



CITY OF WHEATLAND

CITY COUNCIL MEETING STAFF REPORT

October 11, 2022

SUBJECT: Council discussion and consideration to adopt Resolution No. 34-22 accepting Amendment No 1 to the Basis of Design Report; authorizing an amendment to the grant/loan agreement with Yuba Water Agency for additional funding; amending FY2022-23 Budget; and authorizing amendments for environmental and design services for the Wheatland Regional Sewer Pipeline Project

PREPARED BY: Dane Schilling – City Engineer

Recommendation

Adopt Resolution No. 34-22 as presented, which specifies the following actions:

1. Accept the oral project update from the City Engineer and accept Amendment No. 1 to the Basis of Design Report for the Wheatland Regional Sewer Pipeline Project.
2. Authorize the City Manager to pursue and execute an amendment to the Yuba Water Agency (YWA) agreement for an additional \$2M in loan funds for additional work associated with the environmental, engineering design, right-of-way acquisition and grant funding work for the Project.
3. Upon execution of an agreement for additional loan funds from YWA, authorize the City Manager and Finance Director to amend the FY 2022-23 Budget to include an additional \$2M for the Regional Sewer Project.
4. Contingent upon items 2 and 3 above, authorize and direct the City Manager to execute any required amendments not to exceed the additional \$2M, for consultant services required to complete the environmental, engineering design, right-of-way acquisition and grant funding work for the Project.

Background

On January 14, 2020, the City Council directed the formation of an Ad-Hoc committee to work toward securing the best possible long-term solution to the City's future wastewater treatment needs by exploring and developing the two alternatives recommended in the *City of Wheatland Wastewater Treatment Alternatives Analysis* report.

On July 28, 2020, the City Council adopted Resolution No. 35-20 approving a \$2.6M grant/loan agreement with the Yuba Water Agency (YWA) and authorizing the City Manager to sign the agreement to fund environmental and design efforts for the conveyance pipeline and pump stations needed to deliver 1.5 million gallons per day of sewage from Wheatland to the planned terminus of Olivehurst Public Utilities District's (OPUD) sewer project at Highway 65 and Rancho Road.

On November 10, 2020, the City Council adopted Resolution No. 43-20 amending the FY 2020-21 Budget and authorizing the City Manager to proceed with environmental review and engineering design for the Wheatland Regional Sewer Pipeline Project which conveys wastewater as far as Highway 65 and Rancho Road.

On April 27, 2021, the Basis of Design Report for the Project was presented to the City Council, the City Council adopted Resolution 16-21 accepting the report, and the City Manager was authorized to approve modifications to the proposed project that are consistent with the overall scope and estimated costs of the project as represented in the report.

On July 26, 2022, the City Engineer provided an update on the Project including: funding for construction, environmental review, engineering design, right-of-way acquisition, permitting and inter-agency agreements.

The purpose and need for the Project are summarized as:

- Existing wastewater plant is only secondary treatment
- Existing plant has a State Water Quality violation on record
- Remaining plant capacity was previously sold-out to future development
- 1.5 million gallons daily treatment is needed for existing users and growth
- Reasonable & Stable Rates
- Ultimate plan for up to 3.82mgd capacity at build-out
- Alternatives were studied by City in Dec 2019
- The City committed to regional solution in Oct 2020

Discussion

Since the July 26, 2022 City Council update staff and the consultant teams have continued toward the original goal of being shovel ready in the event that construction funding is made available to the Project. Engineering design is approximately 90% complete, environmental review and processing is progressing and some permits have been acquired for construction of the project.

As mentioned in the July 26th update certain significant issues and opportunities have arisen during the course of development of the Project, especially in the last five months. The major issues and opportunities include the following changes, new information and unforeseen conditions:

Pump Station 2 (PS2) Site - Resistant property owners along Jasper Lane required the sequential evaluation of five alternative sites to host the 3.5-acre PS2 facility. Additional design work was needed to evaluate the layout and feasibility of each site as well as new hydraulic calculations, pipeline alignments and site plans. Several of the sites evaluated required additional environmental site reviews and land surveys to confirm the suitability of each site.

Once the current PS2 site was identified the property owner (a developer) requested further assurances for mitigating potential visual and odor impacts. To satisfy these concerns landscape plans and renderings of the site were prepared, enhanced odor controls were added to the project, and extensive coordination with the developer's engineering team was required. The new location also requires the design of additional force main piping down Spenceville Road.

OPUD Flow Equalization - After preparation of the BODR and start of final design, the City learned from OPUD that their wastewater plant couldn't handle Wheatland's peak flows. The City met with OPUD and their engineers in an attempt to resolve the situation. After lengthy coordination with OPUD's design team and negotiations the City moved forward with the addition of three 400,000 gallon tanks and piping at PS2 to "equalize" the City's wastewater flows before they are pumped to OPUD.

The inclusion of the tanks require additional land, grading, walls, drainage, and environmental reviews, land surveys and environmental mitigation. The landowner also requested enhanced odor controls and visual screening as a condition of granting land to the City. Project Scope was increased by approximately \$15M to add equalization to the project.

Corp Yard Replacement Area at PS2 – When the old wastewater treatment plant is demolished and re-purposed, the City's Public Works Department will lose the use of its storage areas at the old WWTP. During the design process the PS2 site was identified as a suitable site in a well-positioned location for replacement of the lost space. In addition, the City has outgrown its Fourth Street Corp Yard and offices. The design team performed preliminary site planning for future buildings, materials and equipment storage, and other public works facilities.

UPRR Permitting, Rights of Entry, Design Changes – Approvals and permits from Union Pacific Railroad (UPRR) were identified in the original scope as a long-lead and uncertain item. To date UPRR has issued two of the four permits to construct pipeline crossing under UPRR and been slow to respond on the other two crossings. Also, UPRR has requested alignment changes, has not allowed the design team's potholing contractor access certain sites.

Central Valley Flood Protection Board (CVFPB) – In addition to Reclamation District 2103 (RD2103) the CVFPB (a state agency) has jurisdiction over activities at Dry Creek and Best Slough. In the course of pursuing permits the design team learned that it was infeasible to attach the forcemain pipe to bridge at Jasper Lane. Attaching to the bridge would require expensive/impractical modifications to the bridge, special pipe appurtenances, and a lengthy permitting process with the CVFPB. The design was changed to employ a horizontal drilling (HDD) method to cross Dry Creek and Best Slough. The permits required in regard to HDD crossings are much easier and quicker to obtain. Horizontal drilling requires engaging specialty subconsultant for design.

Pipeline Realignments – In the execution of the right-of-way process, the right-of-way agent and City Engineer conducted individual meetings with impacted property owners to advise landowners of the project and gauge their interest in cooperating in the acquisition of rights-of-way for the project. The rights-of-way needed include long narrow strips of land for pipelines, pump station sites, temporary construction easements and access easements for operations and maintenance of the completed pipeline. Several landowners expressed an interest in cooperating initially but then changed their minds and others were unsupportive up-front. Certain areas of the pipeline alignments were re-aligned to avoid impacts to unsupportive landowners.

In addition, other reaches of the pipeline were realigned to avoid environmentally sensitive areas of the project, particularly in the area of S. Beale Road and the UPRR wye tracks.

PG&E Conflicts - PG&E overhead lines are in conflict with (overhanging) the current pump station at Malone Avenue which is the low point where most of the City's current sewage is collected. Public Utility Commission (PUC) regulations govern clearances for overhead electric lines. The originally proposed Pump Station 1 footprint was in close proximity to the existing electric transmission lines. The design and environmental teams researched three alternatives and site plans in attempt to avoid conflicts that would trigger relocation of the overhead powerlines. Efforts included contacting surrounding property owners, additional site designs, additional topo surveys, and additional environmental coordination.

Potholing – The original scope of work for design included an assumed number of utility pothole excavations ('potholes') to visually verify the location and depth of underground utilities. The initial pothole count was assumed prior to receipt of utility owner information and requirements. Additional potholes were required based on changes to the pipeline alignment, utility owner requirements and UPRR requests. Also, UPRR delays have required 3 mobilizations and additional on-site observation.

Maximize Available Construction Funding – During the project development process certain improvements were identified but not included in the project to keep Project costs as low as possible. Other improvements like solar power were identified as enhancements that benefit the Project and the environment. The two most significant items added to the project include photovoltaic power generation (solar) at pump station sites and a watermain with a booster pump to serve PS2 instead of a water well.

Other activities that maximize construction grant funding involve sizing facilities according to acceptable growth rates and re-packing the Wheatland and OPUD projects to rank higher for grant funding.

Prolonged Project Schedule - The original design effort was scheduled to occur over a 14-month period. Property owner delays, significant project changes described above and changes in scope to obtain newly identified grant funding have required more effort on the pre-construction activities. The additional environmental, engineering design, right-of-way acquisition and grant funding activities will extend the pre-construction efforts into mid-2023.

Spikes in Construction Costs – the planning and pre-design efforts for the Project began before the global pandemic. Initial cost estimates were based on pre-pandemic cost data.

The construction industry has and is currently experiencing significantly higher construct costs due to low supply chain production/manufacturing, labor shortages, shipping constraints and global inflation. Some recent heavy construction projects have bid at two to three times the estimated costs. Accordingly, each line item in the project estimate has been re-examined with regard to currently inflated construction costs and adjusted in an effort to anticipate current and future bidding conditions.

