



City of Morro Bay
Water Reclamation Facility Project

MONTHLY REPORT JULY 2019

FINAL | August 2019





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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
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
WRF	Act 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. 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, respectively. In July 2019, City staff and the Program Manager focused 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 Martz 2003 Trust.
- Funding Agency Coordination.
- Negotiate and sign the final loan agreement with the 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.
- Acquire the CDP from the California Coastal Commission.
- Environmental Documentation Completion.
- Complete the Final Environmental Impact Report (FEIR) addendum.

A description of the status of these specific activities is provided below.

1.1.1 Property and Easement Acquisition

City staff received a letter from their appraiser (Schenberger, Taylor, McCormick & Jecker, Inc. [STMJ]) on August 14, 2019 indicating the value of the Tri W property and necessary easements owned by the Martz 2003 Trust. City staff is finalizing the purchase agreements with the two property owners and anticipates bringing these purchase agreements to City Council at the September 10, 2019 meeting.

1.1.2 Funding Agency Coordination

City staff and the Program Manager have been working with the City Attorney and WIFIA 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 at the September 10, 2019 meeting.

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). All of these consultation efforts are underway and City staff anticipates having a completed Environmental Checklist by the middle of September 2019.

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. The Program Manager is currently working with the DB team and Conveyance Facilities designer to finalize and submit these documents to CCC staff before the end of August 2019.

1.2 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. Hard copies of the FEIR Addendum and supporting documentation were received by the State Clearinghouse and San Luis Obispo County Clerk's Office on August 14, 2019. The FEIR Addendum will be put on the agenda for the September 10, 2019 City Council meeting.

1.3 Facility Site Visits

During the week of July 08, 2019, City staff (Joe Mueller), a member of the Program Manager's technical team (Andrew Ilmore), and the DB team traveled to several wastewater facilities in Ohio, Indiana, and Illinois to observe working installation of the Fibracast membrane bioreactor (MBR) and Aqua Aerobics' AquaStorm™ system. A total of five (5) sites were toured including:

- Delphos, Ohio (Fibracast MBR).
- Rushville, Indiana (AquaStorm™ system).
- Rockford, Illinois (Aqua Aerobics headquarters, test facility, and manufacturing facility).
- Woodland, Illinois (AquaStorm™ system).

Both the MBR and AquaStorm™ system, which will be used to treated peak stormwater flows, are critical elements of the new WRF. Information gained from these site visits will be used to evaluate the four (4) MBR proposals and develop the procurement documents for the stormwater treatment system.

1.4 Quarterly Budget Revision

The budget for the Project is reconciled on a quarterly basis and is re-baselined on an annual basis. The original \$126 million baseline budget was developed in June 2018 (Q4 Fiscal Year 2018/2019) and was used as the basis for the rate study prepared by Bartle Wells. The annual re-

baselined budget will become the new baseline budget used during this 2019/2020 fiscal year. A summary of the baseline, quarterly reconciled, and annual re-baselined budgets are summarized in Table 1. Subsequent budget reconciliations (quarterly) and re-baselined 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)	Annual Re-Baselined (Q4 FY 18/19)
Water Reclamation Facility	\$62,414,000	\$74,059,000	\$72,891,000
Conveyance Facilities	\$21,087,000	\$27,108,000	\$28,864,000
Recycled Water Facilities	\$8,593,000	\$5,366,000	\$5,283,000
General Program	\$24,403,000	\$11,614,000	\$11,714,000
Construction Contingency ⁽¹⁾	\$9,444,000	\$6,450,000	\$7,132,000
Total	\$125,941,000	\$124,597,000	\$125,884,000

Notes:

(1) Increase in construction contingency is due to funds being shifted back from the Water Reclamation Facility into the contingency fund (only \$1.9 million of the budgeted \$2.5 million was used to fund the potential change orders [PCOs] approved by City Council for the Project in May 2019).

Increases to the Project budget since the budget reconciliation in Q3 Fiscal Year 2018/2019 can be attributed to the following:

- Addition of a trenchless crossing to the design of the Conveyance Facilities along the bike path at Willow Camp Creek following completion of the wetland delineation as part of the supplementary biological report prepared by Kevin Merk (approximately \$1 million)
- Additional potholing for design of the Conveyance Facilities necessary to identify utility locations and avoid construction change orders (approximately \$150,000)
- Additional land acquisition costs for purchase of the Tri-W property following initial estimates from the appraiser (approximately \$300,000).

