

Item: 2



## VMC Sub-committee Report

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**DATE:** Tuesday, February 13, 2018

**WARD(S):** 4

**TITLE:** VMC BLACK CREEK RENEWAL PROJECT  
CLASS ENVIRONMENTAL ASSESSMENT STUDY UPDATE

**FROM:**

Jason Schmidt-Shoukri, Deputy City Manager, Planning and Growth Management

**ACTION:** FOR INFORMATION

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### **Purpose**

To provide an update and highlight the conclusions and recommendations of the Vaughan Metropolitan Centre (VMC) Black Creek Renewal Class Environmental Assessment (EA) study.

### **Recommendations**

1. THAT this report be received for information purposes.

### **Report Highlights**

- The Black Creek Class Environmental Assessment (Class EA) Study is now essentially completed and staff anticipate issuing the Notice of Study Completion in March 2018 in accordance with the Municipal Class EA process
- Substantial stakeholder engagement took place in conjunction with the Class EA including a VMC stakeholder facilitated process which resulted in the development of a preferred channel alignment concept
- Black Creek Financial Strategy established the framework for funding the renewal works
- An alternative storm water management strategy for the south-east quadrant of the VMC is also being developed through the Class EA study

## **Background**

The flooding in the Black Creek sub-watershed during the August 19, 2005 storm event illustrated the need to implement cost-effective retrofit and stream rehabilitation projects to improve conveyance capacity in the Black Creek and highlighted the fact that significant infrastructure will be required to accommodate future development and achieve the vision outlined for the downtown. With significant development and redevelopment proposed in the VMC, a more specific assessment of water management needs and opportunities was required to reduce the future impact on infrastructure and property.

In early 2012, the City completed the Black Creek Optimization Study which identified the need to improve the existing stream channel conditions to achieve appropriate flood control and conveyance capacity within the VMC Secondary Plan area which, in turn, would accommodate future development.

### **The Black Creek Renewal Class EA was initiated in 2012**

Subsequently, in July 2012, the City initiated the VMC Black Creek Renewal Class EA Study, which built on the findings and recommendations of the Optimization Study. Based on issues raised by the majority of stakeholders directly impacted, it became clear that an expanded/enhanced consultation process was necessary to develop a plan for the Black Creek which would be supportable by the majority of the stakeholders and meet the objectives of the City.

### **A facilitated stakeholder engagement process was undertaken in 2013/14**

In June 2013, the City expanded the Class EA study consulting team to include a multidisciplinary design facilitation team led by Swerhun Inc. in collaboration with Real Estate Search Corporation (RESC), The Municipal Infrastructure Group (TMIG), Schollen and Company, and Public Work. Over the following year, this facilitation team held a number of meetings and design workshops to engage with key stakeholders to understand their perspectives and priorities regarding the project and to ultimately propose a path forward for the Black Creek design vision and channel alignment that would be supported by the majority of stakeholders. These stakeholders included City of Vaughan staff, the Toronto and Region Conservation Authority ("TRCA"), York Region, the Province of Ontario and community interest groups such as Sustainable Vaughan and local landowners.

The facilitation process concluded in May 2014 and resulted in a land use framework and urban design vision that would be utilized to develop alternative alignments for the Black Creek Renewal.

## **A comprehensive financial strategy with multiple funding sources was established for the Black Creek Renewal project in 2016**

A result of the facilitation process was the undertaking of the Black Creek Financial Strategy and Development Charge Background Study which was carried out to establish the framework for funding the potential realignment and renewal of Black Creek Channel including the Edgeley Pond retrofit. Preliminary work on the new financial strategy and framework was commenced by staff in 2014 and late in the year it was decided that the City should retain consultants to provide an Area Specific Development Charge (ASDC) Background Study and related financial strategy. Staff retained engineering (Fabian Papa and Partners) and finance (Hemson Consulting Ltd.) consultants to assist in developing the Strategy. The Black Creek Financial Strategy concluded in May 2016 and presented equitable cost allocation, sound methodology and put in place a financial plan for the long-term development of the Black Creek storm water infrastructure which included the enactment of an ASDC By-law. The financial strategy was approved by Vaughan Council in June 2016.

