

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com

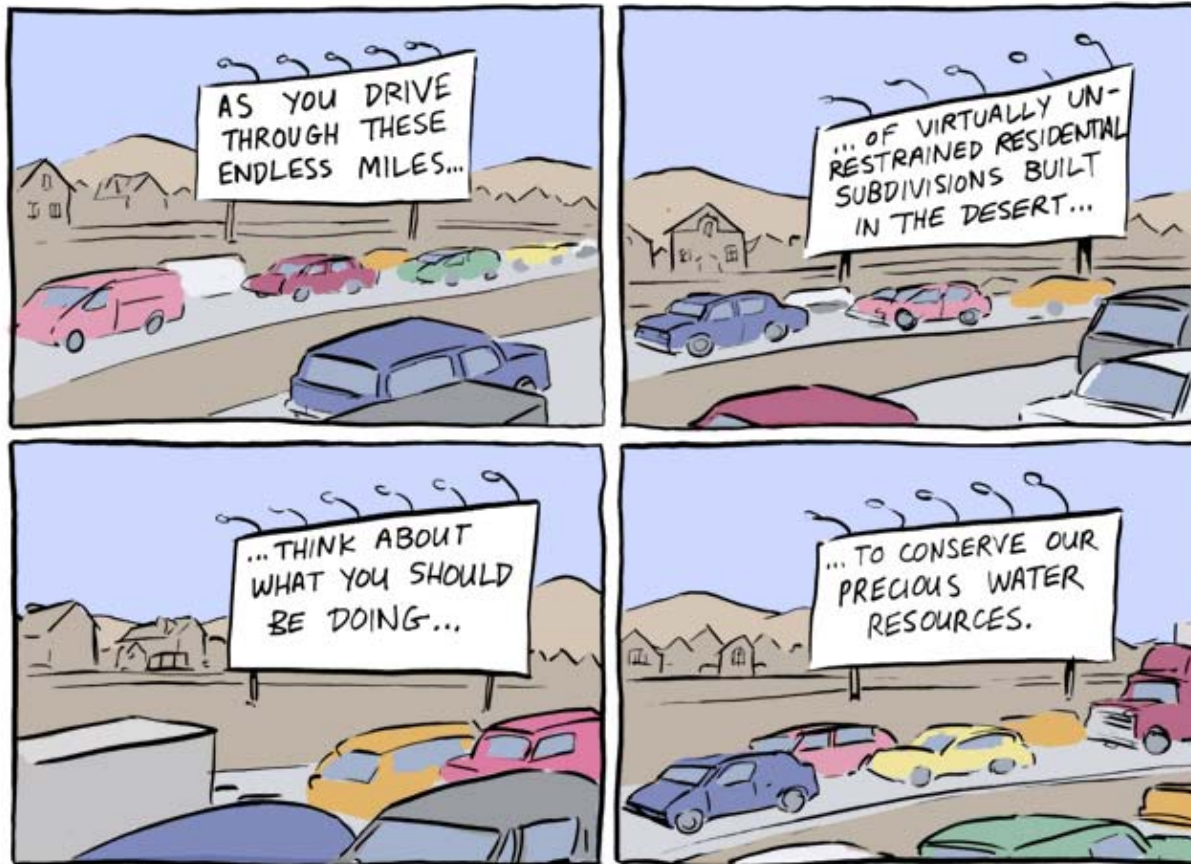


CREATING A NEW
FRAMEWORK TO SUPPORT
UTILITY WATER
CONSERVATION PLANNING

OCTOBER 2011

Utilities Get No Respect!

SAN DIEGO COUNTY ROLLS OUT A NEW \$1.8 MILLION ADVERTISING CAMPAIGN

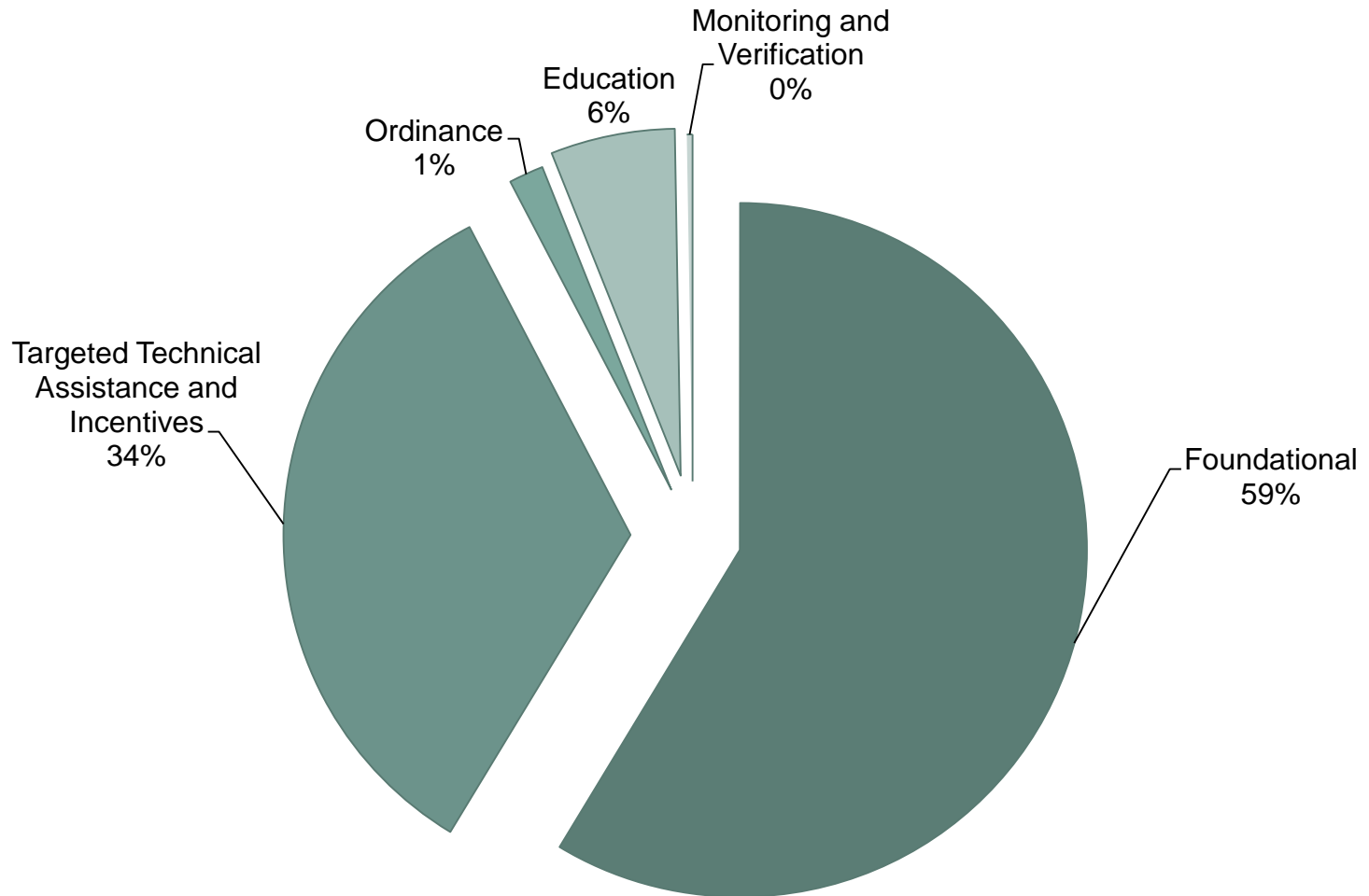


NEAL BERMEYER

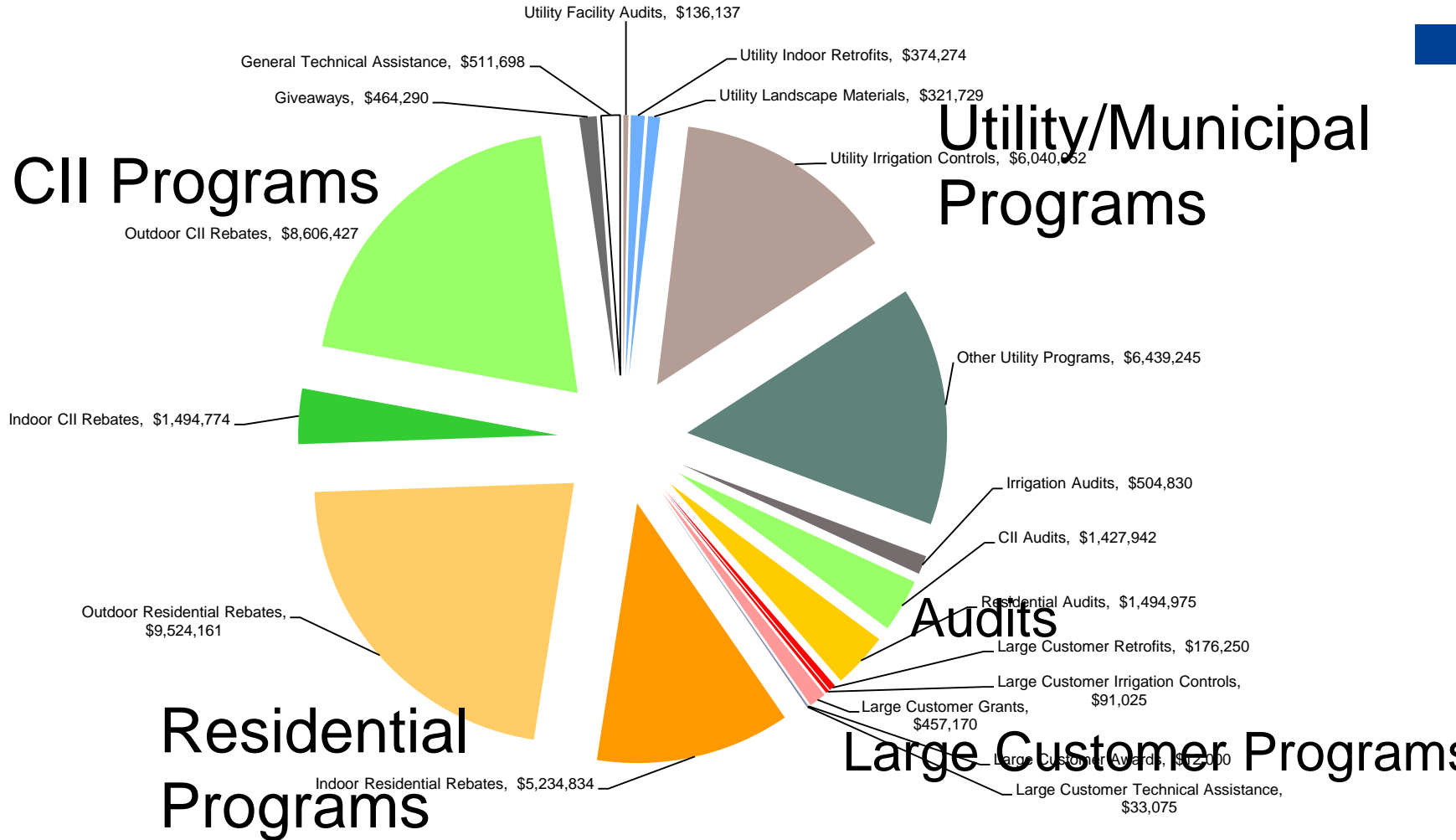
Overview

- ❑ Review Plans and Implementation for Dozens of Utilities
 - ❑ Selected Measures and Programs
 - ❑ Penetration
 - ❑ Budgets
- ❑ New Framework
 - ❑ Focus on Utility Centric Business
 - ❑ Rate of Return
 - ❑ Control Over Implementation
 - ❑ Overall Water Resources Management

Proposed Budgets by Category for All Reporting Planning Entities



Budget for Targeted Technical Assistance and Incentives



What is Popular?

