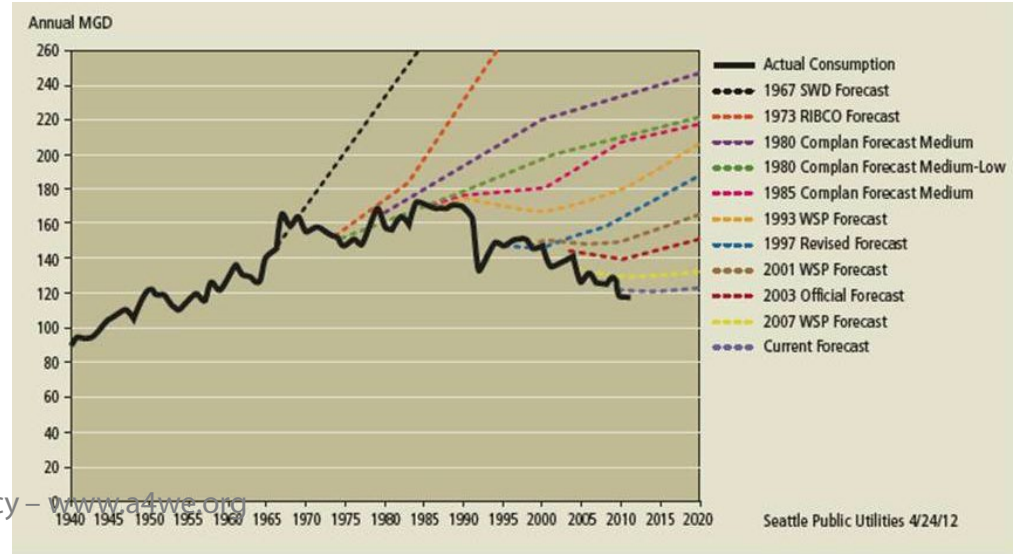
# WATER EFFICIENCY: MORE THAN A TOILET REBATE

- 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

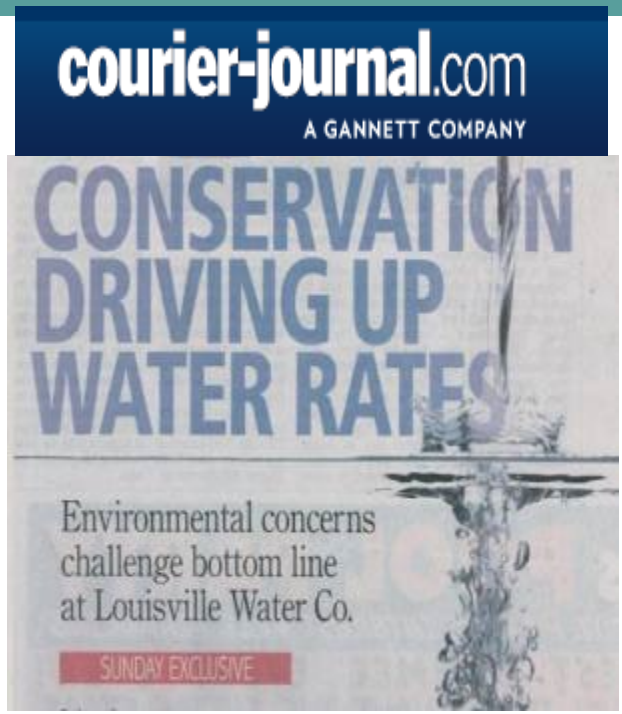
Credit: Bruce Flory, Seattle Public Utilities

