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**TO:** GENERAL COMMITTEE

**SUBJECT:** EN1169 LOVERS CREEK NEW BRIDGE AT TOLLENDAL MILL ROAD

**WARD:** 8

**PREPARED BY AND KEY CONTACT:** D. FOX, P. ENG., ENGINEERING PROJECT MANAGER  
EXT. 4301

**SUBMITTED BY:** B. ARANIYASUNDARAN, P. ENG., DIRECTOR OF INFRASTRUCTURE

**GENERAL MANAGER APPROVAL:** A. MILLER, RPP, GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH MANAGEMENT

**CHIEF ADMINISTRATIVE OFFICER APPROVAL:** M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

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### **RECOMMENDED MOTION**

1. That staff proceed with Capital Project EN1169 Lovers Creek New Bridge at Tollendal Mill Road for construction in 2021 as recommended in the Capital Plan and as identified in Staff Report INF002-21.

### **PURPOSE & BACKGROUND**

#### Report Overview

2. The purpose of this Staff Report is to respond to Motion 21-G-006 (2021 Business Plan), paragraph 11. i) which reads:  

“That staff in the Infrastructure Department prepare a memorandum on the necessity of Capital Project EN1169 Lovers Creek New Bridge including watermain and possible alternatives before any further work is conducted.”
3. Furthermore, this Staff Report was prepared in lieu of a memorandum to ensure staff receive direction on whether to proceed with this project as planned.

### **ANALYSIS**

4. Lovers Creek is currently conveyed under Tollendal Mill Road through a corrugated steel pipe culvert. In 2013, this culvert was identified as being in poor structural condition with replacement as the recommended repair solution.
5. The most recent structural inspections have recorded continued deterioration and the engineers have documented the imminent need for replacement.
6. The previous Class Environmental Assessment (EA) for this file was completed to evaluate the stormwater conveyance needs, through the 2019 Drainage Master Plan. This EA did not evaluate transportation needs in this corridor. Options to permanently close Tollendal Mill Road would have been considered at a high level but discounted before formal evaluation of alternatives. This is considered reasonable as it would not be typical to consider permanent road closures through a drainage project.

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7. The current scope of this project includes removal of the existing culvert, stream restoration including erosion protection, construction of a new 24 m-span bridge, and construction of a new watermain crossing connecting existing dead-ends on either side of the creek.
  8. In developing the current project scope, the following factors were considered:
    - a) Based on the Drainage Master Plan (MP) the existing culvert is undersized and only an open channel with a bridge crossing can accommodate the peak flows conveyed in this creek.
    - b) Tollendal Mill Road connects the Tollendal and Melia subdivisions and provides passage to Tyndale Park and Dock Road Park.
    - c) Tollendal Mill Road carries approximately 1200 vehicles daily which helps reduce traffic volumes on residential streets connected to Hurst Drive.
    - d) Maintaining this link is reflective of the City's transportation planning goals and objectives as described in the official plan. Specifically, this road establishes a grid network system that supports vehicular traffic and active transportation.
    - e) The stream restoration works will repair significant erosion that has caused watercourse degradation and will rejuvenate and protect the natural habitat in the creek.
    - f) The new watermain will satisfy the requirement for system security and redundancy in the distribution network.
  9. One alternative to the current design would be to permanently close Tollendal Mill Road and leave an open channel in place of the culvert. This alternative could still accommodate the need for drainage improvements and stream restoration. In addition, the watermain would still be required and could be installed under the creek. It would, however, eliminate a critical transportation link in this community and the City's overall transportation network. This option was previously considered, but discounted prior to any formal evaluation through an EA, based on a high level assessment of the importance of the transportation link.
  10. Any deviation from the present design would require another Class Environmental Assessment (EA). The new Class EA would specifically evaluate a "no replacement" alternative among other alternative solutions. Based on public engagement experience on previous transportation projects in this area, staff anticipate that maintaining this road link would draw strong public support irrespective of any technical conclusions that result from the EA study.
  11. A new Class EA study would require additional funding (an estimated \$400,000) and delay the repair of the culvert and watercourse up to three (3) years. If this project is delayed past this summer, staff will need to retain a structural engineer to assess the culvert and the potential need for a temporary closure of Tollendal Mill Road given the previous engineering assessment that culvert is in poor structural condition and in need of replacement.
  12. Subsequent to completion of any new Class EA and depending on the findings and recommendations from the study, the Infrastructure Department may need to complete additional design activities to augment the current design or develop a new design.
  13. The current detailed design for this project is nearly complete and the contract will be ready for tender and construction in the coming weeks as this project has been on the priority list based on the condition assessment, previous scope/design approvals and capital plan approvals.

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## **ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS**

14. The following environmental and climate change impact matters have been considered in the development of the recommendation:
- a) The drainage analysis considered impacts from climate change on present and future creek flows and storm events. Based on this analysis the existing culvert is undersized and only the open channel and bridge crossing alternative can accommodate the impacts from climate change.
  - b) The project also includes stream and embankment restoration to eliminate erosion and protect the aquatic habitat during storm events.

## **ALTERNATIVE**

15. The following alternative is available for consideration by General Committee:

### **Alternative #1**

General Committee could direct staff not to proceed with the current project, defer the approved construction funding, and add \$400,000 to the 2021 Capital Plan for a Class Environmental Assessment to consider alternative solutions. In addition, staff will return to Council after the updated engineering condition assessment is complete with a recommendation as to whether Tollendal Mill Road must be closed pending the outcome of the new Environmental Assessment.

Although this alternative is available, the Class EA process may still recommend the culvert be replaced with a new bridge. In that scenario, it would result in increased project cost and duration.

## **FINANCIAL**

16. The costs associated with EN1169 Lovers Creek New Bridge have been approved in the 2021 Business Plan. An amount of \$6,352,000 in total funding has been approved for this project to-date. Approximately \$300,000 has already been expended in the design phase. The bridge component has an estimated cost of \$2,500,000 with the remaining \$3,500,000 allocated for the stream restoration, road improvements, and new watermain.
17. Increased construction costs can be anticipated should the project proceed in future years and the Capital Plan will need to be updated to reflect these changes once known.

## **LINKAGE TO 2018–2022 STRATEGIC PLAN**

18. The recommendations included in this Staff Report support the following goals identified in the 2018-2022 Strategic Plan:
- Fostering a Safe and Healthy City
  - Building Strong Neighbourhoods
  - Improving the Ability to Get Around Barrie

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19. The project supports the Council's Strategic Plan by:
- a) Fostering a Safe & Healthy City by promoting active transportation and adapting to climate change.
  - b) Building Strong Neighbourhoods by building walkable neighbourhoods that encourage community connections.
  - c) Improving the Ability to Get Around by making connection and creating safer streets.

APPENDIX "A"

Existing Conditions – Site Plan