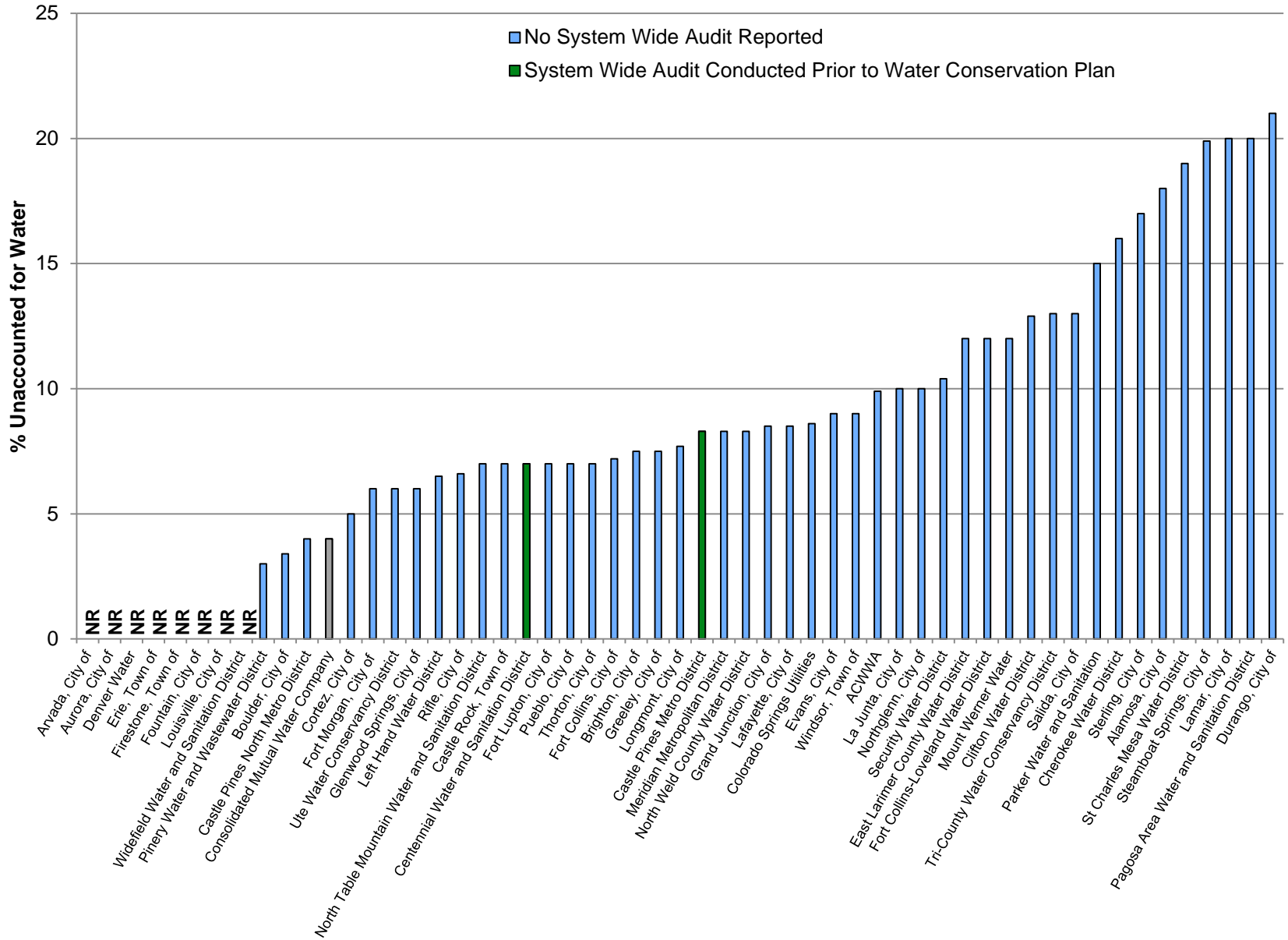
Indoor Water Use Incentives						
	Toilets	Clothes Washers	Dishwashers	Showerheads	Faucet Aerators	Other
Residential	62	55	9	11	11	4
CII	35	18	15	4	2	4

Outdoor Water Use Incentives						
	Rain/Wind Sensors	Soil Moisture Sensors	ET/ Smart Controllers	Landscape Materials	Soil Amendments	Other
Residential	44	5	53	13	7	11
CII	17	2	23	4	3	3

Budget Takeaways

- Too Much?
 - ▣ Residential Indoor
 - Rate of Return
 - Toilet - 40 to 100 plus years
 - Clothes Washer – 15 to 45 years (water only)
 - Showerheads – 1 to 3 years (energy included)
 - Faucet Aerators – 8 to 25 weeks (energy included)
 - Passive Replacement
- Not Enough?
 - ▣ Commercial Indoor
 - Rate of Return
 - Toilet – 5 to 100 plus years
 - Clothes Washer – 2 to 90 years (water only)
 - Showerheads – 0.2 to 2 years (energy included)
 - Faucet Aerators – 2 to 8 weeks (energy included)
 - ▣ Large Customer Programs
 - ▣ Monitoring and Verification

Percent Unaccounted for Water



Time to Re-Purpose Funds





Passive Savings

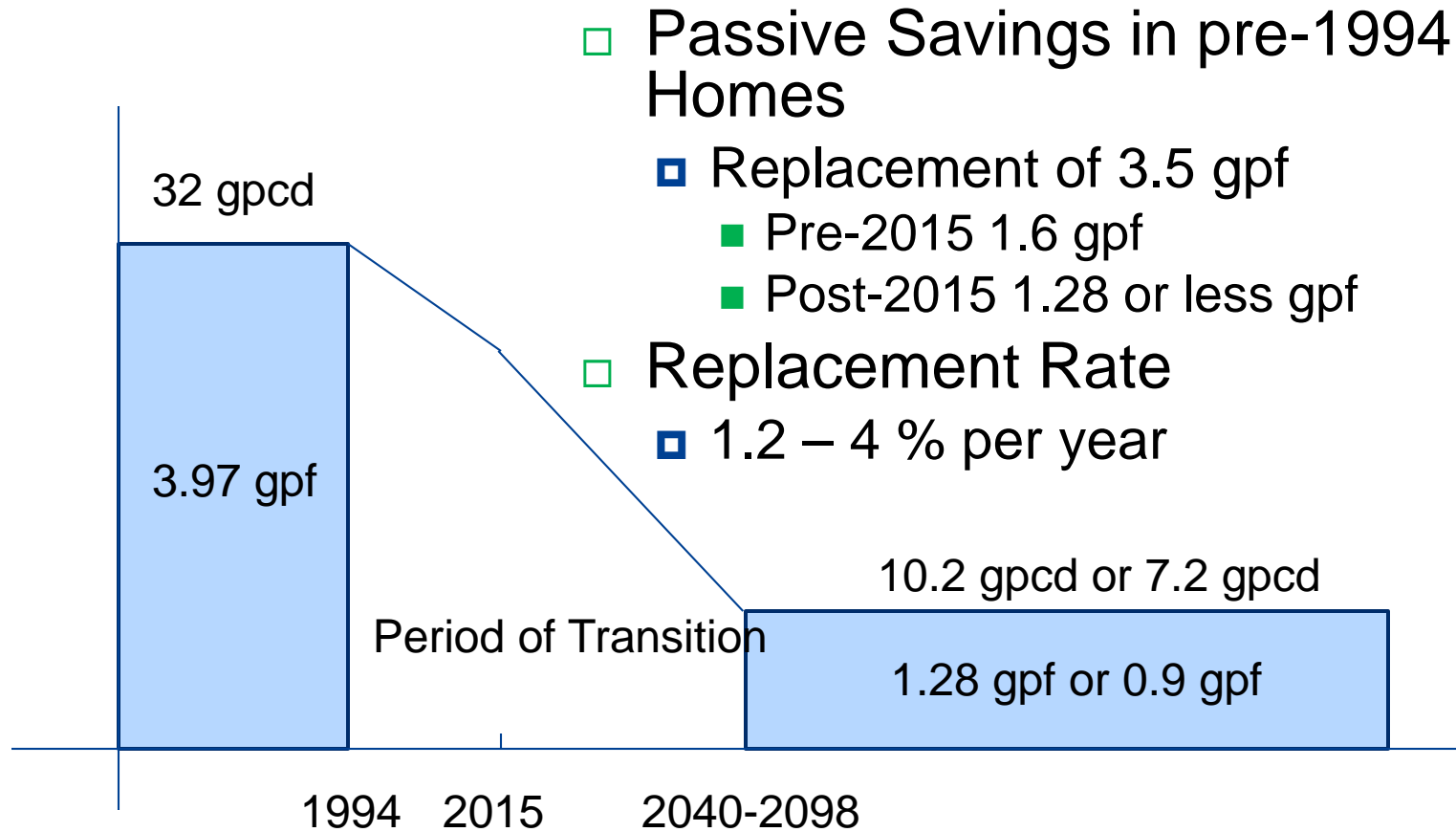
Passive Savings Analyses

- Update Passive Savings Using
 - ▣ New Regulations that Will Impact Market
 - ▣ Colorado Housing Stock Information
 - ▣ New Data on Fixture/Appliance Replacement Rates
 - ▣ New Technologies
 - Toilets
 - Clothes Washers
 - Dishwashers

Regulations Influencing Passive Savings

- Savings Related to Impact of Federal, State and Local Statutes and Ordinances
 - 1992 National Energy Policy Act
(effective 1994/96)
 - 2002 California Energy Commission
(effective 2007)
 - 2009 California Point of Sale Requirements
(effective 2014)
- New and Old Construction

