

# State of the Union: DWU Capital Improvement Program

WEAT North Texas Section  
November Luncheon



Richard Wagner, P.E.  
Assistant Director  
Dallas Water Utilities



# Outline

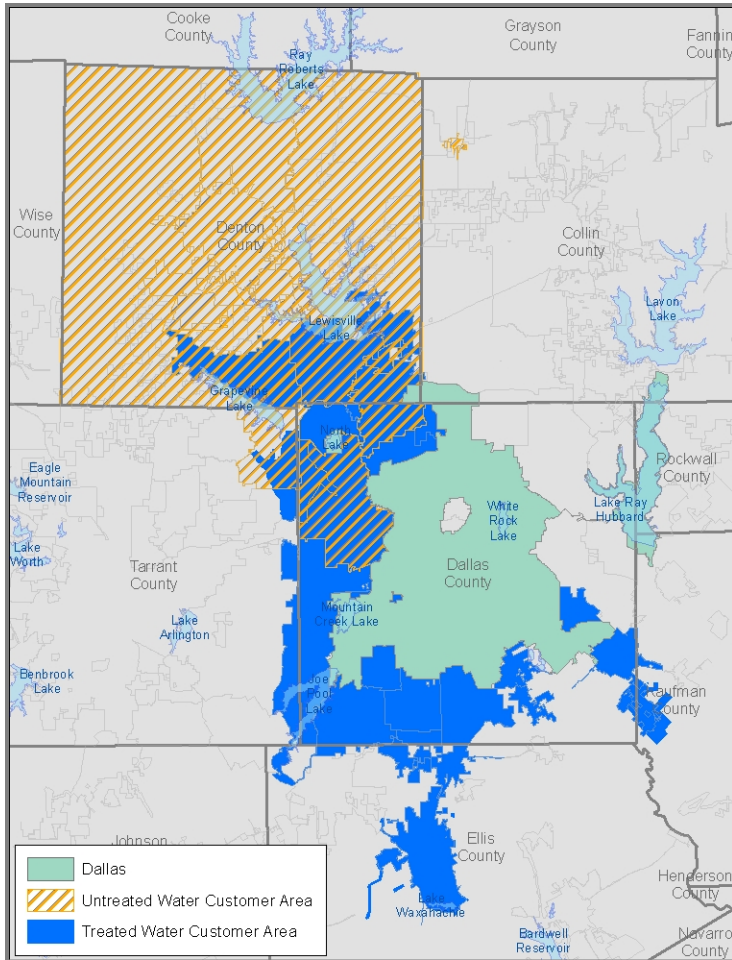
- DWU Background
- Organization
- “One Water”
- Capital Improvement Program
  - Water & Wastewater
  - Storm Water & Erosion Control
- Future Challenges



# BACKGROUND



# Dallas Water Utilities Fact Sheet

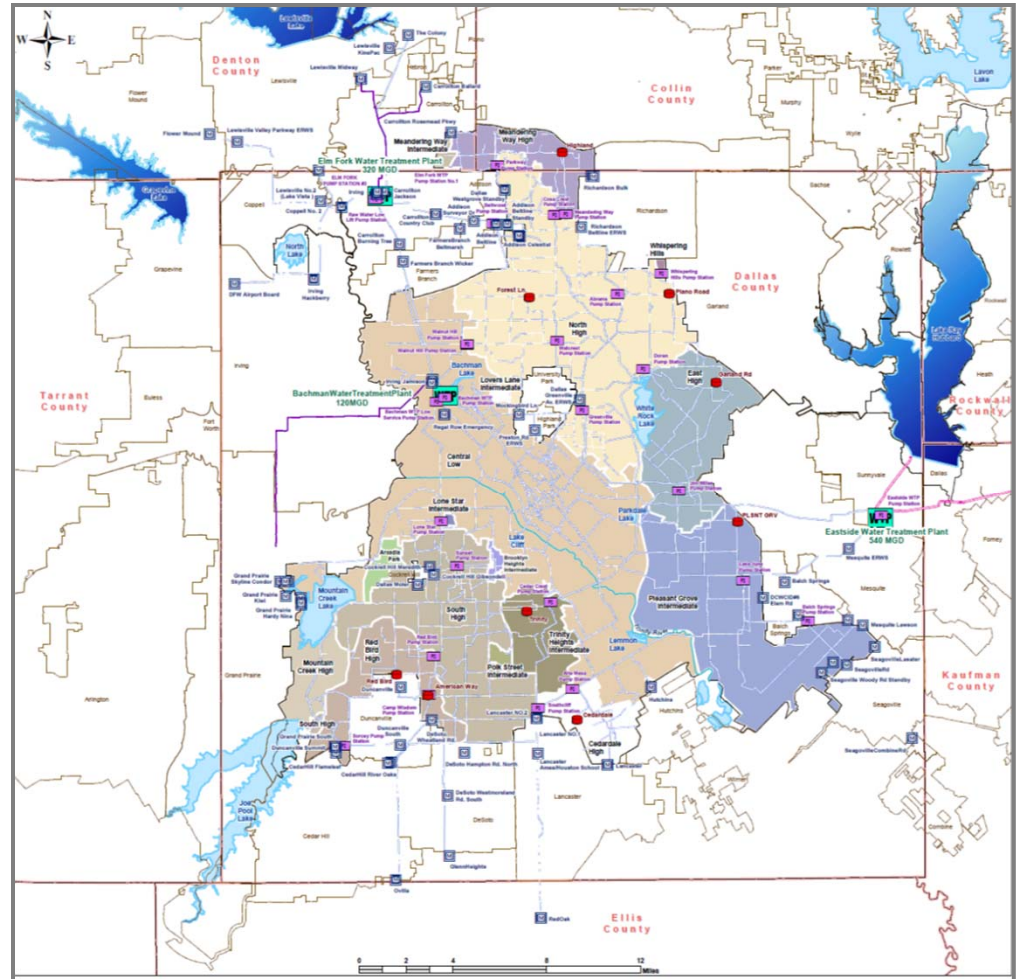


- Founded in 1881
- Funded from wholesale and retail water and wastewater revenues (receives no tax dollars)
- 699 square mile service area
- Approximately 1,400 employees
- 2.5 million treated water customers
  - 1.3 million – Retail (City of Dallas)
  - 1.2 million – Wholesale
- 300,000 retail customer accounts
  - 23 treated water
  - 3 untreated water
  - 11 wastewater

