



City of Morro Bay  
Water Reclamation Facility Project

## MONTHLY REPORT OCTOBER 2019

FINAL | December 2019







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State of California, P.E. 73351



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## Abbreviations

BOD	Biochemical Oxygen Demand
Carollo	City staff and Program Manager
CCC	California Coastal Commission
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CPT	Cone Penetration Test
CRLF	California Red Legged Frog
CWSRF	Clean Water State Revolving Fund
DB	design-build team
EPA	Environmental Protection Agency
ESA	Environmental Science Associates
ESCP	Enhanced Source Control Program
FEIR	Final Environmental Impact Report
GMP	Guaranteed Maximum Price
GSI	City's hydrologist
KPI	Key Performance Indicator
MBMWC	Morro Bay Mutual Water Company
MBR	Membrane Bioreactor
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NTP	not to proceed
PA	programmatic agreement
PCO	Potential Change Order
PPP	Pollution Prevention Program
Project	Water Reclamation Facility Project
RWQCB	Regional Water Quality Control Board
SHPO	State Historic Preservation Office
SPI	Schedule Performance Index
TSO	Time Schedule Order
TSS	Total Suspended Solids
USFW	United States Fish and Wildlife
Vistra	Vistra Energy
WIFIA	Water Infrastructure Finance and Innovation and Act
WRF	Water Reclamation Facility
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. City staff and the Program Manager (Carollo) are actively working with the design-build team (DB team) and the pipeline designer to advance the design of the Water Reclamation Facility (WRF) and Conveyance Facilities project components, respectively. In October 2019, City staff and the Program Manager continued to focus on moving the WRF component of the Project into construction. In order to start construction, the following activities must be completed:

- Property and Easement Acquisition.
  - Purchase the WRF site currently owned by Tri W.
  - Acquire both the temporary and permanent easements on property adjacent to Teresa Road owned by the Shepherd Trust.
- Funding Agency Coordination.
  - Negotiate and sign the final loan agreement for the Environmental Protection Agency's (EPA's) Water Infrastructure Finance and Innovation and Act (WIFIA).
  - Facilitate completion of the Clean Water State Revolving Fund's (CWSRF's) Environmental Checklist.
- Coastal Development Permit (CDP) Receipt.
- Environmental Documentation Completion.
  - Receipt of the Final Environmental Impact Report (FEIR) addendum by the City Council.

A status update for these specific activities related to the start of construction is provided below. Brief updated on the status of each Project components is also provided as well.

#### 1.1.1 Property and Easement Acquisition

In October 2019, the City finalized and signed the purchase agreement for the Tri W property and entered into escrow of the 27.6-acre parcel. The City also negotiated and executed a right of entry agreement with the Shepherd Trust for the temporary construction and permanent easements needed for the facility access road and construction laydown area, respectively. The purchase agreement for the Tri W property allows the City to access the property and start construction before the close of escrow. All property and easement acquisition necessary to start construction for the WRF has been completed at this time.

#### 1.1.2 Funding Agency Coordination

City staff and the Program Manager have been working with the City Attorney and EPA staff for the last several months to finalize the terms and specific language of the WIFIA loan agreement. The WIFIA loan agreement will cover 49 percent of the total \$126 million cost for the Project. Final edits have been provided to the City by WIFIA staff and it is anticipated that the final loan agreement will come back to City Council for review and approval in January 2020.

In addition to loan terms, the Program Manager has been working to facilitate the review of both the WIFIA and CWSRF applications with their respective staffs. Specifically, CWSRF requires an applicant to complete the Environmental Checklist before construction can begin. These activities include coordination with various stakeholders including the United States Fish and Wildlife (USFW), National Marine Fisheries Service (NMFS), and the State Historic Preservation Office (SHPO).

The City has been negotiating a programmatic agreement (PA) regarding the treatment and handling of cultural resources with SHPO for the last six months. In October 2019, the City met with SHPO staff in Sacramento to finalize the PA. It is anticipated that the PA will be signed by the EPA and SHPO in November 2019. Construction can begin once the PA is signed.

In early October 2019, the City was notified by EPA staff that the USFW, through Section 7 consultation, did not agree with their initial findings regarding the California red legged frog (CRLF). As a result, WIFIA entered into more discussions with USFW on October 22, 2019. The City is supporting the EPA in their review efforts. Once the Section 7 consultation is completed, the EPA can close the environmental process and construction of the WRF can begin.

