



NORTH
TEXAS
MUNICIPAL
WATER
DISTRICT

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



LOWER BOIS D'ARC CREEK RESERVOIR PROJECT

Society of Texas Environmental Professionals – Fort Worth

Janet Rummel, Public Relations & Communications Officer

September 29, 2017



AGENDA

- **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

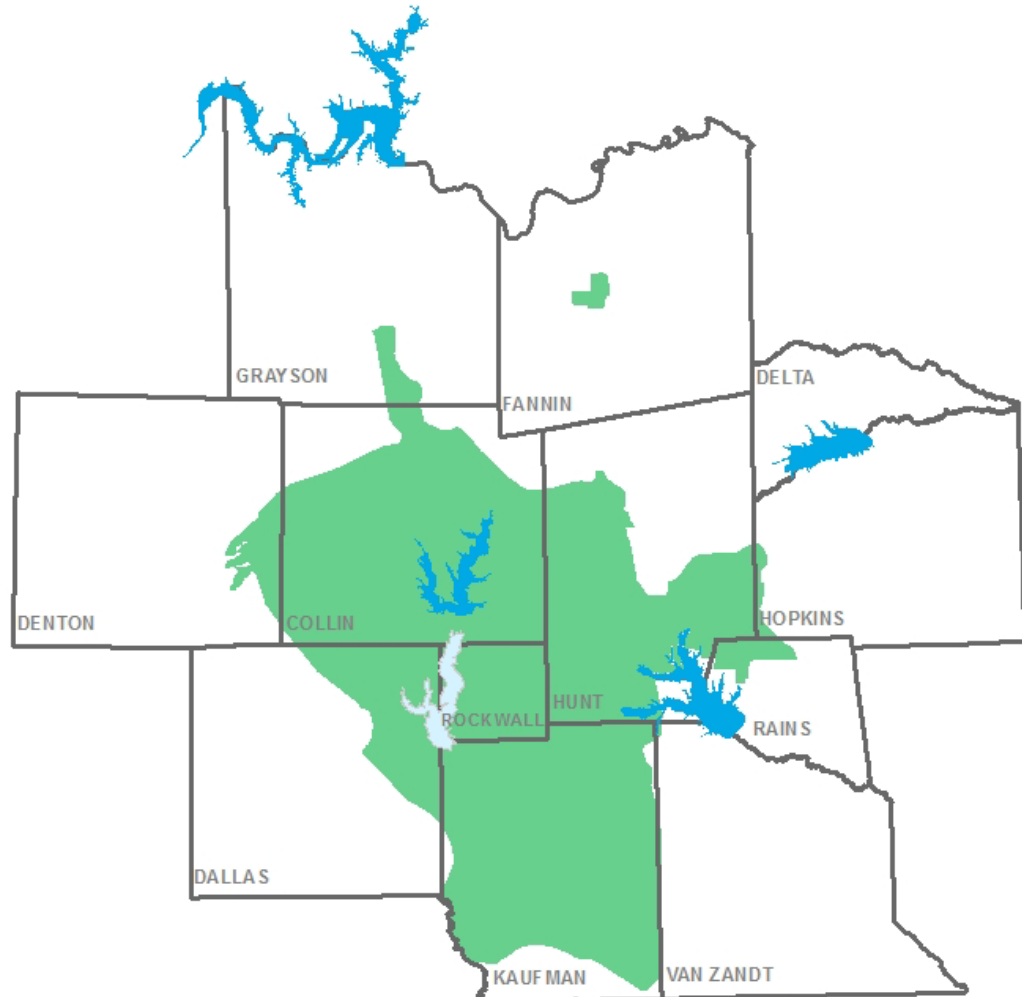
“We decided we were all in this together. We couldn’t do it separately.”

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- 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**



REGIONAL PROVIDER: WATER, WASTEWATER, SOLID WASTE

- *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



NORTH TEXAS MUNICIPAL WATER DISTRICT

BY THE NUMBERS

DID YOU KNOW?



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
MILES

WATER TRANSMISSION PIPELINES



250+
MILES

LARGE-DIAMETER WASTEWATER PIPELINES

14

WASTEWATER TREATMENT PLANTS

151+
MGD

WASTEWATER TREATMENT CAPACITY
MGD (million gallons/day)



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

950,000+
tons/year accepted at landfill



Focused on Serving Growing Region

City	1950	1960	1970	1980	1990	2000	2010	2015
Allen	---	659	1,940	8,314	18,309	43,554	84,246	91,390
Farmersville	1,955	2,021	2,311	2,360	2,640	3,118	3,301	3,310
Forney	1,425	1,544	1,745	2,483	4,070	5,588	14,661	17,480
Frisco	736	1,184	1,845	3,420	6,138	33,714	116,989	145,510
Garland	10,291	38,501	81,437	138,857	180,635	215,768	226,876	232,960
McKinney	10,560	13,763	15,193	16,249	21,283	54,369	131,117	154,840
Mesquite	1,684	27,526	55,131	67,053	101,484	124,523	139,824	142,230
Plano	2,115	3,695	17,872	72,331	127,885	222,030	259,841	271,140
Princeton	540	594	1,105	3,408	2,321	3,477	6,807	7,910
Richardson	1,289	16,810	48,405	72,496	74,840	91,802	99,223	102,430
Rockwall	1,501	2,166	3,121	5,939	10,486	17,976	37,490	40,620
Royse City	1,266	1,274	1,535	1,566	2,206	2,957	9,349	10,220
Wylie	1,295	1,804	2,675	3,152	8,716	15,132	41,427	45,000

