City of Sandy

Wastewater Facility Plan Amendment Summary

May 2026

Introduction

The City of Sandy (City) currently discharges treated effluent from its wastewater treatment plan (WWTP) to Tickle Creek in the winter and provides filtered water to a local nursery for beneficial reuse (irrigation) in the summer. The City is permitted to discharge treated effluent to Tickle Creek from May 1 to October 31, with no regard for the current weather conditions or stream flow. These means of effluent discharge and reuse are constrained by the Three Basin Rule, which prohibits increases in mass load discharges to Tickle Creek. Additionally, there is limited demand for beneficial reuse from the City's nursery partner during the spring and fall shoulder seasons.

The City entered a Consent Decree with the State of Oregon's Department of Environmental Quality (DEQ) and United States Environmental Protection Agency (EPA) in 2023 to resolve past claims and effluent discharge violations, while also allowing the City to develop a long-term wastewater discharge strategy. Part of the Consent Decree required that certain investments be made to the existing collection system, addressing inflow and infiltration and other system defects.

As of the date of this report, over $40 million has been invested into the City's collection system, repairing leaky pipes and manholes to prevent groundwater from entering the system, WWTP upgrades, and studying viable alternatives to correct the capacity issue for the long-term. An additional $14 million is expected to be spent to complete this work throughout the entirety of the collection system.

The Facility Plan Amendment studied three different long-term discharge alternatives, which are explained in more detail further this in summary.

Existing Conditions

The City's existing discharge permit allows for the discharge of treated effluent to Tickle Creek during the winter (wet weather) months of November through April, and to a local nursery partner for irrigation in the summer months (dry weather) of May through October. Statewide dilution limitations restrict discharge to Tickle Creek during the winter months to only when a 10 to 1 dilution ratio of the effluent can be achieved, meaning the treated effluent cannot exceed 10% of the total streamflow.

In addition to the challenges noted above, Tickle Creek is located within the "Three Basin Rule" area which prohibits increases in mass load discharge Tickle Creek. As a tributary to Clackamas River, which serves as the primary drinking water source for a large portion of Oregon's population, the strict discharge limits are meant to protect the watershed. Unfortunately, current permitting limits have not been modified to reflect the significant technological improvements that have been made to the treatment process over the last several decades. The mass load discharge limits cannot be increased from the levels currently noted in our 2010 permit.

Finally, due to the discharge permit following calendar days and not actual weather conditions, if the City experiences a significant wet weather event in the dry months, the demand for water does not exist from the nursery partner and Tickle Creek discharge is not allowed. This creates an unmanageable situation that leaves the City vulnerable to permit violations.

Treatment Alternatives

While several different alternatives have been studied, there are only three alternatives that can meet the City's long-term needs. These alternatives include: the construction of a membrane bioreactor (MBR) and discharge treated effluent to Sandy River, construction of a new pumpstation and pipeline to a neighboring wastewater treatment facility for treatment and discharge, and construction of an MBR and continued discharge to Tickle Creek and the local nursery partner along with expanded discharge to groundwater.

- Sandy River – This alternative would utilize MBR treatment technology, membrane filtration, and a new pumpstation and pipeline to discharge treated effluent to Sandy River. The submerged membrane performs a physical barrier to the sludge, removing toxins and ammonia from the treated effluent. An MBR facility would require higher levels of certification for operators, but due to built-in automation, the plant could be operated by the same number of staff.
    - **Opportunities**: A single MBR solution would provide improved operation, compliance, and resiliency. Discharging to Sandy River eliminates the many challenges the City faces with regards to the Three Basin Rule.
    - **Challenges**: Extreme expense; lengthy and uncertain permitting process; ends current reuse
    - **Timeline**: 6 – 8 years, depending on permitting and land acquisition.
- Regional Treatment – This alternative includes constructing a new pumpstation and approximately 14 miles of pipeline to the City of Gresham WWTP. City of Gresham would then treat and discharge the City's waste. Staffing would potentially be reduced, and the certification level for operators would likely be reduced to a collection system certification only.
    - **Opportunities**: Shortest timeline for construction; risk of permit violations and operational complexity are significantly reduced.
    - **Challenges**: Extreme expense; challenging intergovernmental agreement negotiations; significant and distant infrastructure to maintain; higher risk of raw sewage overflow; ends current reuse
    - **Timeline**: 4 years
- Groundwater Recharge – This alternative would utilize MBR treatment technology, membrane filtration, utilizing the existing discharge to Tickle Creek, retaining the local nursery partner, and construction of a new groundwater discharge location. Additional effluent polishing (i.e. advanced treatment) would likely be required to meet more stringent discharge standards.
    - **Opportunities**: This alternative is environmentally beneficial, retaining existing partnerships while also having the added benefit of augmenting our region's diminishing groundwater supply. While the Three Basin Rule would still apply to the City, this alternative provides the needed relief throughout the year when discharge cannot take place in Tickle Creek and the nursery does not need to irrigate.
    - **Challenges**: Uncertainty due to permitting process; adds additional treatment complexity
    - **Timeline**: 4 – 7 years, depending on permitting.