### **1.1.3 Coastal Development Permit Receipt**

On July 11, 2019, CCC approved the City's CDP with special conditions. On July 19, 2019, the City received a Notice of Intent (NOI) to issue the CDP 3-19-0463 that included several conditions that must be met before either the CDP can be issued or before construction can be started. In order to receive the CDP, the City must satisfy Special Condition 1 (Revised Final Plans) and Special Condition 2 (Construction Plans). A third condition, Special Condition 6 (Recycled Water Management Plan), must be satisfied before construction of the Project can begin. In October 2019, the Program Manager finalized these documents with CCC staff and anticipates receiving the fully executed CDP in early November 2019.

### **1.1.4 Environmental Documentation Completion**

On August 08, 2019, Environmental Science Associates (ESA) completed the FEIR Addendum for the Project. While not required by the California Environmental Quality Act (CEQA) to be circulated, the State Water Board requires that all environmental documents for projects that receive CWSRF funding be circulated for a minimum period of 14 days. The FEIR Addendum was put on the agenda for the September 10, 2019 City Council meeting and City Council approved a motion to receive and file the addendum.

## **1.2 Water Reclamation Facility**

The design of the WRF has been progressing since the agreement with the DB team was signed in October 2018. The 90-percent design submittal will be delivered to the City by the end of calendar year 2019/early 2020.

## **1.3 Conveyance Facilities**

The City received the 60-percent design submittal in September 2019. It is anticipated that the 90-percent design deliverable will be submitted to the City by the end of calendar year 2019/early 2020.

## 1.4 Recycled Water Facilities

Challenges to advancement of the hydrogeological work to support design of the Recycled Water Facilities have resulted from problems accessing the Vistra Energy (Vistra) property. In early 2019, the City's hydrogeologist (GSI) completed Phase 1 of the hydrogeology work for the Project focused on long-term nitrate concentrations and the potential for seawater intrusion in the Lower Morro Groundwater Basin. GSI also completed the first component of the Phase 2 hydrogeology work focused on identifying the optimal groundwater injection location. The work consisted of pump testing of an existing well on Errol Street and cone penetration tests (CPTs) at the east injection area.

The next step in the hydrogeology work includes completion of Phase 2 or improved characterization at the west injection area. Completion of this component of the work has been contingent upon accessing the Vistra property to drill a pilot injection well or use an existing Morro Bay Mutual Water Company (MBMWC) well to conduct the pumping and injection tests. The City has reached an agreement with Vistra regarding use of the MBMWC well. Testing for this well can be started once the City receives the final CDP. While the City anticipates receipt of the CDP in early November 2019, it will likely take several months to coordinate with Vistra and begin the testing.

## 1.5 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. 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 Q2 Fiscal Year 2019/2020 (December 31, 2019). A summary of the baseline, reconciled quarterly, and fiscal year budgets are summarized in Table 1. Subsequent budget reconciliations (quarterly) and fiscal year budgets (annual) will also be presented in this table for reference.

Table 1 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)
Water Reclamation Facility	\$62,414,000	\$74,059,000	\$72,891,000	\$72,598,000
Conveyance Facilities	\$21,087,000	\$27,108,000	\$28,864,000	\$28,524,000
Recycled Water Facilities	\$8,593,000	\$5,366,000	\$5,250,000	\$5,212,000
General Program	\$24,403,000	\$11,614,000	\$11,801,000	\$11,625,000
Construction Contingency <sup>(1)</sup>	\$9,444,000	\$6,450,000	\$7,132,000	\$7,131,000
<b>Total</b>	<b>\$125,941,000</b>	<b>124,597,000</b>	<b>\$125,938,000</b>	<b>\$125,090,000</b>

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 2 summarizes some of the key accomplishments and critical challenges identified for the Project in October 2019.

