

Dallas Water Utilities- Nuts and Bolts of DWU

Transportation and Infrastructure
Committee
October 18, 2021

The logo of the City of Dallas, featuring a stylized white 'D' on a dark blue background. Inside the 'D' is a white three-leaf plant. To the left of the 'D' is a white square with a smaller square inside it.

City of Dallas

Terry S. Lowery, Director
Dallas Water Utilities
City of Dallas

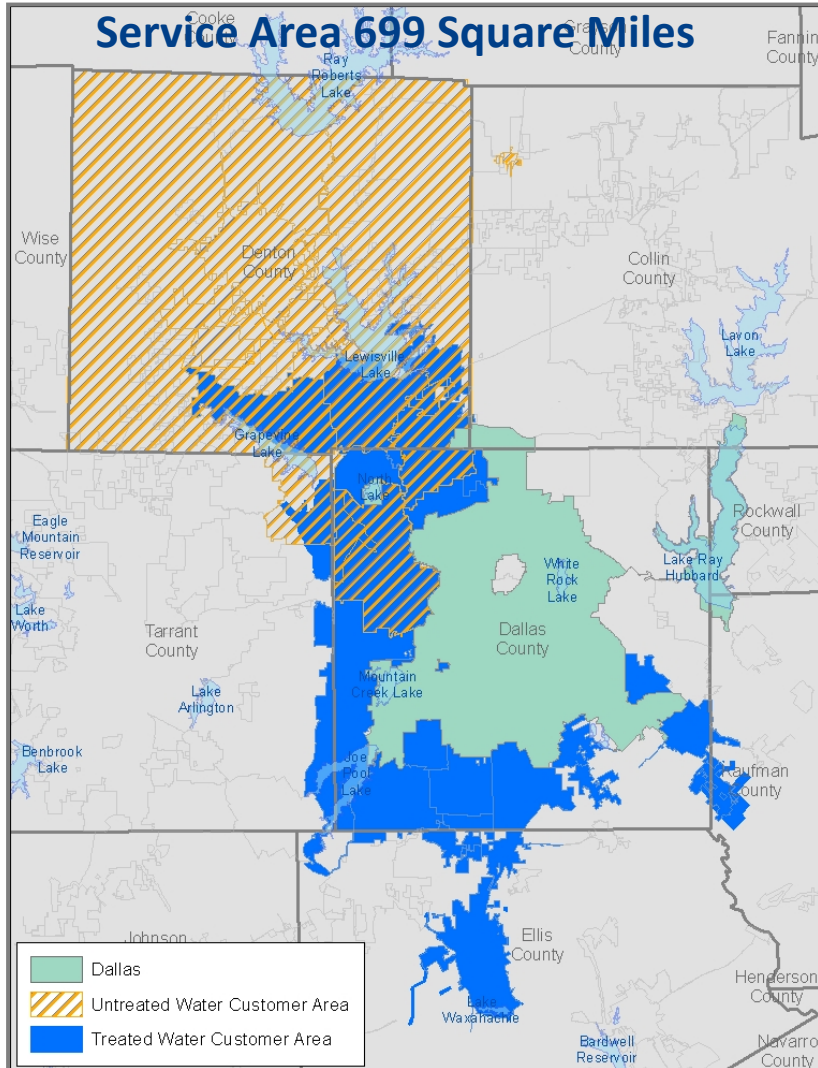
Purpose



- Provide an overview of Dallas Water Utilities (DWU) including:
 - How DWU is Funded
 - Capital Investments
 - Daily Operations



Dallas Water Utilities Overview



- Established by City Charter in 1881
- Operates under Dallas City Codes: 49, 51, 19
- Regional provider of water, wastewater, stormwater and flood control services
- Fiscal Year 2020 net capital water and wastewater assets of \$5.5B
- Funded from wholesale and retail water and wastewater revenues and stormwater fees (receives no tax dollars)
- Approximately 1,600 employees
- Combined operating and capital budgets of \$1.1B




Proposed Fiscal Year 2021-22 Budget

Budget	DWU	SDM	Total
Operations	\$722.4 M	\$69.3 M	\$791.7 M
Capital	<u>\$323.6 M</u>	<u>\$14.7 M</u>	<u>\$338.3 M</u>
Total	\$1,046.0 M	\$84.0 M	\$1,130.0 M



