Staff Report

TO: City Council

FROM: Thaxton Van Belle, General Manager of Utilities

DATE October 19, 2021

SUBJECT: **City Council Approval of Change Order No. 21 for the Wastewater Treatment Plant Upgrade/Expansion in the Amount Not to Exceed $213,164.76 for Plant Improvements**

Background and Analysis:

Wastewater Treatment Plant Change Order No. 21:

Item No. 1 – BCVWD Requested Changes to Potable Water Connection:

The original design for the new potable water connection to the Beaumont Waste Water Treatment Plan (WWTP) included an eight-inch hot-tap and an eight-inch fire line to two new fire hydrants onsite. The existing potable water connection was intended to be utilized for potable water service. It was decided during construction that a new potable water service would provide better service, additional flow, and increased pressure to the WWTP. The design was changed to include a new two-inch domestic flow meter in addition to the proposed eight-inch fire service. The new design required additional backflow preventers on both the eight-inch and two-inch pipelines, two-inch flow meter, and two additional eight-inch mainline valves on the connection. The actual connection to Beaumont Cherry Valley Water District's (BCVWD) mainline was performed by BCVWD. The credit from the contractor for the actual connection is factored into this change order, thus reducing the additional cost. The cost for this work is $15,597.01.

Item No. 2 – Plant Effluent Analyzers and Sampler Addition:

The original design called for the re-use of the existing effluent turbidimeter analyzer, sampler and sample pump to monitor final plant effluent. It was determined by WWTP staff that the old analyzer, sampler and pump should be replaced rather than relying on older equipment. The new equipment and installation was specified for the contractor to install. The cost for this work is $48,501.92.

Item No. 3 – Yard Piping – Three-inch Non-Potable Waterline and Valves:

The non-potable waterline leading to the fine screens necessitate the need to be looped to ensure continuous water supply and increased pressure to improve cleaning of the screens. Approximately 100 linear feet of three-inch piping and valves were installed. The new UV system requires a hose bibb to be installed for cleaning purposes. Approximately 80 linear feet of two-inch piping and valves were installed and additional yard valves were installed to allow the WWTP staff to better isolate portions of the non-potable water system. The cost for this work is $17,500.62.

Item No. 4 – Fine Screens Cleaning Pressure Washer:

Due to higher than anticipated loading on the fine screens from what appears to be fibrous materials now being experienced in the influent sewage, the screens have become fouled on a few occasions and created overflow conditions. Several remedies have been implemented including better mixing and controls in the influent pump station and diversion ability to the EQ basin. One additional remedy is an enhanced high pressure cleaning system. This improvement was previously approved by City Council on an emergency basis. The cost for this work is $82,276.27.

Item No.5 – MBR RAS Pump Seal Water Backup System:

The seals on the MBR RAS pumps are lubricated via the non-potable water system. This system works adequately, however, a scenario exists where the MBR system shuts down and the non-potable water system runs out of water. As a result, the water to these seals also shuts off and the pumps will not run. In order to mitigate this potential problem, a two-inch backup connection would need to be installed between the potable water system and the pipeline to the RAS pump seals. The connection requires a new two-inch backflow preventer to ensure the safety of the potable water system. The cost for this work is $11,721.54.

Item No. 6 – 8" WAS Additional Piping :

The original design of the sludge holding tanks utilized an existing pipeline to feed the two tanks, however, the existing piping does not allow for individual feeds. In discussions with the WWTP staff, it was determined that it would be advantageous to feed each tank independently. There also exists the slight potential of air locking of the pipes under certain, unusual circumstances. In order to enhance the operability of this

system and remedy the potential air locking, a new dedicated eight-inch piping and valving needs to be installed to each holding tank. The cost for this work is $37,567.40.

Item No. 7 – SCE Time Delay:

Southern California Edison (SCE) needed to de-energize the power to the old blower building transformer in order to demo the building so that a new solids building and sludge loading structure could be constructed. SCE was notified by the contractor and City numerous times and with plenty of notice. SCE delayed the contractor by 32 calendar days. It is recommended to authorize a no cost change order time extension of 32 calendar days for this unforeseen delay. The cost for this work is $0.00.

Item No. 8 – Inclement Weather Time Delay:

There were 23 documented days of inclement weather (rain and/or high winds) which impacted the project between December 2020 and April 2021. It is recommended to authorize a no cost change order time extension of 23 calendar days for inclement weather. The cost for this work is $0.00.

Summary of Change Order No. 21 Costs:

The cumulative costs associated with this change order is in the amount not to exceed $213,164.76 and will not impact the project schedule. The summary and details for each change order are attached.

Wastewater Treatment Plant Change Order Summary:

CO No.	Description	Reason for Change	Amount
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-Sulfurtic 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
WWTP Contingency	**Budget Amount**	**Change Orders 1-21**	**Remaining**
	$5,624,252.52	**$4,772,751.91**	**$851,500.61**

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 $851,200.61 would remain should City Council approve this item.

WWTP	Budget Amount	Paid to Date	Remaining
Design	$2,697,942.63	$2,557,938.51	$140,004.12
Construction Management	$5,382,475.75	$5,681,413.19	$(298,937.44)
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	$49,845,786.41	$4,064,950.59
Contingency	$5,624,252.52	$3,892,030.12	$1,732,222.40
Unallocated	$2,141,341.72	$ -	$2,141,341.72
Total	**$70,334,432.38**	**$62,354,834.46**	**$7,979,597.92**

Recommended Action:

Approval of Change Order No. 21 for the Wastewater Treatment Plant Upgrade/Expansion in the amount not to exceed $213,164.76.

Attachments:

A. Change Order 21