Dallas Water Utilities- Capital Investments for Our Future

City of Dallas

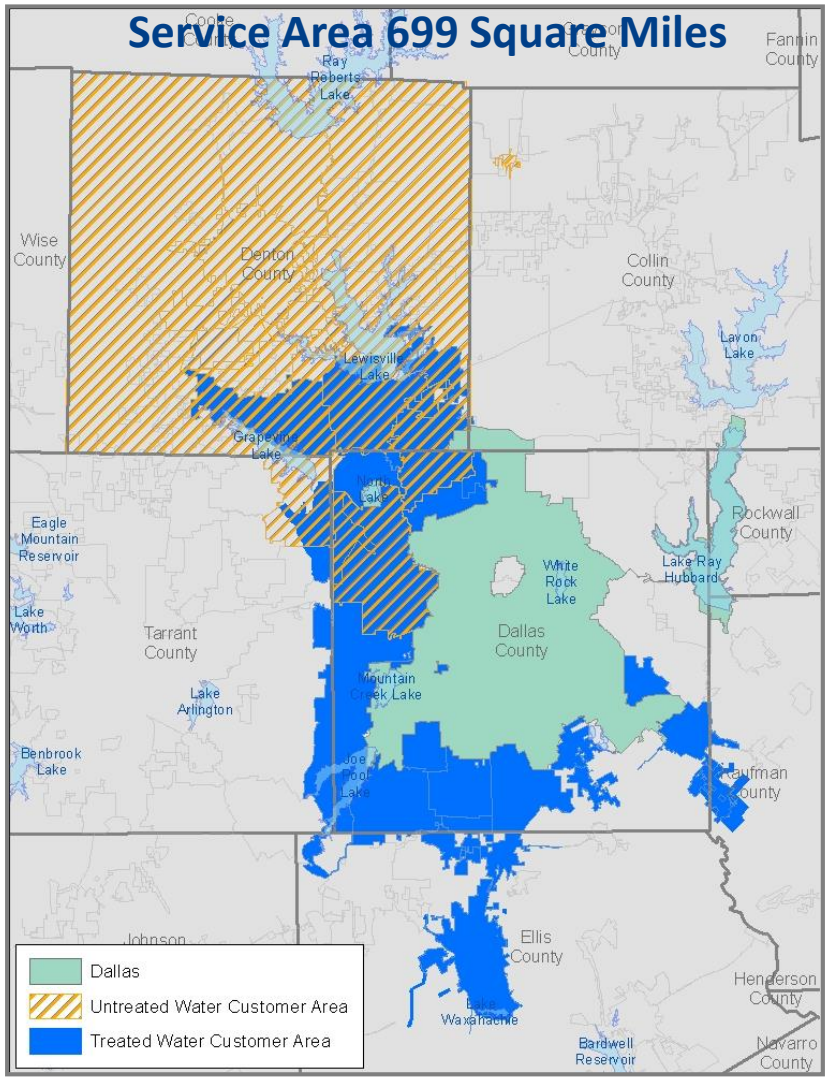
City Council
November 17, 2020

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

Purpose

- Provide a brief overview of Dallas Water Utilities
- Discuss Dallas' One Water Approach
- Provide an update on Dallas Water Resources Activities

Dallas Water Utilities Fact Sheet

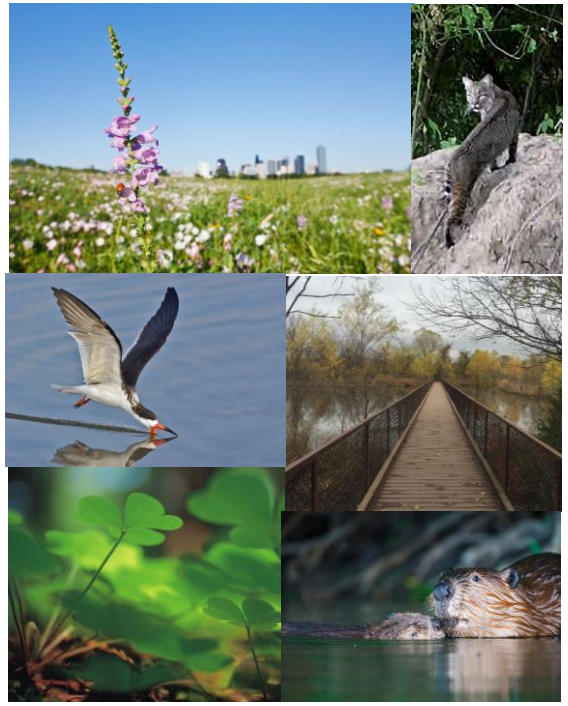


- Funded from wholesale and retail water and wastewater revenues and stormwater fees (receives no tax dollars)
- Combined operating and capital budgets of $1.1B
- Approximately 1,650 employees
- 2.5 million treated water customers
  - 1.3 million – Retail (City of Dallas)
  - 1.2 million – Wholesale
- 300,000+ retail customer accounts
  - 23 wholesale treated water
  - 4 wholesale untreated water
  - 11 wholesale wastewater

