



Braneida Stormwater Management Facility Retrofit and Downstream Channel Remediation

**November 30, 2020 – Virtual Public Information Centre (PIC) 1
Transcript of Presentation
First Posted November 30, 2020**

This document provides documentation of the verbal content of the Virtual PIC 1 first posted on November 30, 2020. Each section starts with an indication of a slide number followed by a time stamp. The time stamp may be used to advance the video to sections of greater interest.

Slide 1 – Welcome – 0:00

Welcome to the Public Information Centre (or PIC) for the Braneida Stormwater Management Facility: Proposed Retrofits, Municipal Class Environmental Assessment (or EA). This presentation was posted on November 30, 2020.

Slide 2 – Purpose of this Public Information Centre – 0:18

The purpose of this Public Information Centre is to:

- Provide information on the Environmental Assessment (EA) study purpose and background;
- Provide summaries of the existing conditions assessments, including:
 - Stormwater Management Pond Design vs Current Functionality;
 - Water Resources and Geomorphic Conditions;
 - Natural Heritage; and,
 - Archaeological and Cultural Heritage.
- Present alternative solutions and proposed evaluation criteria; and,
- Present the recommended alternative solution.

We would also like to invite public input to the project and evaluation. This is the best opportunity to integrate comments and concerns from the public into the alternative evaluation and preferred alternative design for the Class EA.

Slide 3 – Study Purpose – 1:10

The EA study follows the Municipal Class Environmental Assessment under Schedule 'B' for the stormwater management facility servicing the Braneida Industrial Subdivision in the City of Brantford.

The Problem Statement used to help define the study scope is:

The existing Braneida Industrial stormwater management facility was constructed in the 1990s and does not meet current Ministry of Environment, Conservation and Parks water quality and quantity control standards. Furthermore, there is no Environmental Compliance Approval (formerly known as the Certificate of Approval) in place.

The ultimate objective on completion of the Municipal Class EA will be to obtain the necessary approvals and permits for the retrofit of the existing stormwater management facility for water quality, erosion, and quantity control in compliance with current provincial standards.

Slide 4 – Municipal Class EA Process Overview – 2:10

The Municipal Class EA process provides opportunities for public and stakeholder involvement throughout the project, ensures that all reasonable alternatives are considered and that a selected alternative would have minimal impact on the surrounding environment.

The Braneida Stormwater Management Facility: Proposed Retrofits EA Study is being undertaken as a Schedule 'B' Class EA Project.

This slide highlights the current stage in the Municipal Class EA process. Steps in the process which have already been completed consist of identifying the problem or opportunity, assessing existing conditions, identifying alternative solutions and how the solutions can impact natural, social and economic environments, mitigation measures for these potential impacts and identification of the draft preferred solution. After we receive public feedback and integrate it into the evaluation of alternatives, we will confirm the preferred solution. Once the preferred solution has been confirmed the project file report and notice of completion will be issued for a 30-day public consultation and review period.

Slide 5 – Characterization of Existing Conditions – 3:26

The information shown on this slide provides the key details for characterizing site geometry, geotechnical, natural heritage, archaeological, built heritage, social and geomorphological background conditions.

The site geometry consists of a general description of the subject lands. The study area spans over 140 hectares of mixed industrial development. The stormwater management facility site consists of approximately 2.4 hectares. The outlet channel of the stormwater management facility is a 500-metre-long tributary to Fairchild Creek.

The geotechnical background is used to inform the hydrologic calculations and stormwater management facility construction details. Geotechnical information was sourced from GRCA mapping and geotechnical reports completed by Pinchin in 2019 and Exp in 2018. These reports identified that the underlying soils within the catchment are predominately consisting of silt and clay in moist to saturated states.

A natural heritage assessment was completed to determine the potential impacts of the project on the natural environment. The study area includes meadow, thicket, marsh and industrial lands. The tributary to Fairchild Creek contains fish species both above and below the stormwater management facility despite the stormwater management pond acting as a barrier to fish movement. Vegetation consisted of native, non-native and invasive species. Historic species-at-risk were identified within the surrounding habitat.

An archaeological, built and cultural heritage study was completed by Timmins and Martel in 2019. Findings demonstrated proximity to known archaeological sites, water sources, early historic settlements, and transport routes but the proximity was not enough to warrant further heritage studies. The Cultural Heritage Assessment (CHA) found that the subject property does

not meet any Ministry of Tourism, Culture and Sports (MTCS) screening criteria for known or potential cultural heritage value.

