



**CORPORATE ASSET
MANAGEMENT
MEMORANDUM**

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File: C11-BE
Pending #:

TO: INFRASTRUCTURE AND COMMUNITY INVESTMENT COMMITTEE

**FROM: T. REEVE, P.ENG., SENIOR PROJECT MANAGER, WATER-WASTEWATER
PLANNING, EXT 4465**

WARD: 6

**NOTED: K. OAKLEY, P. ENG., ASSOCIATE DIRECTOR OF CORPORATE ASSET
MANAGEMENT**

**B. ARANIYASUNDARAN, P. ENG., GENERAL MANAGER OF INFRASTRUCTURE
AND GROWTH MANAGEMENT**

M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

**RE: BEAR CREEK WETLAND – MARTA CRESCENT BACKYARD FLOODING
UPDATE**

DATE: OCTOBER 2, 2024

BACKGROUND

1. The purpose of this memorandum to the Infrastructure and Community Investment Committee is to provide an update on the City's efforts to improve the backyard flooding associated with the Bear Creek Wetland at Marta Crescent.
2. Property owners on Marta Crescent have been reporting that the standing water in the wetland has been rising in elevation over the past few years. This is consistent with City staff observations. The elevated water levels caused standing water in the backyards of some homes on Marta Crescent. Residents expressed concern from an aesthetic and safety perspective.
3. Wetlands can change over time both naturally and because of human influence. Assessment by the City's consultant is that the main drivers for the changes in the wetland are the deposition of sediment carried from Ardagh Bluffs and the increased prevalence of phragmites. The build-up of sediment and the phragmites have prevented water from flowing through the Bear Creek tributary which passes through the wetland behind Marta Crescent and has inundated the surrounding wetland, causing water levels to rise. A map showing the location of the backyard flooding is included in the appendix.
4. While the City was determining long-term solutions there was a desire to provide some short-term relief to residents with standing water in their backyards. A capital project to implement a cofferdam and pumping solution was designed and implemented.
5. On August 16, 2023, City Council adopted motion 23-G-183 regarding BEAR CREEK WETLAND – MARTA CRESCENT FLOODING ISSUE (Ward 6) as follows:

That the funding request outlined in Staff Report CAM001-23 for the capital construction and ongoing maintenance of a dewatering initiative at Marta Crescent and the Bear Creek wetland be approved:

- a. Capital project EN1513 be increased to include an additional amount of \$350,000 for 2023 funded from the tax capital reserve; and



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- b. The 2024 operating budget to be presented to Council in late 2023, include an additional \$400,000 for the Operations Department to fund ongoing operations and maintenance of the dewatering.
 - c. That staff in Corporate Asset Management report back to the Infrastructure and Community Investment Committee on the effectiveness of the project by September 2024. (CAM001-23) (File: C11-BE)
6. In September of 2023, after a competitive procurement, the City awarded the contract to construct the temporary cofferdam. Construction began in late September 2023 and was substantially completed in November 2023. Some photos of the construction and completed cofferdam are included in the appendix.

CURRENT SITUATION

7. Once the cofferdam construction and initial pumping was complete, the operation and maintenance phase began. This work includes:
- a. Weekly inspections by City staff to assess the site conditions and water levels adjacent to the residential properties. Inspections are also completed after every significant rainfall event. As of the end of July 2024, approximately thirty-five (35) inspections have been performed.
 - b. If water levels are noted to be impacting the private properties, a contractor is engaged to pump the site. Pumping is completed within 24 to 48 hours of the request. As of July 2024, pumping has occurred fourteen (14) times.
8. The temporary cofferdam has provided some relief to residents in that it has largely removed standing water from their backyards, except for after rain fall. However, it is an imperfect solution. The construction impacted the existing vegetation, involved the construction of a temporary access road and has made the standing water in the wetland more visible. Through emails, discussions and informal feedback, residents have provided a variety of comments, with varying degrees of satisfaction.

