# What does the future of water-energy efficiency look like?

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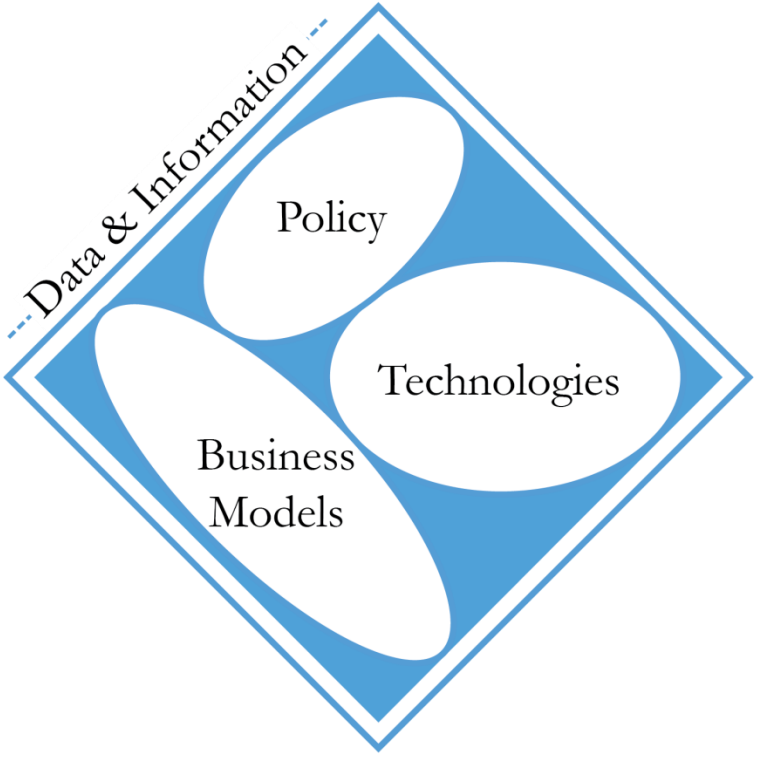
# The Information Bottleneck

- California' active water-energy agenda
  - CPUC Guidance
  - AB 32
  - WET-CAT Coordination
- But limited by availability of actionable data

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# Saving Energy with Water

## Energy Efficiency of Water System

## Energy Savings through Water Efficiency

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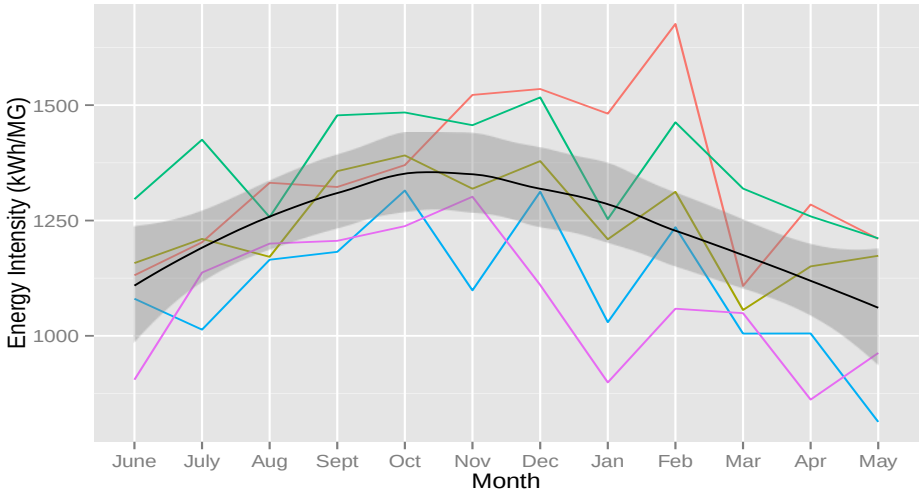
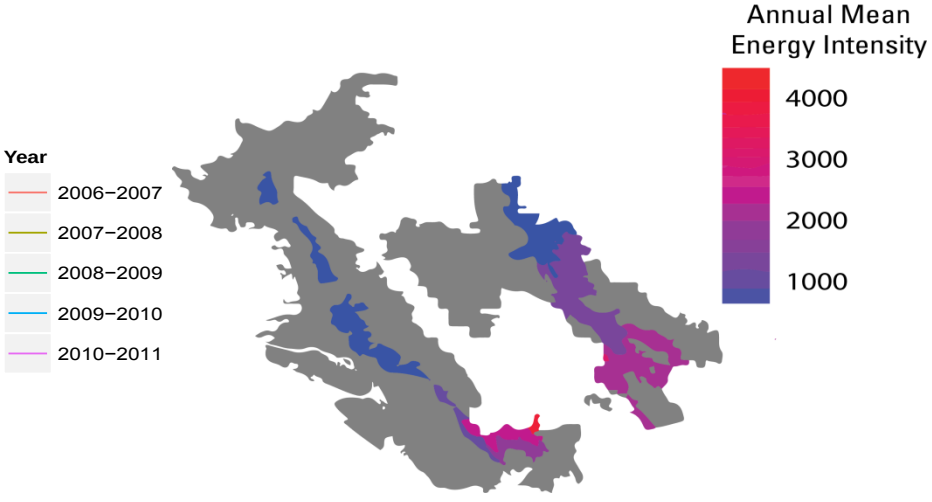
# Case Study: East Bay MUD