Passive Savings from Toilets



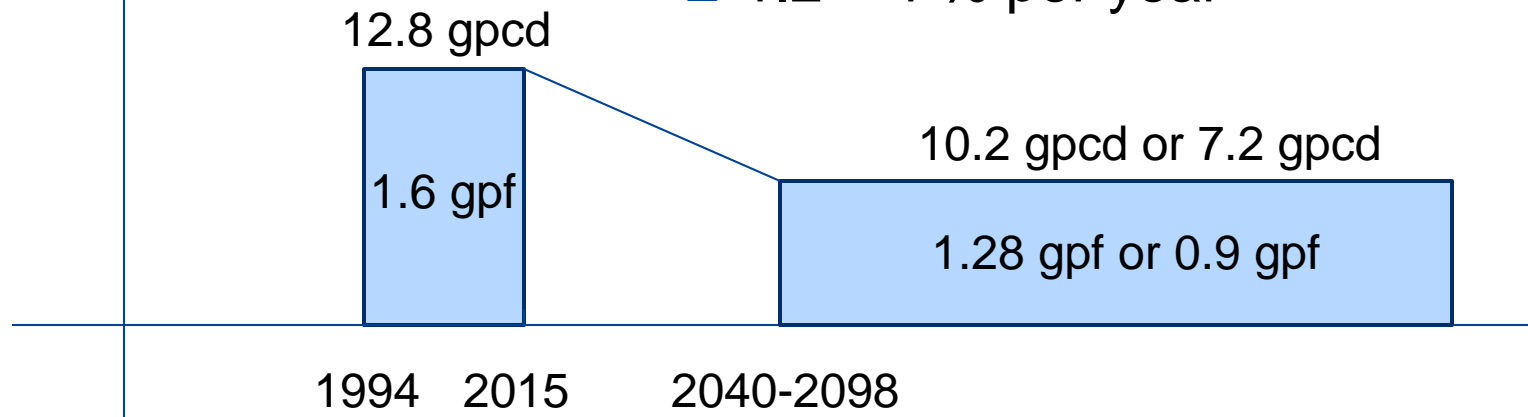
Passive Savings from Toilets

- Passive Savings in pre-2016 Homes

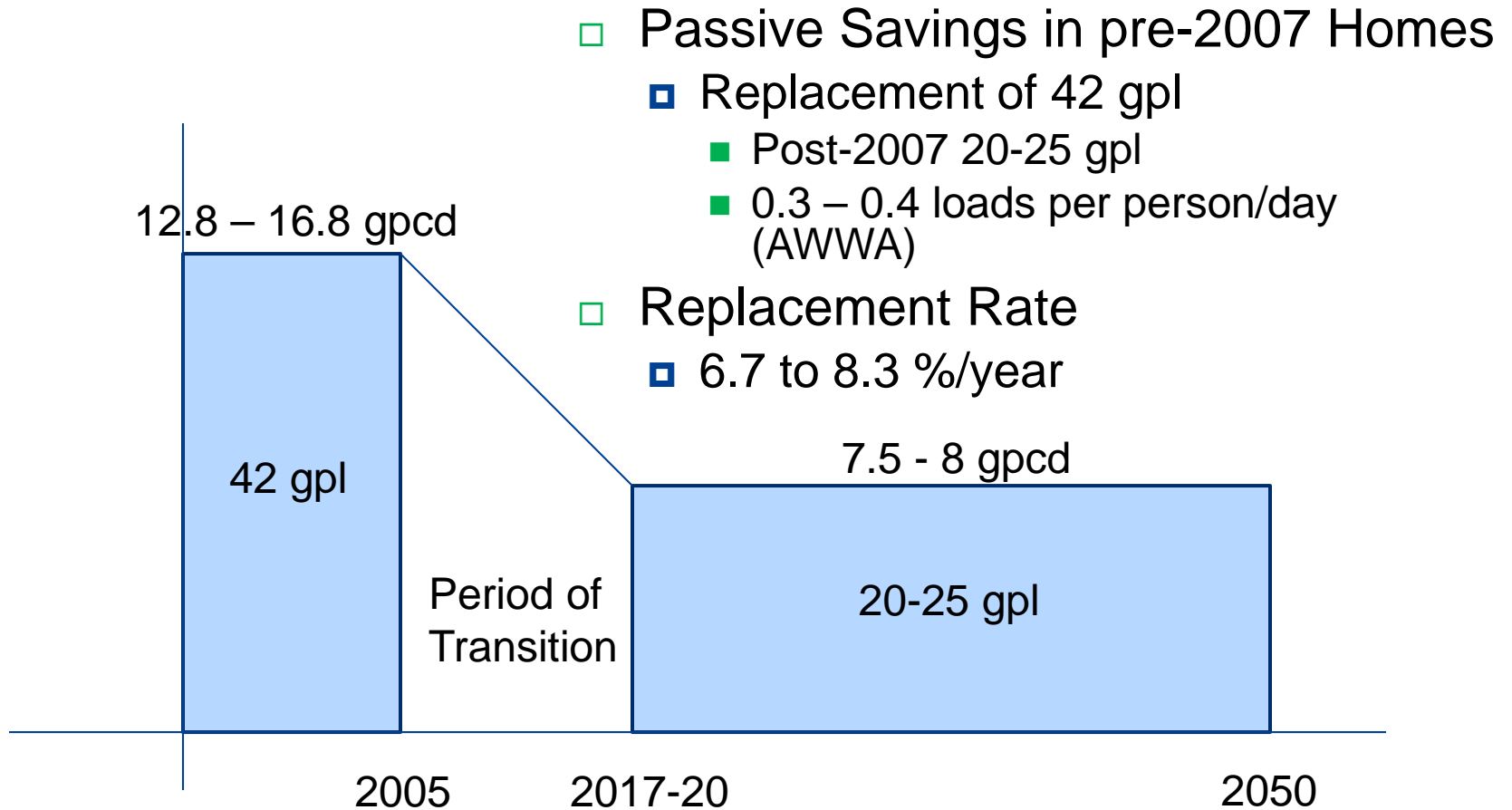
- ▣ Replacement of 1.6 gpf
 - Post-2015 1.28 or less gpf

- Replacement Rate

- ▣ 1.2 – 4 % per year

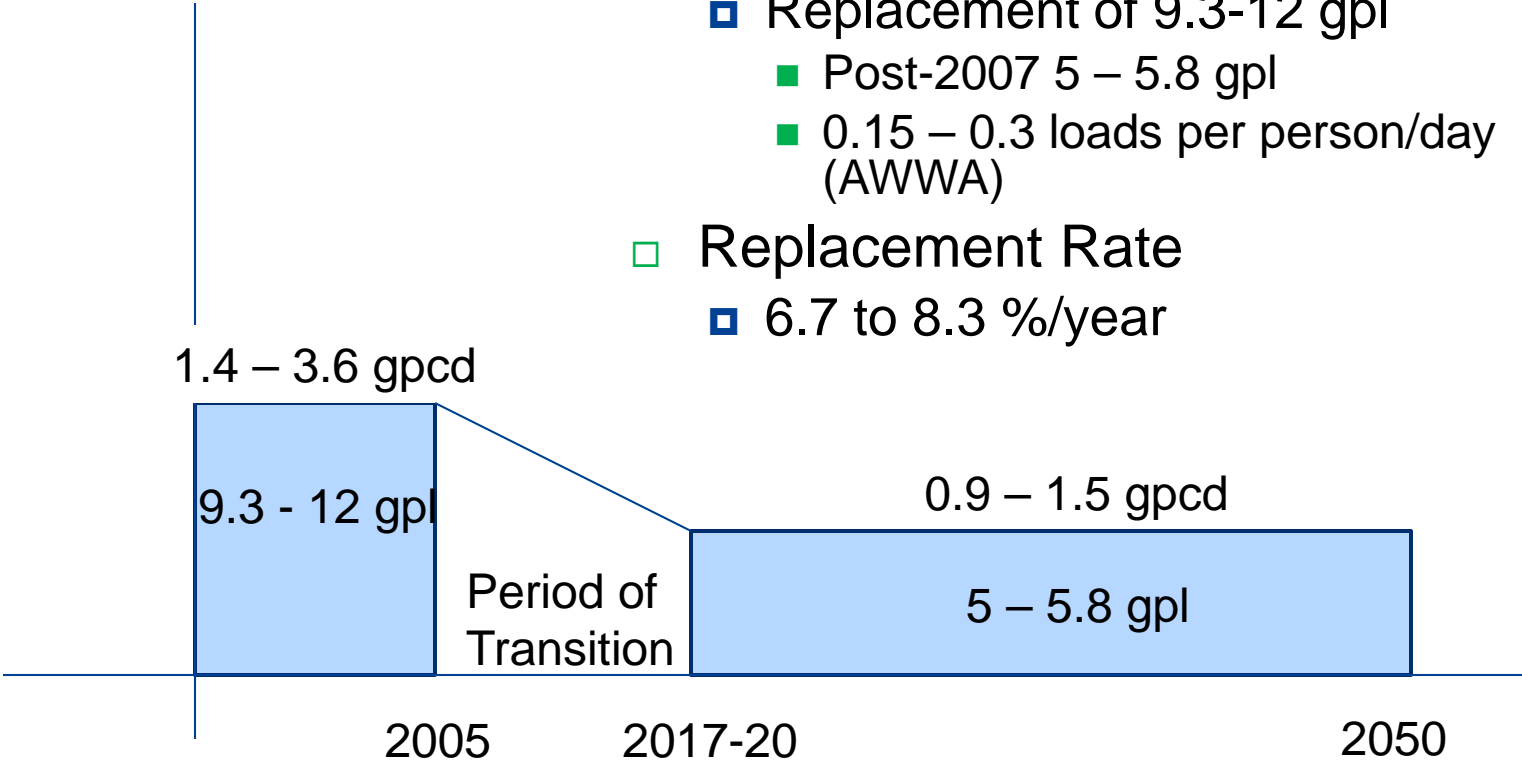


Passive Savings for Clothes Washers



Passive Savings Dishwashers

- Passive Savings in pre-2007 Homes
 - ▣ Replacement of 9.3-12 gpl
 - Post-2007 5 – 5.8 gpl
 - 0.15 – 0.3 loads per person/day (AWWA)
- Replacement Rate
 - ▣ 6.7 to 8.3 %/year

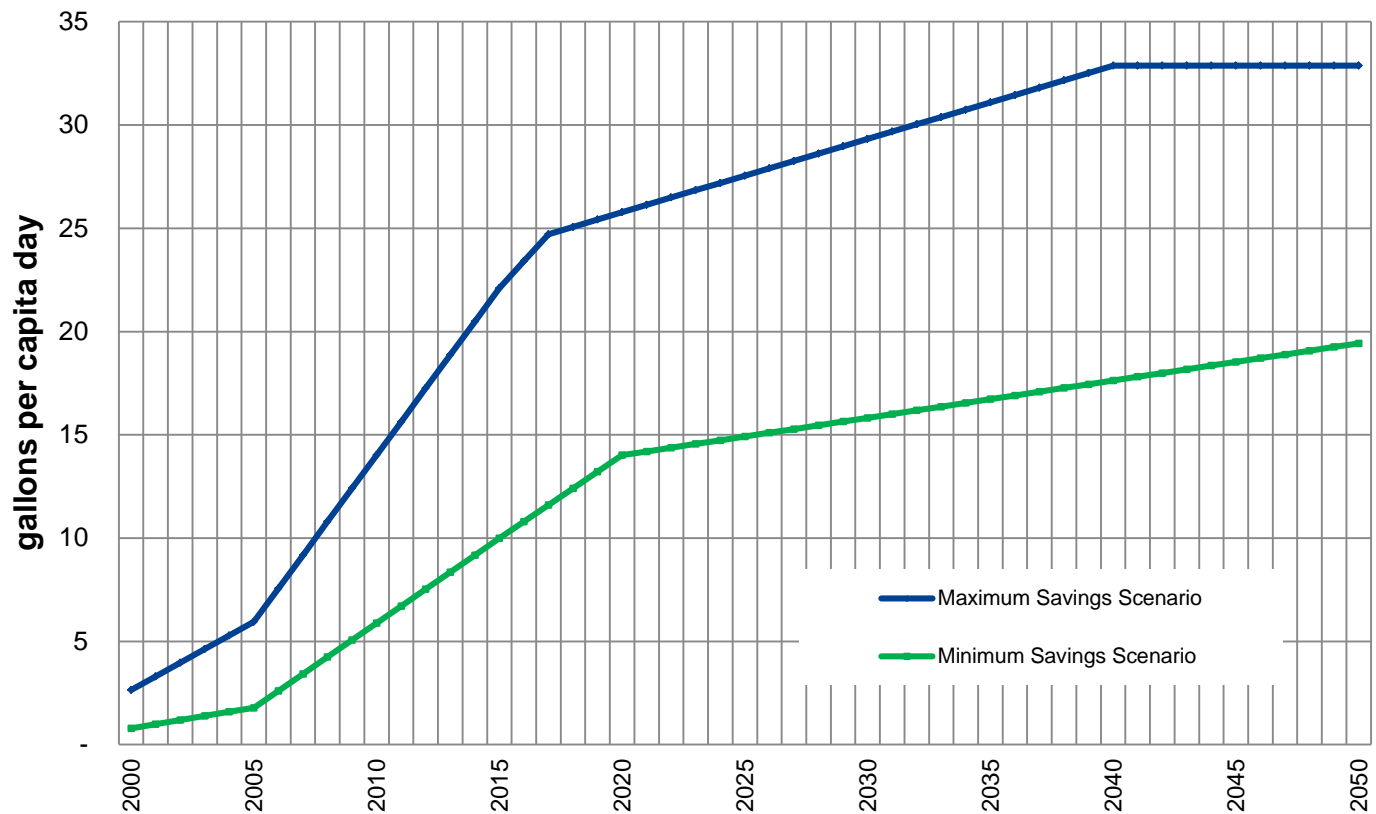




Results

GPCD Reduction versus Time

Figure 8 - Reduction of GPCD Due to Passive Savings



New Framework

Goals

Better Focus On Utility Planning

Improve Data Collection (Understanding and Verification)