Grant Funding Application – As reported in the July 26, 2022 update to the City Council, the State Water Board recently contacted the City to advise that the City now qualifies as a economically disadvantaged community (DAC) and that the Project appeared to be eligible for substantial grant funding for construction activities. As a result, YWA engaged the services of a grant funding team to assist Wheatland and OPUD in the pursuit of the grant funding. This effort requires rigorous collaboration with YWA, OPUD and the funding team to make the funding application as successful as possible. In addition, the funding team has recommended that OPUD’s projects and Wheatland’s project be evaluated and “re-packaged” to maximize the potential funding and outcome of the grant opportunity.

The changes described above are substantial enough to warrant a revision to the original BODR. YWA’s funding team has also recommended amending the BODR to better support the current pursuit of grant funding for construction.

The changes have also expanded the environmental, engineering design, right-of-way acquisition and grant funding efforts well beyond what was originally estimated in 2020.

The City’s Ad-Hoc committee has continued to meet since January 2020 to review the status and progress of the Regional Sewer Project and the associated agreements. Also, staff have been in close coordination with agencies involved including YWA, OPUD and Yuba County staff as well as Wheatland’s development interests regarding the progress and planning of wastewater treatment in south Yuba County. It is clear that all south County agencies and key stakeholders continue to be supportive of the regional sewer efforts. Recently, the City’s Ad-Hoc Committee has been meeting more frequently (weekly) to stay abreast of current developments and of the collaboration between agencies.

Fiscal Impact

The following shows a comparison of the original estimates from the BODR (updated April 2021) and the current estimates in Amendment No 1 to the BODR:

Wheatland Regional Sewer Pipeline				
Project Cost Estimate				
COSTS	Pre-Construction (Millions)	Construction (Millions)	TOTAL (Millions)	Prior Estimate April 27, 2021
WTLD Pipelines		30.31	30.31	13.77
WTLD Pump Stations		31.47	31.47	12.20
WTLD Decom. WWTP		3.36	3.36	2.06
WTLD Soft Costs	4.60	4.00	8.60	4.17
OPUD Design & Const. Cost	4.72	19.28	24.00	17.61
Total Design and Construction	\$ 9.32	\$ 88.42	\$ 97.74	\$ 49.81

A detailed cost breakdown is provided in Appendix 3 of Amendment No. 1 to the BODR.

The following summarizes the breakdown of costs contemplated in the YWA budget augmentation request:

Wheatland Regional Sewer Pipeline Additional Pre-Construction Services Estimate			
	Unforeseen Items	Changes in Scope	Total (thousands)
Environmental		155	\$ 155
Engineering	380	665	\$ 1,045
Right-of-Way	184		\$ 184
Funding Assistance		135	\$ 135
Contingency			\$ 481
Total	\$ 564	\$ 955	\$ 2,000

The requested budget increase for additional environmental, engineering design, right-of-way acquisition and grant funding efforts was independently reviewed by the City’s third-party consultant Bill Lewis. Mr. Lewis reported to the Ad-Hoc committee that the requested budget augmentation of for pre-construction professional services is consistent with the changes in the Project scope, and within industry ranges for projects of similar complexity and magnitude. The Ad-Hoc Committee has reviewed the proposed budget increase and endorsed the requested augmentation.

YWA staff has indicated that they are aware of the dynamics associated with becoming construction-ready on a compressed time frame for a project of this size and complexity. YWA staff has indicated that their Board may be willing to augment the City’s current \$2.6M grant/loan agreement with YWA to include an additional \$2M loan to fund the additional environmental, engineering design, right-of-way acquisition and grant funding efforts required for the Project according to the same terms of the original agreement. The City Manager sent a letter to YWA’s Assistant General Manager to document the City’s intent to request an amendment to the grant/loan agreement pending City Council’s approval.

Attachments

1. Resolution No. 34-22
2. Amendment No. 1 to the Basis of Design Report for the Wheatland Regional Sewer Pipeline Project

RESOLUTION NO. 34-22

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WHEATLAND ACCEPTING A PROJECT UPDATE AND AMENDMENT NO. 1 TO THE BASIS OF DESIGN REPORT; AUTHORIZING THE CITY MANAGER TO SIGN AN AMENDMENT TO A GRANT/ LOAN AGREEMENT WITH THE YUBA WATER AGENCY; AUTHORIZING CITY MANAGER AND FINANCE DIRECTOR TO AMEND THE FY2022-23 BUDGET; AND AUTHORIZING THE CITY MANAGER TO EXECUTE AMENDMENTS FOR SERVICES REQUIRED TO COMPLETE ENVIRONMENTAL, ENGINEERING DESIGN, RIGHT-OF-WAY ACQUISITION AND GRANT FUNDING WORK FOR THE WHEATLAND REGIONAL SEWER PIPELINE PROJECT

WHEREAS, on July 28, 2020, the City Council adopted Resolution No. 35-20 approving the \$2.6M grant/loan agreement with the Yuba Water Agency (YWA) to fund environmental and design efforts for the Wheatland Regional Sewer Pipeline Project ("Project") and authorizing the City Manager to execute the agreement; and

WHEREAS, on November 10, 2020, the City Council of the City of Wheatland adopted Resolution No.43-20 amending the FY 2020-21 Budget and authorizing city staff to proceed with environmental review and engineering design for the first segment of the Project; and

WHEREAS, the City has engaged its contract planning firm, Raney Planning and Management, and the City's contract engineering firm, Coastland Civil Engineering, to perform the environmental, engineering design, right-of-way acquisition and grant funding work for the Project; and

WHEREAS, on April 27, 2021, the Basis of Design Report for the Project was presented to the City Council, the City Council adopted Resolution 16-21 accepting the report, and the City Manager was authorized to approve modifications to the proposed project that are consistent with the overall scope and estimated costs of the project as represented in the report; and

WHEREAS, on October 11, 2022, Amendment No. 1 to the Basis of Design Report for the Project as well as an update on the environmental, engineering design, right-of-way acquisition and grant funding efforts were presented to the City Council; and

WHEREAS, since the inception of the environmental, engineering design, right-of-way acquisition and grant funding efforts for the Project, many challenges and unforeseen conditions have been encountered that have altered the scope and cost of the Project, and require additional efforts to make the Project ready for construction; and

WHEREAS, YWA staff has indicated that the YWA Board may be willing to augment the City's current grant/loan agreement with YWA to loan an additional \$2M to fund the additional environmental, engineering design, right-of-way acquisition and grant funding efforts required for the Project.

NOW, THEREFORE IT IS HEREBY RESOLVED, ORDERED AND FOUND by the City Council of City of Wheatland, State of California, that the City Council:

1. Accept the oral project update from the City Engineer and accept Amendment No. 1 to the Basis of Design Report for the Wheatland Regional Sewer Pipeline Project.
2. Authorize the City Manager to pursue and execute an amendment to the existing agreement with the Yuba Water Agency for an additional \$2M in loan funds for additional work associated with the environmental, engineering design, right-of-way acquisition and grant funding work for the Project, according to the same terms of the original agreement.
3. Upon execution of an agreement for additional grant/loan funds from the Yuba Water Agency, authorize the City Manager and Finance Director to amend the FY 2022-23 Budget to add \$2M to the Project.
4. Contingent upon items 2 and 3 above, authorize and direct the City Manager to execute any required amendments not to exceed the additional \$2M, for consultant services required to complete the environmental, engineering design, right-of-way acquisition and grant funding work for the Project.

PASSED AND ADOPTED by the City Council of City of Wheatland, State of California this 11th day of October 2022, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

Rick West, Mayor

ATTEST:

Lisa Thomason, City Clerk

Amendment 1 to Basis of Design Report

WHEATLAND REGIONAL SEWER PIPELINE PROJECT

Accepted by the City Council of the City of Wheatland by Resolution 34-22 on October 11, 2022

Prepared For:
City of Wheatland
111 C Street
Wheatland, CA 95692

Prepared By:
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COASTLAND
DCCM

NEXGEN
UTILITY MANAGEMENT



Date: October 5, 2021

To: City of Wheatland
111 C Street Wheatland, CA 95692

From: Laurie Loaiza, Coastland Civil Engineering
Dan Rich, Nexgen Utility Management

CC: Dane Schilling, Coastland Civil Engineering

Subject: BODR Amendment No. 1 – Wheatland Regional Sewer Pipeline Project

The initial Basis of Design Report (BODR) for the Wheatland Regional Sewer Pipeline Project (“Project”) was completed and adopted by the City Council of the City of Wheatland on April 22, 2021. Since that time, numerous changes to the design, project scope and costs have occurred. This memo is intended to be a supplement to the April 2021 Report and outlines appropriate additions and changes to that report.

The following changes refer to the sections, section numbers, tables, figures and appendices as identified in the original report.

SECTION 1 – SUMMARY

REPLACE Table 1-3 with page 2 with,

Parameter	PS 1	PS 2	PS 3
Location	Malone, south of Main	Spenceville Rd	Rancho Rd, near HWY 65
Pump Horsepower	65/65/65	65/65/65 65/65/65	40/40/40
Flow Range	270-1700 gpm	270-3080 gpm	270-3080 gpm
Wet Well Dimensions	32'l x 12'w x 39'd	32'l x 22'w x 35'd	N/A
Standby Generator Capacity	300 KW	650 KW	100 KW
Operational Storage	40,000 gallons underground	40,000 gallons underground	N/A
Wet Weather Storage	None	1,200,000 gallons in 3 tanks	N/A

Santa Rosa
1400 Neotomas Avenue
Santa Rosa, CA 95405
Tel: 707.571.8005

Auburn
11641 Blocker Drive, Ste. 170
Auburn, CA 95603
Tel: 530.888.9929

Pleasant Hill
3478 Buskirk Avenue, Ste. 1000
Pleasant Hill, CA 94523
Tel: 925.233.5333

Fairfield
324 Campus Lane, Ste. A
Fairfield, CA 94534
Tel: 707.702.1961

SECTION 2 – PROJECT BACKGROUND

No changes.

