NORTH TEXAS MUNICIPAL WATER DISTRICT

Regional Service Through Unity… Meeting our Region's Needs Today and Tomorrow



BOIS D'ARC RESERVOIR

UCT National Conference

January 29, 2019

Tom Kula, NTMWD Executive Director



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**

NORTH TEXAS MUNICIPAL WATER DISTRICT



REGIONAL PROVIDER: WATER, WASTEWATER, SOLID WASTE

NORTH TEXAS MUNICIPAL WATER DISTRICT

BY THE NUMBERS

DID YOU KNOW?



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

14 WATER PUMP STATIONS

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

575+ MILES
WATER TRANSMISSION PIPELINES

250+ MILES
LARGE-DIAMETER WASTEWATER PIPELINES

13 WASTEWATER TREATMENT PLANTS

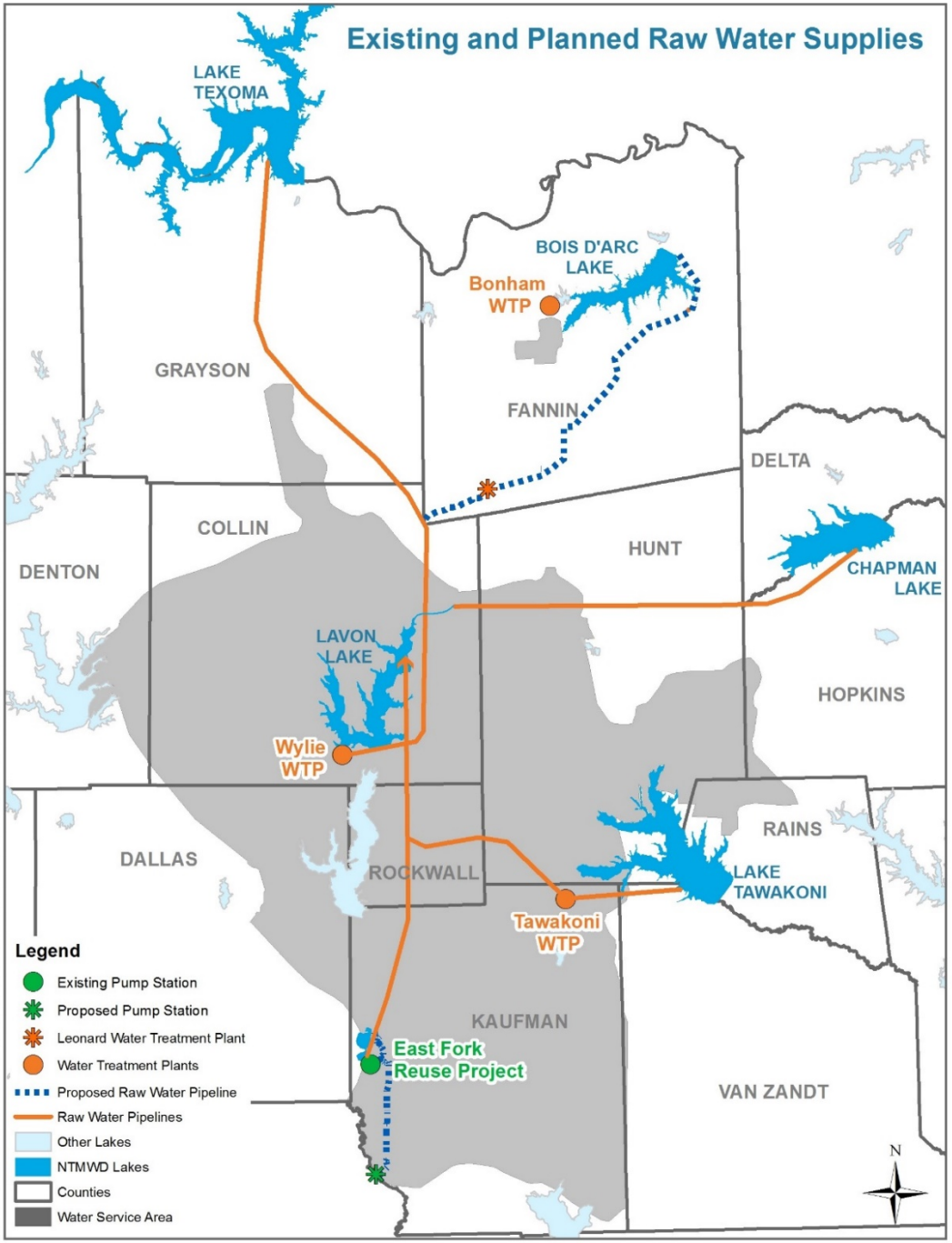
151+ MGD
WASTEWATER TREATMENT CAPACITY
MGD (million gallons/day)