Table 2      Project Accomplishments and Challenges

Project Component	Key Accomplishments	Critical Challenges	Actions to Overcome Challenges	Likely Outcomes
General Project	Receipt of the fully-executed CDP.			
	Execution of the purchase agreement for the Tri-W property and right of entry agreement with the Shepherd Trust, which gives the City the access needed to start construction of the WRF.			
Water Reclamation Facility	Continued development of the 90-percent design deliverable			
		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.
		Missing the 12-month construction Notice to Proceed (NTP) milestone.	Complete the consultation with United States Fish and Wildlife (USFW) as expeditiously as possible.	Missing the 12-month NTP milestone in October 2019 will result in some increase to the DB team's GMP as a result of delay and escalation costs.
Conveyance Facilities	Continued development of the 90-percent design deliverable.			
		Schedule recovery due to issues surrounding access to Vistra and PG&E property. This issues have been resolved at this time.	Work with WWE to expedite the final design schedule (options could include eliminating some intermediate deliverables)	Without expediting the schedule, delayed construction completion could impact the schedule for start-up of the WRF.
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. The City will work with Vistra following receipt of the CDP to start the necessary pump testing as soon as possible.	Without expediting the schedule, the completion of the injection wells could be delayed (does not impact compliance with the time schedule order [TSO]).



## Section 2

# 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 3. The Project's performance is also illustrated graphically in Figures 1 and Figure 2.





Table 3 WRF Project Performance Measures

Performance Measure	Data	Baseline (Q4FY 18/19)	Current (Q1 FY 19/20)	Delta	Status	Ⓜ	Ⓜ	Ⓜ
<b>1: Total Project Costs</b>	Total Project Projected Cost at Completion versus the Baseline Budget (budget as of 10/31/19)	\$125.9 M	\$125.1 M	0.0%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
<b>1.1: WRF Costs</b>	On Site WRF Projected Cost at Completion versus the Baseline Budget (budget as of 10/31/19)	\$77.3 M	\$77.0 M	0.0%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
<b>1.2: Conveyance Facilities Costs</b>	Conveyance Facilities Projected Cost at Completion versus the Baseline Budget (budget as of 10/31/19)	\$31.3 M	\$31.0 M	-1.0%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
<b>1.3: Recycled Water Facilities Costs</b>	Off Site Injection Facilities Projected Cost at Completion versus the Baseline Budget (budget as of 10/31/19)	\$5.6 M	\$5.5 M	-1.8%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
<b>1.4: General Project Costs</b>	General Project Projected Cost at Completion versus the Baseline Budget (budget as of 10/31/19)	\$11.7 M	\$11.6 M	-0.9%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
<b>2: Program Manager Earned Value</b>	Ratio of Program Manager Earned Value to Actual Invoiced Cost-to-Date (as of 10/31/19)	1.00	1.08	0.08	Ⓜ	>= 1.00	0.99 to 0.90	< 0.90
<b>3: Schedule Performance Index<sup>(1)</sup></b>	Ratio of Planned Percent Complete to Actual Percent Complete (as of 9/30/19)	1.00	0.94	-0.06	Ⓜ	>=1.00	0.99 to 0.80	<0.80
<b>4: Conveyance Pipeline Installed</b>	Feet of conveyance pipeline installed (thru 10/31/19)	18,500 LF	0.0 LF	0.0%	Ⓜ	<= 5%	> 5% and <=7.5%	> 7.5%
<b>5: Compliance Date Countdown</b>	Days Remaining to Compliance Date (as of 10/31/19)	1,216 days	852 days	-364 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 4. 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 4 shows the total amount of work currently under contract and provides a summary of total charges.

Table 4 WRF Project Overall Budget Status (thru October 2019)

Summary of Total WRF Project Cost	
Original Baseline WRF Project Budget <sup>(1)</sup>	\$125,941,000
Current Fiscal Year WRF Project Budget (as of 6/30/19) <sup>(2)</sup>	\$125,884,000
Current WRF Project Budget (as of 9/30/19) <sup>(3)</sup>	\$125,090,000
Budget Percent Change (Current versus Fiscal Year)	-0.6%
Total Expenditures for October 2019 <sup>(4)</sup>	\$1,532,585
Total Expenditures to Date (thru 10/31/19 invoices)	\$14,579,794
Percent of Current WRF Project Budget Expended	11.66%
Summary of Contracted Work	
Total Contracted Amount	\$80,323,869
Percent of Current WRF Project Budget Contracted	64.2%
Total Contracted Amount Expended	\$12,839,724
Percent of Contracted Amount Expended	16.0%
Remaining WRF Project Contracted Amount	\$67,484,145

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 (i.e., Carollo).

### 3.2 Project Cash Flow

Figure 1 presents the projected and actual expenditures for the Project through October 2019 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. While compliance with the TSO has not changed since last quarter, completion of construction of the injection wells has been delayed.

