Water Use Data Collection Program – Independent Evaluation

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Project Purpose

- Evaluate method of collecting water use data
- Estimate overall accuracy of historic State numbers
- Make recommendations for improvements

Project Methodology

- Detailed interviews of Division of Water Resources and Division of Water Rights Staff
- Review of water use database and available documentation
- Evaluation of State water use numbers
  - Large water districts (JVWCD, MWDSLS, and WBWCD)
  - Sample of smaller, retail water providers
- Our numbers based on detailed analysis of raw data and years of experience working with water providers

Major Findings (in a nutshell)

- Potable Water Use Data is Reasonably Accurate (and getting better)
- Secondary Water Use Data and Water Supply Data is Less Accurate
- System Loss Needs to be Considered in Calculation of Water Demands
- Focusing on Large Systems Will Provide Best Return on Investment

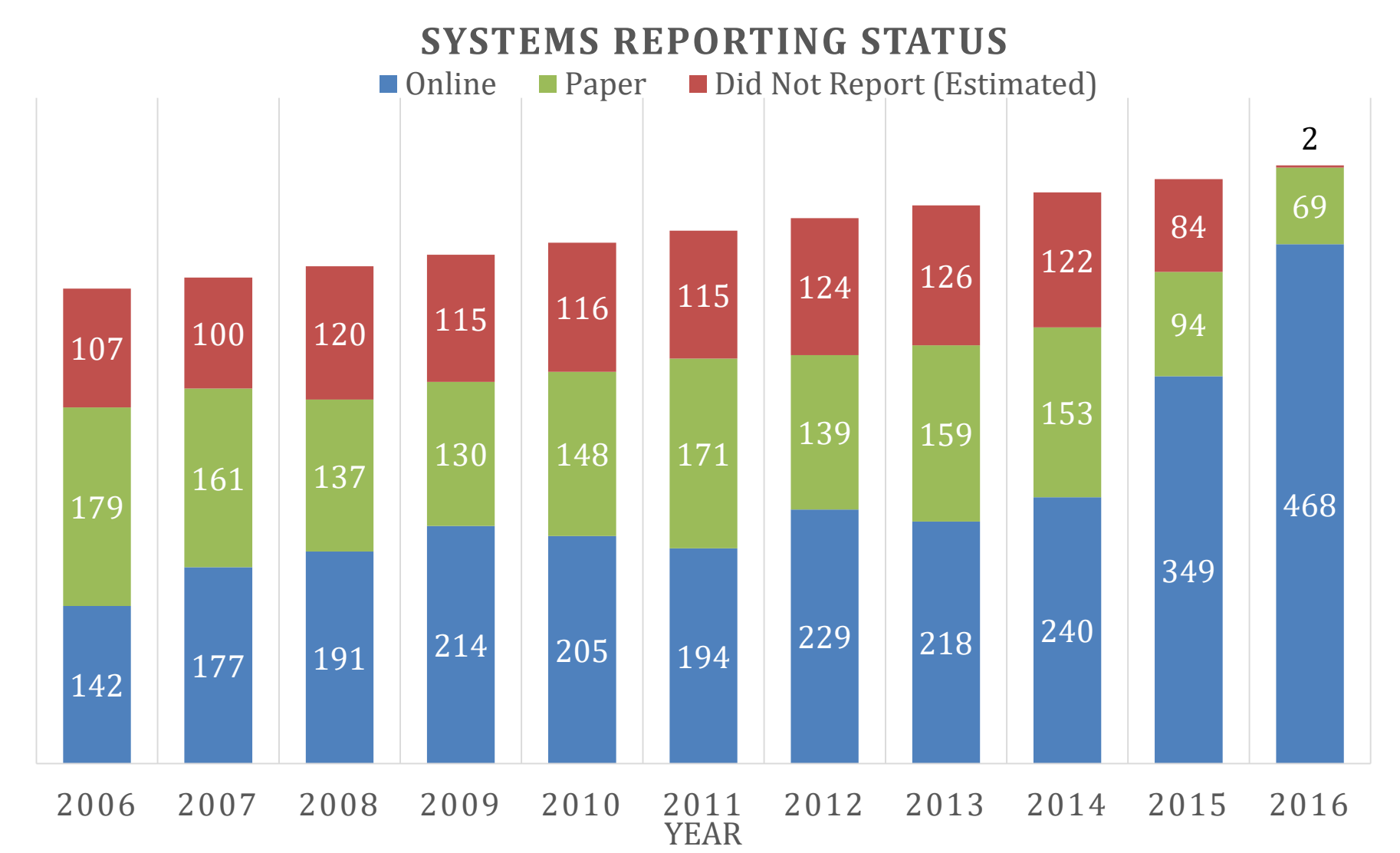
Potable Water Use Data Results

	Individual Water Systems		Large Water Districts	
Year	Absolute Error	Mean Weighted Error	Absolute Error	Mean Weighted Error
2015	0.3%	±3.2%	0.8%	±7.3%
2010	3.3%	±7.3%	6.5%	±7%
2005	3.7%	±9.9%	-1.6%	±8%

Notes

Errors based on the sample of water systems analyzed in the study.

