NORTH TEXAS MUNICIPAL WATER DISTRICT

Regional. Reliable. Everyday.

August 3, 2021

Honorable Mayor and Council Members
Plano City Council
City of Plano
1520 K Avenue
Plano, TX 75074

Dear Mayor and Council Members,

In advance of the Preliminary Open Meeting (POM) on August 9, 2021, we are providing additional historical information and details on the Rowlett Creek Regional Wastewater Treatment Plant (RCRWWTP) to facilitate further conversation with Council members during the meeting.

History

RCRWWTP located northeast of the intersection of Los Rios Boulevard and 14th Street, was constructed in 1959, with a permitted capacity of 2 million gallons per day (MGD). In a 1971 zoning case, a Specific Use Permit (SUP-4) was granted to zone the location of the plant as Sewer Treatment Plant. In 1975, the City of Plano sold the plant infrastructure to NTMWD as part of the regionalization effort to treat wastewater flows. Because of the success of regionalizing water, it was determined that regionalizing wastewater treatment would also lead to better efficiency and cost savings to participants of the Regional Wastewater System. The transaction did not include the sale of the underlying land but did place the operational responsibility on the NTMWD. Throughout the years the plant was expanded several times to meet the growth of cities of Plano and Richardson, and reached its current permitted annual average day capacity of 24 MGD in the year 2000. Below is a table showing the capacity of RCRWWTP since the NTMWD began operation in 1975.

Table 1 - Rowlett Creek Regional WWTP Permitted Capacities

Year	AADF (MGD)	2-Hour Peak (MGD)
1975	6	NA
1980	12	30
1985	16	40
2000	24	60

Annual Average Daily Flow (AADF) vs. Peak Flow

The flows above show the quantity of treated effluent the plant is permitted by Texas Commission on Environmental Quality (TCEQ) to discharge based on differing conditions of operation.

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Annual Average Daily Flow (AADF) is the total volume of wastewater being discharged from the plant during any consecutive 365 days presented in million gallons per day. This flow is made up of daily domestic sanitary sewer flows that come from residential, commercial and industrial uses. The AADF also includes additional flows entering the system during wet weather events that are inflow and infiltration of storm water resulting in a sudden spike (peak flow) of flow arriving at the treatment plant. This sudden spike can be short in duration followed by a sustained decline back to normal daily flows, which can last several days depending on the rain event. By rule, TCEQ mandates a peaking factor is used to determine the peak flow capacity for a plant. The peaking factor varies considerably based on the climate conditions, age of the system, extent of urbanization, etc. Currently RCRWWTP has a peaking factor of 2.5 but TCEQ guidelines recommend a peaking factor of 4.0 absent of actual flow data. For this reason the NTMWD and City of Plano cooperate to take field measurement of flows in the system to capture data and then model for potential growth and flows into the future. Based on flow monitoring and modeling, RCRWWTP is projected to have peak flows of 120 MGD by 2035. It is important to note that in 2020 RCRWWTP experienced peak flows arriving at the site in excess of 90 MGD.

Where does inflow and infiltration (I&I) come from? There are a number of common sources for I&I such as cracks in buried wastewater pipes on residential properties (private laterals) as well as throughout the collection system; pipe joints that have become loose or separated due to soil movement; open cleanouts at residential and commercial properties; manholes that become submerged or have lost their seal and allow surface drainage into the system. While not common, there are also instances where downspouts or submersible pumps are discovered to be illegally connected to the wastewater system instead of the storm water collection system, which contributes to I&I as well.

Rowlett Creek RWWTP and the Regional System

RCRWWTP is permitted to treat 24 MGD of AADF. Under normal conditions, RCRWWTP treats around 19 MGD but as mentioned above the AADF includes peak flows so the plant has to provide a buffer in case storm events result in a peak flow that could risk making the average flow higher than the permitted flow. It is common for the plant to treat around 80% of the average flow that arrives at the facility and transfer the remainder to our Wilson Creek RWWTP located near Lucas. This transfer occurs through a force main that goes through our Dublin Lift Station. During peak flow events the RCRWWTP treat flows to its permitted capacity and coordinates with Wilson Creek staff to transfer additional flows.

Due to the rapid growth in the regional system, Wilson Creek is gradually nearing its AADF which prompted the NTMWD to invest in a new regional plant northeast of McKinney to offload some of the projected future flows. Sister Grove Regional Water Resource Recovery Facility (SGRWRRF) is anticipated to be online in late 2023 with a capacity of 16 MGD and will begin the next expansion phase immediately to operate at 32 MGD by 2026 and up to 64 MGD by 2038.

The NTMWD undertook an evaluation in 2012 to identify how to manage the increase in peak flows experienced at RCRWWTP. After evaluating several options, it was determined that treating the peak flows at Rowlett Creek was the best value option for the regional customers. The NTMWD is currently in Phase I of the peak flow improvements which add 17.5 MGD of peak flow capacity to the facility. There are additional phases planned including Phase IIA which is primarily improvements to solids handling, Phase IIB which will complete the necessary improvements to the treatment process to increase the ability to treat peak flows of 95 MGD and Phase III which would increase the peak flow capacity to 120 MGD.

