



NORTH  
TEXAS  
MUNICIPAL  
WATER  
DISTRICT

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



# WASTEWATER COMMITTEE MEETING

February 23, 2022 (Via Videoconference)



## AGENDA

### ACTION ITEMS

- A. Consider Approval of Wastewater Committee meeting minutes – October 27, 2021
- B. Authorize execution of an engineering services agreement for the Wilson Creek Regional Wastewater Treatment Plant Primary Clarifiers, UV, and Centrifuge Improvements project - Administrative Memorandum No. 5810
- C. Authorize award of construction contract and internal inspection services for the North McKinney Parallel Interceptor project - Administrative Memorandum No. 5811

### DISCUSSION ITEMS

- A. Discuss Stewart Creek West Wastewater Treatment Plant Primary Clarifier and Blower Improvements
- B. Discuss Easement Exchange Agreement with Dallas Area Rapid Transit
- C. Discuss Sister Grove Regional Water Resource Recovery Facility Grayson Collin Electric Cooperative electric services agreement
- D. Discuss City of Plano Reuse Agreement
- E. Update from Pretreatment meeting with City of Richardson
- F. Opportunity for Committee members to provide feedback on Wastewater Committee meeting
- G. Opportunity for Committee members to request potential future agenda items



# AGENDA

## Opening Remarks

- A. Chairman/Executive Director/Committee Champion Status Report concerning legislation and regulatory matters, budgets, current projects and ongoing Wastewater System programs of the District



# AGENDA

## Action Items

- A. Consider Approval of Wastewater Committee Meeting Minutes – October 27, 2021**

**Recommend Approval of Wastewater Committee Meeting Minutes**



## AGENDA

### Action Items

#### **B. Authorize execution of an engineering services agreement for the Wilson Creek Regional Wastewater Treatment Plant Primary Clarifiers, UV, and Centrifuge Improvements project - Administrative Memorandum No. 5810**

- Consider recommendation on authorizing the Executive Director to execute an engineering services agreement with Brown and Caldwell, Inc. in the amount of \$2,012,925 for the preliminary engineering design for Project No. 301-0606-22, Wilson Creek Regional Wastewater Treatment Plant, Primary Clarifiers, UV, and Centrifuge Improvements

*What: Authorize funding for engineering services for the preliminary design of Wilson Creek Regional Wastewater Treatment Plant (RWWTP) Primary Clarifier, UV, and Centrifuge Improvements project.*

*Why: The Wilson Creek Masterplan outlined condition and reliability improvements to be completed in two phases. The first phase includes aeration basin repairs, additional centrifuge solids processing capacity, replacement of three ultraviolet light disinfection trains and replacement of primary clarifier components, which are consistent with Strategic Goal 1.1 High Quality Services, Goal 1.4 Reliable and Resilient System Capacity.*



# WILSON CREEK PRIMARY CLARIFIERS, UV, AND CENTRIFUGE

## Background

- **Plant 1 was placed in operation in 1986**
- **Primary clarifier covers were constructed in 1999.**
- **UV trains 601, 602 and 603 were placed in service in 2004**
- **The existing blowers are old and require extensive and costly maintenance.**
- **Centrifuges were added at the last expansion in 2020 with the old belt filter presses as back-up units.**

**The Master Plan recommended condition and reliability improvements based on risk and safety needs**



UV 601 – 603 were the first UV units installed at Wilson Creek.



# WILSON CREEK PRIMARY CLARIFIERS, UV, AND CENTRIFUGE

## Project Components

### Preliminary Design for:

- Plant 1 primary clarifier improvements
- Plant 1 blower building improvements
- Plant 1 aeration basin instrumentation and controls
- Plant 1 aeration basin structural repairs
- Plant 1 new aeration control building
- Ultraviolet (UV) disinfection improvements
- Addition of one centrifuge
- Removal of drain pump station



Blower Building 1 has older blowers with limitations in their operation and no HVAC for the building



Significant corrosion of stairs atop Plant 1 – South primary tanks



# WILSON CREEK PRIMARY CLARIFIER, UV, AND CENTRIFUGE

## Preliminary Engineering Services

### Brown and Caldwell, Inc.

- **Founded in 1947 in California; operating in Texas since the 1980s**
- **More than 1800 professionals nationwide focused exclusively on the water industry**
- **Engineering News Record ranks Brown and Caldwell, Inc. as the #3 firm in the U.S. in wastewater treatment**
- **Key personnel experienced and familiar with NTMWD**





## RECOMMENDATION

**The Executive Director and NTMWD staff recommend the Board of Directors authorize the Executive Director to execute an engineering services agreement as follows:**

**Consultant: Brown and Caldwell, Inc.**

**Scope: Preliminary engineering design**

**Project: No. 301-0606-22, Wilson Creek Regional Wastewater Treatment Plant, Primary Clarifiers, UV, and Centrifuge Improvements**

**Amount: \$2,012,925**



## AGENDA

### Action Items

#### **C. Authorize award of construction contract and internal inspection services for the North McKinney Parallel Interceptor project - Administrative Memorandum No. 5811**

- Consider recommendation on authorizing award of construction contract to McKee Utility Contractors, Inc. in the amount of \$10,084,531 and internal inspection costs in the amount of \$212,000 for Project No. 501-0504-18, North McKinney Parallel Interceptor

*What: Award a construction contract and authorize internal inspection services for the North McKinney Parallel Interceptor project.*

*Why: The North McKinney & Wilson Creek Sub-Basin Improvements study found that additional conveyance capacity is needed in the Upper East Fork Interceptor System to meet current and projected peak flow conditions through 2035, which is consistent with Strategic Goal 1.1 High Quality Services and Goal 1.4 Reliable and Resilient System.*