Social impacts are focussed on potential impact to communities nearby the study lands. A series of trails near the stormwater management facility were identified as a social community feature, but these trails are not on the stormwater management facility property and are not going to be impacted by any of the proposed alternatives.

A geomorphological assessment was completed on the tributary to Fairchild Creek. The findings of the study were:

- The channel has been previously modified and demonstrates evidence of response to these modifications in hydrology and channel realignment;
- The channel has incised into silty clay till material resulting in an entrenched condition, meaning that flows which should overflow the channel into the overbank areas are contained within the channel; and,
- The incision process is likely to continue as the watercourse adjusts to the modified hydrological conditions until a state of equilibrium is achieved.

Slide 6 – Existing Conditions Photos – 7:03

This slide contains photos demonstrating some key features of the existing conditions on the subject lands.

Photo 1 shows the outlet structure of the stormwater management facility. This structure is intended to allow low flows to exit the facility via two smaller holes cut into the concrete weir wall. As you can see those smaller holes have become clogged with sediment and debris, and the pictured concrete weir is providing outflow control for the facility. This has reduced the active storage volume of the facility by 13,700 cubic meters.

Photo 2 shows the twin two-meter diameter culverts downstream of the stormwater management facility outlet.

Photo 3 shows the tributary to Fairchild Creek approximately 300 meters downstream of the stormwater management facility outlet. Bank erosion can be seen on either side of the channel with exposed roots and channel incision.

Photo 4 shows an indication of active bank erosion in the channel. There is a lack of rooting depth and exposed clay at the toe of the bank.

Photo 5 shows the extent of the study area.

Slide 7 – Potential Easement Locations – 8:26

This slide shows the five potential easement locations that were considered to provide access to the stormwater management facility for construction and maintenance activities. The locations considered were:

- Alternative 1: 132 Adams Boulevard;
- Alternative 2: 112 Adams Boulevard;
- Alternative 3: 90 Adams Boulevard;
- Alternative 4: 66 Adams Boulevard; and,

- Alternative 5: 66 Adams Boulevard from Bury Court.

Slide 8 – Easement Location Evaluations – 9:04

This slide shows the alternative evaluation for each of the potential easement locations. The criteria used to evaluate the alternatives were:

1. Land Use – which evaluates the potential damage to existing property, potential impact on the day to day operations of nearby businesses and the presence of utilities and overhead power lines.
2. Natural Environment – which evaluates the potential impact to terrestrial and aquatic environment including habitat and tree removal.
3. Design Requirements – which evaluates the proximity to the stormwater management facility, ease of grade transition to the stormwater management facility and the opportunity to coordinate access for future stream rehabilitation works within the downstream tributary.
4. Willing Host – the City of Brantford conducted background work to determine which of the easements is preferred based on the willingness of landowners to agree to an access easement on their lands.

Based on a relative scoring exercise, the preferred easement location is Alternative 3: 90 Adams Boulevard.

Slide 9 – Stormwater Management Facility Retrofit Alternatives – 10:20

Three alternatives were generated for the stormwater management facility.

Alternative 1: Do Nothing. A do nothing alternative is provided to use as a basis of comparison between the other alternatives. This alternative proposes that the facility is left as-is and no remediation or rehabilitation works are completed.

Alternative 2: Retrofit the stormwater management facility within the existing property boundaries. This alternative involves a redesigned stormwater management facility within the existing location providing a permanent pool for water quality treatment and a multi-stage outlet to provide erosion and quantity control. A forebay will be constructed for ease of long-term maintenance and separation of inlet and outlet structures will increase the flow path and detention time within the facility to further improve water quality treatment,

Alternative 3: Retrofit stormwater management facility within expanded stormwater management facility property boundaries. This alternative will have the same design criteria as alternative 2 but will only be used if stormwater management design calculations indicate that additional detention storage volumes are needed. If extra storage volumes are required for water quality treatment the stormwater management property block will be expanded to the required size to accommodate the required level of water quality treatment.

Slide 10 – Alternative 1 Figure - 11:59

This figure shows the existing boundaries and flow paths of the stormwater management facility.

Slide 11 – Alternative 2 Figure – 12:07

This figure shows a conceptual design for a pond retrofit including a forebay and permanent pool providing water quality treatment, along with a general flow path of water through the facility.

