NORTH TEXAS MUNICIPAL WATER DISTRICT

Regional Service Through Unity

Meeting our Region's Needs Today and Tomorrow

City of Josephine

February 12, 2024

Overview

- Who We Are
- Overview of Services
- Monofil Project Information
- Water Treatment Process
- Project Timeline

NORTH TEXAS MUNICIPAL WATER DISTRICT

Regional. Reliable. Everyday.

OUR VISION

Regional Service Through Unity:
Meeting Our Region's Needs
Today And Tomorrow

OUR MISSION

Provide high quality and dependable water, wastewater and solid waste services in a cost-efficient manner

OUR GOALS

SERVICE
Provide superior water, wastewater and solid waste services today and tomorrow

STEWARDSHIP
Responsibly manage public resources to ensure responsiveness, effectiveness and efficiency

PARTNERSHIP
Actively collaborate with members, customers, partners, employees and stakeholders

PEOPLE
Build a talented, competent and committed team

OUR CORE VALUES

INTEGRITY
We are honest, transparent and accountable for what we say and do.

TRUST
We are relied on to serve our customers' best in interest.

RESPECT
We treat others fairly and with courtesy and kindness.

UNITY
We do what's best for our region – all-in together!

SAFETY
We look out for each other to prevent accidents and protect public health and environment.

TEAMWORK
We cooperate and collaborate to meet our region's needs.

NTMWD – AT A GLANCE

2+ MILLION POPULATION SERVED

2,220 SQAURE MILES SERVED

WATER SERVICES

20

MAJOR RAW & TREATED WATER PUMPS STATIONS

7

WATER TREATMENT PLANTS
946 MGD CAPACITY
(MILLIONS GALLONS/DAY)

695+
MILES

WATER TRANSMISSION PIPELINES

WASTEWATER SERVICES

13

WASTEWATER TREAMENT PLANTS

237+
MILES

LARGE-DIAMETER WASTEWATER PIPELINES

163+
MGD

WASTEWATER TREATMENT CAPACITY MGD
(MILLION GALLONS/DAY)

SOLID WASTE SERVICES

3

TRANSFER STATIONS
PERMITTED TO PROCCESS UP TO 3,370 TONS OF SOLID WASTE A DAY

UP TO 4,100

TONS OF SOLID WASTE PER DAY

1M
(MILLION)

TONS/ YEAR ACCEPTED AT LANDFILL

WATER ESSENTIAL FOR ECONOMIC GROWTH

NTT Data -Garland

General Dynamics – Mesquite

PGA – Frisco

U.S. CENSUS

Collin, Denton counties among top 10 in growth

The Dallas Morning News

Kaufman County is the fastest growing county in the country

Dec 28, 2022

Workers build a house in Collin County. Collin and Denton counties were in the top 10 U.S. counties for population growth last year, according to census data. Among metros, Dallas-Fort Worth was the nation's leader in population growth, adding 97,290 residents.

More than houses going up

By MICHAEL WILLIAMS

Collin and Denton counties were among the top 10 counties in the U.S. for population growth last year, according to data from the U.S. Census Bureau.

Five of the last year's top 10 largest-gaining counties — Collin at No. 2, Fort Bend (No. 4), Williamson (No. 5), Denton (No. 6) and Montgomery (No. 8) — were in Texas. Those five counties grew by nearly 150,000 residents combined, the bureau reported.

Across the country, 65.6% of counties experienced population growth from domestic migration. At the same time, 73% of counties experienced population decline from natural causes, meaning the number of deaths in a given county was greater than the number of births.

Harris County and Dallas County remained the nation's third- and ninth-largest counties with populations of 4.7 million and 2.6 million residents, respectively. Dallas County lost just under 25,000 residents last year, while Harris County lost about 4,500.

The trend in natural population decline was fueled by increased mortality — owing largely to the COVID-19 pandemic — as well as an aging population and a drop in births.

"You have more older Americans, and birth rates are low so you don't have many children being born," said Kenneth Johnson, a senior demographer at the University of New Hampshire. "And then along comes COVID, and it hits older adults the most, often in rural areas without access to good health care.

"It's like a perfect storm, if you

See DATA Page 3A

Homes brand.

Green Brick Partners

RESIDENTIAL REAL ESTATE

Over 1,900 homes planned in Collin

Green Brick Partners buys Princeton land for houses to buy, rent

By MITCHELL PARTON
Staff Writer

The community will include up to 1,762 single-family homes for sale, 225 single-family homes for rent, parks and about 4 acres of commercial property. Green Brick in the Princeton area, according to Green Brick.

"As we look for new opportunities, we really felt like this was one of the last big opportunities in Princeton," Dolson

tually have more than 2,300 homes — will begin this summer.

