NORTH TEXAS MUNICIPAL WATER DISTRICT

NTMWD's Vision

Regional Service Through Unity…

Meeting Our Region's Needs Today and Tomorrow

NTMWD's Mission

Meet the Various Needs of Member Cities and Customers

Top 5 Priorities:

- Provide superior water, wastewater, and solid waste services today.
- Secure the future for water, wastewater, and solid waste supplies and services.
- Maintain strong relationships with Member Cities, Customers, and partners.
- Maintain our infrastructure to provide reliable service today and tomorrow – through emphasis on preventive/ predictive maintenance.
- Take care of our people – develop our leaders and work force, hire and retain the right people, build our bench, and be safe.

North Texas Municipal Water District

"Regional Service Through Unity …
Meeting Our Region's Needs Today and Tomorrow"

McKinney City Council

October 17, 2016

Tom Kula, NTMWD Executive Director

Agenda

- Overview of Our Mission & Services
- Key Water Projects and Programs
- Key Wastewater Projects and Programs
- Wastewater & Water System Rate Projections
- Questions

NTMWD Systems

Serve 1.6 million in North Texas area nearly twice the size of Rhode Island

Water

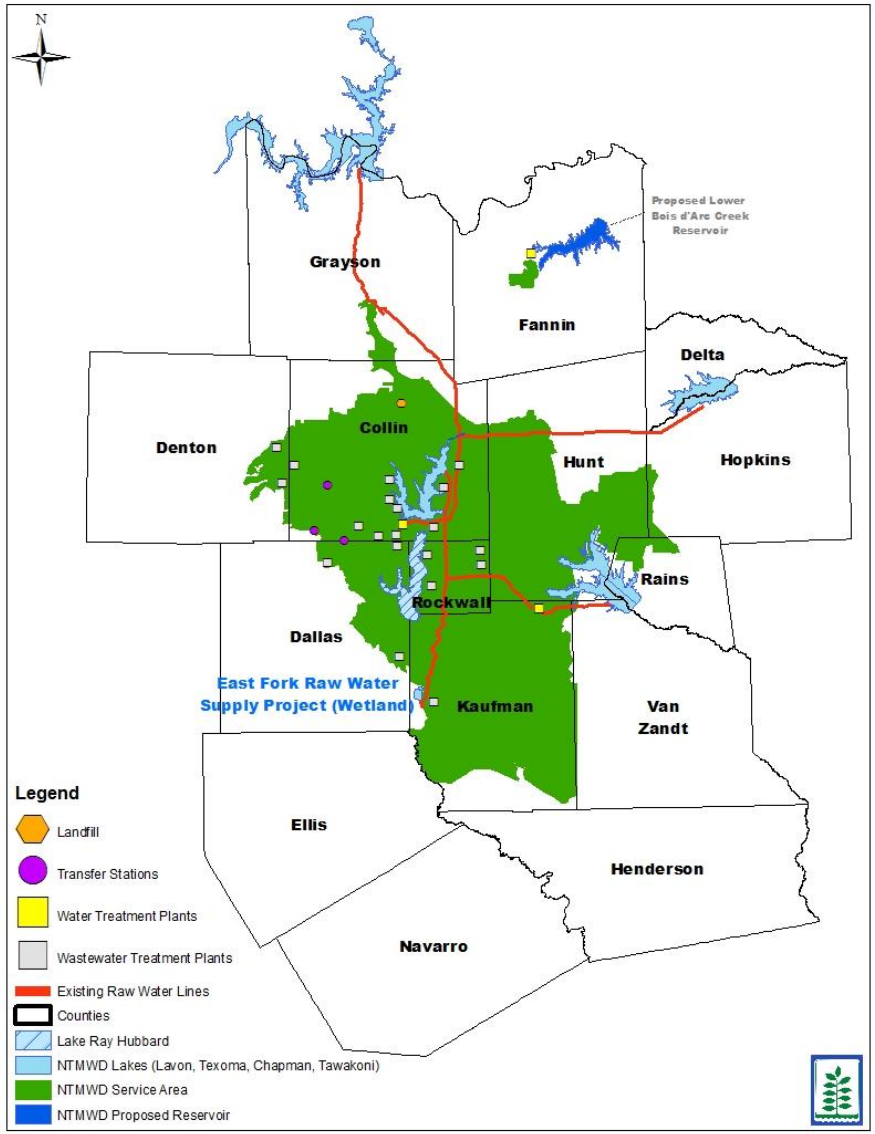
- 370 MGD average raw water supply
- 6 water treatment plants – 806+ MGD capacity
- 566 miles of transmission pipelines
- 9 raw water pump stations
- 8 treated water pump stations
- 77 City delivery points

Wastewater

- Operate 14 wastewater treatment plants
- 151+ MGD treatment capacity
- 8 interceptor systems with 250+ miles of large-diameter pipelines and 23 lift stations

Solid Waste

- 3 transfer stations, 3,295 combined permitted tons/day
- 800,000+ tons/year accepted at landfill



Focused on Serving Growing Region

NTMWD Largest Member Cities Population Growth

City	1950	1960	1970	1980	1990	2000	2010	2015
Frisco	736	1,184	1,845	3,420	6,138	33,714	116,989	145,510
Garland	10,291	38,501	81,437	138,857	180,635	215,768	226,876	232,960
McKinney	10,560	13,763	15,193	16,249	21,283	54,369	131,117	154,840
Mesquite	1,684	27,526	55,131	67,053	101,484	124,523	139,824	142,230
Plano	2,115	3,695	17,872	72,331	127,885	222,030	259,841	271,140
Richardson	1,289	16,810	48,405	72,496	74,840	91,802	99,223	102,430

Note: Collin County recently updated growth projections to include 1.3 million more residents than previous estimates.

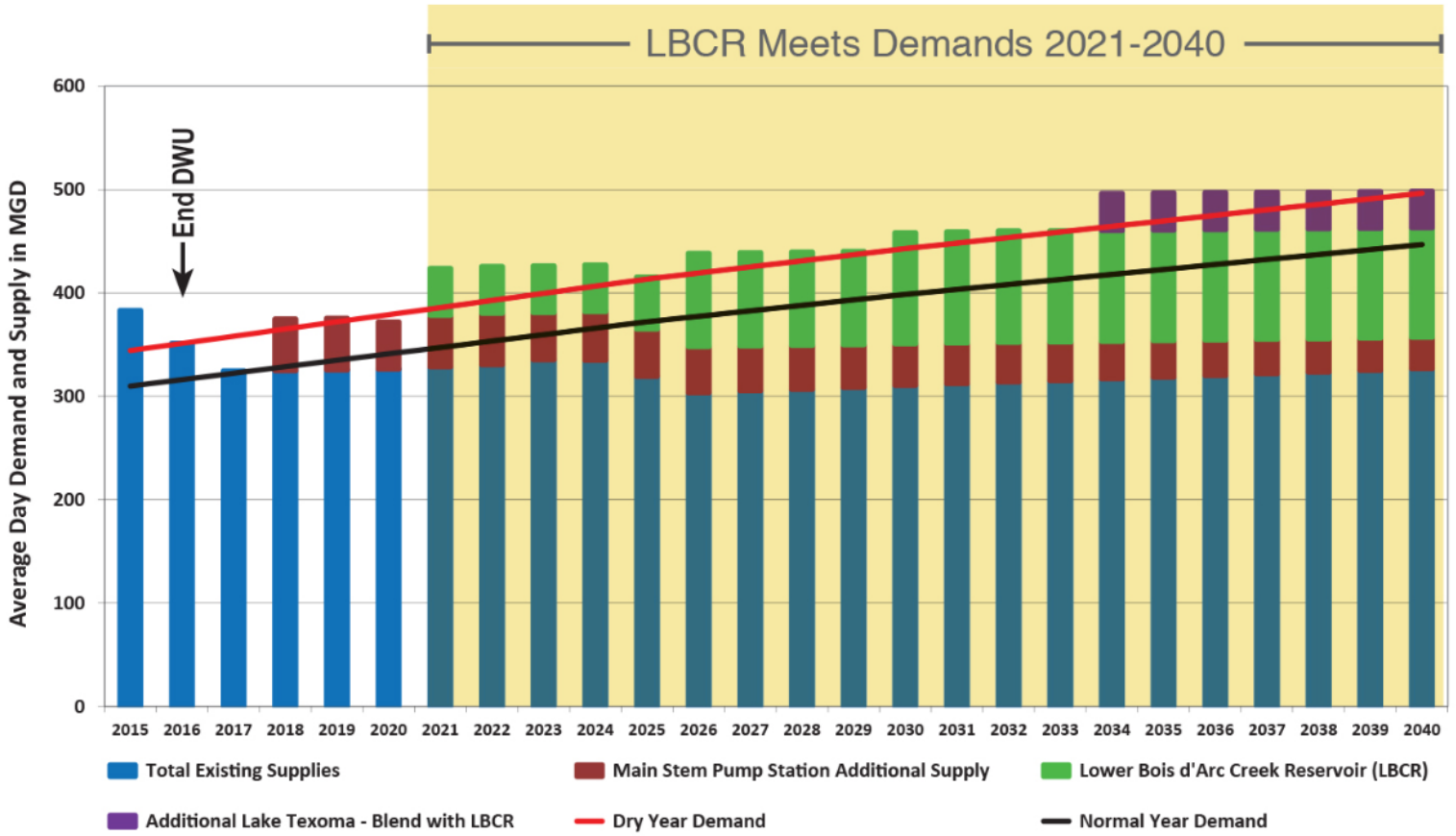
NTMWD Total Population: Historical and Projected

Year	1956	1961	1974	1994	2015	2040	2070
Population Served	32,000	60,000	200,000	800,000	1,600,000	2,500,000	3,700,000

Water Essential for Economic Growth

Water supply infrastructure is the driving force of community and business vitality

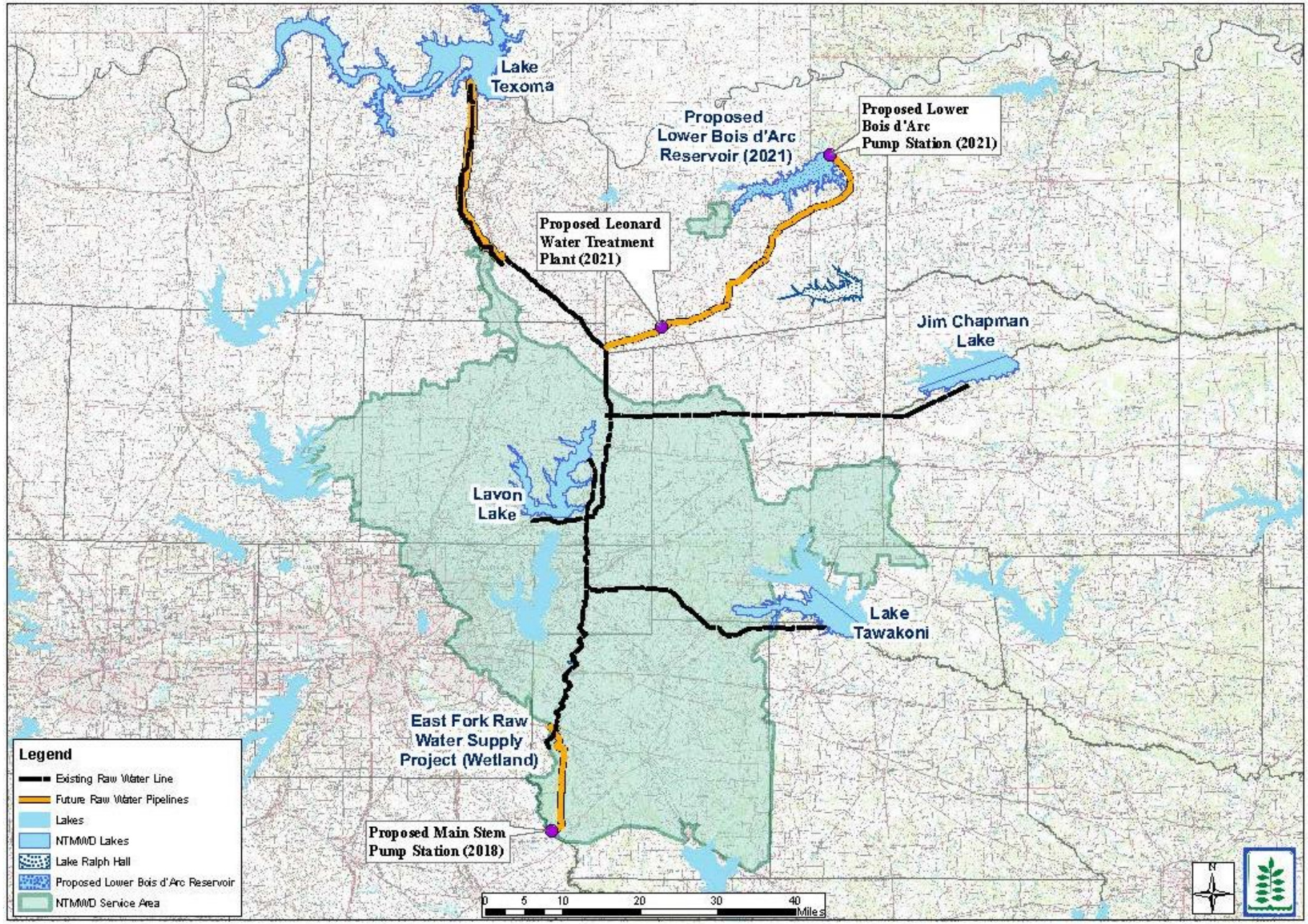
Water Demand and Supply Projections
from 2015 to 2040