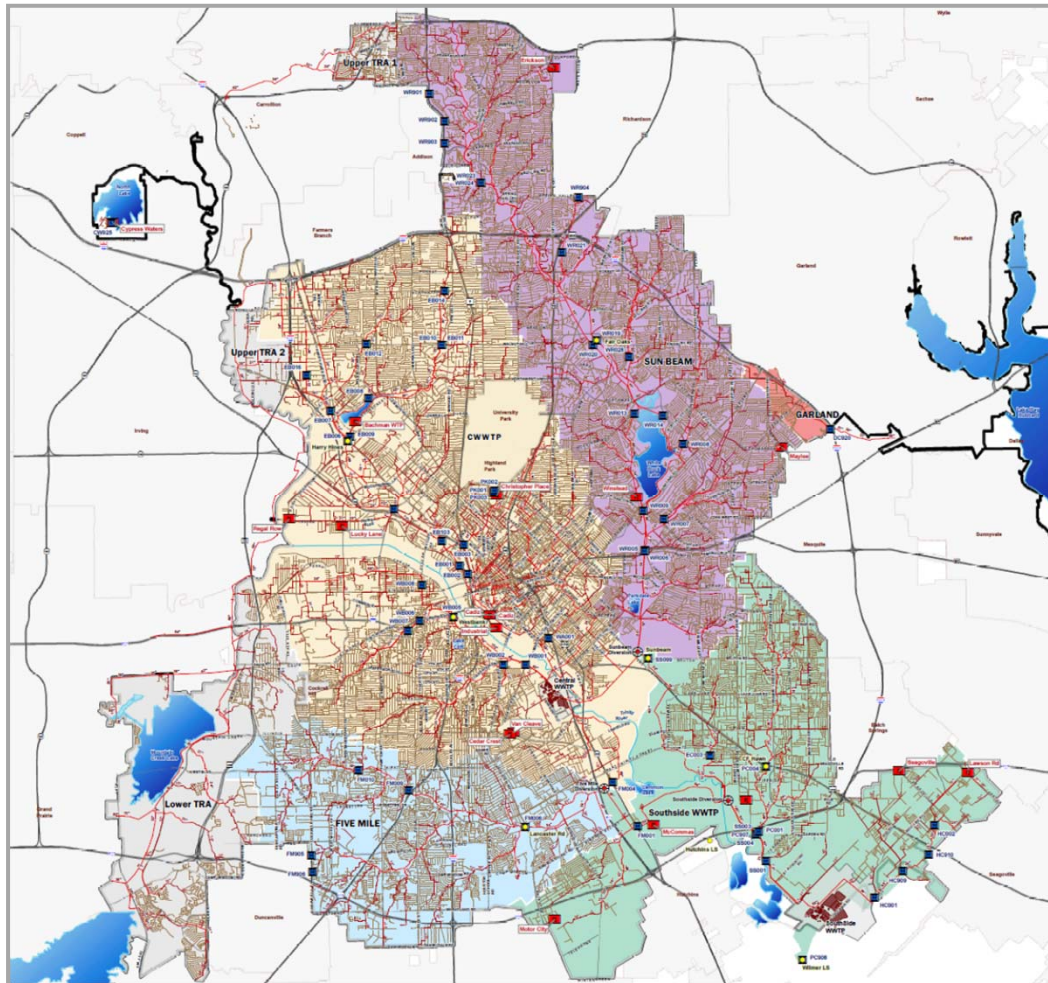


# Dallas Water System

- 7 reservoirs (6 connected)
- 4,983 miles of water mains
- 3 water treatment plants with a combined capacity of 900 MGD
- 23 pump stations
- 9 elevated and 12 ground storage tanks
- Value of water assets \$3.6 Billion
- Treated 136 BG of water in FY17