NEXT STEPS

9. The cofferdam and pumping does not address the root cause and still leaves the residents with impacts on their properties. This is not unexpected given that the localized issue is part of the Bear Creek Wetland and is caused by erosion and sedimentation in the larger system. A larger solution was always going to be required to provide the permanent long-term solution for the area.
10. To this end, staff will be recommending two (2) projects for inclusion in the 2025-2034 Capital Plan which will be presented to Council in late 2024. Council will have the opportunity to review and approve these projects as part of the 2025 capital budget. These projects will provide additional solutions to rectify the issues around the Bear Creek Wetland. The proposed solutions include:
- a. Project 1: Re-grading of the impacted backyards to raise them above the standing water level. This project is forecasted to be completed by 2027 and will provide additional relief to the residents until Project 2 can be implemented. This project will involve property access agreements with each property owner prior to implementation. The budget proposed for this project in the draft 2025 capital plan is \$1,173,000.



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- b. Project 2: Re-establishing of the Bear Creek Tributary through this part of the wetland to stabilize the wetland water levels and allow excess water to drain away. This larger project will begin with an environmental assessment in 2026, then proceed through design and construction, and is forecasted to be completed in 2032. The budget proposed for this project in the draft 2025 capital plan is \$1,602,000.
 - 11. Until the re-grading of the backyards is completed, the City will continue to operate the cofferdam and pump periodically through the spring, summer and fall.
 - 12. Staff will be engaging with residents on Marta Crescent and Kierland Road regarding the proposed capital projects, following presentation of this memo to Committee.

FINANCIAL

- 13. The capital cost to implement the temporary cofferdam was \$334,527 which was within the budget approved by Council in 2023.
- 14. The operating budget was increased to accommodate the anticipated need for ongoing operation and maintenance of this system. At the time of writing of this report, the City has spent \$14,000 on the contractor costs to pump the area. This is in addition to staff time for coordination and inspections which is estimated at 370 hours for the first two (2) quarters of 2024.

Appendix "A"

Site Plan



Appendix "B"

Before, During and After Construction Photos



1 September 2023 - just prior to construction



2 October 2023 - Construction of cofferdam



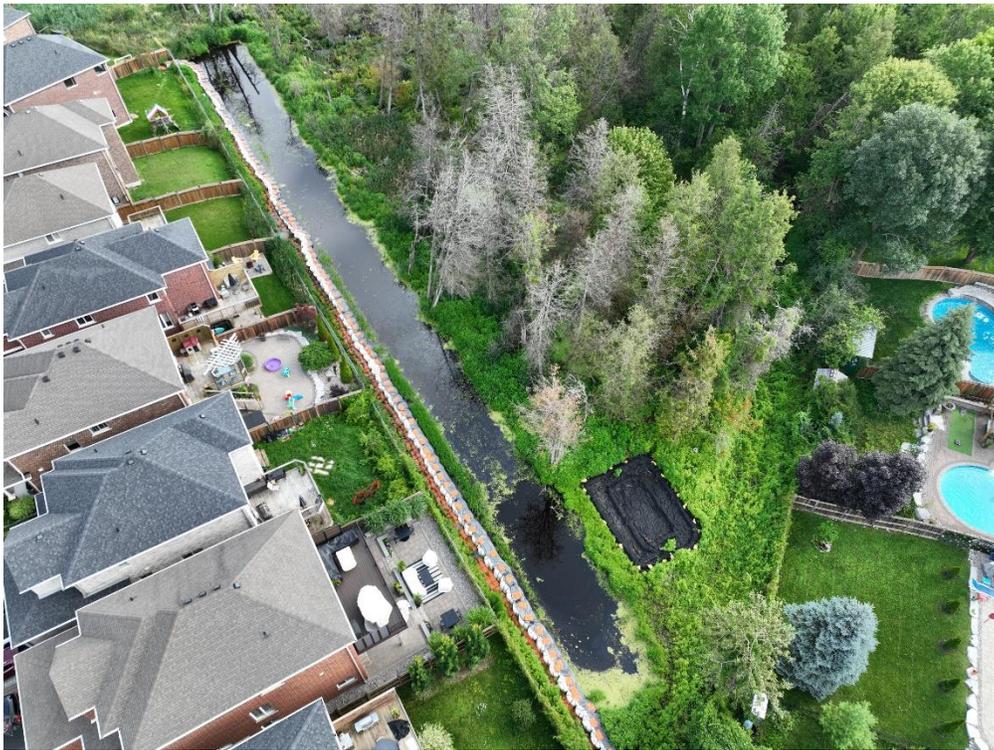
3 November 2023 -Coffer dam after completion and first pump out



4 March 2024 – No standing water in backyards



5 *May 2024 - Photo provided by resident after rainfall*



6 *July 2024 - Drone Photo*