Dry Year - Below average rainfall without drought response restrictions

Normal Year - Average year rainfall that results in normal year demand

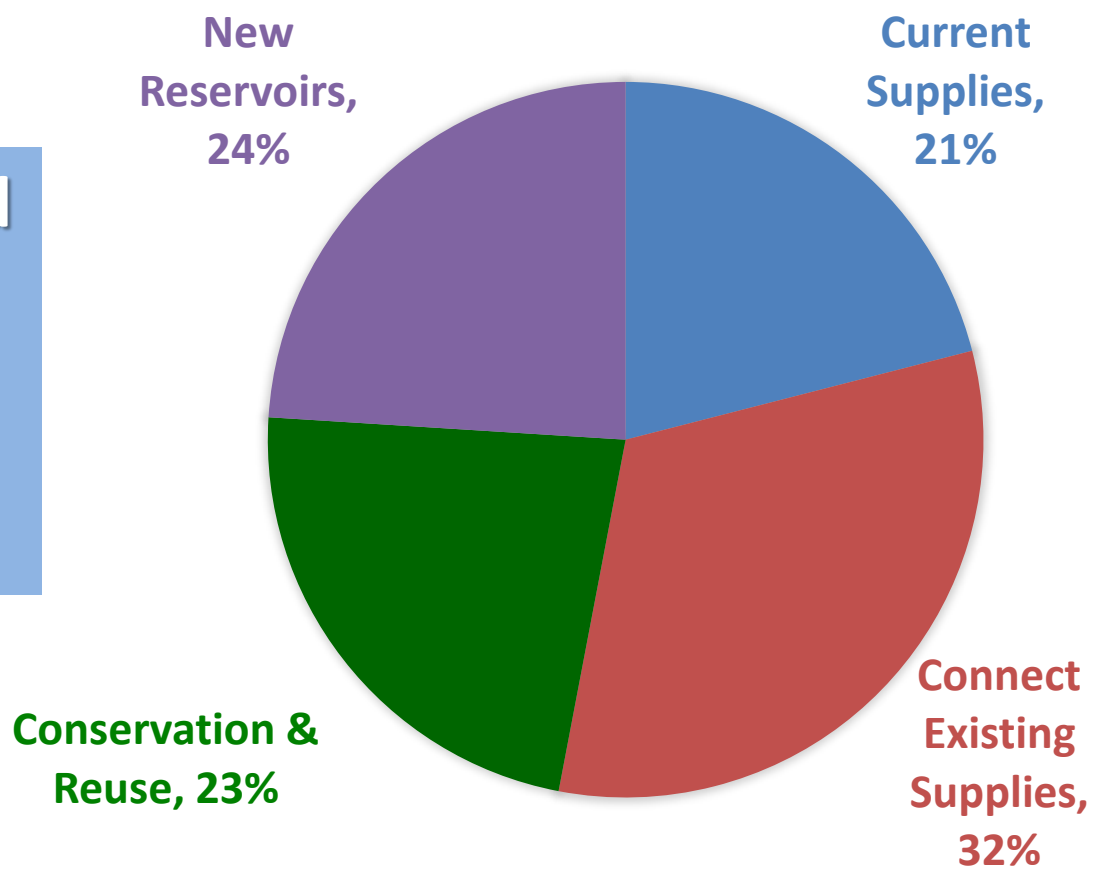
NTMWD Existing and Planned Raw Water Supplies



Water Supply Planning: Future Sources

Conservation and Reuse = 23%

New Sources, Reservoirs = 24%



Lower Bois d'Arc Creek Reservoir

First major reservoir to be constructed in Texas in the last 30 years

Location: Fannin County, TX

Area: 16,526 acres

Supply: up to 108 MGD

Average/ Max Depth: 22/70 ft

Lake Elevation: 534 ft msl

Owner & operator: NTMWD

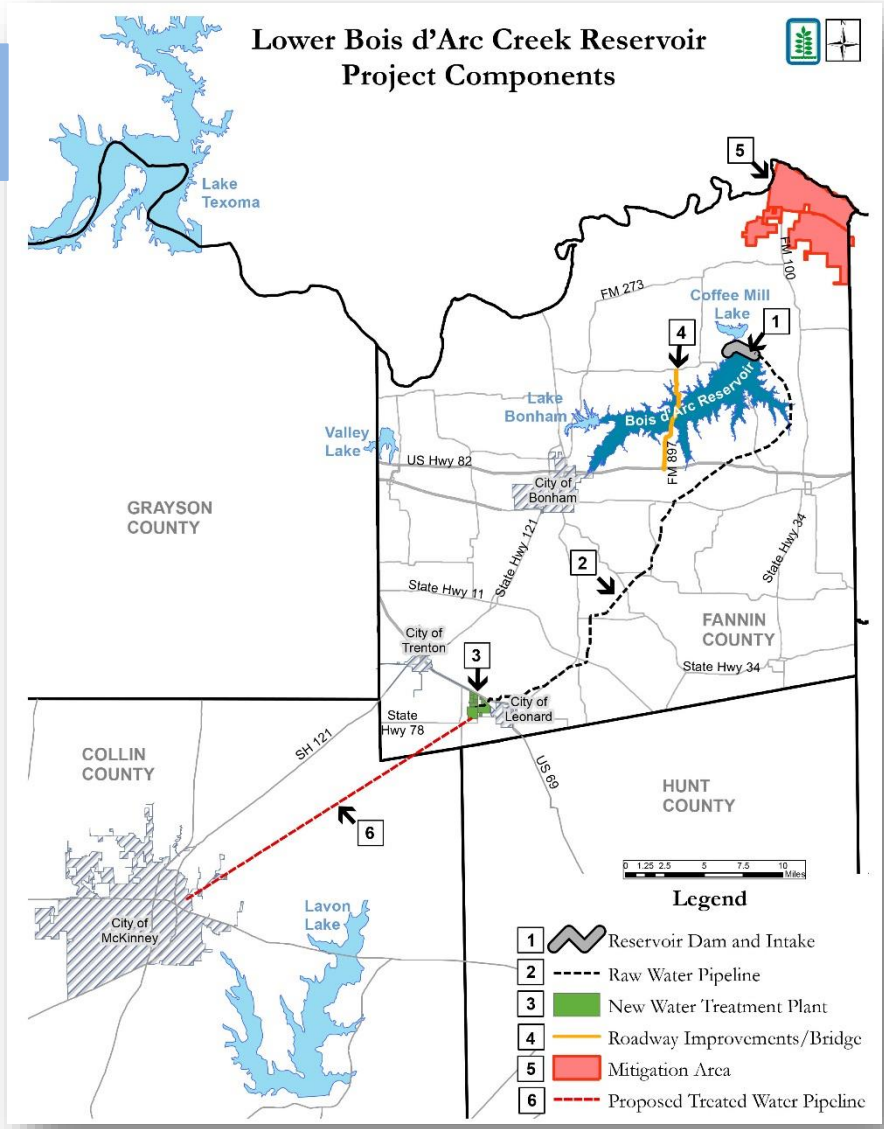
Cost Estimate: ~$1.2B

Permitting Required:

- **Water Rights – received June 2015**
- **USACE Section 404 – under review**

Anticipate federal permit in 2018 with water delivery in 2022*

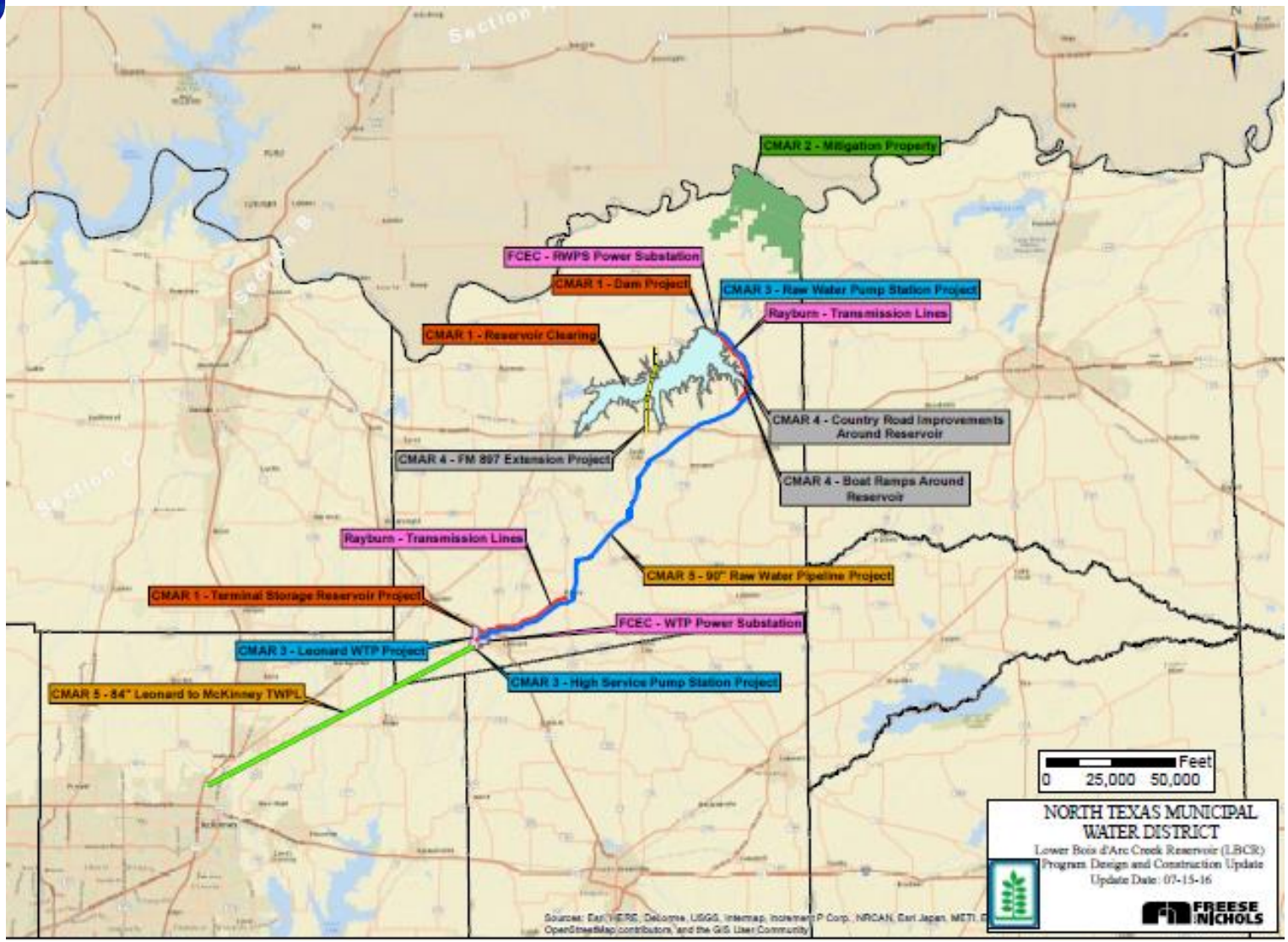
**Final schedule dependent on permitting*



Lower Bois d'Arc Creek Reservoir

- **Proposed Lower Bois d'Arc Creek Reservoir included in Region C Water Plan as a strategy for NTMWD since 2001**
- **Reservoir expected to provide up to 108,000 af/yr for NTMWD service area including Fannin County**
- **Project includes a reservoir, dam, water treatment plant, and transmission facilities (delivers raw water to the treatment plant and District customers)**
- **State Water Right Permit obtained in 2015**
- **CWA Section 404 permit pending**
  - **USACE currently projects 404 issuance in 1st quarter of 2018**

