LOWER BOIS D’ARC CREEK RESERVOIR PROJECT

Society of Texas Environmental Professionals – Fort Worth

Janet Rummel, Public Relations & Communications Officer

September 29, 2017
• History, Services and Communities Served

• Water Essential for Regional Prosperity

• Future Supplies
  – Conservation
  – Reuse
  – Proposed Reservoir

• Value of Water

• Questions
HISTORY OF NTMWD

10 Original Member Cities
Farmersville, Forney, Garland, McKinney, Mesquite, Plano, Princeton, Rockwall, Royse City, and Wylie

“We decided we were all in this together. We couldn’t do it separately.”

• 1951 – Created by Texas Legislature to Provide Water Service
• 1956 – Began Providing Treated WATER to Member Cities
• 1970s – Expanded to WASTEWATER Service
• 1973 – Richardson added as Member City
• 1980s – Expanded to SOLID WASTE Service
• 1998 – Allen added as Member City
• 2001 – Frisco added as Member City
• Serve 10-county area nearly twice the size of Rhode Island

• Shared systems provide cost-efficiencies for communities served
REGIONAL PROVIDER: WATER, WASTEWATER, SOLID WASTE

BY THE NUMBERS

SERVE up to 90 COMMUNITIES
75 Daily basis
15 Emergency basis

Service area of 2,200 square miles in 10 counties

Serving 1.6 million people in one of the fastest-growing regions in the country

14 WATER PUMP STATIONS

6 WATER TREATMENT PLANTS
806+ MGD Capacity (million gallons/day)

573 WATER TRANSMISSION PIPELINES

250+ MILES LARGE-DIAMETER WASTEWATER PIPELINES

14 WASTEWATER TREATMENT PLANTS

151+ MGD WASTEWATER TREATMENT CAPACITY MGD (million gallons/day)

DID YOU KNOW?

3 TRANSFER STATIONS
up to 3,295 tons of solid waste/day

950,000+ tons/year accepted at landfill
Focused on Serving Growing Region

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>---</td>
<td>659</td>
<td>1,940</td>
<td>8,314</td>
<td>18,309</td>
<td>43,554</td>
<td>84,246</td>
<td>91,390</td>
</tr>
<tr>
<td>Farmersville</td>
<td>1,955</td>
<td>2,021</td>
<td>2,311</td>
<td>2,360</td>
<td>2,640</td>
<td>3,118</td>
<td>3,301</td>
<td>3,310</td>
</tr>
<tr>
<td>Forney</td>
<td>1,425</td>
<td>1,544</td>
<td>1,745</td>
<td>2,483</td>
<td>4,070</td>
<td>5,588</td>
<td>14,661</td>
<td>17,480</td>
</tr>
<tr>
<td>Frisco</td>
<td>736</td>
<td>1,184</td>
<td>1,845</td>
<td>3,420</td>
<td>6,138</td>
<td>33,714</td>
<td>116,989</td>
<td>145,510</td>
</tr>
<tr>
<td>Garland</td>
<td>10,291</td>
<td>38,501</td>
<td>81,437</td>
<td>138,857</td>
<td>180,635</td>
<td>215,768</td>
<td>226,876</td>
<td>232,960</td>
</tr>
<tr>
<td>McKinney</td>
<td>10,560</td>
<td>13,763</td>
<td>15,193</td>
<td>16,249</td>
<td>21,283</td>
<td>54,369</td>
<td>131,117</td>
<td>154,840</td>
</tr>
<tr>
<td>Mesquite</td>
<td>1,684</td>
<td>27,526</td>
<td>55,131</td>
<td>67,053</td>
<td>101,484</td>
<td>124,523</td>
<td>139,824</td>
<td>142,230</td>
</tr>
<tr>
<td>Plano</td>
<td>2,115</td>
<td>3,695</td>
<td>17,872</td>
<td>72,331</td>
<td>127,885</td>
<td>222,030</td>
<td>259,841</td>
<td>271,140</td>
</tr>
<tr>
<td>Princeton</td>
<td>540</td>
<td>594</td>
<td>1,105</td>
<td>3,408</td>
<td>2,321</td>
<td>3,477</td>
<td>6,807</td>
<td>7,910</td>
</tr>
<tr>
<td>Richardson</td>
<td>1,289</td>
<td>16,810</td>
<td>48,405</td>
<td>72,496</td>
<td>74,840</td>
<td>91,802</td>
<td>99,223</td>
<td>102,430</td>
</tr>
<tr>
<td>Rockwall</td>
<td>1,501</td>
<td>2,166</td>
<td>3,121</td>
<td>5,939</td>
<td>10,486</td>
<td>17,976</td>
<td>37,490</td>
<td>40,620</td>
</tr>
<tr>
<td>Royse City</td>
<td>1,266</td>
<td>1,274</td>
<td>1,535</td>
<td>1,566</td>
<td>2,206</td>
<td>2,957</td>
<td>9,349</td>
<td>10,220</td>
</tr>
<tr>
<td>Wylie</td>
<td>1,295</td>
<td>1,804</td>
<td>2,675</td>
<td>3,152</td>
<td>8,716</td>
<td>15,132</td>
<td>41,427</td>
<td>45,000</td>
</tr>
</tbody>
</table>

**NTMWD Total Population Served: Historical and Projected**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Served</td>
<td>32,000</td>
<td>60,000</td>
<td>200,000</td>
<td>800,000</td>
<td>1,600,000</td>
<td>2,500,000</td>
<td>3,700,000</td>
</tr>
</tbody>
</table>

*Note: Collin County recently updated growth projections to include 1.3 million more residents than previous estimates.*
Water Essential for Economic Growth

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

- Legacy West - Plano
- The Star - Frisco
- Watters Creek Convention Center - Allen
- Craig Ranch - McKinney
Existing & Planned Raw Water Supplies

Existing:
- Lavon Lake
- Lake Texoma
- Lake Tawakoni
- Chapman Lake
- Reuse/Wetland

Proposed:
- Lower Bois d’Arc Creek Reservoir
WATER SUPPLY PLANNING: FUTURE SOURCES

Conservation and Reuse = 23%
New Sources, Reservoirs = 24%

Connect Existing Supplies, 32%
Current Supplies, 21%
Conservation & Reuse, 23%

Chart represents NTMWD supplies in 2070
Source: 2016 Region C Water Plan
ONGOING CONSERVATION NEEDED TO STRETCH SUPPLIES

• Critical strategy for maximizing supplies
• Has helped defer approx. $1B in projects
• Award-winning programs
  – Water IQ
  – WaterMyYard.org
  – Water4Otter
    School Education Program
Trinity River Main Stem Pump Station & Pipeline

- Expands reuse supplies
- Divert effluent from river into wetlands
- Up to 100 million gallons per day (MGD)
- 17 miles, 72-inch-diameter pipeline
- Adding one pump at Conveyance Pump Station
- Cost approx. $120 million
- Under construction with completion by early 2019
1,840-acre constructed wetland

Natural treatment of diverted Trinity River water

Improves water quality removing Nitrogen, Phosphorus, Sediment
NEW PROJECTS NEEDED FOR RELIABILITY AND GROWTH

- New supplies critical for future of North Texas
- Water demands will increase 1.5 times over next 40 years
Why it’s Needed

- Growing communities = growing needs
- Population to double in 50 years
- Critical part of state water plan

Reservoir will help:
- Meet projected North Texas water supply needs through 2040 and beyond
- Support region’s economic growth
- Better serve Fannin County
- Provide recreational opportunities
FUTURE SUPPLIES: LOWER BOIS D’ARC CREEK RESERVOIR

Proposed Project:

- Surface Area: 16,641 acres
- Supply: up to 108 MGD
- Average/Max Depth: 22/70 ft
- Lake Elevation: 534 ft mean sea level
- Owner & operator: NTMWD
- Cost Estimate: ~$1.2B (2016 dollars)
- Permitting Required:
  - Water Rights – received June 2015
  - USACE Section 404 – under review
  - Anticipate federal permit by early 2018
- Water delivery in 2022 (pending final permit)

First major reservoir to be constructed in Texas in nearly 30 years
Proposed Lower Bois d’Arc Creek Reservoir

PROJECT COMPONENTS:
Reservoir Dam and Intake (1)

- Earthen embankment
- Dam approx. 10,400 feet in length and maximum height of about 90 feet
- Intake designed for up to 236 million gallons per day (MGD)
  - Larger diversions only when reservoir is near full
PROJECT COMPONENTS:
Raw Water Pipeline (2)

- 35 miles of 90-inch to 96-inch underground pipeline
- Will move water from reservoir to new treatment plant to be built in Leonard
PROJECT COMPONENTS:
Water Treatment Plant (3)

- Located on 662-acre property just west of City of Leonard
- Initial treatment capacity of up to 70 million gallons per day
- Ability to expand capacity to meet future needs
PROJECT COMPONENTS:
Road Improvements and Bridge (4)

• Working with TX DOT and County on plans

• Existing FM 1396 will be re-routed across lake as new FM 897 right-of-way to U.S. 82

• New bridge will be constructed over lake for north-south access

• Smaller roadways around lake will be adjusted to improve navigation
PROJECT COMPONENTS: Mitigation Areas (5)

- Mitigation for impacts to wetlands and waterways is required
- NTMWD has purchased 15,000-acre Riverby Ranch for this purpose
- Mitigation is proposed to include:
  - Planting more than 2 million trees on 5,472 acres
  - 40+ miles of stream improvements
  - 2,900 acres of new or re-established herbaceous plants
Assessment Tools

- **Modified East Texas Hydrogeomorphic Method (HGM)**
  - Forested Wetlands

- **USFWS Habitat Evaluation Procedures (HEP)**
  - Emergent Wetlands
  - Shrub Wetlands

- **Rapid Geomorphic Assessment (RGA)**
  - Streams

4,602 Acres of Forested Wetlands
1,223 Acres of Emergent Wetlands
49 Acres of Shrub Wetlands
78 Acres of Open Water
651,140 Linear Feet of Streams

*Note: Avoidance and minimization strategies employed during planning and design phases for the raw water treatment and transmission facilities resulted in ZERO additional impacts to aquatic resources.*
Benefits in Fannin County

- Access to stable, high quality, long-term water supply that will attract and support new businesses and jobs

- New state-of-the-art water treatment plant in Bonham – more than $20 million investment

- Boost net taxable real estate values in County by an estimated $316 million*

- Recreational amenities could generate $166 million of economic activity per year in Fannin County through activities such as fishing and boating, as well as new industrial and commercial opportunities*

*Based on 2015 updated independent analysis by Clower, T. & Weinstein, B.
NORTH TEXAS BUSINESS OUTREACH

• Encouraging local participation in reservoir projects

• Over 200 attended summer events in Fannin County

• Contractor info posted on NTMWD.com for upcoming opportunities
WATER RATES PAY FOR #MORETHANWATER

• Working to inform consumers about VALUE OF WATER

• Watch Journey of Water video on NTMWD.com

• Paying for water SERVICE, not a commodity

• Essential for public health & safety

• Vital for economic prosperity
SUPPORT FROM LOCAL, STATE AND FEDERAL LEADERS IS KEY

- Reservoirs in this part of the country are an absolute necessity
- With our reservoir project, we remain focused on:
  - PROTECTING ENVIRONMENT
  - SMART DEVELOPMENT
  - PROVIDING ESSENTIAL SERVICES TO NORTH TEXANS… WATER IS LIFE
- Continued support from elected officials and business leaders is needed to help public understand importance of water and wastewater infrastructure to vitality of our communities
RESOURCES

More info at www.NTMWD.com

Sign up at bottom of homepage to receive eNewsletters

SOCIAL MEDIA CHANNELS

@NTMWD
@NTMWD
@TomKulaNTMWD
@NTMWD
@NTMWD