



City of Morro Bay Water Reclamation Facility Project

MONTHLY REPORT FEBRUARY 2020

FINAL | March 2020





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March 2020

State of California, P.E. 73351

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Abbreviations

APE Area of Potential Effect
BDR Basis of Design Report

BOD Biochemical Oxygen Demand
CCC California Coastal Commission
CDP Coastal Development Permit

CDR Concept Design Report

CEQA California Environmental Quality Act

CPT Cone Penetration Test

CWSRF Clean Water State Revolving Fund

DDW Division of Drinking Water

EPA Environmental Protection Agency
ESCP Enhanced Source Control Program
FEIR Final Environmental Impact Report

GMP Guaranteed Maximum Price

IPR Indirect Potable Reuse
IUP Intended Use Plan
IWS Industrial Waste Survey

KPI Key Performance Indicator

MBPFC Morro Bay Public Facilities Corporation

MBR Membrane Bioreactor

NEPA National Environmental Policy Act

NOI Notice of Intent

NPDES National Pollution Discharge Elimination System

PCO Potential Change Order

PPP Pollution Prevention Program

RO Reverse Osmosis

RWQCB Regional Water Quality Control Board
SHPO State Historic Preservation Office

SPI Schedule Performance Index

TSO Time Schedule Order
TSS Total Suspended Solids

USACE United States Army Corps of Engineers
USBR United States Bureau of Reclamation

USFW United States Fish and Wildlife

UVAOP Ultraviolet Advanced Oxidation Process

WIFIA Water Infrastructure Finance and Innovation and Act



WRF Water Reclamation Facility

WRFCAC Water Reclamation Facility Citizens Advisory Committee

WWE Water Works Engineers



PROJECT OVERVIEW

1.1 General Project Status Update

Elements of all components of the Water Reclamation Facility Project (Project) are currently in progress. Focus is currently being put on several key areas of the Project, which include:

- Issuing a Construction Notice to Proceed (NTP) for the Water Reclamation Facility (WRF) component of the Project
- Advancing the design of the WRF and Conveyance Facilities components of the Project
- Advancing the hydrogeological work necessary to confirm the recommended indirect potable reuse (IPR) injection location (i.e., west or east of Highway 1)
- Working to secure outstanding easements from Pacific Gas and Electric (PG&E) and Vistra Energy (Vistra) for construction of the Conveyance Facilities component of the Project
- Executing a final loan agreement with the Environmental Protection Agency's (EPA's)
 Water Infrastructure Finance and Innovation and Act (WIFIA) and State Water Resources
 Control Boards (State Water Board's) Clean Water State Revolving Fund (CWSRF)
 programs

Additional detail regarding these elements is provided below.

1.1.1 WRF Construction Notice to Proceed

In order to issue the Construction NTP to the DB team, several activities must be completed including:

- Receiving the Final Biological Opinion (BO) for the California Red-Legged Frog (CRLF) from the United States Fish and Wildlife Service (USFWS)
- Executing a final WIFIA loan agreement with the EPA
- Completing the CSWRF checklist
- Complying with the pre-construction requirements of the BO
- Receiving approval from the California Coastal Commission (CCC) to start construction of the WRF in accordance with the Project's Coastal Development Permit (CDP)

Many of these activities have been completed and the City is poised to issue a construction NTP during the third week of March 2020. Additional information on each of these activities is provided below.

1.1.1.1 Final Biological Opinion

The City received the Final BO from the USFWS on February 21, 2020, which includes a number of avoidance measures for the CRLF and Morro Shoulderband Snail (MSS). These avoidance measures include both construction and pre-construction related activities that must be followed for all elements of the Project. Most of the avoidance measures are related avoiding take of the CRLF at the WRF site, but also address areas of the Conveyance Facilities that could



impact MSS habitat. The terms of the Final BO have been incorporated into the terms of the WIFIA loan and will become part of the CWSRF loan terms when that agreement is drafted.