Improve Cost/Benefit Analyses

Identify What Can and Can Not Be Implemented

Foundational Components - Rates

Inclining
Block Rates

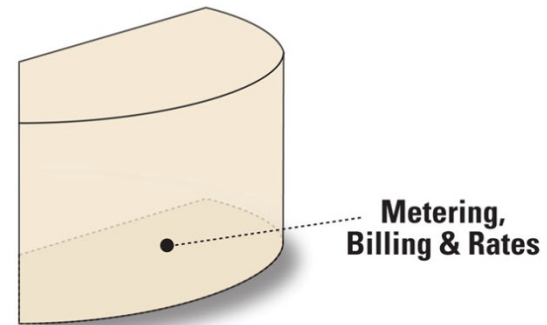
Submetering

Water
Budgets

Monthly
Meter
Reading and
Billing

Online Water
Use
Information

FOUNDATIONAL



Foundational Components - Leaks

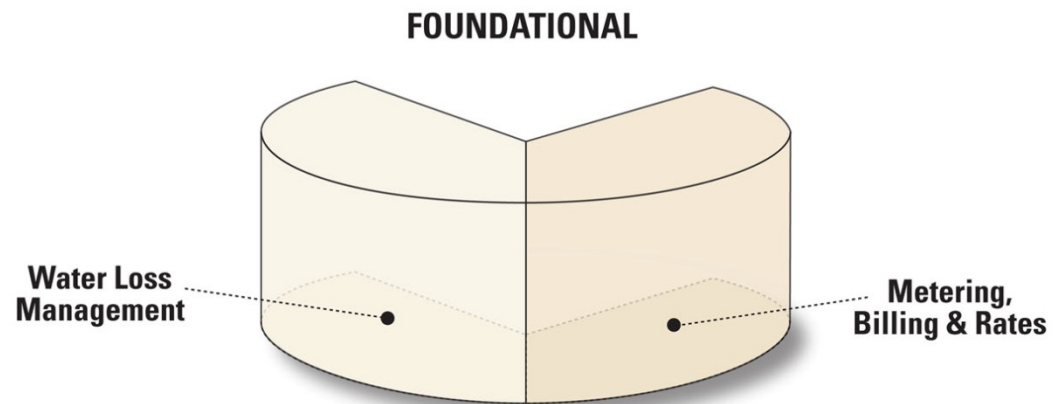
System Wide
Audits

Metering
Testing and
Replacement

Water Line
Replacement

Data
Handling &
Measurement
Procedures

Unauthorized
Consumption



Foundational Components - Track

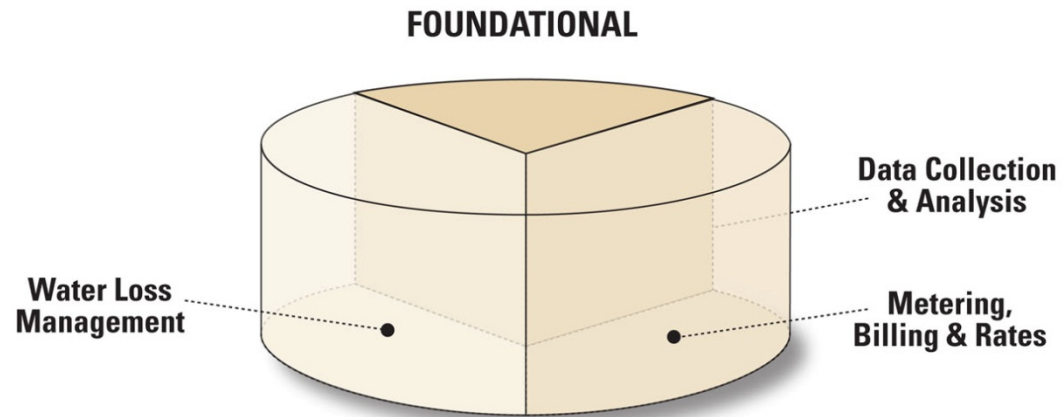
Customer
Categories

High Water
Users

Alignment
with WC
Programs

Differentiate
BY NAICS
Code

Daily,
Monthly,
Seasonally,

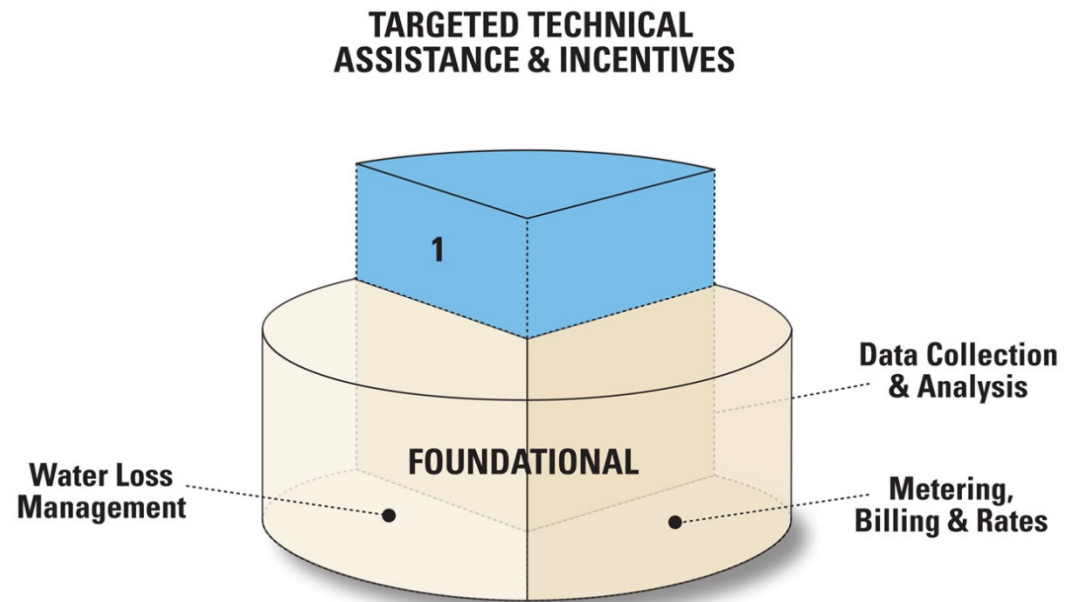


Tiered Programs for Utilities/Districts

Utility/District
/Municipal
Facility
Reductions

Link to
Messaging
to
Customers

Sustainable
Business
Practices



Tiered Programs for Utilities/Districts