NTMWD Total Population Served: Historical and Projected

Year	1956	1961	1974	1994	2015	2040	2070
Population Served	32,000	60,000	200,000	800,000	1,600,000	2,500,000	3,700,000

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

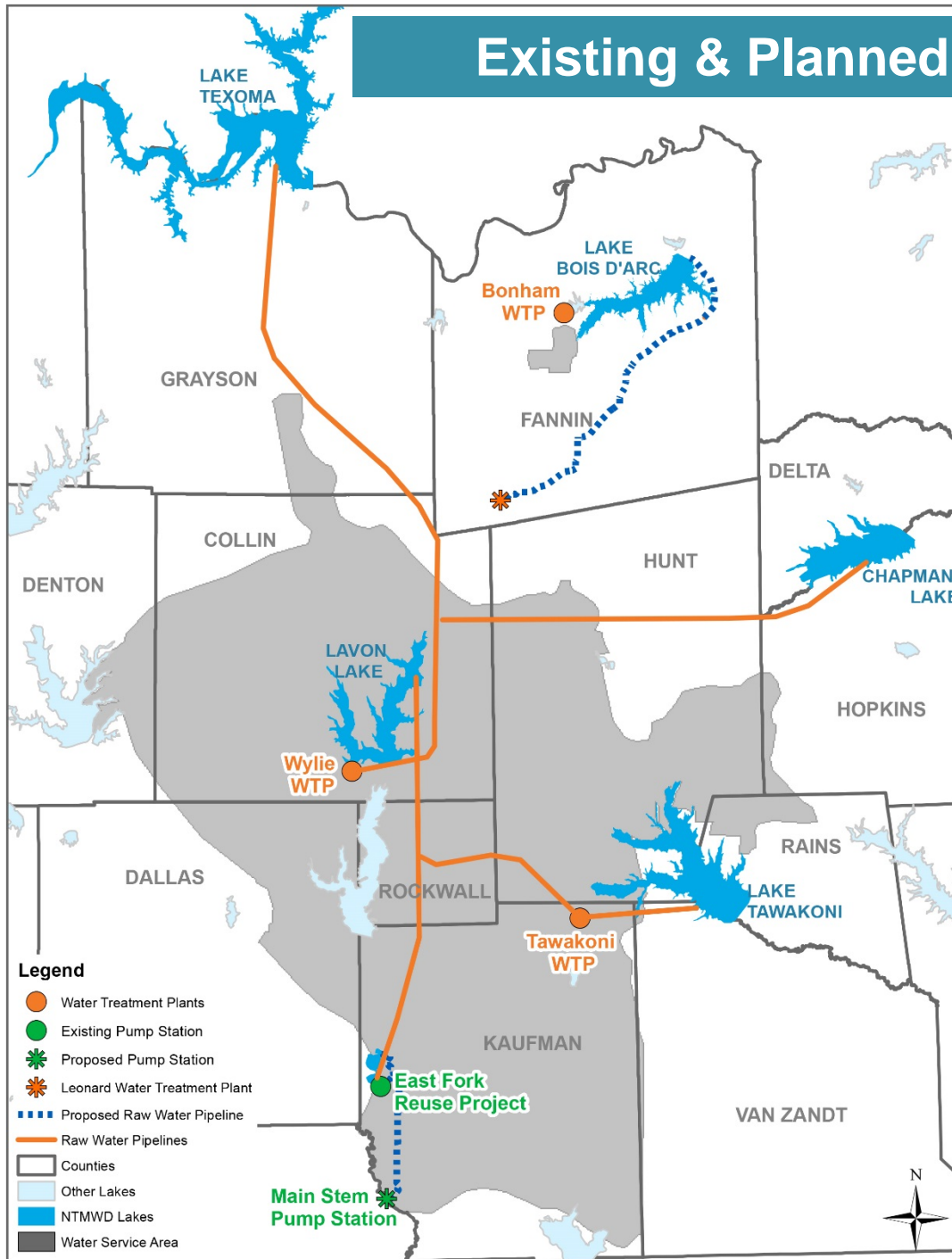


Watters Creek Convention Center - Allen



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



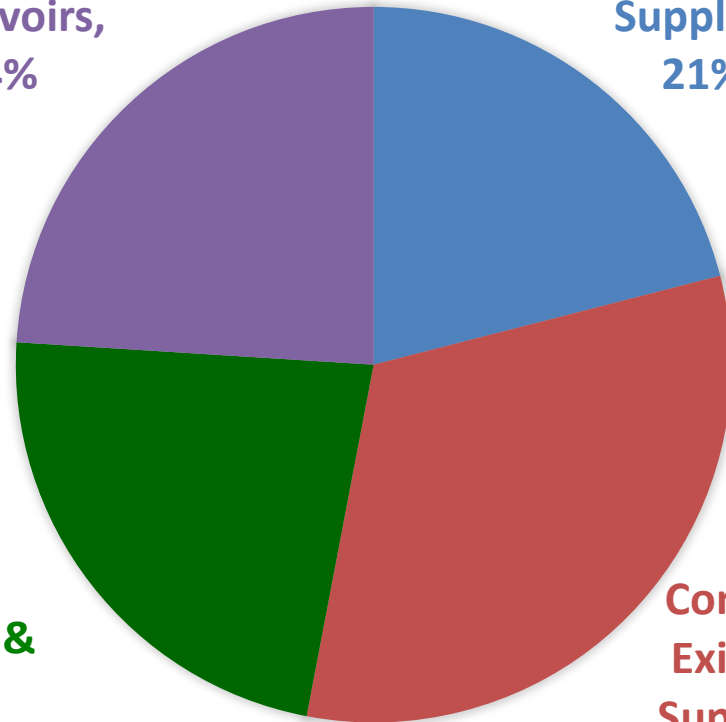
WATER SUPPLY PLANNING: FUTURE SOURCES

**Conservation and
Reuse = 23%**

**New Sources,
Reservoirs = 24%**

**Conservation &
Reuse, 23%**

**New
Reservoirs,
24%**



**Current
Supplies,
21%**

**Connect
Existing
Supplies,
32%**

