CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF MAY 17, 2016

Item 1, Report No. 6, of the Finance, Administration and Audit Committee, which was adopted, as amended, by the Council of the City of Vaughan on May 17, 2016, as follows:

By receiving Communication C1 from Mr. Peter Cipriano, Goldpark Group, Silton Road, Woodbridge, on behalf of Midvale Estates Limited, dated May 6, 2016.

1 BLACK CREEK FINANCIAL STRATEGY AND DEVELOPMENT CHARGE BACKGROUND STUDY– PUBLIC STATUTORY MEETING
WARD 4

The Finance, Administration and Audit Committee recommends:

1) **That the recommendation contained in the following report of the Chief Financial Officer and City Treasurer; the Deputy City Manager, Planning and Growth Management, the Director of Financial Planning and Development Finance / Deputy City Treasurer and the Director of Development Engineering and Infrastructure Planning, dated May 2, 2016, be approved;**

2) **That the deputation of Mr. Kurt Franklin, Weston Consulting Group, Millway Avenue, Vaughan, be received; and**

3) **That the following Communications be received:**

   C1. Michael Reel and Christine Lundvall, on behalf of 2748355 Canada Inc., dated April 26, 2016;
   C2. Ms. Roslyn Houser, Goodmans LLP, Bay Street, Toronto, dated April 29, 2016; and
   C3. Mr. Marco Filice, Liberty Development Corporation, Steelcase Road West, Markham, dated April 29, 2016.

Recommendation

The Chief Financial Officer and City Treasurer; the Deputy City Manager, Planning and Growth Management, the Director of Financial Planning and Development Finance / Deputy City Treasurer and the Director of Development Engineering and Infrastructure Planning recommend:

1. That a report be brought to the May 30, 2016 Finance, Administration and Audit Committee, summarizing and addressing, as necessary, the deputations received at the May 2, 2016 Black Creek Area Specific Development Charge Public Statutory meeting.

Contribution to Sustainability

Green Directions Vaughan embraces a Sustainability First principle and states that sustainability means we make decisions and take actions that ensure a healthy environment, vibrant communities and economic vitality for current and future generations.

Objective 1.3: To support enhanced standards of stormwater management at the City and work with others to care for Vaughan's watersheds

Objective 2.2: To develop Vaughan as a City with maximum greenspace and an urban form that supports our expected population growth

Objective 3.1: To develop and sustain a network of sidewalks, paths and trails that supports all modes of non-vehicular transportation

…/2

Objective 6.1: To fully support the implementation of Green Directions at all levels of City operations.

Economic Impact

Although there is no direct financial impact as a result of this report, an outline of the full financial implications and related Edgeley Pond and Black Creek Works Area Specific Development Charge which are the subject of the Public Statutory Meeting can be found in the Finance, Administration and Audit Committee report titled "Black Creek Financial Strategy and Development Charge Background Study" dated April 4, 2016.

Communications Plan

Legislative Communication Requirements

The Development Charges Act has mandatory communication requirements that require the advertising of at least one public hearing and the Clerk is mandated to carry out such advertising at least 20 days in advance of the meeting date. The Public Statutory hearing was scheduled for May 2, 2016 and was advertised using a number of channels. This included advertising in the Vaughan Citizen and Vaughan Liberal on April 7, 2016.

Both advertising of the Public Meeting as well as pertinent information such as the draft Development Charge Background Study and By-law was also made available on March 31, 2016 on the City's website.

Subsequent to Council approval of the Development Charge Background Study and the Edgeley Pond and Black Creek Works ASDC by-law, appropriate notices will be provided by the Clerks Department as prescribed by the Development Charge Act.

Purpose

The purpose of this report is to facilitate and provide information pertinent to the Public Meeting regarding the Black Creek Financial Strategy and Development Charge Background Study and related Draft Edgeley Pond and Black Creek Works Area Specific Development Charge By-law.

Background - Analysis and Options

The Black Creek Financial Strategy and Development Charge Background Study was originally presented to Committee at the April 4, 2016 Finance, Administration and Audit Committee Meeting, Report #5 Item #1. For the full background on the financial strategy and related area specific development charge background study, please refer back to this report. The report is also available on the City's website, www.vaughan.ca/services/business/development_charges.

Relationship to Term of Council Service Excellence Strategy Map (2014-2018)

The Black Creek Financial Strategy and the Area-Specific Development Charge further the following Term of Council priorities: invest, renew and manage infrastructure and assets; attract investment and create jobs; facilitate the development of the VMC. It also connects directly to the Service Excellence Strategic Initiative of Financial Sustainability.

Regional Implications

The Region of York continues to be involved through the Black Creek Renewal Class EA project and Financial Strategy.

Conclusion

Completion of the Black Creek works is a vital step towards flood relief and the development of the VMC as Vaughan's new downtown. One component of the Strategy is the enactment of an ASDC By-law and therefore a statutory process must be followed. Staff will report back to the Finance, Administration and Audit Committee on May 30, 2016 after the public consultation and statutory meeting are complete in order to obtain approval for the ASDC By-law enactment.

Attachments

1. Allocation of Funding Sources Report and Development Charge Background Study Black Creek Financial Strategy
2. Draft Area Specific Development Charge By-law
3. Interim Black Creek Channel Solution
4. Ultimate Black Creek Channel Solution

Report prepared by:

Brianne Clace, Senior Financial Analyst, Development Finance
Jennifer Cappola-Logullo, VMC Project Manager, Development Eng. & Infrastructure Planning

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

GOLDPARK GROUP

C 1
Item # 1
Report No. 6 (FAA)
Council - May 17/16

April 28, 2016

City of Vaughan
2141 Major Mackenzie Drive
Vaughan, ON L6A 1T1

Attention: Mr. Jeffrey Abrams
City Clerk

RE: City of Vaughan Black Creek Area-Specific Development Charges By-law (the "By-law")

We are writing on behalf of **Midvale Estates Limited**, the owner of lands located at 2938 Highway #7, located at the Northeast corner of Jane & Hwy #7. These are all of the lands we own in the area subject to the By-law.

Based on the content and methodology of the published draft Area-Specific Development Charge Background Study in relation to the Black Creek infrastructure, we confirm that we have no objections to the passage of the proposed By-law.

Sincerely,

Midvale Estates Limited

Per: _____
Name: Peter Cipriano
Title: President

Per: _____
Name:
Title:

I/We have the authority to bind the corporation.

RECEIVED
MAY - 6 2016
CCO

55 Silton Road, Unit 2 • Woodbridge, Ontario L4L 7Z8 • Tel: 905-856-2400 • Fax: 905-850-1838

2748355 Canada Inc.

C 1
COMMUNICATION
FAA - May 2/16
ITEM - 1

April 26, 2016

City of Vaughan
2141 Major Mackenzie Drive
Vaughan, ON L6A 1T1

Attention: Mr. Jeffrey Abrams
City Clerk

RE: City of Vaughan Black Creek Area - Specific Development Charges By-law (the "By-law") - Finance, Administration & Audit Committee Meeting of May 2, 2016

We are writing on behalf of 2748355 Canada Inc., the registered owner of the lands in the area bound by Highway 400, Highway 407, Jane Street and Highway 7, which include the properties municipally known as 7540 Jane Street, 101 Exchange Avenue, and 30, 50, 55, 60, 70, 80, 90, 120 and 300 Interchange Way, City of Vaughan. These are all of the lands we own in the area subject to the By-law.

Based on the content and methodology of the published draft Area-Specific Development Charge Background Study in relation to the Black Creek infrastructure, we confirm that we have no objections to the passage of the proposed By-law.

Sincerely,

2748355 Canada Inc.

Per: _____
Name: Michael Reel
Title: Authorized Signing Officer

Per: _____
Name: Christine Lundvall
Title: Authorized Signing Officer

I/We have the authority to bind the corporation.

Subject: FW: Black Creek Financial Strategy Letter of Non-Objection - FA&A (May 2, 2016)
Attachments: [Untitled].pdf

From: Patrick Duffy [mailto:PDuffy@stikeman.com]
Sent: Wednesday, April 27, 2016 3:39 PM
To: Clerks@vaughan.ca
Cc: Reel, Mike (MReel@Bentallkennedy.com)
Subject: Black Creek Financial Strategy Letter of Non-Objection - FA&A (May 2, 2016)

Please see the attached letter being filed in relation to Black Creek Area-Specific Development Charge Background Study being considered by the Finance, Administration and Audit Committee meeting of May 2, 2016.

Patrick Duffy
Tel : (416) 869-5257
pduffy@stikeman.com

STIKEMAN ELLIOTT LLP Barristers & Solicitors
5300 Commerce Court West, 199 Bay Street, Toronto, ON, Canada M5L 1B9
www.stikeman.com

TORONTO MONTREAL OTTAWA CALGARY VANCOUVER NEW YORK LONDON SYDNEY

Goodmans LLP

Barristers & Solicitors

Bay Adelaide Centre
333 Bay Street, Suite 3400
Toronto, Ontario M5H 2S7

Telephone: 416.979.2211
Facsimile: 416.979.1234
goodmans.ca

Direct Line: 416.597.4119
rhouscr@goodmans.ca

April 29, 2016

Our File No.: 123453

C 2
COMMUNICATION
FAA - May 2/16
ITEM - 1

VIA EMAIL

City of Vaughan
2141 Major Mackenzie Drive
Vaughan, ON L6A 1T1

Attention: Mr. Jeffrey Abrams, City Clerk

Dear Mr. Abrams:

Re: Black Creek Financial Strategy and Development Charge Background Study
Public Meeting to be held by the Finance, Administration and Audit Committee on May 2, 2016

We are writing on behalf of our clients, SmartREIT and Penguin Investments Inc., which own and/or manage certain lands within the Vaughan Metropolitan Centre.

Based on the content and methodology of the published draft Area-Specific Development Charge Background Study in relation to the Black Creek and Edgeley Pond infrastructure, we confirm that our clients have no objections to the passage of the proposed By-law as currently drafted.

Yours truly,

Goodmans LLP

Roslyn Houser
RH/lr

cc. Michael Toshakovski
Paula Bustard
Sandra Kaiser
Ian Andres

6525330

LIBERTY development

C 3
COMMUNICATION
FAA - May 2/16
ITEM - 1

April 29, 2016

Jeffrey Abrams, City Clerk
City Hall, Level 100
2141 Major Mackenzie Drive
Vaughan, ON L6A 1T1

Dear Mr. Abrams:

Re: Item 1 – May 2, 2016 – Finance, Administration and Audit Committee
Black Creek Financial Strategy & Development Charge Background Study

We are the development managers for various land owners in the City of Vaughan and VMC area, including those listed on Schedule A hereto.

At this time, we have reviewed the proposed ASDC bylaw and do not have any material objections with how it is presented. However, we are writing this letter in an effort to preserve our ability to obtain and execute specific instructions for any individual owner we are working with. In accordance, we are filing this letter to:

a. Preserve our client's rights to appeal should an appeal instruction be executed; and;

b. Provide notice of our request to participate in any communication, meeting or discussion which may have the effect of changing the bylaw or Hemson report, as issued on March 8, 2016, including any meeting or communication with any entity purporting to suggest that they represent the 'industry', such as BILD, OHBA or any other land owner group with whom our name may or may not be affiliated.

Please do not hesitate to contact me should you have any questions or require any further information.

Sincerely,
LIBERTY DEVELOPMENT CORPORATION

Per: Marco Filice

MF/tw

4/2

Schedule A:

Land owner at
- 2951 Hwy. 7 W.
- 180 Maplecrete Road
- 190 Maplecrete Road.

2/2

LIBERTY development

LIBERTY *for all*

LIBERTY DEVELOPMENT CORPORATION
FACSIMILE TRANSMITTAL SHEET

To:	Jeffrey Abrams, City Clerk	From:	Marco Filice
Company:	City of Vaughan	Ext.	
Phone:		Pages:	3 (including cover)
Fax:	905-832-8535	Date:	April 29, 2016
Re:	Item 1 - May 2, 2016 - Finance & Administration and Audit Committee - Black Creek		

☐ URGENT ☐ For Review ☐ Please Comment ☐ Please Reply

Additional Information:

NOW AVAILABLE

Thornhill CityCentre

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ROYAL GARDENS RICHMOND HILL

TERRACE ON DANFORTH

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FINANCE, ADMINISTRATION AND AUDIT COMMITTEE **MAY 2, 2016**

BLACK CREEK FINANCIAL STRATEGY AND DEVELOPMENT CHARGE BACKGROUND STUDY– PUBLIC STATUTORY MEETING
WARD 4

Recommendation

The Chief Financial Officer and City Treasurer; the Deputy City Manager, Planning and Growth Management, the Director of Financial Planning and Development Finance / Deputy City Treasurer and the Director of Development Engineering and Infrastructure Planning recommend:

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4. Ultimate Black Creek Channel Solution

Report prepared by:

Brianne Clace, Senior Financial Analyst, Development Finance
Jennifer Cappola-Logullo, VMC Project Manager, Development Eng. & Infrastructure Planning

Respectfully submitted,

Laura Mirabella-Siddall
Chief Financial Officer and City Treasurer

John MacKenzie
Deputy City Manager, Planning & Growth Management

Lloyd Noronha
Director, Financial Planning and Development Finance / Deputy City Treasurer

Andrew Pearce
Director, Development Engineering & Infrastructure Planning

Allocation of Funding Sources Report
&
Development Charges Background Study

Black Creek Financial Strategy

Vaughan, Ontario

08 March 2016

fabian papa & partners
A Division of FP&P HydraTek Inc.

216 Chrislea Road, Suite 204, Vaughan, ON L4L 8S5
Tel: 905-264-2420 | www.fabianpapa.com

HEMSON Consulting Ltd.

30 St. Patrick Street, Suite 1000, Toronto, ON M5T 3A3
Tel: 416-593-5090 | www.hemson.com

Executive Summary

The Vaughan Metropolitan Centre (VMC) is an integral component of the City's long-term strategic plan, a provincially designated Urban Growth Centre, and is initially planned to consist of 12,000 residential units, home to 25,000 people, and accommodate 11,500 jobs of which 5,000 will be new office jobs. Integral to the development of the VMC are two important projects: (i) the channelization of Black Creek adjacent to Jane Street from Highway 7 to Highway 407; and (ii) improvements to the Edgeley Pond located at the northeast corner of Jane Street and Highway 7. These works are anticipated to cost in the order of $96.6 million, a massive undertaking by any measure, and for which the City is developing a comprehensive implementation plan and funding strategy. The purpose of this report is to support that work through the identification of appropriate funding sources, as well as to serve as the statutory background study in support of an Area-Specific Development Charges by-law(s). The costs requiring funding from City-wide development charges will be considered during Vaughan's next City-Wide development charges update.

The methodology applied in this report involved an assessment of the functional benefits served by each component of the above noted projects, and an assessment of beneficial interests associated with each of the functions. Following application of the methodology, the resultant allocations of capital costs and area-specific development charges are as summarized in the tables below. It is important to note that more than one charge may apply to a given land area. More complete descriptions and definitions of the funding sources, particularly as they relate to benefitting interest groups against which the area-specific development charges are assessed are provided in the main body of the report.

An asset management plan is presented which identifies an equivalent annual funding need in the order of $1.06 million to cover ongoing operation and maintenance costs as well as the building of reserves for future significant expenditures, such as major repairs, rehabilitation and/or replacement.

Capital Cost Summary by Funding Source

Description of Funding Source	Cost ($000)	%
Immediately Affected Landowners	$13,024.4	13.5%
Vaughan Metropolitan Centre Areas Draining to Edgeley Pond	$2,612.9	2.7%
Undeveloped Land in Black Creek Drainage Shed	$2,978.1	3.1%
City-Wide Development Charges – Engineering	$33,000.0	34.2%
City-Wide Development Charges – Parks and Open Space	$7,926.4	8.2%
Parks 10% Discount – Tax	$880.7	0.9%
Benefit to Existing Funding	$17,173.6	17.8%
Local Service	$17,070.9	17.7%
Other Governments (York Region, Conservation Authority)	$1,931.2	2.0%
Totals	**$96,598.3**	**100.0%**

Calculated Area-Specific Development Charges

Lands to which Area-Specific Development Charges Applicable (Maps provided in Appendix C)	**Cost ($000)**	**Area (net ha)**	**Unadjusted Charge ($/ha)**	**Adjusted Charge after Cash Flow ($/ha)**
Immediately Affected Landowners	$13,024.4	5.47	$2,381,929	$2,514,568
Vaughan Metropolitan Centre Draining to Edgeley Pond	$2,612.9	33.55	$77,890	$83,452
Undeveloped Lands in Black Creek Drainage Shed	$2,978.1	161.12	$18,484	$22,581
Totals	**$18,615.4**	or 19.3% of the total costs		

Contents

Introduction

Fabian Papa & Partners (fp&p) and Hemson Consulting Ltd. have been retained by the City of Vaughan to undertake a review of the Black Creek works in the vicinity of the Vaughan Metropolitan Centre (VMC) required to enable development in the floodplain and reduce flooding risk and establish a methodology for the allocation of the associated costs to relevant funding sources. The works involved have been identified by the following studies:

- Black Creek Stormwater Optimization Study Municipal Class Environmental Assessment Master Plan Report (Phases 1 & 2). (AECOM, 2011)
- Vaughan Metropolitan Centre Municipal Servicing Class Environmental Assessment Master Plan. (TMIG, 2012)
- Black Creek Stormwater Optimization Study Municipal Class Environmental Assessment Master Plan (Phases 3 &4). (TMIG, under preparation)
- Vaughan Metropolitan Centre – Black Creek Renewal Municipal Class Environmental Assessment. (TMIG, under preparation)

The VMC (see Figure 1) is an integral component of the City's long-term strategic plan. The provincially designated Urban Growth Centre (UGC) is initially planned to consist of 12,000 residential units, home to 25,000 people, and accommodate 11,500 jobs of which 5,000 will be new office jobs. The TTC subway and VIVA public transit stations will seamlessly connect the VMC with other Greater Toronto Area centres.

In addition to the development anticipated directly in and adjacent to the VMC, the new downtown will be a focal point in the City. The Centre will include prime retail, recreation, social, cultural and transportation infrastructure that can be utilized by all Vaughan residents. For the VMC vision to be met, significant infrastructure improvements in the area are required to service the anticipated growth.

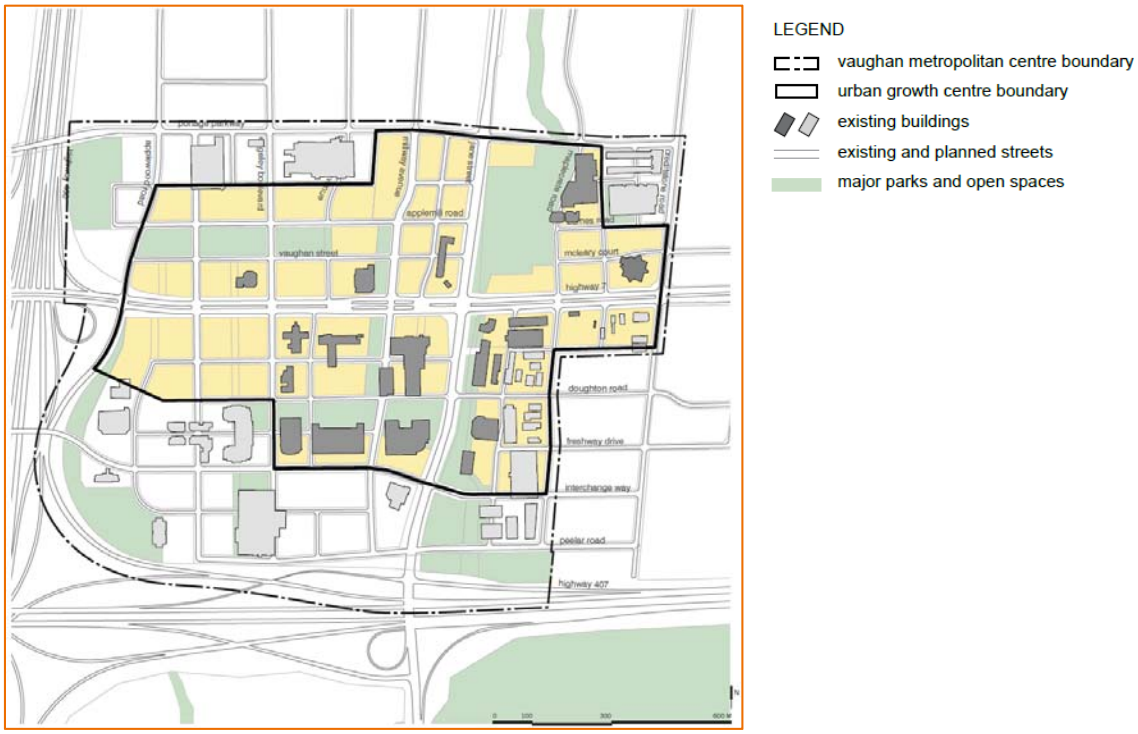

Figure 1 Vaughan Metropolitan Centre (VMC) (Urban Strategies, 2013)

There are two distinct elements of the planned works:

- The channelization of Black Creek along the east side of Jane Street from Highway 7 to the northerly limit of the Highway 407 corridor. Figure 2 identifies the area studied along with a general description of the planned works. Additional detail on specific project components is provided later in the report and the relevant cost estimate is provided in Appendix A.
- The upgrading of the existing stormwater management facility located at the northeast corner of Jane Street and Highway 7 to support development in the VMC and to improve the current function of the pond. The conceptual design of the SWM facility is provided in Figure 3. Additional detail on specific project components is provided later in the report and the relevant cost estimate is provided in Appendix B.