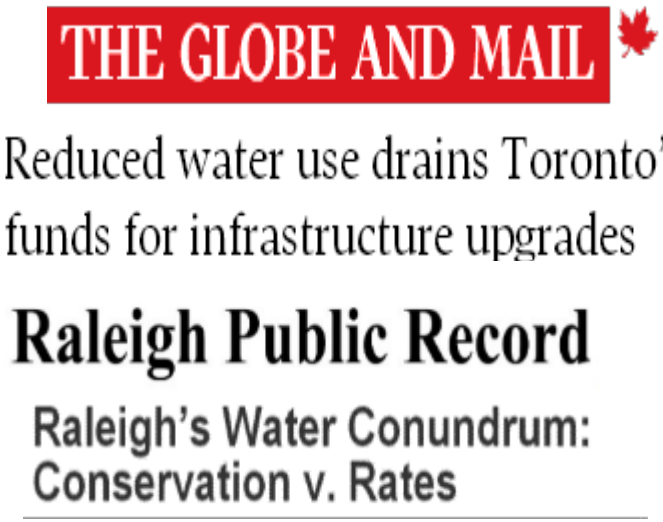
# IF WE USE LESS, WON'T RATES GO UP?

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

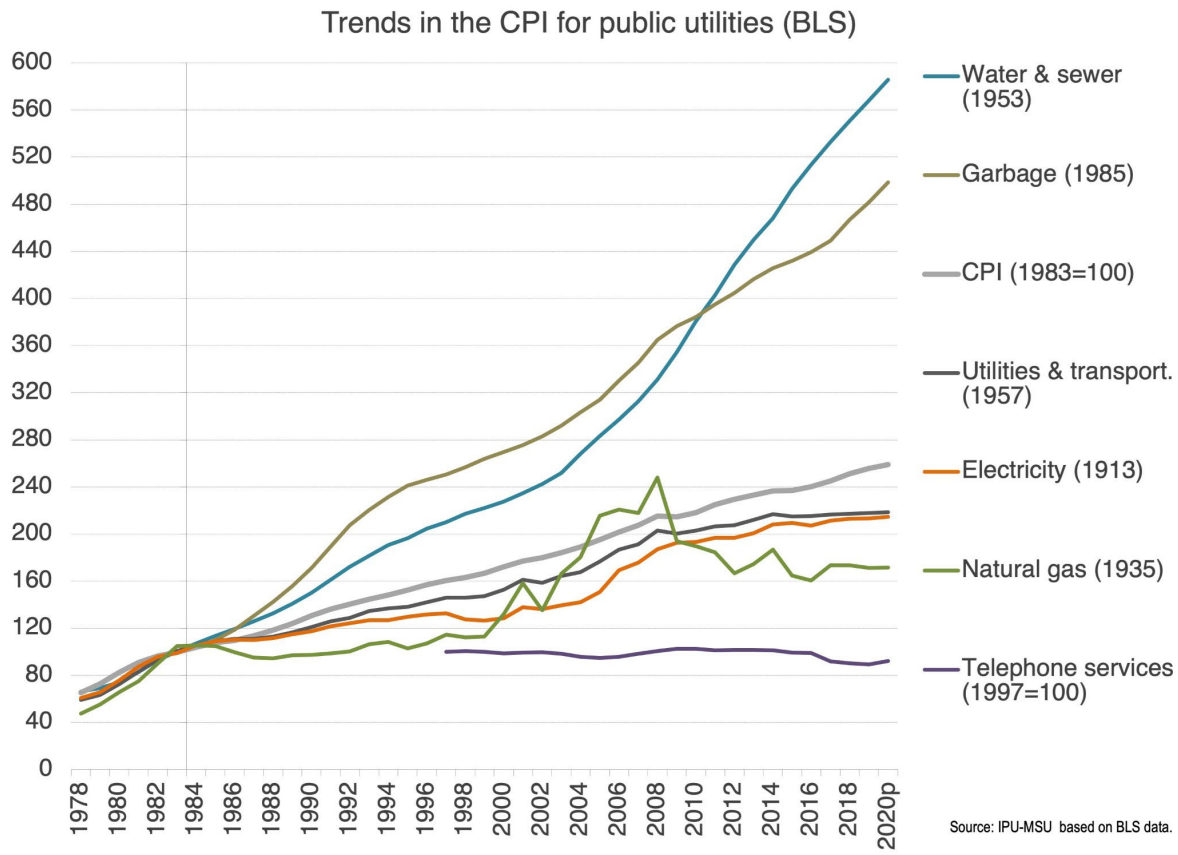
| | Avoided Costs | And bills are… |
|---|---|---|
| Westminster, CO | $592M | 47% lower |
| Tucson, AZ | $244M | 12% lower |
| Gilbert, AZ | $344M | 6% lower |
| Los Angeles, CA | $11B | 27% lower |