# Dallas Wastewater System

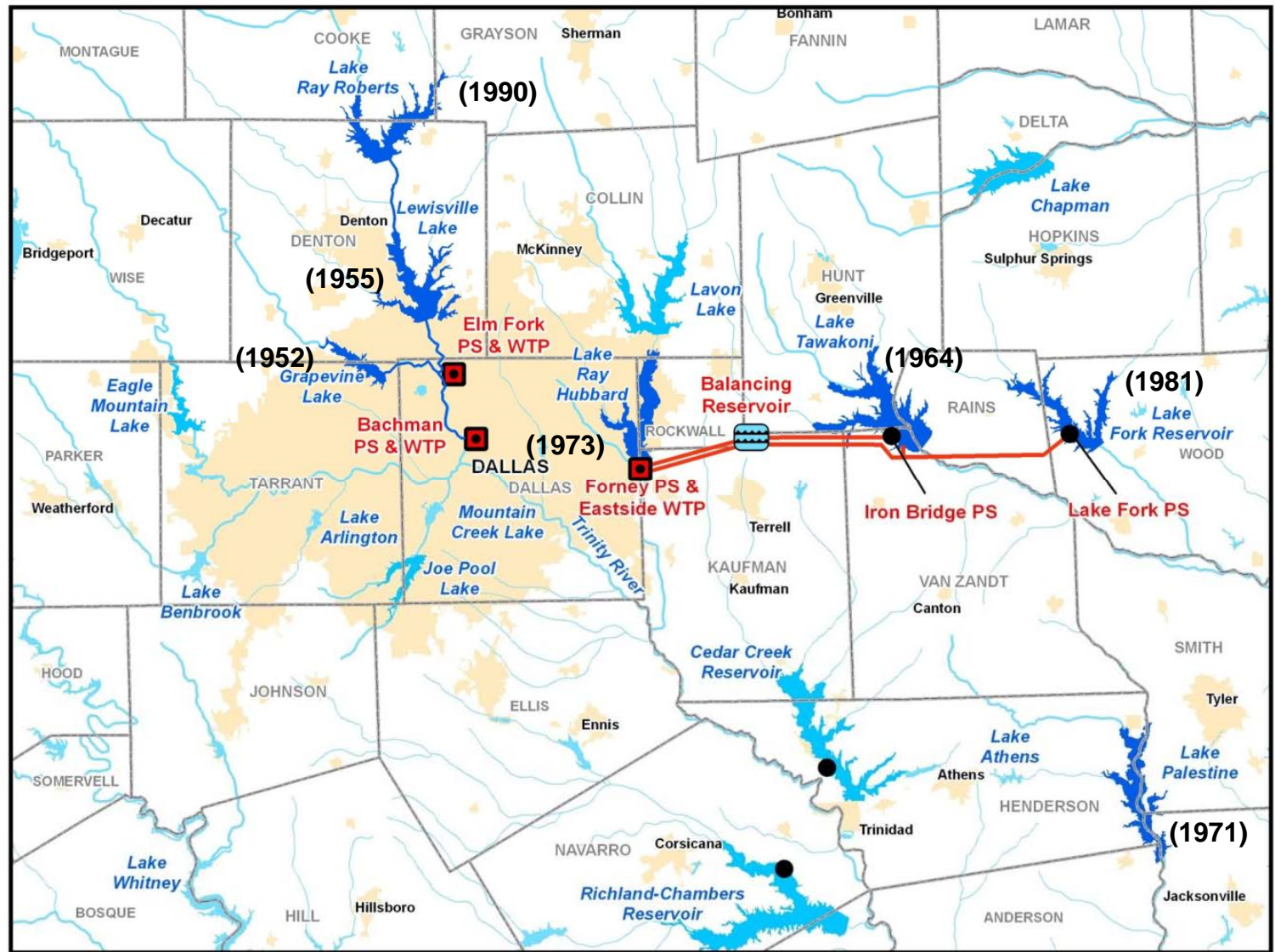


- 2 wastewater treatment plants with a combined capacity of 260 MGD
- 15 wastewater pump stations
- 4,040 miles of wastewater main
- Value of wastewater assets \$2.4 Billion
- Treated 59 BG of wastewater in FY17



# Dallas' Regional System

## Current Water Supply



# Dallas Storm Drainage System



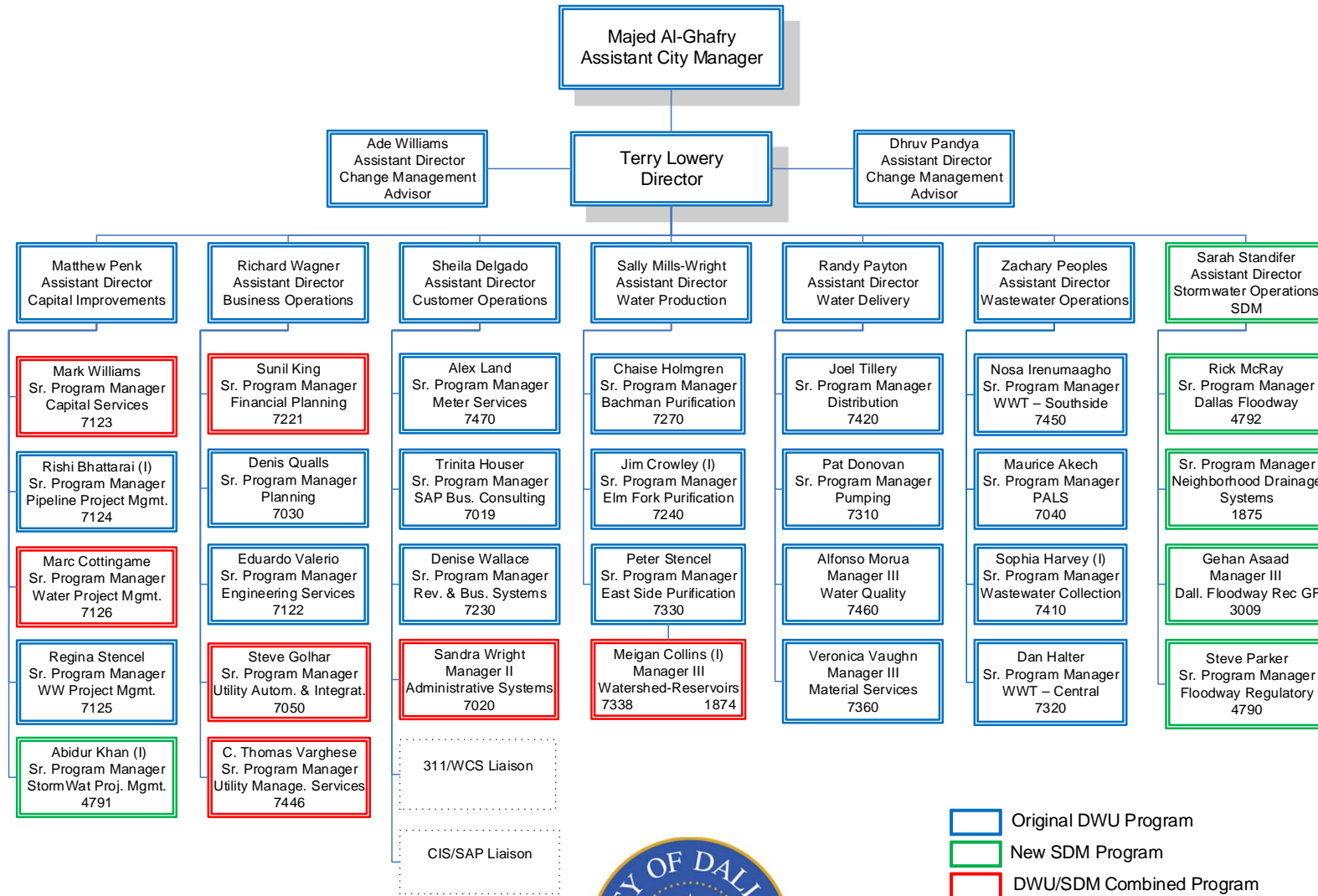
- 8 storm water pump stations with a combined capacity of 2,800 MGD
- 1,963 miles of storm sewers
- 30 miles of levees
- 39,000 acres of floodplain



