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DOCKET NO. 55154

APPLICATION OF THE CITY OF PHARR TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY IN HIDALGO COUNTY	**§ § § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF PHARR'S WASTEWATER SYSTEM MASTER PLAN

The City of Pharr (City) files this, its Wastewater System Master Plan. The wastewater projects the City is expected to construct this year are the following: (1) NW & Central Collection System Improvements and Lift Station Nos. 1, 29, and 33 Elimination, and (2) South Region Interceptor Project. Projects that the City is seeking funding for are the following: (1) Lift Station 31, (2) Lift Station No. 23 Upgrade and Relocation, (3) Lift Station No. 7 Odor Control, (4) Regional Headworks Lift Station Improvements, and (2) Wastewater Treatment Plant Improvements.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that a copy of this document was served on all parties of record on March 20, 2024, in accordance with the requirements of 16 Tex. Admin. Code § 22.74 and PUC Order No. 2 in Docket No. 50664.

Emily W. Rogers

Emily W. Rogers

2018 Wastewater System Master Plan
FINAL
City of Pharr, Texas

Date:
February 7, 2019

Submitted by:

STATE OF TEXAS
JAVIER GARCIA
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LICENSED
PROFESSIONAL ENGINEER
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Section 1.0
Introduction

1.1 Objective

Garcia Infrastructure Consultants, LLC (GIC) was retained by the City of Pharr (City) to develop a Wastewater System Master Plan. The goal was to evaluate the integrity of the existing wastewater system infrastructure and develop a long-term-capital-improvements plan (CIP) to handle projected growth to the Year 2040. The CIP will form the basis for funding the future design, construction, and financing needed to address system deficiencies and future flows.

1.2 Scope

The scope of this evaluation is outlined below:

1. Projected Flows
    a. Develop wastewater flow projections to Year 2040.
2. Collection System
    a. Review existing wastewater system maps and update as necessary to support our analysis. This review is limited to main sewer trunk mains, lift stations, and associated force mains.
    b. Identify sewer shed for each respective lift station and estimate flow to each lift station.
    c. Conduct a condition assessment of each lift station. This assessment also included collecting basic technical information regarding each facility.
    d. Identify system deficiencies.
    e. Develop CIP to address system deficiencies and improvements to meet future growth.
3. Wastewater Treatment Plant
    a. Conduct an assessment of the overall treatment process to identify system deficiencies.
    b. Develop a CIP to address plant deficiencies and improvements to meet future growth.

1.3 Background

The City is located in the Rio Grande Valley and has a population of approximately 76,000. Pharr, like other communities in the Rio Grande Valley, has experienced tremendous growth over the last 30 years. The City on average adds approximately 500-connections/year. Continued population and service area growth will eventually result in the need for future capacity increases at both the water and wastewater treatment plants. This Master Plan will allow the City to plan

for both water and wastewater utilities to efficiently meet the growing demand for water and wastewater services. Refer to Section 2.0 for population projections.

The City's wastewater collection and treatment system facilities serve approximately 98% of the City's residents. A few areas are still served by individual septic units. The wastewater treatment plant receives an average daily flow of 4.1-mgd (average for 2017). The treatment plant includes three separate treatment trains; two (2) carousel oxidation ditches (extended air) and one (1) BNR Process Train. The collection system includes an extensive gravity flow system with thirty-three (33) lift stations. One of the primary goals of the City is to reduce the number of lift stations by adding sewer systems or combining aging facilities.

A separate element introduced in our report is recommended policy changes. Staff struggles to enforce basic design standards for new lift stations constructed by private Developers. Our report includes recommended policy changes to help staff secure the design features required to properly operate and maintain new Developer lift stations.

Section 2.0

Population and Land Use Projections

2.1 Land Use

The City's Land Use Map was recently updated and included in the 2015 Comprehensive Plan Updated which was prepared by the Texas A&M Engineering Extension Service. A copy of the plan is included in Appendix A.

2.2 Population

Historical population figures for Pharr and Hidalgo County are presented in Table 2.1 for Years 2005 through 2019. Data shows that Pharr has outpaced growth in Hidalgo County and represents approximately 9% of the county's population.

Table 2.1
Historical Population of Pharr and Hidalgo County
City of Pharr 2018 Wastewater Master Plan

Year	City of Pharr		Hidalgo County		% of County
	Population	% Change	Population	% Change	Population
2005	59,000		680,000		8.7%
2006	60,000	1.7%	700,000	2.9	8.6%
2007	62,000	3.3%	720,000	2.9	8.6%
2008	65,000	4.8%	750,000	4.2	8.7%
2009	66,000	1.5%	780,000	4.0	8.5%
2010	71,000	7.6%	790,000	1.3	9.0%
2011	72,000	1.4%	798,000	1.0	9.0%
2012	73,000	1.4%	800,000	0.3	9.1%
2013	74,000	1.4%	805,000	0.6	9.2%
2014	76,000	2.7%	810,000	0.6	9.4%
2019	82,000	-	1,000,000	-	8.2%

The Projected population growth for the City of Pharr is shown in Table 2.2 as developed by the Texas Water Development Board (TWDB).

Table 2.2
TWDB Population Projections through the Year 2070
City of Pharr 2018 Wastewater Master Plan

Year	City of Pharr Population	*City of Pharr Population Correction
2000	46,700	41,096
2006	61,400	54,032
2010	66,000	58,080
2020	89,220	78,514
2030	110,785	97,491
2040	132,437	116,545
2050	154,131	135,635
2060	175,826	154,727
2070	196,918	173,288

*A correction is applied to account for reduction in population due to area served by North Alamo for water demand.

Population projections from Table 2.2 were used throughout the Master Plan to develop flow and demand projections.

Section 3.0

Wastewater Flow Projections

3.1 Wastewater Flows

Wastewater flow projections are based on Texas Water Development Board (TWDB) population projections and historical water use data. Current wastewater and per capita flows were computed from historical plant data.

The City of Pharr (City) currently operates a single wastewater treatment plant located at 2400 S. Veterans Blvd and serves a population of approximately 76,000. The City's Wastewater Treatment Plant (WWTP) has an annual average daily flow (AADF) rated capacity of 8-mgd and a peak hourly flow of 24-mgd. Flow rates that are recognized as the most important for design and operation of a collection and treatment system include AADF, maximum month average daily flow (MMADF), maximum day (MD), and peak hourly flow (PHF). These flow rates are defined below:

Annual Average Daily Flow (AADF) is the average flow rate over a 24-hour period on total annual flow rate data. This flow is the arithmetic average over 365 days.

Maximum Month Average Day Flow (MMADF) (Design Flow) is the average day flow for the month with the maximum flow. MMADF is commonly considered to be the Plant's design flow or permitted capacity. To absorb the highs and lows in a given data set, a 30-day rolling average is computed, and the highest flow is selected to be the MMADF or design flow. Currently, the City of Pharr's WWTP has a permitted design capacity of 8.0-million gallons per day (mgd).

Peak Hourly Flow (PHF) is the highest flow rate measured over a two-hour period. Generally, these peaks occur during a two-year, two-hour, wet weather event. PHF rates are also part of the permit capacity and are used to design pumping and disinfection facilities. Currently, the City has a permitted PHF of 24-mgd.

Population projections established in Section 3.0 were used to extrapolate the historical wastewater flows to the Year 2070. Such knowledge of future water demands will be essential in determining the required improvements at the WWTP.

3.2 Historical and Projected Flow rates

TCEQ requires treatment plants be designed for a maximum 30-day average wet-weather flow, which is also referred to as the maximum month average daily flow (MMADF). Historical flow trends at the WWTP were analyzed and used in combination with population projections to determine future flow conditions. Future flows were established based on a per capita basis gallon per day per capita (GPCD) (75-gpdc) and using a peaking factor of 1.2 to compute MMADF. GIC also projected future flows based on historical trends. Table 3.1 shows the projected flows that will form the basis of our study and ultimately, development of the CIP. Data shown between 2015 and 2018 is based on historical data. Data between 2020 to 2070 are projections using the GPCD values previously reported. Table 3.2 highlights current flows (2018) and

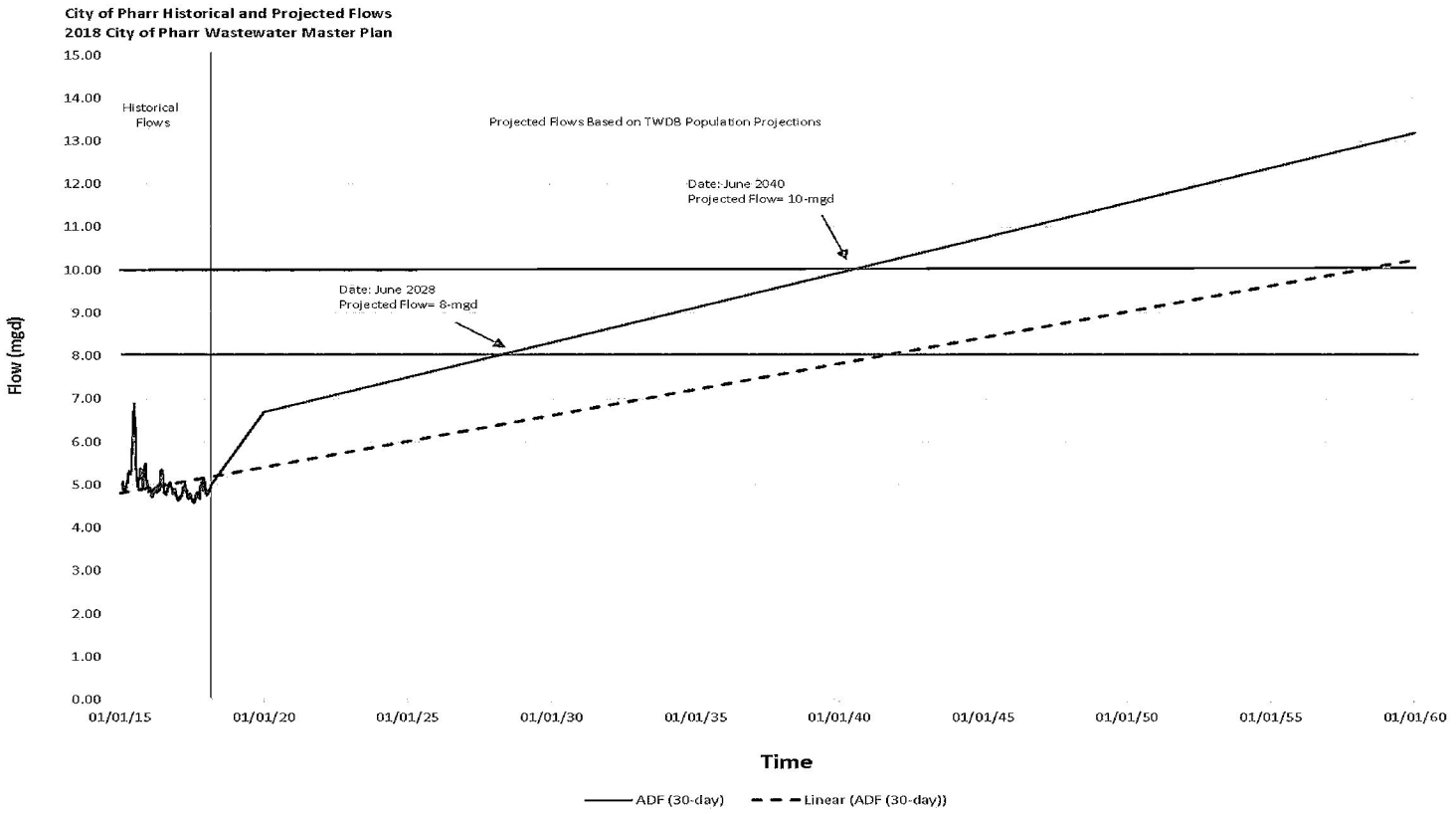
planning flows (2040). Exhibit 3.1 presents this same information graphically. The graph also shows when the plant is expected to reach capacity.

TABLE 3-1
Historical and Projected Flows
City of Pharr 2018 Wastewater Master Plan

Year	AADF (MGD)	MMADF (MGD)	Max. Day (MGD)	Peak Hourly (MGD)
2015	5.7	6.9	8.6	20.7
2016	4.4	5.4	6.7	16.1
2017	4.2	5.1	6.4	15.4
2018	4.1	5.0	6.2	15.0
2020	5.5	6.7	6.9	16.6
2030	6.9	8.3	8.6	20.6
2040	8.2	9.9	10.3	24.6
2050	9.6	11.6	11.9	28.7
2060	10.9	13.2	13.6	32.7
2070	12.2	14.8	15.3	36.6

TABLE 3-2
Pharr WWTP Flows
City of Pharr 2018 Wastewater Master Plan

Year	**AADF (MGD)**	**MMADF (MGD)**	**Max Day (MGD)**	**2-Hr Peak (MGD)**
Existing Flows (2018)	4.1	5.0	6.1	15.0
Planning Year Flows (2040)	8.2	10.0	10.3	24.6


City of Pharr Historical and Projected Flows
2018 City of Pharr Wastewater Master Plan
Historical Flows
Projected Flows Based on TWDB Population Projections
Date: June 2040
Projected Flow= 10-mgd
Date: June 2028
Projected Flow= 8-mgd
Flow (mgd)
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
01/01/15
01/01/20
01/01/25
01/01/30
01/01/35
01/01/40
01/01/45
01/01/50
01/01/55
01/01/60
Time
ADF (30-day)
Linear (ADF (30-day))

Section 4.0

Wastewater Treatment Plant

4.1 Wastewater Treatment Plant

The Pharr WWTP site is in Hidalgo County, adjacent to Veterans Blvd and approximately 2-miles south of the intersection of Veterans Blvd and Business US 83. Treated effluent is discharged into the Hidalgo County Drainage Ditch No. 1, which empties into the Main Floodway and Arroyo Colorado in Segment 2202 of the Nueces-Rio Grande Coastal Basin.

The wastewater treatment plant site and structure locations comply with TCEQ site location requirements for WWTPs. There is a 150-foot buffer zone between plant structures and residential properties. The plant is not closer than 500 feet from public water wells, or 250 feet from private water wells. The Pharr WWTP site is approximately 50.95 acres. Refer to **Appendix B.**

The purpose of this evaluation is to estimate the capital investment needed at the facility to reliably and efficiently treat wastewater generated within the Pharr collection system. The investment is based on identifying the deficiencies and upgrades needed to meet future demands and regulatory requirements. Specific tasks in this evaluation include:

1. Establish projected flows per population projections through the Year 2040.
2. Develop an understanding of the existing treatment plant facilities through conducting site visits, reviewing record drawings, and interviewing plant staff.
3. Perform desktop process analysis using the EnviroSim wastewater treatment simulator BioWin to identify process limiting components and better understand the actual plant capacity.
4. Hydraulic modeling was not necessary for this evaluation.
5. Summarize the process capacity of the existing facility based on current mechanical and operational conditions.
6. Summarize the condition of the existing infrastructure.
7. Recommend a capital improvements program that outlines plant modifications needed to address deficiencies and to meet projected future flows.

4.1.1 Design Flow

4.1.1.1 Plant Capacity

The plant design flow rates, as established in the current discharge permit, are summarized below. A copy of the City's Discharge Permit is included in **Appendix C**.

Annual Average Daily Flow (AADF)= 8.0-mgd
Peak Hourly Flow (PHF)= 21-mgd

4.1.1.2 Projected Flows

Projected flows are covered in **Section 3.0** and based on the City's Comprehensive Plan and Texas Water Development Board (TWDB) Population Projections. TCEQ requires that whenever a wastewater treatment plant reaches 75% of the permitted daily average flow for three consecutive months, the permittee is required to initiate engineering and financial planning for expansion and/or upgrading the treatment plant. Whenever flows reach 90%, the permittee should be in construction. Existing flows fluctuate but generally in the 4-mgd range. **Table 4-1** summarizes these flows and compares to the discharge permit. Based on these projections, the plant will reach 75% of the permitted design flow approximately in 2025 and reach the permitted capacity in 2040. The plant is currently operating at approximately 51% capacity.

