



## Staff Report

**TO:** City Council  
**FROM:** Thaxton Van Belle, General Manager of Utilities  
**DATE:** August 16, 2022  
**SUBJECT:** City Council Approval of Change Order No. 25 for the Wastewater Treatment Plant Upgrade/Expansion in the Amount Not to Exceed \$185,639.07 for Plant Improvements

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### Background and Analysis:

#### Wastewater Treatment Plant Change Order No. 25:

##### **Item No. 1 – Eaton Variable Frequency Drive Deduction**

Upon selection of Aerzen blowers for the solids handling tanks, three variable frequency drives (VFD)s included in the original design became unnecessary for the project. The deduct for this item is -\$47,042.54.

##### **Item No. 2 – Equalization Basin Pressure Reducing Valve Addition**

Following the installation of tipping buckets designed to clean the equalization (EQ) basin, it was determined that the flow demand during the fill time would cause pressure drops across the non-potable water (NPW) system. The pressure drops cause alarms throughout the plant for equipment reliant upon the NPW. The installation of a pressure reducing valve (PRV) installed ahead of the tipping buckets will maintain pressure in the NPW system. The cost of this work is \$21,850.57.

##### **Item No. 3 – Roadway Adjustments**

Roadway modifications southeast of the MBR building are needed to accommodate the turning radius of currently operated solids hauling trucks. In addition to modifying the roadway and associated curb, relocation of an existing fire hydrant and bollards is also required. The cost of this work is \$101,408.24.

##### **Item No. 4 – Huber Fine Screen Spray Bar Addition Support**

Since the installation of the fine screens, the City has experienced issues with fibrous materials collecting on the fine screens and clogging the perforations. As part of Change Order 22, the City opted to add additional high pressure spray bars to combat

the issue. W.M. Lyles assisted in the repair and installation of the spray bars on a time and material basis. The cost for this work is \$21,296.55.

**Item No. 5 – Reverse Osmosis System Chemical Vents and Containment**

The reverse osmosis system’s chemical dosing skids include several connections that need to be vented with any potential liquids captured and contained. Due to the remote location of the chemical tank farm, it was not feasible to run a return line all the way back to the storage tanks. Alternatively, alarmed, five-gallon double containment tanks were installed below the chemical feed skids to capture any nuisance liquids. The cost of this work is \$13,126.25.

**Item No. 6 – Waste Activated Sludge Pump Station Piping Replacement**

Installation of new Waste Activated Sludge (WAS) pumps utilized portions of existing buried piping and valves. Following start up the of the new pumps, it was determined that some of the existing valves were defective and obstructed flow to the pumps. The proposed solution is to install a new header of pipe and valves, bypassing the defective buried equipment. The cost of this work is not to exceed \$75,000.

**Summary of Change Order No. 25 Costs:**

The cumulative costs and credits associated with this change order is in the amount not to exceed \$185,639.07 and will not impact the project schedule. The summary and details for each change order are attached.

<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 & Storm Drain System Material Change	Design & 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 & 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 & Other Misc. Changes and Inclement Weather Impact Nov-18 to May-19	Owner Requested Changes & Inclement Weather	\$596,031.05
11	Frontier Internet Provider Duct Bank Modifications, 30-inch MBR & 20-inch Plant Effluent Pipeline Elevation and Alignment Modifications, Additional Safety Required Handrail at Retaining Wall and Generator	Design Changes, & 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 & SCE Required Additional 4/0 Ground Cable	Design Changes & 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	NTE \$28,006.52
23	MBR Replacement	System Improvements	NTE \$5,143,400.00
24	Fibrecast MBR System Replacement Deduction	System Improvements	\$ (329,839.12)
25	Eaton VFD, EQ Basin PRV, Roadway Adjustment, Huber Fine Screen Spray Bar, RO Chemical Vents & Containment, WAS Pump Station Piping Replacement	Plant Improvements	\$ 185,639.07
<b>WWTP Contingency</b>	<b>Budget Amount</b>	<b>Change Orders 1-25</b>	<b>Remaining</b>
	<b>\$11,624,252.52</b>	<b>\$9,799,958.38</b>	<b>\$1,824,294.14</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 \$1,824,294.14 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	\$ 2,566,070.75	\$ 131,871.88
Construction Management	\$ 6,565,381.75	\$ 6,236,467.68	\$ 328,914.07
Equipment	\$ 252,906.00	\$ 340,420.19	\$ (87,514.19)
Permits	\$ 324,776.76	\$ 121,450.10	\$ 203,326.66
Construction	\$ 53,910,737.00	\$ 51,047,292.65	\$ 2,863,444.35
Contingency	\$ 11,624,252.52	\$ 7,840,572.82	\$ 3,783,679.70
Unallocated	\$ 958,435.72	\$ -	\$ 958,435.72
<b>Total</b>	<b>\$76,334,432.38</b>	<b>\$68,152,274.19</b>	<b>\$8,182,158.19</b>

**Recommended Action:**

Approve Change Order No. 25 for the Wastewater Treatment Plant Upgrade/Expansion in the amount not to exceed \$185,639.07, to be applied to the preapproved contingency funds.

**Attachments:**

- A. Change Order 25