



CRESCENTA VALLEY WATER DISTRICT

Cost of Service/ Rate Study Public Workshop

Presentation by:
Crescenta Valley Water District
Raftelis Financial Consultants

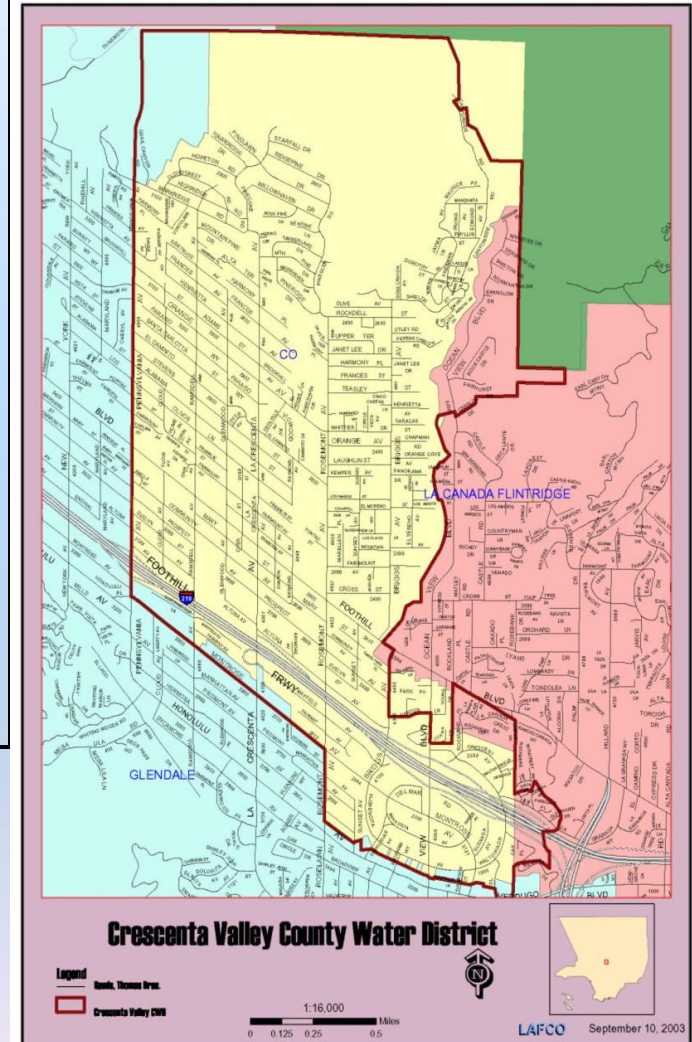
November 18, 2015

Agenda

- **Overview of CVWD Water & Wastewater Operations**
- **Water & Wastewater Budget Information**
- **CVWD Reserve Policy**
- **Water & Wastewater Cost of Service Study**
 - **Project Approach**
 - **Alternative Rate Structures for Water & Wastewater**
- **Question & Answers**

CVWD Facts

- Formed in 1950 as “County” Water District, Combine 3 – mutual water co.
- Provide water & sewer service to 32,000 residents with over 8,000 service connections
- Serve La Crescenta & portions of La Canada Flintridge, Glendale & Montrose
- Governed by 5-member Board of Directors – Elected “At-Large”



CVWD – Water Operations

- 95 miles of Water pipelines
 - 47% > 50-yrs old
- 11 Pressure Zones
- 17 concrete & steel tanks
 - 3.0 MG to 0.5 MG
- Total Storage – 17.5 MG
- Daily Emergency Storage 8 to 10 MG
- 5 to 7-day Storage with water supply out of service



CVWD – Water Operations

- 34 Booster Pumps
- Pumps Water from Reservoir Site to Site
- Pumps at night to fill reservoir
- Uses gravity during day to provide water service



CWVD – Wastewater Operations



- Serves the La Crescenta area & small area of La Canada Flintridge
- CWVD is a Wastewater Collection System only



- 1.7 MGD of sewage flows to City of LA
- Sewage is treated at the LA/Glendale Reclamation Plant near the I-5/I-134 Freeways

Wastewater flow via gravity with only 1 wastewater lift Station

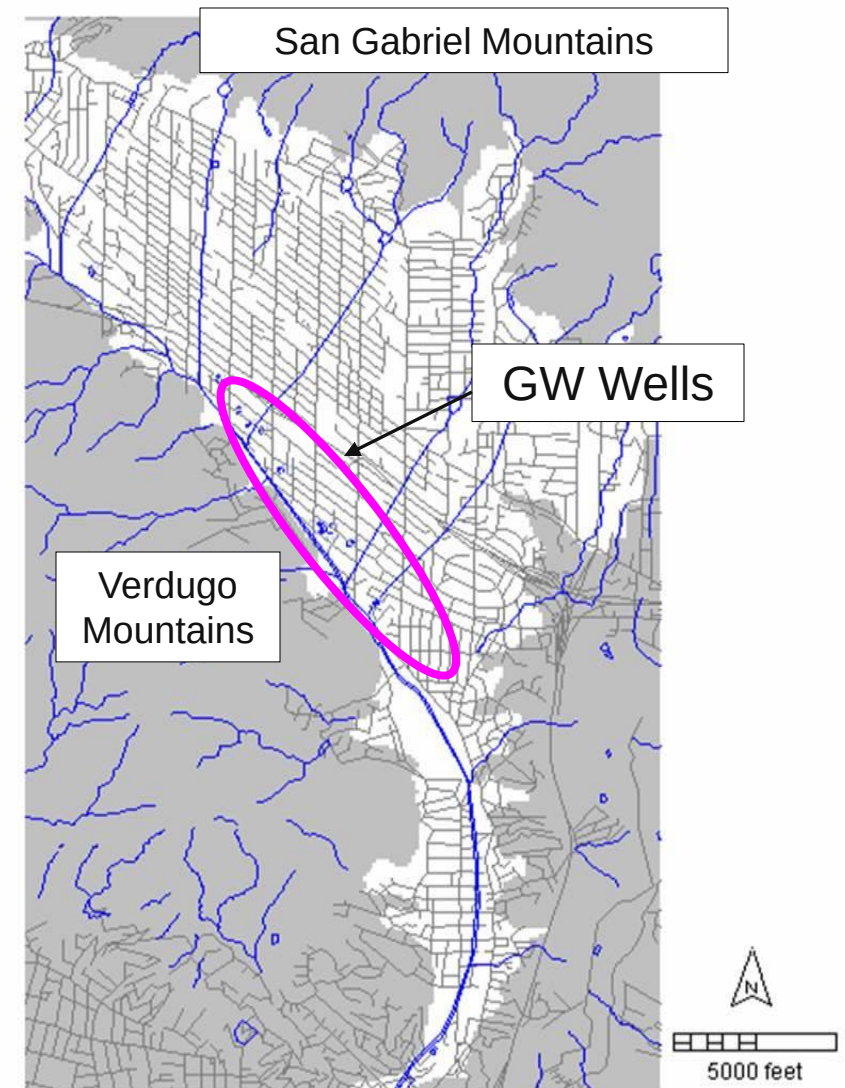
Maintain 66 miles of wastewater pipeline

- Built in early 1980's; Relatively good condition
- Clean collection system within 18-months

