

Sparks Street Project Design Considerations

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Recommended by:	General Manager of Growth and Infrastructure

Report Summary

As per Council Resolution# CC2022-177, this report provides a recommendation regarding the watermain replacement and road rehabilitation project on Sparks Street from Barry Downe Road to Roy Avenue.

Resolution

THAT the City of Greater Sudbury approves an increase of \$200,000 for the watermain replacement and road rehabilitation project on Sparks Street to include a semi-urban cross section with speed humps, for a total budget of \$1.88 million, using funds within the existing approved Roads program budget as described in the report titled "Sparks Street Project Design Considerations" from the General Manager of Growth and Infrastructure presented at the Operations Committee meeting on February 13, 2023.

Relationship to the Strategic Plan, Health Impact Assessment and Community Energy & Emissions Plan (CEEP)

This report supports the objectives "Asset Management and Service Excellence" as laid out in the City of Greater Sudbury's Strategic Plan for 2019-2027.

Financial Implications

The approved capital budget for the Sparks Street project is \$1,680,000 (\$1,100,000 for Roads, \$550,000 for Watermain, and \$30,000 for Sanitary Sewer). To tender the project for construction with a semi-urban cross section with speed humps as recommended in the report, an additional \$200,000 is required to be funded by reallocating budget within the existing approved Roads program as other projects in the program came in under budget.

Background

Sparks Street is a local semi-urban road with a 50km/h speed limit, an Annual Average Daily Traffic volume of 500 vehicles per day and has been identified through asset management planning for underground infrastructure improvements and road rehabilitation. The 2020 approved capital budget for Sparks Street from Barry Downe Road to Roy Avenue infrastructure improvement project is \$1,680,000 (\$1,100,000 for Roads, \$550,000 for Watermain, and \$30,000 for Sanitary Sewer). Refer to Figure 1 for the project limits.

