



City of Morro Bay  
Water Reclamation Facility Program

## QUARTERLY REPORT - ENDING MARCH 31, 2023

FY 2022-2023 – 3rd Quarter  
January 1 through March 31, 2023



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## EXECUTIVE SUMMARY

“Our Water” is the City of Morro Bay’s (City’s) program to plan and build water and wastewater infrastructure for a sustainable future for the environment, our economy, and the community. This report summarizes key accomplishments and challenges during the third quarter (Q3) of the 2022-23 fiscal year (FY 22/23). It includes information and data on the overall program budget and the status of the individual program components.

### ES.1 Progress During Q3 FY 22/23

The Water Resources Center (WRC) is approximately 97.6 percent complete, and Conveyance Facilities are approximately 99.4 percent complete. Substantial Completion was issued to the WRC design build contractor on January 15, 2023, and the City achieved compliance with the State’s Time Schedule Order (TSO) that required full operation of the WRC by February 28, 2023. Major construction on the Conveyance Facilities project was completed in Q3 and punch list coordination progressed. The Recycled Water Facilities (RWF) component of the program is approximately 12 percent complete and is anticipated to be completed by Spring 2025. The pilot injection well testing was completed on January 4, 2023. The major accomplishments are summarized below.

### ES.2 Budget Status

The current program budget is \$159.84 million and \$133.1 million has been spent to-date.

### ES.3 Key Q3 FY 22/23 Accomplishments

- The City took full occupancy of the WRC on January 1, 2023.
- The City met the February 28, 2023 TSO deadline.
- The City held a completion event for the WRC and Conveyance Facilities project on February 23, 2023 and introduced the public to the future of the Recycled Water component of Water Reclamation Facility (WRF) program.
- All roadway paving was completed for the Conveyance Facilities project.
- The pilot injection well extended period injection testing was completed on January 4, 2023.

### ES.4 Challenges and Upcoming Activities

Wet weather and flooding in various parts of the City were the biggest challenges the City experienced during this quarter. Consequently, the WRC experienced flows that met or exceeded the design capacity of the WRC, which allowed the City to operate the WRC at full capacity and test the treatment processes at the peak flow rates.

The WRC and Conveyance Facilities contractors continue to close out of the major construction projects and focus on completing punch list work items, with the goal of achieving final completion of the contracts in the fourth quarter (Q4).

There are no significant challenges on the RWF portion of the project. Upcoming activities include the development of the engineering report for the injection wells and the final groundwater modeling results of the proposed indirect potable reuse (IPR) system. GSI Water Solutions, Inc. (GSI) (hydrogeologist) is expected to submit a draft engineering report to the RWF program manager (Confluence Engineering Solutions) in Q4.



## Section 1

# PROGRAM MANAGEMENT SUMMARY

### 1.1 Purpose of the Quarterly Progress Report

The WRF program quarterly progress report describes current budget status, funding agency reimbursements, planning/design and construction activities, and project component schedules. Abbreviations used throughout this quarterly progress report are found in Appendix A.

### 1.2 Program Budget

Table 1 shows the current program budget.

Table 1 WRF Program Budget

Program Component	Baseline <sup>(1)</sup>	FY 2021/2022	FY 22/23 and Prior Quarter	Current Quarter <sup>(2)</sup>	Current % Change From Baseline
WRC Plant	\$62,414,000	\$77,687,023	\$79,643,216	\$79,643,216	28%
Conveyance Facilities	\$21,087,000	\$37,982,000	\$39,774,724	\$39,774,724	89%
RWF	\$8,593,000	\$6,668,000	\$9,424,174	\$9,424,174	10%
General Project	\$24,403,000	\$15,445,000	\$30,998,235	\$30,998,235	27%
Construction Contingency	\$9,444,000	\$6,892,854	Note 2	Note 2	N/A
<b>Total</b>	<b>\$125,941,000</b>	<b>\$144,674,877</b>	<b>\$159,840,349</b>	<b>\$159,840,349</b>	<b>27%</b>

Notes:

Abbreviations: FY- fiscal year.

(1) Baseline budget established Q4 of FY 2017/2018.

(2) The FY 22/23 budget adopted by City Council on June 28, 2022 was \$159,840,349. As of current Q3, FY 22/23, Construction and Overall Program Contingency in the FY 22/23 budget is included within each Program Component with remaining breakdowns as follows: WRC \$1,690,221, Conveyance \$0, RWF \$261,197, and General Project \$618,897. The contingencies were reported incorrectly in the Q2 FY 22/23 Report, however, were identified correctly in the November 22, 2022 City Council Meeting Staff Report for the WRF Project contract amendments.

Table 2 shows the initial and current contract values by project component.

Table 2 Project Component Contract History

Project Component	Contractor	Initial Contract Value	Current Contract Value	% Change
<b>WRC Plant</b>		<b>\$67,234,512</b>	<b>\$78,015,298</b>	<b>16%</b>
Design/Build	FBV (Overland)	\$67,234,512	\$78,015,298	16%
<b>Conveyance Facilities</b>		<b>\$33,321,277</b>	<b>\$39,893,315</b>	<b>20%</b>
Design	Waterworks Engineers	\$1,360,565	\$2,615,112	92%
Construction	Anvil Builders	\$31,493,675	\$34,968,314	11%

Project Component	Contractor	Initial Contract Value	Current Contract Value	% Change
Permitting	Cogstone, Far Western, KMA	\$467,037	\$2,309,889	395%
<b>RWF</b>		<b>\$752,832</b>	<b>\$1,584,020</b>	<b>110%</b>
Planning and Modeling	GSI, Cleath Harris	\$351,000	\$1,173,513	234%
Pilot Injection Well Construction	ABC Liovin, Pacific Coast Well Drilling	\$358,300	\$366,975	2%
Environmental Permitting	Rincon	\$43,532	\$43,532	0%
Injection Wells Construction	To Be Determined	--	--	--
<b>General Project</b>		<b>\$293,000</b>	<b>\$14,603,120</b>	<b>4,884%</b>
Program and Construction Management	Carollo <sup>(1)</sup>	\$293,000	\$13,508,401	4,510%
City Contracts	Note 2	Note 2	\$1,094,719	--
<b>Total</b>		<b>\$101,601,621</b>	<b>\$134,095,753</b>	<b>--</b>

Notes:

Abbreviations: Carollo - Carollo Engineers, Inc.; FBV - Filanc Black & Veatch; KMA - Kevin Merk Associates.

(1) Program management costs include permitting, public outreach, funding support, and construction oversight/management.

(2) Initial City Contract values for previous and/or inactive consultants (such as Michael K. Nunley and Associates, Black & Veatch, Environmental Science Associates, and Kestrel) are unknown. Current contract values are shown only for currently active consultants including Bartle Wells Associates, Confluence, and James S. Phillips Automation (JSP Automation).

### 1.3 Cashflow Projections and Actual Expenditures

Figure 1 shows cashflow projections and actual expenditures through the current period.

Table 3 lists actual expenditures for each program component and the percent of the budget expended.

Table 3 WRF Program Expenditures

Program Component	Previous Total	Current Quarter <sup>(1)</sup>	Total To Date	FY 22/23 and Current Quarter Budget <sup>(2)</sup>	Percent Budget Expended
WRC Plant	\$69,644,435	\$2,032,539	\$71,676,974	\$79,643,216	90%
Conveyance Facilities	\$36,506,755	\$1,233,801	\$37,740,557	\$39,774,724	95%
RWF	\$1,134,670	\$103,819	\$1,238,488	\$9,424,174	13%
General Project	\$21,503,477	\$988,896	\$22,492,373	\$30,998,235	73%
<b>Total</b>	<b>\$128,789,337</b>	<b>\$4,359,055</b>	<b>\$133,148,392</b>	<b>\$159,840,349</b>	<b>83%</b>

Notes:

(1) Q3 FY 22/23 total expenditures as tallied on the Accounts Payable Report run on April 27, 2023, which may not include all invoices paid through March 31, 2023 services (to be included with Q4 FY 22/23 report). See Appendix B Note 2 for additional details.

(2) The FY 22/23 budget adopted by City Council on June 28, 2022 was \$159,840,349.

## 1.4 Program Funding

Table 4 lists WRF program funding sources.

Table 4 WRF Program Funding Sources

Funding Agency	Funding Type	Amount Financed	Initiation Date	Terms
SWRCB – CWSRF Construction Loan	Low Interest Loan	\$66,604,638	7/1/2021	0.9%, 30 years
EPA – WIFIA	Low Interest Loan	\$61,700,336	3/9/2020	0.83%, 35 years
SWRCB – CWSRF Planning Loan	Low Interest Loan	\$10,300,000	12/11/2015	0.9%, 30 years
Recycled Water Planning Grant	Grant	\$75,000	9/10/2015	Costs reimbursed upon request
<b>Total</b>		<b>\$138,679,974</b>		

Notes:

Abbreviations: CWSRF - Clean Water State Revolving Fund; EPA - Environmental Protection Agency; SWRCB - State Water Resources Control Board; WIFIA - Water Infrastructure Finance and Innovation Act.

Appendix C provides detailed information on funding reimbursements.

## 1.5 Program Schedule Overview

In June 2018, the City received a TSO from the Regional Water Quality Control Board that required the City to achieve full operation of the new WRC by February 2023. The key milestones included in the TSO are included in Appendix D, and the overall program schedule is shown in Figure 2. The current construction progress percent complete to-date per contract spent is 97.6 percent for the WRC and 99.4 percent for Conveyance Facilities. Figure 2 shows percent complete as an average between contract spent and scheduled date of completion. The RWF currently shows a project progress of 12 percent which represents the completion of the pilot injection study.

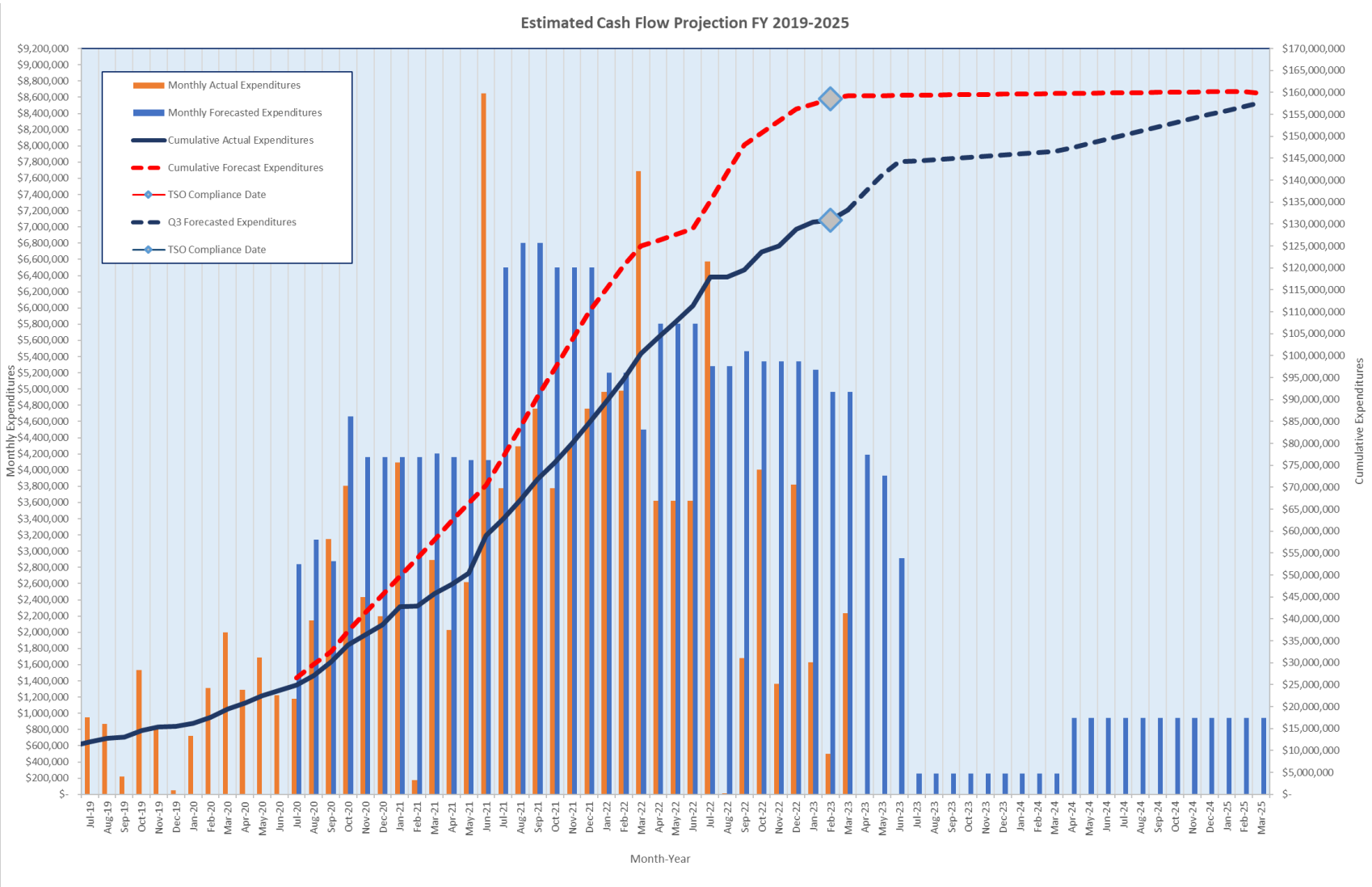


Figure 1 Program Cash Actual and Forecasted Expenditures



Morro Bay WRF Program  
 Program Wide Schedule Summary  
 Updated: FY22/23 Q3

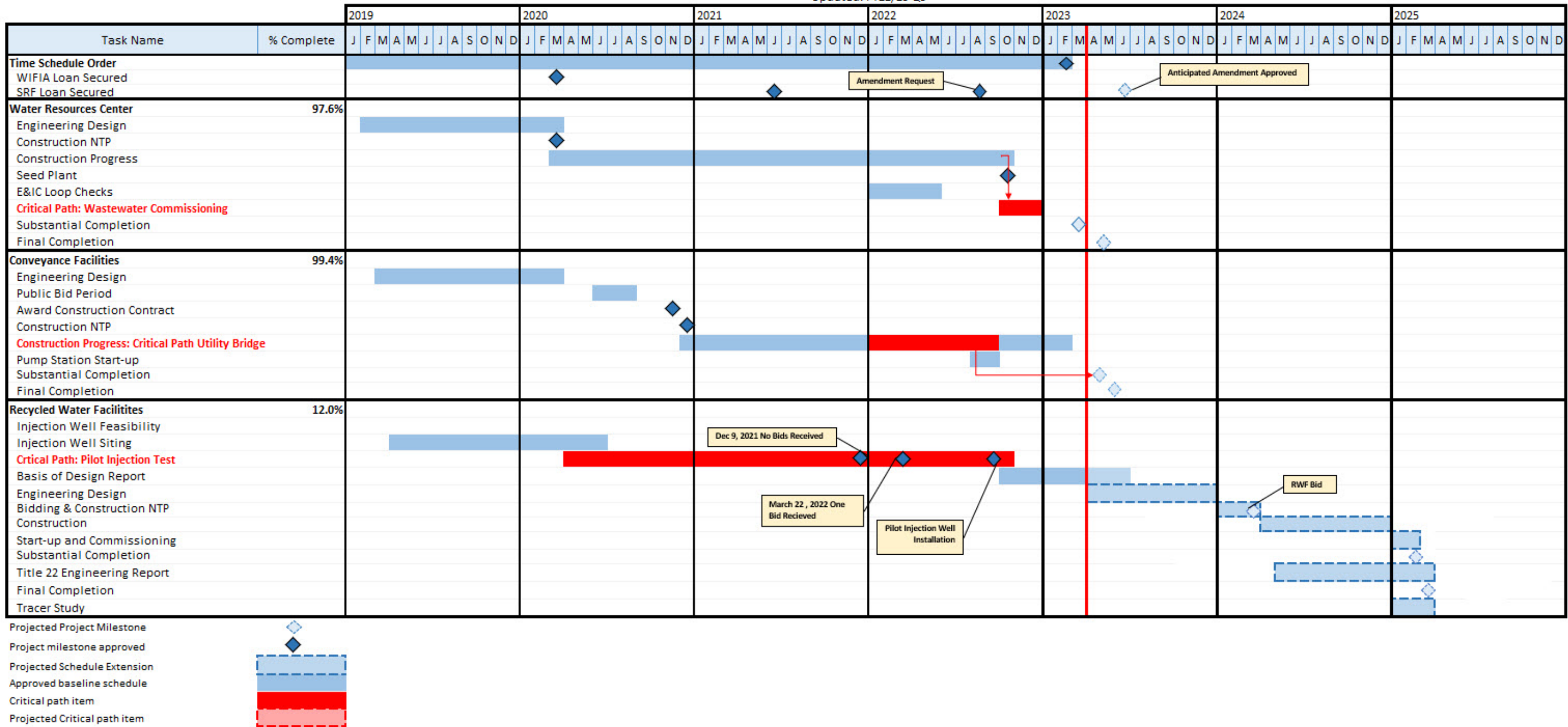


Figure 2 Program-Wide Summary Schedule



## Section 2

# WRC PROJECT

### 2.1 Construction Progress Summary

Major accomplishments during this period are summarized below:

#### *General and Administrative:*

- Milestone: The City completed the TSO milestone requirement of full operation of wastewater treatment facilities in compliance with the State National Pollutant Discharge Elimination System (NPDES) permit and other regulatory requirements.
- Contractor continues with the correction of punch list and warranty items.
- Contractor continues to maintain stormwater pollution prevention plan (SWPPP) best management practices (BMPs).
- Contractor continues to adhere to pertinent Mitigation Measures stipulations.
- Contractor/subcontractors continue to comply with Davis-Bacon Act requirements.
- Contractor has discontinued submitting critical path method schedule updates.
- The City hosted a completion event on February 23, 2023 for local and regional agencies and the public.
- The City experienced a long period of wet weather in December and January that caused operational challenges at the WRC. The City, with help from Carollo and the design build team, was able to work through these challenges to ensure treatment operations continued through the storm impacts.