# ORGANIZATION



# Management Team & Programs



Original DWU Program  
 New SDM Program  
 DWU/SDM Combined Program



# Benefits Of A “One Water” Approach

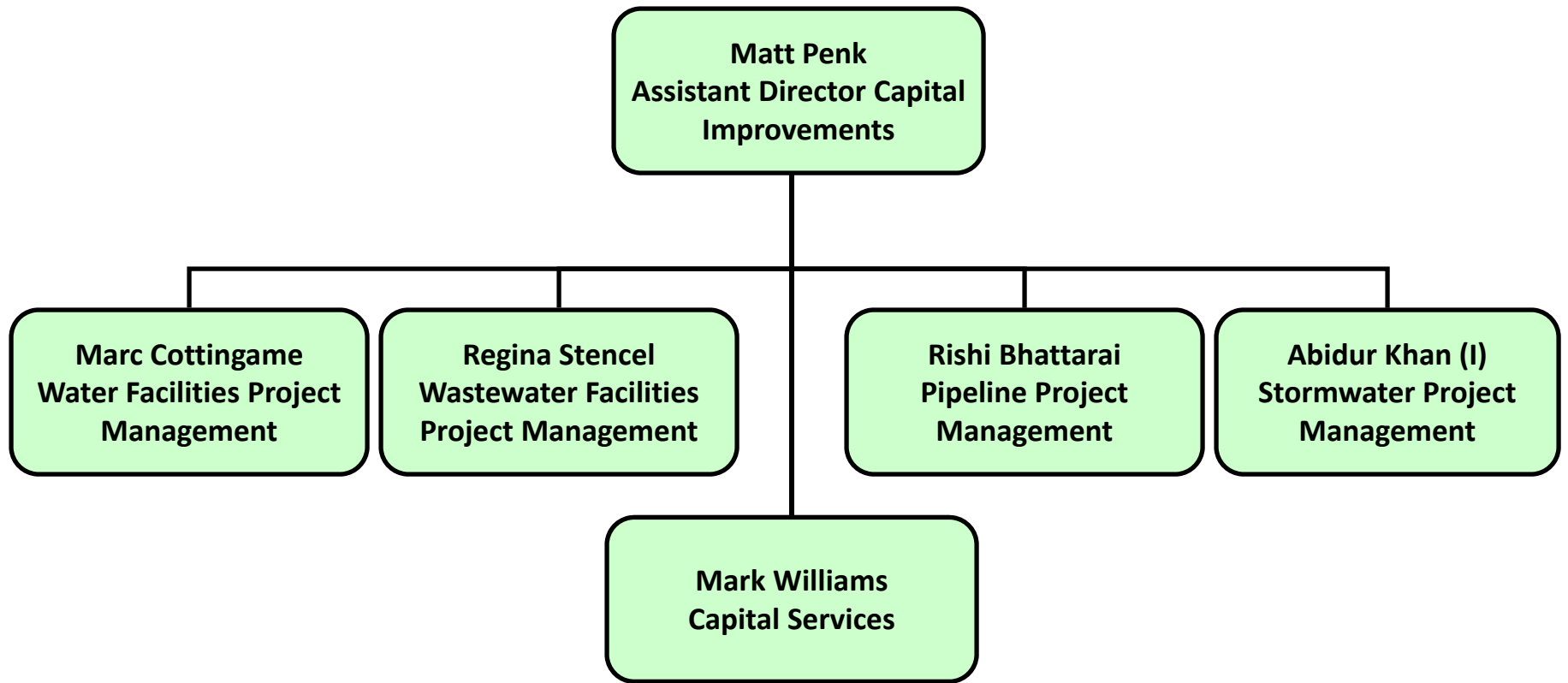
- Greater resilience and reliability;
- Opportunities to optimize regional infrastructure;
- Sustainable community development;
- New regulatory flexibility or opportunity;
- Economic growth opportunity; and
- Increased coordination among agencies/departments.



