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**Date** December 8, 2020 **Report No.** 2020-543

**To** Chair and Members  
Committee of the Whole – Operations and Administration

**From** Inderjit Hans, P. Eng., PMP  
General Manager, Public Works Commission

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## 1.0 Type of Report

Consent Item ☐  
Item For Consideration ☒

## 2.0 Topic **Asset Management Grant Funding for Light Detection and Ranging (LiDAR) Survey for Flood Mitigation [Financial Impact: None]**

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## 3.0 Recommendation

- A. THAT report 2020-543 Asset Management Grant Funding for Light Detection and Ranging (LiDAR) Survey for Flood Mitigation BE RECEIVED; and
- B. THAT staff BE DIRECTED to apply for a grant opportunity from the Federation of Canadian Municipalities' Municipal Asset Management Program for the LiDAR Survey for Flood Mitigation; and
- C. THAT staff BE DIRECTED to forward a declaration of the City of Brantford's financial contribution towards this initiative of \$85,000 as approved through the 2021 Pre-approval report 2020-536, to the Federation of Canadian Municipalities for inclusion in the grant application; and
- D. THAT if the City is successful with the grant application, \$50,000 BE RETURNED from Capital Project ID#1900 (City-Wide Light Detection and

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Ranging (LiDAR) Asset Management Survey for Flood Mitigation) to the Capital Funding Envelope RF0556.

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## **4.0 Purpose and Overview**

This report outlines the opportunity for the City of Brantford to access grant funding from the Municipal Asset Management Program (MAMP) administered through the Federation of Canadian Municipalities (FCM) to offset costs associated with a Light Detection and Ranging (LiDAR) Asset Management Survey for Flood Mitigation.

The MAMP is an eight-year, \$110-million program funded by Infrastructure Canada to support Canadian municipalities and communities in making informed infrastructure investment decisions based on stronger asset management practices. The funding is intended to focus on building strong foundations in asset management by supporting activities that incorporate asset management into daily practices. The maximum MAMP contribution to a project is \$50,000 for up to 80% of eligible project costs.

A funding application to the MAMP was submitted in July 2020, as directed by Council, to offset costs associated with a Flood Gate Control Assessment, however when staff was advised, in September 2020, of longer than expected approval timelines, costs for this project would not be eligible for the grant, and the City of Brantford is required to submit a different project for this grant. As part of the application process, FCM requires a council resolution that acknowledges the application, a commitment to undertake the activities proposed in the application should the application be approved, and a declaration of the municipality's financial contribution.

## **5.0 Background**

In June 2020, Council directed staff to apply for a grant opportunity from the FCM's MAMP for Flood Control Gates – Condition Assessment (Report No. 2020-287) and approved the following recommendation:

- A. THAT report 2020-287 Funding for Flood Control Gate Condition Assessment BE RECEIVED; and
- B. THAT staff BE DIRECTED to apply for a grant opportunity from the Federation of Canadian Municipalities' Municipal Asset Management Program for Flood Control Gate – Condition Assessment; and

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C. THAT staff BE DIRECTED to conduct the following activities as outlined in the Municipal Asset Management Program application to the Federation of Canadian Municipalities' Municipal Asset Management Program to advance our asset management program:

- i. a condition assessment and inventory verification,
- ii. a level of service needs assessment,
- iii. improvements to data reporting and financial modelling to support asset management related activities; and

D. THAT staff BE DIRECTED to forward a declaration of the City of Brantford's financial contribution towards this initiative of \$115,000, as approved through the 2018 budget process, to the Federation of Canadian Municipalities for inclusion in the grant application; and

E. THAT if the City is successful with the grant application, \$50,000 BE RETURNED from Capital Project ST1804 (Flood Control Gate Condition Assessment) to the Roads and Related Reserve RF0537.

Following Council direction, staff submitted the MAMP application to FCM in July 2020 and was advised that the application would be reviewed in turn. Staff proceeded with the flood control gate condition assessments in the summer of 2020 and expenses were applied as Capital Project ST1804 (Flood Control Gate Condition Assessment) to the Roads and Related Reserve RF0537, as approved in the 2018 capital budget; any funding from the MAMP would offset the costs applied to the reserve.

In September 2020, FCM updated staff that MAMP applications would not be approved until January 2021, impacting the eligibility of the application for flood gate condition assessments, as MAMP funding cannot be used to cover expenses already incurred. FCM advised that the City of Brantford's MAMP application could be changed and a new project could be submitted for consideration and approval by January 2021.

