



# THERE'S SOMETHING IN THE WATER! IT'S ENERGY SAVINGS

## 2022 MIDWEST ENERGY SOLUTIONS CONFERENCE

Ron Burke  
President and CEO

# *Alliance for Water Efficiency*

- Our mission is to promote an **efficient** and **sustainable** water future
- A unique network and forum for collaboration around research, policy, information sharing, education, and stakeholder engagement

**530+** member organizations in  
**200** watersheds delivering water to  
**50 million** water users

# WHO WE BRING TOGETHER

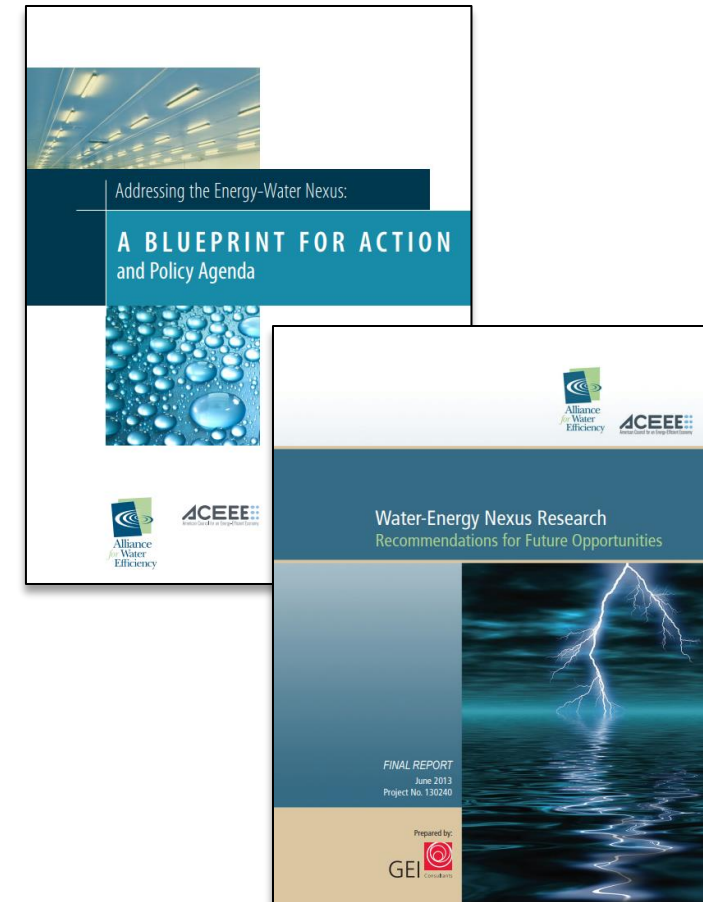
- Water suppliers (retail and wholesale)
- Water planning agencies
- Plumbing, appliance & irrigation manufacturers and retailers
- Efficiency-focused businesses
- Efficiency service providers
- Environmental community
- Energy community
- Government (federal, state, municipal)
- Academic representatives
- Cultural institutions



# AWE's Water-Energy Work

Our Energy-Water Objective: Encourage and build collaborative opportunities between water and energy providers to optimize energy and water savings.

- Reports and Resources:
  - ✓ *Addressing the Energy-Water Nexus: A Blueprint for Action and Policy Agenda (50 recommendations)*
  - ✓ *Water-Energy Nexus Research: Recommendations for Future Opportunities*
  - ✓ *Water-Energy Nexus Research Database*
- AWE Water Conservation Tracking Tool
- Testimony before Senate Water and Power Subcommittee



# WATER EFFICIENCY WORKS...DESPITE A LACK OF FEDERAL FUNDING

- 1995 to 2020: U.S. population grew by 63.2 million people and yet public water withdrawals over that same period remained essentially unchanged.
  - Between 2000 and 2020, federal EERE investments dwarfed federal investments in water efficiency and water reuse by a ratio of approximately 80 to 1.
- <https://www.allianceforwaterefficiency.org/resources/analysis-federal-funding-2000-2020>
- Most water agencies are public, but the federal government pays less than 5 percent of the cost for drinking water and wastewater (National Association of Clean Water Agencies).
  - Before the Clean Water Act Amendments of 1987, the federal share of project costs was generally 55%.

