



City of Morro Bay
Water Reclamation Facility Project

MONTHLY REPORT JANUARY 2020

FINAL | February 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

Elements of 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 January 2020, 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:

- 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

A status update for these specific activities related to the start of construction is provided below. Brief updates on the status of each Project component are also provided.

1.1.1 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, and the City achieved several major milestones in January 2020. At the January 14, 2020 meeting of the Morro Bay Public Finance Corporation (MBPFC), the corporation approved Resolution No. PFC 01-20 which will allow the City to finance the Project with proceeds from the EPA's WIFIA Program. At the January 14, 2019 City Council meeting, the council approved Resolution No. 04-20 to complement Resolution No. PFC 01-20. The MPPFC was formed in 2019 to allow the City to undertake financing related to the Project. The WIFIA agreement authorizes the City to be reimbursed for eligible Project costs of up to \$61.7 million, which equates to 49 percent of the projected total costs of the Project (i.e., \$126 million). The low-interest loan from WIFIA will save rate payers upwards of \$28 million in debt savings compared to a conventional loan.

The City is ready to sign the WIFIA loan agreement. However, the environmental review processes for both WIFA and CWSRF must first be completed.

1.1.2 Environmental Checklist

Since July 2019, the City staff and the Program Manager have been working through EPA to complete Section 7 consultation with the United States Fish and Wildlife Service (USFWS). In December 2019, the decision was made by the EPA to pursue formal consultation with USFWS for the California Red Legged Frog (CRLF). While this formal consultation process requires additional time to complete, it will protect the City from potential schedule delays that would

occur during construction as a result of CRLF take. The EPA requested the USFWS to expedite the formal consultation and issue their Biological Opinion by the end of January 2020. The USFWS indicated in December that they would make every effort to honor this request. However, the BO has not yet been received. Based on the latest information from EPA, the final BO will be received by March 05, 2020. The EPA has committed to completing their environmental review/checklist within a week after receipt of the final BO. This will allow the City to sign the WIFIA loan agreement and issue the construction notice to proceed (NTP) for the WRF in mid-March 2020.

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 has been delayed over the last few months as the City has been working with the DB team to develop a number of potential change orders (PCOs) that will 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

City staff and the Program Manager are currently planning to bring these PCOs to the Public Works Advisory Board (PWAB) for review on March 18, 2020 and to the City Council for approval on March 24, 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.

1.3 Conveyance Facilities

The design has continued to progress since the City completed extensive utility investigations in December 2019/January 2020 (i.e., potholing) and the City received the 90 percent design submittal on February 10, 2020. The 90 percent design submittal is currently under review by City staff and the Program Manager.

In addition to advancing the design, the City has continued property acquisition efforts in January 2020. Both permanent and temporary construction easements are required from PG&E and Vistra Energy (Vistra) to complete construction of the pipelines and injection wells that will link the current wastewater treatment facility (WWTF) and the WRF and allow the City to inject purified water into the Lower Morro Valley Groundwater Basin for indirect potable reuse (IPR), respectively. In order to acquire these easements, the City is taking advantage of all mechanisms at their disposal. Through discussions with PG&E, they have recommended the City utilize eminent domain through the California Public Utilities Commission (CPUC). This is the most expedient way to acquire the easements from PG&E at this time. The City has been actively working with Vistra to acquire additional easements along the bike path without using eminent domain. While these negotiations continue, the City has not dismissed the possibility of eminent domain, which may be necessary to keep the Project on schedule. At the February 11, 2019 City Council meeting, the council approved Resolution No. 13-20 and 14-20 authorizing eminent

domains actions for Vistra and PG&E, respectively. These resolutions of necessity are an important first step in the eminent domain process.

