



## Department of Public Works

**To:** Mayor Welch, Common Council Members  
**From:** Mark Langer, City Engineer  
**Date:** July 30, 2020  
**Subject:** North Janesville Street Sanitary Sewer – Assessment Considerations

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### Summary

The Council held a Public Hearing on July 21, 2020 to discuss Final Resolution #2020-20 Regarding Assessments for the Sanitary Sewer Main Installation along North Janesville Street. Public Participation was high with representation by several of the affected property owners. Concerns regarding the cost of the project were raised with the currently designed, bid and awarded project. Specifically residents had concerns regarding the costs of installation of the large diameter sanitary sewer main (10-inch) at a greater depth than what would be required to serve the immediately adjacent residences.

Planning and design for efficient operations, reductions in long term maintenance and maximizing capacity within the existing sewer infrastructure are some of the considerations given to any new sewer project. With proper planning infrastructure improvements installed today will be appropriate for decades. It is normal and good planning to maintain gravity sewer as deep as possible for as long as possible when existing capacity is present. This eliminates the need for future lift stations which generally have a higher installation cost and do have a much higher operational cost to provide sewer service. Additionally one installation to maximize service is preferred compared with a solution now for services to existing residences and future rework at higher costs and added disruptions to the public. Comments provided at the public hearing and the subsequent request by City Council to compare the costs of a sewer of “normal” size and depth with the current design are provided in the analysis below.

### Analysis

Sewer design to serve basements generally includes sewer at a depth of approximately ten to twelve feet. Additionally an 8 inch main would be adequate for service to only the existing residences. Note that at this depth the ability to provide gravity sewer service to anything beyond properties within the City limits and immediately adjacent to Janesville Street is very limited. Both of the large undeveloped parcels on each side of house 331 as well as the large flag lot that is adjacent to Janesville Street at the north end of the project could be negatively impacted. All three of these parcels are assessable. It is possible service could be extended from East Sunset to these parcels. However service to all of these parcels would require crossing the flag lot to get to the other parcels. There is no easement or right of way currently in place to locate the utilities to provide service to the west along East Sunset. Additionally it is unlikely that the deep gravity sewer extension can provide service to every part of all of the adjacent lots. Variables such as building type, basements, floor elevations, existing and future ground elevations, etc. would need to be known to answer those specific questions.



The summary below is a breakdown of what costs might be considered if the Utility elected to install a main that is only for use of the existing residences immediately adjacent to the sanitary sewer main. Baseline costs were determined using the average cost of the base bid and alternate.

The first piece of the analysis examined items that might have a change in quantity as a result of a change in the scope of the project. Table 1 provides a summary of these changes.

**Table 1 - Quantity Adjustments**

ITEM	Unit	Quantity	Change in Cost
BUILDING SERVICE RISER PIPE	VF	-55	\$ (6,600.00)
PAVEMENT RESTORATION (10-INCH REINFORCED CONCRETE PAVEMENT)	SY	-400	\$ (61,016.95)
Total			\$ (67,616.95)

- Building Service Riser Pipe would most likely not be required so the entire quantity is removed.
- Additional cost savings may also be realized in the concrete pavement replacement. A shallower sewer could eliminate the need for some of the concrete pavement replacement included in the alternate bid by shifting the sewer closer to the retaining wall at the north end of the project. There is a gas main that is also in conflict that we have to avoid that normally would not be present had the sewer been installed prior to other utility construction. The deep sewer will require a wider trench top and require more distance in order to stay away from the retaining wall. It is possible that the lower quantity of concrete pavement could result in a higher per unit cost which could offset some of the decrease.

The second piece of the analysis examined items that might have a change in unit price as a result of a change in the scope of the project. Table 2 provides a summary of these changes.