# Los Angeles Times

Want to save energy and fight climate change? Try using less water

BY [SAMMY ROTH](#). STAFF WRITER

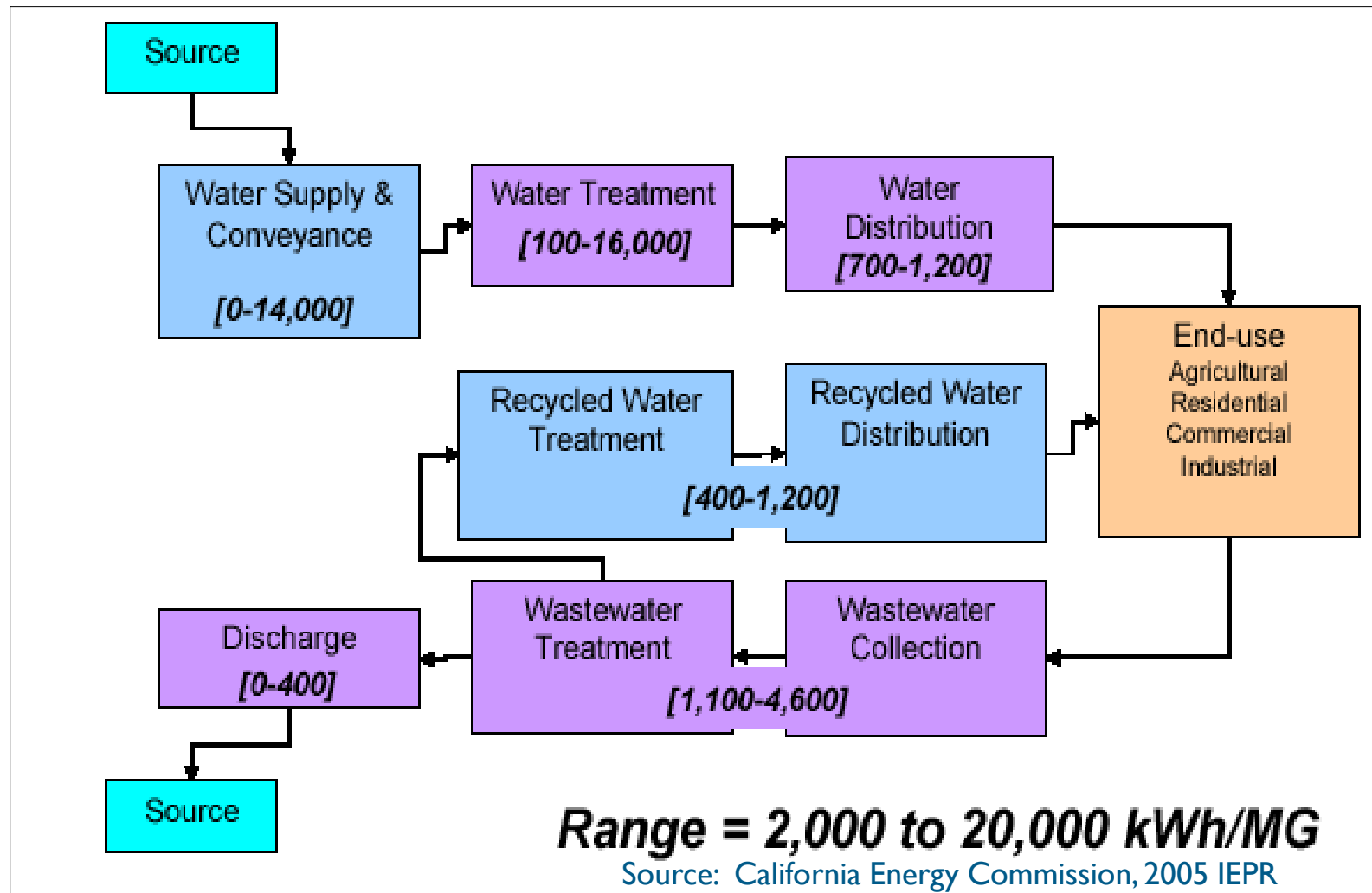
MARCH 4, 2021

# WATER - ENERGY - CLIMATE NEXUS

**Water Savings = Energy Savings = ↓ GHGs**

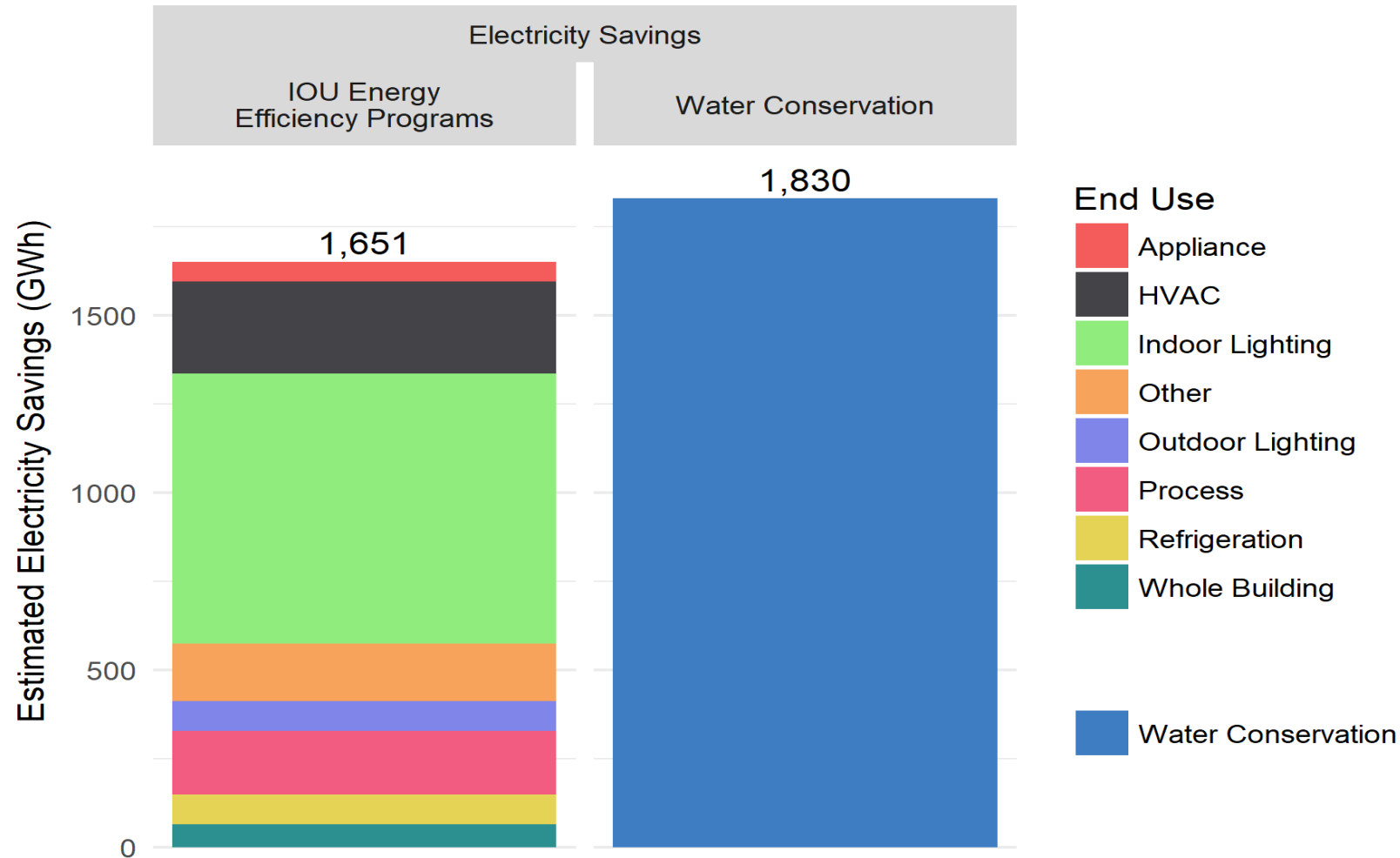
- End-user energy savings (reduction in the amount of energy needed to heat, cool, and pressurize water in homes and businesses)?
- System-wide/embedded energy savings (reduction in energy used to collect, treat, and deliver water and collect and treat wastewater)

