



City of Morro Bay
Water Reclamation Facility Project

MONTHLY REPORT APRIL 2020

FINAL | July 2020





City of Morro Bay
Water Reclamation Facility Project

MONTHLY REPORT OF PROJECT STATUS AND
EXPENDITURES THROUGH APRIL 2020

FINAL | July 2020

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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

Section 1

PROJECT OVERVIEW

1.1 General Project Status Update

All components of the Water Reclamation Facility Project (Project) are currently in progress.

1.1.1 Water Reclamation Facility

1.1.1.1 Design

On May 22, 2020, the design-build team completed the design of the Water Reclamation Facility (WRF) with delivery of the Issued for Construction (IFC) drawings and specifications. Together with the final grading plans and final yard piping plans, all elements of the WRF construction can now proceed. The final grading and yard piping drawings were completed in October 2019 and April 2020, respectively. The design for the WRF is now complete.

Throughout the design process, the City and Program Manager have identified the need for changes to the scope of work included in the design-build team's original proposal. The results of these changes are potential change orders (PCOs) that have been presented to various advisory groups including the Public Works Advisory Board (PWAB) and Water Reclamation Facility Citizens Advisory Committee (WRFCAC) and approval by City Council. Most recently, the City and Program Manager presented a group of twenty six (26) PCOs with a value of \$5.99 million to PWAB and City Council on May 20, 2020 and May 26, 2020, respectively. The City Council approved the PCOs and the City is currently finalizing Amendment No. 3 with the design-build team.

1.1.1.2 Construction

Since the construction notice to proceed (NTP) was issued on March 20, 2020, work on the South Bay Boulevard site has progressed. However, the construction has faced several challenges. The City and Program Manager have been in discussions with the California Department of Fish and Wildlife (CDFW) since June 2019. While the need for a Stream Bed Alteration Agreement (SAA) for the Conveyance Facilities component of the Project has always been assumed, the Environmental Impact Report (EIR) clearly stated that no waters of the state or United States were being impacted by the WRF facility component of the Project. The Project has proceeded since 2018 under this assumption. However, the City and Program Manager have been unable to get concurrence with CDFW on an erosional feature on the site. This concurrence is a requirement of the Project's Coastal Development Permit (CDP). In March 2020, the City submitted notification to CDFW for the erosional feature. Recently, CDFW has confirmed that the City will need a SAA for the WRF site. Receipt of the SAA is pending at this time. During coordination with CDFW, the contractor has been unable to access the erosional feature and it has impacted the efficiency and planned sequence for the work. The magnitude of the financial impacts are unknown at this time, but will result in an increase in the cost of the Project. Every day the contractor cannot access the erosional feature is impacting the Project negatively, and the City and Program Manager are doing everything possible to expedite this process.

On May 05, 2020, a crack or separation on the southern tip of the slope being excavated was observed. Shortly after noticing the slip, the Program Manager updated the California Coastal Commission (CCC) on the situation. The event has been classified as a soil slip or landslide with a volume of approximately 30,000 cubic yards. The soil slip was evaluated by several geotechnical firms and the issue has resulted in a change to the grading plans for the upper area of the site. Soon after the evaluations were completed, the contractor began excavating the slip material and stockpiling it for eventual transfer to the erosional feature area (identified above). Dealing with the soil slip and design changes has a cost, but it has not yet been determined who will be responsible for the additional costs (i.e., City or design-build team, or shared cost). Since the issue occurred, the focus for everyone involved has been finding a solution to the problem. Now that the long-term plan for dealing with the soil slip has been finalized, the City and Program Manager will negotiate with the design-build team and will have an update for the City Council once negotiations are complete.

1.1.2 Conveyance Facilities

1.1.2.1 Design

The pipeline designer delivered the final drawings and technical specifications in May 2020. Since that time, the pipeline designer and Program Manager have been working to finalize the front-end documents before this component of the Project can be advertised for bidding. On June 16, 2020, the Conveyance Facilities component of the Project was advertised, and bids will be opened on July 28, 2020.

