



City of Hamilton
GENERAL ISSUES COMMITTEE
AGENDA

Meeting #: 21-014
Date: July 5, 2021
Time: 9:30 a.m.
Location: Due to the COVID-19 and the Closure of City Hall (CC)

All electronic meetings can be viewed at:

City's Website:
<https://www.hamilton.ca/council-committee/council-committee-meetings/meetings-and-agendas>

City's YouTube Channel:
<https://www.youtube.com/user/InsideCityofHamilton> or Cable 14

Stephanie Paparella, Legislative Coordinator (905) 546-2424 ext. 3993

1. CEREMONIAL ACTIVITIES

2. APPROVAL OF AGENDA

(Added Items, if applicable, will be noted with *)

3. DECLARATIONS OF INTEREST

4. APPROVAL OF MINUTES OF PREVIOUS MEETING

4.1. June 16, 2021

5. COMMUNICATIONS

6. DELEGATION REQUESTS

6.1. Paven Bratch, Metro Partners Inc., respecting the proposed Downtown TechHub (For a future meeting)

7. CONSENT ITEMS

- 7.1. Business Improvement Area (BIA) Advisory Committee Minutes 21-005, May 11, 2021
- 7.2. Assessing COVID Related Financial Impacts on Local Farmers' Markets (PED21141) (City Wide)

8. STAFF PRESENTATIONS

- 8.1. COVID-19 Verbal Update
- 8.2. Chedoke Creek Order - Cootes Paradise Workplan (PW19008(m)) (City Wide)
- 8.3. City Manager 2020 - 2021 Review (CM21006) (City Wide)

9. PUBLIC HEARINGS / DELEGATIONS

10. DISCUSSION ITEMS

- 10.1. Hamilton Tax Increment Grant - 154 Main Street East, Hamilton (PED21115) (Ward 2)
- 10.2. Hamilton Tax Increment Grant - 540 King Street East, Hamilton (PED21140) (Ward 3)
- 10.3. Capital Projects Work-in-Progress Sub-Committee Report 21-002, June 21, 2021
- 10.4. Considerations to Implement a Vacant Home Tax in Hamilton (FCS21017(a) / PED21114) (City Wide) (Outstanding Business List Item)
- 10.5. School Board Properties Sub-Committee Report 21-002, June 22, 2021
- 10.6. Advisory Committee for Persons with Disabilities Report 21-006, June 8, 2021
- 10.7. 2022 Municipal Election: Communication Plan (FCS21071) (City Wide)

11. MOTIONS

12. NOTICES OF MOTION

- 12.1. Investing in City Roads and Sidewalks Infrastructure with Canada Community-Building Funds

13. GENERAL INFORMATION / OTHER BUSINESS

- 13.1. Amendments to the Outstanding Business List

13.1.a. Proposed New Due Dates:

13.1.a.a. CityLAB Pilot Update

Current Due Date: July 5, 2021

Proposed New Due Date: September 8, 2021

13.1.a.b. Communications Strategy to assist in ensuring residents on the Municipal Elections Voters List

Current Due Date: July 5, 2021

Proposed New Due Date: August 9, 2021

13.1.a.c. Election Expense Reserve Needs related to consideration of Internet Voting for the 2026 Municipal Election

Current Due Date: July 5, 2021

Proposed New Due Date: August 9, 2021

13.1.b. Items to be Removed:

13.1.b.a. Downtown Entertainment Precinct Master Agreement

(Addressed as Item 14.2 at the June 2, 2021 GIC - Report PED18168(g))

14. PRIVATE AND CONFIDENTIAL

14.1. Disposition of City-Owned Industrial Land (PED21135) (Ward 11)

Pursuant to Section 9.1, Sub-section (c) of the City's Procedural By-law 21-021 and Section 239(2), Sub-section (c) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to a proposed or pending acquisition or disposition of land by the municipality or local board.

14.2. Surplus and Disposition of City-Owned Land in Ward 12 (PED21124) (Ward 12)

Pursuant to Section 9.1, Sub-section (c) of the City's Procedural By-law 21-021 and Section 239(2), Sub-section (c) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to a proposed or pending acquisition or disposition of land by the municipality or local board.

