STAFF REPORT

Date: **October 11, 2023**

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 $262,500. (Sewer Fund)**

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

Department: **Utility Services**

Summary:
Sanitary sewer flow monitoring efforts provide comprehensive data to support the City's sewer capacity model and helps evaluate and characterize wet-weather and dry-weather flows within our sewer network. This second phase of a three-phase flow monitoring plan provides information to isolate/pinpoint sub-areas of high inflow and infiltration, refine the accuracy of the City's sewer model, and assist in prioritizing capital improvements to the sewer system. Staff recommends Council approval of the consultant agreement with V&A Consulting Engineers in an amount not to exceed $262,500 for professional engineering services to perform sanitary sewer flow monitoring.

Alignment with Strategic Plan:
Fiscal Sustainability
Infrastructure, Climate Change, and Environmental Sustainability

Previous Council Action:
October 26, 2022 – Council approved a Consultant Agreement with V&A Consulting Engineers for Flow Monitoring Services (Phase 1) in an amount not to exceed $622,000. (Sewer Fund)

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

that has led to the development of a large-scale model of the City's major sanitary sewer infrastructure.

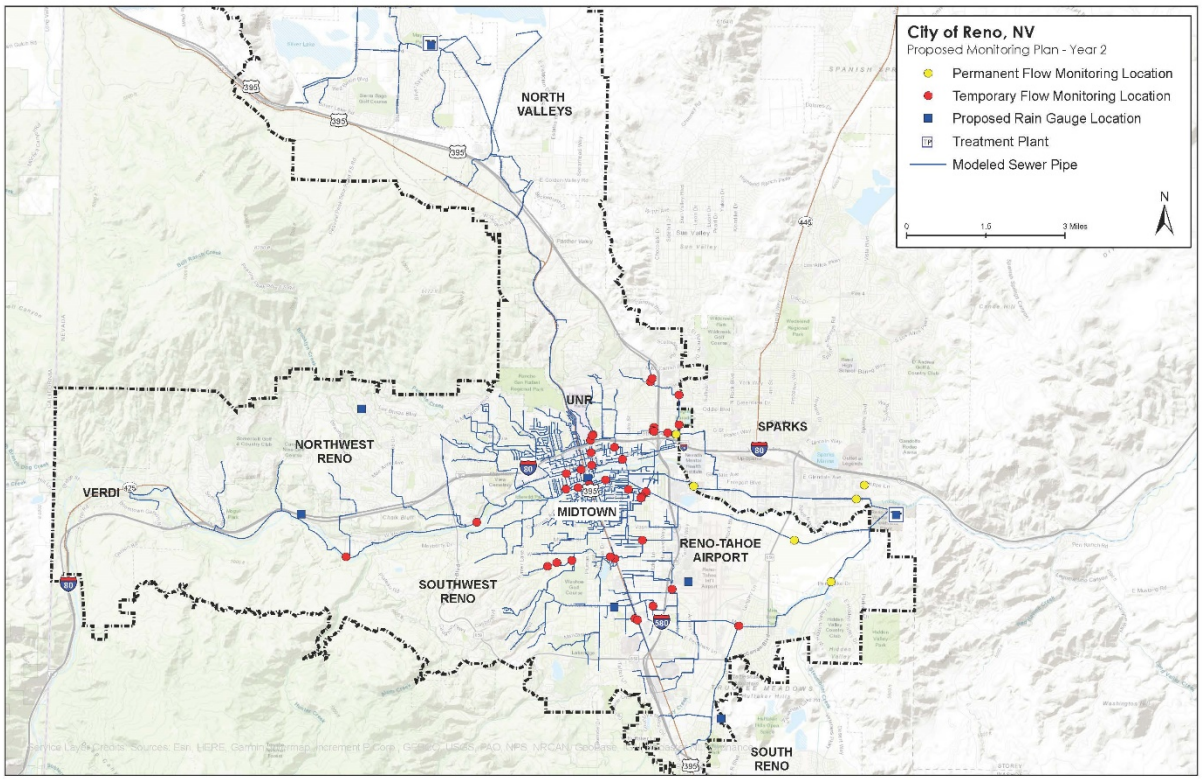
Monitoring the flow conditions in a sanitary sewer collection system is essential for gathering data to evaluate and characterize wet-weather and dry-weather flows to assist with operational decision making and system optimization. A major area of concern and challenge for all wastewater collection system owners/operators throughout the country is inflow and infiltration, commonly known as I&I. Inflow means 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 over the years have primarily been to support sewer capacity studies for a specific part of the City. A Flow Monitoring Plan dated May 22, 2023, was developed by the City's sewer modeling consultant (Stantec) that identifies three separate phases of flow 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.
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 data was collected during the 22/23 winter weather months and examined a large contribution area to establish a baseline for understanding regions with high I&I for further monitoring. Phase 2 (current agreement) 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 will be for Phase 2 of the Flow Monitoring Plan and will consist of installing 38 temporary flow meters across the collection system for up to two months. Six permanent flow meters currently exist in the collection system and will be utilized as part of this project. Additionally, rain gauges will be installed in eight predetermined locations to collect rainfall data to assist with the wet-weather hydraulic modeling analysis.



Phase 1 occurred in 2022/23 and analysis of the data helped guide to more focused locations in the Phase 2 plan investigation. Phase 3 is planned to occur in 2024/25 during the wet-weather season which typically occurs towards the end of the calendar year.

After all of the flow monitoring data has been collected in Phase 2, staff will work with our modeling consultant under a separate agreement to develop a I&I reduction strategy, update the hydraulic model, and create a system expansion plan based on hydraulic trigger criteria.

Financial Implications:
This project is included in the approved in the FY24 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 $262,500 and authorize the Mayor to sign.

Proposed Motion:
I move to approve staff recommendation.

Attachments:

• Agreement with V&A Consulting Engineers