



City Manager's Office

MEMORANDUM

DATE: 10/12/2023

TO: Honorable Mayor and City Council

THROUGH: Doug Thornley, City Manager Approved Electronically
Jackie Bryant, Assistant City Manager

FROM: Trina Magoon, Director of Utility Services
Dustin Waters, Assistant Director of Utility Services
Joe Coudriet, Senior Civil Engineer

SUBJECT: **Recommended Capacity Improvements to the Reno Stead Water Reclamation Facility Flow Shave**

The Reno Stead Water Reclamation Facility (RSWRF), located at 4250 Norton Drive in the North Valleys, is a wastewater treatment plant that is permitted to treat 2 million gallons per day (MGD) of raw sewage. A recently constructed expansion increased the plant's treatment capacity to 4 MGD; however, the existing effluent discharge permit limits the total discharge to 2 MGD.

The Advanced Purified Water Facility Project at American Flat (APWF) is currently under design and will provide the effluent management solution to allow for full utilization of the RSWRF expanded treatment capacity. The APWF is anticipated to be operational and permitted by the Nevada Division of Environmental Protection (NDEP), by mid-2028, at which time will serves¹ can be issued against the discharge permit for the additional 2 MGD discharge capacity provided by the APWF.

In the interim, an operational process of flow shaving that diverts raw sewage from the headworks of RSWRF to the headworks of the Truckee Meadows Water Reclamation Facility (TMWRF), has been used to allow for issuance of will serves above the permitted 2 MGD, by way of an allocation process that was initially approved by the City Council on 9/11/2019. The existing flow shave pumps have a capacity of 0.5 MGD.

City Council has approved use of 0.35 MGD of the available 0.5 MGD flow shave capacity, leaving approximately 0.15 MGD that Council has directed staff to leave for flood mitigation. The plant capacity of 2 MGD plus the Council approved flow shave capacity of 0.35 MGD equals 2.35 MGD of total capacity. The average annual inflow at the facility is currently 1.96 MGD and the City has issued 0.21 MGD in will serves totaling 2.17 MGD. This leaves 0.18 MGD of unallocated council approved capacity.

¹ The NDEP requires on a per project basis, a commitment by the sewer utility to accept sewerage from a proposed development and reserve said capacity for the development. A will serve letter is a letter issued by the city engineer stating that city possesses adequate sewer utility capacity for the proposed development and agrees to provide these utility services in accordance with the development plan reviewed by the city engineer.

The average annual RSWRF influent flow from 2016 through 2022, increased by approximately 0.07 MGD per year, or approximately 424 equivalent residential units (ERUs) per year. For planning purposes, an estimated growth rate of 500 ERUs per year, or 0.083 MGD yearly influent increase, is reasonable based on dry weather flow increases experienced since 2016. At this estimated growth rate, the remaining 0.18 MGD of unallocated council approved capacity could serve approximately 1090 ERU's and would be fully utilized in approximately two (2) years.

Given the timeline for completion of the APWF in mid-2028, and projected growth in the North Valleys, additional flow shave capacity at RSWRF will be needed to meet the demand for will serves. As an interim measure, staff are proposing the construction of a Flow Shave Capacity Improvement project that would increase the pumping capacity of the existing flow shave infrastructure by 0.4 MGD that could serve an additional 2425 ERU's and extend the anticipated capacity by approximately five (5) years, or in total to approximately 2031.

Should growth rates in the North Valleys exceed 500 ERU's per year, or the APWF project be delayed, the Flow Shave Capacity Improvement project could serve to bridge additional gaps. Additionally, the Flow Shave Capacity Improvement project would mitigate continued high levels of infiltration and inflow (I&I) that have an ongoing impact on the flows rates being treated at RSWRF. The higher capacity flow shave would have operational benefits well into the future by providing flexibility to treat lower volumes as may be required to perform system maintenance or rehabilitation. As such, expanding flow shave capacity would ensure future continuity of sewer service for the North Valleys, avoid discharge of excess volumes to Swan Lake, and create additional capacity for will serves for this interim period until the APWF is fully operational and groundwater injection begins.

Staff requested a proposal for design of the Flow Shave Capacity Improvement Project to expand the flow shave pumping by 0.4MGD to a total of 0.9 MGD, which consists of pumping and piping modifications to the existing solids pump station, piping upgrade for the diversion pump station, and upgrades to electrical capacity and other related appurtenances such as a grinder/macerator, surge tank, controls, etc.