



**SUBJECT:** North Service Road and King Road Emergency Culvert Replacements

**TO:** Committee of the Whole

**FROM:** Engineering Services Department

Report Number: **ES-01-24**

Wards Affected: 1

Date to Committee: January 8, 2024

Date to Council: January 16, 2024

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**Recommendation:**

Receive and file Engineering Services report ES-01-24.

**PURPOSE:**

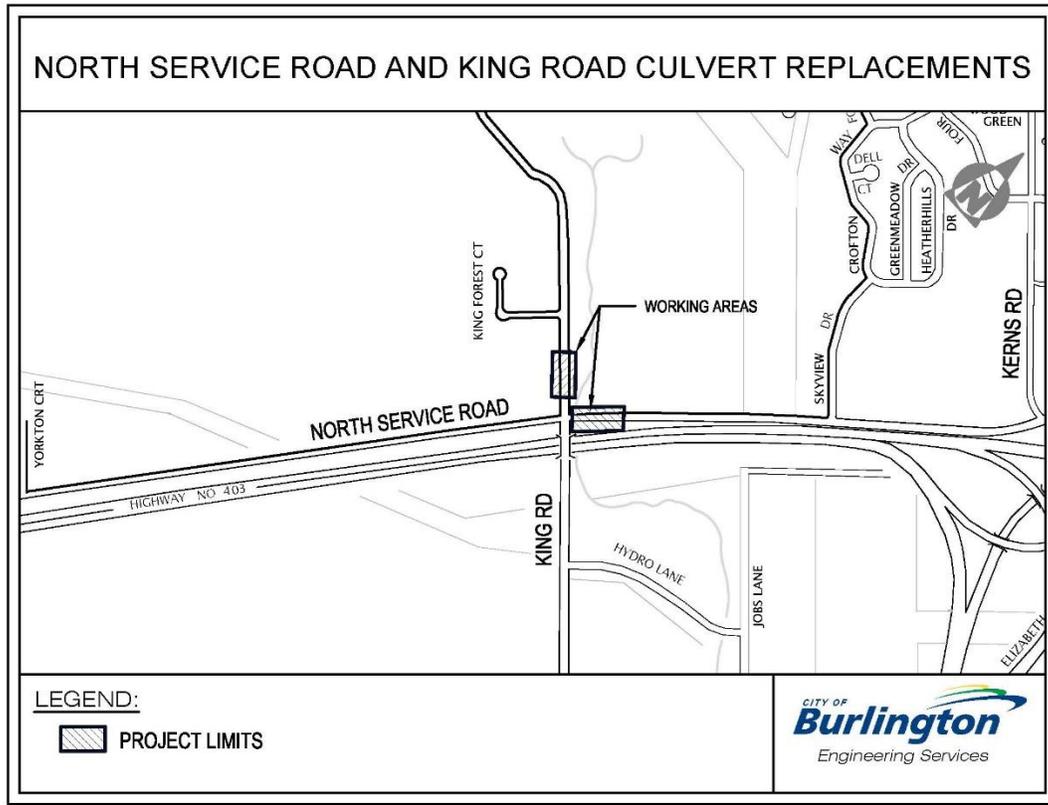
**Vision to Focus Alignment:**

- Support sustainable infrastructure and a resilient environment
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**Background and Discussion:**

The North Service Road and King Road Emergency Culvert Replacements project will replace two collapsed corrugated steel pipe culverts located at the North Service Road & King Road intersection. The urgent nature of this work is required to permanently re-stabilize the embankment slopes through regrading and slope restoration and restore the stormwater drainage network to connect with the Ministry of Transportation's existing box culvert adjacent Highway 403.

**Project Location:**



**Proposed Works:**

Proposed Works on the North Service Road and King Road at the Indian Creek tributary include:

- North Service Road Culvert Crossing Installation at Indian Creek.
- Storm Culvert installation within MTO Right of Way.
- King Road Culvert Crossing at North Service Road.
- Asphalt Road Restoration
- Steel Beam Guide Rail Installation
- Erosion and Site Restoration