#### *Sitework:*

- Completed.

#### *Headworks:*

- Completed and in service.

#### *Biological Nutrient Removal (BNR)/Membrane Bioreactor (MBR) Treatment:*

- Completed and in service.

#### *Reverse Osmosis (RO)/Ultraviolet (UV) Advanced Oxidation Process (AOP):*

- Facility is completed.
- RO and UV clean water and treated water testing was undertaken but not completed.
- RO and UV equipment are not commissioned as of the end of the reporting period. The design build team with Carollo oversight are expected to begin the UV commissioning and challenge testing in Q4.
- The City and the State Department of Drinking Water are in consultation regarding various issues.

#### *Purified Water Facilities:*

- Facilities are completed and tested with clean water (not commissioned).

#### *Residuals/Sludge Processing:*

- Completed and in service.

*Electrical and Controls:*

- Completed and in service.

*Chemical Storage and Feed:*

- Completed and in service.

*Operations Building:*

- Building is completed and occupied by City staff.

*Maintenance Building:*

- Building is completed and occupied by City staff.

*City Yard Facilities:*

- Buildings are completed and occupied by City staff.

## 2.2 Project Photographs

The following photos show progress during this period.



February 2023 – SWPPP BMPs at WRC Entrance in Preparation of Winter Storms



February 23, 2023 – Mayor Wixom Presenting at the Completion Event



February 23, 2023 – Completed IPR Pump Station





February 23, 2023 – Completed and Operational Headworks and Fine Screens

### 2.3 Contract Amendment Summary

Table 5 contains a summary of the contract amendments for the WRC project component. Each amendment included multiple change orders to address changes in scope from the original proposal. A detailed summary of each amendment is provided in Appendix E.

Table 5 WRC Project Contract Amendment Summary

Amendment No.	Council Approval Date	Amount
1	May 2019	\$1,636,060
2	March 2020	\$63,937
3	May 2020	\$5,992,218
4	November 2020	\$835,097
5	March 2021	\$(195,946)
6	September 2021	\$1,132,117
7	June 2022	\$0
Revised 7	August 2022	\$359,885
8	November 2022	\$957,418
<b>Total</b>		<b>\$10,780,786</b>

### 2.4 Project Schedule

Figure 3 shows the WRC construction and startup schedule.



Morro Bay WRF Program  
 Program Wide Schedule Summary  
 Updated: FY22/23 Q3

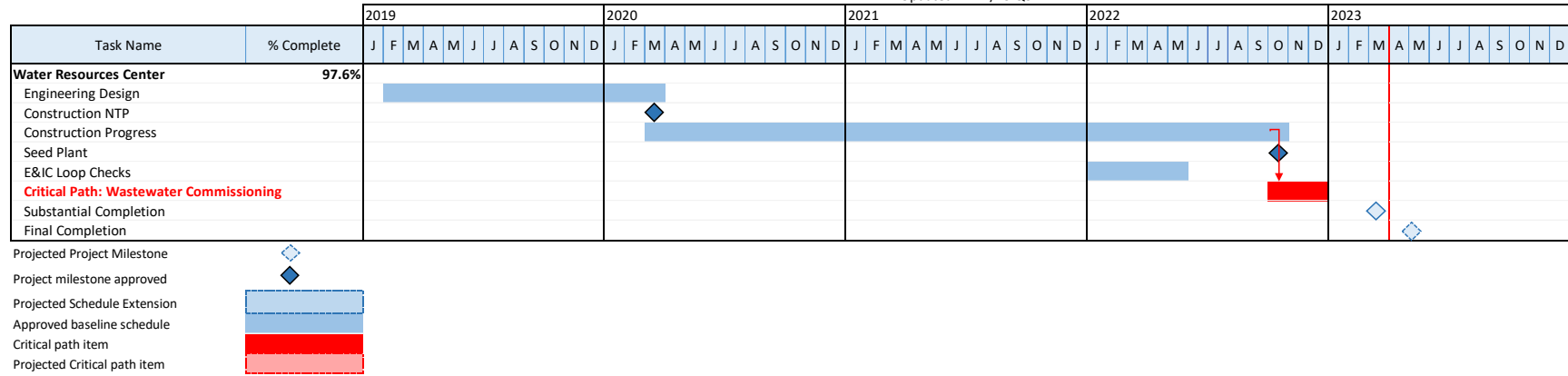


Figure 3 WRC Project Component Schedule



## Section 3

# CONVEYANCE FACILITIES PROJECT

### 3.1 Construction Progress Summary

Major accomplishments during this period are summarized below:

*General and Administrative:*

- Milestone: The City completed the TSO milestone requirement of full operation of the wastewater treatment facilities in compliance with the State NPDES permit and other regulatory requirements.
- Contractor continues with the correction of punch list and warranty items.
- Contractor continues to maintain SWPPP BMPs.
- Contractor continues to adhere to pertinent Mitigation Measures stipulations.
- Contractor/subcontractors continue to comply with Davis-Bacon Act requirements.
- No requests for public information were received during the reporting period.
- Contractor continues equipment operations and maintenance manual submittals.
- Contractor continues to submit 4-week look ahead schedules to identify punch list tasks scheduling as needed.
- The City experienced a long period of wet weather in December and January that caused damage to the bike path and required repairs of the bike path pavement subgrade and temporary fencing.

**Sanitary Sewer Pump Stations:**

*Pump Station A:*

- Pump Station facility is completed and in service.
- Sitework and fine grading were completed in this reporting period.
- Cleanup of the Pump Station A site was necessary after the January and February storm events.
- Permanent fencing was installed at site.

*Pump Station B:*

- Pump Station facility is completed and in service.
- Sitework and fine grading were completed in this reporting period.
- Permanent fencing was installed at site.

*Existing Lift Station 2:*

- Pump Station connection is completed and in service.

*Existing Lift Station 3:*

- Connection to existing Lift Station 3 was completed.

**Pipelines:**

*Segment 1 – Atascadero Road (Existing City Wastewater Treatment Plant to Bike Path):*

- Pipelines and other facilities in this segment are completed and in service.

*Segment 2 – Bike Path (Atascadero Road to Morro Creek Foot Bridge):*

- Pipelines and other facilities in this segment are completed and in service.
- The bike path grading and ground cover were damaged from the January storm event requiring the contractor to repair already completed work.
- Paving of bike path remains to be completed. Contractor to finalize bike path with painting and striping in Q4.

*Segment 3 – Bike Path (Morro Creek Foot Bridge to Main Street):*

- Pipelines and other facilities in this segment are completed and in service.
- The bike path grading and ground cover were damaged from the January storm event requiring the contractor to repair already completed work.
- The bike path has been paved. Contractor to finalize bike path with painting and striping in Q4.

*Segment 4 – Main Street (Bike Path to Quintana Road):*

- Pipelines and other facilities in this segment are completed and in service.
- Final paving has been completed.

*Segment 5 – Quintana Road (Main Street to Morro Bay Boulevard):*

- Pipelines and other facilities in this segment are completed and in service.
- Final paving has been completed.

*Segment 6 – Quintana Road (Morro Bay Boulevard to La Loma Avenue):*

- Pipelines and other facilities in this segment are completed and in service.
- Final paving has been completed.

*Segment 7 – Quintana Road (La Loma Avenue to South Bay Boulevard):*

- Pipelines and other facilities in this segment are completed and in service.
- Final paving has been completed.

*Segment 8 – South Bay Boulevard (Quintana Road to New Morro Bay WRC):*

- Pipelines and other facilities in this segment are completed and in service.

*Segment 9 – Vistra Property (Bike Path to Existing Lift Station 2):*

- Pipelines and other facilities in this segment are completed and in service.
- Final site restoration activities were completed. The contractor and construction management team are in contact with Vistra Energy for final sign-off.

### 3.2 Project Photographs

The following photos show progress during this period.





January 2023 – Flooding Along Bike Path



February 2023 – Quintana Road Paving





February 2023 – Pump Station B Fine Grading



March 2023 – Completed Morro Creek Utility Bridge

### 3.3 Change Order Summary

Table 6 contains a summary of the contract amendments for the Conveyance Facilities project component. Each amendment included multiple change orders to address changes in scope from the original proposal. A detailed summary of each amendment is provided in Appendix F.

Table 6 Conveyance Facilities Contract Amendment Summary

Amendment No.	Council Approval Date	Amount
1	October 2021	\$674,485
2	January 2022	\$587,502
3	March 2022	\$241,317
4	June 2022	\$(54,065)
5	August 2022	\$1,253,667
6	November 2022	\$646,763
7	February 2023	\$124,970
<b>Total</b>		<b>\$3,474,639</b>

### 3.4 Project Schedule

Figure 4 shows the Conveyance Facilities construction and startup schedule.





## Section 4

# RECYCLED WATER FACILITIES PROJECT

### 4.1 Project Progress Summary

The RWF component of the WRF program is currently in the planning pre-design phase, which includes the pilot study for the injection wells. GSI has completed Phase 1 and is currently working on Phase 2 of the hydrogeological work, which resulted in the selection of the west injection area and preliminary siting of the injection wells. The following activities were completed during this period:

- On January 4, 2023, the extended injection test, utilizing potable water from the City's Water Distribution System, was completed using the pilot injection well.
- The City's hydrogeologist consultant, GSI, administered the test and collected water level and water quality data at the injection well and nearby monitoring well.
- The results of the injection test will be utilized to update the Morro Basin Groundwater Model and improve the program team's understanding of travel time in the groundwater basin.
- Additionally, following the injection test, GSI collected periodic water quality samples from the pilot injection well to evaluate potential geochemical interaction between the groundwater basin aquifer materials and the injected water.
- GSI utilized the findings from the injection test and other hydrogeologic investigations to begin preparation of the Basis of Design Report.
- Following the injection test Pacific Coast Well Drilling completed the remaining components of the project and reached Substantial Completion on February 24, 2023.
- The program management team evaluated different IPR pipeline alignment alternatives to identify a preferred alignment.
- The program management team developed estimates of the amount of wastewater that could be processed into advanced purified water under existing flow rates/diurnal patterns.

### 4.2 Project Photographs

There were no construction progress or project photographs taken this reporting period.

### 4.3 Project Schedule

Figure 5 shows the RWF construction and startup schedule.



Morro Bay WRF Program  
 Program Wide Schedule Summary  
 Updated: FY22/23 Q3

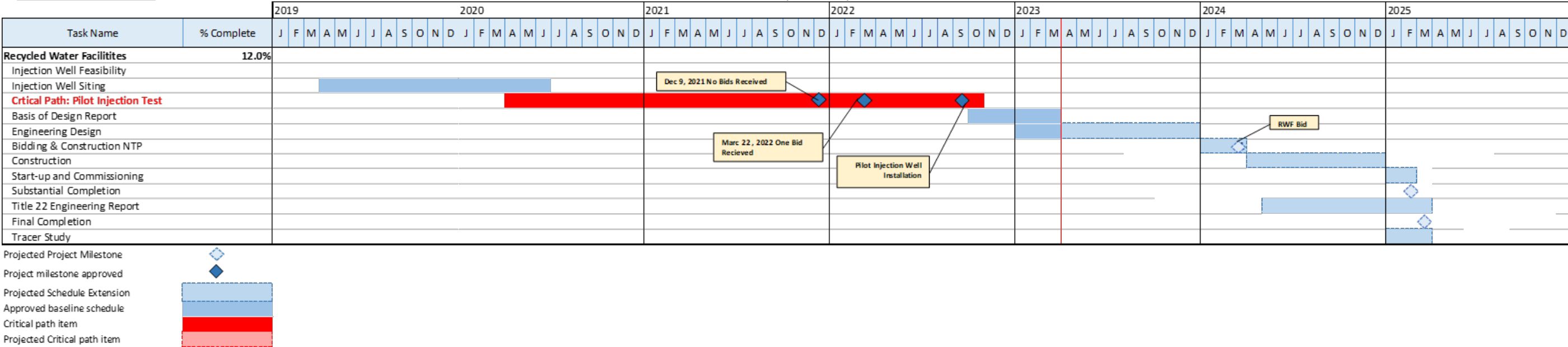


Figure 5 RWF Project Component Schedule

# Appendix A

## ABBREVIATIONS

## Appendix A

# ABBREVIATIONS

AOP	advanced oxidation process
BMP	best management practices
BNR	biological nutrient removal
Carollo	Carollo Engineers, Inc.
City	City of Morro Bay
CWRSF	Clean Water State Revolving Fund
EPA	Environmental Protection Agency
FBV	Filanc Black & Veatch
FY	fiscal year
FY 22/23	2022-23 fiscal year
GSI	GSI Water Solutions, Inc.
IPR	indirect potable reuse
JSP Automation	James S. Phillips Automation
KMA	Kevin Merk Associates
MBR	membrane bioreactor
NPDES	National Pollutant Discharge Elimination System
PCO	potential change order
Q3	third quarter
Q4	fourth quarter
RO	reverse osmosis
RWF	Recycled Water Facilities
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TSO	Time Schedule Order
UV	ultraviolet
WIFIA	Water Infrastructure Finance and Innovation Act
WRC	Water Resources Center
WRF	Water Reclamation Facility



## Appendix B

# QUARTERLY EXPENDITURES BY BUDGET CODE

## Appendix B

# QUARTERLY EXPENDITURES BY BUDGET CODE

City Budget Code	Fund Name	Total Q3 FY22/23 Expenditures	Vendor Name	Project Component
4110	Regular Pay			
4599	Other Pay			
4910	Employer Paid Benefits		Summarized in Total Personnel Services	
4911	Pension Normal Cost			
4999	Labor Costs Applied			
<b>Total Personnel Services</b>		<b>\$13,089.65</b>		<b>City of Morro Bay</b>
5199	Miscellaneous Operating Supplies	\$63,628.95	Brenntag Pacific, US Bank Voyager Fleet Systems, Pacific Petroleum CA, Mechanics Bank, SWRCB, HD Supply	General Project
<b>Total Supplies</b>		<b>\$63,628.95</b>	<b>Various</b>	<b>General Project</b>
6101, 7115, 7116	Legal Services – General	\$22,977.97	Aleshire & Wynder	General Project
6301	Electricity	\$14,842.84	PG&E	
6303	Water	\$61.50	City of Morro Bay	General Project
<b>Total Services</b>		<b>\$37,882.31</b>	<b>Various</b>	<b>General Project</b>
6104	Engineering Services	\$103,818.55	GSI Water Solutions, Cleath Harris, Confluence (IPR)	RWF
6105	Consulting Services	\$23,906.25	Confluence (WRF Program)	General Project
6107	Promotion and Advertising	\$360.00	Estero Bay News	General Project
6152	Outside Laboratory Testing	\$14,601.25	Pace Analytical, BSK Analytical	General Project
6196	Program Management & DB Procurement	\$835,427.37	Carollo Engineers	General Project
<b>Total Project Soft Costs</b>		<b>\$978,113.42</b>	<b>Various</b>	<b>RWF, General Project</b>
6106	Contractual Services	\$1,052,150.21	Anvil Builders	Conveyance
7103	WRF - On- Site Imprv Design - Build	\$94,550.00	JSP Automation	WRC
7104	Design Phase - Lift Station & Force Main	\$2,994.21	Water Works Engineers	Conveyance

City Budget Code	Fund Name	Total Q3 FY22/23 Expenditures	Vendor Name	Project Component
7105	Planning & Permitting	\$178,657.03	Far Western, Cogstone	Conveyance
7107	WRC - On- Site Imprv - Build	\$1,937,989.40	FBV	WRC
<b>Total Construction Costs</b>		<b>\$3,266,340.85</b>	<b>Various</b>	<b>Conveyance, WRC</b>
<b>Total Quarterly Expenditures</b>		<b>\$4,359,055.18</b>		

Notes:

- (1) City Budget Codes are from the latest Accounts Payable Report run on April 27, 2023.
- (2) Total quarterly expenditures shown only include invoices paid by the City in this quarter and are derived from a cash basis of accounting using the Accounts Payable reports provided by the City approximately one week after the end of the quarter. Total quarterly expenditures shown may differ from City fiscal year-end budget performance reports that are based on a modified accrual basis of accounting, which reallocates current quarter expenditures for services rendered in prior fiscal year back to the prior fiscal year.

