



Mayor: Mario Garza
Mayor Pro-Tem: Jesus “Jesse” Ramirez
Commissioners: Ernesto “Neto” Guajardo
Raudel Maldonado
Pete Garcia

The City of San Juan does not discriminate on the basis of disability in the admission of, access to, treatment of, or employment in its programs, activities, or public meetings. Any individual with a disability in need of an accommodation is encouraged to contact the Office of the City Secretary at 956-223-2200 at least 24 hours prior to the scheduled meeting to make proper arrangements.

SAN JUAN CITY COMMISSION

Location: San Juan Memorial Library
Multipurpose Meeting Room
1010 S. Standard
San Juan, Texas 78589
Thursday, January 18, 2018

WORK SESSION AGENDA

5:30 PM

- I. CALL TO ORDER**
- II. INVOCATION**
- III. PLEDGE OF ALLEGIANCE**
- IV. DISCUSSION AND POSSIBLE ACTION ON ALL THE FOLLOWING MATTERS:**
 - A.** Project Information Form (PIF) Discussion for the Proposed Rehabilitation of the City of San Juan Wastewater Treatment Plant to the Texas Water Development Board for inclusion in the Fiscal Year 2019 Clean Water State Revolving Fund Intended Use Plan (FY19 CWSRF IUP).
- V. ADJOURNMENT**

CERTIFICATION

I certify that the above notice of the Special Called Meeting of the City of San Juan is true and correct; and that I posted such notice on the bulletin board. A place convenient and readily accessible to the public on the in accordance with the Texas Open Meetings Act (Tex. Gov’t. Code §551-041 - §551.050).

DIANA CAVAZOS
CITY SECRETARY
CITY OF SAN JUAN, TEXAS

CERTIFICATION OF REMOVAL

I certify that the agenda of items to be considered by the City Commission was removed by the City Secretary's Office from the San Juan City Hall bulletin area on the the _____ of _____, 2017.

OFFICE OF THE CITY SECRETARY

AGENDA ITEM AND RECOMMENDATION SUMMARY
CITY COMMISSION REGULAR MEETING
JANUARY 18, 2018

Project Information Form (PIF) Discussion for the Proposed Rehabilitation of the City of San Juan Wastewater Treatment Plant to the Texas Water Development Board for inclusion in the Fiscal Year 2019 Clean Water State Revolving Fund Intended Use Plan (FY19 CWSRF IUP).

STAFF COMMENTS AND RECOMMENDATIONS:

Discussion and Presentation on the current Status of the City of San Juan Wastewater Treatment Plant.

RECOMMENDATION:

Authorize as Presented.

PREPARED BY:

Diana Cavazos, City
Secretary

APPROVED BY:

Benjamin Arjona, City
Manager

CITY of SAN JUAN

WASTEWATER TREATMENT PLANT

Presentation to the City Commission

CRUZ-HOGAN *Consultants, Inc.*

ENGINEERS | PLANNERS | CONSULTANTS

McAllen | Weslaco



"Water is Our Specialty"

WASTEWATER TREATMENT PLANT



CRUZ-HOGAN Consultants, Inc.

WASTEWATER TREATMENT PLANT

PLANT HISTORY

- 💧 CURRENT PLANT COMPLETED AND PUT INTO OPERATION IN YEAR 2000

FLOW CAPACITY

- 💧 PLANT IS PERMITTED TO DISCHARGE
4.0 *MGD* (MILLION GALLONS PER DAY)



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WASTEWATER TREATMENT PLANT

CURRENT DISCHARGE FLOW

💧 PLANT CURRENT DISCHARGE FLOW IS CURRENTLY
AVERAGING 2.5 MGD

or approximately

💧 60% OF THE PLANT'S PERMITTED CAPACITY



CRUZ-HOGAN Consultants, Inc.

Presentation.....

First

- 💧 **The *EVALUTATION* and existing *CONDITION* of the Wastewater Treatment Plant**

Second

- 💧 **Recent *TCEQ Inspection* of the Wastewater System**



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WASTEWATER TREATMENT

Treatment Plant is classified as an Activated Sludge, Oxidation Ditch method of ***treatment of wastewater.***

This method utilizes an elliptical channels with mechanical equipment which inject oxygen into the wastewater. The oxygen allows for the growth of bacterium that digest the waste and removes BOD, solids, nitrogen and ammonia from the wastewater.