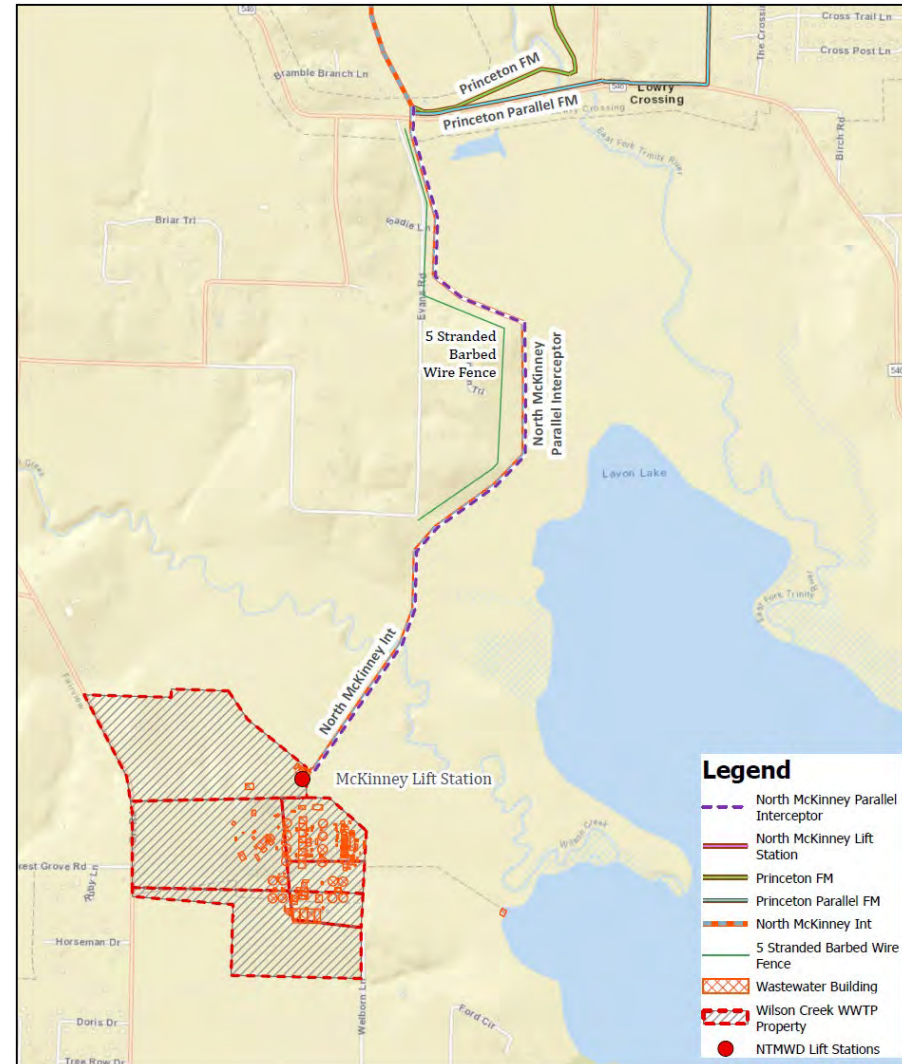
# NORTH MCKINNEY PARALLEL INTERCEPTOR

## Project Purpose

- Provide additional conveyance capacity up to 54 MGD

## Project Components

- 11,600 feet of 48" to 66" interceptor from FM 546 to the McKinney Lift Station at the Wilson Creek RWWTP
- Parallel 4" conduit for future fiber optic communication cable
- Complete USACE mitigation requirements for the granting of an easement to NTMWD
- 18 months construction duration from Notice to Proceed to Final Completion





# NORTH MCKINNEY PARALLEL INTERCEPTOR

## Tabulation of Bids

Bidder	Bid Amount
<b>McKee Utility Contractors, Inc.</b>	<b>\$10,084,531.50</b>
<b>Mountain Cascade of Texas, LLC</b>	<b>\$10,647,143.50</b>
<b>Belt Construction of Texas, LLC</b>	<b>\$11,078,186.00</b>
<b>ARK Contracting Services, LLC</b>	<b>\$21,789,054.00</b>
<b>Engineers Opinion of Probable Construction Cost</b>	<b>\$12,554,020.00</b>

- McKee Utility Contractors, Inc., lowest responsible bidder
- McKee has completed and is currently constructing a total of 6 NTMWD projects of similar scope

## Construction Inspection Services

Construction Inspection Services	Cost
<b>Internal construction inspection services</b>	<b>\$212,000.00</b>



## RECOMMENDATION

**The Executive Director, NTMWD staff, and Teague, Nall, and Perkins, Inc., recommend the Board of Directors authorize the award of a contract as follows:**