With a land use framework and financial strategy in place, the remaining steps of the Black Creek EA study were completed in 2017 which included public and stakeholder consultation in May and the analysis and evaluation of the alternative designs for the potential alignment configurations for the Black Creek Renewal.

## **Previous Reports/Authority**

[Black Creek Storm Water Optimization Study Master Plan Class Environmental Assessment \(EA\)](#)

[Allocation of Funding Sources Report and Development Charge Background Study - Black Creek Financial Strategy](#) – May 2016 (PDF)

## **Analysis and Options**

### **Improving the existing condition of the Black Creek channel within the VMC Secondary Plan area is key to advancing development**

Through the VMC Secondary Plan, the Black Creek corridor is positioned as a signature feature that will create identity for the new downtown, attract investment along its frontage, support urban growth, and add value as the prominent open space amenity and natural heritage feature for the VMC community. The renewal of the Black Creek corridor will serve as a defining place maker in the VMC as both a destination and prominent piece of ecological infrastructure. The long-term vision of this feature was significant in establishing the land use framework for the Secondary Plan, and will serve as a key catalyst to attract urban intensification, investment and animation in the downtown.

The urban design vision for the corridor developed through the facilitation process manages watershed and storm water needs while providing a diverse range of edge conditions, recreational opportunities, programs, and urban experiences, and integration of parks and open spaces. The natural character and ecological landscape of the corridor is amplified on the west side, while the east side delivers a unique public urban amenity and distinct address for development.

### **The Class EA identified a preferred channel realignment concept**

With the preferred concept established through the facilitation process, the Black Creek Renewal Class EA focused on potential alignment configurations for the Black Creek. It considered the road networks, land use designations, population projections established through the VMC Secondary Plan process, and the requirement to mitigate the current flooding and erosion problems in Black Creek while introducing potential enhancements to the natural heritage system and public realm associated with the Black Creek corridor.

Four (4) alternative designs were comparatively and qualifiedly evaluated based on set criteria resulting in the selection of a preferred alignment. Alternative #4 (Meander North of Peelar Road) was selected as the preferred alignment due to a number of advantages compared to the other alternatives.

The details of the Class EA study are incorporated into the final draft Environmental Study Report (ESR) which was prepared in December 2017 with input and review from external agencies. A copy of the draft Executive Summary of the Class EA is included as Attachment 1 to this report.

### **The design of the Black Creek corridor immediately south of Hwy 7 requires further review**

The design of the Black Creek corridor immediately south of the Hwy. 7 presents some technical challenges that still need further review before finalizing the Class EA. These challenges include the need to integrate an appropriate transition between the existing and future culverts across Highway 7 and the proposed Black Creek channel; the need to provide an access crossing to Jane Street; and the integration of an appropriate urban square at the south-east corner of Jane Street and Highway 7. A number of focused meetings have taken place with the adjacent landowner, TRCA and City staff to address the design of this area but further review is required before the City is satisfied moving forward to finalize the Class EA.

### **An alternative storm water management strategy was developed through the Class EA for the southeast quadrant of the VMC**

The VMC Master Servicing EA identified the need for a new storm water facility to service the southeast quadrant of the VMC, presently sited south of Peelar Road, east

of the Black Creek. The need for and placement of the facility have been challenged through both the VMC Secondary Plan appeals process as well as the VMC Master Servicing Class EA. As a result, an alternative storm water management (SWM) strategy was developed to manage storm water within the VMC southeast quadrant without the need for a SWM facility in the future.

Alternative opportunities to incorporate SWM control features in an underground storage system within the buffer area of the channel corridor, including integration of these features with the 'Blue' streets contemplated by the VMC Streetscape and Open Space Plan, were previously identified in conjunction with the Black Creek Renewal facilitation process. As outlined in the Streetscape and Open Space Plan, 'Blue' streets are public streets extending laterally outwards from Black Creek where Low Impact Development (LID) measures can be implemented to improve storm water quality and incrementally reduce storm water quantity with maximum benefit. These special streets are envisioned to treat water as both a resource and as a design feature.