1.4 Recycled Water Facilities

While design of the Recycled Water Facilities has not yet been started, City staff and the Program Manager have continued to advance the necessary hydrogeological work being done by the City's hydrogeologist, GSI Water Solutions (GSI). 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 use an existing Morro Bay Mutual Water Company (MBMWC) well to conduct the pumping and injection tests. Pump testing for this well was completed in early February 2020. GSI is now updating the groundwater model and will be making a recommendation for the preferred injection location (i.e., either west of Highway 1 in Vistra property or east of Highway 1 near Silver City) by the end of March 2020. Pump testing for the MBMWC was promising and GSI will be starting injection testing as soon as March 2020.

1.5 Funding

City staff and the Program Manager have been working with the United States Bureau of Reclamation (USBR) Title XVI grant program since 2018. The City was unable to get the previous crosswalk document approved by USBR prior to last year's funding opportunity was announced. A crosswalk document is used to adapt a report that has been previously developed to the USBR Title XVI Project Report requirements. In this case, the crosswalk document was developed for the Draft Master Reclamation Plan developed by MKN in 2017. After several rounds of review by USBR staff in 2019, it was determined that the best course of action would be to develop a new project report specifically for Title XVI in order to make the Project eligible for funding in 2020. On February 03, 2020, City staff and the Program Manager submitted a Title XVI Project Report to USBR staff for review. The City anticipates having an approved project report before the funding opportunity for 2020 is announced in spring 2020. Title XVI provides grant funding for up to 25 percent of the total eligible project costs.

Table 2 summarizes some of the key accomplishments and critical challenges identified for the Project in January 2020.

Table 1 Project Accomplishments and Challenges

Project Component	Key Accomplishments	Critical Challenges	Actions to Overcome Challenges		Likely Outcomes
General Project	Delivery of the Draft Title XVI Project Report to USBR.				
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 increases 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 issue have been resolved at this time.	Work with WWE to expedite the final design schedule including elimination of the 100 percent design deliverables (i.e., transition from 90 percent submittal to bid submittal)		Without expediting the schedule, delayed construction completion could impact the schedule for start-up of the WRF (final completion of the Conveyance Facilities component of the Project is not currently on the critical path).
		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).
Recycled Water Facilities	Completion of pump testing at the west injection location.				
			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]).

1.6 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

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:

- (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.

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 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	Ⓞ	Ⓜ	Ⓡ
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%	Ⓞ	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%	Ⓞ	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%	Ⓞ	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%	Ⓞ	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 01/31/20)	1.00	1.19	0.19	Ⓞ	>= 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 01/31/20)	1.00	0.92	-0.08	Ⓜ	>=1.00	0.99 to 0.80	<0.80
4: Conveyance Pipeline Installed	Feet of conveyance pipeline installed (as of 01/31/20)	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 01/31/19)	1,124 days	836 days	-288 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 January 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⁾	\$125,884,000
Current WRF Project Budget (as of 12/31/19) ⁽³⁾	\$125,873,000
Budget Percent Change (Current versus Fiscal Year)	0.0%
Total Expenditures for January 2020 ⁽⁴⁾	\$717,082
Total Expenditures to Date (thru 01/31/20 invoices)	\$16,193,686
Percent of Current WRF Project Budget Expended	12.87%
Summary of Contracted Work	
Total Contracted Amount	\$80,124,640
Percent of Current WRF Project Budget Contracted	63.7%
Total Contracted Amount Expended	\$13,859,354
Percent of Contracted Amount Expended	17.3%
Remaining WRF Project Contracted Amount	\$66,265,286

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 January 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.

