Sister Grove Regional Water Resource Recovery Facility

New Hope City Council

June 26, 2018
AGENDA

• **North Texas Municipal Water District Overview**
  Jenna Covington, Assistant Deputy Director – Wastewater

• **Sister Grove Regional Water Resource Recovery Facility Overview**
  RJ Muraski, Assistant Deputy Director – CIP and Planning
History

**Vision: Regional Service Through Unity – Meeting Our Region’s Needs Today and Tomorrow**

**Mission: Provide high quality and dependable water, wastewater and solids waste services in a cost efficient manner.**

13 Member Cities
Allen, Farmersville, Forney, Frisco, Garland, McKinney, Mesquite, Plano, Princeton, Richardson, Rockwall, Royse City, and Wylie

- 1951 – Created by Texas Legislature to Provide Water Service
- 1956 – Began Providing Treated WATER to Member Cities
- 1970s – Expanded to WASTEWATER Service
- 1980s – Expanded to SOLID WASTE Service
REGIONAL PROVIDER: WATER, WASTEWATER, SOLID WASTE

BY THE NUMBERS

14 WATER PUMP STATIONS
6 WATER TREATMENT PLANTS
575+ WATER TRANSMISSION PIPELINES
250+ MILES LARGE-DIAMETER WASTEWATER PIPELINES
14 WASTEWATER TREATMENT PLANTS
151+ MGD WASTEWATER TREATMENT CAPACITY

SERVES about 80 COMMUNITIES
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

1 MILLION+ tons/year accepted at landfill
**Existing:**
- Lavon Lake
- Lake Texoma
- Lake Tawakoni
- Chapman Lake
- Reuse/Wetland
- Lake Bonham

**Future:**
- New Reservoir in Fannin County

**Water Treatment Plant Capacity**
- 806 MGD fully ozonated
  - Wylie: 770 MGD
  - Tawakoni: 30 MGD
  - Bonham: 6 MGD
WASTEWATER SYSTEM

Entities Served
• Serve 24 communities
• Approximately 1-million North Texas residents

Facilities
• Over 250 miles of large diameter pipe to transfer from communities to regional treatment facilities
• 14 Treatment plants
• Total capacity of +150 MGD
REGIONAL WASTEWATER SYSTEM

• **Regional WWTP/Capacity**
  - Wilson Creek WWTP 56.00 MGD
  - South Mesquite WWTP 33.00 MGD
  - Rowlett Creek WWTP 24.00 MGD
  - Floyd Branch WWTP 4.75 MGD
  TOTAL 117.75 MGD

• **Sewer System WWTP**
  - Number of Sewer System Plants in Operation: 10
  - Total Sewer System Capacity: 34 MGD

• **Total Wastewater Treatment Capacity:** 151.75 MGD
7 Steps to Clean Water

1. WASTEWATER COLLECTION
   Used water is piped from homes and businesses to treatment plant.

2. SCREENING
   Removes large objects like rocks and twigs.

3. PRIMARY CLARIFICATION
   Removes materials that naturally fall to the bottom and skims off contaminants that float.

4. AERATION
   Uses tanks of micro-organisms to consume organic matter, breaking it down into carbon dioxide and clean water.

5. SEDIMENTATION
   Separates the solid particles (including the microorganisms) from the clean water which continues through the treatment process.

6. ODOR CONTROL
   Is incorporated throughout the steps of treatment process.

7. FILTRATION
   Flows water through sand or cloth filters to remove remaining fine particles.

8. DISINFECTION
   Uses chlorine or ultraviolet light to treat the water for remaining bacteria or viruses.

9. TESTING & DISCHARGE
   Testing throughout the process ensures the water being discharged into our waterways protects public health and the environment.