Figure 2 Preliminary Ultimate Channelization Concept (TMIG/Schollen & Company)

Figure 3 Preliminary SWM Pond Improvements Concept (TMIG/Schollen & Company)

Category A: Black Creek Channelization Works

The improvements to the stretch of Black Creek extending from Highway 7 to the Highway 407 corridor along the east side of Jane Street include a variety of elements and components that, in addition to the function of increasing hydraulic capacity and thereby containing the floodplain to within the limits of the channel, also provide benefits to individual landowners, future development within the tributary drainage shed as well as existing and future residents and employees of the City.

The subsequent sections discuss the benefitting interest groups and the allocation of costs among them associated with each of these benefits in mind.

BENEFICIAL INTERESTS

Each of the project components will serve one or more functional benefits which need to be treated differently in terms of beneficial interests and, in turn, funding sources. As an example, a bridge structure for a new road connection may serve a transportation function in addition to improving the hydraulic capacity of the creek at the road crossing. The approach is to firstly identify the various functional benefits to be considered, and secondly to ascribe the degree to which each component contributes to providing each of the functional benefits.

The following functional benefits have been identified as relevant for this analysis, each of which is described in detail below:

- Improvement of hydraulic capacity of Black Creek waterway (flood control);
- Transportation; and
- Open Space Network.

Improvement of Hydraulic Capacity (Flood Control)

The predominant stormwater management objective being served by the infrastructure proposed as part of the Black Creek Renewal, particularly extending from Highway 7 to Highway 407, is flood containment through a high capacity naturalized channel. These works are expected to remove a significant amount of lands, both privately and publicly owned, from the existing floodplain allowing future development to proceed.

Black Creek Drainage Shed

The drainage shed associated with this stretch of Black Creek is identified in Figure 4 and is largely developed, although it does contain several vacant developable parcels. Given the proximity of these lands to the City's new downtown core, it is reasonable to expect that some properties will undergo re-development in the foreseeable future, although this fraction is expected to be quite small.

This interest group benefits from these works since the improvements to the hydraulic capacity of Black Creek does result in a condition where there will be planned and available capacity in the infrastructure to receive flows from development lands without exacerbating the existing conditions known to have issues with respect to flooding. That is, without the improvements, the design criteria applied to new development would likely need to be more stringent than the "typical" criteria identified in previous work (AECOM, 2011) which itself is premised on the implementation of the improvements. More specifically, in the absence of the planned improvements, the on-site storage requirements for developments in this drainage shed would appropriately be increased above the City's current standard in order to not exacerbate the current flooding risk.

It is noted that, although flow rates may be controlled on-site, total volumes of runoff will increase and on-site controls, while useful to limit flows to the receiving sewer system, may in fact yield counter-productive results further downstream as the various attenuated (or "flattened") hydrographs are superimposed on each other. That is, this flattening of

hydrographs increases the likelihood of coincident peak flows at downstream locations. Accordingly, any additional development is expected to exacerbate the existing flooding risk, particularly near the intersection of Jane Street and Highway 7.

The planned improvements accordingly provide a benefit to future development in the drainage shed by virtue of reducing this risk and unlocking the potential for development. The Black Creek Stormwater Optimization Study (Phases 1 & 2), in consideration of these improvements, ensured that future development in this drainage shed would be able to proceed following typical development standards in relation to stormwater control. In the absence of these improvements, however, it would be expected that development would either be constrained or the on-site control requirements would be more stringent. This is in fact the approach that has been applied in several instances of development occurring within the known and problematic basement flooding areas of Toronto. Specifically, the unit rate of discharge from these sites is lowered from the typical standard.

Adopting a similar approach, a numerical investigation was undertaken to estimate the increased on-site storage requirements and costs based on a lower release rate than the City's currently applied 180 L/s/ha for developments of similar nature as would be expected in the Black Creek drainage shed (i.e., largely ICI). For purposes of this analysis, a reduction in release rate to 25 L/s/ha[1] is used which, for a sample 1 hectare site with 90% impervious cover, results in an estimated increased storage requirement on the order of 180 m^3.

It is reasonable to assume that the on-site storage design under typical conditions would have made use of some portion of the available rooftop and surface (e.g., parking lot, other) storage and, as such, any additional storage would be subsurface. At one extreme, certain sites such as those with a low ratio of rooftop area relative to site area will make complete use of these available capacities, thereby requiring that all additional storage be placed underground. At the other extreme, sites with large rooftop areas relative to lot size may have considerable surplus capacity available to accommodate the additional volume without the need for additional underground storage. For purposes of this analysis, it is assumed that 50% – representing a reasonable approximation of the overall average in terms of site characteristics – of the additional storage requirement will be implemented underground. For the sample 1 hectare site, this amounts to 90 m^3 (i.e., 180 m^3 × 50%).

Based on the foregoing, and assuming that HDPE arch chambers are employed to store this additional volume at a cost of $500/m3, the resultant avoided cost is estimated to be on the order of $45,000 (i.e., 90 m^3 × $500/m) for the sample 1 hectare site. Applying this unit rate to the total 161.12 ha of undeveloped lands in the Black Creek Drainage Shed results in a total estimated avoided cost of $7.25 million.

The total estimated cost for the Black Creek Channelization Work is $61.5 million and the proposed rate for cost apportionment in relation to the undeveloped lands in the Black Creek Drainage Shed is 11.25%, amounting to $6.9 million. This amount closely resembles, and is somewhat lower than, the estimated $7.25 million benefit calculated above and is thus deemed to be reasonable and appropriate.

Immediately Affected Landowners

The implementation of the proposed improvements will result in the removal of both non-developable public and developable (private and public) lands from the regulatory floodplain, the extent to which is illustrated in Figure 5. Accordingly, benefits will accrue to private landowners whose properties will be improved as a result of the work and, similarly, the publicly owned rights-of-way will become less susceptible to flooding, resulting in a benefit to the existing development in the City (addressed below). Furthermore, the planned works will serve to "unlock" these lands and thereby allowing the development of new uses to proceed.

[1] This value compares well with: (i) the TRCA unit rate approach which, for the 100-year storm in the Humber River Watershed, amounts to 23 L/s (Reference: Appendix A of "Stormwater Management Criteria – Version 1.0", prepared by TRCA, dated August 2012); and (ii) the estimated 100-year flow of 24.9 L/s at the intersection of Jane Street and Highway 7 (Reference: Table 3 of "Black Creek Stormwater Optimization Study – Municipal Class EA Master Plan Report (Phases 1 & 2)", prepared by AECOM, dated February 2012).

As noted above, the allocation to lands in the Black Creek Drainage Shed is 11.25%. The remaining amount to be allocated is thus 88.75% for which it is instructive to consider the relative amount of land removed from the floodplain as a result of the planned improvement works. Based on the floodplain modelling and as illustrated in Figure 5, the following areas have been estimated:

- Privately & publicly owned developable lands: 5.47 ha
- Publicly owned non-developable lands: 4.40 ha
- Total lands removed from floodplain: 9.87 ha

Based on these areas, the fraction of developable lands removed from the floodplain amounts to 55.41% of the 88.75% to be allocated, this amounts to 49.20% of the total costs related to hydraulic improvements. The remaining 44.59% of the 88.75% allocation, being 39.55%, is attributable to public sector improvements and is the topic of the next section.

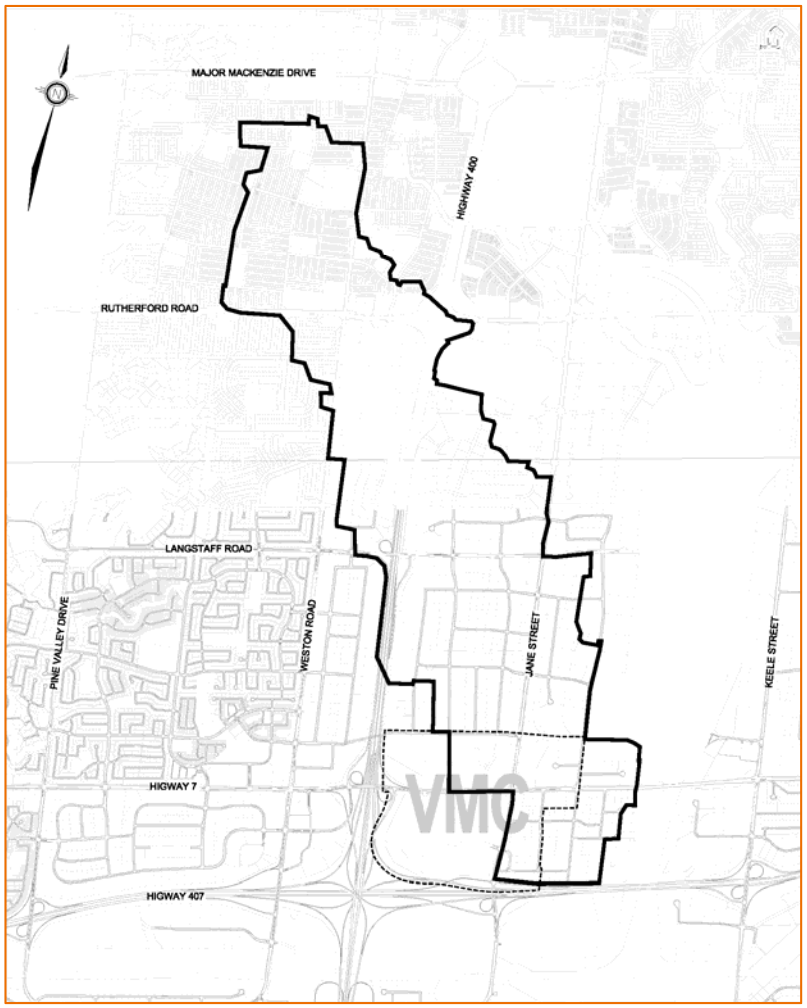

Figure 4
Black Creek Drainage Shed Tributary to Improvement Works

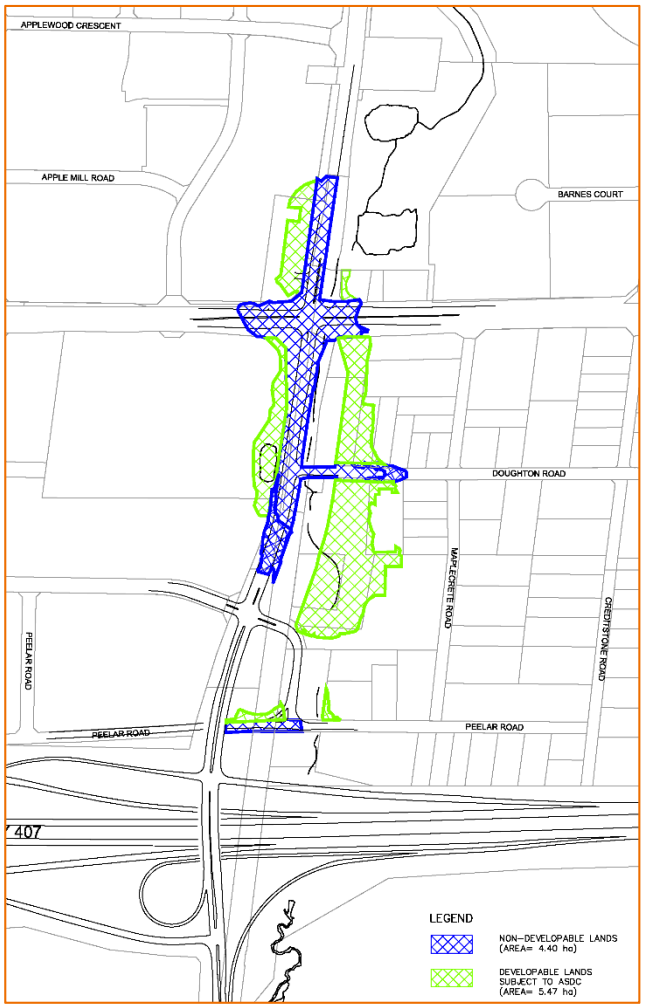

Figure 5
Reduction in Floodplain during Regional Storm with Proposed Improvements

City-Wide Future Development & Existing Development

Consistent with the approach utilized in the City's 2013 Development Charges By-law, certain works are deemed to provide benefits to the City as a whole level which can be funded through City-wide development charges. In this regard all transportation, streetscaping and related engineered services and open space network projects have been considered at the City-wide level.

The allocation of costs related to the benefit accruing to the City as a whole may be funded through City-wide Development Charges under the 2013 by-law or a subsequent development charges by-law. Funding under the 2013 by-law may require the substitution of non-Black Creek projects since $20 million was identified for City-wide Black Creek Works in the Development Charges Study which is lower than the presently identified City-wide funding requirement.

The allocation of costs relating to the benefit accruing to existing development (residents and employees) in the City are to be funded through the City's internal resources, such as general taxation, and utility rates and charges wherever applicable.

The distribution of the remaining 39.55% of benefits resulting from improvements in the hydraulic capacity of Black Creek between existing and future development can be apportioned based on existing and future population and employment, respectively. The 2011 Census population and employment total in Vaughan was 473,400 while the forecast future (2041) population and employment is 780,000 (Hemson estimate). Based on these figures, the existing population and employment represents 60.7% of the 2041 population and employment and new growth represents 39.3%. Applying these values to the remaining 39.55% of benefits noted above results in the following apportionment of costs related to the benefits accruing to these interest groups:

- New Development (to be recovered through City-wide Development Charges): 15.50%
- Existing Development (to be recovered through the City's internal resources): 24.05%

Summary

To the extent that any individual project components are deemed to provide a hydraulic benefit, the allocation of costs indicated in Table 1 is applied.

Table 1 Allocation of Costs Related to Hydraulic (Flood Control) Benefits

Benefitting Interest Group	Allocation
Black Creek Drainage Shed	11.25%
Immediately Affected Landowners	49.20%
City-wide Future Development	15.50%
Existing Development	24.05%
Total	100.00%

Transportation

While certain bridge structures are planned on existing roads to improve the hydraulic capacity of Black Creek, certain other bridge structures, both vehicular and pedestrian, are required as part of the planned development and in support of the population and employment growth of the Vaughan Metropolitan Center (VMC) and the City in general. Following the City's policy, all growth-related transportation infrastructure is deemed to be of benefit to the City as a whole and is funded through City-wide development charges.

Open Space Network

The planned improvements to Black Creek are also intended to create value in a social dimension by virtue of the planned open space network. Maintaining consistency with the City's current practice, all new open space network projects are

considered to benefit the City as whole and are funded 90% through City-wide development charges. Due to the statutory limitations of the *Development Charges Act*, 10% of the funding must come from non-development charges sources.

ALLOCATION OF FUNCTIONAL BENEFIT BY COMPONENT

This section provides a brief discussion of each of the components of the Black Creek renewal and allocates the degree to which each addresses one of the functional benefits of flood control (hydraulic capacity improvement), transportation and open space network. These allocations are combined with the benefitting interest allocations identified above in order to establish the extent to which each benefitting interest group may contribute to funding the works, the details of which are provided in a later section of this report.

Category A1: Channel Works

A1.1 Realignment, earthworks, restoration

This component predominantly provides a flood control benefit by increasing the hydraulic capacity of this stretch of Black Creek and, accordingly, the functional benefits are allocated in accordance with Table 1.

Category A2: Structures

A2.1 Interchange Way Crossing

This is an example of a crossing of the Black Creek which doesn't currently exist and is associated with the extension of a new road. Accordingly, this component's predominant function is that of transportation and its functional benefits are allocated accordingly.

A2.2 Doughton Road Crossing

The reconstruction of the Doughton Road crossing provides both a hydraulic benefit by improving conveyance capacity of the Black Creek, as well as a transportation benefit in relation to a future roadway connection extending to the west side of Jane Street. For purposes of this work, these functional benefits are allocated as follows:

- Flood Control: 50% which, in turn, is allocated in accordance with Table 1
- Transportation: 50%

A2.3 NE Corner Culvert – North of Highway 7

This component provides several functions in addition to the hydraulic benefit associated with flood control which can be accomplished using an open channel. Additional benefits accrue to the adjacent landowner who is able to utilize the land atop the channel enclosure. In recognition of the benefit to the City as a whole resulting from the enclosure and the increase of usable and accessible space, an allocation of the costs is assessed to the City-wide development charge related to engineering given the engineering function of the culvert. For purposes of this work, these benefits are allocated as follows:

- Flood Control: 40% which, in turn, is allocated in accordance with Table 1
- Local Service[2]: 25%
- City-wide DCs: 35% (engineering)

[2] Based on the methodology in the City's Streetscape Implementation Manual & Financial Strategy Plan. Additional discussion on Local Service Definitions is provided in a later section of this report (see page 28).

A2.4 Peelar Road Crossing

This component provides both a hydraulic benefit by improving conveyance capacity of the Black Creek, as well as a transportation benefit. For purposes of this work, these functional benefits are allocated the same as Doughton Road as follows:

- Flood Control: 50% which, in turn, is allocated in accordance with Table 1
- Transportation: 50%

A2.5 Mews

The Mews identified in the VMC Secondary Plan which crosses the Black Creek and connects Jane Street with the future road network east thereof. The VMC Secondary Plan speaks to the intended purpose and function of a mews to serve as a right-of-way for transportation and utilities, amongst other matters. It is noted that the transportation function may include either or both of routine and emergency/special operations. Given these functions, this component of the work is allocated as a transportation benefit.

A2.6 Retaining Walls

The predominant function of this component is that of improved hydraulic conveyance and its functional benefits are allocated in accordance with Table 1.

A2.7 Removal of Existing Driveway Culvert (Access to Arena) and Restoration

The existing driveway providing access to the Doublerink Arenas/Vaughan Iceplex facility includes a culvert through which the Black Creek flows and which also represents a restriction to flow. In order to improve the hydraulic capacity of the Black Creek, this driveway and culvert have been identified for removal and, therefore, this component predominantly provides a flood control benefit with the functional benefits allocated in accordance with Table 1.

A2.8 Temporary Access to 7581 Jane Street

During the construction of the works, the existing access to 7581 Jane Street will need to be removed and reinstated on a temporary basis. These works are predominantly required to improve the hydraulic conveyance function of Black Creek and its functional benefits are accordingly allocated in accordance with Table 1.

Category A3: Bank Treatments, Urban Design and Landscape

A3.1 Naturalized Western Edge plus Eastern Edge South of Peelar Road

Based on the City's interactions with TRCA this component was identified as construction of the hydraulic improvements along Black Creek is necessary to facilitate development in the VMC and, in order to balance the impacts associated with the work. While this treatment is required, in part to create the channel itself, thus providing a hydraulic function, it is also considered an enhancement that provides additional benefit to the public through its integration with pedestrian trails and similar functions. For purposes of this work, these functional benefits are allocated as follows:

- Flood Control: 85% which, in turn, is allocated in accordance with Table 1
- Parks and Open Space: 15%

A3.2 Terraced Steps

Similar to the above, the terraced steps along the channel provide both a hydraulic function and, by virtue of aesthetics and integration with the public realm, also provide non-engineering benefits. In addition, they also provide a local service benefit to adjacent landowners. For purposes of this work, these functional benefits are allocated as follows:

- Local Service[2]: 25%
- Flood Control & Parks: 75% general allocation which is allocated as follows:
  - Flood Control: 85% which, in turn, is allocated in accordance with Table 1
  - Parks and Open Space: 15%

A3.3 Urban Plazas – paving, furniture, lighting (Intersection of Jane and Highway 7)

The costs related to these works have been split across four categories. A 25% local service[3] share is identified based on the arterial road guidelines in the City's Streetscape Implementation Manual & Financial Strategy Plan. A 25% share has been assumed to be funded by the Region of York. For the remaining 50%, it is anticipated that this project will have equivalent parks and open space and streetscape components resulting in a 25% apportionment to City-wide parks and engineering development charges respectively. Since this is a new project no benefit to existing shares are identified.

A3.4 Urban Buffer – amenitized eastern edge, promenade paving, furniture, lighting

Following the methodology of the City's Streetscape Implementation Manual & Financial Strategy Plan which identifies a multi-pronged approach to funding this type of work, and given that these components (i.e., A3.3 & A3.4) are located at the intersection of two arterial roads, the local development contribution[3] is deemed to be 25%. The remainder of the costs associated with this work is allocated evenly to the City-wide Development Charges related to both Engineering and Parks and Open Space, as well as York Region since both Highway 7 and Jane Street are regional roads.

A3.5 Sustainable Transitional Feature NE Corner of Jane and Highway 7

This feature sits atop the proposed enclosure of the Black Creek identified in A2.3 and, similarly, provides a local service benefit[3] which is deemed to be 25% of the benefit. The remainder of the benefits are deemed to be equally divided among City-wide Development Charges related to both Engineering (based on technical function of wetlands) and Parks and Open Space (based on aesthetics and public enjoyment of space).