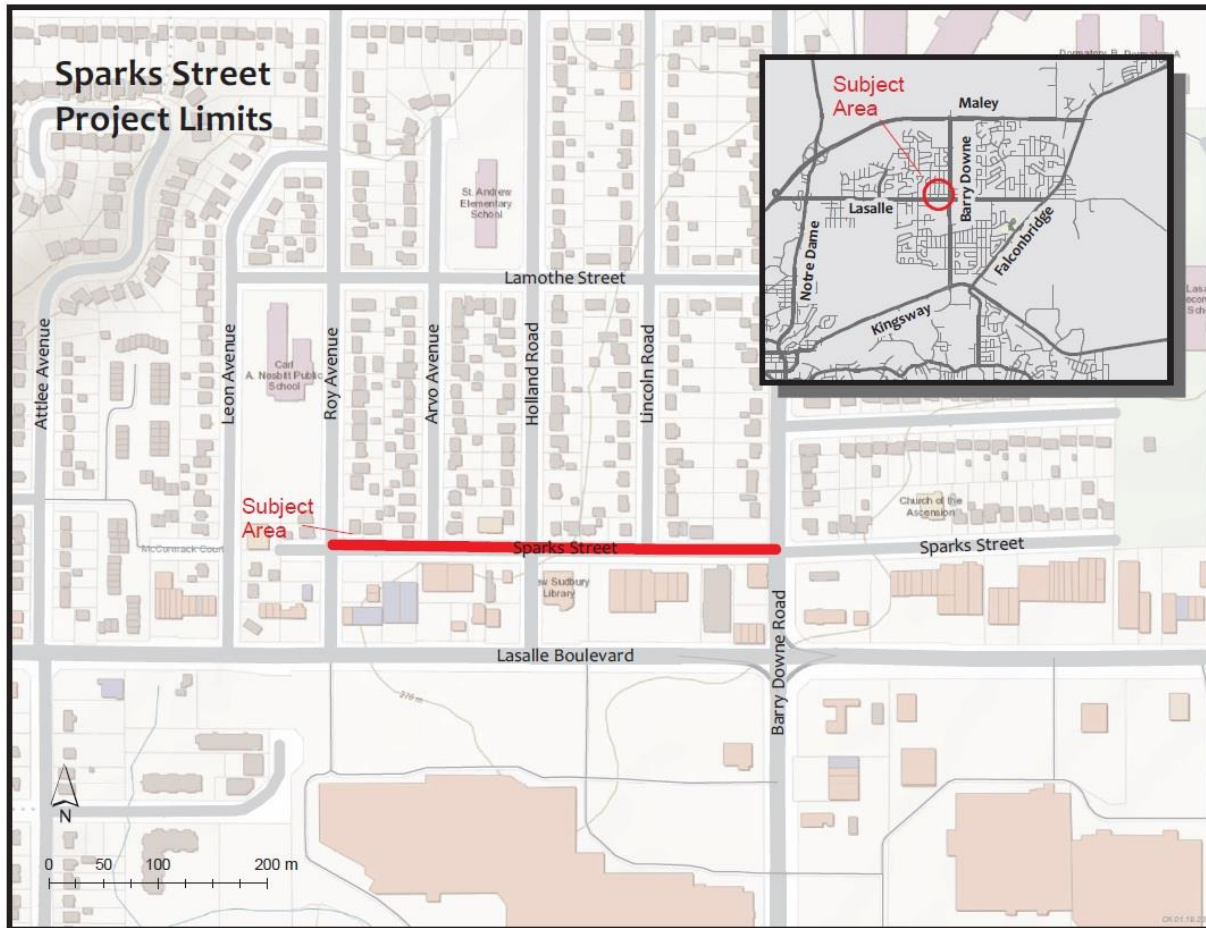


Figure 1 – Sparks Street Project Limits

The original project scope includes; watermain replacement, sanitary sewer improvements, storm sewer repairs, trench restoration, road rehabilitation to match existing semi-urban road layout, mountable curb on the south side, ditching improvements on the north side, and new asphalt for the limits of the project. The project was tendered for construction in June 2022, but was subsequently cancelled in July 2022 as per Council Resolution# CC2022-177 (Request for deferral of Sparks Street Project):

WHEREAS a watermain replacement and road rehabilitation project on Sparks Street between Roy Avenue and Barry Downe Road is scheduled to commence this summer;
AND WHEREAS the project design does not contemplate urbanization or a complete street design with sidewalk;
AND WHEREAS residents of the area wish to have a sidewalk on the north side of the street instead of the open ditches;
AND WHEREAS public consultation on the Complete Street Design Guidelines is currently underway;
AND WHEREAS the Sparks Street project should be reviewed through the Complete Streets lens before proceeding;
THEREFORE BE IT RESOLVED that the City of Greater Sudbury directs staff to delay the project, cancel the tender for the Sparks Street watermain replacement and road rehabilitation project and work on a design which contemplates the Complete Street Guidelines;
AND BE IT FURTHER RESOLVED that staff be directed to present a report to the Operations Committee to explain the impacts of urbanizing the project, seek additional funding for the project through the 2023 Budget and retender the project in 2023.

Complete Streets Design Considerations

In June 2018, the City officially adopted a Complete Streets Policy. As noted in the policy, “This approach shall also be applied to all infrastructure capital projects, where the entirety of the roadway is planned to be reconstructed or rehabilitated with substantial infrastructure improvements within the existing road

allowance, to provide new or improved facilities for people who walk, bike and use public transit.” The original scope of the Sparks Street project tendered in 2022 was a watermain trench restoration project with asphalt resurfacing, and not a full reconstruction project. A Complete Streets approach integrates the mobility needs of people in the planning, design, construction, operation, and maintenance of transportation networks. This approach breaks down the traditional separation in planning for different modes of travel, and emphasizes context-sensitive, multimodal capital project planning, design, and implementation. Complete streets are streets that are designed with all users in mind, people who walk, bike, take transit or drive, and people of varying ages and abilities. While not every type of use or user may be accommodated on every street, the goal is to build a city with a well-functioning street network that supports and sustains our quality of life. Ultimately, the City aims to provide a safe, affordable, convenient, and reliable transportation network for all users of all abilities. The Complete Streets Policy recognizes that complete streets are achieved through a series of incremental improvements to the transportation network over time. In following the Complete Streets Policy, the City is currently developing Complete Streets Design Guidelines that will provide a set of consistent guidelines and tools to inform the design, implementation, and monitoring of Complete Streets across the city. There is no single way in which to make a street ‘complete’, as it depends on many factors including the character and context of each particular street.

Two existing guidelines that are currently used by the City in the design and integration of Complete Streets typologies and for active transportation improvements, are the Sidewalk Priority Index (SPI), and the Transportation Master Plan (TMP).

The TMP is a long-range plan which provides a framework and direction for transportation infrastructure needs and recommendations for a practical, long-term plan for the City’s transportation system to meet the needs of pedestrians, cyclists, transit riders, motorists and goods movement, while enhancing safety and accessibility, promoting sustainability, reducing environmental impacts and supporting economic development. Sparks Street is not identified in the recommended cycling network outlined in the TMP.

