



CITY COUNCIL SPECIAL MEETING

Monday, November 22, 2021 at 5:30 PM

Council Chambers at City Hall, 202 n. Virginia Street, Port Lavaca, Texas 77979

PUBLIC NOTICE OF MEETING

The following item will be addressed at this or any other meeting of the city council upon the request of the mayor, any member(s) of council and/or the city attorney:

Announcement by the mayor that council will retire into closed session for consultation with city attorney on matters in which the duty of the attorney to the city council under the Texas disciplinary rules of professional conduct of the state bar of Texas clearly conflicts with the open meetings act (title 5, chapter 551, section 551.071(2) of the Texas government code).

(All matters listed under the consent agenda item are routine by the city council and will be enacted by one motion. There will not be separate discussion of these items. If discussion is desired, that item will be removed from the consent agenda and will be considered separately.)

AGENDA

Council will consider/discuss the following items and take any action deemed necessary.

COVID-19 MEETING PROCEDURE

Public notice is hereby given that the City Council of the City of Port Lavaca, Texas, will conduct a special meeting on Monday, November 22, 2021 beginning at 5:30 p.m. at the regular meeting place in Council Chambers at City Hall, 202 North Virginia Street, Port Lavaca, Texas to consider the following items of business:

Due to COVID-19 concerns, social distancing guidelines will be encouraged for in-person attendance. The meeting will also be available via the video conferencing application "ZOOM".

Join Zoom Meeting:

<https://us02web.zoom.us/j/87572078429?pwd=OU5qRnFtSllZcG9jd3NqTGwySGd1dz09>

Meeting ID: 875 7207 8429

Passcode: 572270

One Tap Mobile

*+13462487799,,87572078429#,,, *572270# US (Houston)*

+1 346 248 7799 US (Houston)

I. ROLL CALL

II. CALL TO ORDER

III. COMMENTS FROM THE PUBLIC - *Comments will be limited to three (3) Minutes per individual unless permission to speak longer is received in advance*

IV. **ACTION ITEMS** - Council will consider/discuss the following items and take any action deemed necessary

1. Consider award of the TPWL National Recreational Trails Grant project. Presenter is Jody Weaver
2. Consider approval of Additive Change Order to the Renovation of the Southern Pacific Depot. Presenter is Jody Weaver
3. Receive Presentation of final report from AECOM on the City's Water Supply Feasibility Study. Presenter is Wayne Shaffer
4. Receive Presentation of final report from AECOM on the City's Lynn's Bayou Wastewater Treatment Plant (WWTP) expansion. Presenter is Wayne Shaffer
5. Consider approval of two (2) AECOM Task Orders. Presenter is Wayne Shaffer
Task Order No. 3 regarding "next step" activity regarding the City's Water Supply.
Task Order No. 4 to prepare construction documents for immediate needs at the City's Lynn's Bayou Wastewater Treatment Plant (WWTP).

V. **ADJOURN SPECIAL MEETING**

VI. **CERTIFICATION OF POSTING NOTICE**

This is to Certify that the above foregoing notice of a Special Meeting of the City Council of the City of Port Lavaca, Texas, to be held Monday, November 22, 2021 beginning at 5:30 p.m., was posted at City Hall, easily accessible to the Public, as of 5:00 p.m., Thursday, November 18, 2021.

/s/ Mandy Grant, City Secretary

ADA NOTICE

The Port Lavaca City Hall and Council Chambers are wheelchair accessible. Access to the building is available at the primary north entrance facing Mahan Street. Special parking spaces are located in the Mahan Street parking area. In compliance with the Americans with Disabilities Act, the City of Port Lavaca will provide for reasonable accommodations for persons attending meetings. To better serve you, requests should be received 24 hours prior to the meetings. Please contact City Secretary Mandy Grant at (361) 552-9793 Ext. 230 for assistance.

COMMUNICATION

SUBJECT: Consider award of the TPWL National Recreational Trails Grant project.
Presenter is Jody Weaver

INFORMATION:

CITY OF PORT LAVACA

COUNCIL MEETING: NOVEMBER 8, 2021

AGENDA ITEM __

DATE: 11.17.2021

TO: HONORABLE MAYOR AND CITY COUNCIL MEMBERS

FROM: JODY WEAVER, INTERIM CITY MANAGER 

SUBJECT: TPWL NATIONAL RECREATIONAL TRAILS GRANT PROGRAM

BACKGROUND: The City of Port Lavaca was awarded a \$200,000 Recreational Trails Grant in 2019. After a year waiting on the environmental study and another year for TPWL to make upgrades to their online portal system, we received the grant contract this past summer. We contracted with Urban Engineering to prepare the construction bid documents for this project along with other improvements as part of the second Phase of the Bayfront Parks Improvement project.

A total of 4 Bids were received on November 16. A Bid Tabulation is *attached*.

The Alternate bid is to include pavement improvements from the new raised walkway to the Veterans Memorial, as shown on the *attached* aerial siteplan. This would be similar to the improvements made in Phase 1. We are proposing a raised walkway across the entrance road as a traffic calming feature. If it works well, it can be considered in other areas to remind people to slow down. With the completion of this project there will be an exact 1.0 mile lighted walking trail loop around the Park and approximately 0.5 mile bike loop in the park.

The Low Bidder is Matagorda Construction & Materials with a Base Bid of \$426,173.00 and an Alternate No. 1 bid of \$116,493.00. The sum of the Base and Alternate 1 bids is \$542,666.00.

FINANCIAL IMPLICATIONS: There is a total of \$500,766 included in the 2021-22 Capital Improvement budget for this construction project. (This includes the \$200,000 grant funds).

An award of the Base Bid and the Paving Improvements Alternate would require additional funds of \$41,900.00. The Auditors have completed the FYE 2020 Audit and are in the process of writing the report for presentation to Council on December 13. The Audit reveals a gain of \$200,780.00 in our reserves balance from that we had assumed when preparing the FYE 2022 budget.

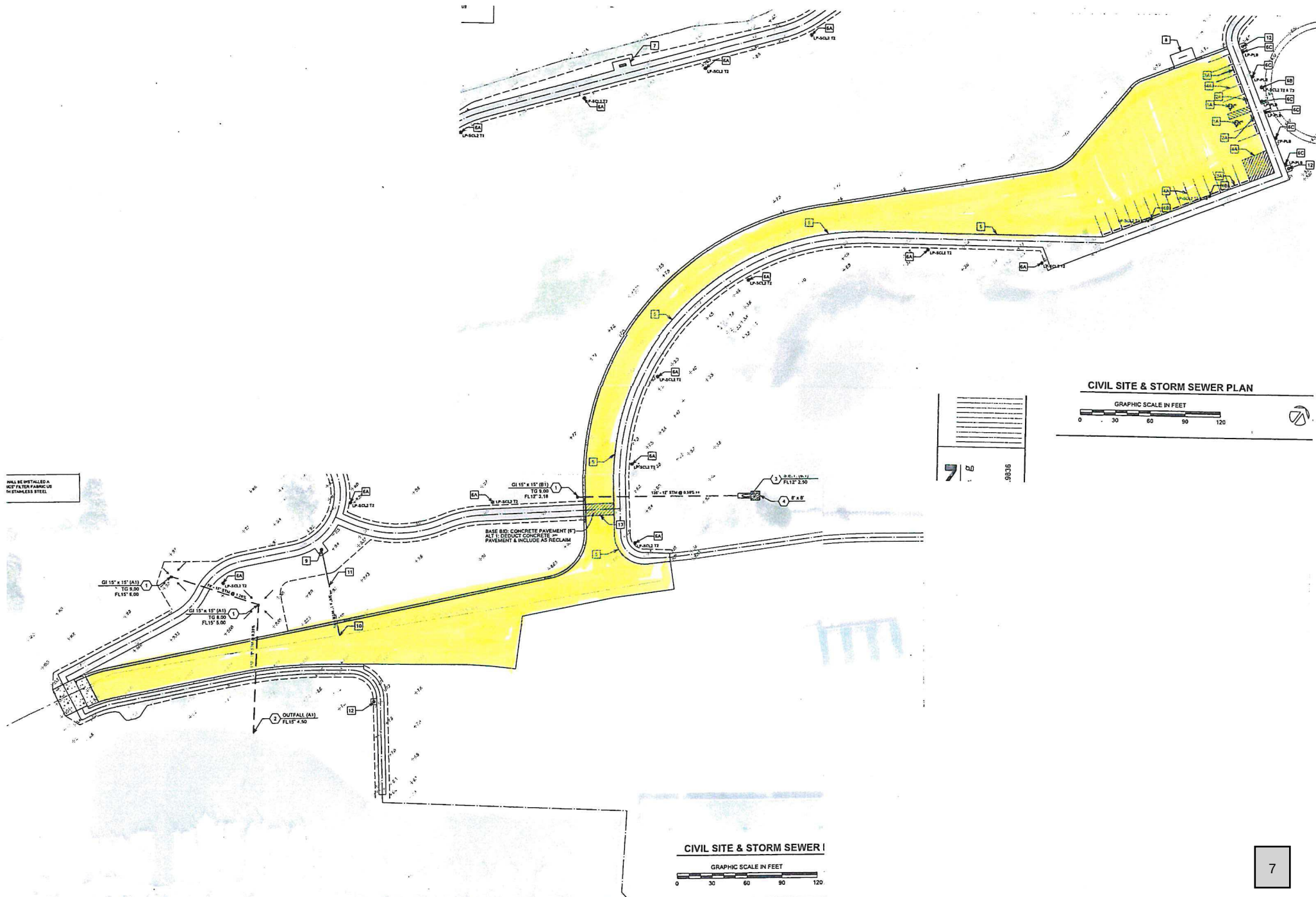
IMPACT ON COMMUNITY SUSTAINABILITY: The Community's response to the improvements completed as part of Phase 1 has been extremely positive. The park is being well used for fishing, walking/jogging and other family outings. This project will provide a safe place for bikers to ride as well as provide a full 1.0 mile loop for walking and jogging. It contributes towards completion of Action Item 4 of the 2016 Comprehensive Plan – "to complete the improvements at Bayfront Park".

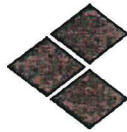
RECOMMENDATION: See the Letter of Recommendation from the project Engineer Matt Glaze of Urban Engineering. Staff and the consensus of the Parks Board concur with the recommendation.

Attachments: Bid Tabulation; Aerial site plan

BID TABULATION											
CITY OF PORT LAVACA											
BAYFRONT PENINSULA PARK WALKING TRAIL & PARK IMPROVEMENTS											
BID DATE: NOVEMBER 16, 2021											
				K-C Lease Service, Inc. dba Matagorda Construction & Materials		Sylva Construction, LLC		Staff Concrete Construction		Lester Contracting, Inc.	
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
BASE BID											
GENERAL											
1.	Mobilization, Insurance and Bonds (Maximum 5% of Base Bid)	1	LS	\$ 26,000.00	\$ 26,000.00	\$ 24,700.00	\$ 24,700.00	\$ 22,305.00	\$ 22,305.00	\$ 25,000.00	\$ 25,000.00
2.	Barricading & Traffic Control (Furnish, Install, Maintain & Remove Signs & Warning Devices) (Includes Flagmen, Traffic Handling & Temporary Striping)	1	LS	\$ 2,000.00	\$ 2,000.00	\$ 3,000.00	\$ 3,000.00	\$ 1,500.00	\$ 1,500.00	\$ 2,500.00	\$ 2,500.00
3.	Construction Staking	1	LS	\$ 3,000.00	\$ 3,000.00	\$ 5,200.00	\$ 5,200.00	\$ 1,850.00	\$ 1,850.00	\$ 5,000.00	\$ 5,000.00
4.	Storm Water Pollution Prevention Plan (Prepare, Implement and Maintain Storm Water Plan and Controls)	1	LS	\$ 15,000.00	\$ 15,000.00	\$ 1,300.00	\$ 1,300.00	\$ 1,800.00	\$ 1,800.00	\$ 3,500.00	\$ 3,500.00
SUBTOTAL GENERAL					\$ 46,000.00		\$ 34,200.00		\$ 27,455.00		\$ 36,000.00
STORM SEWER IMPROVEMENTS											
5.	Furnish & Install Storm Sewer Main (8") (0' - 5' Cut) (Non-Paved Areas)	40	LF	\$ 33.00	\$ 1,320.00	\$ 56.68	\$ 2,267.20	\$ 55.35	\$ 2,214.00	\$ 30.00	\$ 1,200.00
6.	Furnish & Install Storm Sewer Main (12") (0' - 5' Cut) (Non- Paved Areas)	123	LF	\$ 33.00	\$ 4,059.00	\$ 56.68	\$ 6,971.64	\$ 65.92	\$ 8,108.16	\$ 32.00	\$ 3,936.00
7.	Furnish & Install Storm Sewer Main (12") (0' - 5' Cut) (Paved Areas)	51	LF	\$ 60.00	\$ 3,060.00	\$ 60.80	\$ 3,100.80	\$ 71.60	\$ 3,651.60	\$ 34.00	\$ 1,734.00
8.	Furnish & Install Storm Sewer Main (15") (0' - 5' Cut) (Non- Paved Areas)	138	LF	\$ 33.00	\$ 4,554.00	\$ 60.50	\$ 8,349.00	\$ 68.74	\$ 9,486.12	\$ 35.00	\$ 4,830.00
9.	Furnish & Install Storm Sewer Main (15") (0' - 5' Cut) (Paved Areas)	50	LF	\$ 90.00	\$ 4,500.00	\$ 65.00	\$ 3,250.00	\$ 80.00	\$ 4,000.00	\$ 38.00	\$ 1,900.00
10.	Furnish & Install Precast Concrete Grate Inlet with 15" Standard Grate (0' - 5' Depth)	4	EA	\$ 3,000.00	\$ 12,000.00	\$ 2,225.00	\$ 8,900.00	\$ 1,428.00	\$ 5,712.00	\$ 2,000.00	\$ 8,000.00
11.	Furnish & Install Storm Sewer Pipe Outfall	2	EA	\$ 2,000.00	\$ 4,000.00	\$ 700.00	\$ 1,400.00	\$ 2,045.00	\$ 4,090.00	\$ 1,000.00	\$ 2,000.00
12.	Furnish & Install Safety End Treatment (6:1)	1	EA	\$ 2,500.00	\$ 2,500.00	\$ 1,800.00	\$ 1,800.00	\$ 1,456.00	\$ 1,456.00	\$ 2,000.00	\$ 2,000.00
13.	White Crushed Limestone (3" x 5")	8	TONS	\$ 200.00	\$ 1,600.00	\$ 263.50	\$ 2,108.00	\$ 111.75	\$ 894.00	\$ 120.00	\$ 960.00
14.	Furnish & Install Filter Fabric	8	SY	\$ 15.00	\$ 120.00	\$ 13.50	\$ 108.00	\$ 36.25	\$ 290.00	\$ 50.00	\$ 400.00
SUBTOTAL STORM SEWER IMPROVEMENTS					\$ 37,713.00		\$ 38,254.64		\$ 39,901.88		\$ 26,960.00
PAVING IMPROVEMENTS											
15.	Concrete Sidewalk	29,500	SF	\$ 5.50	\$ 162,250.00	\$ 8.90	\$ 262,550.00	\$ 6.75	\$ 199,125.00	\$ 8.00	\$ 236,000.00
16.	Concrete Pavement (6")	1,005	SF	\$ 14.00	\$ 14,070.00	\$ 7.20	\$ 7,236.00	\$ 8.40	\$ 8,442.00	\$ 9.00	\$ 9,045.00
17.	Thickened Edge	87	LF	\$ 12.00	\$ 1,044.00	\$ 7.00	\$ 609.00	\$ 18.61	\$ 1,619.07	\$ 17.50	\$ 1,522.50
18.	Pavement Markings (Permanent) (4" White) (TxDOT Type I)	186	LF	\$ 0.75	\$ 141.00	\$ 1.50	\$ 282.00	\$ 7.45	\$ 1,400.60	\$ 8.00	\$ 1,504.00
SUBTOTAL PAVING IMPROVEMENTS					\$ 177,505.00		\$ 270,677.00		\$ 210,586.67		\$ 248,071.50
WATER IMPROVEMENTS											
19.	Water Service Line (1")	75	LF	\$ 25.00	\$ 1,875.00	\$ 13.85	\$ 1,038.75	\$ 35.04	\$ 2,628.00	\$ 15.00	\$ 1,125.00
SUBTOTAL WATER IMPROVEMENTS					\$ 1,875.00		\$ 1,038.75		\$ 2,628.00		\$ 1,125.00
MISCELLANEOUS IMPROVEMENTS											
20.	Domed Timber Post (6' - 3")	109	EA	\$ 120.00	\$ 13,080.00	\$ 106.00	\$ 11,554.00	\$ 71.97	\$ 7,844.73	\$ 150.00	\$ 16,350.00
21.	Area Light, (First Light Technologies SCL2 Solar Series Luminaire, Type 2 Light, Color & Lighting Profile TBD) (First Light Spec SCL2-SPMS-XX-T2-NW-XX)	23	EA	\$ 3,000.00	\$ 69,000.00	\$ 3,424.00	\$ 78,752.00	\$ 3,872.00	\$ 89,056.00	\$ 4,500.00	\$ 103,500.00
22.	Area Light, (First Light Technologies SCL2 Solar Series Luminaire, Type 3 Light, Color & Lighting Profile TBD) (First Light Spec SCL2-SPMS-XX-T3-NW-XX)	3	EA	\$ 3,000.00	\$ 9,000.00	\$ 3,424.00	\$ 10,272.00	\$ 3,872.00	\$ 11,616.00	\$ 4,500.00	\$ 13,500.00
23.	Direct Bury Marine Grade Aluminum Pole (HAPCO Pole Products, Catalog No. RTA20D8BE01)	23	EA	\$ 1,500.00	\$ 34,500.00	\$ 1,590.00	\$ 36,570.00	\$ 1,611.50	\$ 37,064.50	\$ 2,100.00	\$ 48,300.00
24.	Bollard Light, (First Light Technologies PLB Solar Series, Color & Lighting Profile TBD) (First Light Spec PLB-102-XX-ASM-NW-XX)	6	EA	\$ 1,500.00	\$ 9,000.00	\$ 1,606.85	\$ 9,641.10	\$ 2,303.33	\$ 13,819.98	\$ 1,775.00	\$ 10,650.00
25.	Pedestrian Bench (Allowance)	3	EA	\$ 2,000.00	\$ 6,000.00	\$ 2,000.00	\$ 6,000.00	\$ 2,000.00	\$ 6,000.00	\$ 2,000.00	\$ 6,000.00
26.	Stainless Steel, Heavy-Duty Round Tube Bike Rack (Allowance)	1	EA	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
27.	Water Fountain & Bottle Filling Station with Dog Bowl (Murdock GYV35-MO-PF or approved equal) (Allowance)	1	EA	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
28.	Trash Receptical (49 Gal) (Including Rain Cap) (Park Warehouse or approved equal) (Allowance)	5	EA	\$ 2,500.00	\$ 12,500.00	\$ 2,500.00	\$ 12,500.00	\$ 2,500.00	\$ 12,500.00	\$ 2,500.00	\$ 12,500.00
SUBTOTAL MISCELLANEOUS IMPROVEMENTS					\$ 163,080.00		\$ 175,289.10		\$ 187,901.21		\$ 220,800.00
TOTAL BASE BID					\$ 426,173.00		\$ 519,459.49		\$ 468,472.76		\$ 532,956.50