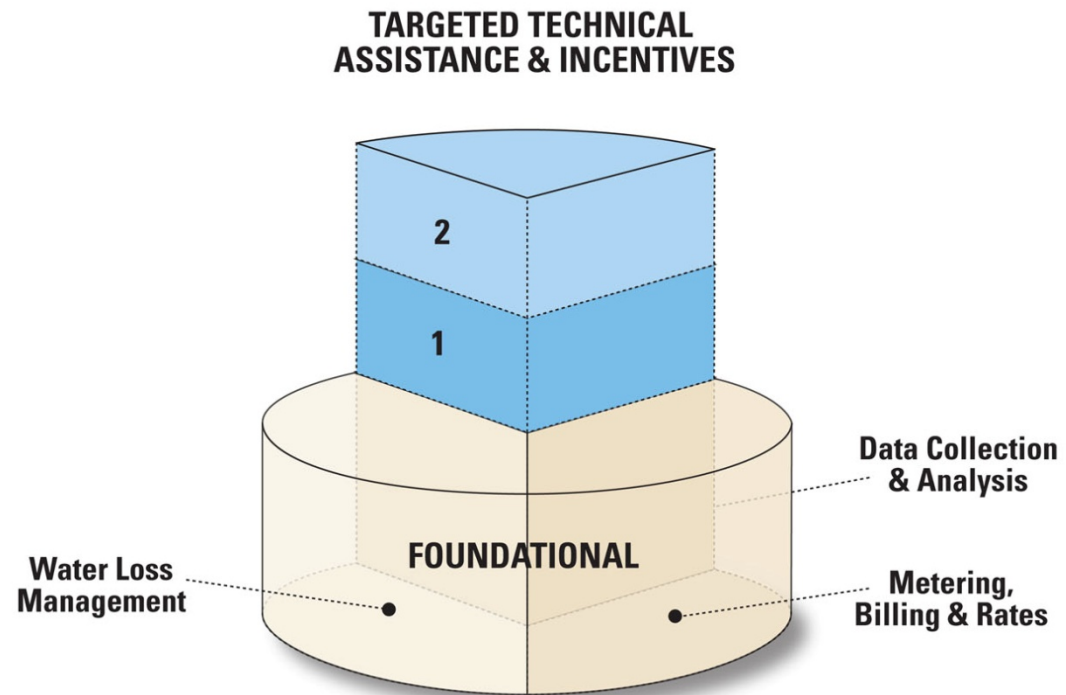
Targeted
Largest
Customers

Audits

*Fixture
Replacements*

*Irrigation
Improvements*

*Focused
Technical
Assistance*



Tiered Programs for Utilities/Districts

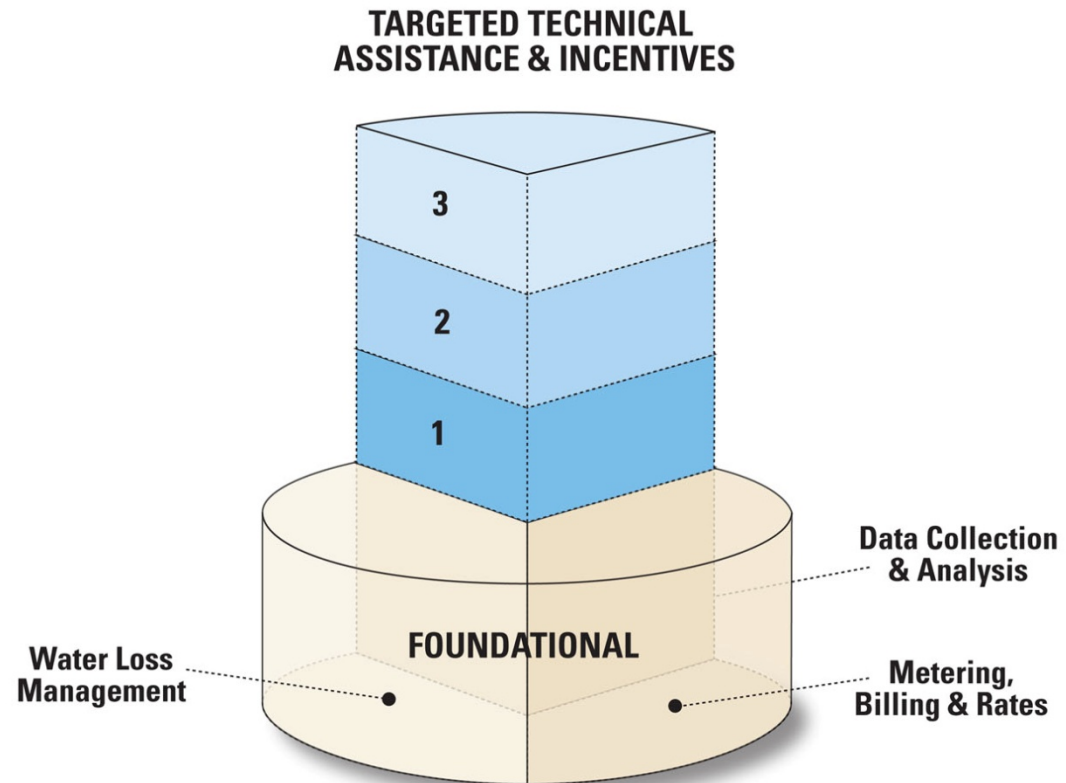
Targeted
Technical
Assistance
and
Incentives for
Other
Customers

Audits

*Fixture
Replacement
s*

*Irrigation
Improvement
s*

*Focused
Technical*



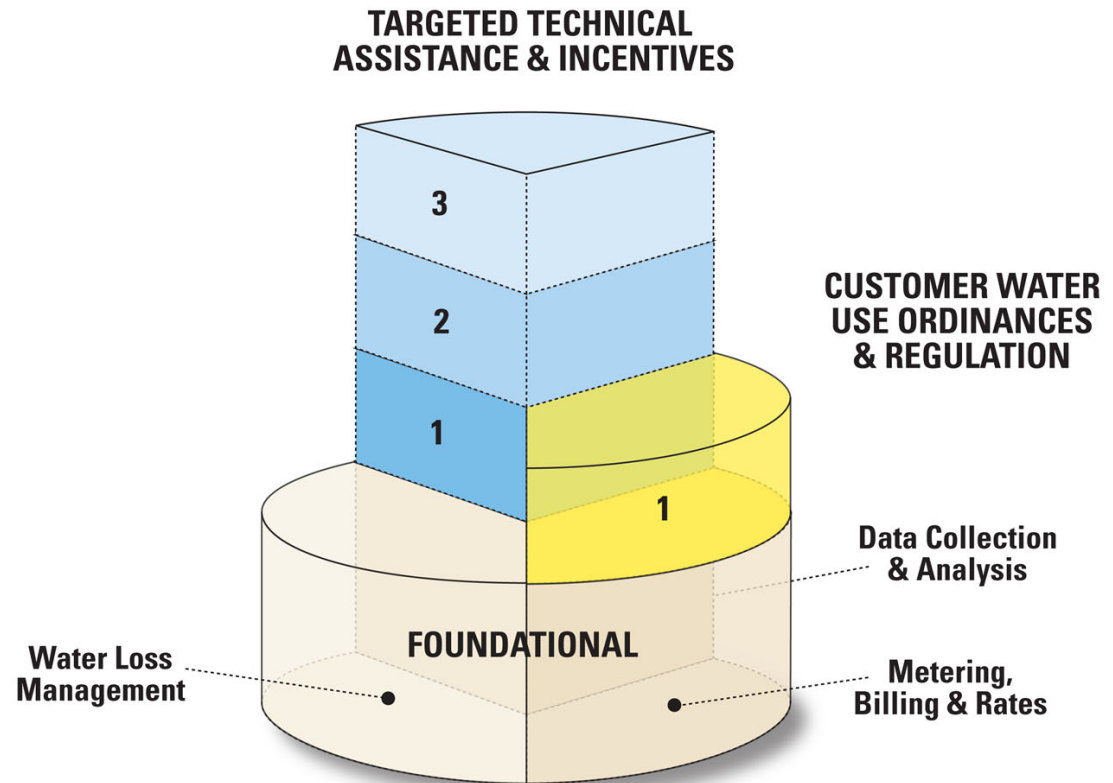
Tiered Programs for Utilities/Districts

Water Waste Ordinance

Timing

Wet Pavement

Cooling Water Tower Requirements/Restrictions



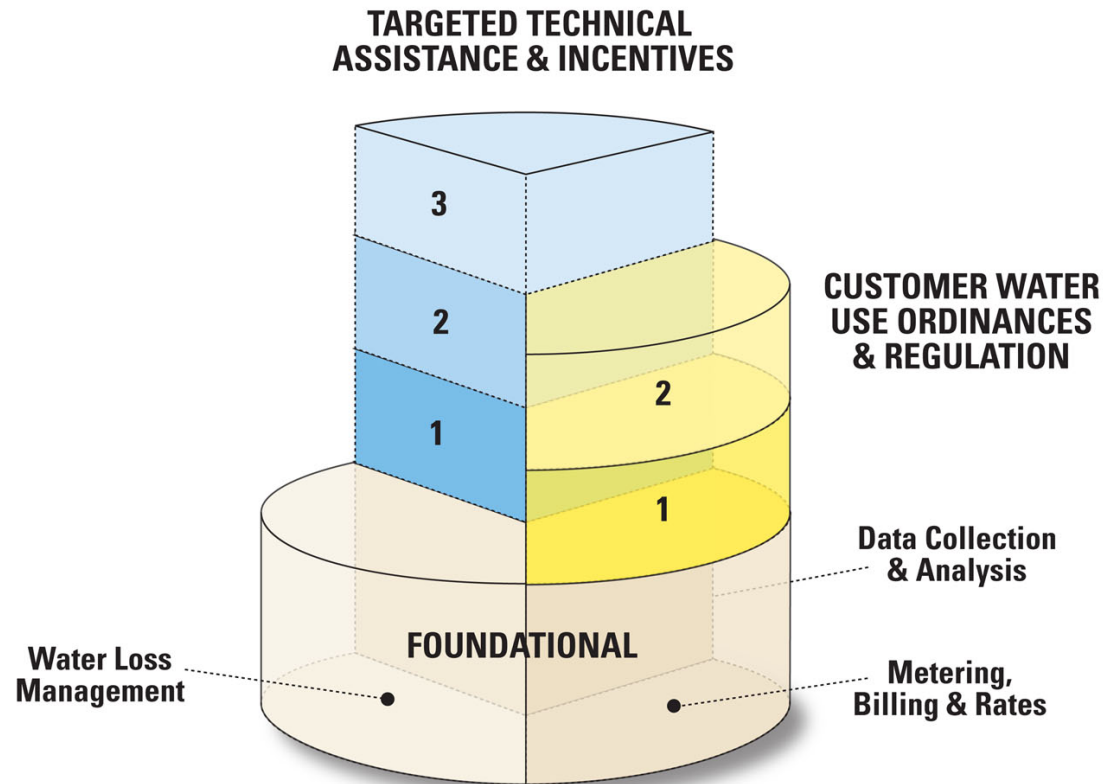
Tiered Programs for Utilities/Districts

New Construction Standards (100% penetration)

Landscape and Irrigation

Indoor Fixtures and Appliances

Water Sense Homes



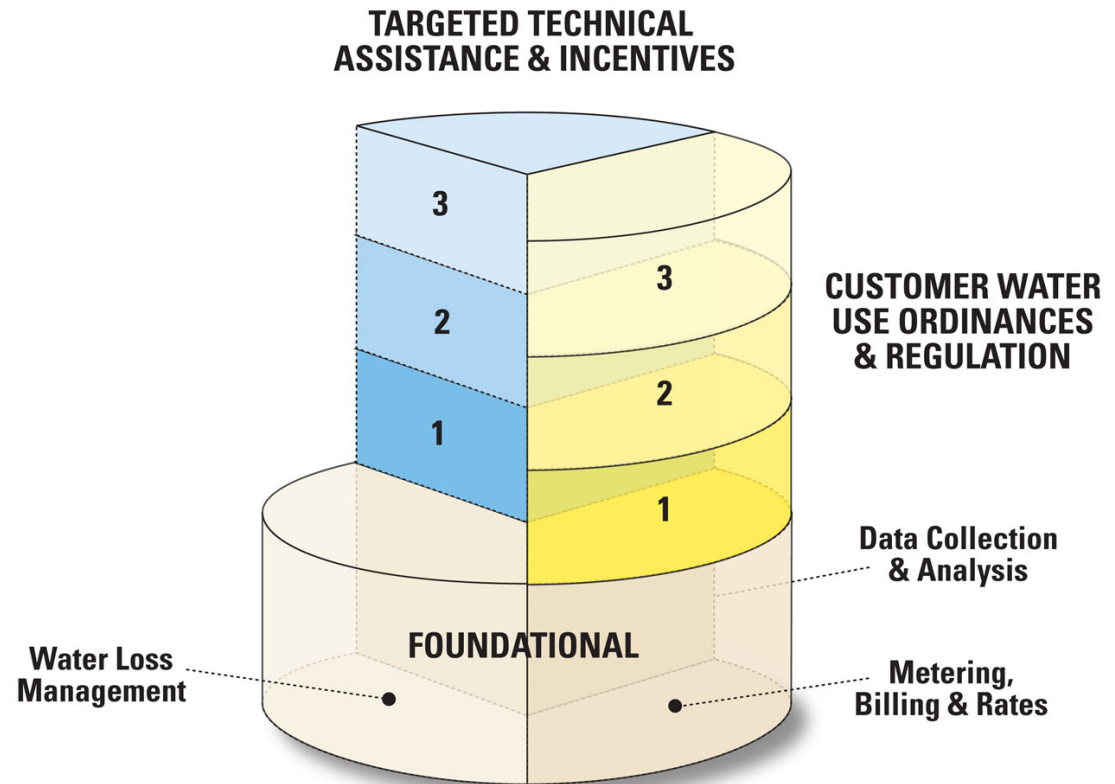
Tiered Programs for Utilities/Districts

Existing
Construction
Retrofits
(100%
penetration)