1.1.1.2 WIFIA Loan

On March 9, 2020, the City executed a \$61.7 million WIFIA loan with the EPA. The effective interest rate for the loan is 0.83 percent. When the 2018 Rate Study was completed in July 2018, the assumed WIFIA loan interest rate was 3.23 percent. Most recently, Bartle Wells Associates (Bartle Wells) prepared a Financial Plan Update in October 2019, which used an estimated WIFIA loan interest rate of 2.2 percent. The reduction in the actual WIFIA loan interest rate has the ability to reduce the long-term financial impact on the City's rate payers.

1.1.1.3 CWSRF Environmental Checklist

The City has been actively working with the CWSRF program since January 2019 and an initial environmental checklist was developed at that time which included the results and mitigation measures in the Final Environmental Impact Report (EIR) (August 2018). Since the Final EIR Addendum was adopted by the City on September 10, 2019 and a BO has been issued by the USFWS, the checklist required updating. The final checklist was updated by the City and sent to State Water Board staff on March 12, 2020 and the City anticipates receiving confirmation from staff that it is complete during the third week of March 2020.

1.1.1.4 Pre-Construction Avoidance Measures

The Final BO includes several pre-construction avoidance measures that must be implemented prior to the start of construction including approval of biologists used to perform monitoring for the CRLF and MSS and a CRLF survey that must be conducted within 48 hours of the start of construction. Resume information for biologists from Kevin Merk Associates (KMA) have been sent to the EPA and USFWS. KMA has been involved with the Project throughout the development of the EIR and formal consultation with the USFWS. Once the biologists are approved by the USFWS, the pre-construction survey can be completed and a construction NTP can be immediately issued.

1.1.1.5 California Coastal Commission Construction Approval

The Project CDP requires that Special Condition No. 13 (Other Authorizations) be met before construction can begin for the WRF. A report detailing the City's compliance with Special Condition No. 13 was sent to the CCC and was approved by the Executive Director on March 10, 2020.

1.1.2 Final Design Advancement

1.1.2.1 Water Reclamation Facility

As reported over the last several months, the 90 percent design submittal has been delayed as the City and DB team have been working to resolve a number of potential change orders (PCOs) that need to be reflected in the submittal. These PCOs are necessary for a number of reasons including:

- Process changes initiated by the City necessary to improve the future operability of the facility.
- Avoidance measures for the CRLF that have been identified through the Section 7 consultation with the USFWS.



 Process changes required to accommodate different water quality conditions identified as a result of additional sampling that was completed in 2019.

The City plans to bring these PCOs to the Public Works Advisory Board (PWAB) for review in April 2020 and to the City Council for approval in May 2020.

Based on the current schedule, the 90 percent design submittal will be delivered to City staff and the Program Manager for review by the end of March 2020.

1.1.2.2 Conveyance Facilities

The 90 percent design submittal was received on February 10, 2020 and has been reviewed by City staff and the Program Manager. On February 25 and 26, 2020 a workshop was held with key members of the design team to review the submittal in detail. The comments from the detailed review and workshop are being incorporated into the design by Water Works Engineers (WWE) and the final design is anticipated in late April 2020.

1.1.3 Hydrogeological Studies

Hydrogeological investigations west of Highway 1 have been ongoing for several months and the initial pumping test was successfully completed by GSI Water Solutions, Inc. (GSI) in February 2020. As part of this effort, GSI also evaluated the Morro Bay Mutual Water Company (MBMWC) Well No. 3 to determine its ability to serve as a pilot injection well. Based on the evaluation, the condition of this well is not suitable for injection testing. Therefore, a new pilot injection well will need to be constructed before pilot injection testing can be initiated.

The results of the pump testing will be provided to the City in a technical memorandum that will be delivered the third of March 2020. The technical memorandum will include a recommendation by GSI for the optimal injection location (i.e., either the west or east injection area). The contents of this technical memorandum will be presented to both the Public Works Advisory Board and the City Council in March and April 2020, respectively.