The City has developed a comprehensive and objective tool, the Sidewalk Priority Index (SPI), to prioritize locations where sidewalks should be installed, based on a variety of factors, including road classification, speed, and volume, proximity to parks and schools, and number of pedestrian collisions. Currently there are a total of 4,013 road segments without sidewalks that have been scored under the SPI. Based on scoring from the SPI, Sparks Street has the following mid-block sidewalk segment priority rankings:

- i) Barry Downe Road to Lincoln Road – 427 of 4,013
- ii) Lincoln Road to Holland Road – 236 of 4,013
- iii) Holland Road to Arvo Avenue – 699 of 4,013
- iv) Arvo Avenue to Roy Avenue – 568 of 4,013

Since Sparks Street scores a low ranking for all mid-block segments in the SPI, the installation of a new sidewalk was not included as part of the original scope of work.

In terms of public transit infrastructure, GOVA does not travel on Sparks Street and does not require any additional infrastructure installed.

Traffic Calming Design Considerations

As an outcome of the consultation with area residents and Councillor Landry-Altmann carried out in 2022, it is recommended that traffic calming be installed on Sparks Street between Barry Downe Road and Roy Avenue. The recommended traffic calming treatment is a series of speed humps. The specific locations and number of speed humps will be determined during detailed design; however, staff anticipate that three speed humps can be installed. The cost of installing the speed humps has been estimated at \$30,000 and is included in the construction cost estimates for all scenarios outlined below.

Existing Entrances and Parking Design Considerations

The commercial sites along Lasalle Boulevard that also back onto the south side of Sparks Street were all designed with Sparks Street to be used as a service road. Many of the buildings have service/loading entrances that can only be accessed from Sparks Street, and specifically for 1380 Lasalle Boulevard, there is a registered site plan that allows for the entrances onto Sparks Street. All design scenarios considered in this report account for maintaining access to rear of these businesses from Sparks Street, and all design

scenarios propose a mountable curb along the south side of the road from Roy Street to Barry Downe Road to delineate where the edge of the road is and keep parked vehicles from encroaching on the travelled portion of the road.

Storm Sewer and Drainage Considerations

The existing drainage conveyance on Sparks Street consists of a semi-urban section with a combination of open ditches on the north side with culverts at entrances, and a storm sewer to capture drainage on the south side with some open ditches and culverts at entrances. All stormwater captured on Sparks Street flows downstream to a storm sewer network that outlets to Junction Creek. The drainage system on Sparks Street is currently near maximum capacity and is able to accommodate 5-year rain events. The limiting factor on improving the drainage capacity on Sparks Street is the downstream storm sewer from Arvo Avenue to Lasalle Boulevard that would require upsizing if stormwater flows were to increase from Sparks Street.

In order to consider urbanizing Sparks Street with a new storm sewer to fill in ditches on the north side, the City's *Environmental Compliance Approval for Stormwater* does not authorize the City to convert a rural cross section to an urban cross section without improving stormwater control. The stormwater control would need to be integrated into the design and would be one of or a combination of the following: retention on site (infiltration, reuse, or evapotranspiration), Low Impact Development (LID) filtration, and/or other conventional Stormwater management controls (pond, oil & grit separator). The appropriate stormwater control would be determined through the detailed design process but would increase the design requirements for this scenario and impact the schedule for completing the design and issuing the tender.

Road Layout Design Considerations

Three road layout design scenarios have been considered with construction cost estimates and typical sections prepared and are described below and Roads budget requirement for each scenario noted. Refer to the Appendix for a visual representation of the typical sections of all three road layout scenarios. For all design scenarios noted below, staff do not anticipate any scope change or additional budget requirements for Water and Wastewater budget components as there is sufficient approved budget to account for the anticipated increase of construction costs for the Water and Wastewater components of the project.

1) Semi-Urban with speed humps - \$1,300,000 Roads Cost Estimate

- This is the design layout that was tendered in 2022, with the addition of speed humps.
- Scope includes underground infrastructure improvements, trench restoration, road rehabilitation with 8.5m wide road platform, mountable curb on the south side, ditches on the north side, no sidewalk, and addition of speed humps.
- This scenario has minimal impact to existing front yard landscaping, trees, and shrubs, as the road layout matches the existing.
- This scenario would require an additional \$200,000 Roads capital budget for 2023 to account for inflation of anticipated construction costs (\$170,000) in 2023 and for installation of speed humps (\$30,000). This additional \$200,000 can be funded by reallocating budget within the existing approved Roads program as other projects in the program came in under budget.
- Minimal design work required, and the tender could be re-issued in early 2023 for construction in 2023 and final surface asphalt in summer of 2024.