## Appendix C

# WRF PROGRAM FUNDING REQUESTS AND REIMBURSEMENTS STATUS SUMMARY

## Appendix C

# WRF PROGRAM FUNDING REQUESTS AND REIMBURSEMENTS STATUS SUMMARY

Agency	Description	No.	Date Submitted	Requested Amount	Approved Amount	Received
SWRCB	CWSRF Planning Loan	1	12/18/2022	\$289,595	\$217,441	Yes
SWRCB	CWSRF Planning Loan	2	11/19/2022	\$6,431,295	\$5,312,748	Yes
SWRCB	CWSRF Planning Loan	3	10/20/2022	\$3,910,211	\$2,415,669	Yes
SWRCB	CWSRF Planning Loan	4	10/21/2022	\$930,385	\$484,617	Yes
SWRCB	CWSRF Planning Loan	5	4/22/2022	\$0 (see 5A)	Pending	No
SWRCB	CWSRF Planning Loan	5A	9/26/2022	\$0	Not Applicable	Not Applicable
SWRCB	CWSRF Planning Loan	5B	11/22/2022	\$1,982,581	Pending	No
SWRCB	CWSRF Construction Loan	1	9/21/2022	\$11,185,433	\$11,185,433	Yes
SWRCB	CWSRF Construction Loan	2	11/21/2022	\$10,886,581	\$10,886,581	Yes
SWRCB	CWSRF Construction Loan	3	12/21/2022	\$5,463,514	\$5,463,514	Yes
SWRCB	CWSRF Construction Loan	4	2/22/2022	\$5,943,019	\$5,943,019	Yes
SWRCB	CWSRF Construction Loan	5	3/22/2022	\$6,095,373	\$6,095,373	Yes
SWRCB	CWSRF Construction Loan	6	5/22/2022	\$3,237,138	\$3,237,138	Yes
SWRCB	CWSRF Construction Loan	7	6/22/2022	\$2,145,403	\$2,145,403	Yes
SWRCB	CWSRF Construction Loan	8	7/22/2022	\$4,245,018	\$4,245,018	Yes
SWRCB	CWSRF Construction Loan	9	8/22/2022	\$3,896,973	\$3,896,973	Yes
SWRCB	CWSRF Construction Loan	10	9/30/2022	\$2,360,768	\$2,360,768	Yes
SWRCB	CWSRF Construction Loan	11	12/5/2022	\$2,744,578	\$2,744,578	Yes
SWRCB	CWSRF Construction Loan	12	2/2/2023	\$1,791,012	Pending	No
SWRCB	CWSRF Construction Loan	13	3/28/2023	\$1,572,840	Pending	No
EPA	WIFIA Loan	1	5/20/2022	\$1,100,944	\$1,100,944	Yes
EPA	WIFIA Loan	2	6/20/2022	\$61,014	\$50,486	Yes
EPA	WIFIA Loan	3	7/20/2022	\$3,489,409	\$3,489,409	Yes
EPA	WIFIA Loan	4	7/20/2022	\$2,461,121	\$2,461,121	Yes
EPA	WIFIA Loan	5	8/20/2022	\$142,863	\$142,863	Yes
EPA	WIFIA Loan	6	10/20/2022	\$1,635,106	\$1,635,106	Yes
EPA	WIFIA Loan	7	12/20/2022	\$3,008,572	\$3,008,572	Yes
EPA	WIFIA Loan	8	12/20/2022	\$3,671,499	\$3,671,499	Yes
EPA	WIFIA Loan	9	1/21/2022	\$5,553,851	\$5,553,851	Yes

Agency	Description	No.	Date Submitted	Requested Amount	Approved Amount	Received
EPA	WIFIA Loan	10	3/21/2022	\$2,440,399	\$2,440,399	Yes
EPA	WIFIA Loan	11	4/21/2022	\$1,621,783	\$1,621,783	Yes
EPA	WIFIA Loan	12	5/21/2022	\$2,988,342	\$2,988,342	Yes
EPA	WIFIA Loan	13	6/21/2022	\$3,544,987	\$3,544,987	Yes
EPA	WIFIA Loan	14	7/21/2022	\$2,692,977	\$2,692,977	Yes
EPA	WIFIA Loan	15	8/21/2022	\$1,328,552	\$1,328,552	Yes
EPA	WIFIA Loan	16	9/21/2022	\$488,601	\$488,601	Yes
EPA	WIFIA Loan	17	10/21/2022	\$321,117	\$321,117	Yes
EPA	WIFIA Loan	18	11/21/2022	\$346,279	\$346,279	Yes
EPA	WIFIA Loan	19	12/21/2022	\$1,005,341	\$1,005,341	Yes
EPA	WIFIA Loan	20	1/22/2022	\$337,646	\$337,646	Yes
EPA	WIFIA Loan	21	3/22/2022	\$956,562	\$956,562	Yes
EPA	WIFIA Loan	22	4/22/2022	\$395,308	\$395,338	Yes
EPA	WIFIA Loan	23	5/22/2022	\$1,315,288	\$1,315,288	Yes
EPA	WIFIA Loan	24	6/30/2022	\$155,599	\$155,599	Yes
EPA	WIFIA Loan	25	7/28/2022	\$169,286	\$169,286	Yes
EPA	WIFIA Loan	26	8/22/2022	\$723,244	\$723,244	Yes
EPA	WIFIA Loan	27	9/30/2022	\$653,121	\$653,121	Yes
EPA	WIFIA Loan	28	10/26/2022	\$968,147	\$968,147	Yes
EPA	WIFIA Loan	29	12/20/2022	\$433,862	\$433,862	Yes
EPA	WIFIA Loan	30	2/1/2023	\$262,959	\$262,959	Yes
<b>Total</b>				<b>\$119,385,496</b>	<b>\$110,897,554</b>	

## Appendix D

# PROGRAM MILESTONES

## Appendix D

# PROGRAM MILESTONES

Milestone	Planned Completion Date
<b>General Project</b>	
Compliance with the TSO	2/23/2023
WIFIA Loan Secured	3/9/2020
SRF Loan Secured	7/31/2021
<b>WRC</b>	
Begin Design	11/5/2018
Construction Notice to Proceed	3/20/2020
Plant Seeding	10/4/2022
Substantial Completion	1/15/2023
Final Completion	3/20/2023
<b>Conveyance Facilities</b>	
Deliver 100 Percent Design	6/15/2020
Bid Advertisement	6/16/2020
Award Construction Contract	11/10/2020
Construction Notice to Proceed	12/14/2020
Substantial Completion	10/17/2022
Final Completion	12/1/2022
<b>RWF</b>	
Select Preferred Injection Area	6/17/2020
Pilot Injection Well - Complete	10/1/2022
Basis of Design of Report - Complete	1/31/2023
Engineering Design - Begin	1/1/2023
Construction Notice to Proceed	3/15/2024
Substantial Completion	2/15/2025
Final Completion	3/15/2025



# Appendix E

## FBV AMENDMENT DETAILS

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
1	New Sodium Hypochlorite Feed for Plant Water	78,576	0	1	Add a sodium hypochlorite (disinfection) chem feed pump, add sodium hypochlorite double contained piping from the Chemical Facility to the Recycled Water pumps. Additional electrical and controls for the new sodium hypochlorite pump. The added pump is needed for redundancy.
2	Change Architecture of Operations Building	(21,623)	0	1	The City requested to change the Operations Building exterior architecture back to a basic style, to delete the clerestory but to include cupolas and solatubes. The City requested the change to reduce project costs.
4	Headworks Odor Control	18,422	0	1	Adding foul air ducting from the Fine Screens and SAFE Diversion Box to the Headworks Odor Control Biofilter. Cost also includes adding a cover to the SAFE Diversion Box. The ducting and cover were adding to reduce foul air emissions.
5	Remove Canopy and Monorail at MBR	(185,434)	0	1	The MBR tank was originally design with a canopy cover and monorail/crane hoist. The monorail and crane hoist were originally included to move MBR cassettes in and out of the tank for cleaning and maintenance. The City requested the change to reduce project costs. In the future the City will use a crane or boom truck to remove MBR cassettes when necessary.
9	Consolidate Chemical Facilities	218,978	0	1	The original design provided chemical feed pumps and storage tanks at various locations where needed on site. The City requested to centralize all chemical storage tanks and feed equipment to one facility. Work includes a larger Chemical Facility structure, and additional chemical ductbanks and double containment piping.
10	Modify Chemical Piping	(15,856)	0	1	Revise underground chemical piping, to change double containment carrier piping from rigid pipe to flexible ducting. The City accepted this change to reduce project costs.
15	Remove Solids Dumpster Lid	14,543	0	1	At the Solids Handling Area, delete the Solids Dumpster Lid and delete the Hypalon Splash Guards. Add a canopy / awning structure over the dumpster area by extending the Solids handling Area canopy. The City prefers the open-air solids dumpster while providing the canopy to protect dewatered solids from rain and atmospheric moisture.
16	Modify Outfall Pump Station	367,632	0	3	Increase the guaranteed pump station capacity to 8.14 MGD. Change the original design of 3 medium sized VFD controlled pumps, to a modified configuration using 2 smaller pumps and 2 larger pumps, all with VFDs. Also add and modify pump station manifold piping and valving as necessary. The City requested the change to ensure adequate future flow capacity and maximize pumping efficiency.
17	Add SAFE Equalization Tank	504,116	0	1	Add SAFE Settle Tank (water bearing concrete structure) upstream of the SAFE system. The SAFE Settle Tank is added to the Sludge Holding Tank concrete structure. The new SAFE Settle Tank will either overflow to the SAFE System, or be pumped back to the SAFE Diversion Box using Solids Handling Pumps. Various segments of SAFE System diversion piping are upsized as required.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
18	Instrumentation and Control Changes	75,266	0	1	The City prepared and issued a SCADA Master Plan for the WRF program. In January 2019, City staff and the DB team met and agreed on multiple technical items to coordinate between the City's SCADA Master Plan requirements and the DB Agreement scope. The PCO #18 proposal document includes a 6 page table of the multiple hardware and software changes.
19	Reduce Size of the Product Water Tank	(129,681)	0	3	The original DB Agreement included a 500,000 gallon bolted steel glass lined Product Water Tank. The City requested to decrease volume of Tank to 200,000 gallons. This was done to save project costs while also maintaining a suitable Product Water storage capacity on site.
21	Revise Maintenance Building Layout and Size	516,583	0	1	The Maintenance Building footprint is expanded from 50'x70' to 60'x90' and a second vehicle sized roll-up door is added. The change order also includes revised site grading and eliminating a step in the building foundation slab, such that the new layout providing a larger, single level, vehicle accessible, shop area.
22	Influent Piping and Metering	411,766	0	1	The original design included a single 18" influent raw sewage pipeline from Teresa Rd to the new Headworks and an 18" influent flow meter at the Headworks. The City requested to change the design to parallel 16" and 12" HDPE influent pipelines, each pipeline with a separate flow meter at the Headworks. The City requested the change to add redundancy to the influent piping system.
23	Outdoor-Rated Blowers (BNR)	(58,210)	0	1	Replace the specified Turbo Blowers with Outdoor Rated Dry Screw Positive Displacement Blowers. The change order includes various revisions to blower controls, valving, and Aeration Air piping. The change was made to reduce project costs while still providing a suitable capacity of Aeration Air for the biological facility process.
24	Remove Bypass of Coarse Screens	(37,137)	0	1	Delete the Coarse Screens bypass line, including both above grade and below grade 16" piping, valving, and fittings at the Headworks. The City requested the change to reduce project costs, as the bypass line was deemed not necessary.
26	SAFE Diversion Box Additions	58,304	0	1	Add a removable FRP cover over the SAFE Diversion Box. The new cover includes multiple FRP panel sections that are removable by hand and structurally rated to support foot traffic. The change also adds an access ladder and handrail to the top of the Diversion Box. The changes were requested by the City to improve access to the Diversion Box.
28	Size Dewatering as a Building in the Future	30,983	0	1	Expand the Solids Handling Area concrete foundation slab and canopy to 36'x45'. The change also includes reconfiguring the dewatering belt press, pumps, piping, etc. This change will allow walls to be added around the equipment in the future. The City requested this change in case excessive foul air is emitted in the future and odor control measure become necessary.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
30	Match Blowers at SHT, BNR, and MBR System	17,426	0	4	There are 3 set of air blowers on the project: 2 each for MBR Air Scour, 3 each for BNR Aeration, and 2 each for Sludge Holding Tank mixing. The 2 each MBR Air Scour Blowers are Aerzen Blowers. The City requested that the 3 each BNR Aeration Blowers and 2 each Sludge Holding Tank Blowers also be supplied by Aerzen. The City requested this change for uniformity of equipment providers.
31	Coarse Screens and Grit Basins Stairs	52,870	0	1	The original design included various metal ladders to access the Headworks Coarse Screen and Grit Tank platform skids. This change deletes the ladders and adds 2 each 4 ft tall stair sets to the Course Screens and adds 2 each 8 ft tall stair sets to the Grit Tank area. This change also extends the Headworks foundation slab as required to provide foundations and landings for the added stairs.
32	Sulfuric Acid System	315,652	0	3	The City requested to add Sulfuric Acid feed pumps and a storage tank at the Chemical Facility. This change includes increasing the size of the Chemical Facility structure, adding double containment piping to both the RO Feed Tanks and the RO/UV Building, and adding all necessary electrical and controls. The City deemed that Sulfuric Acid addition is necessary for pH control/neutralization.
37	PLC/SCADA Software Uniformity	201,577	0	3	This PCO includes the cost to change PLC hardware and SCADA software from the standard offerings of the MBR, RO, and Headworks manufacturers to the City requested Allen Bradley and Wonderware products. This PCO applies to only those three equipment items and a separate PCO will be generated if a similar change is required for future procurements. The City requested this uniformity.
38	IPR Product Water Tank Bypass	(26,087)	0	1	Delete the Product Water Tank bypass line, including both above grade and below grade 8" piping, valving, and fittings at the Product Water Area. The City requested the change to reduce project costs, as the bypass line was deemed not necessary.
39	NTP Delay	1,220,532	0	3	This PCO includes extended general conditions costs due to the delay in receiving construction NTP from April 29, 2019 to March 20, 2020. The amount for the period April 29, 2019 to October 23, 2019 was in dispute and a reduction is provided to reflect the results of a negotiation.
40	Headworks Valve Automation	249,946	0	3	The change adds motor operated valving and controls to the Headworks treatment trains. This allows for automated shifting of flows from one treatment train to the other, as may be needed due to equipment malfunction or other alarm conditions, especially during periods when no operators are on site. The change includes adding 8 each motor operated valves, plus electrical and controls.
41	Perimeter Barbed Wire Fence	79,935	8	s 3&4	City requested that FBV install a 5-strand barbed wire fence around the entire 27-acre project/property boundary, and along the Temporary Construction Easement (TCE) on the eastern boundary of site. The eastern boundary TCE fence will be relocated to the actual project/property boundary at project completion.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
42	UV/AOP System Modifications	(33,481)	0	3	The City requested to delete the Standby UV Reactor from the scope of work to reduce project costs. The change includes FBV added costs for: UV system investigation, technical memoranda, development of alternatives, and resulting design revisions for associated mechanical, electrical, and controls.
44	Tank Access Improvements	210,327	0	3	This Change adds staircases to replace ladders throughout the site for improved access to treatment process basins. The change adds stairs, catwalks, and handrails at the BNR tanks, adds stair and landings at the SHT, add stairs and a grating platform at the MBR tank, and adds stairs, catwalk, and handrails at the SAFE system.
45	Maint. Building Ceiling and Auto Roll-Up Door	21,009	0	3	The City requested to add a motor actuator on one of the 14'X14' roll-up door at the Maintenance Building. This change includes the required added electrical and controls.
46	Curbed Washdown Areas	76,250	0	3	This change adds containment curbs, sloped slabs, floor drains, and drainage piping to sewer for various wastewater washdown areas. The change adds curbed washdown areas for the MBR cassette maintenance area, the solids/sludge dewatering area, and the Headworks Coarse Screen and Grit Tank area. The City requested the curbed washdown areas to better contain sewage spills.
47	Changes to Building Furnishings and Equipment	85,194	0	3	This Change adds office furnishings and appliances for the Operations and Maintenance Buildings, including desks, chairs, tables, shelves, cabinets, control room console, flat-screen monitors, kitchen and laboratory appliances, lockers, and maintenance building storage racks. The items were discussed and requested by the City during design meetings with the DB team Architect.
50	Water/Sewer Supply Shed Revisions	13,142	0	3	The original design includes a Water and Collections Storage Shed, with two equal sized rooms each with an exterior double-wide pedestrian door. This change deletes the double doors and adds 10 ft wide roll-up doors and single pedestrian doors for each room.
52	Analyzer Relocation and Enclosures	76,555	0	3	Relocate analyzers at Outfall/IPR Pump Station to indoors at the RO/UV Building, including adding 120' of sample piping between the sample point and building. Relocate analyzers at Dechlorination Facility to indoors at the Water/Collections Storage Shed, including adding 70' of sample piping between the sample point and building, and adding 70' of drainage piping to sewer.
55	Notice of Dispute PG&E Temporary Power	13,163	0	3	This PCO addresses the cost paid to PG&E for temporary power service. It has been a disputed item and negotiation has led to an agreement to split the cost 50/50.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
56	Impacts of Water Quality Changes	282,420	0	3	In September 2019, the City provided updated influent Water Quality data to use as the basis of design. Multiple parameters were significantly different than listed in the DB Agreement. The revised Water Quality data impacted the RO equipment design. The added costs are for H2O Innovations (RO manufacturer) as well as for electrical and control changes by Electricraft.
57	Soil Lateral Earth Pressure	116,329	0	3	This change adds foundation sub-drains around below grade water bearing concrete structures as recommended by FBV and the Geotechnical Engineer. This change adds Miradrain Panels and 4" PVC drain piping around the perimeter of the BNR basin and Sludge Holding Tanks, to relieve lateral soil pressure on the concrete structures.
58	Permanent Exclusion Fencing	855,991	0	3	As required by environmental regulatory agencies, a concrete barrier wall for wildlife exclusion is added along the entire Eastern boundary of the site from Teresa Rd to the northern most tip of the site. The concrete barrier wall shall extend 24 inches above grade and 36 inches below grade, and include a nominal 6-inch top lip to serve as a climbing barrier.
59	Increased Escalation Costs	1,232,677	0	3	This PCO includes escalation costs due to the delay in receiving construction NTP from October 23, 2019 to March 20, 2020.
61	Potential Change Order (PCO) Design Impacts	158,172	0	3	This PCO is in response to FBV's claim for engineering redesign costs from changes requested by the City but subsequently reversed due to the cost being too high or otherwise excessive. The PCO also addresses FBV's claim for inefficiencies resulting from "changes in direction throughout the design development process".
62	Conduit Alternative Design	(268,400)	0	3	This change removed the original DB Agreement, Exhibit B, requirement to use PVC coated galvanized rigid steel conduit systems in all exterior and/or process areas on site. FBV proposed to use galvanized rigid steel conduit systems (without PVC coating) in all project locations as a value engineering suggestion. The City accepted the proposal in an attempt to reduce project costs.
64	Reduce Performance Period	(35,450)	0	3	The DB Agreement requires 6-months of FBV support during the Performance Test Period. The City requested to delete this requirement as not necessary. Note FBV remains responsible for the 12-month warranty against equipment and/or system malfunctions. The credit amount is taken directly from FBV's original bid proposal document.
65	Davis Bacon Wage Increases	63,937	0	2	The Contract amount is increased to compensate for the required implementation of CA Wage Determination dated 10/5/2018. FBV's original bid proposal document was based on CA Wage Determination dated 1/5/18