Project Costs

The Facility Plan Amendment process included evaluating the estimated cost of each of the three alternatives. These costs include direct construction costs, program overhead costs, and other applicable costs dependent upon the alternative.

It's important to note that these costs do not reflect the $40 million already invested in the wastewater system, nor the additional $14 million that is required to be spent over the next five years finishing the overall collection system improvements.

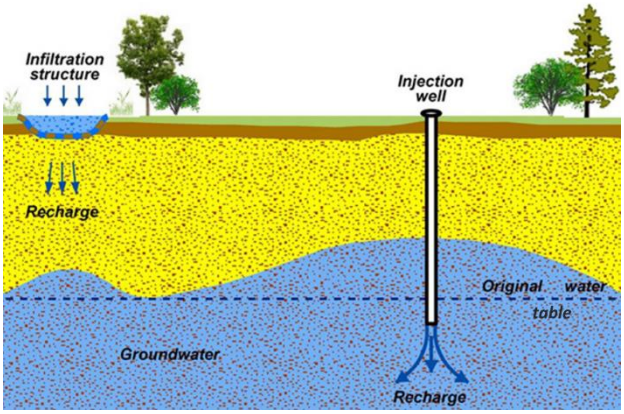
WASTEWATER DISCHARGE ALTERNATIVES

Project Element	Sandy River	Regional Treatment	Groundwater Recharge
Construction Costs			
MBR Plant	$68	$0	$62
Advanced WWTP Improvements	-	-	23
Sandy River Discharge	66	-	-
Groundwater Discharge Improvements	-	-	24 *
Sandy to Gresham Pump Station	-	22	-
Sandy to Gresham Force Main	-	88	-
Sandy to Gresham Gravity Main	-	25	-
Construction Costs Total	134	135	109
Capacity Purchase Costs			
Gresham Connection Fee	-	18 - 29	-
Capacity Purchase Costs Total	-	18 - 29	-
Program Overhead Costs Total			
Program Management	5	5	4
Construction Management and Inspectior	8	8	7
Management Reserve	13	13	11
Soft Costs (Finance, Legal, etc.)	4	4	3
Program Overhead Costs Total	31	31	25
Total Project Costs (millions)	**$165**	**$184 - 195**	**$134**

*Cost based on advanced polishing for gorundwater recharge using filtration with granular activated carbon. If reverse osmosis is required, total project cost increases to $147 mm.

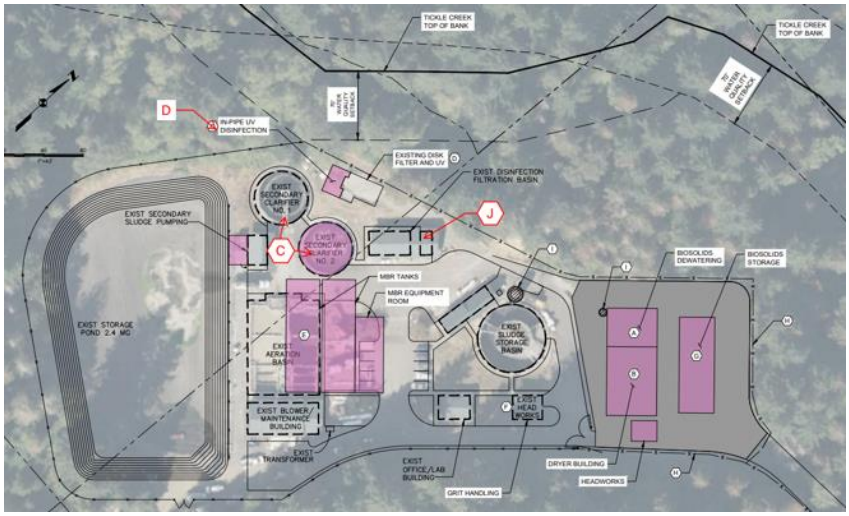
Preferred Alternative & Next Steps

The Facility Plan Amendment has identified the **Groundwater Recharge alternative as the preferred alternative** to ensure the City's long-term ability to remain compliant with wastewater discharge permit, allow for future development, and is the lowest overall cost. The total program costs, including all collection system work, treatment enhancements, discharge infrastructure, and permitting is approximately **$188 million**.



Groundwater recharge is a modern, sustainable approach that is already utilized in many communities across the western United States. Rather than treating highly purified effluent as waste, recharge projects return it to underground aquifers where it can help replenish declining groundwater supplies and improve long-term regional water resilience. In the City's case, this approach provides an environmentally responsible solution that supports future growth, lessens resilience on surface water discharge, and aligns with broader statewide goals to expand innovate water reuse strategies.

Upon adoption of the Facility Plan Amendment, the City will immediately begin working on drafting a request for proposals (RFP) to complete the design and engineering work needed to advance this alternative forward. The City's existing WWTP location will be reconstructed to allow for the MBR plant to be built.



The City will also begin working with the local nursery to broaden the scope of the current reuse agreement, as well as work with DEQ to ensure a timely permit application period for the new groundwater recharge alternative.