Chart represents NTMWD supplies in 2070
Source: 2016 Region C Water Plan



ONGOING CONSERVATION NEEDED TO STRETCH SUPPLIES

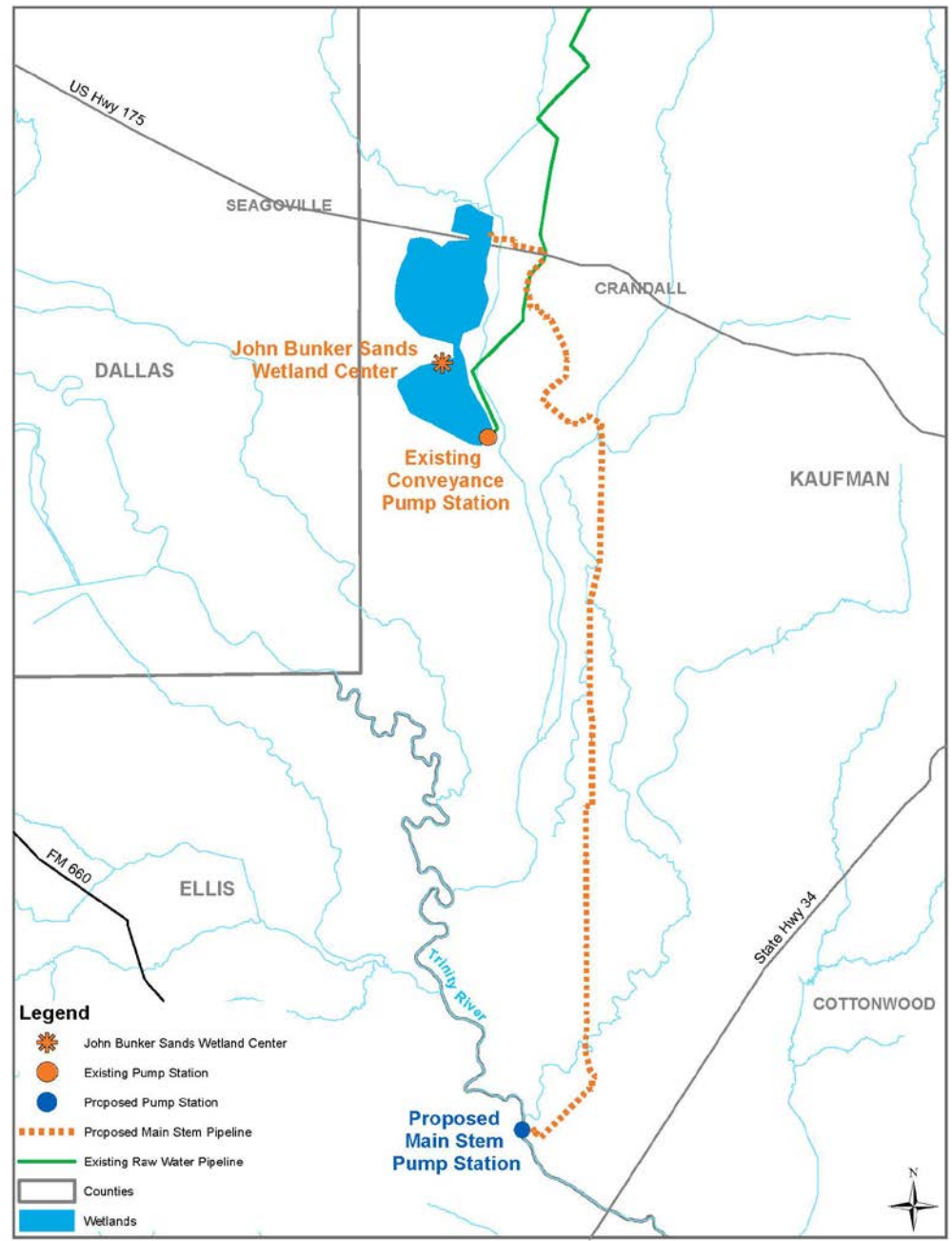
- **Critical strategy for maximizing supplies**
- **Has helped defer approx. \$1B in projects**
- **Award-winning programs**
 - **Water IQ**
 - **WaterMyYard.org**
 - **Water4Otter School Education Program**



FUTURE SUPPLIES

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





FUTURE SUPPLIES: REUSE – WETLANDS PROJECT SEAGOVILLE

- 1,840-acre constructed wetland
- Natural treatment of diverted Trinity River water
- Improves water quality removing Nitrogen, Phosphorus, Sediment