No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
66	Caltrans Intersection Improvements	(21,893)	0	3	Delete scope of work to extend intersection at Teresa Road and South Bay Boulevard for the new WRF Access Road. Adjust centerline of the WRF Access Road to be offset from the centerline of South Bay Boulevard.
67	BNR System Modifications	742,405	0	3	This change was requested by City to increase Aeration Air systems as required for full nitrification in the biological process. The costs include upsizing 3 each aeration blowers, stainless steel aeration piping, air meters, air valves, and adding aeration diffusers in the BNR basins. The change also adds Ammonium Sulfate pumps, tank, piping, and increases the size of the Chemical Facility.
68	SAFE Equalization Settle Tank Drain Piping	62,215	0	3	This change is requested by the City to provide a new pipeline to drain the SAFE Settle Tank. This pipeline will tie in to the existing dewatering feed pumps and will allow draining the tank back to the SAFE Diversion Box. The work includes adding 80 lf of 6" piping and adding 2 each 6" manual valves.
69	Third Party Testing and Inspection	100,000	0	3	The responsibility for 3rd party testing and inspection costs were in dispute for several months prior to construction. In April 2020 the City and FBV agreed that the cost of these services would be split 50/50 between the parties, up to a cap of \$200K. The agreement included the provision that if additional services are required above \$200K, it would be paid by the City.
71	CDFW Restrictions (Direct Costs & Inefficiencies)	254,443	0	4	The construction NTP on 3-20-2020 included restrictions from working in the designated spoils disposal area on site. The restrictions by CDFW were due to an erosional feature and were not resolved until 7-14-2020. As a result of the restrictions, FBV was required to stockpile spoils outside the disposal area, and then haul and grade the material a second time after the restrictions was lifted.
72	Owner Trailer Utility Hook Ups	19,593	0	4	This change provides utility connections to the Owner/Carollo field office trailer at the WRF. The work includes grading the trailer site, installing a temporary potable water connection, connecting temporary electrical, and providing electrical power through the project duration. The work also includes installing a temporary USPS jobsite mailbox.
73	Main Gates in Perimeter Fence	27,031	0	4	This change was requested by the City to add 2 pedestrian gates in the WRF perimeter fence, one north of the Operations Building and one at the northern most tip of site. Along with the pedestrian gate north of the Operation Building, also provide a 4' wide set of concrete stairs and a 4' wide sidewalk between paved areas.
74	Parking Canopy Electrical Receptacles	42,346	0	4	This change adds 7 outdoor rated duplex 120VAC electrical outlets on canopy poles around the Vehicle/Equipment Storage Canopy, and the WRF Parking Canopy. The work includes a new 480V circuit from the RO Building Electrical Room, a new 5KVA transformer, and all required underground and exposed power conduits, junction boxes, and outlet receptacles.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
75	Security Windows at Admin Building	11,079	0	4	This change was requested by the City to add a security window in the lobby of the new Operations Building to separate City staff from members of the public in the lobby (similar to City Hall).
76	Additional Sodium Bisulfite Pump	58,243	0	4	This change was requested by the City to provide a redundant (second) Sodium Bisulfite feed pump at the Chemical Facility, including all associated mechanical work, piping, electrical and controls. This change also provides heated tote blankets for the Sodium Bisulfite storage totes to control temperature during cold weather. An electrical outlet is also added for the heated tote blankets.
77	Covid-19 Impacts	125,000	0	6	The DB Agreement stipulates that an "epidemic" or "quarantine restriction" is a compensable Force Majeure event. FBV originally submitted costs in the amount of \$152K for COVID-19 impacts based on added janitorial service, added COVID protective supplies, added Safety Officer time, added costs to send infected workers home for quarantine, and loss of efficiency (1 hr. per worker per day from 3/20/20 to 6/1/20 and 10 min. per worker per day from 6/1/20 to 3/20/21). The City was able to negotiate this cost down to \$125K based on a reduction of the assumed inefficiencies and was able to gain FBV agreement that this costs is considered final (i.e. that any future infections would be based on individuals deciding not to be vaccinated rather than Force Majeure).
78	Soil Slip Differing Site Conditions	280,013	0	4	On May 5, 2020 an unidentified ancient landslide was discovered when mass grading the cut slope above the Operations Building. This is a differing subsurface condition per Section 3.10.2 of the Agreement. The costs represent the additional effort associated with remediating the landslide.
79	Water/Sewer Shed Revisions (Ref. PCO 50)	10,847	0	4	This item is a continuation of PCO 50. FBV claims that their previous quote did not include all costs associated.
82	PLC/SCADA Uniformity Complete (Ref. PCO 37)	108,887	0	4	This PCO includes the cost to change PLC hardware and SCADA software from the standard offerings of the Belt Press and Cloth Disk Filter (SAFE) manufacturers to the City requested Allen Bradley and Wonderware products. This PCO applies to only those equipment items. PCO #37 was similarly for other equipment manufacturers on the project.
84	Alternate Red Legged Frog Barrier (Ref. PCO 58)	(468,768)	0	5	Environmental agencies overseeing the project have allowed an alternate wildlife barrier along the Eastern boundary of site. The PCO 58 concrete barrier is only required from Teresa Rd to the facility gate (400'). The remaining 1700' of exclusionary barrier shall be 2 mm thick HDPE attached to 6' chain link fencing, 24" above grade, 36" below grade, with a rigid 4" FRP top lip climbing barrier.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
86	Pothole Existing Water Valve in Teresa Road	5,189	0	4	The City requested that FBV pothole an existing City water line and shut off on Teresa Road. On the next day, the City requested FBV pothole the 8" branch line service to the WRF property. The work was on T&M.
87	Modify Conduit Design Scope (Ref. PCO 62)	272,822	0	5	This change provides PVC coated electrical conduit systems (conduits, boxes, accessories) for all wastewater and product water processing and washdown areas, including outdoor process areas and indoors at the RO/UV Building. PVC coated Galvanized Rigid Steel (GRS) conduits provide superior corrosion protection. This PCO essentially reverses previous PCO #62.
88	Dead-Front Control Panels	37,774	0	6	City staff requested that all control panels be dead-front type, wherein no controls are exposed, and that a solid front door is furnished (i.e. keyed or with padlock hasp). FBV has submitted costs in the amount of \$37K and the City is in agreement. This change is being implemented on the following system control panels: Kusters (Headworks), Suez (MBR), Aerzen (Blowers), Gierlich-Mitchell (Sanitary Lift Station), Charter Machine (Dewatering), and other minor panels as required.
90	24Vdc Digital Output Circuits	25,689	0	6	City staff requested that all control digital output circuits be 24vDC to match the 24vDC input signals as required by the DB Agreement. The City requested this to prevent potential signal interference. FBV had planned to use 120vAC digital outputs as the DB Agreement only stipulated the 24vDC signals on inputs (not outputs). This could potentially cause signal interferences and various control system disruptions. This item was disputed by the City as matching input and output signals is a design standard for some design firms (including Carollo). As part of negotiations the City elected to accept the proposed costs which include additional relays and power supply units in various Motor Control Centers (power distribution panels) for the 24Vdc PLC digital circuits being added.
91	Equipment Color (Tnemec 32GR Light Gray)	12,500	0	6	City staff requested that a standard color be established for all manufactured equipment, piping, etc., including for all field applied coatings. This is being implemented so that plant staff only need to maintain supply of one coating color, to simplify coating spot repairs during normal maintenance. The selected color is Tnemec 32R Light Gray or equal. FBV coordinated and made requests to each equipment supplier to change their standard or typical factory color to the Tnemec Light Gray or equal. Some supplier had costs impacts for the equipment color change.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
92	West Cut-Slope Soil Slip Reactivation (2021)	825,300	0	6	On January 28, 2021, the previous cut-slope landslide area reactivated during a major storm. The DB Team has performed extensive site investigation, and develop preliminary remediation drawings, and submitted total costs in the amount of \$825,300 to address the known conditions. The remediation scope of work includes: removal and stockpiling of approximately 17,000 cy of loose material to the mapped slip plane, benching into competent native subgrade material, installing a subdrain system at each bench with drainage to surface, placement and compaction of \$17,000+ cy of engineered fill, surface contours to enhance precipitation run-off, concrete v-ditches to divert run-off from the areas, and the installation of two inclinometer for future monitoring by the City (monitoring not included).
93	NEMA 4X Electrical Enclosures	40,000	0	6	The City is requiring that all exterior electrical enclosures be NEMA 4X type. FBV submitted costs in the amount of \$97K to provide the NEMA 4X enclosures. The City does not agree with the contractual merits of this cost request. The City's contention is that the DB Agreement calls for all exterior and exposed electrical and control enclosures are to be NEMA 4X rated. FBV has argued that their intention, and the approved IFC design documents indicate reasonable alternatives to NEMA 4X. The City and FBV have agreed to the settlement amount noted herein and all applicable panels will be NEMA 4X rated.
94	Security System Revisions	25,659	0	6	The City requested the following improvements to the facility security system: add one exterior security camera to enhance coverage of the facility grounds (6 other cameras already in design), add door detectors and motion sensors at the RO Bldg, Storage Shed, Electrical Bldg (detectors and sensors at Ops Bldg and Maint Bldg are already in design). FBV submitted costs in the amount of \$25K and the City is agreeable to the proposed amount.
96	January 2021 Storm Event (1-26 thru 1-29)	40,195	7	6	FBV has submitted costs in the amount of \$40K for actual expenditures associated with the January 2021 major storm (8"+ of precipitation in 48 hours). The work included: actual labor, equipment, and materials to prepare for the storm, maintain the site during the storm while work was otherwise shutdown, and significant post storm efforts to clean and repair storm drain facilities, repair damaged embankments, and repair other erosional damage. The DB Agreement stipulates that "storms" are compensable Force Majeure events. As part of the settlement, City and FBV agree to amend the DB Agreement in that only non-compensable time extensions will be requested by FBV, and/or granted by the City, for any future weather related delay or impact.
97	Hydroseeding Soil & Coverage	25,932	0	8	FBV is reimbursed for additional expenditures related to providing hydroseeding and associated SWPPP and temporary irrigation for the soil slip area.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
98	Materials Testing & Inspection (3rd Party)	143,120	0	7	Filanc-Black&Veath (FBV) is reimbursed for costs associated with 3rd party materials testing and special inspections. Under previous Amendment #3, FBV and the City agreed " All 3rd party testing and inspection shall be provided by FBV up to \$200,000. Anything in excess of \$200,000 shall be borne by the City". This change amount is based on actual applicable testing and inspection costs above \$200,000.
100	Add Thin-Client Licenses and Work Station	17,229	0	7	FBV is reimbursed and compensated for extra work associated with additional Control System elements as follows: (1) Add a thin client workstation in the Maintenance Building, including thin client machine with keyboard and mouse, currently there is just a 42" monitor; and (2) Add two additional Wonderware Supervisory Client License w/ Historian Client and one (1) Dell Wyse 570 Thin Client w/ Windows Server.
101	COVID-19 Related Material Cost Escalation	48,744	0	7	FBV is reimbursed for extra costs associated with COVID-19 material cost escalations from EDI (air diffusers), Jensen Precast (vaults and manholes), Miltimore Tile (bathroom tile), Pacific Acoustics (ceiling tiles) and S&M Fire (fire protection systems). FBV is requesting this material cost escalation reimbursement beyond normal yearly inflation statistics based on terms included in Design-Build Agreement between the City and FBV.
102	City Requested SCADA Screen Revisions	60,000	0	7	FBV is reimbursed for extra work associated with the following City requested SCADA screen upgrades: City and FBV screen development subcontractor shall meet to agree on upgrades to the control screen features, then screen development subcontractor shall implement City preferences including screen readability, graphics use, color use, layout of equipment, use of navigational features, etc. This change item also includes costs for similar modifications to control screens provided by equipment vendors to match the new standard, and costs for two additional empty SCADA server racks in Operations Building for the City's future use.
103	SRF Reimbursement Request Requirements	119,319	0	8	FBV is reimbursed for additional expenditures to assist the City with monthly billing information required for SRF funding, i.e. preparing a separate SRF formatted billing along with cost breakdown as per designated SRF categories, and provide all invoices. This task is performed on a monthly basis with FBV's payment application. Also includes costs to prepare an SRF formatted reconciliation breakdown for Pay Applications 1 to 31.
105	WRF Monument Entry Sign Modifications	23,738	0	7	
106	Add Wash Rack Grease and Sand Interceptor	35,287	0	8	FBV is reimbursed for additional expenditures to provide and install a grease and sand interceptor facility at the WRF Wash Rack (vehicle wash bay) as requested by City staff to match normal developer requirements. This includes an additional underground multiple chamber vault and underground piping modifications.