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

Table 2 Project Accomplishments and Challenges

Project Component	Key Accomplishments	Critical Challenges	Actions to Overcome Challenges	Likely Outcomes
General Project	Completed the FEIR Addendum for circulation and for review by City Council in September 2019			
	Received the NOI for the CDP for the Project			
Water Reclamation Facility	Completed multiple site visits in the Midwest to view critical pieces of equipment for the WRF			
	Received proposals from four (4) MBR manufacturers			
	Received proposals from five (5) headworks equipment manufacturers			
	Received the 60 Percent Design Submittal			
Conveyance Facilities	Continued development of the 60 Percent Design Submittal			
		Schedule recovery due to issues access Vistra and P&E property	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 access Vistra and P&E property	Work with SI to expedite the completion of the Phase 2 hydrogeology work	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	Target ⁽¹⁾	Current	Delta	Status	Ⓜ	Ⓨ	Ⓡ
1: Total Project Costs	Total Project Projected Cost at Completion versus the Baseline Budget (budget as of 6/30/19)	\$125.9 M	\$125.9 M	0.0%	Ⓜ	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 6/30/19)	\$77.3 M	\$77.3 M	0.0%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
1.2: Conveyance Facilities Costs¹	Conveyance Facilities Projected Cost at Completion versus the Baseline Budget (budget as of 6/30/19)	\$31.3 M	\$31.3 M	0.0%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
1.3: Recycled Water Facilities Costs¹	Off Site Injection Facilities Projected Cost at Completion versus the Baseline Budget (budget as of 6/30/19)	\$5.6 M	\$5.6 M	0.0%	Ⓜ	Estimated cost within 5% of target budget	Estimated cost > 5% above target budget	Estimated cost > 10% above target budget
1.4: General Project Costs⁽²⁾	General Project Projected Cost at Completion versus the Baseline Budget (budget as of 6/30/19)	\$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 Cost Performance Index	Ratio of Program Manager Earned Value to Actual Invoiced Cost-to-Date (as of 7/31/19)	1.00	0.99	-0.01	Ⓜ	>= 1.00	0.99 to 0.90	< 0.90
3: Project Schedule Performance Index⁽³⁾	Ratio of Actual Percent Complete to Planned Percent Complete (as of 7/31/19)	1.00	0.92	-0.08	Ⓨ	>=1.00	0.99 to 0.80	<0.80
4: Conveyance Pipeline Installed	Feet of conveyance pipeline installed (thru 7/31/19)	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 7/31/19)	1,308 days	870 days	-438 days	Ⓜ	>= 365 days	364 days and 180 days	> 179 days
Notes: (1) The target costs represent the Fiscal Year 2019/2020 re-baselined budget of \$125,884,000. The original baseline budget used as the basis of the rate increase is \$125,941,000. (2) General Project Costs include Program Management, funding, permitting, etc. as well as approximately \$5 million of accumulated costs for the Project before Carollo became Program Manager in April 2018. (3) Delays associated with access to Vistra and P&E property have resulted in schedule delays impacting hydrogeology work and completion of the Conveyance Facilities final design.								

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 July 2019)

Summary of Total WRF Project Cost	
Original Baseline WRF Project Budget ⁽¹⁾	\$125,941,000
Re-Baselined WRF Project Budget ⁽²⁾	\$125,884,000
Current WRF Project Budget (as of 6/30/19) ⁽³⁾	\$125,884,000
Budget Percent Change (Current versus Baseline)	0.0%
Total Expenditures for July 2019	\$946,798
Total Expenditures to Date (thru 7/31/19 invoices)	\$11,965,433
Percent of Current WRF Project Budget Expended	9.5%
Summary of Contracted Work	
Total Contracted Amount	\$77,246,016
Percent of Current WRF Project Budget Contracted	61.4%
Total Contracted Amount Expended	\$10,341,229
Percent of Contracted Amount Expended	13.4%
Remaining WRF Project Contracted Amount	\$66,904,786