Projections indicate that the plant will not reach capacity until Year 2040. Therefore, the recommended improvements target maintenance repairs and upgrades to replace inoperable or dilapidated equipment that has reached its intended design lift. It is important to continue monitoring flows at the plant. As improvements are made to the sanitary sewer collection system it will result in higher flows at the Plant. GIC developed several options to add capacity to the biological treatment process which are summarized in **Section 4.2.3**. The Secondary Clarifiers, Effluent Filters, UV Disinfection, and post aeration system are currently rated at 10-mgd. Therefore, if flows climb at a higher rate or the GPCD increase, the City has the flexibility of choosing from the various alternatives presented in this section to increase capacity. In addition, the City can also opt to add the third BNR Train.

TABLE 4-1
Pharr WWTP Design Flows
City of Pharr 2018 Wastewater Master Plan

Year	AADF (MGD)	MMADF (MGD)	Max Day (MGD)	2-Hr Peak (MGD)
Existing Flows (2018)	4.1	5.0	6.1	15.0
TCEQ Permit Flows	8.0	-	-	21.0
Year 2040 Flows	8.3	10.0	10.3	24.6

4.1.2 Wastewater Characteristics

Historical wastewater flow, BOD_5 and TSS data were analyzed to determine historical loads to the plant and develop design loads for assessing future treatment requirements if required. The analysis shows that while flows to the plant have declined slightly, loads to the plant have significantly increased since the last upgrade. Refer to Table 4-2. This change probably results from reduced per capita water use and a more concentrated wastewater.

TABLE 4-2
Design BOD_5 and TSS Loads
City of Pharr 2018 Wastewater Master Plan

Year	Avg Daily Flow	Max Month ADF	BOD_5	Annual Average BOD_5 Load	Max Month BOD_5 Load	TSS	Annual Average TSS Load	Max Month TSS Load
	(MGD)	(MGD)	(mg/L)	(lb/day)	(lb/day)	(mg/L)	(lb/day)	(lb/day)
2015	5.7	6.9	236	11,178	13,532	93	4,434	5,365
2016	4.4	5.4	208	7,605	9,334	94	3,473	4,202
2017	4.2	5.1	207	7,225	8,773	105	3,718	4,498
2018	4.1	5.0	227	7,734	9,432	101	3,472	4,201
Existing Design	8.0	10.0	220	12,797	14,626	160	9,341	10,675
Build-out	8.3	10.0	220	15,174	18,282	100	9,270	8,340

4.1.3 Nitrogen Loads

Limited influent nitrogen data are available for this plant. The recommended Total Kjeldahl Nitrogen (TKN) loads for the upgrade are based on the available plant ammonia data plus the estimated organic nitrogen fraction of the suspended solids. A TKN concentration of 43 mg/L was used for the design of the latest upgrade.

4.1.4 Effluent Quality

The existing discharge permit limit concentrations are shown in Table 4-3.

TABLE 4-3
Pharr WWTP Permit Discharge Limits
City of Pharr 2018 Wastewater Master Plan

Parameter	Units	Limits
MMADF	MGD	10.0
BOD_5	mg/L	7
	lb/day	466
TSS	mg/L	12
	lb/day	800
NH_3-N	mg/L	2.0
	lb/day	133
DO	mg/L	6.0

The third train (MLE) facilities are designed to achieve a total nitrogen (TN) concentration of less than 8 mg/L.

The City operates a recycle system to irrigate a golf course as well as for plant process water. The system reduces the amount of water that is discharged from the WWTP and total maximum daily load (TMDL) to the receiving stream. The rules for use of reclaimed water are stipulated in TCEQ Rule 210.32. There are two classifications for reclaim water use:

1. Type I Reclaimed Water Use includes irrigation and other uses in areas where the public may be present during the time when irrigation takes place or other uses and where the public may come into contact with the water. This category includes irrigation of residential and urban properties, golf courses and other recreational land, fire protection, irrigation of food crops, pastures for milking animals, and toilet or urinal flushing water.

2. Type II Reclaimed Water Use includes irrigation or other uses where the public is not present during the time when irrigation activities occur and where the public will not come in contact with the reclaimed water. This category includes irrigation of sod farms, silviculture, limited access highway rights of way. Generally, the site must be remote and have controlled access. Irrigation of crops where the reclaimed water is unlikely to have direct contact with the edible part of the crop, or crops that are pasteurized prior to distribution may be irrigated with Type II reclaimed water.

The applicable reclaimed water quality standards for these two classifications when produced from a WWTP are shown in Table 4-4. The outcome of these rules is that Type I reclaimed water generally requires filtration whereas Type II water does not.

The effluent filters in the last upgrade have sufficient capacity to filter all effluent produced at the plant. Filtration makes the effluent suitable for a wider variety of reuse applications.

TABLE 4-4
Reclaimed Water Quality Requirements
City of Pharr 2018 Wastewater Master Plan

Parameter	Type I	Type II
BOD_5 or $CBOD_5$, mg/L	5	15
Turbidity, NTU	3	na
Fecal Coliform, CFU/100 mL*	20	200
Fecal Coliforms, Max CFU/100 mL**	75	800

* geometric mean
** single grab sample

4.1.5 Overview of Existing Facilities

The existing Pharr WWTP includes a main influent pump station, headworks structure, two (2) oxidation ditch systems and associated clarifiers (Train 1 & 2), a biological nutrient removal (BNR) basin and associated secondary clarifiers (Train 3), cloth media filtration, and UV disinfection. Sludge management facilities include a sludge holding tank, gravity belt thickener, two aerobic digesters, and a belt filter press (BFP) facility for biosolids dewatering.

The influent pump station has four, 40-HP Flygt submersible pumps, each with a capacity of 2,870-gpm. The pump station has a maximum (firm) capacity of 12.3 MGD with three (3) pumps in operation. The 16-ft diameter Pista Grit System has a rated capacity of 20 MGD. Screened and degritted wastewater is split by weirs and flows to the two oxidation ditch systems and BNR Basins.

Oxidation Ditch No. 1 has a basin volume of 1.5 MG, two 2-speed, 125 HP surface aerators and is rated for 2.25 MGD. There are two 60-ft diameter secondary clarifiers (1 and 2) with 12-foot side water depths. The return activated sludge (RAS) pump station has three (3) 15-HP Gorman-Rupp and two (2) 5-HP Gorman-Rupp waste activated sludge (WAS) pumps.

Oxidation Ditch No. 2 has a basin volume of 2.3 MG, two 2-speed, 125 HP surface aerators and is rated for 2.75 MGD. There are two 60-ft diameter secondary clarifiers (3 and 4) with 12-foot side water depths. The RAS Pump Station 2 has three (3) 15-HP centrifugal pumps and two (2) 5-HP WAS pumps.

The third biological treatment train has two aeration basins in a MLE configuration, and two clarifiers (5 and 6). Construction of these facilities was completed in 2010, as well as other system improvements (including effluent filters and UV disinfection). The third treatment train is located directly south of the headworks.

Appendix D shows an overall detailed process flow diagram for the Pharr WWTP for both liquid and treatment streams.

Effluent from all treatment trains pass through effluent filters. The filters reduce the effluent suspended solids, and produce an effluent suitable for Type I reuse.

Disinfection is achieved using UV disinfection. Two channels are each equipped with two banks of lamps.

Effluent that is reused at the WWTP or offsite is chlorinated in an adjacent basin at the UV disinfection basin to achieve high level disinfection and maintain a chlorine residual to prevent bacterial re-growth. Small 150-lb gas cylinders are used for this purpose.

The sludge management system includes the following:

- Waste Activated Sludge storage in an aerated tank (converted gravity thickener).
- WAS can be thickened, if desired, in a gravity belt thickener prior to aerobic digestion.
- Two aerobic digester are used for digestion.
- Sludge is ultimately dewatered at a dewatering facility which includes two (2) belt presses, two (2) progressive cavity sludge cake pumps, and ultimately discharges into two roll-off boxes.

4.1.6 Condition Assessment

The following sections describe the current condition of the wastewater treatment plant which includes the influent lift station, liquid train, and sludge handling system. wastewater collection system lift stations and wastewater treatment facilities.

4.1.6.1 Main Plant Influent Lift Station

The influent pump station has four, 40-HP Flygt submersible pumps, each with a capacity of 2,870-gpm. These pumps provide a maximum (firm) capacity of 12.3 MGD with three (3) pumps in operation and 16.4 MGD when four pumps operate.

Lift Station No. 6 (in the collection system) pumps wastewater directly to the top of the headworks and bypasses the Influent Lift Station. The direct pumping to the headworks allows a total plant peak design flow of 21.6 MGD.

The existing lift station was not modified as part of the last expansion and has been in operation since 1983, approximately 35-years. The City should consider replacing, or expanding and upgrading the Influent Lift Station. The volume of the lift station wet well is too small, which results in overflows. This is a health hazard for plant staff.

The odor control fan, that evacuates corrosive gases from the wet well, is not operational.

4.1.6.2 Headworks

The Headworks includes a 6-ft wide, mechanical fine screen, bypass channel with manually cleaned screen, a 16-ft diameter Pista Grit System rated to treat 20-MGD, and a flow splitter structure. Screenings are washed, compacted and conveyed to a screenings hopper.

Screened and degritted wastewater flows to a splitter box where it is directed to the two oxidation ditch systems and BNR Basin. This system proportionally splits the flow and load between the on-line treatment trains.

The Headworks facility was modified as part of the last two expansion projects. It was originally built in the mid-80's as part of the first train, upgraded when Train 2 was added in 1997, and again when Train 3 was constructed in 2010. Refer to **Table 4.5** for existing screening facility details.

TABLE 4-5
Wastewater Screen Facilities
City of Pharr 2018 Wastewater Master Plan

Item	Existing
Number	1
Capacity, MGD	21.8
Channel width, ft	6.0
Channel depth, ft	5.0
Opening Size	¼"
Design Headloss, ft @ 30% blocked.	1.08
Max. water level upstream, ft	4.0

The existing grit removal system was originally installed during construction of Train 1. Minor improvements were made in 2010, the self-priming control panel was replaced.

The headworks has surpassed its intended design life. The overall condition of the concrete did not reveal any significant issues given age and service. No immediate repairs are necessary.

The fine screen is operational and requires maintenance. The screen cleaning brush was missing during the site visit, the HMI monitor was not operating, and the grinder had been removed. Motors on the screening unit are severely corroded. The addition of a second screen is recommended for redundancy.

The grit chamber was not operational during our site inspection. The mechanical paddle was not operating and there is significant corrosion inside the primer pump control panel. The addition of a water scour to fluidize settled grit prior to turning on the grit pumps would improve the current situation. Staff noted that grit is bypassing the headworks and is possibly impacting the treatment plant.

Basic deficiencies observed at the headworks are summarized below:

1. Severe corrosion of equipment.
2. Odor Control Blower is not operational.
3. Fine Screen Operator Interface Screen Panel is not operational.
4. The cleaning brush at the top of the Fine Screen is missing.
5. Grit Chamber paddle is not operational.
6. There is heavy corrosion at the grit chamber pump priming panel.
7. Fine Screen grinder was removed.
8. Mechanical screen motor needs to be rehabilitated or spares ordered. Motors are severely corroded.
9. Incorporate flow metering (strap on mag type meter) to measure influent flow to meet new TCEQ rules.

4.1.6.3 Plant 1: Oxidation Ditch No. 1

Oxidation Ditch No. 1 was constructed in 1986. It has a basin volume of 1.5 MG, two 2-speed, 125 HP surface aerators and is rated for 2.25 MGD. While older than Oxidation Ditch No. 2, it is in better structural condition. The structure appears sound and there is no major visible cracking. The FRP splash cover panels near the aerators are in poor condition and should be repaired or replaced.

The low-speed aerators (motors and gearboxes) have been rebuilt several times. Now over 30 years old, they are approaching the end of their reliable lives and cost-effective operation.

The power is supplied via the MCC which is located at the base of the ditch structure. The MCC was found to be in satisfactory condition.

The downward-opening weir gates of Oxidation Ditch No. 1 were recently replaced and equipped with motor-operated actuators and dissolved oxygen (DO) sensors. This modification allows the weir gate levels to vary, and can be used to maintain the DO within a target range and reduce aerator power consumption. During our visit, the DO control system was not in use. Gate 1 was 42% open and Gate 2 was 35% open.

The two 60-ft diameter Secondary Clarifiers (Nos. 1 and 2) for Train 1 were refitted in 2015 and 2017 and are in good condition. No deficiencies were identified.

The return activated sludge (RAS) pump station has three 15-HP Gorman-Rupp and two (2) 5-HP Gorman-Rupp waste activated sludge (WAS) pumps. These pumps appear to be operating satisfactorily. Staff did not indicate any problems with the RAS pumps. The station appears to be working well.

Neither the RAS nor WAS flow meters were operational. We recommend that flow meters be installed to properly manage RAS and WAS operations. Strap-on ultrasonic type meters are more cost-effective when compared to inline magnetic type meters. However, we have taken note that the ultrasonic meters at this facility have not performed well. None of the ultrasonic meters were operational during our last site visit. Recommend that the source of the problem be researched or the City should simply avoid using the ultrasonic strap-on type meters.

Basic deficiencies are summarized below:

1. The aerator on the south side of Oxidation Ditch No. 1 was noisy and should be checked.
2. The FRP Splash Panels are loosely fixed or missing, and need to be repaired or replaced.
3. New RAS and WAS flow meters should be provided to assist in plant operation and control.
4. The Oxidation Ditch MCC are also very old and not properly protected. The MCCs for the ditches should be replaced.

4.1.6.4 Plant 2: Oxidation Ditch No. 2

Oxidation Ditch No. 2 was constructed in 1998. It has a basin volume of 2.3 MG, two 2-speed, 125 HP surface aerators and is currently rated for 2.75 MGD.

Oxidation Ditch No. 2 (Plant 2) is structurally in poor condition, with significant cracks developing at the western end (farthest from Veteran's Boulevard) and north side. The mastic compound within construction joints is separating and rebar is exposed. The joint shows signs of leakage.

It is recommended that the City determine the cause of this structural failure and evaluate options to rehabilitate this structure. A comprehensive structural evaluation of the condition of the structure is beyond the scope of this project. However, based on the original construction drawings (Turner Collie & Braden), this structure has a raft foundation (no pile supports). The foundation at the western end of the structure may be subsiding. A structural engineer should examine this structure and prepare a report on the causes of the cracking, remedial options and an estimate of the time needed for repair.

The surface aerators are over 20 years old and are nearing their expected operating life. They have been re-built on multiple occasions. The aerators are 2-speed, but staff noted that only one aerator can operate at both speeds.

Clarifiers No. 3 and 4 are in reasonable condition and there is no immediate need to rehabilitate the sludge collection equipment. GIC recommends that the City dewater the clarifiers every few years to inspect this equipment. Based on visual inspections, the priority for replacing clarifier internal equipment in the CIP can be elevated if the condition of the clarifier equipment rapidly worsens.

The sludge collector drive units at both clarifiers should be sandblasted and painted. The landing at the at the top of the stairs needs to be replaced.

RAS Pump Station 2 has three (3) 15-HP centrifugal pumps and two (2) 5-HP WAS pumps. Staff did not indicate any problems with these pumps. The station appears to be working well.

As with other process pump stations, the flow meters for the RAS and WAS pumps are not working and need to be replaced.

4.1.6.5 Plant 3: BNR System

Two bioreactors, in a folded, plug-flow Modified Ludzack-Ettinger (MLE) configuration provide 3.0-mgd treatment capacity. Each bioreactor has a volume of 0.64-MG and is designed to reduce both ammonia and nitrate (NO_3-N) concentrations. A third bioreactor can be built in the future to increase plant capacity to 10 MGD. Figure 4-1 depicts the process flow diagram and shows the future third biological treatment train.

Screened wastewater flows from the headworks to the MLE splitter box where it is mixed with return activated sludge (RAS) and distributed to the bioreactors. The influent/RAS mixture then mixes with recirculated mixed liquor in the anoxic zone. Mixed liquor suspended solids (MLSS) remain suspended due to submersible mixers.

MLSS flows over a weir into an aerobic zone, where nitrification occurs. At the end of the aerobic zone, a propeller wall pump recirculates nitrate-rich mixed liquor (NRML) back to the anoxic zone. The nitrates are denitrified in the anoxic zone, reducing the total nitrogen concentration, the aeration power requirement and good settling sludge characteristics are promoted.