SECTION 3 - EXISTING AND PROJECTED FLOWS

No changes.

SECTION 4 – DESIGN STANDARDS

Page 18, Section 4.02 Pipelines

ADD the following section:

“4.02.04 Sacramento Area Sewer Standards

Sacramento Area Sewer District (SASD) is a local, large sewer district that serves a large portion of Sacramento County. The Project will also use SASD standards in the absence of applicable City standards because they are thorough, designed for the Sacramento valley region and well-researched, and are therefore an excellent reference for this project, as they set a local standard of practice.”

SECTION 5 - PIPELINE ROUTES AND PUMP STATION SITING

Page 22, Section 5.03 Recommended Pipeline Route and Design Considerations

ADD to bottom of paragraph on Dry Creek Bridge:

“Subsequent coordination with Central Valley Flood Protection Board (CVFPB) and Reclamation District 2103 has eliminated the option of attaching the sanitary sewer main to the bridge. Regulations require that any pipe attached to bridge be located above the 100-year flood elevation. The height of bridge is too close to the floodwater surface of the creek/top of the levee to allow the pipe adequate freeboard and it is not feasible to raise Jasper Lane and the bridge to the required elevations. As such, the Reclamation District and the CVFPB recommended that pipe go underneath the levee. In addition, the design team was advised by the CVFPB that permitting activities associated with attaching the force main to the bridge would be lengthy and may delay the planned start of construction.

According to CVFPB staff, a pipe located less than 49-feet under a levee is required to undergo a lengthy and expensive permitting process. If this path is chosen, the permitting will likely extend past the current project schedule and it likely that the permitting agencies will impose rigorous restrictions that will add to the cost of the project over and above the typical HDD initially envisioned for this crossing.

However, Title 23 Article 8 Section 123 (f)(3) states that a permit is not required if the pipe is more than fifty (50) feet below the lowest part of the levee and streambed. The design team elected to design the HDD crossing to achieve the 50-ft clearance, as it adds certainty to both the project scope and project schedule. Deepening the depth of the HDD crossing means that the crossing has been extended to a horizontal distant of

approximately 1450 LF. Although a CVFPB permit is not required, the Project still has to submit a design package to CVFPB, for an abbreviated review that can be done within the current project schedule.

The design of this lengthy HDD crossing requires specialized engineering, additional geotechnical investigation and an analysis of the potential for “frac-out” of drilling mud during installation.

Due to the length and depth of the HDD crossing, the pipe wall thickness must be increased to account for additional stresses in construction and increased soil pressures due to the depth of the pipe. ”

ADD to bottom of paragraph on Best Slough:

“CVFPB advised the design team that Best Slough is within CVFPB jurisdiction. The process is a little simpler than Dry Creek because there is not a federal levee at that location, but federal USACE 408 reviewers require a review culminating in a letter of permission so that the CVFPB can issue a permit. Since the Best Slough crossing does not involve a levee, the minimum depth of cover required by State code is 5 feet (refer to Title 23 Article 8 Section 123 (c)(1). The HDD at that location is required to have a horizontal length of about 500 lineal feet.”

Page 26, Section 5.05.01

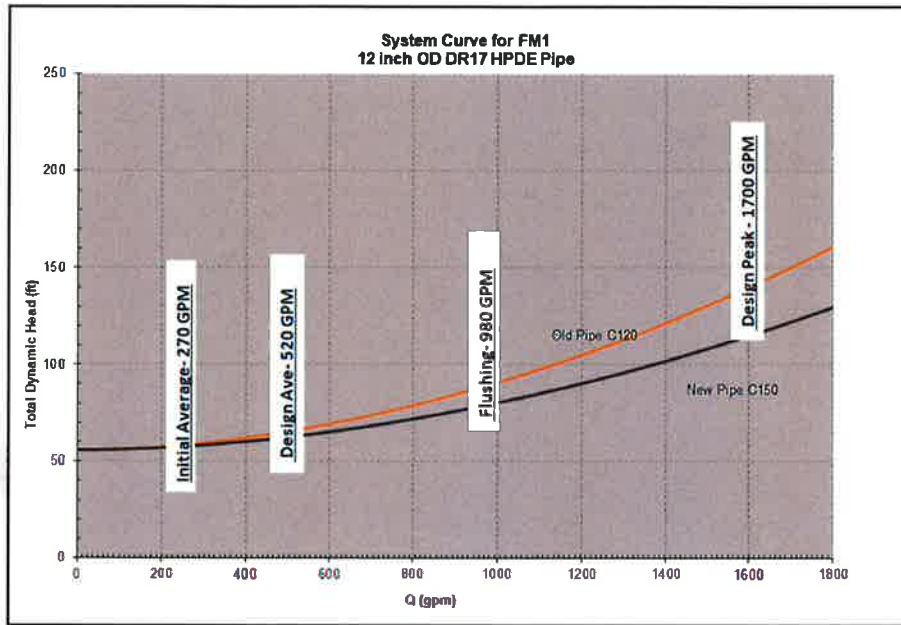
REPLACE,

- The high point in FM No. 2 is located where the pipeline could turn off Jasper Lane (about 2.1 miles from PS No. 2) at a ground elevation of 99 feet.
- In the vicinity of where PS No. 3 could be located, the ground surface elevation is about 75 feet.
- The intersection of Ostrom Rd and Rancho Rd is about at elevation 65-feet.”

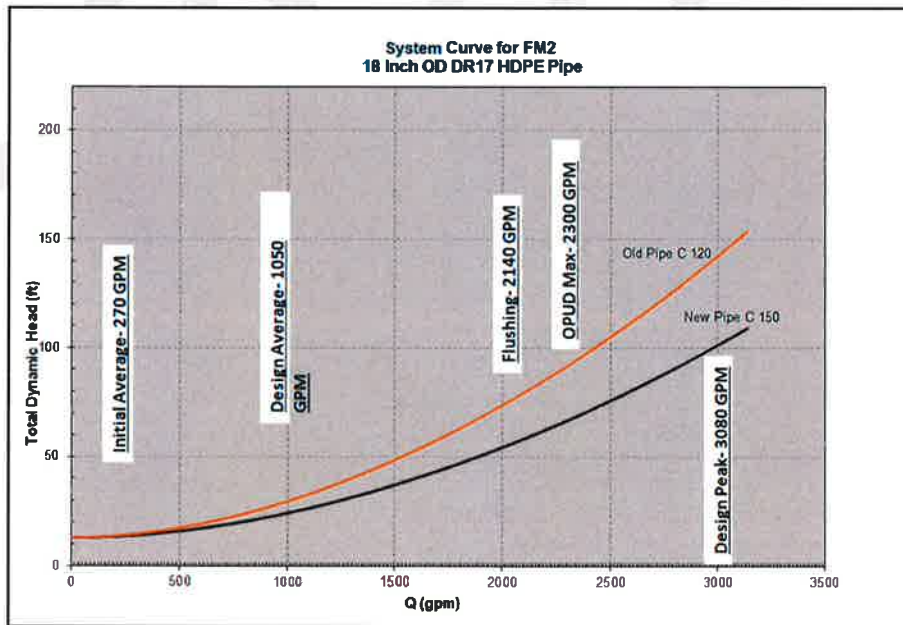
WITH,

- The high point in FM No. 2 is located at PS 2 at a ground elevation of approximately 106 feet. The intermediate high point in the pipeline is located at the turn off Jasper Lane (about 2.1 miles from PS No. 2) at a ground elevation of 99 feet.
- In the vicinity of where PS No. 3 could be located, the ground surface elevation is about 83.5 feet.
- The intersection of Ostrom Rd and Rancho Rd is about at elevation 65-feet.”

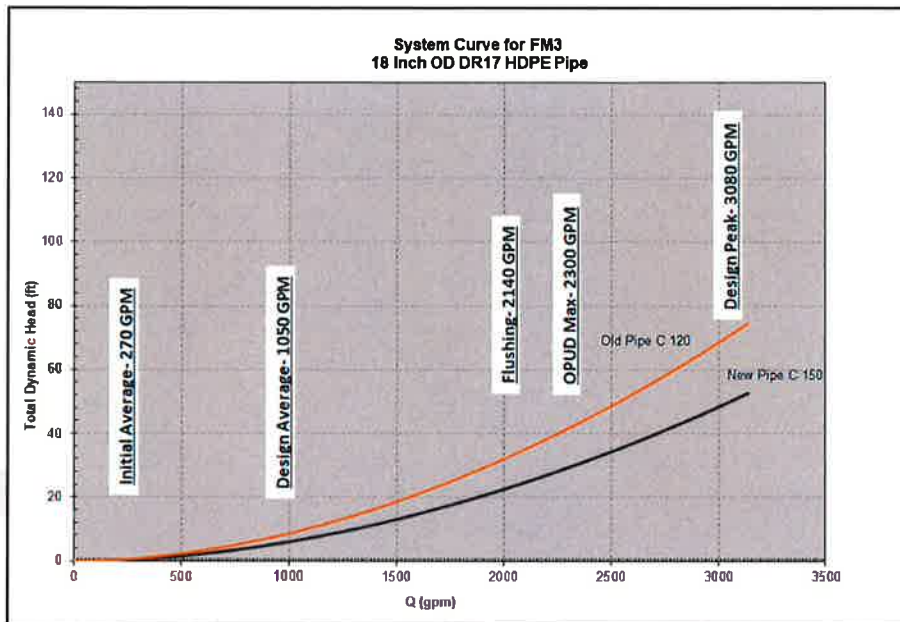
REPLACE Figure 5-3 page 28 with,



REPLACE Figure 5-4 page 29 with,



REPLACE Figure 5-5 page 30 with,



SECTION 6 – PUMP STATION NO. 1 (PS1)

Page 31, Section 6.01.01

REPLACE,

“The primary planning consideration the power lines pose is a prohibition of building structures under the lines. This requires moving the control building and generator to the north side of South Grasshopper Slough and running power and control wiring from the control building to the PS site underground in Malone Road.”