1.1.4 Easement Acquisition

The City is current pursuing both permanent and temporary construction easements from Vistra and PG&E necessary for construction of the Conveyance Facilities component of the Project. While negotiations have been ongoing with Vistra, the City is maintaining the option to acquire the property through eminent domain if necessary. Based on discussions with PG&E, they have indicated that the preferred path for property acquisition is eminent domain through the California Public Utilities Commission (CPUC). At the February 11, 2020 City Council meeting, Resolutions of Necessity No. 13-20 and 14-20 were adopted authorizing eminent domain actions for Vistra and PG&E, respectively.

1.1.5 Low-Interest Loan Agreements

As previously stated, the City transmitted the final environmental checklist to State Water Board staff on March 12, 2020 constituting the completion of the CWSRF environmental review. State Water Board staff is now beginning the legal, financial, and technical review of the CWSRF construction application package. The City has continued to meet on a regular basis with staff to help facilitate their review and will continue to hold regular conference calls until the final loan agreement is negotiated and executed. Based on these discussions, the City anticipates having a signed loan agreement by late summer or fall 2020.



 Table 1
 Project Accomplishments and Challenges

Project Component	Key Accomplishments	Critical Challenges	Actions to Overcome Challenges	Likely Outcomes
General Project	Execution of the final WIFIA loan agreement			
	Completion of consultation with the USFWS			
	Continued development of the 90-percent design deliverable			
Water Reclamation Facility		As design has continued, additional PCOs have been identified that are being evaluated by the City.	In order to minimize the impacts of future PCOs, the City needs to critically evaluate the need for PCOs and identify cost-saving measures to offset cost increases.	The overall impact of the PCOs will lead to an increase in the Guaranteed Maximum Price (GMP), but costs will be maintained with the contingency identified for the WRF component of the Project.
	Receipt and review of the 90-percent design deliverable.			
Conveyance Facilities		Receipt of easements necessary to construct the pipelines in the City's existing bike path	Work closely with Vistra, PG&E, and California Public Utilities Commission (CPUC) to obtain the easements. Pursue eminent domain if necessary	Delayed receipt of the easements could complicate or delay construction of the Conveyance Facilities, and depending on severity of delay could impact compliance with the Time Schedule Order (TSO). Construction of the Conveyance Facilities component of the Project is not on the overall Project critical path.
Recycled Water Facilities		Schedule recovery due to issues surrounding access to Vistra and PG&E property	Work with GSI to expedite the completion of the Phase 2 hydrogeology work	Without expediting the schedule, the completion of the injection wells will be delayed (does not impact compliance with the time schedule order [TSO])



1.2 Quarterly Budget Revision

The original \$126 million baseline budget was developed in June 2018 (Q4 Fiscal Year 2017/2018) and was used as the basis for the rate study prepared by Bartle Wells Associates (Bartle Wells). At the beginning of each fiscal year, the budget is updated and used as the measure of performance for the Project during that upcoming fiscal year. The budget is then reviewed and reconciled on a quarterly basis so it can be compared to both the current fiscal year and baseline budgets. The next budget reconciliation will occur at the end of Q3 Fiscal Year 2019/2020 (March 31, 2020). A summary of the baseline, reconciled quarterly, and fiscal year budgets are summarized in Table 2. Subsequent budget reconciliations (quarterly) and fiscal year budgets (annual) will also be presented in this table for reference.

Changes to the Project budget since the completion of the fiscal year budget reconciliation in Q1 Fiscal Year 2018/2019 can be attributed to the following:

- Addition of biological monitoring and mitigation to the Conveyance Facilities and Recycled Water Facilities components of the Project associated with avoidance of the CRLF.
- Addition of pre-construction archeological investigations outlined in the PA for the Conveyance Facilities and Recycled Water Facilities components of the Project.
- Addition of archeological and tribal representative monitoring for the Conveyance Facilities and Recycled Water Facilities components of the Project.