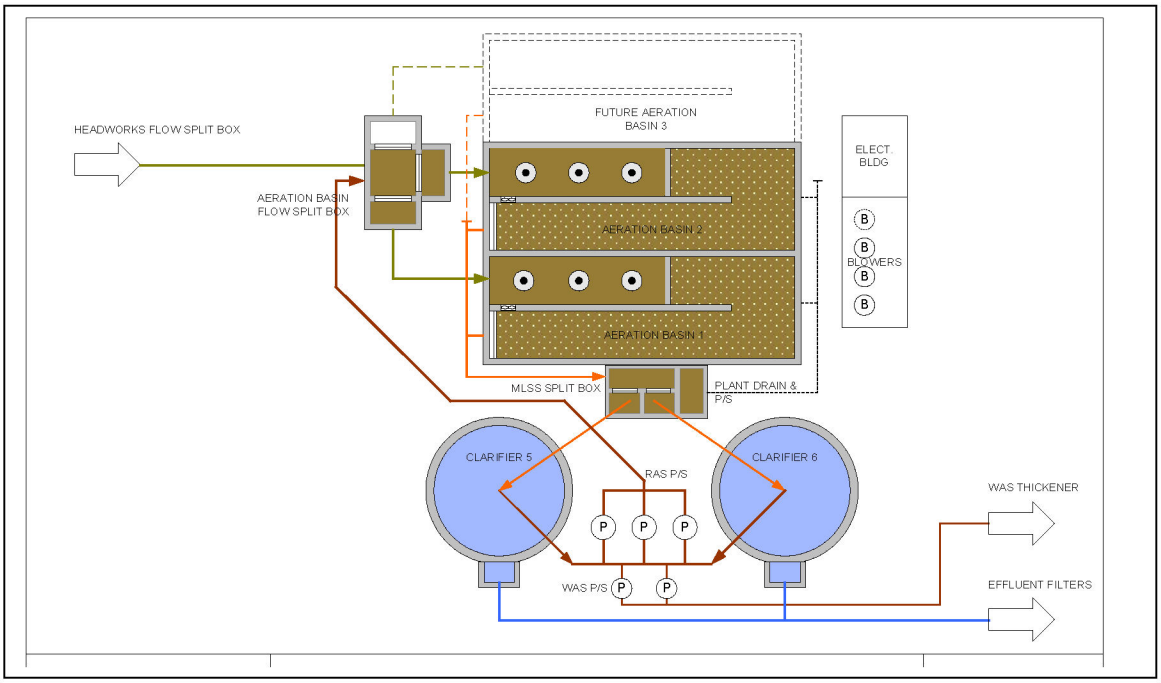
The aerobic zones of the bioreactors use fine-bubble diffusers to distribute air supplied by multi-stage centrifugal blowers. These systems appear to be working satisfactorily.

The BNR aeration basins and equipment are in good condition. No major deficiencies were identified. Mixers and pumps need to continue to be monitored and replaced/repaired as needed under the City's O&M Budget. GIC will include replacement costs for this equipment in the CIP.

Secondary Clarifiers 5 and 6 are 80-ft diameter units with a side water depth of 15 feet. Clarifiers are center feed units, with internal weirs, full-width scum troughs and spiral sludge removal mechanisms. The concrete structures and most of the equipment in these clarifiers are in good condition.

The scum pump system is not working reliably. GIC recommends that it be replaced. The City may consider using a Wemco Pre-rotation Type Basin which is designed to create a rotation motion of fluid in the basin prior to entering the pumps. This system could be considered as part of a future improvement project.

Figure 4-1
Biological Treatment Process Flow Diagram
City of Pharr 2018 Wastewater Master Plan



The three (3) existing RAS pumps are operating well. One (1) of the original Penn Valley WAS pumps was replaced with a Gorman-Rupp Pump. It is our understanding that the second Penn Valley Pump is not operational. No other major deficiencies were identified.

No RAS/WAS flow meters (strap-on) for the RAS & WAS pump stations are operational. The existing flow measurement systems should be upgraded.

New HMI screens are needed and should be housed inside exterior panels to protect them from UV degradation.

4.1.6.6 Effluent Filter

Effluent filters achieve a high-quality plant effluent that is consistently less than the 10 mg/L effluent total suspended solids concentration (TSS) limit. The filters have sufficient capacity to treat all wastewater flows in the foreseeable future.

The filters are in good condition. The four 12-disk cloth filter units are designed to treat and average 10 MGD flow, and a peak flow of 24 MGD. Filter media is typically replaced every 7 to 10-Years. It is our understanding that the media has been replaced once. A second replacement would therefore not be necessary for another 7 to 10-Years.

Filter HMI screens need to be replaced and housed inside the exterior panels. No other problems identified with filters.

A walkway was installed by staff to facilitate movement between the effluent filter and UV Basin. This walkway does not meet safety codes and consideration should be given to replacing it with a properly designed walkway or eliminating it completely. It is our opinion that the City seal it off and not allow use for safety issues.

4.1.6.7 UV Disinfection

The UV disinfection facility has two channels, and each channel has two banks of UV modules. The disinfection system is designed for an average flow of 10 MGD, and peak flow of 24 MGD.

A downward-acting weir gate at each end of the new UV channels maintains the water level in the disinfection basin at a specified depth above the UV lamps, and ensures proper disinfection of all flow. The influent weir gate is normally open when the channel is in use. It should be raised, or closed, when the channel is offline. These weir gates have electric actuators and modulate to achieve the constant water level in the channel.

Each channel has a level element and instrumentation to determine the weir gate position so that effluent flow can be calculated, and the correct UV dose determined and applied.

The lamps are automatically cleaned to maintain disinfection efficiency. The cleaning wipers are powered by a single, hydraulic system.

The HMI Control Panel screens need to be replaced. No other problems identified with UV Disinfection.

4.1.6.8 Solids Handling Overview

The Sludge Management System consists of the following treatment components:

Waste Activated Sludge (WAS) Storage Tank & Blowers
Gravity Belt Thickener Feed Pumps
Gravity Belt Thickener (GBT)
TWAS Transfer Pumps
Aerobic Digesters and Associated Blowers
Digested Sludge BFP Feed Pumps
Belt Filter Presses
Dewatered Sludge Cake Transfer Pumps

The sludge management system is designed to produce biosolids that meet Class B Sludge Requirements.

Proof of pathogen reduction is accomplished by fecal coliform testing and VAR requirements. The new sludge management system is expected to produce aerobically digested sludge SOUR rates equal to or less than 1.5 mg/g/hr.

Figure 4-2 shows the process flow diagram of the upgraded sludge management system. These processes are discussed in more detail in the following sections.

Table 4-6 shows the expected WAS flows and loads at the design monthly maximum average day conditions. These values are based on an assumed solids retention time (SRT) of 10 days.

Figure 4-2
Sludge Management Process Flow Diagram
City of Pharr 2018 Wastewater Master Plan

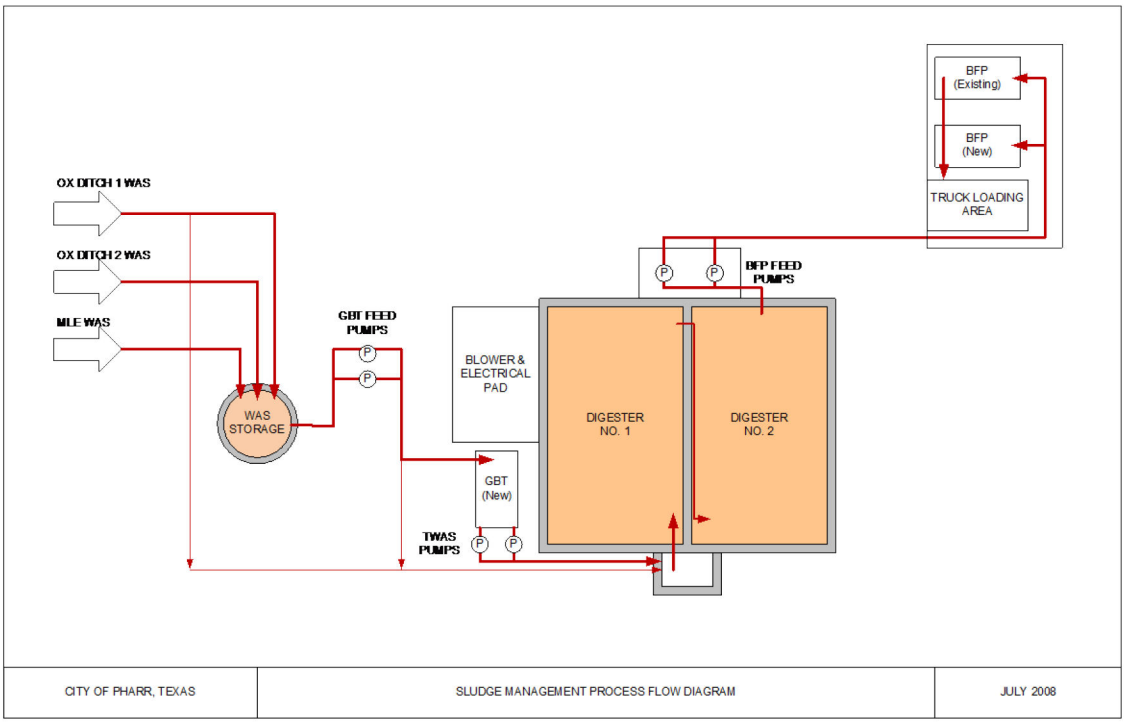


Table 4-6
Design Waste Activated Sludge Flows and Loads[a]
City of Pharr 2018 Wastewater Master Plan

Flow Condition MGD	WAS Load lb SS/day	WAS Flow gpd
5.0	5,900	81,800
8.0	10,050	139,000
10.0	12,120	168,000

Notes: [a]Based on a 10-day SRT

4.1.6.9 WAS Thickening

The former gravity thickener is available to store WAS upstream of the thickening process. The GBT can process up to 490-gpm, which far exceeds the WAS pump capability.

Therefore, storage is available to accumulate WAS and allow the GBT to operate for extended run times independent of wasting operations.

A coarse bubble aeration system and blowers provide air to keep the WAS mixed and aerobic. Pumps (GBT Feed Pumps) transfer WAS from the storage tank to the gravity belt thickener (GBT) when thickening is needed, or directly to the digesters. After thickening, two TWAS pumps transfer TWAS from the GBT to the aerobic digesters.

The WAS operation can be used to blend TWAS and WAS to achieve approximately 3 to 4 % dry solids (% DS) in the digesters. The GBT thickens WAS using a minimum polymer dose for solids separation. A portion (typically 10 to 15 percent) of the WAS can bypass the GBT to dilute the TWAS and optimize the solids concentrations in the digesters.

4.1.6.10 WAS and TWAS Systems

The sludge holding tank is not currently being used. This non-usage is not an issue if adequate digestion can be achieved without thickening sludge. All equipment should be operated periodically to ensure future operation.

The GBT Feed and TWAS Transfer Pumps are not being used, as WAS is being pumped directly to the digesters by the WAS pumps. The GBT and TWAS pumps need to be exercised regularly, and should also be sandblasted and painted.

Blowers for the sludge storage tanks should also be periodically exercised to ensure future operation.

The Gravity Belt Thickener is operational and no major problems were noted.

The Belt Filter Press Feed Pumps need to be sandblasted and painted. During our visit we observed that one of the BFP Feed pumps is relatively new and a second new pump is stored in the old BFP Building awaiting installation.

4.1.6.11 Aerobic Digestion

The two existing 0.58 MG aerobic digesters are aerated by three 125-HP multistage centrifugal blowers.

TWAS can be pumped to Digester 1 and aerated. TWAS will overflow into Digester 2, and after further digestion, is pumped to the belt filter presses (BFP) for dewatering. The use of a two-stage digestion process improves coliform destruction and volatile solids reduction.

Alternatively, WAS/TWAS can be pumped to one digester until it is full, and then to the other. Digested sludge will be pumped from the digester not being filled.

The digester structure appears to be in satisfactory structural condition. Any future work at the WWTP should include an assessment of this facility.

The digester blowers are in poor condition. The digester blowers are in poor shape and should be replaced as part of a CIP or O&M Program. One of the three blowers was not

operational during our site visit. These blowers were installed as part of Phase 2, 1997 and approximately over 20-Years old. This equipment is due to be replaced.

The MCC for the blowers is in extremely poor condition. The MCCs need to be replaced as soon as possible. We recommend housing MCC in a new Electrical Building.

4.1.6.12 Dewatering Facility

The screens on the various control panel screens are blinded/burned out. These screens need to be replaced and some sort of protective covers provided to protect screens. Covers for the screens should be provided at all panels across the entire plant.

The older belt filter press needs to either be replaced or refurbished. Staff indicated some difficulties with this older press. This press was first installed in 1997.

One of the polymer feed systems appeared inoperable. This system should be replaced.

Cake pumps are working well. The pump stator for one of the pumps was out and a replacement stator was pending. Consider providing water jetting inside the sludge transfer piping to lubricate the sludge and reduce wear and tear on the cake pumps and associated stators.

4.1.7 Electrical, Instrumentation and Control

Plant 3 was designed to be SCADA ready. All of the conduits from the various treatment components were installed but wires will need to be pulled and terminated at the existing Administration Building. Software/programming, hardware, and wiring is required to incorporate new SCADA System for Plant 3. Plant 3 includes the BNR Basin, Secondary Clarifier 5 and 6, Effluent Filters, and UV Disinfection System. The SCADA will allow the Staff to optimize the operation of the BNR Basin and it may allow reduction in power consumption.

4.1.8 General Plant Condition

The plant generally is operating well and meeting all effluent discharge limits. We noticed multiple examples of equipment and process piping corrosion that need to be sandblasted to near white finish and epoxy coated. We strongly recommend the City consider adding maintenance personnel. Plant operators are currently responsible for both operations and maintenance. Maintenance personnel would be strictly dedicated to maintenance activities (keeping the plant clean, painting, lubricating equipment, equipment repair, etc.). Additional resources/staff/subcontractors are also needed to support instrumentation and control (I&C) and future SCADA systems.

4.2 Recommended Plant Improvements

The plant is currently operating at approximately 65% capacity. Once the plant reaches 6-mgd, it will trigger the TCEQ 75% rule and the City will need to start planning the next plant expansion.

While capital investment for new facilities that provide additional treatment capacity is not needed immediately, the overall condition of the plant has deteriorated significantly over the past 5 years. Additional funding is needed to improve maintenance, replace aging equipment and upgrade instrumentation and plant controls. These issues should be a high priority over the next few years. Refer to **Appendix E** for drawings that show the location of the various recommended repairs. A summary narrative outlining the recommended repairs/improvements throughout the plant is provided below.

4.2.1 Influent Lift Station

The Influent Lift Station needs to be upgraded or replaced. The new or upgraded Lift Station should be designed to ultimately convey an average flow of 12 MGD and peak flow of 30 MGD.

The existing wet well volume is too small. The lift station pumps cannot respond quickly enough to the uncoordinated peak flows coming from collection lift stations. This results in periodic flooding of raw sewage at the Headworks.

Two possible concepts for replacing the existing facility are:

1. Build a completely new Lift Station structure, most likely to the north of the existing lift station. This would require some logistically difficult influent sewer pipe changes.

2. Build a second wet well adjacent to the existing wet well (on the north side) and connect it to the existing wet well to create a larger, split-wet well.

The new lift station should have sufficient volume to provide some flow equalization. Designers should evaluate the use of collection system lift station instrumentation and controls, connected via a new plant SCADA system, to actively manage and coordinate the collection lift station operations and minimize simultaneous pumping of peak flows to the plant.

The Electrical Building installed during the last expansion includes space for new pump starters and VFDs.

Corrosion due to sewer gases is extensive at the lift station and headworks. High quality, corrosion-resistance materials should be specified and selected for the new facility. Concrete in the wet well should be lined to prevent corrosion by acidic gases.

A comprehensive approach to contain and treat sewer off-gas needs to be included in the new design to protect equipment, minimize maintenance and extend the operating life of the new pumping facility.