BID TABULATION											
CITY OF PORT LAVACA											
BAYFRONT PENINSULA PARK WALKING TRAIL & PARK IMPROVEMENTS											
BID DATE: NOVEMBER 16, 2021											
				K-C Lease Service, Inc. dba Matagorda Construction & Materials		Sylva Construction, LLC		Staff Concrete Construction		Lester Contracting, Inc.	
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE	UNIT PRICE	TOTAL PRICE
ALTERNATE NO. 1											
A1.	Reclaim Roadway and Stabilize with Cement (6")	5,850	SY	\$ 5.50	\$ 32,175.00	\$ 3.60	\$ 21,060.00	\$ 9.43	\$ 55,165.50	\$ 4.00	\$ 23,400.00
A2.	Cement for Roadway Stabilization	64	TONS	\$ 180.00	\$ 11,520.00	\$ 173.00	\$ 11,072.00	\$ 206.25	\$ 13,200.00	\$ 175.00	\$ 11,200.00
A3.	Additional Limestone Base (Type A, Grade 2) for Roadway Crown (As Directed by Engineer)	50	TONS	\$ 112.00	\$ 5,600.00	\$ 63.50	\$ 3,175.00	\$ 53.35	\$ 2,667.50	\$ 35.00	\$ 1,750.00
A4.	Prime Coat (MC-30)	5,850	SY	\$ 1.20	\$ 7,020.00	\$ 1.25	\$ 7,312.50	\$ 1.375	\$ 8,043.75	\$ 0.95	\$ 5,557.50
A5.	Two Course Surface Treatment (AC-15P & PB, GR4 Pre-Coated Aggregate)	5,850	SY	\$ 5.60	\$ 32,760.00	\$ 5.30	\$ 31,005.00	\$ 9.075	\$ 53,088.75	\$ 9.80	\$ 57,330.00
A6.	Concrete Curb (Sloped Curb, Ribbon Curb, or Transition Curb)	1,480	LF	\$ 18.00	\$ 26,640.00	\$ 15.45	\$ 22,866.00	\$ 18.54	\$ 27,439.20	\$ 29.00	\$ 42,920.00
A7.	Pavement Markings (Permanent) (4" White) (Sherwin Williams SelfFast Acrylic Marking Paint)	648	LF	\$ 1.00	\$ 648.00	\$ 1.40	\$ 1,187.20	\$ 0.605	\$ 513.04	\$ 8.00	\$ 6,784.00
A8.	Pavement Markings (Permanent) (International Disable Symbol) (Sherwin Williams SelfFast Acrylic Marking Paint)	2	EA	\$ 75.00	\$ 150.00	\$ 65.00	\$ 130.00	\$ 49.50	\$ 99.00	\$ 550.00	\$ 1,100.00
A9.	Accessible Parking Sign Installation (Permanent) (Measured Per Post)	2	EA	\$ 500.00	\$ 1,000.00	\$ 385.00	\$ 770.00	\$ 715.00	\$ 1,430.00	\$ 1,065.00	\$ 2,130.00
A10.	Precast Concrete Wheel Stop	22	EA	\$ 110.00	\$ 2,420.00	\$ 80.00	\$ 1,760.00	\$ 82.20	\$ 1,808.40	\$ 230.00	\$ 5,060.00
A11.	Deduct: Concrete Pavement (6")	260	SF	\$ (14.00)	\$ (3,640.00)	\$ (6.50)	\$ (1,690.00)	\$ (6.00)	\$ (2,080.00)	\$ (9.00)	\$ (2,340.00)
TOTAL ALTERNATE NO. 1					\$ 116,493.00		\$ 98,647.70		\$ 161,375.14		\$ 154,891.50
TOTAL BASE BID + ALTERNATE NO. 1					\$ 542,666.00		\$ 618,107.19		\$ 629,847.90		\$ 687,848.00
CALENDAR DAYS - SUBSTANTIAL COMPLETION					68		160		90		180





November 17, 2021

Ms. Jody Weaver, P.E.
City Manager & City Engineer
City of Port Lavaca
202 N. Virginia Street
Port Lavaca, TX 77979

RE: Recommendation of Award
U.E. Job No. E23609.01
Bayfront Peninsula Park Walking Trail & Park Improvements
Port Lavaca, Texas

Dear Ms. Weaver:

On Tuesday, November 16, 2021 at 2:00 p.m., public bids were opened for the Bayfront Peninsula Park Walking Trail & Park Improvements. The following bids were received:

Bidder	Total Base Bid + Alternate No. 1	Calendar Days to Substantial Completion
K-C Lease Service, Inc. DBA Matagorda Construction & Materials	\$542,666.00	68
Sylva Construction, LLC	\$618,107.19	160
Staff Concrete Construction	\$629,847.90	90
Lester Contracting, Inc.	\$687,848.00	180

K-C Lease Service, Inc. DBA Matagorda Construction & Materials submitted the lowest Bid and stated a completion time of 68 calendar days. I recommend that the contract for the aforementioned project be awarded to K-C Lease Service, Inc. DBA Matagorda Construction & Materials.

If you have any questions, please do not hesitate to contact me at (361) 578-9836 or by email at mglaze@urbanvictoria.com.

Sincerely,

Matt A. Glaze, P.E.
Senior Engineer

MAG/dmf

COMMUNICATION

SUBJECT: Consider approval of Additive Change Order to the Renovation of the Southern Pacific Depot. Presenter is Jody Weaver

INFORMATION:

CITY OF PORT LAVACA

COUNCIL MEETING: NOVEMBER 8, 2021**AGENDA ITEM __****DATE:** 11.18.2021**TO:** HONORABLE MAYOR AND CITY COUNCIL MEMBERS**FROM:** JODY WEAVER, INTERIM CITY MANAGER **SUBJECT: CHANGE ORDER TO RENOVATION OF THE SOUTHERN PACIFIC RR DEPOT**

BACKGROUND: A contract was awarded on September 10 to Barefoot Construction to renovate the Southern Pacific Railroad Depot for a cost of \$189,820.00. This was only \$755 below what was budgeted.

Progress to date includes demolition and reconstruction of the exterior deck/platform, leveling up of the east end of the structure, installation of the soffit under the east end roof structure, and repair of the damaged area of the main roof and associated trusses. The Asbestos contractor has also completed the removal of the asbestos siding.

In making the repairs to the damaged area of the roof, more deteriorated lumber was encountered than had been estimated. The construction contract includes unit prices for any additional quantity of plywood and lumber, which Mark voluntarily reduced from the dollar amount bid, when he realized that he had misunderstood the bid item and the price he bid was much higher than it should have been. The additional board foot of lumber and square footage of plywood required to complete this roof repair at the unit prices amounted to an additional \$19,564.00.

Mr. Barefoot identified that a portion of the exterior beam supporting the main building on the north side was severely deteriorated and discovered that the wooden piers supporting the beams under the main portion of the building were sitting only a few inches below the natural grade and were in many instances deteriorated. We worked with Lynn Engineering and provided a plan to install new CMU piers, replace the north beam, level the structure up and tie it into the new concrete piers being constructed under the new open deck area, to provide lateral support. This Change Order 1, which also includes a repair to correct the sagging of two window headers and additional trim to better match the 1908 photo, amounted to \$20,038.00. Due to the need to continue with these improvements before being able to move forward with the remainder of the project, and it being less than \$25,000, I approved this Change Order No. 1.

When the siding was removed from the north side of the west end of the building, it was realized that termites had been active in some of the wood foundation and wall studs in this area. Again, working with Lynn Engineering, Mr. Barefoot has submitted a proposed Change Order to make foundation repairs and level up the west end of the building and replace the rotten wall studs as well as replace the wood flooring. Removal of the wood flooring is necessary to make the foundation repairs and several soft spots in the flooring have been discovered. The cost for this Change Order 2 is **\$17,425.00**. Apart from this contract, I am getting proposals for termite treatment of the site.

For Council's consideration, I asked Mr. Barefoot to provide a price to extend the exterior deck/platform along the north side of the building to just past the sliding doors to recreate the deck (minus the stairs) as it was in the 1908 photograph. This would involve a 10' x 21' addition to the deck. He is proposing to do that at the prorated cost of the deck that was bid and is currently in the contract. This would be \$42.86/sf or **\$9,858.00**.

FINANCIAL IMPLICATIONS: To date the project has cost \$38,847 more than was budgeted. This includes the \$19,564.00 additional cost due to actual lumber quantities and the above described \$20,038.00 Change Order 1. Understand that there could possibly still be additional cost due to actual lumber quantities, but at this time we believe we have identified all of the significant issues with the structure.

To fund both the needed foundation improvements on the west end of the building and the deck extension would be another \$27,283.00 on this contract. This would bring the total cost to \$66,130 over what was budgeted.

As mentioned in the Memo regarding the award of the TPWL Bayfront project, the FYE 2020 Audit has shown that there is in reality \$200,780 more in general fund reserves than we had assumed when preparing this year's budget. Assuming approval of the TPWL grant project award, there still remains \$158,880 of this amount. After funding this additional \$66,130, there would remain \$92,750 of this amount of additional general fund reserves above what was assumed for the FYE 2022 budget.