WITH,

“Construction constraints and sequencing will be dictated by the need for PG&E’s relocation of the high voltage transmission lines, including at least one pole.”

Page 34, Section 6.07

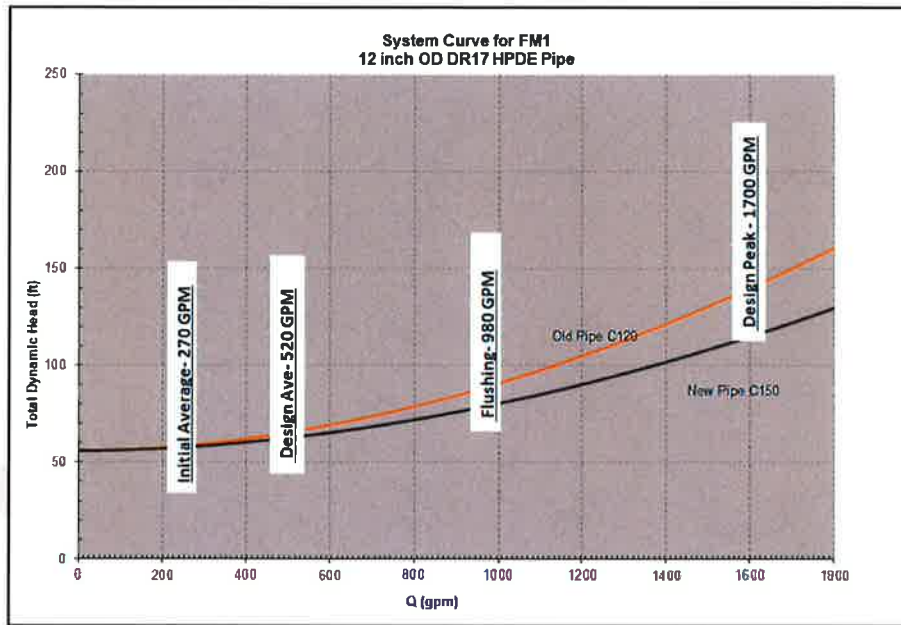
REPLACE,

“Surge protection is not expected to be required based on the force main modelling.”

WITH,

“Surge protection will be provided by an epoxy coated 250-gallon sewage surge tank rated for 275 psi.”

REPLACE Figure 6-1 page 43 with,



REPLACE Table 6-3 page 43 with,

	Initial	Design
Type of Station	Self-Cleaning Channel Type w/ Submersible Pumps	
Type of Pump	Screw Centrifugal	Screw Centrifugal
Total Number of Pumps	2 (1 duty)	3 (2 duty)
Max. Pump Solids Handling (in)	3	3
Capacity, Each gpm	850	850
Reliable Pumping Capacity, gpm	1700	1700
First Flow (gpm) / Operating Point (feet)	270 / 60	520 / 40
Second Flow (gpm) / Operating Point (feet)	980 / 90	980 / 90
Third Flow (gpm) / Operating Point (feet)	1,700 / 150	1,700 / 150
Variable Speed Drive Type	Adjustable Frequency	Adjustable Frequency
Pump Motor, HP	65	65
Total Installed HP	195	195
Flowmeter type	Magnetic	Magnetic
Emergency Storage Provided, gals	40,000	40,000
Surge Mitigation	Surge / Bladder Tank	Surge / Bladder Tank
Odor Control	Nitrate Addition and Carbon Scrubbers	Nitrate Addition and Carbon Scrubbers
Emergency Generator, KW	300	300

SECTION 7 – PUMP STATION NO. 2 (PS2)

ADD the following paragraph to Section 7.01.01 page 44

“Due to difficulties with land acquisition, the sites identified in the April 2021 BODR were determined to not be feasible. The Pump Station 2 site was moved to a site located near the southeast corner of Jasper and Spenceville Road. The design was updated accordingly to accommodate the new pump station location.”

ADD the following Section 7.01.0 2 Water Service Connection page 44

The current Pump Station 2 site does not have water main in the vicinity for connection. Initially, the design team proposed drilling a small domestic well. A well this size produces minimal amount of flow, and although might serve the pump station, it is not suitable to

serve a corporation yard building, which will require with fire service/fire hydrants/restroom. In order to solve this problem, the design team proposes a roughly 4500 LF water main extension and booster pump to the Pump Station 2 site. This will provide a more robust water supply to the project site.

ADD the following paragraph to Section 7.09 page 48

“The PS2 site also includes several buildings that support City wastewater operations. The buildings include an electrical building, a sampling and chemical feed equipment room, a vactor receiving station, and a maintenance garage. The PS2 site accommodates the addition of future covered parking and an administration building near the site entrance on Spenceville Road. For more details, refer to 90% drawings for PS 2.”

Photovoltaic (PV) power generation (solar panels) will be added to construction documents after the 90% submittal and may be constructed as construction funding allows. PV power would be used to offset the daily energy consumption of the wastewater operations and add to the reliability of the systems at PS2.

Page 49, Section 7.11.3

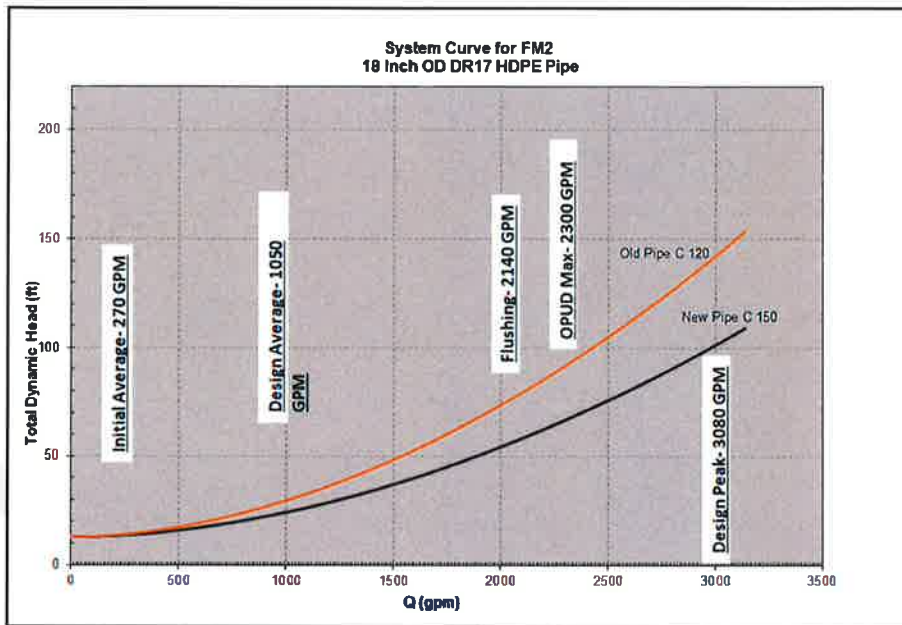
REPLACE,

“The generator at this location will be larger at **500 KW**, and it will initially be fueled by an LP gas, or diesel, tank and converted to natural gas as that utility service becomes available.”

WITH,

“The generator at this location will be larger at **650 KW**, and it will initially be fueled by an LP gas, or diesel, tank and converted to natural gas as that utility service becomes available.”

REPLACE Figure 7-1 page 52 with,



Replace Table 7-4 page 53 with,

	Initial	Design
Type of Station	Self Cleaning Channel Type w/ Submersible Pumps	
Type of Pump	Screw Centrifugal	Screw Centrifugal
Total Number of Pumps	3 (1 duty) low + 3 (2 duty) high	3 (3 duty) low + 6(5duty) high
Max. Pump Solids Handling (in)	3	3
Capacity, Each gpm	850	850
Reliable Pumping Capacity, gpm	3,080	3,080
First Flow (gpm) / Operating Point (feet)	270 / -6	1,000 / 30
Second Flow (gpm) / Operating Point (feet)	2,140 / 97	2,140 / 82
Third Flow (gpm) / Operating Point (feet)	2,300 / 112	3,080 / 149
Variable Speed Drive Type	Adjustable Frequency	Adjustable Frequency
Pump Motor, HP	75	75
Total Installed HP	450	450
Flowmeter type	Magnetic	Magnetic
Emergency Storage Provided, gals	800,000	1,200,000
Surge Mitigation	N/A	N/A
Odor Control	Carbon Scrubber	Biofilter
Emergency Generator, KW	650	650

SECTION 8 - PUMP STATION NO. 3 (PS3)

ADD the following paragraph to Section 8.01.01 page 54

“During design Option 1 was selected PS 3. For more details, please refer to 90% drawings for PS 3.”