Landowners within the south-east quadrant have also indicated an ability and willingness to achieve higher levels of SWM control measures through on-site practices than presently required.

As part of the Class EA study, this alternative SWM strategy was developed for the VMC southeast quadrant to address concerns of the feasibility of SWM facility that was recommended in the VMC Servicing Master Plan. Some of the benefits associated with this alternative strategy include reduced peak flows which reduces flooding potential on adjacent properties as well as improvements to overall water quality released into the creek. As well, without a SWM facility and the associated land requirements for construction, SWM controls can be implemented earlier in the VMC southeast quadrant as development proceeds on a site by site basis.

Staff recognize the need for additional discussions with TRCA and the City's Public Works Department to further refine the SWM strategy before the final solution is determined, which may include one option or a hybrid of both options.

### **The next steps in finalizing the VMC Black Creek Renewal Class EA process**

The Class EA is essentially complete and has been circulated to the technical agencies for review and comment. The next steps in the Class EA study are as follows:

- Finalize the report based on comments from reviewers, regulatory agencies, and stakeholders;
- Address the outstanding design details at the south-east corner of Jane Street and Highway 7 and refine the storm water management strategy for the south-east quadrant in the VMC; and

- Issue a Notice of Study Completion and place the Class EA for the minimum 30-day public review period. During this period, the public may further review and submit comments and/or concerns to the City and the Ministry of Environment and Climate Change (MOECC). Staff will address these comments and should any member of the public not be satisfied with the responses; a Part II Order request may be submitted directly to the Minister of the Environment thereby initiating an independent Ministry review process.

Following the filing of the Notice of Completion of the Class EA study expected by end of Q1-2018, the next step will be to prioritize the detailed design and construction of the various segments of the Black Creek Renewal Class EA with consideration for the timing of development.

### **Financial Impact**

The Black Creek Financial Strategy and Development Charge Background Study, which was approved by Council in June 2016, established the frameworks for funding the realignment and renewal of Black Creek channel.

### **Broader Regional Impacts/Considerations**

Regional staff were involved throughout the duration of the Study and are supportive of the Study findings and recommendations. Regional comments were received on the draft Environmental Study Report and were addressed prior to finalizing the Environmental Study Report.

### **Conclusion**

The VMC Black Creek Renewal Class EA Study has been essentially completed and has confirmed that there is an opportunity to implement effective flood controls works, enhance the natural heritage system and enhance the public realm through the reconstruction and renewal of the Black Creek valley corridor between Highway 7 and Highway 407.

The draft study has been submitted to the technical agencies for their final review and comments. Staff will continue to work with all its partners to complete the review process as promptly as possible. Staff will also continue to work with the TRCA and adjacent landowners to refine the design of the Black Creek corridor at the south-east corner of Jane Street and Highway 7, and confirm the SWM strategy for the south-east quadrant of the VMC before finalizing the Class EA study.

Upon completion of the review process and resolution of the remaining design issues, the Environmental Study Report be finalized and associated Notice of Completion be issued. Issuing the Notice of Completion will place the Environmental Study Report on public record for the minimum 30-day review period in accordance with the Municipal Class Environmental Assessment process.

The City may proceed with the detailed design and construction works after the Class EA study has received final approval.

