

# The Water-Energy Nexus in Missouri

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# Comprehensive State Energy Plan (CSEP)

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- Stakeholder process
  - Guides much of our work
  - Released 2015; updates coming 2019
  - Input from/participation by Missouri-American Water Company (MAWC), municipal utilities
- “Water and wastewater utilities are typically the largest consumers of energy in municipalities, often accounting for 30 to 40 percent of total energy consumed.” (p. 91; citation omitted)
- “Across the U.S., four percent of power generation is used for water supply and wastewater treatment, and electricity costs represent approximately 80 percent of municipal water processing and distribution costs.” (p. 92; citations omitted)

# Small Water Systems

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- 1,433 community-run systems regulated by Missouri Department of Natural Resources (CSEP, p. 91)
- Some systems need significant, costly improvements – need to facilitate
- Rate consolidation as potential acquisition consideration
- District consolidation considerations:
  - Infrastructure needs
  - Cost of service
  - Rate impacts
- Role of potential Energy Investment Partnership (“green bank”)

# Intervention in PSC Cases

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- Quasi-judicial process
- Pre-filed testimony by witnesses
- Stipulations and/or evidentiary hearings
- Legal counsel needed

# Missouri-American Water Company (MAWC)

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- Discussion of water-energy nexus to support:
  - Demand-side efficiency pilot
  - Process audits/walkthrough
  - Better residential rate design/block rate pilot (w/ efficiency)

# Combined Heat and Power (CHP)

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- Potential measure for wastewater facilities
- Custom measure in current MEEIA program cycles
  - No projects have been approved to date
  - Potential MEEIA participation by small water/wastewater system customers of electric IOUs?
- “Modifying” vs. “reducing” net consumption under MEEIA
  - Differing values of energy over time, shifting consumption
- Gas vs. electric impacts
  - Counting costs and savings (participant impacts, electric/other savings)
  - “Promotional practices”
- Standby rate structures
- Resiliency value
- Work with Empire/Liberty

# Statewide Technical Reference Manual (TRM)

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- U.S. Department of Energy grant, with cost-sharing from government, utilities (including MAWC), advocates
- Released in 2017; trying to get it used for investor-owned electric and gas utilities
- Includes some water savings
- Currently working on EM&V 2.0 (electronic format for using current info to assess savings)

# Energy Loan Program (ELP)

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- Revolving loan program
- Energy savings determine the loan amount
- The higher the savings, the shorter the term
- Maximum of 10-year repayment
- Bi-annual payments
- Sewer and water supply districts eligible
- CHP is an eligible energy conservation measure
- More than 612 loans
  - \$114 million in completed energy efficiency projects
  - More than \$199 million in estimated cumulative energy savings
  - 30 year old program with zero defaults

# Energy Loan Program Examples

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- Pulaski County Sewer District
  - Efficient pumps
  - \$99,470 loan (ARRA funds)
  - \$11,211 annual energy cost savings; ~18 year payback
- City of Harrisonville
  - Wastewater treatment plant aerator, lagoon pump, basin motor, VFD raw water pump
  - \$295,859 loan (ARRA funds)
  - \$42,833 annual energy cost savings; ~12-13 year payback

# Ongoing Activities

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- Utilize lessons learned by Rolla in guiding other communities in the use of ESPCs and in the opportunity to improve energy efficiency in the treatment of water and wastewater
- Supplemental SEP funding – potential partnership on small water/wastewater system energy efficiency improvements
- Programs being developed in MAWC territory
  - Website demo soon
  - Toilet program participant identified

Thank you!