IMPACT ON COMMUNITY SUSTAINABILITY:

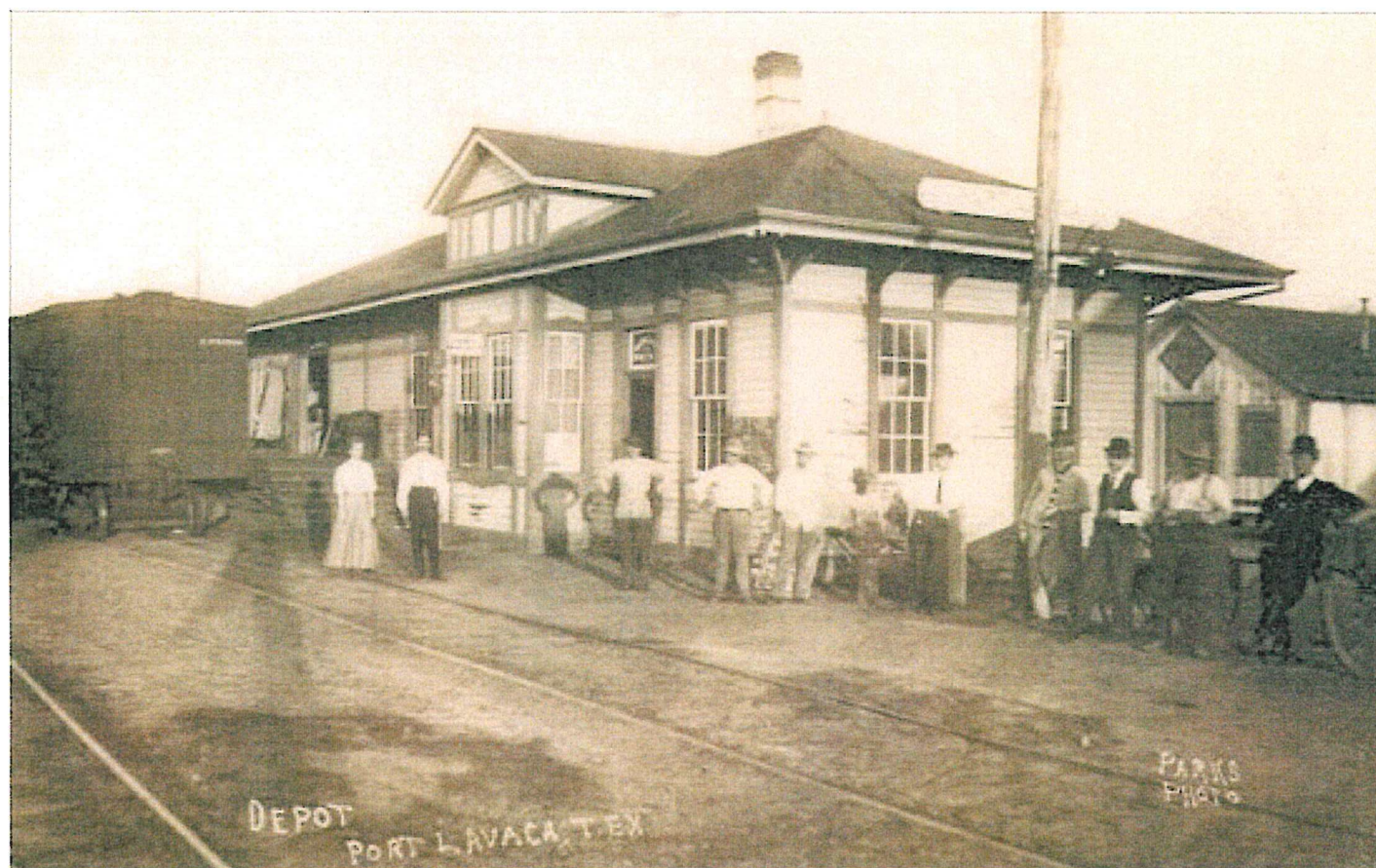
Council has committed to investing in the preservation and restoration of this historical structure. This effort is consistent with Action Item 6 of the City's Comprehensive Plan to restore historically and culturally significant amenities. It makes sense to remedy these discovered structural issues prior to putting up the new siding and roofing. Although the deck could be extended at a later date, the cost would surely be much more expensive to mobilize just for this. The advantage of having this deck extension is that the sliding doors on both the south and north sides of the building can be safely opened and used for events.

Next Step improvements that need to be looked at with other bids include but are not limited to constructing a new ADA compliant access ramp, interior improvements at the west end of the building, electrical and lighting upgrades, steam pump handrails around the deck, site drainage improvements, and construction of restroom facilities.

RECOMMENDATION: Staff recommends that Council approve Change Order No. 2 in a total amount of \$46,847.00, to be funded with General Fund Reserves. This Change Order reflects \$17,425.00 for the west end structural repairs, \$9,858.00 for the additional deck area and \$19,564.00 for the additional as-built quantities to date.

Attachments:

- 1908 photo of the Southern Pacific Railroad Depot
- Change Order proposal for the west end foundation repair (\$17,425.00)
- Change Order proposal for the extension of the deck area (\$9,858.00)
- Accounting of additional as-built quantities to date





Change Order Proposal to Contract

Proposal Submitted To:		Job Name:		Job #	
CITY OF PORT LAVACA, TX.		FOUNDATION REPAIR DEPOT			
Address:		Job Location:			
VIRGINIA STREET		28' x 20' GROUND LEVEL OFFICE ECT.			
PORT LAVACA, TX. 77979					
Date:		Date of Plans:			
11/09/2021		11/09/2021			
Phone #	e-mail	Designer/Architect			
		Mark Barefoot			

We hereby submit specifications and estimates for change order to original contact as:

THIS IS A CHANGE ORDER CONTRACT TO ADD ADDITIONAL WORK TO THE ORIGINAL SCOPE OF WORK AND SUPPLY.

THE FOLLOWING ITEM(S) WILL BE COMPLETED AS PER INSTRUCTION BY "OWNER"

REPLACE DECOMPOSED BEAMS ON GROUND LEVEL STRUCTURE
INSTALL CONCRETE PIERS / NEW BEAMS /ANCHORING AS IDENTIFIED ON THE ATTACHED
"SCOPE OF WORK"

FOUNDATION TO BE HYDRAULICALLY JACKED AND ELEVATED "LEVEL" TO A TOLERANCE
OF (+ - 1/4")

FLOOR JOIST REPAIR AND WALL STUD REPAIR INCLUDED

This Work will Require 5-7 Days to Complete

Materials No Tax & Labor: \$ 17,425.00

We propose hereby to furnish material and labor – complete in accordance with the above specifications for the sum of Seventeen Thousand Four Hundred Twenty Five Dollars

Respectfully
Submitted _____

Note: This proposal may be withdrawn by us if not
Accepted within 30 days.

Acceptance of Proposal

The above prices, specifications and conditions are
satisfactory and are hereby accepted. You are authorized
to do the work as specified.

Signature _____

Date of Acceptance _____

Witness _____







Job Estimate/ Scope of Work

Estimated by:

Date:

Customer:

Address of Job:

#	Item	Hrs	C	Ch	L
	<i>PERIMETER BEAMS</i>				
1	PURCHASE ALL THE REQUIRED MATERIALS AND MOBILIZE TO THE JOBSITE				
2	EXCAVATE THE REMAINING AREAS TO EXPOSE THE SILL BEAMS OF THE GROUND LEVEL STRUCTURE. REMOVE THE FAILED BEAMS.				
3	THE EXCAVATION SHALL BE APPROXIMATELY 6" BELOW THE BOTTOM OF THE EXISTING BEAMS. THE EXCAVATIONS TO BE ADJACENT TO THE BEAMS AND EXTEND APPROXIMATELY 6' WIDE				
4	LOCATE THE 9-10 NEW FOOTINGS LOCATIONS. CORNERS SHALL HAVE FOOTING OTHERS ON 6'-7' CENTERS				
5	DRILL THE NEW FOOTINGS 18" DIAMETER FOOTINGS. THE FOOTINGS MUST BE DRILLED AN ANGLE OF APPROXIMATELY 20 DEGREES TO CLEAR THE BEAM AND PROVIDE SUPPORT DIRECTLY UNDER THE NEW BEAMS				
6	PLACE REINFORCING STEEL AS REQUIRED IN THE DRILLED FOOTINGS, PLACE 3/4" ANCHOR BOLTS AS REQUIRED, POUR WITH CONCRETE AND FINISH WITH "LEVEL" TOPS				
7	REPAIR THE FLOOR JOIST THAT ARE DECOMPOSED, ATTACHED NEW MATERIAL APPROXIMATELY 3' LONG TO SIDES OF THE GOOD JOISTS				
8	INSTALL THE NEW GROUND CONTACT BEAMS, TIE UP TO THE JOISTS WITH STRAPS				
	<i>CENTER BEAM / UNDER FLOOR PLANKS</i>				
1	GAIN ACCESS TO THE CENTER BEAM OF THE GROUND LEVEL STRUCTURE				
2	MOVE THE CONTENTS IN THE STORAGE ROOM, RELOCATE WITHIN THE BUILDING				
3	CUT THE 1 X 4 TONGUE AND GROOVE FLOORING TO ALLOW REMOVAL OF A 36" WIDE STRIP, THE CENTER BEAM OF THE STRUCTURE WILL BE EXPOSED FOR EVALUATION AND REPAIR. THIS BEAM APPEARS TO BE IN A CONDITION TO BE KEPT IN PLACE				
4	THE REPAIR OF THE CENTER BEAM WILL CONSIST OF LIFTING THE BEAM AND INSTALLING CONCRETE BLOCKING. THIS LIFTING AND BLOCKING WILL OCCUR AT THE SAME TIME THE NEW PERIMETER BEAMS ARE LIFTED.				
5	LIFT ALL BEAMS, THE STRUCTURE IS CURRENTLY APPROXIMATELY 3-1/2" DOWN ON THE WEST END				
	<i>FINISHING UP</i>				
1	PLACE CONCRETE BLOCKING AND SHIMS ON THE 9-10 FOOTINGS TO THE LEVEL BEAMS				
2	INSTALL SIMPSON HTT4 12-3/8" HOLD DOWNS TO THE ANCHOR BOLTS, ATTACH TO BEAMS				
3	BACK FILL THE PERIMETER TO A LEVEL THAT WILL NOT CONTACT THE NEW BEAMS. THE SURROUNDING LAWN IS STILL GOING TO BE HIGHER THAN THE STRUCTURE'S BEAMS. THIS ISSUE WILL BE ADDRESSED AT A LATER TIME				
4	RESTORE THE INTERIOR FLOOR WITH LIKE KIND PLANKS. NO PAINTING OF THE FLOORING IS PLANNED				
5					
6					



Change Order Proposal to Contract

Proposal Submitted To:		Job Name:	Job #
CITY OF PORT LAVACA, TX.		CONSTRUCT 23' x 10' ADDED DECK	
Address:		Job Location:	
VIRGINIA STREET		NORTH SIDE OF NEW DECK	
PORT LAVACA, TX. 77979			
Date:		Date of Plans:	
11/10/2021		11/10/2021	
Phone #	e-mail	Designer/Architect	
		Mark Barefoot	

We hereby submit specifications and estimates for change order to original contact as:

THIS IS A CHANGE ORDER CONTRACT TO ADD ADDITIONAL WORK TO THE ORIGINAL SCOPE OF WORK AND SUPPLY.

THE FOLLOWING ITEM(S) WILL BE COMPLETED AS PER INSTRUCTION BY "OWNER"

CONSTRUCT A 10' WIDE 21' LONG DECK ADDITION AS PER ALL OTHER DECK FRAMING AND ATTACHMENT PROCEDURE
THIS DECK TO BE ADDED TO INCLUDE THE SLIDING DOOR ON THE NORTH SIDE
DRAWING ATTACHED.

AS PER CONTRACT THE COMPLETED NEW DECK COST WAS \$ 42.86 / SQ. FT.

ADDITIONAL DECK WILL BE: 230 SQ. FT. @ \$ 42.86 TOTAL: \$ 9,858.00

Materials No Tax & Labor: \$ 9,858.00

We propose hereby to furnish material and labor – complete in accordance with the above specifications for the sum of Nine Thousand Eight Hundred Fifty Eight Dollars

Respectfully
Submitted Mark Barefoot 11/19/21

Note: This proposal may be withdrawn by us if not Accepted within 14 days.

Acceptance of Proposal

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified.

Signature _____

Date of Acceptance _____

Witness _____

Job Estimate Bill of Materials



Estimated by: Mark Barefoot

Date: 10/19/2021

Customer:

Address of Job: DEPOT

LARGE REPAIR # 1

Note: More to Repair

BILL OF MATERIALS REQUIRED

Bid

Item #		QTY	TOTAL BF	RATE	TOTAL
1	TRUSS BOTTOM CHORD REPAIR 2" X 6" X 36" (NATIVE) = 3 BF EA.	6	18 BF	\$ 48.00	\$ 864.00
2	TRUSS TOP CHORD REPAIR (TAILS) 2" X 4" X 8' (NATIVE) = 5.33 BF EA.	6	32 BF	\$ 48.00	\$ 1,536.00
3	FURRING BOARDS / LATERALS 1" X 6.5" X 1' = .5417 BF EA. FOOT	81.33'	44 BF	\$ 48.00	\$ 2,112.00
4	SOFFIT TONGUE AND GROOVE 1" X 4" X 20'-0" (MODERN) ACTUAL 3/4" X 3-1/2" REPAIR AREA 20'-0" X 54" = 67.5 BF	90 SQ. FT.	67.5 BF	\$ 55.00	\$ 3,712.00
5	PLYWOOD FILL TO LEVEL WITH SHAKES 1" X 20'-0" X 13'-6"	270 SQ. FT.	270 SQ. FT	\$ 42.00	\$ 11,340.00
	WAS \$ 35,137.00				\$ 19,564.00
				10% retainage	1,956.40
					\$ 17,607.60
	Materials:				

COMMUNICATION

SUBJECT: Receive Presentation of final report from AECOM on the City's Water Supply Feasibility Study. Presenter is Wayne Shaffer

INFORMATION:

Water Systems Planning for the City of Port Lavaca



Nov 22, 2021

Susan Spore PE
Ron Cass

AECOM

1

Agenda

- Background and Scope
- Current and Future Water Requirements
- Assessment of Existing Wells
- New Wells Options Analysis
- Treatment Options Analysis
- Recommendations and Path forward

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2

Background and Scope

- Currently, GBRA WTP provides municipal water supply for City of Port Lavaca, the Calhoun County Rural Water Supply Corporation and the Port O'Connor MUD.
 - Current CPL – GBRA contract is for 3.6 MGD.
- In the recent past, GBRA has proposed the existing plant be replaced, with financial participation from CPL for the cost of replacement and continued supply of treated water.
 - GBRA investigating WTP improvements and/or replacements.
 - GBRA may consider transfer of WTP ownership.
- AECOM Scope of Work
 - Assess the current GBRA water supply and evaluate options for additional water sources for future growth and a secondary supply
 - Assess existing abandoned wells.
 - Evaluation of new wells, including proposed locations and phasing.
 - Evaluate and recommend water treatment options for new wells.
 - Confirm location of new GST to comply with TCEQ requirements.

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3

Current and Future Water Flows

	Item	Design criteria
Current	Population (Census, 2019)	11,854
	Average Daily Flow	1.7 MGD
	Maximum Daily Flow	2.75 MGD
	Minimum Daily Flow	1.176 MGD
	Per capita water flow	143 gallons per day per person
	Maximum Day Factor	1.6
Year 2030	Population (Est)	15,513
	Projected Average Daily Flow	2.2 MGD
	Project Maximum Daily Flow	3.55 MGD
Year 2040	Population (Est)	16,969
	Projected Average Daily Flow	2.42 MGD
	Project Maximum Daily Flow	3.9 MGD

- Temporary flow monitoring conducted by AECOM showed a consistent 19-20% difference indicating actual demand for CPL may be 20% higher than currently reported flows.
- Current MDF (2.75 MGD) for CPL is approaching the GBRA contracted capacity of 3.6 MGD.
- Projected MDFs for the years 2030 and 2040 are estimated at 3.55 and 3.9 MGD, exceeding current GBRA contract.