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

985,000+ tons/year accepted at landfill

NORTH TEXAS MUNICIPAL WATER DISTRICT

Raw Water Supplies



Existing:

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

In Progress:

- Bois d'Arc Lake

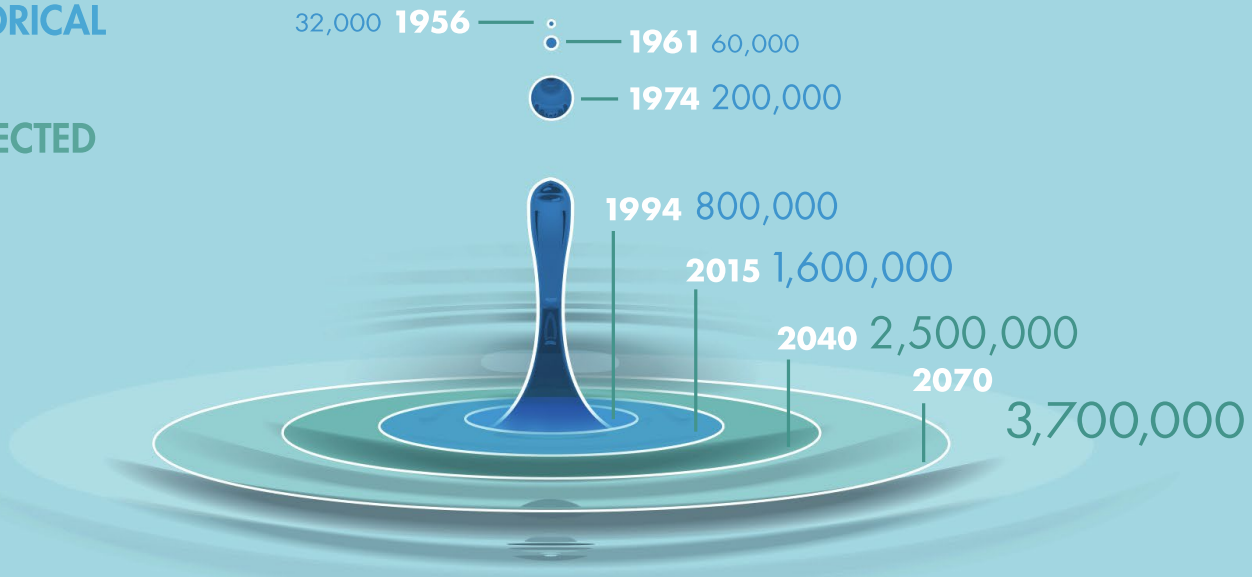
NORTH TEXAS MUNICIPAL WATER DISTRICT



Population projected to double

SERVING A GROWING REGION

NTMWD TOTAL POPULATION: HISTORICAL AND PROJECTED





WATER SUPPLY PLANNING: FUTURE SOURCES

Conservation and Reuse = 21%

New Sources, Reservoirs = 25%