- Variability of infrastructure energy intensity:
  - 10-12% monthly variation around the annual mean
  - >12X difference across the distribution network

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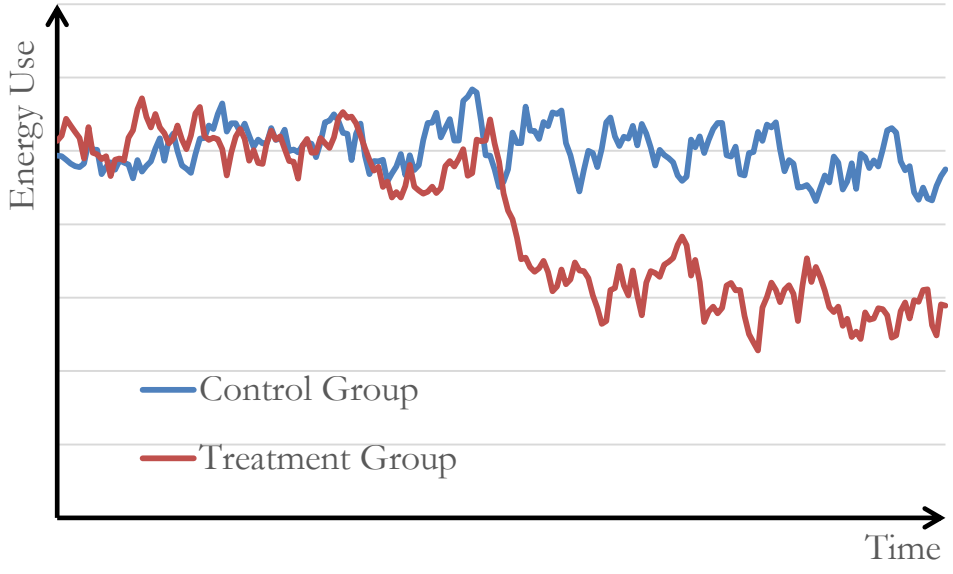
# Behavior-Based Hot Water Savings

- Behavior-based hot water conservation
  - Messaging for water use reduction
  - Estimation of hot water savings
  - Associated energy and GHG savings