No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
107	Vactor Unloading Facility Revisions	38,880	0	8	FBV is reimbursed for additional expenditures to provide and install vactor unloading station modifications requested by City staff, including procure and install two (2) 10' section of concrete k-rail with stainless steel brackets, fabrication and installation of stainless steel sluice gate within vactor trench drain, and installation of concrete weir wall in the downstream sewer manhole.
108	Defer SEED PLANT Milestone and Commission	750,000	187	8	FBV is reimbursed for additional expenditures related to deferring the planned seed plant activity from early July 2022 to early October 2022 (3 months) including, revising sequencing and coordination expenses, deferred maintenance period expenses through October 4, 2022, commissioning inefficiencies and remobilization expenses, extended overhead and added site expenses through October 4, 2022, increased cost for Builders Risk insurance, and allowed mark-ups and fees.
109	Procurement of Teletruck for City Staff	74,562	0	7	FBV is reimbursed for the procurement of a JCB Teletruck from Central California Power for City staff use after the project. Details of the purchase are encompassed in the quote dated 2/7/22 from Central California Power (JBC Dealer) to the City of Morro Bay (Stock Order/Serial No:3405218 - Model 30G4x4 CON).
110	Chem Facility Fencing Revisions	24,767	0	7	FBV is reimbursed for extra work associated with modifying the chain link fencing enclosure at Chemical Facility as per the City's direction. The changes entails widening 6 each double swing gates that had already been installed at each chemical bay. The work required removal of existing fence posts, fencing, and anchors, patching of concrete, re-installation of gate posts, and procurement, delivery, and installation of new wider gate panels (12 total).
113	Modify H2O SCADA Screen for RO System	13,264	0	7	FBV is reimbursed for extra work associated with the following City requested SCADA screen upgrades: City and RO System supplier (H2O Innovations) agreed on upgrades to the screens, and H2O Innovations provided additional RO System SCADA screen re-work so that color use and terminologies match the other project SCADA screens.
114	RO/UV Building Insulation (Disputed)	32,025	0	7	FBV was directed on 3/3/22 to provide wall and ceiling insulation at Building 16, Storage Shed and Building 50, RO/UV Facility. The City's directive was based upon an ICC Inspection Report dated 10/22/21, from a Certified Deputy Inspector for Code compliance, stating "the R.O. Building has heating, but no insulation at this time, but per Title 24 should be insulated." FBV considered this outside the original GMP scope and submitted original costs of approximately \$109K on 5/2/22. On 7/28/22, FBV notified the City that the materials had been purchased and submitted a cost of \$32,025 for insulation materials. Because the City and FBV disagree on whether the installation is included in the GMP, the City has agreed to take possession of the insulation materials until the installation cost matter has been resolved. Materials are currently stored on site.



No.	Item	Approved Amount (\$)	Cal Days	Amendment No.	Description
117	Water Main Connection on Teresa Road	37,503	0	7	FBV is reimbursed for extra work associated with providing and additional length of 18" water line piping, fittings, and gate valve for the new WRF City Water service connection. FBV had originally assumed their connection would be near the edge of pavement on Teresa Road. The final installation includes additional trenching, piping, fittings, and a valve extended to a connection point in the center of Teresa Road. This change also includes installing temporary piping and appurtenances to obtain construction water for the project site until the final connection is completed.
118	Fine Screen LOTO Capability (Disputed)	26,905	0	7	FBV is reimbursed for work associated with changes to the fine screens control panel and power feed that will facilitate safe and proper Lockout/Tagout procedures as follows: (1) Relocate flow meter transmitter 180 degrees from current position adjacent to fine screens vendor LCP to make room for new enclosures/equipment. (2) Remove fine screens and conveyor starters, circuit breakers, load monitors, and control wiring. (3) Relocate starters, circuit breakers, load monitors, and control wiring to new individual enclosures for each fine screen and conveyor. (4) Install one 480V main fused disconnect switch for local shutdown of existing 480V circuit. (5) Install one 480V fused disconnect on each new starter enclosure for individual load shutdown. Three individual 480V circuits will tap off of existing 480V circuit per NEC tap rule. (6) Install new 120V circuit from electrical building electrical panel, through local plant control panel, and terminate in vendor LCP for new control power. (7) Remove vendor control power transformer and re-wire door switch. (8) Install galvanized anchor based stand and kickers to support new enclosures. (9) Modify vendor LCP shroud to install conduits for extending new 480V power conductors and 120V control wiring. (10). Energize and test.
119	Credit for Chemicals Supplied by City	(141,972)	0	7	The City is credited back and reimbursed for process facility chemicals to be purchased and supplied by the City rather than FBV as was otherwise required by the Design Build Agreement.
121	Credit for Alternate Frog Barrier (Alum. Top Lip)	(12,000)	0	8	The City is reimbursed for the cost reduction to provide install an aluminum anti-climbing lip at the top of the HDPE frog barrier rather than FRP, which will provide a longer lifespan (over 30 years compared to the 10 to 20 year estimate for FRP).
<b>TOTAL</b>		<b>\$10,780,786</b>	<b>202</b>		

Appendix F

## ANVIL AMENDMENT DETAILS



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 001**

**Project:** WRF Lift Stations and OffSite Pipelines Project      **Contractor:** Anvil Builders, Inc.  
**Date:** October 12, 2021      **Project Manager:** Gary Silveira

Upon mutual acceptance and execution of this document by the City of Morro Bay (City) and Anvil Builders, Inc. (Contractor), Contractor is hereby directed to make the following changes for the consideration set forth below:

See following page(s) for Descriptions and Reasons for Change

PCO #	DESCRIPTION	Reason For Change	Amount	Contract Time (Calendar Days)
1	SHPO Delay (35 days no dig moratorium)	REG	\$ 443,000.00	40 Days
2	Add 2 Each 10-in Valves and 10-in Tee	CR1	\$ 23,498.00	0 Days
3	PS-B MAS-Relay Pump Protection Module per DC-01	CR1	\$ 13,477.00	0 Days
4	PS-A & PS-B Conduit Changes per DC-02	CR1	\$ 6,436.00	0 Days
7	Extend Waterline Relocation from Sta 71+00 to Sta 77+43	DSC	\$ 131,096.00	0 Days
12	CA-SLO-2232H Work Interruptions from Stat 147 to Sta 150	REG	\$ 56,978.00	0 Days
NET CHANGE ORDER ADJUSTMENT			\$ 674,485.00	40 Days

ORIGINAL CONTRACT AMOUNT	\$ 31,493,675.00
Previous Change Orders	\$ -
Previous Contract Amount	\$ 31,493,675.00
Adjustments by this Change Order	\$ 674,485.00
New Contract Amount	\$ 32,168,160.00

CURRENT FINAL COMPLETION DATE	2/22/2022
Extension Days s (Calendar)	40 Days
NEW FINAL COMPLETION	4/3/2022

Acceptance of this Change Order constitutes an agreement between the City and Contractor, and the work is to be performed subject to the same terms and conditions as are contained in the Agreement with Contractor and for work on the above-mentioned project.

By signature of this Change Order, the Contractor acknowledges that the adjustments to the Contract Cost and Time contained in the Change Order are in full satisfaction and accord and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by this Change Order.

ACCEPTED

Anvil Builders Inc.

Contractor (Company Name)

(Authorized Signature)

(Date)

Gary Silveira - Project Manager

(Print Name and Title)

When signed by the Owner and Construction Manager and received by Contractor, this document becomes effective IMMEDIATELY, and the Contractor shall proceed with the change(s) described above.

APPROVED

Carollo Engineers Inc

Construction Manager

Authorized Signature

(Date)

Paul Amico - Project Manager

(Print Name and Title)

ACCEPTED

City of Morro Bay

Owner

Authorized Signature

(Date)

Scott Collins - City Manager

(Print Name and Title)



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 001**

**Project:** WRF Lift Stations and OffSite Pipelines Project

**Contractor:** Anvil Builders, Inc.

**Date:** October 12, 2021

PCO #	TILE	DESCRIPTION OF CHANGE	Reason For Change
1	SHPO Delay	Project NTP was issued on 12-14-20. Based on a notification from SHPO, a stop work order was issued by the City on 2-16-21 restricting Anvil from conducting any ground-disturbing activities. Upon resolution of SHPO concerns, Anvil was allowed to begin most project ground-disturbing activities on 3-15-21 (35 calendar days later). This issue arose from the Section 3 Consultation between EPA and SHPO required as part of the City's WIFIA loan. The process included submittal of a Monitoring Plan to EPA that SHPO needed to approve before any ground-disturbing activities could begin. The Monitoring Plan was submitted to EPA on 10-3-2020, and EPA sent the document to SHPO in early November 2020. SHPO has a statutory requirement to provide a response within 30 days. EPA received SHPO comments in February 2021, past the 30 day limit. Under the regulations, EPA and the City could have moved forward since the statutory 30 day requirement was not met. However, EPA was not willing to do so. Consequently, the City was not approved by SHPO to move forward with any ground disturbing activities until 3-15-2021. Anvil subsequently filed a delay claim and time impact analysis resulting in this change order.	REG
2	Add 2 Each 10-in Valves and 10-in Tee	Anvil exposed the existing Waterline near Sta 121+30 as required to relocate the line per Contract. The existing piping configuration was discovered to be different from what was shown on the as-built drawings. After a review, City staff concluded that a new 10" Valve and 10" Tee fitting were needed to replace the existing piping configuration. This change will increase the reliability and operability of the water distribution system.	CR1
3	PS-B MAS Pump Relay Module per DC-01	The electrical Design Engineer issued Clarification No. 1 on 3-12-2021, indicating that the Pump Station B Pumps have been provided with a different pump protection system than shown in the design. The conduit and wire changes are required to incorporate the pump protection module. As a result conduit/wiring revisions were necessary at PS-B on Drawings 20-E-02, 03, 04, 05, 08 & and 20-I-01.	CR1
4	PS-A & PS-B Conduit Changes per DC-02	The electrical Design Engineer issued Clarification No. 2 on 4-19-2021, indicating that isolation of AC and DC signals is desired to prevent potential signal interferences. The following revisions will isolate the AC signals from the DC signals. As a result conduit/wiring revisions were necessary at PS-A on Drawings 10-E-3, 10-E-6, and 10-E-7, and at PS-B on Drawings 20-E-4, 20-E-5, 20-E-8, and 20-E-9.	CR1
7	Extend 12" RO Waterline Relocation	The original Contract includes relocating an existing 12" Waterline on Quintana between Sta 77+43 and Sta 82+05, due to the waterline being in conflict with the main Joint trench. Anvil's trenching crew on Quintana encountered the waterline entering the main Joint Trench alignment at Sta 73+50. After additional potholing, the City decided to extend the water line relocation back to Sta 71+00 (adding approximately 643 LF of waterline relocation).	DSC
12	CA-SLO-2232H Work Interruptions	Trenching operations on Quintana Rd near South Bay Blvd (Sta 147 to Sta 150) was significantly impacted by two known archaeological sites (CA-SLO-2232/H and CA-SLO-1183), one of which contains recently discovered human burials. This area needed to have excavations treated differently in that direct loading of trucks was not allowed without first confirming the soil was negative for resources or remains. These instruction were provided and enforced by State mandated archeological and tribal monitors assigned to the project.	REG

**REASON FOR CHANGE CODES**

**CR1:** City requested (required)

**CR2:** City requested (Optional)

**E&O:** Design Error or Omission

**ABI:** Anvil request / claim item

**DSC:** Differing Site Conditions

**REG:** Regulatory Agency Item



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 002**

**Project:** WRF Lift Stations and OffSite Pipelines Project      **Contractor:** Anvil Builders, Inc.  
**Date:** January 11, 2022      **Project Manager:** Matt Scholfield

Upon mutual acceptance and execution of this document by the City of Morro Bay (City) and Anvil Builders, Inc. (Contractor), Contractor is hereby directed to make the following changes for the consideration set forth below:

See following page(s) for Descriptions and Reasons for Change

PCO #	DESCRIPTION	Reason For Change	Amount	Contract Time (Calendar Days)
9	SoCal Gas Delays and Disruptions	ABI	\$ 43,017.00	0 Days
22	6-Inch Waterline Relocation at Pump Station A	DCS	\$ 20,147.00	0 Days
23	Miscellaneous Unforeseen Utility Work	DSC	\$ 27,198.00	0 Days
27	MTBM Delays and Disruptions - Claim Resolution	ABI	\$ 111,161.00	0 Days
28	SLO County APCD Generator Mandates – Procurements	REG	\$ 301,703.00	0 Days
34	Bike Path Jack & Bore Concrete Debris Obstruction	DSC	\$ 84,276.00	0 Days
NET CHANGE ORDER ADJUSTMENT			\$ 587,502.00	0 Days

ORIGINAL CONTRACT AMOUNT	\$ 31,493,675.00
Previous Change Orders	\$ 674,485.00
Previous Contract Amount	\$ 32,168,160.00
Adjustments by this Change Order	\$ 587,502.00
Change Order to Date	\$ 1,261,987.00
New Contract Amount	\$ 32,755,662.00

CURRENT FINAL COMPLETION DATE	4/3/2022
Extension Days (Calendar)	0 Days
NEW FINAL COMPLETION	4/3/2022

Acceptance of this Change Order constitutes an agreement between the City and Contractor, and the work is to be performed subject to the same terms and conditions as are contained in the Agreement with Contractor and for work on the above-mentioned project.