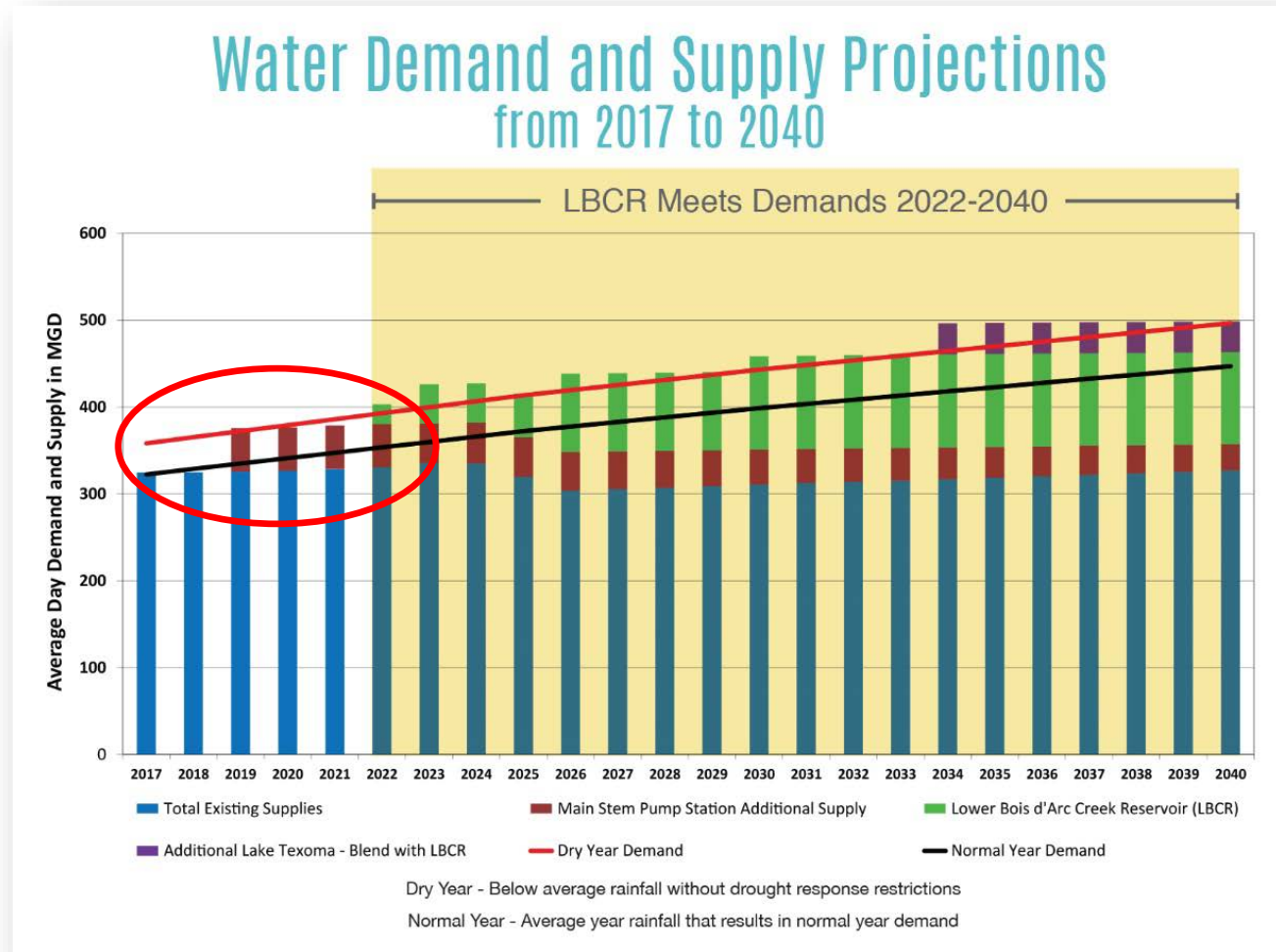


WATER SUPPLY + HABITAT + EDUCATION



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





FUTURE SUPPLIES: NEW RESERVOIR IN FANNIN COUNTY

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



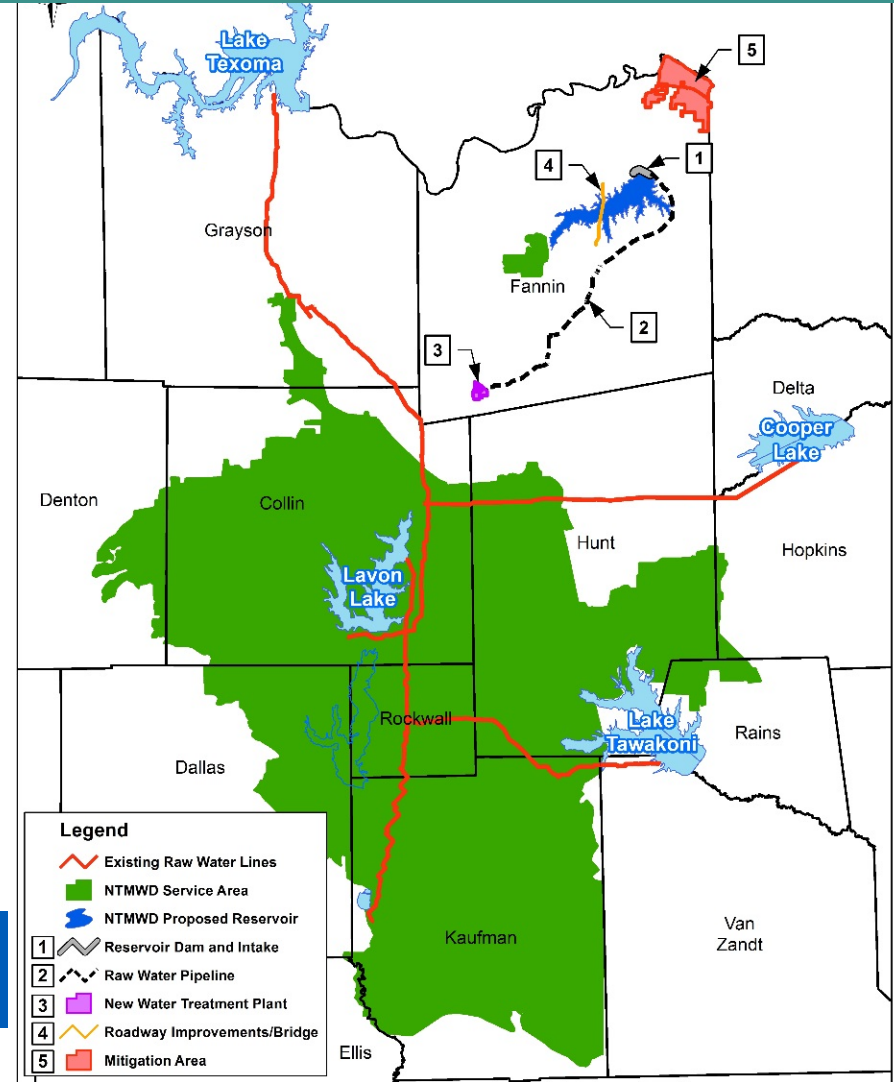