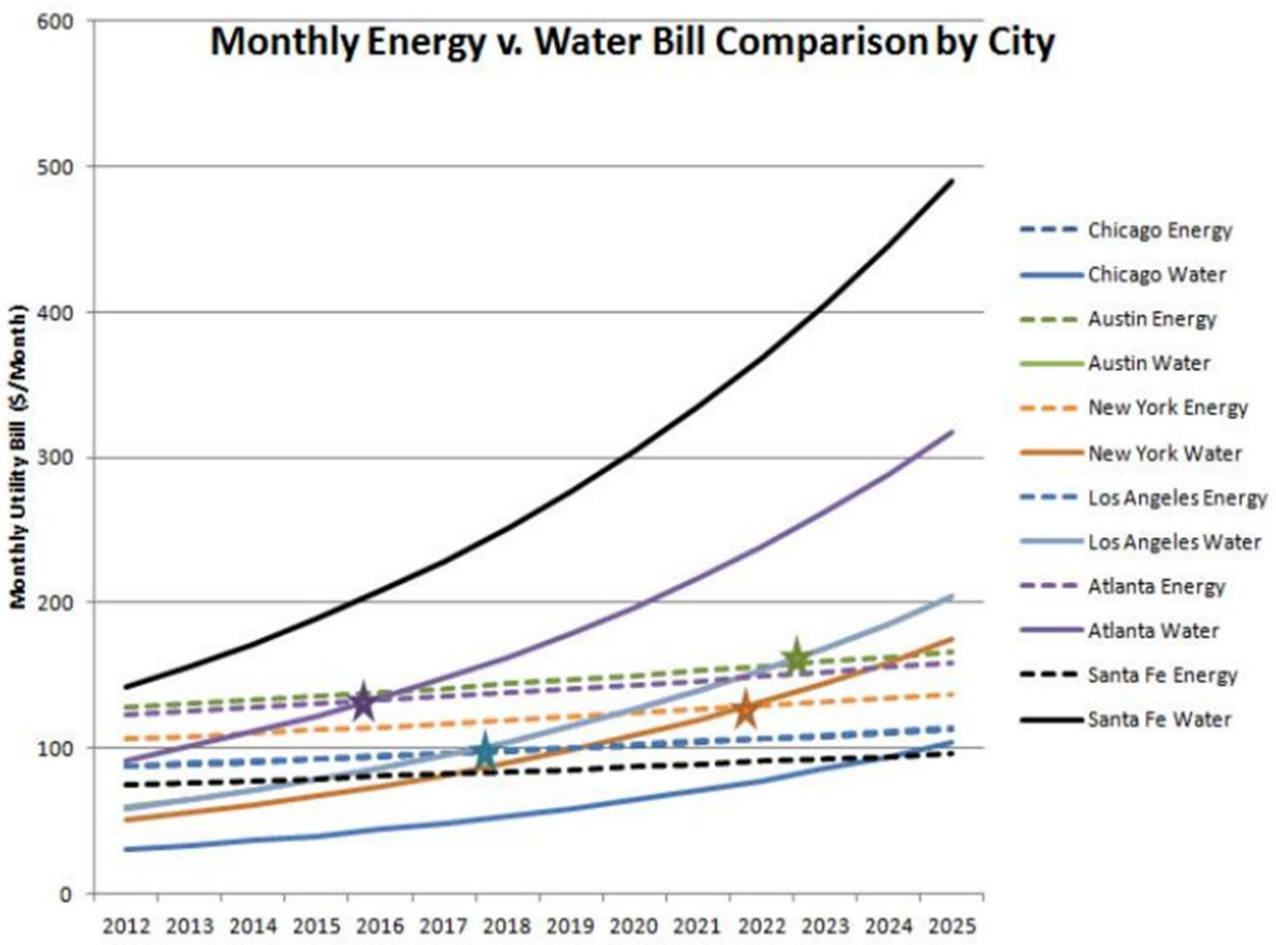
https://www.financingsustainablewater.org/water-efficiency/when-everyone-conserves-everyone-saves