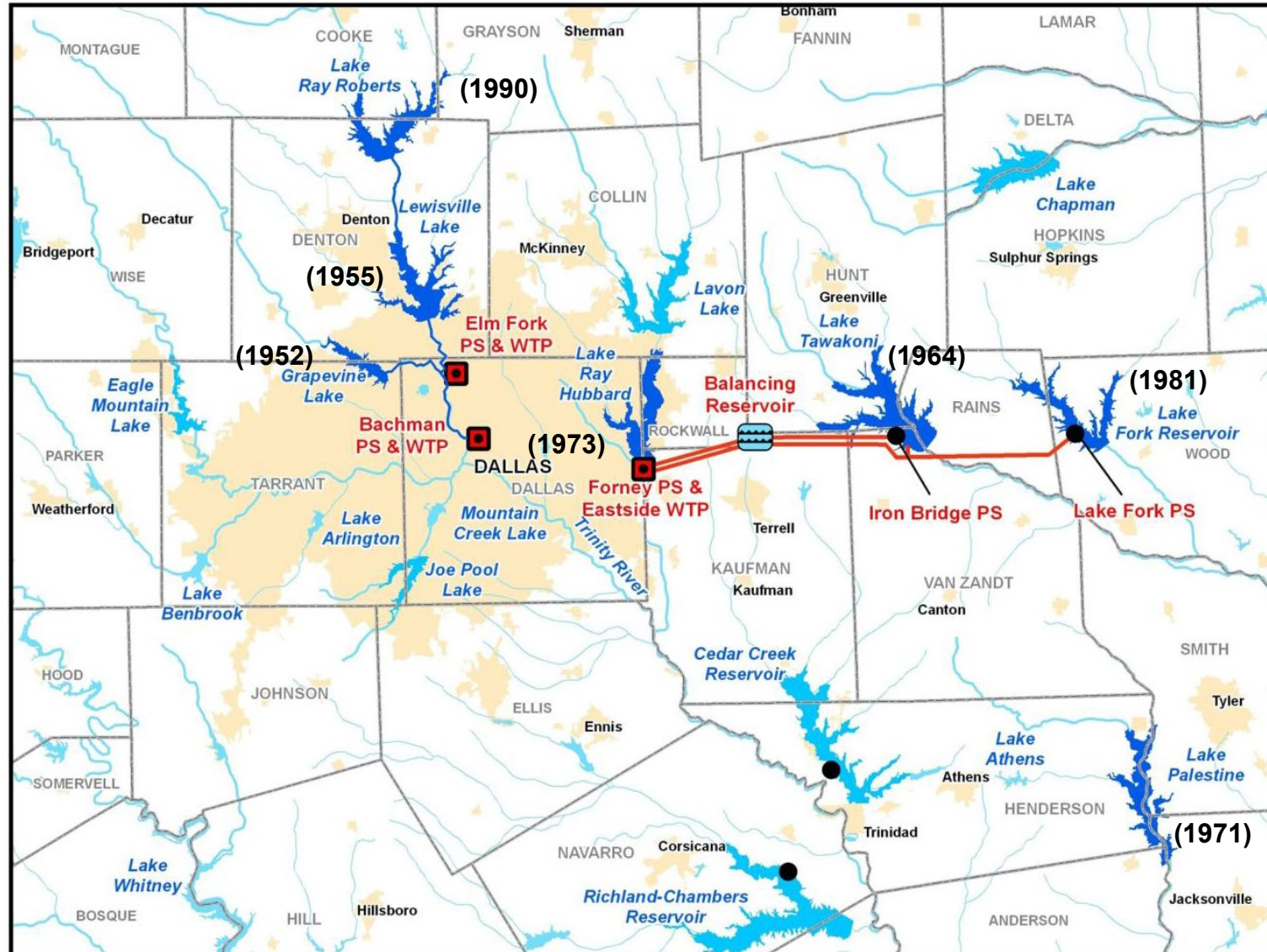
City of Dallas One Water



	ASSETS	CUSTOMERS
	WATER <ul style="list-style-type: none"> • 7 reservoirs, (6 connected) • 5,017 miles of water mains • 3 water treatment plants (900 MGD capacity) • 23 pump stations, 10 elevated and 12 ground storage tanks 	2.5 million treated water customers <ul style="list-style-type: none"> • 1.3 million – Retail (City of Dallas) • 1.2 million – Wholesale • 23 wholesale treated water • 4 wholesale untreated water
	WASTEWATER <ul style="list-style-type: none"> • 2 wastewater treatment plants (280 MGD capacity) • 4,053 miles of wastewater main • 15 wastewater pump stations 	320,000+ retail customer accounts <ul style="list-style-type: none"> • 11 wholesale wastewater
	STORMWATER <ul style="list-style-type: none"> • 8 storm water pump stations (5.7 BGD capacity) • 1,963 miles of storm sewers • 30 miles of levees • 39,000 acres of floodplain 	300,000 storm water accounts <ul style="list-style-type: none"> • 265,979 Residential • 29,470 Commercial



Dallas' Regional Water Supply System



Regulatory Agency Compliance



Federal

- Environmental Protection Agency (EPA)
- United States Army Corps of Engineers (USACE or Corps)
- Department of Homeland Security (DHS)
- U.S. Department of Transportation (DOT)
- Federal Aviation Administration (FAA)
- Federal Deposit Insurance Corporation (FDIC)
- Federal Emergency Management Agency (FEMA)
- Federal Railroad Administration (FRA)
- United States Fish and Wildlife Service (USFWS)

State

- Public Utility Commission (PUC)
- Texas Commission on Environmental Quality (TCEQ)
- Texas Department of Health (TDH)
- Texas Department of Licensing and Regulation (TDLR)
- Texas Parks and Wildlife Department (TPWD)
- Texas Water Development Board (TWDB)



Exceeding Standards



- Texas Optimization Program for water treatment
- National Environmental Laboratory Accreditation Program (NELAP) Certification
- Partnership for Safe Drinking Water
- TCEQ Superior Public Water System
- Standard & Poor's AAA Bond Rating
 - Fitch rating AA+
- American Water Works Association (AWWA) Benchmarking
- National Association of Clean Water Agencies Awards for both wastewater treatment plants





How We are Funded: DWU Operating Budgets



Dallas Water Utilities Operating Budgets



- Dallas Water Utilities is a municipally owned retail and regional wholesale water/wastewater supplier and a regional provider of storm drainage and flood control services
- FY22 Operating Budgets for water, wastewater and stormwater total \$791.7M
- Budget focus maintains infrastructure and conserves resources
 - Costs are driven by infrastructure requirements for both growth and renewal
 - Dallas is responsible for meeting future water requirements for service area
- Since the services we provide are vital to the health and safety of our customers, affordability is a major consideration in budget development



DWU Revenue Requirement



- How much revenue is needed to cover expenses?
 - Development of Operating Budget
 - Analyze usage data: how many customers, meters and usage trends of residential, commercial and industrial customers
 - How much would revenues be with no rate change – Revenues at Current Rates
- How much of the costs should each group of customers pay?
 - Annual Water and Wastewater Retail Cost of Service Study
 - Annual Wholesale Cost of Service Studies reviewed by Wholesale Customer Cities Rate Subcommittee
 - Annual review of DCAD data and sufficiency of Stormwater rates
 - Revenue projection reviewed annually by City Auditor's Office
- After wholesale rates are finalized, what is the retail revenue gap – Retail Revenue Increase



DWU Rate Development



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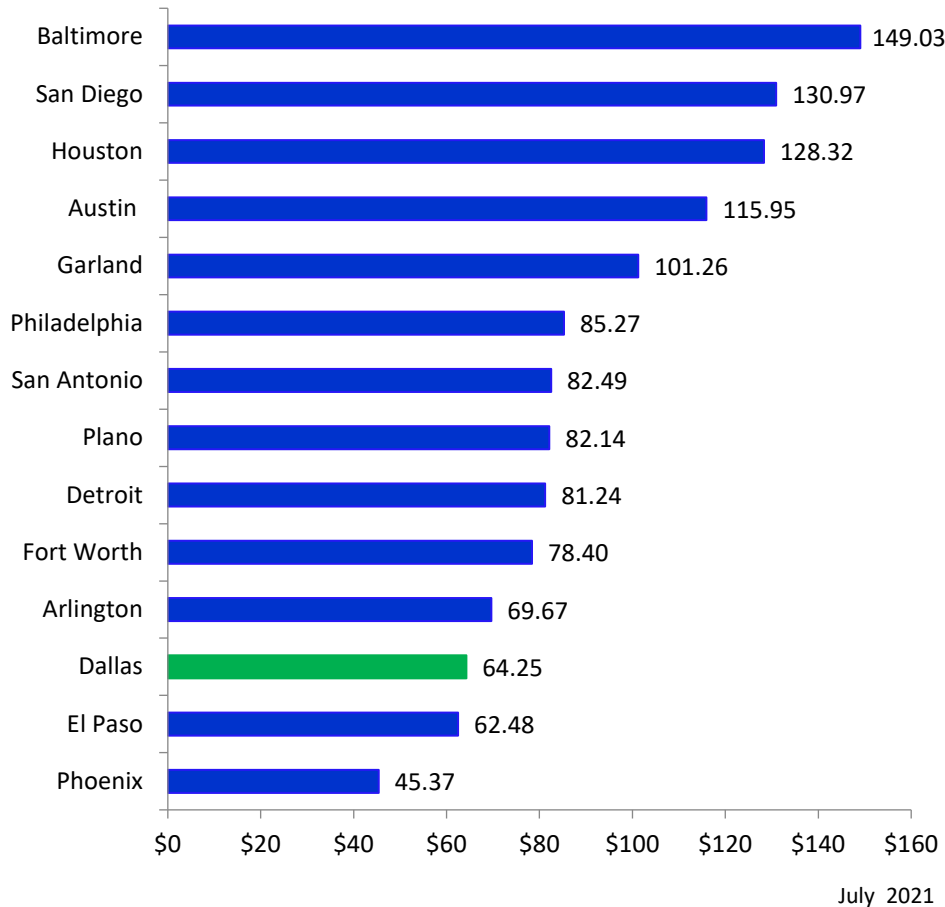
- Wholesale rates are set by 2010 Memorandum of Agreement adopted by City Council and all treated water wholesale customers
- Retail rates are developed to fill any remaining revenue gap using affordability considerations
 - Percent Average Bill to Median Income – EPA Affordability Threshold 2.5% for water and 2.0% for wastewater – DWU actual is 1.43% combined
 - Increasing rate impact as tier usage increases for residential customers, lowest impact to basic water use
- Review and oversight of DWU's financial performance
 - Bond rating agencies evaluation of DWU's financial and operational management and performance
 - Standard & Poor's AAA, highest rating; Fitch AA+
 - Annual external audit of DWU financials
 - Compliance with Financial Management Performance Criteria – 13 criteria specific to DWU established by City Council