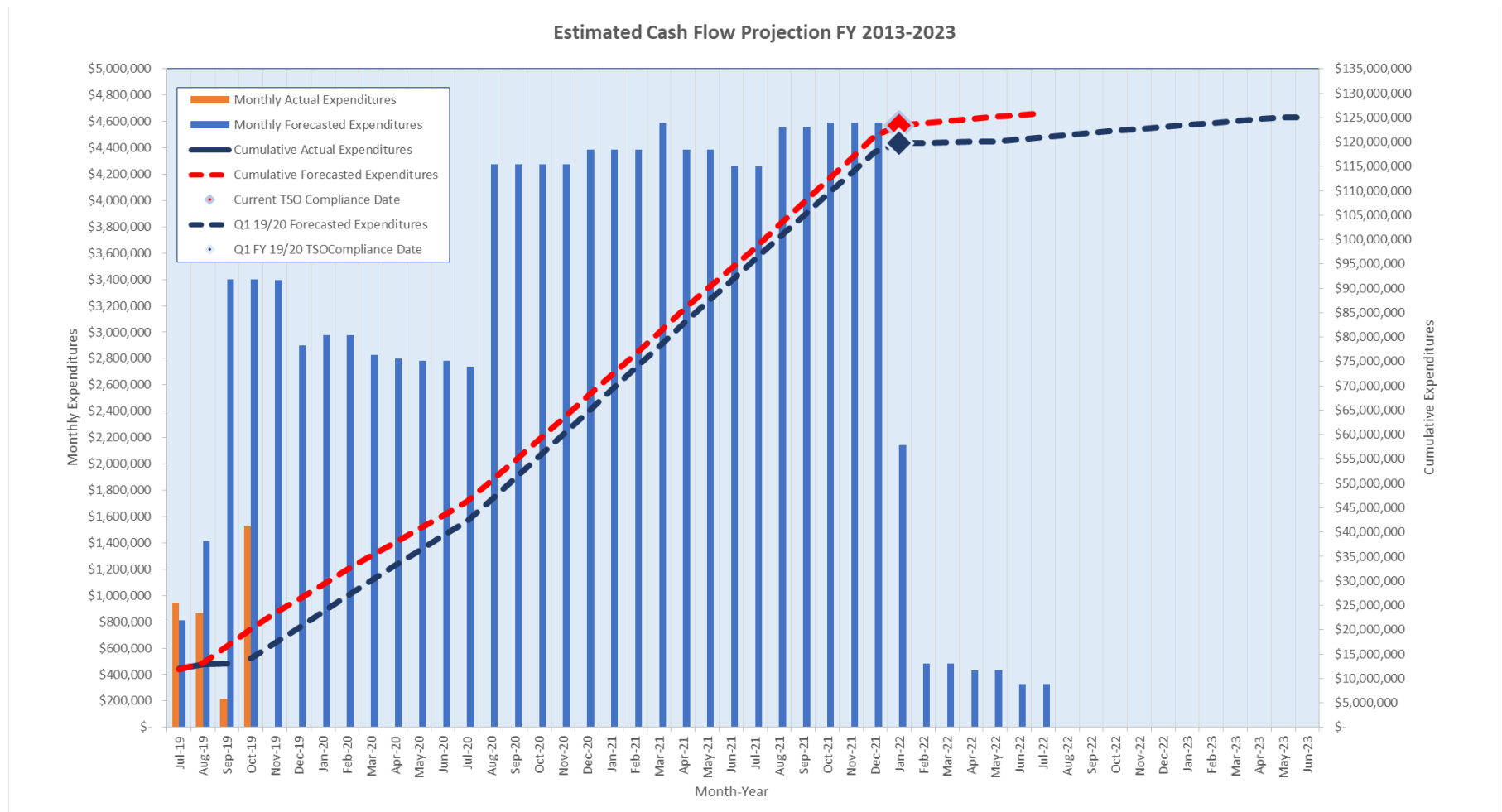


Figure 1 Project Cash Flow Projections and Actual Expenditures



## 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 September 2019. 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 3 (Compliance Schedule) of the TSO. Table 5 below provides a summary of the milestones in the TSO.

Table 5 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	July 31, 2020	-
Completion of WRF Improvements with Completion Report	December 30, 2022	March 10, 2022	-
Full compliance with final effluent limitations	February 29, 2023	March 10, 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.