**For more information**, please contact: Andrew Pearce, Director, Development Engineering, ext. 8255

**Attachment**

1. Draft Executive Summary – Black Creek Renewal Project, Class Environmental Assessment

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VAUGHAN METROPOLITAN CENTRE  
BLACK CREEK RENEWAL CLASS EA

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## ENVIRONMENTAL STUDY REPORT

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DRAFT REPORT ▪ NOVEMBER 2017

REPORT PREPARED FOR



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# EXECUTIVE SUMMARY

## Introduction

The Municipal Infrastructure Group Limited (TMIG), along with team members Palmer Environmental Consulting Group Limited (PECG) and Archeoworks Inc., were retained by the City of Vaughan (the City) to complete the Vaughan Metropolitan Centre (VMC) – Black Creek Renewal Class Environmental Assessment (Black Creek Renewal EA or EA). The EA builds upon the Black Creek Storm Water Optimization Study Master Plan Class Environmental Assessment (BCSWOS) (AECOM, 2012) that was completed by the City.

The BCSWOS identified a range of alternative solutions to reduce flooding and flood damages, improve water quality and limit stream bank erosion in Black Creek within the City. The preferred solution to address flooding was determined to be the reconstruction and renewal of Black Creek between the Edgeley Pond (north of Highway 7) and Highway 407 (referred to herein as the 'Black Creek Renewal' or 'new channel corridor').

The EA's purpose is to develop and evaluate potential channel alignments and physical forms for the Black Creek Renewal between Highway 7 and Highway 407. It considers the requirement to mitigate the current flooding and erosion problems in Black Creek as well as potential enhancements to the natural heritage system and public realm associated with the Black Creek corridor. The EA was carried out as a Schedule C project.

The study area is primarily located east of Jane Street, from Highway 7 to Highway 407 as highlighted in **Figure 1-1**. The existing urban context may be generally characterized as discontinuous development with a mix of built form and vacant lots. The majority of Black Creek through the study area has been realigned and confined to a relatively narrow corridor and does not have adequate capacity to convey storm runoff from large storm events. Multiple driveway and road crossings currently exist along this reach of the creek that also contribute to the flooding issues.