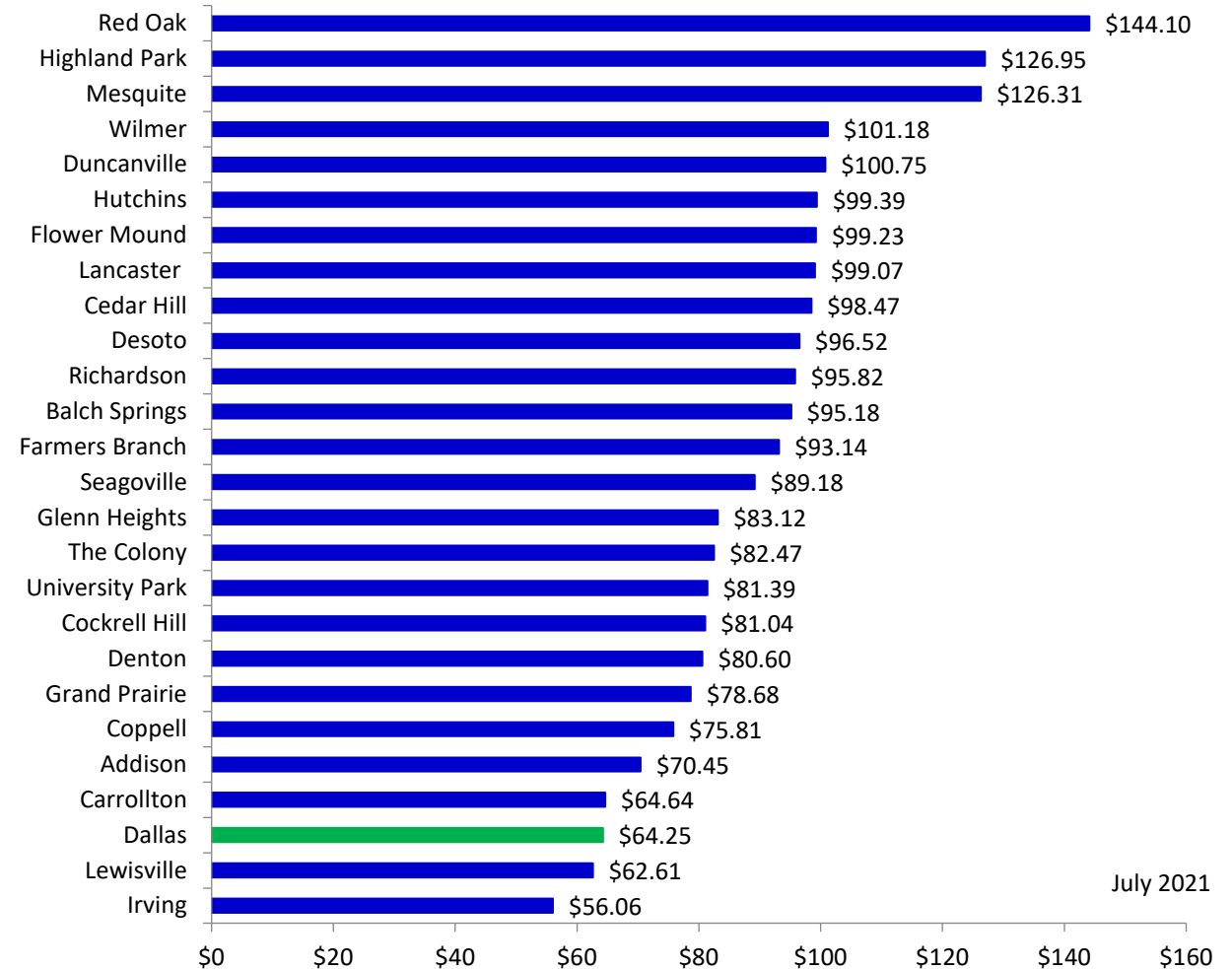
Comparison of Average Water and Sewer Residential Bills



Average Monthly Water & Wastewater Residential Bills
Dallas, Index and Selected Cities
(Based on 5/8" Meter; 8,300 Gallons/Month; 5,300 Gallons Winter Month Average)