Jordan Cortez and Mason John of Dallas-based real estate advisory and capital mar-

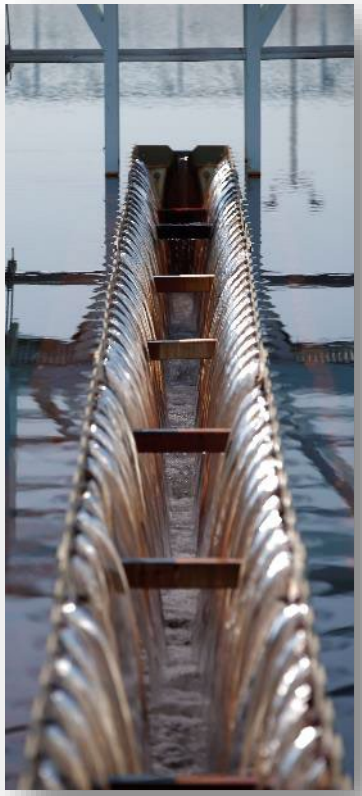
Crossroads - Princeton

Gateway Oaks– Forney

Del Webb Trinity Falls – McKinney

Overview

- Who We Are
- Overview of Services
- Monofill Project Information
- Water Treatment Process
- Project Timeline



RJ. Muraski
Assistant Deputy Planning/CIP

WATER SERVICES

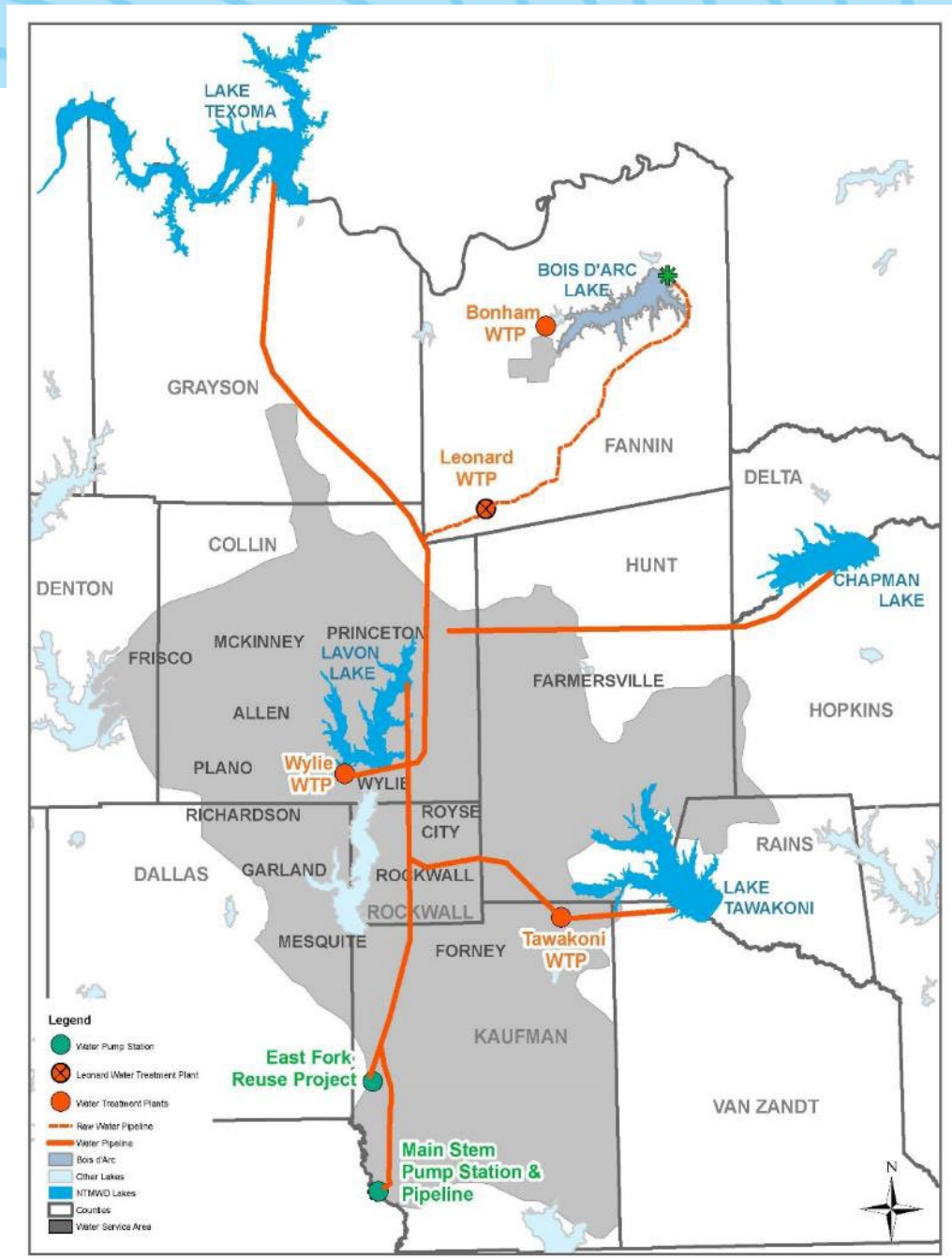
- **Existing Water Supply Sources**
  - Lavon Lake
  - Bois d'Arc Lake
  - Lake Texoma
  - Lake Tawakoni
  - Jim Chapman Lake
  - Reuse/Wetland (East Fork and Main Stem)

