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January 12, 2026

Justin Wagner
Utilities Manager
City of Northfield
1101 College Street
Northfield, MN 55057

RE: Sanitary Sewer Comprehensive Plan Update
City of Northfield, Minnesota

Dear Mr. Wagner,

A successful Comprehensive Sanitary Sewer System Plan and Capital Improvement Plan (CIP) rely on a complete understanding of the City of Northfield's challenges and resources, as well as its future city development goals. Below is our approach to developing a plan that the community and its stakeholders can support.

Our Approach

The City of Northfield can be confident in Bolton & Menk's policy to staff all major projects using a team approach, always maintaining close coordination between the city and the project team. The team assembled for this project will provide:

- Project management
- Technical review
- Sanitary system evaluation
- Hydraulic modeling abilities
- Digital file management
- GIS/AutoCAD data storage and display
- Wastewater treatment plant evaluation
- Capital Improvement Plan
- Proven experience

The following approach will meet the city's goals and objectives of the Comprehensive Sanitary Sewer Plan Update. We will use our extensive knowledge of the city's existing system and proposed development in the northwest area to assist the city through this comprehensive sanitary sewer update.

Communication

Task 1.1: Kickoff Meeting

A kickoff meeting will be scheduled with city staff immediately after the notice to proceed. At this meeting, we will:

- Collect and review existing studies and plans
- Collect information from city staff about issues, goals, and priorities
- Establish communication protocols associated with various plan aspects
- Formulate a mutually acceptable milestone schedule
- Tour facilities that apply to the project with city staff

We will also develop a plan for incorporating maps, modeling files, and practical field experiences with the existing sanitary sewer collection system.

Task 1.2: Progress Meeting and Interim Review with City Staff

Bolton & Menk team leaders will attend a city staff meeting to present a draft report and solicit input and feedback. We will summarize the comments and questions, incorporating the information into the draft report.

Task 1.3: Final Plan Presentation Meeting

Bolton & Menk will meet with City staff to present the final draft report and summarize our findings. Any additional comments provided will be incorporated into the final deliverable plan.

Deliverables: Meeting attendance, meeting minutes.

Sanitary Sewer Collection System Modeling, Analysis, and Plan

Task 2.1: Existing Wastewater Collection System Condition Review

Subtask 2.1.1: Review City Records

Using the existing data from the city's GIS system and previous studies, we will assemble a system-wide issues map to be discussed at the kickoff meeting. We will use the city's knowledge of the system to update the map with any anecdotal information and other system issues.

We assume that Bolton & Menk will not be responsible for any additional field data collection to supplement the city GIS mapping information. Further, we assume that all as-built sewer information is in a format that is readily accessible for input into CAD/GIS and/or modeling software. If there are gaps in the geometric data, we will present the areas to the city for additional field data collection or as-built research. We will also use Light Detection and Ranging (LiDAR) surface topography to populate missing rim elevations and use slopes from city records.

Task 2.2: Sanitary Sewer Hydraulic Modeling

Subtask 2.2.1: Determine Sewersheds

Bolton & Menk will use digital system geometrics, land use files, topography, lift station locations, and existing sewer studies to develop system-wide sanitary sewer service areas. We will further subdivide the sanitary sewersheds when appropriate. In critical areas, we will delineate service flows to contributing lateral lines to track system capacity deficiencies. In most areas, we anticipate trunk lines will be the most critical.

We understand the city wishes to determine service flows to 12-inch and larger trunk lines. We will use GIS workflows to intersect sewersheds with land uses to summarize anticipated base and peak service flows. All sewershed delineations will be presented to the city for review and refined as necessary.

Subtask 2.2.2: Develop Wastewater Service Flows

Bolton & Menk has worked extensively with communities to effectively merge land use information with sewersheds delineations in a GIS environment to automatically determine spatially varied sewer service flows.

Based on land use, we will assign peak flow rate factors and appropriate peaking factors to each sewersheds. The information will be populated in the sewersheds layer and linked to the pipe network. Industry-standard peaking factors will be recommended and assigned based on land uses and other relevant information about historical flow data that city staff can provide.

Deliverables: Summary of flow projections, preliminary and final sewersheds maps.

