

Headworks Rehabilitation at Plant No. 1, Project No. P1-105

Presented by:
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Contingency Increase

Operations Committee
April 2, 2025



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Plant No. 1 Headworks Facilities



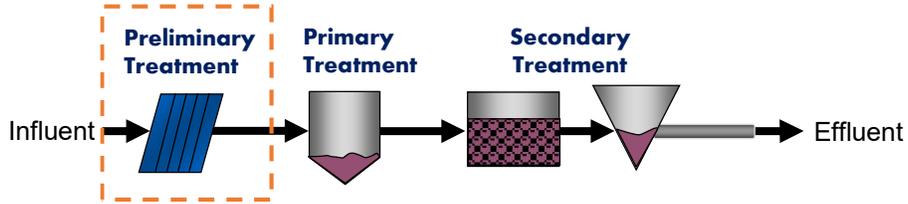
30 years in service



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Preliminary Treatment (Headworks) Protects Subsequent Treatment Process



Bar Screen



Grit waste

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Biggest Construction Contract: \$222M

An aerial photograph of a wastewater treatment plant under construction. The site is filled with various buildings, tanks, and construction equipment. Labels with callout boxes identify different parts of the facility: Electrical Room, Chemicals, Grit Pump Station, Odor Control, Standby Power, Power Building, Metering and Diversion, Bar Screens, Main Sewage Pumps, Grit Basins, and Grit Handling Building. A legend in the bottom left corner indicates that blue boxes represent 'Rehab Existing' and orange boxes represent 'New Facility'. A text box in the top right corner provides the schedule: 'Schedule: 65% Complete', 'Notice to Proceed: May 3, 2021', and 'Final Completion: End of 2028 (Anticipated)'.

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Recent Construction Progress



Headworks Odor Control Scrubbers



Ferric Chloride Facility



Standby Power Building



Slide Gates in Influent Pump Station



Odor Control and Chemical Facility



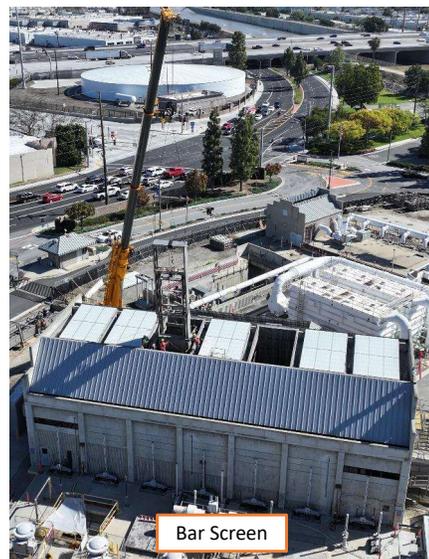
Power Building No. 3

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Construction Complexities

- Must maintain facilities during construction
- Work must be performed in prescribed sequence
 - Dry weather only activities (Apr 15 to Oct 15)
- Major shutdowns
- Flow diversions required
- Rehab work involves unknown conditions
- Extensive confined space entry work



Bar Screen

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Bid Results – January 19, 2021

Bidder	Amount of Bid
Engineer's Estimate	\$292,299,000
★ Kiewit Infrastructure West Co.	\$222,330,000
J.F. Shea Construction, Inc.	\$259,506,000
Shimmick Construction Co., Inc.	\$276,611,500

At the time of the construction contract award (March 2021) staff proposed a lower than usual contingency (4%) for a rehabilitation project and planned to present a mid-construction review to the Board, highlighting the progress and risks encountered to date.