Land Acquisitions

The land acquisitions required to implement the above works are to be distributed to the benefitting interest groups so as to match the distribution to these groups following the above noted allocations. The underlying rationale is that the acquisitions are a necessary element to achieving all of the other benefits noted above.

It is noted that the land acquisitions contemplated herein are only for those parcels required to implement the "interim solution", while the remainder of lands necessary to complete the ultimate solution are expected to be conveyed to the City at the time of (re-)development of the properties to which this matter relates. Accordingly, lands to be conveyed through the (re-)development processes are attributed fully as a local service.

The City retained a third party appraisal firm to estimate the market values of the land required for the Black Creek Channel Revitalization Works for budgeting purposes. The estimated market value was based on existing and anticipated future land uses. The appraisal provided for a low, medium, median and high value per category and was not a property specific appraisal but rather for categories of land uses.

A blended land value per hectare was then established by taking 50% of the median value for each of the categories of land use which were identified in the future VMC Secondary Plan (Schedule F). The categories used were as follows:

[3] Additional discussion on Local Service Definitions is provided in a later section of this report (see page 28).

- Station Precinct
- Neighbourhood Precinct
- Major Park & Open Space
- Industrial

The established rates by category were then applied to the estimated number of hectares per category. The total value was then divided by the total estimated number of hectares required for the Black Creek Channel Revitalization Works to establish the blended rate. The resulting blended rate using this methodology is approximately $2.7 million per hectare.

This should not be considered to be the value of land for any specific parcel to be acquired. An independent property specific appraisal prepared by an accredited appraiser in good standing with the Appraisal Institute of Canada within 6 months of the acquisition is required. The land areas used are also estimates and require a reference plan to confirm actual land areas. Based on future acquisitions, the City reserves the right to reopen the ASDC By-law to review and adjust the land values as deemed necessary.

Category B: Edgeley Pond Improvements

The planned improvement and expansion works to the existing SWM facility located at the northeast corner of Jane Street and Highway 7 (Edgeley Pond) provide several functional benefits. In the absence of any development, there is a need to improve the existing pond's function and this project includes these previously identified retrofits that benefit the existing community. Beyond this, the planned facility also provides the opportunity to provide a functional benefit, particularly in terms of water quality control, for a portion of the lands within the VMC. Additional future (re-)development lands within the upstream drainage shed also benefit from the improved function of the facility. Given the strategic location of the facility and the future vision for the VMC, this project capitalizes on the opportunity to provide a meaningful enhancement to the space to be enjoyed by the public.

The subsequent sections discuss the benefitting interest groups and the allocation of costs among them associated with each of these benefits in mind.

BENEFICIAL INTERESTS

The beneficial interest groups discussed below have been identified as relevant for this analysis.

Lands in VMC Serviced by Pond

The Edgeley Pond will collect and process flows from approximately 33.55 ha of contributing drainage area within the Vaughan Metropolitan Centre (see Figure 6) for purposes of water quality control. Accordingly, there is a substantial benefit accruing to these landowners noting that, in the absence of this opportunity, additional developable tablelands would have been required to satisfy this water quality control objective given the size of the catchment area in question. Moreover, it is likely that two facilities would have been required given the physical division of the entire drainage area by Jane Street, thereby reducing efficiencies related to economies of scale.

To understand the value of this benefit, it is reasonable to assume that something in the order of 2 ha (±5 acres) might otherwise be required for this purpose, representing approximately 6.5% of the participating 33.55 ha drainage area (and 4.1% of the ±49 ha contributing drainage area) which is a typical, and perhaps modest, fraction of land required for such purposes. The benefits derived therefore include the value of this land, as well as any construction-related works that would otherwise be required to construct these facilities.

The City as a Whole

This facility is intended to provide an interesting and enjoyable public space and certain elements of the project contribute to this specifically.

Existing Development

In the absence of development in the VMC and the public realm elements noted above, it is recognized that the retrofit of this pond is desirable to improve its function as a stormwater management facility, improving downstream quality in addition to providing other related benefits. It is noted that the retrofit-only design of the pond does not provide a broader benefit (i.e., to development in the VMC as well as the City as a whole) as currently envisioned and, based on technical function alone, would be considerably less expensive.

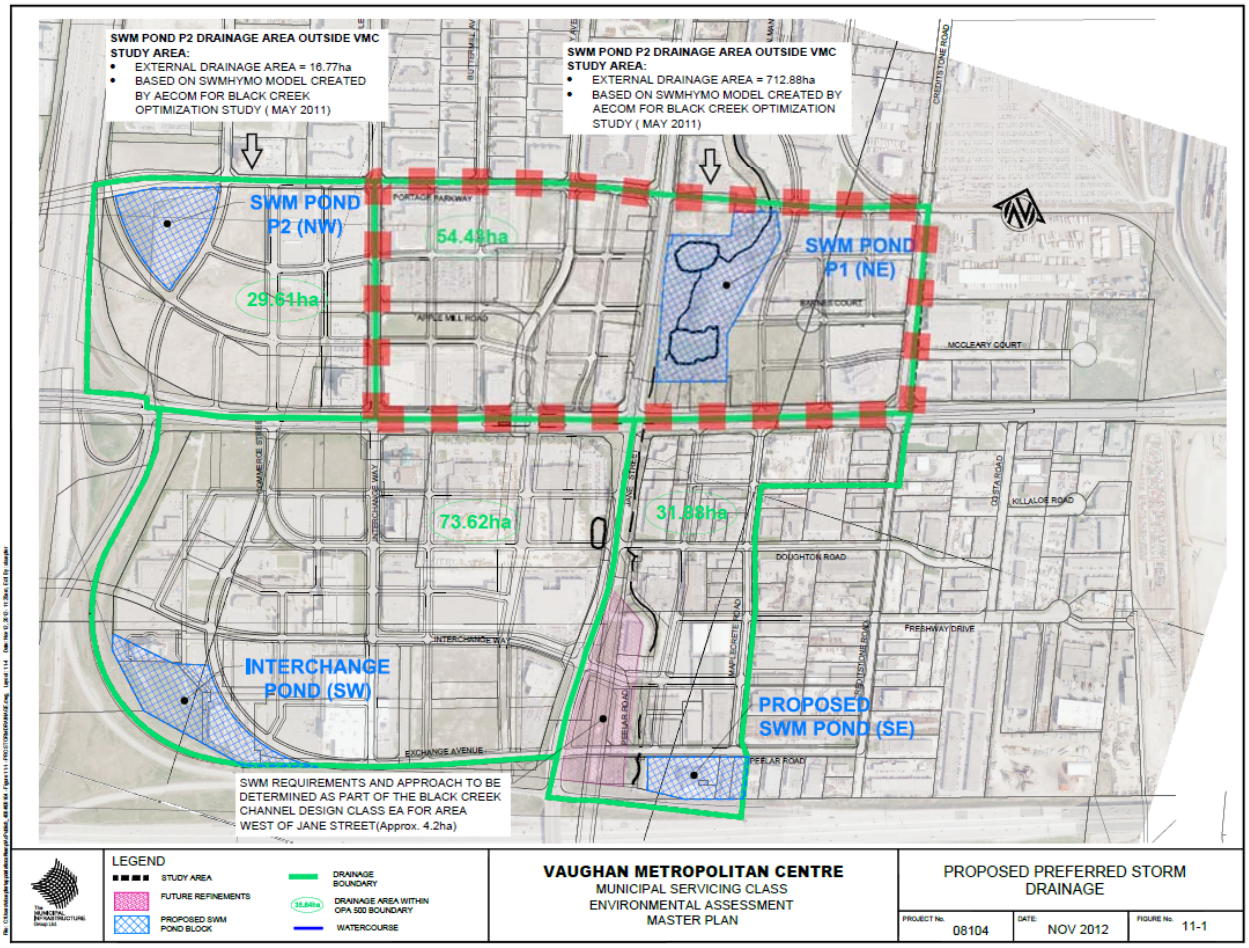

Figure 6 Areas in VMC Tributary to Edgeley Pond (SWM Pond P1 NE)
(annotated excerpt from VMC Municipal Servicing Class EA Master Plan prepared by TMIG, 2012)

Allocation of Benefit between VMC Lands Serviced by Pond and Existing Development

Wherever it is deemed that works provide benefit to both these interest groups, the allocation is weighted more heavily against existing development, in recognition of the need to retrofit this facility and the large upstream drainage area it handles. Simultaneously, the benefit afforded to private landowners by permitting the use of this facility and avoiding loss of developable lands is quite considerable. For the purposes of this work, the allocation of benefit to these interest groups is provided in Table 2.

Table 2 Allocation of Costs Related to Edgeley Pond Improvements

Benefitting Interest Group	Allocation
Lands in VMC Serviced by Pond	25%
Existing Development	75%

ALLOCATION OF FUNCTIONAL BENEFIT BY COMPONENT

Category B1: Base Design Components

B1.1 Earthworks, Erosion/Sediment Control, Site Preparation

B1.2 Natural Channel Realignment and Restoration

B1.3 Plant Material

These components of the work (i.e., B1.1 to B1.3) are required for the construction of the pond as a whole and, as such, the allocation of costs is in accordance with Table 2.

B1.4 Inlet and Outlet Control Structures – Main Pond

These structures are deemed to be for the sole benefit of the existing facility and are allocated entirely to the existing development.

B1.5 Structures Servicing VMC Lands

This category of costs includes those structures which convey and process stormwater drainage derived from that portion of the VMC lands which drain to this pond. Costs associated with these works are ascribed entirely to this benefitting interest group.

B1.6 Edge Treatments (Base Design)

This class of edge treatments is considered to be typical of stormwater management pond design and affects the pond as a whole. The allocation of costs is therefore in accordance with Table 2.

B1.7 Urban Design Features (Base Design)

Urban design features are common in contemporary stormwater management pond design and this component addresses the base, rather than the enhanced component of design. The allocation of costs is therefore in accordance with Table 2.

Category B2: Enhanced Design Components

B2.1 Urban Design Features (Enhanced Design)

B2.2 Site Furnishing

The works that fall into the above categories (i.e. B2.1 & B2.2) are above and beyond what would normally be expected and are provided to improve the public space. These works provide a City-wide benefit and are allocated to Parks and Open Space Development Charges.

B2.3 Bridges

While the bridges envisioned for the pond provide an improvement to the public space, they are designed for and serve the additional benefit of access to the pond for purposes of maintenance. This also provides benefit to the existing lands as well as future lands draining into the facility. For purposes of this work, these functional benefits are allocated as follows:

- Park and Open Space: 62.5%
- Benefit to Existing 37.5%

B2.4 South Pond Enhancements (Area 'C')

B2.5 North Pond Enhancements (Area 'D')

These components (i.e. B2.4 & B2.5) represent enhancements leveraging the design of the pond facility for the benefit of adjacent development and, accordingly, costs are ascribed to the local service[3] funding source. Figure 7 illustrates the location of the areas under study.

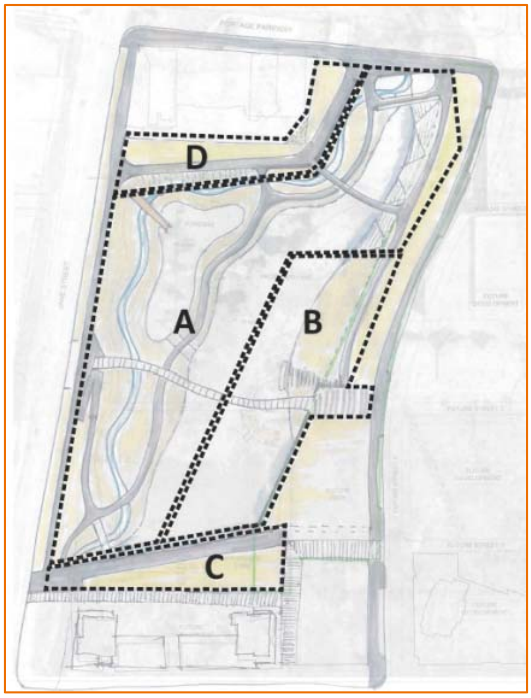

Figure 7 Pond Enhancements Showing Local Service Benefit Areas 'C' and 'D'

Additional Works

CATEGORY C: EROSION IMPROVEMENTS

These works include improvements to the Black Creek south of Highway 407 towards Steeles Avenue West. Given that the works serve to improve existing conditions to a perceivably greater extent compared to the facilitation of future development in the upstream drainage shed, the allocation of costs related to this work are assigned to existing development. It is worth noting that funds are understood to be available through TRCA and which have been historically collected for this sort of activity. Based on this, the cost apportionment is further divided such that 25% is ascribed to "other government" funding sources and the remaining 75% is deemed to benefit the existing community.

CATEGORY D: PUBLIC ART

Any public art installation is deemed to be a Local Service that will be paid for by the specific developer as part of its development negotiation process with the City.

CATEGORY E: SWM POND/TANK FOR SOUTHEAST QUADRANT OF VMC

The Municipal Class EA Master Plan for the Vaughan Metropolitan Centre identified the need for a SWM pond to be located on the south side of Peelar Road, immediately east of the Black Creek. Since the time of that work, and based on discussions between the City and the relevant land interests, the concept of an underground tank running parallel to the east side of the realigned Black Creek has been developed, which will be subject to finalization through the EA process. This tank is intended to service municipal-owned lands (i.e. entirely or predominantly rights-of-way) while individual developments will be required to provide on-site controls. On this basis, the benefits of this work are ascribed to future re-development (growth) in the area through City-wide development charges related to engineering.

CATEGORY F: DC AND RELATED ENGINEERING STUDIES

Similar to the methodology applied earlier to land acquisitions required in relation to the Black Creek channelization works, these studies are treated herein to be distributed to the benefitting interest groups so as to match the distribution to these groups following all the above noted allocations (i.e. Categories A to E). The underlying rationale is that the studies are a necessary element to achieving all of the other benefits noted above. Of note, the parks-related studies could also be funded though the City's general government development charges service category.

Contingencies & Soft Costs

In addition to the estimated construction cost of the works, additional provisions need to be accounted for when establishing actual overall costs that may be incurred.

A component-specific contingency is carried in the analysis and accounts for the variability in the construction cost estimate provided. This variability, and the resultant contingency, can be wide and is dependent upon various factors including the degree of certainty relating to the scope of the project, the level to which designs have been advanced, the ability to cluster project components to achieve economies of scale, and timing impacts amongst other matters. For instance, given the fragmented ownership of lands associated with the Black Creek Channelization Works, it is expected that implementation of the works will occur on a piecemeal basis, thereby resulting in inefficiencies which are intended to be accounted for by the contingencies applied to these works.

Also, the remaining costs to complete the design work (soft costs) as well as construction-related contingencies are included in the overall costs. Similarly, these can vary significantly depending on the extent to which detailed design work is still required, as well as the uncertainties associated with implementation of the project. For instance, the values used for this category of additional costs are lower for works related to the Edgeley Pond improvements relative to the Black Creek Channelization work since there is more knowledge (and less uncertainty) related to the pond improvements. Further, the pond works are generally self-contained within a single site whereas the channelization works will be complicated by the numerous and fragmented properties along its route, in addition to road crossings, as well as proximity to Jane Street and other actively used transportation and business elements. As well, the channelization works will occur through a narrow corridor for which the drainage function must be maintained during construction which can significantly impact the cost of construction. In contrast, within the pond there is space and opportunity to stage works in a manner that maintains functionality during construction.

Development Charges Calculations

This study calculates development charges for the Black Creek related works in the City of Vaughan in compliance with the provisions of the *Development Charges Act*, *1997* (DCA) and its associated regulation (Ontario Regulation 82/98).

The City's existing 2013 City Development Charge Bylaw 045-2013, that expires on September 21, 2018, would not be amended through this study. It is the City's intent to pass by-laws related to area-specific development charges (ASDCs) calculated herein in 2016 and the City-wide development charges capital expenditures identified in this study will be considered during the next City-wide by-law update.

STUDY CONSISTENT WITH DEVELOPMENT CHARGES LEGISLATION

- The City needs to continue implementing development charges to fund capital projects related to growth so that development pays for its capital requirements to the extent allowed by the *Development Charges Act* and so that new services required by growth are provided in a fiscally responsible manner.
    - The *Development Charges Act* and O. Reg. 82/98 requires that a development charges background study be prepared in which development charges are determined with reference to:
    - a forecast of the amount, type and location of development anticipated in the study areas;
    - a review of future capital projects, including an analysis of gross expenditures, funding sources, and net expenditures incurred or to be incurred by the City to provide for the expected development, including the determination of the growth and non-growth-related components of the capital projects; and
    - an examination of the long-term capital and operating costs for the capital infrastructure required for each service to which the development charges by-laws would relate.
- This report identifies the growth-related net capital costs which are attributable to development that is forecast to occur in the City. These costs are apportioned to types of development (residential, non-residential) in a uniform land-based manner.

SERVICES CONSIDERED IN THE ANALYSIS

- The following City services have been included in the development charge analysis:
    - Area-Specific Stormwater and/or Floodplain Management
    - City-wide Engineering
    - City-wide Parks and Open Space Development
- City-wide engineering can include storm, transportation, streetscape, lighting, sidewalks, culvert and other similar infrastructure.
- The area-specific approach was used for stormwater and/or floodplain management infrastructure since it more closely aligns the capital costs and benefits to the development areas being improved.
- As permitted by the legislation and consistent with the City's existing practice, the area-specific stormwater management development charges have been calculated on a land area (per net hectare) basis.

DEVELOPMENT AREAS INCLUDED IN STUDY

- The area-specific development charges calculated in this study are based on the development or redevelopment of three defined geographies within the Black Creek watershed and Vaughan Metropolitan Centre (VMC) areas. The applicable areas are illustrated in the Area-Specific Development Charges maps (Appendix C) and summarized in Table 3.

Table 3 Development Areas Included in the Study

Area Description	Net Hectares
Immediately Affected Landowners (Map 1)	5.47
Vaughan Metropolitan Centre Areas Draining to Edgeley Pond (Map 2)	33.55
Undeveloped Lands in Black Creek Drainage Shed (Map 3)	161.12

HISTORIC SERVICE LEVELS

- Since this area-specific development charges calculation deals with a "hard" service, namely stormwater and/or floodplain management, historic service level inventories are not required and Provincial, Conservation Authority and City environmental and safety requirements take precedence.
- However, during the course of the allocation of project costs, consideration was given to enhancements that exceed the City's base stormwater management requirements. In these instances, the costs associated with the enhancements were assigned to City-wide development charges or benefit to existing development depending on the characteristics of the enhanced feature.

GROWTH-RELATED CAPITAL PROGRAM

- The growth-related capital program is based on a 2041 benefiting period with the assumption that all lands will develop/redevelop over the 2011 to 2041 period. A retroactive treatment of the ASDC by-law has been included in development agreements for projects that have proceeded prior to ASDC by-law enactment.
    - The City of Vaughan provided the project listing and cost estimates contained in the capital program. Many of the costs were prepared by specialized consultants retained by the City.
    - Table 3 summarizes the funding apportionments described in the prior sections of this report.
    - Table 4 details the capital program considered in the funding strategy which totals $96.6 million.
    - Table 5 shows the capital costs apportioned to each funding source.