Adjacent to the new lift station, a new receiving facility for septic haulers should be built. When siting the new station, consideration should be given to plant traffic and accessibility to the treatment plant for maintenances purposes.

Due to the flooding issues, the priority to upgrade the Main Lift Station is high.

A budget estimate for a new Lift Station is $2.5M.

4.2.2 Headworks

The headworks need to be upgraded or replaced to provide new screening and grit removal facilities. The new facility could be located on the north side of the existing headworks. Minimum design requirements are outlined in TAC Title 30, Part 1, Chapter 217 Subchapter E.

The existing grit removal system is not operational and could may be demolished, allowing a new facility to be constructed adjacent to the existing structure and potentially retain the existing flow splitter structure. This would minimize changes to several large buried pipes.

The new facility should include, at minimum, two mechanical screens with maximum 5-mm diameter perforated plates, and associated screenings conveyance, washer/compactor equipment. There should be a grit removal system designed to remove 95% of grit (specific gravity of 2.65) larger than 100 microns at peak flows. Grit should be well washed, dewatered and conveyed into a dumpster.

Channels should be covered to contain odorous and corrosive gases. Gases should be extracted to an odor control system. Concrete channels should be lined to provide long-term protection to the structure.

The need to upgrade the headworks is high. Parts of the existing screen system (grinder, cleaning brush, HMI screen) do not function or are missing. Corrosion of electrical control systems is severe.

A second mechanical screen, with associated screenings washer and compactor, is needed to reduce the load on the existing screen and for redundancy.

A budget estimate for a new headworks is $5M.

4.2.3 Biological Treatment

Oxidation Ditch No. 1 is structurally in better condition than Oxidation Ditch No. 2. The condition of Oxidation Ditch No. 2 is concerning and the City should commission an engineering assessment of the cracking within the next 12 months and prepare remedial options.

Oxidation Ditch No. 2 is the largest single treatment unit at Pharr (2.75 MGD). As such, the ability to maintain adequate treatment capacity needs to considered when such a large part of overall capacity is unavailable for whatever reason.

A third BNR basin could be constructed and provide an additional 1.5 MGD capacity.

The aerators for both ditch systems are old and need to be upgraded. A 2013 study evaluated the capital and operating costs to upgrade the two oxidation ditch systems at the Pharr WWTP. This study evaluated three alternatives to upgrade the existing aerators:

Alternative 1: Replace the 125 HP surface aerators with new, two-speed surface aerators.
Alternative 2: Replace the existing aerators with dual-impeller surface aerators and VFD motor control.
Alternative 3: Replace surface aerators with independent mixers and fine bubble diffusers.

The study concluded that converting the existing ditch systems to diffused aeration with horizontal mechanical mixers is the most cost-effective alternative, with capital costs being recovered by energy savings within 5 to 6 years.

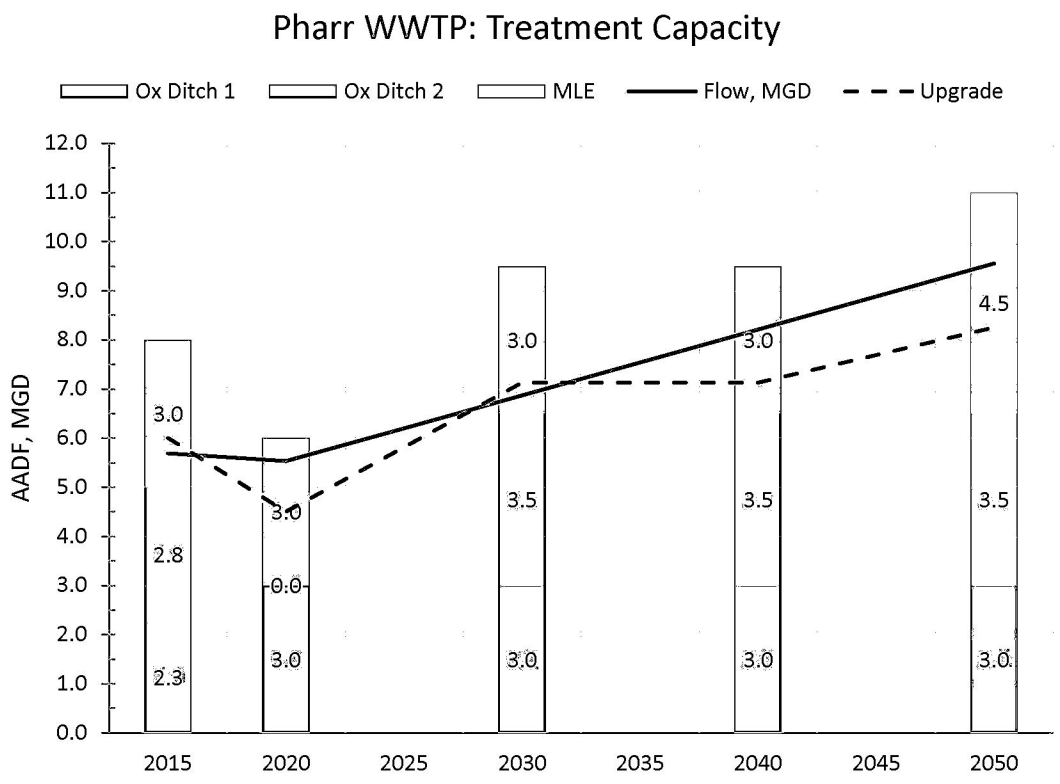
In addition to the energy savings, the potential treatment capacity of the ditches would be increased. The capacity of Oxidation Ditch No. 2, for example, could be comfortably increased from 2.75 MGD to 4 MGD using typical wastewater characteristics and operating at a 10-day solid residence time (SRT).

Considering the imminent need to upgrade the ditches mechanical aeration systems. The City may consider increasing treatment capacity by incorporating a fine bubble diffused aeration system. This modification eliminates the need to build new structures. This approach coupled with the long-term energy savings the City would achieve, is in our opinion, the most prudent and cost-effective approach while flows can still be managed with either of the ditches out of service.

Oxidation Ditch No. 1 can be converted first to realize the treatment capacity gain, before Oxidation Ditch No. 2 is taken offline for a similar conversion and remedial work on the structure, if needed.

The construction of the third BNR basin can then be postponed for the foreseeable future. This sequence is illustrated in **Figure 4-3** below, which shows the projected flows and on-line treatment capacity of an upgraded Oxidation Ditch No. 1 and offline Oxidation Ditch No. 2 in 2020.

Figure 4-3
Treatment Capacity Graph
City of Pharr 2018 Wastewater Master Plan



4.2.3.1 Secondary Clarifiers 1, 2, 3 and 4.

Secondary Clarifier Nos. 1 and 2 which are associated with Oxidation Ditch No. 1 were recently rehabilitated. All mechanical and electrical components were fully replaced. Secondary Clarifiers Nos. 3 and 4 which are associated with Oxidation Ditch No. 2, have not been rehabilitated. These clarifiers are in reasonable condition but have some localized areas of corrosion. They should be upgraded within the next 10 years.

4.2.3.2 Secondary Clarifiers 5 and 6.

The secondary clarifiers are in good condition and do not need upgrading. They were designed to accommodate flow from three MLE basins.

The scum pumps need to be upgraded.

Flow meters need to be added to properly control return activated sludge (RAS) and waste activated sludge (WAS) flows. A new WAS pump is needed.

4.2.4 Effluent Filters

The existing effluent filters have been designed for an average flow of 10 MGD and a peak flow of 24.0 MGD. No additional filtration capacity is needed over the next 10 years.

Replacement of the control panels are needed.

Provide safe walkway between the Filters and UV disinfection.

4.2.5 UV Disinfection

No UV disinfection capacity increases are needed in the foreseeable future.

Continued maintenance on the modulating gates and replacement of the HMI control panels are needed.

4.2.6 Post Aeration

The existing post-aeration system is adequate for the expected future flows and does not need to be expanded.

4.2.7 Solids Handling

The digester structure appears to be in reasonable condition.

The digester blowers are over 20 years old and in poor condition and should be replaced. A budget cost to replace the digester blowers is $300,000.

The digester blower motor control center (MCC) is in very poor condition. The electrical cabinet bases have extensive corrosion. Replacement of this electrical equipment should be a high priority. A budget cost to replace the digester MCC is $730,000.

There are two belt filter presses (BFP) at the plant. One new BFP was added in the 2012 upgrade while the original unit was refurbished. The City should plan on replacing the refurbished unit within the next 5 years. A budget cost to replace one belt filter press is $288,000.

One BFP polymer system is inoperable and should be replaced immediately. A budget cost for a new polymer feed system is $35,000.

It is recommended that the City consider adding water glands to reduce the friction and stress on the sludge cake pumps. This improvement may reduce the wear and tear on the sludge cake pumps. Other improvement to consider is replacing the HVAC system in the electrical room. A budget cost for improvements to the biosolids cake conveyance system is $75,000.

4.3 Capital Improvement Plan

This section of the report provides a schedule and corresponding cost for improvements identified in the master plan report to meet capacity, regulatory, and/or maintenance requirements at the wastewater treatment plant. Refer to **Table 4-7** for a breakdown of recommended improvements at the WWTP. Refer to **Appendix E** which shows location of recommended miscellaneous plant improvements.

Table 4-7
Wastewater Treatment Plant CIP
City of Pharr 2018 Wastewater Master Plan

Item No.	Description Summary	*Critical Rating (1 to 10)	Timeframe		Expenditures	
			Design	Construction	Engr/SDC/Admin	Construction
1	Influent Lift Station Replacement	7	2019	2020	$ 384,000.00	$ 2,560,000.00
2	Headworks Replacement	7	2019	2020	$ 412,500.00	$ 2,750,000.00
3	Oxidation Ditch No. 2 Repairs	9	2019	2020	$ 27,000.00	$ 180,000.00
4	Oxidation Ditch Modification/Diffused Air	7	2020	2021	$ 315,000.00	$ 2,100,000.00
5	BNR Basin (SCADA Upgrade)	5	2025	2026	$ 225,000.00	$ 1,500,000.00
6	Clarifier No. 3 and 4 Replacement	4	2025	2026	$ 225,000.00	$ 1,500,000.00
7						
8	RAS/WAS PS No. 2- Add Flow Meters	4	2019	2020	$ 2,700.00	$ 18,000.00
9	Effluent Filter Control Panel Repairs	7	2019	2020	$ 2,775.00	$ 18,500.00
10	Solids Handling System Improvements	7	2019	2020	$ 104,700.00	$ 698,000.00
11	Digester Blower Electrical (MCC) Improvements	9	2019	2020	$ 109,500.00	$ 730,000.00

*Critical rating is based on a scale of 1 to 10. Ten (10) being the most critical/urgent.

Section 5.0

Wastewater Collection System

5.1 Evaluation Objective and Scope

This plan is prepared to assist the City develop a Capital Improvement Plan (CIP) to define wastewater collection system improvement to meet current and future flows through the year 2040. As with any master plan, it is crucial to understand the limitation of this plan as a planning tool. Staging of particular projects may need to be adjusted to conform to regional factors such as planned roadway improvements, changes in development patterns, sewer condition, and/or right of way considerations.

The City's Sewer System Service Area is roughly bounded to the north by Owassa Road, west by Jackson Road, east by Veterans Road and South by the Rio Grande River. The study area also includes the region recently annexed by the City of Pharr. The Certificate of Convenience and Necessity (CCN) for this region is currently held by the Military Highway Water Supply Corporation. Refer to Exhibit No. 5.1 which shows the service area boundary.

The City continues to struggle with the operation and maintenance of thirty-three (33) lift stations. One of the primary goals of this study is to eliminate existing lift stations to reduce operational cost. This would be accomplished by combining existing lift stations or constructing new deeper sewer mains. GIC conducted an assessment of each lift station to help in the decision process to either eliminate or rehabilitate facilities that were found in poor conditions.

The main elements of our study are summarized below:

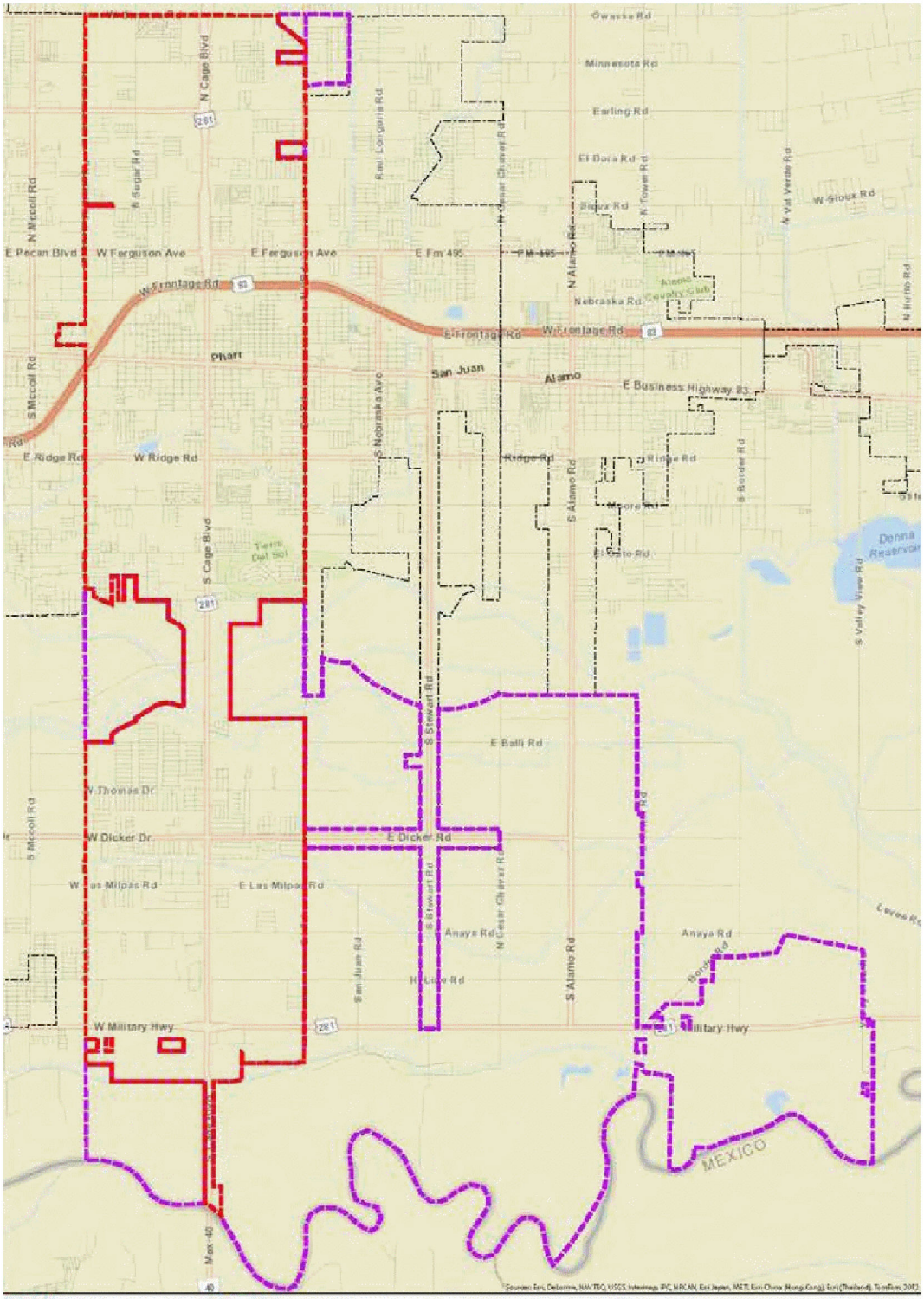
1. Define sewer sheds for each of the City's 33 Lift Stations.
2. Utilize the City's Comprehensive Plan and Texas Water Development Board (TWDB) Population Projections to determine future flows. The population and corresponding flow projections were presented in Section 2.0 and 3.0.
3. Hydraulic analysis to identify system deficiencies and future needs.
4. Lift station condition assessment. Refer to Appendix F.
5. Develop a prioritized Capital Improvement Plan (CIP) to address system deficiencies and handle projected flows.