## **6.0 Corporate Policy Context**

Submitting the City-Wide LiDAR Asset Management Survey for Flood Mitigation project for the funding grant under the FCM 's Municipal Asset Management Program reflects the following Council Priorities for 2021 to 2022:

- Desired Outcome #1: All neighbourhoods in the City are safe, vibrant, attractive and inclusive
  - Tier 2 Priorities: Develop a multi-year asset management and funding strategy for all infrastructure categories, including natural assets, prioritizing investments for areas in need and focusing on preventative maintenance to extend the life of municipal assets
- Desired Outcome #7: The City is mitigating its environmental footprint and adapting to Climate Change:
  - Tier 1 Priorities: Demonstrate the City's commitment to environmental leadership through visible projects
  - Tier 2 Priorities: Increase investment in flood mitigation and protection

## **7.0 Input From Other Sources**

In preparing this report, input was received from the Infrastructure Planning division of the Engineering Services Department, the FCM, and Finance Department.

## **8.0 Analysis**

Staff have reviewed the 2021 capital projects and identified the LiDAR of City owned right-of-ways (ROW) as a suitable alternative project to submit to the MAMP grant through FCM.

LiDAR is a method for measuring distances (ranging) by illuminating the target with laser light and measuring the reflection with a sensor. LiDAR is commonly used to make high-resolution maps, with applications including; surveying, geomatics, archaeology, geography, and geology. In the current context the LiDAR scan will provide information pertaining to stormwater drainage and overland flow paths. Under existing conditions, the City of Brantford does not have a clear perspective of their major system flow path (emergency overland flow path) throughout the City.

LiDAR of all of the City owned ROW's will provide the background information required to determine areas which may experience flooding during major storm events, and where flooding issues within the City are possible. This allows differentiation between areas without major system outlets and areas where the capacity of the major system is not sufficient to convey stormwater to the outlet.

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Aerial LiDAR of the City ROW will also assist the City in better determining both the cause and liability of any future flooding within both private and public owned spaces.

Up to \$50,000 is available through the MAMP program to offset the costs of the LiDAR Survey. The LiDAR ROW project is currently on the pre-approval list for 2021 capital projects and has a projected cost of \$85,000. The LiDAR Survey has an anticipated start date of April 2021.

Staff is seeking Council approval to amend the previous MAMP application to replace the Flood Control Gate Condition Assessment, with the LiDAR Survey as described above. As with the previous application the MAMP funding requires that municipalities submit a Council resolution that outlines:

- That Council acknowledges that staff are submitting the application;
- A commitment to undertake the activities proposed in the application should the application be approved; and
- A declaration of the municipality's financial contribution.

This report includes a recommendation to Council that meets the criteria for this resolution.

## **9.0 Financial Implications**

If the MAMP application through FCM is successful, the City will be awarded up to \$50,000 in funding to offset the cost of the LiDAR Survey for Flood Mitigation, which has been budgeted at a total cost of \$85,000. Funding will be returned from Capital Project ID#1900 (City-Wide Light Detection and Ranging (LiDAR) Asset Management Survey for Flood Mitigation) to the Capital Funding Envelope RF0556.

## **10.0 Conclusion**

In an effort to improve asset management practices staff are embarking on a City-Wide LiDAR Asset Management Survey for Flood Mitigation. This project is currently on the pre-approval list for 2021 capital projects being recommended at the Committee of the Whole – Operations and Maintenance December 1 meeting and has a projected cost of \$85,000. MAMP funding is available through FCM, and provides an opportunity for cost savings of up to \$50,000 to offset the cost of this project. As part of the application process, FCM requires a

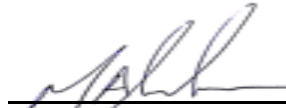
resolution that acknowledges staff are submitting the application, a commitment to undertake the activities proposed in the application should the application be approved, and a declaration of the municipality's financial contribution.



Russ Loukes  
Director Engineering Services



Inderjit Hans, P. Eng., PMP General  
Manager, Public Works Commission



Mike Abraham  
Manager of Infrastructure Planning

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required ☐ yes ☒ no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk ☐ yes ☒ no

Is the necessary by-law or agreement being sent concurrently to Council? ☐ yes ☒ no