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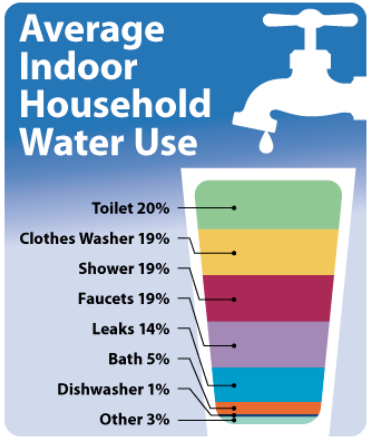
# Linking Energy Dynamics to Water Savings

- Need to factor in:
  - Customer types and location
  - Seasonality of water use
  - Indoor or outdoor water use
- Utility-side opportunities:
  - Leak loss
  - Pressure Management
- Customer-side opportunities:
  - Direct technology install
  - Rebate programs
  - Behavior change

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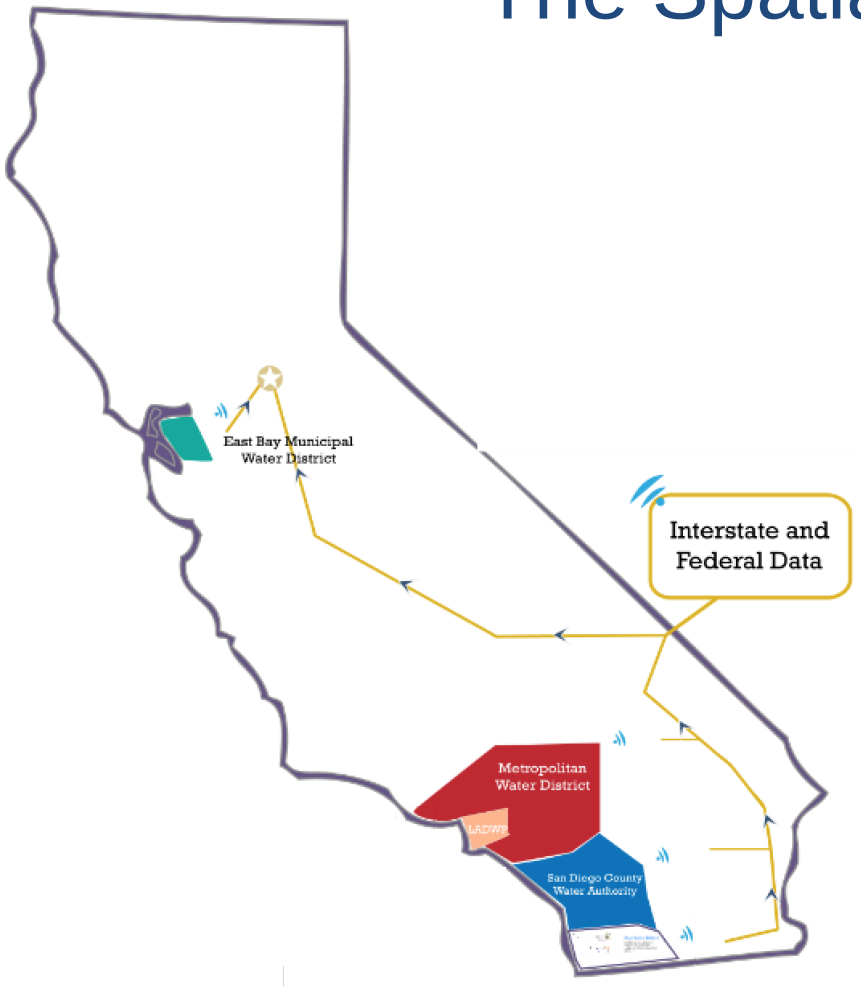
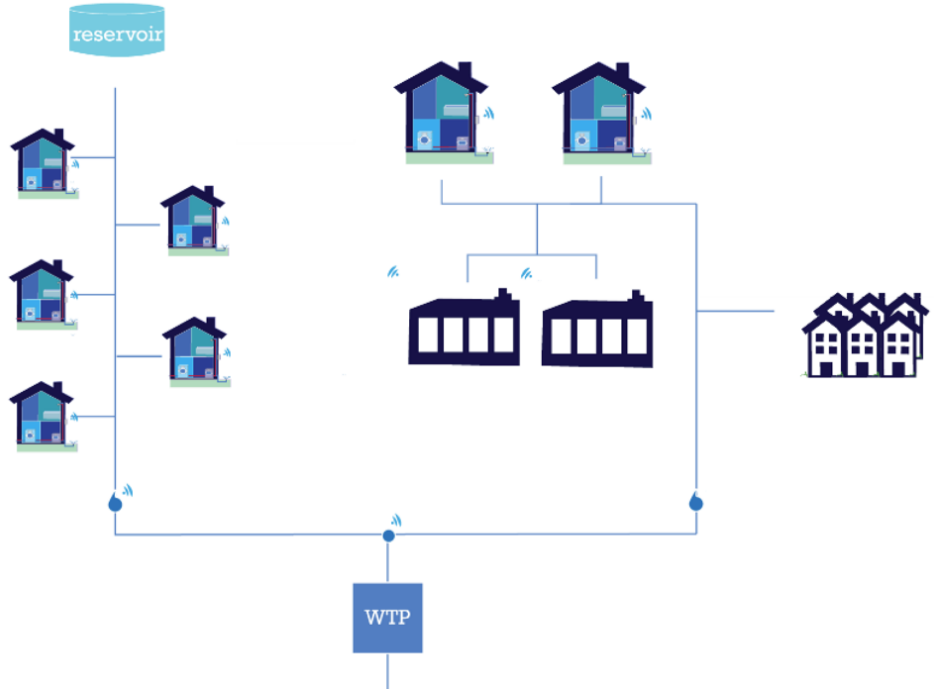
# The Spatial Complexity