- **Wylie Water Treatment Plant**
  - Wylie WTP I — 70 MGD
  - Wylie WTP II — 280 MGD
  - Wylie WTP III — 280 MGD
  - Wylie WTP IV — 210 MGD

  TOTAL 840 MGD

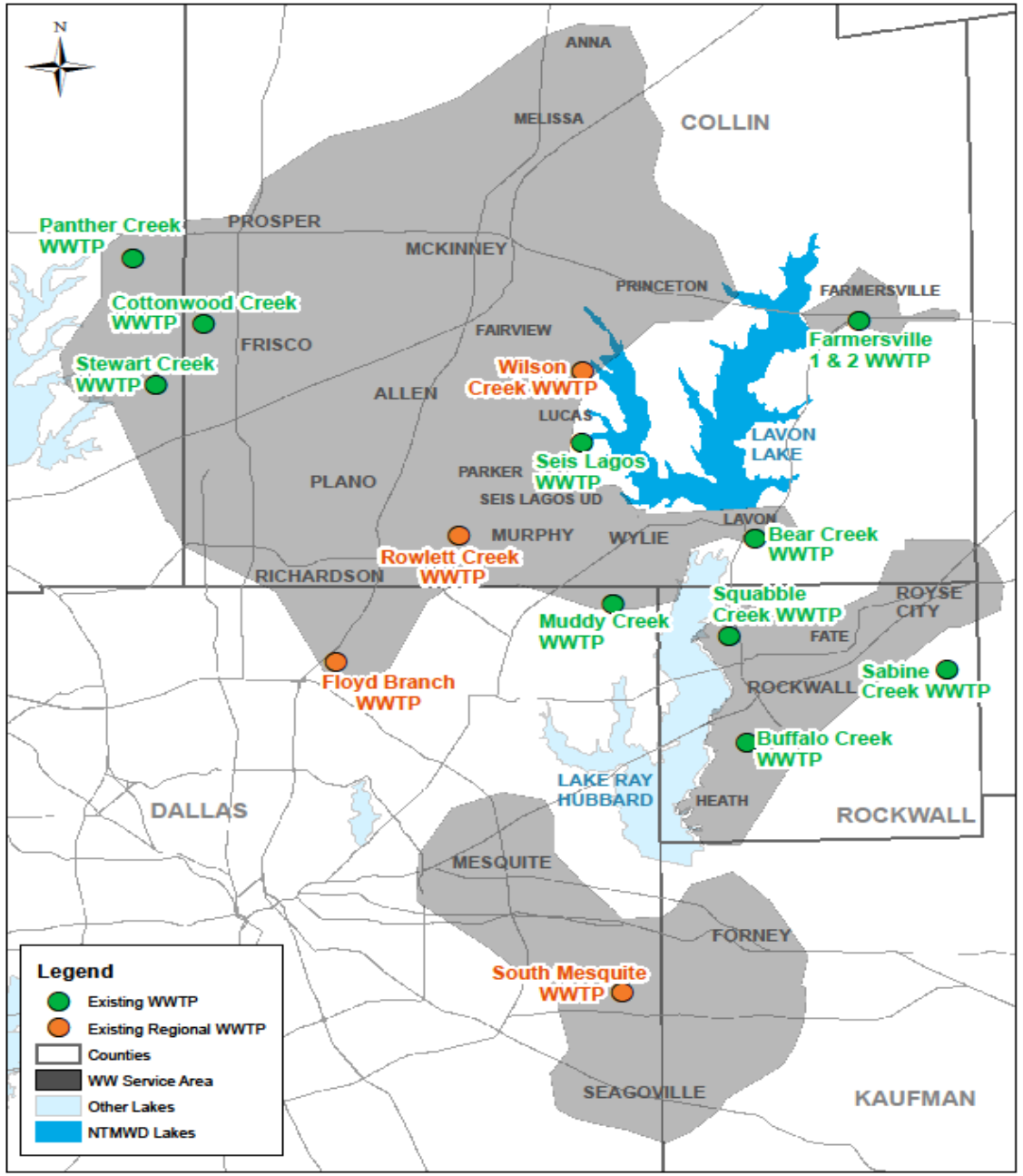
- **Leonard Water Treatment Plant** — 70 MGD
- **Bonham Water Treatment Plant** — 6 MGD
- **Tawakoni Water Treatment Plant** — 30 MGD