# WATER & SEWER COSTS ARE RISING



# 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

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

"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

- Water rates are rising faster than other costs, on top of inflation and stagnant incomes
- Utilities will increasingly be asked to actively address affordability challenges.
- Recent AWE research:
  - Detroit: 7% of annual income goes to water, some up to 40%
    - Replace old toilets & save 14%
  - Long Beach: 3% of annual income, some up to 24%
    - Replace old toilets + clothes washers & save 13%
    - Add turf replacement: 22% bill savings
- How are you supporting historically underserved customers and/or customers with low or limited incomes?

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

https://www.allianceforwaterefficiency.org/impact/our-work/assessment-water-affordability-conservation-potential-long-beach-california

# 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

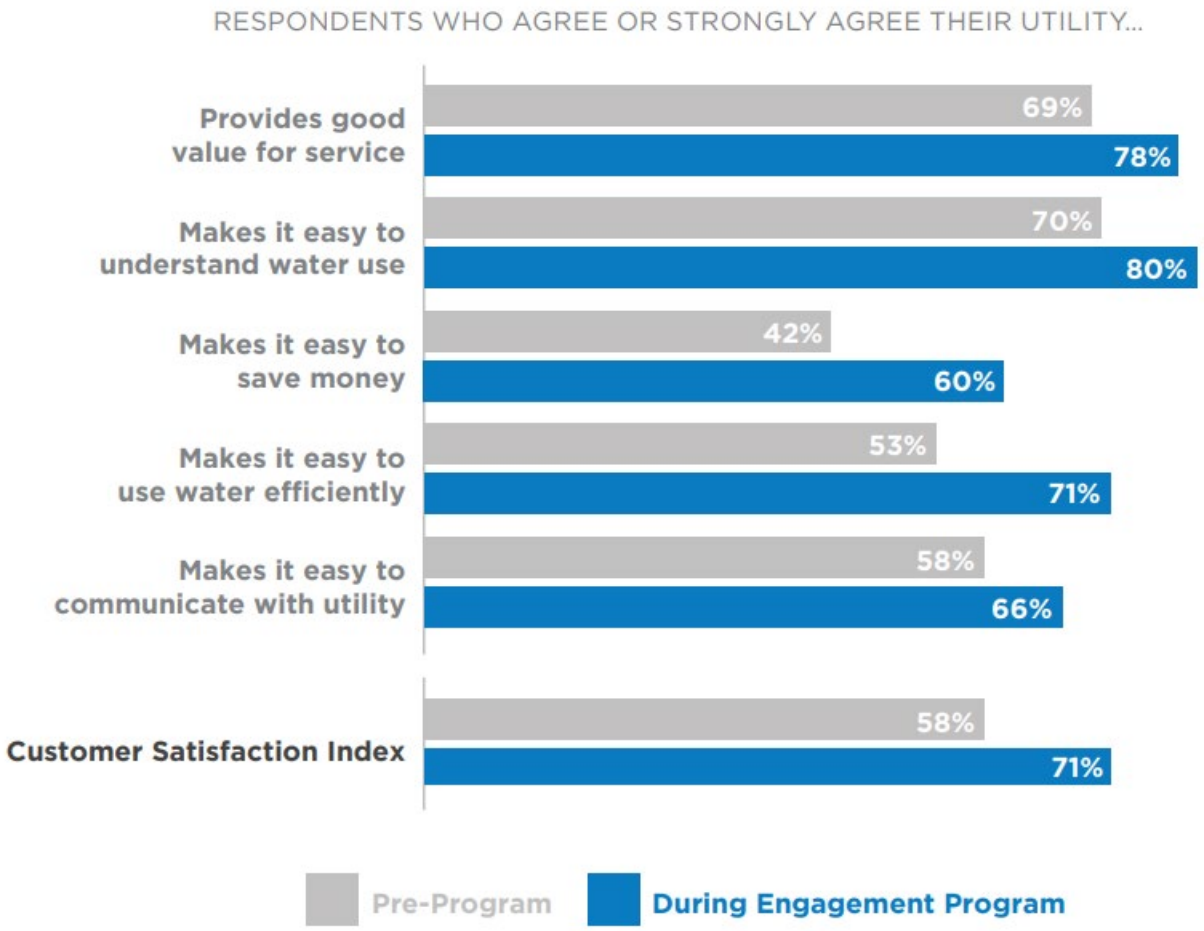
"Electric utilities are going to need the support of their customers if they want to meet zero-carbon goals, and that process begins and ends with strong customer engagement and awareness for proactive sustainability programs," said Andrew Heath, managing director of utilities intelligence at J.D. Power.

