

Mohawk Lake and Canal Cleanup and Rehabilitation Project Design Update – for Shallow Creek Park and West Canal Elements Virtual Public Information Centre - Script of Presentation

Slide 1: Title page and Welcome

Hello, and welcome to the City of Brantford's Virtual Public Information Centre for the Mohawk Lake and Canal Cleanup and Rehabilitation Project. We will refer to it as the Project for the rest of the presentation. The focus of today's presentation is on the Design Update of the Shallow Creek Park and West Canal Elements.

We encourage you to view this presentation, and feel free to pause and read the slides for more details. A pdf copy of this presentation is also available on the project webpage, should you wish to review it without narration. As you go through this presentation, you may find that you have questions, comments or suggestions regarding this project that you would like to share with the Study Team. At the end of this presentation, you will find information on how to submit questions, comments or suggestions.

Slide 2: Purpose of this Public Information Centre

The City of Brantford is providing this overview of the Design Update for Shallow Creek Park and West Canal Water Elements.

This presentation will:

- Provide an overview of the study
- Review the highest priority measures being advanced to construction and the proposed design of works in Shallow Creek Park and West Mohawk Canal
- Review design, landscaping and restoration plans
- Outline the next steps in the Design and Construction Process
- Identify how we can hear from you

Slide 3: Historical Overview

Mohawk Lake was constructed in the 1800s as part of a canal system to provide barges access traveling through Brantford

In the early 1900s, the lake and the surrounding parkland provided community residents with recreational opportunities and today continues to offer valuable natural heritage. For decades, concern has been expressed about the deteriorating environmental conditions in the lake and canal.

The Mohawk Lake and Mohawk Canal Cleanup and Rehabilitation Project was initiated in response to these concerns. Through the Project, the City intends to improve the environmental conditions and water quality of the Mohawk Lake and Mohawk Canal.

The images on this slide are postcards of Mohawk Lake at Mohawk Park, Brantford, Canada showing a dock and a viewing point pergola extending into the lake.

Slide 4: Overall Study Area and Purpose

The purpose of the Project is to consider ways we can improve the environmental quality of Mohawk Lake and Canal by providing:

- Improved aquatic and wildlife habitat
- Protection and interpretation of natural heritage resources
- recreational opportunities

The map shown identifies the Project's study area, which is location in the southeast corner of Brantford with the Grand River, Mohawk Canal and Mohawk Lake located along the south boundary.

Slide 5: Project Phases

This diagram illustrates the three phases to this project which had ongoing consultation at each phase.

Phase One included a characterization study which was performed in 2018-2019

Phase 2 was comprised of a Subwatershed Stormwater Plan, Environmental Assessment and Mohawk Lake Master Plan.

The final and current stage is Phase 3. Phase three is the Implementation Phase which includes:

- Design and Construction,
- Land use planning, and
- Long term community engagement.

The video you are watching now, is the Virtual Public Information Centre for the Design Update of the Shallow Creek Park and West Canal Elements.

Slide 6: Preferred Alternatives from Class Environmental Assessment

The City considered different alternatives to address identified challenges and evaluated these alternatives to reach preferred alternatives. One of the preferred alternatives is oil grit separator retrofits. The upper left image is of an oil grit separator which resembles a circular concrete cylinder with connections for pipes and a deep sump pit to trap sediment.

In December 2020, three Oil/Grit Separator Retrofits were constructed to treat storm sewer contaminants upstream of the lake. The upper right image is an aerial map that shows where these oil/grit separator retrofits were constructed, namely Alfred Street, Mary Street and Forest Road.

The image on the bottom, another aerial map, highlights two areas, circled in red, of the retrofits in Shallow Creek Park and the West Mohawk Canal. These are additions to pre-existing infrastructure and are currently being designed.

Slide 7: Purpose of Works

Previous work to identify actions to support the overall goal of long-term rehabilitation of Mohawk Lake resulted in a preferred alternative to promote stormwater quality by settling of sediments upstream of Mohawk Lake. The map shows Mohawk Lake circled in red and arrows point to Shallow Creek Park and upper West Mohawk Canal.