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Assessment of Existing Wells

Three Existing Wells

- Review the condition of three existing wells located near the intersection of Westerlund Grade Road and Landfill Road



Assessment Criteria

- Well history: Review of well depth, screen setting, original and last operated capacity, water quality.
- Current well condition: Review of last downhole video to assess extent of rework to re-establish production; and
- Site visit: document remaining facilities and assess condition of assets.

Grading Scheme

A	Good Condition
B	Fair Condition
C	Inoperable or extremely poor condition

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Assessment of Existing Wells

Assessment and Recommendations

- All three wells were **rated as C** (Inoperable or extremely poor condition).
 - Reached or surpassed the typical service life of ground water wells (60-80 years).
 - Casings are corroded and of unknown structural integrity; casing technology has significantly improved since construction.
 - Downhole videos show clogged perforations and debris throughout the water column; videos ended at silt layer.
- Current lease or legal easements for the existing well sites were not found. If the City no longer has legal rights to utilize the property for water supply purposes, rehabilitation or replacement of the wells could only be considered after negotiation of property acquisition or easements with the current landowners.
- Rehabilitation of existing wells is not cost effective; construction of at least 6,000 l.f. of transmission main required to deliver water to existing distribution system.
- Recommendations:** AECOM recommends that new groundwater source development efforts be focused on other locations closer to the City's existing water infrastructure.

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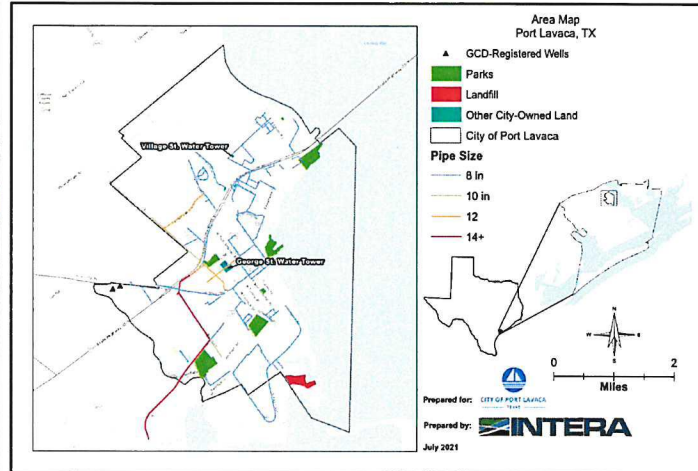
Assessment of New Wells

Four Potential New Well Sites

- George Street tank site and operations center
- Tilley Park, located close to George Street property
- West Main Street
- Village Road tank site

New Well Criteria and Limitations

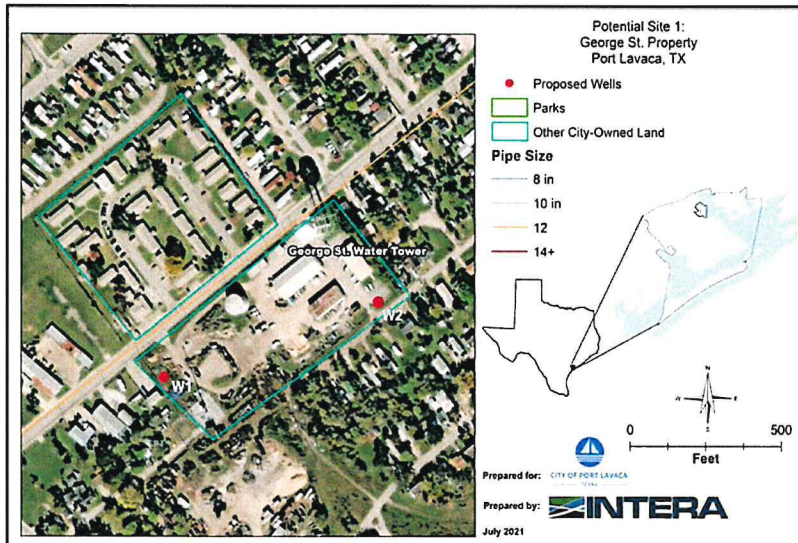
- New well max capacity: 200 GPM
- Above 250 GPM, new wells within Calhoun GCD would require extensive groundwater modeling and other analysis to assess the long-term impacts on water quality and water levels
- Per GCD Rules, the minimum well spacing for 200 GPM wells is 200 feet.
- New wells assumed at 375 ft total depth, 12in casing, with 25 HP vertical turbine pump.



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Assessment of New Wells - George Street Property

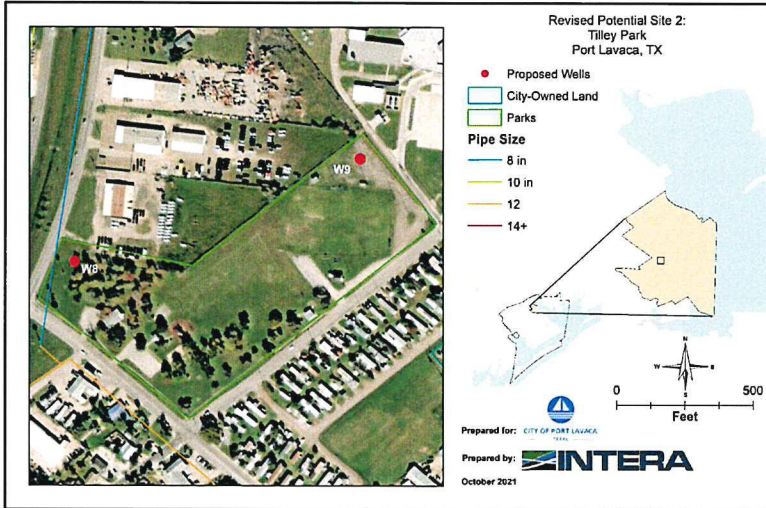


- Property can support up to 2 wells
- There is room on the property for a central treatment facility and it is near existing 12-inch water distribution line.

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Assessment of New Wells - Tilley Park Property

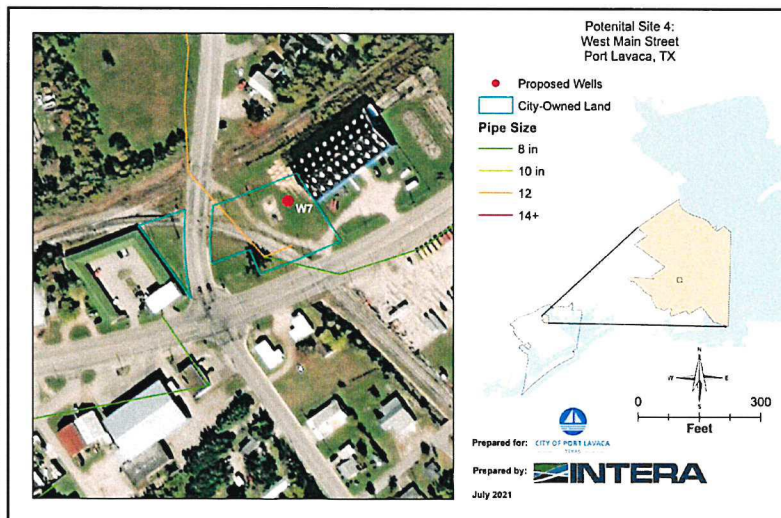


- Property can support 2 to 4 wells
- Wells were sited to prevent interference with park activities.
- Located close to George street

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Assessment of New Wells - West Main Street Property

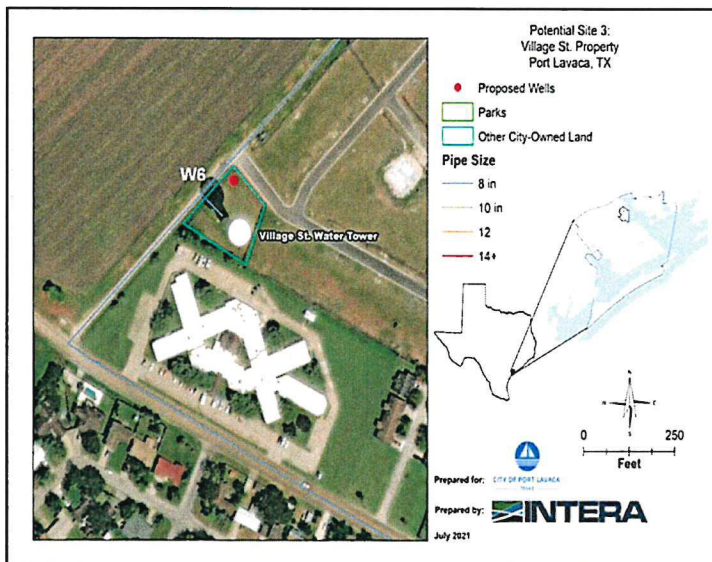


- Small property
- Can support one well.
- Located fairly close to George street

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Assessment of New Wells - Village Street Property

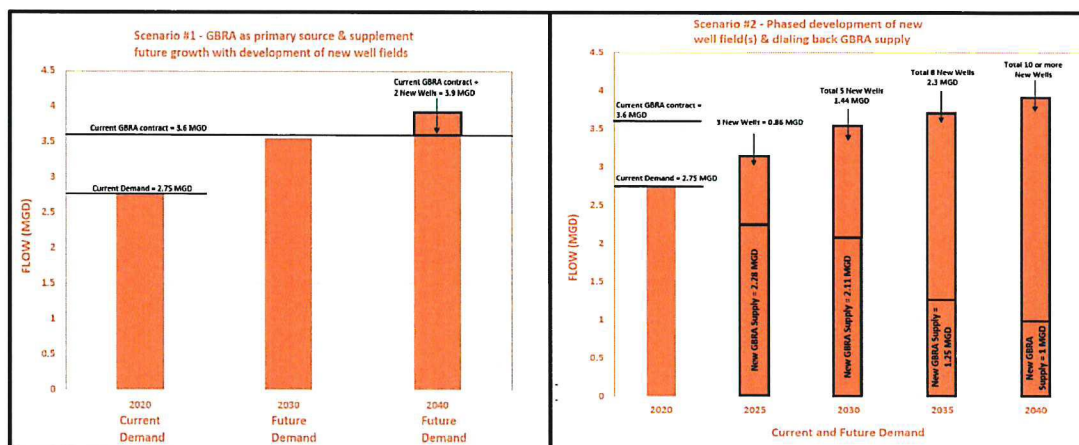


- Small city owned property – can support 1 well.
- Multiple additional wells at 200 GPM each can be considered at the Village Road location with acquisition of other nearby land (currently not owned by CPL) if the results of investigation at the Village Road site are favorable.

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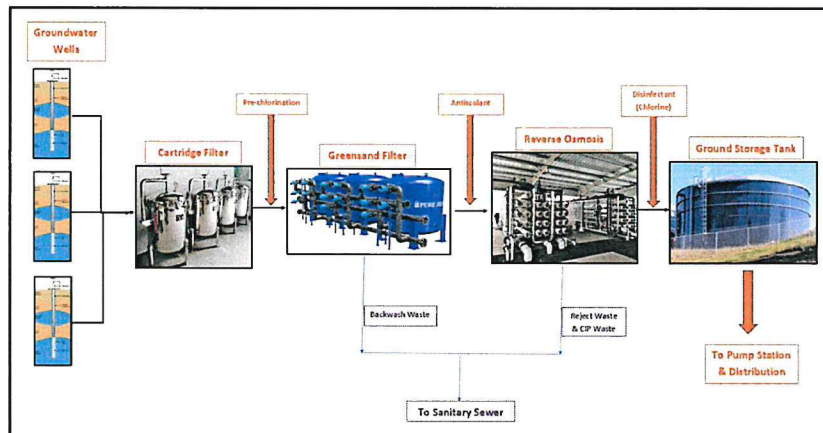
Water Planning Options



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Water Treatment Options



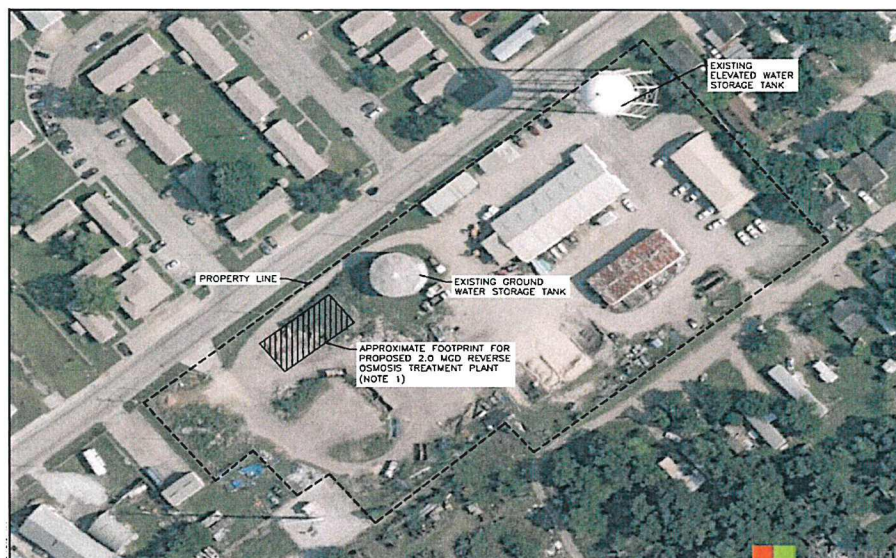
Concept Criteria

- Groundwater influent quality based on preliminary evaluation
- Treatment incorporates multi-barrier protection approach
- Meets both EPA and TCEQ drinking water standards.

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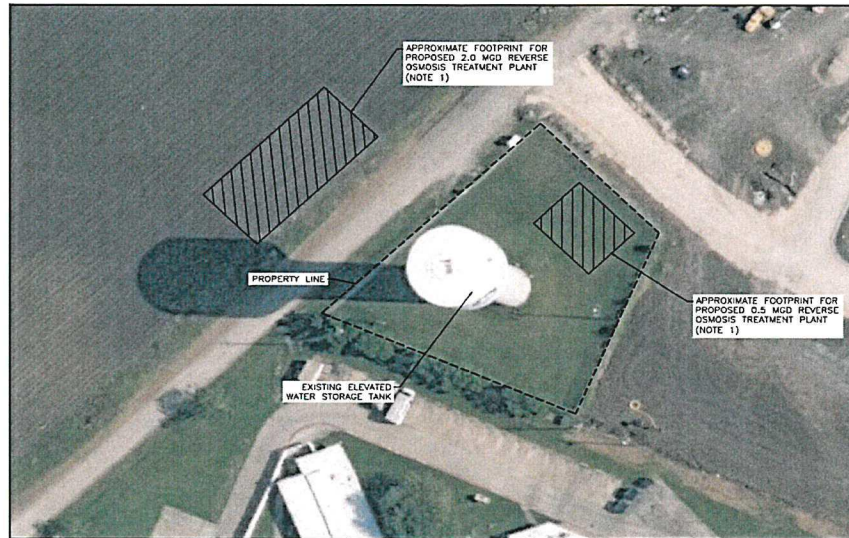
Centralized Treatment Facility at George Street



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Centralized Treatment Facility at Village Street



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Water Planning Alternatives

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Flow	0.5 MGD	1 MGD	1.5 MGD	2 MGD
Well Needs	2 new wells	4 new wells	6 new wells	7 new wells
Capital Cost	\$ 4.2 M	\$ 8 M	\$ 11.5 M	\$ 14.7 M
Yearly O&M	\$ 276k	\$ 444k	\$ 653k	\$ 845k

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Next Steps- Ground Storage

- Ground Storage Tanks
 - Presently the TCEQ requirement for total storage capacity (1.078 MG) is not met.
 - First step- rehabilitate existing 250,000 gallon GST at George Street to regain compliance.
 - Second step- Add 500,000 gallon GST at George Street location
 - Third step- Add 500,000 gallon GST at the Village street location.
 - Modeling should be done to confirm GST locations.