Point of
Sales

Reconnect
and Retrofit

Certifications
and
Licensing



Tiered Programs for Utilities/Districts

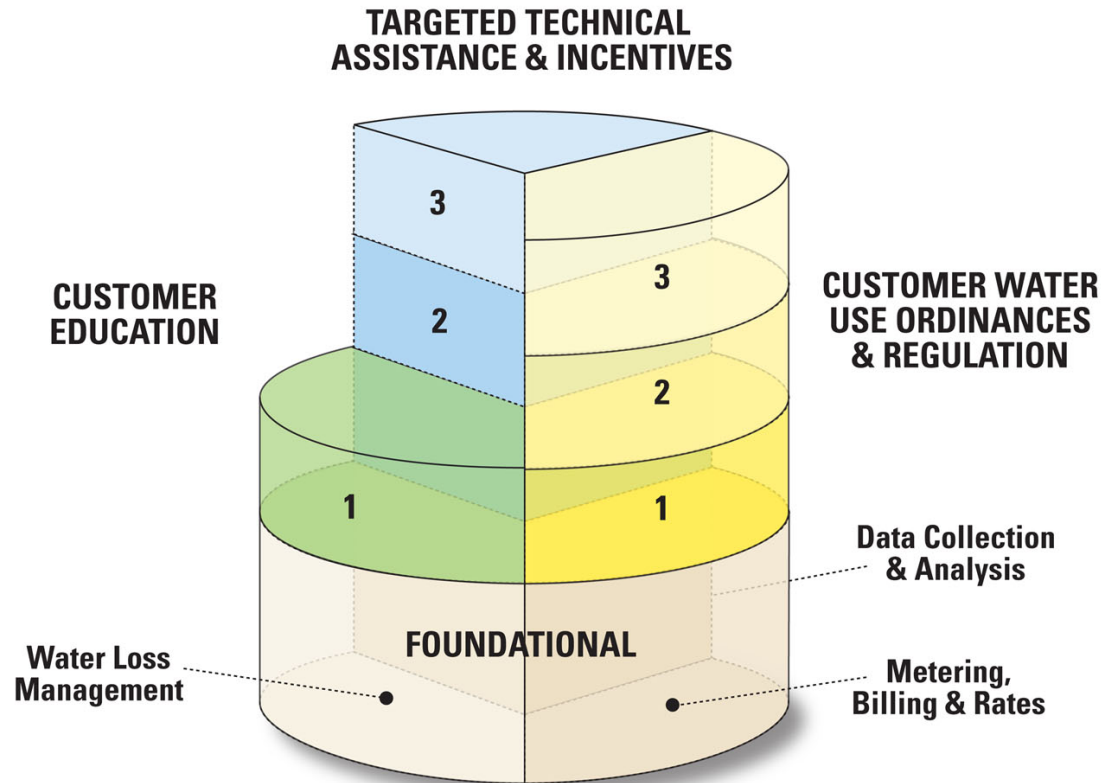
One Way

Bill Stuffers

Website Postings

Mass Mailings

Xeriscape Demo Garden



Tiered Programs for Utilities/Districts

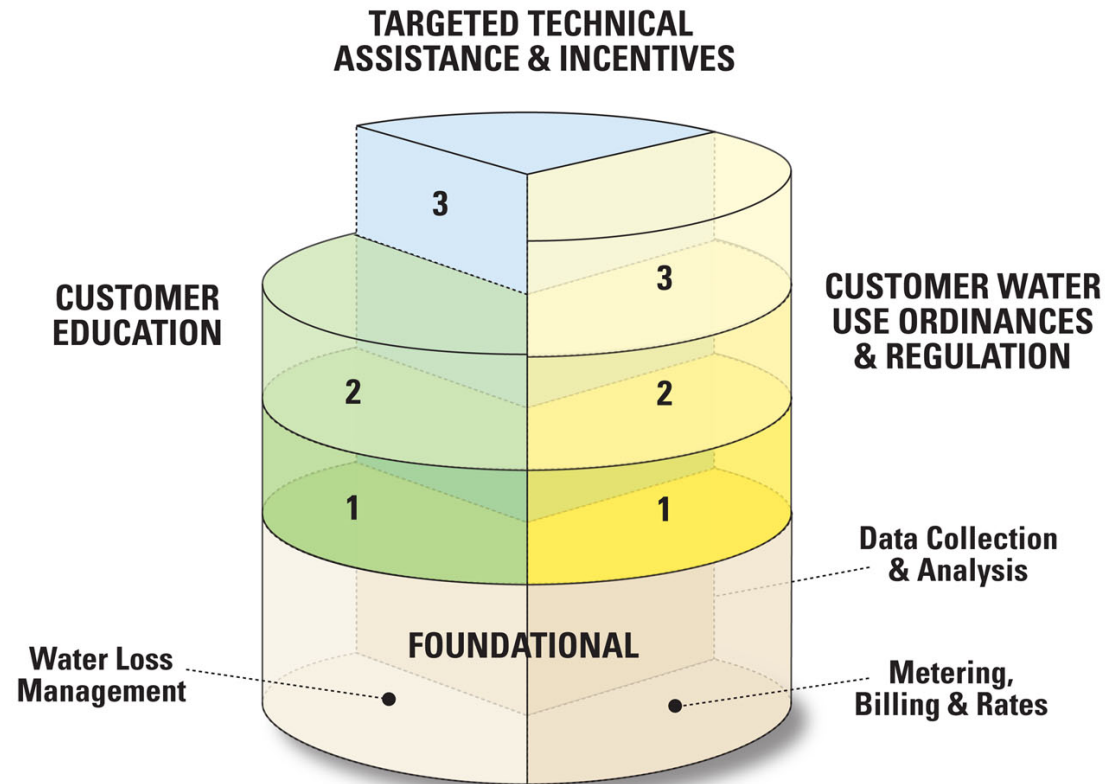
One-Way
with Some
Feedback

*K-12
Education*

Water Fairs

*Consistent
Messaging*

*Interactive
Website (with
tracking)*



Tiered Programs for Utilities/Districts

Two-Way

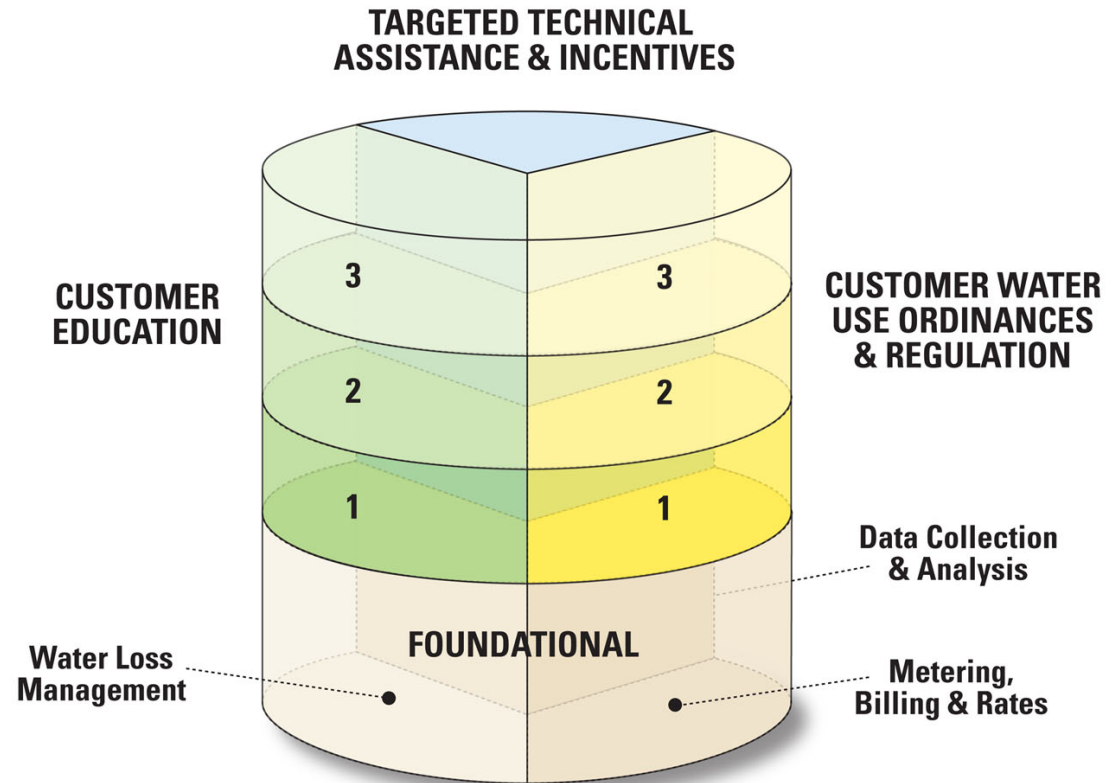
*Citizen
Advisory
Board*

Focus Groups

*Community
Workshops*

*Messaging
Campaigns*

*Social
Marketing*



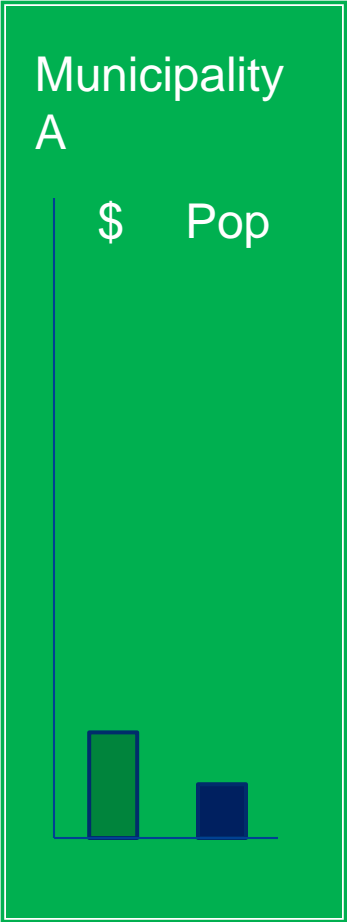
How Do Current Plans Stack Up?

Look at Six Programs

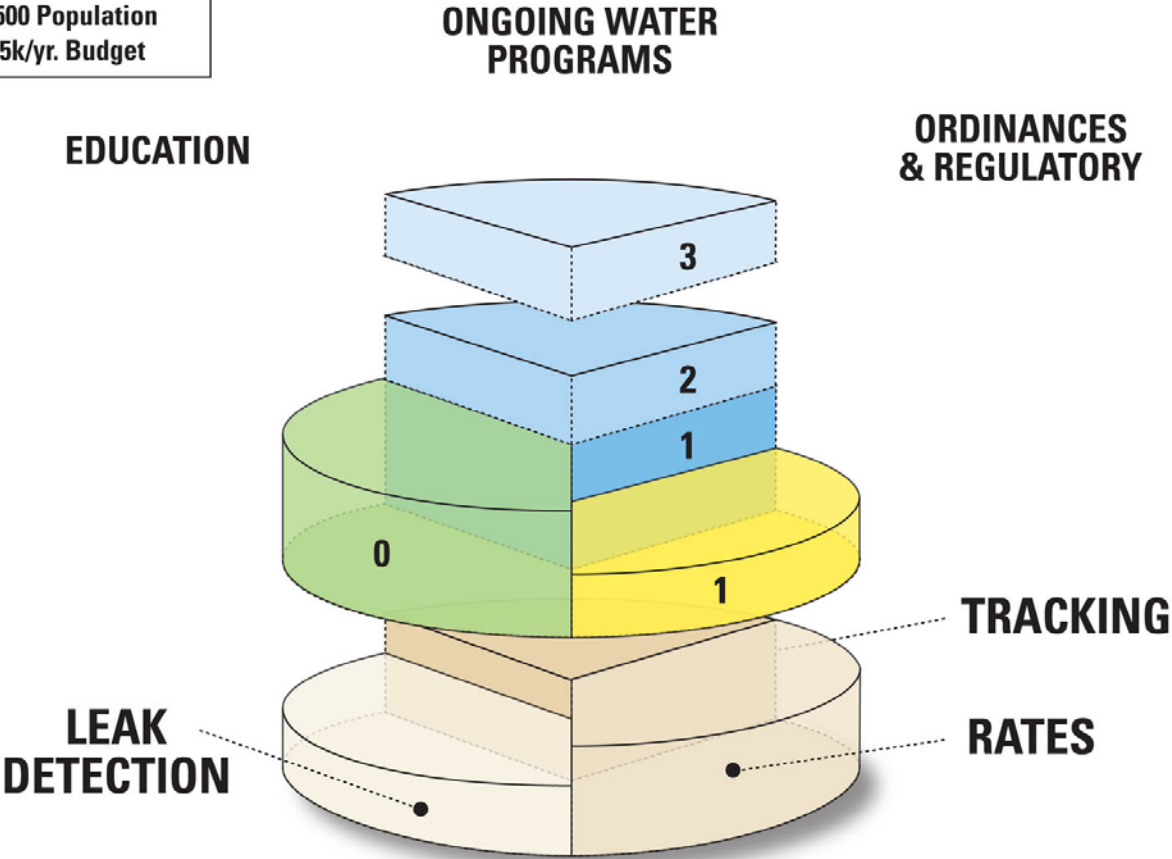
Small and Mid-Sized Communities

Proposed Programs (not necessarily implemented)