14.3. Planning and Economic Development Realignments - Real Estate Section
(PED21134) (City Wide)

Pursuant to Section 9.1, Sub-section (d) of the City's Procedural By-law 21-021 and Section 239(2), Sub-section (d) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to labour relations or employee negotiations.

15. **ADJOURNMENT**



GENERAL ISSUES COMMITTEE MINUTES 21-013

9:30 a.m.

Wednesday, June 16, 2021

Due to COVID-19 and the closure of City Hall, this meeting was held virtually.

Present: Mayor F. Eisenberger, Deputy Mayor J. Farr (Chair)
Councillors M. Wilson, N. Nann, S. Merulla, C. Collins, T. Jackson,
E. Pauls, J. P. Danko, B. Clark, M. Pearson, B. Johnson,
L. Ferguson, A. VanderBeek, J. Partridge

Absent: Councillor T. Whitehead – Leave of Absence

THE FOLLOWING ITEMS WERE REFERRED TO COUNCIL FOR CONSIDERATION:

1. **Annual Update - Implementation of the Public Art Master Plan (PED19053(b)) (City Wide) (Item 7.1)**

(Danko/Nann)

That Report PED19053(b), respecting the Annual Update - Implementation of the Public Art Master Plan, be received.

Result: Motion CARRIED by a vote of 15 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

**2. 2022-2024 Multi-Year Outlook and Capital Financing Plan Update (FCS21057)
(City Wide) (Item 8.2)**

(Eisenberger/Jackson)

That Report FCS21057, respecting the 2022-2024 Multi-Year Outlook and Capital Financing Plan Update, be received.

Result: Motion CARRIED by a vote of 13 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

**3. Updated Net Operating Cost Estimates for a Hamilton LRT
(CM21006/PED21145/PW21040/FCS21068) (City Wide) (Item 10.1)**

(Eisenberger/Ferguson)

That Report CM21006/PED21145/PW21040/FCS21068, respecting the Updated Net Operating Cost Estimates for a Hamilton LRT, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson

Yes	-	Ward 11	Councillor Brenda Johnson
Yes	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

4. Light Rail Transit Investment and City of Hamilton Financial Incentive Programs (FCS21066) (City Wide) (Item 10.2)

(Eisenberger/Ferguson)

That Report FCS21066, respecting the Light Rail Transit Investment and City of Hamilton Financial Incentive Programs, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

5. Historical Development Activity in the Proposed LRT Corridor (PED21142) (City Wide) (Item 10.3)

(Eisenberger/Ferguson)

That Report PED21142, respecting the Historical Development Activity in the Proposed LRT Corridor, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann

Yes	-	Ward 4	Councillor Sam Merulla
Absent	-	Ward 5	Councillor Chad Collins
Yes	-	Ward 6	Councillor Tom Jackson
Yes	-	Ward 7	Councillor Esther Pauls
Yes	-	Ward 8	Councillor J. P. Danko
Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Yes	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

6. Facility Naming Sub-Committee Report 21-001, May 27, 2021 (Item 10.4)

(Nann/Pearson)

(a) Naming of Brightside Park, 43 Lloyd Street, Hamilton (PW21028) (Ward 3)

That the yet to be constructed park site located at 43 Lloyd Street, Hamilton, (internally referred to as Stadium Precinct Community Park), be named Brightside Park.

(b) Jennie Florence Parker Sports Complex (Item 11.1)

WHEREAS Jennie Florence Parker (1902-1965) proposed to civic leaders in 1958 that a waterfront park be constructed in the City's east end;

WHEREAS there exists a small plaque in Confederation Beach Park celebrating her contribution to the development and opening of the park in the 1960s; and

WHEREAS the new sports complex (former RV campground) in Confederation Beach Park is scheduled to open in 2021,

THEREFORE BE IT RESOLVED:

That staff be directed to investigate naming the new sports complex in honour and recognition of Jennie Parker for her contribution in the establishment of Confederation Beach Park, and report back to the Facility Naming Sub-committee.