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 engagment**



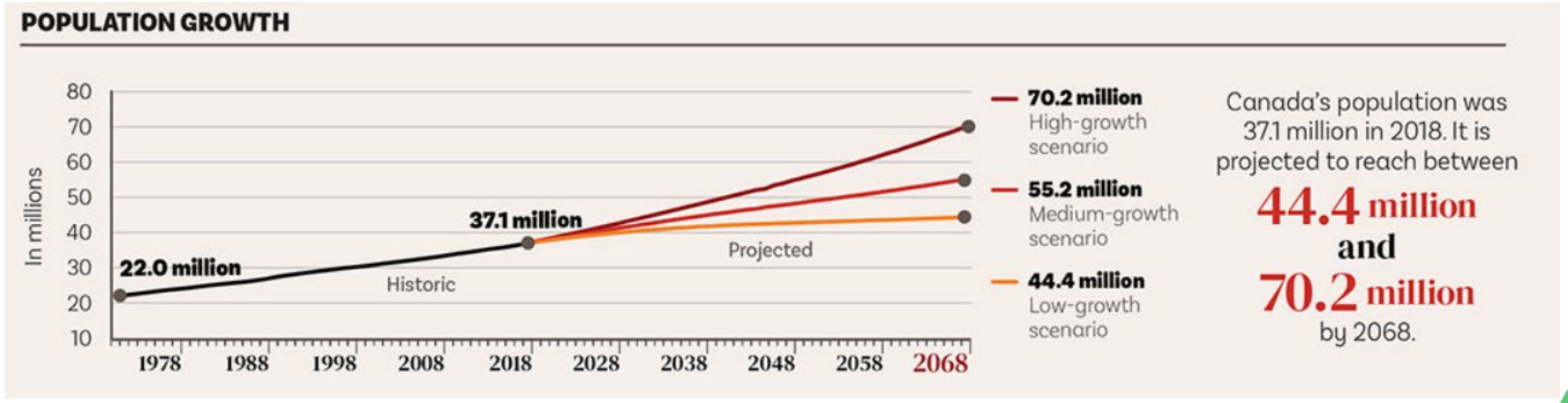



Credit: WaterSmart (VertexOne) 2017 Utility Benchmark Report: Customer Satisfaction