5.2 Description of Existing Collection System Facilities

The City's Collection System includes the following components:

1. Thirty-three (33) Lift Stations.
2. One (1) Wastewater Treatment Plant (WWTP). The WWTP includes an on-site plant lift station. The WWTP Influent lift station is covered in Section 4.0.
3. Organized Sanitary Sewer System consisting of 6, 8, 10, 12, 14, 15, 18, 21, 24, 30, and 36-inch lines.

Refer to Exhibit 5.2, 5.3, and 5.4 for maps that show the existing sewer collection system highlighting major trunk mains and all lift stations.



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CITY OF PHARR MASTER PLAN

CITY OF PHARR

EXHIBIT NO. 5.1 WASTEWATER SERVICE AREA BOUNDARY

PHARR, TEXAS

SCALE: N.T.S.

OWASA ROAD
OWASA ROAD
LS #27
8" SS
LS #23
8" SS
8" SS
6" FM
10" SS
MINNESOTA ROAD
12" SS
10" SS
6" FM
8" FM
12" SS
SUGAR ROAD
12" SS
10" SS
15" SS
6" FM
U.S. HIGWAY (U.S. 281)
LS #25
12" SS
15" SS
10" SS
6" FM
NOLANA LOOP
6" FM
NOLANA ROAD
LS #31
6" FM
LS #29
8" SS
RAIDERS AVENUE
12" SS
VETERANS BLVD. (I. ROAD)
N. JACKSON ROAD (F.M. 2061)
10" SS
LS #33
8" SS
6" FM
ELDORA ROAD
16" FM
8" SS
15" SS
SIOUX RD.
30" SS
SIOUX RD.
30" SS
15" SS
30" SS
30" SS
U.S. HIGHWAY (U.S. 281)
SUGAR ROAD
LS #7
24" SS
16" FM
FM.495 (FERGUSON ROAD)
FM.495 (FERGUSON ROAD)
12" SS
12" SS
N. JACKSON ROAD (F.M. 2061)
U.S. EXPRESSWAY 83
LS #15
POLK AVENUE
LS #3
FM

LEGEND

- SANITARY SEWER TRUNK
- FORCE MAIN
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT

City of Pharr
2018 Master Plan
North Lift Stations

Lift Station #	Name
7	Bagwell
23	Texas Trails
25	High School
29	Presidents
31	Rudy's
33	Crystal Estates

NORTH
CENTRAL
SOUTH
KEY MAP

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CITY OF PHARR
MASTER PLAN

CITY OF PHARR

EXHIBIT 5.2
NORTH REGION

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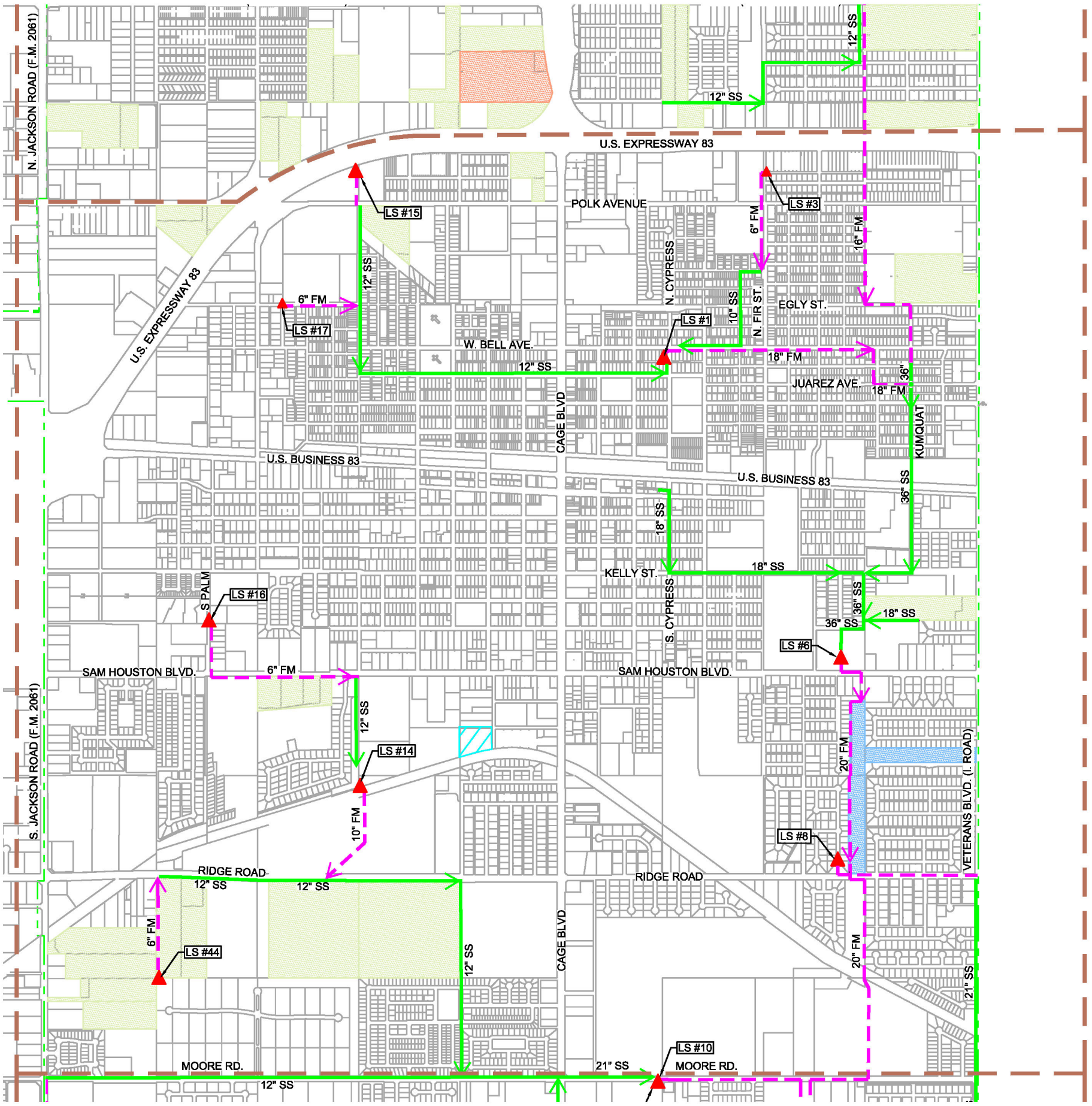
SCALE: 1"=1500'



LEGEND

- SANITARY SEWER TRUNK
- FORCE MAIN
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT

2018 Master Plan
Central Lift Stations

Lift Station #	Name
1	Main
3	DeLeon
6	PUB
8	Ridge
14	Canal
15	RGV
16	Civic
17	Beto Espinoza
44	Encanto Ridge

KEY MAP

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CITY OF PHARR
MASTER PLAN

CITY OF PHARR

EXHIBIT 5.3
CENTRAL REGION

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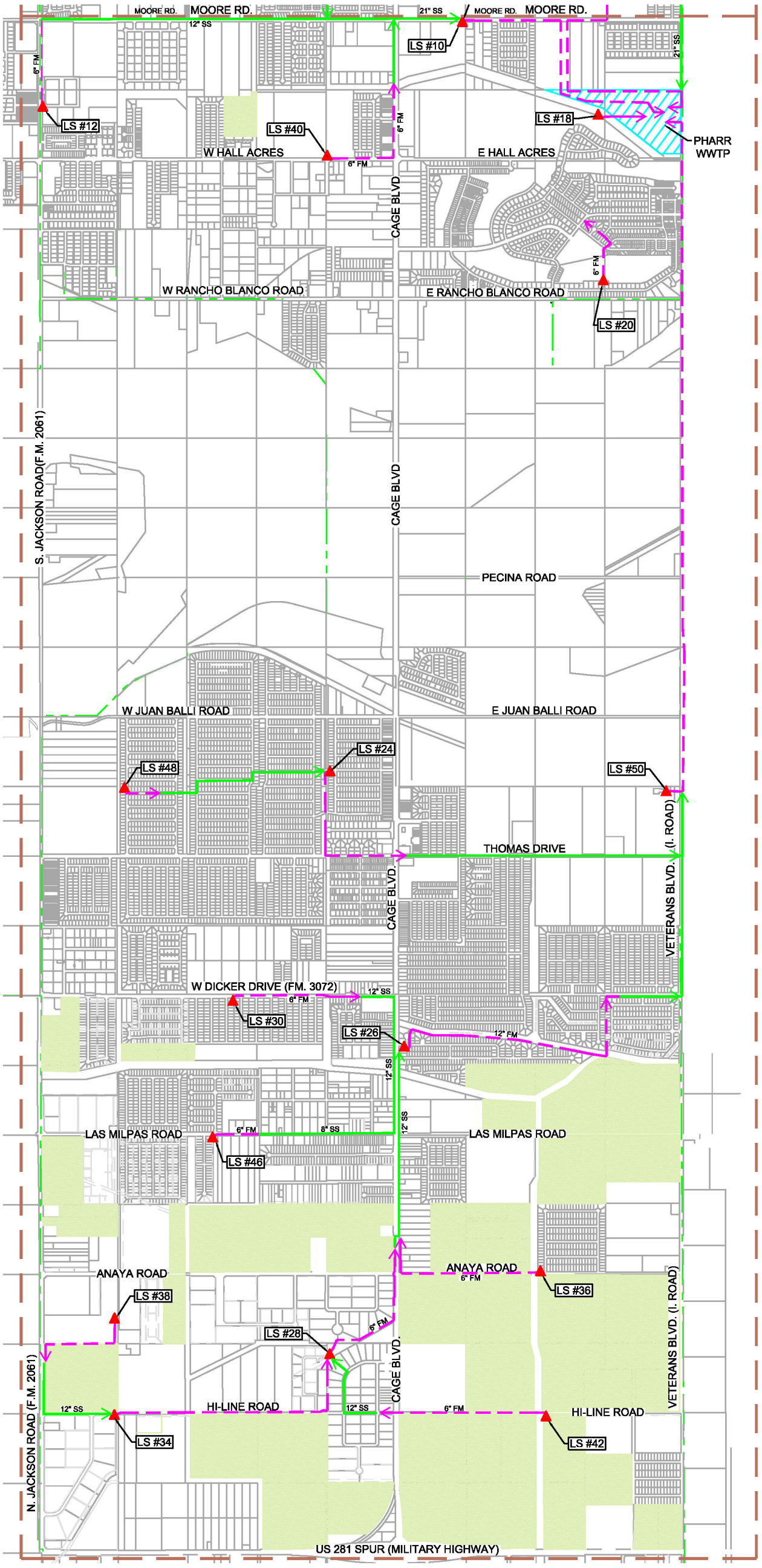


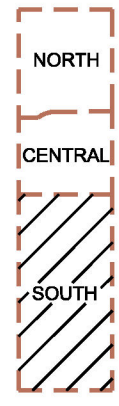
SCALE: 1"=2200'

LEGEND

- SANITARY SEWER TRUNK
- FORCE MAIN
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT

City of Pharr
2018 Master Plan
South Lift Stations

Lift Station #	Name
10	Moore
12	Dunlyn
18	N. Plantation
20	S. Plantation
24	La Qunita
26	Anaya
28	Industrial
30	W. 3072 (Dicker)
34	W. Hi-Line
36	Los Ebanos
38	Valley View
40	Hall Acres
42	E. Hi-Line
46	Las Palmas
48	San Gabriel
50	Veterans



KEY MAP

Garcia Infrastructure Consultants, LLC
Texas Firm No. F-17794
12042 Blanco Rd., Ste. 203
San Antonio, Texas 78216
Ph. (210) 437-0323

CITY OF PHARR
MASTER PLAN

CITY OF PHARR

EXHIBIT 5.4
SOUTH REGION

file:Exh-SWR_SYS-01.dwg

An evaluation of each lift station was conducted, refer to Appendix F. The evaluation is based on site visits, staff interviews, and field measurements. It includes a condition assessment as well as recommended repairs and improvements. Technical information such as pump horsepower (Hp), wet well size, and inventory of station equipment was summarized and included in this same appendix.

The City's Organized Sewer Collection System includes a series of lift station and trunk sewers that convey flow to the City's single WWTP. GIC subdivided the collection system into three regions, North, Central, and South to simplify our analysis. The annexed area was included as well. Exhibit 5.5 graphically depicts the connectivity between the various lift stations and final discharge at the WWTP.

North Region (North of US 83)

The north region is one of the fastest growing regions in the City. The collection system in this region is well organized. GIC is recommending a few system improvements to address undersized sewers which also happen to be in poor conditions. Furthermore, several lift stations in this region have reached their intended design life and need to replaced. The most critical project in the region is finding a solution to decommission LS 29 and associated force main. The force main, which operates under pressure, is located under several homes. If this force main ruptures it could damage private property.

Flow north of US 83 is collected at LS 7. LS 31 collects flow from the northwest quadrant and LS 25 from the northeast quadrant. LS 31 transfers flow a short distance across US 281 to a 15-inch Sanitary Sewer which ultimately outfalls at LS 25. LS 25 Force Main discharges into the 30-inch gravity main on Sioux Road.

LS 7 receives flow from the 30-inch on Sioux Road as well as a 24-inch Sewer Main from the south. This station then pumps flow south to a 36-inch gravity main near the intersection of Kumquat and E. Lucas Ave. This 36-inch discharges into LS 6 which then pumps flow directly to the WWTP Headworks influent channel bypassing the plant influent lift station. LS 6 is also one of the primary lift stations collecting flow from the Central Region.

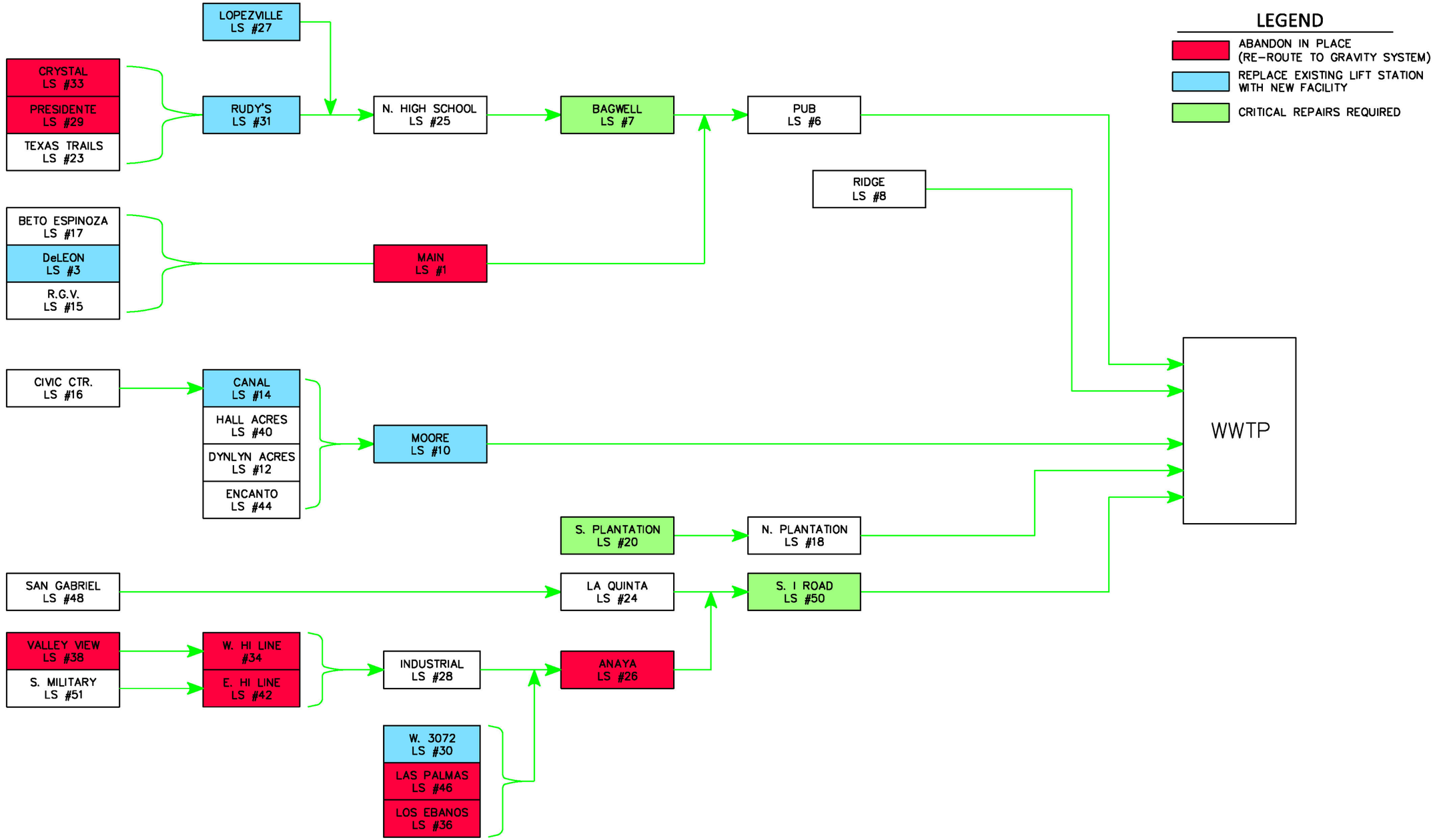
Refer to Exhibit 5.2.