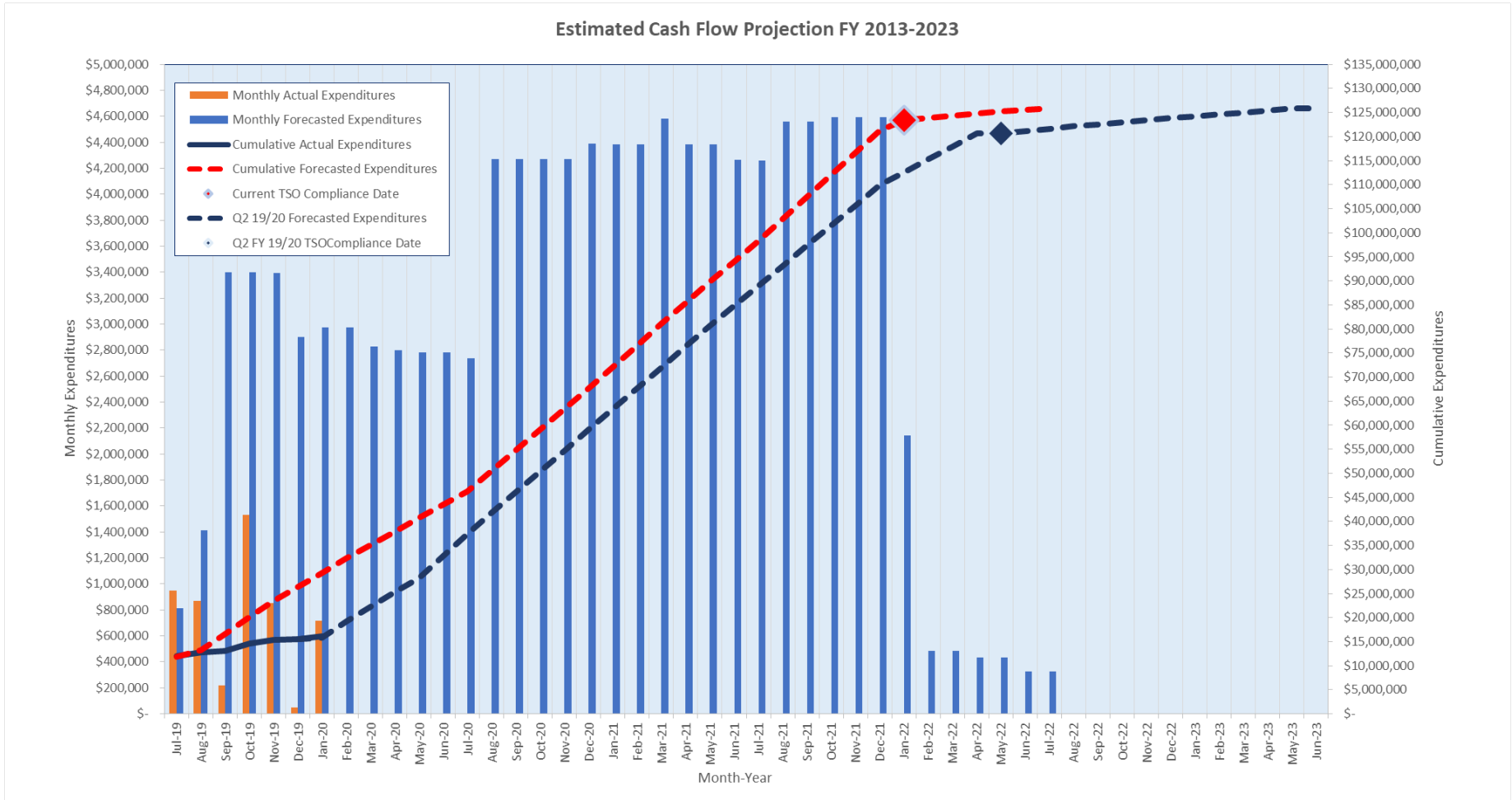


Figure 1 Project Cash Flow Projections and Actual Expenditures

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 January 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	July 09, 2020	-
Completion of WRF Improvements with Completion Report	December 30, 2022	May 16, 2022	-
Full compliance with final effluent limitations	February 29, 2023	May 16, 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.

