

## STAFF REPORT

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**Date:** October 26, 2022

**To:** Mayor and City Council

**Thru:** Doug Thornley, City Manager

**Subject:** Staff Report (For Possible Action): Approval of Consulting Agreement for Professional Engineering Services with V&A Consulting Engineers for Flow Monitoring Services in an amount not to exceed \$622,000. (Sewer Fund)

**From:** Roy Flores, Senior Civil Engineer

**Department:** Utility Services

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**Summary:**

Staff recommends Council approval of the consultant agreement with V&A Consulting Engineers in an amount not to exceed \$622,000 for professional engineering services to perform sanitary sewer flow monitoring. This work will help identify areas of high inflow and infiltration (I&I), refine the accuracy of the City's sewer model, and assist in prioritizing capital improvements to the sewer system.

**Alignment with Strategic Plan:**

Fiscal Sustainability

Infrastructure, Climate Change, and Environmental Sustainability

**Previous Council Action:**

May 12, 2021 – Council approved a Consultant Agreement with Stantec for the Sanitary Sewer Collection System Modeling in an amount not to exceed \$521,936 (Sewer Fund).

**Background:**

Much of the City's critical sewer interceptors over the past 15+ years, and most recently the smaller collection-level piping within the McCarran Loop, have undergone capacity evaluations to develop a large scale model of the City's major sanitary sewer infrastructure.

Monitoring the flow conditions in a sanitary sewer collection system is essential for gathering data to evaluate and characterize wet-weather and dry-weather flows to assist with operational decision making and system optimization. A major area of concern and challenge for all wastewater collection system owners/operators throughout the country is inflow and infiltration,

commonly known as I&I. Inflow refers to water discharged into the wastewater system from sources such as roof, cellar, yard, foundation, and area drains; drains from springs, manhole covers; and cross-connections from storm drains. Infiltration refers to the water that enters sewer lines from the ground, usually through pipe and manhole joints.

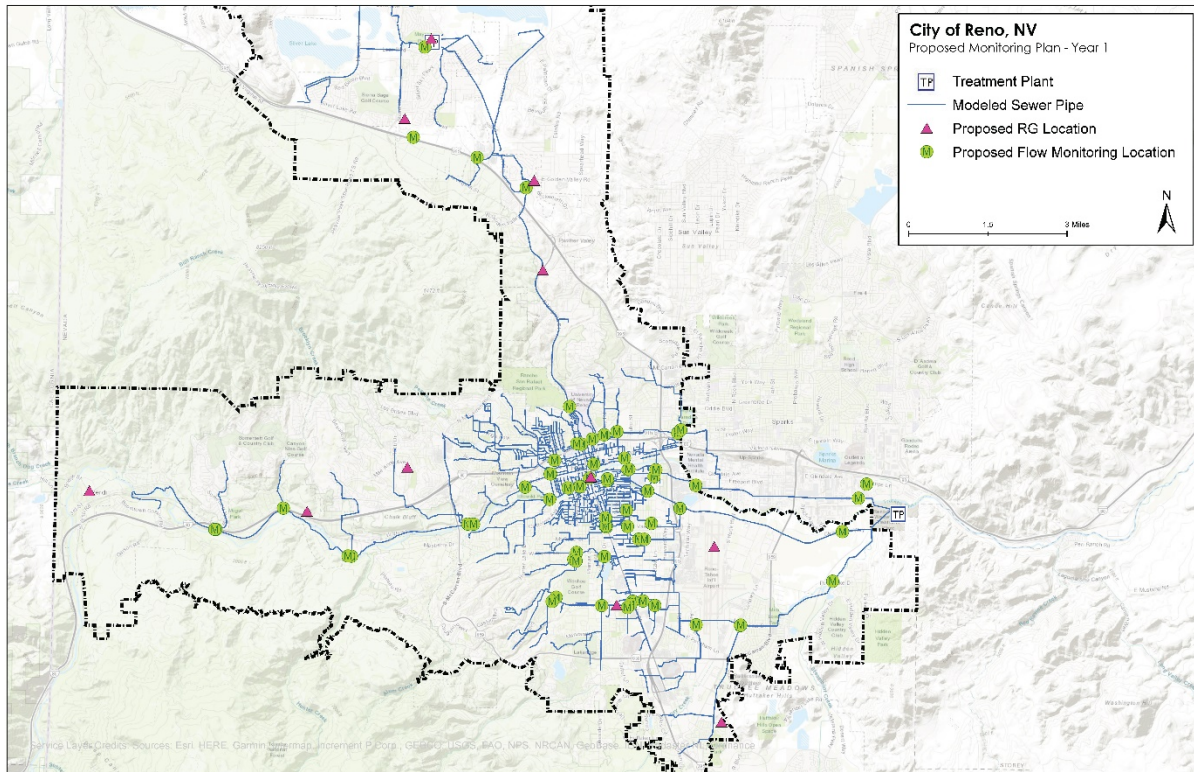
**Discussion:**

The City's flow monitoring efforts to date have primarily supported sewer capacity studies for specific parts of the City. A Flow Monitoring Plan dated September 28, 2022, developed by Stantec, identifies three separate phases of monitoring over the next three years to support the following actions:

1. Prioritize areas for I&I field investigation and possible reduction.
2. Assess current and future sewer capacity needs and identify deficits.
3. Develop an operations plan for the three major diversion structures to maximize the collection system's capacity.
4. Determine the right balance of I&I reduction versus up-sizing collection system piping.
5. Evaluate and size short- and long-term sewer improvement projects.
6. Expand and enhance the hydraulic model to reflect current dry- and wet-weather conditions, and to more accurately predict future system impacts from wet-weather.
7. Identify hydraulic triggers to optimize timing for implementation of system improvements.

A phased approach will be used to identify high I&I within the sewer collection system. Phase 1 will examine a large contribution area to establish a baseline for understanding regions with high I&I for further monitoring. Phase 2 will further isolate sub-basins with higher I&I. Finally, Phase 3 will pinpoint sources of I&I for field investigations and condition assessments.

This proposed consultant agreement includes Phase 1 of the Flow Monitoring Plan only, and will consist of installing 60 temporary flow meters across the collection system for up to four months. Six permanent flow meters currently exist in the collection system that will be used as part of this project. Additionally, rain gauges will be installed in predetermined locations to collect rainfall data to assist with the wet-weather hydraulic modeling analysis.



Phase 2 would occur in 2023/24 and Phase 3 would occur in 2024/25 – both of these phases would take place during the wet-weather season, which typically occurs towards the end of the calendar year.

After the flow monitoring data has been collected in Phase 1, staff will work with Stantec under an existing agreement to develop a reduction strategy for I&I, update the hydraulic model, optimize the implementation schedule of capital improvements based on hydraulic trigger criteria, and confirm flow monitoring locations planned for two subsequent phases. V&A Consulting Engineers was selected from the City's pre-qualified list of consultants from the 2022/2024 list.

### **Financial Implications:**

This project is included in the approved FY23 Capital Improvement Program (Sewer Fund).

### **Legal Implications:**

Legal review completed for compliance with City procedures and Nevada law.

### **Recommendation:**

Staff recommends Council approval of the consultant agreement with V&A Consulting Engineers to perform flow monitoring in an amount not to exceed \$622,000 and authorize the Mayor to sign.

**Proposed Motion:**

I move to approve staff recommendation.

**Attachments:**

Agreement with V&A Consulting Engineers