Subtask 2.2.3: Develop Hydraulic Model Framework, Perform Assessment, and Troubleshoot

Bolton & Menk is well-versed in a variety of hydrodynamic sewer modeling programs. A comprehensive hydrodynamic trunk sewer model will provide the city with the following opportunities for successful implementation of the proposed sewer improvements:

- Graphical integration
- Interoperability with both CAD and GIS file formats
- Easy import and export of GIS files for automatic model development and geodatabase creation
- Ability to develop geospatial relationships between sanitary service flows and pipe capacity
- Conversion of complex hydraulic calculations to an easy-to-understand mapping format with the freedom to symbolize critical system deficiencies
- Continuous update of the model to reflect changes in service flow and pipe size
- Ability to calibrate the model using actual flow data as it is collected over time, potentially reducing the potential for unnecessary oversizing of infrastructure due to assumed data

Bolton & Menk has extensive experience using GIS information to automatically populate spatially developed modeling data. We will use these techniques to cost-effectively develop the sewer collection system model and dramatically reduce user input error.

Subtask 2.2.4: Present Existing Conditions Model Results

Before initial modeling runs, the model setup and initial data inputs will be reviewed with the city to ensure that all assumptions are consistent with the city's goals. Updates to modeling assumptions will

be performed based on city comments before presenting initial modeling results. All modeling results will be presented as visual graphics and maps unless table output is otherwise warranted. Output graphics will include, but may not be limited to, the following:

- Hydraulic model
- GIS database
- Pipe characteristic maps
- Pipe size
- Gravity flow capacity
- Actual model capacity
- Identification of below, at, and overcapacity pipes
- Sewershed assumptions
- Sewer service flows
- Peaking factors
- Lift station locations
- Lift station capacity

Deliverables: Preliminary model layout, existing conditions model results.

Subtask 2.2.5: Develop Technical Report of Findings

Based on the final modeling results, we will summarize the existing system conditions, lift station capacities, future development areas, future trunk/interceptor analyses, and anticipated construction costs. A draft technical report will be presented to the city for review and comment. Upon incorporation of all comments, a final report will be delivered.

Deliverables: Evaluation of sewer system, summary of system deficiencies, sewer issues maps, draft technical report, and final technical report.

Task 3: Determine Future Sanitary Collection System Needs

Subtask 3.1: Recommend Long-Range Planning

We will use the calibrated existing conditions model to account for future growth areas, potential changes to sewer service needs for existing commercial and industrial users, and redevelopment. The future conditions model will:

- Identify increases in pipe size needed to accommodate future service flow changes
- Target areas that could benefit from alignment changes or the addition of interceptor lines
- Identify the need for additional lift stations
- Maximize investment and minimize city costs by targeting the future location of improvements to combine with other identified street or utility needs
- Maximize the use of future development construction for proposed sewer locations
- Identify any infeasible areas to service with the sanitary sewer

Deliverables: Recommended long-range plan.

Task 4: Final Comprehensive Sewer Plan Report

Subtask 4.1: Prepare Final Report

The final summary and recommendations report will be a culmination of the data collection and modeling efforts. It will provide an effective framework for improving the sewer system. The hydraulic models, GIS system, and comprehensive report will function as planning tools that set in motion the next generation of sanitary service for the City of Northfield. The toolset will be formatted to allow for consistent modification as system improvements are constructed, or land-use changes are implemented. The final document will pull in pertinent information from the 2045 Comprehensive plan.

The final report will include the following main items: description of existing facilities and existing demand including the existing collection system and flow monitoring results. Discussion of expansion area and existing sewer Agreements (City of Dundas and Dundas future growth plans). Discussion of the wastewater treatment facility and proposed improvements to meet future standards (nitrogen, phosphorous, PFAS in biosolids, etc.). Analysis of Ultimate Service Area with proposed improvements. The report will include recommendations for meeting future growth. Figures will be included to show improvements to existing infrastructure and planned new infrastructure.

Deliverables: Final Comprehensive Sewer Plan report.

