

B R O W N S V I L L E PUBLIC UTILITIES BOARD

Facilities/Program Committee

WEDNESDAY, JUNE 26, 2024



Call Open Meeting To Order

Items For Presentation and Discussion

- 1. Presentation of the SCADA Upgrade Project Eddy Hernandez/Elias Quintero
- 2. Presentation of Brownsville Public Utilities Board Rebate Pilot Program Implementation - Mirta Vasquez
- 3. Update on Service Center Pole Yard Expansion Project Phase 2 Marie Leal
- 4. Update on Airport Substation Upgrade Eli Alvarez





PUBLIC UTILITIES BOARD

OSI SCADA Upgrade

JUNE 26, 2024

SCADA Upgrade Justification

•Existing hardware and software went online in July 2018 for initial commissioning

•Cutover in January 2019, the system is now 5 years old

- •Requires hardware and software upgrades to complete the OMS installation due to cybersecurity concerns with existing setup.
- •Requires a Historian upgrade to provide adequate data collection for analysis and operator training of historical events
- Requires additional modules to leverage upcoming AMI project data and OMS integration
 - Compass Module will allow mobile connections to OMS system for operational first responders
 - AVL Module will facilitate deployment and monitoring of first responder units in the OMS system

What is SCADA?

An electric SCADA system, or Supervisory Control and Data Acquisition system, is a computerbased system that uses software and hardware to monitor and control industrial equipment and processes. SCADA systems can be used in many industries, including energy, telecommunications, and water and waste control.

SCADA systems allow companies to remotely monitor and manage industrial sites, such as substations, breakers, . SCADA systems can also help improve power reliability by allowing operators to remotely operate substation breakers during outages, or to perform Volt/VAR Optimization (VVO) to improve distribution system efficiency.

SCADA systems typically include the following components: I/O signal hardware, Controllers, Software, Network and communication, and Human-machine interface (HMI) software.



OpenControl SCADA Network Architecture

Overall Project Costs

OSI Upgrade Project Costs				
1	OSI Services	\$	710,290.00	
2	OSI Licensing	\$	64,050.00	
3	Hardware	\$	254,497.52	
	Total Project Cost	\$ 1,028,837.52		

Detailed Project Costs

OSI Services				
1 System Upgrade Implementation	\$	426,800.00		
2 Option 1 - Chronus Historian in SCADA ESP	\$	64,090.00		
3 Option 2 - Chronus Historian in SCADA DMZ	\$	30,600.00		
4 Option 3 - Factory Acceptance Testing	\$	41,400.00		
5 Option 4 - Site Acceptance Testing	\$	44,000.00		
6 Option 5 - AMI Interface Addition	\$	21,600.00		
7 Option 6 - Compass Addition	\$	54,800.00		
8 Option 7 - AVL Interface Addition	\$	27,000.00		
Total OSI Services Cost		710,290.00		

OSI Licensing				
1	Chronus Historian ESP Term License	\$	14,525.00	
2	Chronus Historian SCADA DMZ Term License	\$	14,525.00	
3	AMI Interface Term License	\$	10,500.00	
4	Compass Interface Term License	\$	17,500.00	
5	AVL Interface Term License	\$	7,000.00	
	Total OSI Licensing Costs	\$	64,050.00	

Hardware				
1	Servers	\$	142,964.00	
2	Workstations	\$	29,339.64	
3	Primary Firewalls	\$	46,700.00	
4	Networking equipment	\$	21,967.36	
5	Jumphost appliances	\$	13,526.52	
	Total Hardware Cost	\$	254,497.52	

otal Project Cost	\$ 1,028,837.52
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Questions

Discussion



BPUB Rebate Pilot Program Implementation

Grease Interceptor Retrofit Rebate

June 26, 2024

AGENDA

- Introduction
- Why is Pretreatment Required
- What is FOG?
- Effects of Improperly Sized Pretreatment System
- Why Introduce a Grease Interceptor Rebate
- Rebate Terms and Conditions



Brownsville Public Utilities Board (BPUB) Pretreatment Department, in partnership with the Energy Efficiency and Conservation Department is working together to create a Grease Interceptor Retrofit Rebate to incentivize BPUB water customers to upgrade their existing sub 500-gallon Grease Interceptor.