Slide 8: Shallow Creek Park Area

Shallow Creek Park is the first priority area. The aerial view map shows Shallow Creek park circled in red. For this area, it is proposed that a wet pond with a permanent pool be constructed. Low flow from the upstream drainage would be diverted to the pond for water quality treatment. Holding water in the pond will allow sediments to settle out of the water prior to flowing into Mohawk Lake.

Slide 9: West Mohawk Canal Area

West Mohawk Canal is the second priority area. The aerial map shows West Mohawk Canal circled in red. For this area, it is proposed that the canal be deepened with constructed berms to trap sediment for water quality treatment.

Slide 10: Work completed as part of Design Phase

To support the work, the City conducted five types of supporting studies as part of the Design Phase.

These studies are:

The Water Resources study, which mapped the floodplain of Shallow Creek,

The Geotechnical, Environmental, Hydrogeology study, which evaluated the soils, contaminants, and groundwater levels

The Natural Environment Study, which included a Tree inventory as well as terrestrial and aquatic ecology assessment

The Structural Engineering study, which explored the Condition of retaining walls, culverts, and pedestrian bridges, and finally the Fluvial Geomorphology Study, which examined the Creek's form and erosion potential.

Slide 11: Site Constraints

There are several site constraints that have to be considered in developing a design. This includes:

Legacy soil contamination issues in Shallow Creek park

The need for an impermeable liner to isolate works from affected soils and avoid groundwater impacts.

The need for erosion control along creek channel – the photo on the left shows the need for more stone abutments along the stream bank

And replacement of gabion baskets and wooden boards along West Mohawk Canal and adjacent tow path trail – the photos on the right show the tow path trail. A tow path is a historical path for the horses that towed the boats and barges in the canal.

Slide 12: Alternative Evaluation

As mentioned earlier, the City considered several alternatives. The design for these alternatives were evaluated in collaboration with a Technical Advisory Group. These alternatives and the evaluation considered work completed and site constraints. The evaluation focused on advancing measures that maximize the water quality benefit to Mohawk Lake downstream.

Preferred design alternatives were selected based on the preceding assessment, balanced against local impacts (social and environmental) and other factors, including cost. The next few slides are present the preferred alternatives.

Slide 13: Shallow Creek Park Retrofit (Off-line Wet Pond Stormwater Management Feature)

The first preferred alternative is the Shallow Creek Park Retrofit. The figure here presents a drawing of the planned wet pond stormwater management feature. It is an oblong pond running parallel to the existing walkway. There is a buffer of two meters from the walkway and there is a stormwater facility outlet pipe from the pond to Shallow Creek. Existing trees will be protected during construction, currently there are no planned tree removals but this will be reviewed as the design advances. There is an inline control structure in the creek which will work in combination with a low flow diversion pipe to direct flow to the stormwater facility for treatment, while allowing high flows events to continue to flow downstream in the creek. Reconstruction of existing retaining walls upstream of the retrofit will be addressed as part of separate future study. Channel

rehabilitation works will occur in tandem with the primary pond works. There is an existing playground that will remain. There will be a new maintenance walkway provided around the perimeter of the pond.

Slide 14: Shallow Creek Park Retrofit (Landscaping Plans)

Building on the figure of the wet pond, this drawing presents the proposed landscaping. Deciduous and coniferous trees, shrubs and native emergent species will be installed along the perimeter of the pond. Potential future works may include a pollinator garden as well as public picnic tables or benches along the walkway.

Slide 15: Shallow Creek Park Retrofit – Design Features and Benefits

There are several benefits of the Shallow Creek Park retrofit.