**Construction Schedule:**

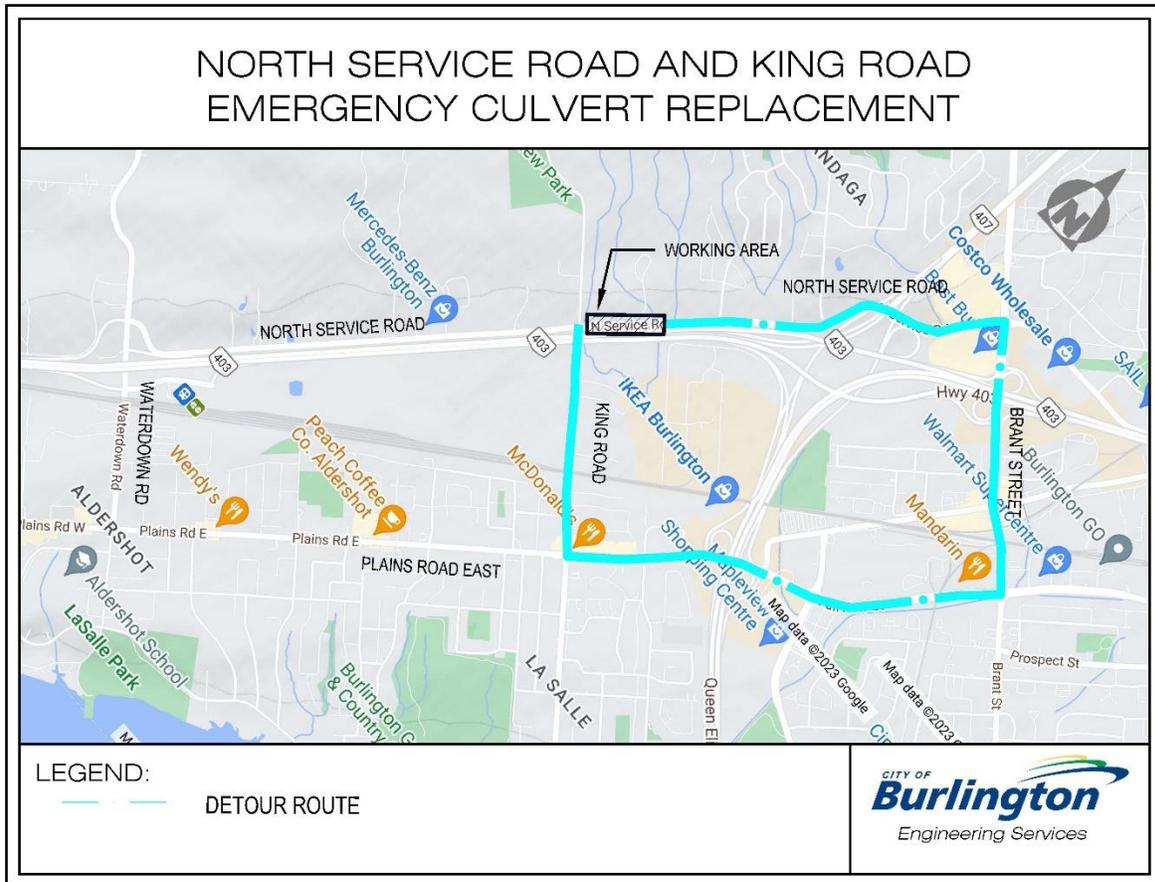
Construction Duration: December 2023 to March 2024.

North Service Road Closure: January 15 to March 1, 2024.

