

The Challenge of Classifying CII Water Customers for Water Demand Analysis and Benchmarking

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Methodology for Determining Baseline Commercial, Institutional, and Industrial End Uses of Water

Water Research Foundation Project 4375

- City of Austin
- City of Phoenix
- Tampa Bay Water
- East Bay Municipal Utility District
- City of Fort Collins
- Colorado Springs Utilities
- City of Boulder
- City of El Paso
- New York City DEP

Water Utilities Seldom Classify CII Customers the Same Way

- One single nonresidential category
- More detailed schemes
 - Wastewater characteristics
 - NAICS-like groupings
 - Land use classifications
- Meter size categories
- Commercial/Industrial

About 20 Categories of Customers Are Relatively Ubiquitous and Typically Account for > 80% of Total CII Use

1. Lodging (Hotel or Motel)

2. Office Building

3. School or College

4. Health Care Facility

5. Eating or Drinking Place

6. Retail Outlet

7. Warehouse

8. Auto Service Facility

9. Religious Building

10. Retirement or Nursing Home

11. Manufacturing

12. Other Commercial

13. Other Government/Institutional

14. Other Industrial
- Product or Service Emphasis
- Water Dependent Facilities

15. Commercial or Industrial Laundry

16. Laundromat

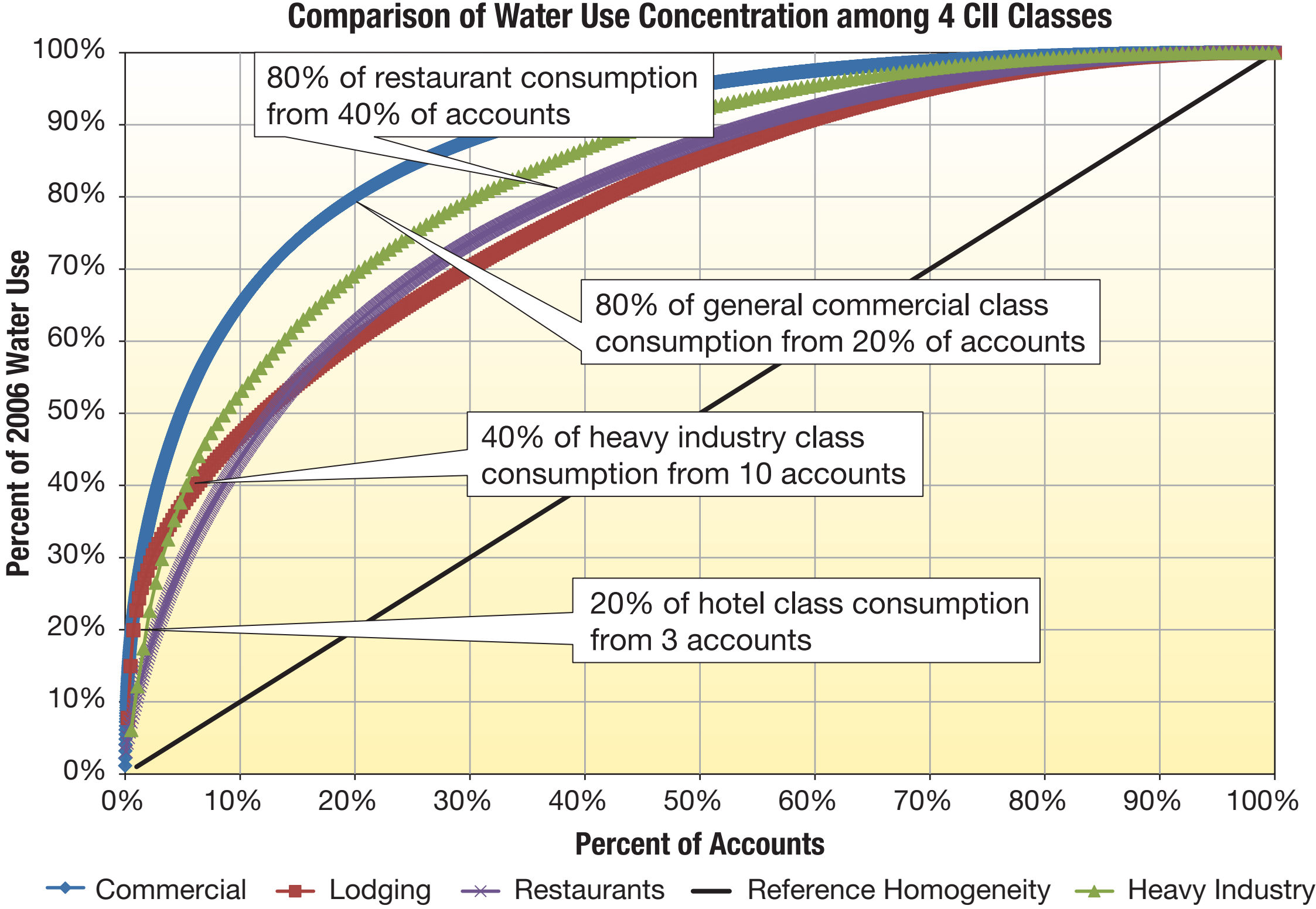
17. Car Wash

18. Park or Recreational Area

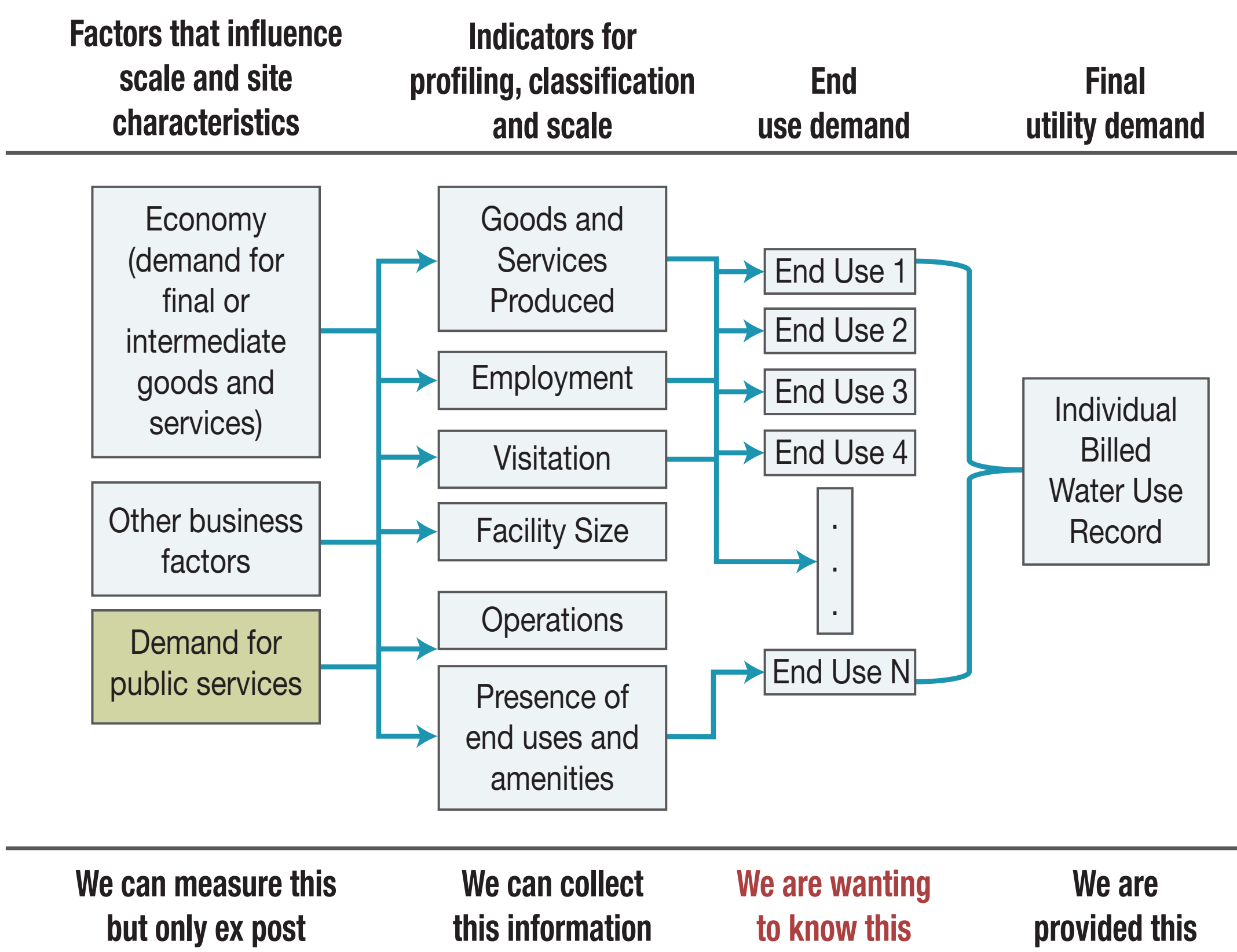
19. Golf Course

20. Landscape Only
- Defined by a Dominant End Use

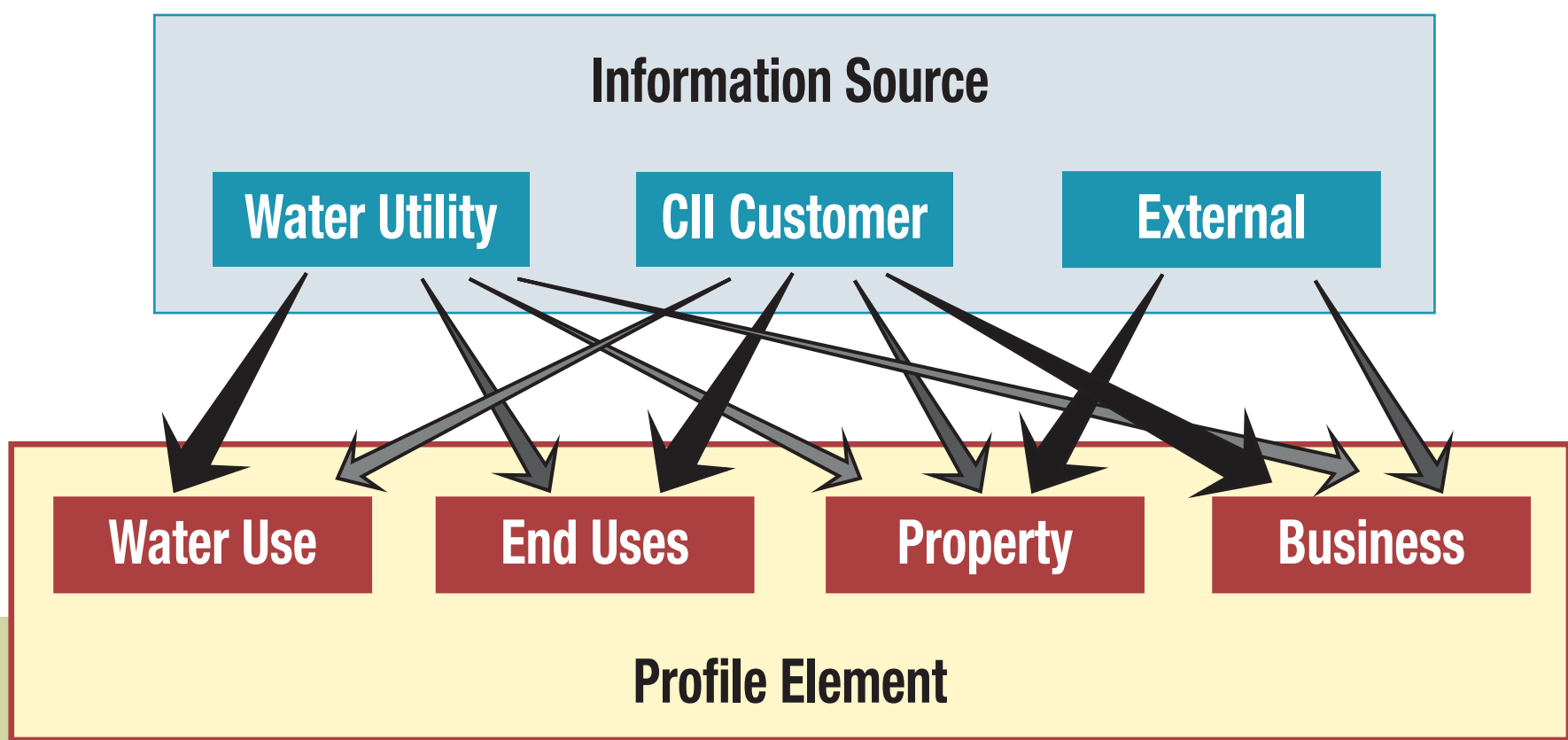
CII Water Use Varies Considerably Between and Within Given Classes



Several Factors Cause Inherent Variability in CII Water Use



Constructing an Information Web



What do we want to know and why do we want to know it?

What do we want to know?	Why do we want to know it?	Source(s) of Information
Water use	Basic objective variable	Utility billing records CII customer
Type of business	To group/classify To infer goods/services produced To infer likely or potential water end uses	Utility billing classes Appraiser data Land use/zoning data External (pay) sources Primary/surveys
Drivers/measures of scale	To differentiate total use from unit use To create metrics for benchmarking To create metrics for modeling/forecasting	Utility billing records Appraiser data External (pay) sources Web and directory searches Primary surveys
End Uses (Presence)	To correlate with water use patterns To inform benchmarks To inform water budgets To identify targets for programs	Primary surveys Audits
End Uses (Water Consumed)	Desirable objective variable To create metrics for benchmarking To create metrics for water budgets To identify targets for programs	Direct metering
Operational Business Data	To correlate with water use patterns To explain more variance in water use	Primary/surveys Audits External (pay) sources ?? Web and directory searches
Best grouping/segments of CII	To tailor efficiency programs to both end uses and customer types To create class level metrics/models for forecasting	Utility billing records Appraiser data Land use/zoning data External (pay) sources Primary/surveys

Toward a Consistent Research and Data Collection Methodology!