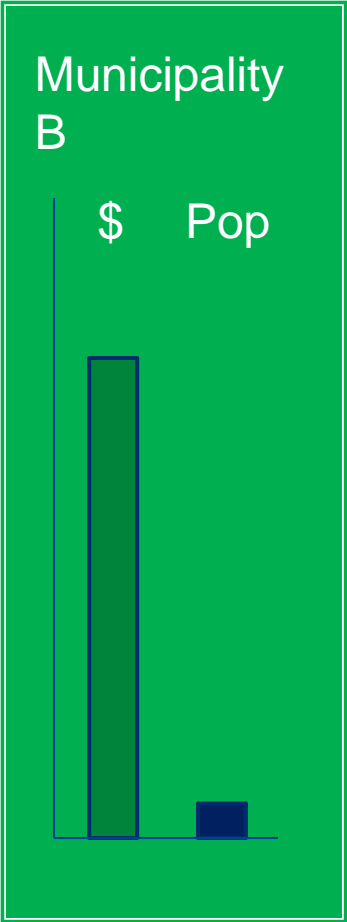
Example from Submitted Plans



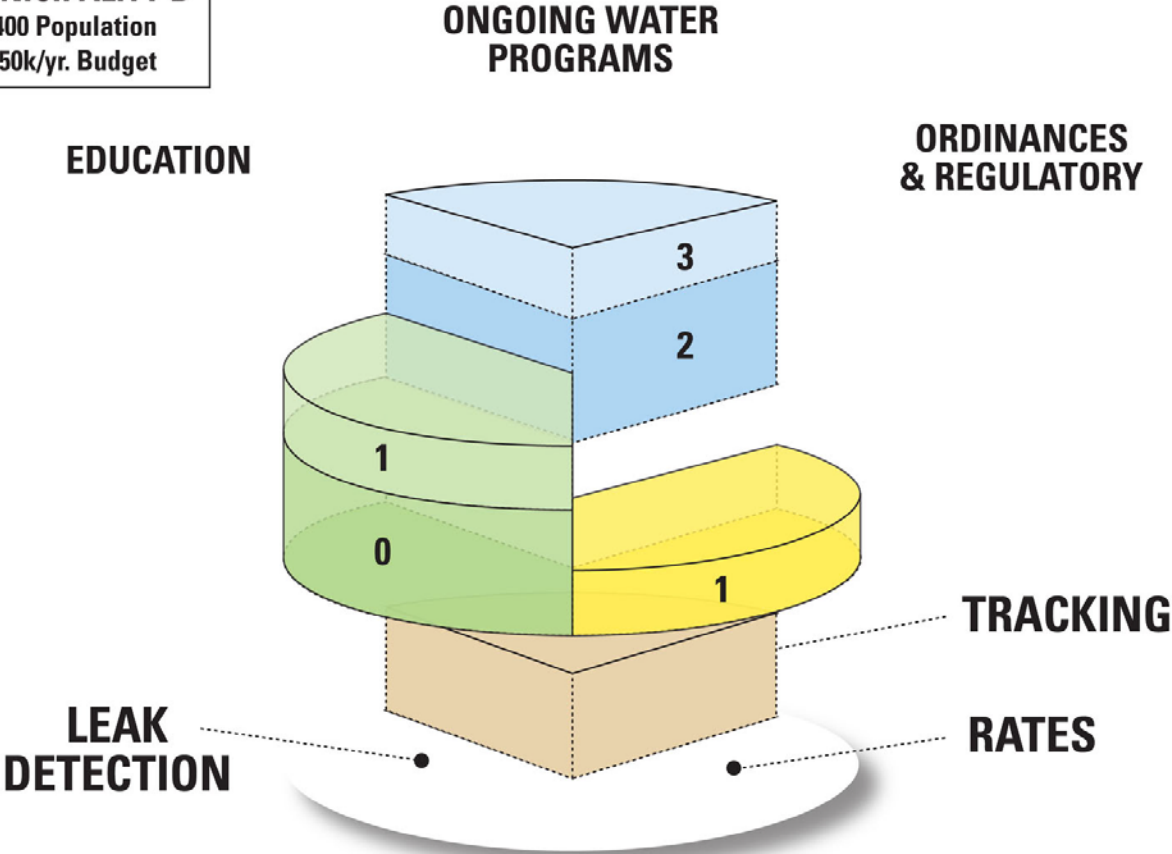
MUNICIPALITY A
• 8,500 Population
• \$55k/yr. Budget



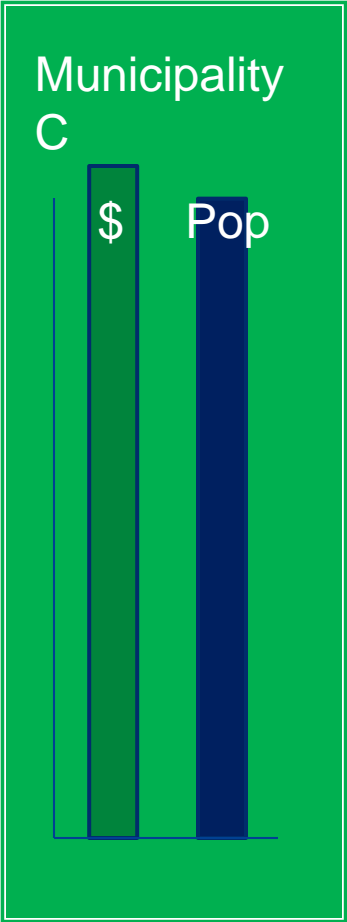
Example from Submitted Plans



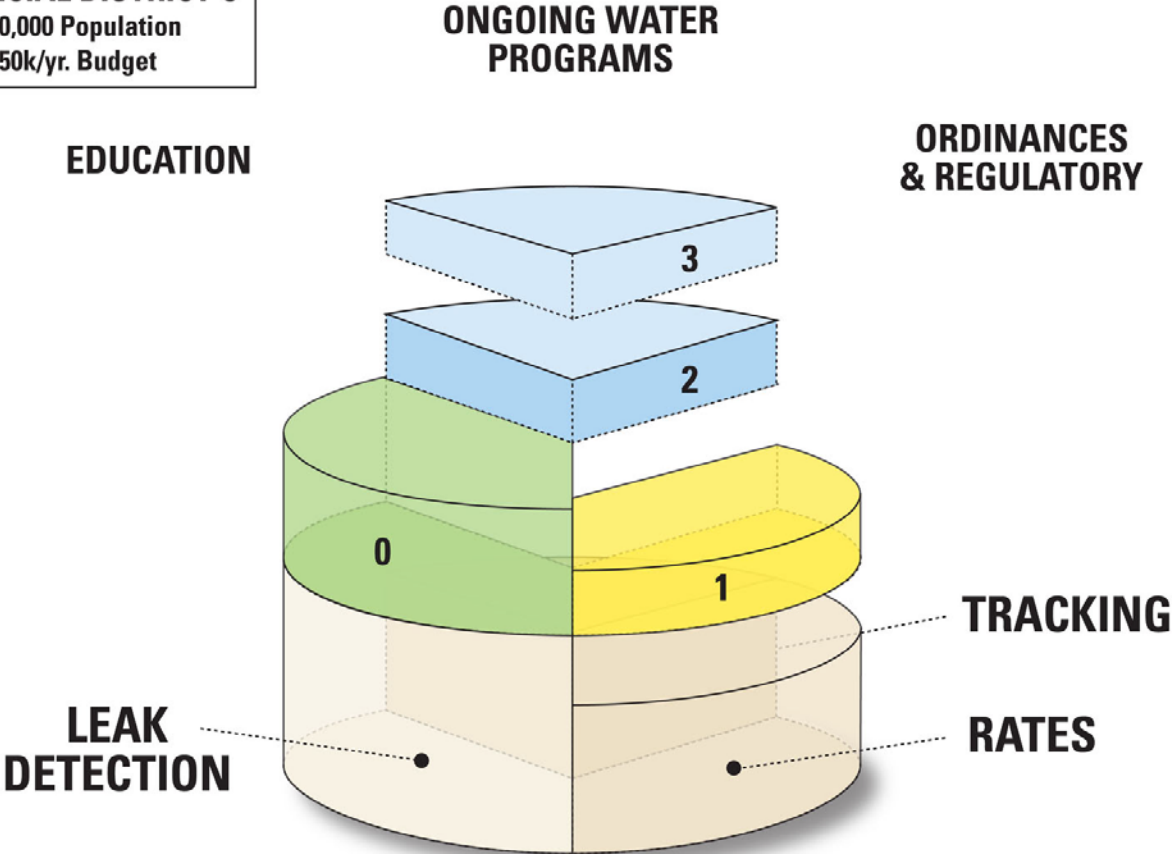
MUNICIPALITY B
• 5,400 Population
• \$250k/yr. Budget



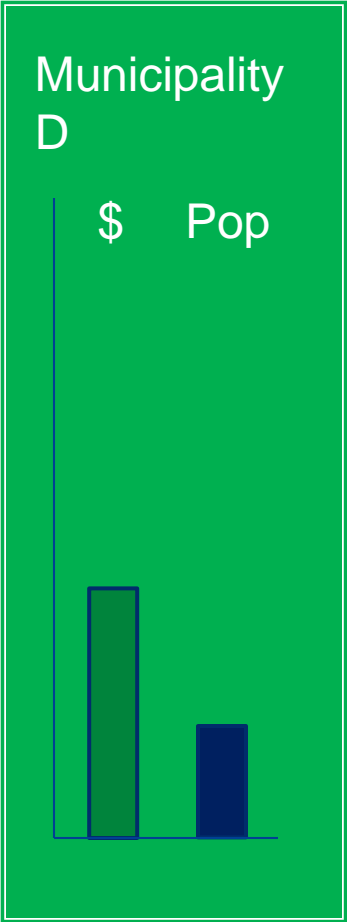
Example from Submitted Plans



SPECIAL DISTRICT C
• 100,000 Population
• \$350k/yr. Budget



Example from Submitted Plans



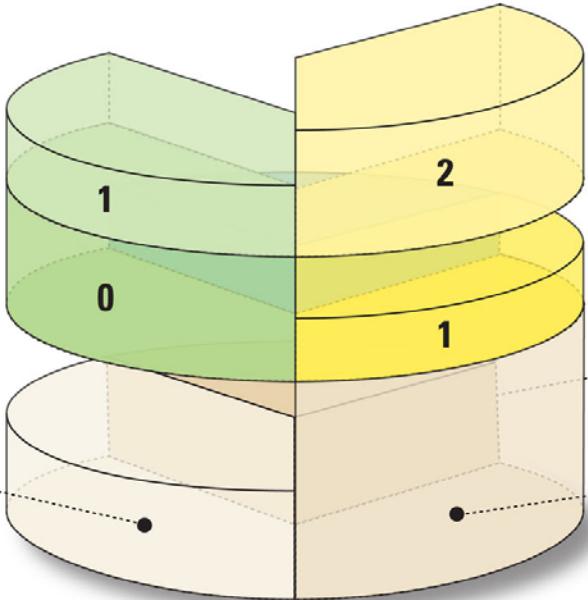
MUNICIPALITY D
• 17,500 Population
• \$130k/yr. Budget