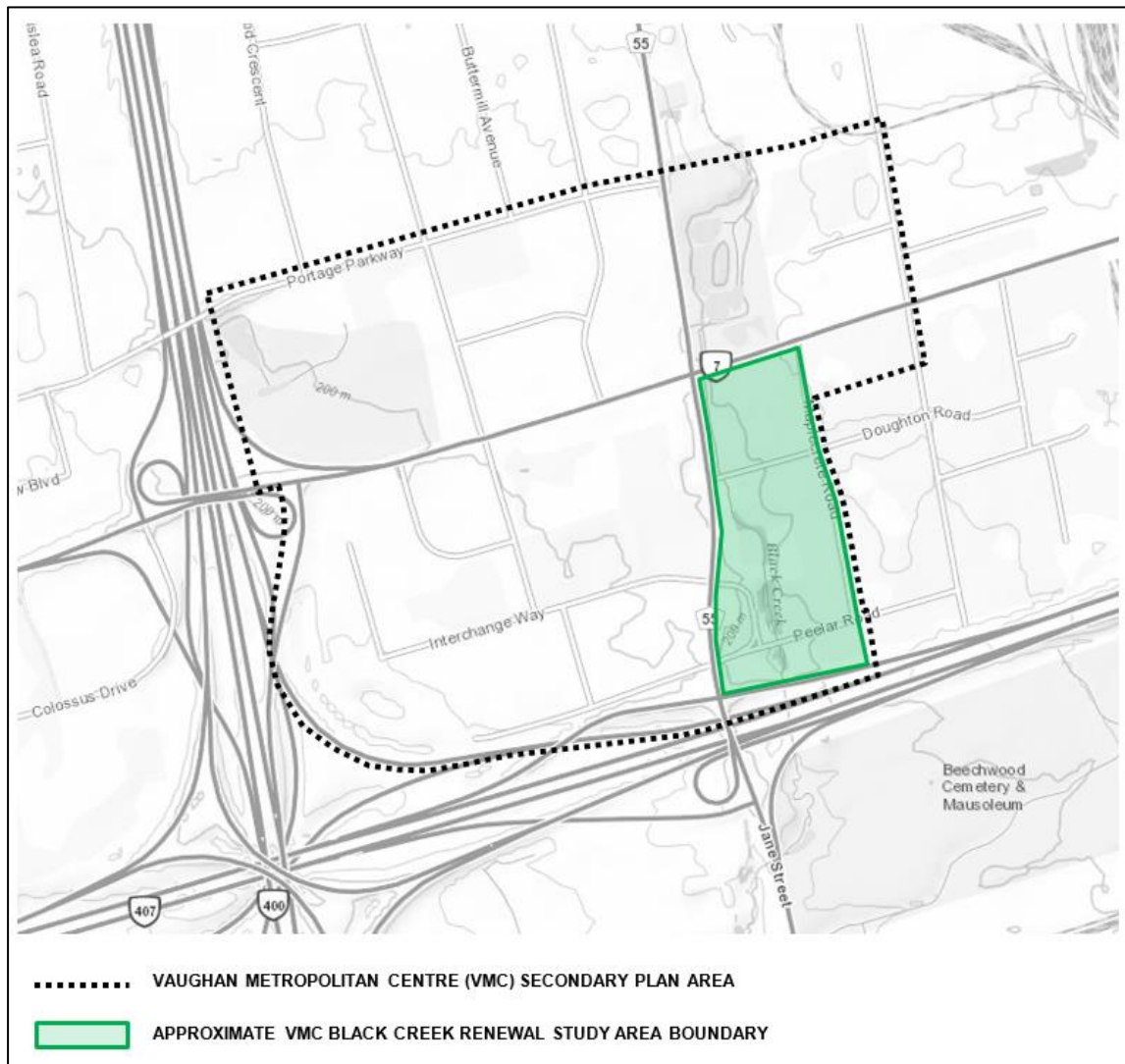
## Problem and Opportunity Statement

The problem/opportunity statement was originally defined in the Black Creek Storm Water Optimization Study Master Plan Class Environmental Assessment (BCSWOS), and is repeated below:

*An opportunity exists to develop a comprehensive strategy that will establish measures to improve the water quality within Black Creek, as well as appropriate flood control and erosion protection works for the existing properties and future/planned development within the Subwatershed. Further, there is also an opportunity to protect and enhance the natural habitat along Black Creek. In order to prepare and implement a comprehensive strategy, a subwatershed-based approach is most appropriate to ensure that the full range of concerns, objectives and potential solutions are recognized and reconciled.*

The VMC Black Creek Renewal Class EA study has confirmed that there is an opportunity to implement effective flood controls works, enhance the natural heritage system and enhance the public realm through the reconstruction and renewal of the Black Creek valley corridor between Highway 7 and Highway 407.

**Figure ES-1 VMC Black Creek Renewal EA Study Area**



## Public Consultation

A Notice of Study Commencement was prepared and circulated on July 5, 2012. A Project Status Update was circulated on January 16, 2017 to the stakeholders identified during the Notice of Study Commencement, which included regulatory agencies, Aboriginal Communities, utilities, and local business and property owners. The notice was sent after a period of consultation and facilitation from 2013 to 2016 that was undertaken to resolve a number of land use planning issues affecting the study area. The outcome of the consultation and facilitation process was a land use framework to develop alternative alignments for the Black Creek Renewal. As part of the process, preliminary hydraulic analyses were completed to establish key design elements such as the required channel size and general configuration of the channel embankments and buffer areas, which were carried forward into the Black Creek Renewal EA.

The Public Information Centre (PIC) was held on May 10, 2017. The purpose of the PIC was to present the alternative designs, the evaluation methodology and the preferred design. During the PIC, members of the public and agency representatives were invited to provide comments for consideration in the EA, which were documented and followed up with a response. A Notice of Study Completion was issued on \*date\*.

## Alternative Designs

The alternatives for this EA focused on the potential alignment configurations for the Black Creek Renewal. The following outlines the alternative alignments, where Alternative #2 to #4 are presented in **Figures ES-2 to ES-4**, respectively.