TOTAL PERMITTED CAPACITY 946 MGD



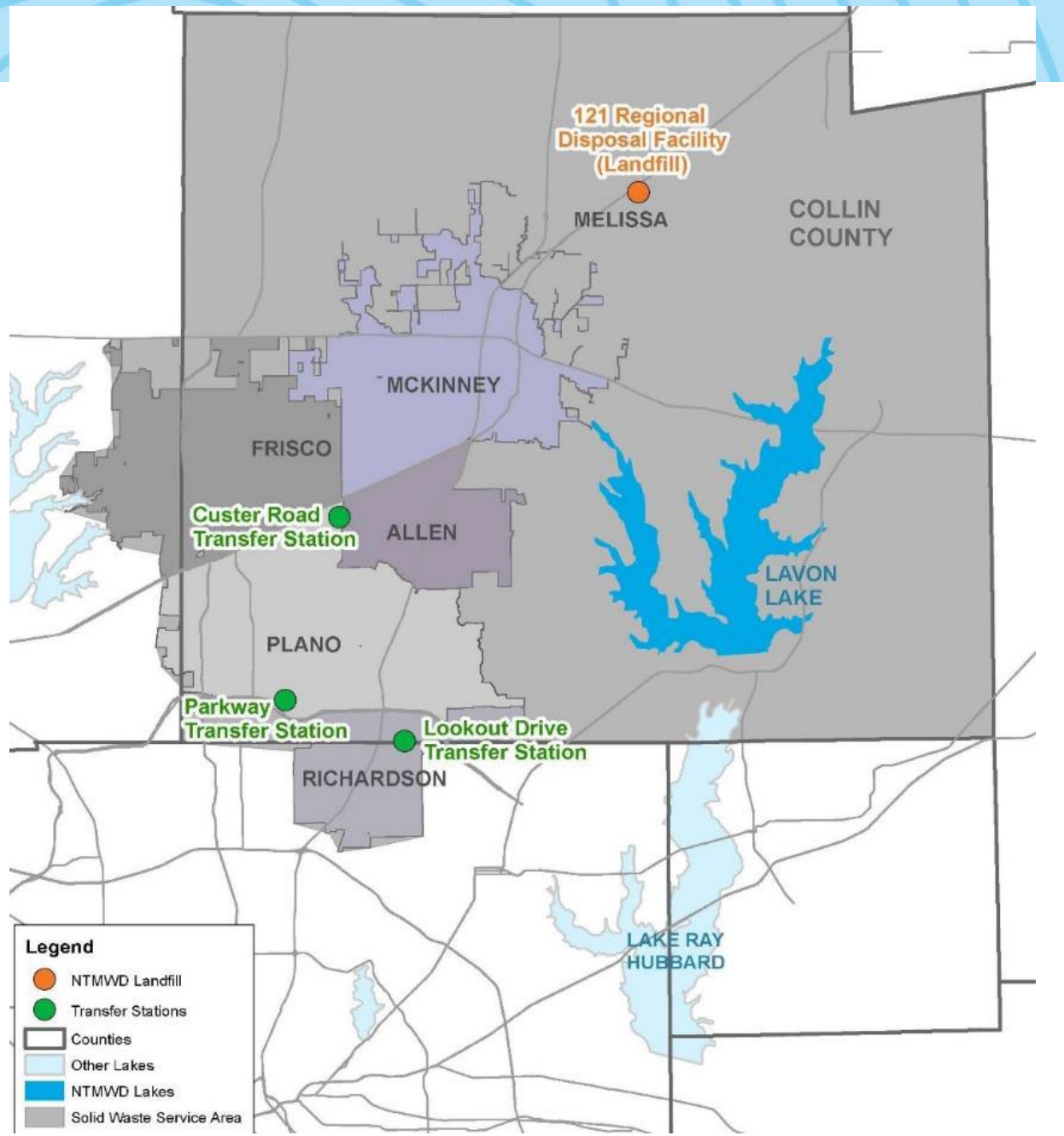
WASTEWATER SERVICES

- **Regional Wastewater System**
  - Wilson Creek WWTP 64.00 MGD
  - South Mesquite WWTP 33.00 MGD
  - Rowlett Creek WWTP 24.00 MGD
  - Floyd Branch WWTP 4.75 MGD
  - TOTAL 125.75 MGD
- **Sewer System Plants**
  - Number of Sewer System Plants in Operation: 9
  - Total Sewer System Capacity: 34 MGD
  - Each plant is a separate, independent system and contracts
- **Total Wastewater Treatment Capacity: 159.45 MGD**



SOLID WASTE SYSTEM

- **Entities Served**
  - **Allen, Frisco, McKinney, Plano, Richardson & surrounding region**
- **Transfer Stations: 3**
  - **Transfer Station Throughput: 4,100 tons/day**
- **Landfill: 121 Regional Disposal Facility (Melissa)**
  - **Site Capacity – 134,800,000 cubic yards**
  - **Permitted Area – 673 acres**
  - **Permitted Fill Area – 433 acres**
  - **Approximate Site Life – 38 years**
  - **Waste acceptance – 3,800 tons/day**



Overview

- Who We Are
- Overview of Services
- Monofill Project Information
- Water Treatment Process
- Project Timeline

RJ Muraski
Assistant Deputy Planning/CIP

Zeke Campbell
Assistant Deputy Water Treatment and Conveyance

MONOFILL SITE PROJECT

What is a Monofill Site?