Table 2 Budget Revision Summary

Project Component	Baseline (Q4 FY 17/18)	Quarterly Reconciliation (Q3 FY 18/19)	Current Fiscal Year (Q4 FY 18/19)	Quarterly Reconciliation (Q1 FY 19/20)	Quarterly Reconciliation (Q2 FY 19/20)
Water Reclamation Facility	\$62,414,000	\$74,059,000	\$72,891,000	\$72,598,000	\$72,231,000
Conveyance Facilities	\$21,087,000	\$27,108,000	\$28,864,000	\$28,524,000	\$29,224,000
Recycled Water Facilities	\$8,593,000	\$5,366,000	\$5,250,000	\$5,212,000	\$5,353,000
General Program	\$24,403,000	\$11,614,000	\$11,801,000	\$11,625,000	\$11,701,000
Construction Contingency	\$9,444,000	\$6,450,000	\$7,132,000	\$7,131,000	\$7,364,000
Total	\$125,941,000	124,597,000	\$125,938,000	\$125,090,000	\$125,873,000

Notes:



⁽¹⁾ Breakdown of the current contingency (\$7,131,000) is as follows: WRF = \$4,373,000; Conveyance Facilities = \$2,458,000; and Recycled Water Facilities = \$300,000.

Table 3 summarizes the positions and estimates at completion (EACs) for the major elements of the Project through the end of Q2 FY 19/20 when the last budget reconciliation was completed.

Table 3 Estimates at Completion

Table 5 Estimates	s at Completion				
Project Component	Original Estimates	Initial Contract Value	Current Contract Value	Expenditures to Date	Estimate at Completion
General Project	\$24,403,000			\$3,009,125	\$13,449,336
City Costs ⁽²⁾				\$1,244,011	\$3,622,563
Program Management ⁽³⁾ (Carollo Engineers)		\$293,000	\$4,280,916	\$1,765,115	\$9,826,774
Water Reclamation Facility	\$62,414,000			\$6,205,848	\$68,870,572
Design/Build (Filanc/Black & Veatch)		\$67,234,512	\$68,870,572	\$6,205,848	\$68,870,572
Conveyance Facilities	\$21,087,000			\$1,018,474	\$26,118,387
Design (Water Works Engineers)		\$1,360,565	\$2,052,387	\$1,018,474	\$2,102,387
Construction				-	\$24,016,000
Recycled Water Facilities	\$8,593,000			-	\$3,575,000
Design				-	\$450,000
Construction				-	\$3,125,000
Contingency	\$9,444,000				\$7,363,149
Water Reclamation Facility					\$4,605,273
Conveyance Facilities					\$2,457,876
Recycled Water Facilities					\$300,000
Other Contracts ⁽⁴⁾				\$5,243,156	\$6,496,556
Total	\$125,941,000			\$15,476,603	\$125,873,000
Notes:					

Notes:

- (1) Total expenditures and EAC are based on the budget reconciliation completed for Q2 FY 19/20.
- (2) City costs include staff salaries and benefits, legal services, land acquisition, supplies and equipment, etc.
- (3) Includes total program management costs including public outreach and construction oversight/management .
- 4) Other Contracts includes previous consultants including MKN and Black & Veatch and current consultants including Far Western, ESA, Kestrel, GSI, Bartle Wells Associates, etc.



KEY PERFORMANCE MEASURES

2.1 Performance Measures

A set of five (5) Key Performance Indicators (KPIs) were established to readily measure the progress of the Project. These KPIs represent various success factors associated with the WRF project management and delivery that were established by the Program Manager and City staff and are summarized as Table 4. The Project's performance is also illustrated graphically in Figures 1 and Figure 2.