ADD the following paragraph to Section 8.01.01 Flood Protection page 54

“The site elevation for PS 3 site will be raised by approximately 3 feet in order to be 2 feet above the 100-year flood elevation.”

Page 54 , Section 8.03.1

REPLACE,

“The configuration of the wet well for this PS is not typical as it is only receiving flow from the force main system and it is located above ground in a stainless-steel tank, rather than underground like a typical gravity fed sewage PS. This unconventional approach is proposed due to need to control the hydraulics of the PS2 force main by utilizing a standpipe at the PS3 location. The standpipe effectively raises the static hydraulic grade to ensure a full pipe at the highest points of its alignment (approximately 95 feet elevation), which is about 20 feet above grade at PS3. From the standpipe the sewage will convey downward, through a drop pipe, to the operating level in the above ground wet well. The standpipe will be equipped with an air valve that is normally open to the atmosphere and that closes before sewage reaches the top of the standpipe and spills.”

WITH,

“The configuration of this PS is not typical as it is only receiving flow from the force main system and is at a lower elevation than PS2. At lower flowrates the station is metering the flows to PS21 along Ostrom Road. At higher flowrates, booster pumps are required to pump all flow to PS21. Just prior to the station a hydropneumatic tank and motorized control valves will maintain a specified pressure in the force main such that the hydraulic grade line is always above the crown of the pipeline between PS2 and PS3. This will minimize air entrainment and odor generation as will also dampen any surge conditions created when pumps and valves are turned on and off. For more details, please refer to 90% drawings for PS 3.”

Page 55, Section 8.03.01

REPLACE,

“A single F4K-S pump will accommodate the very low flows up to approximately 500 gpm (to stay in its BEP range) against a minimal discharge head. This requires running the pump at minimal speed over this range. For flows in excess of 500 gpm, the manufacturer recommends operating two pumps in parallel so as to move the system curve up into the pump's performance area...as you can see on the attached performance curve for this station. With this operating mode, these pumps will easily cover the full station flow range up to the peak flow requirement of 3080 gpm for both the new and old pipe friction coefficients. These pumps would require **60 hp** x 1800 rpm TEFC motors direct coupled to the pumps.”

WITH,

“A single F4K-S pump will accommodate the very low flows up to approximately 500 gpm (to stay in its BEP range) against a minimal discharge head. This requires running the pump at minimal speed over this range. For flows in excess of 500 gpm, the manufacturer recommends operating two pumps in parallel so as to move the system curve up into the pump's performance area...as you can see on the attached performance curve for this

station. With this operating mode, these pumps will easily cover the full station flow range up to the peak flow requirement of 3080 gpm for both the new and old pipe friction coefficients. These pumps would require 40 hp x 1800 rpm TEFC motors direct coupled to the pumps.”

DELETE,

“Although, they could be supplied as identical to the PS1/PS2 pumps with the 75HP immersible motors and mounted in the prefabricated building pump room. This would facilitate moving a pump from, or to, any of the three PSs; and minimize the number of spare parts necessary to keep on hand.”

ADD the following paragraph to Section 8.04 page 55

“This pump station is operating as a closed pipe booster station. No emergency storage was ultimately proposed for this site.”

Page 55, Section 8.04

DELETE,

“During design the exact size of the wet well will be further evaluated to confirm the volume stored will be sufficient to smooth out transient conditions that may occur as pumps at PS2 modulate its output flow and PS3 pumps turn on and react to the changing influent flow, considering the transit times of the pressure/flow waves that are induced. If additional volume is necessary (i.e., to prevent a transient related spill, or excessive pump cycling) the diameter or number of wet well tanks may change in final design.”

Page 56, Section 8.05

DELETE,

“At this PS there are two systematic cleaning requirements that must be facilitated. First, the wet well will need to be routinely cleared of debris. We propose to facilitate this function by providing a pump recirculation line with motorized valve to regularly agitate the tank contents. We will also install an internal spray system to occasionally wash down the walls of the tank, similar to but much smaller than the system at the PS2 storage tanks. Until a water service is available a water truck will need to provide the water for tank washdowns. The wet well tank will also have a drain connection so a Vactor or septic pump type truck can pump out settled debris as required.”

Page 56, Section 8.06

REPLACE,

“The control building will be prefabricated and include the pumping room and adjacent backup generator. Washroom facilities are not proposed to be located at this site.”

WITH,

“The control building as well as the pumping building will be prefabricated. The control building will include electrical controls and a washroom. The backup generator will be in a separate outside enclosure.”

ADD the following paragraph to Section 8.08 page 56

“The air valve drainage and sewage from the control building restroom are the only places that should generate odors at PS 3. Odors will be controlled by a carbon scrubber connected to foul air piping.”

Page 56, Section 8.07

REPLACE,

“Due to the low pressure downstream of this PS we do not expect to need surge protection facilities, however there is ample room to place surge tanks as required for future flow scenarios.”

WITH,

“Surge protection will be provided by an epoxy coated 1000-gallon sewage surge tank rated at 150 psi.”

Page 57, Section 8.11.3

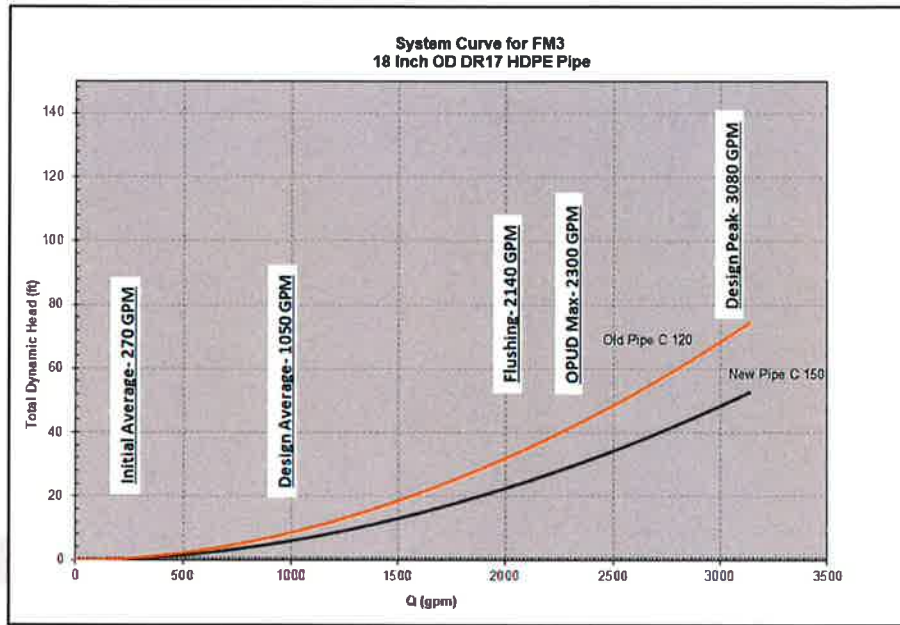
REPLACE,

“Please refer to Section 6.11.3, in the write-up for PS1 as the generator installation will be very similar. The generator at this location will be **250 KW**, and it will initially be fueled by an LP gas tank and converted to natural gas as that utility service becomes available. The LP tank will be sized for several days of service under design flows, and it will be located in an accessible location for servicing. A CMU block wall will be placed around it to minimize the opportunities for vandalism.”

WITH,

“Please refer to Section 6.11.3, in the write-up for PS1 as the generator installation will be very similar. The generator at this location will be **100 KW**, and it will initially be fueled by an LP gas tank and converted to natural gas as that utility service becomes available. The LP tank will be sized for several days of service under design flows, and it will be located in an accessible location for servicing. A CMU block wall will be placed around it to minimize the opportunities for vandalism.”

REPLACE Figure 8-1 page 60 with,



Replace Table 8-2 page 61 with,

	Initial	Design
Type of Station	Dry Pump Room	
Type of Pump	Screw Centrifugal,	Screw Centrifugal
Total Number of Pumps	0	3 (2 duty)
Max. Pump Solids Handling (in)	N/A	3
Capacity, Each gpm	N/A	1,030
Reliable Pumping Capacity, gpm	N/A	3,080
First Flow (gpm) / Operating Point (feet)	270 / 1	1,000 / 9
Second Flow (gpm) / Operating Point (feet)	2,140 / 36	2,140 / 36
Third Flow (gpm) / Operating Point (feet)	2,140 / 36	3,080 / 72
Variable Speed Drive Type	Adjustable Frequency	Adjustable Frequency
Pump Motor, HP	40	40
Total Installed HP	120	120
Flowmeter type	Magnetic	Magnetic
Emergency Storage Provided, gals	N/A	N/A
Surge Mitigation	Surge / Bladder Tank	Surge / Bladder Tank
Odor Control	Carbon Scrubber	Carbon Scrubber
Emergency Generator, KW	100	100

ADD a Section 8.13 Pump Station 21

“PS 21 will convey all flows from PS 3, without collecting any additional flow from its immediate surroundings. All wastewater generated by Wheatland will flow through this facility as it is conveyed to OPUD/LCWA.

PS 21 is located adjacent Rancho Road a couple of miles down from PS 3. Future flows will require additional pumps and the ability to divert flows to LCWA. PS 21 layout has control valves, metering, sample location, and telemetry to communicate with the main controls to be located at PS 2. Pump sizing, strategy, and wet well configuration will be designed by OPUD.”