Central Region (north of Moore Road and south of US 83)

The Central Region represent the oldest part of the City and the collection system is generally adequate to handle existing and future flows. The challenge in this region is replacing mains that have reached their intended design life. No major capacity improvements were identified. The most urgent issue is addressing downstream deficiencies from LS 1. The City is unable to operate this facility at full capacity during wet weather conditions.

Flow in the central region is collected at LS 1, 6, and 10. Multiple sewer mains were constructed in 2010 that improved service in the Central Region. LS 1 collects flow from LS 3, 15, and 17. LS 10 from LS 12, 14, 16, 40, and 44. LS 10 flows directly to the WWTP.

Refer to Exhibit 5.3.



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CITY OF PHARR
MASTER PLAN

CITY OF PHARR

EXHIBIT 5.5
WASTEWATER COLLECTION
LIFT STATION FLOW PATH

file:Exh-LS FLOW SCH.dwg

South Region (south of Moore Road)

The South Region represents the largest region. However, a significant area is within the floodway which is not developable. The South Area includes a significant concentration of warehouses, primarily along Military Highway which do not generate a significant volume of wastewater. It includes the largest concentration of lift stations and a large number of these facilities were found to be in very poor conditions.

In addition to evaluating the possibility of eliminating lift stations by constructing new sewer mains, GIC also considered combining some of the aging lift stations. This has the dual benefit of addressing aging infrastructure and reducing the number of lift stations as well. A project was included to eliminate multiple lift stations, mostly in the City's far South Region (Las Milpas and Military Highway).

LS 50 is the primary facility collecting flow south of the floodway. LS 12 and LS 40 convey flow to the gravity main along Moore Rd that eventually flows into LS 10. LS 10 and LS 18 flow directly into the WWTP.

The South Region includes an area annexed that increases the geographical area of the City of Pharr from 23.7-sq miles to 51.5- sq. miles. The area is southeast of Pharr, south of the floodway, and just south of the cities of San Juan and Alamo. The area is predominately undeveloped and offers great potential for growth. However, the certificate of convenience and necessity (CCN) for this region resides with the Military Highway Water Supply Corporation (MHWSC). It is difficult to predict if MHWSC will relinquish these rights. Regardless, the sewer system on Veterans Road and LS 50 can be used as a potential collection point for this area.

Refer to Exhibit 5.0 and Exhibit 5.4

5.3 System Evaluation

An analysis was performed to evaluate the sewer capacity versus peak flows for both existing and future system conditions. This evaluation formed the basis of the recommended project improvements.

5.3.1 Description of Hydraulic Analysis

A hydraulic analysis was developed for each sewershed and combined to incorporate the City's complete collection system. Flow from each respective sewershed collected at each lift station and corresponding gravity mains was computed to help identify deficiencies. Undeveloped areas were taken into account to help assess the capacity of the various sewer mains and lift stations. The following assumptions were made in our analysis:

- Full pipe flow was assumed.
- Infiltration and inflow was taken into consideration.

Existing flows from residential customers were estimated using the City's Geographical Information System (GIS), Google Maps, and incorporating the most recent Land Use Map included in the City's Comprehensive Plan. Flows from the various categories were estimated based on historical flows for single family residential and actual residential connections. Flow

from non-residential sources (schools, municipal parks, hospitals, community centers, etc.) were estimated using standard literature and TCEQ Values.

Refer to Appendix G for a summary of our analysis, as well as unit flow rates used for existing lots and future development.

5.3.2 Capacity Analysis of Existing Sewer System

5.3.2.1 Lift Stations

One of the main objectives was to inspect and assess the City's Lift Stations. Refer to Appendix F for a detailed report regarding each lift station. GIC has identified a total of eleven (11) lift stations to eliminate which reduces the number to twenty-two (22). Furthermore, we are also recommending replacing four (4) other lift stations that are beyond repair. The master plan also includes a list of repairs at a majority of the remaining lift stations.

All the lift station related improvement projects are summarized in Section 5.4.

5.3.2.2 Sewer System

The City's collection system is aging. In addition to the sewer collection system projects identified in Section 5.4, we also recommend the City track repairs or problems within the collection system to begin the systematic replacement of sewer mains that are beyond repair.

5.4 Recommended Collection System Improvements

GIC has identified multiple projects to be included as part of the Capital Improvements Program. These projects are briefly summarized below and subdivided per region (North, Central, and South). Certain complex projects were evaluated in greater detail to better define work required and highlight urgency and challenges.

5.4.1 North Region Projects

Project No. 1- Replace Lift Station 23 (Texas Trails)

Lift Station 23, Texas Trails was recently rehabbed as part of the new residential development North of the intersection of Sugar Road and Minnesota Road. This facility has accessibility constraints. The station is behind a commercial building. There is no room for a vector truck, space to bring in temporary pumps in an emergency situation, or parking. It is recommended that a new site be acquired and the station be relocated. The new station can be upgraded to incorporate better standards and accessibility. The new station would be designed to accept flow from the undeveloped tracts to the northwest.

Project No. 2- Replace Lift Station 27 (Lopezville)

Lift Station 27 (Lopezville) is in very poor conditions and, in our opinion, beyond repair. During our site visit only one pump was operational. The wet well was pitted and suction pipe could fail at any moment. There is sufficient space to build a new station and keep the existing facility in service.

Project No. 3- Lift Station 25 Odor Control

Lift Station 25 is a new facility that was installed without an odor control system. The lift station is located adjacent to a residential neighborhood and future commercial tract. We recommend adding an odor control system to mitigate odors as well as minimize corrosion.

Project No. 4- Northeast Interceptor

Refer to Appendix H which includes a detailed description of this project.

Project No. 5- Northwest Interceptor (Eliminates LS 29 and 33)

Refer to Appendix H which includes a detailed description of this project.

Project No. 6- Replace LS No. 31 (Rudy's)

Lift Station 31 (Rudy's) is in very poor conditions and, in our opinion, beyond repair. The piping, pumps, building, etc. is severely corroded. This station is one of the City's primary facilities, effectively handling flow from the City's entire northwest region. If the Northwest Interceptor Project is constructed first, it will reduce the volume of flow to this lift station.

LS 31 has accessibility constraints. The station has no all access weather road nor access easement. Currently, staff has to cross private property to maintain this lift station. It is possible that property could deny access to the City in the future.

Project No. 7- Citrus Bay Subdivision

This area includes sewers that were found to be in poor conditions. It is recommended that all sewer in this area be videoed and inspected. Trenchless technology options such as, Cured-in-Place Pipe (CIPP) or pipe bursting, should be considered to address these deficiencies. Conservatively, GIC is estimating full removal and replacement of all pipes, plus mill and overlay, of the entire street section in all this subdivision.

Refer to Exhibit 5-6.

5.4.2 Central Region

Project No. 8- Replace Lift Station 3 (DeLeon)

Lift Station 3 (DeLeon) is in very poor conditions and, in our opinion, beyond repair. The piping, pumps, building, etc. are severely corroded. The wet well is pitted.

Project No. 9- Main Lift Station No. 1 Interceptor (Eliminates LS 1)

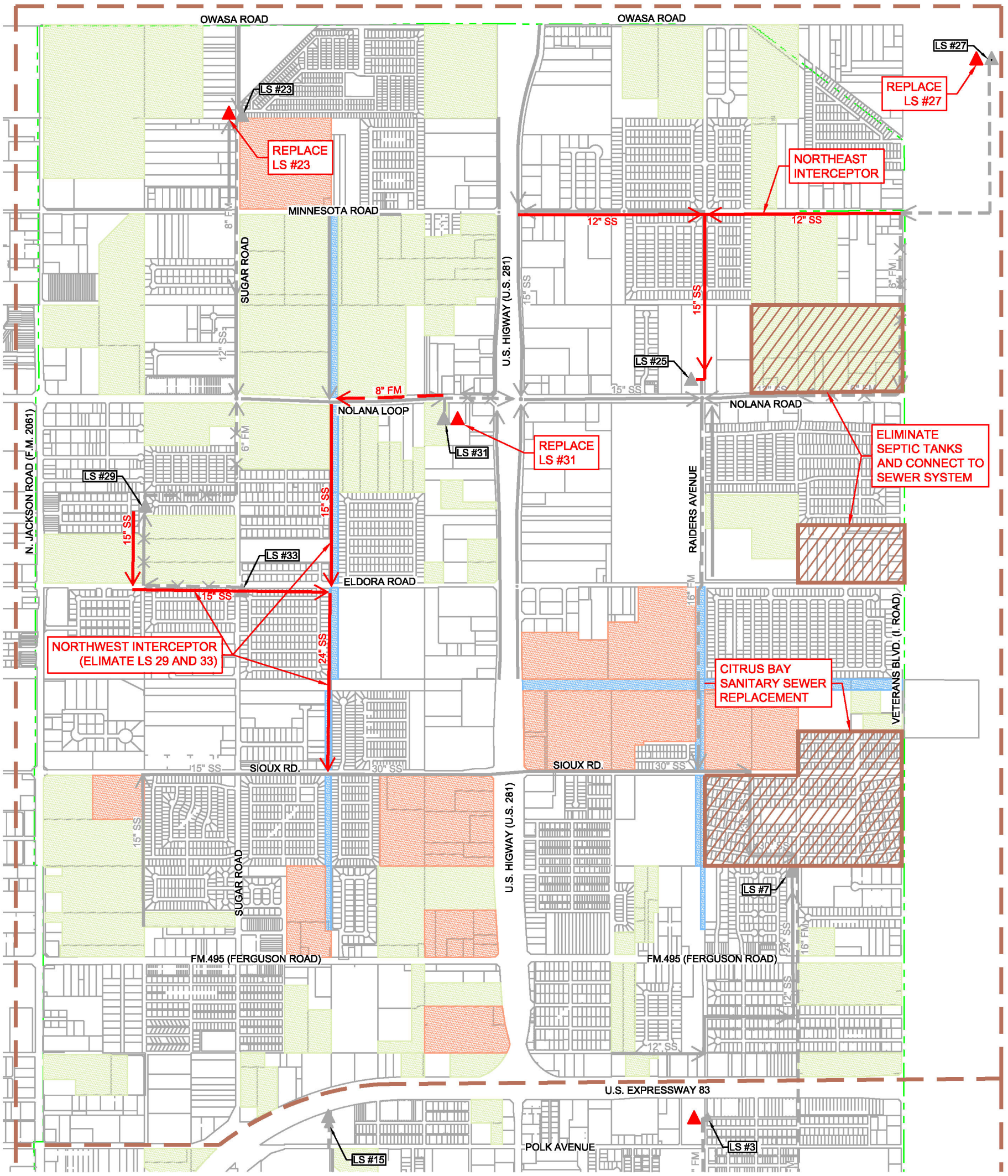
Refer to Appendix H which includes a detailed description of this project.

Project No. 10- Replace Lift Station 14 (Canal)

Lift Station 14 (Canal) is in very poor conditions and, in our opinion, beyond repair. The pumps are constantly being repaired. The structure shows very severe corrosion, exposed electrical wires, and piping is deteriorated.

Refer to Exhibit 5-7.

SCALE: N.T.S.



LEGEND

- SANITARY SEWER IMPROVEMENTS
- SANITARY SEWER TRUNK
- FORCE MAIN
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT
- LS REPLACEMENT
- FM TO BE ABANDONED
- SAN SWR TO BE ABANDONED

City of Pharr
2018 Master Plan
North Lift Stations

Lift Station #	Name
7	Bagwell
23	Texas Trails
25	High School
29	Presidents
31	Rudy's
33	Crystal Estates

KEY MAP

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Texas Firm No. 17794

CITY OF PHARR

EXHIBIT 5.6
NORTH REGION IMPROVEMENTS

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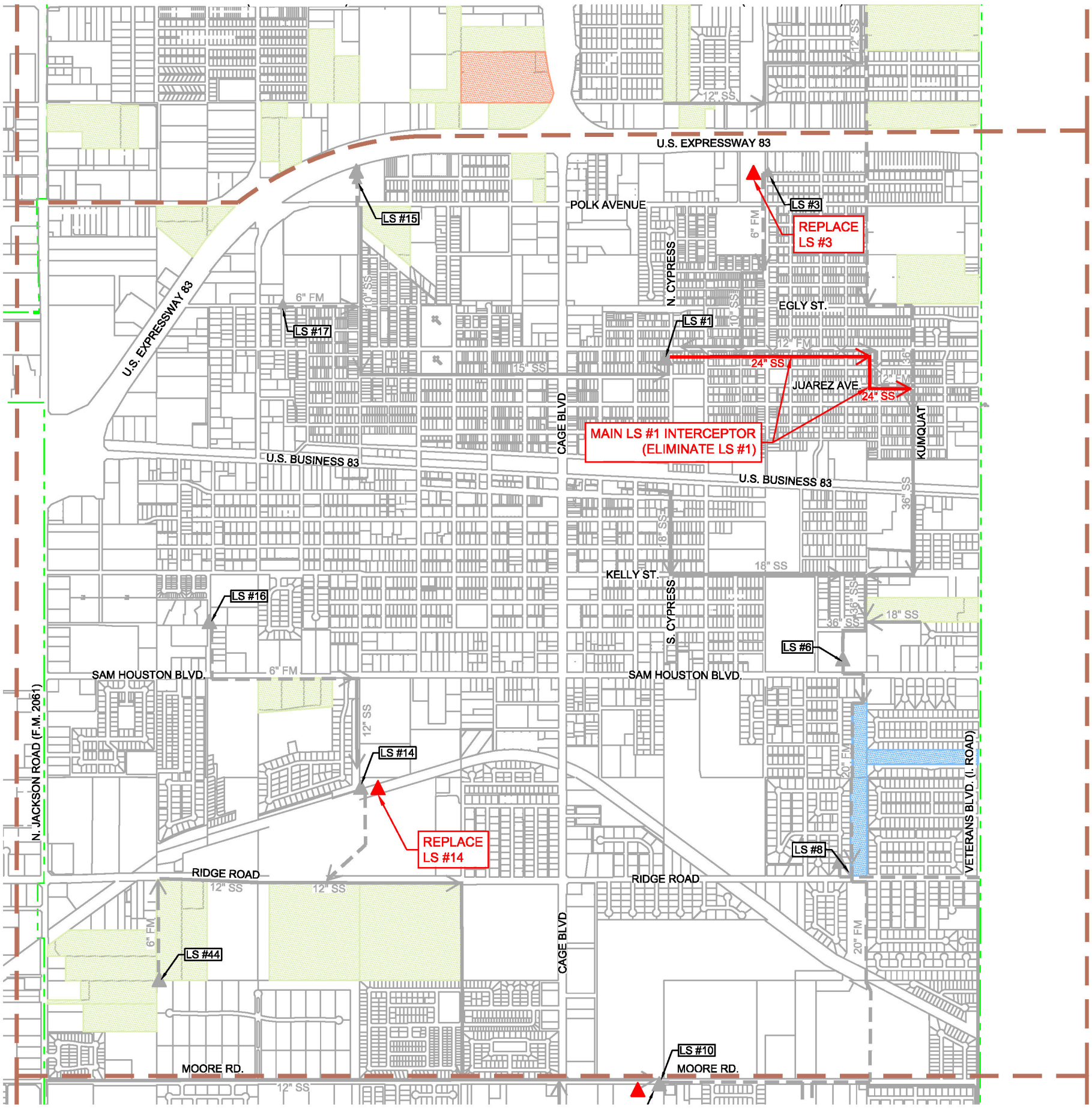
SCALE: N.T.S

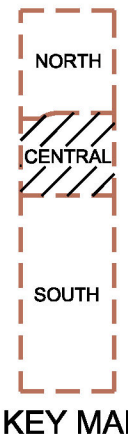


LEGEND

- SANITARY SEWER IMPROVEMENTS
- SANITARY SEWER TRUNK
- FORCE MAIN
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT
- LS REPLACEMENT
- FM TO BE ABANDONED
- SAN SWR TO BE ABANDONED

2018 Master Plan
Central Lift Stations

Lift Station #	Name
1	Main
3	DeLeon
6	PUB
8	Ridge
14	Canal
15	RGV
16	Civic
17	Beto Espinoza
44	Encanto Ridge



KEY MAP

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Texas Firm No. 17794

CITY OF PHARR
EXHIBIT 5.7
CENTRAL REGION IMPROVEMENTS

file:Exh-SWR_SYS-02.dwg

5.4.3 South Region

Project No. 11-Replace Lift Station 10 (Moore)

Lift Station 10 (Moore) is in very poor conditions and, in our opinion, beyond repair. In addition, this station receives a large volume of flow. Five (5) lift stations are located immediately upstream of this station and flow is collected at LS 10. LS 10 Pumps typically stay on all the time. This station is a critical station in the collection system and immediate attention is required.