FUTURE SUPPLIES: LOWER BOIS D'ARC CREEK RESERVOIR

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)

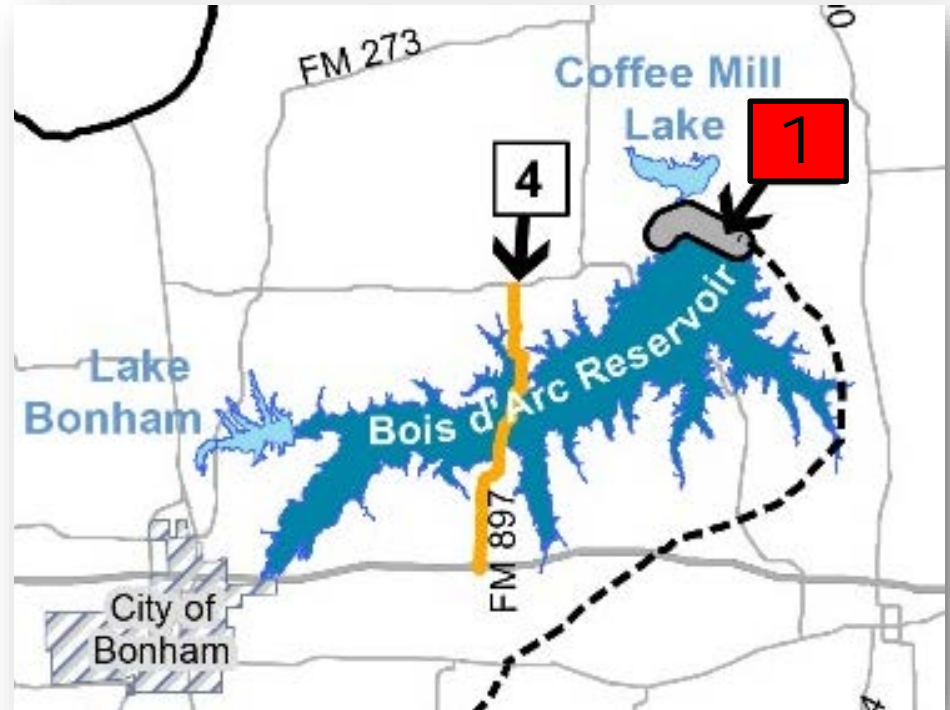
First major reservoir to be constructed in Texas in nearly 30 years



Proposed Lower Bois d'Arc Creek Reservoir

PROJECT COMPONENTS: Reservoir Dam and Intake (1)

