



**CITY COUNCIL MEETING
STAFF REPORT**

Meeting Date: November 6, 2023		Subject: Wastewater Treatment Plant Master Plan Update	
		Staff Member: Mike Nacrelli, Senior Civil Engineer	
		Department: Community Development	
Action Required		Advisory Board/Commission Recommendation	
<input type="checkbox"/> Motion <input type="checkbox"/> Public Hearing Date: <input type="checkbox"/> Ordinance 1 st Reading Date: <input type="checkbox"/> Ordinance 2 nd Reading Date: <input type="checkbox"/> Resolution <input checked="" type="checkbox"/> Information or Direction <input type="checkbox"/> Information Only <input type="checkbox"/> Council Direction <input type="checkbox"/> Consent Agenda		<input type="checkbox"/> Approval <input type="checkbox"/> Denial <input type="checkbox"/> None Forwarded <input checked="" type="checkbox"/> Not Applicable	
		Comments: N/A	
Staff Recommendation: Review Wastewater Treatment Plant Master Plan updates and provide feedback on the recommended capital improvement plan.			
Recommended Language for Motion: N/A			
Project / Issue Relates To:			
<input checked="" type="checkbox"/> Council Goals/Priorities: Strategy 1. Develop an Infrastructure resilience plan and reprioritize/ fund recommended projects.	<input type="checkbox"/> Adopted Master Plan(s):	<input type="checkbox"/> Not Applicable	

ISSUE BEFORE COUNCIL:

The project team will provide an update on the additional analysis included in the Wastewater Treatment Plant (WWTP) Master Plan and the proposed changes made since the previous Council discussion on August 1, 2022.

EXECUTIVE SUMMARY:

The City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled “Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities.” To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020). These improvements are designed to provide the best value to the City’s ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the Comprehensive Plan and 2023-2025 City Council Goals.

The City’s WWTP was originally built in 1971 and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City’s continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the wastewater treatment plant, located at 9275 Southwest Tauchman Road.

This Plan identifies needed capital improvements within the planning period, taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ), and
- Consistency with the 2018 Comprehensive Plan and City Council 2023-2025 Strategy 1.

Plan Updates

Since the previous Council Work Session on August 1, 2022 growth projections have been updated to an assumed 2.9% annual population increase, consistent with recent planning documents adopted by the City, including the Wastewater Collection System Master Plan (November 2014), the Willamette River Water Treatment Plan Master Plan Update (March 2018), and the Basalt Creek Concept Plan (August 2018). In addition, the wastewater flow and load projections for biochemical oxygen demand (BOD) and total suspended solids (TSS) have been

further updated to account for increases in industrial discharges, as allowed under existing permits. The project team also performed a more in depth seismic and resiliency analysis of the wastewater treatment plant facilities to address the City Council 2023-2025 goal to develop an infrastructure resilience plan and reprioritize/ fund recommended projects. These changes result in a higher level of capital investment over the planning period than previously reported, as reflected in the table below.

Project Description	Timeframe	Cost*
Dewatering Performance Optimization	2025	\$150,000
Fiber Optic Conduit Addition	2025	\$60,000
UV System Improvement	2026	\$1,705,000
Seismic Improvements	2026	\$1,082,000
New Aeration Basin and Blower	2025 – 2027	\$10,222,000
Replace Secondary Clarifier Mechanisms	2026 - 2027	\$1,775,000
Membrane Bioreactor (MBR) Phase 1 (includes new blower, fine screens, electrical and hydraulic upgrades)	2028 – 2030	\$69,727,000
New Solids Dryer	2031 – 2033	\$17,130,000
Thickening and Dewatering Improvements	2031 – 2033	\$3,701,000
New Cooling Tower	2037 – 2038	\$642,000
MBR Phase 2 (includes new blower)	2037 – 2038	\$2,330,000
UV Equipment Replacement	2039 – 2040	\$2,571,000
Outfall Upsizing	2039 – 2040	\$1,244,000
MBR Phase 3 (includes 2 new blowers)	2042 – 2043	\$8,117,000
Total		\$120,456,000
*Costs are shown in 2023 dollars and include 25% for engineering, legal, and administration.		

The most significant impact to the required level of capital investment is the need for membrane bioreactor (MBR) facilities. These are state-of-the-art, compact facilities that provide a high level of treatment. Due to the limited amount of space available at the existing WWTP site, MBR facilities are the most feasible means of providing the necessary treatment to accommodate build out of the Wilsonville urban reserve areas.

EXPECTED RESULTS:

The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. The total estimated amount of capital investment over the planning period is approximately \$120 million, of which \$15 million is anticipated in the next five (5) years. The recommended capital improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that are necessary to adequately fund the upgrades needed to meet the projected growth.

TIMELINE:

The project team will incorporate feedback received by both the Planning Commission (October 11, 2023 Work Session) and the City Council (November 6, 2023 Work Session) into the Plan.

Currently, a public hearing for the Plan adoption recommendation by the Planning Commission is scheduled for December 13, 2023. A public hearing before City Council for the Plan adoption is anticipated in January 2024.

CURRENT YEAR BUDGET IMPACTS:

The amended fiscal year 2023 -2024 Budget for capital improvement project (CIP) #2104, Wastewater Treatment Plant Master Plan, includes \$130,000 in sewer operations and system development charge funds. The remaining budget is sufficient to complete the remaining work to update and adopt the Plan.

COMMUNITY INVOLVEMENT PROCESS:

A virtual town hall meeting to present the findings of the Plan and solicit public input was held in September 2022 and posted on the City’s online calendar and Let’s Talk Wilsonville page, where a project overview and periodic updates to the Executive Summary have also been posted. In addition, draft versions of the Executive Summary have been sent to the ten (10) largest industrial customers for review and comment. The public hearings listed above will provide further opportunity for public input. The forthcoming Sewer System Rate Study and SDC Update will also include a public engagement process with outreach to utility customers and the development community.

POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:

A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

ALTERNATIVES:

The project team considered and evaluated numerous technologies and alternatives to provide the needed wastewater treatment plant capacity to meet future demands and recommend a capital improvement program that implements the needed improvements in a way that is efficient and cost effective.

CITY MANAGER COMMENT:

N/A

ATTACHMENT:

1. Wastewater Treatment Plant Master Plan Draft Executive Summary (dated October 2023)