## WATER EFFICIENCY REDUCES THE ENERGY NEEDED TO COLLECT, TREAT, AND DISTRIBUTE POTABLE WATER AND WASTEWATER

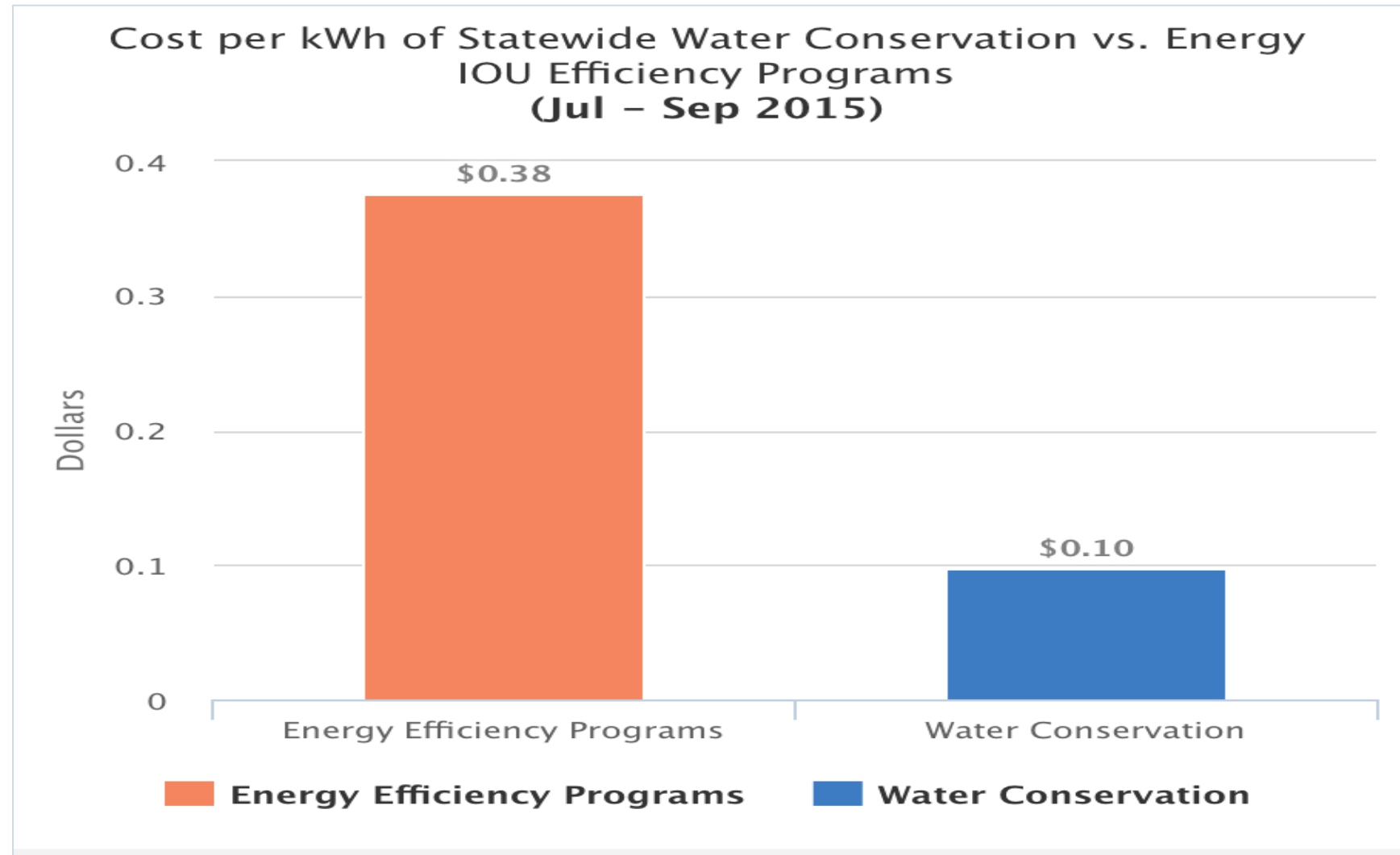




# Estimated electricity savings from California statewide water conservation programs vs. IOU EE programs (2015 – 2016 )



Center for Water-Energy Efficiency, UC Davis, 2016





**Supply source: State Water Project**  
**8,140 kWh/AF (24,991 kWh/MG)**

**Supply source: Ground Water**  
**2,890 kWh/AF (8,873 kWh/MG)**

**Supply source: Lake Water**  
**2,926 kWh/AF (8,984 kWh/MG)**

- Implemented landscape conservation program
- Able to eliminate State Water Project deliveries with major energy, cost savings