Result: Motion CARRIED by a vote of 13 to 0, as follows:

Yes - Mayor Fred Eisenberger

Yes	-	Ward 1	Councillor Maureen Wilson
Yes	-	Ward 2	Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3	Councillor Nrinder Nann
Absent	-	Ward 4	Councillor Sam Merulla
Yes	-	Ward 5	Councillor Chad Collins
Yes	-	Ward 6	Councillor Tom Jackson
Yes	-	Ward 7	Councillor Esther Pauls
Yes	-	Ward 8	Councillor J. P. Danko
Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Absent	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

7. Hamilton Tax Increment Grant - 40 King Street East, Stoney Creek (PED21116) (Ward 5) (Item 10.5)

(Collins/Farr)

- (a) That a Hamilton Tax Increment Grant Program Application submitted by Simnat Consulting Inc. (Joseph Trombetta), for the property known as 40 King Street East, Stoney Creek, estimated at \$27,972.48 over a maximum of a five (5) year period, and based upon the incremental tax increase attributable to the renovation of 40 King Street East, Stoney Creek, be authorized and approved, in accordance with the terms and conditions of the Hamilton Tax Increment Grant Program;
- (b) That the Mayor and City Clerk be authorized and directed to execute a Grant Agreement together with any ancillary documentation required, to give effect to the Hamilton Tax Increment Grant for Simnat Consulting Inc. for the property known as 40 King Street East, Stoney Creek, in a form satisfactory to the City Solicitor; and,
- (c) That the General Manager of the Planning and Economic Development Department be authorized to approve and execute any Grant Amending Agreements, together with any ancillary amending documentation, if required, to give effect to the Hamilton Tax Increment Grant for Simnat Consulting Inc. for the property known as 40 King Street East, Stoney Creek, provided that the terms and conditions of the Hamilton Tax Increment Grant Program, as approved by City Council, are maintained.

Result: Motion CARRIED by a vote of 13 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson

Yes	-	Ward 2	Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3	Councillor Nrinder Nann
Absent	-	Ward 4	Councillor Sam Merulla
Yes	-	Ward 5	Councillor Chad Collins
Yes	-	Ward 6	Councillor Tom Jackson
Yes	-	Ward 7	Councillor Esther Pauls
Yes	-	Ward 8	Councillor J. P. Danko
Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Absent	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

**8. Hamilton Tax Increment Grant - 81 King Street East, Hamilton (PED21103)
(Ward 2) (Item 10.6)**

(Eisenberger/Danko)

- (a) That a Hamilton Tax Increment Grant Program Application submitted by 1787493 Ontario Inc.(Sonalben Gandhi), for the property at 81 King Street East, Hamilton, estimated at \$41,242.71 over a maximum of a five (5) year period, and based upon the incremental tax increase attributable to the redevelopment of 81 King Street East, Hamilton, be authorized and approved, in accordance with the terms and conditions of the Hamilton Tax Increment Grant Program;
- (b) That the Mayor and City Clerk be authorized and directed to execute a Grant Agreement together with any ancillary documentation required, to affect the Hamilton Tax Increment Grant for 1787493 Ontario Inc. (Sonalben Gandhi), for the property at 81 King Street East, Hamilton, in a form satisfactory to the City Solicitor; and,
- (c) That the General Manager of the Planning and Economic Development Department be authorized to approve and execute any Grant Amending Agreements, together with any ancillary amending documentation, if required, to give effect to the Hamilton Tax Increment Grant for 1787493 Ontario Inc. (Sonalben Gandhi), for the property at 81 King Street East, Hamilton, provided that the terms and conditions of the Hamilton Tax Increment Grant Program, as approved by City Council, are maintained.

Result: Motion CARRIED by a vote of 13 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor

Yes	-	Ward 3	Councillor Nrinder Nann
Absent	-	Ward 4	Councillor Sam Merulla
Yes	-	Ward 5	Councillor Chad Collins
Yes	-	Ward 6	Councillor Tom Jackson
Yes	-	Ward 7	Councillor Esther Pauls
Yes	-	Ward 8	Councillor J. P. Danko
Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Absent	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

9. Hamilton Tax Increment Grant – 34 Main Street North, Flamborough (PED21122) (Ward 15) (Item 10.7)

(Partridge/Eisenberger)