# CAPITAL IMPROVEMENTS



# Capital Improvements Organizational Structure

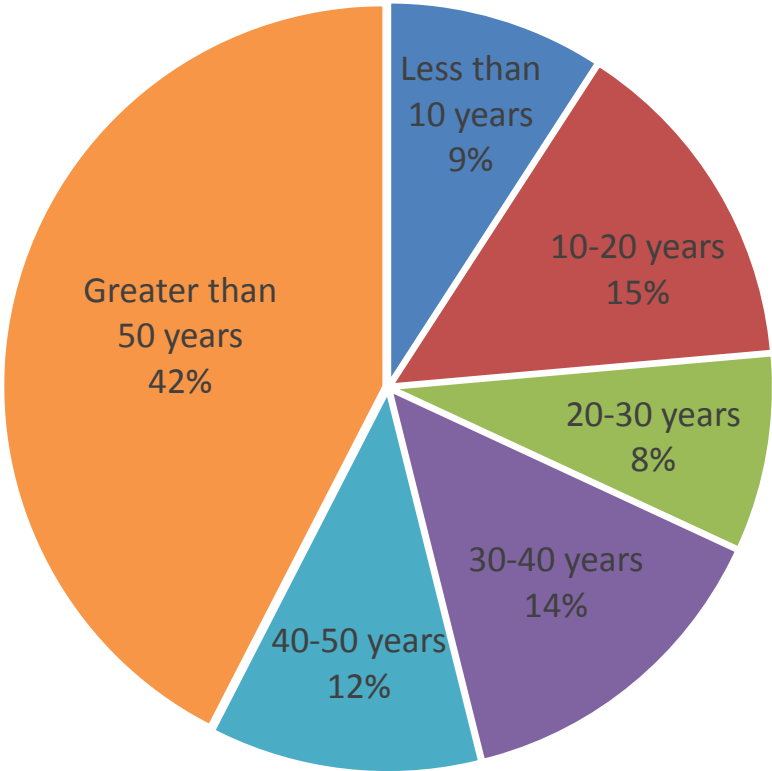


# DWU Capital Improvement Program

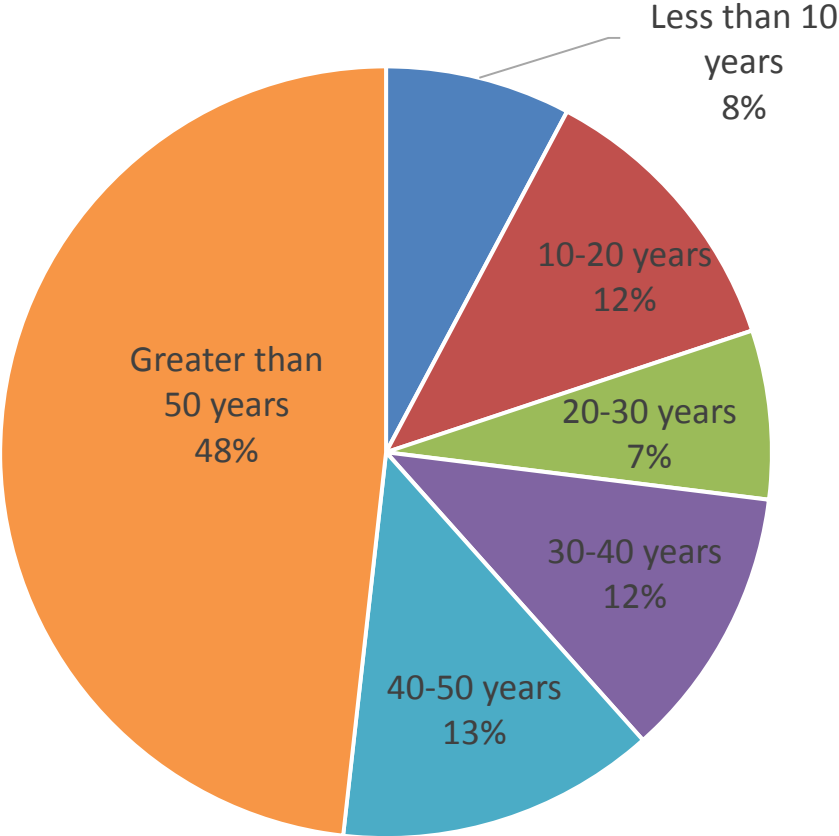
- FY18-19 CIP budget is \$300M (Water & WW)
  - ☐ **Regulatory (\$15.0M)**
    - EPA Requirements, TCEQ Requirements
  - ☐ **Growth (\$52.0M)**
    - To meet future customer needs
    - Long Range Plans, Master Plans and Studies
  - ☐ **Rehab and Replacement (\$233.0M)**
    - Projects requested by Operations programs
    - Areas of concern and excessive maintenance
    - Work with Others (DOT, DART, County, NTTA, PBW)