Slide 12 – Alternative 3 Figure – 12:22

This figure shows a conceptual design for a pond retrofit if additional storage is required to provide water quality treatment. Additional land to the north of the facility is available to add to the stormwater management block if required, as shown on the figure.

Slide 13 – Evaluation of Alternative Solutions – 12:43

Each of the proposed alternatives were evaluated for the following criteria:

1. Public Health and Safety – which evaluates the potential for protection of residents and adjacent landowners from flooding.
2. Technical – which evaluates the ability of the facility to provide adequate water quality treatment, quantity control and erosion protection.
3. Environmental – which evaluates the impact on vegetation, fish habitat and terrestrial habitat.
4. Heritage and Natural Resources – which evaluates the potential disturbance to heritage and/or archaeological resources.
5. Socio-Economic – which evaluates impacts from the construction activities, property requirements, and potential to integrate trails and/or enhance a multi-use trail network.
6. Construction Cost – evaluates the capital costs of construction as well as long-term operation and maintenance cost considerations.
7. Constructability – which evaluates the ability to implement the facility design, impacts on existing utilities and the extent and accessibility of maintenance requirements for the design.

Based on the relative scoring exercise, the preferred alternative is Alternative 2 – retrofit the existing stormwater management facility within the existing property boundaries.

Slide 14 – Channel Remediation Alternatives – 14:15

Four alternatives were generated for the channel remediation of the tributary to Fairchild Creek which receives drainage from the stormwater management facility.

Alternative 1: Do Nothing. A do nothing alternative is provided to use as a basis of comparison between the other alternatives. This alternative proposes that the creek remains in existing conditions and no remediation or rehabilitation works are completed.

Alternative 2: Channel Bed and Profile Enhancements. This alternative maintains the existing channel footprint and addresses sensitive areas of the channel. Protections of the clay channel bed through the placement of stone will prevent further incision and upstream mitigation of vertical drops within the channel. This alternative will not completely halt ongoing channel bed incision or widening.

Alternative 3: Channel Capacity and Floodplain Connectivity. This alternative alters the cross-sectional configuration to include floodplain access for larger runoff events reducing the stress on the channel bed. This alternative requires a larger construction footprint and impact to

provide overbank storage for higher flow runoff events, and the amount of environmental disruption is relatively higher than alternative 2.

Alternative 4: Channel Realignment. In this alternative the watercourse would be realigned to a new location within the study area, with a new planform pattern. The channel bed and cross-sectional configuration would be altered to enable the concepts described in Alternatives 2 and 3, though to a larger extent to address all erosion issues and mechanisms comprehensively. The focus would be to reduce flow energy and increase floodplain connectivity within the watercourse.

Slide 15 – Evaluation of Alternative Solutions – 16:21

Each of the proposed alternatives were evaluated for the following criteria:

1. Technical – which evaluates the ability of the watercourse to be protected from erosion and the impacts to river stability and flood risk.
2. Environmental – which evaluates the impact on vegetation, fish habitat and terrestrial habitat.
3. Socio-Economic – which evaluates impacts from the construction activities and property requirements.
4. Construction Cost – evaluates the capital costs of construction as well as long-term operation and maintenance cost considerations.
5. Constructability – which evaluates the ability to implement the watercourse rehabilitation, impacts on existing utilities and the extent and accessibility of maintenance requirements for the design.

Based on the relative scoring exercise, the preferred alternatives are a combination of Alternative 2 and Alternative 3. This hybrid alternative proposes channel modifications focusing primarily on enhancing the channel form to manage flow energy through channel widening and providing stability through channel bed enhancements.

Slide 16 – Extents of Creek Rehabilitation – 17:41

This slide illustrates the location and extents of creek rehabilitation. The highlighted stretch of creek is the location that demonstrates the need for implementation of the preferred alternative. Upstream sections of the creek will not require rehabilitation at this time.

Slide 17 – Next Steps – 18:00

Upon completion of the PIC review period, the following steps will take place:

- Finalization of the preferred alternative design considering public feedback;
- Completion of the project file report;
- Issuance of the Notice of Completion and a 30-day public review period; and,
- Detailed design, tendering and construction.

Slide 18 – Project Contacts – 18:25

Thank you for watching our online Public Information Centre of the Brantford Braneida Stormwater Management Facility: Proposed Retrofit Municipal Class Environmental Assessment. You can find comment sheets on the City of Brantford website linked from the

page where you found this presentation, please complete these comment forms, and submit them by December 14, 2020 for them to be considered.

Should you have any questions or concerns, please contact either of the following people:

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