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Next Steps- Water Wells

- Existing Well Recommendations
 - Permanently plug and abandon existing wells to prevent risk of contamination to the aquifer.
- New Well Recommendations
 - Phase I- Proceed with exploratory drilling and testing program at George Street/Tilley Park.
 - Phase II- Construct one well at George Street/Tilley Park and blend groundwater.
 - Phase III- Construct two additional wells at George Street/Tilley Park and groundwater treatment plant at George Street.
 - Phase IV- Proceed with exploratory drilling and testing program at Village Road; repeat Phase II and Phase III at Village Road.

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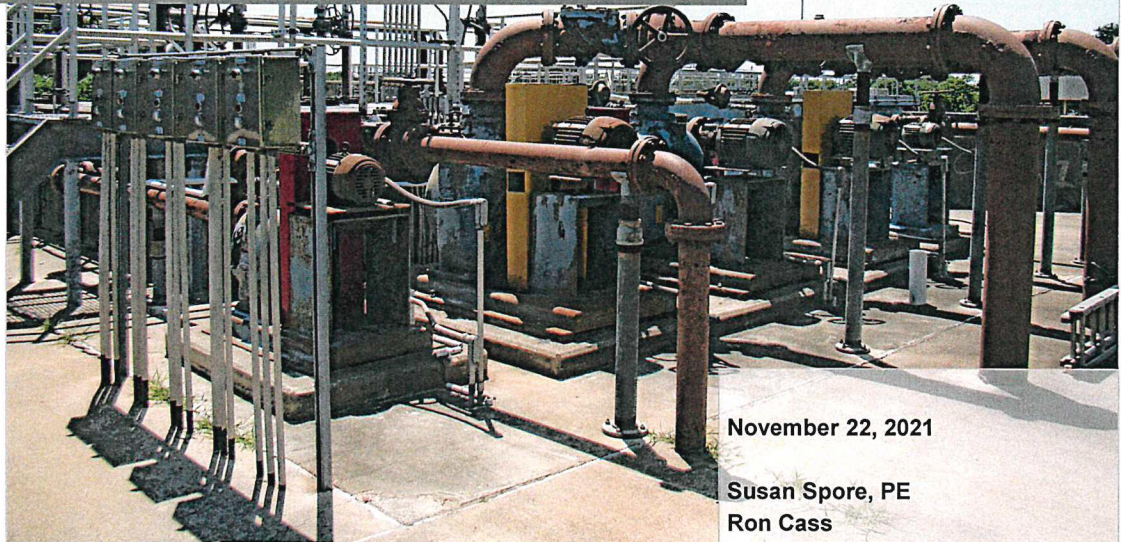


COMMUNICATION

SUBJECT: Receive Presentation of final report from AECOM on the City's Lynn's Bayou Wastewater Treatment Plant (WWTP) expansion. Presenter is Wayne Shaffer

INFORMATION:

LYNN'S BAYOU WASTEWATER TREATMENT PLANT EXPANSION FOR THE CITY OF PORT LAVACA



November 22, 2021

Susan Spore, PE
Ron Cass

AECOM

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Agenda

- Background and Purpose
- Existing Wastewater System
- Current Wastewater Flows
- Influent and Treated Wastewater Characteristics
- Population and Flow Projections
- WWTP Condition Assessment
- Existing WWTP Process Evaluation
- Existing WWTP Modeling Results
- Alternatives for Expansion
- Capital Costs
- Project Phasing

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2

Background and Purpose

- CPL owns and operates all components of the City's wastewater collection system
 - 21 lift stations
 - 1 wastewater treatment plant
 - Network of gravity mains and force mains: 650 manholes and 40 miles of wastewater collection lines
 - Capital Improvement Program (CIP): Infiltration and inflow (I&I) reduction
 - Lynn's Bayou WWTP: Constructed in 1982 and permitted for 2 MGD ADF and 7.65 MGD Peak 2-hr
 - ADF > 75% of permit capacity, initiation of engineering and financial planning for expansion of WWTP required by TCEQ.
- AECOM Scope of work
 - Validation of the WWTP Flows and Data Evaluation
 - Facility and Equipment Condition Assessment
 - Evaluate and Plan WWTP upgrade and expansion

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Existing Wastewater System



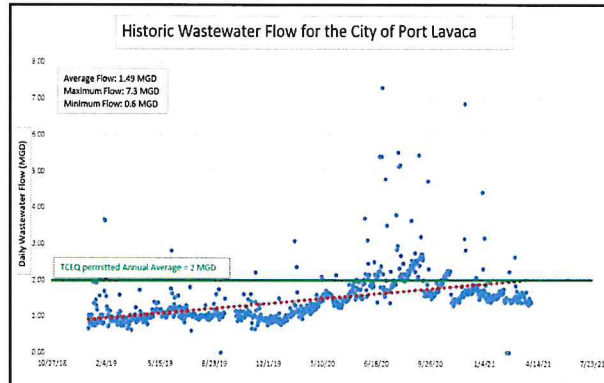
Effluent Characteristic	TPDES Permit Discharge Limitations			
	Daily Average	7-Day Average	Daily Max	Single Grab
Flow (MGD)	Annual Average to not exceed 2 MGD Average 2-Hour peak to not exceed 5,319 GPM (7.65 MGD)			
Biochemical Oxygen Demand (5 day)	20 mg/L 334 lb/day	30 mg/L	45 mg/L	65 mg/L
Total Suspended Solids	20 mg/L 334 lb/day	30 mg/L	45 mg/L	65 mg/L
Total Copper	11.1 ug/L 0.185 lb/day	N/A	23.5 ug/L	34.4 ug/L
Total Zinc	75.19 ug/L 1.25 lb/day	N/A	159.07 ug/L	233.1 ug/L
E.Coli	35 CFU	N/A	104 CFU	N/A

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Current Wastewater Flows

- Daily flows exceeded the 2 MGD rated flow during June through October (74 times in 5 months).
- Daily flows have exceeded 3 MGD, 22 times in the last three years likely as a result of rain events.



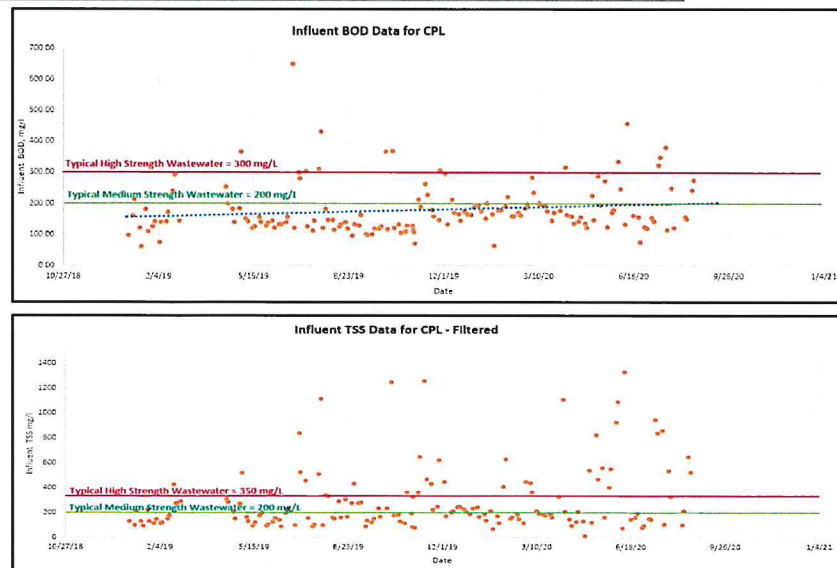
Temporary Water Supply Flow Monitoring

- June 17 through June 23, 2021 using an external ultrasonic clamp-on flow meter (FLUXUS F601 Liquid and Energy) on the discharge line from the high service pump station.
- Conclusions -
 - On dry days, there is a 0 to 10% decrease in flow monitored at the WWTP versus the flow supplied by the GBRA WTP.
 - On wet days, there is an increase of up to 40% in flow monitored at the WWTP vs. the flow supplied by the GBRA WTP.

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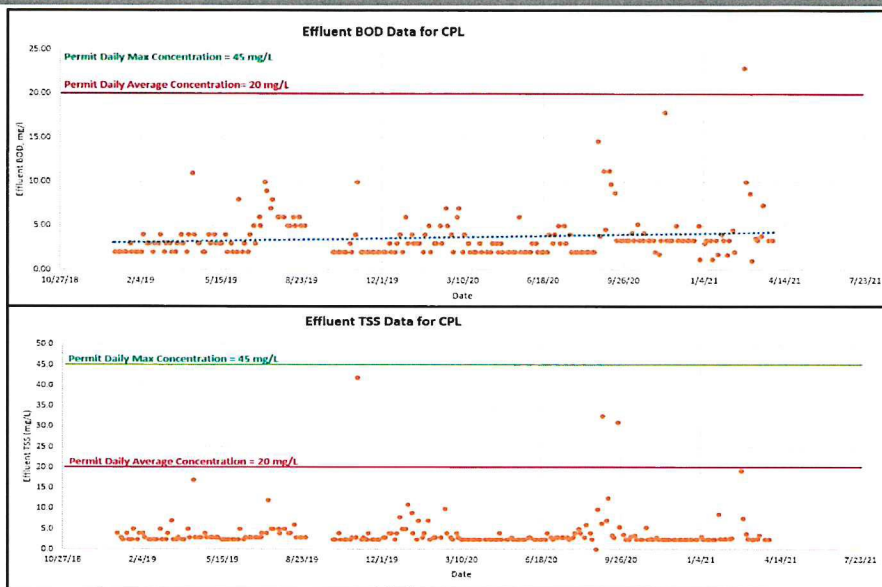
Influent Wastewater Characteristics



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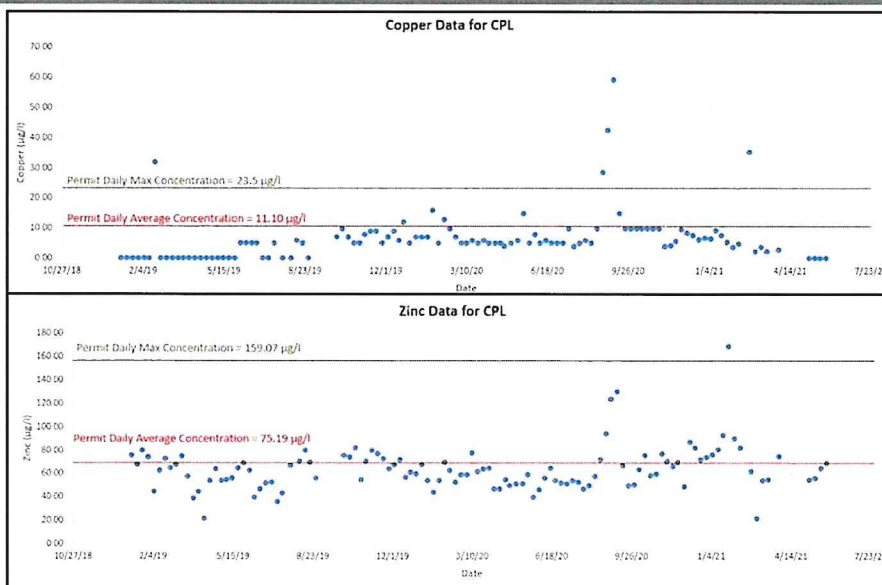
Treated Effluent Characteristics: BOD & TSS



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Treated Effluent Characteristics: Copper & Zinc



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Population and Flow Projections

Populations Projections		
Year	Population	Growth (%)
1970	10,491	-
1980	10,911	4.0%
1990	10,886	-0.2%
2000	12,003	10.3%
2010	12,248	2.0%
2014 (Estimated)	12,281	0.3%
2019 (Census)	11,854	-3.5%
2030 (Estimated)	15,513	30.9%
2040 (Estimated)	16,969	9.4%

- Population growth for the city was projected for the years 2014, 2030 and 2040 based on Texas Water Development Board estimates.
- "Port Lavaca Comprehensive Plan" suggested that the City's population will continue to see slow but steady growth similar to Calhoun County.

Wastewater Flow Projections		
	Item	Design criteria
Current	Population (Census 2019)	11,854
	2020-2021 Average Day Flow (ADF)	1.9 MGD
	2020-2021 Max. Day Flow (MDF)	6.85 MGD
	2020-2021 Min. Day Flow	1.31 MGD
	Per capita wastewater flow (i.e. ADF/population)	160 gallons per day per person
	Maximum Day Factor (i.e. MDF/ADF)	3.6
Year 2030	Population (Est)	15,513
	Projected ADF (based on per capita wastewater flow above)	2.48 MGD
	Project MDF (based on Max Day Factor above) w/o further I&I control	8.9 MGD
	Population (Est)	16,969
Year 2040	Projected ADF (based on per capita wastewater flow above)	2.7 MGD
	Project MDF (based on Max Day Factor above) w/o further I&I control	9.8 MGD

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WWTP Condition Assessment

Condition Assessment Scoring and Risk Matrix Example

Location	Picture	Condition Score	Criticality Score	Risk Matrix					
Sludge Transfer Pumps		56	58	Criticality		Condition			
						Good Condition	Fair Condition	Poor Condition	Imminent Failure
					No Impact				
					Low Impact				
					Medium Impact				
					High Impact			X	
Very High Impact									
Chemical Feed		83	81	Criticality		Condition			
						Good Condition	Fair Condition	Poor Condition	Imminent Failure
					No Impact				
					Low Impact	X			
					Medium Impact				
					High Impact				
Very High Impact									

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Condition Assessment Recommendations

Priority	WWTP Area	Recommendation	Upgrade required
High Priority	Sludge Transfer Pumps	Immediate replacement of Pump 1 is recommended for redundancy.	Procure and install new replacement pump.
	Sludge Drain Lift Station	Immediate replacement of Pump 1 is recommended for redundancy.	Procure and install new replacement pump.
	Aeration Tanks 1, 2 & 3	Perform grit depth measurements across different areas of the aeration chambers and perform maintenance on the aeration tanks, as required.	Identify grit accumulation areas in the aeration chambers and hire a maintenance company to remove solids and repair diffusers, as necessary.
	Aerobic Digester	Perform sludge depth measurements across different areas of the digester chamber and perform maintenance on the digester tank, as required.	Identify grit accumulation areas in the aerobic digester and hire a maintenance company to remove solids as necessary.
	Secondary Clarifiers	Evaluate hourly influent flow data to determine if the surface loading rate of clarifier meets the 2-hr peak TCEQ requirement of 1,200 g/d/ft ² .	If required, construct one additional clarifier in the near-term to meet TCEQ criteria for current flow and loading conditions.
	Centrifugal Blowers	Replace centrifugal blowers in blower building, as they are currently undersized, in poor condition, and at the end of service life.	Procure and install new replacement blowers. Number of replacement blowers recommended in following sections. As a part of immediate modifications, 2 new blowers can be added to justify airflow requirements for permit compliance.