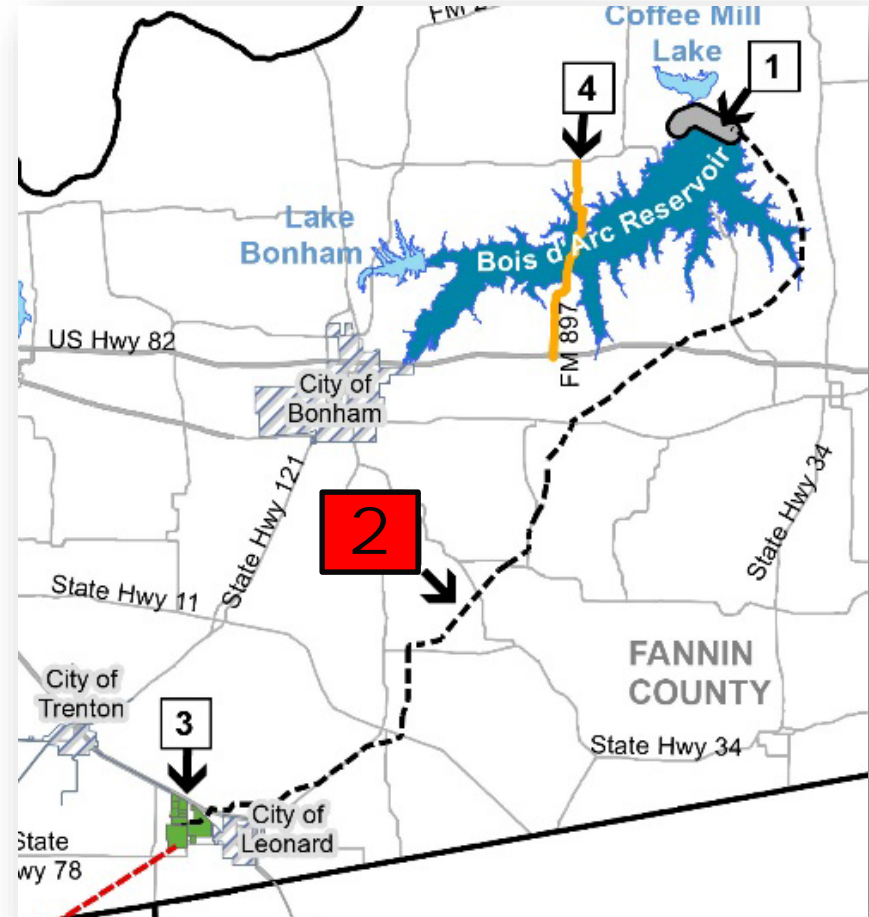
- Earthen embankment
- Dam approx. 10,400 feet in length and maximum height of about 90 feet
- Intake designed for up to 236 million gallons per day (MGD)
 - Larger diversions only when reservoir is near full



Proposed Lower Bois d'Arc Creek Reservoir

PROJECT COMPONENTS: Raw Water Pipeline (2)

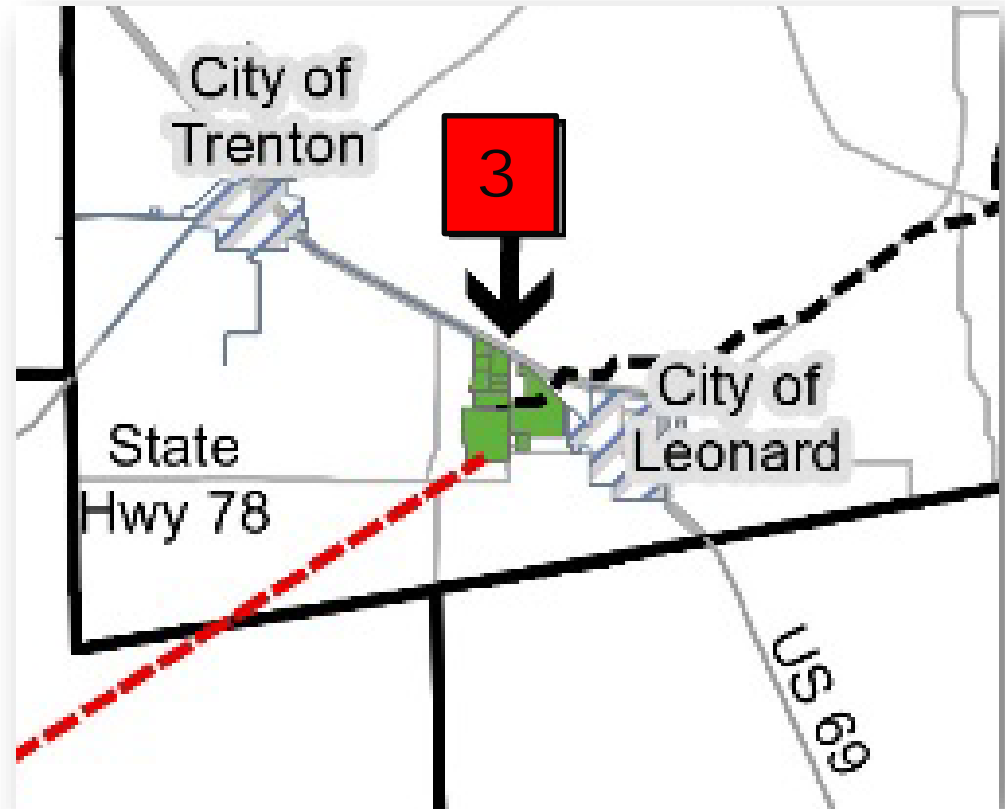
- 35 miles of 90-inch to 96-inch underground pipeline
- Will move water from reservoir to new treatment plant to be built in Leonard



Proposed Lower Bois d'Arc Creek Reservoir

PROJECT COMPONENTS: Water Treatment Plant (3)