CVWD Water Supply Sources

Local Groundwater – Verdugo Basin

- 11 groundwater wells located along Verdugo Wash
- Provides 4.0 MGD max.
- Currently – 2.0 MGD
- 50% of water demand
- Adjudicated Basin
- Rights only to CVWD & Glendale
- New Well 16 – 2016
- New Well 2 - 2017



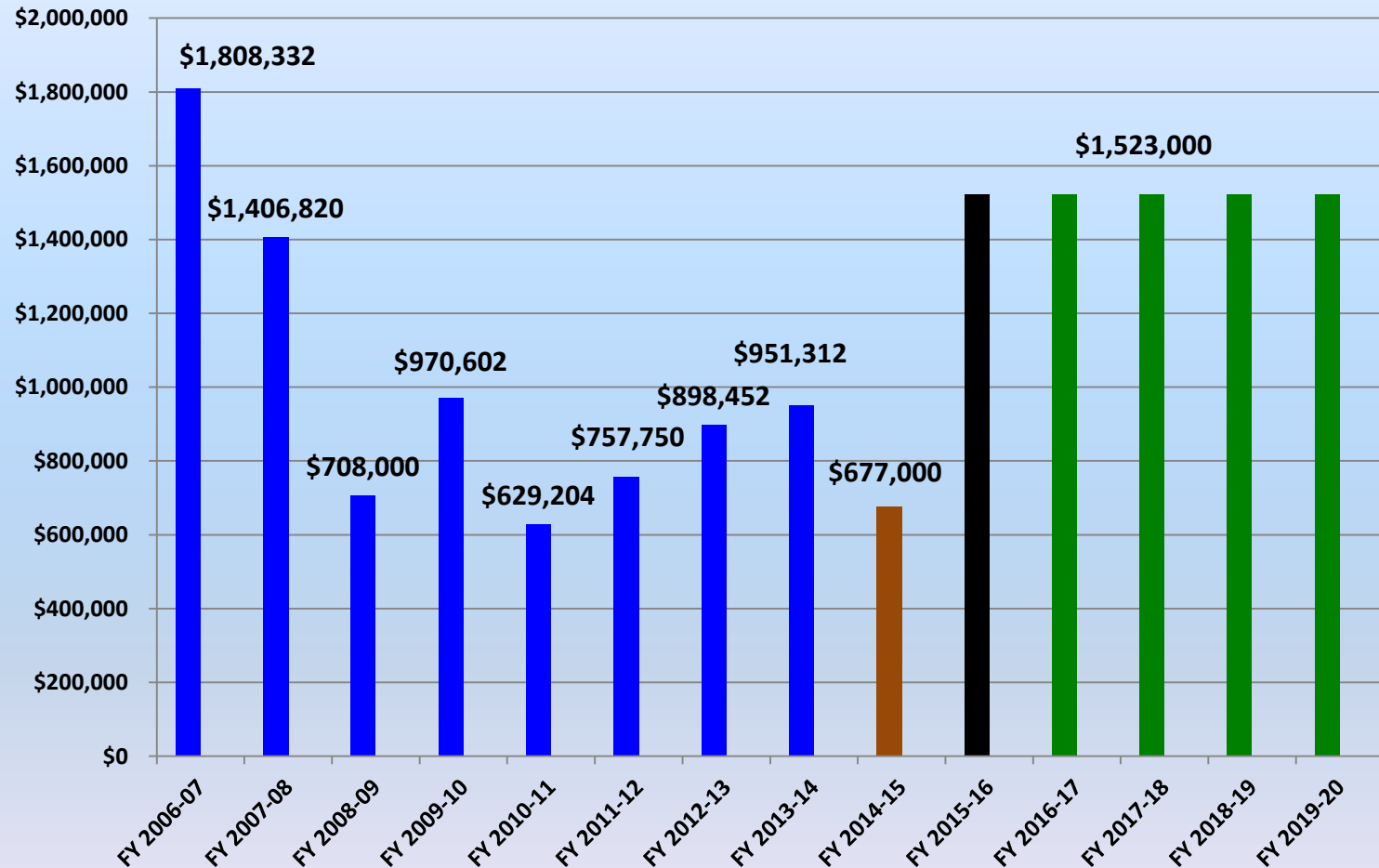
CVWD Water Supply Sources

Imported Water – FMWD

- **Foothill Municipal Water District – wholesaler to CVWD**
 - Created in 1953
 - 8 sub agencies
 - Serves Altadena, La Canada & La Crescenta Area
- Provides 5.9 MGD max
- 50% of water demand
- Imported: Weymouth Plant – La Verne
 - Water supplied from either the Colorado River or the State Water Project in Northern California
- Local groundwater is less expensive than imported water from FMWD/MWD

CWVD – Wastewater Treatment

Summary of LA - Treatment & Disposal Costs



Legend: Blue Bars - Recorded Brown Bar - Projected Black Bar - Budget
Green Bars - Forecasted

Water – Capital Improvement Projects

- **Goal – Replacement of Aging Water System**

- **Categories**

- 1. Water Supply**

- 1. Well Rehabilitation
 - 2. New Wells
 - 3. Stormwater Capture
 - 4. Recycled Water
 - 5. Emergency Water Supply

- 2. Water Storage**

- 1. Reservoir Rehabilitation
 - 2. Additional Storage

- 3. Water Quality**

- 1. Disinfection
 - 2. Nitrate Removal
 - 3. Emerging Contaminants

- 4. Water Distribution**

- 1. Pipelines
 - 2. Booster Pumps
 - 3. Electrical MCC
 - 4. Automated Metering

- 5. Technology**

- 1. SCADA/Telemetry System
 - 2. Communication System

- 6. Public Safety/Emergency Response**

- 1. Seismic Sensors
 - 2. Site Security
 - 3. Emergency Generators

- 7. Facilities & Planning**

- 1. Maintaining/Upgrading Facilities
 - 2. Power Management – Electrical & Solar

Water – Capital Improvement Projects

- 10-year CIP Program based on average replacement cycle
 - \$37.8M over 10-ys
 - Average \$3M - \$4.5 M per year
 - Current CIP program - \$2M per year
- Major element in annual budget
- Question – “How long can projects be deferred?”