2) Urbanization with Sidewalk and speed humps – \$2,300,000 Roads Cost Estimate

- This scenario is a reconstruction project with full urbanization with the addition of a sidewalk and speed humps.
- Scope includes underground infrastructure improvements, new storm sewer installation, trench restoration, road reconstruction to accommodate urbanization, 3.5m driving lanes, barrier curb with 1.5m grass boulevard and 1.5m sidewalk on north side, mountable curb on south side, addition of speed humps.
- The granular material over the water main and storm sewer will be replaced, and the remaining granular material down the center of the road will be replaced at the same time to improve the longevity of the asset.
- This scenario has a significant impact to existing front yards on the north side, as the urbanization and addition of sidewalk will require the road asset footprint to expand within the existing road allowance to the north and will require removal of existing trees, shrubs, and other front yard features on the north side to

construct. Most of the impacted trees, shrubs, and landscaping features identified to accommodate this scenario are currently located within the road allowance, The impact to front yards will be mitigated where possible through the detailed design process if this scenario were to proceed.

- This scenario would require an additional \$1,200,000 Roads capital budget for 2024 to account for scope changes. This additional \$1,200,000 can be partially funded up to \$200,000 by reallocating budget within the existing approved Roads program as other projects in the program came in under budget, and the remaining \$1,000,000 in additional funding would be requested as part of the 2024 Roads capital budget request.
- Extensive re-design work will be required, and the tender would not be ready for issuance until 2024, which would push most of the construction into 2024, and 2025 for final surface asphalt. The construction schedule would be established during the detailed design phase if this scenario were to proceed. While the watermain on Sparks Street is nearing its useful end of life, staff do not have concerns with delaying its replacement for an additional year.

3) Semi-Urban with sidewalk and speed humps - \$1,700,000 Roads Cost Estimate

- This scenario is a modified version of the existing design that was tendered in 2022, that accommodates a sidewalk on the north side and addition of speed humps.
- Scope includes underground infrastructure improvements, trench restoration, road reconstruction to shift the road centreline to the south and install narrower 3.0m wide lanes, mountable curb on the south side, revised ditch alignment on the north side, new sidewalk back of ditch on the north side, and addition of speed humps.
- This scenario has a moderate impact to existing front yards on the north side, as the addition of sidewalk will require the removal of existing trees, shrubs, and other features at some front yards to construct. The majority of the impacted trees, shrubs, and landscaping features identified to accommodate this scenario are currently located within the road allowance, so would not require consent from private property owners to remove if required. The impact to front yards will be mitigated where possible through the detailed design process if this scenario were to proceed.
- This scenario would require an additional \$600,000 Roads capital budget for 2024 to account for the scope changes. This additional \$600,000 can be partially funded up to \$200,000 by reallocating budget within the existing approved Roads program as other projects in the program came in under budget, and the remaining \$400,000 in additional funding would be requested as part of the 2024 Roads capital budget request.
- Extensive re-design work will be required, and the tender would not be ready for issuance until 2024, which would push the majority of construction into 2024, and 2025 for final surface asphalt. The construction schedule would be established during the detailed design phase if this scenario were to proceed. As noted in the scenario above, while the watermain on Sparks Street is nearing its useful end of life, staff do not have concerns with delaying its replacement for an additional year.

Recommendation

Sparks Street is a low volume local road which does not have a GOVA transit route on it, was not identified for cycling infrastructure in the Transportation Master Plan and a segment of it ranks as high as 236 on the sidewalk priority index. Staff's recommended road design layout on Sparks Street is a semi-urban cross section with trench restoration, road rehabilitation, no sidewalk, and the addition of speed humps. The additional cost due to delaying the tender for construction in 2023 and the addition of speed humps is \$200,000, and it is recommended the additional budget be funded by reallocating budget within the existing approved Roads program as other projects in the program came in under budget. The design for this road layout is tender-ready and is the most cost-effective option to complete the scope requirements of this infrastructure improvement project in 2023.

Resources Cited

1. Complete Streets Policy
<https://www.greatersudbury.ca/live/transportation-parking-and-roads/complete-streets/complete-streets-policy/>

2. Sidewalk Priority Index
<https://pub-greatersudbury.escibemeetings.com/filestream.ashx?documentid=8020>
3. Transportation Master Plan
<https://www.greatersudbury.ca/live/transportation-parking-and-roads/road-plans-and-studies/transportation-master-plan/>
4. Roads and Transportation Asset Management Plan
<https://www.greatersudbury.ca/city-hall/budget-and-finance/financial-reports-and-plans/pdf-documents/appendix-c2-roads-transportation/>
5. Environmental Protection Act, O.Reg. 208/19, Amendments to the Environmental Compliance Approval in respect of Sewage Works Regulation
<https://www.ontariocanada.com/registry/view.do?postingId=37667>