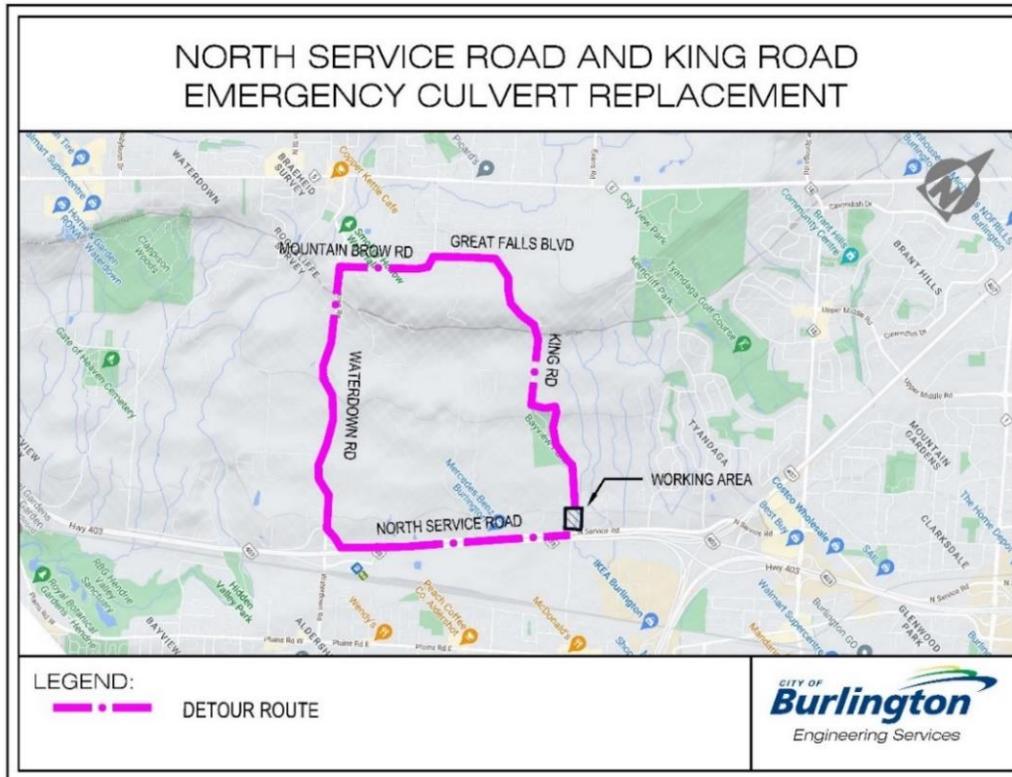
King Road Closure (weekend closure only): March 1, 2024 to March 25, 2024.

### Road Closure & Lane Restrictions

There will be ongoing lane restrictions within the construction area. A two-stage full road closure is proposed at the North Service Road and King Road intersection. The road closures will be staged such that only one road is closed at a time to minimize traffic disruptions. The King Road closure will occur over weekends and vehicle access will be restored by the following weekday. The proposed detour staging, and routes are shown below:



Detour #1 – North Service Road Culvert Installation



Detour #2 – King Road Culvert Installation

### Strategy/process/risk

Due to the initial failure of the existing corrugated steel pipe culvert and critical timing of the work needed to restore the stormwater conveyance of the Indian creek tributary. Immediate work was required to re-stabilize the North Service Road corridor, requiring an Emergency authorization for City Staff to design an improved stormwater culvert and procure a contractor to replace the collapsed storm culverts.

City staff provided a turn-key design to remove the existing compromised corrugated steel pipes and replace with a more robust reinforced concrete pipe culvert infrastructure. The Ministry of Transportation (MTO) has been included in the design process and is included as a joint partner due to the location of the stormwater culvert connection within the MTO's right of way.

As per the Procurement City of Burlington By-law 004-2022, Part 3, subsection 46 Emergency Procurement; an emergency procurement process was carried out requiring the immediate delivery of services to restore stormwater network instead of the regular tendering process and award of the project. Three contractors capable of delivering the goods and services and who were already under contract with the City, were invited to provide bids to carry out the culvert replacement work with a significantly shorter

procurement window to expedite the commencement of work. Classifying this as emergency work also allowed the City to secure Conservation Halton permits in a timely manner to allow the work to begin before any further washout occurs which would directly impact the North Service Road and at the worst, MTO's Highway 403.

### **Options Considered**

Two designs were considered to remediate the site area and stabilize the city's roadway. A like-for-like replacement of the corrugated steel pipe was considered but was not chosen due to the likelihood to undergo the same accelerated deterioration which resulted the collapse of the culvert. The final executed design utilizes a series of concrete pipes and maintenance holes which will extend the service life of the stormwater network while maintaining the existing hydraulic capacity. The installation of maintenance holes will also provide critical access points for structure assessments and future cleanouts.

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### **Financial Matters:**

#### **Total Financial Impact**

The approved budget for the North Service Road and King Road – Culvert Repair (BG0059) capital order is \$1,562,000, of which \$1,382,000 was approved in 2023. Funding from the Local Road Resurfacing (RL0294) capital order in the amount of \$441,600 will be used to cover the local road resurfacing costs.

The emergency site stabilization required to prevent further damages to the city roadway and assets, while an accelerated internal design was being completed, resulted in an unplanned cost in the amount of approximately \$377,700 (including Net HST). This additional cost was not included in the original budget for the North Service Road and King Road – Culvert Repair project. This funding shortfall will be funded from the Infrastructure Renewal Reserve Fund. The uncommitted reserve fund balance as of September 30, 2023, for the Infrastructure Renewal Reserve Fund prior to the recommended draw was approximately \$8.3 million.

