

ADOPT THE 2022 WASTEWATER MASTER PLAN UPDATE FOR THE MUNICIPAL UTILITIES DEPARTMENT

RECOMMENDATION

It is recommended that the City Council approve a resolution to adopt the 2022 Wastewater Master Plan Update prepared in concurrence with the Envision Stockton 2040 General Plan Update.

Summary

The 2022 Wastewater Master Plan Update (WWMPU) revises the 2008 Wastewater Master Plan in accordance with the Envision Stockton 2040 General Plan Update. The WWMPU includes the recalibration of the collections system hydraulic model to evaluate the existing wastewater collection system infrastructure, address potential impacts of planned development growth, and develop a comprehensive roadmap for the City's wastewater collection system Municipal Utilities Department (MUD) Capital Improvement Plan.

The 2022 WWMPU was presented to the Water Advisory Group and Council Water Committee in advance of this Council action. By this action, the City Council will adopt the 2022 WWMPU (Exhibit 1 to the Resolution), which shall serve as the planning document for future infrastructure requirements within the City's Wastewater Collection System.

DISCUSSION

Background

On November 12, 2008, the City Council, by Resolution No 08-0466, adopted the most recent Wastewater Master Plan (WWMP), dated October 2008. The WWMP was prepared to support the 2035 General Plan and served as a planning document for future City of Stockton Wastewater Collection systems infrastructure requirements at full buildout. It identified a short and long-term Capital Improvement Program for wastewater infrastructure projects, including upsizing, rehabilitation, and extensions of sewer pipelines, rehabilitation of existing pump stations, and construction of new pump stations to serve future development areas identified in the 2035 General Plan buildout.

In 2016, the City initiated the Envision Stockton 2040 General Plan Update (GPU). The GPU provided guidance for reevaluating the City's public infrastructure, such as roadways, water, and sewer distribution systems. Utility Master Plan Supplements (UMPS) for water, storm, and sanitary sewer services were prepared in coordination with the Envision Stockton 2040 GPU.

On December 4, 2018, the City Council, by Resolution No. 2018-12-04-1503-01, certified the Environmental Impact Report (EIR), Findings of Fact, and Mitigation Monitoring and Reporting Program for the Envision Stockton 2040 GPU and the UMPS. At the same meeting, by Resolution No. 2018-12-04-1503-02, the City Council adopted the Envision Stockton 2040 GPU and the UMPS. This action necessitated the completion of a citywide Wastewater Master Plan Update (WMPU) with hydraulic modeling for existing conditions, as well as infrastructure planning for future development and efficient operations and maintenance of wastewater collection system facilities.

On June 9, 2020, a Professional Services Contract was awarded to West Yost Associates (West Yost) for the preparation of the Wastewater Master Plan Update (WWMPU). The WWMPU analyzes the City Wastewater Utility's existing collection system, projects capacity demand based on the 2040 General Plan, and includes calibration of the City's wastewater collection system's hydraulic model. The WWMPU also identifies infrastructure needs and develops short-and-long-term capital improvement plan (CIP) with cost estimates for future improvements.

In conjunction with the Envision Stockton 2040 GPU, the City identified future development areas that are both within City Limits and outside of City Limits via the April 2020 Sphere of Influence/Municipal Service Review (SOI/MSR). The City Council adopted the SOI/MSR on July 14, 2020, by Resolution No. 2020-07-14-1103. The Envision Stockton 2040 GPU and the SOI/MSR provide near-term and future development projections, which were used in the WWMPU preparation and analysis.

Present Situation

The purpose of the 2022 WWMPU was to evaluate the wastewater collection system infrastructure, address potential impacts of near-term and long-term planned growth, and develop a comprehensive roadmap for the City's wastewater system capital improvement program. The MUD operates the wastewater collection and treatment systems, which serve customers throughout the City and some outlying areas immediately to the east and south of the City limits.

The Envision Stockton 2040 GPU and SOI/MSR triggered the reassessment of the City's wastewater capacity demands, priorities, and strategies and reevaluation of the wastewater collection system infrastructure improvements to ensure efficient service to the City's existing and future residents and businesses.