Table 4 - Summary of Cost Apportionment

Component	Timing	Black Creek Floodplain Reductions - Immediately Affected Landowners	Vaughan Metropolitan Centre (VMC) Areas Draining to Edgeley Pond	Undeveloped Lands in Black Creek Drainage Shed	City-Wide Development Charges - Engineering	City-Wide Development Charges - Parks & Open Space	Benefit to Existing Funding	Local Service	Other Governments (York, TRCA)	Totals
A. BLACK CREEK CHANNELIZATION WORKS										
A1. Realignment, Earthworks and Restoration	2017 - 2019	49.2%	0.0%	11.3%	15.5%	0.0%	24.1%	0.0%	0.0%	100.0%
A2. Structures										
A2.1 Interchange Way Crossing	2019 - 2024	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
A2.2 Doughton Road Crossing	2019 - 2024	24.6%	0.0%	5.6%	57.8%	0.0%	12.0%	0.0%	0.0%	100.0%
A2.3 NE Corner Culvert - North of Hwy 7	2017 - 2019	19.7%	0.0%	4.5%	41.2%	0.0%	9.6%	25.0%	0.0%	100.0%
A2.4 Peelar Road Crossing	2017 - 2019	24.6%	0.0%	5.6%	57.8%	0.0%	12.0%	0.0%	0.0%	100.0%
A2.5 Mews	2019 - 2024	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
A2.6 Retaining Walls	2017 - 2019	49.2%	0.0%	11.3%	15.5%	0.0%	24.1%	0.0%	0.0%	100.0%
A2.7 Removal of existing driveway culvert (access to arena) and restoration.	2019 - 2024	49.2%	0.0%	11.3%	15.5%	0.0%	24.1%	0.0%	0.0%	100.0%
A2.8 Temporary Access to 7581 Jane Street	2019 - 2024	49.2%	0.0%	11.3%	15.5%	0.0%	24.1%	0.0%	0.0%	100.0%
A3. Bank Treatments, Urban Design and Landscape										
A3.1 Naturalized western edge plus eastern edge south of Peelar Road (plantings, trails, lighting)	2017 - 2019	41.8%	0.0%	9.6%	13.2%	15.0%	20.4%	0.0%	0.0%	100.0%
A3.2 Terraced Steps	2019 - 2024	31.4%	0.0%	7.2%	9.9%	11.3%	15.3%	25.0%	0.0%	100.0%
A3.3 Urban plazas - paving, furniture, lighting (Intersection of Jane and Highway 7 & SE Platform)	2017 - 2019	0.0%	0.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	100.0%
A3.4 Urban buffer (amenitized eastern edge - promenade paving, furniture, lighting)	2024 - 2029	0.0%	0.0%	0.0%	25.0%	25.0%	25.0%	25.0%	0.0%	100.0%
A3.5 Sustainable Transitional Feature NE Corner of Jane & Hwy 7	2024 - 2029	0.0%	0.0%	0.0%	37.5%	37.5%	0.0%	25.0%	0.0%	100.0%
Sub-Totals - Before Land Acquisitions										
A4. Land Acquisitions										
Allocation Distribution for Land										
A4.1 Region/Provincial Land	2019 - 2022	32.1%	0.0%	7.3%	42.4%	0.0%	18.2%	0.0%	0.0%	100.0%
A4.2 Private Land	2019 - 2022	32.1%	0.0%	7.3%	42.4%	0.0%	18.2%	0.0%	0.0%	100.0%
A4.3 Land Conveyance	2019 - 2022	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Total Black Creek Channelization Works										
Allocation Distribution										
B. EDGELEY POND IMPROVEMENTS										
B1 Base Design Components										
B1.1 Earthworks, Erosion/Sediment Control, Site Preparation	2017 - 2019	0.0%	25.0%	0.0%	0.0%	0.0%	75.0%	0.0%	0.0%	100.0%
B1.2 Natural Channel Realignment and Restoration	2017 - 2019	0.0%	25.0%	0.0%	0.0%	0.0%	75.0%	0.0%	0.0%	100.0%
B1.3 Plant Material	2017 - 2019	0.0%	25.0%	0.0%	0.0%	0.0%	75.0%	0.0%	0.0%	100.0%
B1.4 Inlet and Outlet Control Structures - Main Pond	2017 - 2019	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
B1.5 Structures Servicing VMC Lands	2017 - 2019	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
B1.6 Edge Treatments (Base Design)	2017 - 2019	0.0%	25.0%	0.0%	0.0%	0.0%	75.0%	0.0%	0.0%	100.0%
B1.7 Urban Design Features (Base Design)	2017 - 2019	0.0%	25.0%	0.0%	0.0%	0.0%	75.0%	0.0%	0.0%	100.0%
B2 Enhanced Design Components										
B2.1 Urban Design Features (Enhanced Design)	2024 - 2039	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
B2.2 Site Furnishing	2024 - 2039	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
B2.3 Bridges - Long term	2024 - 2039	0.0%	0.0%	0.0%	0.0%	62.5%	37.5%	0.0%	0.0%	100.0%
B2.4 South Pond Enhancements (Area 'C')	2024 - 2039	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
B2.5 North Pond Enhancements (Area 'D')	2024 - 2039	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Total Edgeley Pond Improvements										
Allocation Distribution										
C. EROSION IMPROVEMENTS, HIGHWAY 407 TO STEELES AVENUE WEST	2017 - 2019	0.0%	0.0%	0.0%	0.0%	0.0%	75.0%	0.0%	25.0%	100.0%
D. PUBLIC ART	2017 - 2039							100.0%		100.0%
E. SWM POND/TANK FOR SOUTHEAST QUADRANT OF VMC (Ultimate Solution)	2019 - 2024				100%					0.0%
F. DC AND RELATED ENGINEERING STUDIES	2017 - 2019	16.8%	3.4%	3.8%	42.5%	11.3%	22.1%			100.0%

Table 5 - Summary of Capital Costs							
Component	**Timing**	Component Cost Estimate	Component-Specific Contingency	Soft Cost and Constuction Contingency	City Admin Fee	Net HST	Totals
A. BLACK CREEK CHANNELIZATION WORKS							
A1. Realignment, Earthworks and Restoration	2017 - 2019	$6,500,000	30.0%	30.0%	3.0%	1.76%	$11,513,686
A2. Structures							
A2.1 Interchange Way Crossing	2019 - 2024	$1,500,000	30.0%	30.0%	3.0%	1.76%	$2,657,004
A2.2 Doughton Road Crossing	2019 - 2024	$1,000,000	30.0%	30.0%	3.0%	1.76%	$1,771,336
A2.3 NE Corner Culvert - North of Hwy 7	2017 - 2019	$3,000,000	30.0%	30.0%	3.0%	1.76%	$5,314,009
A2.4 Peelar Road Crossing	2017 - 2019	$1,000,000	30.0%	30.0%	3.0%	1.76%	$1,771,336
A2.5 Mews	2019 - 2024	$750,000	30.0%	30.0%	3.0%	1.76%	$1,328,502
A2.6 Retaining Walls	2017 - 2019	$200,000	30.0%	30.0%	3.0%	1.76%	$354,267
A2.7 Removal of existing driveway culvert (access to arena) and restoration.	2019 - 2024	$500,000	30.0%	30.0%	3.0%	1.76%	$885,668
A2.8 Temporary Access to 7581 Jane Street	2019 - 2024	$250,000	30.0%	30.0%	3.0%	1.76%	$442,834
A3. Bank Treatments, Urban Design and Landscape							
A3.1 Naturalized western edge plus eastern edge south of Peelar Road (plantings, trails, lighting)	2017 - 2019	$975,000	30.0%	30.0%	3.0%	1.76%	$1,727,053
A3.2 Terraced Steps	2019 - 2024	$3,500,000	30.0%	30.0%	3.0%	1.76%	$6,199,677
A3.3 Urban plazas - paving, furniture, lighting (Intersection of Jane and Highway 7 & SE Platform)	2017 - 2019	$3,000,000	30.0%	30.0%	3.0%	1.76%	$5,314,009
A3.4 Urban buffer (amenitized eastern edge - promenade paving, furniture, lighting)	2024 - 2029	$2,000,000	30.0%	30.0%	3.0%	1.76%	$3,542,673
A3.5 Sustainable Transitional Feature NE Corner of Jane & Hwy 7	2024 - 2029	$2,000,000	30.0%	30.0%	3.0%	1.76%	$3,542,673
Sub-Totals - Before Land Acquisitions							**$46,364,728**
A4. Land Acquisitions							
Allocation Distribution for Land							
A4.1 Region/Provincial Land	2019 - 2022	$2,452,427	25.0%	0.0%	3.0%	1.76%	$3,213,072
A4.2 Private Land	2019 - 2022	$2,080,873	25.0%	0.0%	3.0%	1.76%	$2,726,276
A4.3 Land Conveyance	2019 - 2022	$7,013,206	25.0%	0.0%	3.0%	1.76%	$9,188,421
Total Black Creek Channelization Works							**$61,492,498**
Allocation Distribution							
B. EDGELEY POND IMPROVEMENTS							
B1 Base Design Components							
B1.1 Earthworks, Erosion/Sediment Control, Site Preparation	2017 - 2019	$1,974,000	50.0%	10.0%	3.0%	1.76%	$3,413,858
B1.2 Natural Channel Realignment and Restoration	2017 - 2019	$750,000	20.0%	10.0%	3.0%	1.76%	$1,037,647
B1.3 Plant Material	2017 - 2019	$1,175,000	10.0%	10.0%	3.0%	1.76%	$1,490,176
B1.4 Inlet and Outlet Control Structures - Main Pond	2017 - 2019	$610,000	20.0%	10.0%	3.0%	1.76%	$843,953
B1.5 Structures Servicing VMC Lands	2017 - 2019	$545,000	20.0%	10.0%	3.0%	1.76%	$754,023
B1.6 Edge Treatments (Base Design)	2017 - 2019	$1,050,000	10.0%	10.0%	3.0%	1.76%	$1,331,647
B1.7 Urban Design Features (Base Design)	2017 - 2019	$100,000	10.0%	10.0%	3.0%	1.76%	$126,823
B2 Enhanced Design Components							
B2.1 Urban Design Features (Enhanced Design)	2024 - 2039	$642,000	10.0%	10.0%	3.0%	1.76%	$814,207
B2.2 Site Furnishing	2024 - 2039	$720,000	10.0%	10.0%	3.0%	1.76%	$913,129
B2.3 Bridges - Long term	2024 - 2039	$2,950,000	20.0%	10.0%	3.0%	1.76%	$4,081,410
B2.4 South Pond Enhancements (Area 'C')	2024 - 2039	$447,500	10.0%	10.0%	3.0%	1.76%	$567,535
B2.5 North Pond Enhancements (Area 'D')	2024 - 2039	$507,500	10.0%	10.0%	3.0%	1.76%	$643,629
Total Edgeley Pond Improvements							**$16,018,037**
Allocation Distribution							
C. EROSION IMPROVEMENTS, HIGHWAY 407 TO STEELES AVENUE WEST	2017 - 2019	$1,600,000	25.0%	15.0%	3.0%	1.76%	$2,410,694
D. PUBLIC ART	2017 - 2039	$500,000	15.0%	15.0%	3.0%	1.76%	$693,075
E. SWM POND/TANK FOR SOUTHEAST QUADRANT OF VMC (Ultimate Solution)	2019 - 2024	$15,000,000	0.0%	0.0%	3.0%	1.76%	$15,721,920
F. DC AND RELATED ENGINEERING STUDIES	2017 - 2019	$250,000	0.0%	0.0%	3.0%	1.76%	$262,032
TOTAL ALLOCATION OF COSTS							**$96,598,256**

Table 6 - Summary of Capital Costs By Funding Source										
Component	Black Creek Floodplain Reductions - Immediately Affected Landowners	Vaughan Metropolitan Centre (VMC) Areas Draining to Edgeley Pond	Undeveloped Lands in Black Creek Drainage Shed	City-Wide Development Charges - Engineering	City-Wide Development Charges - Parks & Open Space	Parks 10% Discount - Tax	Benefit to Existing Funding	Local Service	Other Governments (York, TRCA)	Totals
A. BLACK CREEK CHANNELIZATION WORKS										
A1. Realignment, Earthworks and Restoration	$5,664,734	$0	$1,295,290	$1,784,621	$0	$0	$2,769,042	$0	$0	$11,513,686
A2. Structures										
A2.1 Interchange Way Crossing	$0	$0	$0	$2,657,004	$0	$0	$0	$0	$0	$2,657,004
A2.2 Doughton Road Crossing	$435,749	$0	$99,638	$1,022,947	$0	$0	$213,003	$0	$0	$1,771,336
A2.3 NE Corner Culvert - North of Hwy 7	$1,045,797	$0	$239,130	$2,189,372	$0	$0	$511,208	$1,328,502	$0	$5,314,009
A2.4 Peelar Road Crossing	$435,749	$0	$99,638	$1,022,947	$0	$0	$213,003	$0	$0	$1,771,336
A2.5 Mews	$0	$0	$0	$1,328,502	$0	$0	$0	$0	$0	$1,328,502
A2.6 Retaining Walls	$174,299	$0	$39,855	$54,911	$0	$0	$85,201	$0	$0	$354,267
A2.7 Removal of existing driveway culvert (access to arena) and restoration.	$435,749	$0	$99,638	$137,279	$0	$0	$213,003	$0	$0	$885,668
A2.8 Temporary Access to 7581 Jane Street	$217,874	$0	$49,819	$68,639	$0	$0	$106,502	$0	$0	$442,834
A3. Bank Treatments, Urban Design and Landscape										
A3.1 Naturalized western edge plus eastern edge south of Peelar Road (plantings, trails, lighting)	$722,254	$0	$165,149	$227,539	$233,152	$25,906	$353,053	$0	$0	$1,727,053
A3.2 Terraced Steps	$1,944,529	$0	$444,633	$612,606	$627,717	$69,746	$950,527	$1,549,919	$0	$6,199,677
A3.3 Urban plazas - paving, furniture, lighting (Intersection of Jane and Highway 7 & SE Platform)	$0	$0	$0	$1,328,502	$1,195,652	$132,850	$0	$1,328,502	$1,328,502	$5,314,009
A3.4 Urban buffer (amenitized eastern edge - promenade paving, furniture, lighting)	$0	$0	$0	$885,668	$797,101	$88,567	$885,668	$885,668	$0	$3,542,673
A3.5 Sustainable Transitional Feature NE Corner of Jane & Hwy 7	$0	$0	$0	$1,328,502	$1,195,652	$132,850	$0	$885,668	$0	$3,542,673
Sub-Totals - Before Land Acquisitions	**$11,076,733**	**$0**	**$2,532,790**	**$14,649,040**	**$4,049,275**	**$449,919**	**$6,300,209**	**$5,978,260**	**$1,328,502**	**$46,364,728**
A4. Land Acquisitions										
Allocation Distribution for Land	32.1%		7.3%	42.4%			18.2%			100%
A4.1 Region/Provincial Land	$1,029,850	$0	$235,484	$1,361,982	$0	$0	$585,756	$0	$0	$3,213,072
A4.2 Private Land	$873,823	$0	$199,807	$1,155,635	$0	$0	$497,012	$0	$0	$2,726,276
A4.3 Land Conveyance								$9,188,421		$9,188,421
Total Black Creek Channelization Works	**$12,980,405**	**$0**	**$2,968,080**	**$17,166,657**	**$4,049,275**	**$449,919**	**$7,382,977**	**$15,166,681**	**$1,328,502**	**$61,492,498**
Allocation Distribution	21.1%	0.0%	4.8%	27.9%	6.6%	0.7%	12.0%	24.7%	2.2%	100%
B. EDGELEY POND IMPROVEMENTS										
B1 Base Design Components										
B1.1 Earthworks, Erosion/Sediment Control, Site Preparation	$0	$853,464	$0	$0	$0	$0	$2,560,393	$0	$0	$3,413,858
B1.2 Natural Channel Realignment and Restoration	$0	$259,412	$0	$0	$0	$0	$778,235	$0	$0	$1,037,647
B1.3 Plant Material	$0	$372,544	$0	$0	$0	$0	$1,117,632	$0	$0	$1,490,176
B1.4 Inlet and Outlet Control Structures - Main Pond	$0	$0	$0	$0	$0	$0	$843,953	$0	$0	$843,953
B1.5 Structures Servicing VMC Lands	$0	$754,023	$0	$0	$0	$0	$0	$0	$0	$754,023
B1.6 Edge Treatments (Base Design)	$0	$332,912	$0	$0	$0	$0	$998,735	$0	$0	$1,331,647
B1.7 Urban Design Features (Base Design)	$0	$31,706	$0	$0	$0	$0	$95,118	$0	$0	$126,823
B2 Enhanced Design Components										
B2.1 Urban Design Features (Enhanced Design)	$0	$0	$0	$0	$732,786	$81,421	$0	$0	$0	$814,207
B2.2 Site Furnishing	$0	$0	$0	$0	$821,816	$91,313	$0	$0	$0	$913,129
B2.3 Bridges - Long term	$0	$0	$0	$0	$2,295,793	$255,088	$1,530,529	$0	$0	$4,081,410
B2.4 South Pond Enhancements (Area 'C')	$0	$0	$0	$0	$0	$0	$0	$567,535	$0	$567,535
B2.5 North Pond Enhancements (Area 'D')	$0	$0	$0	$0	$0	$0	$0	$643,629	$0	$643,629
Total Edgeley Pond Improvements	**$0**	**$2,604,061**	**$0**	**$0**	**$3,850,396**	**$427,822**	**$7,924,594**	**$1,211,164**	**$0**	**$16,018,037**
Allocation Distribution	0.0%	16.3%	0.0%	0.0%	24.0%	2.7%	49.5%	7.6%	0.0%	100%
C. EROSION IMPROVEMENTS, HIGHWAY 407 TO STEELES AVENUE WEST	$0	$0	$0	$0	$0	$0	$1,808,021	$0	$602,674	$2,410,694
D. PUBLIC ART	$0	$0	$0	$0	$0	$0	$0	$693,075	$0	$693,075
E. SWM POND/TANK FOR SOUTHEAST QUADRANT OF VMC (Ultimate Solution)	$0	$0	$0	$15,721,920	$0	$0	$0	$0	$0	$15,721,920
F. DC AND RELATED ENGINEERING STUDIES	$43,982	$8,823	$10,057	$111,437	$26,767	$2,974	$57,993	$0	$0	$262,032
TOTAL ALLOCATION OF COSTS	**$13,024,387**	**$2,612,884**	**$2,978,137**	**$33,000,014**	**$7,926,437**	**$880,715**	**$17,173,586**	**$17,070,920**	**$1,931,176**	**$96,598,256**
Allocation Distribution	13.5%	2.7%	3.1%	34.2%	8.2%	0.9%	17.8%	17.7%	2.0%	100%

- The *Development Charges Act* requires that gross capital costs be reduced by grants, subsidies, and recoveries from other governments, capital replacements or other benefits provided to the existing community; amounts that exceed historic service levels; and a statutory 10 per cent reduction for eligible soft services when calculating development charges. A summary of the apportionment is shown in Table 7 below.

Table 7 Capital Cost Summary By Funding Source

Description	Cost ($000)	%
Immediately Affected Landowners	$13,024.4	13.5%
Vaughan Metropolitan Centre Areas Draining to Edgeley Pond	$2,612.9	2.7%
Undeveloped Land in Black Creek Drainage Shed	$2,978.1	3.1%
City-Wide Development Charges – Engineering	$33,000.0	34.2%
City-Wide Development Charges – Parks and Open Space	$7,926.4	8.2%
Parks 10% Discount – Tax	$880.7	0.9%
Benefit to Existing Funding	$17,173.6	17.8%
Local Service	$17,070.9	17.7%
Other Governments (York, Conservation Authority)	$1,931.2	2.0%
Totals	**$96,598.3**	**100.0%**

- It should be noted that development charges reserve funds do not presently exist for the proposed area-specific development charges areas.

CALCULATED DEVELOPMENT CHARGES

- The calculated area-specific development charges are shown in Table 8 below:

Table 8 Calculated Area-Specific Development Charges

Lands to which Area-Specific Development Charges Applicable (Maps provided in Appendix C)	**Cost ($000)**	**Area (net ha)**	**Unadjusted Charge ($/ha)**	**Adjusted Charge after Cash Flow ($/ha)**
Immediately Affected Landowners	$13,024.4	5.47	$2,381,929	$2,514,568
Vaughan Metropolitan Centre Draining to Edgeley Pond	$2,612.9	33.55	$77,890	$83,452
Undeveloped Lands in Black Creek Drainage Shed	$2,978.1	161.12	$18,484	$22,581
Totals	**$18,615.4**	or 19.3% of the total costs		

- The charges shown above are not cumulative and more than one charge could apply to a given land area. See the Area-Specific Development Charges Maps in Appendix C.
- The unadjusted charges do not consider the timing of development and the timing of infrastructure emplacement.
- The adjusted charge considers the anticipated timing of projects and land development. The timing assumptions were developed in consultation with City Staff taking into account known development applications. Specific cash flow assumptions are detailed in Appendix D.
- An inflation rate of 2% per annum is used.
- It is assumed that the City would issue external debt for projects constructed between 2017 and 2020. A 20-year mortgage style debenture with a current Infrastructure Ontario fixed interest rate of 2.81% is assumed.

- Projects emplaced after 2020 were assumed to be reserve funded with long-term interest rates of 5% applied to negative balances and 3.5% applied to positive balances.

ASSET MANAGEMENT PLAN

The recently enacted changes to the *Development Charges Act*[4] require that development charges background studies include the preparation of an asset management plan that shall, *inter alia*, demonstrate that all assets whose capital costs are proposed to be funded under the development charges by-law are financially sustainable over their full life cycle. This section of the background study has been prepared in general accordance with provincial guidelines[5] in relation to the preparation of an asset management plan and follows the overall organizational structure set out therein.

The planned intensification of development in the vicinity of, or otherwise benefitting from, the Black Creek Channelization Works and the Edgeley Pond Improvements is dependent on these works to reduce and contain the regulatory floodplain to within publicly-controlled lands as well as to ensure proper handling of stormwater. A considerable amount of investment is required to implement this infrastructure and it is important to ensure that the intended level of service offered by it can be sustained over its full life cycle, being the purpose of this asset management plan.

State of the Infrastructure

Asset Types

A summary of the future municipal-owned assets covered by this Area-Specific Development Charges (ASDC), along with their estimated useful lives, is presented in Table 9. For the purpose of consistency of presentation, each of the assets discussed throughout this report is identified, although not all assets are covered by the ASDC. The reasons for this may include the following:

- Certain assets may be covered by other funding sources (e.g. City-Wide DCs, Local Service, etc.) that are or will be addressed through other municipal/public processes. In such cases, these are identified as *"Not Applicable – not part of ASDC"* in the table.
- Some of the works identified herein represent one-time costs and are temporary in nature and, as such, there are no ongoing operation and maintenance costs, nor are there ultimate replacement costs related to them. These works may include matters such as grading, removals or works that are temporary in nature. These cases are identified as *"Not Applicable – one-time cost; not a long-term asset"* in the table.
- Some of the costs identified herein do not pertain to infrastructure (e.g., land costs) and, similarly, there are no ongoing operation and maintenance costs, nor are there ultimate replacement costs, related to them. These cases are identified as *"Not Applicable – not infrastructure"* in the table.