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Condition Assessment Recommendations

Medium Priority	Headworks	Replace current bar screen with new screen as part of planned expansion project. Provide a secondary screen and channel as part of planned expansion.	Replace current bar screen with a new centralized screen as part of planned expansion project for 4 MGD. Provide a secondary screen and channel as part of planned expansion.
	Headworks	Replace grit removal equipment as part of planned expansion.	Replace current grit removal facility with a new centralized grit removal as part of plant expansion project for 4 MGD. Provide bypass or redundancy for grit removal during plant expansion.
	Aeration tanks 1, 2 & 3	Replace coarse bubble aeration with fine bubble diffusers as part of planned expansion.	Procure and install fine bubble diffusers.
	Blower and equipment building	A centralized power distribution and blower building is warranted in planned expansion.	Demolish existing building and construct a new blower and equipment building as part of planned expansion.
Low Priority	UV Disinfection	Extend controls to SCADA for remote operation and availability.	Hire a SCADA programmer and work with UV supplier to extend controls to SCADA.
	Secondary Clarifiers	Replace sluice gate valves and improve scum transfer system as part of planned expansion.	Procure and install sluice gate valves and scum transfer system.
	Parshall Flume Meter	Planned expansion will require a new effluent flow measuring structure for entire plant flow.	Procure, construct, and install new flow meter.

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Existing WWTP Process Evaluation

Objectives

- Identify existing treatment capacity needs and process deficiencies
- Identify improvements critical for current plant loading conditions and evaluate required upgrades.
- A Level 2 BioWin™ model was developed and calibrated for the existing treatment system.
- Modeling inputs :
 - Airflow was set at 2,200 SCFM based on capacity of one centrifugal blower in operation.
 - RAS rate was set at a constant rate of 1.3 mgd.
 - WAS rate was set at a constant rate of 0.01mgd.
 - Average Solids Retention Time (SRT) is 22 days.
 - Average Daily Flow – 1.5 MGD
 - Average Influent BOD – 190 mg/L
 - Average Influent TSS – 271 mg/L
 - Assumed Influent TKN – 40 mg/L
(26.4 mg/L NH3-N)

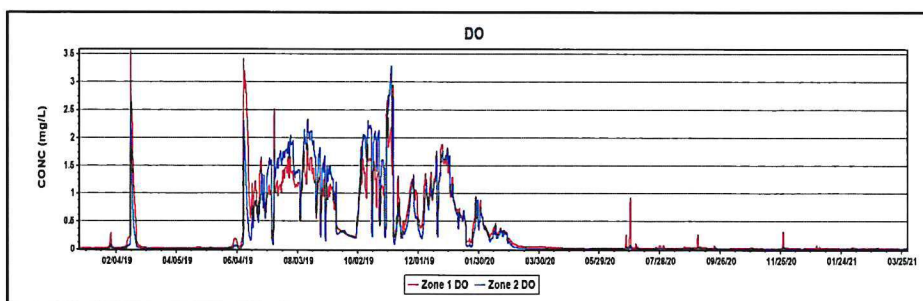
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Existing WWTP Modeling Results - DO

Inferences

- High influent BOD loading is observed in Zones 1 and 2 as a result of high flow events likely due to I&I, resulting in a DO deficit,
- The existing blowers are undersized to handle the BOD load in these timeframes.



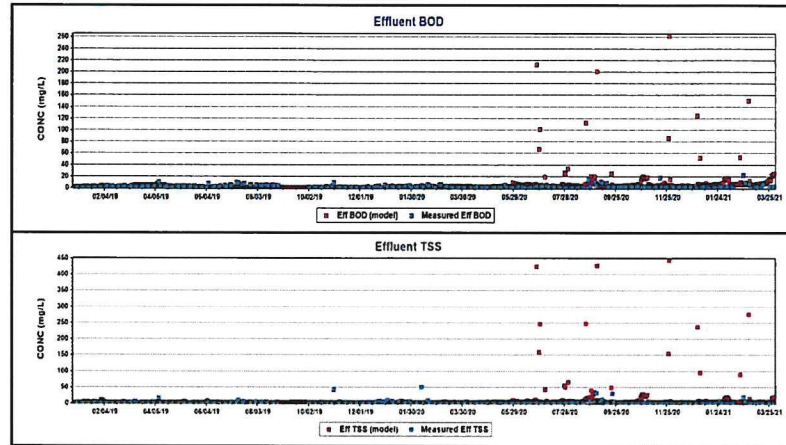
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Existing WWTP Modeling Results – BOD & TSS

Inferences

- BOD and TSS Exceedance events coincide with higher plant influent flows.
- The observed effluent BOD and TSS concentrations are notably lower than the model predicted values and consistent meet TCEQ permit limits



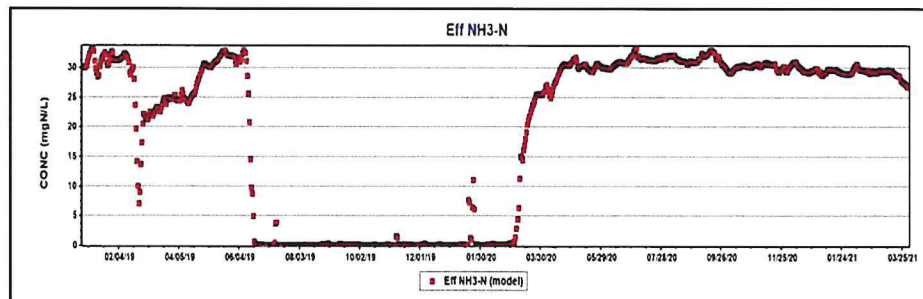
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Existing WWTP Modeling Results - Ammonia

Inferences

- Effluent Ammonia based on model output exceeds the 5.0 mg/L effluent ammonia requirement around 70% of the time

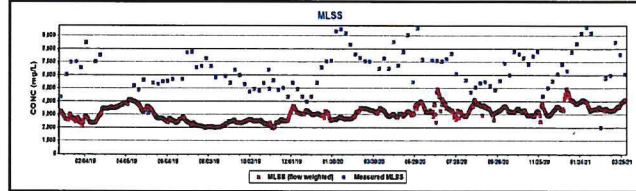


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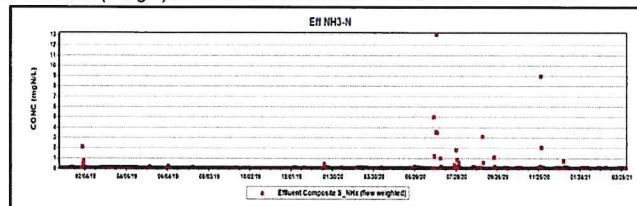
16

Optimization of Existing WWTP Operations

- Operational Optimization : Increase WAS rate to reduce MLSS concentration to approximately 3,000 mg/L and achieve a reduced SRT of about 14 days



- Equipment Addition: Additional blowers to increase aeration capacity to 7,000 SCFM to achieve a DO set point of 2 mg/L in order to meet assumed effluent ammonia (5 mg/L) limits as well as continue to achieve BOD removal.



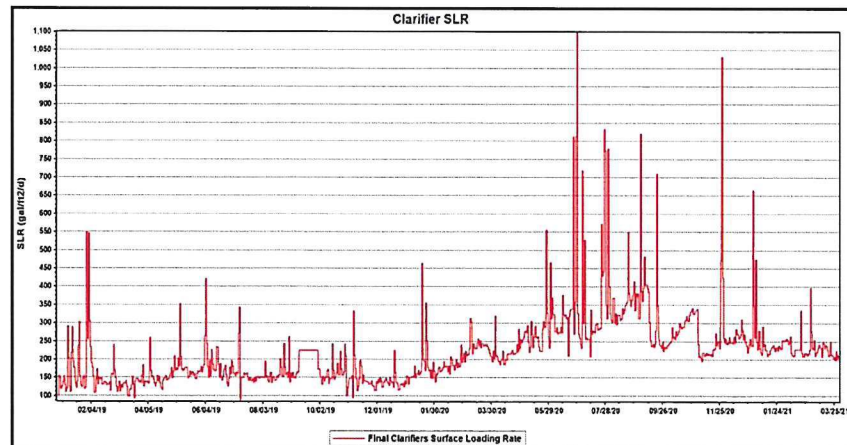
- Equipment Replacement: Substituting existing coarse bubble diffusers with fine bubble diffusers will increase the overall oxygen transfer efficiency of the aeration process, and reduce airflow rates, but would also increase the blower discharge pressure.

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Secondary Clarifier Constraints

- Daily surface loading rate is 1,100 g/d/ft².
- During Wet Weather Flows, it is likely that the 2-hour peak surface loading rate will exceed the TCEQ rate of 1,200 g/d/ft²



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Copper and Zinc Removal

- Copper and Zinc are noted to have exceeded the TCEQ permit limits.
- Currently there are no targeted copper and zinc removal systems in the process train.
- AECOM has identified the following copper and zinc control/removal strategies to help meet TPDES permit limits.
 - Source Sampling and Control:**
 - Sampling of select industrial and commercial dischargers for copper and zinc in their effluent or at Lift Station
 - Identify the potential contributor.
 - Eliminates the need for specialized treatment processes (and associated costs) for metals removal
 - Disadvantages with this strategy is that the source contributor may not be found even with extensive sampling
 - Precipitation of metals in secondary clarifier**
 - Addition of coagulants and/or flocculants at the influent to the secondary clarifier
 - Jar testing experiments should be conducted to identify the efficacy of metals removal
 - Removal of metals through filtration**
 - A filtration system (pressure or adsorption type filter) downstream of the clarifier to remove metals in the wastewater
 - Bench scale testing is required to identify the efficacy of metals removal

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TCEQ Compliance Criteria :30 TAC 217

Equipment/Item	Number of Units	Maximum Capacity	TCEQ Limiting Criteria (30 TAC 217)	WWTP Plant Current Operating Data	Does This Meet Requirements
Secondary Clarifiers	2	2 MGD 60' Diameter, 13' Side Water Depth	217.154 (c) 1. Maximum Surface Loading Rate: 1,200 g/d/sq.ft	Average Surface Loading Rate: 1,100 g/d/sq.ft	Current daily surface loading rate is approaching 1,100 g/d/sq.ft, so it is likely that the 2-hr peak surface loading rate exceeds the TCEQ rate of 1,200 g/d/sq.ft during wet weather events. Hourly influent flow data is needed to evaluate the impact of this requirement.
RAS Pumps	3	Exact Pump Capacity unknown/not found	217.158 (c) 3. - 2.0 MGD with the largest pump not operational	Each Pump may have capacity up to 2500 GPM or 3.7 MGD based on previous pump curve data. The pump curve data is old and indicative of degrading pump performance.	Likely meets requirements
WAS Pumps	2	Exact Pump Capacity unknown/not found	217.158 (d) - At least two pumping units	Two pumps provided	Yes
UV Disinfection System	1	Peak Flow 7.65 MGD	At least two banks with 4 lamps per reactor.	Two banks provided. TSS < 20 mg/l, 65% transmittance at 253.7 nanometer, standard disinfection 126 E.Coli/100 ml.	Yes
Effluent Dissolved Oxygen	2	Centrifugal blower capacity: 2200 SCFM each	217.155 (a) (1) Minimum effluent DO: 2 mg/l	No DO probe in effluent, unable to evaluate.	N/A
Aeration Zones (Centrifugal Blowers)	2	Centrifugal blower capacity: 2200 SCFM each	217.155 (a) (1) Min DO - 2 mg/l 217.155(b)(1) Min Airflow Requirement: 1,800 SCF/d/b Max. Organic Loading - 45 BOD ₅ lb/d/1,000 cf	Existing Airflow/BOD Load: 1000 SCF/d/b	No
Permit Requirements	Plant	2 MGD	BOD - 20 mg/l TSS - 20 mg/l	BOD, TSS effluent < 20 mg/l	Yes
Permit Requirements	Plant	2 MGD	Copper - 11.1 ug/L Zinc - 75.19 ug/L	Per plant TPDES limits, 5 max daily concentration Exceedances in Copper & 1 max daily concentration Exceedance in Zinc	No

TCEQ Non-compliance:

- Existing blowers do not meet air flow requirements for aeration basins.
- Copper and Zinc exceed permit limits.
- Secondary clarifier loading rate may be exceeded.