**Contractor: McKee Utility Contractors Inc.**

**Scope: Construction**

**Project: No. 501-0504-18, North McKinney Parallel Interceptor**

**Amount: Construction Contract : \$ 10,084,531.50**  
**Inspection Services: \$ 212,000.00**



# AGENDA

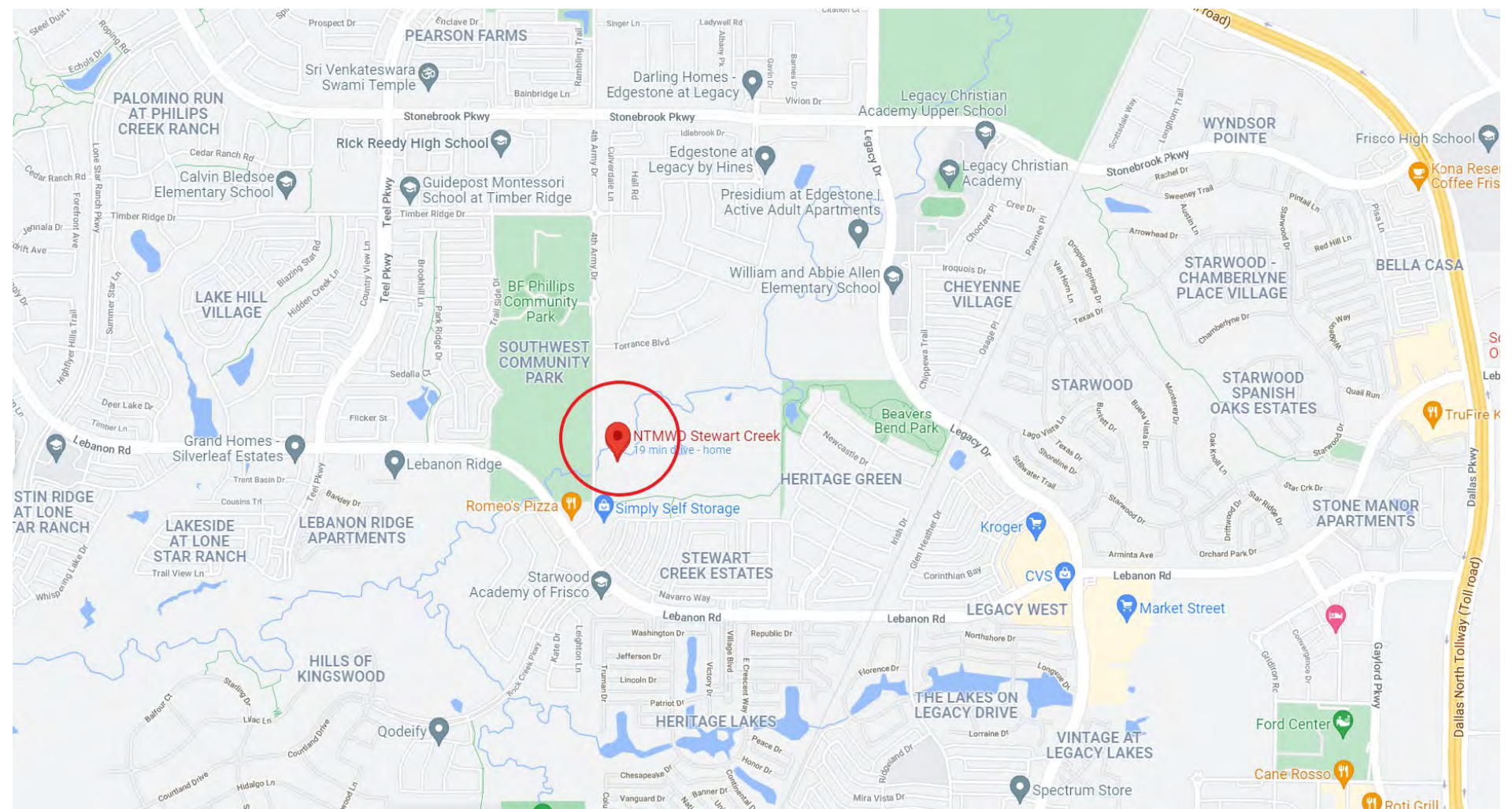
## Discussion Items

- A. Discuss Stewart Creek West Wastewater Treatment Plant Primary Clarifier and Blower Improvements**

**(Engineering agreement to be considered at March 24, 2022 Board Meeting)**



# STEWART CREEK WASTEWATER TREATMENT PLANT

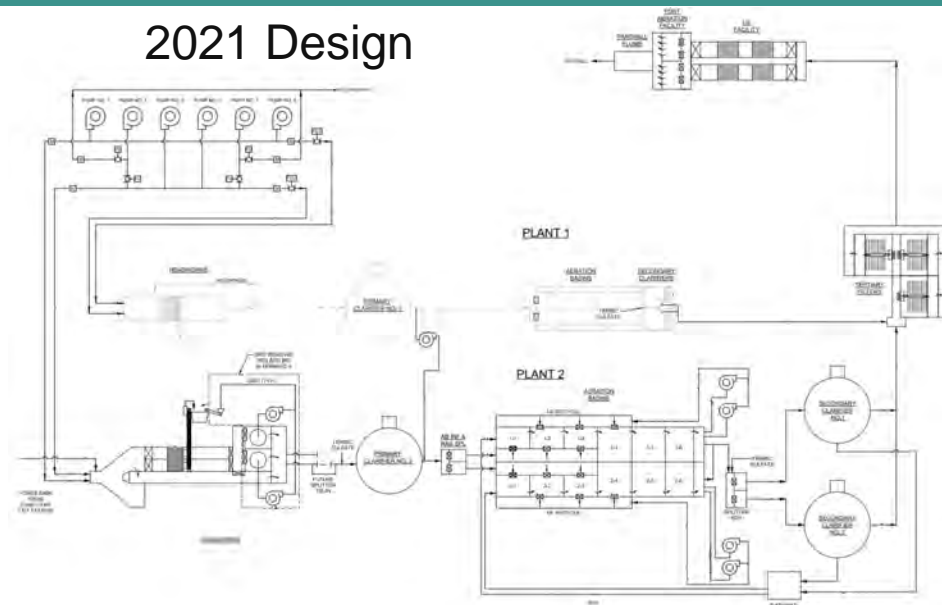
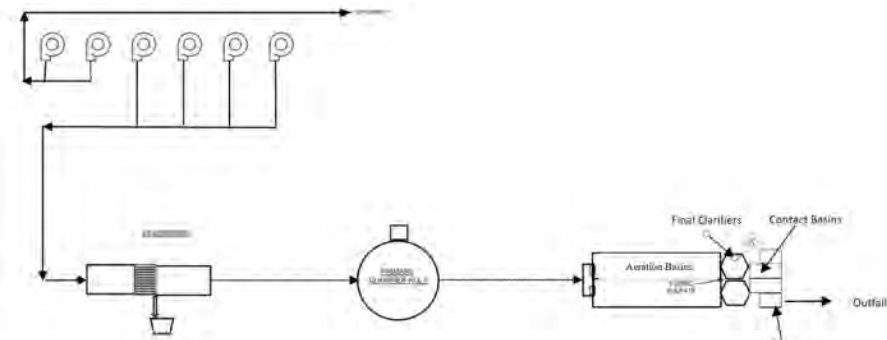




# STEWART CREEK WASTEWATER TREATMENT PLANT

## 1990 Design

## 2021 Design



## 1990

5 MGD Treatment Capacity

NTMWD takes over operation of Stewart Creek Wastewater Plant from City of Frisco (Under Construction)

Population = 6,517



## Now

10 MGD Average / 35 MGD Peak Treatment Capacity

4 MGD of Diversion Flow to Panther Creek WWTP in Frisco

Population Served = 200,490



## Future

15 MGD / 52.5 MGD Peak Treatment Capacity

To better manage flows for:

- Storm events
- System reliability

Population Buildout = 327,000



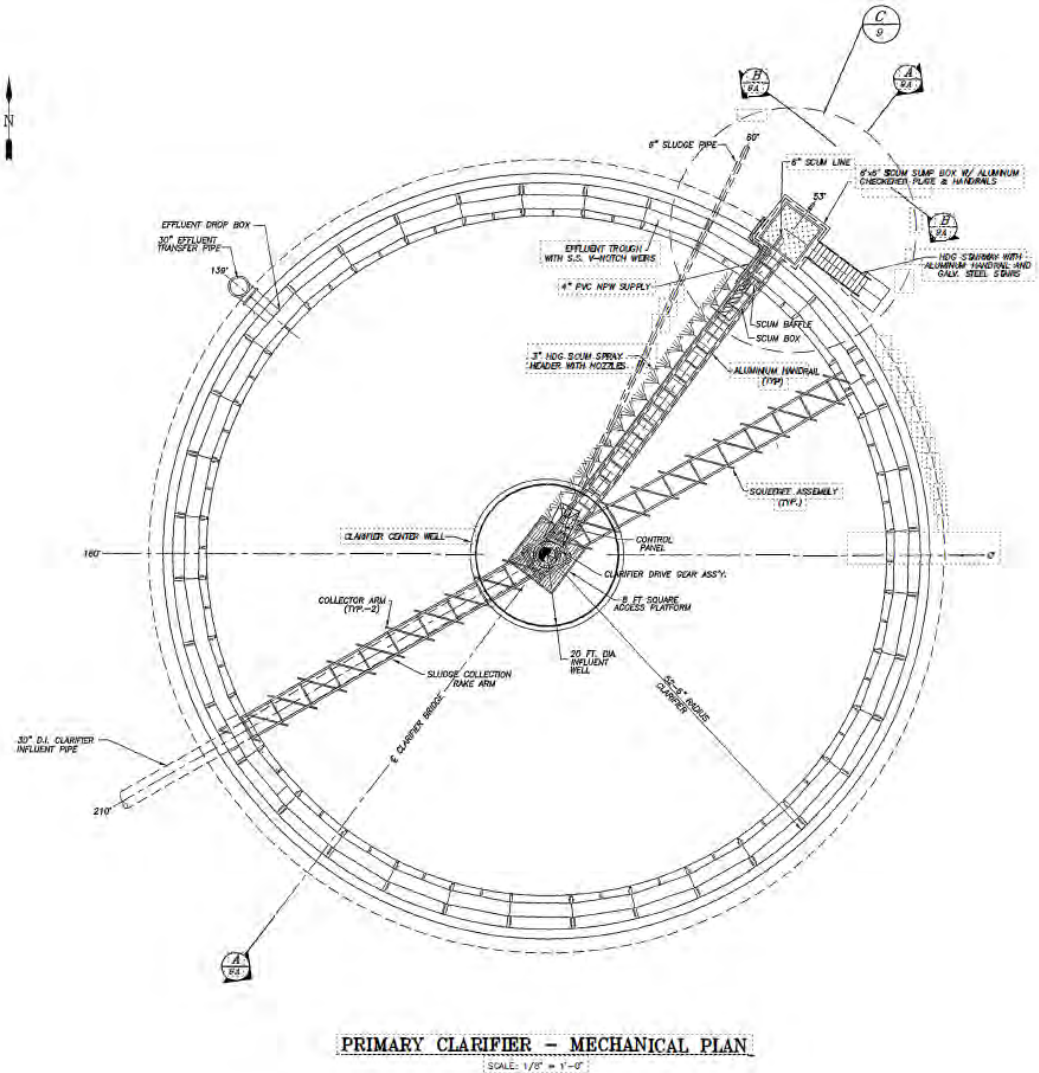


- **The Plant has two separate treatment trains; commonly referred to as Plant 1 and Plant 2**
- **The original primary clarifier for Plant 1, built in 1990 is identified in the picture and requires lifecycle repairs to the launderer and supports**



# STEWART CREEK WWTP PRIMARY CLARIFIER REPAIRS

- The Plant 1 primary clarifier was constructed in 1990 and is 105 feet in diameter
- Much of the primary clarifier was rehabbed as part of the recent 10 MGD expansion project but the dual sided launderer was identified as beyond repair





## STEWART CREEK WWTP PRIMARY CLARIFIER REPAIRS

### INITIAL ASSESSMENT

- The Primary Clarifier Launder for Plant 1 shows significant deterioration and delamination of the steel launderer, supports, and scum beach.
- The Launder was scheduled for recoating under the recent 10 MGD expansion project, but was not implemented because the risk of complete failure was too high.



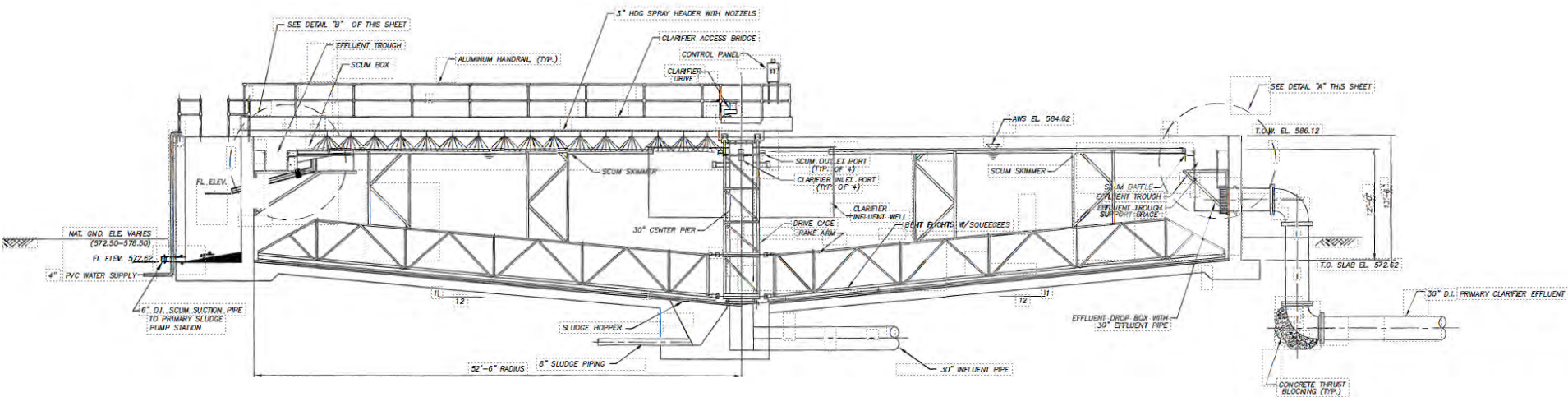
*Visible rust, corrosion, and metal delamination*



# STEWART CREEK WWTP BLOWER UPGRADE

## RECOMMENDATION

Replace launder, weirs, launder supports, scum beach, metal coatings, and other items recommended by the design engineer





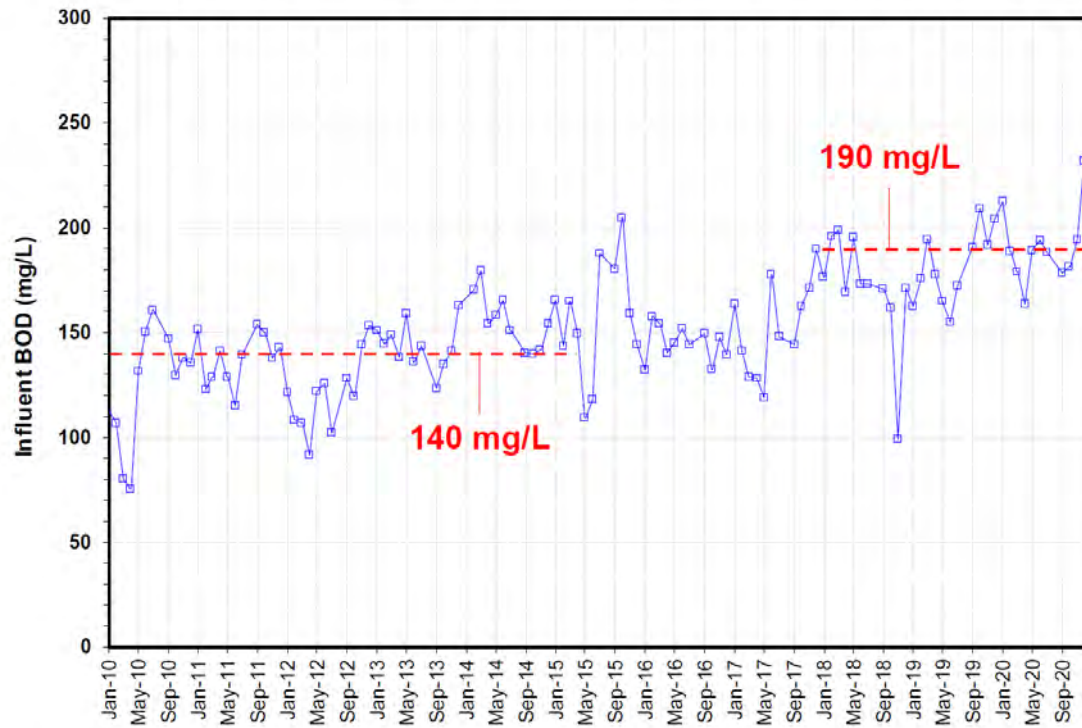
- **Blower building houses the existing three turbo blowers that provide air to the Biological Nutrient Removal (BNR) basins where TSS, BOD, Ammonia, Nitrogen and Phosphorus are removed or reduced.**