Certain assets, particularly those relating to landscaping and related matters, are considered herein to not have a "useful life" in the traditional sense, but are rather considered to provide the requisite level of service on a continuous basis through regular (annual) maintenance activities. Accordingly, the "useful life" is identified in Table 9 as *"Continuous Useful Life subject to Ongoing Maintenance Activities"*, rather than in years.

It is noted that the cost estimates prepared for each of the projects' components as identified in this study include the "lumping" of numerous individual elements. Accordingly, some assumptions are necessary when estimating future funding requirements, which are discussed in later sub-sections.

[4] Bill 73 (Chapter 26, Statutes of Ontario, 2015), An Act to amend the *Development Charges Act, 1997* and the *Planning Act.*
[5] Building Together: Guide for Municipal Asset Management Plans. Ontario Ministry of Infrastructure. 2012.

Table 9 Summary of Assets Covered by ASDC

Asset Description	Estimated Useful Life
A2.1 Interchange Way Crossing	*Not applicable – not part of ASDC*
A2.2 Doughton Road Crossing	40 years
A2.3 NE Corner Culvert – North of Hwy 7	40 years
A2.4 Peelar Road Crossing	40 years
A2.5 Mews	*Not applicable – not part of ASDC*
A2.6 Retaining Walls	50 years
A2.7 Removal of existing driveway culvert and restoration	*Not applicable – one-time cost; not a long-term asset*
A2.8 Temporary Access to 7581 Jane Street	*Not applicable – one-time cost; not a long-term asset*
A3.1 Naturalized western edge plus eastern edge south of Peelar Road (plantings, trails, lighting)	Continuous Useful Life subject to Ongoing Maintenance Activities
A3.2 Terraced Steps	50 years
A3.3 Urban plazas	*Not applicable – not part of ASDC*
A3.4 Urban buffer	*Not applicable – not part of ASDC*
A3.5 Sustainable transitional feature	*Not applicable – not part of ASDC*
A4.1 Region/Provincial Land	*Not applicable – not infrastructure*
A4.2 Private Land	*Not applicable – not infrastructure*
A4.3 Land Conveyance	*Not applicable – not infrastructure*
B1.1 Earthworks, Erosion/Sediment Control, Site Prep.	*Not applicable – one-time cost; not a long-term asset*
B1.2 Natural Channel Realignment and Restoration	*Not applicable – one-time cost; not a long-term asset*
B1.3 Plant Material	Continuous Useful Life subject to Ongoing Maintenance Activities
B1.4 Inlet and Outlet Control Structures – Main Pond	*Not applicable – not part of ASDC*
B1.5 Structures Servicing VMC Lands	100 years
B1.6 Edge Treatments (Base Design)	Continuous Useful Life subject to Ongoing Maintenance Activities
B1.7 Urban Design Features (Base Design)	Continuous Useful Life subject to Ongoing Maintenance Activities
B2.1 Urban Design Features (Enhanced Design)	*Not applicable – not part of ASDC*
B2.2 Site Furnishing	*Not applicable – not part of ASDC*
B2.3 Bridges – Long term	*Not applicable – not part of ASDC*
B2.4 South Pond Enhancements (Area 'C')	*Not applicable – not part of ASDC*
B2.5 North Pond Enhancements (Area 'D')	*Not applicable – not part of ASDC*
C. Erosion Improvements, Highway 407 to Steeles Ave. W.	*Not applicable – not part of ASDC*
D. Public Art	*Not applicable – not part of ASDC*
E. SWM Pond/Tank for SE Quadrant of VMC	*Not applicable – not part of ASDC*
F. DC and Related Engineering Studies	*Not applicable – one-time cost; not a long-term asset*

Asset Valuation

In terms of asset valuations, and given that the Area-Specific Development Charges covered by this study relate to new infrastructure that will be implemented, the estimated costs are used to represent initial (or soon-to-be-current) values. (Accordingly, neither depreciated historical costs nor replacement cost estimates are applicable.) Implementation costs at this time are estimates only and are thus assumed to be the actual implementation costs, on the understanding that these will vary. Further, the contingencies continue to be carried for this assessment to help mitigate the risk of possible changes in actual costs relative to estimated costs, and to lend conservatism to the analysis.

Asset Age Distribution & Condition

Given that the Area-Specific Development Charges covered by this study relate to new infrastructure that will be emplaced, this component of the evaluation is not applicable (but included here for the sake of completeness), since the infrastructure in question is accordingly at the beginning of its life cycle (i.e. new).

Monitoring & Updates

The City is expected to routinely monitor the condition and related characteristics of these assets, including value estimation, as part of its ongoing asset management program in relation to its complete stock of infrastructure.

Expected Levels of Service

For initial guidance on expected levels of service in relation to the infrastructure covered by this Area-Specific Development Charge, the following documents are referenced:

- Black Creek Stormwater Optimization Study Municipal Class Environmental Assessment Master Plan Report (Phases 1 & 2). (AECOM, 2011)
- Vaughan Metropolitan Centre Municipal Servicing Class Environmental Assessment Master Plan. (TMIG, 2012).
- Transportation Master Plan. (November 2012)
- Stormwater Management Master Plan Municipal Class Environmental Assessment. (Cole Engineering Group Ltd., June 2014)
- Vaughan Engineering Design Criteria & Standard Drawings, 2016.
- Black Creek Stormwater Optimization Study Municipal Class Environmental Assessment Master Plan Report (Phases 3 & 4). (TMIG, under preparation)
- Vaughan Metropolitan Centre – Black Creek Renewal Municipal Class Environmental Assessment. (TMIG, under preparation)

Levels of service are expected to be reviewed from time to time as routine updates to the Master Plans are undertaken, in addition to any specific studies that relate to the infrastructure in question. Among the external issues that may affect the levels of service offered by the infrastructure, perhaps the impacts of climate change are among the most important for the City to monitor.

In addition, the National Water and Wastewater Benchmarking Initiative (NWWBI)[6] and the Ontario Municipal CAO's Benchmarking Initiative (OMBI)[7] include data from numerous municipalities across Canada regarding a number of performance indicators such that the City can track its performance relative to its peers in this regard.

Asset Management Strategy

The purpose of the asset management strategy is to inform the activities that will enable the assets to provide the desired levels of service on a continuous basis and in a sustainable manner. For the sake of completeness, the following sub-

[6] www.nationalbenchmarking.ca
[7] www.ombi.ca

sections identify the various components that are typically considered in such strategies, although only some are applied in this assessment.

Non-Infrastructure Solutions

Non-infrastructure solutions are actions or policies that can lower costs or extend asset life (e.g. better integrated infrastructure planning and land use planning, demand management, insurance, process optimization, managed failures, etc.). Given that the proposed infrastructure will be new and land use plans well established, the City should diligently control development applications within the affected watershed to ensure compliance with the design intent of the infrastructure. The City should also routinely monitor the condition as well as the actual performance of the infrastructure over time to better understand these matters and adapt as necessary to ensure the continued sustainability of the infrastructure and the levels of service it provides. For purposes of this work, costs associated with these activities are not explicitly assigned and are assumed to be adequately covered in other components of the life cycle costs. Subsequent asset management plans to be developed by the City for its overall stock of infrastructure will have the opportunity to explicitly consider this for the infrastructure.

Maintenance Activities

Maintenance activities, typically funded though operations, include regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events. For purposes of this work, it is assumed that annual maintenance activities will amount to 2% of the initial capital cost of the work over the life of assets with finite useful lives, and 4% of the initial capital cost for those with continuous useful lives. Subsequent asset management plans to be developed by the City for its overall stock of infrastructure will have the opportunity to refine this approach.

Renewal and Rehabilitation Activities

Renewal/rehabilitation activities include significant repairs designed to extend the life of the asset. For purposes of this exercise, it is assumed that the costs associated with these activities are included in other components of the life cycle costs. Subsequent asset management plans to be developed by the City for its overall stock of infrastructure will have the opportunity to explicitly consider this for the infrastructure in question.

Replacement Activities

Replacement activities are those that are expected to occur once an asset has reached the end of its useful life and renewal/rehabilitation is no longer an option. For purposes of this work, it is assumed that replacement occurs at the end of the useful life of each asset as identified in Table 9, the estimated cost is equal to the initial capital cost, adjusted for inflation at a rate of 2% per annum. As noted above, certain assets associated with the infrastructure considered in the Area-Specific Development Charges considered herein, particularly those relating to landscaping and related matters, are considered to not have a "useful life" in the traditional sense, but are rather considered to provide the requisite levels of service on a continuous basis through regular (annual) maintenance activities.

Disposal Activities

This includes activities associated with disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed by the municipality. For purposes of this exercise, it is assumed that the costs associated with these activities are negligible and/or are otherwise included in other components of the life cycle costs. Subsequent asset management plans to be developed by the City for its overall stock of infrastructure will have the opportunity to explicitly consider this for the identified infrastructure.

Expansion Activities

This includes planned expansion activities (if necessary) required to extend services to previously unserviced areas, or expand services to meet growth demands. This is not applicable to the infrastructure considered in the Area-Specific Development Charges by-law covered herein.

Procurement Methods

It is expected that traditional procurement practices employed by the City for the ongoing operation, maintenance, repair, rehabilitation and replacement of the infrastructure in question will continue to be appropriate given the passive nature of the infrastructure. This can be reviewed and re-considered in subsequent asset management plans developed by the City for its entire stock of infrastructure.

Overview of Risks

In terms of risks associated with the strategy (i.e. ways the plan could fail to generate the expected service levels) and any actions that could be taken in response, it is expected that ongoing monitoring and maintenance of the asset will be crucially important to mitigating any such risks. Routine inspections of the infrastructure will yield information on how well it is withstanding the hydraulic and other loadings it is being subjected to, and provide potential warning signs in relation to where it needs strengthening (e.g. erosion, removal of blockages, etc.).

Financing Strategy

For purposes of this work, the funding required for the long-term sustainability of the identified assets was established as a single, uniform annualized payment based on the assumptions noted above and summarized as follows:

- Annual maintenance activities were assumed to require 4% of the initial capital costs for continuous projects and 2% for projects with finite useful lives;
- The replacement cost of the asset at the end of its useful life (Table 9) was assumed to equate to the future value of the initial capital cost of the asset, adjusted for inflation at a rate of 2% per annum over that period; and
- The uniform annualized cost was calculated as an equivalent annuity using the above assumptions and with a discount rate equating to the rate of inflation (i.e. 2%).

The results of this approach are presented in Table 10 and indicate that an annual funding requirement in the order of $1.06 million is required. This represents an increase in the City's current tax levy of 0.61%, which is reasonable given the scale of infrastructure. This estimate should be viewed as conservative since it does not take into account future taxation revenue due to assessment growth, which is relatively certain in the City of Vaughan. Collection of these funds is expected to pay for annual maintenance activities, with surplus funds being allocated to reserves for future replacement or other significant activities. Further, it is noted that multiple sources of funding are expected to contribute to this, including general taxation as well as user fees. Accordingly, it is expected that these rates can be absorbed by the tax and user base and the assets will be financially sustainable.

Table 10 Annualized Funding Requirement

Description	Initial Capital Cost	Useful Life (years)	Maintenance Activities (Fraction of Initial Cost)		Replacement Cost	Annualized Cost
A2.2 Doughton Road Crossing	$1,771,336	40	2%	$35,427	$3,911,181	$100,179
A2.3 NE Corner Culvert - North of Highway 7	$5,314,009	40	2%	$106,280	$11,733,543	$300,538
A2.4 Peelar Road Crossing	$1,771,336	40	2%	$35,427	$3,911,181	$100,179
A2.6 Retaining Walls	$354,267	50	2%	$7,085	$953,542	$18,359
A3.1 Naturalized W. Edge plus E. Edge S. of Peelar Road	$1,727,053	continuous	4%	$69,082		$69,082
A3.2 Terraced Steps	$6,199,677	50	2%	$123,994	$16,686,977	$321,287
B1.3 Plant Material	$1,490,176	continuous	4%	$59,607		$59,607
B1.5 Structures Servicing VMC Lands	$754,023	100	2%	$15,080	$5,462,632	$32,576
B1.6 Edge Treatments (Base Design)	$1,331,647	continuous	4%	$53,266		$53,266
B1.7 Urban Design Features (Base Design)	$126,823	continuous	4%	$5,073		$5,073
Totals	**$20,840,348**			**$510,321**	**$42,659,054**	**$1,060,147**
City's Current Tax Levy						$173,000,000
Percentage Tax Increase (Excluding Assessment Growth)						0.61%

LOCAL SERVICE DEFINITIONS

Some costs associated with the implementation of the Black Creek and Edgeley Pond infrastructure are deemed to be a local benefit. Given the property specific benefit to individual landowners, it is appropriate that these costs will be borne by the landowners receiving such benefit. The manner in which these costs are allocated to the properties is set out below and will be relied upon by the City in the drafting of relevant development agreements. Notwithstanding the foregoing, should all the locally benefitting landowners voluntarily form cost share agreements to cover the full Local Service / Site Specific Contributions assumed in this Study to the satisfaction of the City, the City will then rely on such agreements for the allocation of costs.

Urban Plazas (A3.3) and Sustainable Transitional Feature (A3.5)

A Local/Site Specific Contribution of 25% has been allocated for the urban plaza and sustainable transitional feature on the NE corner of Jane and Highway 7 and are attributable to the two easterly adjacent landowners. These costs will be divided based on the gross land area of each parcel. The smaller urban plaza on the SE corner of Jane and Highway 7 is attributable to the one easterly adjacent landowner. This contribution level is in keeping with the Council approved streetscape implementation guidelines that exist in relation to developer contributions towards streetscapes.

Terraced Steps (A3.2) and Urban Buffer (A3.4)

These two pieces of infrastructure have been allocated at 25% Local Service/Site Specific Contributions in accordance with the council approved streetscape implementation guidelines relating to streetscapes. It is expected that the easterly

side of the Black Creek will act as a complimentary streetscape to Jane Street and will also be complimentary to the built form adjacent to the terraced steps and urban buffer and therefore it is appropriate to apply the streetscape methodology. Further allocation to individual landowners will be based on a per linear metre rate based on frontage to the Black Creek Channel. The current (2014 costing) estimate of this rate is $3,980/linear metre, but may increase or decrease based on final design and costing. The total frontage attributable to these features is currently estimated at 612 linear metres.

Land Conveyance (A4.3)

Lands in private ownership that are required to construct the interim and ultimate channel designs will be considered a 100% Local Service/Site Specific contribution from the land owner. These will be dedicated without compensation through development agreements at the time of development pursuant to sections 41 and 51 of the *Planning Act*. Depending upon the immediacy of need, some lands may be acquired at an earlier time at the discretion of the City (Project A4.2). Funding required for any such acquisitions has been considered through this strategy on a provisional basis.

NE Corner Culvert – North of Hwy 7 (A2.3) and the South Pond Enhancements (B2.4)

For the NE Corner Culvert – North of Hwy 7 project, the enclosed design is considered to provide a significant benefit to the adjacent landowners and therefore a contribution representing 25% of the cost is deemed to be the local share. For the South Pond Enhancements, the infrastructure is optional in nature and therefore considered to fully (100%) benefit the two easterly/southerly adjacent landowners. The costs will be divided based on the gross land area of each parcel.

North Pond Enhancements (B2.5)

This infrastructure is optional in nature and therefore is considered to be a 100% benefit to the northerly adjacent landowner.

Public Art (D)

Public art is considered to be a 100% Local/Site Specific contribution and will follow the guidelines and requirements outlined in the City's Cultural Framework and Public Art Plan.

Works Cited

AECOM. (2011). *Black Creek Stormwater Optimization Study Municipal Class Environmental Assessment Master Plan Report (Phases 1 & 2)*. Vaughan.

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Urban Strategies. (2013). Vaughan Metropolitan Centre Secondary Plan: Creating a New Downtown. Vaughan.

Appendix A

Black Creek Channelization Works
Cost Estimate

VMC Black Creek Renewal
Cost Estimate for Preliminary Concept

August 13, 2014

Immediate Improvements Plan		Est. Quantity	Unit	Unit Price	Subtotal	Section Total
A	**Structure Removal**					
	Removal of existing driveway culvert (access to arena) and restoration [4]	1	unit	$500,000	$500,000	
						$500,000
	SUB-TOTAL					$500,000
	CONTINGENCY (construction sequencing, environmental controls, flow management, etc.) [3]	30%				$150,000
	HST	13%				$84,500
	TOTAL					**$700,000**

Interim Improvements Plan		Est. Quantity	Unit	Unit Price	Subtotal	Section Total
A	**Channel Works**					
	Realignment, earthworks, restoration (Doughton to Interchange) [1]	300	linear metres	$5,000	$1,500,000	
	Earthworks, restoration (south of Interchange)	300	linear metres	$5,000	$1,500,000	
	Contingency (soil quality, dewatering, utility relocation, stabilization, etc.)	30%			$900,000	$3,900,000
B	**Structures**					
	Interchange Way crossing (15 m span bridge)	1	unit	$1,500,000	$1,500,000	
	Doughton Road crossing (Twin 7.3 m Conspan Arch) *Temporary*	1	unit	$1,000,000	$1,000,000	
	access to 7581 Jane Street [4]	1	unit	$250,000	$250,000	
	Retaining walls [4]	300	linear metres	$500	$150,000	
	Contingency (foundations, restoration, grading requirements, etc.)	30%			$870,000	$3,770,000
C	**Bank treatments, urban design, and landscape** [2]					
	Naturalized western edge south of Interchange, + eastern edge south of Peelar (plantings, trails, lighting)	600	linear metres	$750	$450,000	
	Urban plaza - paving, furniture, lighting (northeast corner of Jane and Hwy 7)	2000	square metres	$750	$1,500,000	
	Contingency (materials, extents, etc.)	30%			$585,000	$2,535,000
	SUB-TOTAL					$10,205,000
	CONTINGENCY (construction sequencing, environmental controls, flow management, etc.) [3]	30%				$3,061,500
	HST	13%				$1,724,645
	TOTAL					**$15,000,000**

Ultimate Improvements Plan		Est. Quantity	Unit	Unit Price	Subtotal	Section Total
A	**Channel Works**					
	Realignment, earthworks, restoration[1]	1300	linear metres	$5,000	$6,500,000	
	Contingency (soil quality, dewatering, utility relocation, stabilization, etc.)	30%			$1,950,000	$8,450,000
B	**Structures**					
	Interchange Way crossing (15 m span bridge)	1	unit	$1,500,000	$1,500,000	
	Doughton Road crossing (Twin 7.3 m Conspan Arch)	1	unit	$1,000,000	$1,000,000	
	NE Corner Culvert - north of Highway 7	1	unit	$3,000,000	$3,000,000	
	Peelar Road crossing (Twin 7.3 m Conspan Arch)	1	unit	$1,000,000	$1,000,000	
	Mews	3	unit	$250,000	$750,000	
	Retaining walls	100	linear metres	$500	$50,000	
	Contingency (foundations, restoration, grading requirements, etc.)	30%			$2,190,000	$9,490,000
C	**Bank treatments, urban design, and landscape** [2]					
	Naturalized western edge, + eastern edge south of Peelar (plantings, trails, lighting)	1300	linear metres	$750	$975,000	
	Terraced steps	700	linear metres	$5,000	$3,500,000	
	Urban plazas - paving, furniture, lighting	4000	square metres	$750	$3,000,000	
	Urban buffer (amenitized eastern edge - promenade paving, furniture, lighting)	4000	square metres	$500	$2,000,000	
	Contingency (materials, extents, etc.)	30%			$2,842,500	$12,317,500
	SUB-TOTAL					$30,257,500
	CONTINGENCY (construction sequencing, environmental controls, flow management, etc.) [3]	30%				$9,077,250
	HST	13%				$5,113,518
	TOTAL					**$44,400,000**

Notes:

[1] based on conventional greenfield channel realignment works, length extended to account for realigned section
[2] estimate does not include signature urban design features (water features, island, Black Mountain), Edgeley Pond structure modifications, parks, Jane St streetscape, or integrated SWM components
[3] confirmation of temporary re-routing requirements, coordination with development, etc. required during design
[4] noted costs do not build towards the ultimate concept, and must be added to the cost of the ultimate concept to determine total project cost

Summary of Costs that do not Build Toward Ultimate Concept			Total
1	Immediate Improvements		$650,000
2	Interim Improvements		$520,000
	SUB-TOTAL		$1,170,000
	CONTINGENCY (construction sequencing, environmental controls, flow management, etc.) [3]	30%	$351,000
	HST	13%	$197,730
	TOTAL ADDITIONAL COSTS BEYOND ULTIMATE CONCEPT		**$1,700,000**