Lower Bois d'Arc Creek Reservoir Projects



Lower Bois d'Arc Creek Reservoir

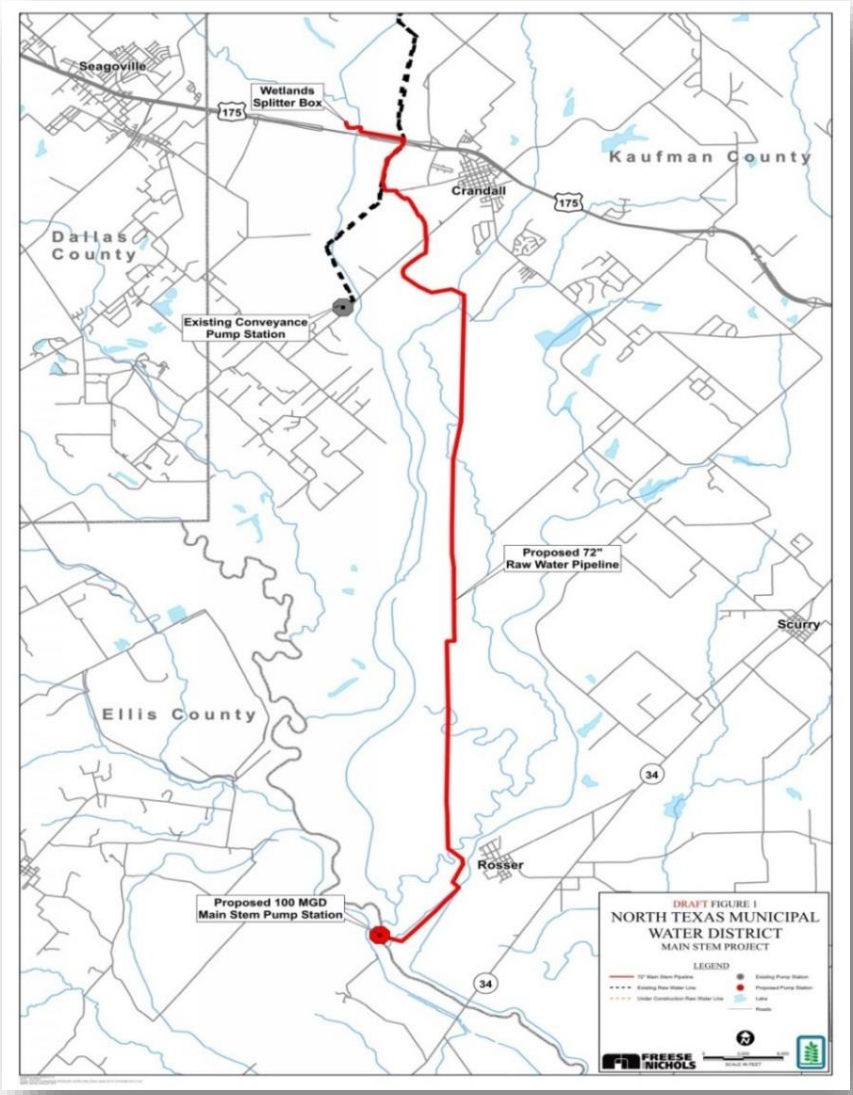
District Actions to Minimize Delays:

- Water Resources Development Act Amendment #5 included is current House of Representatives version
- Requires USACE and EPA permit decision by September 30, 2017
- Continued close coordination with permitting agencies

WRDA Amendment #5 Introduced by Rep. Sam Johnson
Co-Sponsors:
Rep. Pete Sessions
Rep. John Ratcliffe
Rep. Eddie Bernice Johnson

Future Supplies: Reuse

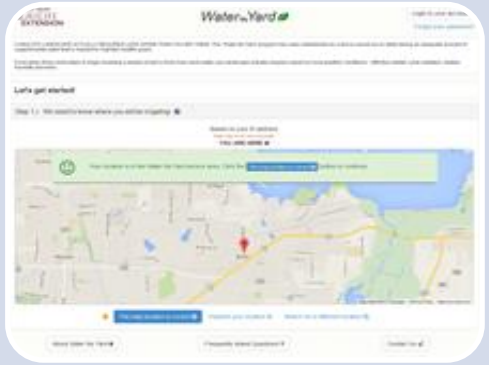
- **New project: Trinity River Main Stem Pump Station**
  - Up to 100 MGD
  - 17 miles, 72-inch-diameter pipeline
  - Add one pump at Conveyance Pump Station
  - Cost approx. $99 million
  - Completion by late-2018

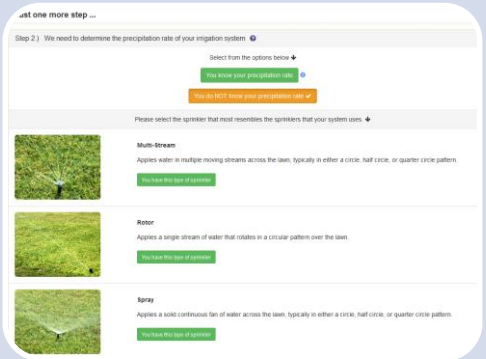


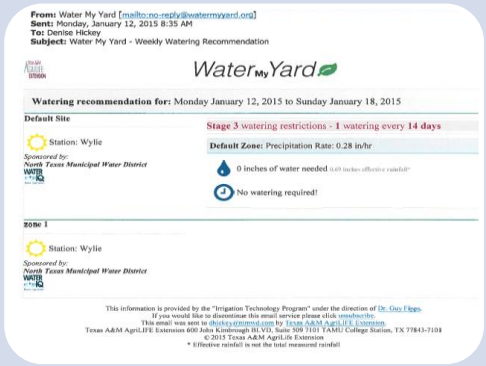
Future Supplies: Conservation

www.WaterMyYard.org

WaterMyYard







Sign-up for a FREE ACCOUNT :

www.WaterMyYard.org

Set up your profile:

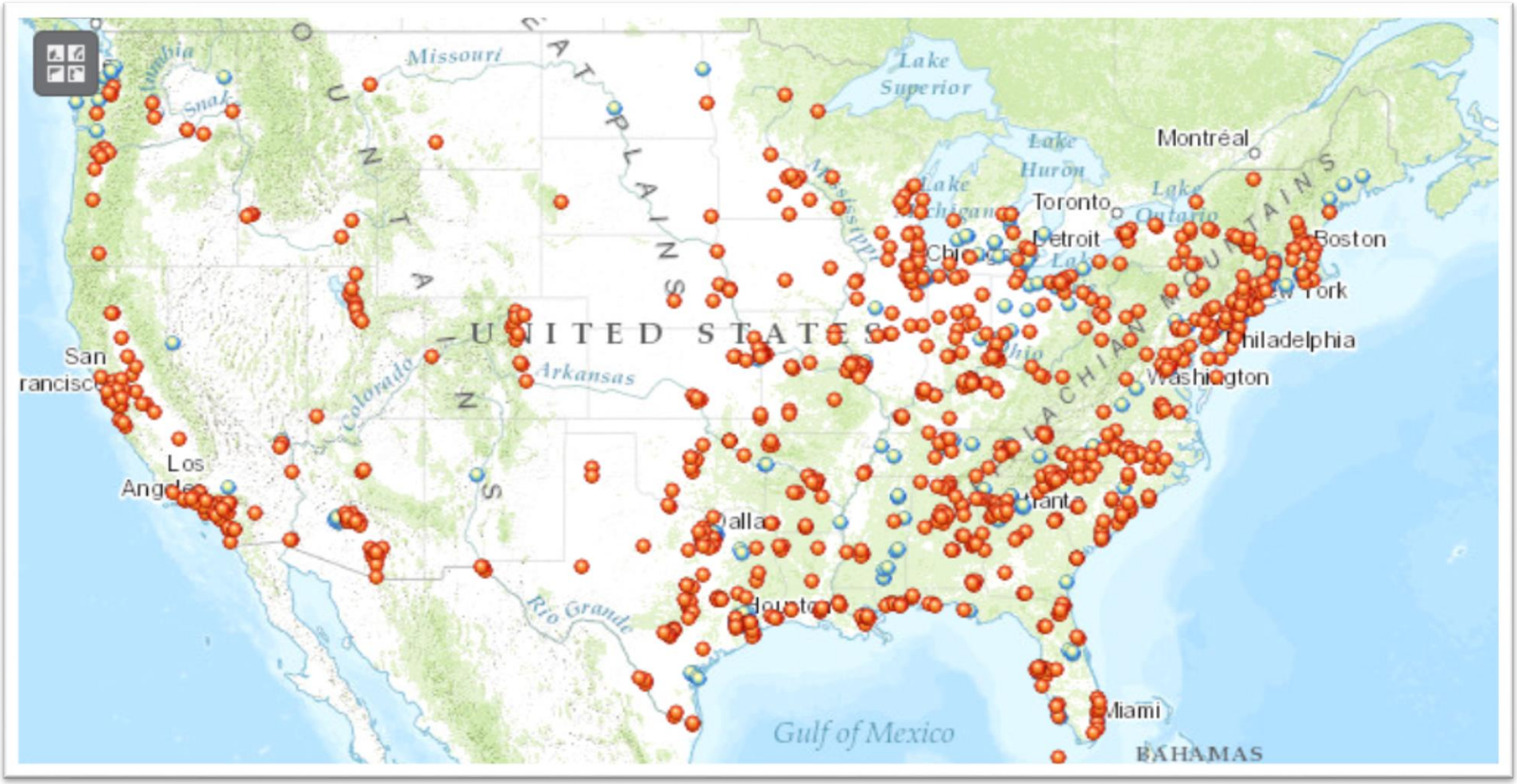
* Where you live
* What type of system components you have
* Your email address

Receive a weekly email:

* Pulls data from closest weather station
* Returns a weekly email to the subscriber based on a 7- day weather on how much watering is needed to supplement natural rainfall
* Many weeks, no watering is recommended

Key Wastewater Projects and Programs

EPA National Enforcement Initiative: Wastewater Systems Overflows



http://www2.epa.gov/enforcement/national-enforcement-initiative-keeping-raw-sewage-and-contaminated-stormwater-out-our

EPA Focused Inspections on Regional Wastewater Systems Members

NTMWD Regional WW Members	NTMWD Regional WW Customers	NTMWD Sewer System Participants
Allen	Anna	Farmersville
Forney	Fairview	Fate
Frisco	Lucas	Frisco
Heath	Melissa	Lavon
McKinney	Parker	Murphy
Mesquite		Rockwall
Plano		Royse City
Princeton		Seis Lagos UD
Prosper		Wylie
Richardson		
Rockwall		
Seagoville		

Potential EPA Compliance Approaches

Letter

- Self controlled plan, implementation, and schedule
- EPA expects alignment with their expectations

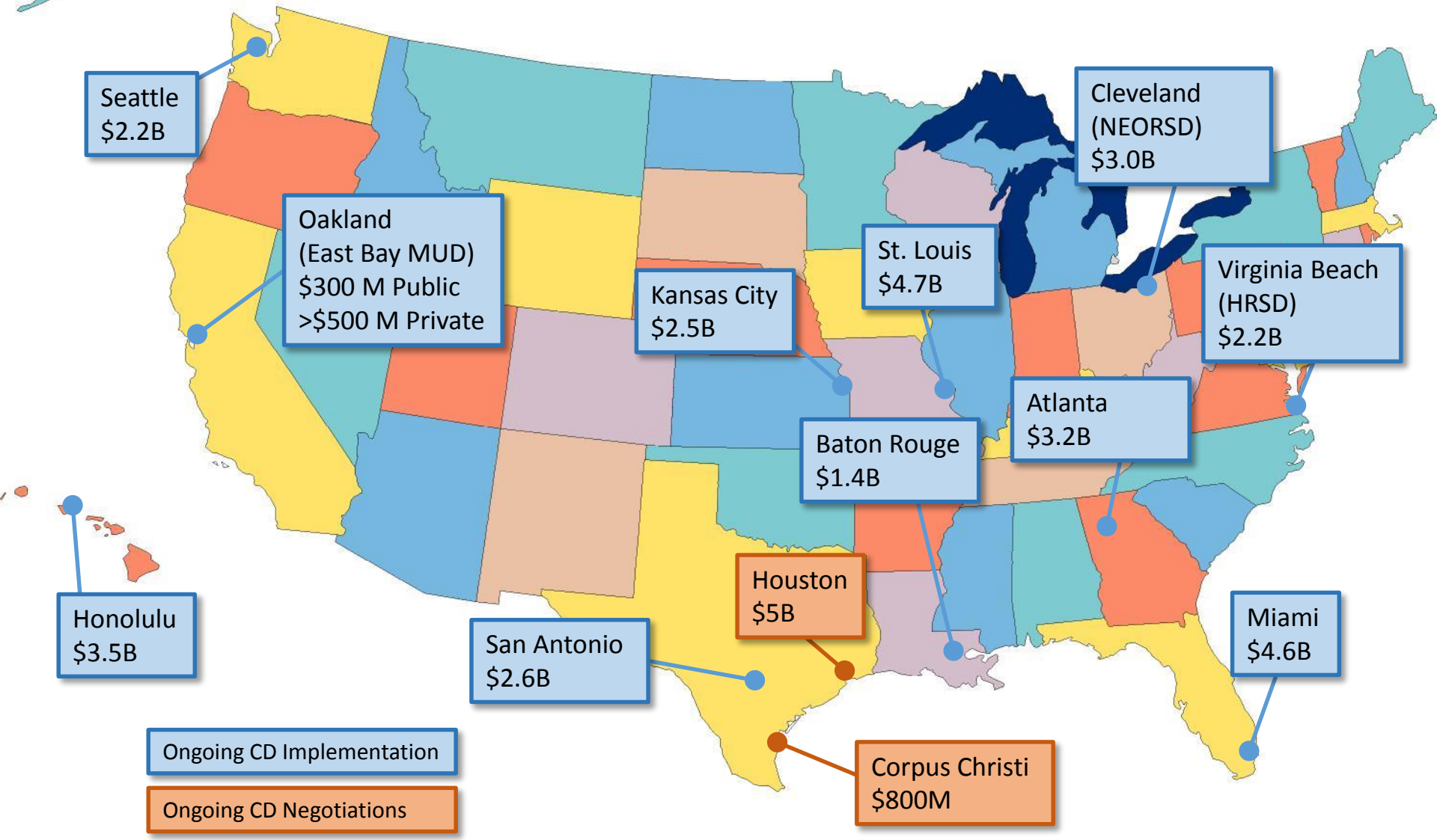
Administrative Order

- Enforcement administered by EPA Region 6
- Required scope and schedule in alignment with EPA expectations

