



MEMO

To: City of Bloomfield

From: Matt Wildman, Project Manager, HR Green, Inc.

Subject: Sanitary Sewer Master Plan – Tasks 2-5 Deliverables

Project Number: 200882

Date: August 17, 2021

HR Green has completed Tasks 2-5 of the Sanitary Sewer Master Plan, Phase 1 – Project Planning and Development. The individual memos for each task are provided with this progress report. The various Sewer Master Plan tasks and their status are provided below.

| Task # | Description | Status |
|---------|---|-------------|
| Phase 1 | | |
| 1 | Project Planning | Ongoing |
| 2 | Public Education and Outreach | Complete |
| 3 | Flow Monitoring and I/I Analysis | Complete |
| 4 | Existing and Future Flow Projections | Complete |
| 5 | Asset Condition and Rating System | Complete |
| 6 | Sanitary System Hydrologic and Hydraulic Modeling | In Progress |
| 7 | CIP Funding | In Progress |
| Phase 2 | | |
| 1 | Sanitary Sewer Master Plan | In Progress |

Completed Task Summary

TASK 2 – PUBLIC EDUCATION AND OUTREACH

An informative newsletter was created to inform residents of the City’s current Consent Order with the EPA and the importance of SSO reduction projects. A draft of the newsletter was shared with the City Council in March 2021 and a final document has since been created with HR Green’s marketing team. The newsletter should be shared with the public by posting fliers in public spaces, mailing fliers to residents, and/or posting on the City website.

A questionnaire was also created to further educate residents on SSO reduction projects, identify SSO locations and/or illegal cross connections in the collection system, and gauge interest/feelings towards sewer projects and sewer user fees. A cover letter was created on behalf of the Mayor to explain the importance of the questionnaire. Both the cover letter and questionnaire should be shared with the public by mailing fliers to residents, and/or posting on the City website as an interactive survey.



TASK 3 – FLOW MONITORING AND I/I ANALYSIS

HR Green evaluated nearly five years of OmniSite pump runtime data for each lift station (with the exception of Lift Station #2 due to lack of data and Lift Station #4 which is not monitored). Peaking factors for the various collection system basins ranged from 4 to 33, with inflow and infiltration (I/I) contributing between 24% to 43% of the total flow for Lift Stations #1, #6A, and the East St. Lift Station.

Priority areas for rehabilitation projects and inspections should focus on the Lift Station #1, #6A, and the East St. collection system basins. Reducing I/I within these basins will provide the most significant I/I reduction to the system as a whole. Specific pipe segments within the priority areas will be defined in Task 6 - Sanitary System Hydrologic and Hydraulic Modeling. Costs for the recommended projects will be included in Task 7 – Capital Improvement Plan Funding.

TASK 4 – EXISTING AND FUTURE FLOW PROJECTIONS

Individual lift station capacities were evaluated using the OmniSite pump runtime data. Lift Station #1 is the only lift station that appears to create SSOs during peak flows. HR Green recommends that these pumps be upsized to reduce the occurrence of future SSOs. Lift Station #6A and the Airport Lift Station pumps do not appear to provide firm capacity because both pumps need to run simultaneously to maintain the level within the wet well during peak flows. These stations should not need to be upsized unless peak flows increase, resulting in SSOs at these locations.

The City appears to be built out within the city limits. One future residential development was identified near the Lakeside Estates mobile home park. The downstream sewer in this area appears to be capable of handling future flows if the mobile home park were expanded in the future. Any future developments with relatively significant wastewater contributions should be evaluated for sewer/lift station capacity prior to development.

TASK 5 – ASSET CONDITION AND RATING SYSTEM

Visu-Sewer CCTV sewer televising data was evaluated in order to categorize each sewer segment based on condition and assign a prioritization. HR Green staff inspected 95% of the City's sanitary manholes and each of the lift stations. Condition ratings were provided for the manholes and lift stations based on the observed deficiencies. Nearly 12,500 LF of sewer contained fractures, cracks, visible infiltration, and broken segments of pipe. Similarly, 23 manholes were considered to be in very poor condition. Most of the lift stations appeared to be structurally sound and had only minor deficiencies including lack of site security, influent screening, and no firm capacity.