- It is located in an optimal location for water quality treatment at most upstream location relative to Mohawk Lake
- It provides treatment for part of the Mohawk Lake Watershed catchment area that currently receives no water quality treatment
- It minimizes disturbance to creek and trees to the extent possible
- It includes construction of a new trail feature around pond perimeter making a complete loop
- It includes enhanced park landscaping and restoration
- And it ensures consideration and safety for adjacent playground area

Slide 16: West Canal Retrofit (Section 1 – Pedestrian Bridge to Alfred Street)

The next preferred alternative is the West Canal Retrofit between the Pedestrian Bridge and Alfred Street. The figure here presents a drawing of the planned retrofit along Greenwich Street. The existing canal will be deepened with a constructed berm to trap sediments. The existing towpath will be reconstructed. The construction will require the removal of eight trees.

Slide 17: West Canal Retrofit (Section 1 – Landscaping Plans)

Building on the figure of the constructed berms, this drawing presents the proposed landscaping. Deciduous trees, coniferous trees, shrubs, native emergent species to be installed along the perimeter of the pond. The figure identifies the locations of the existing eight trees that will be removed. Approximately 30 replacement trees are proposed.

Slide 18: West Canal Retrofit (Section 2 – Alfred Street to Murray Street)

To provide further detail, this figure presents the West Canal Retrofit east of the corner of Alfred Street and Greenwich Street. In this area, the canal will be deepened with

constructed to berms to help trap sediment. There is a recommendation that the Alfred Street culvert be upgraded as part of a future study. Six trees will be removed.

Slide 19: West Canal Retrofit (Section 2 – Alfred Street to Murray Street)

Moving east along the West Canal Retrofit, this figure presents the area to near Murray Street. Similarly, work in this area involves deepening the canal with constructed berms to trap sediment. This figure identifies the location of the proposed maintenance access road from Riddolls Avenue which will match the grades at Shallow Creek Park Trail.

Slide 20: West Canal Retrofit (Section 2 – Landscaping Plans)

Building on the figure of the constructed berms, this drawing presents the proposed landscaping between Alfred and Murray Streets. The majority of the existing trees and canopy would remain, a total of 6 existing trees would require removal. The drawing shows the proposed landscaping works including deciduous trees and shrubs. A total of 28 replacement trees are proposed in this section.

Slide 21: West Canal Retrofits – Design Features and Benefits

There are several benefits of the West Canal retrofit.

- This is the next location downstream of Shallow Creek and upstream of Mohawk Lake and offers the greatest overall benefit after Shallow Creek
- It proposes similar aesthetics to existing conditions
- With enhanced landscaping
- It includes a recommendation for the restoration of the Towpath which is part of cultural heritage system
- It provides the City with maintenance access via Greenwich Street for future clean-out to minimize disturbances
- And it also provides maintenance access via Riddolls Avenue for future clean-out and to maintain existing trail crossing

Slide 22: Immediate Next Steps and Schedule

This virtual presentation is an important step in the City's process. Hearing from you to finalize the design is important. The City is seeking feedback within two weeks of the posting of the presentation and on the next slide we will share how to provide this feedback.

After receiving the feedback and updating the design, the City plans to submit the final Design and permitting for approvals in Quarter 3 of 2022. The budget review and confirmation of preferred project to advance to construction is anticipated for Quarter 3 of 2022.

If approvals are received as anticipated, the City expects to issue the project for construction tender and construction startup in Quarter 4 of 2022 or Quarter 1 of 2023. However, timing may be affected by permitting restrictions on creek works.

Slide 23: Have questions or want more information?

If you would like to share any feedback, please use the comment form available on the Project webpage. Alternatively, you can send your comments to City's Project Manager Nahed Ghbn via email at nghbn@brantford.ca or telephone at 519-759-4150 extension 5262. The City's Engineering Consultant for this project is Wood Environment & Infrastructure Solutions, the Consultant's Contact is Matt Senior who can be reached by telephone at 905-335-2353 or via email at matt.senior@woodplc.com.

Thank you for your participation.

Slide 24: Thank you

This concludes our presentation. We would like to thank you for viewing this presentation.