Table 4 WRF Project Performance Measures

Performance Measure	Data	Baseline (Q4FY 18/19)	Current (Q1 FY 19/20)	Delta	Status	©	Ø	®
1: Total Project Costs	Total Project Projected Cost at Completion versus the Baseline Budget (budget as of 12/31/19)	\$125.9 M	\$125.9 M	0.0%	G	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
1.1: WRF Costs	On Site WRF Projected Cost at Completion versus the Baseline Budget (budget as of 12/31/19)	\$77.3 M	\$76.8 M	-0.6%	G	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
1.2: Conveyance Facilities Costs	Conveyance Facilities Projected Cost at Completion versus the Baseline Budget (budget as of 12/31/19)	\$31.3 M	\$31.7 M	1.3%	G	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
1.3: Recycled Water Facilities Costs	Off Site Injection Facilities Projected Cost at Completion versus the Baseline Budget (budget as of 12/31/19)	\$5.6 M	\$5.7 M	1.8%	G	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
1.4: General Project Costs	General Project Projected Cost at Completion versus the Baseline Budget (budget as of 12/31/19)	\$11.7 M	\$11.7 M	0.0%	©	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
2: Program Manager Earned Value	Ratio of Program Manager Earned Value to Actual Invoiced Cost-to-Date (as of 02/29/20)	1.00	1.00	0.00	©	>= 1.00	0.99 to 0.90	< 0.90
3: Schedule Performance Index ⁽¹⁾	Ratio of Planned Percent Complete to Actual Percent Complete (as of 02/29/20)	1.00	0.94	-0.06	(Y)	>=1.00	0.99 to 0.80	<0.80
4: Conveyance Pipeline Installed	Feet of conveyance pipeline installed (as of 02/29/20)	18,500 LF	0.0 LF	0.0%	G	<= 5%	> 5% and <=7.5%	> 7.5%
5: Compliance Date Countdown	Days Remaining to Compliance Date (as of 02/29/20)	1,095 days	817 days	-278 days	(<= 365 days	364 days and 180 days	> 179 days



PROJECT COSTS

3.1 Project Budget

The overall budget status for the Project is summarized in Table 5. The top half of the table provides a summary of total estimated Project costs, including original and current estimated costs for the entire Project. The bottom half of Table 5 shows the total amount of work currently under contract and provides a summary of total charges.

Table 5 WRF Project Overall Budget Status (thru February 2020)

\$125,941,000				
\$125,884,000				
\$125,873,000				
0.0%				
\$992,532				
\$17,186,946				
13.65%				
Summary of Contracted Work				
\$80,125,743				
63.7%				
\$15,076,578				
18.8%				
\$65,049,166				

Notes:

- (1) Developed in June 2018 as the basis of the approved rate surcharge that took effect in July 2019.
- (2) The budget for the Project is reviewed on an annual basis at the end of each fiscal year (June 30th) and is used as the basis of performance for the Project for the upcoming fiscal year.
- (3) The Project budget is reconciled on a quarterly basis and compared to the current fiscal year budget (i.e., September 30th, December 31st, and March 31st).
- (4) Monthly expenditure is significantly less than expected due to the timing of the preparation of this report. Monthly expenditures do not include invoices from the design-build team (Overland Contracting) or Program Manager (Carollo Engineers).



3.2 Project Cash Flow

Figure 1 presents the projected and actual expenditures for the Project through February 2020 compared to the Fiscal Year 2019/2020 budget developed at the end of Q4 Fiscal Year 2018/2019. The line graph shows the cumulative values for the Project and the bars show the discrete monthly values. Actual and budgeted expenditures from 2013 to the end of Fiscal Year 2018/2019 have been combined to improve readability. Milestones have been added to the cumulative fiscal year budget and cumulative forecasted expenditures to show changes in the Project schedule that have occurred between development of the fiscal year budget from June 2019 and the current, reconciled budget developed at the end of September 2019. The milestone corresponds to the substantial completion of the WRF, which coincides with the City being in compliance with the TSO issued by the Regional Water Quality Control Board (RWQCB) in June 2018. It should be noted that the cash flow in Figure 1 reflects the latest schedule revisions as a result of delays in completion of the hydrogeological work due to issues with access to the Vistra property and delays in receipt of the CDP.