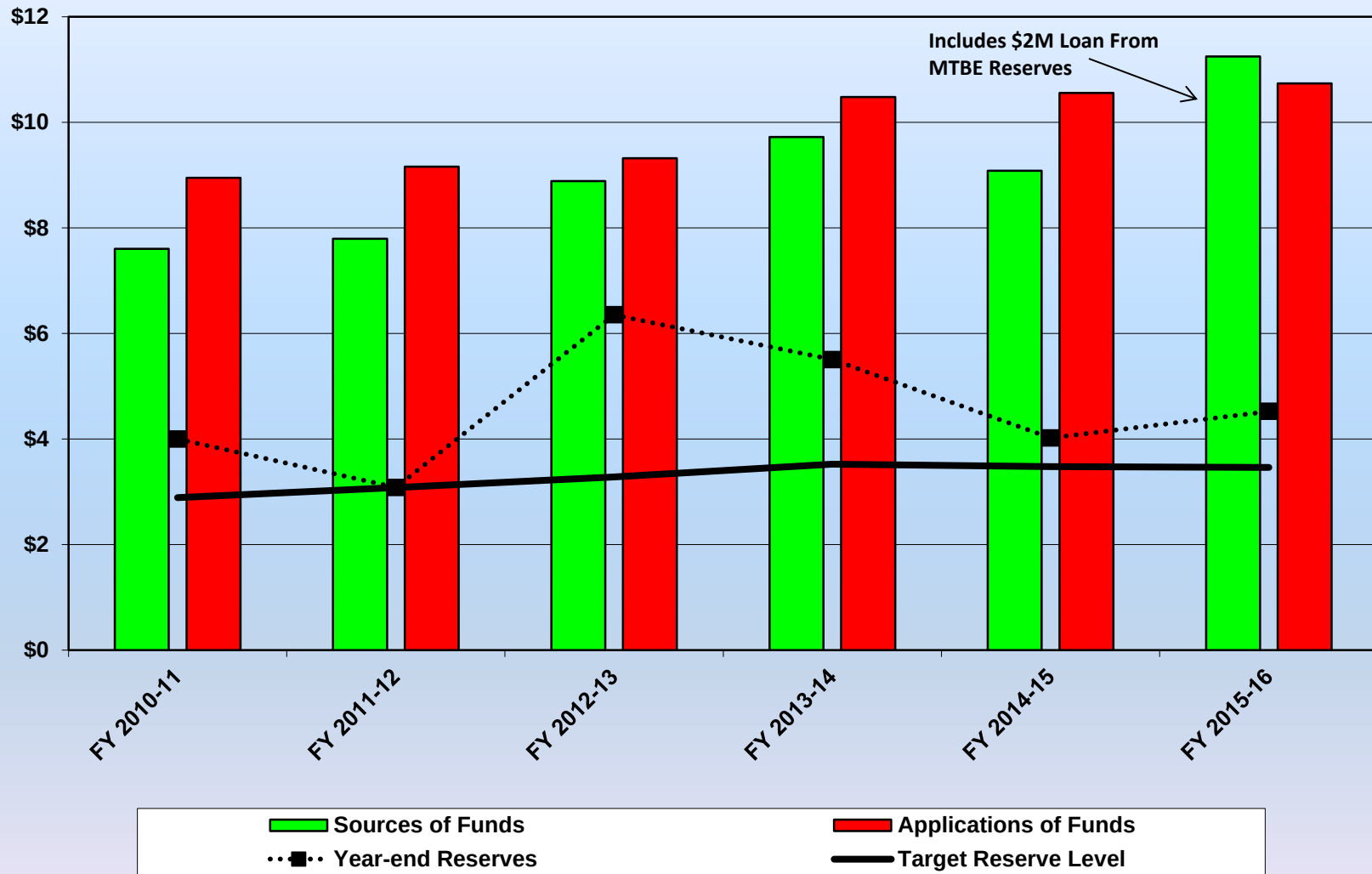


Water Budget Recap

Description	Actual FY 2010-11	Actual FY 2011-12	Actual FY 2012-13	Actual FY 2013-14	Actual FY 2014-15	Budget FY 2015-16
FMWD	\$1.90	\$1.90	\$1.90	\$1.90	\$2.03	\$0
CVWD	\$2.63	\$3.00	\$3.15	\$3.43	\$3.61	\$5.96
Total	\$4.53	\$4.90	\$5.05	\$5.33	\$5.64	\$5.96
Rate Adjustment:	8.4%	8.2%	3.1%	5.5%	5.8%	5.7%
Rate-based Revenues	\$6,611	\$7,584	\$8,493	\$9,195	\$8,510	\$8,808
Water Supply Costs	\$2,209	\$2,031	\$2,234	\$3,152	\$2,780	\$2,277
Other O&M and debt	\$7,159	\$7,080	\$7,691	\$8,505	\$8,438	\$8,312
Project Costs	\$1,176	\$1,467	\$1,300	\$1,537	\$1,627	\$1,880
Annual Increase or (decrease) in Cash	(\$1,345)	(\$1,364)	(\$431)	(\$858)	(\$1,578)	\$410*
Target Cash Balance	\$2,888	\$3,079	\$3,278	\$3,521	\$3,475	\$3,463
Year Ending Cash Fund Balance	\$3,997	\$3,081	\$6,352	\$5,504	\$4,020	\$4,521*