The 2008 WWMP hydraulic model was based on limited flow and system geometry information. The 2022 WWMPU hydraulic model was based on extensive flow information and a detailed analysis of the system geometry. West Yost conducted a flow monitoring study from October 2020 to March 2021, with 25 flow meters deployed at various locations throughout the collection system. In addition, field surveys were

performed to verify backflow conditions and flow splits revealed by the monitoring study and adjusted the City's Geographic Information System (GIS) database of upstream and downstream pipe invert elevations. Vertical datum adjustments - used for measuring the elevations of points on the surface - were also made for consistency.

The current hydraulic model, developed using Innovyze InfoSWMM software, is fully dynamic and includes all gravity mains of 12-inch and larger, plus smaller diameter lines in and around the downtown area. It also includes the 23 pump stations and their associated force mains.

For existing conditions, wastewater flows were generated predicated on parcel-based water use with calibration first set to dry and then to wet weather conditions. The model analysis also recognized the pandemic effects on flow generation. The West Yost analysis of the collection system presented theoretical pipe-upsizing improvements to eliminate gravity sewer capacity deficiencies grouped by priority and recommended that the MUD install flow depth monitoring devices (e.g., SmartCovers®) to monitor surcharging at the identified locations. In addition to modeled capacity concerns, condition-related deficiencies involving pump stations and force mains are identified. It was also recommended that the MUD undertake a citywide pump station assessment to determine whether any other pump stations may require modification or rehabilitation.

Modeled conditions for the 2040 timeframe consisted of flows for existing development conditions in addition to future flows from the following areas that do not currently discharge to the City's wastewater collection system:

- General Plan Major Development Areas
- General Plan Study Areas
- Additional 2040 Development Areas
- Unincorporated County Islands
- Properties within City limits with Septic Tanks

Modeled system deficiencies for 2040 conditions are only slightly more severe than those identified for existing conditions.

In addition to evaluating the 2040 flow conditions, it was necessary to consider collection system flows associated with the buildout of the City's Sphere of Influence. The analysis of buildout flow conditions ensures that any future upsizing of the collection system pipes is adequate to accommodate development consistent with planned future land uses through the General Plan buildout.

The complete list of recommended Capital Improvement Program (CIP) projects is categorized as follows:

- Pump Station and Force Main Improvements, Existing Conditions (P- #)
- Rehabilitation of Existing Gravity Sewer Facilities (R- #)
- Capacity Improvements to Existing Gravity Sewer Facilities (C- #)
- Recommended Studies (S-#)
- Watch List Items (W-#)
- Projects to be removed from the City's Existing CIP List (X- #)

Cost estimates prepared for this WWMPU were developed by West Yost, in accordance with the guidelines of the Association for the Advancement of Cost Engineering (AACE) International for a Class 5 estimate and are presented in March 2022 dollars corresponding to an Engineering News Record Construction Cost Index (ENR CCI) of 15,126.84 (San Francisco). Project cost estimates developed by MUD staff were also used. Total CIP costs include markups equal to 80 percent of base construction costs and assumed that the recommended facilities would be developed in public rights-of-way.

The 2022 WWMPU recommends updates to the MUD Capital Improvement Plan. HDR, Inc. provided an analysis to determine whether the 2022 WWMPU conclusions were supported by the current wastewater rates and connection fees. The most recent rate study was adopted in 2019 and included a CIP project list as well as Operations and Maintenance (O&M) costs for the wastewater utility. This analysis does not replace the adopted rate study, but rather assesses whether the conclusions of the 2019 Rate Study remain valid and whether the planned annual rate increases are adequate and continue to be consistent with the anticipated costs.

All development impact fees/connection fees, including wastewater connection fees, are currently under review through a separate City effort.

On October 5, 2022 and October 13, 2022, the 2022 WWMPU was presented to the Water Advisory Group (WAG) and Council Water Committee (CWC), respectively. Following the WAG's recommendation, the CWC approved forwarding the 2022 WWMPU to City Council for consideration and adoption.

It is recommended that the City Council adopt the 2022 Wastewater Master Plan Update in concurrence with the Envision Stockton 2040 General Plan Update.

FINANCIAL SUMMARY

There is no impact on the City's General Fund or any other unrestricted fund from this action.

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