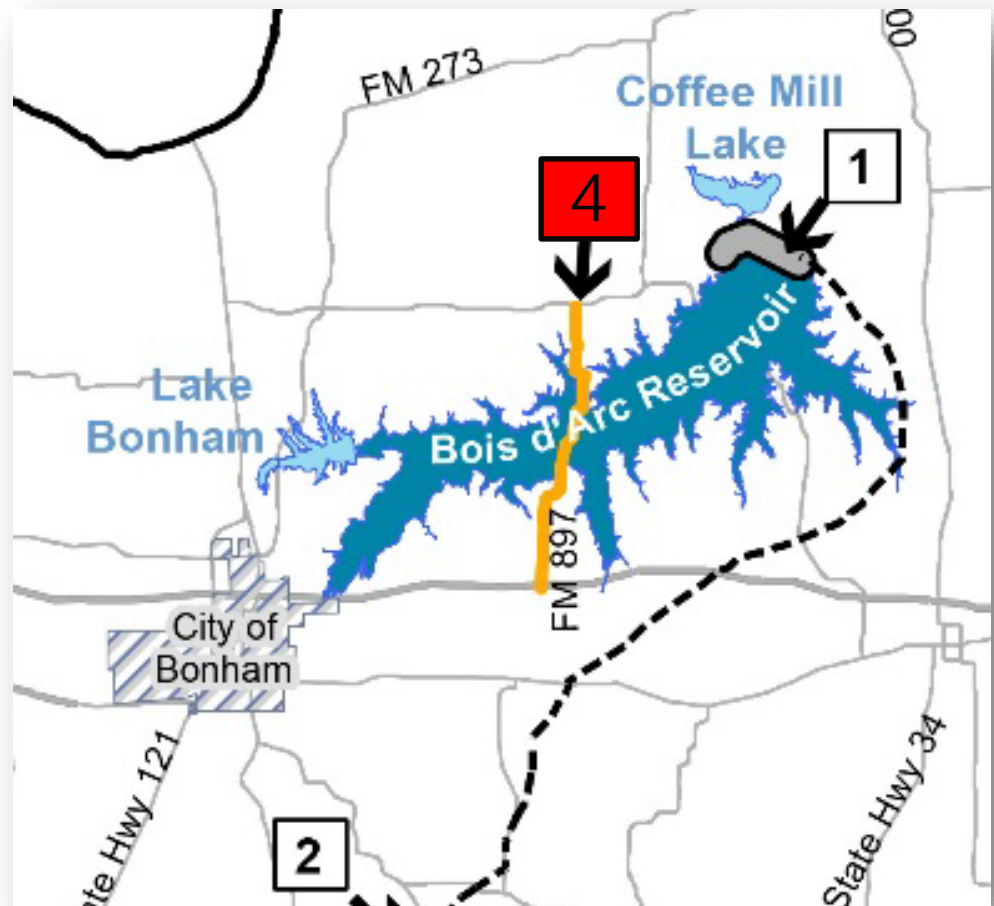
- Located on 662-acre property just west of City of Leonard
- Initial treatment capacity of up to 70 million gallons per day
- Ability to expand capacity to meet future needs



Proposed Lower Bois d'Arc Creek Reservoir

PROJECT COMPONENTS: Road Improvements and Bridge (4)

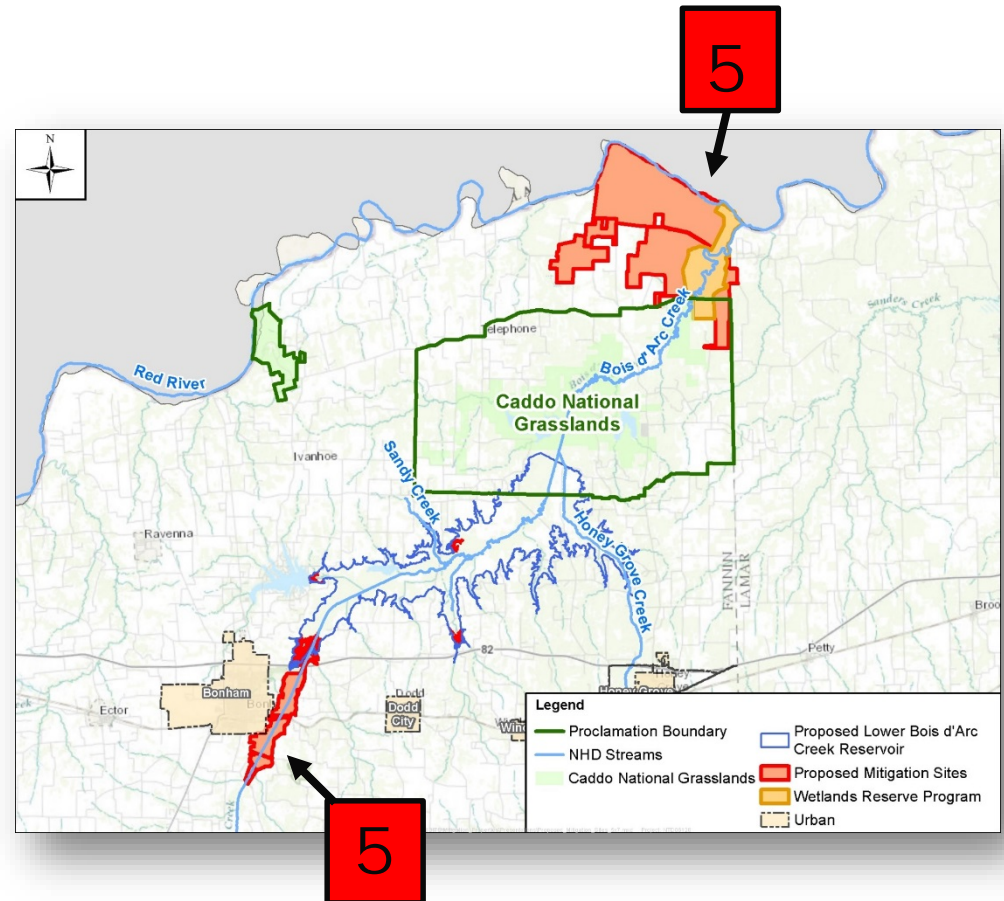
- Working with TX DOT and County on plans
- Existing FM 1396 will be re-routed across lake as new FM 897 right-of-way to U.S. 82
- New bridge will be constructed over lake for north-south access
- Smaller roadways around lake will be adjusted to improve navigation



Proposed Lower Bois d'Arc Creek Reservoir

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





ENVIRONMENTAL IMPACT STUDY

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.