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 re-baselined on an annual basis at the end of each fiscal year (June 30th)
- (3) The Project budget is reconciled on a quarterly basis and compared to the annual budget (i.e., September 30th, December 31st, and March 31st)

3.2 Project Cash Flow

Presented in Figure 1 are the projected and actual expenditures for the Project through July 2019 compared to the re-baselined budget developed at the end of Fiscal Year 2018/2019 as the basis for the upcoming fiscal year (i.e., July 01, 2019 through June 30, 2020). 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 2017/2018 have been combined to improve readability. A milestone has been added to the cumulative forecasted expenditures. This 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

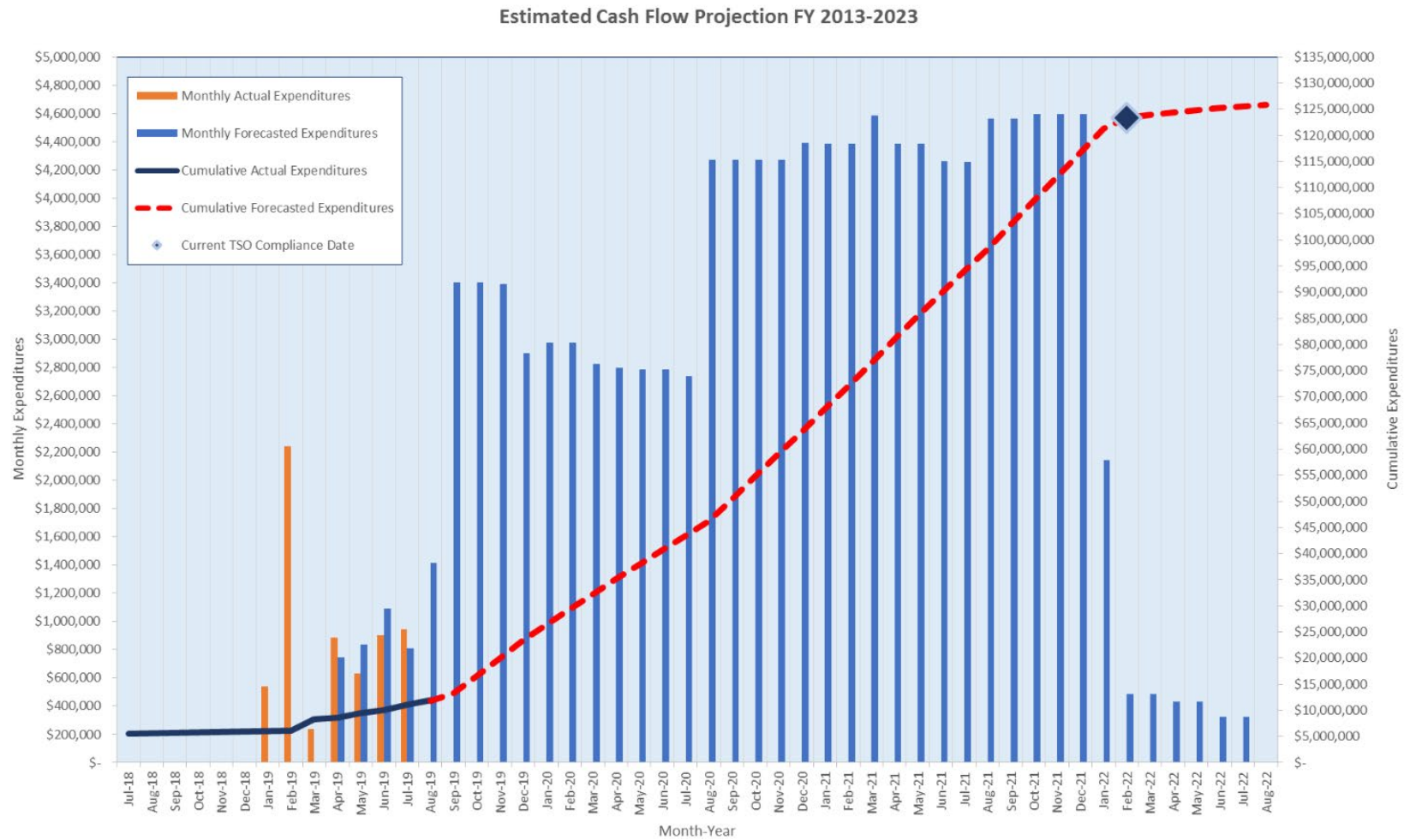


Figure 1 Project Cash Flow Projections and Actual Expenditures

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 developed at the end of Q3 Fiscal Year 2018/2019. The dark blue bars represent the current actual progress as of July 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 current actual percent complete versus the planned 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