One Water: A Water Efficient Future

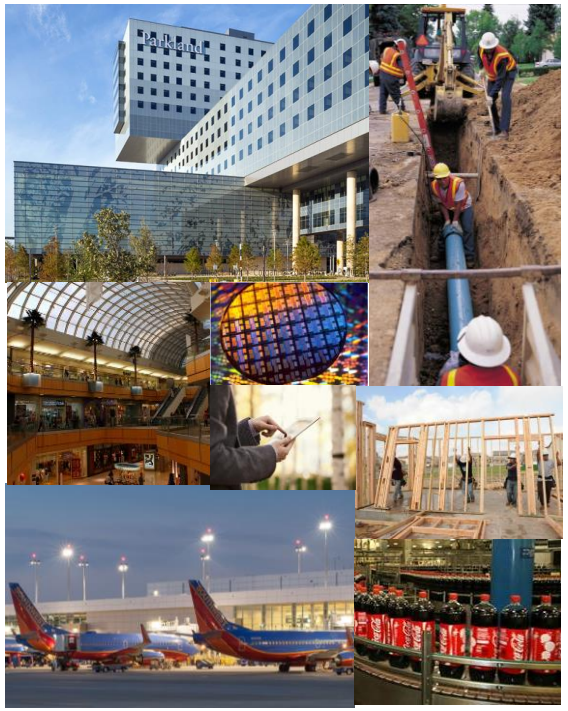
Fundamentals of One Water

Environmental Stewardship



Social Equity

Economic Prosperity

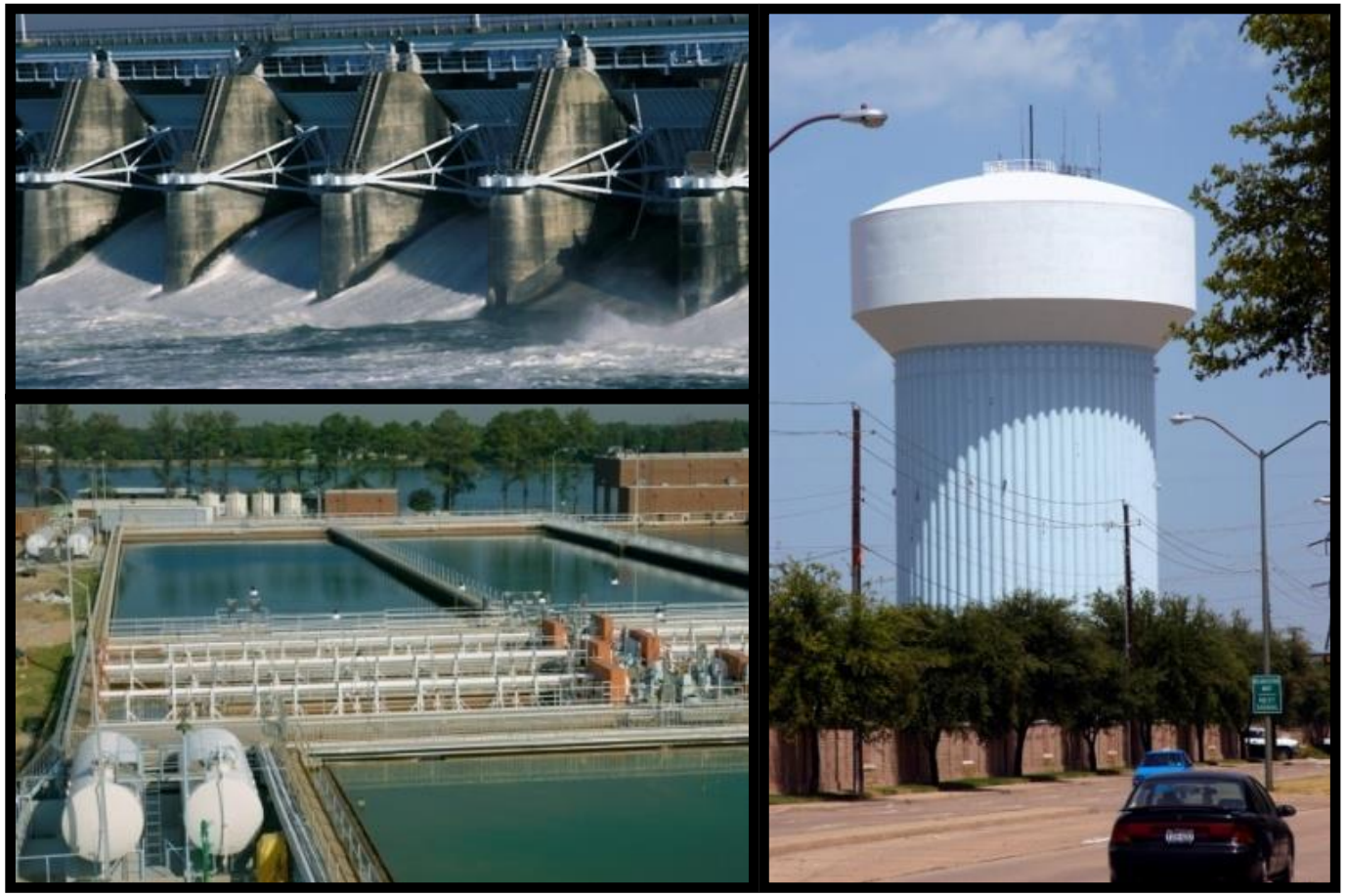


Benefits of a One Water Approach

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

City of Dallas Water Assets

- 7 reservoirs, (6 connected)
- 5,005 miles of water mains
- 3 water treatment plants with a combined capacity of 900 Million Gallons Per Day (MGD)
- 23 pump stations
- 10 elevated and 12 ground storage tanks
- Value of water assets $3.6B
- Treated 139.0 BG of water in FY2019-20



City of Dallas Wastewater Assets

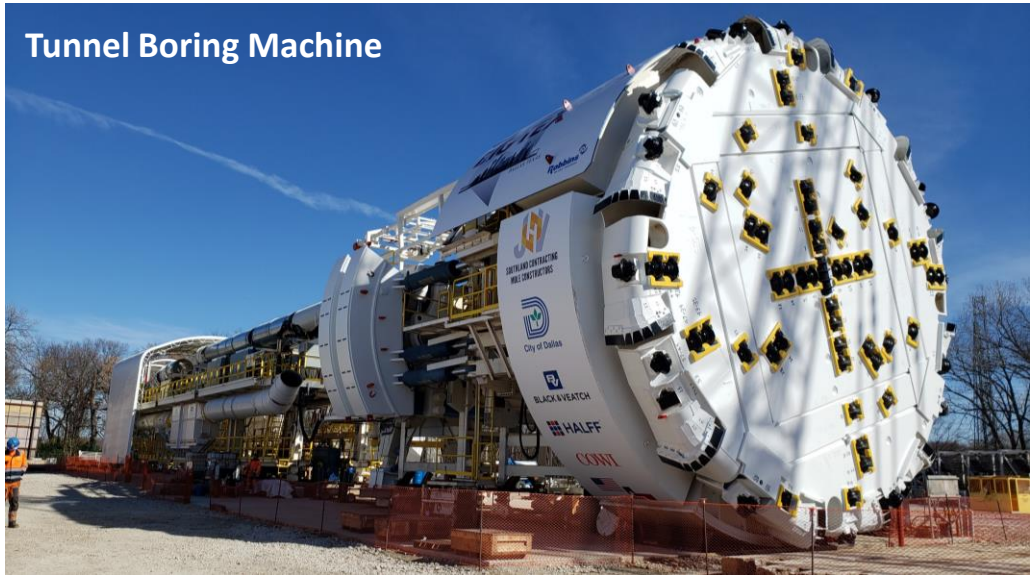
- 2 wastewater treatment plants with a combined capacity of 280 MGD
- 15 wastewater pump stations
- 4,052 miles of wastewater main
- Value of wastewater assets $2.4B
- Treated 72.0 BG of wastewater in FY2019-20