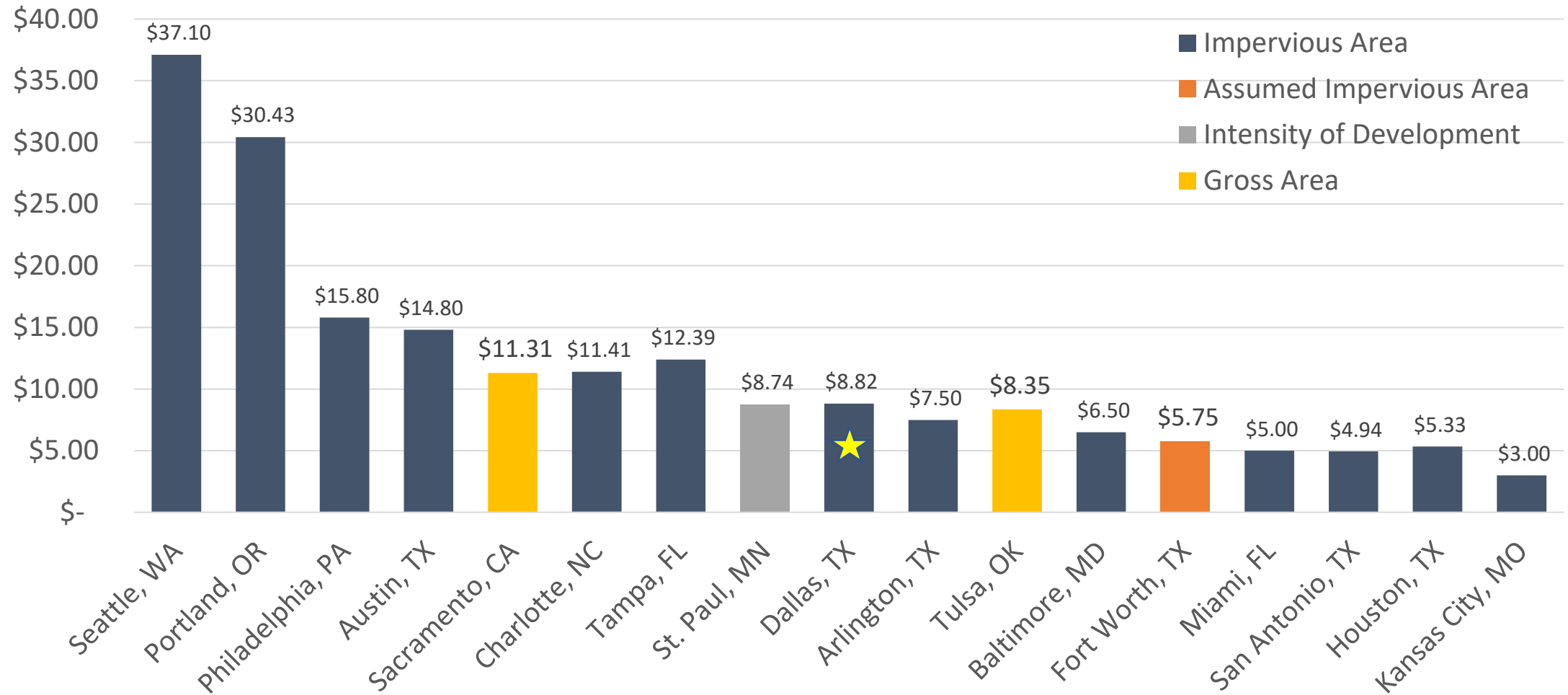
Average Monthly Water & Wastewater Residential Bills
Dallas Rates Compared to Customer Cities
(Based on 5/8" Meter; 8,300 Gallons/Month; 5,300 Gallons Winter Month Average)



National Comparison of Residential Stormwater Fees



Stormwater Average Residential Monthly Fee



Based on Dallas' Tier 2 at 2,001 – 3,500 square feet of Impervious Area





Capital Investments and Long Range System Improvements



Dallas Water Utilities Capital Improvement Program



- Major capital improvements are guided by regulatory changes, work by others, master plans (growth), and rehabilitation/replacement needs
 - Strategic Planning – long range water supply, master plans and studies
 - Project Prioritization and Risk Ratings
- Development of \$3.3B 10-year CIP Plan
- Five-year DWU Financial Forecast developed and includes O&M cost impacts with projected retail revenue increases needed
- Council approves Capital Program funding annually as part of the capital and operating budget process
- Capital Program is typically funded by a combination of cash, short- and long-term debt



Long Range Water Supply Plan



2014 Dallas Long Range
Water Supply Plan to 2070
and Beyond



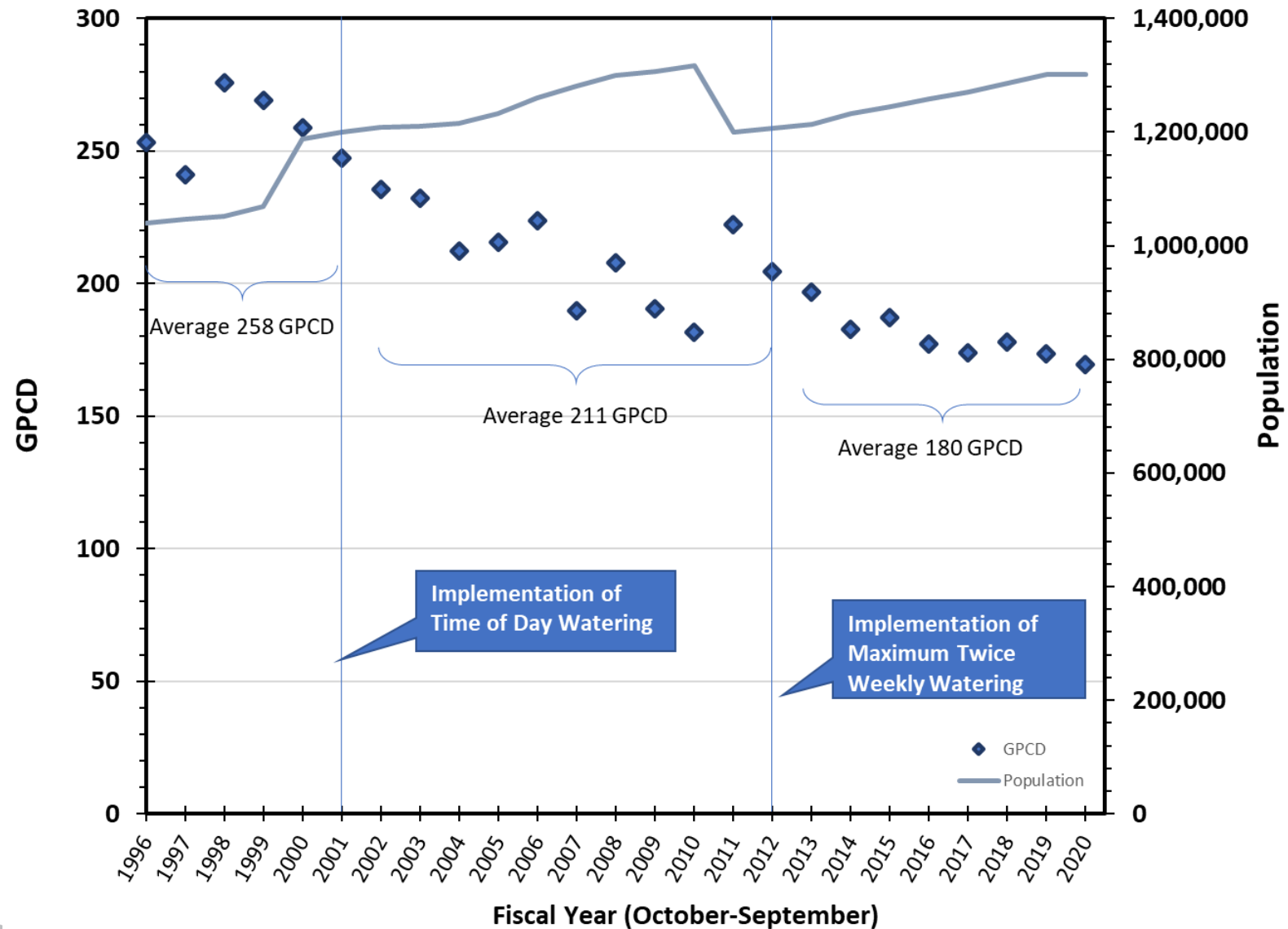
Dallas Water Utilities
City of Dallas, Texas
December 2015