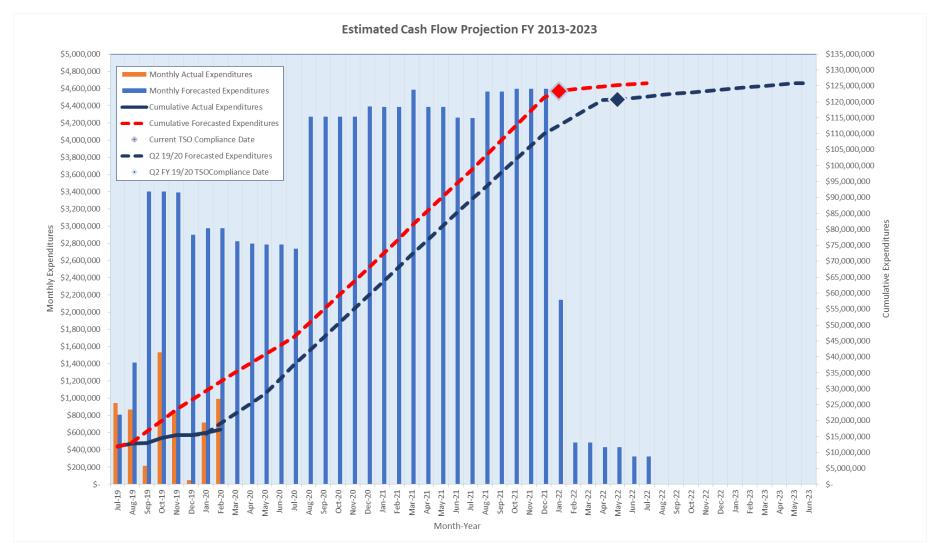


Figure 1 Project Cash Flow Projections and Actual Expenditures



PROJECT SCHEDULE

A summary of the Project schedule is presented in Figure 2. The light blue bars for each major task represent the planned progress based on the baseline schedule. The dark blue bars represent the current actual progress as of February 2020. For each major line item, the schedule performance index (SPI) has been provided as well as an overall SPI for the entire Project. The SPI is a ratio of the planned percent complete versus the current actual percent complete. A SPI of greater than 1.00 indicates that the Project is on or ahead of schedule and a SPI of less than 1.00 indicates the Project is running behind the planned schedule.

4.1 Project Milestones

In June 2018, the City received a TSO from the RWQCB. The TSO requires the City to comply with a time schedule that will, within five years of adoption, allow the City to achieve full compliance with biochemical oxygen demand (BOD) and total suspended solids (TSS) final effluent limitations established in Order No. R3-2017-0050. In addition to the final compliance date, a number of intermediate milestones are provided in Table 4 (Compliance Schedule) of the TSO. Table 6 below provides a summary of the milestones in the TSO.

Table 6 Project Construction Milestones

Required Actions	Compliance Due Date	Planned Compliance Date	Actual Compliance Date
Release of Public Draft EIR	March 30, 2018	-	March 30, 2018
Release of Updated Rate Study	June 30, 2018	-	July 05, 2018
Proposition 218 Hearing	August 30, 2018	-	September 11, 2018
Certification of Final EIR	June 30, 2018	-	August 14, 2018
Award of Contract for WRF	September 30, 2018	-	October 23, 2018
Develop, Implement, and Submit Pollution Prevention Plan (PPP) for BOD and TSS	December 01, 2018	TBD ⁽¹⁾	-
Award of Contract for Construction of Conveyance Facilities	November 30, 2019	August 03, 2020	-
Completion of WRF Improvements with Completion Report	December 30, 2022	May 26, 2022	-
Full compliance with final effluent limitations	February 29, 2023	May 26, 2022	-

Notes



⁽¹⁾ The City and Program Manager have noted this requirement in the previous quarterly progress reports sent to the RWQCB (as required by the TSO). The City has requested that the Enhanced Source Control Program (ESCP) required as part of the Title 22 Engineer's Report be considered acceptable for this requirement in lieu of the PPP identified in the TSO.