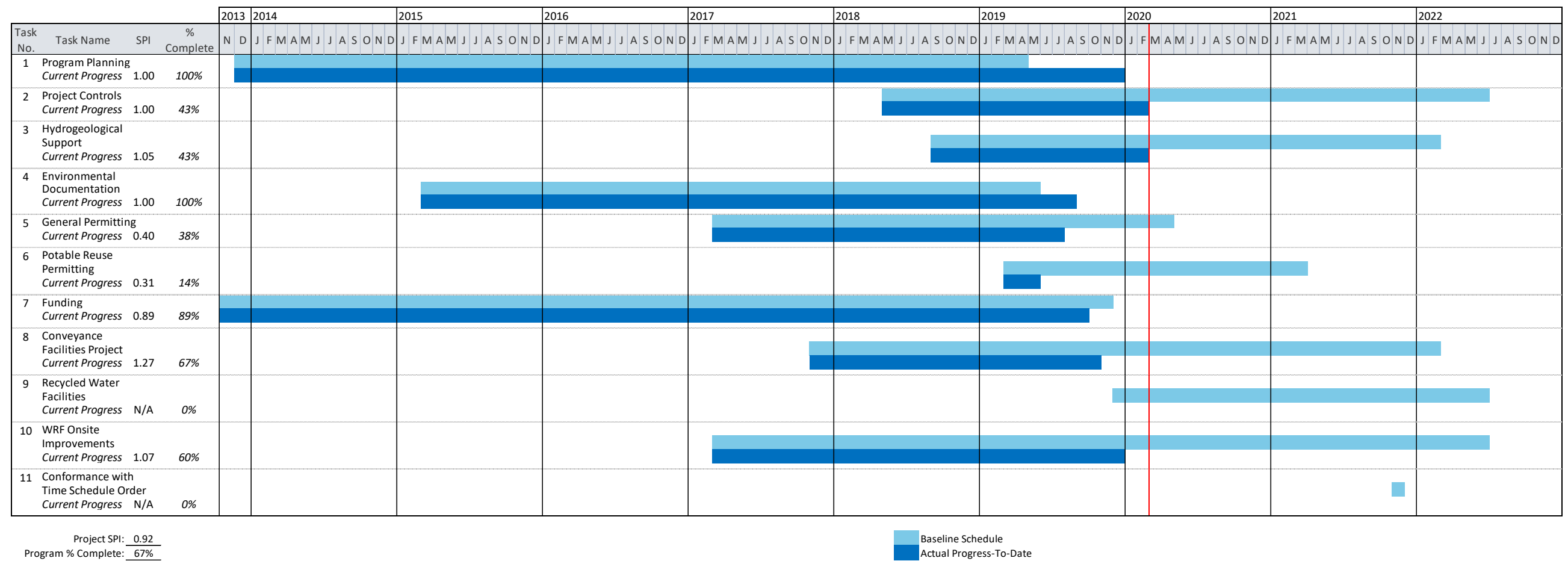


Figure 2 Project Milestone Summary

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

Table 7 Expanded Milestone Schedule

Milestone	Baseline Schedule due Date	Planned Completion Date
<u>General Project</u>		
Compliance with the TSO ⁽¹⁾	November 11, 2021	May 16, 2022
<u>Water Reclamation Facility</u>		
Begin Construction	August 08, 2019	May 09, 2020
Deliver 90 Percent Design	October 24, 2019	March 31, 2020
Substantial Completion	November 11, 2021	May 16, 2022
Final Completion	June 09, 2022	December 01, 2022
<u>Conveyance Facilities</u>		
Deliver 90 Percent Design	October 15, 2019	February 10, 2020
Deliver 100 Percent Design	December 17, 2019	April 20, 2020
Bid Advertisement	February 21, 2020	April 23, 2020
Award Construction Contract	May 08, 2020	July 09, 2020
Substantial Completion	September 17, 2021	November 15, 2021
Final Completion	November 19, 2021	January 17, 2022
<u>Recycled Water Facilities</u>		
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