# STEWART CREEK WWTP BLOWER

## INITIAL ASSESSMENT

Raw Influent BOD<sub>5</sub> concentration increased by 36 percent compared to the historical levels used for the expansion





## STEWART CREEK WWTP BLOWER

### INITIAL ASSESSMENT

- **Two of the three installed blowers were originally designed to meet the needs of the BNR Basins, allowing one to be offline for maintenance, or serve as a back-up system**
- **The increased BOD levels require all three blowers to be operational with no back-up system**





## STEWART CREEK WWTP BLOWERS

### RECOMMENDED REPAIRS

- **Install an additional blower**
- **Redundancy to allow rotation of in-service blowers for preventative and corrective maintenance**
- **Meet peak air demands during elevated flows and loading**







## STEWART CREEK WWTP PRIMARY CLARIFIER & BLOWER

### SCHEDULE

- **Engineer Service Agreement: March Board**
  - **Estimated cost of \$326,000**
  - **Final negotiations for design services in progress**
  - **LAN selected to perform Engineering Design work**
- **Anticipated Bid Opening: October 2022**
- **Anticipated Project Award: November 2022**
  
- **Board action will be requested at the March NTMWD Board of Directors Regular Meeting**



# AGENDA

## Discussion Items

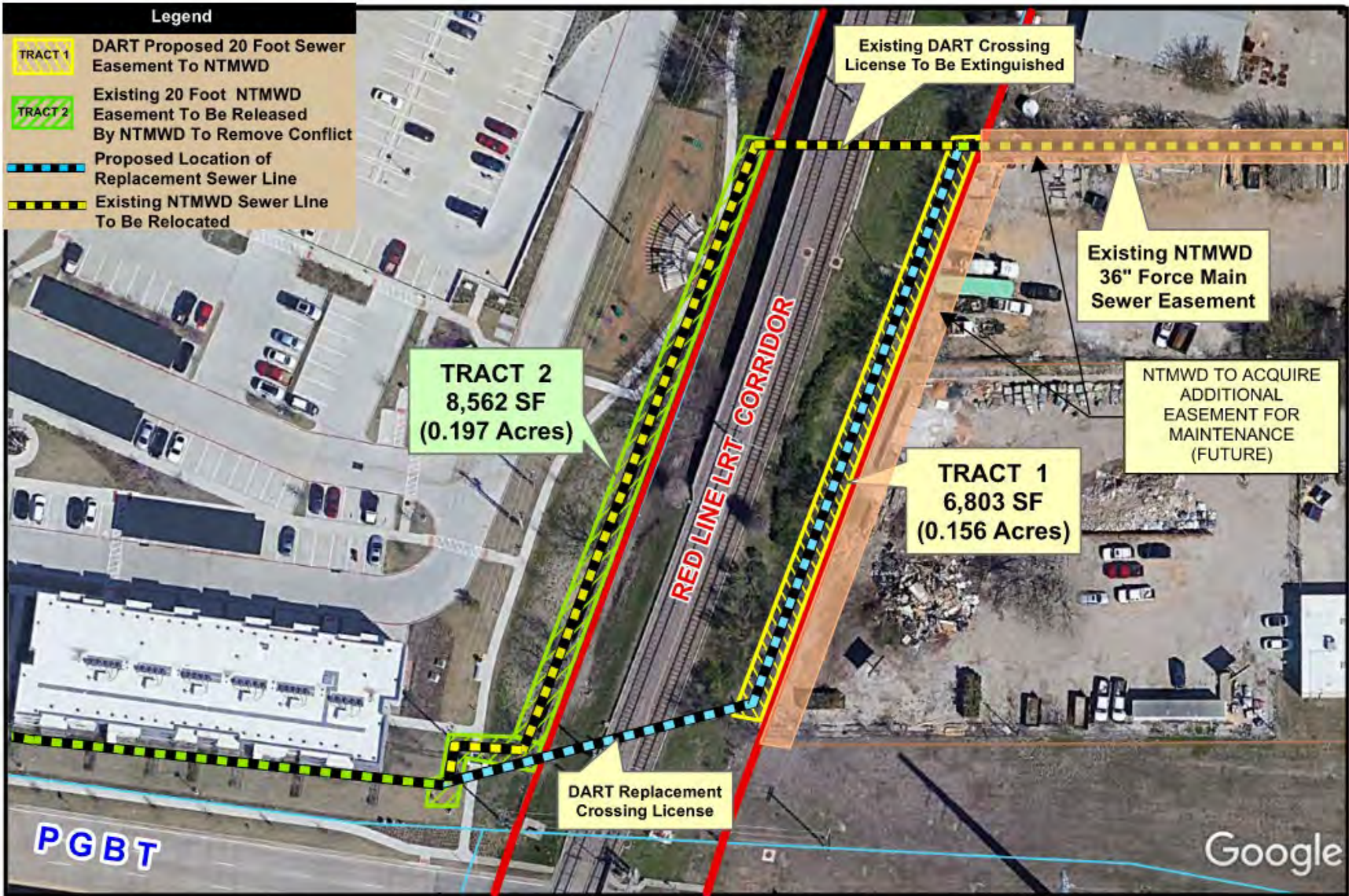
### **B. Discuss Easement Exchange Agreement with Dallas Area Rapid Transit**