# 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

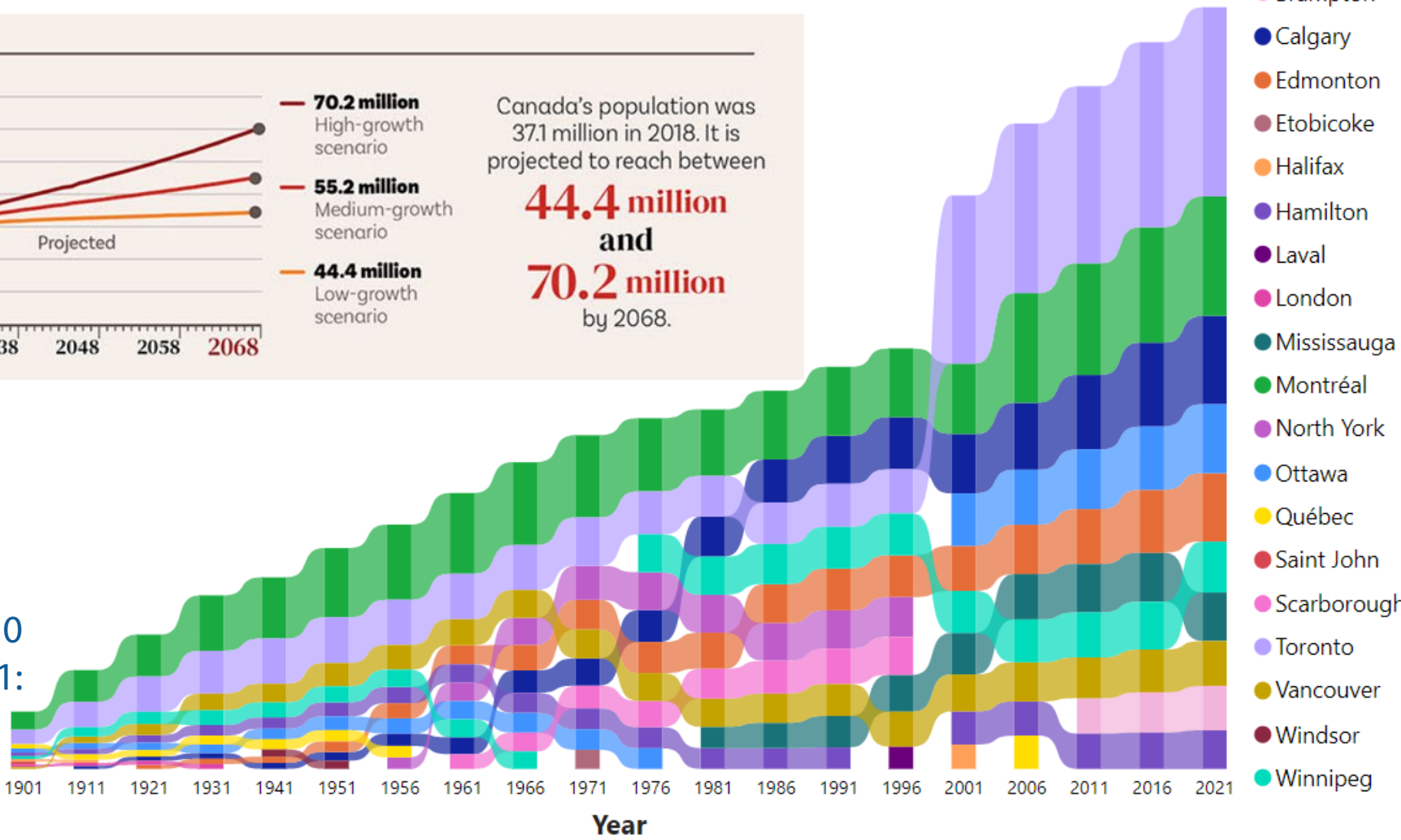
# WATER EFFICIENCY HELPS WITH POPULATION GROWTH




Source: Statistics Canada, statcan.gc.ca

Pop of top 10 cities in 2021: 11,250,000

Pop of top 10 cities in 1901: 850,000



# BUT NOW WE'RE TOO EFFICIENT?

- Critics may say there's not enough water in the distribution, premise plumbing, and collection systems
- **How can you address these issues?**
  - Ensure sufficient water heater temperatures
  - Encourage or require pressure regulating fixtures
  - Educate on "what not to flush"
  - Incorporate right-size plumbing & drain line carry considerations into codes
  - Be a partner with your wastewater facility(ies)
  - Explore water reuse, rainwater capture, etc.
  - Encourage better data collection – don't let anecdotes have the final say
  - Integrate water and land use planning
  - Stop saying "low flow" and use term "high efficiency" instead

# 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
  - Improve stormwater quality & health of waterways
- Rainwater capture and water reuse can reduce demands on sewer systems and limit nutrient discharges