- Designated for only one specific type of by-product
- This Monofill is for residuals from the Water Treatment Process

NTMWD applied for permits for the Monofill Site

- Permit is for residual disposal at the Monofill site (May 2021)
- Design of the site is scheduled to begin in 2028; dependent on any changes with the land application
- Began permitting to reduce future uncertainty

MONOFILL SITE PROJECT BACKGROUND

- Member cities and communities in Collin County are growing rapidly
  - 2.2 Million North Texas served by NTMWD
- NTMWD must plan and construct the infrastructure and processes required to meet future growth
- NTMWD purchased 410 acres in 2011 near Josephine for a site to place residuals from the water treatment process
- NTMWD submitted an application to the Texas Commission on Environmental Quality (TCEQ) for the construction of a Monofill site
  - Dispose of material in the most economical fashion
  - Reclaim land at the Wylie Water Treatment Plan for future needs

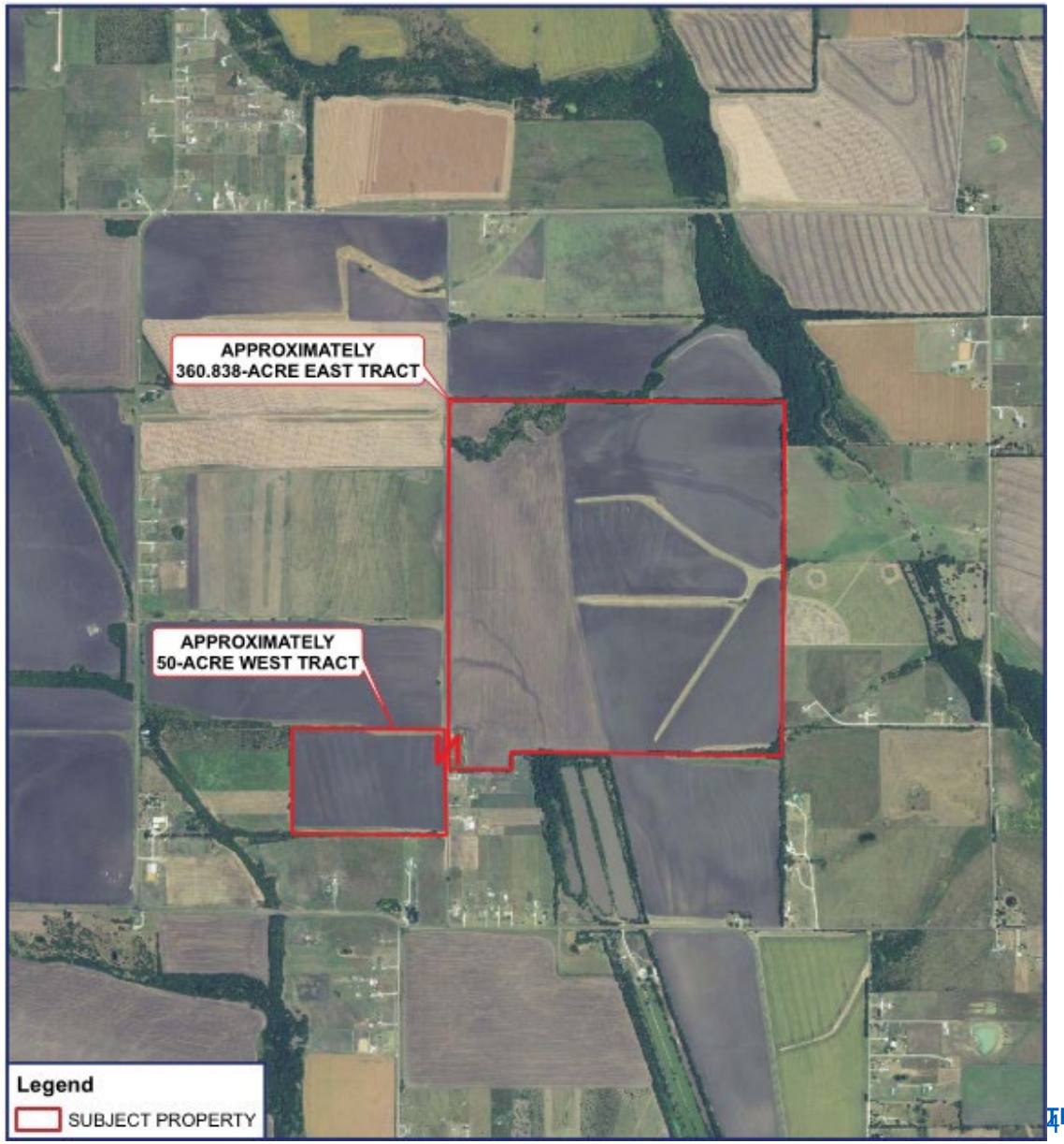
Our Goal – Be a good neighbor by planning and constructing a facility with proven technologies that align with industry best practices and blend with the surrounding community.

