PLANNING COMMISSION

WEDNESDAY, OCTOBER 11, 2023

WORK SESSION

4. Wastewater Treatment Plant Master Plan (Nacrelli) (15 minutes)

PLANNING COMMISSION WORK SESSION
STAFF REPORT

Meeting Date: October 11, 2023	**Subject:** Wastewater Treatment Plant Master Plan **Staff Member:** Mike Nacrelli, Senior Civil Engineer **Department:** Community Development
Action Required	**Advisory Board/Commission Recommendation**
☐ Motion ☐ Public Hearing Date: ☐ Ordinance 1st Reading Date: ☐ Ordinance 2nd Reading Date: ☐ Resolution ☒ Information or Direction ☐ Information Only ☐ Council Direction ☐ Consent Agenda	☐ Approval ☐ Denial ☐ None Forwarded ☒ 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:	

☒Council Goals/Priorities: Align Infrastructure Plans with Sustainable Financing Sources	☐Adopted Master Plan(s):	☐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, & 7.

Updated Growth Projection and Capital Improvement Plan
At the previous work session (9/14/2022), the team presented the capital improvement plan based on an assumed 2.9% annual population increase, consistent with recent planning documents adopted by the City, including the Wastewater Collection System Master Plan (CSMP, November 2014) and the Willamette River Water Treatment Plan Master Plan Update

(March 2018). The flow and load projections have been further updated to account for increases in industrial discharges, as allowed under existing permits. This change results in a higher level of capital investment over the planning period, mainly due to hydraulic upgrades, 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	$10,179,000
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	$69,637,000
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	$2,242,000
UV Equipment Replacement and Outfall Upsizing	2039 – 2040	$2,571,000
UV Equipment Replacement and Outfall Upsizing	2039 – 2040	$1,244,000
MBR Phase 3 (includes 2 new blowers)	2042 – 2043	$8,030,000
Total		**$120,148,000**
*Costs are shown in 2023 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.

Question for the Planning Commission:

What input does the Planning Commission have on the updated capital improvements list for the Wastewater Treatment Plant Master Plan?

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 7/13/22 (completed)

- City Council Work Session 8/1/22 (completed)
- Planning Commission Work Session 9/14/22 (completed)
- Planning Commission Work Session 10/11/23 (current)
- City Council Work Session 11/6/23
- Planning Commission Public Hearing 12/13/23
- City Council Public Hearing 1st Reading 1/4/24
- City Council 2nd Reading 1/18/24

CURRENT YEAR BUDGET IMPACTS:
The remaining contract balance for finalizing the Plan will be expended this fiscal year. An additional $92,450 has been budgeted in FY 23/24 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. In addition, some of the recommended hydraulic upgrades might avoided, depending on the results of more detailed analysis of storage and attenuation in the wastewater collection system, when the next CSMP update is completed.

ATTACHMENTS:
N/A