Consent Decree

- Enforcement negotiated with EPA and DOJ in DC
- Long, detailed, starts with DOJ requirements list
- **Expensive** to implement, little flexibility

We Desired a Regional Developed Solution Rather Than a Consent Decree Solution

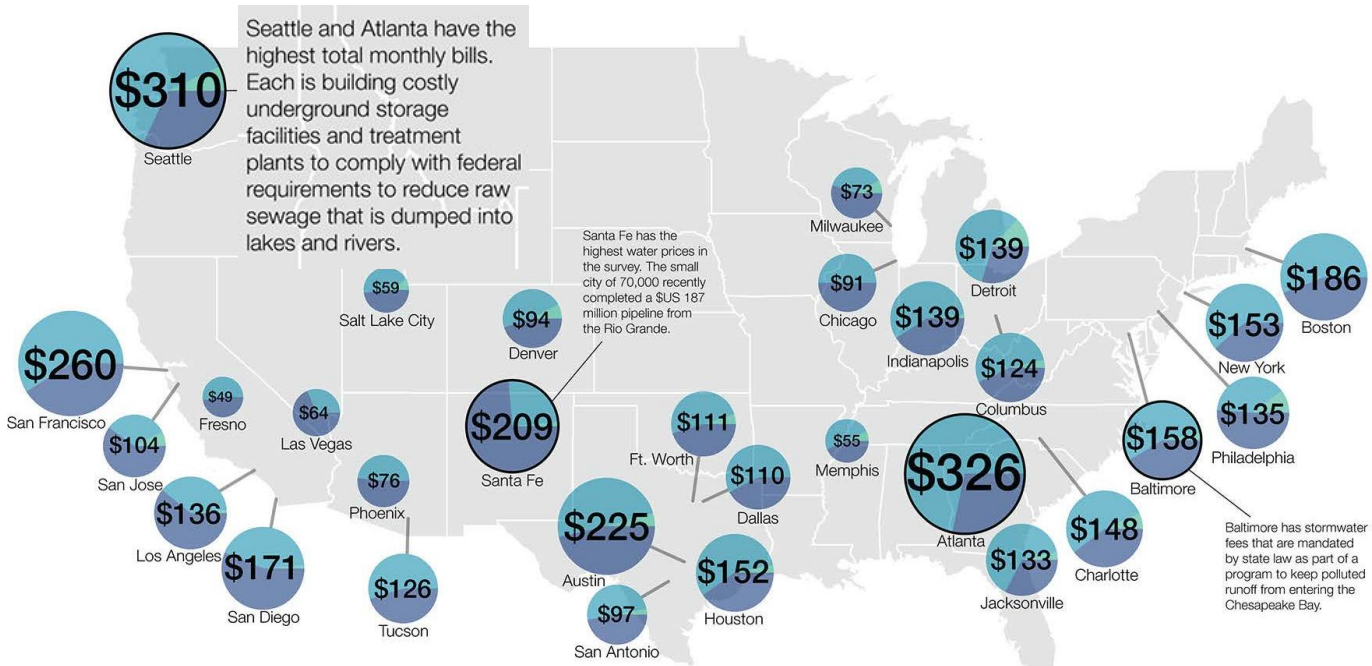


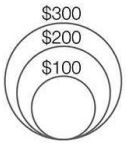
Produced by the Cartographic Research Lab
University of Alabama

Average Monthly Costs Water, Wastewater

THE PRICE OF WATER: 2015

Combined water, sewer and stormwater prices for households in 30 major U.S. cities.





Water prices pay for treating, pumping, and delivering water, while sewer prices cover the cost of cleansing the water that goes down the drain.

Sewer prices are often higher than water prices because more energy and chemicals are required for treatment. Following the Clean Water Act, the federal government gave grants for new treatment plants during the 1970s and 1980s. Over the past three decades, however, new spending has been cut for local sewer infrastructure.

Stormwater fees are not included in every city's monthly bill. Some cities use general tax revenues to pay for projects to reduce polluted runoff from streets and parking lots. However, these projects must then compete for funds with other departments like police and schools.

Rates current as of April 1, 2015.
Monthly bill calculated for a family of four using 100 gallons per person per day.
Source: Circle of Blue research, based on utility water rates.

circle of blue

Established Regional Collaboration To Respond to EPA Concerns

Establish regional collaboration mechanism

Develop corrective action plans for each of our systems

Regular meetings with EPA to provide updates and listen

Formalizing commitment to regional solution with MOU

MOU Executed By All Demonstrated Commitment Of Parties To Each Other and EPA

- Work together to develop a model Regional CMOM program
- Focuses on regional wastewater system members
- Provides a forum to work regionally to establish desired outcomes of enforcement action
- Model program establishes consistency with understanding all parties' unique implementation

NORTH TEXAS MUNICIPAL WATER DISTRICT

MEMORANDUM OF UNDERSTANDING REGARDING DEVELOPMENT OF A REGIONAL CAPACITY, MANAGEMENT, OPERATIONS, AND MAINTENANCE (CMOM) PROGRAM

WHEREAS, the City of Allen, the City of Forney, the City of Frisco, the City of Heath, the City of McKinney, the City of Mesquite, the City of Plano, the City of Princeton, the Town of Prosper, the City of Richardson, the City of Rockwall and the City of Seagoville, (individually and collectively the "Communities"), have entered into various contracts (the "Contracts") for the collection, conveyance, and treatment of wastewater from their various systems (the "Systems"); and

WHEREAS, the Contracts do not include explicit provisions related to maintenance, management, and operation of the Systems; and

WHEREAS, each entity has its own unique collection system and appropriations approval by their respective governing body, the program will be implemented consistent with the needs and appropriated funding of each entity; and

WHEREAS, North Texas Municipal Water District ("NTMWD") and the Communities have a goal to improve wastewater collection capacity, management, operations, and maintenance programs of the Systems; and

NOW THEREFORE, NTMWD and the Communities agree to the following:

NTMWD and the Communities shall work together in good faith to establish a model written Regional Capacity, Management, Operations, and Maintenance (CMOM) program related to the following aspects of NTMWD's and Communities' practices, assets, and programs.

a. Emergency response and mitigation plan,
b. Collection system cleaning program,
c. Comprehensive Fats, Roots, Oil, and Grease (FROG) program,
d. Condition assessment: Force mains, lift stations, manholes, gravity sewers, and service laterals,
e. Hydraulic modeling capacity assessment,
f. Formalized operation and maintenance ("O&M") training program including standard operating procedures and classroom training,
g. Point of entry and flow metering program,
h. Maintenance management system, and
i. Framework for identification and implementation of NTMWD and Community capital project needs resulting from condition and capacity assessments.

This Memorandum of Understanding will be effective the date of the last signature with an awareness all Communities may not participate.

Regional Collaboration Avoided Consent Decrees

Letter

- Continued participation in regional approach
- CMOM plan development and implementation **expected** to align with EPA expectations.

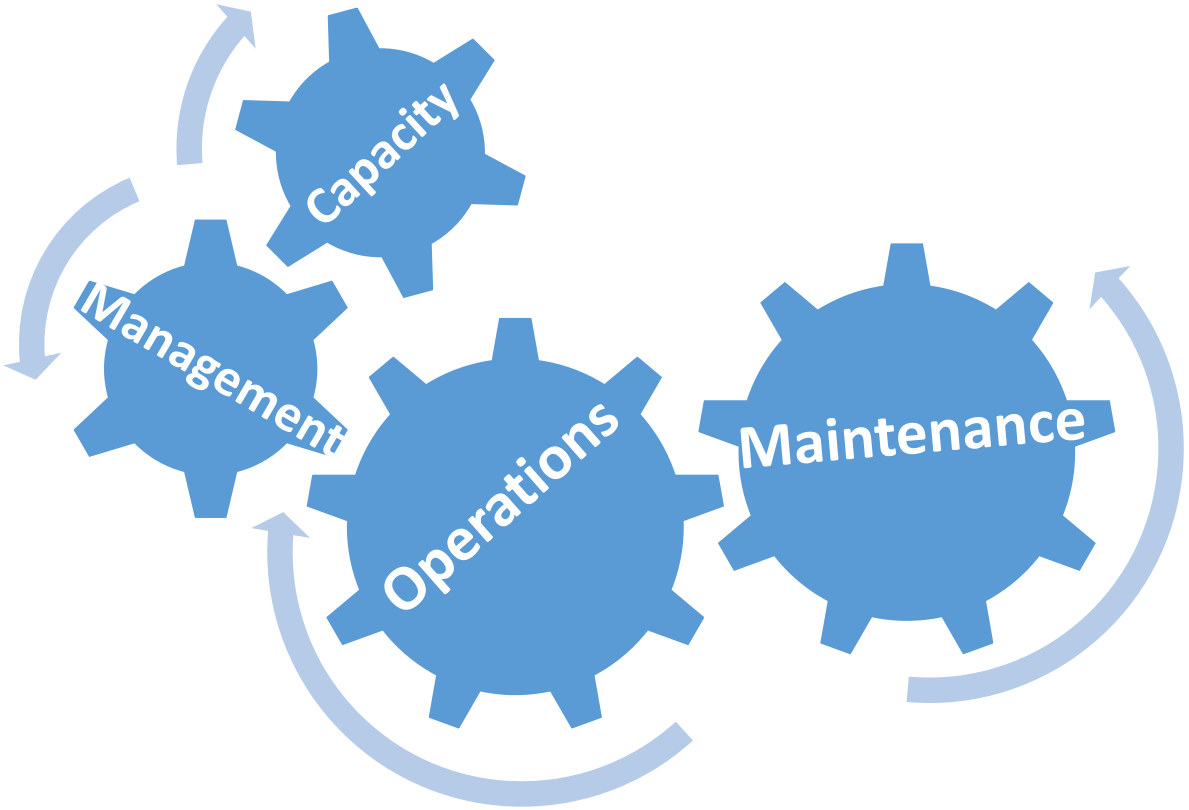
Administrative Order

- Enforcement administered by EPA Region 6
- Continued participation in regional approach expected
- CMOM plan developed **required** for individual cities in 12-month period. Implementation expected to align with EPA expectations.

Consent Decree

- Consent Decree Avoided

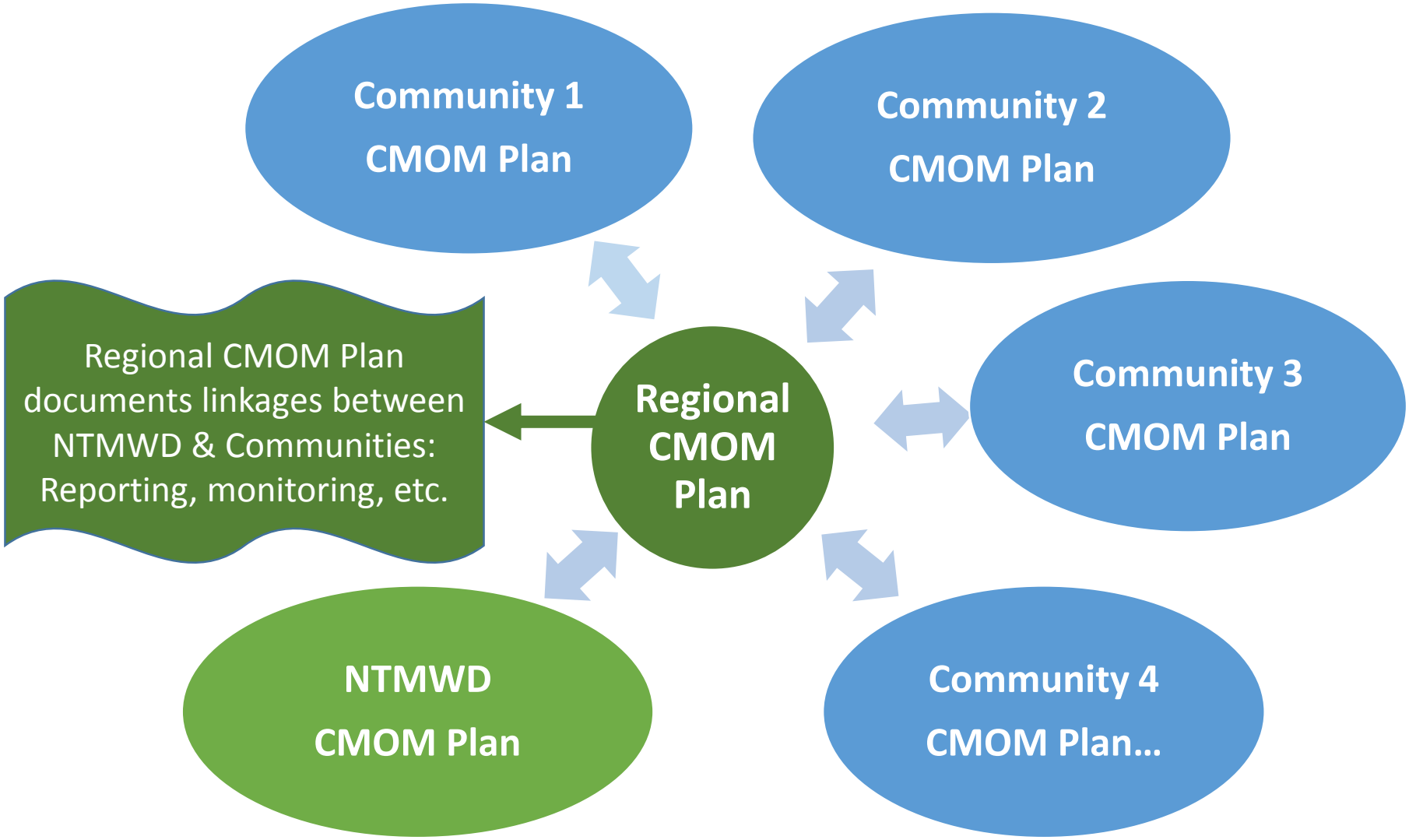
CMOM Plans Are Used To Address These Elements