8.13.01 Location

PS3 discharges into an 18-inch force main along Rancho Road. The force main terminates at OPUD's new pump station, "PS 21", at the intersection of Ostrom Road and Rancho Road. Due to the aforementioned complexities of the system being pumped from PS2 all the way to PS21 at lower flows and from PS3 to PS21 at higher flows, City facilities just prior to PS21 are required to meter and control the hydraulic grade line.

8.13.02 Current and Future Capacity

The flowrates from the City of Wheatland expected at this facility are identical to the flowrates listed for PS 3 in Table 8-1.

8.13.03 Surge Protection

Surge protection will be provided by an epoxy coated 1000-gallon sewage surge tank rated at 150 psi.

8.13.04 Site Improvements

The facilities include a 1000-gallon surge tank, a magnetic flowmeter, a wastewater sampling station, electrically actuated plug valves, and telemetry system to communicate with the upstream pumping stations. Improvements for PS 21 include paving, fencing and an electrical concrete pad for a future emergency generator.

8.13.05 Sampling and Flow Measurement

Flows at this PS will be measured via a magnetic flowmeter and provisions for a portable compositing sampler will be provided. The flowmeter and sampler would be a redundant check on total flow and strength of sewage conveyed to OPUD/LCWA. SCADA telemetry will be installed to allow monitoring and control of the motorized valves as well as a flow permission signal from OPUD.

SECTION 9 – WASTEWATER TREATMENT PLANT DECOMMISSIONING

ADD paragraph to Section 9.03 Permitting requirements

Subsequent to the completion of the BODR, the design team and City staff met with the State to discuss the process required to decommission the existing WWTP and learned that the State does not have a standardized process, forms, or submittal package requirements for wastewater plant closures. The process for coordinating the plant closure with the State, which will involve submitting a plant closure proposal to the State for review. This may be an iterative process since there are no set requirements.

The Plant Closure Proposal will be a standalone document detailing a step-by-step plan for cleanup and removal of the treatment plant entities. Due to the many unknowns, the State recommends a flow chart/decision tree style plan, especially when it comes to testing. The plan will likely start with discussing Malone Lift Station and what will happen at that site (demo existing lift station and reuse the site for new pump station), then work through each components between Malone and the infiltration basins, discuss how

everything will be cleaned, disposed of and/or left in place once cleaned. The proposal needs to include some type of odor control plan.

ADD Section 9.04 Communication and Control of Feeder Lift Stations

“The WWTP is currently fed only by a pumped force main system with no direct gravity flow piping. Therefore, all gravity sewer piping is served by pump stations that must be monitored continuously for proper operation to avoid sewage spills on public and private properties throughout the City. These lift stations alert City staff of a problem either by radio communication with the existing WWTP, or by a telephone dialing system.

There are currently five (5) lift stations:

- Malone Lift Station has radio to the WWTP
- Spruce Lift Station (Park Place) has radio to the WWTP
- Sunrise Lift Station (Wheatland Ranch) has radio to the WWTP
- Forest Glen Lift Station is not connected to the WWTP
- C Street Lift Station is not connected to the WWTP
- And in addition, a new Caliterra Lift Station which was recently constructed.

The Regional Sewer Project will replace the Malone List Station with (new) Pump Station 1 (PS1), which will then receive all existing City sewage flow and pump it to (new) Pump Station 2. It and the other Regional Sewer Facilities will communicate via public cellular wireless networks to a central Supervisory Control and Data Acquisition (SCADA) system located at PS2.

After the Regional Project is on-line City Staff will monitor all sewer systems from the SCADA system at PS2, and remotely by secure internet access.

In the future, City staff intends to integrate the Sewer System SCADA with their Water System SCADA, which is currently monitored at the existing City Corp Yard location, and install City owned dedicated radio communication in lieu of public cellular communications. With integrated servers at two locations City staff will have a redundant server system that is accessible from both PS2 and the Corp Yard, and via secure internet connection.

Therefore, as part of the Regional Sewer Project, each of the four (4) existing lift stations, other than Malone and Caliterra Lift Stations, will have new control/communication pedestals installed, which will be similar to the one at OPUD PS21; as well as new pump controls and sensors as necessary to reliably interface via cellular communication with the new Regional Sewer System. They, as well as the other Regional Sewer Facilities will be configured so that they can be converted to a City owned dedicated radio system in the future.”

SECTION 10 – ENGINEER’S OPINION OF PROBABLE CONSTRUCTION COST

REPLACE 10.03 Summary Cost Estimate Opinion of Probable Cost 90% Design table (p. 65) with the following:

<u>Pipeline and Pump Stations Construction</u>	
Force Main - Segment 1	\$4,981,000
Force Main - Segment 2	\$8,320,000
Force Main - Segment 3	\$11,838,000
Pump Station 1	\$6,000,000
Pump Station 2	\$18,000,000
Pump Station 3	\$3,500,000
Pump Station OPUD 21	Note 2
Water Main Extension with Booster Pump	\$1,900,000
Subtotal Const. Pipeline & Pump Station	\$54,539,000
<u>WWTP Decommissioning Construction</u>	
Estimated Construction Costs & Testing	\$3,000,000
<u>Engineering and Administration Costs</u>	
Engineering Design	\$3,217,000
Land Acquisition and ROW Clearance	\$279,500
Project Administration	\$600,000
Environmental	\$505,000
Construction Management, Inspection, Materials Testing	\$4,000,000
Subtotal Pipeline Engineering and Admin.	\$8,601,500
TOTAL WHEATLAND PROJECT	\$66,140,500

Notes:

1. See Appendix 3 for project cost details.
2. OPUD PS21 construction cost included in OPUD estimates.
3. Rancho Road force main (downstream of PS3) is included in OPUD estimates.

ADD Section 10. 04 Update to Construction Cost Estimate

After the completion of the BODR in April 2021, several factors have contributed to the rise of construction costs for this project. First, construction costs in general have risen sharply over the past several years during the pandemic due to a variety of factors including significant reductions in availability of materials, global reductions in manufacturing output, higher transportation costs and a shortage of available labor. Recent bids for similar projects have come in at 200% or more of the design level estimates..

Secondly, the scope of the project has expanded. As discussed in the previous sections of this amendment, items added to the Project include the addition of very large equalization tanks, improvements to PS 21, longer and deeper horizontal directional drilling (HDD) under Dry Creek and Best slough, additional SCADA controls of existing pump stations in the collection system, photovoltaic power generation and other items.

The project also has additional permitting than originally anticipated, including CVFPB approval for Dry Creek, Section 408 for Best Slough, PG&E power transmission line relocations, and extended permitting with UPRR and the additional permitting required for the decommissioning of the Wastewater Treatment Plant, including the required 401 streambed alteration permit.

APPENDICES

APPENDIX 1 – SYSTEM OVERVIEW AND PIPELINE ROUTE

Update: Refer to the 90% plan package provided to the City of Wheatland in June 2022 for the latest information regarding pipeline alignment and route.

APPENDIX 2 – PIPELINE AND PUMP STATION FLOW SCHEMATICS

APPENDIX 3 – COST ESTIMATES

Updated Cost Estimates are attached to this memo to update Appendix 3.

APPENDIX 4 – HDPE PIPE DIMENSIONS

No update required.

APPENDIX 5 – PUMP STATION DRAWINGS

Update: Refer to the 90% plan package provided to the City of Wheatland in June 2022 for the latest information regarding pipeline alignment and route.

Engineer's Estimate of Probable Construction Cost

City of Wheatland

Wheatland Regional Sewer Pipeline Project

90-Percent Design Submittal

Date: 22-Sep-22

By: HLP

OK'd: LML/DHS

Item No.	Item Description		Item Total
1	Pipeline Construction Costs		\$27,134,000
	12" Forcemain - Segment 1	\$5,001,000	
	18" Forcemain - Segment 2	\$8,351,000	
	18" Forcemain - Segment 3	\$11,882,000	
	Watermain extension and booster pump	\$1,900,000	
2	Pump Station Construction Costs		\$28,600,000
	Pump Station No. 1	\$6,000,000	
	Pump Station No. 2	\$18,000,000	
	Pump Station No. 3	\$4,100,000	
	OPUD Pump Station No. 21	\$500,000	
	Subtotal		\$55,734,000
	Inflation to Midpoint of Construction	12%	\$6,689,000
	Total Cost (Rounded)		\$62,423,000



Engineer's Estimate of Probable Cost - Pump Station 1 Cost Estimate
 City of Wheatland
 Wheatland Regional Sewer Pipeline Project
 90-Percent Design Submittal