* Includes \$2,000 Loan From
MTBE Reserve Fund

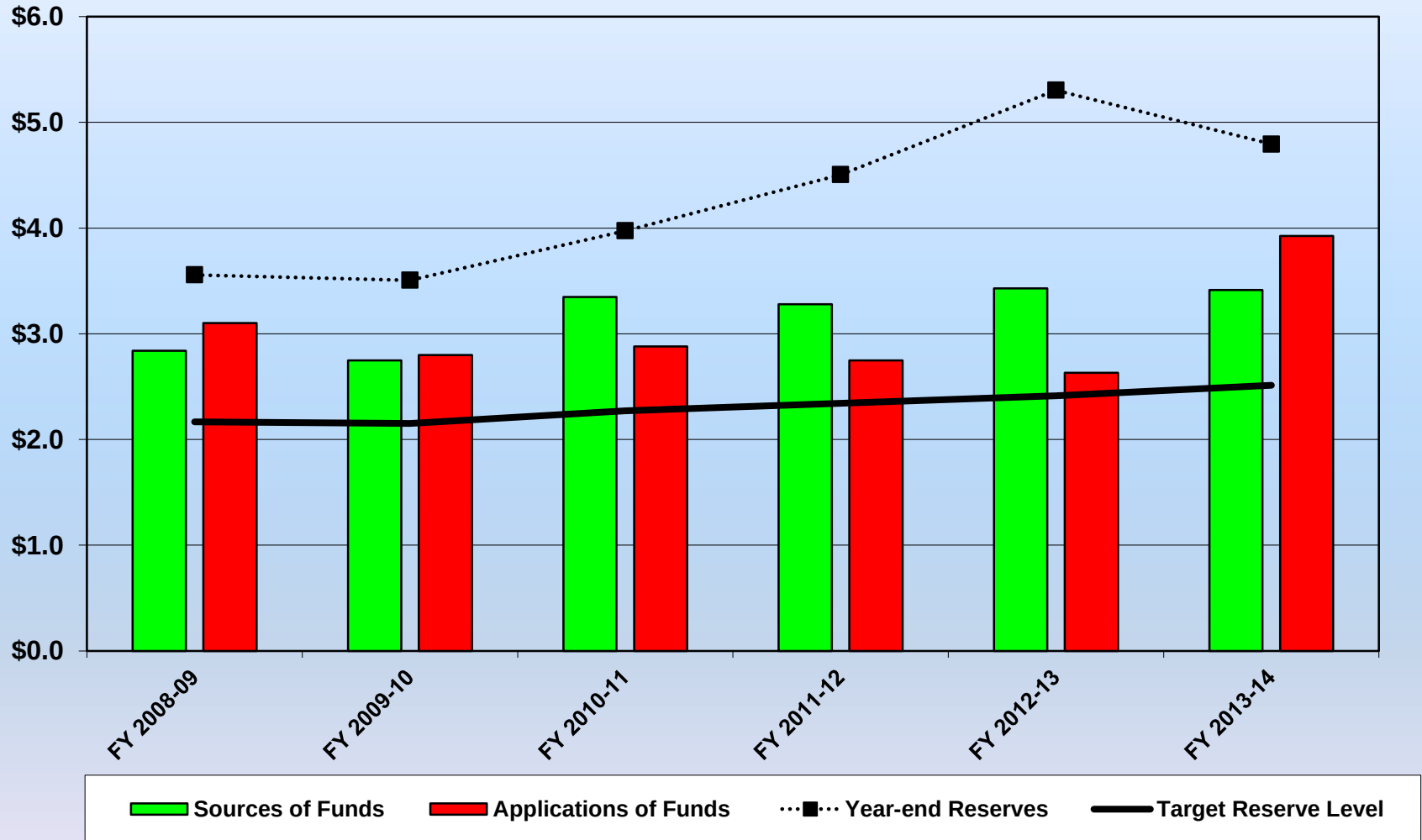
Water Budget Recap



Wastewater Budget Recap

Description	Actual FY 2010-11	Actual FY 2011-12	Actual FY 2012-13	Actual FY 2013-14	Actual FY 2014-15	Budget FY 2015-16
User Charge (monthly EDUs)	\$27.50	\$27.50	\$29.75	\$32.25	\$33.75	\$33.75
Rate Adjustment:	0%	0%	8.2%	4.7%	4.2%	0%
Revenue	\$2.84	\$2.75	\$3.35	\$3.28	\$3.43	\$3.41
City of LA Treatment & Disposal Costs	\$0.63	\$0.76	\$0.90	\$0.95	\$0.68	\$1.52
Other O & M Costs	\$1.72	\$1.76	\$1.94	\$1.78	\$1.81	\$2.12
Capital Imps & Outlay Costs	\$0.76	\$0.28	\$0.05	\$0.02	\$0.15	\$0.28
Total Expense	\$3.10	\$2.80	\$2.88	\$2.75	\$2.63	\$3.92
Annual Increase or (decrease) in Cash	(\$0.26)	(\$0.05)	\$0.47	\$0.53	\$0.80	(\$0.51)
Target Cash Balance	\$2.17	\$2.15	\$2.27	\$2.34	\$2.41	\$2.51
Year Ending Cash Fund Balance	\$3.56	\$3.51	\$3.97	\$4.51	\$5.30	\$4.79