1.1.3 Recycled Water Facilities

The Project's hydrogeologist has been working on refinement of the groundwater model and delivered the Draft Phase 2 (Characterization) Technical Memorandum (TM) in March 2020. Based on the review of the Draft TM, the hydrogeologist has performed additional groundwater modeling and has been making updates to the TM. The City expects receipt of the Final TM by June 19, 2020. While the Final TM has not yet been received, it is anticipated the Final TM will include:

- Recommendation to pursue the west injection area solely
- Longer groundwater retention times than what was previously indicated in the Final Lower Morro Valley Basin Screening-Level Groundwater Modeling for Injection Feasibility Report (GSI, 2017)

Once the Final TM is received, the City and Program Manager will present the results to PWAB at their next regularly scheduled meeting.

Table 1 summarizes some of the key accomplishments and critical challenges identified for the Project through April 2020.

Table 1 Project Accomplishments and Challenges

Project Component	Key Accomplishments	Critical Challenges	Actions to Overcome Challenges	Likely Outcomes
General Project	Continued to support the review of the City's construction loan application by the Clean Water State Revolving Fund (CWSRF) staff.			
	Completed the IFC drawings and specifications.			
Water Reclamation Facility	A soil slip on the site occurred with a volume of approximately 30,000 cubic yards that has resulted in additional work for the design-build team		Negotiate with the design-build team to determine responsibility and minimize the financial impacts from dealing with the soil slip.	Pending the result of the negotiations with the design-build team, the soil slip could result in a future PCO.
	Complete the permitting process with CDFW.		Continue to coordinate with CDFW staff to facilitate review.	Avoidance of certain areas on the WRF site is causing construction inefficiencies that will result in a future PCO.
Conveyance Facilities	Completed the final drawings and specifications.			
	Advertised the Conveyance Facilities for bidding.			
	Receipt of easements necessary to construct the pipelines in the City's existing bike path.		Work closely with Vistra (Vistra Energy), PG&E, and California Public Utilities Commission (CPUC) to obtain the easements.	Delayed receipt of the easements could complicate or delay construction of the Conveyance Facilities.
Recycled Water Facilities	Receipt of property necessary to construct the injection wells.		Work with Vistra to obtain the property for the injection wells.	Without expediting the schedule, the completion of the injection wells will be delayed (does not impact compliance with the 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 Q4 Fiscal Year 2019/2020 (June 30, 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 \$2.9 million in construction contingency for the WRF needed to cover additional PCOs that were approved by the City Council in May 2020.
- Addition of pre-construction archeological investigations outlined in the Programmatic Agreement (PA) negotiated with the State Historic Preservation Office (SHPO) 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)	Previous Fiscal Year (Q4 FY 18/19)	Quarterly Reconciliation (Q1 FY 19/20)	Quarterly Reconciliation (Q2 FY 19/20)	Quarterly Reconciliation (Q3 FY 19/20)
Water Reclamation Facility	\$62,414,000	\$74,059,000	\$72,891,000	\$72,598,000	\$72,231,000	\$71,856,000
Conveyance Facilities	\$21,087,000	\$27,108,000	\$28,864,000	\$28,524,000	\$29,224,000	\$29,989,000
Recycled Water Facilities	\$8,593,000	\$5,366,000	\$5,250,000	\$5,212,000	\$5,353,000	\$5,526,000
General Program	\$24,403,000	\$11,614,000	\$11,801,000	\$11,625,000	\$11,701,000	\$12,964,000
Construction Contingency	\$9,444,000	\$6,450,000	\$7,132,000	\$7,131,000	\$7,364,000	\$10,264,000 ⁽¹⁾
Total	\$125,941,000	124,597,000	\$125,938,000	\$125,090,000	\$125,873,000	\$130,599,000

Notes:

(1) Breakdown of the current contingency (\$10,264,000) is as follows: WRF = \$7,506,000; 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 Q3 FY 19/20 when the last budget reconciliation was completed.