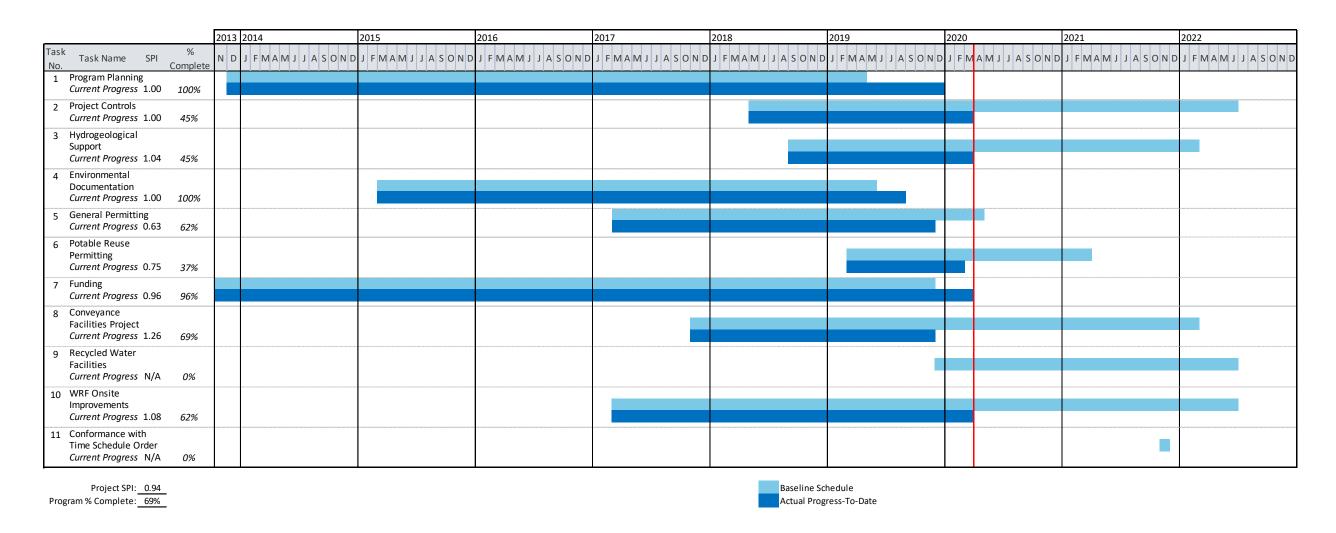


Figure 2 Project Milestone Summary

An expanded milestone schedule has also been developed for outstanding Project activities.

Table 7 Expanded Milestone Schedule

Milestone	Baseline Schedule due Date	Planned/Actual Completion Date			
General Project					
Compliance with the TSO ⁽¹⁾	November 11, 2021	May 26, 2022			
	Water Reclamation Facility				
Begin Construction	August 08, 2019	March 19, 2020			
Deliver 90 Percent Design	October 24, 2019	March 31, 2020			
Substantial Completion	November 11, 2021	May 26, 2022			
Final Completion	June 09, 2022	December 13, 2022			
Conveyance Facilities					
Deliver 90 Percent Design	October 15, 2019	February 10, 2020 (Actual)			
Deliver 100 Percent Design	December 17, 2019	April 20, 2020			
Bid Advertisement	February 21, 2020	May 04, 2020			
Award Construction Contract	May 08, 2020	August 03, 2020			
Substantial Completion	September 17, 2021	February 07, 2022			
Final Completion	November 19, 2021	April 11, 2022			
	Recycled Water Facilities				
Select Preferred Injection Area	May 28, 2019	March 20, 2020			
Deliver 30 Percent Design	August 04, 2020	July 30, 2021			
Deliver 60 Percent Design	November 10, 2020	November 05, 2021			
Deliver 90 Percent Design	February 16, 2021	February 11, 2022			
Deliver 100 Percent Design	April 27, 2021	April 22, 2022			
Award Construction Contract	July 21, 2021	July 18, 2022			
Substantial Completion	April 21, 2022	May 19, 2023			
Final Completion	June 21, 2022	July 14, 2023			
Notes: (1) The TSO requires compliance with full secondary treatment by February 28, 2023					