# Aging Infrastructure



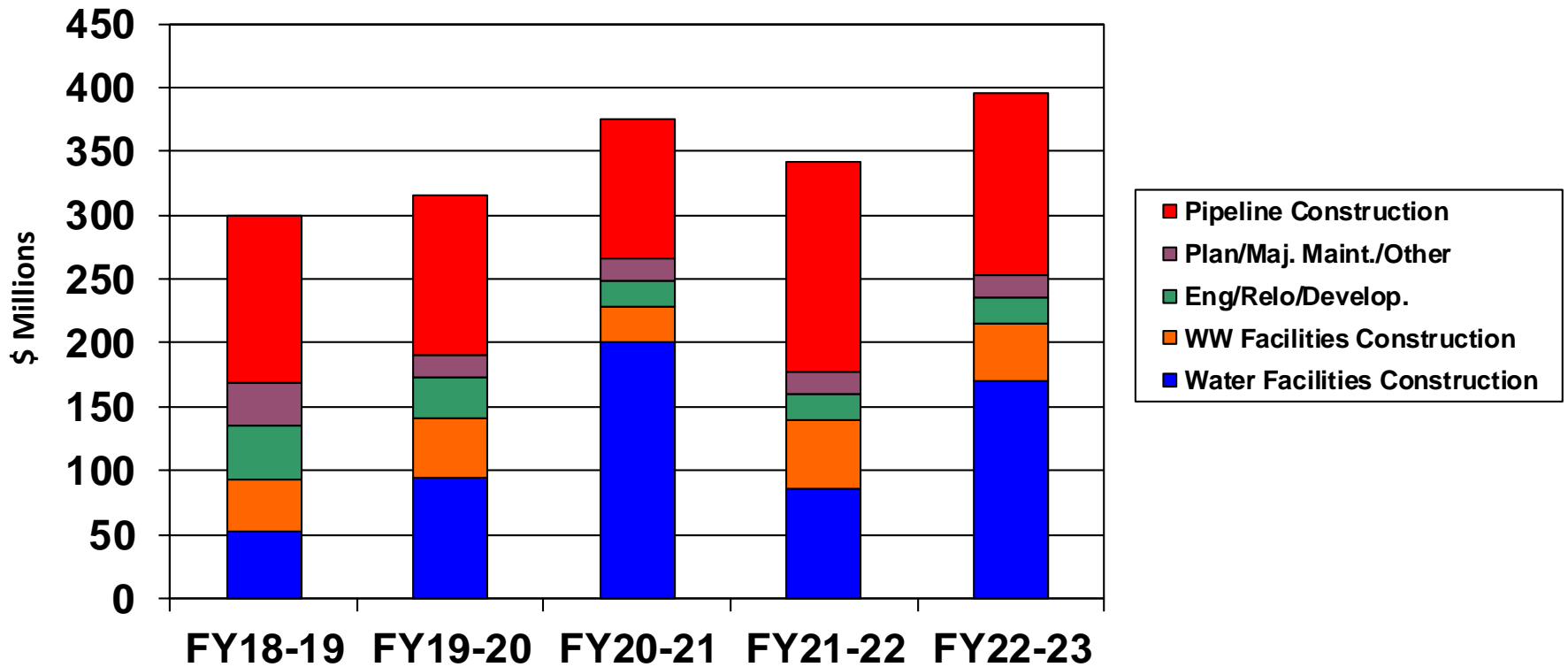
Water Lines



Sanitary Sewer Lines



# 5 Year CIP - Expenditures By Fiscal Year (Water & Wastewater)



# Programs

- Main Replacement Program
  - Needs inventory of approximately 526 miles
  - Replacement rate is 0.9% of system (~72 miles/year)
- Large Valve & Meter Vault Assessments
- Cathodic Protection Evaluations
- Leak Detection Program
- Cleaning & Televising Sewers
- TCEQ SSO Initiative Program



# TWDB Financing

- May 2017 – 5 year funding commitment from TWDB
- DWU will receive \$66M annually with a loan repayment period of 30 years
- Total savings could total \$82.5M
- May 14, 2018 – Loan closed
- DWSRF & CWSRF
- Begin awarding contracts for pipeline replacement in FY 18-19



# Replace & Rehab Focus = Results

- Goals and Benefits
  - Efficient use of water supply
  - Recovers production capacity and costs
  - Reduced liability and damage to property
  - Improved environmental quality
- Unaccounted For Water was 6.62% for FY17 and 6.37% for FY18 with an industry goal of 10%
- Sanitary sewer overflows per 100 miles of main were 3.1 in FY18 compared to 5.4 in FY 07 (42% reduction)
- Water main repairs per 100 miles of main - 29 in FY 18 compared to 42 in FY 07 (31% reduction)