Wastewater Budget Recap



CWVD – Cash Reserve Policy

Water Enterprise

Rate Stabilization Reserve - Based upon 25% of total commodity sales

Emergency Reserve - In the amount of \$750,000

Working Cash - Based upon two months of O & M less purchased water

Wastewater Enterprise

Rate Stabilization Reserve - Based upon 25% of total sales

Emergency Reserve - In the amount of \$750,000

Working Cash - Based upon two months of O & M less purchased water

Replacement Reserve - In the amount of \$900,000

Water and Wastewater Cost of Service Study

Raftelis Financial Consultants

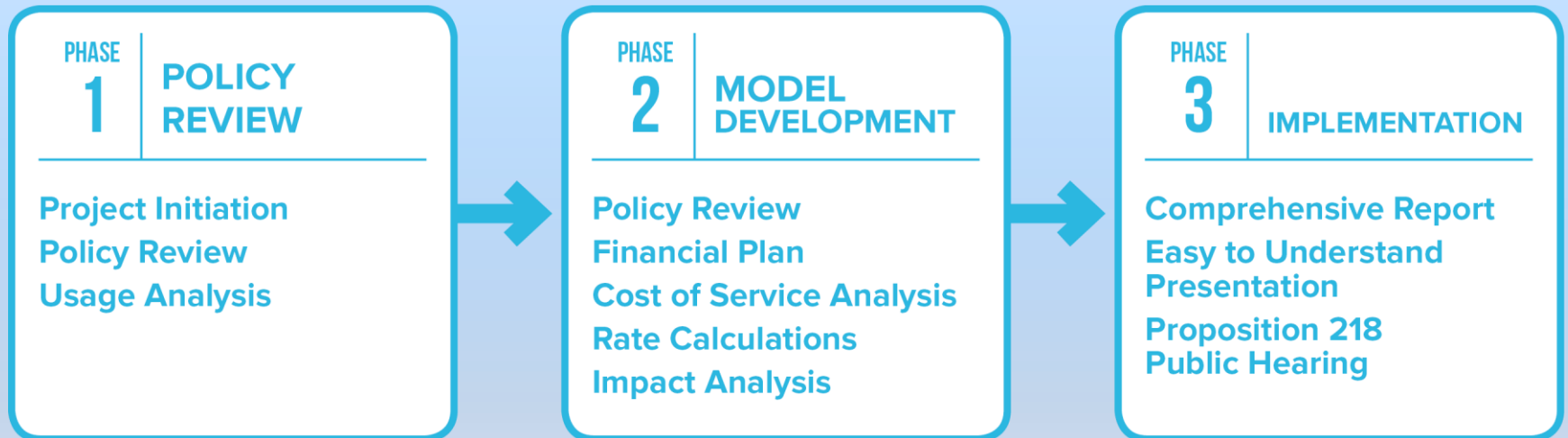
Sudhir Pardiwala, Project Manager

Kevin Kostiuk, Lead Consultant

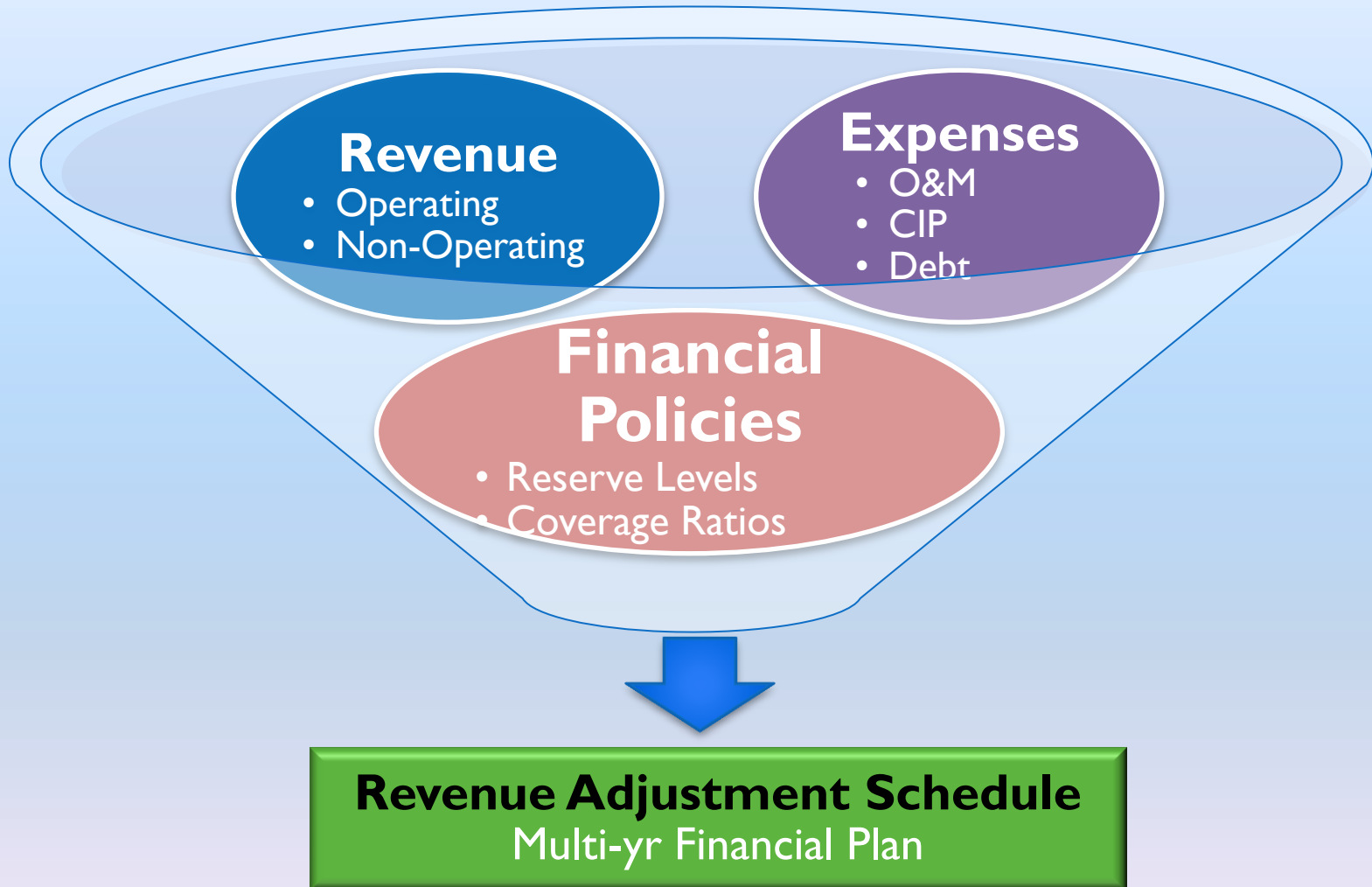
Study Objectives

- Develop 5-year Financial Plans for Water and Wastewater Utilities including Reserves Policies
- Perform Cost of Service (COS) analyses for Water and Wastewater Utilities
- Evaluate water budget allocations for the Water Utility
- Calculate Water and Wastewater Rates and associated customer impacts
- Evaluate financial impacts associated with the current Drought
- Benchmark water and wastewater system financial costs against comparable agencies

Project Approach



Financial Plan



Cost of Service

- Different types of customers incur different costs because their patterns of use or characteristics vary amongst each other
- Cost of service allows the matching of rates charged to each group with the costs of serving them
- Each group will “pay its own way”; no subsidies

Proposition 218/San Juan Case

1. Revenues from the fee may not exceed the funds required to provide service
2. The amount of the fee may not exceed the proportional cost of the service
3. Previously proportionality by class was sufficient
4. Now we need proportionality by tiers as well

Step 1: Allocate Revenue Requirements (Costs), by Function

Operating Revenue
Requirements for
Test Year FYE 2016

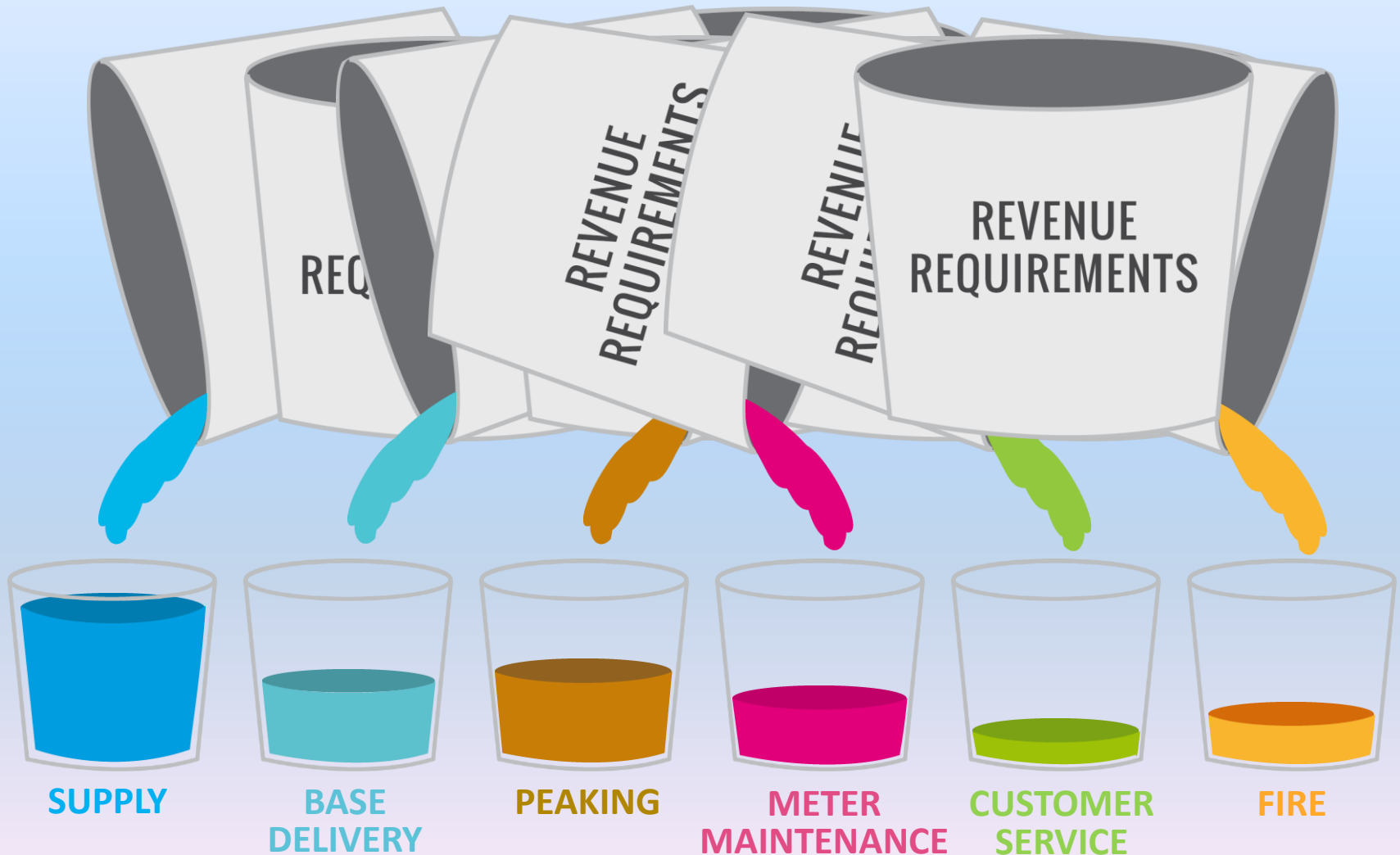
- Water Supply
- Storage
- Treatment
- Pumping
- Transmission
- Distribution
- Hydrants / Fire Protection
- Meters
- Customer Billing & Service
- General & Administration

Capital Revenue
Requirements for
Test Year FYE 2016

- Water Supply
- Storage
- Treatment
- Pumping
- Transmission
- Distribution
- Hydrants / Fire Protection
- Meters
- Customer Billing & Service
- General & Administration

Step 2:

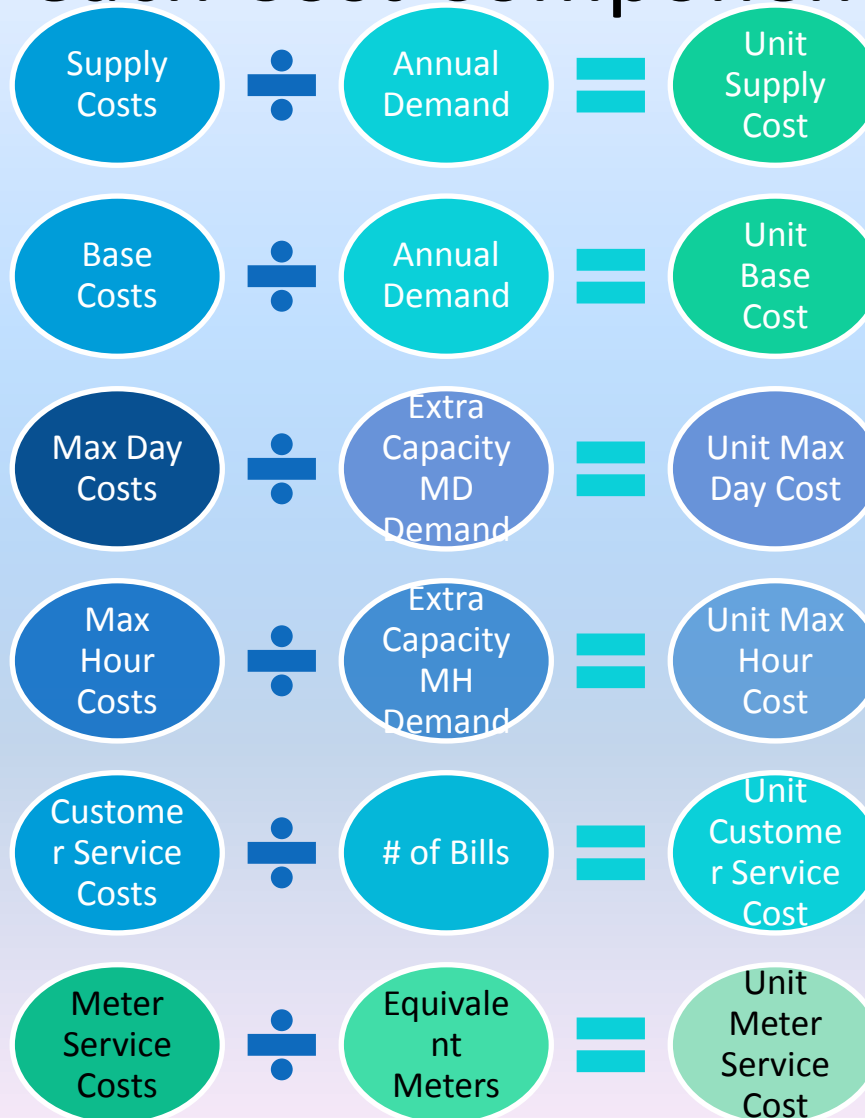
Allocate Functionalized Costs to Cost Components



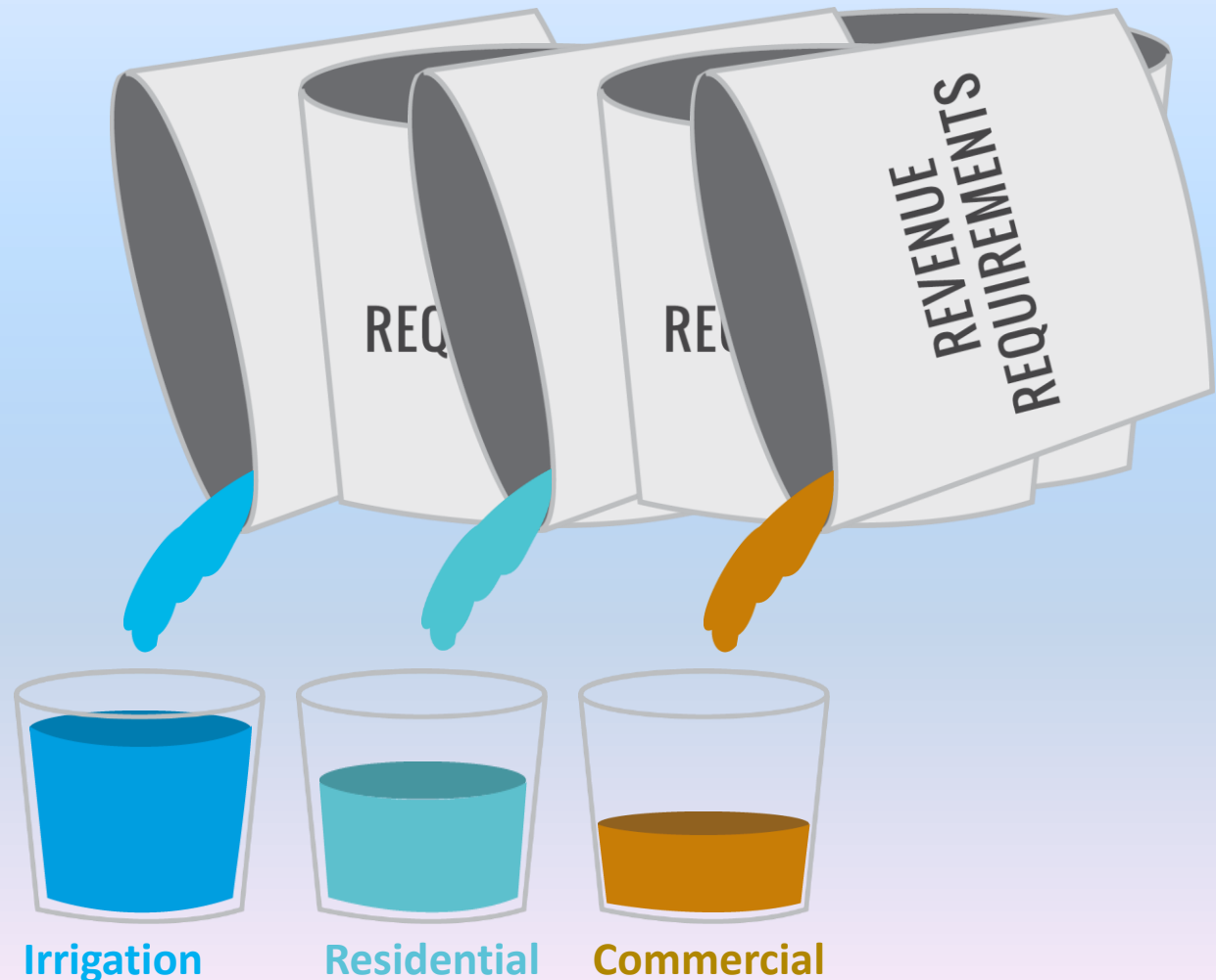
Step 3: Develop units of service by customer class for each cost component

- For each customer class:
 - Annual Usage (or Base Units)
 - Maximum Day Units
 - Maximum Hour Units
 - Customer Units:
 - Number of bills
 - Equivalent meters

Step 4: Develop unit costs of service for each Cost Component



Step 5: Allocation of the Cost Components to Customer Class



Rate Design

- Revenue from rates from each class should be consistent with cost of service
- Revenue from each tier (sub-class) should be consistent with cost of service
- Rates may be designed to meet the District's objectives for conservation, affordability, revenue stability, etc. so long as they are consistent with cost of service

Current Water Rates

Tier	Tier 1	Tier 2	Tier 3	Tier 4
Tier	\$4.61	\$5.96	\$8.50	\$11.39
SFR*	0-10 kgal	11-25 kgal	26-37 kgal	38+ kgal
MFR**/Commercial		Uniform^		
Irrigation		0-70 kgal^^		71+ kgal