Why is the Pretreatment Program Required?

- To satisfy compliance with applicable State and Federal laws required by the Clean Water Act of 1977 (33 U.S.C. § 1251 et seq.) and the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403).
- To protect the health, safety, and general welfare of the general public and Publicly Owned Treatment Works (POTW) personnel.
- To enable the POTW/BPUB to comply with Texas Pollutant Discharge Elimination System (TPDES: WQ0010397003 & WQ0010397005) permit conditions (EPA I.D. No. TX0071340), sludge use and disposal requirements, and other Federal and State Laws.





What is FOG?

Fats, Oils, and Greases (FOG) are defined as organic polar compounds derived from animal and/or plant sources that contain multiple carbon chain triglyceride molecules. All are sometimes referred to herein as "grease" or "greases." (City of Brownsville Non-Domestic Wastewater Pretreatment Ordinance: 2020-795-G)



- Baking goods
- Butter, lard, shortening
- Cooking oil
- Fats and oil from cooked meats
- Food scraps (solids)
- Gravy
- Mayonnaise
- Salad dressing
- Sauces
- Dairy Products

Effects of Improperly Sized Pretreatment System

1. Clogging: If the grease interceptor is too small, it may not effectively capture grease and other waste materials, leading to clogs in the sewer lines. This can cause backups and overflows, resulting in damage to the BPUB lines and surrounding infrastructure. It may also be a hazard to public health and safety.

2. Environmental Contamination: Fats, Oils, and Grease (FOG), along with other waste materials that escape from an undersized pretreatment system, can contaminate the surrounding soil and water sources, posing environmental and public health hazards.

3. Odor: Inadequate or improperly maintained pretreatment systems can result in foul odors emanating from the wastewater system, negatively impacting the surrounding area's air quality and public health.

4. Increased Maintenance Costs: Constant clogging and backups due to an improperly sized pretreatment system can increase maintenance costs for BPUB and the Customer, as more frequent cleanings and repairs to the affected lines and systems are required.

Benefits of a Grease Interceptor Rebate

Incentivize Customers: provide up to \$1,000 to qualifying customers who retrofit the traditional 50 Gallon Grease Interceptor to a minimum 500 Gallon Grease Interceptor.

BPUB infrastructure: Correctly sized Grease Interceptor will safeguard W/WW infrastructure.

Reduce Service Calls: On average service calls are approximately \$1,400. (2 hours)

Funding: no new funds will be required. The EEC Department will reallocate unused FY24 commercial rebate funds.

Account	FY24 Budget	YTD Actuals	Rebates Pending	Budget Balance
Commercial & Industrial Rebate Program	\$70,000	\$14,000	\$30,000	\$26,000

Effective Date: July 1 – September 30, 2024, BPUB Staff will review the pilot program after FY24.

Rebate Terms and Conditions

- A rebate will not be paid if BPUB cannot conduct the required pre- and post-site visit/audit for verification
- •Rebate program only applies to a Grease Interceptor Retrofit. A new unit must meet a minimum 500-gallon liquid Capacity Grease Interceptor and all sizing and design criteria listed under the City's Non-Domestic Wastewater Pretreatment Ordinance 2020-795-G Section 102-386 (b).
- •The address of the account must match the address of the installation.
- •Applications must be completed and submitted within 45 days of installation.
- •Rebate recipient must be a BPUB water customer.
- •BPUB may discontinue the program at any time.
- •Rebates are contingent upon fund availability.
- •Only one application per customer per address will be accepted.
- •Rebates will be in the amount of 50% of invoice cost; up to \$1,000.

<u>Questions?</u>



Service Center Pole Yard Expansion Project Phase 2

FACILITIES/PROGRAM COMMITTEE MEETING |JUNE 26, 2024

Marie C. Leal, P.E.