MONOFILL SITE PROJECT BACKGROUND

PROJECT OVERVIEW

- Project includes
  - Permits to build site
  - Site to dewater and stockpile residual material from Wylie Water Treatment Plant
  - Pipeline to convey residuals from the Water Treatment

MONOFILL SITE (410 ACRES NORTH OF CITY OF JOSEPHINE)



CONCEPTUAL PIPELINE ALIGNMENT TO MONOFILL SITE

Overview

- Who We Are
- Overview of Services
- Monofill Project Information
- Water Treatment Process
- Project Timeline Process

Zeke Campbell
Assistant Deputy Water Treatment and Conveyance

NTMWD WATER TREATMENT PROCESS

RAW WATER PUMPED

LAKE WATER PUMPED TO WATER TREATMENT PLANTS VIA PUMP STATIONS

WATER TREATMENT

WATER MIXED WITH FERRIC SULFATE TO REMOVE SEDIMENT, DIRT AND DEBRIS FROM LAKE WATER

CLEAN WATER STAYS ON TOP; SEDIMENT DROPS TO BOTTOM OF BASIN AND IS REMOVED

PRIMARY DISINFECTION USING OZONE TREATMENT

SECONDARY DISINFECTION OF WATER USING CHLORAMINES OR CHLORINE

FILTRATION

WATER FILTERED TO REMOVE ANY LAST PARTICLES

END USER

CLEAN TREATED WATER DISTRIBUTED TO CITIES-CHLORAMINES ADDED TO MAINTAIN QUALITY WITHIN SYSTEM

Rev. May 2019

CURRENT WATER TREATMENT PROCESS

Current Treatment Process and Residuals

- Raw water from Lavon Lake is pumped into plant
- Mixed with Ferric sulfate in sedimentation basin

Coagulation

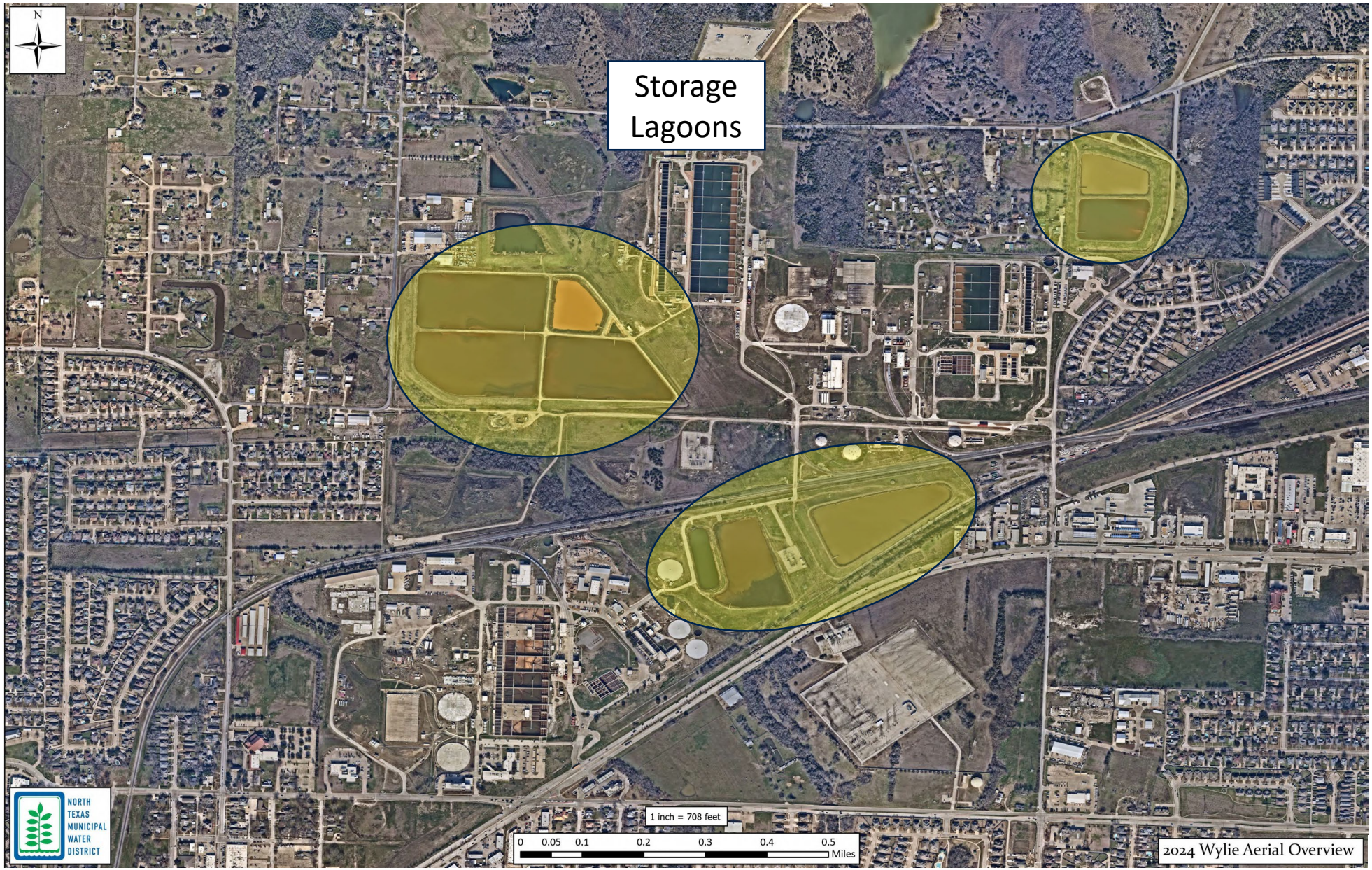
- Ferric Sulfate attaches to suspended solids