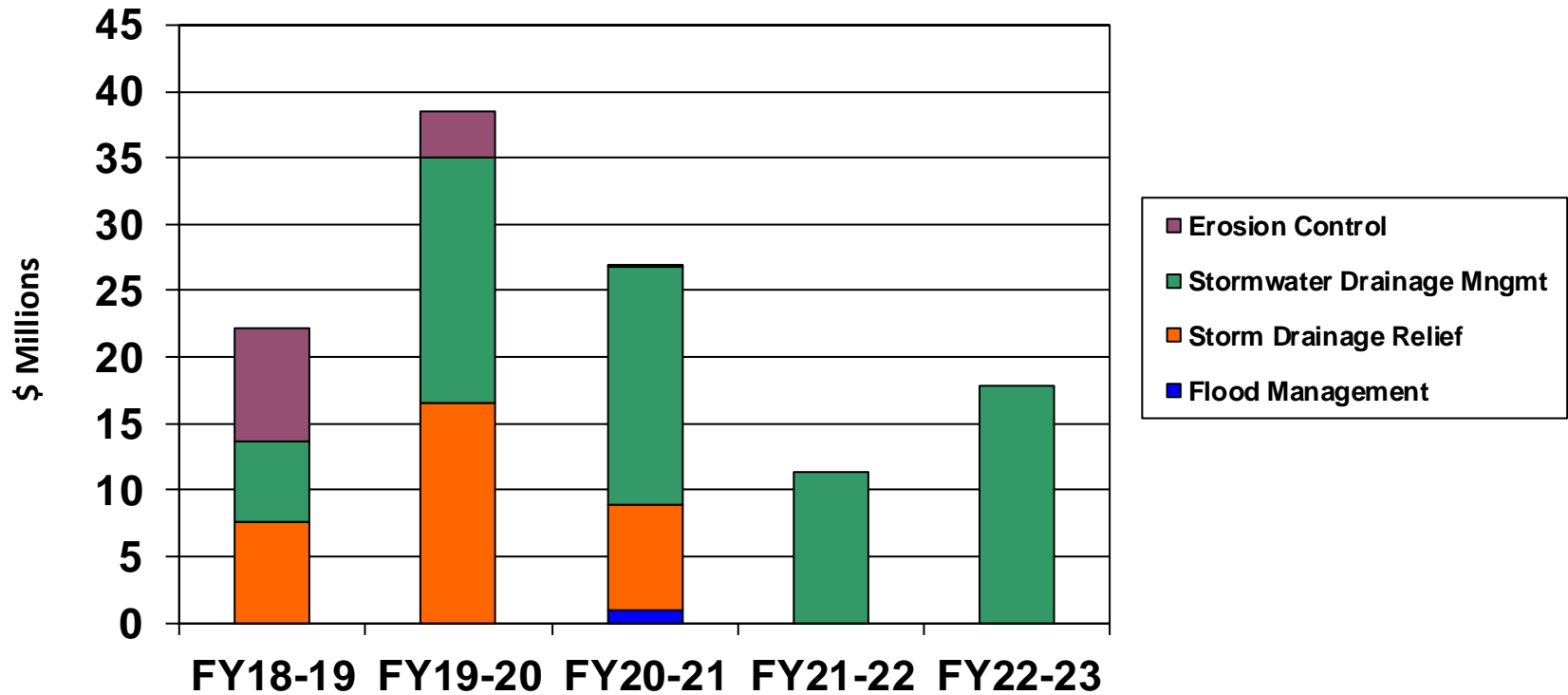


# Storm Drainage Management CIP

- Erosion Control – structures threatened by creek or channel bank erosion
- Flood Management – projects recommended by master plans and hydrologic studies; bridge and culverts, channelization, detention, levee flood protection
- Storm Drainage Relief – storm drainage system improvements; pump stations
- Storm Drainage Management – provides funding for projects thru monthly storm water utility fees.



# 5 Year CIP - Expenditures By Fiscal Year (Stormwater)



# FUTURE CHALLENGES



# Top 5 Issues Facing the Water Industry

Source: 2018 State of the Water Industry Report, AWWA

1. Renewal & replacement (R&R) of aging infrastructure
2. Financing for capital improvements
3. Public understanding of the value of water systems and services
4. Long-term water supply availability
5. Public understanding of the value of water resources

Water systems are the cornerstone of modern society, and their continuous renewal and replacement should be made a higher priority and not dealt with in reaction to emergencies resulting from years of neglect and poor decisions by the uninformed.

*Kenneth Mercer, Journal AWWA, July 2016*



# Future Challenges

- Prioritizing needs and planning to manage impacts
- Developing sustainable capital program for stormwater
- Implementing large scale improvements within funding limitations without impacting service delivery
- Managing and using data to make replacement and rehabilitation decisions
- Aging workforce and staffing needs



# Capital Planning



**Comprehensive Wastewater Collection System Assessment**  
 Dallas Water Utilities  
 City of Dallas  
 CWWSA

**Collection System Master Plan**  
 October 22, 2007

Dallas Water Utilities  
 Wastewater Treatment Facilities Strategic Plan

DWU Control, Operation, and Maintenance Manual for Zebra Mussels - Contract No. 14-009E  
 September 2015



Business Technology Master Plan for Dallas Water Utilities

**CDM**

City of Dallas  
 Master Plan for Compliance with Disinfectants/Disinfection Byproducts Rule and Enhanced Surface Water Treatment Rule  
 June 2003