GIC considered abandoning this station by extending a new gravity main east to Veterans Road or to the WWTP. However, based on survey data collected, there is insufficient fall between LS 10 and sewer main on Veterans Road or to the WWTP to eliminate this lift station.

Project No. 12-Septic Tank Elimination

A small area roughly bounded to the north by Juan Balli Road, south by Thomas Drive, west by S. Jackson Rd. and east by S. Valdivia St is not currently served by the City's Organized Sewer Collection System. These lots, which are predominately commercial, are on septic tanks.

It is recommended that the City consider providing sewer service to these lots. This may be accomplished by extending a new sewer along S. Jackson Road and connecting to Lift Station No. 48 (San Gabriel). A second option is to secure an easement and extend a gravity sewer main along the east side of the property parallel to the existing drainage channel.

Project No. 13-South Interceptor

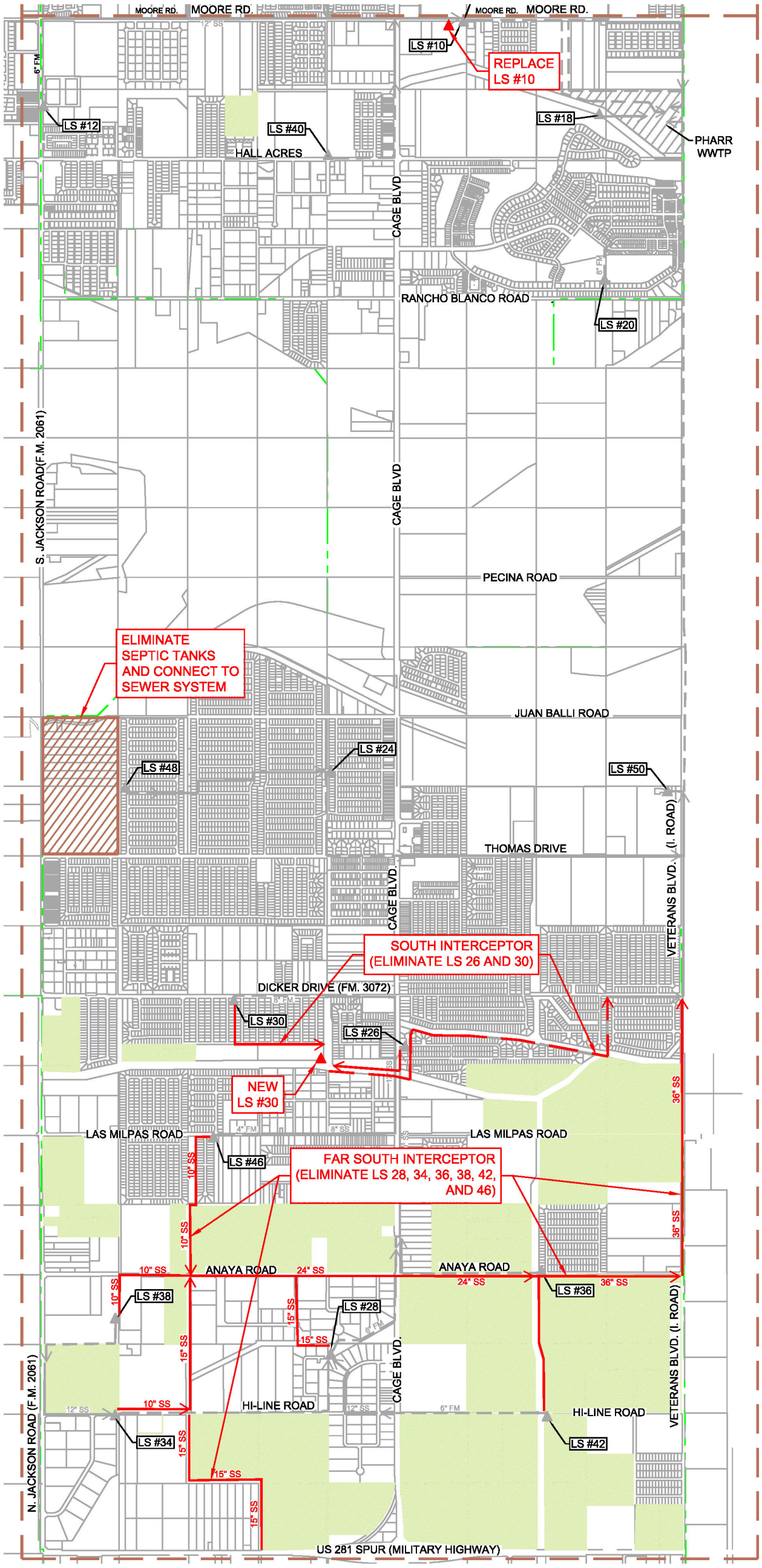
This project was conceptualized and developed to address issues at LS 30 and LS 26. These two (2) facilities are beyond repair and have reached their intended design life. Our concept consists of combining both stations into a single larger station. This solution addresses the need to replace LS 26 and LS 30 while also reducing the number of lift stations the City is required to maintain.

Project No. 14-Far South Interceptor

This project is an artifact from the City 's 2010 Collection System Improvement Project. The design for this project was shelved due to budget constraints. GIC recommends adding to the CIP as it will greatly reduce the number of lift stations in this area. It eliminates six (6) lift stations. Extending a sewer from LS 46 to eliminate this lift station can be either left in this project or incorporated into Project No. 13.

The City may consider combining flow from the various far south lift stations into a single centralized lift station and eliminate the need to build the deep 36-inch gravity main to Veterans Road (10,500-lf). This would be replaced with the new centralized lift station and associated force main. GIC estimates a potential cost savings of approximately $6-million. It also eliminates potential issues of installing a deep sewer main in the south side of town where poor soil conditions are common and high-water table. This should be evaluated more thoroughly during the design.

Refer to **Exhibit 5-8.**



SCALE: N.T.S.

City of Pharr
2018 Master Plan
South Lift Stations

Lift Station #	Name
10	Moore
12	Dunlyn
18	N. Plantation
20	S. Plantation
24	La Qunita
26	Anaya
28	Industrial
30	W. 3072 (Dicker)
34	W. Hi-Line
36	Los Ebanos
38	Valley View
40	Hall Acres
42	E. Hi-Line
46	Las Palmas
48	San Gabriel
50	Veterans

LEGEND

- SANITARY SEWER IMPROVEMENTS
- FORCE MAIN IMPROVEMENTS
- SANITARY SEWER TRUNK
- FORCE MAIN
- LIFT STATION
- CITY LIMITS
- REGION LIMITS
- LAND (UNDEVELOPED)
- LAND (DEVELOPED)
- HIDALGO COUNTY DRAINAGE DISTRICT
- LS REPLACEMENT
- FM TO BE ABANDONED
- SAN SWR TO BE ABANDONED

NORTH
CENTRAL
SOUTH

KEY MAP

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Texas Firm No. 17794

CITY OF PHARR

EXHIBIT 5.8
SOUTH REGION
IMPROVEMENTS

file:Exh-SWR_SYS-02.dwg

5.4.4 System Wide Improvement Projects

Project No. 15-Lift Station Rehabilitation/Repairs

A number of lift stations require minor repairs that may be either developed as a single project or combined with other improvement projects. GIC has decided to group all this work into a single CIP Project to capture investment in this master plan.

The City may decide later if this work can be handled by staff, included in some of the projects previously identified, or grouped into a single project as presented in our report

Project No. 16-Manhole Repair/Replacement

As previously mentioned, the City's aging infrastructure will need to be addressed systematically. A major component that should be addressed is repairing or replacing manholes.

We recommend that the City budget a nominal amount every year to replace brick manholes or other manholes that are found to be in unsatisfactory conditions.

Project No. 17-Lift Station SCADA System

The City has expressed an interest in monitoring all major lift stations via SCADA at a Central Control Location. This monitoring would include Lift Stations 1, 6, 7, 25, 31, 50, and the Anaya Lift Station. The SCADA will allow the City staff to monitor operating conditions at remote pumping stations and coordinate the transfer of flow to the WWTP.

The installation of this monitoring and control equipment will allow the City to more quickly respond to problems in the collection system. The City staff would also be alerted to abnormal operating conditions at each lift station, which could be corrected before they become critical. The system would reduce the number of trips/visits made by City staff to inspect and acquire data from these pumping stations.

As a minimum, key abnormal conditions that would be monitored from each lift station, including the WWTP Lift Station, are as follows:

1. high level alarm
2. Loss of communication
3. Loss of power
4. Alarms – High Wet Well Level, Pump Fail to Run, plus other miscellaneous alarms.
5. Pump Run Time
6. Station totalized flow. Flow monitoring devices will need to be added.
7. Number of pumps in operation]

Remote Lift Station control capabilities should include:

1. Starting and stopping pumps
2. Switching from permanent power to temporary (generator), if temporary power is available.
3. Changing Pump on/off levels if the station is equipped with a water level transducer.

4. Odor Control Adjustments. These adjustments may include switching fans on/off, etc.

Several manufacturers offer a control panel that is versatile and can be linked to a computer via a cellular modem. It can monitor pump wear, impeller wear, flow, automatically resets tripped pumps, reverse pump rotation to unclog a pump, etc. If the City is interested in incorporating a SCADA System for major lift stations; incorporating a newer more advanced control panel should be considered. This control panel can be linked to a central computer to monitor, record, and operate designated lift stations.

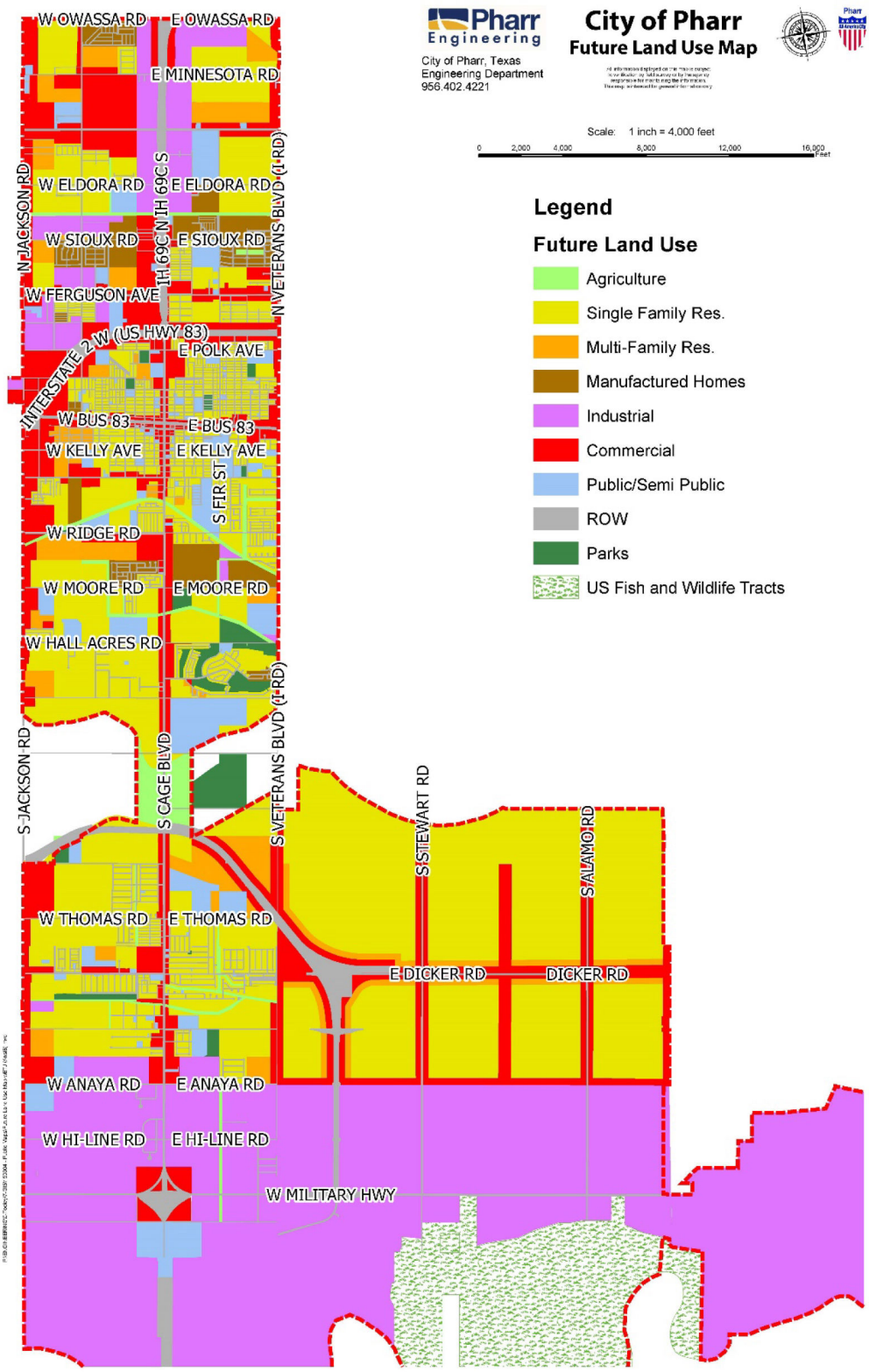
5.5 Capital Improvement Plan

This section of the report provides a schedule and corresponding cost for improvements identified in the master plan report to eliminated lift stations, address system deficiencies, and meet future flow requirements. Refer to **Appendix I** for a breakdown of recommended improvements at the WWTP and associated costs. Refer to **Exhibits 5-6, 5-7,** and **5-8** as well as **Appendix I** which show recommended improvements.