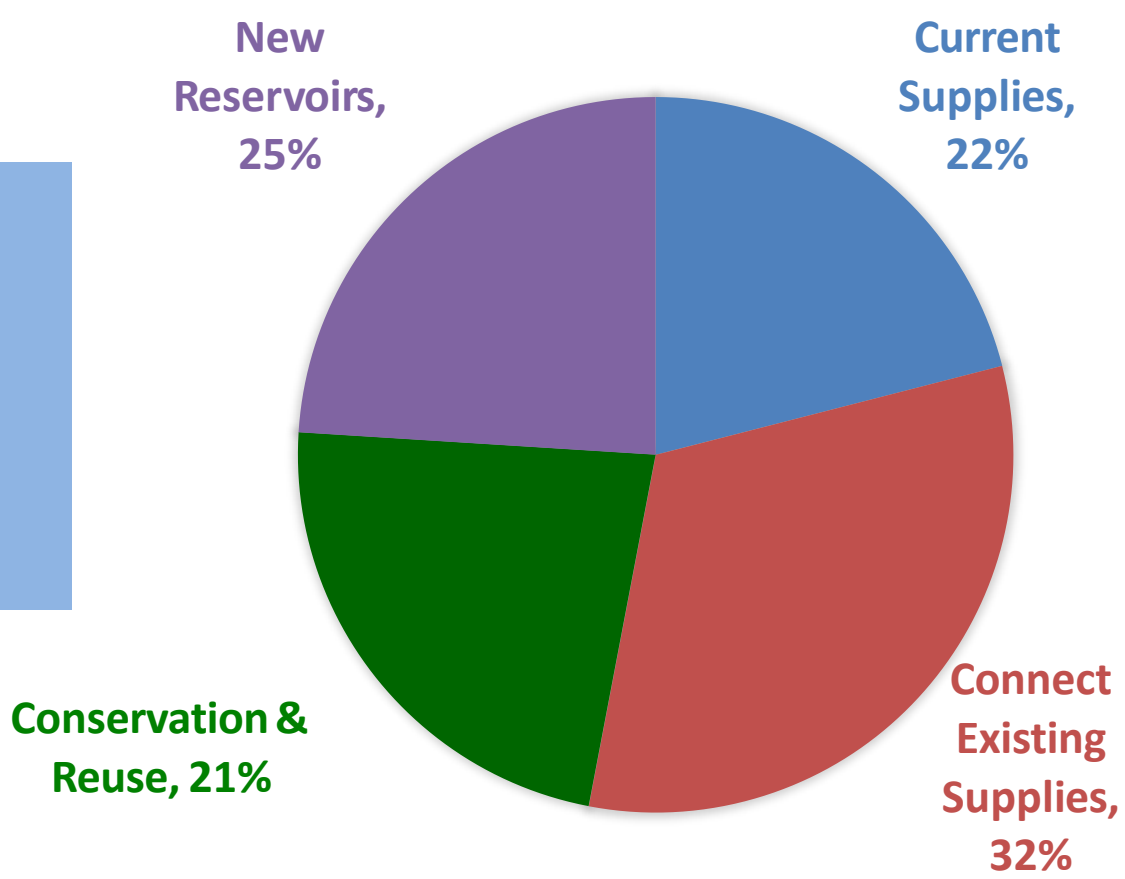


Chart represents NTMWD supplies in 2060
Source: 2016 Region C Water Plan

NORTH TEXAS MUNICIPAL WATER DISTRICT



BOIS D'ARC LAKE

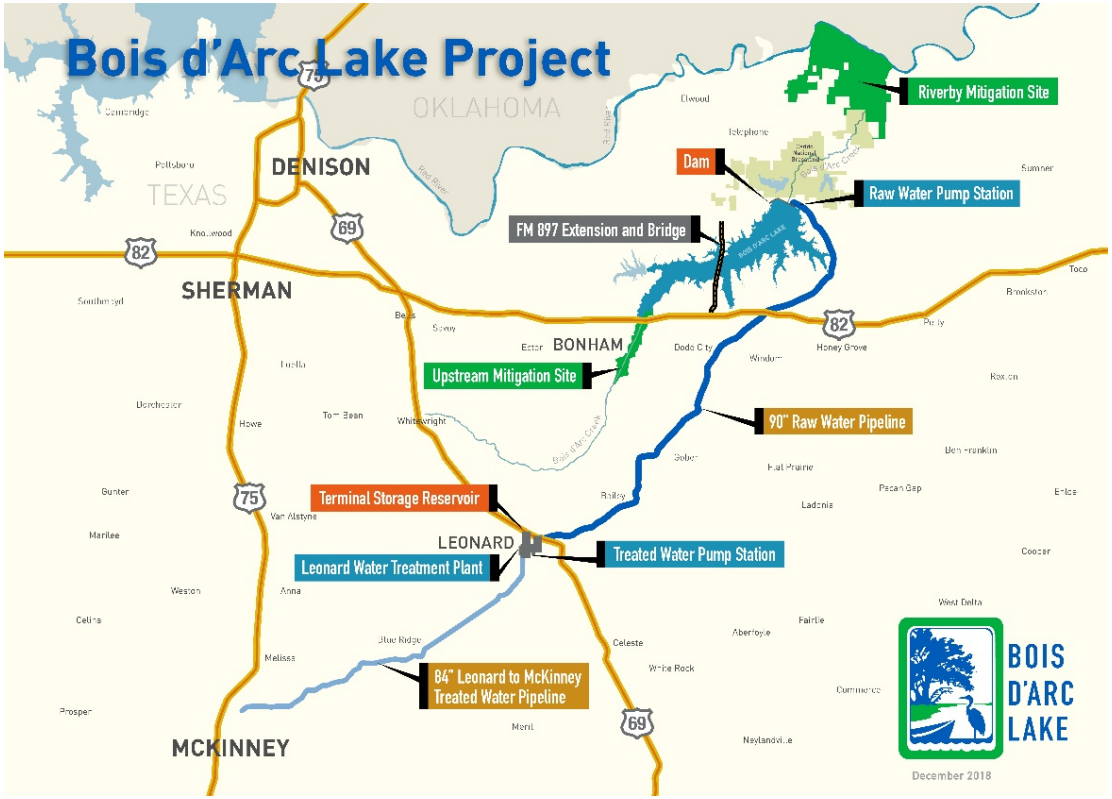
- Decade+ of planning, permitting
- Surface Area: 16,641 acres
- Supply: Firm Yield of 108 MGD
- Average/ Max Depth: 22/70 ft
- Lake Elevation: 534 ft mean sea level
- Owner & operator: NTMWD
- Cost Estimate: $1.6B
- Permitting:
  - TX Water Rights – received June 2015
  - USACE Section 404 – received Feb. 2018
- Construction began May 2018
- Water delivery expected in 2022



First major reservoir to be constructed in Texas in nearly 30 years

Bois d'Arc Lake: Key Components & Related Infrastructure

1. Dam and intake structure for reservoir
2. 35-mile raw water pipeline
3. $50 million road projects
4. Mitigation area (over 17,000 acres)
5. New water treatment plant, pump station, terminal storage reservoir
6. 25-mile treated water pipeline





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BOIS D'ARC LAKE DAM AND RESERVOIR