Chiang, Patel & Yerby, Inc.  
 Words Worth

*Report*

BUILDING A WORLD OF DIFFERENCE®

Water Capital Infrastructure Assessment & Hydraulic Modeling

Volume 1  
 Capital Improvement Plan

July 2007



Project No. 132404  
 Contract No. 02-057E



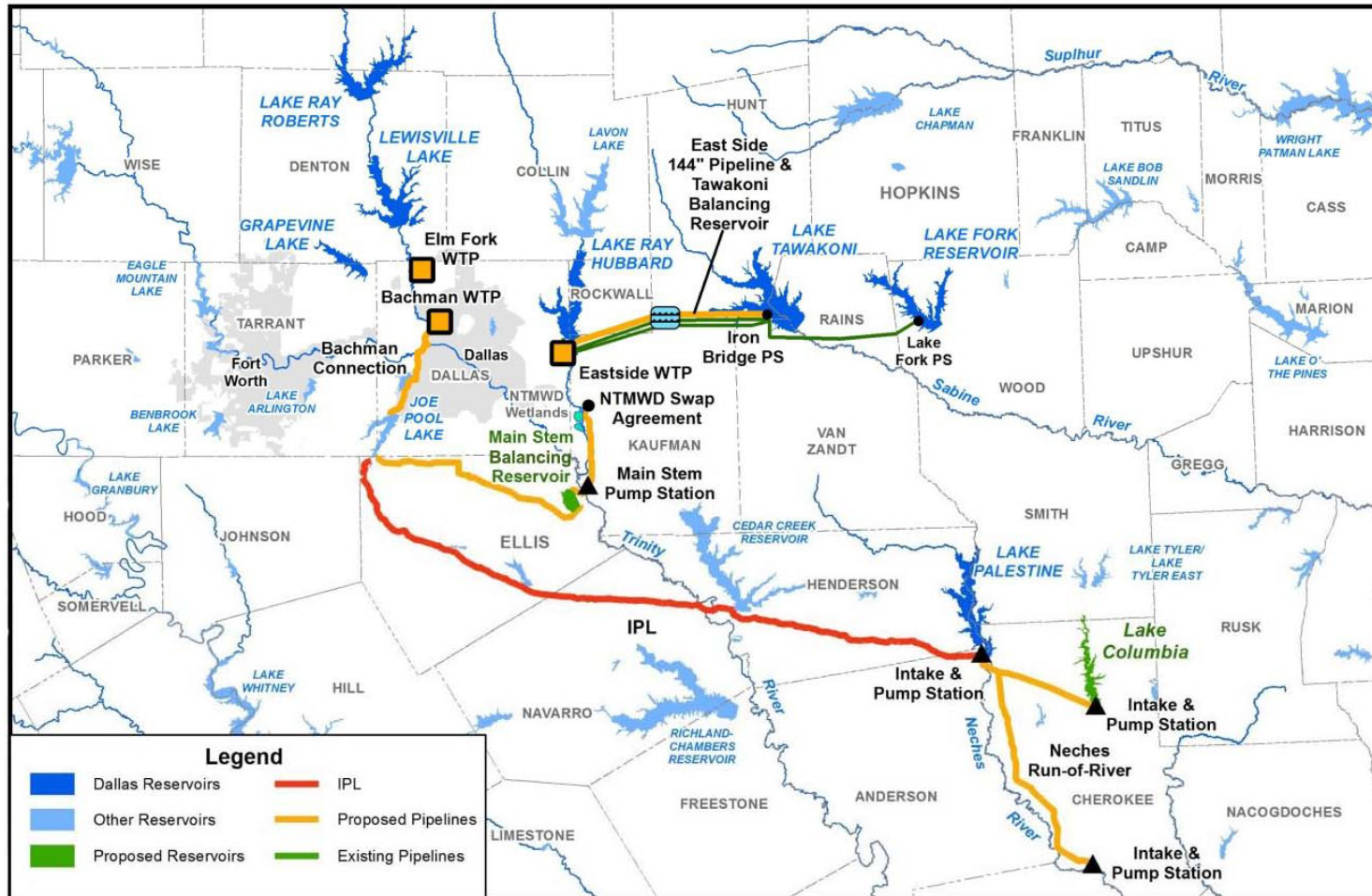
2014 Dallas Long Range Water Supply Plan to 2070 and Beyond

Dallas Water Utilities  
 City of Dallas, Texas  
 December 2015

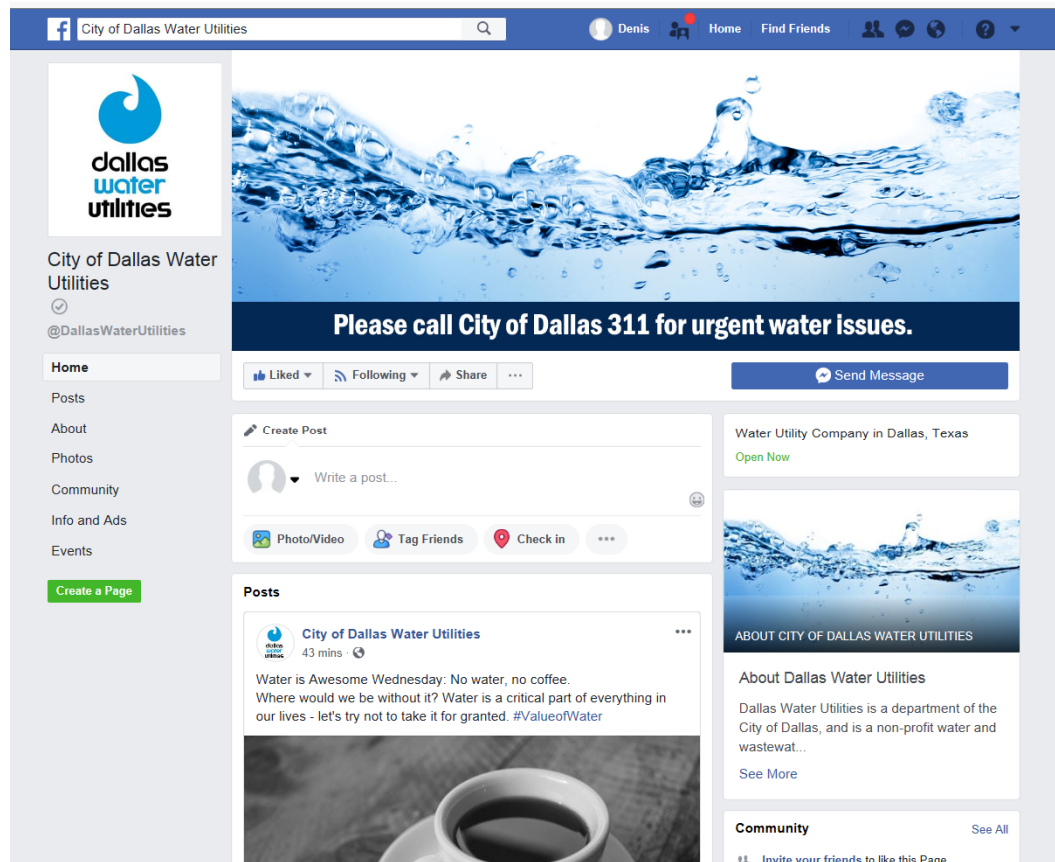


HDR

# Proposed Water Supply Strategies



# Social Media



## Facebook

- Kickoff – August 1, 2018
- Please Follow:  
**@DallasWaterUtilities**



# Questions?

**Matt Penk, P.E.**

**Assistant Director – Capital Improvements**

**Dallas Water Utilities**

**[matthew.penk@dallascityhall.com](mailto:matthew.penk@dallascityhall.com)**

**Richard Wagner, P.E.**

**Assistant Director – Business Operations**

**Dallas Water Utilities**

**[richard.wagner@dallascityhall.com](mailto:richard.wagner@dallascityhall.com)**