## DART-NTMWD PIPELINE & EASEMENT AGREEMENT

### BACKGROUND

- **DART is constructing a new commuter rail line (Silver Line Regional Rail Project) from the City of Plano to DFW International Airport.**
- **The Silver Line will be adjacent to the west side of the existing DART Red Line Light Rail Train right-of-way just north of SH190 in Plano.**
- **Alignment of the Silver Line impacts a portion of the NTMWD's existing 36-inch Plano Spring Creek Force Main.**
- **DART is proposing to relocate the existing force main at no cost to the NTMWD.**



PLANO SPRING CREEK FORCE MAIN  
DART-NTMWD EASEMENT EXCHANGE AGREEMENT TO  
RELOCATE A PORTION OF PLANO SPRING CREEK  
FORCE MAIN FOR THE SILVER LINE RAIL PROJECT





# DART-NTMWD PIPELINE & EASEMENT AGREEMENT

## AGREEMENT RESPONSIBILITIES

- **DART**
  - Design, construct and inspect relocation of approximately 700 linear feet of 36-inch force main.
  - Convey new 20-foot permanent easement to NTMWD.
  - Abandon the existing force main as part of their construction contract.
  - Provide license agreement for new crossing within DART property.
    - No application or annual fee required.
- **NTMWD**
  - Provide reviews and perform site observations.
  - Convey existing 20-foot force main easement to DART.
- Board action will be requested at the March NTMWD Board of Directors Regular Meeting **and a future Real Estate Committee Meeting**



## AGENDA

### Discussion Items

- C. Discuss Sister Grove Regional Water Resource Recovery Facility  
Grayson Collin Electric Cooperative Electric Services Agreement**



## PROJECT DEVELOPMENT UPDATE – SISTER GROVE PHASE 1 FACILITIES

### Electric Power – GCEC and Rayburn Electric

- **Power Supply for the Sister Grove site will be provided by Grayson-Collin Electric Cooperative (GCEC) & Rayburn Electric Cooperative (Rayburn).**
- **Rayburn Electric will build the transmission line and has received an approval from Public Utility Commission for the alignment. Currently Rayburn is working on the design and property acquisition for the transmission line.**
- **GCEC will be responsible for building the substation and feeders to the service yard. The service yard will be located on the north side of the Sister Grove Plant site, east of the dewatering building and north of the power yard.**



## PROJECT DEVELOPMENT UPDATE – SISTER GROVE PHASE 1 FACILITIES

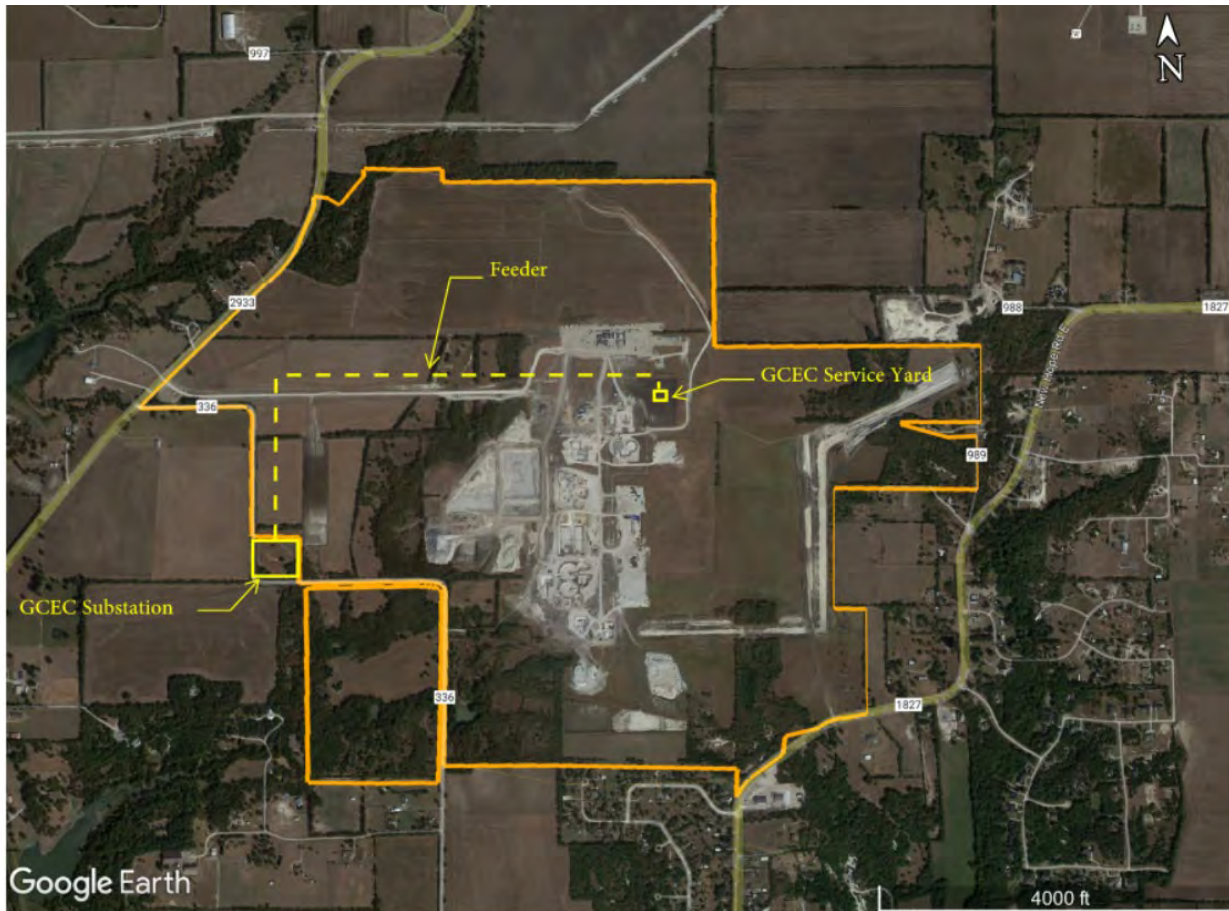
### Electric Power Continued

- The substation will serve Phases 1-2 loads with one substation transformer, two feeders and two switchgears to tie into the District's switchgear located within the power yard.
- One additional substation transformer, two feeders and two switchgears will be required for Phases 3-4.
- Project team is working on drafting an Interconnect Agreement with GCEC and District.
- Cost update will be provided soon.