# EMBEDDED ENERGY IN WATER: ILLINOIS

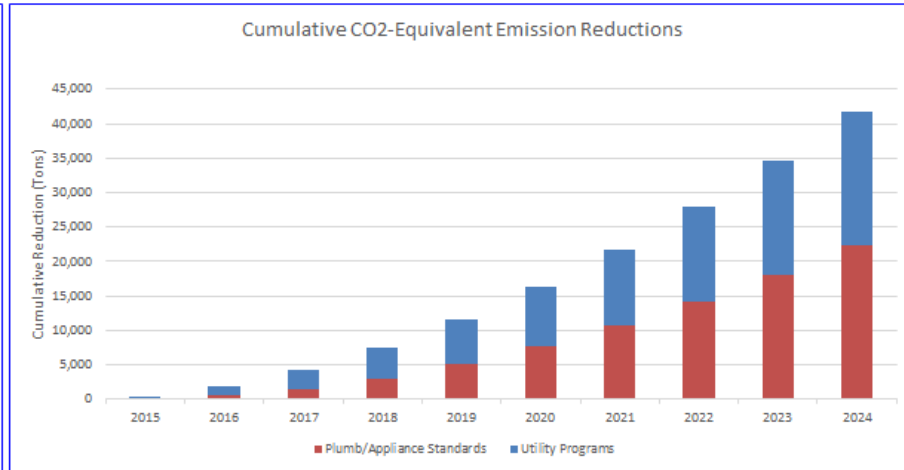
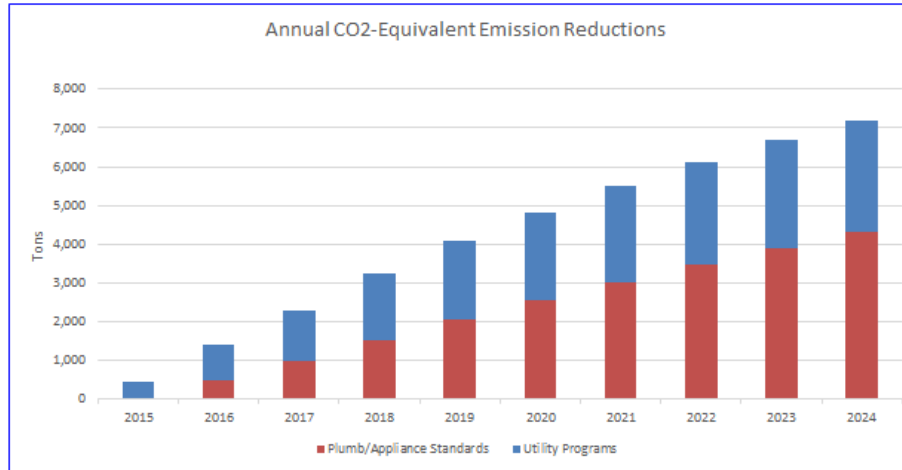
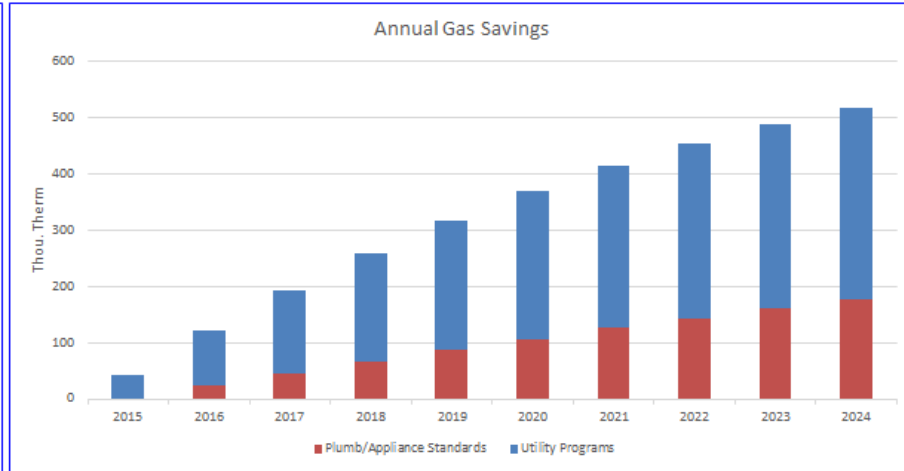
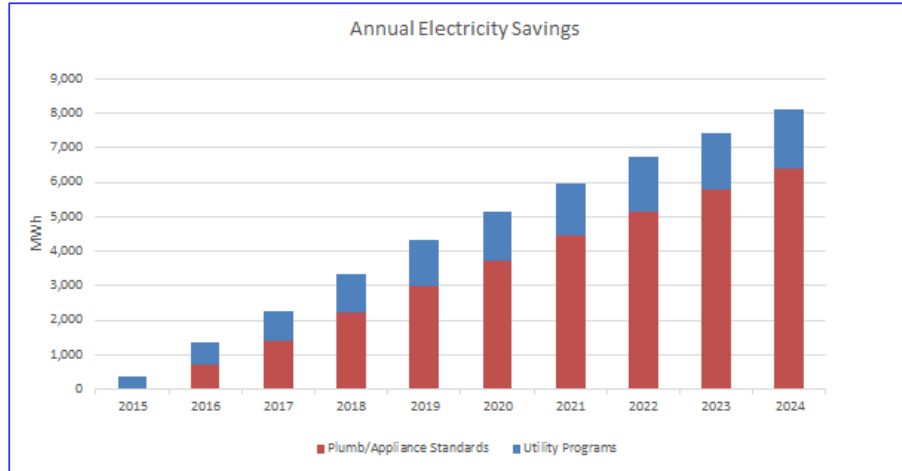
- 2018: Illinois became the only U.S. state to allow energy utilities to claim energy efficiency credit for water efficiency projects
- Approved by the Illinois Commerce Commission (update to the *Technical Reference Manual (TRM) for Energy Efficiency*)
- **Water Supply Energy Factor = 2,571 kWh/MG**
- **Wastewater Treatment Energy Factor = 2,439 kWh/MG**
- Factors based, in part, on *Water Energy Nexus Survey Summary Report* (2012), Illinois Section of the American Water Works Association