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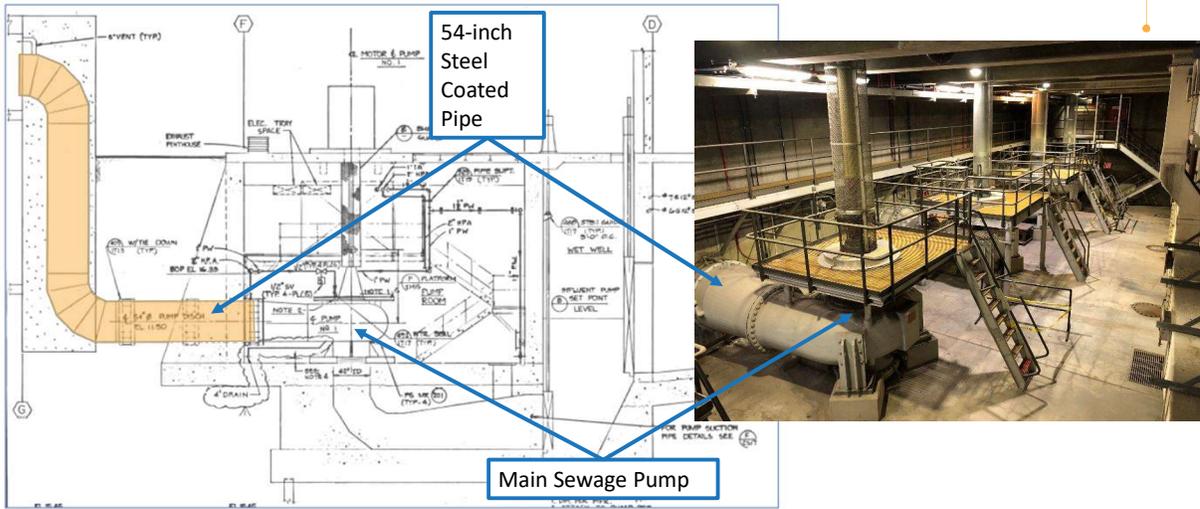
Summary of Major Changes to Date

Change	Amount (\$)	Percentage (%)
1. Rehabilitation of five main sewage pumps 54-inch discharge pipes	\$2,000,000	0.9%
2. Power Building No. 3 electrical equipment changes	\$1,500,000	0.7%
3. Additional temporary bypass systems	\$770,000	0.3%
4. Additional polyvinyl chloride (PVC) liner repairs	\$750,000	0.3%
5. Unknown utilities and additional demolition	\$320,000	0.1%
Total Major Changes	\$5,340,000	2.4%
Approved Construction Contingency - March 2021	\$8,893,200	4.0%

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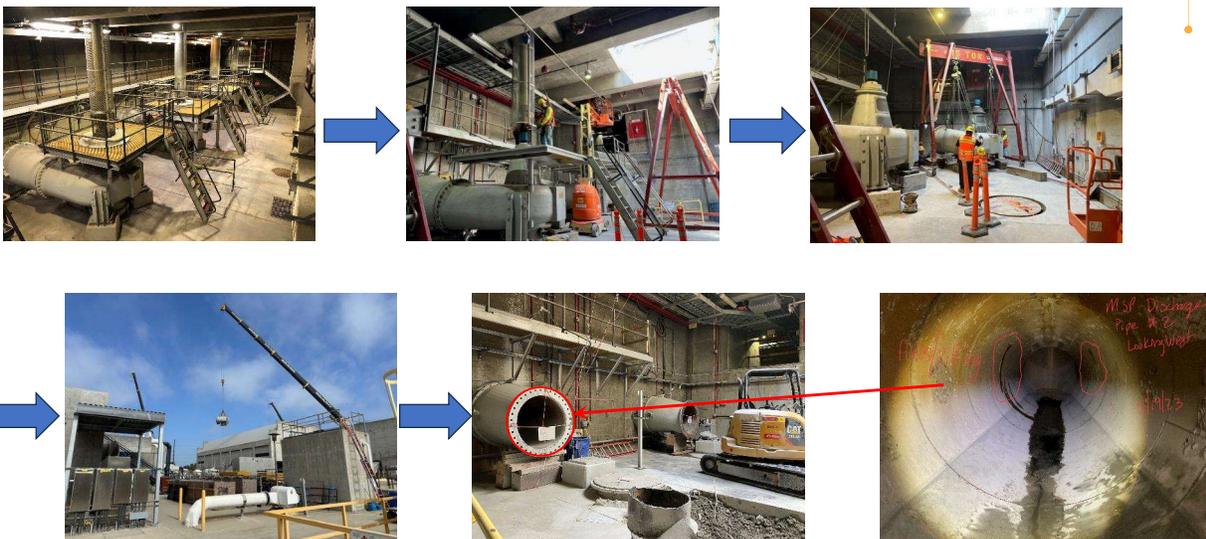
1. Main Sewage Pumps 54-in Discharge Pipes