Significant standby costs were accrued during design as a result of the MTO permitting process, including implementing an extended design into the MTO Right-of-Way required by the MTO in order to receive the necessary permits for construction. Additional delay costs were accrued during the negotiation and execution of legal cost sharing agreements in order to satisfy the MTO and protect the City's assets. The City has executed the legal cost sharing agreement with the MTO and secured the funding through the agreement to complete the construction in the amount of \$657,353.

**Table 1:**

	<b>Project Budget</b>	<b>Tender Award</b>
<b>Contracted Construction</b>		
– Contracted Construction (City of Burlington)	\$ 1,669,486	\$ 1,655,290
– Contracted Construction (MTO)	\$ -	\$ 604,710
– HST (1.76%)	\$ 29,383	\$ 39,776
<b>Subtotal Contracted Construction (Net HST)</b>	<b>\$ 1,698,869</b>	<b>\$ 2,299,776</b>
– Construction Contingency	\$ 123,552	\$ 181,177
– Asphalt Cement Adjustment	\$ 6,000	\$ 5,000
<b>Total Contracted Construction</b>	<b>\$ 1,828,421</b>	<b>\$ 2,485,953</b>
<b>Internal Costs</b>		
– Administration	\$ 30,000	\$ 30,000
– Design Services	\$ 45,000	\$ 45,000
– Inspection	\$ 35,000	\$ 35,000
<b>Total Internal Costs</b>	<b>\$ 110,000</b>	<b>\$ 110,000</b>
<b>External Costs</b>		
– Consulting Services	\$ 50,000	\$ 50,000
– Construction Material Testing	\$ 10,000	\$ 10,000
– Licensing & Permits	\$ 5,000	\$ 5,000
<b>Total External Costs</b>	<b>\$ 65,000</b>	<b>\$ 65,000</b>
<b>Total Emergency Site Stabilization Costs</b>	<b>\$ -</b>	<b>\$ 377,700</b>
<b>Total Project Costs (Rounded)</b>	<b>\$ 2,003,600</b>	<b>\$ 3,038,653</b>
<b>Project Financing</b>		
<b>Recovery</b>		
Ministry of Transportation (MTO)		
– Contracted Construction	\$ -	\$ 604,710
– Contracted Construction HST (1.76%)	\$ -	\$ 10,643
– Administration Recovery	\$ -	\$ 42,000
<b>Total Recovery</b>	<b>\$ -</b>	<b>\$ 657,353</b>
<b>City Funding</b>		
– Tax Support Debt	\$ 450,000	\$ 450,000
– Infrastructure Renewal Reserve Fund	\$ 266,145	\$ 266,145
– Infrastructure Renewal Reserve Fund	\$ -	\$ 377,700
– Infrastructure Renewal Reserve Fund (RL0294)	\$ 441,600	\$ 441,600
– Canada Community Building Fund (Federal Gas Tax)	\$ 796,455	\$ 796,455
– Future Services Reserve Fund	\$ 49,400	\$ 49,400
<b>Total City Funding</b>	<b>\$ 2,003,600</b>	<b>\$ 2,381,300</b>
<b>Total Project Financing</b>	<b>\$ 2,003,600</b>	<b>\$ 3,038,653</b>

- Any remaining funds to be returned to the Local Road Resurfacing (RL0294) capital order at project closure.

### Other Resource Impacts

Not applicable.

## **Climate Implications:**

Not applicable.

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## **Engagement Matters:**

Due to the critical timing of the work, engagement matters will be provided to residents and business owners prior to road closure impacts. High level project information will be made available and provided through:

- Direct Mail.
- The City's project web page.
- Advertisement in the Burlington Post.

The project information will provide an overview of:

1. The limits of the project work.
  2. Construction Schedule.
  3. An opportunity for residents and business owners to ask questions and provide comments.
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## **Conclusion:**

Staff recommend the City Clerk receive and file the report ES-01-24 for contract ES-23-32, North Service Road and King Road Emergency Culvert Replacements.

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Respectfully submitted,

Chris Onishi

Project Manager

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## **Report Approval:**

All reports are reviewed and/or approved by Department Director, the Chief Financial Officer and the Executive Director of Legal Services & Corporation Counsel.