Flocculation

- Coagulated particles clump together and sink to bottom as sediment
- Suspended material settles to bottom and is pumped to storage lagoons

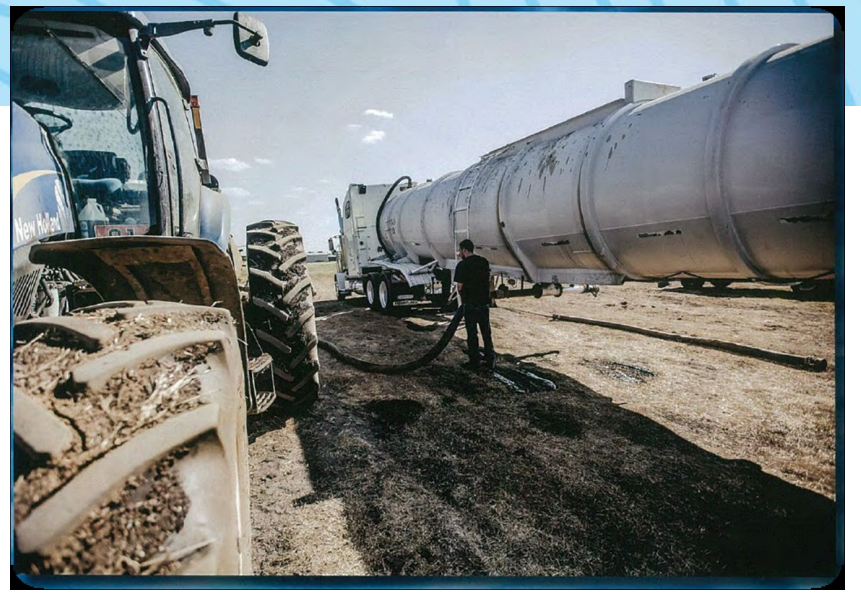
- Once lagoons are filled, dried sediment is hauled off to be used as an iron-rich soil enhancer for agricultural use.
- Lagoons **take up a large amount of real estate** on plant site

STORAGE LAGOONS ON WYLIE WATER TREATMENT PLANT



CURRENT DISPOSAL METHOD

Current residuals are pumped from the Lagoons on the Wylie Water Treatment plant campus, trucked and land applied.



FUTURE WATER TREATMENT PROCESS

Future Treatment Process and Residuals

- Raw water from Lake Lavon pumped into plant
- Mixed with Ferric sulfate in sedimentation basin

