ELEVATE

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There’s Something in the Water! It’s Energy Savings

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OUR MISSION

We design and implement programs that reduce costs, protect people and the environment, and ensure the benefits of clean and efficient energy use reach those who need them most.

There’s Something in the Water! It’s Energy Savings

- State Technical Reference Manuals (TRMs) provide a transparent and consistent basis for calculating energy [electric kilowatt-hours (kWh) and natural gas therms] and capacity [electric kilowatts (kW)] savings generated by the states’ energy efficiency programs.
- As of 2018, the IL TRM accounted for the direct end-user energy savings from water conservation measures.
- But the IL TRM did not account for the system-wide energy savings from water conservation measures.

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- **Basic Concept:** Water conservation measures installed on the end-user side also reduce the system-wide energy needed to collect, treat, and distribute potable water and wastewater.
- **Energy per Gallon Factor:** Using guidance from Wisconsin and state-wide energy usage data from Illinois water utilities, Elevate Energy created an energy per gallon factor to capture system-wide energy savings from water conservation measures.
- **IL TRM update:** In 2018 Elevate proposed the addition of this energy per gallon factor through the TRM update process and it was successfully added.

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Water Source	kWh/MG	% of IL Water Supplied	Weighted kWh/MG
Groundwater	2,844	67%	1,905
Surface Water	2,019	33%	666
		Water Supply kWh/MG	**2,571**

Wastewater System Type	kWh/MG	% of IL Wastewater Treated	Weighted kWh/MG
Secondary Treatment	2,080	42%	874
Less than Secondary Treatment	2,690	56%	1,506
No discharge	2,960	2%	59
		Wastewater kWh/MG	**2,439**

Water Supply Factor	Wastewater Treated Factor	IL Energy per Gallon Factor
2,571 kWh/MG	2,439 kWh/MG	**5,010 kWh/MG**

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- 2019 Existing IL TRM measures containing a water impact calculation

Commercial and Industrial Measures	Residential Measures
4.2.3 Commercial Steam Cooker	5.1.2 ENERGY STAR® Most Efficient Clothes Washers
4.2.6 ENERGY STAR® Dishwasher	5.1.4 ENERGY STAR® Dishwasher
4.2.11 High Efficiency Pre-Rinse Spray Valve	5.4.4 Low Flow Faucet Aerators
4.3.2 Low Flow Faucet Aerators	5.4.5 Low Flow Showerheads
4.3.3 Low Flow Showerheads	5.4.8 Thermostatic Restrictor Shower Valve
4.3.4 Commercial Pool Covers	
4.3.6 Ozone Laundry	

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- 2020 ComEd proposed, and were added, IL TRM measures containing a water impact calculation

Commercial and Industrial Measures	Residential Measures
4.2.20 Efficient Dipper Wells	5.4.10 Pool Covers
4.3.11 Tunnel Washers	5.5.2 Low Flow Toilets
4.8.14 Low Flow Toilet and Urinals	
4.8.15 Smart Irrigation Controls	