By signature of this Change Order, the Contractor acknowledges that the adjustments to the Contract Cost and Time contained in the Change Order are in full satisfaction and accord and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by this Change Order.

ACCEPTED

Anvil Builders Inc.  
 Contractor (Company Name)

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(Authorized Signature) (Date)

Matt Scholfield  
 (Print Name and Title)

When signed by the Construction Manager, and upon execution of source document Amendment by City Council, this document becomes effective IMMEDIATELY, and Contractor shall proceed with the change(s) described above.

APPROVED

Carollo Engineers Inc / MEG Inc.  
 Construction Manager

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Authorized Signature (Date)

Steve Mimiaga - Construction Mngr.  
 (Print Name and Title)





**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 002**

<b>Project: WRF Lift Stations and OffSite Pipelines Project</b>			
<b>Contractor: Anvil Builders, Inc.</b>			
<b>Date: January 11, 2022</b>			
<b>PCO</b>	<b>TILE</b>	<b>DESCRIPTION OF CHANGE</b>	<b>Reason For Change</b>
9	SoCal Gas Delays and Disruptions	The project's joint trench, containing multiple pipelines, parallels an existing 16" diameter SoCal Gas high pressure gas main for nearly the entire alignment along Quintana Road. SoCal Gas requires a representative to be on site during all digging activities as well as other work activities occurring within 10 ft of the high pressure gas main (i.e. that could potentially damage or otherwise impact the main). There have been several occurrences where the SoCal Gas representative did not show up for scheduled assignments, which prevented Anvil from performing contract work and/or progressing the joint trench. In these cases Anvil's entire crew was forced to literally stand-by and wait for the SoCal Gas representative to arrive. The City/Carollo have spent considerable time and effort to coordinate between Anvil and SoCal Gas to improve communication and cooperation, but nevertheless, Anvil was negatively impacted on the following days: 5/3/21 for 2 hours, 5/17/21 for 2.5 hours, 5/18/21 for 3 hours, 6/3/21 for 2 hours, 6/17/21 for 2.5 hours for 2 different crews, 8/10/21 for 4 hours.	ABI
22	6" Waterline Relocation at Pump Sta. A	New Pump Station A is located on City property at the City's existing corporation yard on Atascadero Road. As part of the site preparation and demolition work at Pump Station A, an unknown 6" Waterline was discovered and needed to be relocated to construct the pump station. The extra work included potholing and locating the unknown utility, trenching and installation of new by-pass piping, pressure testing and disinfection of the relocated waterline, backfill and other site work.	DSC
23	Miscellaneous Unforeseen Utility Work	During the project work to date, the below noted miscellaneous unforeseen minor utility work was required for contract work to proceed. The following items are acknowledged as unforeseen conditions and as such warrant reimbursement of verified extra costs: (1) potholing unmarked utility at Pump Station A on 5/3/21, (2) emergency work to recover trench caving due to adjacent utilities from Sta 71+75 to Sta 71+85 on 6/13/21, (3) excavating around unmarked 4" (asbestos) Waterline at Sta 146+00 on 7/8/21, (4) Anvil crew standby time during potholing of incorrectly marked telephone conduit on 8/5/21, (5) unknown and unmarked Sanitary Sewer crossing at Sta 88+50, line was struck and repaired on 8/6/21, (6) potholing unknown and unmarked Sanitary Sewer lines on 8/9/21, and (7) unknown and unmarked Sanitary Sewer crossing at Sta 90+50, line was struck and repaired on 8/23/21.	DSC
27	MTBM Delays and Disruptions Claim Resolution	Anvil and their Microtunnel Boring Machine (MTBM) subcontractor, Vadnais Trenchless Services (Vadnais) encountered several unknown utilities, potential obstructions, and differing soil conditions along the MTBM alignment below the Morro Bay Roundabout, including complete equipment stoppages at approximately Sta 98+50 and Sta 98+65. Anvil's subcontractor (Vadnais) claimed delay and equipment standby time for these equipment stoppages that lasted over 8 weeks. During the 8 weeks of work stoppage, Anvil excavated and shored two separate 23 ft deep emergency recovery shafts to clear the apparent obstructions from in front of the MTBM cutting head. However, no actual obstruction was found, located, or confirmed during the recovery shaft excavations. Subsequently, the MTBM casing pipe installation was completed without further incidents. Anvil and Vadnais provided notifications of potential costs under PCO #14 and PCO #27 in excessive \$500,000 for the Vadnais equipment downtime, Vadnais loss of crew efficiencies, and for the cost of the two recovery shafts by Anvil. The City initially denied the claim for stoppages at Sta 98+50 and Sta 98+65, as no obstruction was found. The City does not dispute the other costs related to unknown utilities noted herein. After several meetings between the City, Carollo, Anvil, and Vadnais, a claim settlement was reached in the amount of \$111,161, wherein all other costs and impacts associated with both PCO #14 and PCO #27, are waived or otherwise agreed upon for the final lump sum amount noted herein.	ABI
28	SLO County APCD Emergency Generator Mandates – Procurements	On 9/24/21, the City received a Notice of Incomplete Applications from SLO County Air Pollution Control District (APCD), pursuant to the Pump Station A emergency generator and the Pump Station B emergency generator. It is City staff understanding that both generators were in compliance with APCD requirements at the time of Bid Opening in 2020. However, in late 2020, APCD rules were revised causing the two generators to now need retrofitted emissions reduction components to attain APCD compliance and approval. APCD is now also requiring Health Risk Assessments (HRAs) for both pump station sites which Carollo is undertaking via specialty subconsultant. This change order encompasses the below noted initial known costs for emissions reduction components, however it is acknowledged that there will be a subsequent change order for additional structural, mechanical, electrical, and sitework revisions necessary to implement the changes. This change order includes costs for the following assumed necessary procurement items: At Pump Station A add a Diesel Particulate Filter (DPF); and at Pump Station B add the DPF, plus Selective Catalytic Reduction (SCR) and Diesel Oxidation Catalysts (DOC) technologies.	REG
34	Bike Path Jack & Bore Concrete Debris Obstruction	On 11/11/21, about 3 pm, Anvil and their jack & bore subcontractor (Pacific Boring) encountered a concrete obstruction in the path of the 60" casing pipe. Anvil and Pacific Boring were immediately instructed to suspend the jack & bore mechanical operation and hand excavate to investigate and confirm the size and extent of the concrete obstruction. For the following 6 consecutive days (including Saturday 11/13/21 and Sunday 11/14/21), Anvil and Pacific Boring worked 8 to 10 hour shifts to hand excavate and jack hammer out the concrete obstruction, while simultaneously advancing the casing pipe about 20 ft using the hydraulic jacking equipment. On 11/18/21, the obstruction was cleared and Pacific Boring resumed normal jack & bore operations, finishing the casing installation the same day. Note that the obstruction appears to be an old Caltrans culvert structure from the original CA Route 1 highway. Also note that the jack & bore work through jurisdictional wetlands needed to proceed without delay, working through the weekend, in order to meet a California Department of Fish and Wildlife (CDFW) mandate for the tunnel to be completed by 11/19/21.	DSC

**REASON FOR CHANGE CODES**  
**CR1:** City requested (required)  
**CR2:** City requested (Optional)  
**E&O:** Design Error or Omission  
**ABI:** Anvil request / claim item  
**DSC:** Differing Site Conditions  
**REG:** Regulatory Agency Item



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 003**

**Project:** WRF Lift Stations and OffSite Pipelines Project      **Contractor:** Anvil Builders, Inc.  
**Date:** March 22, 2022      **Project Manager:** Chris Fassari

Upon mutual acceptance and execution of this document by the City of Morro Bay (City) and Anvil Builders, Inc. (Contractor), Contractor is hereby directed to make the following changes for the consideration set forth below:

See following page(s) for Descriptions and Reasons for Change

PCO #	DESCRIPTION	Reason For Change	Amount	Contract Time (Calendar Days)
8	Additional Project Signage Costs	CR2	\$ 9,196.00	0 Days
9.2	SoCal Gas Delays and Disruptions (Part 2)	ABI	\$ 20,750.00	0 Days
13.1	CA-SLO-16 Work Revisions (Time Extension)	REG	\$ -	153 Days
16	Reroute Joint Trench below State Waterline at 121+75	DSC	\$ 144,616.00	0 Days
20	Pothole Utilities for WRF Pilot Injection Well Layout	CR2	\$ 15,291.00	0 Days
32	Broken Waterline at Quintana Road and Kings Avenue	ABI	\$ 6,198.00	0 Days
39	Cultural Monitor Extra Work at MTBM Launch Pit	DSC	\$ 45,266.00	0 Days
NET CHANGE ORDER ADJUSTMENT			\$ 241,317.00	153 Days

ORIGINAL CONTRACT AMOUNT	\$ 31,493,675.00
Previous Change Orders	\$ 1,261,987.00
Previous Contract Amount	\$ 32,755,662.00
Adjustments by this Change Order	\$ 241,317.00
Change Order to Date	\$ 1,503,304.00
New Contract Amount	\$ 32,996,979.00

CURRENT FINAL COMPLETION DATE	4/3/2022
Extension Days (Calendar)	153 Days
NEW FINAL COMPLETION	9/3/2022

Acceptance of this Change Order constitutes an agreement between the City and Contractor, and the work is to be performed subject to the same terms and conditions as are contained in the Agreement with Contractor and for work on the above-mentioned project.

By signature of this Change Order, the Contractor acknowledges that the adjustments to the Contract Cost and Time contained in the Change Order are in full satisfaction and accord and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by this Change Order.

ACCEPTED

Anvil Builders Inc.

Contractor (Company Name)

(Authorized Signature)

(Date)

Chris Fassari

(Print Name and Title)

When signed by the Construction Manager, and upon execution of source document Amendment by City Council, this document becomes effective IMMEDIATELY, and Contractor shall proceed with the change(s) described above.

APPROVED

Carollo Engineers Inc / MEG Inc.

Construction Manager

Authorized Signature

(Date)

Steve Mimiaga - Construction Mngr.

(Print Name and Title)



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 003**

**Project:** WRF Lift Stations and OffSite Pipelines Project

**Contractor:** Anvil Builders, Inc.

**Date:** March 22, 2022

PCO	TILE	DESCRIPTION OF CHANGE	Reason For Change
8	Additional Project Signage Costs	The original contract included a \$5,000 allowance for additional signage not shown on the plans or required by the specifications. Anvil has exhausted this original budget responding to signage requests from City staff to date. This change order item provides reimbursement of Anvil costs to date to provide additional signage, including custom signs, above the \$5,000 allowance as directed by the City. These additional signs are deemed necessary for public safety, public information, enhanced traffic flow, and/or to enhance access to businesses open during construction.	CR2
9.2	SoCal Gas Delays and Disruptions (Part 2)	The project's joint trench, containing multiple pipelines, parallels an existing 16" diameter SoCal Gas high pressure gas main for nearly the entire alignment along Quintana Road. SoCal Gas requires a representative to be on site during all digging activities as well as other work activities occurring within 10 ft of the high pressure gas main (i.e. that could potentially damage or otherwise impact the main). There have been several occurrences where the SoCal Gas representative did not show up for scheduled assignments, which prevented Anvil from performing contract work and/or progressing the joint trench. In these cases Anvil's entire crew was forced to literally stand-by and wait for the SoCal Gas representative to arrive. The City/Carollo have spent considerable time and effort to coordinate between Anvil and SoCal Gas to improve communication and cooperation, but nevertheless, Anvil was negatively impacted on the following days: 8/25/21 for 2 hours, 8/26/21 for 3.5 hours, 9/16/21 for 1.5 hours, 10/7/21 for 2 hours. This is the second change order to reimburse Anvil for SoCal Gas monitor disruptions, the previous change order amount was \$43,017.00.	ABI
13.1	CA-SLO-16 Work Revisions (Time Extension)	Anvil is provided a 153 day non-compensable time extension due to impacts caused by SHPO mandated work restriction at the Morro Creek Utility Bridge, based on the following analysis and terms: Per Anvil's approved Baseline Schedule, the Utility Bridge was to start Feb 1, 2021 with 23 days of float. Per Anvil's Feb 2022 Update, the Utility Bridge was actually started Feb 24, 2022, now with 153 days of negative float (delay). It is acknowledged that SHPO restrictions prevented Anvil from starting any work at the Utility Bridge prior to Feb 24, 2022. It is acknowledged that the on-going (thru March 2022) archeologist supervised work on site, required by SHPO, continues to impact Anvil's schedule. Direct cost impacts resulting from these circumstances are being tracked separately from this analysis. Anvil is provided the 153 calendar day non-compensable time extension at this time based on the applicable Critical Path Schedule Update negative float duration discuss herein above. Anvil has submitted a Time Impact Analysis requesting 201 calendar days. Anvil and the City agree to allow Anvil to seek additional time extensions if warranted in the future when the full extent of this on-going impact is known. The current Contract completion date is 4/3/2022 (through Amendment No. 3). With 153 calendar days added, the new Contract Completion Date will be Sept 3, 2022. The City currently views the SHPO restrictions at Utility Bridge as concurrent with other Anvil caused delays (i.e. the Pump Station A Electrical Building currently has 164 days of negative float). As such the City considers this delay as non-compensable at this time (no extended overhead merit). Similar to above, Anvil and the City agree to allow Anvil the opportunity to present substantiating documentation of extended overhead merit in the future when the full extent of this on-going impact is known.	REG
16	Reroute Joint Trench below State Waterline at 121+75	Prior to starting the Joint Trench excavation near Sta 121+75, an existing 10" State Waterline was marked incorrectly in the field by the pipeline operator. Anvil excavated (potholed) the pipeline at the location marked in the field to verify its position. The State Waterline was not found at the marked location. The pipeline operator re-marked the line again in the field, this time where shown on the Contract Drawings at Sta 121+75. A pipeline was located at this location and the pipeline operators confirmed the line as the correct pipe in the field. Anvil then began excavating the 8-ft wide by 10-ft deep Joint Trench through the area. While excavating the Joint Trench, Anvil discovered another existing pipeline running adjacent to and below the pipe previously identified as the State Waterline shown on the plans. The pipeline operator subsequently confirmed that the adjacent lower pipe was actually the State Waterline to be protected in place. This caused Anvil to have to move back, re-excavate, and deepen the Joint Trench excavation from 10 ft to approximately 14 ft deep. This would allow the Joint Trench pipelines to pass below the lower pipe with required DDW clearances. In doing so, Anvil was also required to provide additional trench shoring measures and trench dewatering for the deeper trench; then Anvil encountered additional difficulties and inefficiencies installing the Joint Trench pipelines in the deeper trench, with additional groundwater, with increased soil instabilities, and additional shoring to work around, etc. Anvil was subsequently required to also provide additional Controlled Low Strength Material (CLSM) backfill and then additional select fill compaction as well. Anvil's pipe installation operation was significantly impacted over the period from 8/4/21 to 8/16/21.	DSC
20	Pothole Utilities for WRF Pilot Injection Well Layout	Anvil provided additional potholing and utility locating at the request of the City, near Anvil's stockpile and staging area on Vistra property (along Bike Path). This additional potholing and utility locating was required to determine the best location and layout for the future Pilot Injection Well to be installed under a separate City contract, as part of the Recycled Water facilities associated with the Morro Bay "Our Water" program. At the City's direction, Anvil contacted Underground Service Alert (USA), had the area underground utilities marked by utility owners, potholed several critical utilities, backfilled and restored the area, and provided resulting survey data to the City.	CR2