- Alternative #1 – Do Nothing
- Alternative #2 – New Valley over Existing Alignment

This alignment alternative generally follows the alignment of the existing creek valley, which runs adjacent to Jane Street from Highway 7 to Doughton Road and meanders east before the future Interchange Way crossing and continues straight in a southerly direction to the existing Highway 407 culvert.

- Alternative #3 – Jane Street Alignment

This alignment alternative will be adjacent to Jane Street for most of the new channel corridor and meander sharply east on the downstream side of Peelar Road to meet the existing Highway 407 culvert.

- Alternative #4 – Meander North of Peelar Road

This alternative alignment follows the valley alignment from Alternatives #2 and #3 for the upstream section up to Doughton Road, but features a meander east between future Interchange Way and Peelar Road before continuing to Highway 407.

**Figure ES-2 Alternative #2 – New Valley over Existing Alignment**

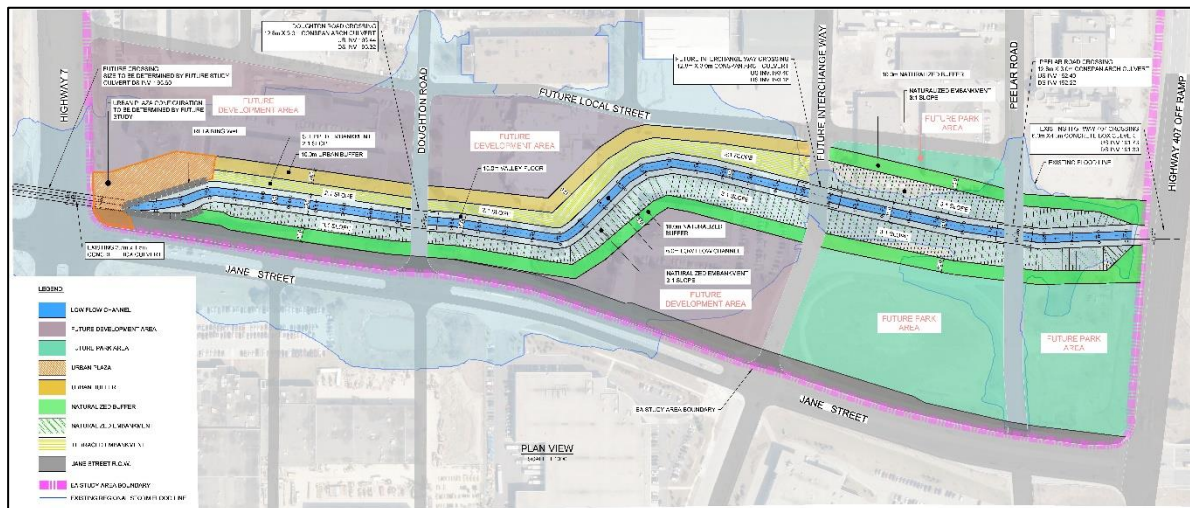




Figure ES-3 Alternative #3 – Jane Street Alignment

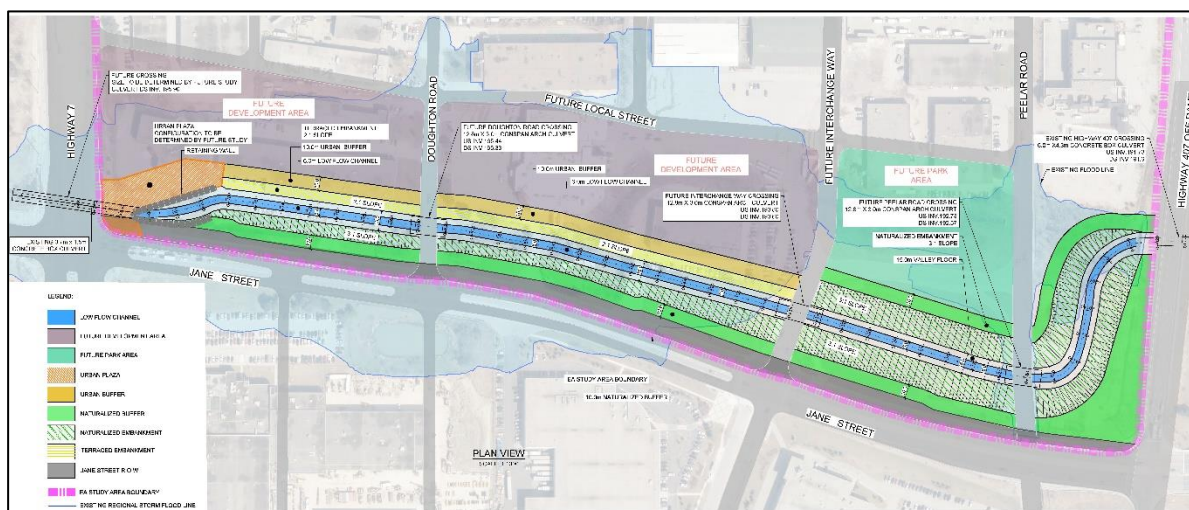
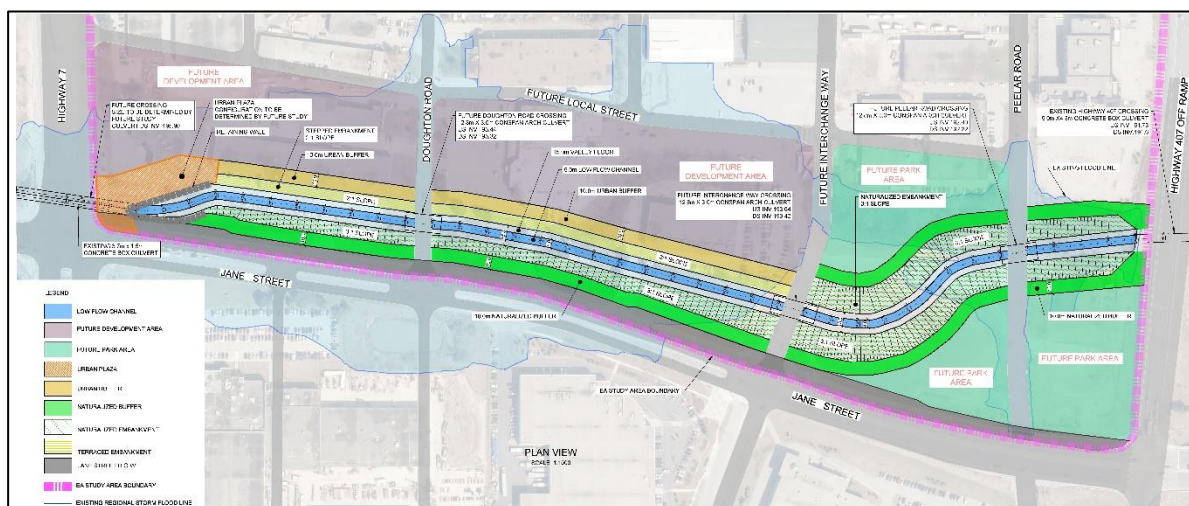


Figure ES-4 Alternative #4 – Meander North of Peelar Road



## Preferred Alternative Design

The alternative designs were comparatively and qualitatively evaluated based on criteria developed within five main categories (technical, natural environment, social, cultural, and financial considerations), which represent the broad definition of the environment in the EA Act. Alternative #4 (Meander North of Peelar Road) was selected as the preferred alignment due to a number of advantages compared to the other alternatives. A summary of the key impacts and benefits of Alternative #4 is provided below:

- **Technical Environment** – Alternative #4 will be able to convey the Regional Storm Event peak flow rate within the valley to provide flood protection for the area to satisfy the key objective of the Black Creek Renewal. Some construction challenges are expected because sections of the new channel corridor are located away from the existing alignment and will require long tie-in sections if constructed separately from other sections. Conversely, the lower reach of the new channel corridor is located on public lands, which will allow a large portion of the channel to be constructed without private land development, disturbing existing buildings, and in the dry outside of the existing watercourse. Some utilities are potentially in conflict with the new channel corridor and will require relocation, including the