- Multiple scales
- Multiple and overlapping jurisdictions

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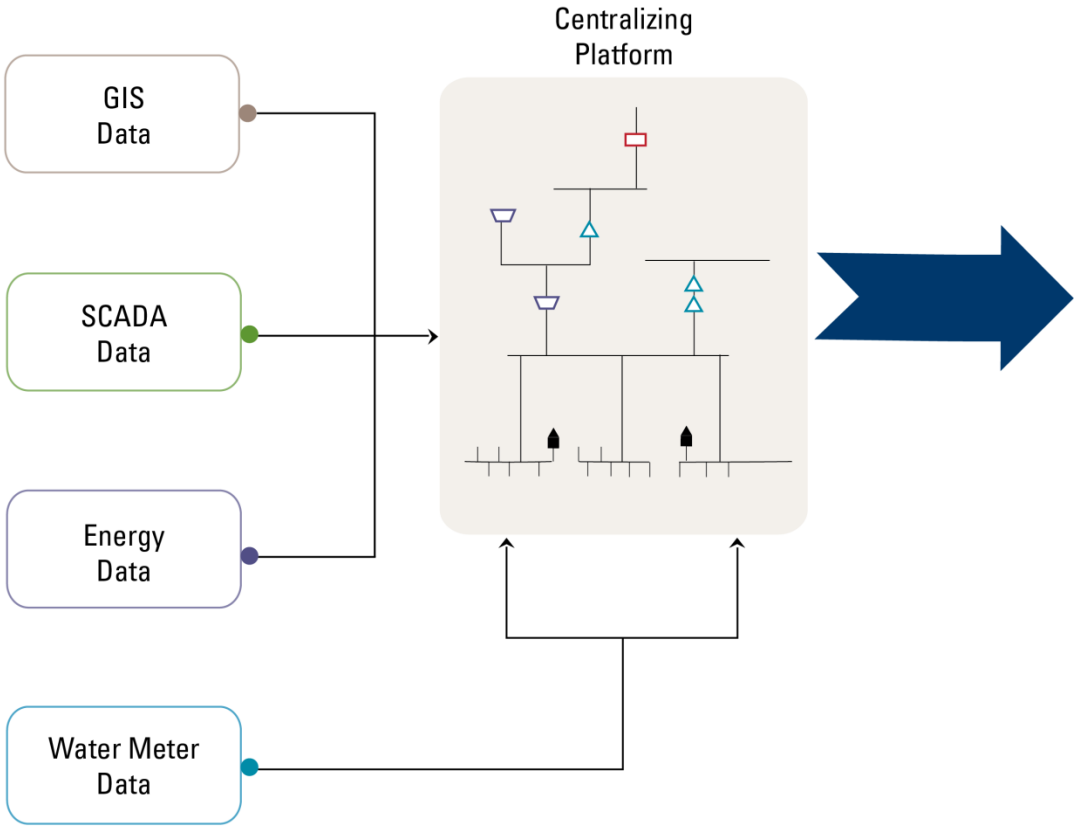
# Opportunity – Data and Analytics