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 003**

**Project:** WRF Lift Stations and OffSite Pipelines Project

**Contractor:** Anvil Builders, Inc.

**Date:** March 22, 2022

PCO	TILE	DESCRIPTION OF CHANGE	Reason For Change
32	Broken Waterline at Quintana Road and Kings Avenue	On Saturday, 10/29/21, City of Morro Bay staff observed a waterline leak where the waterline crosses the Anvil trench in the intersection of Quintana Road at Kings Avenue. The City subsequently confirmed that a 6" Water line, made of Transite (AC) pipe, had deflected and come apart just beyond Anvil's trench line. Anvil had been working in this intersection the previous week and there was strong indication that Anvil activities caused the line brake. Anvil indicated their position that they have no reason to assume they caused the water line break. The City has no reason to believe that the rupture would have occurred if not for Anvil trenching across and backfilling around the existing pipe. After additional discussion and negotiation it was agreed that the City would pay a portion of the Anvil crew expenses for repairs. The settlement amount is less than half of Anvil actual costs. Note that City staff also incurred costs for various activities including temporary repairs made when the leak was first discovered.	ABI
39	Cultural Monitor Extra Work at MTBM Launch Pit	Trenching operations just north of the Microtunnel launch pit on Quintana Road near the Morro Bay Blvd Roundabout (Sta 94 to Sta 95) was significantly impacted by a known archaeological site. Anvil work was significantly impacted by instructions provided and enforced by State mandated archeological and tribal monitors assigned to the project. During trenching in the subject area, all excavated spoils were treated differently in that direct loading of trucks was not allowed without first confirming the soil was negative for resources or remains, by hand investigations performed by the archeological and tribal monitors. Anvil's trenching and shoring operation was significantly impacted over the period from 10/21/21 to 11/8/21.	DSC

**REASON FOR CHANGE CODES**  
**CR1:** City requested (required)  
**CR2:** City requested (Optional)  
**E&O:** Design Error or Omission  
**ABI:** Anvil request / claim item  
**DSC:** Differing Site Conditions  
**REG:** Regulatory Agency Item



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 004**

**Project:** WRF Lift Stations and OffSite Pipelines Project      **Contractor:** Anvil Builders, Inc.  
**Date:** June 14, 2022      **Project Manager:** Chris Fassari

Upon mutual acceptance and execution of this document by the City of Morro Bay (City) and Anvil Builders, Inc. (Contractor), Contractor is hereby directed to make the following changes for the consideration set forth below:

See following page(s) for Descriptions and Reasons for Change

PCO #	DESCRIPTION	Reason For Change	Amount	Contract Time (Calendar Days)
11	Reroute IPR and Water Line Below Sta. 144 Culvert	DSC	\$ 103,893.00	0 Days
19	Remove City's Existing Desalination Iron Media Tank	CR2	\$ 54,189.00	0 Days
28.1	SLO County APCD Generator Mandates (Rescind)	REG	\$ (301,703.00)	0 Days
33	Paving Repairs Near Todd's Garage	CR2	\$ 6,895.00	0 Days
41	Unknown Cementitious Subgrade at South Bay Blvd	DSC	\$ 26,600.00	0 Days
42	Unknown Conduits at South Bay Bvd and Quintana Road	DSC	\$ 7,788.00	0 Days
49	Vistra/PG&E Easements Unknown Extra Work Items	DSC	\$ 48,273.00	0 Days
NET CHANGE ORDER ADJUSTMENT			\$ (54,065.00)	0 Days

ORIGINAL CONTRACT AMOUNT	\$ 31,493,675.00
Previous Change Orders	\$ 1,503,304.00
Previous Contract Amount	\$ 32,996,979.00
Adjustments by this Change Order	\$ (54,065.00)
Change Order to Date	\$ 1,449,239.00
New Contract Amount	\$ 32,942,914.00

CURRENT FINAL COMPLETION DATE	9/3/2022
Extension Days (Calendar)	0 Days
NEW FINAL COMPLETION	9/3/2022

Acceptance of this Change Order constitutes an agreement between the City and Contractor, and the work is to be performed subject to the same terms and conditions as are contained in the Agreement with Contractor and for work on the above-mentioned project.

By signature of this Change Order, the Contractor acknowledges that the adjustments to the Contract Cost and Time contained in the Change Order are in full satisfaction and accord and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by this Change Order (EXCEPT AS NOTED IN ITEM 13.1 HEREIN WHEREIN DELAY IMPACTS ARE ON-GOING).

ACCEPTED

Anvil Builders Inc.

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Contractor (Company Name)

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(Authorized Signature) (Date)

Chris Fassari

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(Print Name and Title)

When signed by the Construction Manager, and upon execution of source document Amendment by City Council, this document becomes effective IMMEDIATELY, and Contractor shall proceed with the change(s) described above.

APPROVED

Carollo Engineers Inc / MEG Inc.

Construction Manager

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Authorized Signature (Date)

Steve Mimiaga - Construction Mngr.

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(Print Name and Title)



**City of Morro Bay  
Water Reclamation Facility  
Lift Stations and Offsite Pipelines Project  
CHANGE ORDER 004**

**Project:** WRF Lift Stations and OffSite Pipelines Project

**Contractor:** Anvil Builders, Inc.

**Date:** June 14, 2022

PCO	TILE	DESCRIPTION OF CHANGE	Reason For Change
11	Reroute IPR and Water Line Below Sta. 144 Culvert	The original design called for the IPR and Waterline relocation in this area to be placed above the existing stormwater culvert. After the trench was excavated, it was discovered that there was insufficient soil cover over the existing culvert to allow the IPR and Waterline to be installed over the top per Drawings. Consequently, these pipelines needed to be routed under the culvert, which increased the depth of excavations from 2 ft to 8 ft at Sta 143+99, thereby also increasing requirements for trench shoring, excavated spoils, backfill and compaction, , and potential groundwater management, between Sta 142+95 and Sta 144+95. Reference RFI #52.	DSC
19	Remove City's Existing Desalination Iron Media Tank	The City requested a quote from Anvil to remove and dispose of the existing Desalination Iron Media Tank (horizontal pressure filter) located east of Pump Station A, along Atascadero Rd. Anvils quote includes removal of the tank, tank supports, and air vacs atop the tank. Bid includes the removal of a max. of 20 CY of concrete inside the tank. Bid is based on the steel tank weighing a maximum of 55,000 lbs (once concrete is removed). Anvil will remove and replace the existing chain link with barbed wire fence; 50 LF max. Removal of adjacent piping and appurtenances (air-vacs, anchor bolts, etc.) is not included in this work.	CR2
28.1	SLO County APCD Generator Mandates (Rescind)	On 9/24/21, the City received a Notice of Incomplete Applications from SLO County Air Pollution Control District (APCD), pursuant to the Pump Station A emergency generator and the Pump Station B emergency generator. The City subsequently completed and submitted Health Risk Assessments (HRAs) at each Pump Station, as was required by APCD as part of their Notice of Incomplete Applications. After submission of the HRAs, APCD reversed its initial determination and accepted both generators without modifications. As such, the City and Anvil agree to rescind the associated previous change order for added (assumed) emissions control devices included in Amendment No. 2. Reference PCO #28.	REG
33	Paving Repairs Near Todd's Garage	The City requested that Anvil repair existing failing pavement in the City right-of-way adjacent to Anvil's Joint Trench excavation. It was determined that the damaged asphalt was not the fault of Anvil operations but rather the on-going inclement weather and existing deteriorated pavement conditions. This occurred near Todd's Garage at 972 Quintana Rd, Morro Bay. The area was re-paved 12/10/2021.	CR2
41	Unknown Cementitious Subgrade at South Bay Blvd	During Joint Trench and IPR excavation work on South Bay Blvd, the Contractor encountered cement-treated aggregate base-rock material below the existing pavement. This cementitious base material required additional effort and expenses in mechanical removal work and subsequent off-site disposal (material was not re-useable as backfill). This extra work warrants reimbursement of verified extra costs including documented labor, equipment, and other expenses on 2/1/2022, 2/3/2022, 2/4/2022, 2/5/2022, 2/10/2022, 2/11/2022, and 2/14/2022.	DSC
42	Unknown Conduits at South Bay Blvd and Quintana	During Joint Trench excavation work near the South Bay Blvd and Quintana Road intersection, the Contractor encountered and damaged unknown existing conduits which required additional effort and expenses to hand-dig around and repair. This extra work warrants reimbursement of verified extra costs including documented labor, equipment, and other expenses on 1/25/2022. The conduits were not shown on the plans or claimed by any known utility owner.	DSC
49	Vistra/PG&E Easements Unknown Extra Work Items	During the project work within PG&E/Vistra easements to date, the below noted miscellaneous unforeseen minor utility work was required for contract work to proceed. The following items are acknowledged as unforeseen conditions and as such warrant reimbursement of verified extra costs: (1) Excavate "test percolation ponds" at City request along Bike Path on 2/16/2022, (2) Unknown utilities encountered from Sta 53+00 to Sta 54+00 which impacted production on 2/16/2022, (3) Installation of exclusionary fencing along LS-2 as required by SHPO on 2/23/2022, (4) Potholing LS-2 alignment for unknown utilities not shown on plans but marked by utility companies on 3/7/2022, (5) Unforeseen concrete slab not shown on plans along LS-2 alignment impacting production on 3/22/2022, (6) Excavate around utilities not marked on plans along LS-2 alignment, 8 utilities total, between 3/17/2022 and 3/31/2022, (7) Sawcut, remove, and stockpile unknown concrete slab at Sta 21+00 of LS-2 alignment on 3/30/2022, and (8) Excavate and install 4" pipe and fittings to re-route existing Vistra waterline above LS-2 force main pipe on 4/6/2022.	DSC

**REASON FOR CHANGE CODES**  
**CR1:** City requested (required)  
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**E&O:** Design Error or Omission  
**ABI:** Anvil request / claim item  
**DSC:** Differing Site Conditions  
**REG:** Regulatory Agency Item



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 005**

**Project:** WRF Lift Stations and OffSite Pipelines Project      **Contractor:** Anvil Builders, Inc.  
**Date:** August 23, 2022      **Project Manager:** Chris Fassari

Upon mutual acceptance and execution of this document by the City of Morro Bay (City) and Anvil Builders, Inc. (Contractor), Contractor is hereby directed to make the following changes for the consideration set forth below:

See following page(s) for Descriptions and Reasons for Change

PCO #	DESCRIPTION	Reason For Change	Amount	Contract Time (Calendar Days)
13	Utility Bridge Abutment Changes	REG	\$ 500,000.00	60 Days
17	Add Tracer Wire, Ground Rods, Terminal Stations	CR2	\$ 108,521.00	0 Days
25	Construction Cost Escalation Increases from Vendors	DSC	\$ 292,000.00	0 Days
50	DSC at South Bay & Teresa (Utilities & Bedrock)	DSC	\$ 210,000.00	0 Days
52	High Level Switch Alarm Termination at Utility Bridge	CR1	\$ 8,743.00	0 Days
61	City Sales Tax Increase During Project	DSC	\$ 134,403.00	0 Days
NET CHANGE ORDER ADJUSTMENT			\$ 1,253,667.00	60 Days

ORIGINAL CONTRACT AMOUNT	\$ 31,493,675.00	CURRENT FINAL COMPLETION DATE	9/3/2022
Previous Change Orders	\$ 1,449,239.00	Extension Days (Calendar)	60 Days
Previous Contract Amount	\$ 32,942,914.00	NEW FINAL COMPLETION	11/2/2022
Adjustments by this Change Order	\$ 1,253,667.00		
Change Order to Date	\$ 2,702,906.00		
New Contract Amount	\$ 34,196,581.00		

Acceptance of this Change Order constitutes an agreement between the City and Contractor, and the work is to be performed subject to the same terms and conditions as are contained in the Agreement with Contractor and for work on the above-mentioned project.

By signature of this Change Order, the Contractor acknowledges that the adjustments to the Contract Cost and Time contained in the Change Order are in full satisfaction and accord and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by this Change Order (EXCEPT AS NOTED IN ITEM 13.1 HEREIN WHEREIN DELAY IMPACTS ARE ON-GOING).

ACCEPTED

Anvil Builders Inc.

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Contractor (Company Name)

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(Authorized Signature) (Date)

Chris Fassari

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(Print Name and Title)

When signed by the Construction Manager, and upon execution of source document Amendment by City Council, this document becomes effective IMMEDIATELY, and Contractor shall proceed with the change(s) described above.

APPROVED

Carollo Engineers Inc / MEG Inc.

Construction Manager

 8/23/2022

Authorized Signature (Date)

Steve Mimiaga - Construction Mngr.

(Print Name and Title)





**City of Morro Bay  
Water Reclamation Facility  
Lift Stations and Offsite Pipelines Project  
CHANGE ORDER 005**

**Project:** WRF Lift Stations and OffSite Pipelines Project

**Contractor:** Anvil Builders, Inc.

**Date:** August 23, 2022

PCO	TILE	DESCRIPTION OF CHANGE	Reason For Change
13	Utility Bridge Abutment Changes	Anvil is reimbursed and compensated for extra work associated with SHPO mandated work revisions including: (1) revising trenching and finish grade requirements between Atascadero Road and the North Bridge Abutment, (2) revised slide rail shoring at both Bridge Abutment excavations, (3) mandated dewatering systems regardless of groundwater level/status, (3) and Archeologist supervised excavations with severely impacted excavation operations throughout the entire CA-SLO-16 zone. Anvil is provided a 60 day non-compensable time extension through 11/2/2022. Anvil and the City agree to allow Anvil to present substantiating documentation of associated extended overhead impacts for incorporation in a future Amendment.	REG
17	Add Tracer Wire, Ground Rods, Terminal Stations	Anvil is reimbursed and compensated for extra work associated with adding Tracer Wire on all project pipelines that are not located in a Joint Trench. This includes: 7 segments of IPR line, 2 segments of BR line, and 4 segments of Relocated Waterlines. Anvil shall provide Tracer Wire starting and/or ending terminals (Tracer Wire Test Stations per Std Det 2060 and Ground Rods per Std Det 16410). Anvil shall also provide Tracer Wire Test Stations at approximately 500' intervals throughout all associated tracer wire systems.	CR2
25	Construction Cost Escalation Increases from Vendors	Anvil is reimbursed and compensated for construction cost escalation increases from specific vendors resulting from the unprecedented COVID-19 caused inflation. The reimbursement is based on several specific vendors including: Aegion for special HDPE fusing, P&F Distributors for piping materials, Big Wakoo for fencing, Pacific Steel Group for rebar, R&B for construction materials, David Crye for trucking, JB Dewar for diesel fuel, and SC Fuels for diesel fuel. The compensation amount represents a 50/50 settlement split with Anvil.	DSC
50	DSC at South Bay & Teresa (Utilities & Bedrock)	Anvil is reimbursed and compensated for extra work associated with differing site conditions (DSC) encountered while installing project pipelines through the intersection of South Bay Blvd and Teresa Road including significant impacts for unknown bedrock over about 100-ft of trenching. This change item also includes impacts for utility conflicts encountered including for AT&T, SoCal Gas, State Water, City Water, and City Sewer. This change item also includes costs to remove and replace segments of existing City Sewer pipe and City Water pipe that were in poor condition and failing due to the adjacent bedrock excavation operations.	DSC
52	High Level Switch Alarm Termination at Utility Bridge	Anvil is reimbursed and compensated for extra work associated with eliminating the PLC at the Utility Bridge. The PLC only operated a flood sensor. The flood sensor will now be connected to the PLC at Pump Station A via added twisted shielded pair (control wire) running in one of the innerducts in the 4" FO conduit. The purchased PLC, solar panel, and other related equipment will be provided to the City as spare parts.	CR1
61	City Sales Tax Increase During Project	Anvil is reimbursed and compensated for extra costs associated with the City raising local Sales Tax by 1% effective 4/1/2021, essentially just after Anvil started working on the project. This settlement amount is calculated to reflect 1% of all goods and materials purchased within the City and delivered to the site.	DSC

**REASON FOR CHANGE CODES**  
**CR1:** City requested (required)  
**CR2:** City requested (Optional)  
**E&O:** Design Error or Omission  
**ABI:** Anvil request / claim item  
**DSC:** Differing Site Conditions  
**REG:** Regulatory Agency Item



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 006**

**Project:** WRF Lift Stations and OffSite Pipelines Project      **Contractor:** Anvil Builders, Inc.  
**Date:** November 29, 2022      **Project Manager:** Brett Bennett

