



PLANNING COMMISSION

WEDNESDAY, SEPTEMBER 14, 2022

WORK SESSION

3. Wastewater Treatment Plant Master Plan (Nacrelli) (30 minutes)



PLANNING COMMISSION WORK SESSION STAFF REPORT

Meeting Date: September 14, 2022		Subject: Wastewater Treatment Plant Master Plan	
		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: Provide requested input regarding recommended capital improvement plan.			
Recommended Language for Motion: N/A			
Project / Issue Relates To:			
<input checked="" type="checkbox"/> Council Goals/Priorities: Align infrastructure plans with sustainable financing resources.	<input type="checkbox"/> Adopted Master Plan(s):	<input type="checkbox"/> Not Applicable	

ISSUE BEFORE PLANNING COMMISSION:

Provide feedback and input on components of the Wastewater Treatment Plant (WWTP) Master Plan.

EXECUTIVE SUMMARY:

This new 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 - the 2018 Comprehensive Plan). 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 2018 Comprehensive Plan and 2021-2023 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 improvements 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 2021-2023 Goals 5, 6 and 7.

Updated Growth Projection and Capital Improvement Plan

The previous (7/13/2022) work session included a capital improvement plan based on population growth projections over the planning period obtained from Metro. The growth projections have since 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) and the Willamette River Water Treatment Plan Master Plan Update (March 2018). This change results in a considerably higher level of capital investment over the planning period, as reflected in the table below.

Project Description	Timeframe	Cost*
Dewatering Performance Optimization	2023	\$155,724
UV System Improvement	2023	\$1,370,369
Fiber Optic Conduit Addition	2023	\$45,679
Seismic Improvements	2024	\$841,323
New Aeration Basin and Blower	2025	\$6,928,208
Replace Secondary Clarifier Mechanisms	2026	\$1,382,827
Membrane Bioreactor (MBR) Phase 1 (includes new blower, fine screens, and electrical upgrades)	2028 – 2029	\$31,811,200
New Solids Dryer	2031 – 2032	\$13,371,479
MBR Phase 2 (includes new blower)	2033 – 2034	\$6,211,200
Thickening and Dewatering Improvements	2035	\$2,854,359
New Cooling Tower	2036 – 2037	\$452,138
MRB Phase 3 (includes 2 new blowers)	2038	\$4,742,400
MBR Phase 4 (includes 2 new blowers)	2040 – 2041	\$5,142,400
Total		\$75,309,306
*Costs are shown in 2022 dollars and include 25% for engineering, legal, and administration.		

As shown in the table above, 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. The adjusted growth projection results in an approximate doubling of the City population over the planning period. Due to the limited amount of space available at the existing WWTP site, MBR facilities are the only feasible means of providing the necessary treatment to accommodate such a substantial rate of growth.

EXPECTED RESULTS:

The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. These improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that will be necessary to provide adequate funding to implement to required upgrades.

TIMELINE:

This is the third in a series of presentations to the Planning Commission and City Council. Completed and planned meetings are as follows:

- Planning Commission Work Session 7/13 (completed)
- City Council Work Session 8/1 (completed)
- Planning Commission Work Session 9/14
- Planning Commission Public Hearing 10/12
- City Council Work Session 11/7
- City Council Public Hearing 1st Reading 11/21
- City Council 2nd Reading 12/5

CURRENT YEAR BUDGET IMPACTS:

The remaining contract balance for finalizing the Plan will carry over into FY 22/23. An additional \$92,450 has been budgeted in FY 22/23 for the Sewer System Rate Study and SDC Update, using a combination of Sewer Operating funds and SDCs.

COMMUNITY INVOLVEMENT PROCESS:

The public hearings listed above will provide opportunity for public input. In addition, the Sewer System Rate Study and SDC Update will include a robust public engagement process.

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 Plan is based on a projected population growth rate that is somewhat aggressive but is consistent with other recently adopted planning documents and with historical growth data. The capital project schedule can be adjusted as appropriate if actual growth rates differ significantly from the projected growth included in the Plan.

ATTACHMENTS:

N/A