- (a) That a Hamilton Tax Increment Grant Program Application submitted by 1955037 Ontario Inc. (Koosh Kahnamoui and Kamyar Kahnamoui), for the property at 34 Main Street North, Flamborough estimated at \$6,917.55 over a maximum of a five (5)-year period, and based upon the incremental tax increase attributable to the development of 34 Main Street North, Flamborough, be authorized and approved, in accordance with the terms and conditions of the Hamilton Tax Increment Grant Program;
- (b) That the Mayor and City Clerk be authorized and directed to execute a Grant Agreement together with any ancillary documentation required, to give effect to the Hamilton Tax Increment Grant for 1955037 Ontario Inc. (Koosh Kahnamoui and Kamyar Kahnamoui) for the property known as 34 Main Street North, Flamborough, in a form satisfactory to the City Solicitor; and,
- (c) That the General Manager of the Planning and Economic Development Department be authorized to approve and execute any Grant Amending Agreements, together with any ancillary amending documentation, if required, to give effect to the Hamilton Tax Increment Grant for 1955037 Ontario Inc. (Koosh Kahnamoui and Kamyar Kahnamoui) for the property known as 34 Main Street North, Flamborough, provided that the terms and conditions of the Hamilton Tax Increment Grant Program, as approved by City Council, are maintained.

Result: Motion CARRIED by a vote of 13 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson

Yes	-	Ward 2	Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3	Councillor Nrinder Nann
Absent	-	Ward 4	Councillor Sam Merulla
Yes	-	Ward 5	Councillor Chad Collins
Yes	-	Ward 6	Councillor Tom Jackson
Yes	-	Ward 7	Councillor Esther Pauls
Yes	-	Ward 8	Councillor J. P. Danko
Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Absent	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

10. Hamilton Tax Increment Grant - 155-161 Wellington Street North, Hamilton (PED21100) (Ward 2) (Item 10.8)

(VanderBeek/Eisenberger)

- (a) That a Hamilton Tax Increment Grant Program Application submitted by JRAD Investments Inc. (John Ribson), for the property at 155-161 Wellington Street North, Hamilton, estimated at \$60,274.41 over a maximum of a five (5) year period, and based upon the incremental tax increase attributable to the redevelopment of 155-161 Wellington Street North, Hamilton, be authorized and approved, in accordance with the terms and conditions of the Hamilton Tax Increment Grant Program;
- (b) That the Mayor and City Clerk be authorized and directed to execute a Grant Agreement together with any ancillary documentation required, to effect to the Hamilton Tax Increment Grant for JRAD Investments Inc. (John Ribson) for the property at 155-161 Wellington Street North, Hamilton, in a form satisfactory to the City Solicitor; and,
- (c) That the General Manager of the Planning and Economic Development Department be authorized to approve and execute any Grant Amending Agreements, together with any ancillary amending documentation, if required, to effect to the Hamilton Tax Increment Grant for JRAD Investments Inc. (John Ribson) for the property at 155-161 Wellington Street North, Hamilton, provided that the terms and conditions of the Hamilton Tax Increment Grant Program, as approved by City Council, are maintained.

Result: Motion CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson

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Yes	-	Ward 2	Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3	Councillor Nrinder Nann
Absent	-	Ward 4	Councillor Sam Merulla
Yes	-	Ward 5	Councillor Chad Collins
Yes	-	Ward 6	Councillor Tom Jackson
Yes	-	Ward 7	Councillor Esther Pauls
Yes	-	Ward 8	Councillor J. P. Danko
Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Absent	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

11. Fair Payment of Musicians for City-Led Events Policy (PED21041(a)) (City Wide) (Item 10.9)

(Eisenberger/Nann)

- (a) That the Fair Payment of Musicians for City-Led Events Policy (Policy) outlined in Appendix "A" to Report PED21041(a), be approved; and,
- (b) That the Outstanding Business List item, City Guidelines and/or Policy Establishing a Practice of Payment for Musicians, be identified as completed and removed from the list.