Date: 22-Sep-22
 By: AO
 OK'd: JD

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Bonds and Insurance	1	EA	\$72,600	\$72,600
2	Mobilization	1	EA	\$146,300	\$146,300
3	Stormwater Pollution Protection Plan (SWPPP) Implementation	1	EA	\$22,000	\$22,000
4	Dewatering	1	LS	\$110,000	\$110,000
5	Excavation	7,000	CY	\$18	\$123,200
6	Export Material	1,266	CY	\$11	\$13,926
7	Import Material	2,110	CY	\$43	\$90,841
8	Landscaping	1	LS	\$15,070	\$15,070
9	Sheet Piling	270	LF	\$1,195	\$322,542
10	Shoring	355	LF	\$131	\$46,586
11	AC/AB Pavement, 4" on 8" replacement	18,975	SF	\$13	\$245,069
12	CMU Retaining Wall	40	CY	\$1,206	\$48,224
13	Fencing	525	LF	\$110	\$57,750
14	Gate	1	LS	\$15,601	\$15,601
15	PG&E Pole Relocation	3	EA	\$110,000	\$330,000
16	PG&E Service	1	LS	\$55,000	\$55,000
17	300 KW Generator	1	EA	\$165,000	\$165,000
18	Electrical Install	1	LS	\$823,724	\$823,724
19	100% Epoxy Coating of Splitter Box Wall	4,828	SF	\$48	\$233,675
20	2" Ball Valve	6	EA	\$72	\$429
21	5-FT Dia Manhole - Base, Barrell, & Top with 24" MH lids	6	EA	\$16,559	\$99,356
22	Access Hatches	5	EA	\$10,149	\$50,743
23	Air Release Valve	1	EA	\$3,130	\$3,130
24	Structural Backfill	3,000	CY	\$43	\$128,700
25	Calcium Nitrate Feed System	1	EA	\$2,200	\$2,200
26	Carbon Scrubber	1	LS	\$170,500	\$170,500
27	Control Building	1	LS	\$275,000	\$275,000
28	Crushed Rock and Filter Fabric	63	CY	\$121	\$7,623
29	ELB, DI, 22.5 Degree, 12-in	1	EA	\$2,516	\$2,516
30	ELB, DI, 45 Degree, 12-in	4	EA	\$2,324	\$9,297
31	ELB, DI, 45 Degree, 8-in	3	EA	\$1,051	\$3,152
32	ELB, DI, 90 Degree, 12-in	1	EA	\$2,421	\$2,421
33	ELB, DI, 90 Degree, 8-in	3	EA	\$6,050	\$18,150

34	Eyewash/shower	1	EA	\$1,440	\$1,440
35	Flex Coupling, 10in	1	EA	\$1,565	\$1,565
36	Flex Coupling, 12in	1	EA	\$2,010	\$2,010
37	Flex Coupling, 14in	1	EA	\$2,129	\$2,129
38	Flex Coupling, 8in	3	EA	\$1,395	\$4,184
39	Flow Meter	1	EA	\$15,105	\$15,105
40	FRP Storage Tanks	2	EA	\$101,640	\$203,280
41	HVAC System Install and Startup	1	EA	\$27,036	\$27,036
42	Hydrotank	1	LS	\$38,500	\$38,500
43	Painting	1	LS	\$11,000	\$11,000
44	Pipe, C900, 12"	221	LF	\$373	\$82,411
45	Pipe, Ductile Iron, 10"	15	LF	\$152	\$2,277
46	Pipe, Ductile Iron, 12"	48	LF	\$172	\$8,237
47	Pipe, HDPE, 12"	27	LF	\$106	\$2,851
48	Pipe, PVC, 12"	355	LF	\$101	\$35,926
49	Pipe, PVC, 14"	65	LF	\$114	\$7,436
50	Pipe, PVC, 8"	96	LF	\$41	\$3,907
51	Pressure Gauge	3	EA	\$740	\$2,221
52	Pump Station Pipe Supports	13	EA	\$1,011	\$13,142
53	Pumps and Supports	3	EA	\$100,936	\$302,808
54	Sampler	1	LS	\$11,000	\$11,000
55	Concrete	357	CY	\$1,217	\$434,499
56	Slide Gate, AL, 14" X 14"	1	EA	\$7,809	\$7,809
57	TEE, 12" x 12" x 8"	1	EA	\$2,698	\$2,698
58	Valve, AWWA Flanged Butterfly, 12in	1	EA	\$3,564	\$3,564
59	Valve, Gate (w/ handwheel), 12in	1	EA	\$3,275	\$3,275
60	Valve, Plug, 10in	2	EA	\$3,929	\$7,858
61	Valve, Plug, 12in	2	EA	\$6,035	\$12,069
62	Valve, Plug, 6in	1	EA	\$1,892	\$1,892
63	Valve, Plug, 8in	4	EA	\$2,990	\$11,959
64	Valve, Swing check w/ lever, 4in	3	EA	\$2,041	\$6,122
65	Wye 12" X 12" x 8"	4	EA	\$3,902	\$15,607
66	Wye 12"x12"x12"	3	EA	\$3,902	\$11,705
67	Bypass Piping / Tie Ins/ Pumping	1	LS	\$110,000	\$110,000
68	Demolition	1	LS	\$82,500	\$82,500

Subtotal		\$5,200,347
Contingency	15%	\$780,052
Total Cost (Rounded)		\$6,000,000



Engineer's Estimate of Probable Cost - Pump Station 2 Cost Estimate

City of Wheatland
Wheatland Regional Sewer Pipeline Project
90-Percent Design Submittal

Date: 22-Sep-22

By: AO

OK'd: JD

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Bonds and Insurance	1	LS	\$223,618	\$223,618
2	Mobilization	1	LS	\$447,236	\$447,236
3	Stormwater Pollution Protection Plan (SWPPP) Implementation	1	LS	\$33,000	\$33,000
4	Excavation	5,846	CY	\$44	\$257,224
5	Embankment	10,924	CY	\$18	\$192,262
6	Import Material	9,758	CY	\$43	\$418,618
7	Landscaping	1	LS	\$160,609	\$160,609
8	AB Import	4,320	CY	\$138.60	\$598,752
9	AC/AB Pavement, 4' on 8" replacement	127,840	SF	\$12.92	\$1,651,100
10	CMU Retaining Wall	332	CY	\$1,206	\$400,259
11	Fencing	949	LF	\$110.00	\$104,390
12	Gate	1	EA	\$15,601.30	\$15,601
13	Electrical Install	1	LS	\$2,490,092	\$2,490,092
14	PG&E Service	1	LS	\$165,000	\$165,000
15	650 KW Generator	1	EA	\$330,000	\$330,000
16	100% Epoxy Coating	17,537	SF	\$48	\$848,791
17	5-FT Dia Manhole - Base, Barrell, & Top with 24" MH lids	7	EA	\$16,559	\$115,916
18	Biofilter	2	LS	\$102,754	\$205,508
19	Carbon Scrubber	1	LS	\$19,360	\$19,360
20	Cruashed Rock and Filter Fabric	88	CY	\$121	\$10,648
21	Custom Access Hatches	11	EA	\$10,079	\$110,872
22	ELB, DI, 45 Degree, 12-in	1	EA	\$6,050	\$6,050
23	ELB, DI, 45 Degree, 12-in	6	EA	\$6,050	\$36,300
24	ELB, DI, 45 Degree, 18-in	3	EA	\$6,227	\$18,681
25	ELB, DI, 90 Degree, 18-in	2	EA	\$7,915	\$15,829
26	ELB, DI, 90 Degree, 8-in	15	EA	\$1,051	\$15,758
27	Electrical Building	1	LS	\$357,500	\$357,500
28	Equalization Tanks	2	EA	\$710,325	\$1,420,650
29	Eyewash/shower	1	EA	\$1,440	\$1,440
30	Flex Coupling, 12in	1	EA	\$2,010	\$2,010
31	Flex Coupling, 8in	6	EA	\$1,395	\$8,369
32	Flow Meter, 12"	1	EA	\$16,851	\$16,851
33	FRP Storage Tank	2	EA	\$101,640	\$203,280

34	High Pressure Water Booster Pumps	3	EA	\$38,866	\$116,599
35	HVAC System Install and Startup	2	EA	\$27,036	\$54,072
36	Laboratory Building	1	LS	\$236,500	\$236,500
37	Maintenance Garage Building	1	LS	\$470,800	\$470,800
38	Motorized Plug Valve	2	EA	\$9,196	\$18,392
39	Painting	1	LS	\$22,000	\$22,000
40	Pipe Supports	10	EA	\$1,011	\$10,109
41	Pipe, C900, 12"	20	LF	\$89	\$1,782
42	Pipe, Ductile Iron, 12"	158	LF	\$343	\$54,127
43	Pipe, Ductile Iron, 18"	8	LF	\$243	\$1,945
44	Pipe, Ductile Iron, 4"	216	LF	\$177	\$38,192
45	Pipe, Ductile Iron, 6"	190	LF	\$227	\$43,043
46	Pipe, Ductile Iron, 8"	44	LF	\$269	\$11,852
47	Pipe, PVC, 12"	248	LF	\$373	\$92,496
48	Pipe, PVC, 18"	862	LF	\$483	\$416,755
49	Pipe, PVC, 4"	1,652	LF	\$177	\$292,096
50	Pipe, PVC, 4"	328	LF	\$177	\$57,995
51	Pipe, PVC, 8"	156	LF	\$41	\$6,349
52	Pipe, PVC, SDR 26, 21"	716	LF	\$601	\$430,237
53	Pump and Supports	6	EA	\$114,686	\$688,116
54	RED, 18" x 12"	2	EA	\$3,788	\$7,577
55	Sewage Combination Air Valve, 2"	1	EA	\$3,130	\$3,130
56	Concrete	1,010	CY	\$1,160	\$1,171,505
57	Slide Gate, AL, 21" X 21"	2	EA	\$9,958	\$19,917
58	Tank Cleaning Nozzle and Lance	2	EA	\$10,284	\$20,568
59	TEE, 12" x 12" x 8"	1	EA	\$2,698	\$2,698
60	TEE, DI, 8-in	4	EA	\$1,660	\$6,640
61	Vactor Receiving Station	1	LS	\$198,000	\$198,000
62	Valve, Plug, 12in	2	EA	\$6,035	\$12,069
63	Valve, Plug, 18in	1	EA	\$15,683	\$15,683
64	Valve, Plug, 6in	1	EA	\$1,892	\$1,892
65	Valve, Plug, 8in	8	EA	\$2,990	\$23,918
66	Valve, Swing check w/ lever, 8in	6	EA	\$3,902	\$23,410
67	Wye 12"x12"x12"	1	EA	\$3,913	\$3,913
68	Wye, 12" x 12" x 18"	1	EA	\$3,913	\$3,913
69	Wye, DI, 18-in	1	EA	\$11,887	\$11,887
70	Chemical Dosing Pump	1	LS	\$4,367	\$4,367
71	Chemical Metering System	1	LS	\$8,800	\$8,800
72	Plant Water Booster Pumps	2	EA	\$13,888	\$27,776
73	Well and storage tank	1	LS	\$77,000	\$77,000

