Dallas Water Utilities
Partnerships: Past, Present and Future

Society of American Military Engineers
Dallas Post

Water Resource Management: A Legacy of Partnerships

Terry S. Lowery
Director

September 16, 2019
Maggiano’s
Dallas, Texas
Outline

• Dallas Water Utilities Background
• Local Partnerships
• Regional Partnerships
• Federal Partnerships

“Talent wins games, but teamwork and intelligence win championships.”

Michael Jordan
Dallas Water Utilities Fact Sheet

- Founded in 1881
- Funded from wholesale and retail water and wastewater revenues and stormwater fees (receives no tax dollars)
- Combined operating and capital budgets of $1.1B
- 699 square mile service area
- 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
  - 3 wholesale untreated water
  - 11 wholesale wastewater
Fundamentals of One Water

Environmental Stewardship

Social Equality

Economic Prosperity
City of Dallas Water and Wastewater Assets

- 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 $3.6B
- Treated 142 BG of water in FY18

- 2 wastewater treatment plants with a combined capacity of 280 MGD
- 15 wastewater pump stations
- 4,040 miles of wastewater main
- Value of wastewater assets $2.4B
- Treated 62 BG of wastewater in FY18
City of Dallas Storm Drainage System

- 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
Dallas’ Regional Water Supply System
Local Partnerships

FRIENDSHIP IS ESSENTIALLY A PARTNERSHIP

ARISTOTLE
March 2, 1954 – Dallas City Council approved a recommendation by the Dallas Water Survey Committee for the City to accept responsibility for providing water supplies to all of Dallas County.
Wholesale Wastewater Customers

- Cockrell Hill
- University Park
- Richardson
- Mesquite
- Duncanville
- Highland Park
- Wilmer
- Addison
- Garland
- Balch Springs
- Seagoville
- Hutchins

TRA begins treating a portion of Dallas’ wastewater.

Garland begins treating a portion of Dallas’ wastewater.
Local Partnerships - Industrial and Commercial Customers

Partnership is not a posture but a process – a continuous process that grows stronger each year as we devote ourselves to common tasks.

[Signature]
Industrial, Commercial and Institutional (ICI)

- Approximately 43,000 ICI customers
- Over $300M or 57% of Dallas Water Utilities operating revenues
Dallas Top Ten Largest ICI Customers

"If you want to lift yourself up, lift up someone else."

Booker T. Washington
Regional Partnerships

“Alone we can do so little; together we can do so much.”

Helen Keller
Lake Tawakoni

- Partner – Sabine River Authority
- Memorandum of Agreement - July 18, 1955
- Term: Perpetual
- Dam Completed: October 1960
- Dallas Supply 190,480 ac-ft/yr

Dallas Water Supply 2070 Firm Yield 19%
Lake Fork

- Partner: Sabine River Authority
- Water Supply Contract and Conveyance - October 1, 1981
- Term: 40 Years, automatically renews for 40 year terms
- Dam Completed: February 1980
- Dallas Supply: 120,000 ac-ft/yr

Dallas Water Supply 2070 Firm Yield

13%
Lake Palestine

- Upper Neches River Municipal Water Authority
- Water Supply and Storage Contract – February 28, 1972
- Term: Perpetual
- Dam Completed: June 1962, enlarged in March 1972
- Dallas Supply 114,337 ac-ft/yr

Blackburn Crossing Dam at Lake Palestine
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

- Joint Cedar Creek Lake Pump Station
- Installation of 108-inch pipe along Section 17
- 108-inch Gate Valve Installation
- Joint Booster Pump Station 3 (JB3)
Regional Water Conservation Campaign

KEEP TEXAS WATER ON TAP, Y’ALL

WaterIsAwesome.com

Dallas, North Texas Municipal Water District, and Tarrant Regional Water District
Federal Partnerships

Unity is strength... when there is teamwork and collaboration, wonderful things can be achieved.

Mattie Stepanek
Trinity Region Drainage Areas
Lewisville Lake

- Contracts
  - Contract Conservation Storage Garza-Little Elm Dam and Reservoir – 1953
- Dam Completed: August 1955
- Storage Volume 549,976 ac-ft
- Diversion Right: 549,976 ac-ft/yr
- Firm Yield: 96,176 ac-ft/yr

Dallas Water Supply 2070 Firm Yield 9%
Grapevine Lake

- Contract Conservation Storage
- Grapevine Dam and Reservoir – 1954
- Dam Completed: August 1952
- Storage Volume 85,000 ac-ft
- Diversion Right: 85,000 ac-ft/yr
- Firm Yield: 14,338 ac-ft/yr

Dallas Water Supply 2070 Firm Yield
Ray Roberts Lake

- Dam Completed: August 1987
- Storage Volume 591,704 ac-ft
- Diversion Right: 591,704 ac-ft/yr
- Firm Yield: 62,997 ac-ft/yr

Dallas Water Supply 2070 Firm Yield
Flooding
Dallas Floodway

**Authorization:** WRDA 2007, PL 110-114, Section 5141

**Purpose:** Flood Risk Management (FRM)

**Phase:** Design and Construction

**Non-Federal Sponsor:** City of Dallas, TX

**Scope:** Construct flood risk management elements of the recommended plan – Modified Dallas Floodway Project.

**FRM Elements:**
- 277K cfs Levee Raise
- AT&SF Bridge Modification
- 4:1 Interior Side Slopes
- Four (4) Interior Drainage Pump Stations

---

**Flood Risk Management**
- 277,000 cfs levee raise with AT&SF Bridge Modifications
- Emergency Action Plan improvements
- Levee side slope flattening to 4:1:1V (Bermment @ 100% local cost)

- Interior Drainage Plan Phase I - Baker and Hampton Pump Stations; Nobles Branch Stump improvements
- Interior Drainage Plan Phase II - Charlie, Delta, New Trinity Portland Pump Stations

**Ecosystem Restoration**
- River Relocation (add meanders to approx. 8 miles of the Trinity River in the Floodway)
- Approx. 60 acre wetland in Floodway

---

**MODIFIED DALLAS FLOODWAY PROJECT – REFERENCE MAP AND RECOMMENDED PLAN**
Dallas Floodway Extension

Authorization: Section 301, River & Harbor Act of 1965 (flood control), modified by Section 351 WRDA 1996 (inclusion of non-Federal constructed work), and Section 356 of WRDA 1999 (addition of ecosystem and recreation features)

Purpose: Flood Risk Management (FRM)
Phase: Construction (Ongoing)
Non-Federal Sponsor: City of Dallas, TX
Scope: Construct remaining FRM elements
FRM Element:
  o Lamar Levee
  o Cadillac Heights Levee
Benefits:
  o Dallas Floodway Extension protects approximately 2,550 structures and provides additional $6.7M annual benefits to Dallas Floodway
  o Protects low income minority residential neighborhoods with comparable level of flood risk reduction as Dallas Floodway
  o Recommended plan yields 2.06 cost-to-benefit ratio
Partnerships: The Future

Coming together is a BEGINNING
staying together is PROGRESS
and working together is SUCCESS

Henry Ford
QUESTIONS?

Terry S. Lowery
Director
Dallas Water Utilities
terry.lowery@dallascityhall.com

@DallasWaterUtilities