Table 3 Estimates at Completion

Project Component	Original Estimates	Initial Contract Value	Current Contract Value	Expenditures to Date	Estimate at Completion
General Project	\$24,403,000			\$5,163,233	\$13,917,000
City Costs ⁽²⁾				\$1,883,407	\$4,078,000
Program Management ⁽³⁾ (Carollo Engineers)		\$293,000	\$4,280,916	\$3,279,826	\$9,839,000
Water Reclamation Facility	\$62,414,000			\$9,385,408	\$68,871,000
Design/Build (Filanc/Black & Veatch)		\$67,234,512	\$68,870,572	\$9,385,408	\$68,871,000
Conveyance Facilities	\$21,087,000			\$1,807,054	\$26,386,000
Design (Water Works Engineers)		\$1,360,565	\$2,052,387	\$1,807,054	\$2,152,000
Construction				-	\$24,234,000
Recycled Water Facilities	\$8,593,000			-	\$3,575,000
Design				-	\$450,000
Construction				-	\$3,125,000
Contingency	\$9,444,000				\$10,263,000
Water Reclamation Facility					\$7,505,000
Conveyance Facilities					\$2,458,000
Recycled Water Facilities					\$300,000
Other Contracts⁽⁴⁾				\$4,448,837	\$7,587,000
Total	\$125,941,000			\$20,804,531	\$130,599,000

Notes:

- (1) Total expenditures and EAC are based on the budget reconciliation completed for Q3 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.

Section 2

KEY PERFORMANCE MEASURES

2.1 Performance Measures

A set of five 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 (Q3 FY 19/20)	Delta	Status	ⓐ	Ⓨ	Ⓡ
1: Total Project Costs	Total Project Projected Cost at Completion versus the Baseline Budget (budget as of 03/31/20)	\$125.9 M	\$130.6 M	3.7%	ⓐ	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 03/31/20)	\$77.3 M	\$79.4 M	2.7%	ⓐ	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 03/31/20)	\$31.3 M	\$32.5 M	3.6%	ⓐ	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 03/31/20)	\$5.6 M	\$5.8 M	4.4%	ⓐ	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 03/31/20)	\$11.7 M	\$12.9 M	10.7%	Ⓡ	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 06/17/20)	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 06/17/20)	1.00	0.98	-0.02	Ⓨ	>=1.00	0.99 to 0.80	<0.80
4: Conveyance Pipeline Installed	Feet of conveyance pipeline installed (thru 06/17/20)	18,500 LF	0.0 LF	0.0%	ⓐ	<= 5%	> 5% and <=7.5%	> 7.5%
5: Compliance Date Countdown	Days Remaining to Compliance Date (as of 06/17/20)	1,034 days	811 days	-223 days	Ⓨ	<= 365 days	364 days and 180 days	> 179 days

Section 3

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 April 2020)

Summary of Total WRF Project Cost	
Original Baseline WRF Project Budget ⁽¹⁾	\$125,941,000
Current Fiscal Year WRF Project Budget (as of 6/30/19) ⁽²⁾	\$125,938,000
Current WRF Project Budget (as of 03/31/20) ⁽³⁾	\$130,599,000
Budget Percent Change (Current versus Fiscal Year)	3.7%
Total Expenditures for April 2020	\$1,296,000
Total Expenditures to Date (thru 04/30/20 invoices)	\$20,805,000
Percent of Current WRF Project Budget Expended	15.9%
Summary of Contracted Work	
Total Contracted Amount	\$80,357,000
Percent of Current WRF Project Budget Contracted	61.5%
Total Contracted Amount Expended	\$18,121,000
Percent of Contracted Amount Expended	22.6%
Remaining WRF Project Contracted Amount	\$62,236,000

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)

3.2 Project Cash Flow

Figure 1 presents the projected and actual expenditures for the Project through April 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 December 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. While the compliance with the TSO has been delayed several months due to consultation with the USFWS, completion of construction of the injection wells has been impacted more significantly due to property acquisition.