10. SOLIDS PROCESSING
    Excess water removed from solids collected before transporting in covered trucks to landfill.
We all live in a watershed

Watershed Management embraces concept of “One Water”

Storm run-off and treated wastewater returns to streams and lakes

Program involves:
- Evaluating water quality, land
- Developing protection goals, implementation plan
- Assessing and adjusting based on results
WATER CONSERVATION AND EDUCATION PROGRAMS

• Conservation critical strategy for maximizing supplies

• Education critical to protect our watershed and wastewater infrastructure

WaterMyYard.org

WATER IQ

WATER4OTT.E ORG
Sister Grove Regional Water Resource Recovery Facility Overview
Project Background and Update

- Member cities and surrounding communities in Collin County are growing
- North Texas Municipal Water District (NTMWD) must plan and construct infrastructure required to meet future growth and protect Lavon Lake
- NTMWD recently purchased over 1000 acres for facility site along with discharge location on Stiff Creek
- NTMWD has submitted an application to the Texas Commission on Environmental Quality (TCEQ) for the construction of a water resource recover facility that will serve the growing wastewater treatment needs of the region for the future
- Goal: Be a good neighbor by planning and constructing facility with proven, safe technologies that align with industry best practices and one which will blend into the surrounding community
• Located near current and future growth

• Recovered water released into Northern Lavon Lake

• Protect Lavon Lake Watershed
ADJACENT LANDOWNERS

- Letters sent to adjacent landowners ahead of TCEQ required notification
- Engaged New Hope elected officials
- Open to present to other community, neighborhood groups
- Provide recommendations on comment cards
The Proposed WRFF will be situated on a 1,000 acre land area east of FM 2933 and north/west of New Hope Road.

Facility will be designed to integrate into neighboring areas by using green spaces, earthen berms, screening, tree plantings, and/or natural vegetation.
Being a Good Neighbor

Facilities designed to integrate with the community

Enclosed blowers reduce odors and noise

Enclosed solids processing captures odorous air

Covered primary clarifiers capture odorous air and sand for treatment at odor control facilities

Site lighting designed to maintain site safety and security, and minimize light pollution

Ultraviolet (UV) light treats bacteria and viruses, ensuring water released protects public health

Odor control facilities are engineered and operated to treat odorous air prior to discharge
A steady flow of clean water will blend with the surrounding habitat.
Questions
Overview

**BY THE NUMBERS**

- **80 COMMUNITIES**
  - 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?**

- **14 WATER PUMP STATIONS**
- **6 WATER TREATMENT PLANTS**
- **575+ WATER TRANSMISSION PIPELINES**
- **250+ LARGE-DIAMETER WASTEWATER PIPELINES**
- **151+ WASTEWATER TREATMENT CAPACITY MGD (million gallons/day)**
- **14 WASTEWATER TREATMENT PLANTS**
- **1 MILLION+ TONS/YEAR accepted at landfill**

**Wastewater Services**

- **211 WASTEWATER STAFF**
- **$215+ MILLION**
  - In regional wastewater conveyance system construction contracts
- **252 MILES**
  - Large-diameter wastewater pipelines
- **152 MGD**
  - Total wastewater treatment capacity (million gallons/day)
- **14 WASTEWATER treatment plants**

**COMMUNITIES SERVED**

- **37.5 BILLION**
  - Gallons of wastewater treated this year
- **13.9 BILLION**
  - Gallons treated in wetland for reuse
- **18 BILLION**
  - Gallons treated wastewater returned to Lavon Lake for reuse
New Facility Needed in Service by 2023

Population projections for communities served indicates the new facility should be in service by 2023.

We serve some of the fastest-growing communities in the country.
The Sister Grove Regional Water Resource Recovery Facility (RWRRF) site was chosen since it is geographically located near the current and future growth areas and will continue to protect the water quality in the Lavon Lake watershed.
Follow the Flow

7 Steps to Clean Water

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   Used water is piped from homes and businesses to the treatment plant.

2. PRIMARY CLARIFICATION
   Removes material that naturally falls to the bottom and settles off contaminants that float.

3. ODOR CONTROL
   Odor control is incorporated throughout the steps of the treatment process.

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