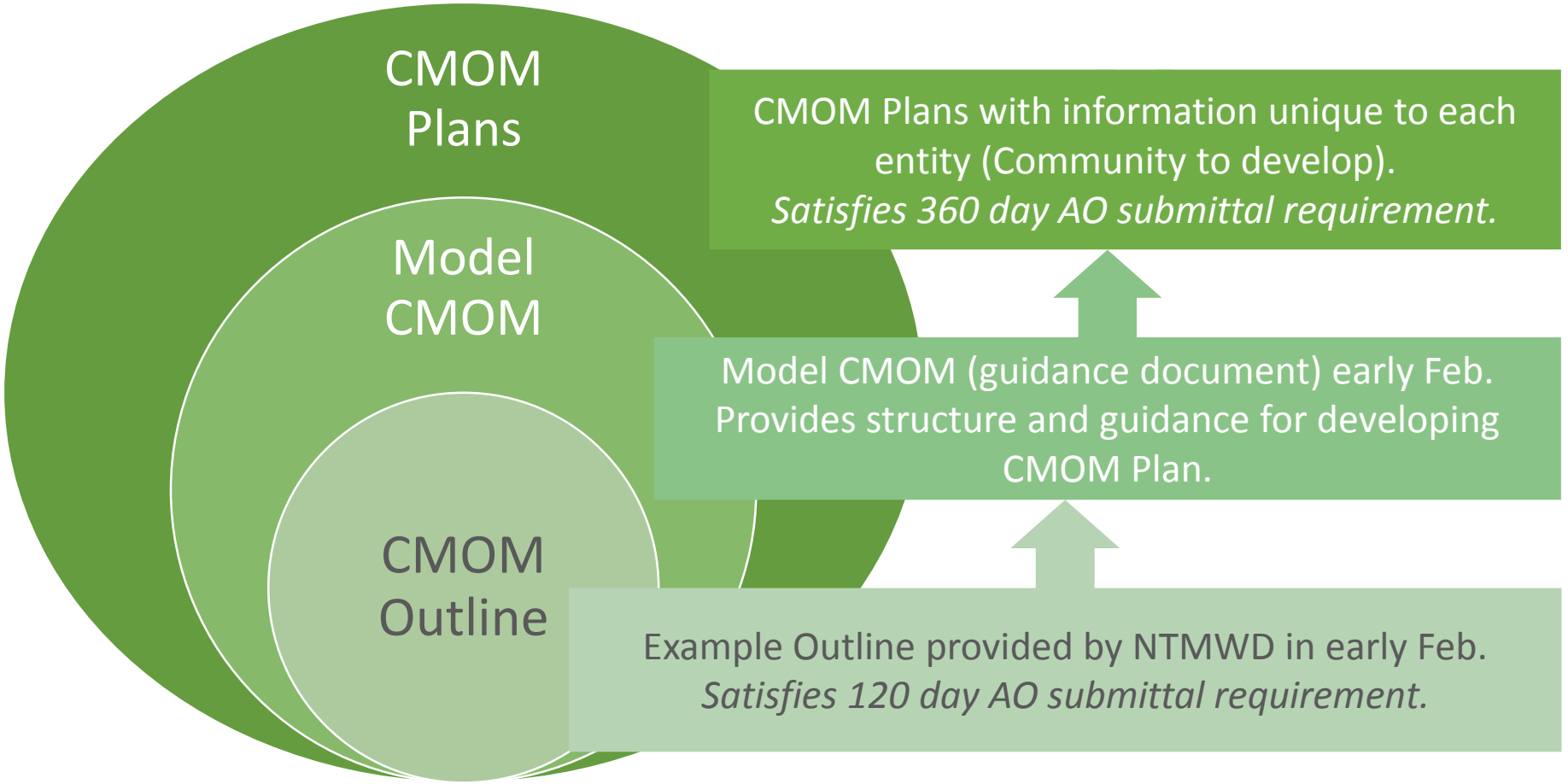
Examples

- Capacity
  - Monitoring
  - Modeling
- Management
  - Training
  - Fats, Oils, & Grease Plan
- Operations
  - Flow metering
  - Overflow emergency response
- Maintenance
  - Maintenance management system
  - Condition assessment
  - Sewer cleaning

How the CMOM Plans are Related



Helpful Guidance to Develop CMOM Plan



Collaborative Regional Approach Has Yielded Positive Results

- Demonstrated to EPA that right steps are being taken
- Framework to avoid future enforcement by implementing sustainable practices
- Allows local utilities to determine necessary investments to provide safe, affordable, and reliable services

Collaborative Regional Approach Must Continue

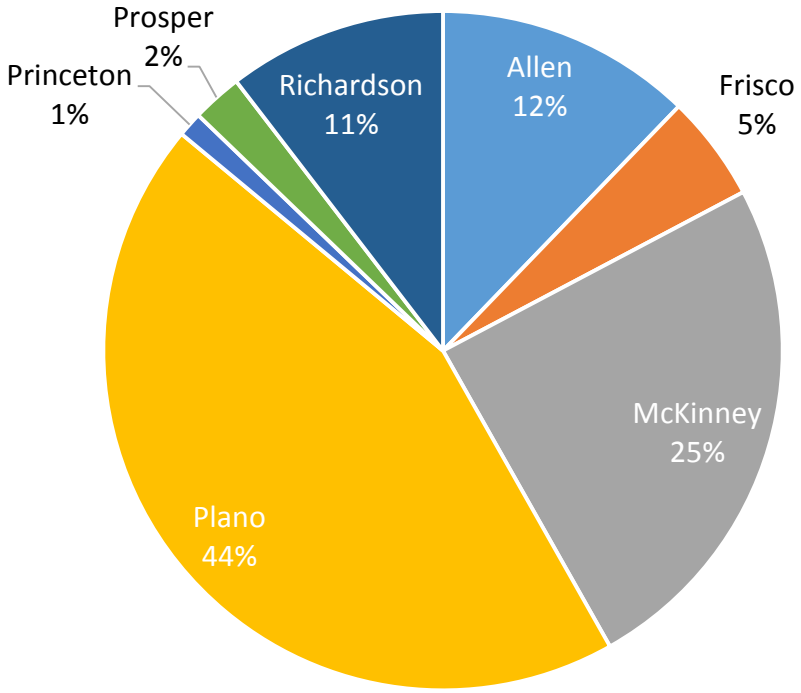
- Draft Regional CMOM Coordination Plan recently reviewed by communities, being finalized
- Unique CMOM Plans nearing completion, in alignment with Administrative Order requirements
- To demonstrate continued regional commitment, plan to deliver 13 CMOM plans and Regional CMOM in person to EPA in December

"Regional Service Through Unity …
Meeting our Region's Needs Today and Tomorrow"

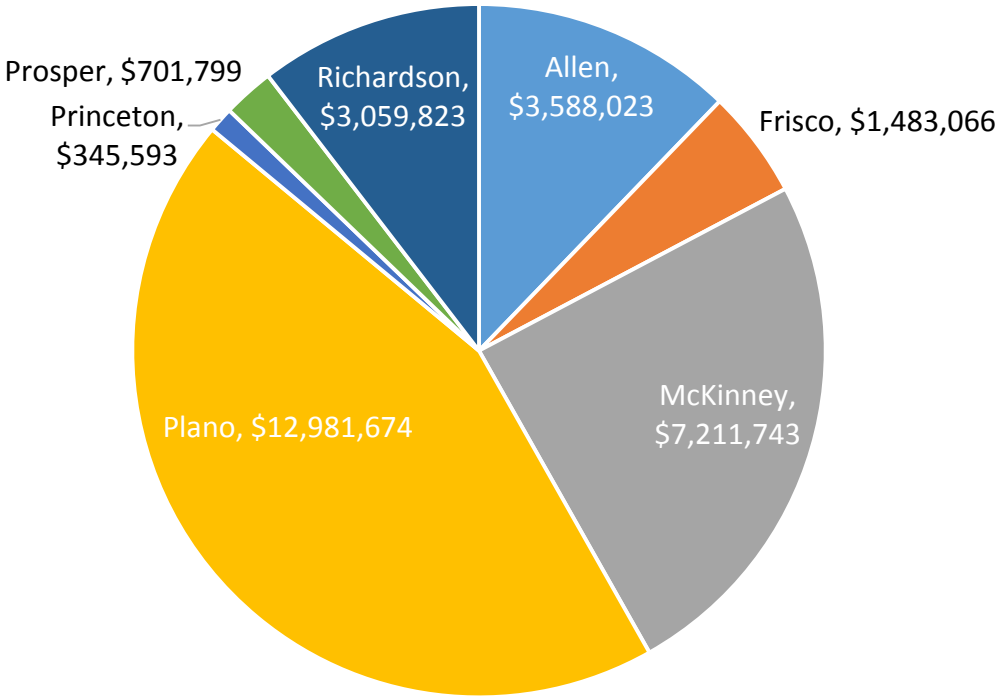
Wastewater System Cost Projections

- Wastewater System Rate Structure
- Drivers for FY 17 Wastewater CIP
- Upper East Fork Interceptor System
  - Capital Program
  - Total Costs
- Regional Wastewater System
  - Capital Program
  - Total Costs