CRUZ-HOGAN *Consultants, Inc.*

WASTEWATER TREATMENT (continued)

Wastewater is then sent to the **Clarifiers**. In the clarifiers, sludge settles and clarified water flows over the weirs and then flows to the chlorination/ de-chlorination chambers for disinfection. Then fully treated wastewater discharges into the adjacent drainage ditch



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WASTEWATER TREATMENT *(continued)*

Sludge that has settled at the bottom of the clarifiers and the collected scum then flow to a pump station where the sludge is either sent back to the plant headworks to reseed the plant with bacteria/organisms *or* digested, mixed with a coagulate and sent to sludge beds for drying. Dried sludge is then put into containers and hauled, by a contracted company, to a landfill or to be land applied



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WASTEWATER TREATMENT PLANT



MAJOR PLANT COMPONENTS



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Plant Lift Station



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Headworks

Mechanical Screen and Grit Chamber



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Headworks

Grit Washer and Dewatering Press



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Aeration Basins



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Clarifiers



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Disinfection Chamber

Chlorine Contact Basins



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Chemical Building

Chlorination De-Chlorination System



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Chlorination System and De-Chlorination System



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Discharge Metering



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Discharge Metering

Parshall Flume



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Wastewater



Discharge Water



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BIO SOLIDS TRAIN



PLANT SLUDGE



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Return Activated and Waste Activated Pump Station



CRUZ-HOGAN *Consultants, Inc.*

Sludge Gravity Thickener



CRUZ-HOGAN *Consultants, Inc.*

Sludge Digester



CRUZ-HOGAN *Consultants, Inc.*

Sludge Dewatering Boxes



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Sludge Drying Beds



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Plant Administration and Laboratory Building



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WASTEWATER TREATMENT PLANT

Over the past few months, a *Preliminary Evaluation* of the City's Wastewater Plant was performed to

- 💧 Assist the City in accessing the current conditions and needs of the wastewater treatment plant
- 💧 Assist the City in making plans for any necessary plant improvements.



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WASTEWATER TREATMENT PLANT

In The Preliminary Evaluation

- ➡ We analyzed the conditions of the existing facilities and equipment
- ➡ We make recommendations regarding necessary improvements needed to address current Plant Conditions and the recent TCEQ Inspections and Plant Violations



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Plant Evaluation Summary

- Many original plant components, which continue to be used or have been abandoned, are at a point where they need to be replaced.
- Many plant components have not been properly maintained over the years and need to be either rehabilitated, repaired or replaced.
- Some plant components *simply* have lived their normal “*useful life*” and need to be replaced at this time.



Plant Evaluation Summary

- Various plant components and equipment consume large amounts of electrical power.
- Newer and more energy efficient equipment should be considered.
- Plant Controls for Plant efficient Operations are currently non-existent.
Installation of *Supervisory Controls and Data Acquisition (SCADA) System should be considered.*



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WASTEWATER TREATMENT PLANT

The Preliminary Plant Evaluation Includes

 Projected and estimated **COSTS** to address the conditions and deficiencies of existing facilities and equipment and for any needed and necessary repairs and or replacements



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Wastewater Treatment Plant

*From the Plant Evaluation
a List of Major Deficiencies was developed*

- ➡ **1. Plant Lift Station Concrete Wet Well Deterioration**
- 2. Headworks Mechanical Screen Not Operational
- 3. Headworks Grit Chamber Not Operational
- 4. Headworks Grit Washer/Screw Press Not Operational



CRUZ-HOGAN *Consultants, Inc.*

Plant Lift Station



Concrete walls and roof are deteriorating due to high hydrogen sulfide gas concentrations.



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Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

1. Plant Lift Station Concrete Wet Well Deterioration
- ➡ **2. Headworks Mechanical Screen Not Operational**
3. Headworks Grit Chamber Not Operational
4. Headworks Grit Washer/Screw Press Not Operational