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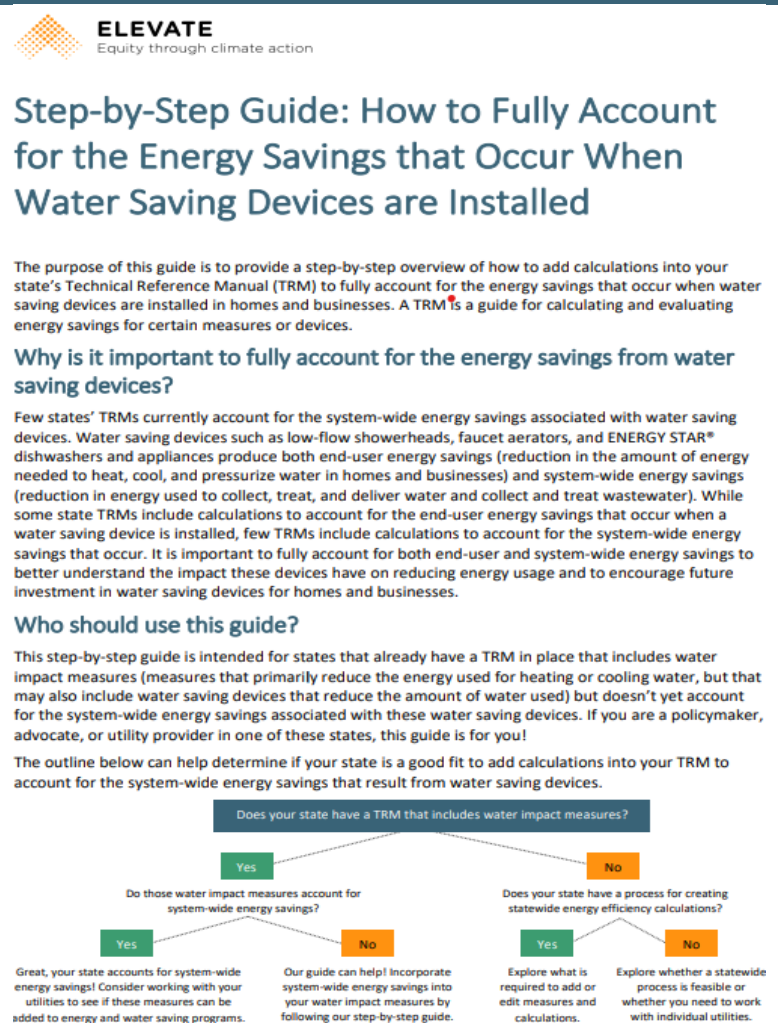
- In 2021 Elevate prepared a Water Energy Nexus Guide/Fact Sheet covering the process
- https://www.elevatenp.org/publications/water-energy-nexus-guide/



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Equity through climate action

Step-by-Step Guide: How to Fully Account for the Energy Savings that Occur When Water Saving Devices are Installed

The purpose of this guide is to provide a step-by-step overview of how to add calculations into your state's Technical Reference Manual (TRM) to fully account for the energy savings that occur when water saving devices are installed in homes and businesses. A TRM is a guide for calculating and evaluating energy savings for certain measures or devices.

Why is it important to fully account for the energy savings from water saving devices?

Few states' TRMs currently account for the system-wide energy savings associated with water saving devices. Water saving devices such as low-flow showerheads, faucet aerators, and ENERGY STAR® dishwashers and appliances produce both end-user energy savings (reduction in the amount of energy needed to heat, cool, and pressurize water in homes and businesses) and system-wide energy savings (reduction in energy used to collect, treat, and deliver water and collect and treat wastewater). While some state TRMs include calculations to account for the end-user energy savings that occur when a water saving device is installed, few TRMs include calculations to account for the system-wide energy savings that occur. It is important to fully account for both end-user and system-wide energy savings to better understand the impact these devices have on reducing energy usage and to encourage future investment in water saving devices for homes and businesses.

Who should use this guide?

This step-by-step guide is intended for states that already have a TRM in place that includes water impact measures (measures that primarily reduce the energy used for heating or cooling water, but that may also include water saving devices that reduce the amount of water used) but doesn't yet account for the system-wide energy savings associated with these water saving devices. If you are a policymaker, advocate, or utility provider in one of these states, this guide is for you!

The outline below can help determine if your state is a good fit to add calculations into your TRM to account for the system-wide energy savings that result from water saving devices.

There's Something in the Water! It's Energy Savings

- Step-by-Step Guide: How to Fully Account for the Energy Savings that Occur When Water Saving Devices are Installed
  - Why is it important to fully account for the energy savings from water saving devices?
  - Who should use this guide?
  - Step-by-Step Guide
    - Background information
    - Get to know your TRM
    - Identify Stakeholders and gain support
    - Create Calculations
    - Incorporate the Energy per Gallon Factors into the TRM
  - Glossary and Appendix

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