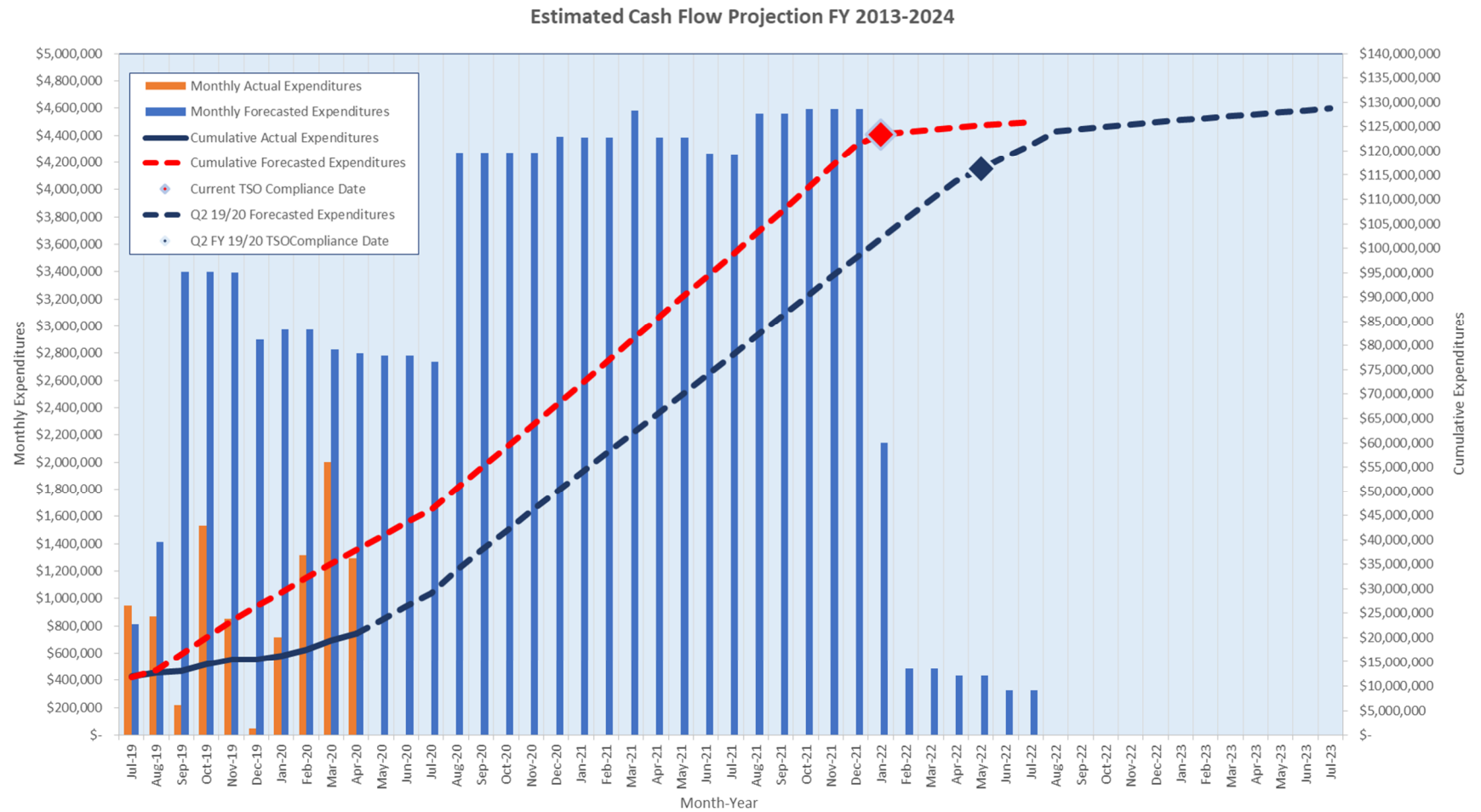


Figure 1 Project Cash Flow Projections and Actual Expenditures

Section 4

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 June 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	September 15, 2020	-
Completion of WRF Improvements with Completion Report	December 30, 2022	May 26, 2022	-
Full compliance with final effluent limitations	February 29, 2023	July 20, 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.