CRUZ-HOGAN *Consultants, Inc.*

Headworks

Mechanical Screen

**Existing Mechanical Screen Not
Operational and Deteriorated**



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Headworks

Mechanical Screen



**By Pass Screen Being Cleaned
Manually**



CRUZ-HOGAN *Consultants, Inc.*

Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

1. Plant Lift Station Concrete Wet Well Deterioration

2. Headworks Mechanical Screen Not Operational

➡ **3. Headworks Grit Chamber Not Operational**

4. Headworks Grit Washer/Screw Press Not Operational

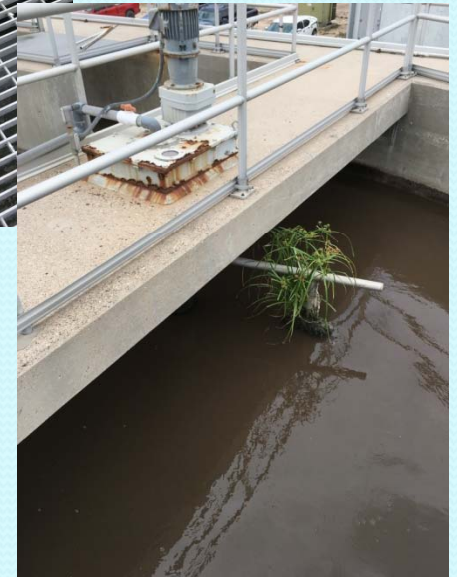


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Headworks

Grit Chamber

Not Operational and Chamber Full of Solids and Vegetative Growth



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Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

1. Plant Lift Station Concrete Wet Well Deterioration
2. Headworks Mechanical Screen Not Operational
3. Headworks Grit Chamber Not Operational
- ➡ **4. Headworks Grit Washer / Dewatering Screw Press Not Operational**



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Headworks

*Grit Washer/Dewatering
Press Screw*



Not Operational



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Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

- ➡ **5. Clarifier Scum Pumps Not Operational**
- 6. Gravity Sludge Thickener Not Operational
- 7. Thickener Sludge Pumps Not Operational
- 8. Sludge Digester Not Operating Properly
- 7. Digester Sludge Pumps Missing



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Clarifier

Scum Pumps

**Scum Pumps at both Clarifiers
Not Operating**



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Wastewater Treatment Plant

List of Major Deficiencies (continued)

5. Clarifier Scum Pumps Not Operational



6. Gravity Sludge Thickener Not Operational

7. Thickener Sludge Pumps Not Operational

8. Sludge Digester Not Operating Properly

7. Digester Sludge Pumps Missing



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GRAVITY SLUDGE THICKENER



Not Operational and Vegetative Growth in the Inside and Highly Corroded



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Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

5. Clarifier Scum Pumps Not Operational

6. Gravity Sludge Thickener Not Operational

➡ **7. Thickener Sludge Pumps Not Operational**

8. Sludge Digester Not Operating Properly

7. Digester Sludge Pumps Missing



CRUZ-HOGAN *Consultants, Inc.*

Thickener Sludge Pump Station



**Pumps Not Operational
and Deteriorated**



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Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

5. Clarifier Scum Pumps Not Operational

6. Gravity Sludge Thickener Not Operational

7. Thickener Sludge Pumps Not Operational

➡ 8. ***Sludge Digester Not Operating Properly***

7. Digester Sludge Pumps Missing



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Sludge Digester



Not Operating Properly



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Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

- 5. Clarifier Scum Pumps Not Operational
- 6. Gravity Sludge Thickener Not Operational
- 7. Thickener Sludge Pumps Not Operational
- 8. Sludge Digester Not Operating Properly

➡ 7. Digester Sludge Pumps Missing



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Digester Sludge Pump Station



Pumps Missing and Station Deteriorated



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Wastewater Treatment Plant

List of Major Deficiencies (continued)

- ➡ 8. *Plant Water Pump Station System Leaking*
- 9. Dewatering Boxes Deteriorated and Leaking



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Plant Water System



Pumps Worn and Leaking



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Plant Water System



Pressure Tank and Compressor Worn



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Wastewater Treatment Plant

List of Major Deficiencies *(continued)*

8. Plant Water Pump Station System Leaking

➡ 9. ***Dewatering Boxes Deteriorated and Leaking***



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Sludge Dewatering Boxes



Deteriorated and Leaking



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WASTEWATER SYSTEM

TCEQ INSPECTION OF THE WASTEWATER SYSTEM



CRUZ-HOGAN *Consultants, Inc.*

TCEQ Inspection

- On November 14, 2017 TCEQ conducted an inspection and evaluation of the City's Wastewater System and Treatment Plant Facility for compliance to TCEQ requirements
- On November 30, 2017 - TCEQ issued a letter of titled:

“Notice of Violation for the Comprehensive Compliance Investigation” for the City’s Wastewater System



CRUZ-HOGAN Consultants, Inc.