## PROJECT DEVELOPMENT UPDATE – SISTER GROVE PHASE 1 FACILITIES



- **Board action will be requested at the March NTMWD Board of Directors Regular Meeting**



# AGENDA

## Discussion Items

### D. Discuss City of Plano Reuse Agreement



## RECLAIMED WATER USE AGREEMENT: CITY OF PLANO

**Plano allowed to take Reclaimed Water from Rowlett Creek WWTP per Member city contract (Section 6.04b). Member cities get first right to use effluent for municipal purposes**

- **Original Reuse Agreement signed July 2010**
  - **Up to 1,200,000 gallons per day**
- **NTMWD received TCEQ authority to produce reclaim water from Rowlett WWTP specifically for Pecan Hollow Municipal Golf Course in 2008**
  - **(Texas Administrative Code 30, Chapter 210 Authority)**
- **Plano constructed facilities to transport and deliver reclaimed water to Pecan Hollow Municipal Golf course (City owned) in 2010**



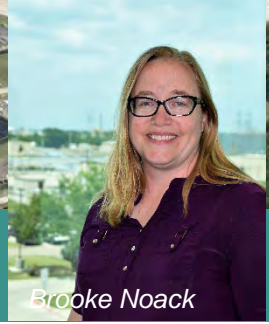
## RECLAIMED WATER USE AGREEMENT: CITY OF PLANO

- **Original agreement intent to extend City of Plano agreement for an additional 10 year period**
- **Agreement expired, Plano requires a new agreement**
- **Agreement language similar to original agreement**
- **Elements of the Agreement**
  - Quantity used by Plano based on metered usage
  - Quality assurance by NTMWD to meet TCEQ Type II Reclaimed water
  - Ability for NTMWD to halt production for O&M at Rowlett RWWTP
  - Plano to operate and maintain the pipeline, facilities and meter located downstream of point of delivery
- **Expect Agreement for Board approval at March Board.**

## ROWLETT CREEK RWWTP AND PLANO'S POINT OF DELIVERY



- **Board action will be requested at the March NTMWD Board of Directors Regular Meeting**



# AGENDA

## Discussion Items

### **E. Update from Pretreatment meeting with City of Richardson**



# NTMWD PRETREATMENT PROGRAM

## Reason for Discussion

- **Provide background information on NTMWD pretreatment programs**
- **Similar overview provided July 2020 Wastewater Committee meeting**
- **Following this discussion will meet in Executive Session to update Committee on illicit sewer discharge to Floyd Branch Regional Wastewater Treatment Plant**



# EPA NATIONAL PRETREATMENT PROGRAM REQUIREMENT

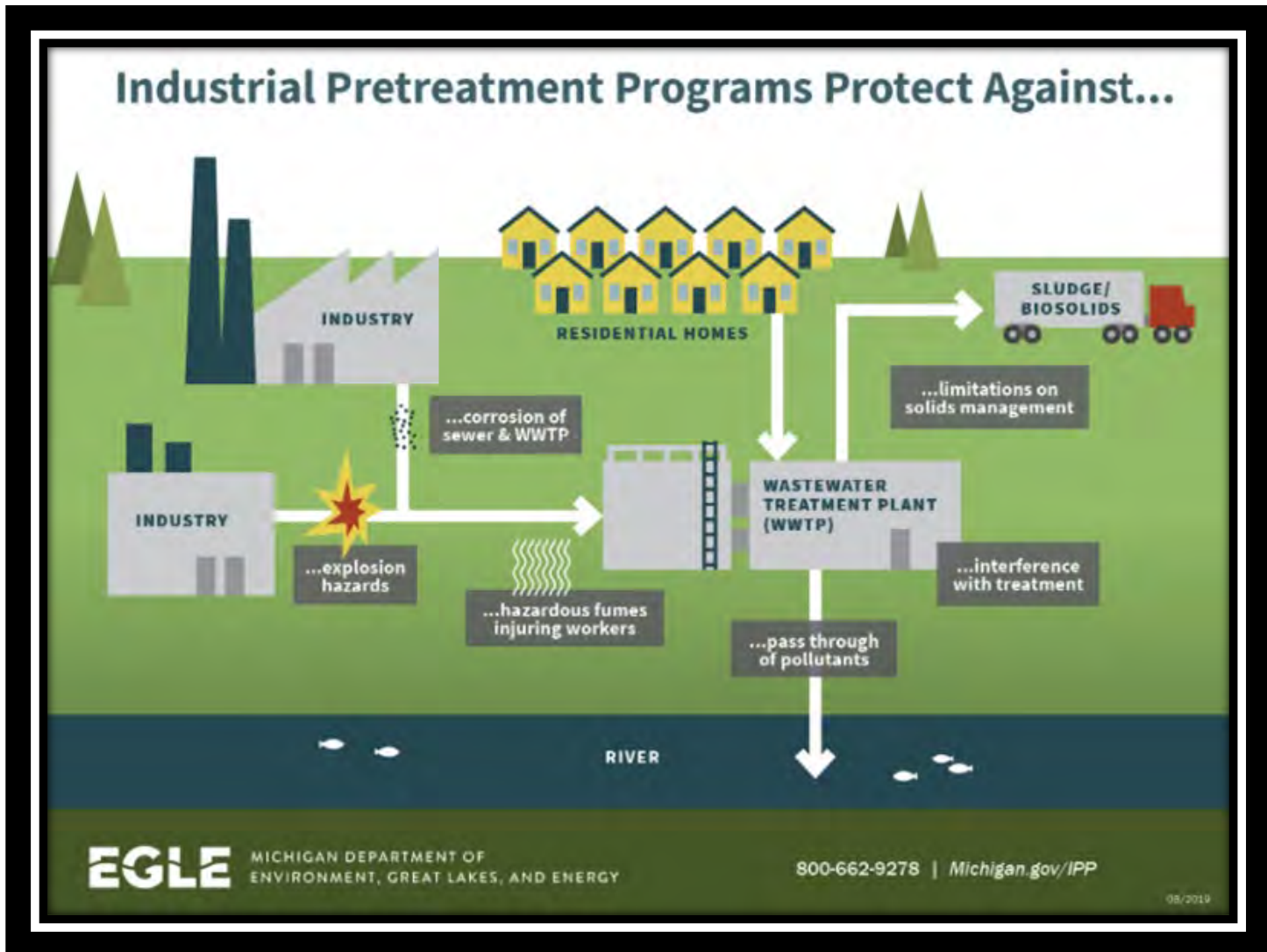
## What is Pretreatment?