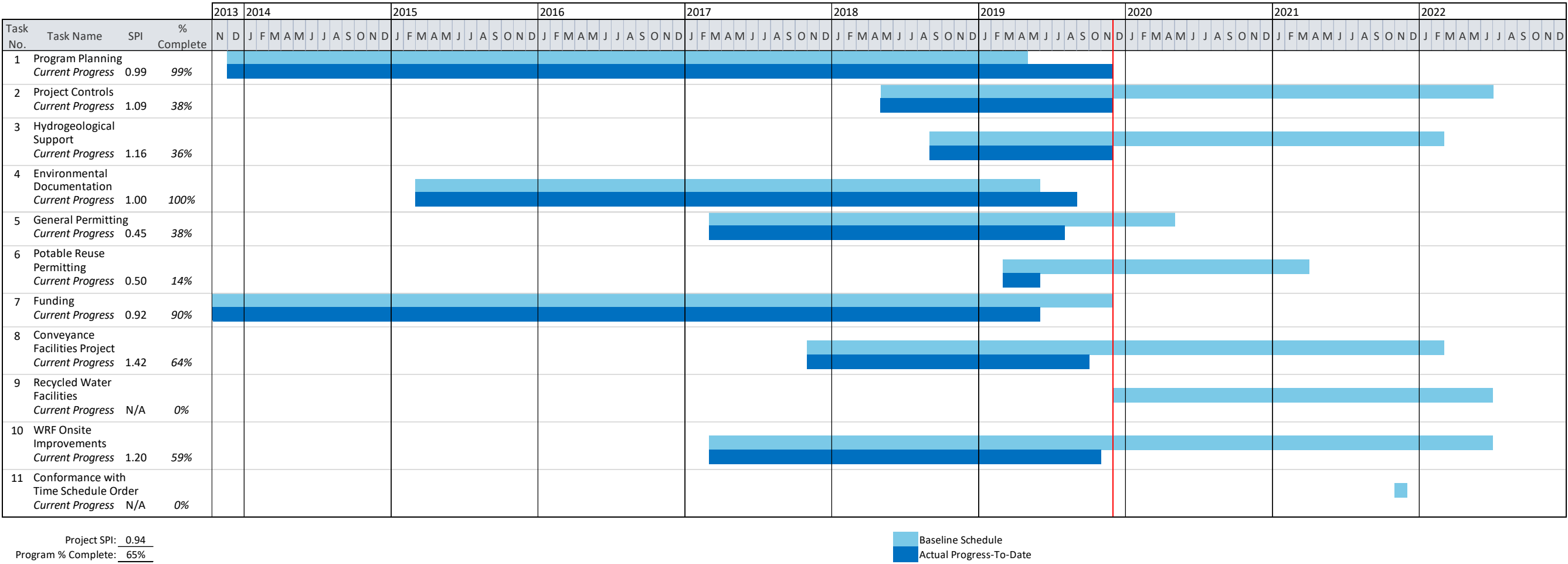


Figure 2 Project Milestone Summary



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

Table 6 Expanded Milestone Schedule

Milestone	Baseline Schedule due Date	Planned Completion Date
<b><u>General Project</u></b>		
Compliance with the TSO <sup>(1)</sup>	November 11, 2021	March 10, 2022
<b><u>Water Reclamation Facility</u></b>		
Begin Construction	August 08, 2019	January 01, 2020
Deliver 90 Percent Design	October 24, 2019	December 19, 2019
Substantial Completion	November 11, 2021	March 10, 2022
Final Completion	June 09, 2022	September 22, 2022
<b><u>Conveyance Facilities</u></b>		
Deliver 90 Percent Design	October 15, 2019	December 31, 2019
Deliver 100 Percent Design	December 17, 2019	March 10, 2020
Bid Advertisement	February 21, 2020	May 15, 2020
Award Construction Contract	May 08, 2020	July 31, 2020
Substantial Completion	September 17, 2021	December 07, 2021
Final Completion	November 19, 2021	February 08, 2022
<b><u>Recycled Water Facilities</u></b>		
Select Preferred Injection Area	May 28, 2019	February 28, 2020
Deliver 30 Percent Design	August 04, 2020	July 09, 2021
Deliver 60 Percent Design	November 10, 2020	October 15, 2021
Deliver 90 Percent Design	February 16, 2021	January 21, 2022
Deliver 100 Percent Design	April 27, 2021	April 01, 2022
Award Construction Contract	July 21, 2021	June 24, 2022
Substantial Completion	April 21, 2022	April 28, 2023
Final Completion	June 21, 2022	May 26, 2023

Notes:

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