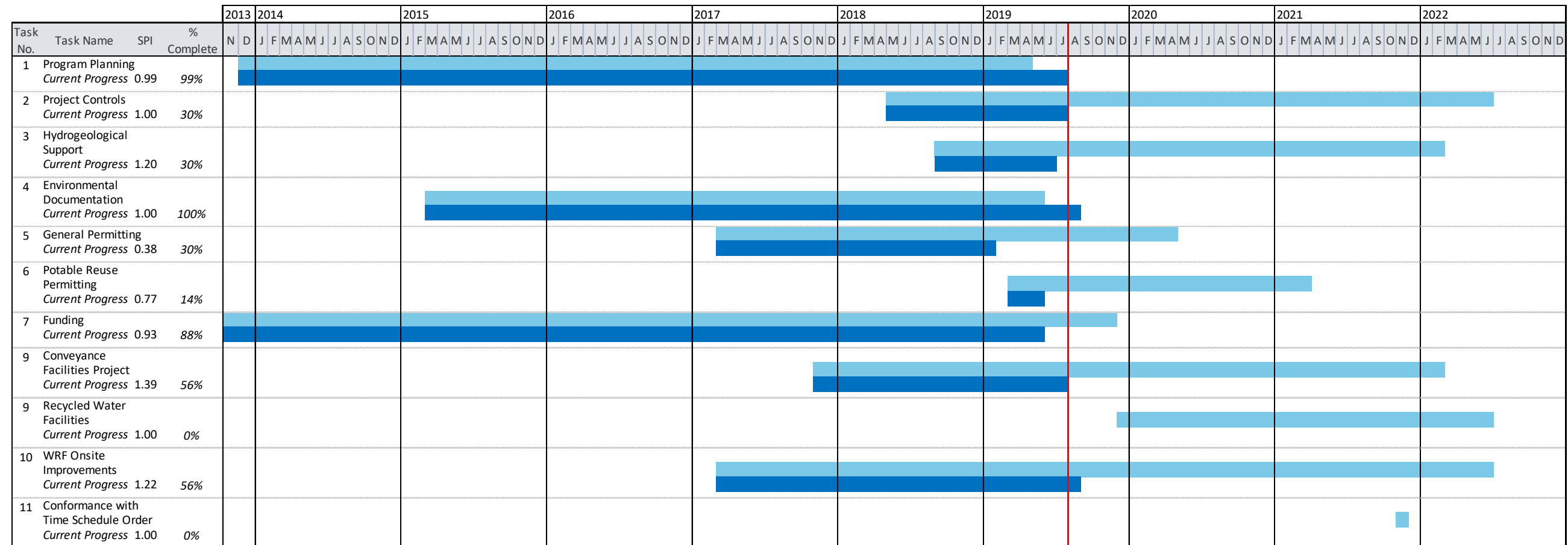
In June 2018, the City received a TSO from the RWQCB. The TSO requires the City to comply with a time schedule that will, within five years of adoption, allow the City to achieve full compliance with biochemical oxygen demand (BOD) and total suspended solids (TSS) final effluent limitations established in Order No. R3-2017-0050. In addition to the final compliance date, a number of intermediate milestones are provided in Table 5 (Compliance Schedule) of the TSO. Presented in Table 5 are 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 22, 2020	-
Completion of WRF Improvements with Completion Report	December 30, 2022	December 17, 2021	-
Full compliance with final effluent limitations	February 29, 2023	December 17, 2021	-

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.



Project SPI: 0.92
Program % Complete: 61%

Figure 2 Project Milestone Summary