Subtotal		\$15,609,690
Contingency	15%	\$2,341,453
Total Cost (Rounded)		\$18,000,000



Engineer's Estimate of Probable Cost - Pump Station 3 Cost Estimate

City of Wheatland
Wheatland Regional Sewer Pipeline Project
90-Percent Design Submittal

Date: 22-Sep-22

By: AO

OK'd: JD

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total	
1	Bonds and Insurance	1	LS	\$41,800	\$41,800	
2	Mobilization	1	LS	\$82,500	\$82,500	
3	Stormwater Pollution Protection Plan (SWPPP) Implementation	1	LS	\$33,000	\$33,000	
4	AB Import	4,700	CY	\$43	\$202,044	
5	Landscaping	1	LS	\$17,727	\$17,727	
6	AC/AB Pavement, 4" on 8" replacement	25,800	SF	\$13	\$340,560	
7	Gate	2	EA	\$15,601	\$31,203	
8	Fencing	678	LF	\$110	\$74,360	
9	Electrical Install	1	LS	\$460,042	\$460,042	
10	PG&E Service	1	LS	\$55,000	\$55,000	
11	100 KW Generator	1	EA	\$110,000	\$110,000	
12	100% Epoxy Coating	75	SF	\$49	\$3,670	
13	5-FT Dia Manhole - Base, Barrell, & Top with 24" MH lids	1	EA	\$16,559	\$16,559	
14	Carbon Scrubber	1	LS	\$18,810	\$18,810	
15	Control Building	1	LS	\$253,000	\$253,000	
16	Custom Access Hatch	1	EA	\$10,079	\$10,079	
17	ELB, DI, 45 Degree, 18-in	1	EA	\$6,227	\$6,227	
18	ELB, DI, 45 Degree, 18-in	2	EA	\$6,050	\$12,100	
19	ELB, DI, 90 Degree, 10-in	3	EA	\$1,851	\$5,554	
20	ELB, DI, 90 Degree, 18-in	7	EA	\$7,815	\$55,402	
21	Flex Coupling, 6in	4	EA	\$942	\$3,768	
22	Flow Meter, 18"	1	EA	\$27,500	\$27,500	
23	Hydrotank	1	LS	\$121,000	\$121,000	
24	Motorized Plug Valve	2	EA	\$9,196	\$18,392	
25	Painting	1	LS	\$5,500	\$5,500	
26	Pipe Supports	8	EA	\$1,011	\$8,087	
27	Pipe, Ductile Iron, 10"	12	LF	\$152	\$1,825	
28	Pipe, Ductile Iron, 18"	140	LF	\$243	\$33,972	
29	Pipe, PVC, 18"	286	LF	\$601	\$171,854	
30	Pipe, PVC, 24"	50	LF	\$601	\$30,044	
31	Pipe, PVC, 6"	175	LF	\$256	\$44,721	
32	Pump Station Building	1	LS	\$466,400	\$466,400	
33	Sewage Combination Air Valve, 2"	2	EA	\$3,130	\$6,259	
34	Concrete	67	CY	\$772	\$51,700	
35	TEE, 18" x 18" x 12"	2	EA	\$4,990	\$9,979	
36	Valve, Plug, 18in	10	EA	\$15,683	\$156,827	
36	Photovoltaic	1	LS	\$550,000	\$550,000	
					Subtotal	\$3,537,464
				Contingency	15%	\$530,620
					Total Cost (Rounded)	\$4,100,000



Engineer's Estimate of Probable Cost - OPUD Pump Station 21 Cost Estimate

City of Wheatland
Wheatland Regional Sewer Pipeline Project
90-Percent Design Submittal

Date: 22-Sep-22
By: AO
OK'd: JD

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Bonds and Insurance	1	LS	\$6,600	\$6,600
2	Mobilization	1	LS	\$13,200	\$13,200
3	AC/AB Pavement, 4" on 8" replacement	3008	SF	\$13	\$38,849
4	Gate	1	EA	\$15,601	\$15,601
5	Fencing	158	LF	\$110	\$17,380
6	Electrical Install	1	LS	\$63,052	\$63,052
7	ELB, DI, 45 Degree, 18-in	2	EA	\$6,050	\$12,100
8	ELB, DI, 90 Degree, 18-in	3	EA	\$7,915	\$23,744
9	Hydrotank	1	LS	\$121,000	\$121,000
10	Motorized Plug Valve	1	EA	\$9,196	\$9,196
11	Pipe Supports	6	EA	\$1,011	\$6,065
12	Pipe, Ductile Iron, 18"	37	LF	\$243	\$8,978
13	Pipe, Ductile Iron, 8"	8	LF	\$269	\$2,155
14	Sampler	1	LS	\$11,000	\$11,000
15	Sewage Combination Air Valve, 2"	1	EA	\$3,130	\$3,130
16	Concrete	3	CY	\$772	\$2,315
17	Valve, Plug, 18in	1	EA	\$15,683	\$15,683
18	Valve, Plug, 8in	1	EA	\$2,990	\$2,990
				Subtotal	\$373,038
				Contingency	15% \$55,956
				Total Cost (Rounded)	\$500,000

Engineer's Estimate of Probable Cost - Pipeline Cost Estimate

City of Wheatland
Wheatland Regional Sewer Pipeline Project
90-Percent Design Submittal

Date: 22-Sep-22
By: HLP
OK'd: LML/ DHS

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization (5% of Construction Costs)	1	LS	\$1,124,000.00	\$1,124,000.00
2	Traffic Control	1	LS	\$720,000.00	\$720,000.00
3	Dewatering	1	LS	\$171,800.00	\$171,800.00
4	Stormwater Pollution Prevention	1	LS	\$265,000.00	\$265,000.00
5	Sheeting, Shoring, and Bracing (5% of Forcemain Costs)	1	LS	\$618,000.00	\$618,000.00
6	Force Main - DR 17 HDPE				
6.a	Force Main - 12" DR17 HDPE*	8,900	LF	\$330.00	\$2,937,000.00
6.b	Force Main - 18" DR 17 HDPE* in paved road	11,900	LF	\$390.00	\$4,522,000.00
6.c	Force Main - 18" DR 17 HDPE* in unpaved area (see item 14 for access road)	17,500	LF	\$280.00	\$4,900,000.00
7	12" Force Main Air/Vac Valve Installations	4	EA	\$22,000.00	\$88,000.00
8	18" Force Main Air/Vac Valve Installations	19	EA	\$22,000.00	\$418,000.00
9	12" Force Main Emergency Shutoff Valve and Flushing Point	8	EA	\$24,000.00	\$192,000.00
10	18" Force Main Emergency Shutoff Valve and Flushing Point	22	EA	\$26,100.00	\$574,200.00
11	Bore and Jack Crossing - DR17 HDPE w/ Steel Casing per Plan				
11.a	Force Main Segment 1-Highway 65 Crossing (approx. 110 LF)	110	LF	\$1,600.00	\$176,000.00
11.b	Force Main Segment 1-Railroad Crossing (approx. 110 LF)	110	LF	\$1,600.00	\$176,000.00
11.c	Force Main Segment 3-Canal Crossing (approx. 150 LF)	150	LF	\$1,600.00	\$240,000.00
11.d	Force Main Segment 3-Railroad Spur Crossing #1 (approx. 220 LF)	220	LF	\$1,600.00	\$352,000.00
11.e	Force Main Segment 3-Railroad Spur Crossing #2 (approx. 250 LF)	250	LF	\$1,600.00	\$400,000.00
11.f	Force Main Segment 3-Railroad and Rancho Road Crossing (approx. 300 LF)	300	LF	\$1,600.00	\$480,000.00
12	Horizontal Directional Drilling - DR11 HDPE				
12.a	Force Main Segment 2-Dry Creek Crossing (approx 1450 LF)	1	LS	\$1,300,000.00	\$1,300,000.00
12.b	Force Main Segment 3-Best Slough Crossing (approx 500 LF)	1	LS	\$630,000.00	\$630,000.00
13	Culvert Replacement (Stale Street)	1	LS	\$79,000.00	\$79,000.00
14	All Weather Access Road	213,000	SF	\$4.00	\$852,000.00
15	Tree Removal				
15.a	Up to 36" Tree Removal	200	EA	\$2,000.00	\$400,000.00
15.b	36" and Over Tree Removal	2	EA	\$10,000.00	\$20,000.00
16	Construction Staking	1	LS	\$308,000.00	\$308,000.00
17	Water main extension and Booster Pump				
17.a	Water main extension*	4,700	LF	\$250.00	\$1,175,000.00
17.b	Booster Pump	1	EA	\$477,000.00	\$477,000.00

Subtotal		\$23,595,000
Contingency	15%	\$3,539,250
Total Cost (Rounded)		\$27,134,000

* This item includes Labor, Excavation, Backfill and Paving