The combined improvements at RCRWWTP, along with the force main transferring flow to Wilson Creek RWWTP, gives Rowlett Creek the resiliency and redundancy to treat all flows arriving at the plant or transfer some flows as needed. However, the system was never designed nor intended to transfer all the flows from RCRWWTP to Wilson Creek for treatment. The current and future flow management scheme to treat most of the flows at RCRWWTP provides the best value while ensuring continued and reliable wastewater service to our customers.

RCRWWTP Operations and the Neighborhood

The NTMWD has held 5 public meetings with interested neighbors as well as numerous appearances at public hearings with the City of Plano. There are a number of questions and comments regarding odors and the NTMWD takes these concerns seriously. The NTMWD has invested in state of the art odor control equipment through the years and continues to look at solutions that can further reduce the potential for odors. Additionally, our operations team at the facility and odor control crews monitor the performance of the units and take corrective action when necessary. Odor is a very complex subject and sources can often be difficult to locate and isolate. We have a dedicated team of professionals who monitor for odors and proactively feed chemicals into the system at strategic locations to reduce the odor potential of wastewater flows. Through our meetings, long-time residents in the area nearest to the plant have commented how the odor issues have improved significantly over the years.

Our commitment to being a good neighbor continues to this day and into the future. The NTMWD has been monitoring odors near the entrance of the plant using a device that can detect hydrogen sulfide (H2S) at part per billion (ppb) levels. The device records a value approximately every 10 minutes and is calibrated regularly for accuracy of the readings. Reviewing 19,200 readings since November 2020 we find 19 recorded values greater than zero ppb and not a single value greater than 25 ppb. For reference, it is generally regarded that H2S can be identified by humans at levels around 30-50 ppb, although TCEQ regulates hydrogen sulfide odor as a nuisance above 80 ppb. In addition to the NTMWD self-monitoring, we can also point to 4 visits from TCEQ since October 2019 with the most recent visit occurring on April 20, 2021. In each case TCEQ has determined that nuisance conditions were not present and found no evidence of odor violations.

During the course of our zoning case, there have been questions about traffic. Excluding traffic from employees going to and from work, the remaining traffic consists of trucks delivering supplies and/or hauling sludge for disposal at the landfill. The sludge trucks would average around 6-8 per day with 2 trucks per day delivering supplies. Currently those trucks use the only available entrance to the plant off Los Rios Blvd. With the additional land the NTMWD purchased from Plano in 2019 and the plans for the service yard to include a paved road, we are in the process of rerouting the supply and sludge hauling traffic to a proposed 14th Street entrance. We currently are working with adjacent landowners and have a letter of intent to purchase a small access easement to facilitate this improvement. This is an example of the NTMWD implementing solutions to concerns offered by the neighbors.

Permitted Flows and TCEQ

RCRWWTP has a Texas Pollution Discharge Elimination System (TPDES) permit issued by TCEQ that authorizes NTMWD to treat 24 MGD on an average basis and a peak flow discharge of approximately 60 MGD with progressive peak flow increases to 77.5, 95 and 120 MGD based on the planned peak flow improvements. NTMWD must renew this permit on a regular basis through a request to TCEQ. The permit is currently in the initial stages of renewal and the application includes no request for changes to the current operating permit for annual average flow or peak flow.

There were concerns raised by the residents regarding NTMWD being able to increase AADF of 24 MGD to some higher number without going through a public comment process in the future. Increasing the AADF is not something the NTMWD can do unilaterally. The decision to increase AADF would require concurrence from City of Plano and regional members prior to NTMWD making a request to amend the existing TPDES permit from TCEQ. The TCEQ process would require the same public notification and offer interested citizens public input and dialogue with TCEQ. This process takes place in a public forum and input is gathered from many stakeholders much like what we are undertaking through the SUP process.

Summary

RCRWWTP serves approximately 148,000 residents of Plano. It has provided reliable and effective wastewater treatment service to the City of Plano as the city experienced rapid growth from the 1970s to 2000s. The NTMWD and the regional customers continue to invest in RCRWWTP to meet the needs of the customers now and into the future.

We hope the summary above on topics related to how the plant operates will provide some background for your consideration prior to our meeting on August 9, 2021.

Zoning Case ZC2020-016 is critical to providing a safe, adequate workspace for NTMWD employees, while continuing to treat wastewater flows from the cities of Plano and Richardson. It does not expand the treatment process area of the plant, and NTMWD has no intention or plans to increase the annual average daily flow capacity or area where the treatment processes are located.

If desired by the Council, we are available to meet with you in advance of the August 9th meeting to provide additional information and answer your questions. Please feel free to contact me at (972) 442-5405 or by email jcovington@ntmwd.com.

Sincerely,

Jennafer P. Covington, P.E.
Executive Director/General Manager
North Texas Municipal Water District