Result: Motion CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

12. Potential for Major Event in 2024 (PED20071(c)) (City Wide) (Item 10.10)

(Pearson/Jackson)

- (a) That the City of Hamilton enter into the agreements necessary to facilitate the hosting of the June 10 to 16, 2024 RBC Canadian Open, under terms and conditions substantially similar to those previously approved by Council, for the hosting of the June 5 to 11, 2023 RBC Canadian Open; and,
- (b) That the General Manager of the Planning and Economic Development Department be authorized, on behalf of the City of Hamilton, to approve and execute any required agreements and associated documents, for the hosting of the June 10 to 16, 2024 RBC Canadian Open, each in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 2, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
No	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
No	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

13. Green and Inclusive Community Buildings Program (FCS21055) (City Wide) (Item 10.11)

(Partridge/Pauls)

- (a) That the projects listed in Appendix "A" to Report FCS21055, be approved as the City of Hamilton's submission for consideration to Infrastructure Canada for the requested funding amount of \$1,240,000, for projects with a total project cost of \$1,550,000, in accordance with the terms and conditions associated with the Green and Inclusive Community Buildings Program;
- (b) That the Mayor and City Clerk be authorized and directed to execute all necessary documentation, including Funding Agreements, to receive funding under the Green and inclusive Community Buildings Program with

content satisfactory to the General Manager of Corporate Services, and in a form satisfactory to the City Solicitor;

- (c) That the City Solicitor be authorized and directed to prepare any necessary by-laws for Council approval, for the purpose of giving effect to the City's acceptance of funding from the Green and Inclusive Community Buildings Program;
- (d) That, should a project submission for the Green and Inclusive Community Buildings Program, be approved, the City's contribution be funded from the City's Energy Reserve (Account 112272); and,
- (e) That copies of Report FCS21055, respecting the Green and Inclusive Community Buildings Program, be forwarded to local Members of Parliament.

Result: Motion CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

14. Hamilton Tax Increment Grant and Environmental Remediation and Site Enhancement (ERASE) Redevelopment Grant – a Portion of the Property currently known as 3311 Homestead Drive, Mount Hope (PED20125(a)) (Ward 11) (Item 10.12)

(Johnson/Partridge)

- (a) That the Hamilton Tax Increment Grant Program (HTIGP) Application, submitted by 1804482 Ontario Limited (Sonoma Homes - Michael Chiaravalle 50%, Rita Chiaravalle 50%) for the property currently known as 3311 Homestead Drive, Mount Hope, to be known as Part of 8533 Airport Road West, Mount Hope, upon successful completion of severance, ("the

Property”) estimated at \$49,844.76 over a maximum of a five (5) year period, and based upon the incremental tax increase attributable to the development occurring on the portion of 3311 Homestead Drive, Mount Hope, as depicted on Appendix “A” attached to Report PED20125(a), be authorized and approved, in accordance with the terms and conditions of the (HTIGP), and subject to the following conditions:

- (i) the portion of the Property generally depicted on Appendix “A” attached to Report PED20125(a) be severed;
 - (ii) the HTIGP Grant only apply to the future severed portion of the Property generally depicted on Appendix “A” attached to Report PED20125(a);
 - (iii) the approval of the Grant shall not prejudice or fetter City Council’s discretion with respect to any current or future *Planning Act* Application regarding 3311 Homestead Drive, Mount Hope, including, but not limited to, a future Consent Application for a severance on the Property;
 - (iv) Only the tax increment generated, based on the apportioned pre-development municipal taxes and actual post development taxes applicable to the future parcel, generally depicted in Appendix “A” attached to Report PED20125(a), will be used to determine future Grant payments; and,
 - (v) all the terms and conditions of the HTIGP; and,
- (b) That the Mayor and City Clerk be authorized and directed to execute a Grant Agreement together with any ancillary documentation required, to give effect to the Hamilton Tax Increment Grant for 1804482 Ontario Limited, owner of the property at 3311 Homestead Drive, Mount Hope, at such time as the property has been severed, as generally depicted on Appendix “A” attached to Report PED20125(a), in a form satisfactory to the City Solicitor; and,
- (c) That the General Manager of the Planning and Economic Development Department. be authorized to approve and execute any Grant Amending Agreements, together with any ancillary amending documentation, if required, to give effect to the Hamilton Tax Increment Grant Program (HTIGP) Application, submitted by 1804482 Ontario Limited (Sonoma Homes - Michael Chiaravalle 50%, Rita Chiaravalle 50%) for the property currently known as 3311 Homestead Drive, Mount Hope, to be known as Part of 8533 Airport Road West, Mount Hope, provided that the terms and conditions of the Hamilton Tax Increment Grant Program, as approved by City Council, are maintained.