Wastewater Rate Structure Shares Costs Proportionally to Flow Contribution

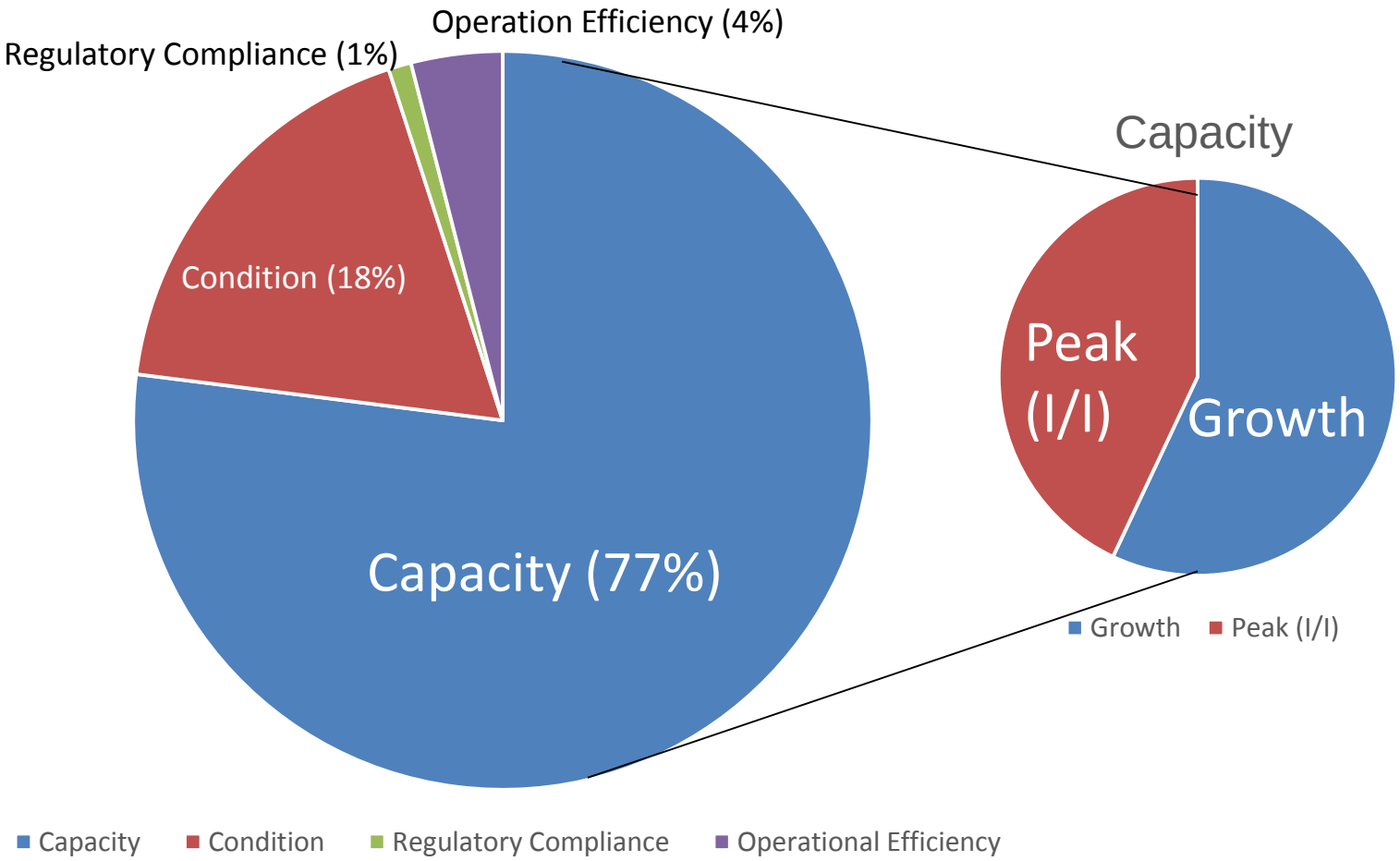


Total budget: $29,371,720



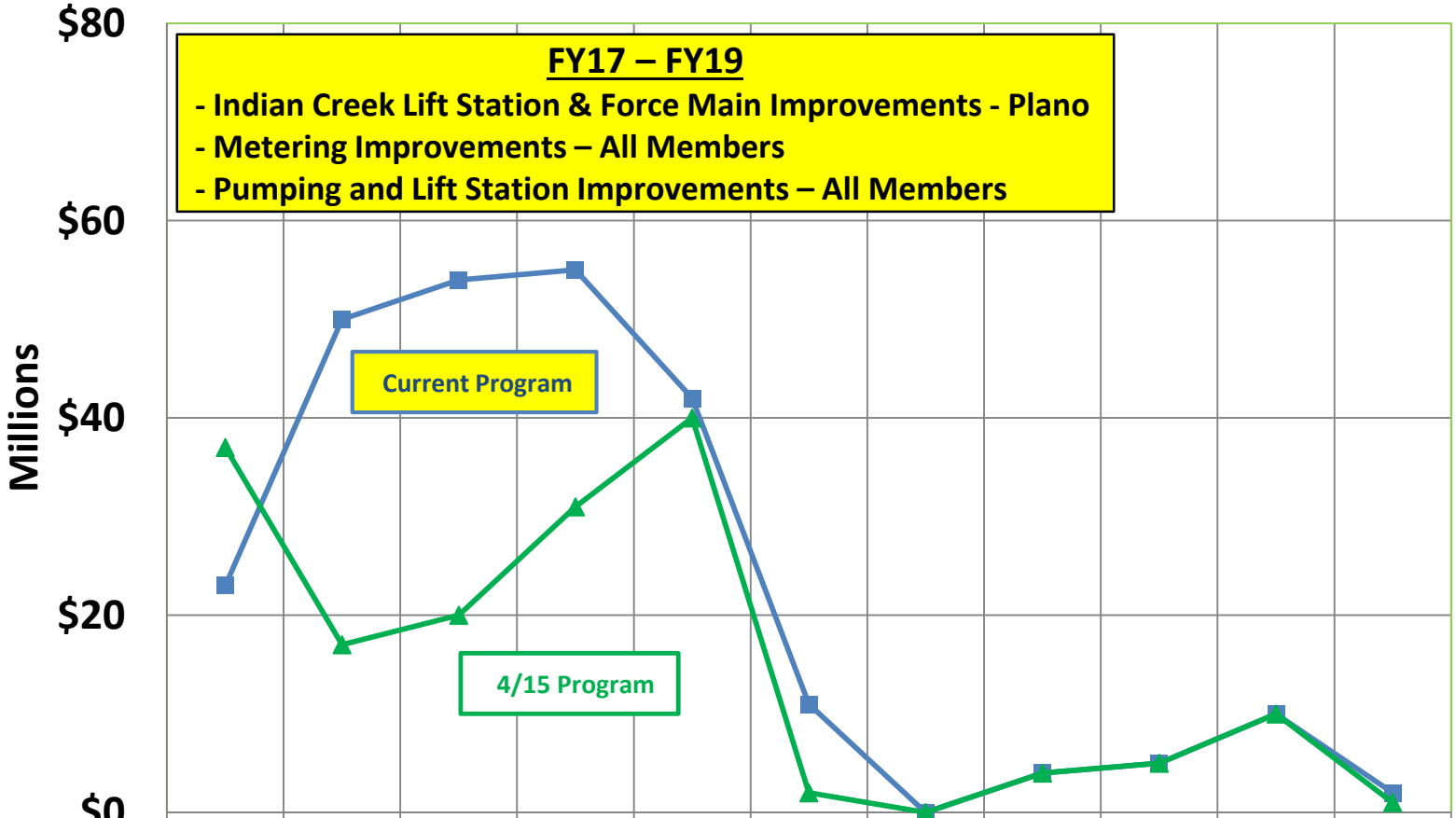
Upper East Fork Interceptor System FY 17 Budget

Drivers for FY 17 Wastewater CIP



UEFIS Capital Program

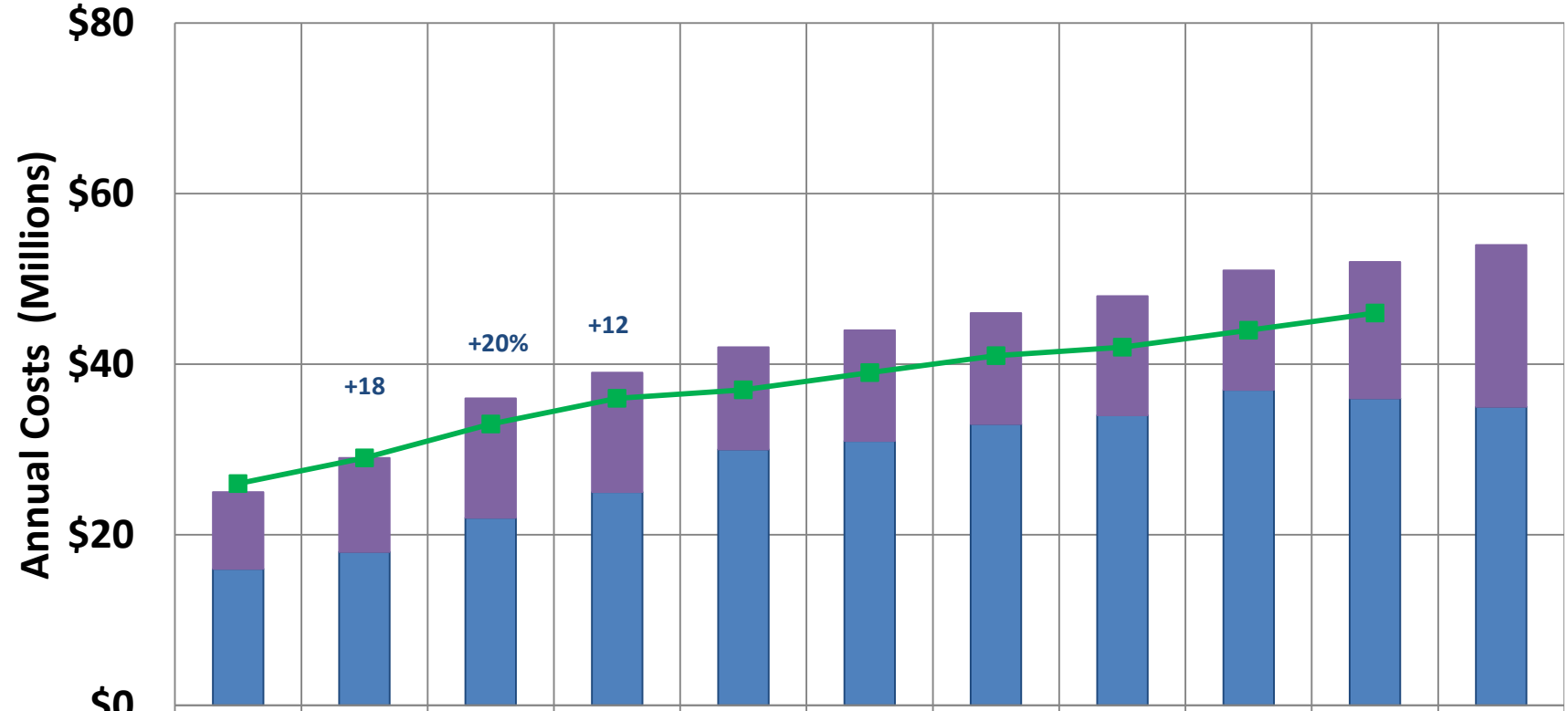
PRELIMINARY



	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Current Program	$23	$50	$54	$55	$42	$11	$-	$4	$5	$10	$2
4/15 Program	$37	$17	$20	$31	$40	$2	$0	$4	$5	$10	$1

UEFIS Total Costs

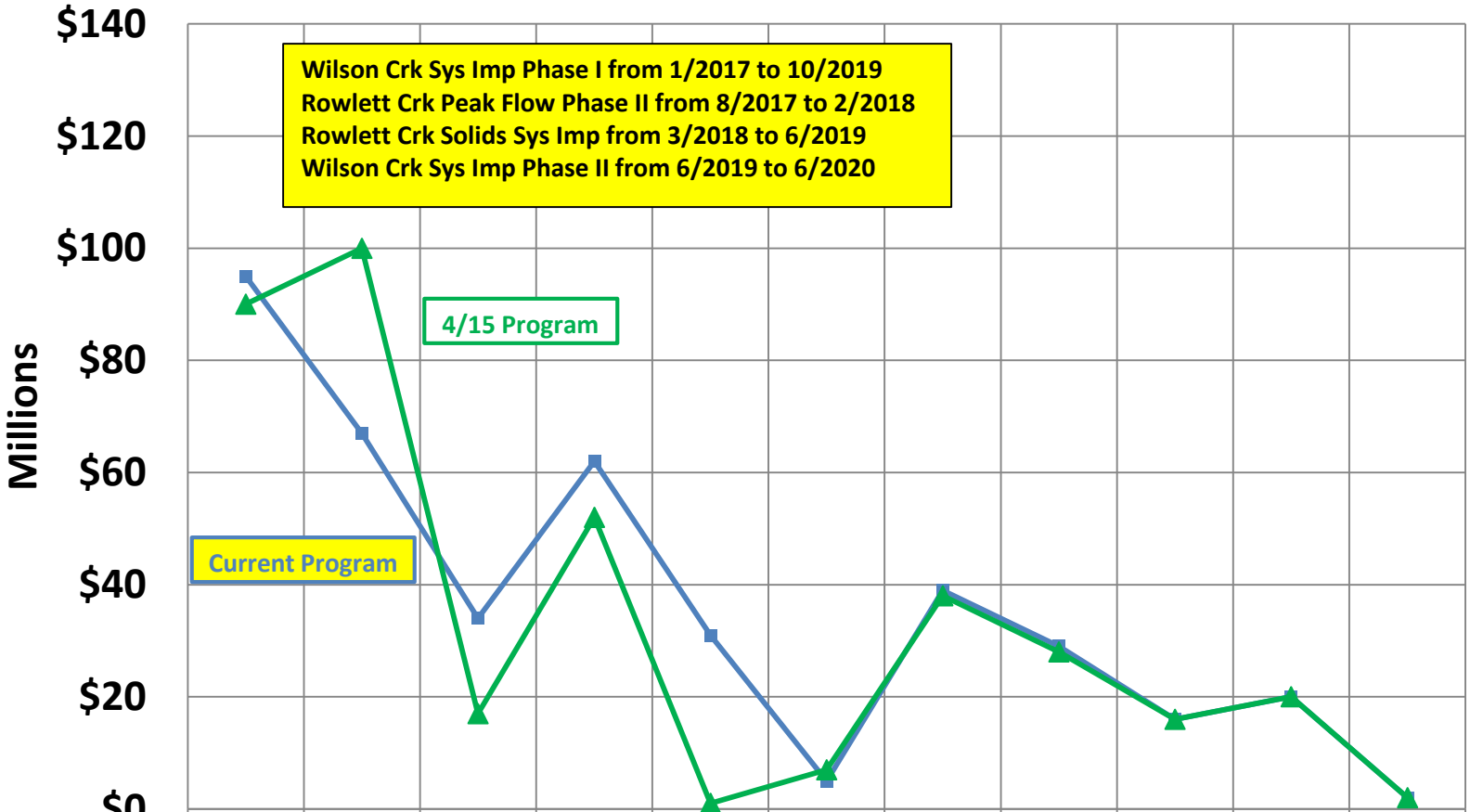
PRELIMINARY



	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
O&M	$9	$11	$14	$14	$12	$13	$13	$14	$14	$16	$19
Capital	$16	$18	$22	$25	$30	$31	$33	$34	$37	$36	$35
4/15 Total	$26	$29	$33	$36	$37	$39	$41	$42	$44	$46	