ONGOING WATER PROGRAMS

EDUCATION

ORDINANCES & REGULATORY

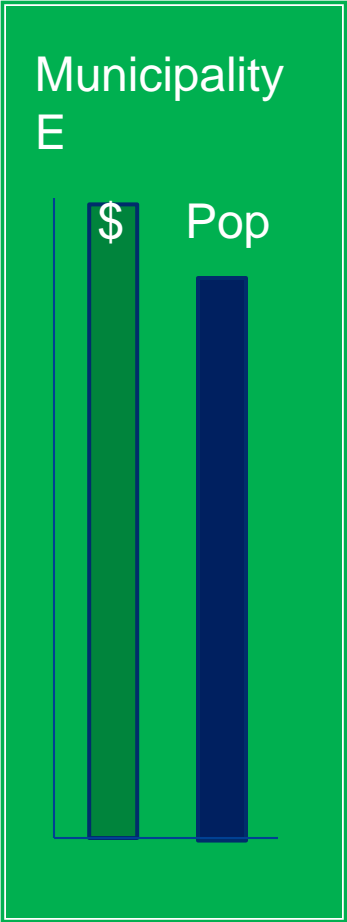
LEAK DETECTION



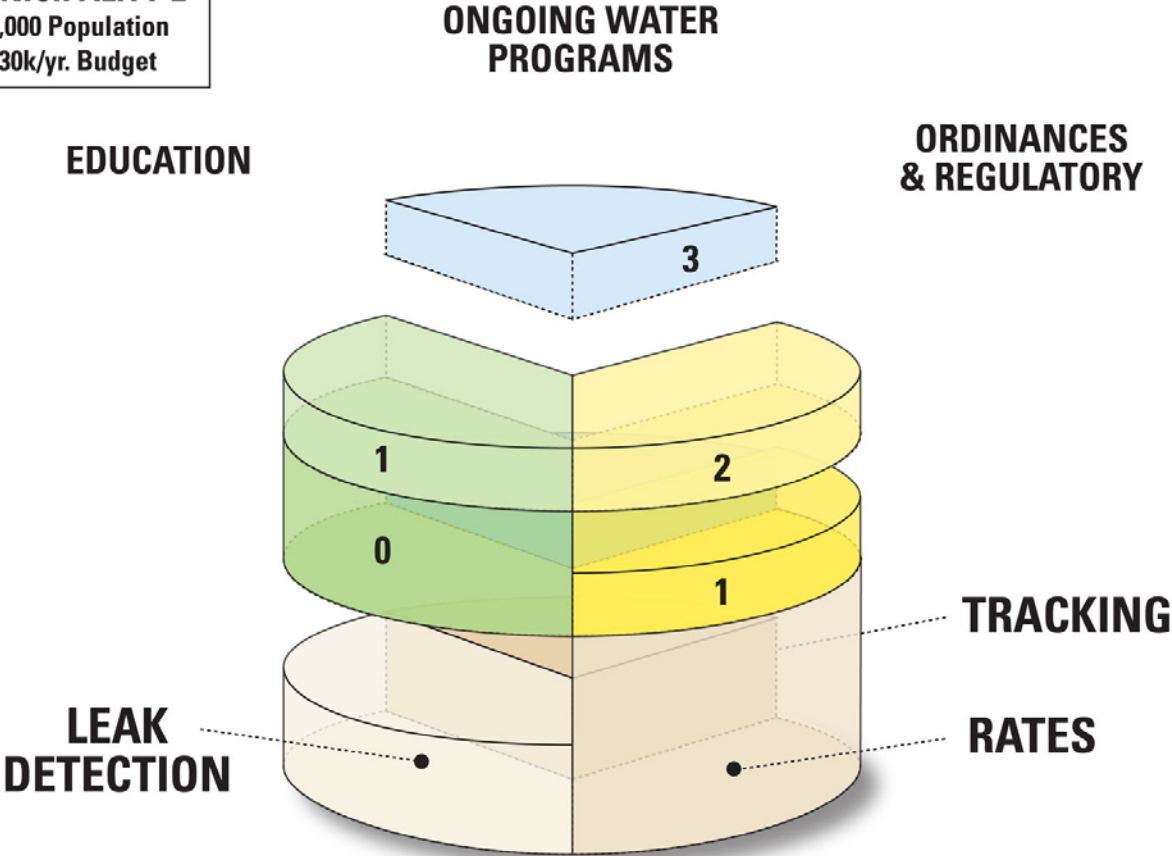
TRACKING

RATES

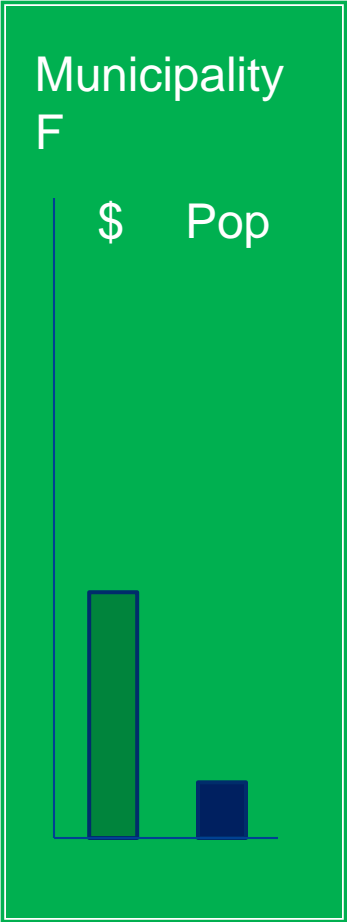
Example from Submitted Plans



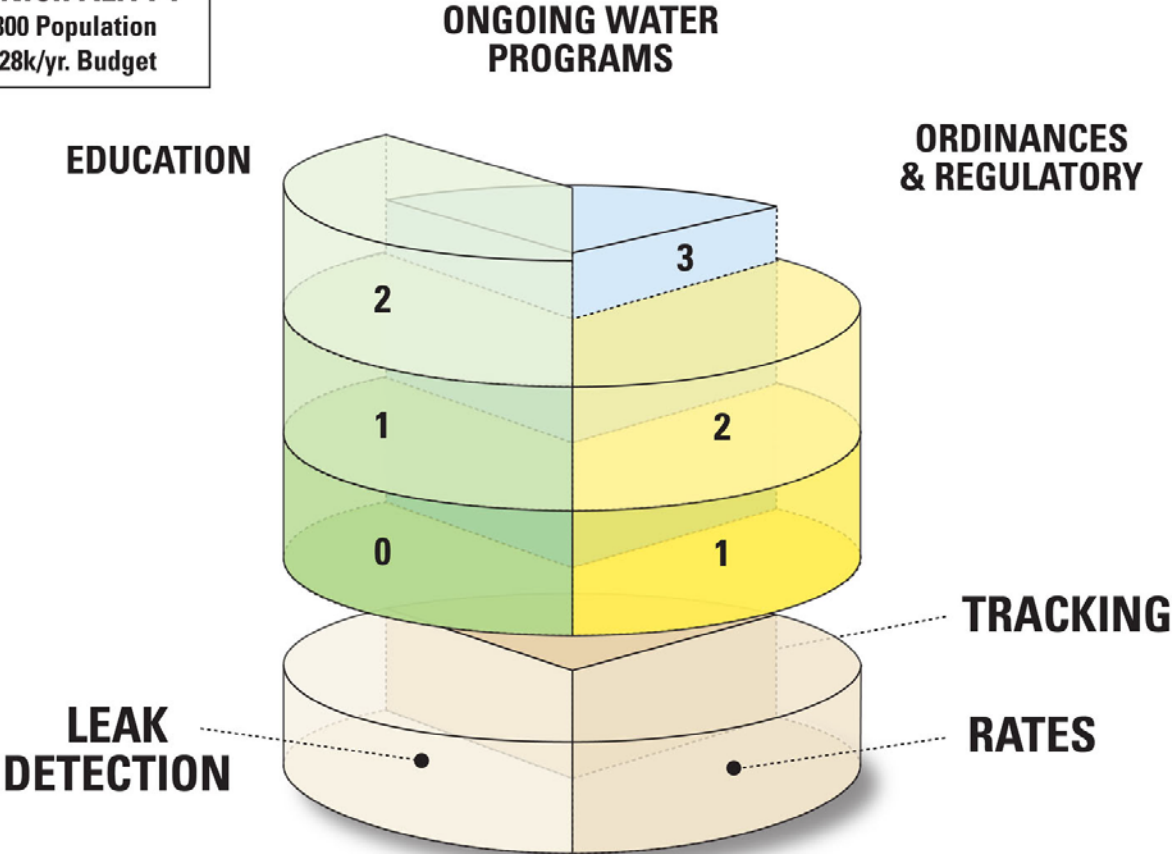
MUNICIPALITY E
• 88,000 Population
• \$330k/yr. Budget



Example from Submitted Plans



MUNICIPALITY F
• 8,800 Population
• \$128k/yr. Budget

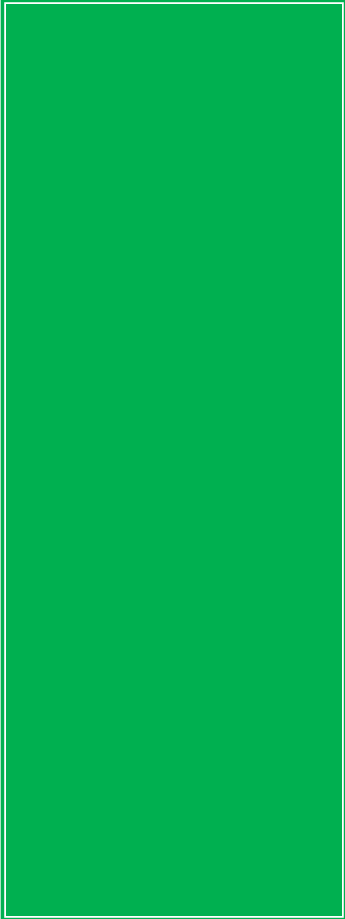


Go Forth and Share



... and that concludes my federal report on the status of climate change. Now, special agent Coffield here will be placing you all under arrest for having classified information.

Insightful Dialogue Ensues



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