City of Dallas Storm Drainage System


Able Pump Station

Storm Drainage Debris Removal

- 8 storm water pump stations with a combined capacity of 5.7 BGD
- 1,963 miles of storm sewers
- 30 miles of levees
- 39,000 acres of floodplain

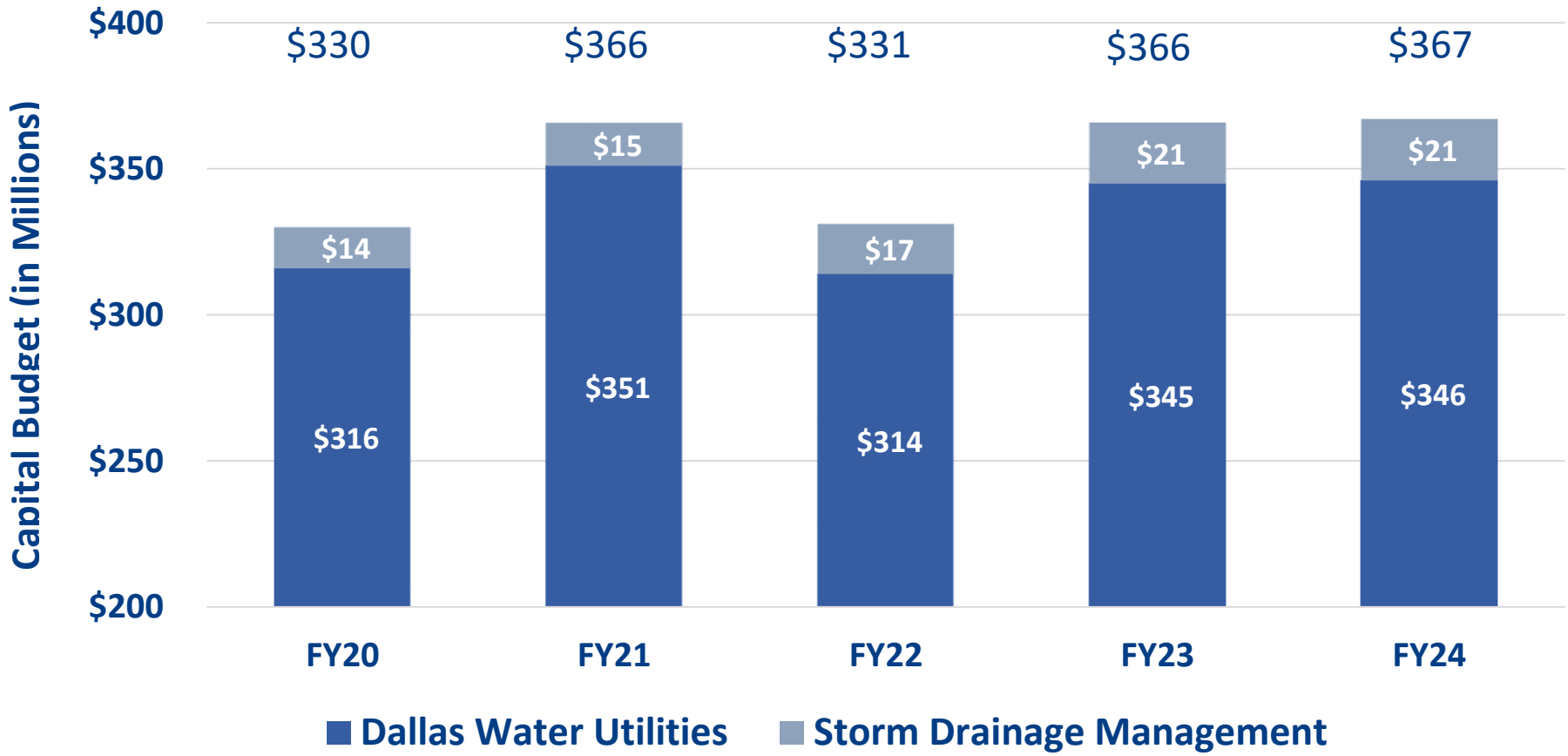


Tunnel Boring Machine

Fiscal Year 2020-21Budget

Budget	DWU	SDM	Total
Operations	$714.8 M	$66.3 M	$781.1 M
Capital	$350.5 M	$14.7 M	$365.2 M
Total	$1,065.3 M	$81.0 M	$1,146.3 M