Appendix A

Comprehensive Plan Land Use Map

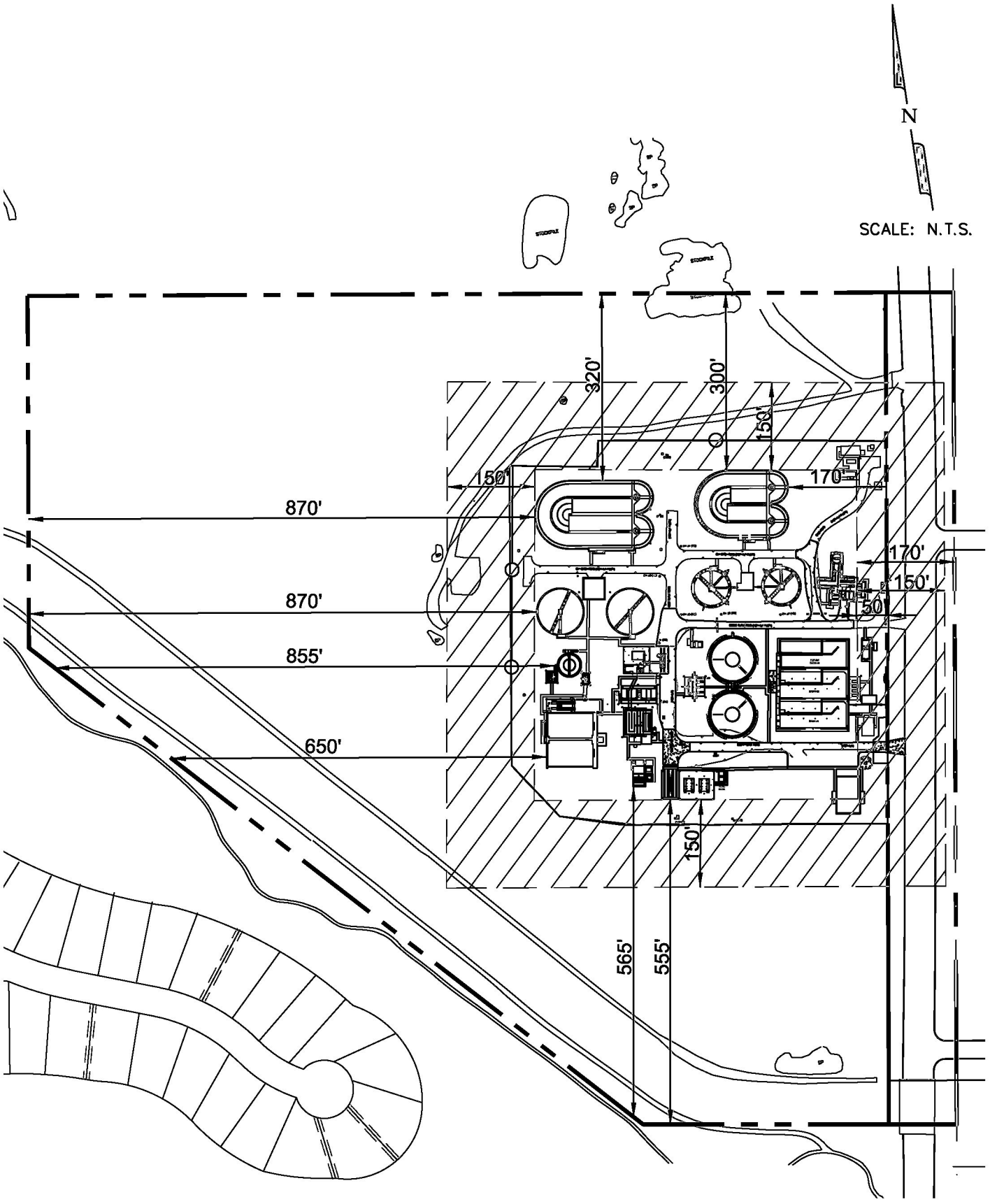
Figure 9: Future Land Use Map, Pharr 2015



Source: City of Pharr Engineering Department
A comprehensive plan shall not constitute zoning regulations or establish zoning district boundaries.

Appendix B

WWTP Buffer Zone Map/Site Map



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CITY OF PHARR
MASTER PLAN

CITY OF PHARR

APPENDIX B
BUFFER ZONE MAP

PHARR, TEXAS

Appendix C

TCEQ Discharge Permit

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 20, 2018

Hilda Pedraza
City of Pharr
P.O. Box 1729
Pharr, Texas 78577

RE: City of Pharr
Permit No. WQ0010596001

This letter is your notice that the Texas Commission on Environmental Quality (TCEQ) executive director (ED) has acted on the above-named application. According to 30 Texas Administrative Code (TAC) Section 50.135 the ED's action became effective on the date the ED signed the permit or other action. A copy of the final action is enclosed and cites the effective date.

For certain matters, a **motion to overturn**, which is a request that the commission review the executive director's action on an application, may be filed with the chief clerk. Whether a motion to overturn is procedurally available for a specific matter is determined by Title 30 of the Texas Administrative Code Chapter 50. According to 30 TAC Section 50.139, an action by the ED is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

If a motion to overturn is filed, the motion must be received by the chief clerk within 23 days after the date of this letter. An original and 7 copies of a motion must be filed with the chief clerk in person or by mail. The Chief Clerk's mailing address is Office of the Chief Clerk (MC 105), TCEQ, P.O. Box 13087, Austin, Texas 78711-3087. On the same day the motion is transmitted to the chief clerk, please provide copies to Robert Martinez, Environmental Law Division Director (MC 173), and Vic McWherter, Public Interest Counsel (MC 103), both at the same TCEQ address listed above. If a motion is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the ED's action. The procedure and timelines for seeking judicial review of a commission or ED action are governed by Texas Water Code Section 5.351.

Individual members of the public may seek further information by calling the TCEQ Public Education Program, toll free, at 1-800-687-4040.

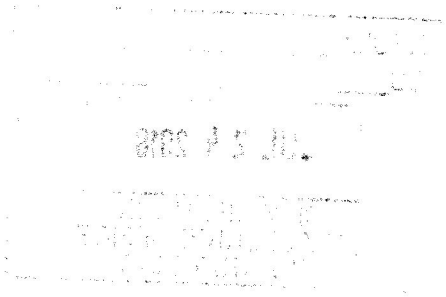
Sincerely,

Bridget C. Bohac

Bridget C. Bohac
Chief Clerk

BCB/tm

cc: Vic McWherter, TCEQ Public Interest Counsel (MC 103)



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 20, 2018

Ms. Hilda Pedraza
City of Pharr
P.O. Box 1729
Pharr, Texas 78577

Re: City of Pharr, TPDES Permit No. WQ0010596001
(CN600245898; RN102928041)

Dear Ms. Pedraza:

Enclosed is a copy of the above referenced water quality permit issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

Self-reporting or Discharge Monitoring Forms and instructions will be forwarded to you from the Water Quality Management Information Systems Team so that you may comply with monitoring requirements. For existing facilities, revised forms will be forwarded if monitoring requirements have changed.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form (if needed) when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit, as applicable.

Should you have any questions, please contact Ms. Sonia Bhuiya of the Texas Commission on Environmental Quality's (TCEQ) Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address below.

Sincerely,

David W. Galindo, Director
Water Quality Division

DWG/SB/rs

ccs: TCEQ, Region 15
Mr. Ambrosio Hernandez, Mayor, City of Pharr, P.O. Box 1729, Pharr, Texas 78577
Mr. Jose Villescas, Utilities Director, City of Pharr, P.O. Box 1729, Pharr, Texas 78577

NetDMR: Online Reporting of Discharge Monitoring Data

What is NetDMR?

NetDMR is a Web-based tool that allows you as a Texas Pollutant Discharge Elimination System (TPDES) permittee to electronically sign and submit your discharge monitoring reports (DMRs) to the Texas Commission on Environmental Quality. The data is then automatically submitted to the EPA's Integrated Compliance Information System (ICIS)-NPDES database.

NetDMR benefits for permittees:

- Offers an alternative to paper submissions, reducing your paperwork burden.
- Improves your data quality by automatically error checking and validating data prior to your submission to the TCEQ.
- Aids in the timeliness of your DMR data submissions.
- You can import DMR data for multiple outfalls at the same time.
- You can sign your DMRs electronically.
- You receive confirmation of your submission.
- You can access up to five years of electronic copies.
- You can submit attachments such as lab data, photographs, or other documentation relevant to the DMR.

There are several types of NetDMR users, and each user can be assigned one or more roles.

NetDMR Users

- **Permittee User**—you work for an organization that is required to submit DMRs under a TPDES permit.
- **Data Provider (e.g., analytical laboratory, consultant)**—you support an organization that is required to submit DMRs as part of a TPDES permit.

NetDMR Roles

- **Permittee Read-only:** able to view DMRs associated with the permit, but not allowed to update or modify DMR data.
- **Edit Access:** able to view and modify DMRs and DMR data.
- **Signatory:** has authority to sign and submit DMRs on behalf of your organization. A request for the signatory role requires submission of a subscriber agreement to the TCEQ.
- **Permit Administrator:** able to approve all DMR read-only and edit requests for a permit.

If you as a permittee so choose, one person can fulfill all the necessary roles in NetDMR—meaning, one person can both enter the data and have signatory authority to submit the data. In that case, that person would need to have the role of signatory.

Who can report?

TPDES permittees required to submit DMRs may use NetDMR after requesting and receiving permission from the TCEQ. After the TCEQ has approved your request, the NetDMR tool enables you to complete your DMRs via a secure Internet connection.

DMR data can be submitted electronically through NetDMR for the following TPDES permits:

- Industrial wastewater discharge individual permit
- Domestic wastewater discharge individual permit
- Authorizations under the TPDES Wastewater General Permit for discharges from concrete production facilities (TXG110000)
- Authorizations under the TPDES Wastewater General Permit for discharges of wastewater from concentrated aquatic-animal production facilities and certain related activities (TXG130000)
- Authorizations under the TPDES Wastewater General Permit for discharges contaminated with petroleum fuel or petroleum substances (TXG830000)
- Authorizations under the TPDES Wastewater General Permit for discharges of wastewater and contact storm water from petroleum bulk stations and terminals (TXG340000)

What reports cannot be submitted through NetDMR?

- **Monthly Effluent Reports**—If you are required to submit MERs, you must continue submitting paper forms to the TCEQ. MER data cannot be submitted through the NetDMR system.
- **Concentrated Animal Feeding Operation General Permit Reports**—Annual reports required by authorizations under the TPDES CAFO General Permit must continue to be submitted by paper.

GI-398 (4/09) printed on recycled paper

- **Other required reports**—Individual and general permits with reporting requirements that you must continue to submit in paper form by mail include:
  - ❒ pretreatment semiannual and annual reports required in a permit or pretreatment program
  - ❒ biomonitoring quarterly, semiannual, and annual reports required in a permit
  - ❒ sludge beneficial-land-use quarterly and annual reports (domestic permits and sludge disposal)
  - ❒ multi-sector general permit benchmark testing
  - ❒ groundwater reports required in a permit
  - ❒ other reports that relate to compliance activities specified in your permit (for example, a construction schedule)
  - ❒ notices of noncompliance

Is NetDMR secure?

Yes. Communications with NetDMR are secured by your password, responses to security questions, and use of the Secure Sockets Layer protocol commonly used by online banking sites.

For more information:

Visit the NetDMR Web page at <**www.tceq.state.tx.us/goto/NetDMR**>.
Submit e-mails to <**NetDMR@tceq.state.tx.us**>.
Call **512-239-eDMR**.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
NOTIFICATION OF COMPLETION/PHASE OF WASTEWATER TREATMENT FACILITY

If you have questions about completing this form please contact the Applications Review and Processing Team at 512-239-4671.

Current Permit Information

What is the TCEQ Water Quality Permit Number?

What is the EPA I.D. Number? TX

Current Name on Permit:

Notification

Indicate the phase the facility will be operating.

- ☐ Interim Phase I Flow
- ☐ Interim Phase II Flow
- ☐ Interim Phase III Flow
- ☐ Final Phase Flow

Indicate the date that the operation began or will begin operating under the selected phase:
Month/Day/Year:

Comments:

Certification and Signature

Responsible Official Name (Print or Type):

Responsible Official Title:

Responsible Official Email:

I certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signature (use blue ink): _____ Date: _____

Email completed form to: **WQ-ARPTeam@tceq.texas.gov**
or

Fax completed form to: **512-239-0884**
or mail completed form to: Texas Commission on Environmental Quality
Applications Review and Processing Team (MC-148)
P.O. Box 13087
Austin TX 78711-3087

Instructions for Notification of Completion/Phase Of Wastewater Treatment Facility

Current Permit Information

Provide your Permit Number. This number will start with WQ followed by 10 digits. The number can be found on the top right-hand corner of your issued permit.

For Texas Pollutant Discharge Elimination Permits (TPDES), provide the EPA ID number. This number will start with TX followed by 7 digits. The number can be found on the top right-hand corner of your issued permit.

Provide the current name that is on your permit. This information can be found on the first page of your permit.

Indicate the phase of operation you will be operating under. Provide the date the facility will begin operating in that phase. Date should be provided as month/day/year.

Signature Requirements

In accordance with 30 Texas Administrative Code §305.44 relating to Signatories to Applications, all applications shall be signed as follows:

For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or v ice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or themanager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

TPDES PERMIT NO.
WQ0010596001
[For TCEQ office use only - EPA I.D. No. TX0062219]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal that replaces TPDES Permit No. WQ0010596001 issued on August 14, 2014.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

City of Pharr

whose mailing address is

P.O. Box 1729
Pharr, Texas 78577

is authorized to treat and discharge wastes from the City of Pharr Wastewater Treatment Facility, SIC Code 4952

located at 2400 South Veterans Boulevard, in the City of Pharr, Hidalgo County, Texas 78577

to Hidalgo County Drainage District Ditch No. 1; thence to Main Floodway; thence to the Arroyo Colorado Above Tidal in Segment No. 2202 of the Nueces-Rio Grande Coastal Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **five years from the date of issuance.**

ISSUED DATE: July 12, 2018

Stephanie Bergeron Perdue

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The annual flow of effluent shall not exceed 8.0 million gallons per day (MGD), nor shall the average discharge during any two-hour period (2-hour peak) exceed 14,583 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg	7-day Avg	Daily Max	Single Grab	Report Daily Avg. & Daily Max.	
	mg/l (lbs/day)	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	7 (467)	12	22	32	Five/week	Composite
Total Suspended Solids	15 (1001)	25	40	60	Five/week	Composite
Ammonia Nitrogen	2 (133)	5	10	15	Five/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	Daily	Grab

2. The permittee shall utilize an Ultraviolet Light (UV) system for disinfection purposes. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored five times per week by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 6.0 mg/l and shall be monitored five times per week by grab sample.

7. The annual average flow and maximum 2-hour peak flow shall be reported monthly.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period

of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

   i. Unauthorized discharges as defined in Permit Condition 2(g).

   ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

   iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

   a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that

discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 µg/L);

ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 µg/L);

ii. One milligram per liter (1 mg/L) for antimony;

iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to CWA § 301 or § 306 if it were directly discharging those pollutants;

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. For the purpose of this paragraph, adequate notice shall include information on:

i. The quality and quantity of effluent introduced into the POTW; and

ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the

Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

   i. Violation of any terms or conditions of this permit;

   ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

   iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and TWC§ 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of

wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under TWC §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC § 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC § 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534

(relating to New Sources and New Dischargers); or

ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

e. In accordance with the TWC § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications

Review and Processing Team (MC 148) of the Water Quality Division.

b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to TWC Chapter 11.

8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy

a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

i. the permittee;

ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee and the permit number(s);

ii. the bankruptcy court in which the petition for bankruptcy was filed; and

iii. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not

confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 169) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

   c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and

related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

    b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

    d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

    e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

    f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

        i. Volume of waste and date(s) generated from treatment process;
        ii. Volume of waste disposed of on-site or shipped off-site;

iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge . **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Sewage Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 15) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 15) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

a. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met.

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%.

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information.

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B criteria for

sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.
viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been

treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- annually
PCBs	- annually

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 15) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 15) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 15) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 15) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge transported interstate in dry tons/year.

6. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge that is transported to another wastewater treatment facility or facility that further processes sludge. These provisions are intended to allow transport of sludge to facilities that have been authorized to accept sludge. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 15) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge production;

3. the amount of sludge transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

TCEQ Revision 01/2016

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and, in particular, 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category B facility must be operated by a chief operator or an operator holding a Category B license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point of discharge.

4. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

5. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

6. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, daily may be reduced to 5/week. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The following pollutants may not be introduced into the treatment facility:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;

   d. Any pollutant, including oxygen-demanding pollutants (e.g., biological oxygen demand), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

   e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

   h. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 [*rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798*].

3. The permittee shall provide adequate notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

      Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for WET testing.

1. Scope, Frequency, and Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.

b. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this part of this permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," fourth edition (EPA-821-R-02-013) or its most recent update:

1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever occurs first. This test shall be conducted once per quarter.

2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 31%, 42%, 56%, 74%, and 99% effluent. The critical dilution, defined as 99% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

d. This permit may be amended to require a WET limit, a chemical-specific effluent limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

e. Testing Frequency Reduction

1) If none of the first four consecutive quarterly tests demonstrates significant toxicity, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test