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Existing WWTP Process Evaluation Recommendations

The following recommendations are based on the evaluation of the existing WWTP using BioWin™ modeling and TCEQ requirements

- Provide new blowers to increase blower capacity.
 - Double the current centrifugal blower capacity from 2,200 SCFM to 4,400 SCFM
 - Increase the current centrifugal blower capacity from 2,200 SCFM to 7,000 SCFM
- Make operational improvements to reduce MLSS concentration in the aeration tanks from an average of 6,500 mg/L to approximately 3,000 mg/L and achieve a reduced SRT of about 14 days
- Substitute existing coarse bubble diffusers with fine bubble diffusers to increase the overall oxygen transfer efficiency of the process.
- Explore and evaluate options for copper and zinc removal

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Alternatives for Expansion

Pre-consultation meeting with a TCEQ representative with summary notes

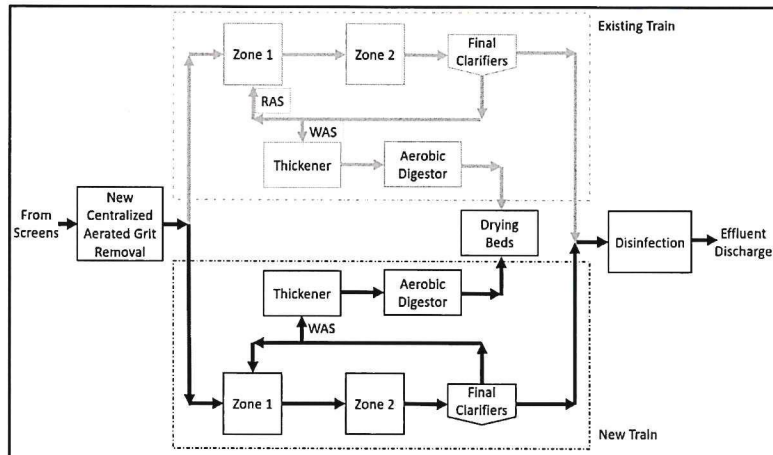
- TCEQ Pre-Consultation
 - New Permit Limits for BOD and TSS: Reduction from 20/20 mg/L to 10/15 mg/L
 - Introduce new permit limit for Ammonia: 5 mg/L effluent ammonia limit
 - A potential of imposing a DO limit of 4 mg/l
 - Existing Copper and Zinc limits to remain

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Alternatives for Expansion

Alternative I – Duplicate existing plant components – Expansion to 4 MGD



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Alternatives for Expansion

Alternative I – Duplicate existing plant components – Expansion to 4 MGD

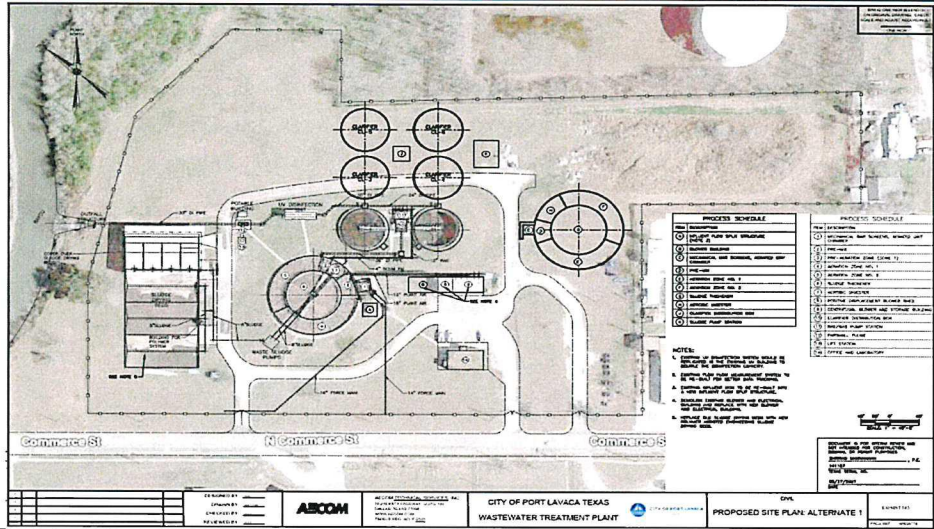
- The Alternative I expansion and upgrade includes the following:
 - New splitter box at receiving Headworks to split the flow evenly between two process trains.
 - Addition of a centralized headworks facility consisting of mechanical bar screens (climber type, with redundancy), grit chamber (complete with grit pumps, classifiers and separators, with redundancy).
 - Replicate existing tankage to include pre-mix chamber, Aeration tanks (4, 5 and 6), Central digester, thickener, complete with fine bubble diffuser systems, pumps and other ancillary equipment.
 - Addition of centrifugal blower capacity or provision of space for up to 14000 SCFM (for both trains).
 - Addition of one new 1500 SCFM PD blowers for the new digester.
 - Build a new central blower and electrical building to accommodate new equipment.
 - Addition of four new secondary clarifiers.
 - Addition of a coagulant dosing system for copper and zinc removal ahead of clarifiers (assumption).
 - Add one new RAS/WAS pump station.
 - Add two additional UV banks in existing UV building to duplicate existing capacity.
 - Rebuild Parshall Flume effluent meter to accommodate increased flows and better data tracking.
 - Rebuild four of the old sludge drying beds into engineered sludge drying beds, adding a roof structure, to handle increased capacity.

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Alternatives for Expansion

Alternative I – Duplicate existing plant components – Expansion to 4 MGD

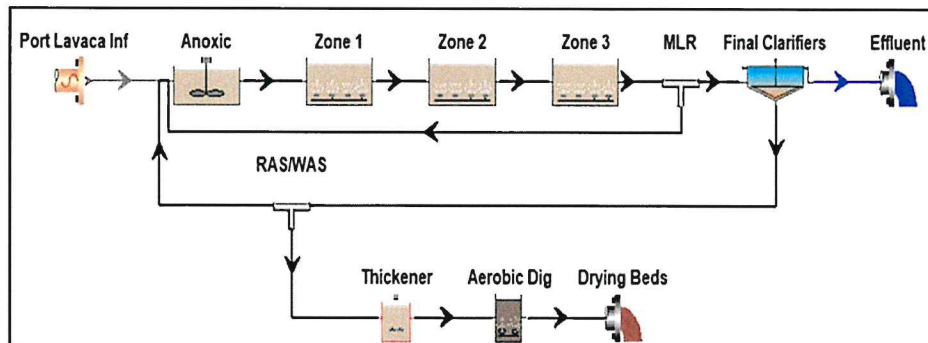


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Alternatives for Expansion

Alternative II – Adding Specific Processes – Expansion to 4 MGD (Recommended)



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Alternatives for Expansion

Alternative II – Adding Specific Processes – Expansion to 4 MGD (Recommended)

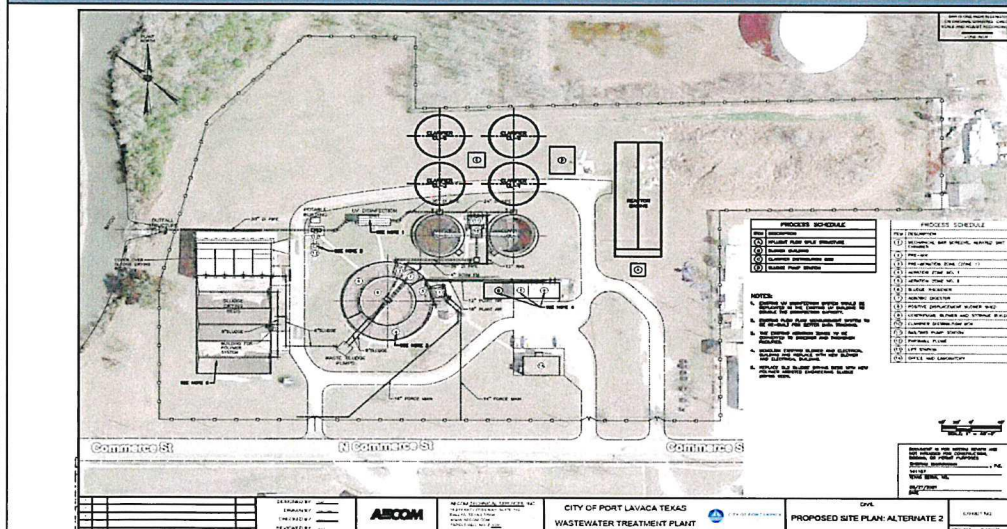
- Alternative II expansion and upgrade considers including the following (Table 11):
 - New receiving box at the proposed new reactor basins.
 - Addition of a centralized headworks facility consisting of mechanical bar screens (climber type, with redundancy), grit chamber (complete with grit pumps, classifiers and separators, with redundancy).
 - Addition of two new reactor basins (each with 1 anoxic zone, 3 aerated zones complete with fine bubble diffuser system, MLSS recycle to anoxic zone, pumps and other ancillary equipment).
 - Addition of centrifugal blower capacity or provision of space for up to 14000 SCFM (for both trains).
 - Addition of one new 1500 SCFM PD blowers for the new digester.
 - Build a new central blower and electrical building to accommodate new equipment.
 - Repurposing of existing WWTP tanks to use them as pre-mix basin, thickener, and digester.
 - Addition of four new secondary clarifiers.
 - Addition of a coagulant dosing system for copper and zinc removal ahead of clarifiers (assumption).
 - Add one new RAS/WAS pump station
 - Add two additional UV banks in existing UV building.
 - Rebuild Parshall Flume effluent meter to accommodate full plant flow and better data tracking.
 - Rebuild four of the old sludge drying beds into engineered sludge drying beds, adding a roof structure, to handle increased capacity.

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Alternatives for Expansion

Alternative II – Adding Specific Processes – Expansion to 4 MGD (Recommended)



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Capital Costs

	Alternative 1	Alternative 2
	4 MGD	4 MGD
Cost	\$ 10,123,800.00	\$ 10,390,400.00
Contingency (35%)	\$ 3,543,330.00	\$ 3,636,640.00
Total Costs	\$ 13,667,130.00	\$ 14,027,040.00

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Project Phasing

Immediate Needs & Improvements that need to be addressed in the short-term:

	Total Cost
1 <u>Procure and install new pump at both the sludge transfer station and sludge drain lift station for continued plant operation.</u>	\$ 138,666.00
2 <u>Perform maintenance activities on the aeration and digester tanks including sludge/grit removal from tank bottom, as necessary</u>	\$ 49,500.00
3 <u>Procure and install two new centrifugal blowers to provide enough air to aeration basins for current loading conditions and continued plant operations</u>	\$ 315,150.00
4 <u>Perform operational improvements to increase WAS rate and reduce MLSS concentration to approximately 3000 mg/L, and subsequently achieve a reduced SRT of about 14 days</u>	Plant Labor cost
5 <u>Evaluate hourly influent flow data to determine if the surface loading rate of clarifier meets the 2-hr peak TCEQ requirement of 1,200 g/d/ft². If required, construct one additional clarifier in the near-term to meet TCEQ criteria for current flow and loading conditions. Possibly add one clarifier.</u>	\$ 627,000.00
<u>Immediate Needs Total</u>	\$ 1,130,316.00

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Project Phasing

Alternative II - Plant Expansion Phasing:

Phasing	
Phase 1:	
	Cost
1 Construction and installation of headworks (receiving box, screens & grit chamber).	\$ 1,219,914.00
2 Construction and installation of both reaction basin trains (anoxic, aerobic tanks).	\$ 2,093,944.50
3 Construction and installation of two new clarifiers.	\$ 1,481,368.50
4 Repurposing of existing WWTP tanks to use them as digester, thickener and pre-mix basin.	\$ 326,160.00
6 Construction and installation of new RAS/WAS pump station.	\$ 1,653,077.50
8 Procurement and installation of new blowers for 75% of blower capacity (10,500 SCFM) in new blower building.	\$ 2,116,854.00
7 Construction and installation of coagulant system.	\$ 270,000.00
Phase 1 Total	\$ 9,361,318.50
Phase 2:	
8 Construction and installation of one additional clarifier.	\$ 740,684.25
9 Procurement and installation of new blowers remaining blower capacity.	\$ 386,775.00
10 Installation of new effluent flume.	\$ 236,250.00
11 Installation of new engineered sludge beds.	\$ 2,025,000.00
12 UV facility expansion.	\$ 536,328.00
Phase 2 Total	\$ 3,925,037.25
Overall Total (Immediate needs + Phase 1 + Phase 2)	\$ 14,416,671.75

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Thank you

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COMMUNICATION

SUBJECT: Consider approval of two (2) AECOM Task Orders. Presenter is Wayne Shaffer

INFORMATION:

Task Order No. 3 regarding “next step” activity regarding the City’s Water Supply.

Task Order No. 4 to prepare construction documents for immediate needs at the City’s Lynn’s Bayou Wastewater Treatment Plant (WWTP).

COUNCIL MEETING: NOVEMBER 8, 2021

AGENDA ITEM __

DATE: 11.18.2021

TO: HONORABLE MAYOR AND CITY COUNCIL MEMBERS

FROM: JODY WEAVER, INTERIM CITY MANAGER

SUBJECT: NEXT STEPS FOR CITY'S WATER SUPPLY STUDY AND WWTP IMPROVEMENTS

FINANCIAL IMPLICATIONS:

At Monday night's Special Meeting, AECOM will make a presentation of their final report for the City's Water Supply Feasibility Study and the WWTP expansion.

In order to keep progress moving forward on both the Water Supply needs and the required improvements to the Wastewater Treatment Plant, AECOM has prepared Task Orders 3 and 4 for Council consideration.

The total estimated cost for both Task Orders is \$562,046.00.

Although I have kept the task orders on the agenda for consideration of approval, we probably will not be prepared to recommend a contract award until the December 13 meeting after the Audit is 100% complete. There are still a few things Susan is working through with the Auditors to reconcile the Public Utility Fund.

I have inquired about using the American Recovery Act funds, but preliminary information I am getting from Grantworks indicates that to do so for engineering, we would be required to go through the RFQ process again. I hope to have more definitive information Monday night.

Exhibit A

City of Port Lavaca

Water Systems Planning and Lynn's Bayou Wastewater Treatment Plant Expansion

Tasks 3 and 4

22 November 2021

Reference:

RN101612893

City of Port Lavaca - Water Systems Planning and Lynn's Bayou Wastewater Treatment Plant Expansion - Engineering Scope of Services**Introduction:**

The AECOM team appreciates the opportunity to work with the City of Port Lavaca (City) on these challenging and important projects. The City is requiring engineering services to assist in the assessment of the existing water supply and distribution systems, the expansion of the Lynn's Bayou Wastewater Treatment Plant, and planning for future upgrades and expansion of the water and wastewater system to manage future growth.

AECOM completed two initial task orders considered as part of the Professional Services Agreement (PSA) as described below:

- 1) City's Water Supply Feasibility Study: Assess the City's current water supply and evaluate options for additional sources of water for future growth and a secondary source.
- 2) City's Lynn's Bayou Wastewater Treatment Plant (WWTP) expansion: Assess the condition of the existing WWTP and develop a plan for engineering study/design to expand the plant to accommodate for future growth as per TCEQ requirements.

Based on recommendations from the above-referenced task orders, AECOM will begin next steps to secure additional sources of water in accordance with the City's Water Feasibility Study and address some high priority issues identified during the condition assessment conducted at Lynn's Bayou WWTP.

Scope of Work (SOW):

The proposed scope of services for this work authorization includes the following tasks:

- 3) City's Water Supply: Evaluate well sites at City property located at George Street and Tilley Park and complete test borings, test well construction, aquifer testing and water quality testing to determine recommended pumping capacity, preliminary design of future production wells, and expected water quality.
- 4) City's Lynn's Bayou WWTP Improvements: Develop construction documents for the immediate needs identified in the Lynn's Bayou WWTP condition assessment including pump replacement, new blowers, and a new blower building. Evaluate influent flow data to confirm if the surface loading rate of the secondary clarifier meets the TCEQ 2-hour peak requirement.

1. Project Management and Coordination

This task includes the following project management meetings, project management deliverables and project coordination activities for Task Orders 3 and 4:

- 1.1. Project Manager and select staff participation in the project kick-off meeting (one combined meeting for both task orders). The objectives of the kickoff meeting will include aligning project team with the City's expectations on the project scope, establishing lines of communication, and confirming staff roles and responsibilities. The kick-off meeting will be conducted via a virtual video conference program (such as Microsoft Teams or Zoom).
- 1.2. Project Manager and select staff participation in project progress conference calls (maximum of six conference calls for both task orders) to provide progress update and facilitate general project coordination, communication with City staff, and other stakeholders for the project duration.
- 1.3. Preparation and maintenance of a schedule, progress and financial status report updated and submitted monthly through the end of both task orders.
- 1.4. Preparation and maintenance of health and safety plan (for field activities), project schedule, monthly progress reporting and invoicing.
- 1.5. General Project Management activities including providing day-to-day coordination of activities, subconsultant coordination, and providing project control (cost & schedule – plan vs. actual).