*SFR stands for Single Family Residential

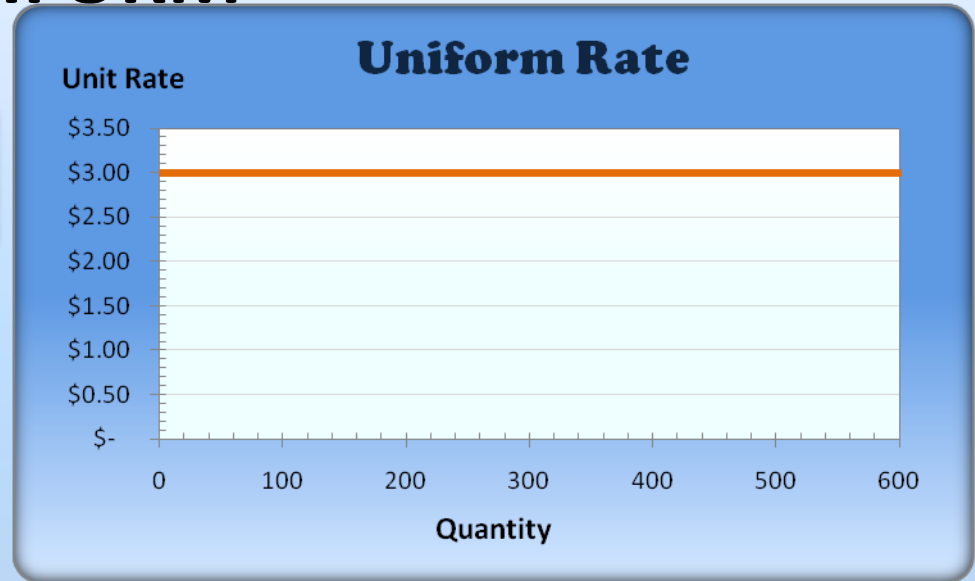
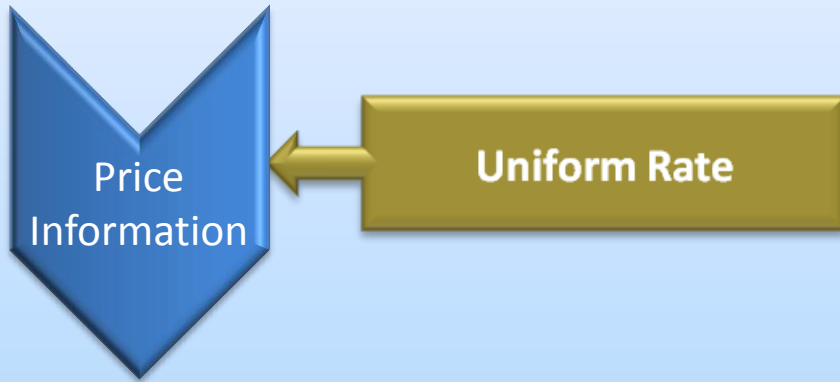
**MFR stands for Multi-Family Residential

^MFR is charged a uniform rate for all units of water charged at the Tier 2 rate

^^Irrigation customers have a two-tier rate structure which corresponds to the Tier 2 and Tier 4 price for SFR

Alternative Water Rate Structures

WATER RATE STRUCTURE EVOLUTION - UNIFORM

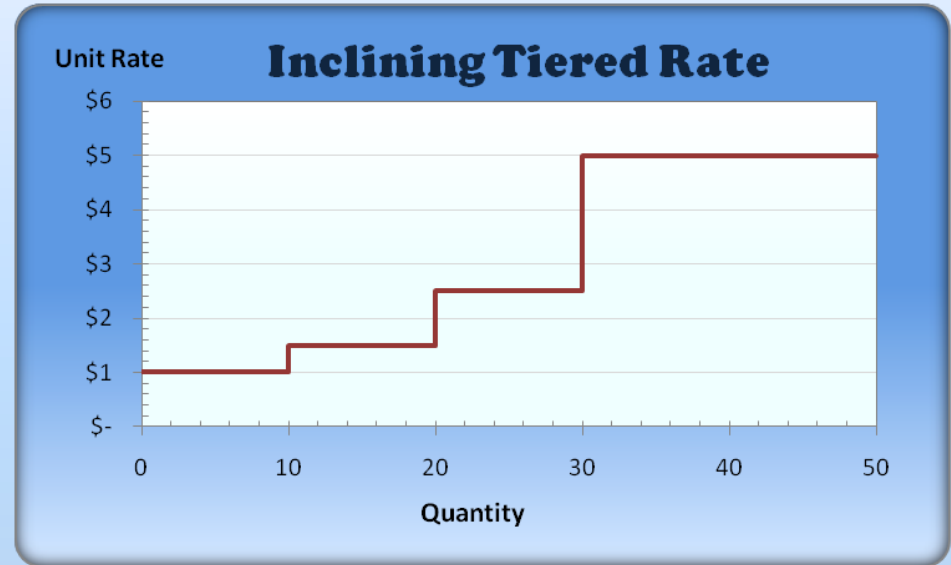
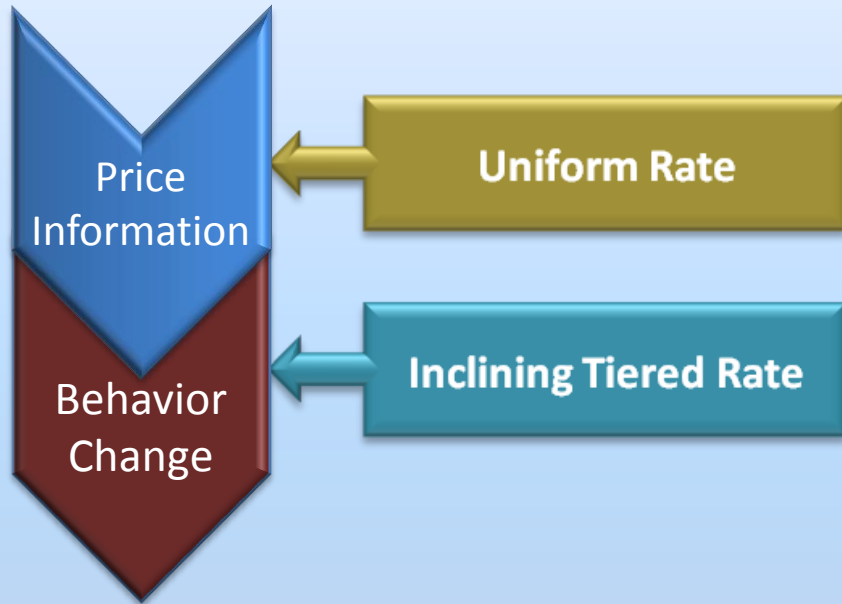


Uniform Rate: \$xx / hcf

Pros: Revenue stability, administrative ease, easy to understand

Cons: Weak conservation, not affordable for essential use, doesn't reflect demand placed on system by different users