PROPOSED LOWER BOIS D'ARC CREEK RESERVOIR

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

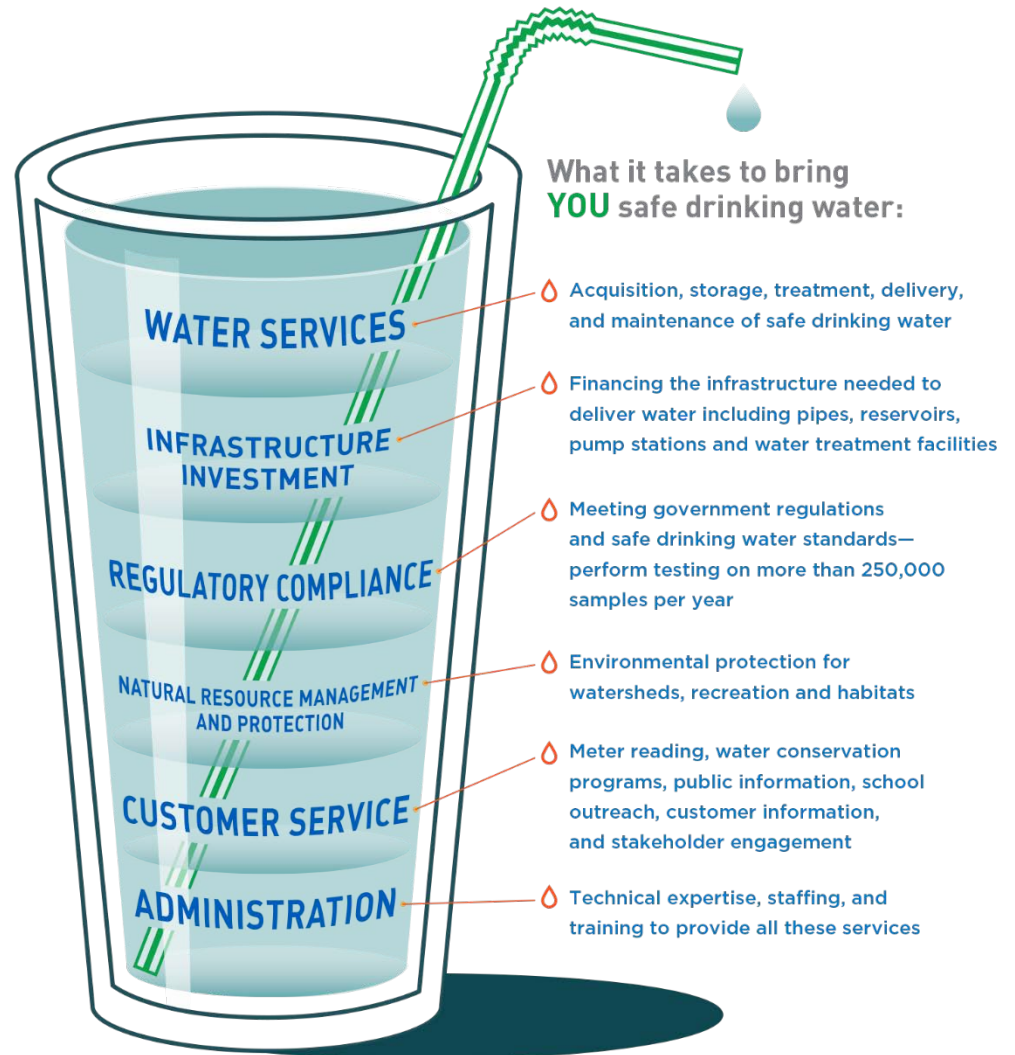
- Encouraging local participation in reservoir projects
- Over 200 attended summer events in Fannin County
- Contractor info posted on NTMWD.com for upcoming opportunities





WATER RATES PAY FOR #MORETHANWATER

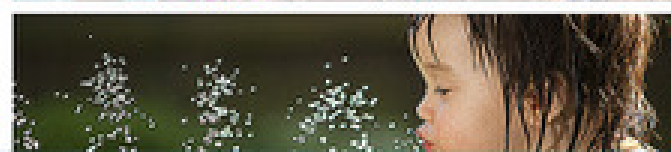
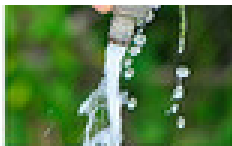
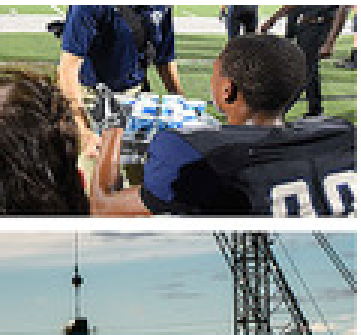
- Working to inform consumers about **VALUE OF WATER**
- Watch **Journey of Water** video on NTMWD.com
- Paying for water **SERVICE**, not a commodity
- Essential for public health & safety
- Vital for economic prosperity





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



#MORETHANWATER


Supporting where you live, work and play



RESOURCES

More info at www.NTMWD.com

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News Stream Project Pipeline

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