- **Industries treat wastewater onsite, reducing pollutants discharged into wastewater system that would require treatment at an additional cost**
- **Prevent pollutants from entering wastewater system that may cause pass through or interference**
- **Improve opportunities to recycle and reclaim sludge**
- **Requirement to implement a pretreatment program established in the TCEQ wastewater treatment plant permit**
- **EPA delegates authority to TCEQ to regulate program implementation which includes program review and approval and onsite audits and inspections**





# EPA NATIONAL PRETREATMENT PROGRAM REQUIREMENT





# PRETREATMENT PROGRAM REQUIREMENTS

## Overview of NTMWD Pretreatment Program

- **Identify and permit all industrial users**
  - Industrial Waste Surveys
  - Work with Cities as new industries start up
- **Sample permitted industries quarterly**
- **Inspect industries annually**
- **Compliance and Enforcement**
  - Continuously review compliance for reporting deadlines, limit violations
  - Draft and recommend appropriate enforcement activities for violations
    - Filed by city
- **Investigate unauthorized discharges**



# NTMWD PRETREATMENT PROGRAM

## TCEQ Approved Pretreatment Programs

**Buffalo Creek**

**Floyd Branch**

**Muddy Creek/Wylie**

**Panther Creek/Stewart Creek**

**Rowlett Creek**

**South Mesquite Creek**

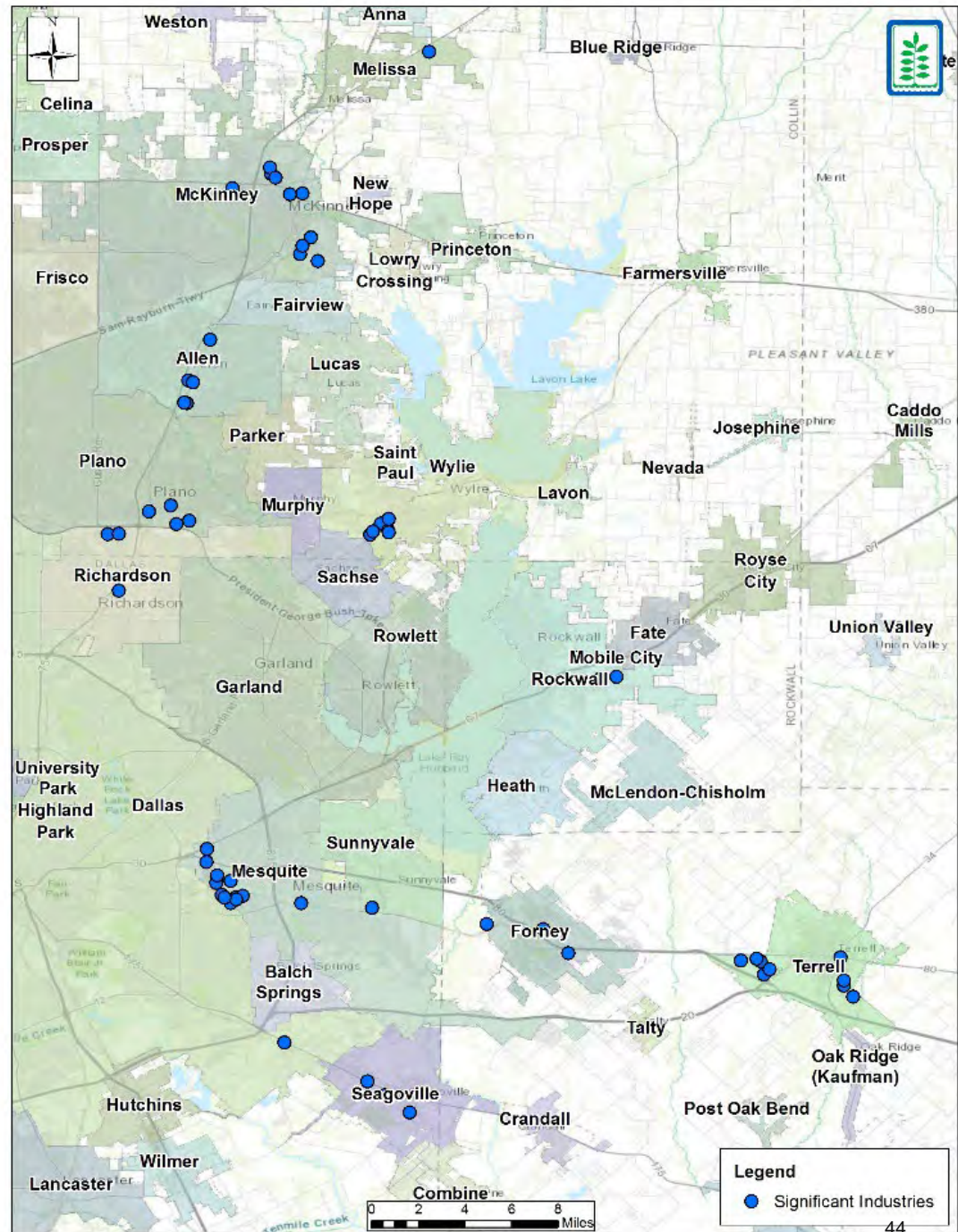
**Wilson Creek**

**Sabine Creek (Pending TCEQ Approval)**

**King's Creek (Contract with City of Terrell to implement their pretreatment program, excluded from the NTMWD combined program)**

## Summary of Permitted Facilities by City

<u>City</u>	<u># of Permitted Industries</u>
Allen	4
Forney	3
Frisco	2
McKinney	11
Melissa	1
Mesquite	12
Plano	4
Richardson	4
Rockwall	5
Royse City	(2 pending approved program)
Seagoville	3
Sunnyvale	1
Terrell	9
Wylie	7
<b>Total</b>	<b>66</b>





# PRETREATMENT PROGRAM REQUIREMENTS

## Multijurisdictional Pretreatment Agreement

- **Agreement required by EPA/TCEQ approved programs to ensure adequate implementation**
  - **Details responsibilities for City and NTMWD**
  - **NTMWD performs daily tasks (sampling, inspections, permitting, tracking compliance, interface with TCEQ, etc.)**
  - **City signs enforcement notices, permits, and provides essential information (i.e. information regarding new industries, commercial water billing records, certificate of occupancy data, etc.)**
  - **Current agreements with the City of Richardson and Terrell are unique**
    - Terrell owns and operates their King's Creek treatment plant and NTMWD contracts with the city to implement the pretreatment program
    - Richardson flows to NTMWD, Garland, and Dallas (no industrial flows)
    - Richardson currently is responsible for the day to day implementation of the pretreatment program for industries within the City



## EXECUTIVE SESSION

### Section 551.071, Consultation with Attorney

- Authorizes a government body to consult with its attorney in an Executive Session to seek advice on legal matters regarding pending or contemplated litigation or a settlement offer.
- A government body may not invoke this Section to convene a closed session and then discuss matters outside of that provision.
- General discussion of policy, unrelated to legal matters, is not permitted under the language merely because an attorney is present.
- Items discussed during Executive Session are privileged and should remain confidential.



# AGENDA

## Adjourn Executive Session

### Discussion Items

- F. Opportunity for Committee members to provide feedback on Wastewater Committee meeting**



# AGENDA

## Discussion Items

- G. Opportunity for Committee members to request potential future agenda items**

## Adjournment