



## Staff Report

**TO:** City Council  
**FROM:** Thaxton Van Belle, General Manager of Utilities  
**DATE:** November 19, 2021  
**SUBJECT:** **City Council Approval of Change Order No. 21 for the Wastewater Treatment Plant Upgrade/Expansion in the Amount Not to Exceed \$28,006.52 for Plant Improvements**

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### **Background and Analysis:**

#### **Wastewater Treatment Plant Change Order No. 21:**

##### **Item No. 1 – Existing Centrifuge Drain Modification:**

The existing centrifuge centrate line drains directly into the Influent Pump Station (IPS), which could, at times, deliver excess polymer to the fine screens. Using spare 12-inch HDPE piping owned by the City, along with the contractor's fusing machine and additional fittings, the contractor can redirect the drain line to the on-site Cooper Creek Lift Station. From here, the centrate can be diluted with wastewater from the lift station and then properly distributed to the headworks distribution box at the head of the facility. The cost for this work is \$8,059.34.

##### **Item No. 2 – IPS Foam Control and Sediment Mixing:**

The Influent Pump Station (IPS) was rebuilt with new pumps, valves and piping along with new level monitoring instrumentation. Organic foam level buildup in the station can interfere with the level instrumentation as can sediment in the basin, both of which create additional ongoing maintenance tasks. To mitigate both the foam and sediment, piping from the pump manifold can be installed and directed into the station to act as a mixer to break up the foam and suspend the sediment. The cost for this work is \$9,035.66.

##### **Item No. 3 – Blower Pip Insulation:**

The new solids holding tanks utilize blowers with exposed piping to deliver compressed air for mixing. The heat generated by blowers has been recorded as reaching up to

125°F and is within contact of personnel or visitors. As a protective measure against incidental contact, the contractor was directed to insulate the exposed pipe within reach of potential exposure. To save the cost of the subcontractor's remobilization, the Mayor granted preapproval of this item. The cost for this work is \$2,377.64.

**Item No. 4 – Modification to MBR Chemical Feed Skids – Off-Gas Air Vents:**

Excessive cavitation was experienced on the chemical piping system associated with trapped air due to chemical off-gassing. To avoid damage to the piping network, air release vents and piping need to be installed to alleviate the system of trapped air. The cost for this work is \$7,844.55.

**Item No. 5 – UV Network Switch:**

The new UV disinfection system included new monitoring instrumentation and hardware. The new transmitter requires internet connectivity for online monitoring, programming, and calibration. A new network switch and associated cabling with allow internet connectivity from this remote location. The cost for this work is \$689.33.

**Summary of Change Order No. 21 Costs:**

The cumulative costs associated with this change order is in the amount not to exceed \$28,006.52 and will not impact the project schedule. The summary and details for each change order are attached.

**Wastewater Treatment Plant Change Order Summary:**

<b>CO No.</b>	<b>Description</b>	<b>Reason for Change</b>	<b>Amount</b>
1	MBR System Improvements	Enhance the performance of MBR System	\$149,741.00
2	RO System Electrical Modifications and Storm Drain System Material Change	Design and Material Updates	(\$245.00)
3	New Aeration Basin 1 through 3 Excavation	Conflict with Existing Utilities	\$19,998.00

4	Structural and Mechanical Modifications	Pre-Selected Submittals	\$57,450.64
5	Vactor Truck Dump Station Modifications	Conflict with Construction	NTE \$15,000.00
6	EDI/Fine Coarse Bubble Diffuser Equipment	Design Change	\$24,298.00
7	Various Changes – MBR/RO Structural, Site Civil and Headworks SCADA Design Modifications	Design Changes	\$59,167.49
8	Various Changes - Demolition, Piping Realignment, Material Change, and Electric Actuated Valve Voltage Change	Unforeseen Conditions and Value Engineering	\$6,067.00
9	Various Changes - Solids Handling Bldg. Conveyor Capacity Increase, Electrical Yard Vault Cover Changes, Additional Pothole Investigation and Existing Duct Bank Removal, and Yard Utilities	Design Changes, Conflict with Construction, Owner Requested Changes	\$138,531.73
10	MBR Chemical Area Changes and Other Misc. Changes and Inclement Weather Impact Nov-18 to May-19	Owner Requested Changes and Inclement Weather	\$596,031.05
11	Frontier Internet Provider Duct Bank Modifications, 30-inch MBR and 20-inch Plant Effluent Pipeline Elevation and Alignment Modifications, Additional Safety Required Handrail at Retaining Wall and Generator	Design Changes, and Conflict with Construction	\$81,128.29