TMIG | Schollen & Company

Appendix B

Edgeley SWM Pond Improvements
Cost Estimate

VMC - Edgeley Pond Improvements
Cost Estimate for Preliminary Concept

Updated February 18, 2015
TMIG | Schollen & Company

B1 Base Design Components		Est. Quantity	Unit	Unit Price	Subtotal	Section Total
B1.1	**Earthworks, Erosion/Sediment Control, Site Prep**					
	Cut and Fill	75000	cubic metres	$15	$1,125,000	
	Mobilization	1	lump sum	$15,000	$15,000	
	Sediment and Erosion Control	1600	linear metres	$10	$16,000	
	Construction Fence	1200	linear metres	$15	$18,000	
	Clearing and Grubbing, Topsoil Stripping	60000	square metres	$10	$600,000	
	Dewatering	1		$200,000	$200,000	
	Contingency (soil quality/disposal, dewatering, utility relocation, etc.)	50%			$987,000	**$2,961,000**
B1.2	**Natural Channel Realignment and Restoration**					
	Realignment, restoration, stabilization	500	linear metres	$1,500	$750,000	
	Contingency (by-pass requirements, environmental controls, etc.)	20%			$150,000	**$900,000**
B1.3	**Plant Material**					
	Seeding, sod, shrubs, grasses, wildflowers	25000	square metres	$25	$625,000	
	Tree planting	800	each	$500	$400,000	
	Aquatic plantings	6000	each	$25	$150,000	
	Contingency (additional materials to satisfy agency requirements)	10%			$117,500	**$1,292,500**
B1.4	**Inlet and Outlet Control Structures - Main Pond**					
	Inlet control weir	1	each	$10,000	$10,000	
	Outlet structure (headwalls, major and minor system, fish passage)	1	each	$600,000	$600,000	
	Contingency (outlet structure complexity, integration with downstream system, pipe lengths and sizes)	20%			$122,000	**$732,000**
B1.4	**Structures Servicing VMC Lands**					
	West inlet (aqueduct)	50	linear metres	$1,500	$75,000	
	West inlet (headwall, flow control)	1	each	$30,000	$30,000	
	East inlet (headwall, flow control)	1	each	$30,000	$30,000	
	East stormwater management tanks	200	linear metres	$2,000	$400,000	
	East stormwater polishing tank	1	each	$10,000	$10,000	
	Contingency (extents, sizing, structural)	20%			$109,000	**$654,000**
B1.6	**Edge Treatments**					
	Shoreline Riverstone / Fieldstone Boulders (4m width surrounding lake)	3500	square metres	$150	$525,000	
	Concrete retaining wall (south side, standard concrete)	750	square metres	$700	$525,000	
	Contingency (extents, material selection)	10%			$105,000	**$1,155,000**
B1.7	**Urban Design Features (Base Design)**					
	Trail (3m wide asphalt, medium duty)	1000	square metres	$100	$100,000	
	Contingency (extents, material selection)	10%			$10,000	**$110,000**
	SUB-TOTAL					**$7,804,500**
	CONTINGENCY (construction sequencing, environmental controls, flow management, etc.)	10%				**$780,450**
	HST	13%				**$1,116,044**
	BASE DESIGN SUB-TOTAL					**$9,700,000**

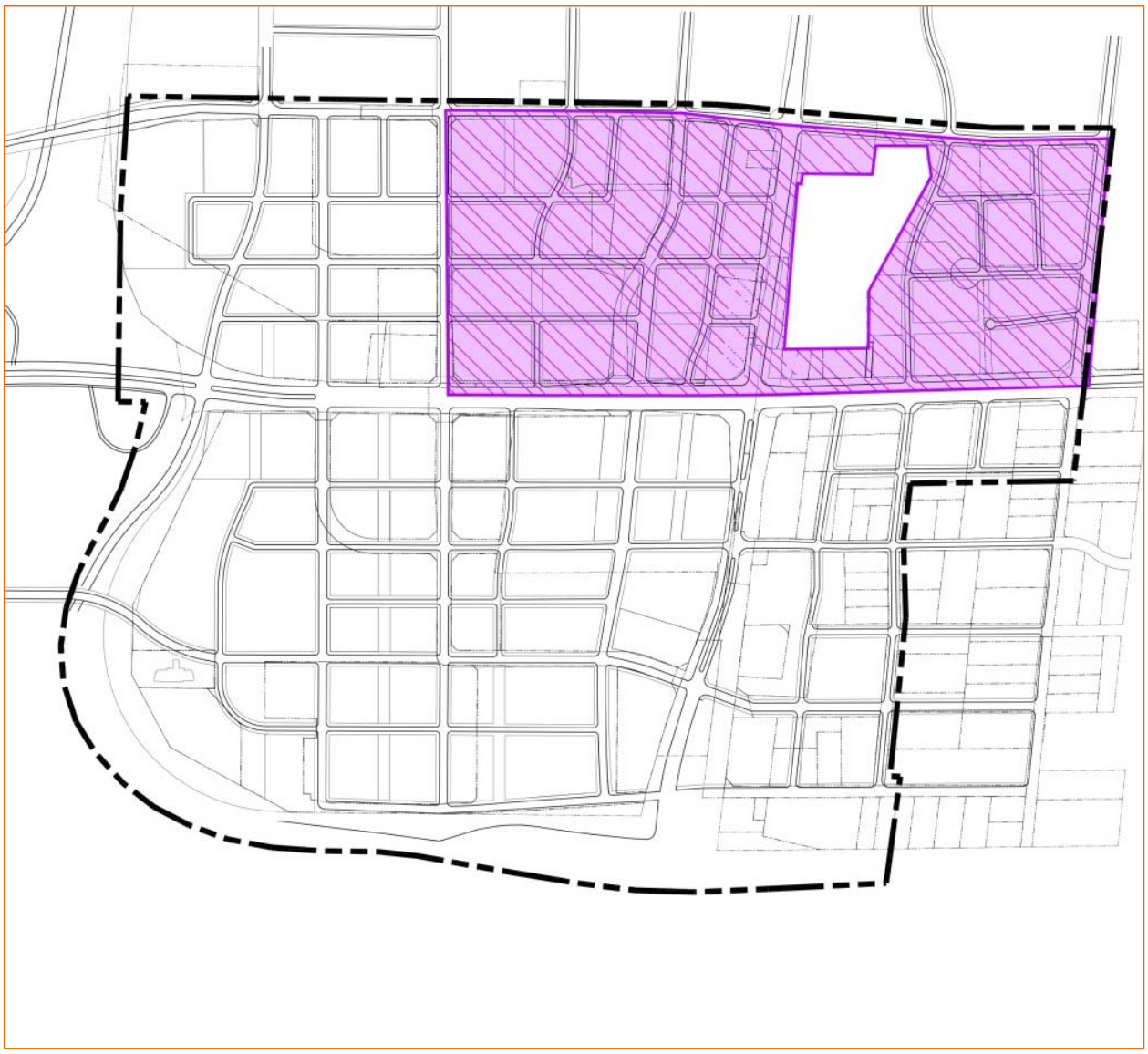
B2 Enhanced Design Components		Est. Quantity	Unit	Unit Price	Subtotal	Section Total
B2.1	**Urban Design Features (Enhanced Design)**					
	Concrete steps	1	each	$10,000	$10,000	
	Concrete ramp	120	linear metres	$100	$12,000	
	Lockstone paving	5500	square metres	$100	$550,000	
	Concrete curbs	700	linear metres	$100	$70,000	
	Contingency (extents, material selection, structural)	10%			$64,200	**$706,200**
B2.2	**Site Furnishing**					
	Benches	40	each	$3,000	$120,000	
	Waste receptacles	40	each	$3,000	$120,000	
	Bike Racks	10	each	$500	$5,000	
	Interpretive signs	10	each	$5,000	$50,000	
	Lighting	50	each	$5,000	$250,000	
	Handrails	350	linear metres	$500	$175,000	
	Contingency (extents, material selection)	10%			$72,000	**$792,000**
B2.3	**Bridges**					
	Bridge 1	25	linear metres	$10,000	$250,000	
	Bridge 2	70	linear metres	$10,000	$700,000	
	Bridge 3	100	linear metres	$10,000	$1,000,000	
	Bridge 4	50	linear metres	$10,000	$500,000	
	Bridge 5	50	linear metres	$10,000	$500,000	
	Contingency (extents, material selection, structural)	20%			$590,000	**$3,540,000**
B2.4	**South Pond Enhancements (Area 'C')**					
	Site prep, ESC, etc.	1	lump sum	$10,000	$10,000	
	Lockstone paving	2000	square metres	$100	$200,000	
	Concrete curbs	500	linear metres	$100	$50,000	
	Concrete retaining wall (incremental cost beyond base components, standard to patterned/textured)	750	square metres	$250	$187,500	
	Contingency (extents, material selection, structural)	10%			$44,750	**$492,250**
B2.5	**North Pond Enhancements (Area 'D')**					
	Site prep, ESC, etc.	1	lump sum	$10,000	$10,000	
	Fill	2000	cubic metres	$15	$30,000	
	Concrete retaining wall (patterned/textured)	400	square metres	$950	$380,000	
	Handrails	250	linear metres	$350	$87,500	
	Contingency (extents, material selection, structural)	10%			$50,750	**$558,250**
	SUB-TOTAL					**$6,088,700**
	CONTINGENCY (construction sequencing, environmental controls, flow management, etc.)	10%				**$608,870**
	HST	13%				**$870,684**
	ENHANCED DESIGN SUB-TOTAL					**$7,570,000**
	ULTIMATE DESIGN TOTAL (BASE + ENHANCED)					**$17,270,000**

Notes:
- 50% contingency applied to earthworks to account for risk associated with dewatering, material quality, disposal requirements etc.
- 20% contingency applied to elements having uncertain structurual or technical requirements
- 10% contingency applied to more flexible elements with respect to extents, material selection, or timing
- 10% contingency applied to totals to account for risk associated with construction sequencing, approvals, integration with adjacent properties
- Totals include HST as shown
- Area 'C' is labeled as Area 'B' on the detailed Schollen breakdown
- Area 'D' is labeled as Area 'A' on the detailed Schollen breakdown

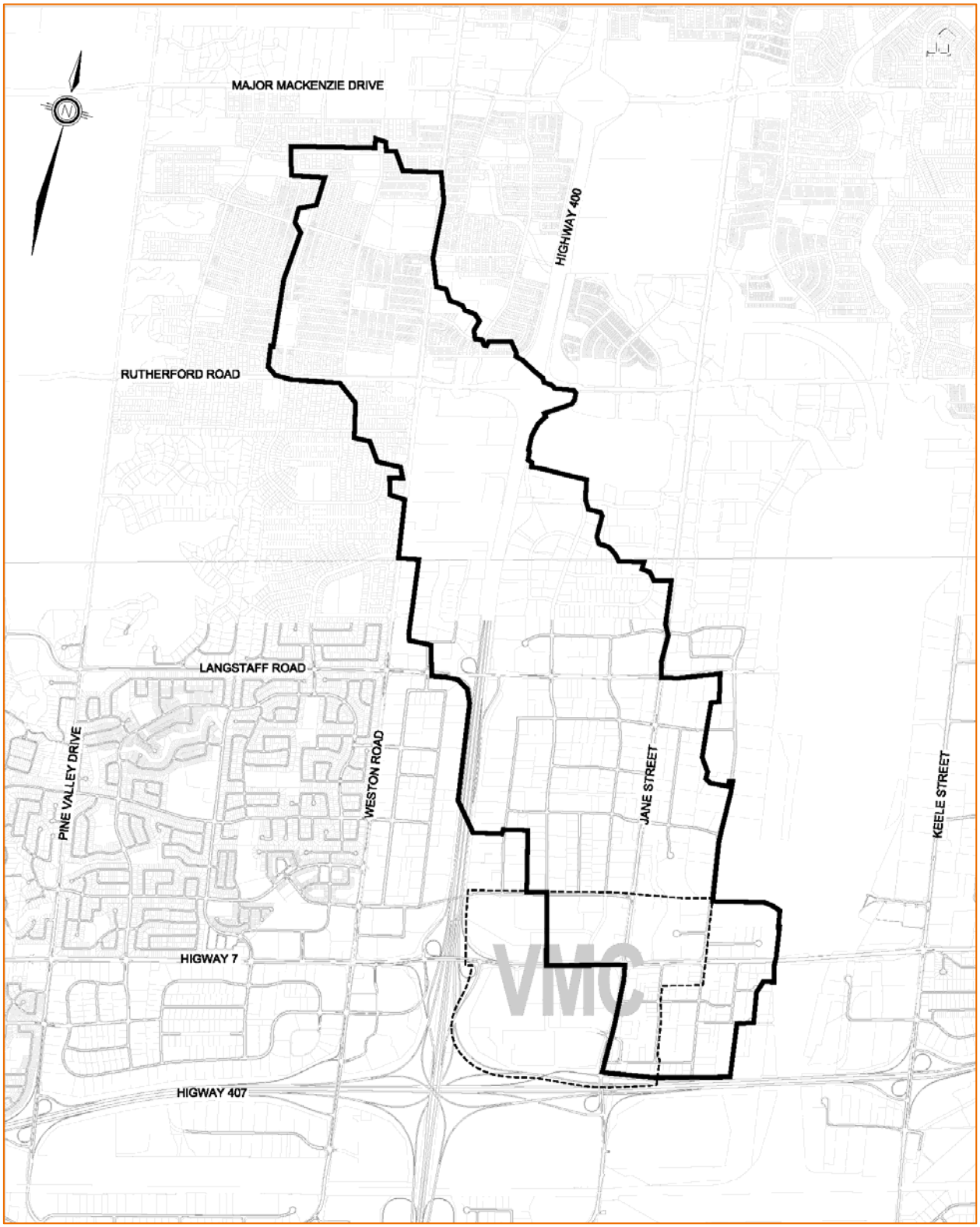
Appendix C

Area-Specific Development Charges Maps

Map 1: Black Creek Floodplain Reductions – Immediately Affected Landowners



Map 2: Vaughan Metropolitan Centre Lands Draining into Edgeley Pond



Map 3: Undeveloped Lands in the Black Creek Drainage Shed

Appendix D

Cash Flow Assumptions

APPENDIX D - PAGE 1

CITY OF VAUGHAN
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
IMMEDIATELY AFFECTED LANDOWNERS
DEVELOPMENT CHARGE PER HECTARE
(in $000)

IMMEDIATELY AFFECTED LANDOWNERS	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
OPENING CASH BALANCE	$0.0	$0.0	$803.8	$5,183.5	$5,953.6	$5,994.7	$5,974.4	$4,827.5	$3,729.0	$3,153.7	$2,027.1	$1,483.7	$923.1	$593.0	$258.2	($81.3)	($427.3)	($785.1)	($893.8)
2015 - 2041 FUNDING REQUIREMENTS																			
- Non Inflated	$0.0	$0.0	$2,695.6	$2,695.6	$3,677.2	$981.6	$981.6	$981.6	$505.7	$505.7	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
- Reserve Funded (Inflated)							$1,105.4	$1,127.5	$592.4	$604.3	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
- Debenture Principal	$0.0	$0.0	$106.4	$217.9	$375.1	$426.7	$438.7	$451.0	$463.7	$476.7	$490.1	$503.9	$518.1	$532.6	$547.6	$563.0	$578.8	$595.1	$611.8
NEW DEVELOPMENT																			
- Hectares	-	0.31	1.71	0.36	0.17	0.17	0.17	0.21	0.21	0.03	0.03	0.03	0.11	0.11	0.11	0.11	0.11	0.18	0.18
REVENUE																			
- DC Receipts: Inflated	$0.0	$790.0	$4,460.5	$950.0	$468.2	$477.5	$487.1	$595.6	$607.5	$102.8	$104.8	$106.9	$350.8	$357.8	$365.0	$372.3	$379.7	$642.2	$655.1
INTEREST																			
- Interest on Opening Balance	$0.0	$0.0	$28.1	$181.4	$208.4	$209.8	$209.1	$169.0	$130.5	$110.4	$70.9	$51.9	$32.3	$20.8	$9.0	($4.5)	($23.5)	($43.2)	($49.2)
- Interest on In-year Transactions	$0.0	$13.8	$76.2	$12.8	$1.6	$0.9	($29.1)	($27.0)	($12.3)	($26.9)	($10.6)	($10.9)	($4.6)	($4.8)	($5.0)	($5.2)	($5.5)	$0.8	$0.8
- Debenture Interest	$0.0	$0.0	($78.8)	($156.2)	($261.9)	($281.8)	($269.8)	($257.5)	($244.8)	($231.8)	($218.4)	($204.6)	($190.5)	($175.9)	($161.0)	($145.6)	($129.8)	($113.5)	($96.8)
TOTAL REVENUE	$0.0	$803.8	$4,486.1	$988.0	$416.2	$406.4	$397.3	$480.0	$480.8	($45.6)	($53.2)	($56.7)	$188.0	$197.8	$208.0	$217.0	$221.0	$486.4	$509.9
CLOSING CASH BALANCE	$0.0	$803.8	$5,183.5	$5,953.6	$5,994.7	$5,974.4	$4,827.5	$3,729.0	$3,153.7	$2,027.1	$1,483.7	$923.1	$593.0	$258.2	($81.3)	($427.3)	($785.1)	($893.8)	($995.7)

IMMEDIATELY AFFECTED LANDOWNERS	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	($995.7)	($1,090.2)	($1,176.5)	($1,254.1)	($1,376.0)	($1,302.8)	($948.5)	($491.9)	
2015 - 2041 FUNDING REQUIREMENTS									
- Non Inflated	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$13,024.4**
- Reserve Funded (Inflated)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$3,429.7**
- Debenture Principal	$629.0	$646.7	$664.8	$498.3	$323.4	$69.6	$0.0	$0.0	**$10,729.1**
NEW DEVELOPMENT									
- Hectares	0.18	0.18	0.18	0.12	0.12	0.12	0.12	0.12	**5.47**
REVENUE									
- DC Receipts: Inflated	$668.2	$681.5	$695.2	$471.2	$480.6	$490.2	$500.0	$510.0	**$16,770.6**
INTEREST									
- Interest on Opening Balance	($54.8)	($60.0)	($64.7)	($69.0)	($75.7)	($71.7)	($52.2)	($27.1)	**$836.4**
- Interest on In-year Transactions	$0.7	$0.6	$0.5	($0.7)	$2.8	$7.4	$8.8	$8.9	**($6.2)**
- Debenture Interest	($79.6)	($61.9)	($43.7)	($25.0)	($11.0)	($2.0)	$0.0	$0.0	**($3,442.0)**
TOTAL REVENUE	$534.5	$560.3	$587.3	$376.4	$396.6	$423.9	$456.6	$491.9	**$14,158.8**
CLOSING CASH BALANCE	($1,090.2)	($1,176.5)	($1,254.1)	($1,376.0)	($1,302.8)	($948.5)	($491.9)	($0.0)	

2015 Adjusted Charge Per Ha	**$2,514,568**

Allocation of Capital Program	
Residential Sector	Combined
Non-Residential Sector	Combined
Reserve Rates for 2015	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF VAUGHAN
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
VMC AREAS DRAINING TO EDGELEY POND
DEVELOPMENT CHARGE PER HECTARE
(in $000)

VMC AREAS DRAINING TO EDGELEY POND	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
OPENING CASH BALANCE	$0.0	$0.0	$0.0	$111.6	$168.8	$168.7	$172.1	$179.1	$321.4	$475.0	$640.5	$818.4	$1,009.3	$912.0	$812.3	$710.0	$605.3	$497.8	$365.5
2015 - 2041 FUNDING REQUIREMENTS																			
- Non Inflated	$0.0	$0.0	$871.0	$871.0	$871.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
- Reserve Funded (Inflated)							$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
- Debenture Principal	$0.0	$0.0	$34.4	$70.4	$108.2	$111.2	$114.3	$117.5	$120.8	$124.2	$127.7	$131.3	$135.0	$138.8	$142.7	$146.7	$150.8	$155.1	$159.4
NEW DEVELOPMENT																			
- Hectares	-	-	1.95	1.95	1.95	1.95	1.95	3.29	3.29	3.29	3.29	3.29	0.50	0.50	0.50	0.50	0.50	0.31	0.31
REVENUE																			
- DC Receipts: Inflated	$0.0	$0.0	$169.1	$172.4	$175.9	$179.4	$183.0	$315.7	$322.0	$328.4	$335.0	$341.7	$52.8	$53.8	$54.9	$56.0	$57.1	$36.6	$37.3
INTEREST																			
- Interest on Opening Balance	$0.0	$0.0	$0.0	$3.9	$5.9	$5.9	$6.0	$6.3	$11.2	$16.6	$22.4	$28.6	$35.3	$31.9	$28.4	$24.9	$21.2	$17.4	$12.8
- Interest on In-year Transactions	$0.0	$0.0	$2.4	$1.8	$1.2	$1.2	$1.2	$3.5	$3.5	$3.6	$3.6	$3.7	($2.3)	($2.3)	($2.4)	($2.5)	($2.6)	($3.3)	($3.4)
- Debenture Interest	$0.0	$0.0	($25.5)	($50.5)	($75.0)	($71.9)	($68.8)	($65.6)	($62.3)	($58.9)	($55.4)	($51.8)	($48.1)	($44.3)	($40.4)	($36.4)	($32.3)	($28.1)	($23.7)
TOTAL REVENUE	$0.0	$0.0	$146.0	$127.7	$108.0	$114.6	$121.4	$259.8	$274.5	$289.7	$305.6	$322.2	$37.7	$39.1	$40.5	$41.9	$43.4	$22.7	$23.0
CLOSING CASH BALANCE	$0.0	$0.0	$111.6	$168.8	$168.7	$172.1	$179.1	$321.4	$475.0	$640.5	$818.4	$1,009.3	$912.0	$812.3	$710.0	$605.3	$497.8	$365.5	$229.1