Wastewater Treatment Plant Analysis and Capital Improvement Plan

We will review the existing information from the City of Northfield to have a strong understanding of the existing facility and provide the city with a current state of the wastewater treatment facility. This will include a summary of the existing unit processes and equipment, and a determination of the remaining useful life.

Bolton & Menk will use our knowledge of the City of Northfield and the discharge to the Cannon River to determine the most likely facility requirements. We will also develop a path with city staff to provide the best value solution to the community. Our team has a desire to maximize existing assets but also knows when it is appropriate to invest in new infrastructure. We will utilize the city's facility plan document and our experience with the most recent upgrade project to develop the facility requirements.

The final Capital Improvement Plan (CIP) will serve as a roadmap to provide the city with direction for the next 20 years. Opportunities associated with residential or industrial growth will determine how quickly the city enacts the CIP. The plan will clearly identify each necessary improvement as the city continues to grow and develop.

Sanitary Sewer Trunk Fee Policy Review and Amendments

The City of Northfield's existing Sanitary Sewer Trunk Fee Policy will be reviewed for consistency with the revised Sanitary Sewer Comprehensive Plan and Wastewater Treatment Plant CIP. Planning-level cost estimates will be provided for proposed projects within both plans. We will work closely with the city's financial consultant to provide the information needed for the financial consultant to complete a rate analysis, including trunk area and SAC fees. We anticipate one in-person or virtual meeting with city staff and the city's financial consultant.

Sanitary Sewer Monitoring

The City is interested in understanding the current capacities of the trunk sewer along the east side of the Canon River along Division St in Northfield. This information will be utilized to help analyze the existing sanitary sewer system and the results incorporated into the final report.

Bolton & Menk will collect flow data on 15-minute intervals at each location for the duration of the study. The 15-minute intervals will be used to identify metered peak flows and to calculate a daily average flow rate for each location along with peak flows during and proceeding rain events. This information is intended to assist with decisions regarding future development contributions and capacities of the trunk sewer line that runs along the east side of the Cannon River along Division St.

If any proposed development comes online or is planned within the sewer shed of the trunk sewer, it is critical that the time and date is known prior to data analysis.

Proposed Locations

Data is proposed to be collected at 7 locations shown on the attached figure:

1. Up gradient of the lift station along Dundas Blvd
2. Intersection of 5th St E and Division St S
3. Intersection of 3rd St E and Division St E
4. In the parking lot of Larid Stadium
5. (2) In the field of Carleton College West Field
6. Along the Carleton Arboretum Trail

Timeline

Bolton & Menk is planning to install flow monitoring equipment at the seven locations listed above during the wet season that typically runs between Mid-April and June. The current cost estimate is based off of monitoring for two months at each location, in the hopes to capture two (2) 0.5" + rainfall events. If during those 2 months of monitoring two (2) 0.5" + rain events are not captured. Monitoring efforts can be extended, at which time Bolton & Menk will propose an updated cost to reflect the additional monitoring efforts.

Fees

Bolton & Menk will plan a system for the City of Northfield that is both resilient and cost-efficient. The Scope of Work and Fee described herein is flexible. In other words, we understand that budgets are important. The Scope and Fee have been assembled to include the items described by the City, but individual scope items can be removed or reduced to best meet the needs of your plan. Our Project Understanding and Scope of Services include several project assumptions. We propose to complete the work described above for a fee of \$73,750. The sanitary sewer monitoring work will cost \$34,500 for a total fee of \$107,250. As noted above, the sanitary sewer monitoring work is estimated at two months. If we do not capture two significant rainfall events in those two months, additional charges will apply. If changes to the Scope are required based on any changes to these assumptions, we will assemble the

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scope and fee revisions and submit them to the city for review and approval prior to commencement of additional work.

We look forward to working with the City of Northfield and are excited for the opportunity to complete the Water System Comprehensive Plan Update for you. I will personally serve as your primary contact for this project. Please contact me at 612-803-5223 or seth.peterson@bolton-menk.com if you have any questions regarding our proposal.

Sincerely,

Bolton & Menk, Inc.



Seth A. Peterson, P.E.

Senior Project Manager | Senior Principal

Northfield Sanitary Flow Monitoring

City of Northfield

Monitoring Overview

January, 2026