12	RO-Sulfuric Acid Chemical Piping Material Change, Solids Feed Pump TR/TSH Thermocouple Elements, Solids Handling Bldg. Changes	Design Changes, Owner Requested Changes	\$91,417.26
13	Plant Effluent Chemical Area Changes	Owner Requested Changes	\$404,821.33
14	ADA Compliance Men's – Women's Restroom Modifications and SCE Required Additional 4/0 Ground Cable	Design Changes and SCE Requirements	\$12,311.12
15	Aeration Basin 24" Air Piping Block-outs and Pipe Seals, Modifications to HACH Instrumentation Communications Protocol, MBR Module Lifting Safety Device, RO CIP-Skid Discharge Orifice Plate Addition	Design Changes, Owner Requested Changes	\$79,713.39
16	Pump station at the EQ Basin	Design Changes, Owner Requested Changes	NTE \$667,487.82
17	RW Future Pump Station, Weather Time Extension, Valve Modifications, MBR Feed Pump Seal Water Control Changes	Design Changes, Owner Requested Changes, Unforeseen Conditions	NTE \$159,442.86
18	Construction Cost of UV System, Weather Time Extension	Design Changes, Unforeseen Conditions	NTE \$1,788,568.52
19	Aeration Basin 1-4 MOV Extension Risers, Aeration Basin Network Switch for HACH Instruments, Fine Screens, MBR Addition	Design and Scope Changes	\$95,556.60

20	Truck Scales	Design Change	NTE \$113,100.05
21	Line Connections on 4th Street, Effluent Analyzers and Sampler Additions, Yard Piping, Fine Screens Cleaning Pressure Washer, MBR RAS Pumps, Additions to Sludge Holding Tanks, Delay Decommissioning Existing Power, Weather Impact Dec 2020-April 2021	Design Change	NTE \$213,164.76
22	Existing Centrifuge Drain to Cooper Lift Station, IPS, Sludge Tank Blowers, MBR Chemical Skid Discharge Vent System, UV Network Switch for Carlos Connection	System Improvements	\$28,006.52
<b>WWTP Contingency</b>	<b>Budget Amount</b>	<b>Change Orders 1-22</b>	<b>Remaining</b>
	<b>\$5,624,252.52</b>	<b>\$4,800,758.43</b>	<b>\$823,494.09</b>

**Fiscal Impact:**

Wastewater Treatment Plant Expansion/Renovation:

The project accounting below represents the status of funds should the change order be approved by City Council. A contingency balance of \$823,494.09 would remain should City Council approve this item.

<b>WWTP</b>	<b>Budget Amount</b>	<b>Paid to Date</b>	<b>Remaining</b>
Design	\$2,697,942.63	\$2,557,938.51	\$140,004.12
Construction Management	\$6,034,572.75	\$5,756,198.83	\$278,373.92
Equipment	\$252,906.00	\$256,216.13	\$(3,310.13)

Permits	\$324,776.76	\$121,450.10	\$203,326.66
Construction	\$53,910,737.00	\$50,690,174.97	\$3,220,562.03
Contingency	\$5,624,252.52	\$3,994,286.68	\$1,629,965.84
Unallocated	\$1,489,244.72	\$ -	\$1,489,244.72
<b>Total</b>	<b>\$70,334,432.38</b>	<b>\$62,376,265.22</b>	<b>\$6,958,167.16</b>

**Recommended Action:**

Approval of Change Order No. 22 for the Wastewater Treatment Plant Upgrade/Expansion in the amount not to exceed \$28,006.52.

**Attachments:**

- A. Change Order 22