Potable Water Use Data Improvements



Secondary Water Use Data Results

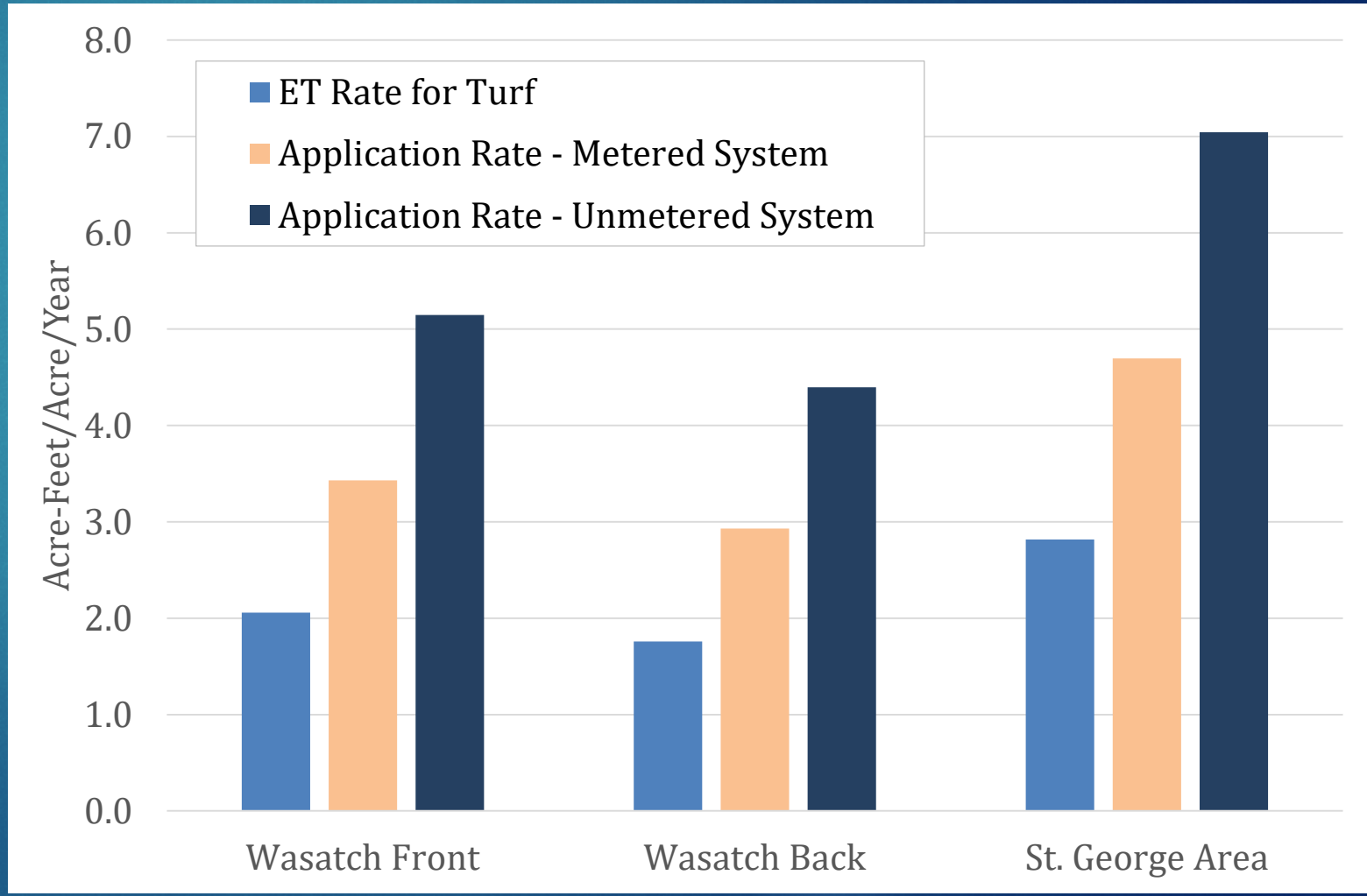
	Individual Water Systems		Large Water Districts	
Year	Absolute Error	Mean Weighted Error	Absolute Error	Mean Weighted Error
2015	-24.8%	±25%	-34.4%	±34.8%
2010	-30.9%	±31%	-32.3%	±32.3%
2005	-32.6%	±32.6%	-10.7%	±12.1%

Notes

Errors based on the sample of water systems analyzed in the study.