# AWE CONSERVATION TRACKING TOOL: GHG REDUCTION BENEFITS WORKSHEET



**GHG reduction:** This worksheet summarizes the calculated reduction in CO2-equivalent emissions due to plumbing/appliance standards and planned conservation. Below the charts are tables that summarize the results in five-year and annual increments.

Years to Display:



## Summary Calculated Energy Savings

Total Annual Energy Savings	Units	2015	2020	2025	2030	2035	2040	2045	2050
Electricity	MWh	374	5,163	8,713	11,541	12,506	13,490	14,526	15,191
Natural Gas	Thou. Therm	43	370	548	673	522	451	411	378

Cumulative Energy Savings Since 2014	Units	2015	2020	2025	2030	2035	2040	2045	2050
Electricity	MWh	374	16,841	53,768	106,105	166,587	232,144	302,784	377,469
Natural Gas	Thou. Therm	43	1,304	3,724	6,854	9,730	12,104	14,235	16,190

Value of Annual Energy Savings	Units	2015	2020	2025	2030	2035	2040	2045	2050
Electricity	Thou. 2014	\$56	\$784	\$1,340	\$1,797	\$1,972	\$2,154	\$2,348	\$2,487

# JOINT WATER-ENERGY EFFICIENCY OPPORTUNITIES

- Combined water/energy audits
- Combined retrofit/replacement programs (“piggy back”)
- High efficiency plumbing fixtures and appliances
- Landscape irrigation efficiency
  - Can also eliminate nutrient run off/improve water quality
- Cooling tower efficiency improvements
- Leak detection/prevention
  - Inside buildings
  - Within the drinking water distribution system



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# *Alliance for Water Efficiency*

## *Thank You!*