**Table 2 - Unit Price Adjustments**

ITEM	Unit	Change in Unit Price	Change in Cost
SANITARY SEWER (OPEN CUT) 10-INCH PVC	LF	\$ (46.33)	\$ (43,740.00)
CONNECTION TO EXISTING SANITARY SEWER MANHOLE	EACH	\$ 3,500.00	\$ 3,500.00
BUILDING SERVICE BRANCH FITTINGS 4-INCH PVC	EACH	\$ (30.00)	\$ (240.00)
SANITARY MANHOLES 4-FEET DIAMETER	EACH	\$ (666.67)	\$ (2,000.00)
GRANULAR BACKFILL (SANITARY SEWER)	LF	\$ (2.00)	\$ (560.00)
GRANULAR BACKFILL (BUILDING SERVICE LINE)	LF	\$ (2.00)	\$ (240.00)
TRAFFIC CONTROL, DETOUR AND PROTECTION	LSUM	\$ (5,700.00)	\$ (5,700.00)
Total			\$ (48,980.00)

- In speaking with the Contractor the response received indicated a cost of approximately \$70/LF to install a new 8-inch diameter sewer at a depth of approximately ten to twelve feet. This is based on recent costs he has provided for other projects (not in the City of Milton). Note that the cost provided by the contractor is for new gravity sewer that is not being added to existing infrastructure. Additionally a new development will incur other expenses such as street constructions that are included in the cost of the lots or homes.



- The connection to the existing manhole would likely increase in cost due to the need for a drop connection requiring additional manhole cores, fittings, supports, and concrete installation around the drop pipe.
- Building Service Branch Fittings would be smaller so some decrease in cost is likely.
- Sanitary Manholes are shallower so a decrease in cost is likely.
- Trench excavations will be shallower so granular backfill may be less.
- The project construction time could decrease allowing for a shorter duration of the traffic control device installations resulting in lower costs.

In total the approximate reduction of cost would be  $\$67,616.95 + \$48,980 = \$116,596.95$ . The total assessable footage is approximately 1,687 feet. Therefore the reduction on the assessments might be  $\$69.11/\text{LF}$  or nearly 33% of the original estimated assessment/LF cost.

An alternative of rebidding the project was also discussed at the June 16<sup>th</sup> meeting during bid considerations. While it is possible that providing more time for construction could result in lower construction costs it is also possible that other items arise that increase project costs such as increased material and supplier costs. This project received multiple bids indicating that those contractors did feel they had time available to complete this project during this season.

### Recommendation

If the council elects to proceed with assessments of only the “normal” sewer installation costs the assessable project costs would be approximately  $\$236,842.05$  or  $\$140.40/\text{LF}$ . Table 3 below provides the estimated changes to the assessments for each parcel.

**Table 3 - Estimated Assessment Changes**

Property Address	Parcel	Estimated Lineal ft. Sanitary Sewer	Total Estimated Assessment at \$209.51/LF	Total Estimated Assessment at \$140.40/LF	Change in Estimated Assessment
Lot on N Janesville St	V-23-1147.3	99	\$ 20,741.49	\$ 13,899.60	\$ (6,841.89)
340 N Janesville St	V-23-1147.2	82	\$ 17,179.82	\$ 11,512.80	\$ (5,667.02)
Lot on N Janesville St	V-23-1147.1	134	\$ 28,074.34	\$ 18,813.60	\$ (9,260.74)
362 N Janesville St	V-23-1146	167	\$ 34,988.17	\$ 23,446.80	\$ (11,541.37)
382 N Janesville St	V-23-1145.1	234	\$ 49,025.34	\$ 32,853.60	\$ (16,171.74)
387 N Janesville St	V-23-1143.1	164	\$ 34,359.64	\$ 23,025.60	\$ (11,334.04)
371 N Janesville St	V-23-1143A	184	\$ 38,549.84	\$ 25,833.60	\$ (12,716.24)
Lot on N Janesville St	V-23-1143B	254	\$ 53,215.54	\$ 35,661.60	\$ (17,553.94)
331 N Janesville St	V-23-1139	179	\$ 37,502.29	\$ 25,131.60	\$ (12,370.69)
Lot on N Janesville St	V-23-1138	81	\$ 16,970.31	\$ 11,372.40	\$ (5,597.91)
Lot on N Janesville St	V-23-1138.1	77	\$ 16,132.27	\$ 10,810.80	\$ (5,321.47)
Right of Way Nelson Ave (city owned)		32	\$ 6,704.32	\$ 4,492.80	\$ (2,211.52)



Staff is currently looking into methodology to collect payment on the “extra” sewer installation costs. This could consist of future charges, connection fees or assessments to undeveloped parcels beyond the existing City limits. The final costs would be determined by quantities actually installed however adjustments to assessable costs would be made based on the summary above.