CITY OF BEND

Water Reclamation Facility – Facility Plan Update

Project No.: 1SFPU

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Prepared For: City Council

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Subject: Urgent Need Projects

Background

The City of Bend is undertaking an update to the Water Reclamation Facility (WRF) Facility Plan to identify and prioritize capital improvements required through the planning horizon of 2045. Preliminary assessments completed as part of this effort indicate that several critical WRF systems – most notably solids digestion and secondary treatment – are at or near capacity, are in deteriorated condition, and pose immediate risks to safety, regulatory compliance, and service continuity. As a result, accelerated action is required on specific "urgent need" projects.

Purpose and Objectives

The primary objective of the Facility Plan Update (FPU) is to establish a capital improvement program that ensures the WRF can reliably meet current and future capacity, condition, and regulatory requirements. Key City goals guiding the FPU include maintaining compliance with water pollution control facility (WPCF) permits, protecting staff health and safety, ensuring uninterrupted hauled waste services, maximizing beneficial use of reclaimed water, biosolids, and biogas, minimizing odors, and advancing the City's climate and energy objectives.

Key Findings and Risks

The FPU assessment identified significant limitations in both solids digestion and secondary treatment processes. Several existing major components in these areas are more than 25 to 40 years old, requiring frequent maintenance and operation under overloaded conditions that accelerate wear and increase the likelihood of failure. The solids digestion system is currently out of capacity, with no operational redundancy; taking a single digester offline for maintenance risks significant treatment process disruptions and regulatory non-compliance. A 2025 digester cleaning project

demonstrated these vulnerabilities, resulting in odor complaints and costly alternative handling of partially digested solids.

Secondary treatment performance has also been inconsistent, with episodic exceedances of effluent permit limits. These issues are expected to worsen as the wastewater flow volume continues to grow through 2045. Collectively, these conditions present three primary risks: (1) safety hazards to WRF personnel, particularly within the digester complex; (2) increased probability of permit violations as flows and loads increase; and (3) potential interruption of regional hauled waste services.

Hauled Waste Considerations and Timing Constraints

Urgency is further heightened by the City's third-party hauled waste contractor, whose contract expires by June 30, 2030 (or earlier if not renewed). The City has determined that long-term continuation of hauled waste service should be managed by the City and be treated through WRF processing. However, the existing facility lacks sufficient capacity to accommodate hauled waste without first constructing additional solids digestion and secondary treatment infrastructure. Preliminary schedules indicate that new facilities – including a fourth digester and a fourth secondary clarifier – are unlikely to be operational before December 2031, creating a potential service gap that requires an interim solution, near-term planning, and risk mitigation.

Recommended Improvements and Costs

To address these urgent needs, the FPU identifies a series of major capital improvements. The solids project, centered on the digester complex, is expected to exceed **$100 million** along with a separate **$15 million** hauled waste receiving component. Secondary treatment improvements, including construction of a fourth secondary clarifier and a new recycling pump station, are estimated to exceed **$70 million**. While these cost estimates may increase as alternatives are refined and market conditions evolve, the improvements are necessary to restore capacity, reduce risk, and support long-term system reliability.

Conclusion

Promptly initiating project efforts to address the identified urgent WRF needs offers the City an opportunity to proactively start implementing a solution to address known operational safety and continuity challenges, achieving regulatory compliance, and realizing cost control. While construction will be complex and financially impactful, the solids digestion and secondary treatment improvements are critical requirements to achieving successful operation at the WRF. Interim measures may still be warranted to help reduce near-term risks, but prompt advancement of these major capital projects is critical to ensuring long-term resilience.