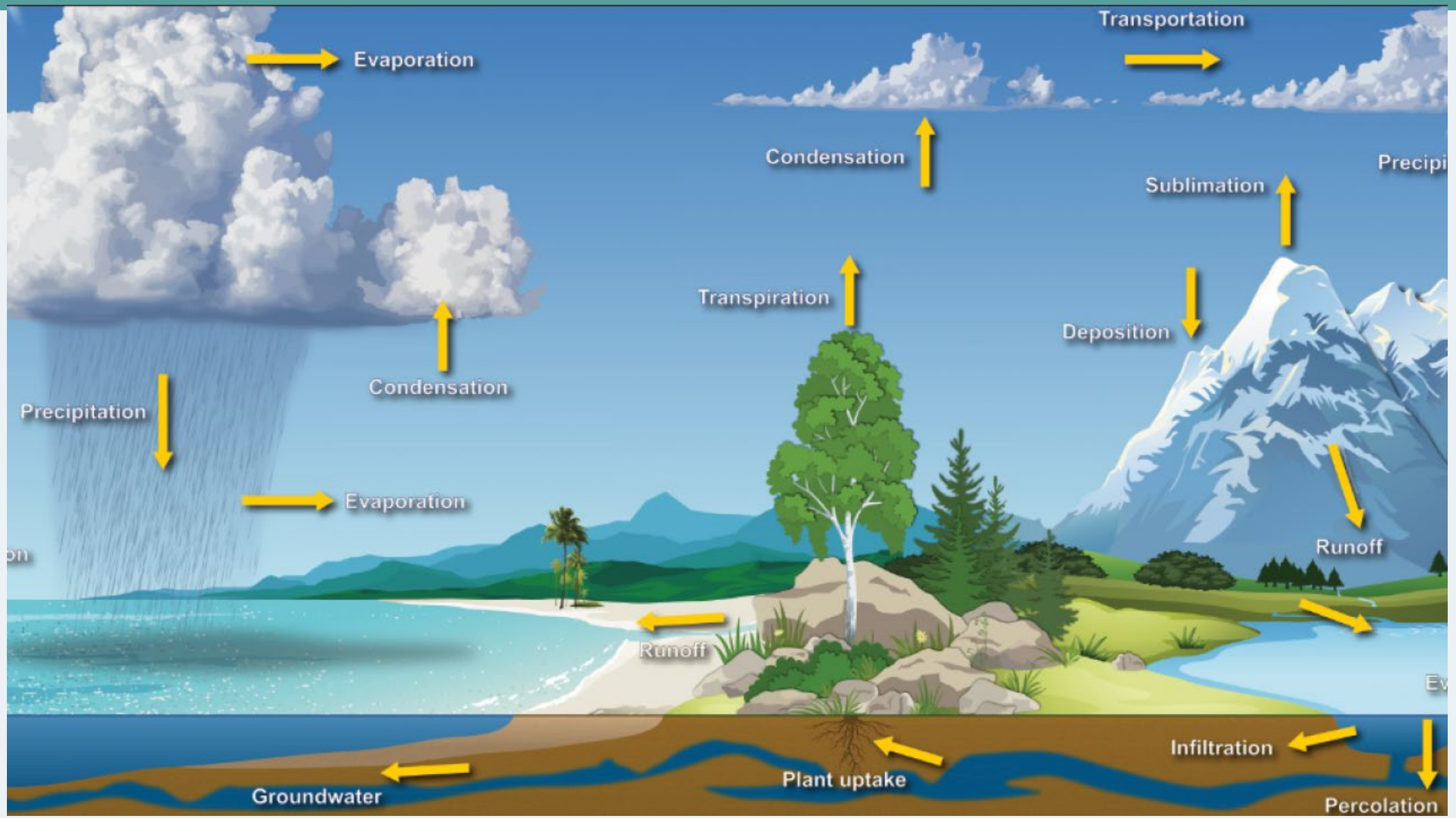
**Rain City Strategy approved**

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 resources to pump, treat and deliver safe, potable water
- Drought affects much of North America on a more regular basis; 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 escalates 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

