



## Report to County Council

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**From:** Peter Dutchak, Director of Engineering Services

**Date:** July 23, 2024

**Subject:** Calton Line Culvert Replacement

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### Recommendation(s):

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THAT the report titled “Calton Line Culvert Replacement” from the Director of Engineering Services dated July 23, 2024 be received and filed, and;

THAT staff be authorized and directed to proceed with the replacement of an existing culvert on Calton Line, immediately east of Mitchell Road at an estimated project cost of \$400,000 and funded from the “Reserves Capital Projects” account.

### Introduction:

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A 2.1 metre diameter steel culvert located on Calton Line (CR 45), immediately east of Mitchell Road, in the Municipality of Bayham requires replacement. This project was not identified in the 2024 Capital budget and therefore project funds required are recommended to be taken from the Reserves Capital Projects account. The project is being expedited and scheduled to be completed in 2024.

### Background and Discussion:

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A 62-year-old, multi-plate, 2.1m diameter steel culvert, located on Calton Line, immediately east of Mitchell Road has been identified as needing replacement in 2024. Routine road inspections identified a depression in the pavement surface over the culvert which prompted further investigation. Those findings identified that the culvert had begun to deteriorate to a point where supporting soils are being washed away and have begun to jeopardize the structural integrity of the culvert. Steel culverts are also known as soil/steel structures since their ability to support loads is dependent upon the granular bedding and backfill around the culvert.

The County has retained Spriet Associates to complete a survey, design and tender package for the culvert’s replacement as an extension of their assignment awarded earlier in 2024 to rehabilitate five bridges. Preliminary engineering findings confirmed that the existing 2.1 metre diameter culvert has a 10-year storm design, typical of culverts from this era. A slip lining solution of the existing culvert has been reviewed and

unfortunately discounted as an option since the reduction of the culvert size would increase flow velocities beyond approved levels that would negatively affect the natural environment.

Therefore, a minimum 50-year storm design (2.4m diameter) is recommended to retain current flow velocities and a 100-year storm design (2.7m diameter) is the preferred size to account for future unknown climate change risks and to create a potential culvert slip lining rehabilitation alternative in the future.

A new, 2.7m diameter corrugated steel culvert pipe is estimated to cost \$400,000 and will necessitate a multi-week road closure and detour route be established to facilitate the project.

**Financial Implications:**

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This project was unplanned and therefore funding is recommended to be allocated from the Reserves Capital Projects account where sufficient funds exist.

**Alignment with Strategic Priorities:**

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Serving Elgin	Growing Elgin	Investing in Elgin
<input checked="" type="checkbox"/> Ensuring alignment of current programs and services with community need.  <input type="checkbox"/> Exploring different ways of addressing community need.  <input type="checkbox"/> Engaging with our community and other stakeholders.	<input type="checkbox"/> Planning for and facilitating commercial, industrial, residential, and agricultural growth.  <input type="checkbox"/> Fostering a healthy environment.  <input type="checkbox"/> Enhancing quality of place.	<input checked="" type="checkbox"/> Ensuring we have the necessary tools, resources, and infrastructure to deliver programs and services now and in the future.  <input checked="" type="checkbox"/> Delivering mandated programs and services efficiently and effectively.

**Local Municipal Partner Impact:**

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Once the project is designed and tendered, project schedule details will be shared with the Municipality of Bayham.

**Communication Requirements:**

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Standard project notifications will be issued in advance of the project as well as posting on the Municipal 511 platform.

**Conclusion:**

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A 2.1 metre diameter steel culvert located on Calton Line (CR 45), immediately east of Mitchell Road, in the Municipality of Bayham requires replacement with a new 2.7 metre diameter steel culvert pipe. This project was unplanned and therefore project funds are recommended to be taken from the Capital Projects Reserve. The project is being expedited and scheduled to be completed in 2024.

All of which is Respectfully Submitted

Approved for Submission

Peter Dutchak  
Director of Engineering Services

Blaine Parkin  
Chief Administrative Officer/Clerk