Regional WW Capital Program

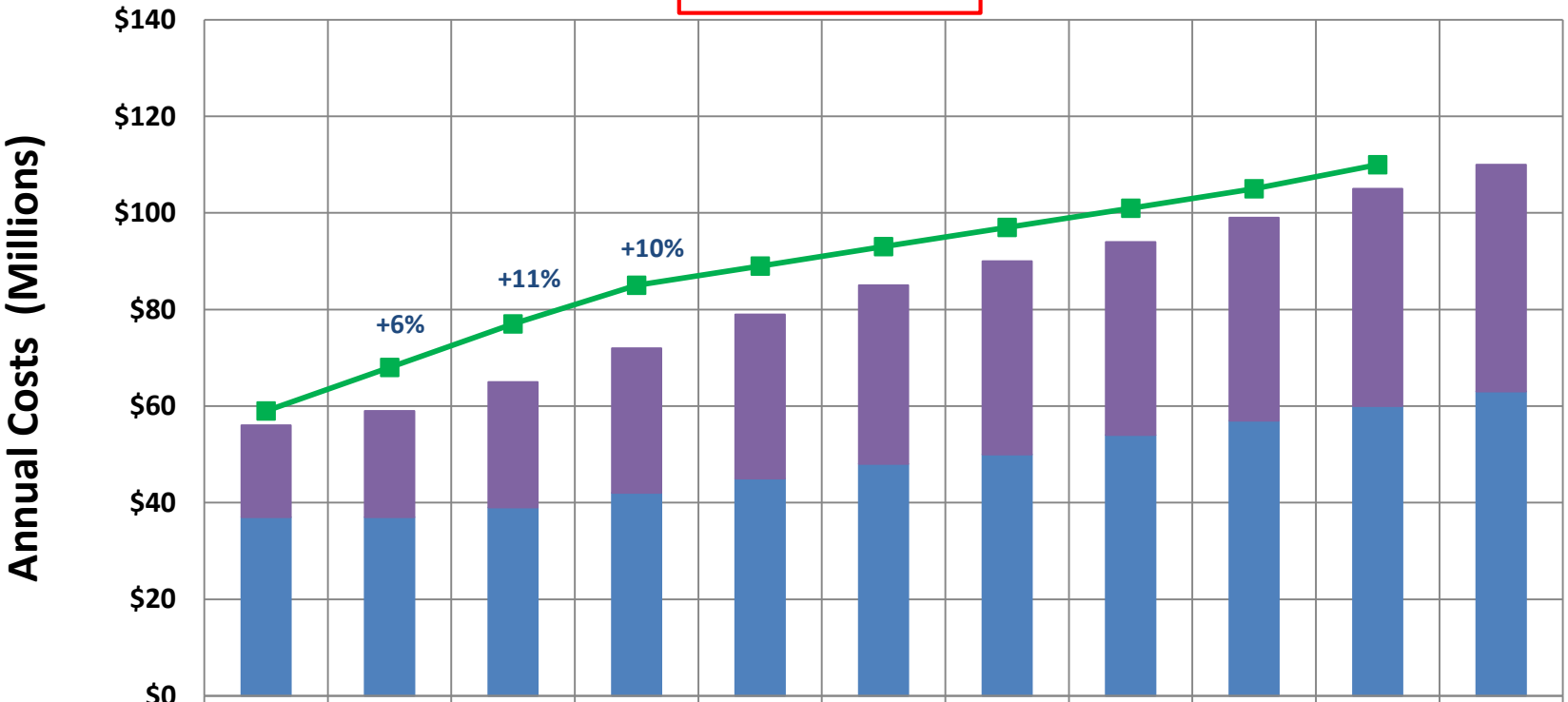
PRELIMINARY



	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Current	$95	$67	$34	$62	$31	$5	$39	$29	$16	$20	$2
4/15 Program	$90	$100	$17	$52	$1	$7	$38	$28	$16	$20	$2

Regional WW TOTAL COSTS

PRELIMINARY

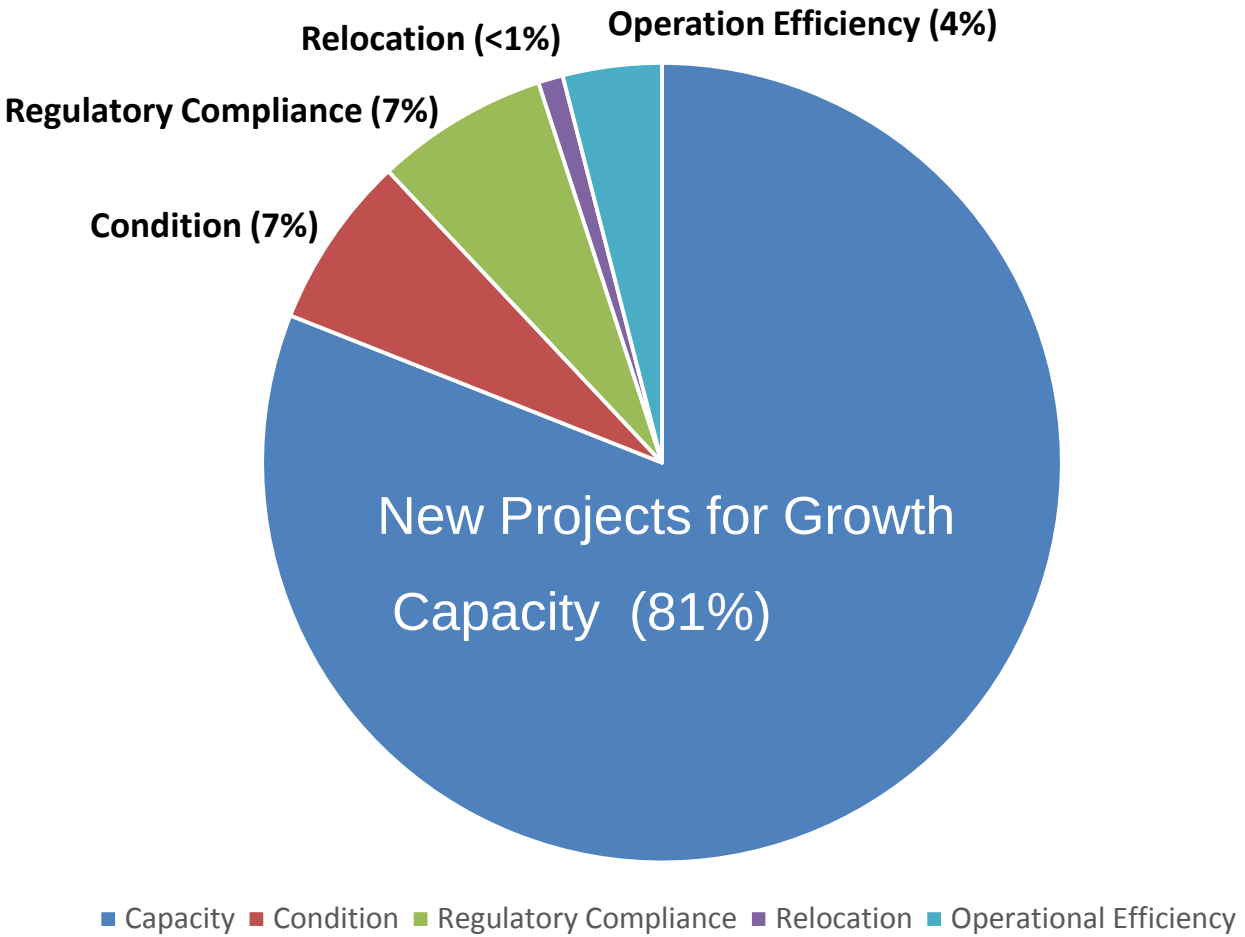


	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Capital	$19	$22	$26	$30	$34	$37	$40	$40	$42	$45	$47
O&M	$37	$37	$39	$42	$45	$48	$50	$54	$57	$60	$63
4/15 Total	$59	$68	$77	$85	$89	$93	$97	$101	$105	$110	