Secondary Water Use Data – Observed Sources of Error

- Oversimplification of lot size
- Underestimation of application rates



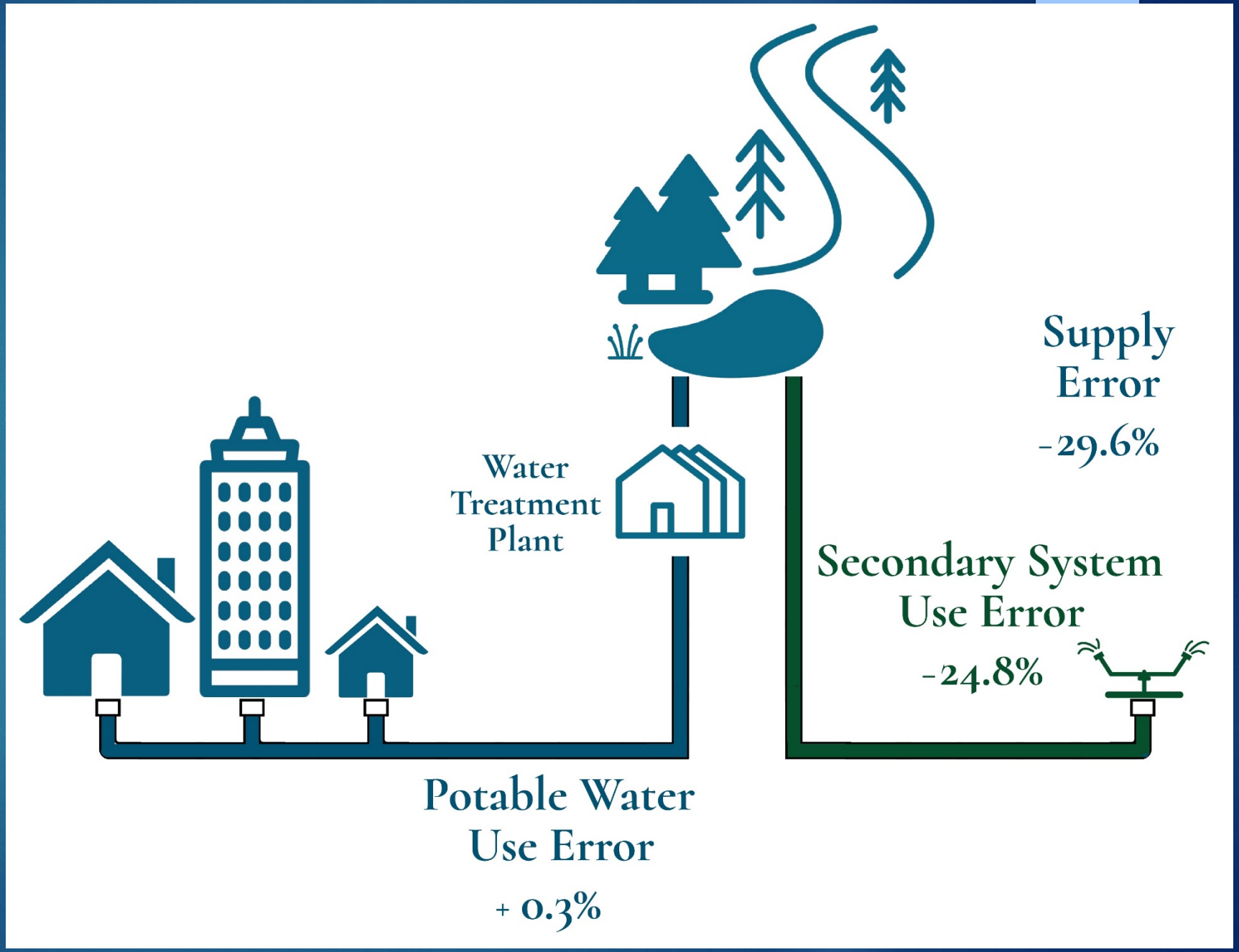
Water Supply Data Results

	Absolute Error	Mean Weighted Error
Potable	-11.0%	±16.6%
Secondary	-64.0%	±65%
Total	-29.6%	±32%