FOR

- Long Range Water Supply Plans (LRWSP) on average are updated every ten years
- The LRWSP update will evaluate:
 - Changes in population and demand projections
 - Changed conditions associated with current water supplies and recommended and alternate water management strategies
- 2014 LRWSP recommended Strategies, Alternate Strategies and Infrastructure Recommendations approved by Council (October 8, 2014)
 - Adopted strategies in Plan designed to meet demands to the year 2070
 - Completion of the Integrated Pipeline Project to connect Lake Palestine extends Dallas' water supply through the year 2050
- Council briefed several times during development and prior to finalization of the Plan and an additional three times since adoption to provide updates on progress
- An update to the LRWSP is being scheduled in 2022



Impacts of Water Conservation Program



Integrated Pipeline (IPL) Project



- Partner - Tarrant Regional Water District
- 350 MGD Total System Capacity
 - 150 Dallas
 - 200 TRWD
- 149.5 miles of 108, 96, and 84 inch pipe
- Three lake pump stations
- Three booster pump stations
- One 450 million gallon balancing reservoir
- Three redundant IPL interconnect facilities



Midlothian Balancing Reservoir



Joint Booster Pump
Station 3 (JB3)



Kennedale Balancing Reservoir
Pressure Control Station



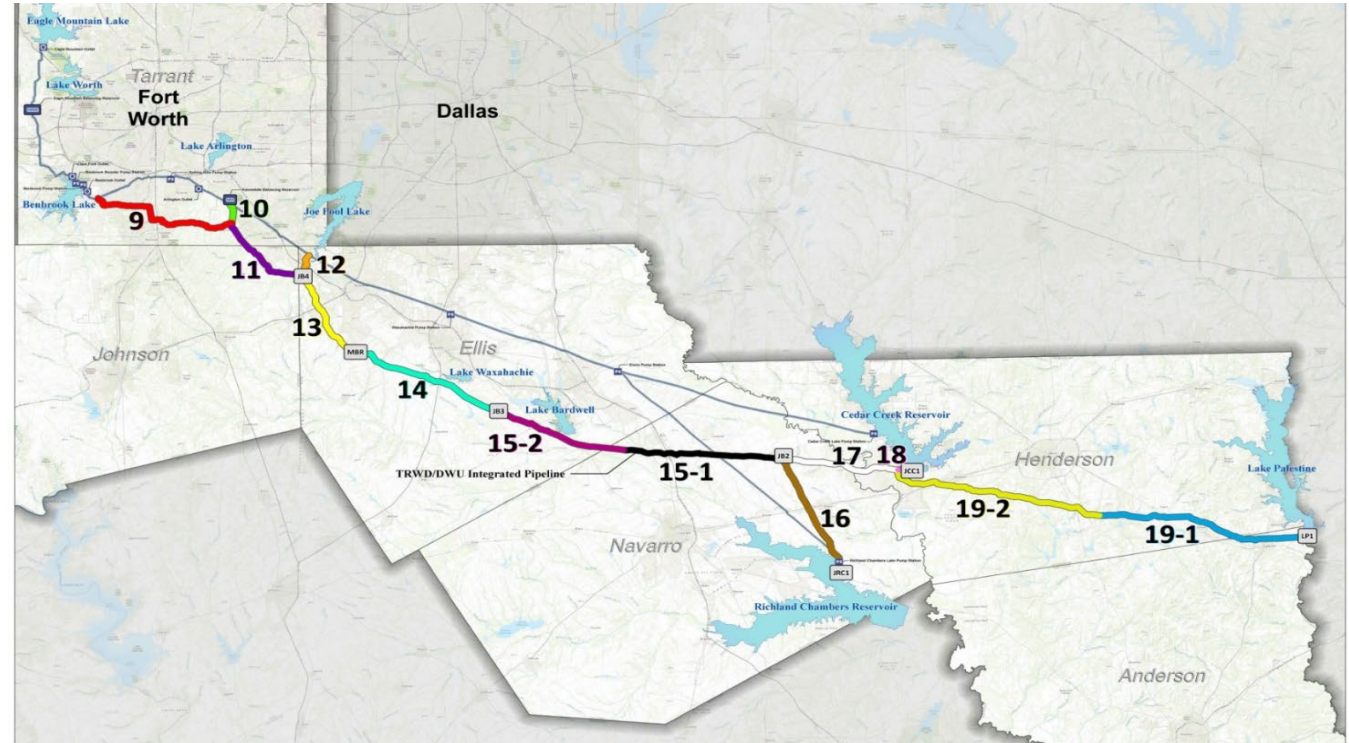
Installation of 108-inch
pipe along Section 17



IPL Project Budget



- Savings
 - \$200 million in capital costs;
 - \$20 million per year in debt service coverage savings for the life of the bonds.
- Redundancy and Reliability by interconnecting TRWD's supply with Dallas' supply
- Dallas' IPL to Bachman Connection alignment study is underway. Next steps are land acquisition and preliminary engineering.



Mill Creek/Peaks Branch/State-Thomas Drainage Relief Tunnel



Cost:

\$272 M (design, construction and construction management)

Benefits:

Reduces flooding on 2,300 acres and 2,200 properties (totaling \$4 Billion in property values)

Next Steps:

Neighborhood Stormwater Infrastructure Cost

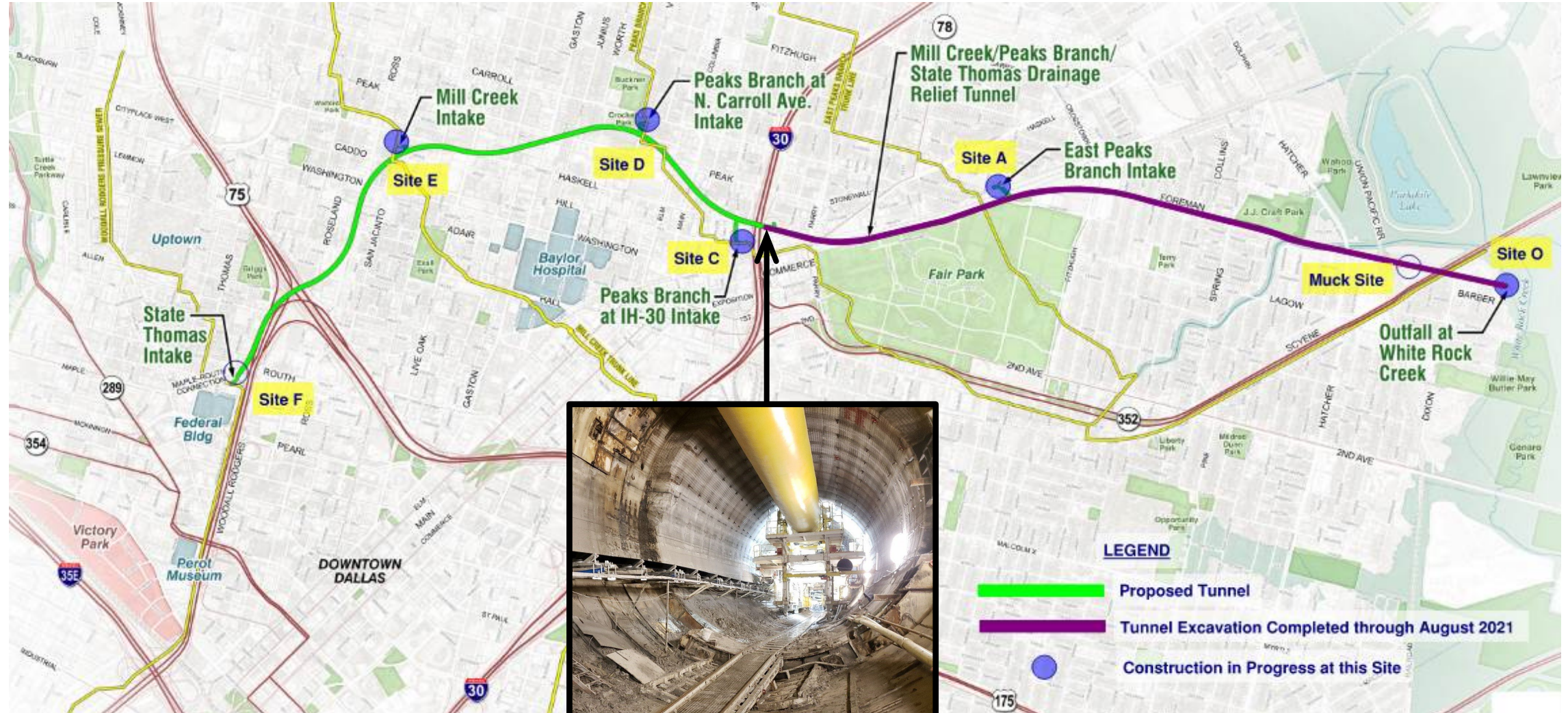
- Mill Creek system ~\$110 million
- Peaks Branch system ~\$ 90 million
- East Peaks Branch system ~\$ 55 million



“Big Tex” Tunnel Boring Machine



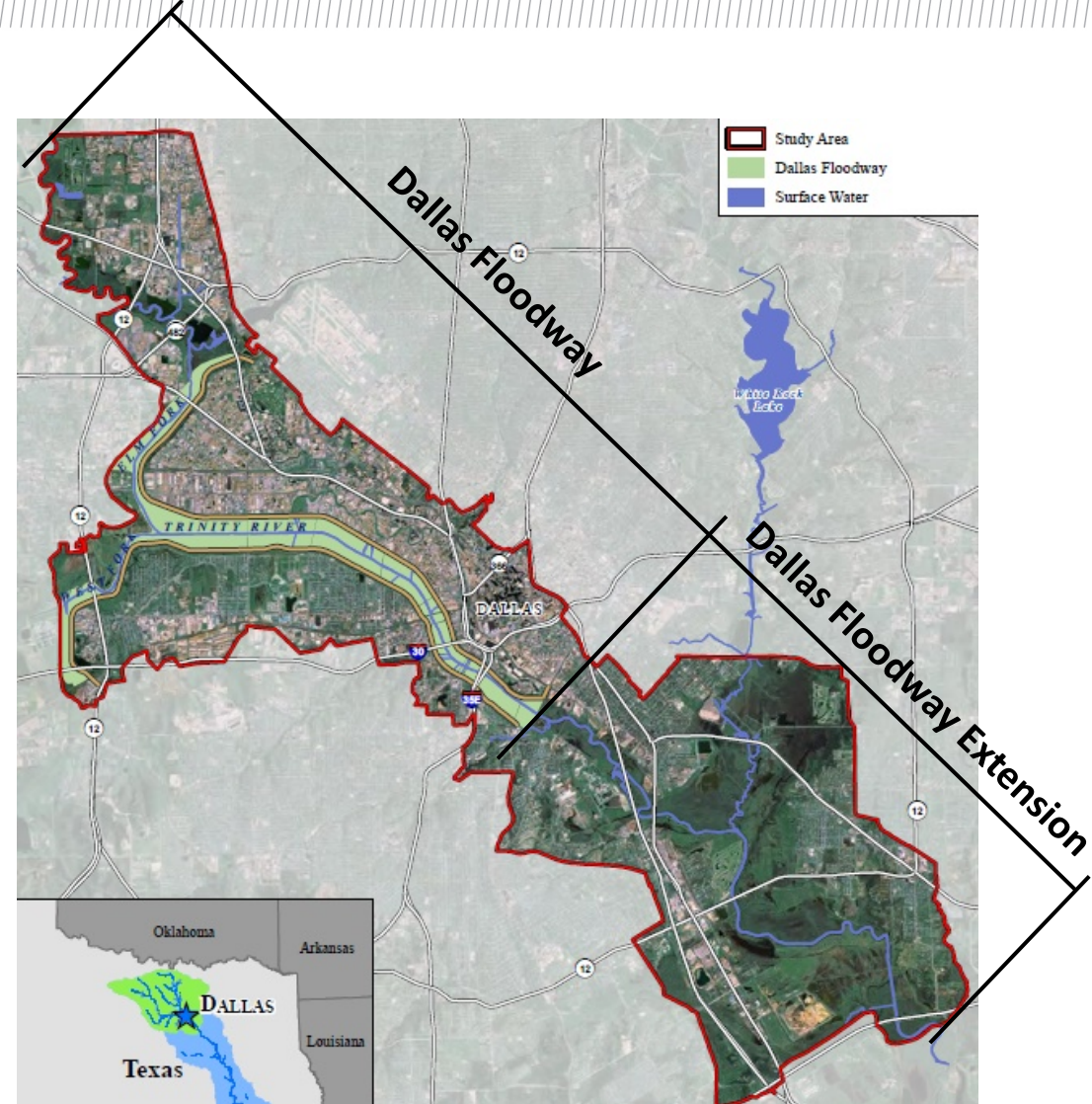
Mill Creek/Peaks Branch/State-Thomas Drainage Relief Tunnel



Dallas Levee System



- Dallas Levee System protects:
 - Over 40,000 acres of development outside the levees
 - \$14 Billion in real and personal property
 - Over 400,000 people living in the protected levees
- All flood risk management projects were funded in the Bi-Partisan Budget Bill of 2018



U.S. Army Corps of Engineers Project Update



Dallas Floodway Project - \$223M

- Removal of abandoned ATSF Trestle – Completed February 2021
- Levee Raise & Flattening – Design Build Awarded October 2021
- Interior Drainage Improvements (Pump Stations):
 - Trinity Portland – Anticipated Design Build Award January 2022
 - Charlie – Anticipated Design Build Award February 2022
 - Delta – Anticipated Design Build Award Spring 2022
 - Hampton – Design Underway/Anticipated Construction Award January 2024
- All flood risk management estimated completion December 2026, dependent upon land acquisition and weather

Dallas Floodway Extension Project - \$135M

- Lamar Levee – Design Award Underway/Anticipated Construction Award January 2023
- Cadillac Heights Levee – Design Award Underway/Anticipated Construction Award June 2023
- Projects construction is contingent on City acquiring necessary real estate, relocation of utilities and remediation of lands associated with levee projects
- All flood risk management estimated completion December 2025, dependent upon land acquisition and weather





DWU Daily Operations



Business Operations



Financial Planning

Develops and manages DWU's annual operating budget of approximately \$792M and prepares the annual capital budget averaging \$338M necessary to provide water, wastewater and storm drainage services to about 2.5 million people in Dallas and 27 nearby communities.