TCEQ Letter

Bryan W. Shaw, Ph.D., P.E., Chairman
Toby Baker, Commissioner
Jon Niemann, Commissioner
Richard A. Hyde, P.E., Executive Director

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 30, 2017

CERTIFIED MAIL 7016 1370 0001 6696 4416
RETURN RECEIPT REQUESTED

The Honorable Mario Garza
Mayor of San Juan
107 E. Hall Acres
San Juan, Texas 78589

Re: Notice of Violation for Comprehensive Compliance Investigation at:
City of San Juan Wastewater Treatment Plant, Located approximately 1.9 miles
south of U.S. Highway 83 Business Route at the south end of San Antonio Road
in San Juan (Hidalgo County), Texas
Regulated Entity No.:102180973, TCEQ ID No.: WQ0011512001, EPA ID No.:
TX0057592

Dear Mayor Garza:

On November 14, 2017, Jonathan Diaz of the Texas Commission on Environmental Quality (TCEQ) Harlingen Region Office conducted an investigation of the above-referenced regulated entity to evaluate compliance with applicable requirements for wastewater treatment. Enclosed is a summary which lists the investigation findings. During the investigation, some concerns were noted which were alleged noncompliances that have been resolved as Areas of Concern based on subsequent corrective action. In addition, certain outstanding alleged violations were identified for which compliance documentation is required. Please submit to this office by December 29, 2017 a written description of corrective action taken and the required documentation demonstrating that compliance has been achieved for each of the outstanding alleged violations.

In the listing of the alleged violations, we have cited applicable requirements, including TCEQ rules. Please note that both the rules themselves and the agency brochure entitled Obtaining TCEQ Rules (GI 032) are located on our agency website at <http://www.tceq.state.tx.us> for your reference. If you would like a hard copy of this brochure mailed to you, you may call and request one from either the Harlingen Region Office at 956-425-6010 or the Central Office Publications Ordering Team at 512-239-0028.

The TCEQ appreciates your assistance in this matter. Please note that the Legislature has granted TCEQ enforcement powers which we may exercise to ensure compliance

TCEQ Region 15 • 1804 W. Jefferson Ave. • Harlingen, Texas 78550-5247 • 956-425-6010 • Fax 956-412-5059

Austin Headquarters: 512-239-1000 • tceq.texas.gov • How is our customer service? tceq.texas.gov/customer/survey

Mayor Garza
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November 30, 2017

with environmental regulatory requirements. Self-reported violations may be subject to enforcement, including penalties, upon review by the Enforcement Division. We anticipate that you will resolve the alleged violations as required in order to protect the State's environment. If you have additional information that we are unaware of, you have the opportunity to contest the violation documented in this notice. Should you choose to do so, you must notify the Harlingen Region Office within 10 days from the date of this letter. At that time, we will schedule a violation review meeting to be conducted within 21 days from the date of this letter. However, please be advised that if you decide to participate in the violation review process, the TCEQ may still require you to adhere to the compliance schedule included in the attached Summary of Investigation Findings until an official decision is made regarding the status of any or all of the contested violations.

If you or members of your staff have any questions, please feel free to contact Mr. Jonathan Diaz in the Harlingen Region Office at (956) 430-6038.

Sincerely,



Carolyn A. Wood, Work Leader
Water Program
Harlingen Regional Office
Texas Commission on Environmental Quality

CAW/jd

cc: Mr. David Salinas, Utilities Director, City of San Juan

Enclosure: Summary of Investigation Findings



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Violations at the Wastewater System

1. The November 30th TCEQ letter listed ***eleven (11)*** “***Alleged Violations***”.



Seven of the violations were for compliance issues at the Wastewater Treatment Plant



Four of the violations were for compliance issues at three Lift Stations



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Violations at the Wastewater Treatment Plant



1. Failure to maintain mechanical Bar Screen
 - a. *Screen not operational*



2. Failure to operate and maintain Grit Chamber
 - a. *Grit Chamber not operational*



3. Failure to operate and maintain grit chamber
 - a. *Debris and vegetation in chamber*



Violations at the Wastewater Treatment Plant



4. Failure to operate and maintain Clarifiers
 - a. *Excessive solids in the clarifiers*



5. Failure to operate and maintain Gravity Thickener
 - a. *Thickener not operational*



6. Failure to provide Required Plant Protection
 - a. *Missing sections of plant perimeter fencing*



Violations at the Wastewater Treatment Plant



7. Failure to operate and maintain Drying Beds
 - a. *Vegetation growing and not operating*



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Violations at the Wastewater Collection System