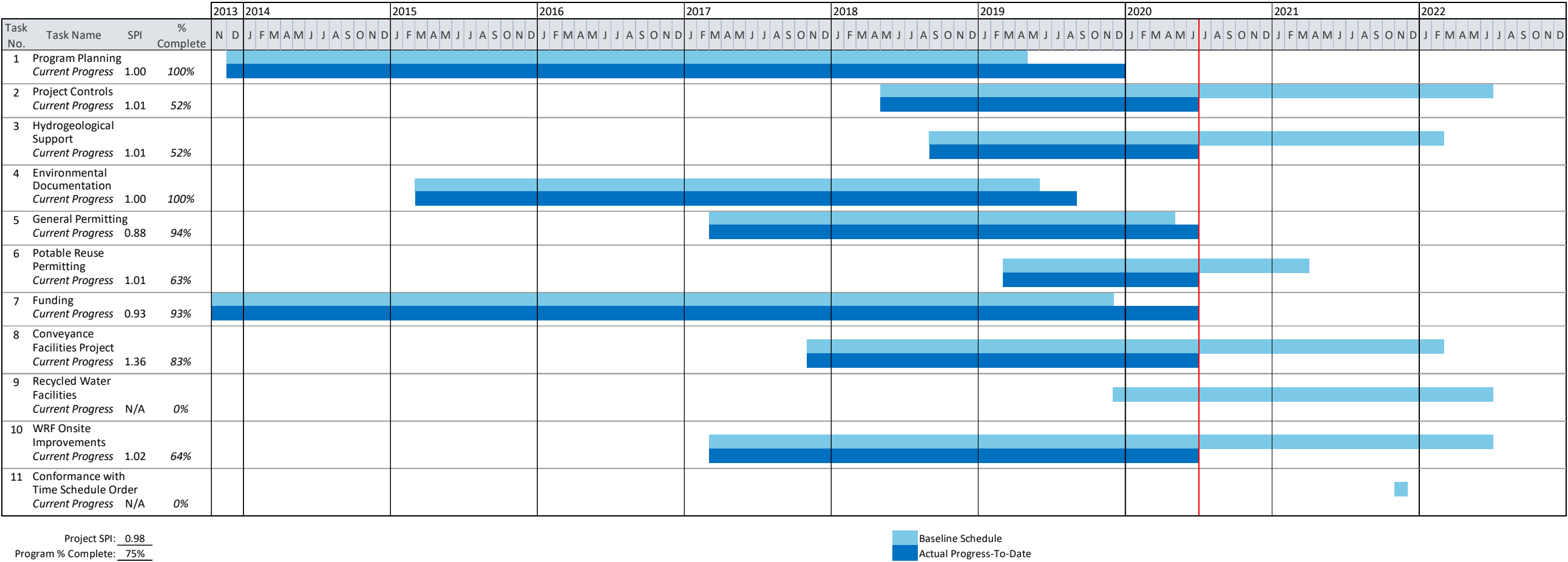


Figure 2 Project Milestone Summary

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
<u>General Project</u>		
Compliance with the TSO ⁽¹⁾	November 11, 2021	July 20, 2022
<u>Water Reclamation Facility</u>		
Begin Construction	August 08, 2019	March 20, 2020 (Actual)
Deliver 90 Percent Design	October 24, 2019	March 31, 2020 (Actual)
Substantial Completion	November 11, 2021	July 20, 2022
Final Completion	June 09, 2022	February 17, 2023
<u>Conveyance Facilities</u>		
Deliver 90 Percent Design	October 15, 2019	February 10, 2020 (Actual)
Deliver 100 Percent Design	December 17, 2019	June 15, 2020 (Actual)
Bid Advertisement	February 21, 2020	June 16, 2020 (Actual)
Award Construction Contract	May 08, 2020	September 15, 2020
Substantial Completion	September 17, 2021	March 23, 2022
Final Completion	November 19, 2021	May 25, 2022
<u>Recycled Water Facilities</u>		
Select Preferred Injection Area	May 28, 2019	June 17, 2020 (Actual)
Deliver 30 Percent Design	August 04, 2020	December 01, 2021
Deliver 60 Percent Design	November 10, 2020	March 09, 2022
Deliver 90 Percent Design	February 16, 2021	June 15, 2022
Deliver 100 Percent Design	April 27, 2021	August 24, 2022
Award Construction Contract	July 21, 2021	November 16, 2022
Substantial Completion	April 21, 2022	September 20, 2023
Final Completion	June 21, 2022	November 15, 2023

Notes:

(1) The TSO requires compliance with full secondary treatment by February 28, 2023