Coagulation

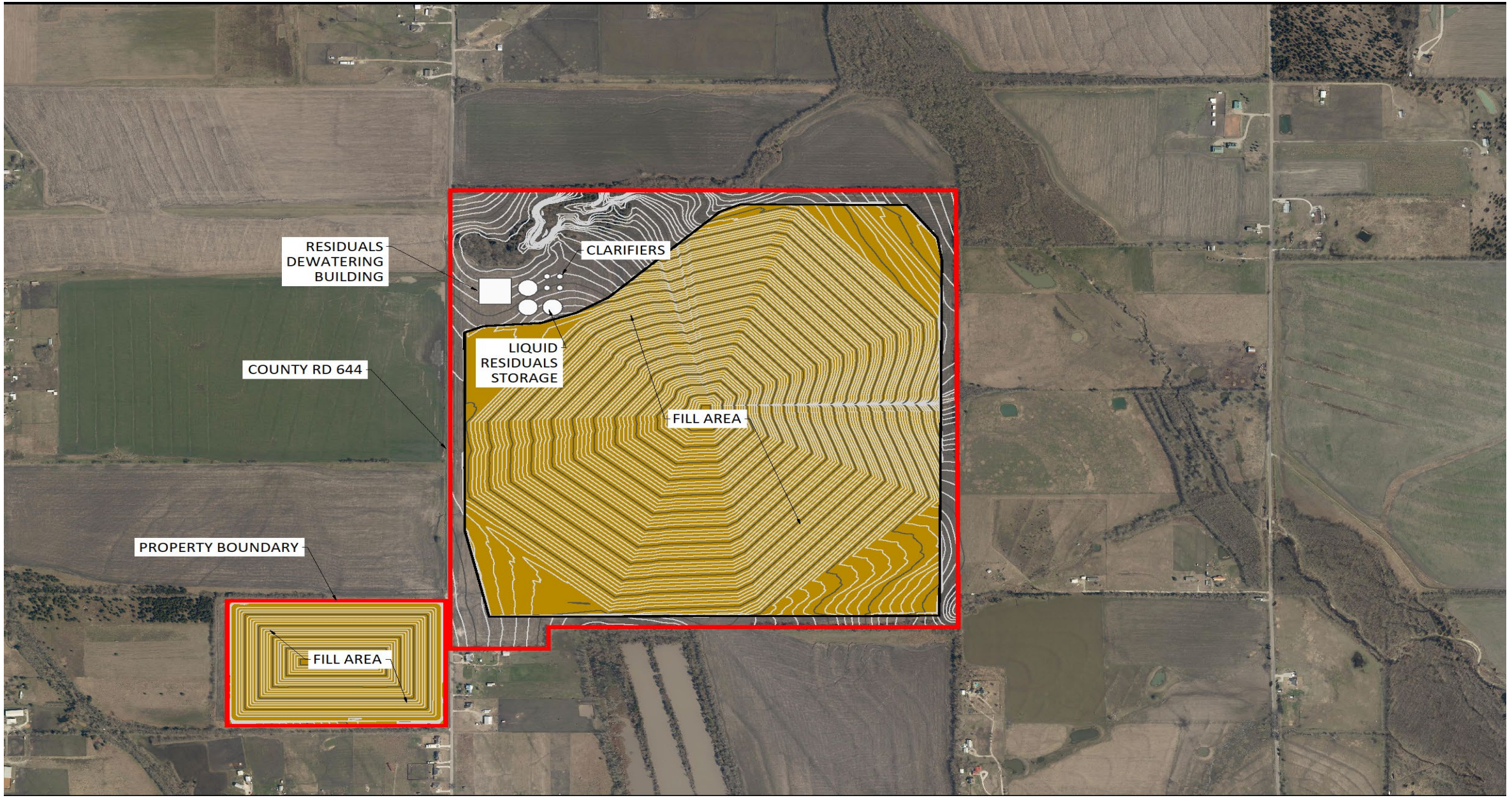
- Ferric Sulfate attaches to suspended solids

Flocculation

- Coagulated particles clump together and sink to bottom as sediment
- Suspended material settles to bottom and **pumped to Monofill Site** where material dried and placed at this site

- Currently Plan to continue to land apply until it becomes economically unfeasible
- Lagoons **take up large amount of real estate** on plant site

MONOFILL SITE CONCEPTUAL LAYOUT



REGULATORY COMPLIANCE

NTMWD Regulatory Compliance

- NTWMD meets or exceeds all regulatory requirements
- The EPA and TCEQ are responsible for establishing health-based and environmental regulations

Future PFAS Regulations

- PFAS are widespread, common chemicals present in numerous everyday household items like clothing, food packaging, and cookware.
- PFAS have also been detected across the country in air, soil, and water.
- Scientific knowledge about PFAS is rapidly evolving and the EPA is working to establish health-based regulations for PFAS.
- NTMWD is monitoring laboratory tests from our service area conducted under the EPA's testing program for PFAS. So far, the levels of PFAS detected in local water systems do not exceed the EPA's draft standards for safe drinking water.
- Public health is our top priority, and we will continue to ensure our water quality meets or exceeds federal and state drinking water standards.
- More info on NTMWD's efforts - https://www.ntmwd.com/pfas/

MONOFILL PROJECT UPDATED TIMELINE

NTMWD will continue to land apply residuals, timeline is estimate.

NORTH TEXAS MUNICIPAL WATER DISTRICT

Regional. Reliable. Everyday.

Thank you.

Learn more about the project at

https://www.ntmwd.com/projects/ntmwd-water-treatment-residuals-monofill/

www.NTMWD.com

@NTMWD