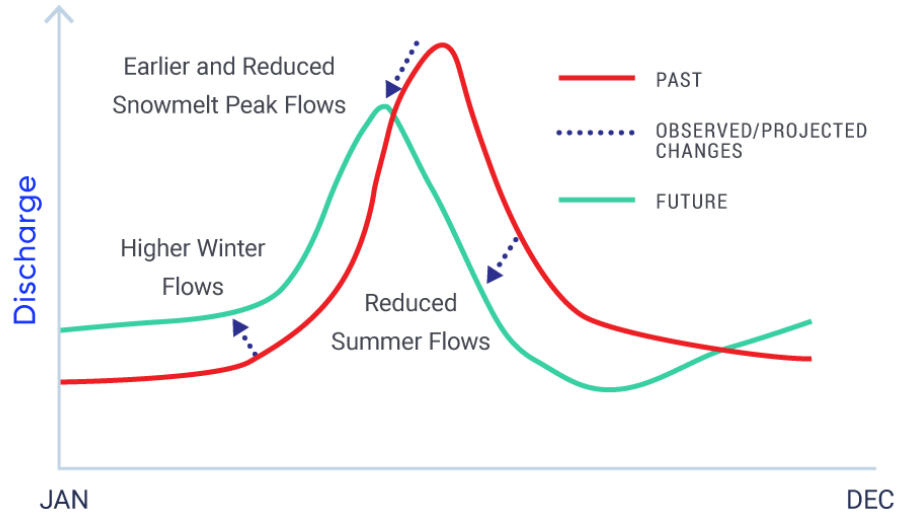
# WATER EFFICIENCY IS NECESSARY TO ADAPT TO CLIMATE CHANGE

What will we see?

- Longer growing seasons
- More extreme heat
- More drought & wildfire
- More intense storms, flooding
- More evaporation
- Less precipitation as snow, more as rainfall
- Less summer rainfall in some areas
- Increased variability in water availability

**Canada warming twice as fast as the rest of the world, report says**

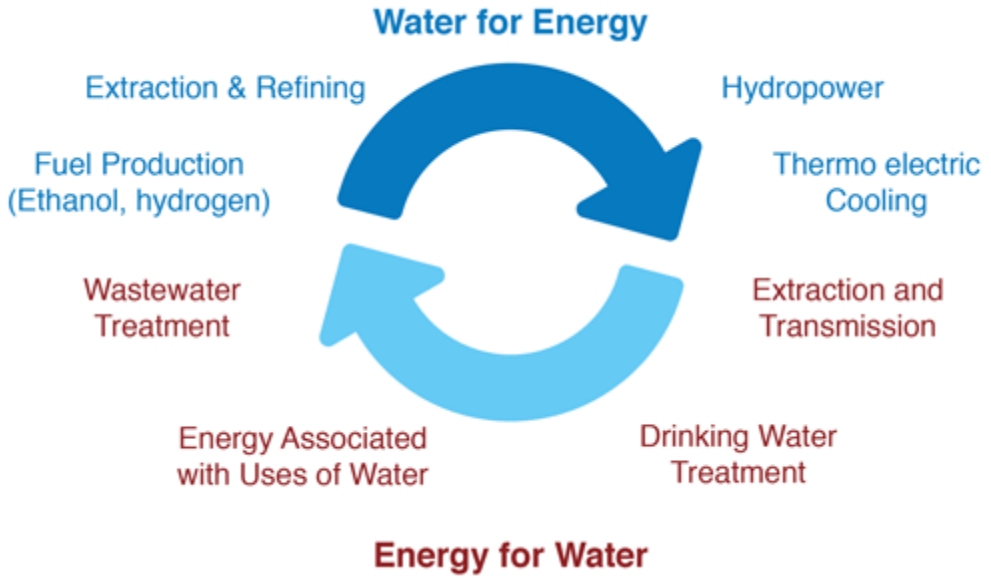
3 April 2019




https://changingclimate.ca/CCCR2019/chapter/executive-summary/

# 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

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

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

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***

## Joy for environmentalists as California blocks bid for $1.4bn desalination plant

# 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

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# Alliance *for* Water Efficiency

*Thank You!*