VMC AREAS DRAINING TO EDGELEY POND	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	$88.6	($56.2)	($206.5)	($257.3)	($246.8)	($170.6)	($88.5)	($0.0)	
2015 - 2041 FUNDING REQUIREMENTS									
- Non Inflated	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$2,612.9**
- Reserve Funded (Inflated)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$0.0**
- Debenture Principal	$163.9	$168.5	$173.2	$118.3	$60.6	$0.0	$0.0	$0.0	**$2,773.2**
NEW DEVELOPMENT									
- Hectares	0.31	0.31	0.31	0.66	0.66	0.66	0.66	0.66	**33.55**
REVENUE									
- DC Receipts: Inflated	$38.1	$38.8	$39.6	$84.8	$86.5	$88.2	$90.0	$91.8	**$3,428.8**
INTEREST									
- Interest on Opening Balance	$8.0	$3.1	($3.1)	($11.4)	($14.2)	($13.6)	($9.4)	($4.9)	**$233.6**
- Interest on In-year Transactions	($3.5)	($3.6)	($3.7)	($0.9)	$0.5	$1.5	$1.6	$1.6	**$0.4**
- Debenture Interest	($19.2)	($14.6)	($9.9)	($5.0)	($1.7)	$0.0	$0.0	$0.0	**($889.7)**
TOTAL REVENUE	$23.4	$23.7	$23.0	$67.5	$71.1	$76.2	$82.1	$88.5	**$2,773.2**
CLOSING CASH BALANCE	$88.6	($56.2)	($206.5)	($257.3)	($246.8)	($170.6)	($88.5)	($0.0)	

2015 Adjusted Charge Per Ha	**$83,452**

Allocation of Capital Program	
Residential Sector	Combined
Non-Residential Sector	Combined
Reserve Rates for 2015	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

CITY OF VAUGHAN
CASHFLOW AND DETERMINATION OF DEVELOPMENT CHARGE
UNDEVELOPED LANDS IN BLACK CREEK DRAINAGE SHED
DEVELOPMENT CHARGE PER HECTARE
(in $000)

UNDEVELOPED LANDS IN BLACK CREEK DRAINAGE SHED	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
OPENING CASH BALANCE	$0.0	$137.1	$281.8	$391.5	$464.3	$481.8	$486.3	$176.5	($158.6)	($352.4)	($563.7)	($591.5)	($617.6)	($641.8)	($663.8)	($683.7)	($701.0)	($715.7)	($727.4)
2015 - 2041 FUNDING REQUIREMENTS																			
- Non Inflated	$0.0	$0.0	$616.4	$616.4	$840.8	$224.4	$224.4	$224.4	$115.6	$115.6	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
- Reserve Funded (Inflated)							$309.5	$326.5	$177.4	$187.2	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
- Debenture Principal	$0.0	$0.0	$24.3	$49.8	$85.8	$97.6	$100.3	$103.1	$106.0	$109.0	$112.1	$115.2	$118.5	$121.8	$125.2	$128.7	$132.3	$136.1	$139.9
NEW DEVELOPMENT																			
- Hectares	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97
REVENUE																			
- DC Receipts: Inflated	$134.8	$137.4	$140.2	$143.0	$145.9	$148.8	$151.8	$154.8	$157.9	$161.0	$164.3	$167.5	$170.9	$174.3	$177.8	$181.4	$185.0	$188.7	$192.5
INTEREST																			
- Interest on Opening Balance	$0.0	$4.8	$9.9	$13.7	$16.2	$16.9	$17.0	$6.2	($8.7)	($19.4)	($31.0)	($32.5)	($34.0)	($35.3)	($36.5)	($37.6)	($38.6)	($39.4)	($40.0)
- Interest on In-year Transactions	$2.4	$2.4	$2.0	$1.6	$1.1	$0.9	($7.1)	($7.6)	($3.5)	($3.7)	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9	$0.9
- Debenture Interest	$0.0	$0.0	($18.0)	($35.7)	($59.9)	($64.4)	($61.7)	($58.9)	($56.0)	($53.0)	($49.9)	($46.8)	($43.6)	($40.2)	($36.8)	($33.3)	($29.7)	($25.9)	($22.1)
TOTAL REVENUE	$137.1	$144.6	$134.1	$122.6	$103.3	$102.1	$100.0	$94.5	$89.7	$84.9	$84.2	$89.1	$94.3	$99.7	$105.4	$111.4	$117.7	$124.3	$131.2
CLOSING CASH BALANCE	$137.1	$281.8	$391.5	$464.3	$481.8	$486.3	$176.5	($158.6)	($352.4)	($563.7)	($591.5)	($617.6)	($641.8)	($663.8)	($683.7)	($701.0)	($715.7)	($727.4)	($736.1)

UNDEVELOPED LANDS IN BLACK CREEK DRAINAGE SHED	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
OPENING CASH BALANCE	($736.1)	($741.4)	($743.0)	($740.7)	($691.2)	($590.8)	($419.4)	($217.5)	
2015 - 2041 FUNDING REQUIREMENTS									
- Non Inflated	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$2,978.1**
- Reserve Funded (Inflated)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$1,000.6**
- Debenture Principal	$143.8	$147.9	$152.0	$113.9	$73.9	$15.9	$0.0	$0.0	**$2,453.3**
NEW DEVELOPMENT									
- Hectares	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	**161.12**
REVENUE									
- DC Receipts: Inflated	$196.3	$200.2	$204.2	$208.3	$212.5	$216.7	$221.1	$225.5	**$4,762.7**
INTEREST									
- Interest on Opening Balance	($40.5)	($40.8)	($40.9)	($40.7)	($38.0)	($32.5)	($23.1)	($12.0)	**($536.7)**
- Interest on In-year Transactions	$0.9	$0.9	$0.9	$1.7	$2.4	$3.5	$3.9	$3.9	**$15.0**
- Debenture Interest	($18.2)	($14.2)	($10.0)	($5.7)	($2.5)	($0.4)	$0.0	$0.0	**($787.0)**
TOTAL REVENUE	$138.5	$146.2	$154.3	$163.5	$174.4	$187.3	$201.9	$217.5	**$3,453.9**
CLOSING CASH BALANCE	($741.4)	($743.0)	($740.7)	($691.2)	($590.8)	($419.4)	($217.5)	$0.0	

2015 Adjusted Charge Per Ha	**$22,581**

Allocation of Capital Program	
Residential Sector	Combined
Non-Residential Sector	Combined
Reserve Rates for 2015	
Inflation Rate	2.0%
Interest Rate on Positive Balances	3.5%
Interest Rate on Negative Balances	5.5%

Attachment 2

THE CITY OF VAUGHAN

BY-LAW

BY-LAW NUMBER XXX-XXXX

A By-Law to impose an Area Specific Development Charge – Edgeley Pond and Black Creek Channel Works

Whereas subsection 2(1) of the Development Charges Act, 1997, S.O. 1997, c. 27 (hereinafter referred to as the "Act") provides that the council of a municipality may pass by-laws for the imposition of a development charge against land where the development of the land would increase the need for services;

And Whereas the Council of the Corporation of the City of Vaughan held a public meeting on May 2, 2016 to consider the enactment of an area specific development charge by-law, in accordance with section 12 of the Act;

And Whereas the Council of the Corporation of the City of Vaughan has given notice in accordance with section 12 of the Act, of its intention to pass a by-law under section 2 of the said Act;

And Whereas a development charges background study has been prepared by Hemson Consulting Ltd. and Fabian Papa and Partners dated Mach 8, 2016 wherein the background study indicated that the development of any land within the service areas identified within Schedule B will increase the need for services as defined therein;

And Whereas copies of the background study and the proposed by-law were made available to the public on April 4, 2016 in accordance with sections 10 and 12 of the Act;

Now therefore the Council of The Corporation of the City of Vaughan enacts as follows:

Definition

1. For the following words and phrases if used in this by-law,

(a) **"accessory use"** means the use of any building or structure that is naturally and normally:

(i) incidental;

(ii) subordinate to: and

(iii) devoted exclusively to the main use on the same lot,

and for the purpose of this By-law detached buildings or structures which are accessory uses shall not exceed 100 square metres of gross floor area.

(b) **"agreement"** means a contract between the City and an owner and any amendment thereto;

(c) **"agricultural use"** means lands, buildings or structures, excluding any portion thereof used as a dwelling unit, used or designed or intended for use for the purpose of a bona fide farming operation including, but not limited to, animal husbandry, dairying, livestock, fallow, field crops, removal of sod, forestry, fruit farming, horticulture, market gardening, pasturage, poultry keeping, equestrian facilities and any other activities customarily carried on in the field of agriculture;

(d) "**air supported structure**" means an air supported structure as defined in the Building

(e) **"apartment building"** means a residential use building, or the residential use portion of a mixed use building, other than a townhouse or a stacked townhouse containing four or more dwelling units each of which shall have access to above grade common halls, stairs, elevators and yards;

(f) **"area specific development charge"** means a charge imposed with respect to growth-related net capital costs against a defined land area for specified services under the applicable by-law;

(g) "**atrium**" means a large open space extending through several floors in a building that is open to the ceiling;

(h) **"basement"** means a storey, the floor of which is at least 0.75 metres below finished grade, provided that not more than one half of its height from the floor to the underside of the floor joist is below the finished grade;

(i) **"capital cost**" means costs incurred or proposed to be incurred by the City or a local board directly or by others on behalf of, and as authorized by, a Municipality or Local Board under an agreement, required for the provision of services designated in the by-law within or outside the City:

(i) to acquire land or an interest in land, including a leasehold interest,

(ii) to improve land,

(iii) to acquire, lease, construct or improve buildings and structures,

(iv) to acquire, lease, construct or improve facilities including,

(A) rolling stock with an estimated useful life of seven (7) years or more years,

(B) furniture and equipment, other than computer equipment; and

(C) materials acquired for circulation, reference or information purposes by a library board as defined in the Public Libraries Act, R.S.O. 1990, c. P.44;

(v) to undertake studies in connection with any of the matters in clauses (i) to (iv),

(vi) of the development charge background study required before enactment of this by-law, and

(vii) of interest on money borrowed to pay for costs described in any of the matters in clauses (i) to (iv).

(j) **"cellar"** means the portion of a building below the lowest storey which has more than one-half of its height from the floor to the underside of the floor joists below the finished grade.

(k) **"City"** means the Corporation of the City of Vaughan;

(l) **“commercial parking garage”** means a building or structure, or any part thereof, where motor vehicles are stored prior to being sold or rented to the general public or whose principal use is the parking of motor vehicles for remuneration. For the purposes of this definition, the principal use of a building or structure, or any part thereof, shall be deemed to be the parking of motor vehicles for remuneration when:

(i) motor vehicles are parked in a building or structure and the users thereof are required to pay a fee for the parking of said motor vehicles; and

(ii) the users of said motor vehicles are neither owners, tenants or occupants of the building or structure in which the parking is located, nor are said users, guests, invitees, employees or customers of the aforementioned owners, tenants or occupants.

(m) **“development”** means the construction, erection or placing of one or more buildings or structures on land or the making of an addition or alteration to a building or structure that has the effect of substantially increasing the size or usability thereof and includes redevelopment;

(n) **“development charge”** means a charge imposed with respect to growth-related net capital costs against land under this by-law;

(o) “**duplex**” means a building comprising, by horizontal division, two dwelling units, each of which has a separate entrance to grade;

(p) **“dwelling unit”** means a room or suite of two or more rooms, designed or intended for use by a single household in which sanitary conveniences are provided and in which facilities are provided for cooking or the installation of cooking equipment;

(q) **“engineering services”** means services related to a highway, and may include water supply services, waste water services, and storm water drainage and control services,

(r) **“existing industrial building”** means an existing building or structure used or designed or intended for,

(i) manufacturing, producing, processing, storing or distributing something,

(ii) research or development in connection with manufacturing, producing or processing something,

(iii) retail sales by a manufacturer, producer or processor of something they manufactured, produced or processed, if the retail sales are at the site where the manufacturing, production or processing takes place,

(iv) office or administrative purposes, if they are,

(A) carried out with respect to manufacturing, producing, processing, storage or distributing of something, and

(B) in or attached to the building or structure used for that manufacturing, producing, processing, storage or distribution;

(s) **"grade finished"** means the average elevation of the finished ground level at the wall(s).

(t) **"gross floor area"** means, in the case of a non-residential building or structure or the non-residential portion of a mixed-use building or structure, the aggregate of the areas of each floor, whether above or below grade, measured between the exterior faces of the exterior walls of the building or structure or from the centre line of a common wall separating a non-residential and a residential use, and:

(i) includes the floor area of a mezzanine and the space occupied by interior walls and partitions;

(ii) excludes in the case of a building or structure containing an atrium, the sum of the areas of the atrium at the level of each floor surrounding the atrium above the floor level of the atrium;

(iii) excludes the area of any self-contained structural shelf and rack storage facility approved by the Building Materials Evaluation Commission; and

(iv) excludes in the case of a building containing non-commercial parking garage spaces, the sum of the areas of each floor used, or designed or intended for use for the non-commercial parking of motor vehicles, but includes any part of a building or structure above or below grade used as a commercial parking garage.

For the purposes of this definition, the nonresidential portion of a mixed-use building is deemed to include one-half of any area common to the residential and non-residential portions of such mixed-use building or structure;

(u) **"growth-related net capital cost"** means the portion of the net capital cost of services that is reasonably attributable to the need for such net capital costs that results or will result from development in all or a defined part of the City;

(v) **"home occupation"** means an occupation permitted in a dwelling unit and which:

(i) is clearly secondary to the use of the dwelling unit;

(ii) does not change the external character of the dwelling unit;

(iii) does not create or become a public nuisance, in particular in respect to noise, traffic or parking;

(w) **"household"** means one or more persons occupying or sharing all areas of the dwelling unit;

(x) "**large apartment"** means a dwelling unit in an apartment building or plex that is 650 square feet or larger in size.

In the event that the "large apartment" definitions change due to an amendment or succession to Regional By-law Number 2012-36, this by-law shall be amended to implement said amendment or succession, there shall be no retroactive application of the

amendment to the definition and no development charges paid shall be returned or refunded.

(y) **"local board"** means a local board as defined in section 1 of the Municipal Affairs Act, other than a board as defined in subsection 1(1) of the Education Act;

(z) **"lot"** means a parcel of land fronting on a street separate from any abutting land to the extent that a subdivision or a consent contemplated by the Planning Act would not be required for its conveyance. For the purpose of this paragraph, land defined in an application for a building permit shall be deemed to be a parcel of land and a reserve shall not form part of a street;

(aa) **"mid-high density mixed-use"** means a building or structure used, designed or intended for residential and non-residential uses, where:

(i) The non-residential uses comprise not more than 50 percent (50%) of the gross floor area of the building;
(ii) The non-residential uses comprise a minimum of five percent (5%) of the gross floor area of the building;
(iii) The residential portion of the building is over five storeys in height.

(bb) **"mixed-use building"** means a building or structure containing a residential and nonresidential use other than a home occupation.

(cc) **"mezzanine"** means a mezzanine as defined in the Building Code Act;

(dd) **"multiple unit dwelling"** includes stacked townhouses, and all other residential uses that are not included in the definition of "apartment building", "small apartment", "large apartment", "single detached dwelling" or "semi-detached dwelling";

(ee) **"net area"** means the gross area of land less the area of lands conveyed or to be conveyed into public ownership for the purpose of open space, parks, woodlots, schools, storm water management facilities, buffers and road widenings along Regional Roads and Ontario Hydro utility corridors and less the area of any wood lots in private ownership if zoned as such, but shall include the area of all road allowances dedicated to the City.

(ff) **"net capital cost"** means the capital cost less capital grants, subsidies and other contributions made to the City or that the Council of the City anticipates will be made, including conveyances or payments under sections 42, 51 and 53 of the Planning Act in respect of the capital cost;

(gg) **"non-commercial parking garage"** means a building or structure, or any part thereof, that is not a commercial parking garage;

(hh) "**owner"** means the owner of land or a person who has made application for an approval of the development of land upon which a development charge or a special service area development charge is imposed;

(ii) "**plex**" means a duplex, a semi-detached duplex, a triplex or a semi-detached triplex; "semi-detached duplex" means one of a pair of attached duplexes, each duplex divided

vertically from the other by a party wall

(jj) **"semi-detached dwelling"** means a building divided vertically into two dwelling units;

(kk) **"semi-detached triplex"** means one of a pair of triplexes divided vertically one from the other by a party wall;

(ll) **"services"** means services designated in this by-law;

(mm) **"single detached dwelling"** and "**single detached**" means a residential building consisting of one dwelling unit that is not attached to another structure above grade. For greater certainty, a residential building consisting of one dwelling unit that is attached to another structure by footings only shall be considered a single family dwelling for purposes of this by-law;

(nn) "**small apartment**" means a dwelling unit in an apartment building or a plex that is less than 650
square feet in size.

In the event that the "small apartment" definitions change due to an amendment or succession to Regional By-law Number 2012-36, this by-law shall be amended to implement said amendment or succession, there shall be no retroactive application of the amendment to the definition and no development charges paid shall be returned or refunded.

(oo) "**stacked townhouse"** means a building, other than a townhouse or apartment building, containing at least 3 dwelling units, each dwelling unit being separated from the other vertically and/or horizontally and each dwelling unit having an entrance to grade shared with no more than 3 other units.

(pp) "**storey"** means the portion of a building other than the cellar or unfinished attic which lies between the surface of the floor and the surface of the next floor above, and if there is no floor above it, then the surface next above it, provided its height is not less than 2.3 metres.

(qq) **"subdivision"** includes condominium;

(rr) "**triplex**" means a building comprising 3 dwelling units, each of which has a separate entrance to grade;

(ss) **"use, commercial"** means the use of any land, building or structure for the purpose of buying and selling commodities or supplying services as distinguished from such uses as manufacturing or assembly of goods, warehousing and construction;

(tt) **"use, industrial"** means the use of any land, building or structure for construction, warehousing, manufacturing, processing or assembly of materials to finished products or byproducts, including the storage of such materials and products;

(uu) **"use, institutional"** means the use of any land, building or structure by any organization owned or operated for religious, educational, charitable recreational or governmental

purposes whether or not supported in whole or part by public funds.

(vv) **"use, non-residential"** means the use of any land, building or structure or part thereof for use other than a residential use and shall include a commercial use, industrial use and an institutional use; and

(ww) **"use, residential"** means the use of any land, building or structure for a single detached dwelling, semi-detached dwelling, multiple unit dwelling, apartment or any other type of household or dwelling unit.

PART 1: APPLICATION, EXEMPTIONS AND EXCEPTIONS –RULES

2. (1) This by-law applies to lands within the City identified in Schedule B whether or not the land, building or structure or use thereof is exempt from taxation under Section 3 of the *Assessment Act*. R.S.O. 1990, c.A.31.

(2) The development of land within the City may be subject to one or more development charges by-laws of the City.

(3) Despite subsection (1), this by-law does not apply to any land, building or structure within the City owned by and used for the purposes of:

(a) a local board;

(b) the City or any local board thereof and, without limiting the generality of the foregoing, including land leased from the Crown in right of Canada or Ontario located within the Parkway Belt Planning Area as defined in Regulation 744, paragraph 16 of the Revised Regulations of Ontario, 1990, provided the same is used for institutional use purposes of a not-for-profit nature;

(c) any area municipality within the Regional Municipality of York ;

(d) the Regional Municipality of York or any local board thereof; and/or

(e) a public hospital receiving aid under the Public Hospitals Act.

3. (1) Development charges for the services designated in Schedule A shall be imposed upon the service areas designated in Schedule B and calculated in the amounts specified in Schedule A and shall be collected in accordance with this by-law on development for a residential use or non-residential use purpose.

The charges per net developable hectare shown on Schedule A are not cumulative however more than one charge may apply to a given land area.

(2) Development charges provided for in subsections (1) apply where the development requires:

(a) the passing of a zoning by-law or of an amendment thereto under Section 34 of the *Planning Act,* R.S.O. 1990, c.P.13;

(b) the approval of a minor variance under Section 45 of the *Planning Act,* R.S.O. 1990,c.P.13;

(c) a conveyance of land to which a by-law passed under subsection 50(7) of the *Planning Act*, R.S.O, 1990, c.P.13 applies;

(d) the approval of a plan of subdivision under Section 51 of the *Planning Act*, R.S.O. 1990, c.P.13;

(e) a consent under Section 53 of the *Planning Act* R.S.O. 1990 c.P.13;

(f) the approval of a description under Section 50 of the *Condominium Act* 1998 S.O.1998,c.19; and

(g) the issuing of a permit under the *Building Code Act*, 1992 S.O. *1992*, c.23 in relation to a building or structure.

(3) The City shall not apply more than one development charge provided for in this by-law on land even though two or more of the actions described in paragraphs 3(2)(a) to (g) are required before the land can be developed.

(4) Despite subsection (3), if two or more of the actions described in subsection (2)(a) to (g) occur at different times and if the subsequent action or actions has the effect of increasing the need for services a development charge shall be imposed, calculated and collected pursuant to subsection (1) limited to the increase.