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1. Main Sewage Pumps 54-in Discharge Pipes



Holes discovered in existing 54-inch steel pipe (3/4-inch pipe wall thickness)



Extensive corrosion and pipe wall loss in existing 54-inch steel pipe

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1. Main Sewage Pumps 54-in Discharge Pipes



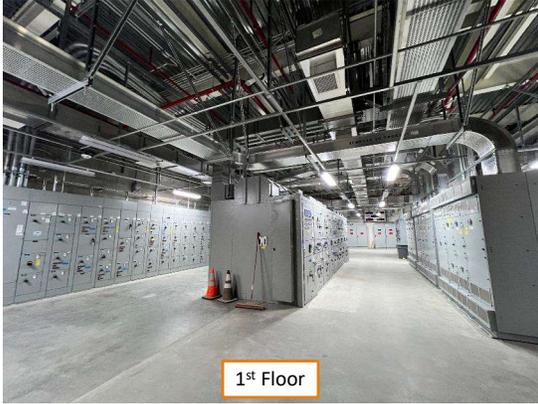
Full structural rehabilitation – Carbon fiber and fiberglass reinforced plastic with protective coating

Cost: \$2,000,000

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2. Power Bldg No. 3 Electrical Equipment Changes

1st Floor

Basement

Project includes approximately 25% electrical work = \$56,000,000

Cost: \$1,500,000

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3. Additional Temporary Bypass Systems



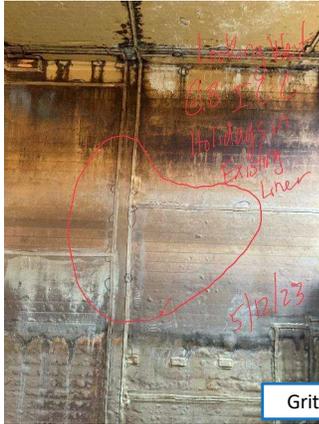
30 MGD bypass pump system for Influent Pump Station required to perform flow isolations and required redundancy

Cost: \$770,000

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4. Additional Polyvinyl Chloride (PVC) Liner Repairs



Grit Basins



Metering and Diversion

PVC liner repairs in-progress at Grit Basins and Metering and Diversion concrete box
Cost: \$750,000

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5. Unknown Utilities and Additional Demolition



Unknown pipes, concrete structures (manholes/vaults) and electrical ductbanks
Cost: \$320,000

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Remaining Work

Rehabilitation

1. Influent sewage pump station
2. Grit basins
3. Metering and Diversion structure
4. One primary influent channel

Construction and Commissioning

1. Power Building No. 3
2. Headworks electrical room
3. Headworks standby power building
4. Headworks odor control and chemical facilities
5. Grit pump station
6. Grit handling building



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Construction Contract Status

Construction Contract	Amount (\$)	Percentage (%)
Original Contract Amount	\$222,330,000	
Board Approved Contingency	\$8,893,200	4.0%
Known Changes to Date	\$8,351,499	3.8%
Remaining Contingency	\$541,701	0.2%
Requested Contingency Increase	\$8,893,200	4.0%

Anticipated Future Changes:

- Additional PVC repairs
- Additional rehabilitation repairs
- Pump bypass

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Recommendation

Recommend to the Board of Directors to:

Approve a contingency increase of \$8,893,200 (4%) to the existing Construction Contract with Kiewit Infrastructure West Co. for Headworks Rehabilitation at Plant No. 1, Project No. P1-105, for a new total contingency of \$17,786,400 (8%).



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Questions?

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