- hydro pole corridor, natural gas line (NPS 12) and 300 mm watermain; however, the 900 mm sanitary trunk sewer appears to be avoided.
- **Natural Environment** – This alternative is expected to improve fish habitat and aquatic ecosystems by removing physical barriers to connectivity, improving substrate quality, and providing a wider, continuous low flow channel. The terrestrial ecosystem will also benefit by having an overall wider and longer valley corridor that is better vegetated compared to existing conditions. There will be a temporary disturbance of the existing aquatic and terrestrial habitat system during the construction; however, the study area does not contain any significant natural and environmentally sensitive areas and appropriate mitigation measures will be implemented.
  - **Social / Cultural Environment** – There are no expected impacts to the cultural heritage with the new channel corridor; however, a Stage 2 Archaeological Assessment (AA) has been recommended for these lands prior to the construction. The land acquisition requirement for this alternative is the lowest amongst the alternatives. In addition, future development blocks adjacent to the new channel in this alternative will be more contiguous with the neighbourhood and aligned with policies in the VMC Secondary Plan.
  - **Financial Environment** – The capital costs associated with Alternative #4 are estimated to be within the costs for a new channel corridor that was outlined in the Black Creek Financial Strategy completed in 2016. Some maintenance costs will be incurred for the new channel corridor, but is roughly equal to the other alternatives. Finally, there will be no damage costs to adjacent properties and businesses for up to the Regional Storm Event.

A preliminary design was prepared for the proposed Black Creek Renewal based on the preferred alternative design (Meander North of Peelar Road), which refined the design based on surrounding grading constraints. Plan and profile views of the channel with preliminary proposed grading is found on **Drawing Nos. CH01 through CH05** and sections views are found on **Drawing Nos. CH05 through CH07**.

Conceptual construction staging was also considered for the Black Creek Renewal. Staging scenarios were developed with an aim to construct the new channel corridor in individual sections on both private and public land, concurrent with the re-development of individual parcels of land adjacent to Black Creek. This will allow for maximum flexibility and benefit to reduce flooding because sections of the new channel corridor can be constructed as soon as adjacent properties are ready for redevelopment. In general, the new channel corridor construction was divided into four major sections, each of which can be constructed individually and integrated together as other sections are completed. From downstream to upstream, the sections are (1) Highway 407 to upstream of Peelar Road, (2) North of Peelar Road to immediately downstream of Doughton Road, (3) Doughton Road and 7683 to 7695 Jane Street, and (4) 7725 Jane Street to Highway 7. Preliminary construction phasing within each section was also discussed.

## Recommendations for Future Study

A number of studies are required for the detailed design of the Black Creek Renewal:

- Several utility conflicts were identified in this EA and a detailed utility investigation is necessary to determine which utilities need to be relocated and the options of relocation.
- A detailed topographic survey is required to support final grading design for the new channel corridor and identify existing features.
- A geotechnical investigation is required to determine subsurface soil conditions and groundwater levels.
- The archaeological assessments (AA) will continue to a Stage 2 AA, as recommended by the Stage 1 AA completed as part of this EA. If necessary, a Stage 3 AA will be completed.
- Landscape design will be completed for the park areas and other public amenities adjacent to the new channel corridor.

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## Construction Impacts and Mitigation

The construction of the new channel corridor will have an impact on the surrounding area including terrestrial features; breeding birds; local groundwater and surface water; soils; adjacent private and properties, air quality, noise and vibration; and traffic and transportation. Best management practices are required to mitigate these impacts and will be detailed specifically for the site in an Environmental Management Plan (EMP).

A number of permits and approvals are also required (in relation to construction impacts and mitigation, in many cases) with the Toronto and Region Conservation Authority, York Region, Ministry of the Environment and Climate Change, Ministry of Natural Resources and Forestry, Fisheries and Oceans Canada, and local utility owners.