Director of Water/Wastewater Engineering & Capital Planning

BROWNSVILLE PUBLIC UTILITIES BOARD

Project Overview

This presentation will highlight a Special / Facilities project:

- Project Location
- Project History
- Procurement & Budget
- Construction
- Q & A



Project Location



Project History

- The design of the BPUB FM 511 Service Center began in June 2016.
- Construction began in May 2018 and move in was completed in June 2020.
- The original design of the Service Center included a 15% future-growth capacity.
- Original Laydown Yard was approx. 72,225 s.f.
- Due to recent industry changes in materials and equipment deliverables, the warehouse department has quickly outgrown the existing laydown area.





How

This is



We Started





Procurement & Budget

On August 14, 2023, the BPUB Board approved the annual hauling, loading and equipment rental services to RML Hauling.

RML provided a labor and equipment only quote for \$84,069.20 to construct the Phase 2 pole yard and roadway areas.

Phase 2 (72,329 s.f.) required 4000 tons of limestone material taken from BPUB's inventory at a cost of \$127,160.00.

Project total: material, equipment & labor was \$211,229.20.

Engineer's Estimate was approx. \$314,143.80



BROWNSVILLE PUBLIC UTILITIES BOARD

Construction

Phase 2 Dimensions:

Laydown area: 175' x 425' (Approx. 74,375 s.f.)

Ingress/Egress Roadway: 30' x 570' (Approx. 17,100 s.f.)

- Pad required approx. 4000 tons of limestone; approx. 9" thick
- ✤ 30" x 56' RCP Culvert with Safety Ends
- Pending items to complete Phase 2 include fencing, gates, pole racks and lighting







Construction Photos







Upcoming Construction

Phase 2 Fencing will include:

2,000 linear feet of galvanized fence (8-ft. high)

- three 30-ft. rolling gates
- Project was advertised on March 30 and April 6, 2024.
 - Three (3) vendors responded.
- Garcia Fence Company is the recommended low bidder at a cost of \$ 129,425.00.
- Construction on fencing project can begin upon Board approval on the July 8, 2024 meeting.
- Lighting for Phase 2 area will be collaborated with our Electrical Engineering & Operations Department (In-house work).











Update on Airport Substation Upgrade

FACILITIES/PROGRAM COMMITTEE MEETING

JUNE 26, 20024

Outline

- The Airport Substation
- Airport Substation Issues
- Project Overview
- Project Timeline Update
- Next Steps
- Questions

The Airport Substation



Airport Substation Issues

- •Airport Substation operates using 69kV equipment that was not replaced during the 2006/2007, 69kV 138kV BPUB Conversion Project.
- Maintenance of this substation is challenging due to difficulty in acquiring parts for obsolete equipment.
- •During times of heavy rainfall, water tends to flood since the substation sits lower than the surrounding areas.

Project Overview

- •Disconnect and Store Equipment
- De-construct the Substation
- •Site Preparation, Grading, and Earthwork
- Install new and reusable equipment

Project Overview: Remove Equipment



Autotransformer



Oil-Circuit Breakers



Switchgear

Project Overview: Raise Elevation



*Photos taken October 30, 2015.



Project Timeline Update

- •The Airport Substation Demolition Contract was approved by the BPUB Board of Directors during the March 11, 2024 Regular Board Meeting.
- •BPUB Planning Engineers identified a reliability risk with the Airport Substation out of commission for the rest of 2024.
- •BPUB will install a mobile substation for the duration of the project to mitigate the reliability risk.
- •Demolition Contactor will begin work in August 2024. Demolition and site grading is estimated to take less than 120 days.
- •Construction Contractor to begin in January 2025 and take approximately six (6) months to complete.

Next Steps

- •The Airport Substation and Control Building Construction Contract will be advertised the week of July 1, 2024.
- •Finalizing MOU with COB to use a property adjacent to the existing substation as a staging area a site for the mobile substation.
- •Finalize arrangements for mobile substation and install.
- •Board of Directors (BOD) Agenda Item for Airport Substation and Control Building Construction Contract to be presented during the August 2024 BOD meeting.



Thank you!



Adjournment