Water Planning

Administration of the City's water rights, water storage contracts and water supply contracts, develops and implements the City's long-range water supply plan and drought contingency plan, administers treated and untreated water supply and wastewater contracts between Dallas and its customer cities, reviews and coordinates responses to State and Federal legislation and rule making, develops partnerships for and participates in regional water supply development.

Reporting and Inspections

- 100 % Annual Compliance with Water Rights Permit
 - Annually report water use to TCEQ and TWDB
- Water Conservation Annual Report to TWDB in conjunction with OEQS
- Annual Retail and Wholesale Water and Wastewater Cost of Service Studies
 - Revenue projection reviewed annually by City Auditor's Office
 - Wholesale Studies reviewed by Wholesale Customer Rate Subcommittee
- Financial Accountability
 - Annual audit of DWU financials by external auditor
 - Compliance with Financial Management Performance Criteria – 13 criteria specific to DWU established by City Council
- Evaluation of creditworthiness by bond rating agencies with any debt issuance, typically occurs annually
 - Standard & Poor's AAA, highest rating; Fitch AA+

- Financial Planning
- Water Planning
 - Wholesale Services
- Engineering Services
- Utility Automation & Integration



Capital Improvements



- Capital Services
- Pipeline Project Management
- Water Project Management
- Wastewater Project Management
- Stormwater Project Management

Provides management for capital improvement projects totaling approximately \$300-400M annually from inception through startup. This includes capital planning, professional services, construction administration, and inspection of the required improvements. Ensures adequate water supply and treatment to customers by acquiring/constructing new water and wastewater facilities and improving existing facilities. Stormwater Projects improve storm drainage and reduce the loss of lives and property due to flooding and erosion.

Reporting Fiscal Year 2020-21

- Pipeline Contracts Awarded
 - Water 54.31 miles
 - Wastewater 39.26 miles
 - Exceeded goal of 75 miles
- M/WBE Participation Engineering - 36.17%; Construction - 47.61%



Water Production



- East Side Water Treatment Plant
- Elm Fork Water Treatment Plant
- Bachman Water Treatment Plant
- Lake Ray Hubbard

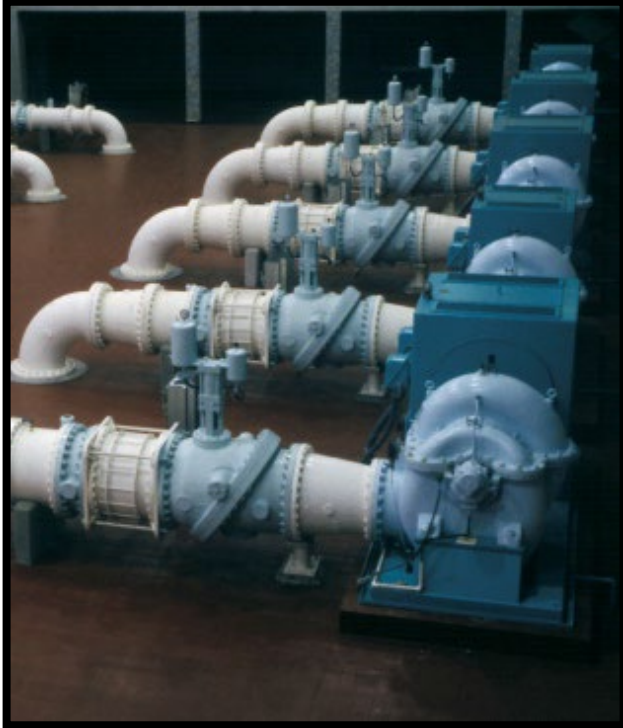
Operate and maintain three water treatment plants with a combined production capacity of 900 million gallons a day, including management of the city-owned raw water source, Lake Ray Hubbard. Producing a reliable supply of high quality water that meets or surpasses all federal drinking water standards requires “real time” monitoring of the treatment process 24 hours a day, 365 days a year. Participates in industry-recognized optimization programs such as the Partnership for Safe Water and Texas Optimization Program requiring the facilities to continuously adhere to more stringent levels of treatment performance.

Performance Measures for Fiscal Year 2020-21

- 100% compliance with all state and federal drinking water regulations
- TCEQ Optimization Program (TOPs)
- AWWA Partnership for Safe Water Program - Water Treatment
- AWWA Utility Benchmarking for Water Operations
- Max day – 686.5 MGD (February 18, 2021)
- Pumpage – 139,364 Million Gallons (1.2% above budget)



Water Delivery



- Distribution
- Pumping
- Water Quality/Source Water Quality
- Material Services

Operation, maintenance and monitoring of potable water system to provide safe treated drinking water and fire protection services. This includes a 24/7 operation and maintenance of pump stations, storage tanks and over 5,000 miles of distribution system. Manages leak detection, water quality management, and back-flow prevention programs to reduce water loss and protect the community.

Performance Measures for Fiscal Year 2020-21

- Main breaks per 100 miles of main – FY21 21.01, (Due to Freeze Event), FY22 Goal is 20 based on Water Distribution Master Plan from over 40 in 2007
- # Miles Main Assessed – FY21 3,351 Miles, Goal is 5,010 miles every 2.5 years - An adopted strategy from Water Conservation Plan
- % Unaccounted Water Loss – FY21 was 3.65%, Decreasing Trend, Goal is <10% for large utilities
- Main Breaks Repaired – 1,054
- Main Leaks Repaired – 267
- Services Repaired – 1,555
- Miles of Water Main – 5,017 miles

Reporting and Inspections

- Annually publish Consumer Confidence Report to Customers
- Water Quality Reporting; Monthly, Quarterly, Annually, Triennially to EPA and TCEQ
- Triennial Public Water System Comprehensive Inspection by TCEQ
- Quarterly, Biennial and Annual Water Quality Testing within public water system by TCEQ



Wastewater Operations



- Central Wastewater Treatment Plant
- Southside Wastewater Treatment Plant
- Wastewater Collection
- Pretreatment and Laboratory Services

Wastewater Operations provides 24/7 operation and maintenance of more than 4,000 miles of pipeline in the sanitary sewer system to ensure the collection and transport of domestic and industrial wastewater. Further, ensures the efficient and effective operation and maintenance of two wastewater treatment plants that treat approximately 68 billion gallons of sewage annually, process and dispose of biosolids and provides reuse effluent water to local area golf courses.