-  1. Failure to operate and maintain Lift Station No. 2
 - a. Excessive grease in wet well*
-  2. Failure to secure Lift Station No. 2
 - a. West Side of Lift Station fencing not fully secure*
-  3. Failure to Secure Lift Station No. 12
 - a. Barb Wire on fencing missing*
-  4. Failure to ensure two functional pumps at LS No. 20
 - a. Lift Station had one functional pump*



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Violations at the Wastewater Treatment Plant



10. Failure to Secure Lift Station No. 12

a. Barb Wire on fencing missing



11. Failure to ensure two functional pumps at Lift Station No. 20

a. Lift Station had one non functional pump



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Violations at the Wastewater System

The November 30th TCEQ letter **requires** the City

1. To Prepare and Submit to TCEQ a “**written description of corrective actions taken**” for compliance by December 29, 2017 (*extension requested*)

and

2. To Prepare and Submit to TCEQ a **CORRECTION PLAN** to be taken by the City to resolve the **NON Compliance** issues



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Wastewater Treatment Plant



Projected and Estimated Costs for Necessary Improvements



CRUZ-HOGAN *Consultants, Inc.*

Projected and Estimated Costs for Necessary Improvements to the Wastewater Plant

- 1. Improvements needed to meet TCEQ
TCEQ Plant Violations***
- 2. Improvements needed to repair and to
Rehabilitate existing Plant Facilities***
- 3. Improvements needed to Upgrades the
existing he Wastewater Treatment Plant***



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Improvements Required to Meet TCEQ Violations

- | | |
|--|---------------|
| 1. Replacement of Mechanical Screen | \$ 345,000.00 |
| 2. Replacement of Grit Removal Chamber | \$ 340,000.00 |
| 3. Replacement of Grit Washer/Dewatering | \$ 115,000.00 |
| 4. Replace Sludge Thickener Equip/Pumps | \$ 403,000.00 |
| 5. Replace Sludge Digester Pumps Equip. | \$ 75,000.00 |



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Improvements Needed to Meet TCEQ Violations

Continued.....

7. Replace Clarifier Scum Pumps

\$ 150,000.00

TOTAL \$ 1,428,000.00 *

**** Does not include Design, Financing or Legal Fees***



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REHABILITATION and REPAIR ITEMS

1. Rehabilitate Plant Lift Station	\$ 560,000.00
2. Replace Plant Water System Equipment	<u>\$ 138,000.00</u>
TOTAL	\$ 698,000.00 *

** Does not include Design, Financing or Legal Fees*



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PLANT UPGRADE ITEMS

1. Install 'VFC's at Aeration Basin Motors	\$ 368,000.00
2. Upgrade Plant Disinfection System	\$ 240,000.00
3. Install Weir Washers at Clarifiers	\$ 150,000.00
4. Install SCADA Plant Controls	\$ 1,236,000.00
5. Upgrade Plant Electrical (<i>allowance</i>)	\$ 600,000.00



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PLANT UPGRADE ITEMS

Continued..

6. Rehabilitate Existing Paving	\$ 200,000.00
7. New Plant Admin and Lab Building	\$ 427,000.00
8. Install an Oder Control System	<u>\$ 450,000.00</u>
TOTAL	\$ 3,671,000.00*

** Does not include Design, Financing or Legal Fees*



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PROJECT FUNDING OPTIONS



General Obligation/Revenue Bonds



**North American Development Bank
Community Assistance Program (CAP)**



Texas Water Development Board

a. Clean Water SRF Funds



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TWDB Project Funding



Prepared the proposed and any ***selected*** Wastewater Treatment Plant Improvements Projects for inclusion into the Texas Water Development Board (***TWDB***) 2019 Clean Water State Revolving Fund (***CWSRF***) Intended Use Plan (***IUP***)



Inclusions to the TWDB's 2017 ***IUP*** are due by March 2, 2018



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TWDB Project Funding



Being included in the TWDB's ***IUP*** allows the City's Wastewater Improvements Projects to be eligible for funding in the TWDB's Clean Water State Revolving Fund Program (***CWSRF***)

- a) Possible Loan Forgiveness (Grants)***
- b) Low Interest Loans***



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