Foundation Excavation for the Dam Footprint
August 2018



Excavating the Raw Water Pump Station
January 2019



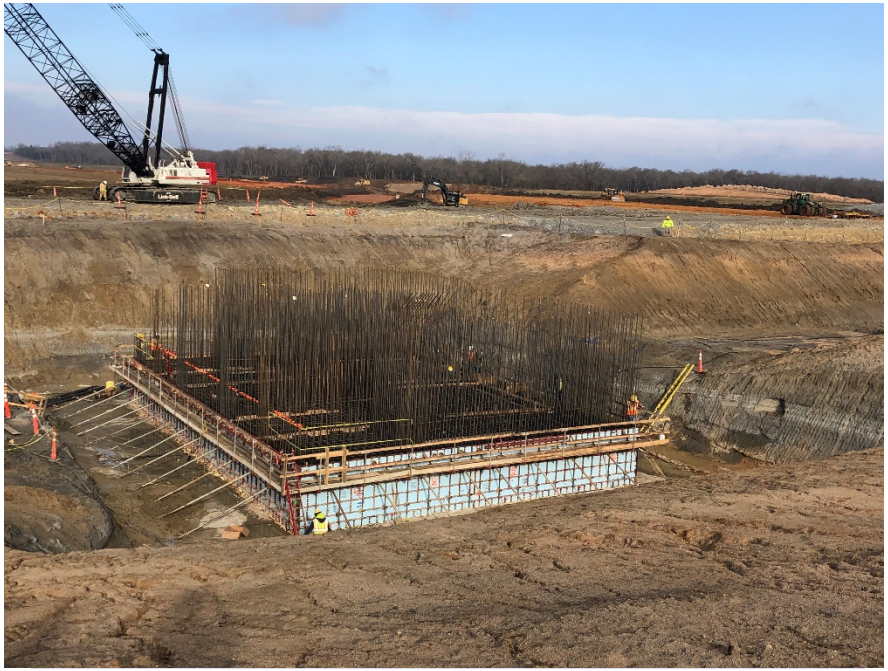
9 pumps in a football field-sized building

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BOIS D'ARC LAKE DAM AND RESERVOIR

Intake Tower Slab Formwork
January 2019



Slab = 1,100 cubic yards of concrete

Excavating the Intake Tower Conduit
January 2019



Two 78" pipes from Intake Tower to RWPS

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BOIS D'ARC LAKE DAM AND RESERVOIR

300-feet of 90-inch Pipe for Raw Water Pipeline
January 2019



Placing 90-inch Pipe
January 2019



Polyurethane coated mortar lined pipe

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BOIS D'ARC LAKE DAM AND RESERVOIR

Pull Test on Heat Shrink Sleeve
January 2019



Compacting Granular Embedment
January 2019



Raw Water Pipeline

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FM 897 BRIDGE

Pouring Columns and Bent Caps
August 2018



First Set of Beams Placed
September 2018



1.3 mile long bridge

240 concrete columns when complete

Each beam=115 ft long, weighs 101,000 lbs

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LEONARD WATER TREATMENT PLANT SITE

October 2018
Looking North



December 2018
Looking North



Phase 1 = 210 million gallon terminal storage reservoir and 90 MGD high service pump station



ENVIRONMENTAL IMPROVEMENTS

- **Environmental mitigation on more than 17,000 acres in two locations**
  - Largest permittee-responsible ecological mitigation project in nation
  - Over 8,500 acres of wetland restoration and enhancement
  - Planting approx. 5 million trees
  - Restoring or enhancing over 3,200 acres of native grasslands; 2,600 acres of forests
  - Improving over 70 miles of local streams



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RIVERBY RANCH MITIGATION SITE

Trees Delivered and Stacked
January 2019



Over 200,000 trees planted of 5 million

Tree Planting Crew
January 2019



Planted 38,100 trees in one day last week



TIMELINE

Dam/Reservoir Construction (2018-2021)

Roads and Boat Ramps/Recreation (2018-2020)

WTP and Pump Station (2018-2021)

Mitigation (2018-2023)

Pipelines (2019-2021)

Reservoir Fills (Fall 2020-2022)

NORTH TEXAS MUNICIPAL WATER DISTRICT



BOIS D'ARC LAKE BENEFITS

- **Supply water to the District's members/customers including Bonham**
  - Possibility to serve other Fannin County communities
- **Major recreation amenity**
  - 3 Public Boat Ramps
  - TPWD Establishing Fisheries
- **Supports economic growth**
  - $509 million economic activity in Fannin Co. during construction
  - $166 million annually economic activity after completion



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News Stream Project Pipeline

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