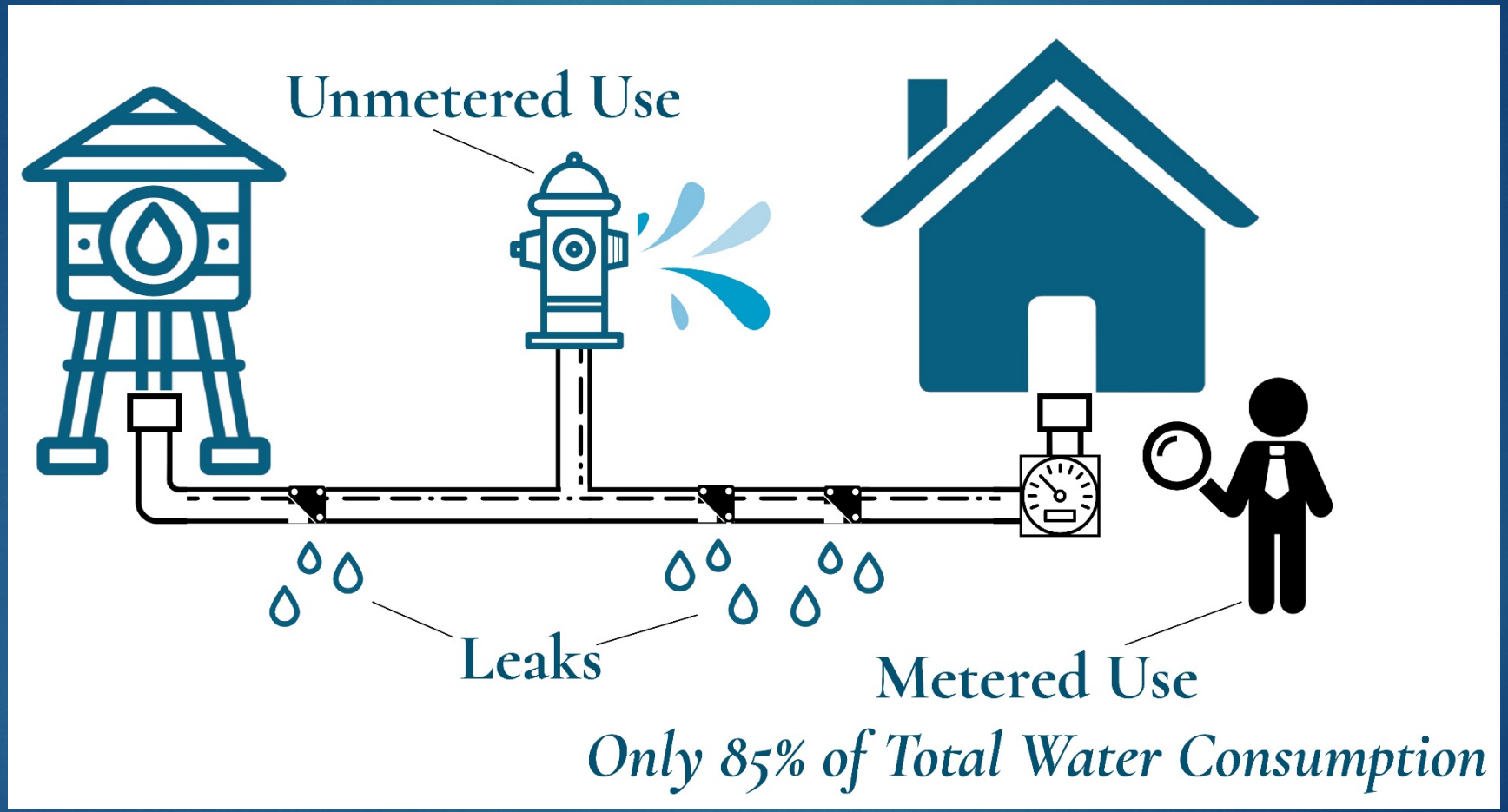
Notes

Errors based on the sample of water systems analyzed in the study.