2. City's Water Supply Feasibility Study:

City of Port Lavaca is contracted with the Guadalupe-Blanco River Authority (GBRA) to purchase its water from the Water Treatment Plant (WTP) located seven miles outside the City of Port Lavaca. The raw water source for the treated drinking water is provided by the diversion of water from the Guadalupe River near Tivoli by GBRA's Calhoun Canal System, utilizing water rights permits issued to GBRA by the State of Texas. The contract with GBRA has been in place since the late 1960's, prior to which, the City owned and operated its own waterworks system with the City's entire water supplied by wells (7 wells in total at the time) situated near the City. The wells have since been abandoned after the City began purchasing treated water from GBRA. AECOM evaluated the wells as part of Task Order 1 and determined that they could not be rehabilitated and should be permanently abandoned.

The quantity of water delivered to Port Lavaca under the GBRA Water Supply contract is limited to a maximum flow per day of 3.6 MGD, for any calendar year. Port Lavaca's projected demand will reach the contract limit by approximately 2030. AECOM identified potential well sites at City property located at George Street, Tilley Park, and Village Road and recommends that the first well field be developed at George Street and Tilley Park.

The next step in developing an alternate water supply includes a site assessment, exploratory drilling and logging, development of a test well, aquifer testing, and water quality testing as further described in the scope elements below.

2.1. Evaluation of Well Sites

This task includes a site visit, review of site-specific conditions, and location of test borings/monitor wells and future production wells:

2.1.1. Review of existing records and information including:

- 2.1.1.1. Property boundaries and rights of way.
- 2.1.1.2. Sanitary setbacks and utility locations.

- 2.1.1.3. Potential sources of contamination such as petroleum storage tanks, chemical storage sites, solid waste storage, etc.

2.1.2. Identify Locations for Four Test Bores and Monitor Wells

- 2.1.2.1. Conduct site visit to evaluate existing use and siting constraints.
- 2.1.2.2. Select four locations for test borings and monitor wells across the collective George Street and Tilley Park locations. Photograph the sites, take measurements to clearly specify locations for drilling, and provide stakes for each location utilizing GPS. It is assumed that the City will provide power, as required for well development and the aquifer test.

2.1.3 Preparation for Testing

- 2.1.3.1 Coordinate with Calhoun County Groundwater Conservation District (CCGCD) to obtain drilling permits for test borings, monitor wells, and test production well. Confirm requirements for future CCGCD production permits for the proposed groundwater supply wells.
- 2.1.3.2 Prepare brief technical memorandum documenting proposed locations for test borings/monitor wells, permit requirements and technical specifications for test borings, monitor well construction, test well construction, and aquifer testing.
- 2.1.3.3 Develop list of prequalified subcontractors for the drilling, well construction, and testing services, obtain bids, and select drilling subcontractor who will be subcontracted through the AECOM team.

2.2. Construction of Test Borings, Monitor Wells, and Test Well

This task involves the drilling and logging of four test bores, the construction and development of four monitor wells, and the construction and aquifer testing of one test well:

- 2.2.1. Complete drilling permits for test borings/monitor wells and submit to CCGCD after review and approval by the City.

- 2.2.2. Drill and complete four borings to a depth of 375 feet below ground surface (ft bgs). Collect and evaluate geologic samples and geophysical logs. Using this data identify screen intervals for the monitor wells.
- 2.2.3. Complete the four test borings into 2-inch or 3-inch diameter monitor wells. It is anticipated that the screened intervals will be between 200 and 350 feet bgs. Monitor wells will be fully developed.
- 2.2.4. After monitor well development, collect water quality samples for the current list of constituents designated by TCEQ for public water supply wells. This will confirm both viability of the aquifer as a potable water supply and how many well(s) can be blended before treatment is required.
- 2.2.5. Based on the results of tasks 2.2.2 through 2.2.4, recommend one location for a test production well. Submit permit to CCGCD after review and approval by the City.
- 2.2.6. Drill a test production well, logging geologic samples, collect samples for sieve analysis, and conducting geophysical logging. Construct the test production well to TCEQ and CCGCD public water supply well standards to allow for future equipping, permitting, and use as a permanent supply well. It is anticipated that the test well will be 8-inches in diameter, approximately 375 feet deep with a screened interval between 200 and 350 feet bgs.
- 2.2.7. Conduct an aquifer test to determine aquifer properties and estimate production well performance. A variable-rate step test will be performed followed by a 72-hour aquifer test at a rate of less than 250 gpm. The drilling subcontractor will be responsible for providing a temporary pump; the City will supply power. The AECOM team will analyze the data to determine aquifer properties and establish a basis for proposed capacity and design of future wells on the George Street and Tilley Park properties. Those wells not converted to a test well will be plugged and abandoned in accordance to regulatory guidelines.
- 2.2.8. Collect water quality samples from the test production well for the current list of constituents designated by TCEQ for public water supply wells.

2.3. Reporting

Prepare a report summarizing the exploration and testing program, findings, and recommendations.

- 2.3.1. Summarize all drilling, construction, and testing activities. Include boring logs, geotechnical test results, geophysical logs, aquifer testing, and water quality testing as appendices.
- 2.3.2. Preliminary design for future production wells at the George Street and Tilley Park sites, including depths, screened intervals, and capacity. Using groundwater models to define recommended pumping capacity of future production wells and predict drawdown.
- 2.3.3. Prepare Class 5 cost (AACE standards, see section 4 below) estimates for future production wells.

2.4. Update Water Treatment Recommendations

This task includes a review of site-specific water quality data, and an update of recommended treatment options and costs that were previously developed on regional water quality data:

2.4.1. Review the water quality data collected in Task 2.2. Refine the treatment alternatives identified in the Water Systems Planning Document.

2.4.2. Update costs and recommend a treatment alternative to be carried into preliminary engineering (a subsequent phase). Using the analytical data collected in 2.2.4 and 2.2.8 and the groundwater hydrology model developed in 2.3.2, determine when (e.g., how many wells can be blended) water treatment is required.

3. City's Lynn's Bayou Wastewater Treatment Plant (WWTP) Expansion

Port Lavaca is authorized to treat and discharge domestic wastewater via the Lynn's Bayou WWTP (Permit WQ0010251001). The WWTP, centrally located in the community, was constructed in 1982 and is permitted for 2 MGD average daily flow and a 2-hour peak flow of 5,319 GPM. Currently, the average daily flow to this plant has reached 75% of the WWTP rated capacity for three consecutive months and as such has triggered TCEQ's requirement for the initiation of engineering and financial planning for an expansion of the wastewater treatment plant. It is also understood that during heavy rains the wet weather flows can be quite significant although a decrease in wet weather flows has been observed over a multi-year period as a result of the sewer line rehabilitation and replacement program. The permit discharge limitations are shown in the table below.

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Biochemical Oxygen Demand (5-day)	20 (334)	30	45	65	Two/week	Composite
Total Suspended Solids	20 (334)	30	45	65	Two/week	Composite
Total Copper, µg/l	11.10 (0.185)	N/A	23.5	34.4	One/week	Composite
Total Zinc, µg/l	75.19 (1.25)	N/A	159.07	233.1	One/week	Composite
E. coli, CFU or MPN/100 ml	35	N/A	104	N/A	Daily	Grab

AECOM completed a condition assessment and alternatives evaluation in Task 2. Several immediate needs were identified as a result of the condition assessment. These improvements will increase the existing system reliability and compliance with the TCEQ permit. In addition, these improvements will carry forward into the proposed plant expansion (Alternative II in the Wastewater Treatment Plant Expansion Report). The immediate needs include pump replacement, blower replacement, general maintenance of tankage, and an evaluation of secondary clarifier surface loading rates.

3.1. Replace Sludge Transfer and Sludge Drain Lift Station Pumps

This task includes the sizing of replacement pumps to provide system redundancy, development of a procurement package and design drawings to facilitate installation of the sludge transfer pump and the sludge drain lift station pump. One site visit will be made during this task to identify pipe routing and electrical conduit routing for wastewater tasks identified in 3.1 and 3.3

- 3.1.1. Review existing name-plate data, flows, and confirm design criteria. Work with pump vendor(s) to select replacement sludge transfer and sludge drain pumps.
- 3.1.2. Develop pump data sheets, specifications, and process flow diagrams for a procurement package for the sludge transfer and sludge drain pump. Procurement package will be submitted for 60% and 90% review.
- 3.1.3. Develop design drawings including mechanical plans and sections, piping connections, mechanical details, updated single line diagram, and electrical details. It is assumed that existing housekeeping pads can be reused and that no new structural supports are needed. Design drawings will be submitted for 30, 60, and 90 percent review.
- 3.1.4. Provide a Class 4 cost estimate in accordance with AACE guidelines at 90 percent review.

3.2. Maintenance of Aeration Basins and Aerated Digester

This task includes the removal of accumulated silt and grit from the existing aeration basin and aerobic digester and an evaluation of fine bubble diffusers.

- 3.2.1. Write a performance specification for the removal of sludge and grit from the aeration basins and the aerobic digester. It is assumed that the City will review the performance specification and contract this maintenance activity.

3.3. Centrifugal Blowers and New Blower Building

In this task the AECOM design team will develop a construction package for two new centrifugal blowers and design a new blower building. The new blowers will provide adequate air for current conditions and improved plant operations. The temporary blower building will house the two new blowers and associated electrical equipment and could include space for future expansion.

- 3.3.1. Size two new replacement centrifugal blowers at approximately 2,200 SCFM each to meet current conditions. Include new MCC bucket, conduit, and wiring.
 - 3.3.1.1. Confirm design criteria and work with vendors to select new blowers.
 - 3.3.1.2. Develop blower and VFD data sheets, specifications, and process flow diagrams for a procurement package for the centrifugal blower and VFD. It is assumed that VFD No. 2 can be reused, based on the condition assessment, but this will be confirmed during design. Procurement package will be submitted for 60% and 90% review.
 - 3.3.1.3. Develop design drawings including mechanical plans and sections, piping connections, mechanical details, updated electrical site plan, new single line diagram, section and elevation drawing for new MCC, and electrical details. Design drawings will be submitted for 60, and 90 percent review.

3.3.2.Design new blower building

- Design new blower building to house two replacement centrifugal blowers and an electrical room. Approximate size is 60 feet by 25 feet.
- Building will be prefabricated insulated metal panels on a concrete slab foundation. It is assumed that existing geotechnical data is available; a survey will be required.
- Architectural, civil and structural drawings as well as electrical and HVAC drawings will be prepared for 60 and 90 percent review. It is assumed that ventilation will be provided for the blower space and conditioned air will be provided for the MCC/electrical room.

3.4. Evaluation of Surface Loading Rate

Task includes evaluation of two-years' worth of hourly influent flow data (January 2020 through October 2021) to determine if the surface loading rate of the clarifier meets the TCEQ 2-hour peak requirement of 1,200 gpd/sf. Summarize finds in a brief technical memorandum and recommendation as to whether or not another secondary clarifier is required for TCEQ compliance with current conditions.

4. Assumptions

- Data identified in this cost proposal is readily available within two weeks of the notice to proceed.
- Conceptual cost estimates completed during these two tasks will be performed in accordance with the AACE standards for a Class 5 Estimate with an expected accuracy of -20% to -50% on the low end and +30% to +100% on the high end.
- Design drawings will be submitted for review at 60 and 90 percent milestones. Specifications will be submitted at 60 and 90 percent milestones.
- It is assumed that the City of Port Lavaca will return review comments within two weeks of a draft submittal.
- Geotechnical data is available. A site survey is not available and would be required for the new Blower Building only. If geotechnical data is not available, assume one soil boring with an allowance of \$5500. Assume an allowance of \$3,500 for Survey.
- As-built drawings will be used as the background for the site plan and sludge pump replacement.

Schedule

Please see milestone schedule below for each task. Construction times are estimated.

Task 3 – Water Supply Exploratory Drilling and Test Well

Milestone/Deliverable	Calendar days from NTP
Site Assessment and Data review	14
Obtain drilling permits, select driller	49

Drill test borings and complete monitor wells	77
Obtain drilling permit for test well	98
Construct Test Well and Perform Aquifer and Analytical Testing	112
Technical memorandum- Draft	140
City Review	154
Technical memorandum - Final	168

Task 4 – Lynn's Bayou Wastewater Treatment Plant (WWTP) Immediate Needs

Milestone/Deliverable	Calendar days from NTP
Sludge Transfer and Drain Lift Station Pumps Design Package (90%)	28
City Review	14
Sludge Transfer and Drain Lift Station Pumps Design Package (Final)	49
Performance specification for Aeration Basin and Aerobic Digester Maintenance	14
Inspection and replacement in kind for coarse diffused aerator replacement (90%)	49
City Review (Pumps)	63
Construction Package for Centrifugal Blowers and Pre-Fab Blower Building (90%)	56
City Review	70
Construction Package for Centrifugal Blowers and Pre-Fab Blower Building (Final)	84
Review Clarifier Surface Loading Rate	21

WWTP Report- Draft	98
City Review	112
WWTP Report - Final	126

Fee:

The fee for each task and subtask is summarized below. Project management is shown as a shared task among the water and wastewater work orders to promote efficiencies.

Task	Labor Hours	Labor Cost	Subcontractor*	Expenses	Total
Task 1- Project Management and Coordination	122	\$19,245	\$11,256	\$500	\$31,001
Task 2 Water Supply Exploratory Drilling and Test Well	129	\$19,535	\$393,005	\$1,450	\$413,990
2.1 Evaluation of Well Sites	43	\$7,205	\$18,039	250	\$25,494
2.2 Construction of Test Borings, Monitor Wells and Test Well	45	\$5,925	\$53,361 \$275,000 \$15,000	\$1,200	\$350,486
2.3 Reporting	17	\$3,015	\$31,605	\$0	\$34,620
2.4 Update Water Treatment Recommendations	24	\$3,390	\$0	\$0	\$3,390
Task 3- Lynn's Bayou WWTP Expansion- Immediate Needs	877	\$107,455	\$9,000	\$600	\$117,055
3.1 Replace Sludge Transfer and Sludge Drain LS Pumps	218	\$28,430		600	\$29,030
3.2 Maintenance of Aeration Basins and Digester	10	\$1,440			\$1,440
3.3 Centrifugal Blowers and Blower Shed	608	\$71,980	\$5,500 \$3,500		\$80,980
3.4 Evaluate Surface Loading Rate	41	\$5,605			\$5,605
Total	1,128	\$146,235	\$413,261	\$2,550	\$562,046

*Subcontractor costs for drilling are estimated to be \$275,000 and will be finalized upon bidding and selection of contractor.

Subcontractor costs for analytical are estimated to be \$3000 per sample (5 each) for a total of \$15,000 and will be finalized upon bidding and selection of laboratory.

Geotech is assumed to be \$5,500 for the blower building, and \$3,500 is assumed for survey of the new blower area.

Please let us know if you have any comments or questions.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Susan Spore".

Susan Spore, PE
Senior Project Manager
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E: susan.spore@aecom.com

enclosures: Fee Breakdown, condition assessment data forms, AACE document #