(5) Subsection (1) shall not apply to any land, building or structure where the application for a building permit is for:

(a) a temporary use permitted under a zoning by-law enacted under Section 39 of the *Planning Act* R.S.O. 1990, c.P.13;

(b) an accessory use and, without restricting the generality of the foregoing, including a tent or awning used on a temporary or seasonal basis;

(c) a home occupation;

(d) an agricultural use; and/or

(e) renovation of an existing building which does not alter, if a residential use, the number of units, or, if a non-residential use, the gross floor area thereof.

(6) Development charges collected pursuant to this by-law shall be maintained in a separate reserve fund or funds and shall be used only for the services specified in Schedule A.

PART 2: ADMINISTRATION

Payment

4. Unless otherwise provided by agreement, all development charges payable shall be paid by cash or certified cheque to the City Treasurer.

5. Unless otherwise provided herein or by an agreement, a development charge is calculated and payable, as the case may be, on the date a building permit is issued for development on land to which a development charge applies and no building permit shall be issued until the development charge is paid in full.

6. Unless otherwise provided by agreement, a residential use development pursuant to a plan of subdivision under section 51 of the *Planning Act,* R.S.O. 1990,c.P.13, shall pay any area specific development charge set out in Schedule A immediately upon entering into the subdivision agreement.

7. If a use of any land, building or structure that constitutes development does not require the issuing of a building permit but requires one or more of the actions listed in section 3(2)(a) to (f) inclusive, a development charge shall be payable and shall be calculated and collected on the earliest of any of the actions listed in section 3(2)(a) to (f) required or on a date set by agreement.

Credits

8. (1) Where the City permits the provision of services in lieu of the payment of all or any portion of a development charge, the City shall give a credit for an amount equal to the reasonable cost to the owner of providing the services as determined by the City, provided such credit shall relate only to the portion of the development charge attributable to the services provided, unless otherwise agreed by the City.

(2) The City may by agreement permit an owner to provide services additional to or of a greater size or capacity than is required and the City may give a credit for an amount up to the reasonable cost to the owner of providing the services as determined by the City, provided that no such credit may be given for any part of the cost of work that relates to an increase in the level of service that exceeds the average level of service described in Paragraph 4 of subsection 5 (1) of the *Development Charges Act, 1997.*

PART 3: GENERAL

Semi-annual Adjustment

9. The development charges established pursuant to section 3 may be adjusted semi-annually, without amendment to this by-law, as of the 1st day of January and the 1st day of July in each year, commencing on July 1, 2016 in accordance with the most recent change in the Statistics Canada Quarterly, Construction Price Statistics (catalogue No. 62-007 CANSIM II Table 327-0039).

Term

10. This By-law shall come into force on July 1, 2016.

11. Nothing in the by-law shall be construed so as to commit or require the City to authorize or proceed with any specific capital project at any specific time.

12. Each of the provisions of this by-law are severable and if any provision hereof should for any reason be declared invalid by a court the remaining provisions shall remain in full force and effect.

Schedules

13. Schedules A and B are attached hereto and form an integral part of this by-law.

PART 4: TRANSITIONAL PROVISIONS

18. If before the coming into force of this by-law an owner or previous owner has made a payment for The total cost of the services described in this by-law or provided all of said services in lieu thereof, no payment as required under this by-law and no refunds or credits shall apply.

19. This by-law may be cited as the Area Specific Development Charges By-law, Edgeley Pond and Black Creek Channel Works, 2016.

READ a FIRST, SECOND and THIRD time and finally passed this 7th day of June 2016.

_____
Hon. Maurizio Bevilacqua, Mayor

_____
Jeffrey A. Abrams, City Clerk

Authorized by Item No. 1 of Report No. X
Of the Finance and Administration Committee
Adopted by Vaughan City Council on
June 7, 2016

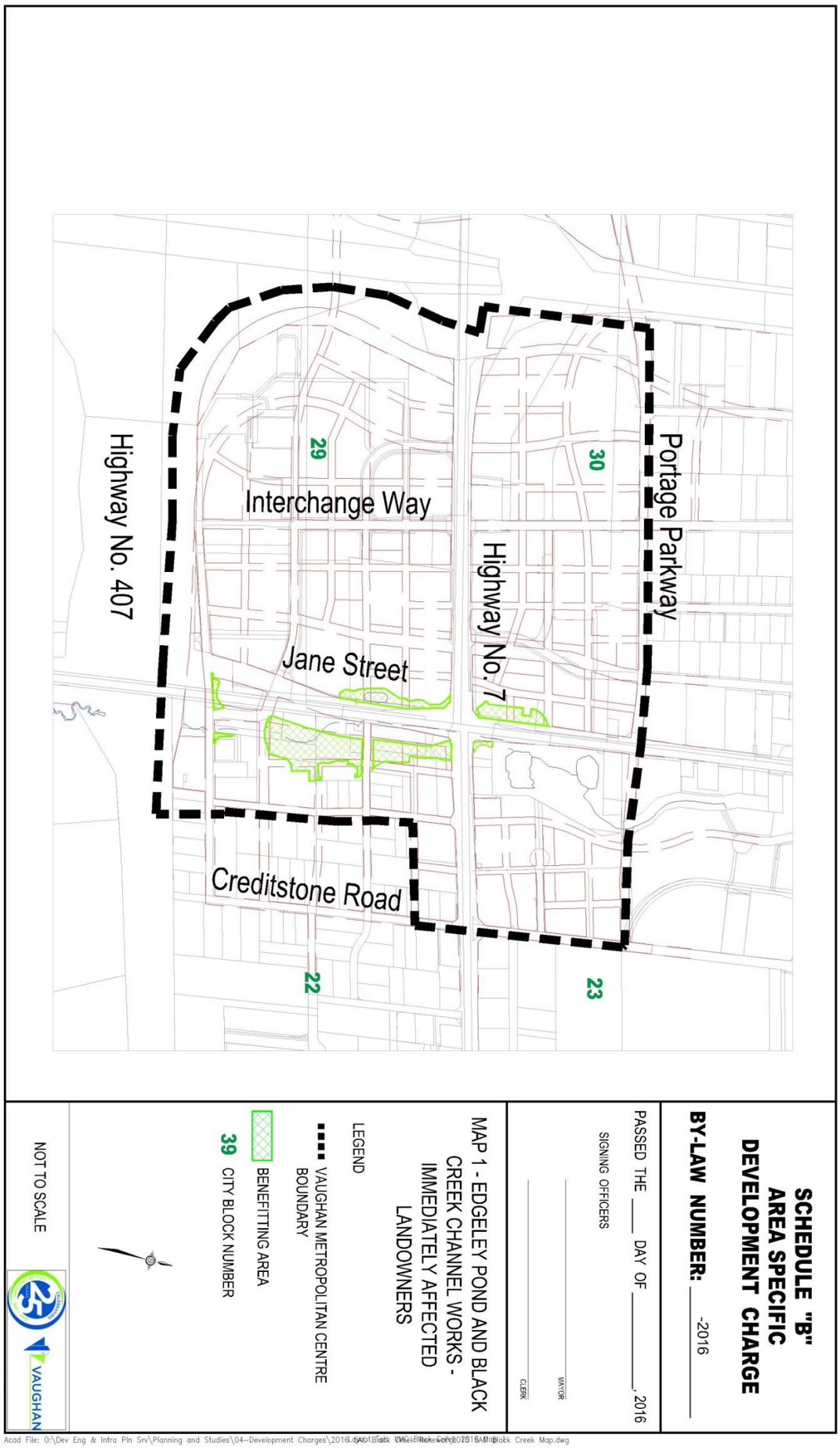
Schedule A
To By-law No. XX-XXX
Area Specific Development Charge
Edgeley Pond and Black Creek Channel Works

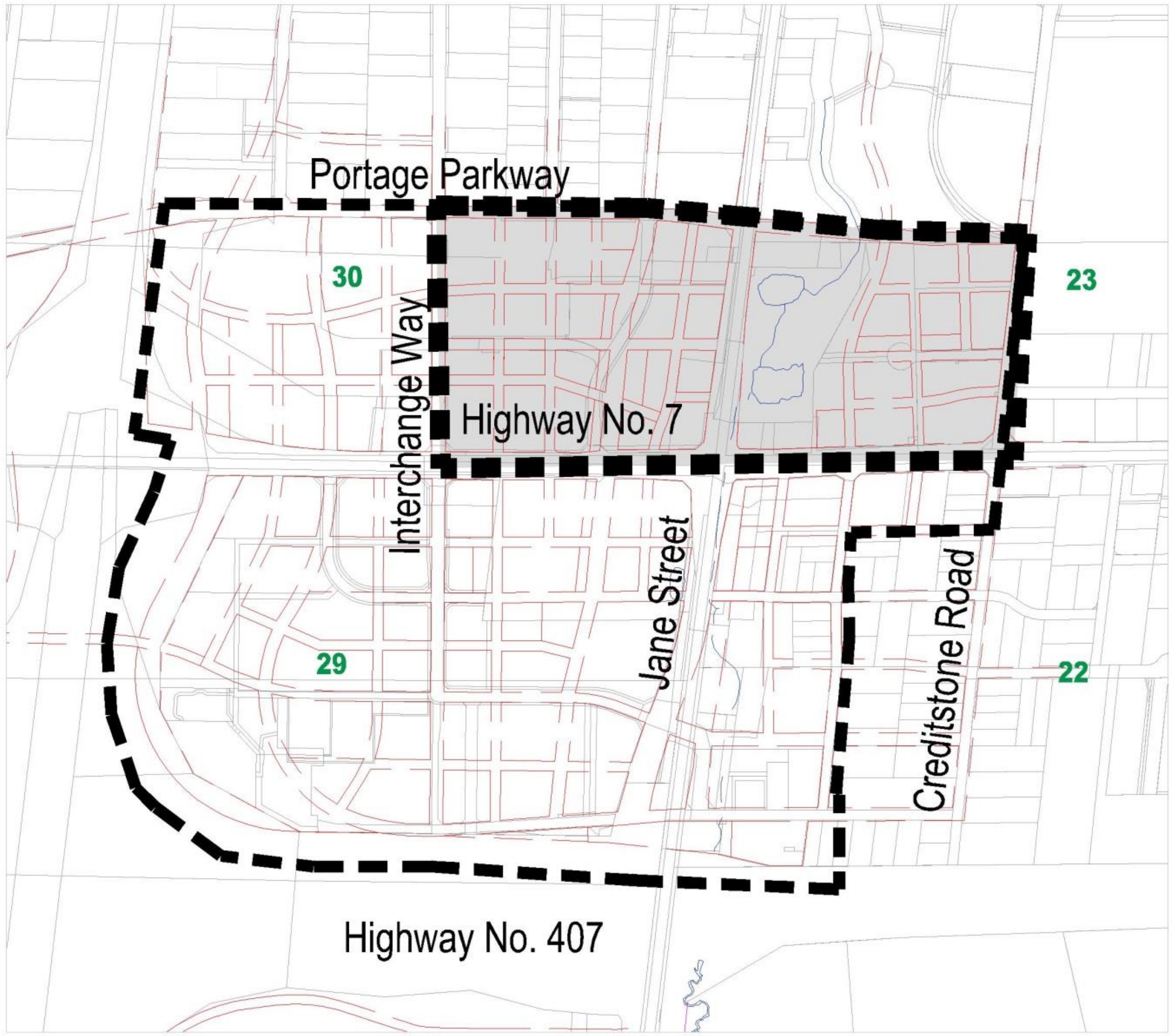
Service	Lands to which Area Specific Development Charges Apply	Net Project Cost	Net Benefitting Area	Charge Per Net Developable Hectare
Edgeley Pond and Black Creek Channel Works	Immediately Affected Landowners – Map 1	$13,024,387	5.47	$2,514,568
	Vaughan Metropolitan Centre Draining to Edgeley Pond – Map 2	$2,612,884	33.55	$83,452
	Undeveloped Lands in the Black Creek Drainage Shed – Map 3	$2,978,137	161.12	$22,581

Lands that fall in more than one map area as designated in Schedule B shall be required to pay the development charges designated in Schedule A, applying to each map that the lands are included. For greater clarity, should a parcel of land be located on more than one map, the development charge associated with each map will be applied as a sum total charge per hectare.

Schedule B

Area Specific Development Charge Maps





SCHEDULE "B" CONTINUED
AREA SPECIFIC
DEVELOPMENT CHARGE

BY-LAW NUMBER: ____-2016____

PASSED THE ____ DAY OF ____________, 2016

SIGNING OFFICERS

______________ MAYOR

______________ CLERK

MAP 2 - EDGELEY POND AND BLACK CREEK CHANNEL WORKS - VAUGHAN METROPOLITAN CENTRE DRAINING TO EDGELEY POND

LEGEND

---- VAUGHAN METROPOLITAN CENTRE BOUNDARY

BENEFITTING AREA

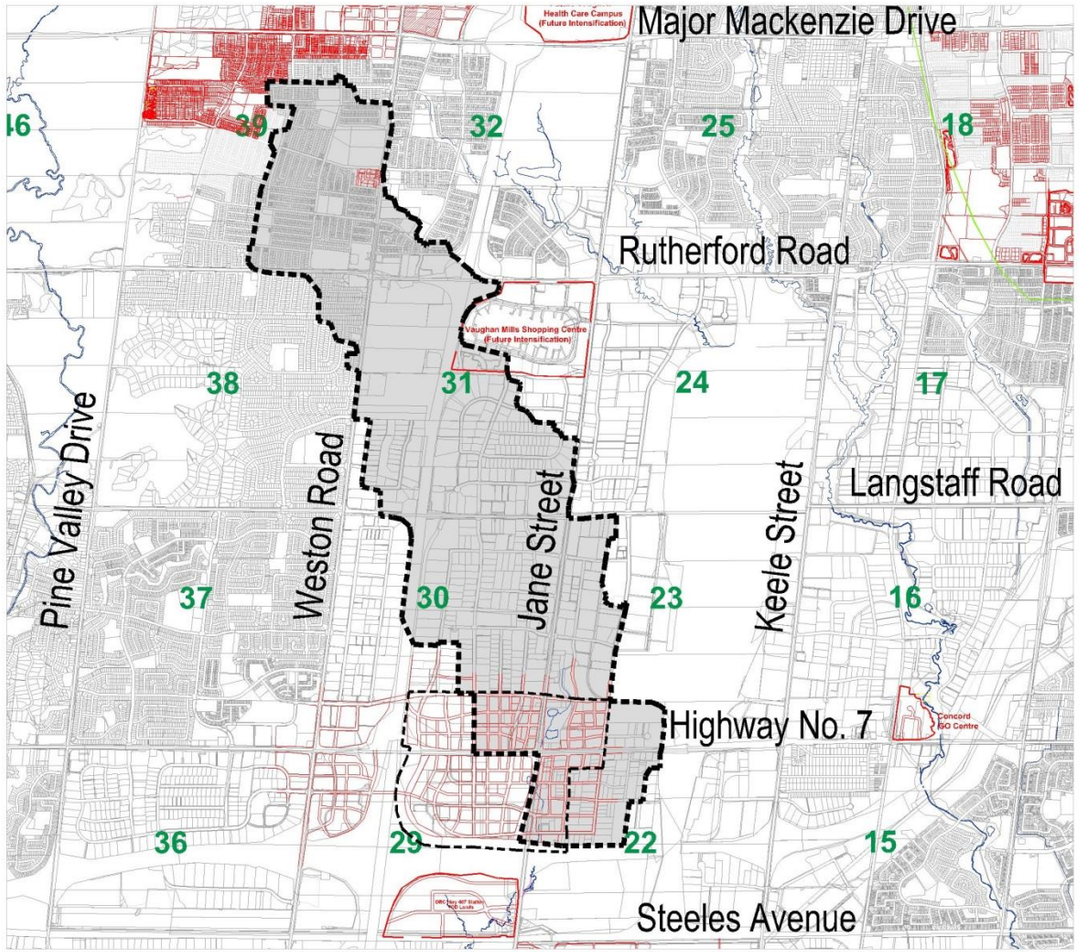
39 CITY BLOCK NUMBER

NOT TO SCALE

VAUGHAN

March 2, 2016

Acad File: O:\Dev Eng & Infra Pln Srv\Planning and Studies\04-Development Charges\2016 SAC Black Creek Map.dwg



SCHEDULE "B" CONTINUED AREA SPECIFIC DEVELOPMENT CHARGE

BY-LAW NUMBER: -2016

PASSED THE ____ DAY OF _____, 2016

SIGNING OFFICERS

_____ MAYOR

_____ CLERK

MAP 3 - EDGELEY POND AND BLACK CREEK CHANNEL WORKS - UNDEVELOPED LANDS IN THE BLACK CREEK DRAINAGE SHED

LEGEND

---- VAUGHAN METROPOLITAN CENTRE BOUNDARY

BENEFITTING AREA

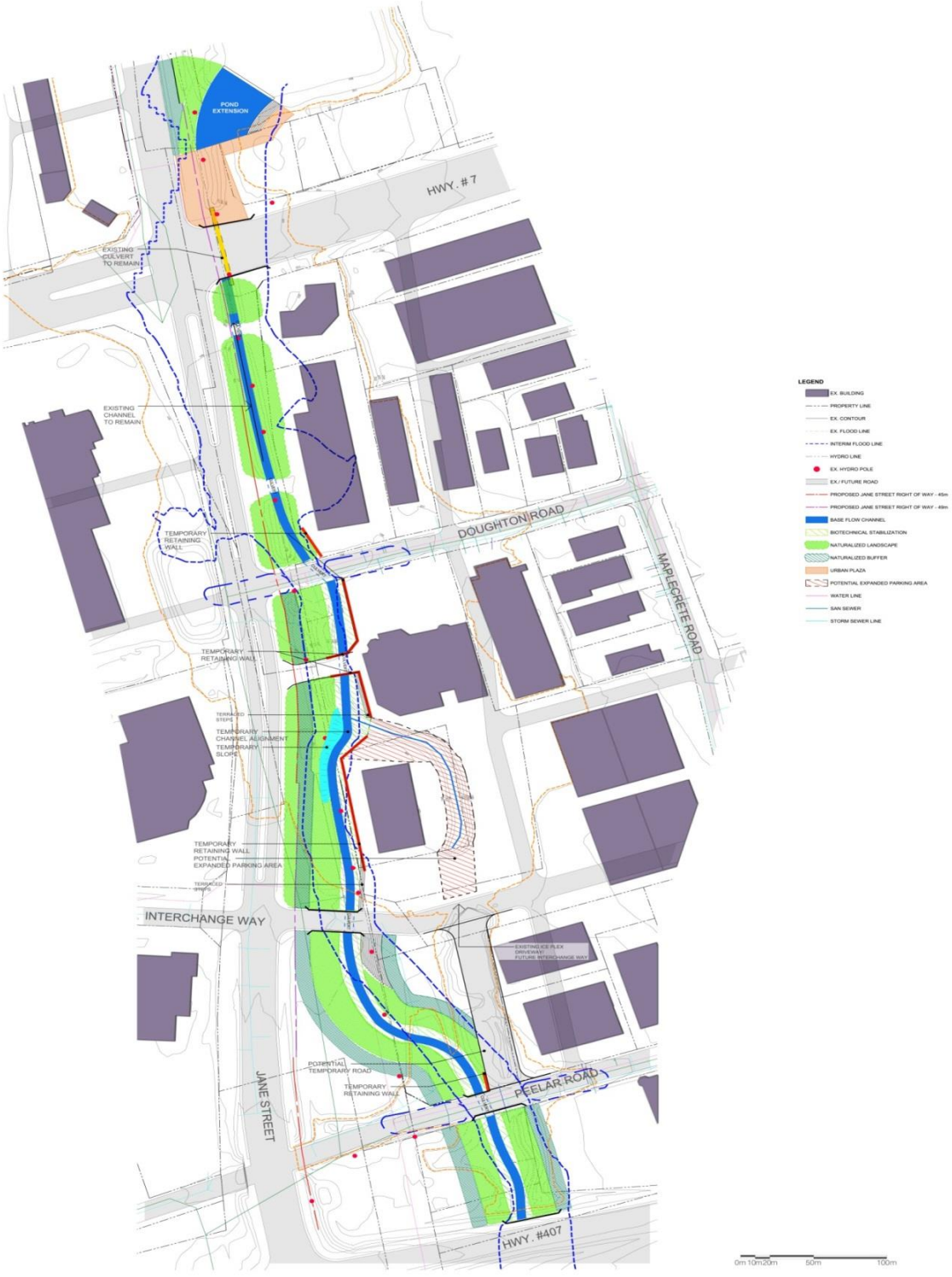
39 CITY BLOCK NUMBER

NOT TO SCALE

March 3, 2016

Acad File: O:\Dev Eng & Infra Pln Srv\Planning and Studies\04-Development Charges\2016 DC Update\Maps\Edgeley Pond & Black Creek Map.dwg

ATTACHMENT 3 – INTERIM CHANNEL CONCEPT



VAUGHAN black creek renewal vaughan metropolitan centre

Proposed Structure
Interim Scenario

May 2014

ATTACHMENT 4 – ULTIMATE CHANNEL CONCEPT

VAUGHAN black creek renewal vaughan metropolitan centre

Proposed Structure
Ultimate Scenario

May 2014