RATES

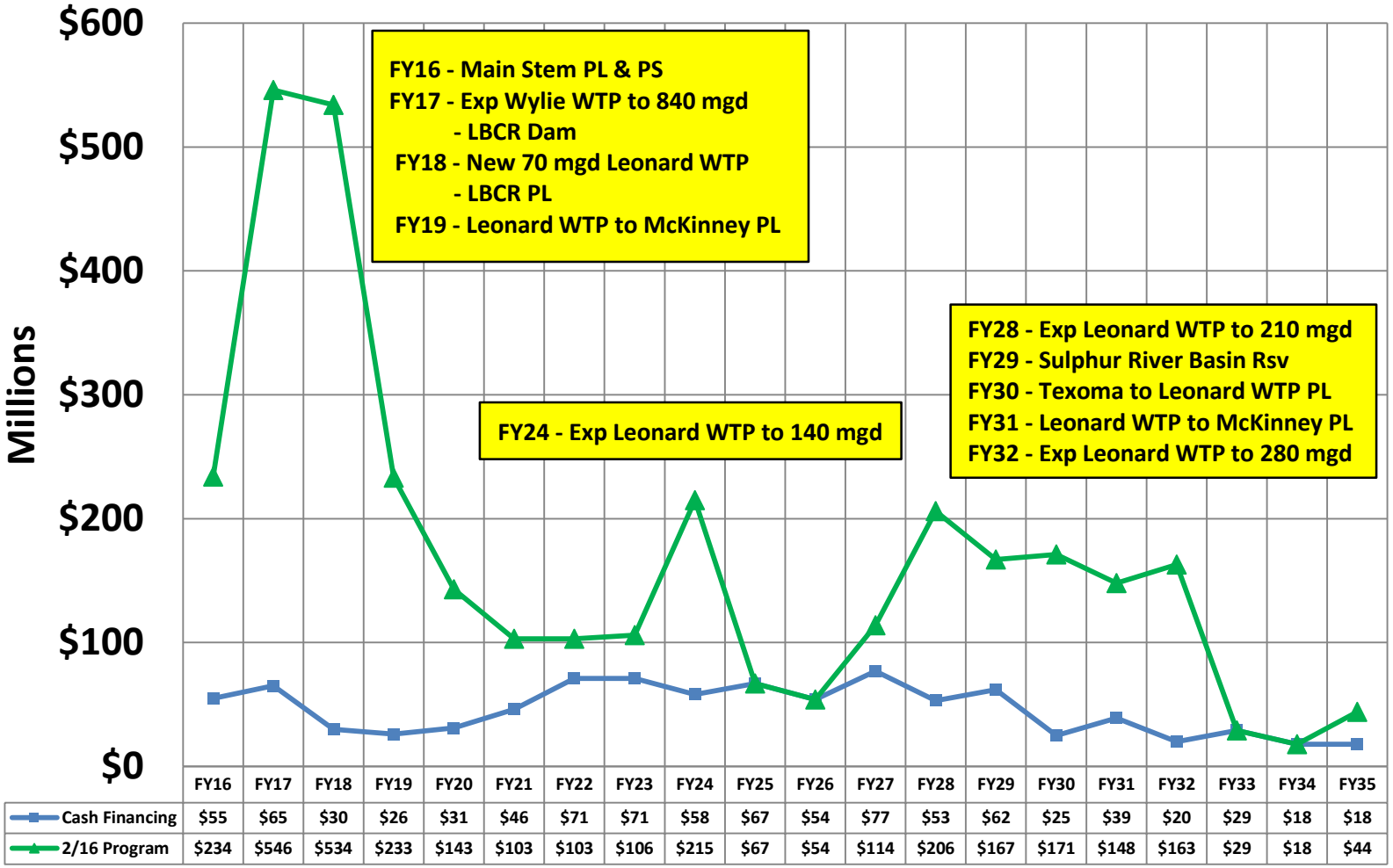
REGIONAL WATER SYSTEM

Drivers for FY17 Water CIP



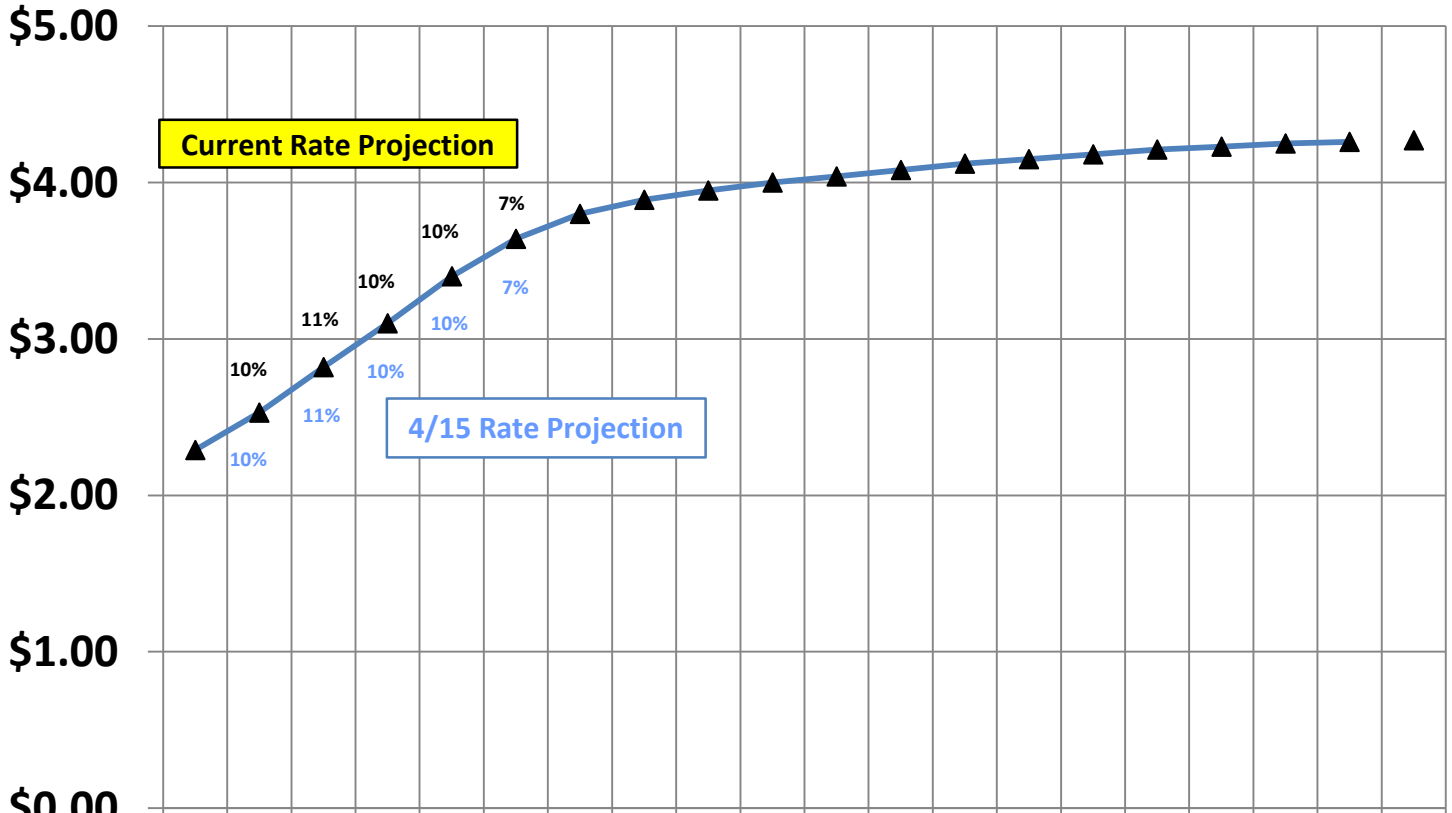
Percentages of dollars

Water Service Capital Program



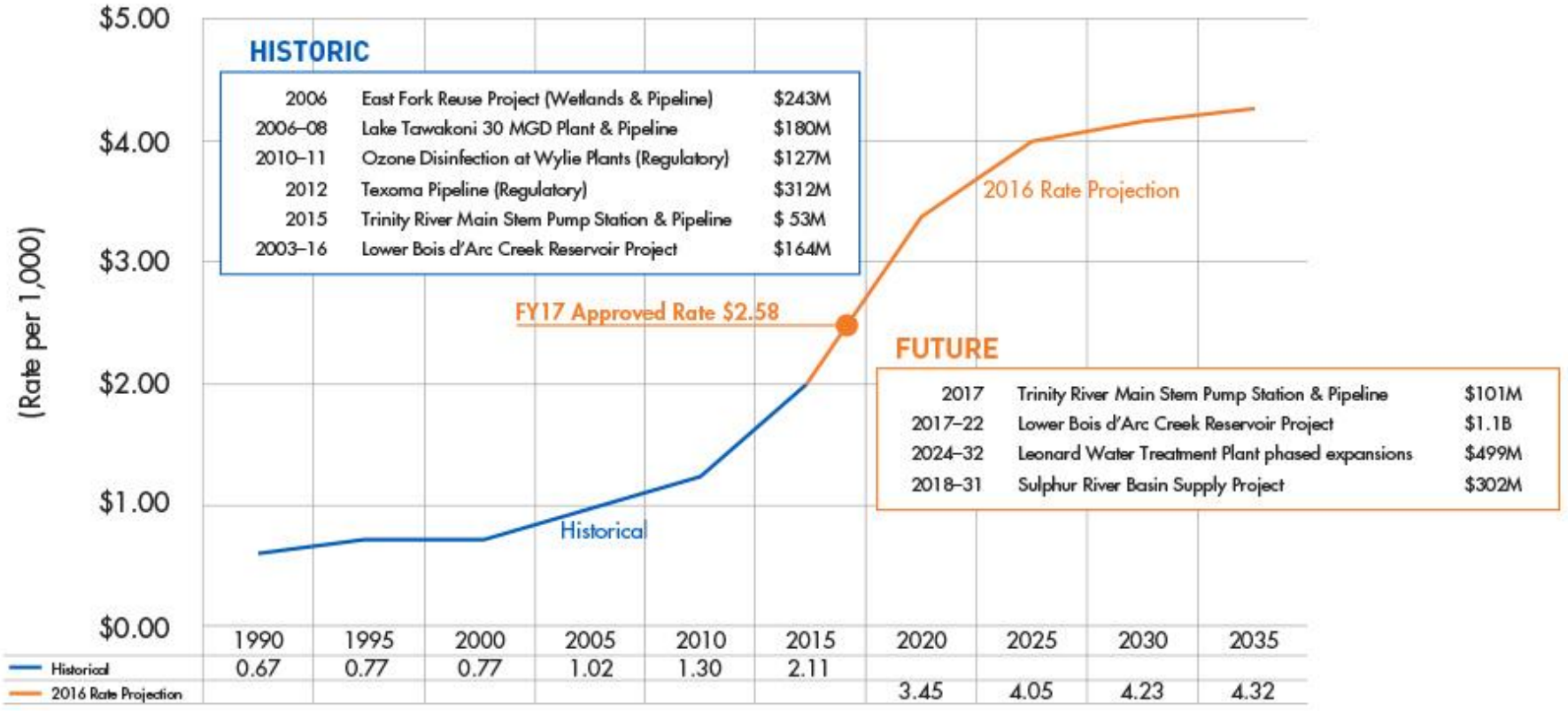
	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Cash Financing	$55	$65	$30	$26	$31	$46	$71	$71	$58	$67	$54	$77	$53	$62	$25	$39	$20	$29	$18	$18
2/16 Program	$234	$546	$534	$233	$143	$103	$103	$106	$215	$67	$54	$114	$206	$167	$171	$148	$163	$29	$18	$44

Water System Member Rate

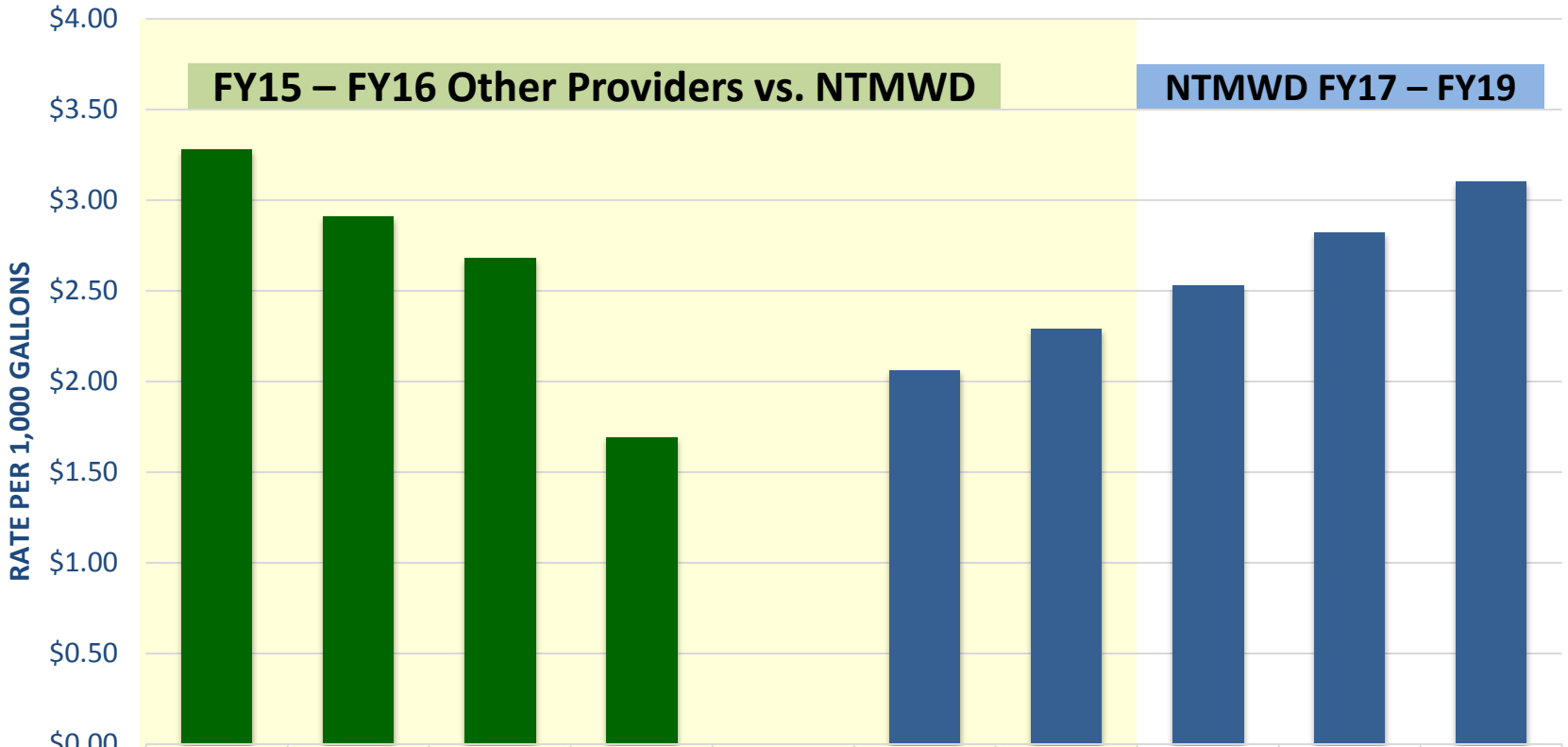


	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
▲ Current Projection	$2.29	$2.53	$2.82	$3.10	$3.40	$3.64	$3.80	$3.89	$3.95	$4.00	$4.04	$4.08	$4.12	$4.15	$4.18	$4.21	$4.23	$4.25	$4.26	$4.27
4/15 Projection	$2.29	$2.53	$2.82	$3.10	$3.40	$3.64	$3.80	$3.89	$3.95	$4.00	$4.04	$4.08	$4.12	$4.15	$4.18	$4.21	$4.23	$4.25	$4.26	

Wholesale Water Rates – Customers



Wholesale Water Rate Comparisons



	Entity A FY15	Entity B FY15	Entity C FY15	Entity D FY15		NTMWD FY15	NTMWD FY16	NTMWD FY17	NTMWD FY18	NTMWD FY19
Rate	$3.28	$2.91	$2.68	$1.69		$2.06	$2.29	$2.53	$2.82	$3.10

Note: Assumes a 2.21 Peaking Factor

Current Member City Wholesale Rate

- **Current rate = $2.53/1000 gallons**
  - **$2.12 covers system fixed costs (ex. infrastructure, debt)**
  - **$0.41 covers variable costs (ex. chemicals, energy)**
  - **Cities receive annual rebate based on actual consumption unless a new annual minimum established**
  - **Approx. 84% funds fixed system costs**
  - **Still 1/4 penny per gallon of treated water delivered**

Water Historically Undervalued

- **Providers need to lead in new ways**
- **Need help educating consumers on true cost and value of water**
- **Paying for water SERVICE, not just commodity**

¼ penny = cost of ONE gallon of water from NTMWD

Best to work together to inform consumers about costs & challenges we face

Personnel History

	New Requests	Positions
FY13	21	612
FY14	25	637
FY15	36	673
FY16	78*	751
FY17	22	773

*one time additional increase in personnel above yearly norms based on District's understaffing in operations, maintenance, and engineering

Questions and Discussion

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