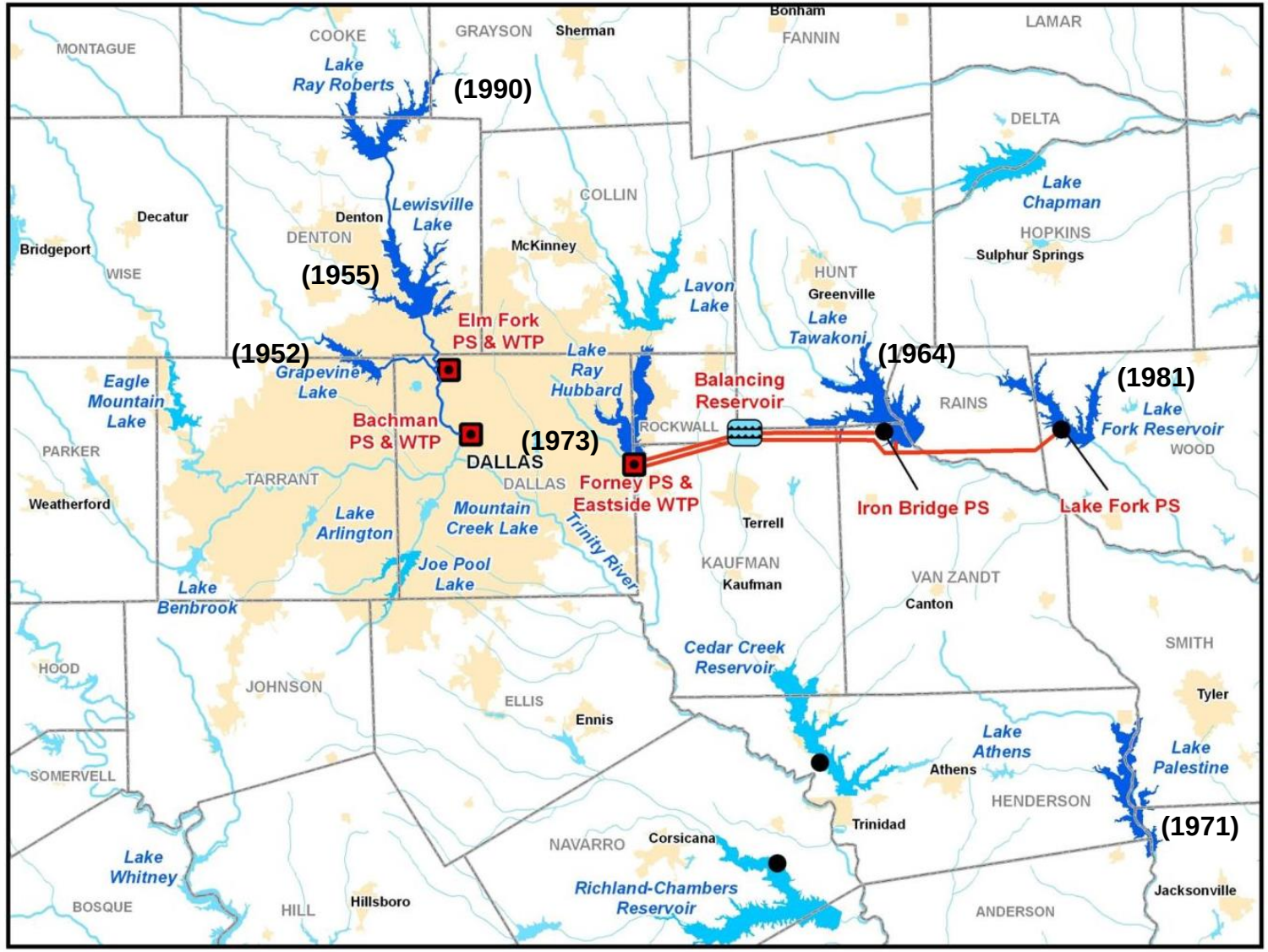
DWU/SDM Capital Program Outlook



Impacts of Dallas' Budgetary Investments

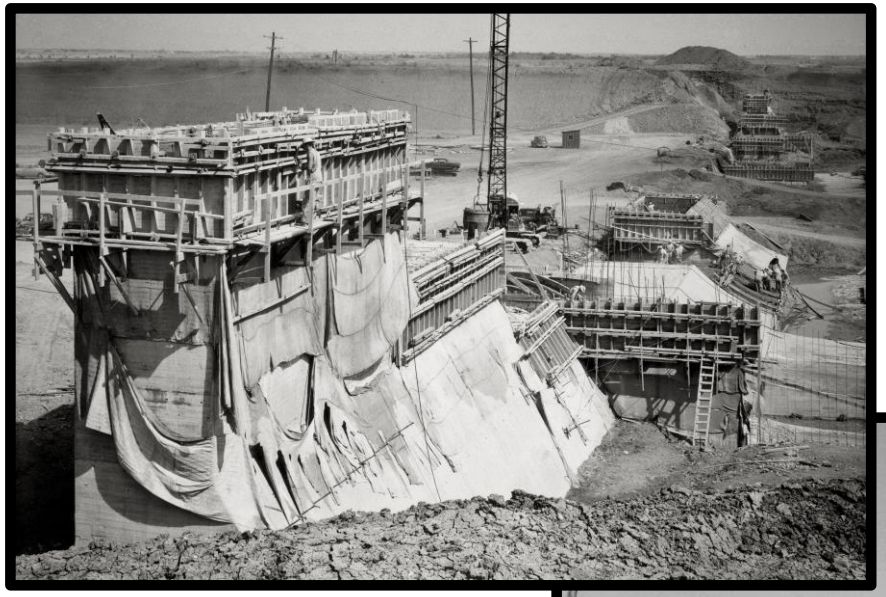
- Unaccounted for Water
  - 5.28 % in FY2019-20
- Main breaks
  - Since 2010 main breaks for 100 miles have decreased from 42.9 breaks per 100 miles to 20.8 breaks per 100 miles.
  - Since 2005 the Leak Detection program has surveyed 44,061 miles of pipeline, located more than 6,596 leaks and saved a cumulative 4.96 billion gallons of water
- Sanitary Sewer Overflow (SSO)
  - The National average is 6.2 SSO's per 100 miles of pipe, Dallas average in FY2019-20 was 3.33 SSO's per 100-miles of pipe
- Storm Drainage
  - 281 miles of storm drainage pipe inspected in FY2019-20
  - 10,439 cubic yards of debris removed from the storm drainage pipe system FY2019-20

Dallas' Regional Water Supply System

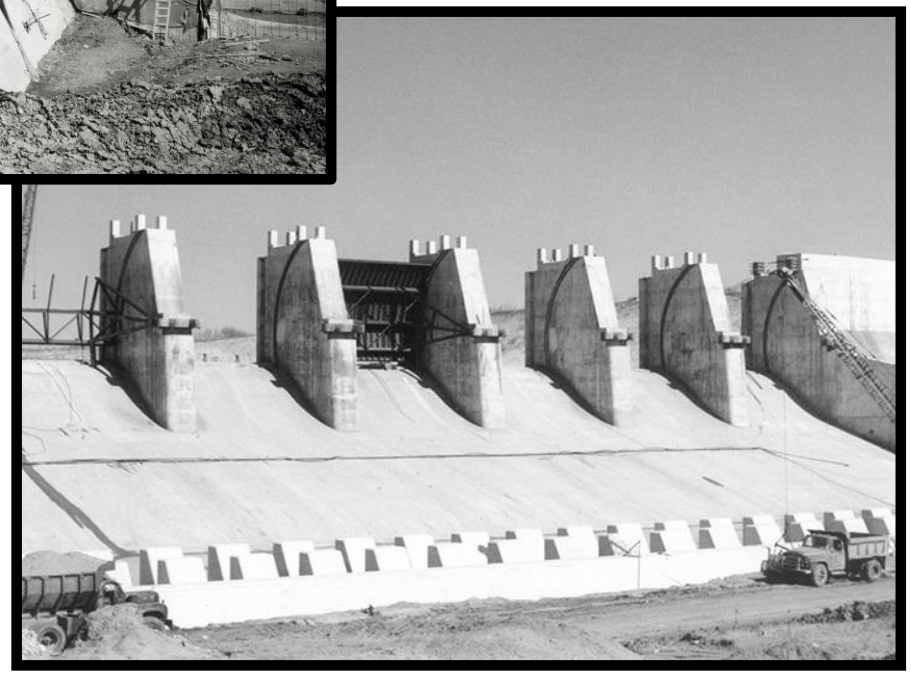


Long Range Water Supply Planning

- In response to the drought of the 50's, Dallas started the current era of long range water supply planning
- Dallas' 1959 Plan included the recommendation that Dallas supply water to surrounding cities
- The 1959 Plan was updated in 1975, 1989, 2000, 2005 and 2014
- The 2014 Plan shows a deficit beginning in 2027



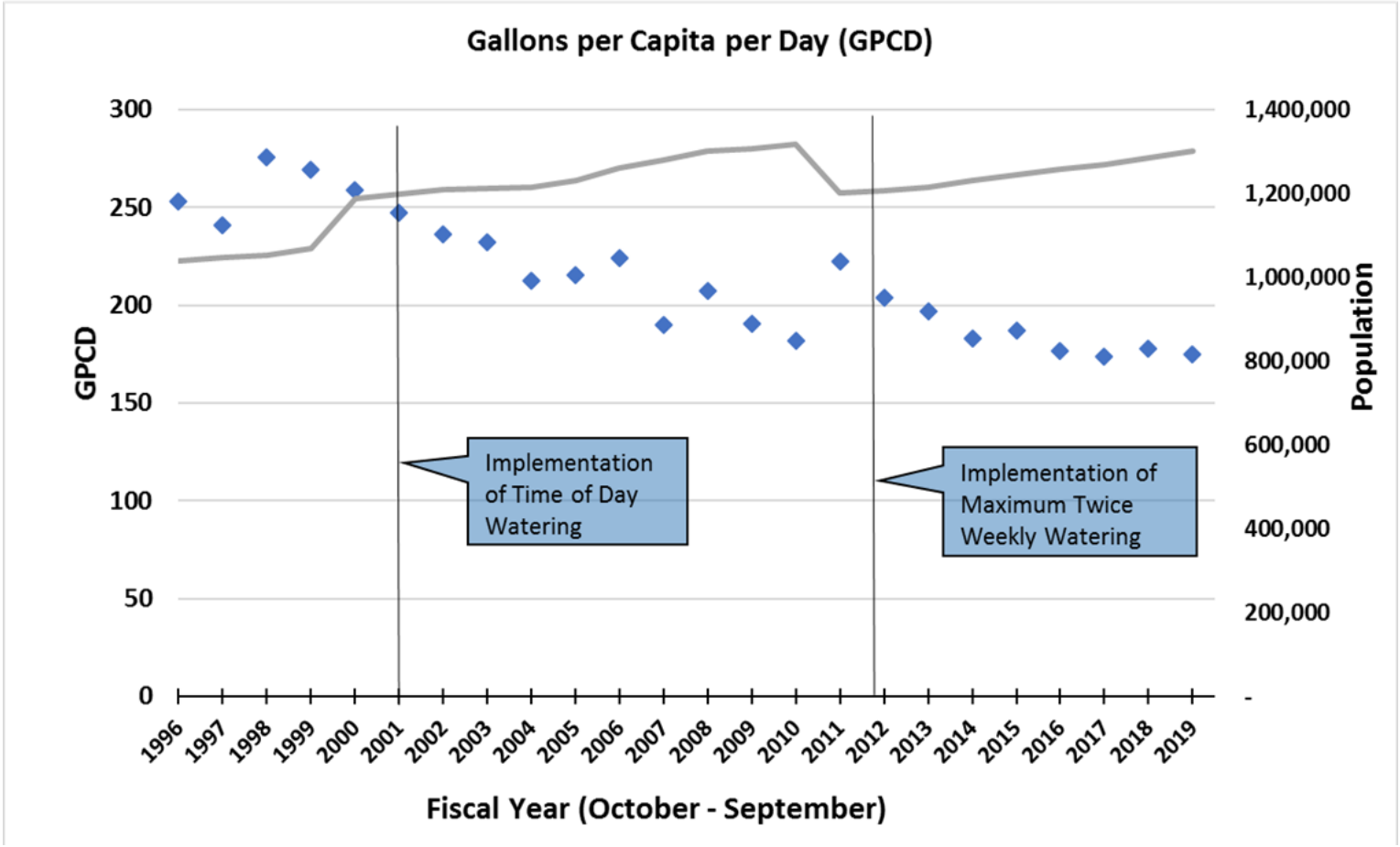
Lewisville Lake Dam Construction



Forney Dam at Lake Ray Hubbard
Installation of Tainter Gates

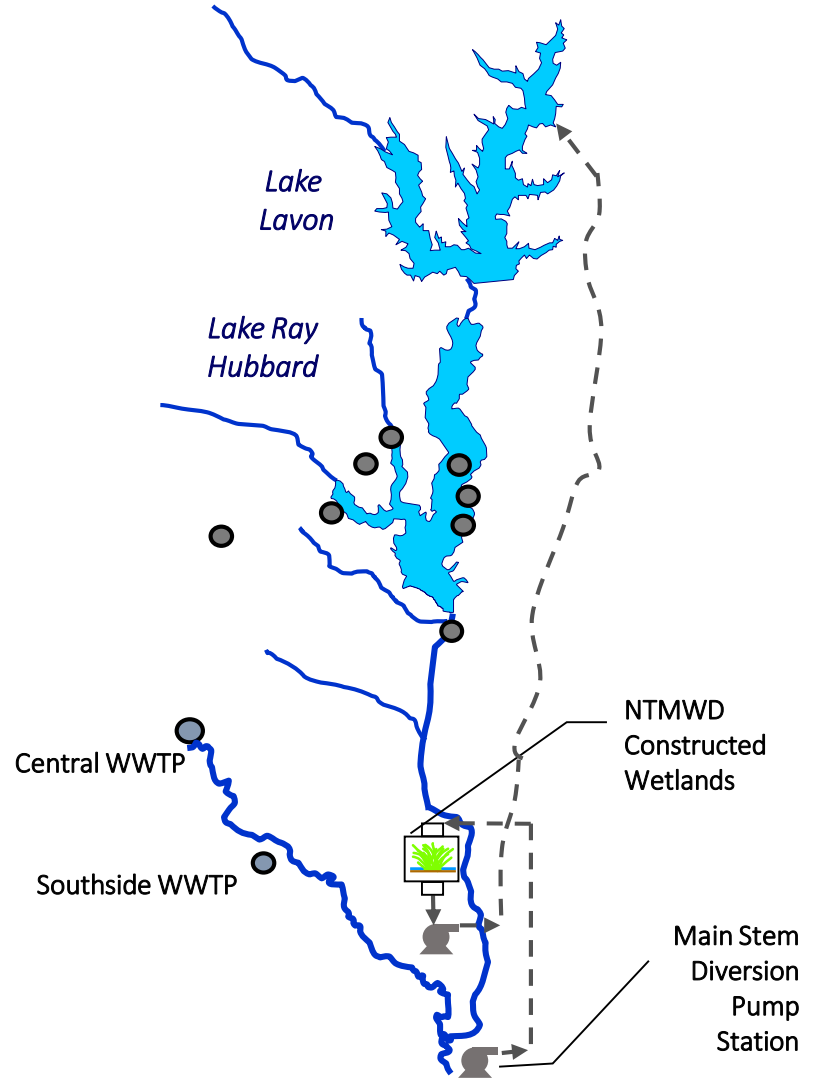
Current Projects – Status and Timing

- Water Conservation (Ongoing)
  - Gallons per Capita per Day (GPCD) reduced from 247 in FY2001 to 169 in FY2020
- Main Stem Pump Station (2020)
  - Develop amendment to North Texas Municipal Water District (NTMWD) Swap Agreement for cost sharing
- Integrated Pipeline Project (IPL) – Lake Palestine Connection (2027)
  - Tarrant Regional Water District (TRWD) – Land Acquisition
- IPL to Bachman Connection (2027)
  - Preliminary Alignment Study underway



Indirect Reuse Agreement

- Partner - North Texas Municipal Water District
- "Swap" Agreement December 2008
- Exchange treated effluent
- NTMWD's Permitted Return flows into Lake Ray Hubbard and Lewisville Lake for an equal amount of Dallas Central and Southside WWTP return flows into the Trinity River
- Estimated Yield ~30 MGD



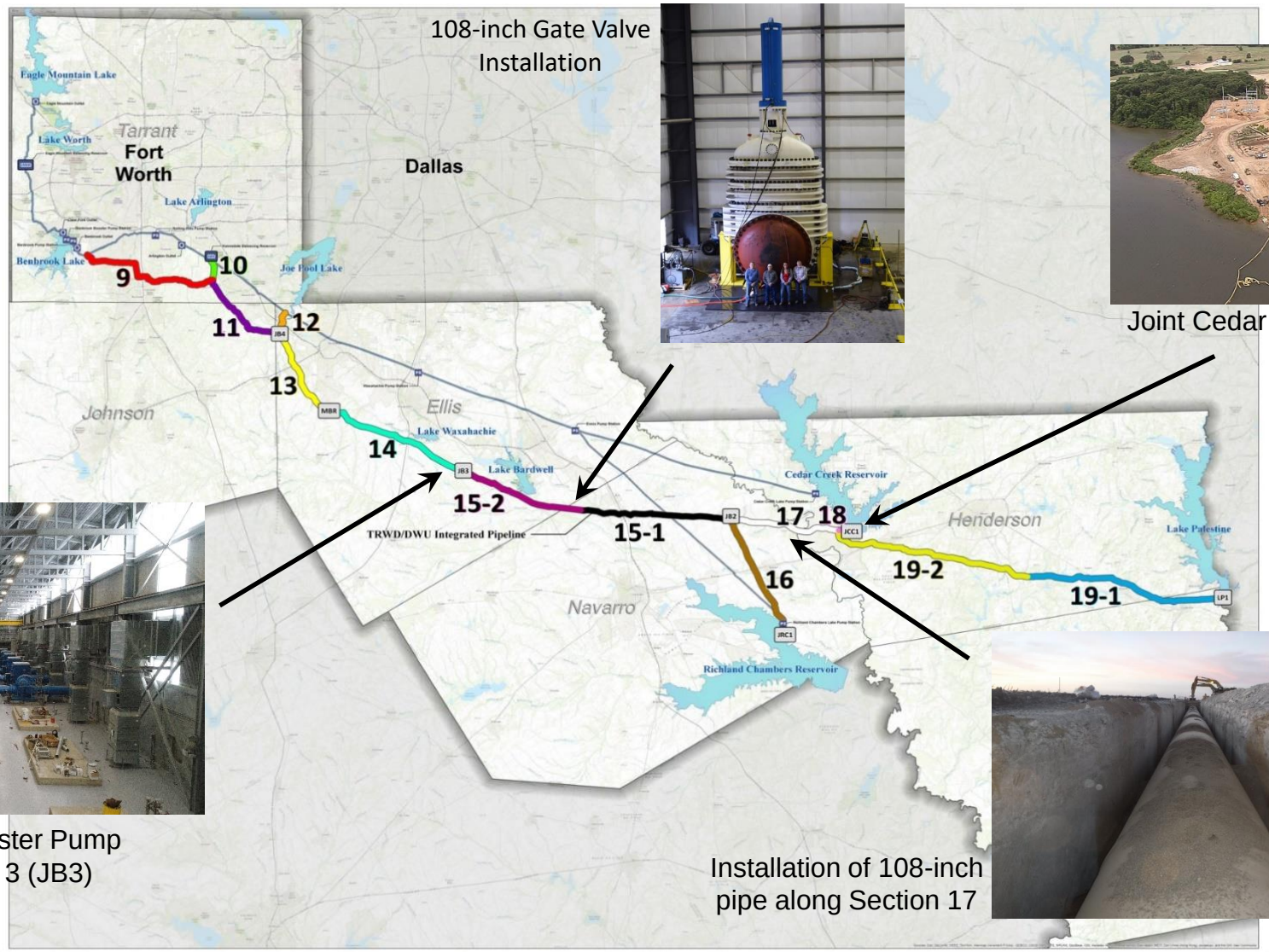
Integrated Pipeline (IPL) Project

- 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

Kennedale Balancing Reservoir
Pressure Control Station

IPL Progress



108-inch Gate Valve Installation

Joint Cedar Creek Lake Pump Station

Joint Booster Pump Station 3 (JB3)

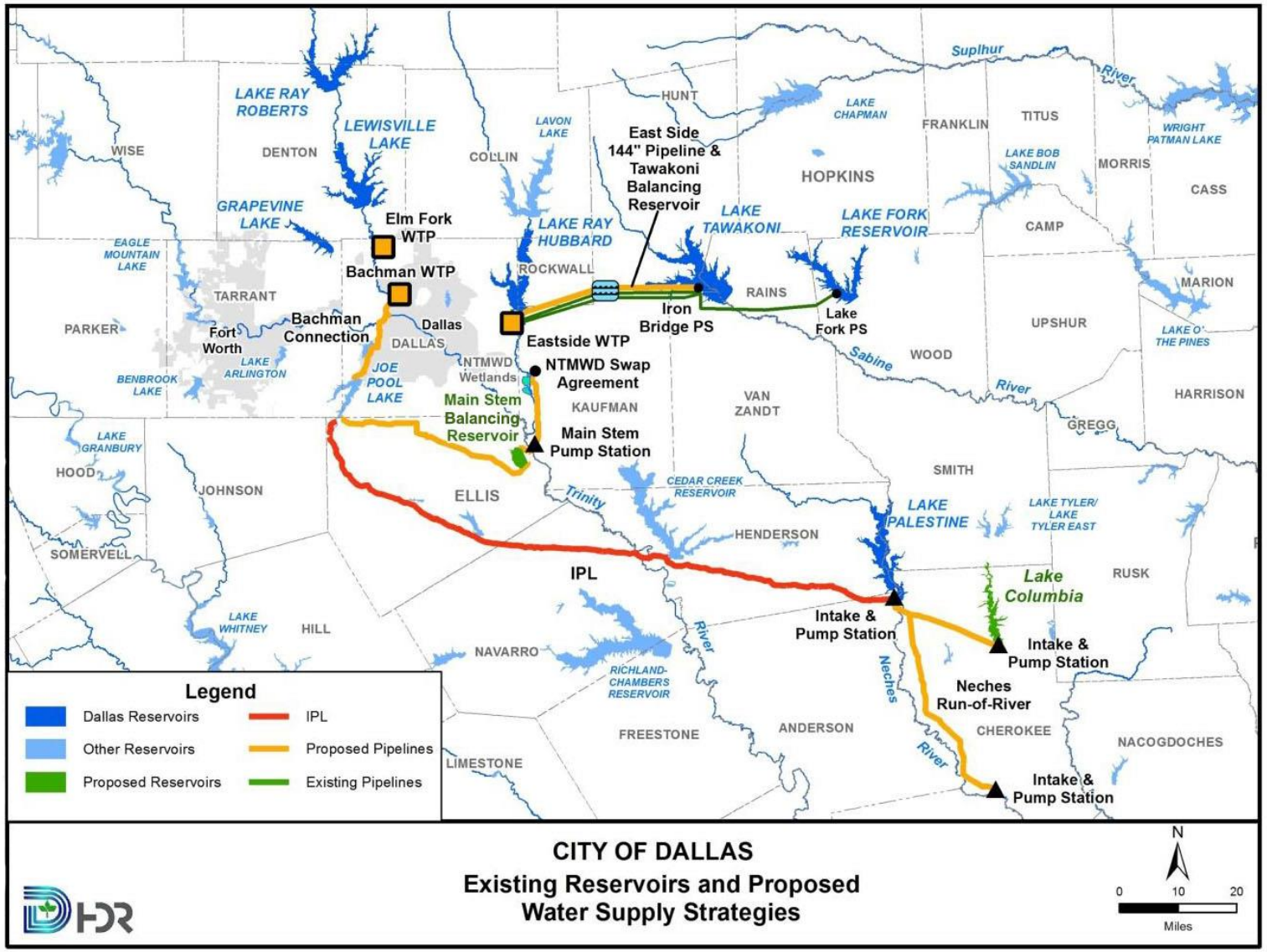
Installation of 108-inch pipe along Section 17

2014 Long Range Water Supply Plan

Adopted Water Management Strategies	Projected Supply (MGD)	Total Project Cost (Million Dollars)	Unit Cost ($/1,000 gal)
Additional Conservation	46.4	$51.7 [a]	$0.38
Indirect Reuse Implementation - Main Stem Pump Station – NTMWD Swap Agreement	31.1	$25.9 [b]	$0.25
Indirect Reuse Implementation - Main Stem Balancing Reservoir	102	$675	$1.74
Connect Lake Palestine	102	-	-
IPL Part 1 – Connection to Lake Palestine [c]	-	$939	$2.31
IPL Part 2 – Connection to Bachman WTP [c]	-	$244	$0.49
Neches Run-of-River	42.2	$227	$1.88
Lake Columbia	50.0	$289	$1.78
Totals	**373.7**	**$2,451.6**	**$1.24**

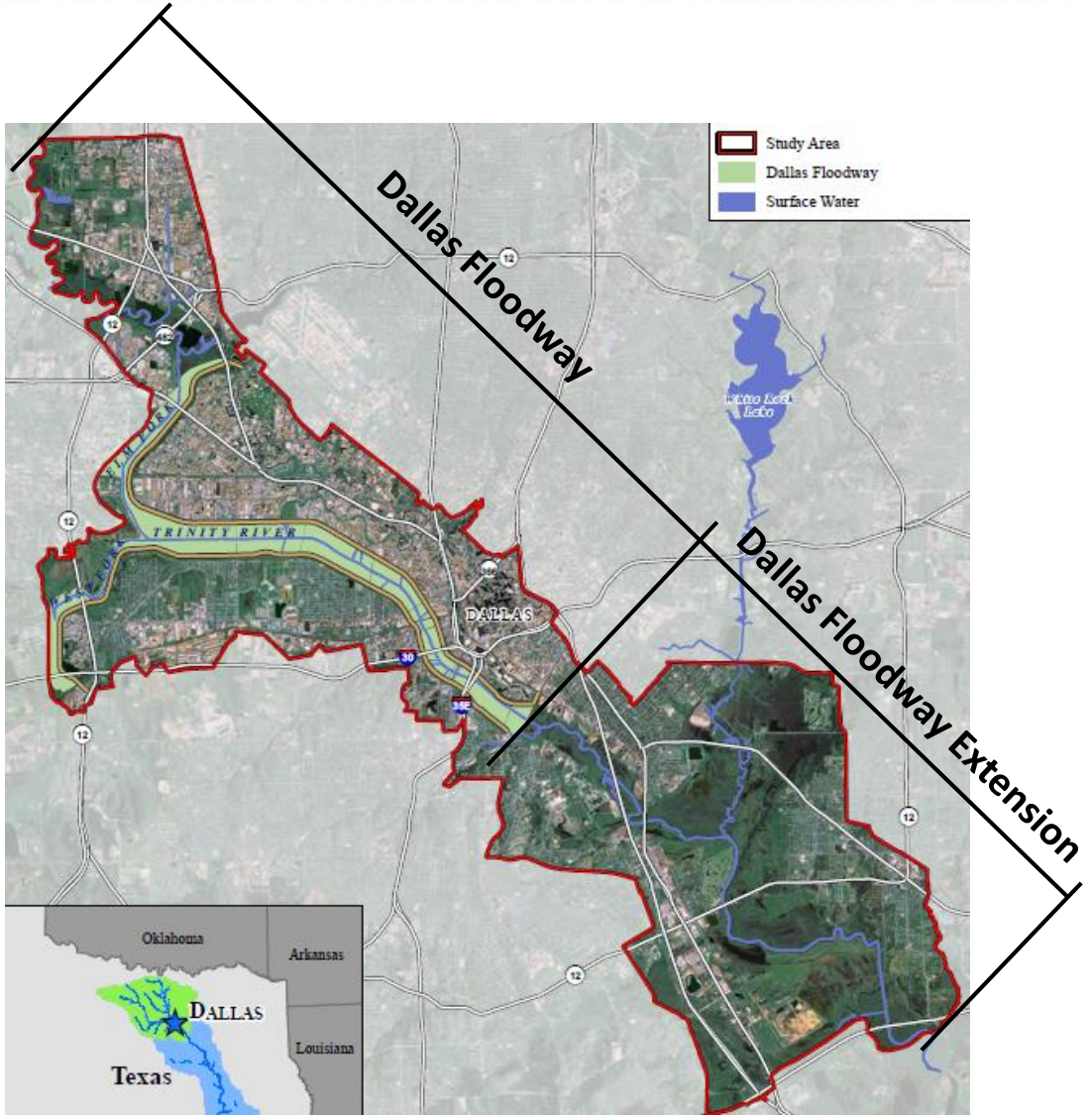
[a] Equivalent total project cost based on net present value analysis for the 50-year planning horizon
[b] Represents Dallas' portion of the total project cost
[c] The IPL project requires both the following projects to provide 102 MG to the Dallas system.

Recommended Water Strategies Map



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

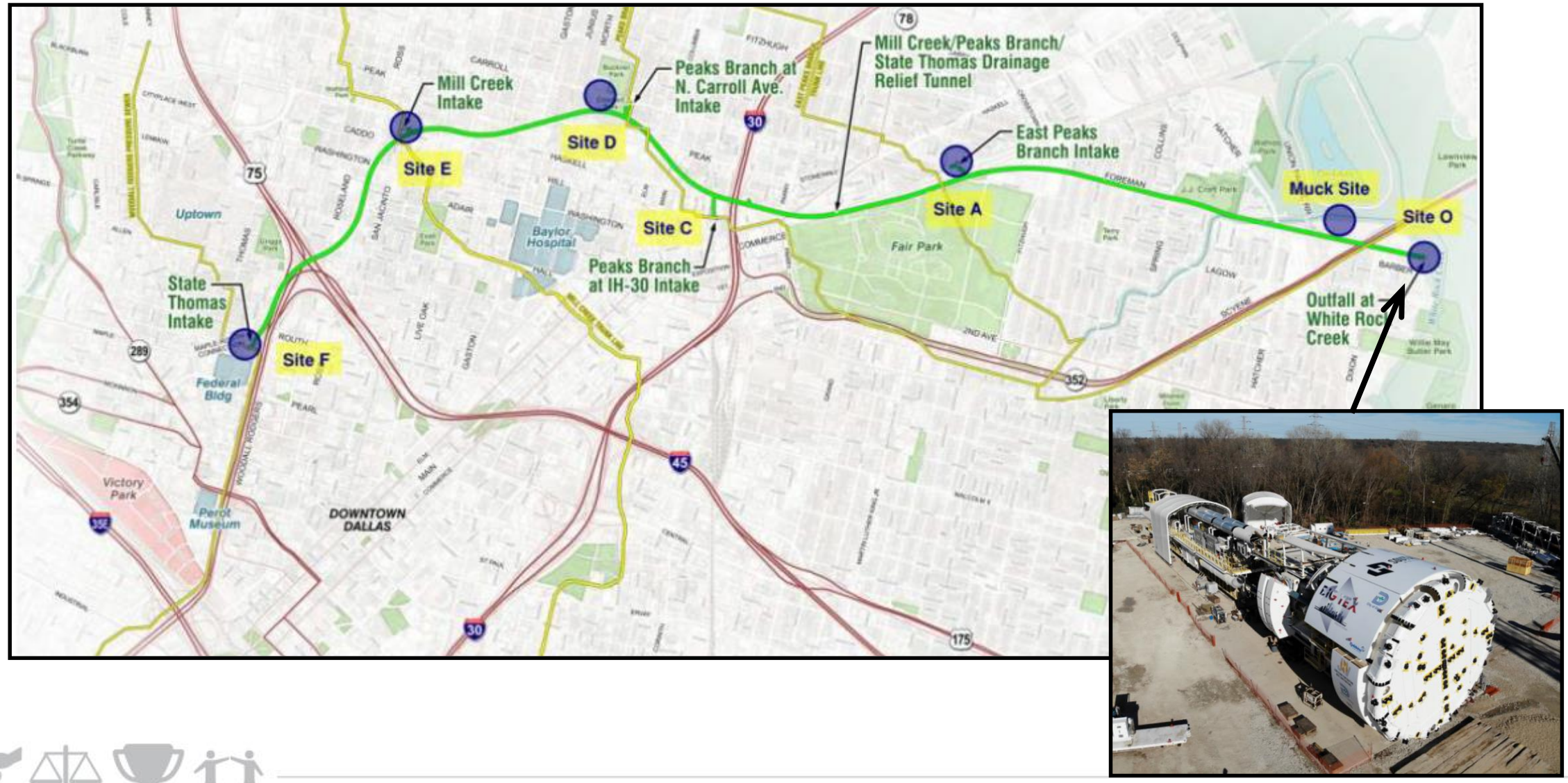
Dallas Floodway Project - $223M

- Removal of abandoned ATSF Trestle – Construction Starts November 19, 2020
- Levee Raise & Flattening – Design Build Award Anticipated June 2021
- Interior Drainage Improvements (Pump Stations):
  - Trinity Portland – Anticipated Design Build Award July 2021
  - Charlie – Anticipated Design Build Award July 2021
  - Delta – Anticipated Design Build Award November 2021
  - 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 – Anticipated Design Award January 2021/ 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 August 2025, dependent upon land acquisition and weather

Mill Creek Tunnel



Next Steps for City of Dallas' One Water

- Complete the Comprehensive Stormwater System Assessment
- Continue development of Water Production Facilities Strategic Plan
- Complete the Water Delivery Comprehensive System Assessment Update
- Improve efficiency through work order and asset management system and Field Mobility projects
- Evaluate customer enhancement through automated meter infrastructure

Dallas Water Utilities-Capital Investments for Our Future

City Council
November 17, 2020

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