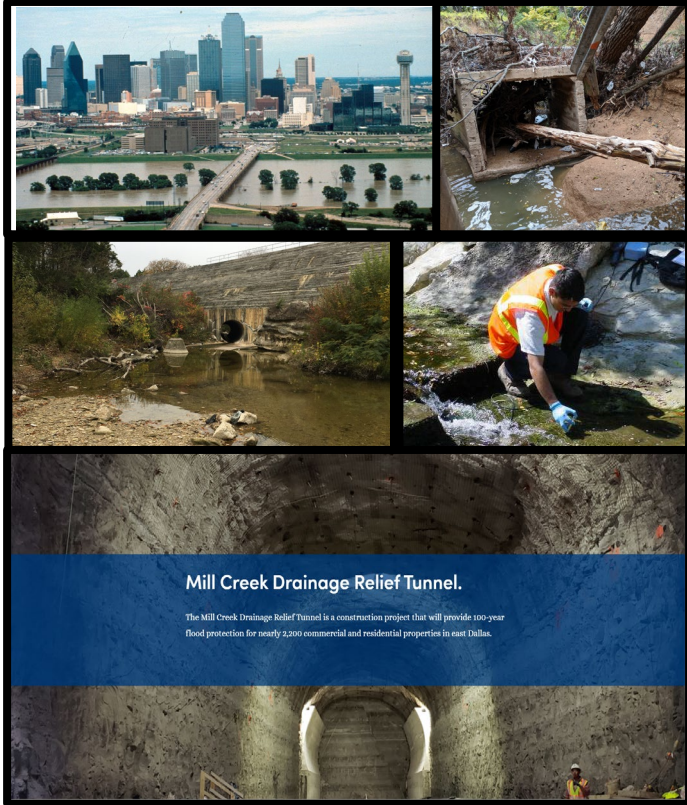
The Pretreatment and Laboratory Services Division provides a robust sewage pretreatment program and analytical / process laboratory support activities.

Performance Measures for Fiscal Year 2020-21

- Average response time to emergency sewer calls of 57.8 minutes with a goal of under 60 minutes
- 0.76 Overflows Per 100 Miles of Pipe with national average of 6.2 per 100 miles
- 1548 miles of sanitary sewer pipe cleaned with annual goal of 1,500 miles annually
- Wastewater Treated – 65.0 BG
- Total Wastewater samples collected and analyzed – 29,016
- 203 miles of Sewer mains inspected with an annual goal of 200 Miles
- Grease Generator Inspections - 2,097
- Miles of Sewer Maintained – 4,057



Stormwater Operations



Enhance the quality of life for Dallas residents through management of the Trinity River watershed, associated with neighborhood and systemwide flood control, floodplain, and surface water quality activities.

Performance Measures for Fiscal Year 2020-21

- Inspected 1,304 outfalls, 12,613 inlets, and 193 miles of storm sewers
- 61,774 cubic yards of debris and floatables removed from storm sewer infrastructure FY21
- Maintained over 40 flooded roadway warning stations and 88 ALERT sites
- Responded to 8,024 service requests
- Maintained the City's CRS 5 floodplain management ranking earning a 25% discount on flood insurance for the residents of Dallas
- Maintained City's eligibility in levee compliance and eligibility for federal flood fighting and rehabilitation in the event of a disaster
- Processed 40 fill permits and floodplain alteration permits
- Dam Inspections in accordance with TCEQ standards
- Annual Table-top Emergency Exercises simulating dam breaches and other hazards

- Flood Control
- Floodplain Management
- Neighborhood Drainage



Customer Operations



- Revenue and Business Systems
- Meter Services
- SAP Business Consulting
- Administrative Systems

Customer Operations provides water meter reading, billing, collection, and customer service activities for more than 300,000 water, wastewater, sanitation, and stormwater utility accounts monthly. Customer Operations manages Special Collections, Administrative Systems Division, Revenue & Business, Management Systems and Business Consulting Division (SAP) for DWU. Customer Operations serves as the liaison with Water Customer Service/311.

Performance Measures for Fiscal Year 2020-21

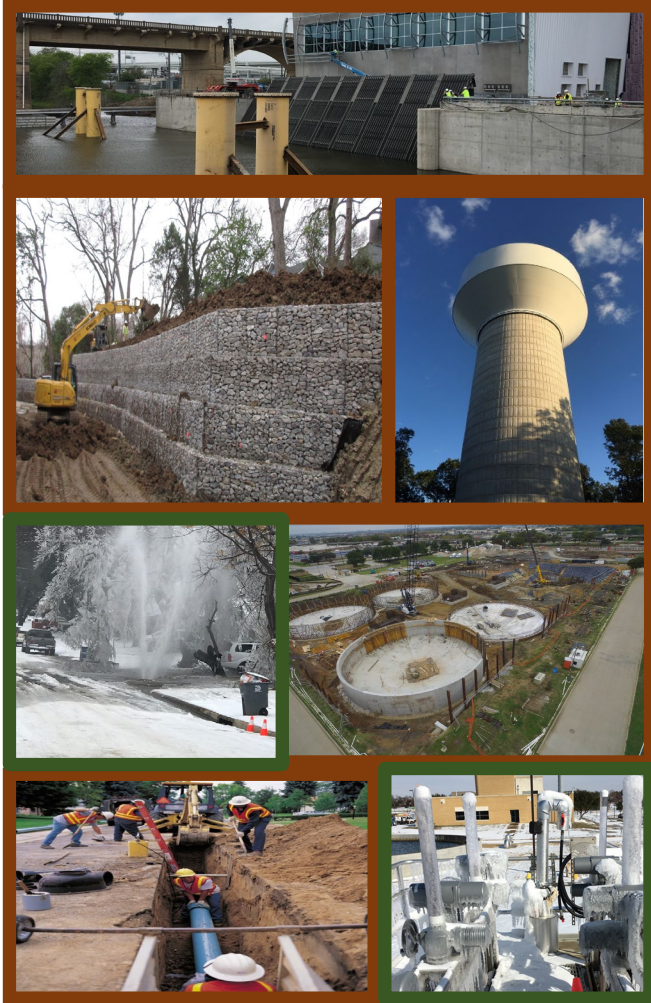
- Connections
 - Residential 259,761
 - General Service 43,637
 - Municipal 1,274
 - Optional General Service 83
- Total Meter Reads 4,094,950
- Meters Exchanged 29,455
- Meter Leaks Reported/Investigated 8,747
- Move In/Move Outs 91,156
- Meters Inspections 21,685

Reporting and Inspections

- Texas Alcohol Beverage Commission – Monthly report for delinquent license holders
- City Auditor's Office - Third Party Auditor – Annual, Meters to Cash Sampling to ensure Invoicing Accuracy
- Annual external audit on SAP security controls, segregation of duties, access and processes



Summary



- Dallas Water Utilities is an enterprise fund of the City of Dallas and a regional provider of water, wastewater and stormwater services
- Provides services vital to the health, safety, quality of life and economic development of Dallas and the region
- Approximately 1,600 employees dedicated to serving residents 24 hours a day and 365 days a year
- Past investment in Dallas' System has benefited the community well
- Continued investment in Dallas' One Water is essential for the System's future reliability



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