WATER RATE STRUCTURE EVOLUTION - INCLINING

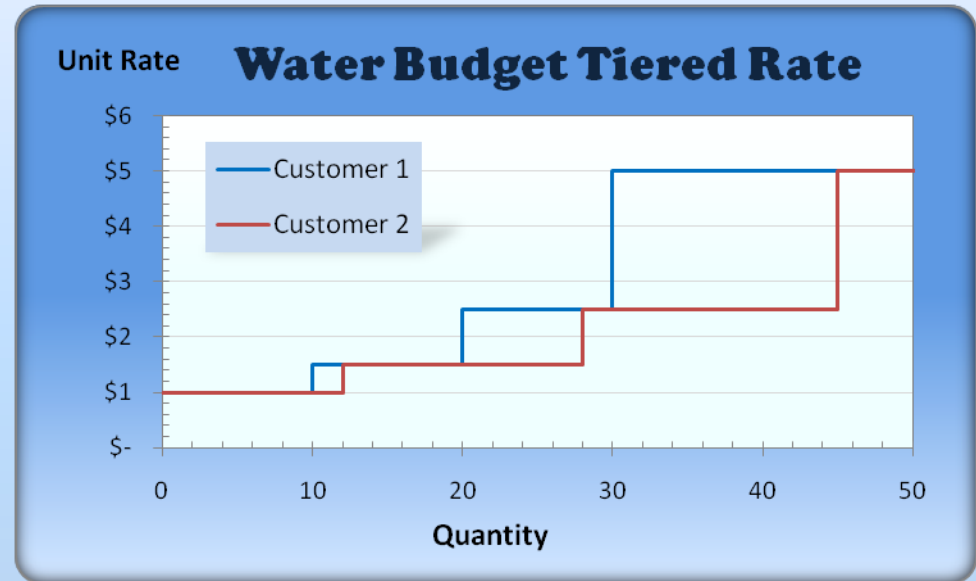
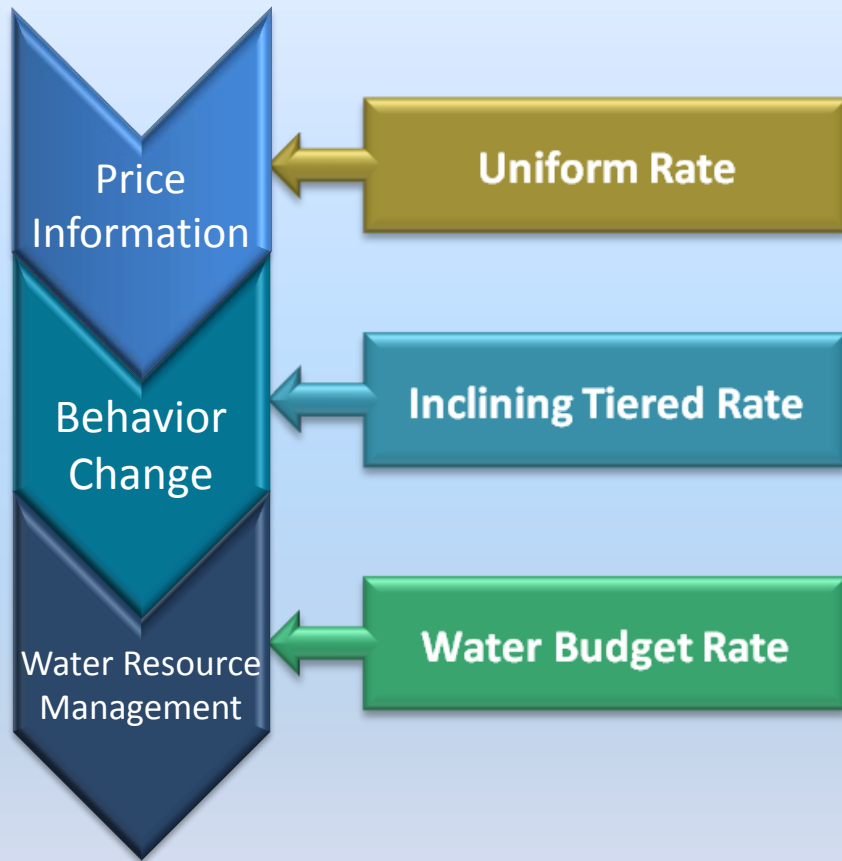


Inclining Tiered Rate:

Pros: Promote **conservation**, affordable for essential use, easy to administer, easy to understand

Con: Not parcel specific; based on average use

WATER RATE STRUCTURE EVOLUTION – BUDGET-BASED



Water Budget Tiered Rate:

Pros: Promotes water **efficiency**, equitable, affordable for essential use, drought allocation tool, revenue stability

Cons: High initial administrative cost, additional effort needed for public outreach, does not necessarily reward past or future conservation

Current Inclining Tiered Structure

- Traditional conservation based inclining tiered structure
- Tiers utilize a “build up” approach using rate components
- Rate components may include costs for water supply, delivery, peaking, conservation, and revenue offsets, among other components
- Unit costs of rate components are based upon cost of service analysis

Modified Inclining Tiered Structure

- Inclining tiered structure based upon water sources of supply
- Would allocate least expensive local groundwater to the lowest tier on a per account basis. This becomes basis for Tier 1
- Tier 2 incorporates more expensive leased groundwater right and imported/purchased water (blended rate)
- Tier 3 likely exclusively imported/purchased water
- Tier 4 TBD

Water Budget Based Structure

- American Water Works Association (AWWA): *“The quantity of water that would be required by an efficient level of water use”*
- *Efficiency* is often considered a community policy decision
 - Public expectations, water supply constraints, etc.
- “Budgets” are specific allocations for:
 - **Indoor Use** for health and sanitation for residential customers; potentially for commercial customers
 - **Outdoor Use** for irrigating landscape; generally applies to all customer classes less multi-family

Water Budget Based Structure (Hypothetical)

Tier 1	Budget	Use Description	Example Definition	Example Tier (month)	Rate
Tier 1	Indoor Budget	Essential Use	$3^a \times 55^b \times 30^c$	10 kgal	\$2.00
Tier 2	Outdoor Budget	Efficient Use	$\text{Area}^d \times \text{ET}^e \times \text{ETAF}^f$	14 kgal	\$4.00
Tier 3	Exceeds Budget by X%	Inefficient Use	50% of total water budget	12 kgal	\$6.00
Tier 4	All use greater than Tier 3	Wasteful Use	> 150% of total water budget	>36 kgal	\$8.00

a = household size

b = gallons per capita per day

c = days in the month

11/17/2015

d = landscape area (in square feet)

e = evapotranspiration (from soil and plants)

f = ET adjustment factor (to account for plant type)

Alternative Wastewater Rate Structures

Current Fixed (Service Charge) Rate Structure

- For Single Family Residential (SFR): \$67.50 bi-monthly
- For Multi Family Residential (MFR): \$67.50 per dwelling unit bi-monthly
- Pros: Easy to understand and administer, creates stable revenue
- Cons: Does not acknowledge difference in wastewater generation by households and so does not allow customers to control their bill

Current Wastewater Rates

Customer Class	Bi-Monthly Fee/Customer Charge	Quantity Charge
SFR	\$67.50	
MFR (per DU*)	\$67.50	
Commercial	\$2.10	\$5.50/kgal
Secondary School	\$2.10	\$162.10/100 ADA**
Primary School	\$2.10	\$81.00/100 ADA

*DU stands for Dwelling Unit

**ADA stands for Average Daily Attendance

Note: A 10% discount is offered on the bi-monthly bill for any account that uses less than 12 kgal per billing period

Alternate Fixed + Variable Rate Structure

- Bi-monthly charge for SFR and MFR would decrease
- Winter water use (or similar) would be used to determine a unit rate of wastewater
- Bi-monthly bill would consist of fixed service charge component and water use component
- Use component would be capped at a maximum value
- This rate structure increases a customer's ability to control their bill; however, it introduces additional volatility in to the District's finances

Q&A