ANALYTICS

**Water Benefits**

- Water Use Benchmarking
- Targeted Conservation
- Leak Loss Detection
- Monitoring and Verification

**Energy Benefits**

- Energy Savings
- Demand Response
- Peak Shaving/Shifting
- Energy Storage
- Monitoring and Verification

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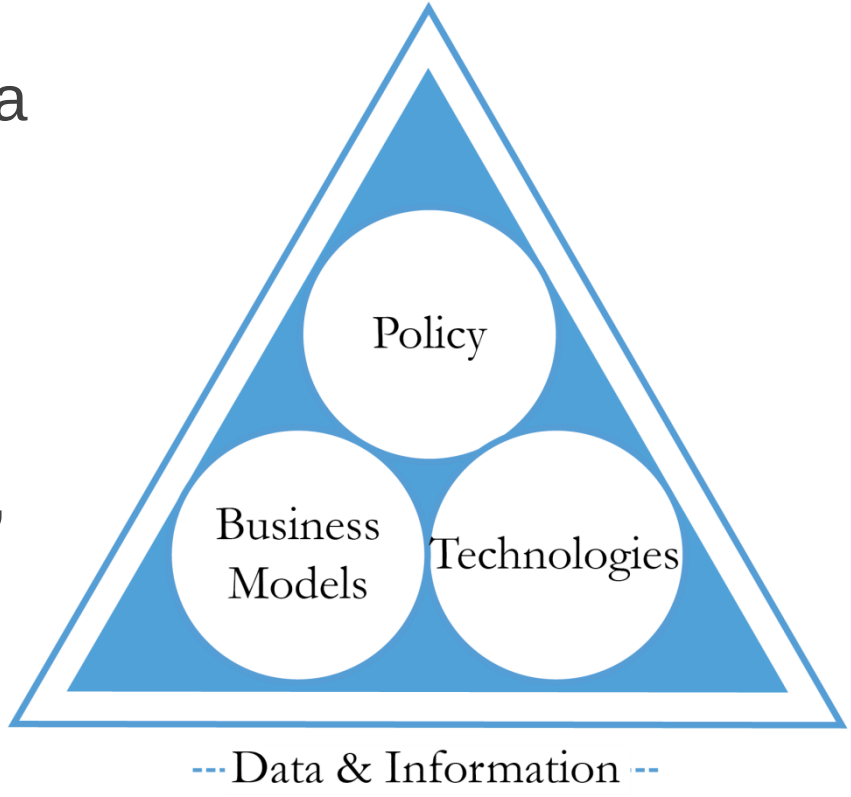
# Moving Forward

- Aligning water and energy data
  - Common data platform
  - Security and privacy provisions
  - Suite of analytics
  - Funding (e.g., PGC)
  - Stakeholder engagement
- … to drive innovation in policy, technology, and business models for water-energy efficiency

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