

EXECUTIVE SUMMARY

DATE: August 14, 2024
TO: Ben Litwack, Public Works Manager
FROM: Jose Gutierrez, P.E. – Murrieta Water Group 
SUBJECT: City of Visalia 2024 Water Reclamation Facility – Master Plan Review Final
TRANSMITTED VIA EMAIL

The City of Visalia (City) tasked the Murrieta Water Group (MWG) with reviewing the 2024 Water Reclamation Facility – Master Plan (Master Plan) and preparing a professional opinion on the approach, analysis and recommendations prepared by the City’s consultant (Carollo) in their evaluation of the City’s Water Reclamation Facility (WRF). To complete its analysis, MWG also reviewed certain technical memoranda from the City’s 2024 Water Reclamation Facility – Facility Plan (Facility Plan), certain chapters of the City’s General Plan adopted in 2014 (General Plan), and responses provided by Carollo to a July 19, 2024 email regarding their analysis. This executive summary documents and describes the work performed by MWG in performance of the agreement and scope reflected in City PO3847.

Conclusion

Carollo used reasonable, industry standard assumptions based on actual measured data, professional expertise, facility performance, design standards, and the General Plan’s growth forecasts to prepare the Master Plan. The Master Plan will serve the City in making foundational decisions, managing compliance risks, and planning projects at its WRF. The Master Plan was prepared with the appropriate professional standard of care and conservatism to achieve the residential, commercial and industrial growth forecasts in the City’s General Plan.

The Master Plan’s recommended projects, proposed capital improvement plan (CIP), overall implementation schedule and cash flow requirements are appropriate to serve the City’s General Plan growth projections, to comply with Regional Water Quality Control Board regulations, and to maintain sufficient redundancy and reliable operation of the reclamation facility for treating the variable flow and loads experienced at the WRF. The Master Plan contains sufficient financial information for the City’s utility rate consultant to determine rates and development impact fees.

Recommendations

Although the Master Plan assumptions are consistent with the City's General Plan growth projections, to reach the 2030 forecast population of 210,000 persons, the annual growth rate from 2024 through 2030 would need to equal approximately 3.8%, which is two times greater than the average growth rate from 2001 to 2024. I do not believe that the lower growth rate through 2024 warrants changes to the Master Plan or Facility Plan, but the City should monitor the average annual daily flow (AADF), average day maximum month flow (ADMMF), and peak wet weather flow (PWWF) (and corresponding solids loading) going forward. If the measured flows lag the Master Plan projections, then the City should consider adjusting the implementation schedule and defer project implementation as appropriate to meet future flow and load requirements, and to comply with its waste discharge permit. If growth is less than the General Plan and Master Plan's forecast, then the overall CIP schedule and projected cash flow requirements for implementing the CIP could be extended beyond 2043.

For example, the long-term flow and load projections summarized in Table 1.1 Flow and Load Projection Summary on page 1-1 of the Master Plan, include the anticipated year 2044 AADF, ADMMF, and PWWF. Similarly, Table 1.2 Unit Process Capacities summarizes different process unit capacities, deficiencies and anticipated year of capacity exceedance. The forecast year of capacity exceedance is tied directly to the City's actual residential, commercial and industrial growth. The MBR system is projected to reach treatment capacity at an AADF of 16.3 mgd, which could be reached by 2033. If growth is less than 2.7 percent per year (which was the case over the last 20 years), then the MBR might not reach its capacity until 2038.

Similarly, if the PWWF attenuates as the collection system grows, then a lower peaking factor might be observed at the WRF compared to the 2.0 assumed in the Master Plan. The UV Disinfection System's firm capacity will be reached at a PWWF of 37 mgd (after the near-term expansion), currently forecast to occur by 2038. If a lower peaking factor is experienced during the planning horizon (say 1.7), then the UV Disinfection System firm capacity might be sufficient through 2044.

In Section 5.5 on page 5-5 of the Master Plan, Carollo recognizes that "These projects would be implemented *as needed to meet flow and load requirements rather than at set dates*" (emphasis added), which I interpreted as a recommendation to monitor the AADF, ADMMF, and PWWF (and corresponding solids loading) and to initiate planning and design at appropriate times versus set milestones, so that process unit capacities could be expanded when needed, and on-line prior to exceeding their capacities.

I appreciate the opportunity to assist the City with this effort and look forward to providing you with service on other water related projects.