Result: Motion CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

15. Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding (Item 11.1)**(Eisenberger/Merulla)**

- (a) That staff be directed to meet with Metrolinx, the Ministry of Transportation and other governmental entities, as required, to prepare a Memorandum of Understanding (MOU) for the Hamilton Light Rail Transit project, and report back to the General Issues Committee, as soon as possible, with a draft MOU;
- (b) ***That Scenario One, as outlined in Report CM21006 / PED21145 / PW21040 / FCS21068 (page 10), which anticipates a system-wide 8% ridership increase after the Hamilton Light Rail Transit (LRT) is operating and a reduction of 29 buses in the LRT area, which will result in a net operating and maintenance cost of \$6.4 million annually for the LRT, be approved;***
- (c) ***That the downtown Hamilton CIPA development charge (DC) exemption of 40%, effective July 6, 2021, be considered through the September 2023 DC by-law review, which is estimated to result in an annual savings of \$8 million; and,***
- (d) ***That the Hamilton Tax Increment Grant Program be eliminated in downtown Hamilton through the next incentive program review, which is estimated to result in additional estimated savings of \$0.917 million annually for the City.***

Result: Main Motion, As Amended, CARRIED by a vote of 9 to 6, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
No	-	Ward 5 Councillor Chad Collins
No	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
No	-	Ward 9 Councillor Brad Clark
No	-	Ward 10 Councillor Maria Pearson
No	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
No	-	Ward 15 Councillor Judi Partridge

16. Disposition of City-Owned Downtown Property (PED21099) (Ward 2) (Item 14.2)

(Farr/Johnson)

- (a) That the City's vacant property, identified in Appendix "A" to Report PED21099, be declared surplus for sale in accordance with the City's Real Estate Portfolio Management Strategy Plan and the Sale of Land Policy By-law 14-204;
- (b) That an Offer to Purchase for the sale of the City's property, identified in Appendix "A" attached to Report PED21099, based substantially on the Major Terms and Conditions outlined in Appendix "B" attached to Report PED21099, and such other terms and conditions deemed appropriate by the General Manager of Planning and Economic Development Department, be approved and completed;
- (c) That the net proceeds of the sale of the City's vacant property, identified in Appendix "A" attached to Report PED21099, be credited to Project ID No. 3561850200 (Property Purchase & Sales);
- (d) That the Real Estate and Legal fees of \$18,750 be funded from Project ID No. 3561850200 (Property Purchase & Sales) and credited to Dept. ID No. 812036 (Real Estate – Admin Recovery);
- (e) That the City Solicitor be authorized and directed to complete the transaction for the sale of the City's vacant property, identified in Appendix "A" attached to Report PED21099, on behalf of the City, including paying

any necessary expenses, amending the closing, due diligence and other dates, and amending and waiving terms and conditions on such terms deemed appropriate;

- (f) That the Mayor and City Clerk be authorized and directed to execute any and all necessary documents related to the sale of the City's vacant property, identified in Appendix "A" attached to Report PED21099, in a form satisfactory to the City Solicitor; and,
- (g) That Report PED21099, respecting the Disposition of City-Owned Downtown Property, remain confidential until final completion of the real estate transaction.

Result: Motion CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

FOR INFORMATION:

(a) APPROVAL OF AGENDA (Item 2)

The Committee Clerk advised of the following changes to the agenda:

5. ADDED COMMUNICATION ITEMS

5.2. Correspondence respecting the Fair Payment of Musicians for City-Led Events Policy

5.2.a. Patricia LeClair, Chair, of the Hamilton Music Advisory Team

- 5.2.b. Keanin Loomis, President and CEO, of the Hamilton Chamber of Commerce
- 5.2.c. Alan Willaert, Vice-President. of the Canada American Federation of Musicians of the United States and Canada
- 5.2.d. Larry Feudo, President; and, Brent Malseed, Secretary-Treasurer, of the Hamilton Musicians' Guild, AFM Local 293, CFM

5.3 Correspondence respecting the Hamilton Light Rail Transit (LRT) Matter

- 5.3.b. Gabriel Nicholson
- 5.3.c. Martin Zarate
- 5.3.d. Hamilton Transit Alliance

6. ADDED DELEGATION REQUESTS

- 6.1. Delegation Requests respecting the Light Rail Transit (LRT) Matter (For the June 16 2021 GIC)
 - 6.1.b. Eric Tuck, