BOIS D’ARC LAKE: WATER FOR NORTH TEXAS

National Waterways Conference
September 18, 2019
Tom Kula, NTMWD Executive Director

Regional Service Through Unity… Meeting our Region’s Needs Today and Tomorrow
BOIS D’ARC LAKE

NTMWD: Water for the Future of North Texas
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 TX 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
REGIONAL PROVIDER: WATER, WASTEWATER, SOLID WASTE

BY THE NUMBERS

**WATER PUMP STATIONS**
14

**LARGE-DIAMETER WASTEWATER PIPELINES**
250+

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

**WASTEWATER TREATMENT PLANTS**
13

**WATER TRANSMISSION PIPELINES**
575+

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

SERVE

**up to 80 COMMUNITIES**
75 Daily basis
15 Emergency basis

Service area of 2,200 square miles in 10 counties

Serving 1.7 million people in one of the fastest-growing regions in the country

DID YOU KNOW?

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

985,000+ tons/year accepted at landfill
WATER ESSENTIAL FOR ECONOMIC GROWTH

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

NTMWD Total Population Served: Historical and Projected

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<tr>
<td>Population Served</td>
<td>32,000</td>
<td>60,000</td>
<td>200,000</td>
<td>800,000</td>
<td>1,700,000</td>
<td>2,500,000</td>
<td>3,700,000</td>
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Legacy West - Plano

The Star - Frisco

Watters Creek Convention Center – Allen

Craig Ranch - McKinney
Existing:
- Lavon Lake
- Lake Texoma
- Lake Tawakoni
- Chapman Lake
- Reuse/Wetland

In Progress:
- Bois d’Arc Lake
BOIS D’ARC LAKE

- Decade+ of planning, permitting
- Surface Area: 16,641 acres
- Supply: Firm Yield of 108 MGD
- Average/Max Depth: 22/70 ft
- Lake Elevation: 534 ft mean sea level (MSL)
- Owner & operator: NTMWD
- Cost Estimate: $1.6B
- Construction began May 2018
- Impoundment expected Fall 2020
- Water delivery expected Spring 2022
- BoisdArcLake.org

First major reservoir to be constructed in Texas in nearly 30 years
BOIS D’ARC LAKE: KEY COMPONENTS

1. Dam, Intake, Terminal Storage Reservoir – ARCHER WESTERN
2. Environmental Mitigation (17,000+ acres) – RES
3. Raw Water Pump Station, Water Treatment Plant – GARNEY
4. FM 897, County Roads, Boat Ramps, Lake Office – AUSTIN BRIDGE & ROAD
5. Pipelines – GARNEY
   - 35-mile 90-inch raw water
   - 25-mile 84-inch treated water
PLANNING AND PERMITTING TIMELINE

December 2006
State Water Rights Permit Application

June 2008
USACE Section 404 Permit Application

February 2015
USACE Issues Draft Environmental Impact Statement

June 2015
State Water Rights Permit Received – Anticipating 404 Permit in Jan 2016

July 2015
USACE Requires HGM methodology for Mitigation – Delay in expected 404 permit

March 2017
USACE Issues Revised Draft Environmental Impact Statement

November 2017
USACE Issues Final Environmental Impact Statement

Feb 2018
USACE Section 404 Permit Received
BOIS D'ARC LAKE DAM AND PUMP STATION

Raw Water Intake Structure

Service Spillway

West Dam Abutment

Embankment center line

Raw Water Pump Station
BOIS D’ARC LAKE DAM – 2 MILES LONG, 90 FT. TALL

- Lake side of the dam
- Embankment center line
- Raw Water Intake Structure
Raw Water Intake Tower –
Approx. 110-feet tall when complete

Two 78-inch pipes carry water from the Intake Tower to Raw Water Pump Station
BOIS D’ARC LAKE DAM AND RESERVOIR

Raw Water Pump Station

Initially 90 MGD
236 MGD at full build-out

9 pumps in a building the size of a football field
BOIS D’ARC LAKE

Raw Water Pipeline

35-miles of 90-inch pipe

3,696 total pieces of pipe
Each section of pipe = 50 ft. long; weighs 25,000 lbs
BOIS D’ARC LAKE ROADS

FM 897 Bridge and County Roads

Approx. 11 miles of new county and state roads, including 1.3-mile-long new bridge

Approx. $50 million in improvements
(Note the old bridge above the new one)
BOIS D’ARC LAKE REQUIRED MITIGATION

Replacing trees and improving streams

Approx. 1.67 million trees planted out of 5 million

Over 70 miles of stream improvements
Leonard Water Treatment Plant

Approx. 1,000-acre site
Initially able to treat 70 MGD

Installing pipe in the Ozone facility
TIMELINE FOR PROJECTS

2003
Planning and Permitting Process Begins

JUNE 2015
Texas Commission on Environmental Quality Issues State Water Use Permit

FEBRUARY 2018
Army Corps of Engineers Issues 404 Permit and Record of Decision

MAY 2018
Dam and Reservoir Construction Begins

MAY 2018
Roadway/FM 897 Construction Begins

AUGUST 2018
Environmental Mitigation Work Begins

NOVEMBER 2018
Leonard Water Treatment Plant Construction Begins

FALL 2020
Dam Substantially Complete

SUMMER 2020
Boat Ramps and Recreational Facilities Complete

SUMMER 2020
Roadway/FM 897 Construction Complete

FALL 2019
Boat Ramps and Recreational Facilities Construction Begins

FALL 2019
Treated Water Pipeline Construction Begins

SPRING 2019
Raw Water Pipeline Construction Begins

FALL 2020
Reservoir Impoundment Begins

SUMMER 2021
Raw Water and Treated Water Pipelines Complete

FALL 2021
Leonard Water Treatment Plant Complete

SPRING 2022
Water Delivery Scheduled to Begin

SPRING 2023
Environmental Mitigation Complete/Full Monitoring & Maintenance Begins
### PERMITTING REFORM RECOMMENDATIONS

#### STREAMLINE PERMITTING
- Unnecessary delays from changeover in people, policies, concepts and procedures – process should only take 2-3 years

#### STATUTE OF LIMITATIONS TO PERMIT CHALLENGES
- Should be shortened to 180 days vs. 5+ years to avoid further delays of litigation

#### FEDERAL FUNDING FOR SUPPLY PROJECTS
- Water supply lowest priority and lowest funded program of USACE – need Congress to approve more funding and resources

#### ESTABLISHING PURPOSE & NEED
- Population and demand projections developed/approved by state should be sufficient

#### USE OF BEST AVAILABLE INFORMATION
- Applicants shouldn’t be required to develop new or updated information late in permitting process – recommend statutory deadline.
- Applicant and agencies should have binding agreement on impact assessment methods required for evaluation.

#### COMPENSATORY MITIGATION
- Environmental benefits of supply projects should be considered as offsets to impacts
KEYS TO SUCCESS

• Reservoirs are an absolute necessity and we’ve stayed focused on:
  – PROTECTING ENVIRONMENT
  – SMART DEVELOPMENT
  – PROVIDING ESSENTIAL SERVICES TO NORTH TEXANS… WATER IS LIFE

• Build relationships with state and federal agencies early

• Assemble dream team – get right resources/expertise

• Get support from elected officials – keep informed along the way

• Funded entire $1.6B project with low interest SWIFT funding from TWDB… saving ~ $230 million

Follow our progress at www.BoisdArcLake.org