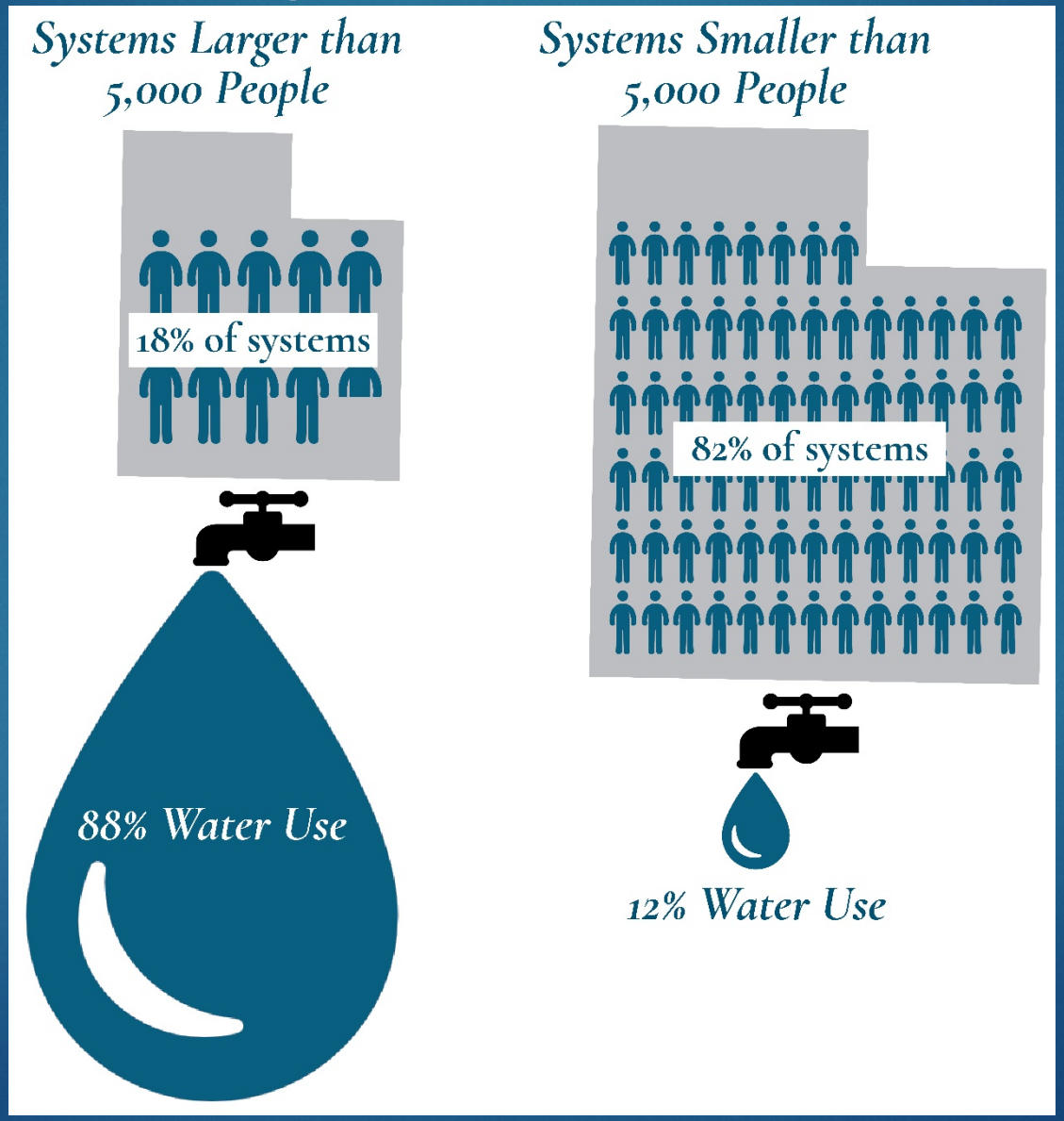
Overall Accuracy



System Loss


Unmetered Use
Leaks
Metered Use
Only 85% of Total Water Consumption

Large vs. Small Systems



Recommendations

- Continue current trajectory of improvement in data collection
- Add consideration of system losses into calculation of demands
  - Short-term: Add 15% to current estimates
  - Long-term: Require AWWA M36 water audits in the future
- Improve secondary estimates
  - Short-term: Revise 2015 secondary data using infrared imagery and updated application rates
  - Long-term: Require secondary metering

Recommendations (Cont.)

- Improve supply estimates
  - Long-term: Require detailed supply analysis by water providers
- Focus efforts on large systems
  - New requirements to apply to systems serving more than 5,000 persons
- Use revised 2015 estimates as baseline for planning

Recommended Legislative Actions

- Require customer metering for secondary water use
- Require periodic AWWA M36 water audits
- Require reliable supply evaluation to be submitted with conservation plans

Questions?