Upon mutual acceptance and execution of this document by the City of Morro Bay (City) and Anvil Builders, Inc. (Contractor), Contractor is hereby directed to make the following changes for the consideration set forth below:

See following page(s) for Descriptions and Reasons for Change

PCO #	DESCRIPTION	Reason For Change	Amount	Contract Time (Calendar Days)	
26	Relocate 12" City RO Waterline at Sta 87+00	DSC	\$ 130,452.00	6	Days
31	Existing Storm Drains Collapse at Sta 63+97	DSC	\$ 7,389.00	2	
35	Existing RO Brine Line Discharge to WRF Outfall	REG	\$ 200,000.00	12	Days
36	DDW Initiated Realignment btwn Sta 99 and Sta 116	REG	\$ 82,892.00	2	
37	Restoration of Quintana Near Kings during Inclement Weather	DSC	\$ 13,000.00		
45	Atascadero BR and Joint Trench Realignments	DSC	\$ 34,023.00		
53	Pump Station B Grading and Drainage Revisions	E&O	\$ 65,102.00	5	Days
55	200 LF Fused 4" HDPE for City Emergency Leak Response	CR2	\$ 1,338.00		
57	Add FCA Restraint Rods and Lugs at Pump Stations	E&O	\$ 47,647.00		
58	Change Wet Well Piping Fit-up Bolts to 316SS (RFI 122)	CR2	\$ 9,963.00		
59	Pump Station A Retaining Wall Revision to Detail 1	E&O	\$ 20,837.00		
68	Waterline Breaks on Atascadero Road near Hwy 1	DSC	\$ 34,120.00	2	
<b>NET CHANGE ORDER ADJUSTMENT</b>			<b>\$ 646,763.00</b>	<b>29 Days</b>	

ORIGINAL CONTRACT AMOUNT	\$ 31,493,675.00	CURRENT FINAL COMPLETION DATE	11/2/2022
Previous Change Orders	\$ 2,702,906.00	Extension Days (Calendar)	29 Days
Previous Contract Amount	\$ 34,196,581.00	NEW FINAL COMPLETION	12/1/2022
Adjustments by this Change Order	\$ 646,763.00		
Change Order to Date	\$ 3,349,669.00		
New Contract Amount	\$ 34,843,344.00		

Acceptance of this Change Order constitutes an agreement between the City and Contractor, and the work is to be performed subject to the same terms and conditions as are contained in the Agreement with Contractor and for work on the above-mentioned project.

By signature of this Change Order, the Contractor acknowledges that the adjustments to the Contract Cost and Time contained in the Change Order are in full satisfaction and accord and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by this Change Order (EXCEPT AS NOTED IN ITEM 13.1 HEREIN WHEREIN DELAY IMPACTS ARE ON-GOING).

ACCEPTED

Anvil Builders Inc.

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Contractor (Company Name)

*[Signature]*      12/01/2022

(Authorized Signature)      (Date)

Brett Bennett      PM

(Print Name and Title)

When signed by the Construction Manager, and upon execution of source document Amendment by City Council, this document becomes effective IMMEDIATELY, and Contractor shall proceed with the change(s) described above.

APPROVED

Carollo Engineers Inc / MEG Inc.

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Construction Manager

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Authorized Signature      (Date)

Steve Mimiaga - Construction Mngr.

(Print Name and Title)





**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 006**

**Project:** WRF Lift Stations and OffSite Pipelines Project

**Contractor:** Anvil Builders, Inc.

**Date:** November 29, 2022

PCO	TILE	DESCRIPTION OF CHANGE	Reason For Change
26	Relocate 12" City RO Waterline at Sta 87+00	Anvil is reimbursed for extra work to relocate 12" City RO Waterline from Sta 85+90 to Sta 88+00, including potholing, saw cutting, trench excavation from Sta 85+90 to 88+00, installing waterline and backfill, hydrostatic testing, chlorinating, flushing, sampling/testing for BACT, placing concrete kickers for 45-degree elbows at tie-ins, and temporary paving. The relocation work was necessary to provide minimum clearance between the existing waterline and new parallel sewer lines.	DSC
31	Existing Storm Drains Collapse at Sta 63+97	Anvil is reimbursed for extra work to repair collapsed storm drain at Sta 64+00, including excavating damaged storm drain, installation of new SD pipe, placement of CLSM backfill, backfilling and temporary paving.	DSC
35	Existing RO Brine Line Discharge to WRF Outfall	Anvil is reimbursed for extra work related to the City's groundwater RO facility, including re-routing RO concentrate to the existing Air Relief Structure (Ocean Outfall), setting a new 48" sewer diversion manhole near RO Bldg and connecting a new 12" SS to new influent manhole, upsizing new sewer from 8" to 12" (noted above) from added 48" sewer diversion manhole to new influent manhole, installing new 6" RO flush line across Pump Station A site to retaining wall penetration and Cam-Lok (for flushing emergency storage tanks), deleting 6" flush line and vaults shown on Contract Drawings, connecting to existing re-purposed Desal Feed line for new RO discharge (from RO Bldg), and connecting new 6" ROC line to the existing Air relief Structure (Ocean Outfall).	REG
36	DDW Initiated Realignment btwn Sta 100 and Sta 116	Anvil is reimbursed for extra work to relocate or sleeve existing utilities located too close to new Sewer Force Mains and/or the IPR line as determined by the State of California Department of Drinking Water (DDW), including at Stations 100+56, 108+20, 113+52, and 115+52. The work includes potholing in advance of the work, saw cutting and excavating existing utilities to be relocated or sleeved, installing new piping and/or sleeve casing pipes, backfilling, compacting, and temporary paving.	REG
37	Restoration of Quintana Near Kings during Inclement Weather	Anvil is reimbursed for extra work to temporarily restore pavement on Quintana Road near Kings Avenue after an inclement weather event. The work included placement of CLSM backfill in a low area, installation, and maintenance of temporary cold mix asphalt. Temporary repairs were requested by City staff for public safety.	DSC
45	Atascadero BR and Joint Trench Realignments	Anvil is reimbursed for extra work to mitigate and realign the joint trench on Atascadero Road due to potential conflicts with existing utilities and to mitigate the narrow road leaving minimal space for traffic control devices on paved surfacing. Anvil extra work included, confirming the location of existing parallel waterlines by potholing, confirming the vertical clearance between the revised joint trench and all known crossing waterlines, confirming no conflict with other adjacent and crossing utilities, and paint marking in the field, the edges (sawcut lines) of Anvil's proposed Joint Trench for City staff review.	DSC
53	Pump Station Grading and Drainage Revisions	Anvil is reimbursed for extra work to correct grading and drainage issues at Pump Station B as noted in RFI #162, including adding various grade changes, grade breaks, and elevation adjustments throughout the pump station site, adding a concrete curb around the Electrical Building, and adding a concrete valley gutter, drain inlet, and curb drain to allow precipitation runoff to leave the site and flow into the existing Main Street storm drain system.	E&O

55	200 LF Fused 4" HDPE for City Emergency Leak Response	Anvil is reimbursed for extra work to provide 200 LF fused 4-in HDPE for City use in their emergency response to a leak below Route-1 near Cloisters Park. This work is not otherwise related to the Anvil Pipelines and Pump Stations project.	CR2
57	Add FCA Restraint Rods and Lugs at Pump Stations	Anvil is reimbursed for extra work to furnish and install restraint rods and lugs at all flange coupling adapters (FCAs) at each pump station. This includes 6 each FCAs at Pump Station A and 6 each FCAs at Pump Station B. Without these restraint rods the FCAs could come apart and/or leak during high pressure conditions for the noted above grade portions of pump station discharge piping.	E&O
58	Change Wet Well Piping Fit-up Bolts to 316SS (RFI 122)	Anvil is reimbursed for extra work to furnish and Install stainless steel flange bolts for all flanged piping connections within wastewater wet wells at both Pump Station A and Pump Station B. The specified carbon steel bolts would have a significantly shorter service life.	CR2
59	Pump Station A Retaining Wall Revision to Detail 1	Anvil is reimbursed for extra work to increase the size of the pump station site retaining wall and concrete footing, and to add steps in the wall/footing as required. The extra work includes increasing the size of the reinforced concrete footing and changing the CMU blocks from 8" to 10" for additional structural strength. The work also includes adding 3 steps in the wall to accommodate planned finish grading at Pump Station A.	E&O
68	Waterline Breaks on Atascadero Road near Hwy 1	Anvil is reimbursed for extra work to repair a broken existing City waterline that failed during Anvil's work near Sta 26+75, which ceased crew work and diverted resources to repair the failed waterline. The work includes saw cutting and excavating the existing waterline, installing new piping and repair couplings, backfilling, compacting, and temporary paving. The extra work occurred mostly after hours on June 7, 2022.	DSC

**REASON FOR CHANGE CODES**

**CR1:** City requested (required)

**CR2:** City requested (Optional)

**E&O:** Design Error or Omission

**ABJ:** Anvil request / claim item

**DSC:** Differing Site Conditions

**REG:** Regulatory Agency Item





**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 007**

**Project:** WRF Lift Stations and OffSite Pipelines Project      **Contractor:** Anvil Builders, Inc.  
**Date:** February 28, 2023      **Project Manager:** ~~Chris Fassari~~ *Brett Bennett*

Upon mutual acceptance and execution of this document by the City of Morro Bay (City) and Anvil Builders, Inc. (Contractor), Contractor is hereby directed to make the following changes for the consideration set forth below:

See following page(s) for Descriptions and Reasons for Change

PCO #	DESCRIPTION	Reason For Change	Amount	Contract Time (Calendar Days)	
5	Pump Station A Excavation NPDES Dewatering Permit	REG	\$ 55,856.00	0	Days
8	Additional Project Signage Costs	CR1	\$ 3,856.00	0	Days
23.1	Miscellaneous Unforeseen Utility Work (Part 2)	DSC	\$ 17,949.00	0	Days
66	Repair Leaking City Waterline at North Abutment	CR1	\$ 10,958.00	0	Days
75	Additional Bollards Required by PG&E at Pump Stations	REG	\$ 15,013.00	0	Days
78	Change 1-in. AIR-DR Piping to Stainless Steel (DC #35)	CR1	\$ 16,839.00	0	Days
80	Repair Existing Leaking RO Line at PS-A Site (Pre-Existing Leak)	CR1	\$ 4,499.00	0	Days
NET CHANGE ORDER ADJUSTMENT			\$ 124,970.00	0 Days	

ORIGINAL CONTRACT AMOUNT	\$ 31,493,675.00
Previous Change Orders	\$ 3,349,669.00
Previous Contract Amount	\$ 34,843,344.00
Adjustments by this Change Order	\$ 124,970.00
Change Order to Date	\$ 3,474,639.00
New Contract Amount	\$ 34,968,314.00

CURRENT FINAL COMPLETION DATE	12/1/2022
Extension Days (Calendar)	0 Days
NEW FINAL COMPLETION	12/1/2022

Acceptance of this Change Order constitutes an agreement between the City and Contractor, and the work is to be performed subject to the same terms and conditions as are contained in the Agreement with Contractor and for work on the above-mentioned project.

By signature of this Change Order, the Contractor acknowledges that the adjustments to the Contract Cost and Time contained in the Change Order are in full satisfaction and accord and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by this Change Order (EXCEPT AS NOTED IN ITEM 13.1 HEREIN WHEREIN DELAY IMPACTS ARE ON-GOING).

ACCEPTED  
 Anvil Builders Inc.  
 Contractor (Company Name)  
*[Signature]*      3/15/2023  
 (Authorized Signature)      (Date)  
 Chris Fassari *Brett Bennett, PM*  
 (Print Name and Title)

When signed by the Construction Manager, and upon execution of source document Amendment by City Council, this document becomes effective IMMEDIATELY, and Contractor shall proceed with the change(s) described above.

APPROVED  
 Carollo Engineers Inc / MEG Inc.  
 Construction Manager  
 \_\_\_\_\_  
 Authorized Signature      (Date)  
 Steve Mimiaga - Construction Mngr.  
 (Print Name and Title)



**City of Morro Bay**  
**Water Reclamation Facility**  
**Lift Stations and Offsite Pipelines Project**  
**CHANGE ORDER 007**

**Project:** WRF Lift Stations and OffSite Pipelines Project

**Contractor:** Anvil Builders, Inc.

**Date:** February 28, 2023

PCO	TILE	DESCRIPTION OF CHANGE	Reason For Change
5	Pump Station A Excavation NPDES Dewatering Permit	The Contract permitted Anvil to discharge groundwater from the Pump Station A excavation into the sanitary sewer. The City later determined that the dewatering discharge could adversely affect the existing WWTP. The City obtained a permit from the Regional Board to discharge to the City's existing RO discharge outfall. The discharge permit required an extensive sampling and testing program, which Anvil is being reimbursed for. The costs also include added temporary piping and added shoring rental costs for the month or so while the City obtained the new discharge permit.	REG
8	Additional Project Signage Costs	The original contract included a \$5,000 allowance for additional signage not shown on the plans. Anvil exhausted this original budget responding to signage requests from City staff. Anvil also was reimbursed under previous PCO 8.1 for added signage through 2021. This PCO 8.2 provides reimbursement of Anvil costs during 2022 to provide signage requested by the City, including custom signs. These additional signs are deemed necessary for public safety, public information, improved traffic flow, and/or to enhance access to businesses open during construction.	CR1
23	Miscellaneous Unforeseen Utility Work (Part 2)	During project work to date, the below noted miscellaneous unforeseen minor utility work was required for Contract work to proceed. The following items are acknowledged as unforeseen conditions and as such warrant reimbursement of verified extra costs: (1) IPR pipe minimum cover determination delay and standby time on 6/29/22; (2) locating unknown underground utilities requested/required by SoCal Gas on 7/28/22 and 7/29/22; and (3) delay costs and repair costs from an existing unknown and unmarked 2" waterline broken by Anvil on Kennedy Way on 8/30/22.	DSC
66	Repair Leaking City Waterline at North Abutment	On 9/20/22, Anvil staff observed at ground level a waterline leak where the waterline crosses Anvil's work area near the Morro Creek Utility Bridge north abutment. The City subsequently confirmed that a City Water line, made of Transite (AC) pipe, was leaking. Anvil crews excavated the pipeline, located the leak, and repaired the leak at the City's request. It is not believed that Anvil activities caused the leak.	CR1
75	Additional Bollards Required by PG&E at Pump Stations	The Contract Drawings indicate an arrangement of steel bollards filled with concrete surrounding the new PG&E transformer equipment at both Pump Station A and Pump Station B. The bollards are intended to prevent vehicular traffic from coming in contact with the transformer equipment (for human safety and equipment protection). During site inspections by PG&E staff in advance of installing the new transformers, PG&E required that Anvil increase the number of bollards at both Pump Stations. Anvil is seeking reimbursement for this added work not shown on the Contract Drawings.	REG
78	Change 1-in. AIR-DR Piping to Stainless Steel (DC #35)	The Contract Drawings indicate 1" piping between each pump station discharge pipe assembly and the adjacent wet well below. Each Pump Station as 3 pumps and 3 discharge pipe assemblies with various instruments and appurtatances. Each discharge assemble also includes a 1" pipe with ball valve leading back to the adjacent wet well. This pipe can be used to release trapped air or drain sewage back to the wet well. The Contract Drawings call for Sch 40 PVC piping. During start-up one of these 1" pipe assembles failed on high pressure. The City subsequently directed Anvil to replace all 6 1" pipe assemblies with 316 Stainless Steel piping, fittings, and valves.	CR1
80	Repair Existing Leaking RO Line at PS-A Site (Pre-Existing Leak)	On 11/18/22, Anvil and City staff observed at ground level an apparent waterline leak on site at Pump Station A. The City subsequently confirmed that it was the City's existing RO brine discharge line leading to the ocean discharge. Anvil crews excavated the pipeline, located the leak, and repaired the leak at the City's request. The leak is confirmed to be pre-existing and not caused by Anvil activities.	CR1

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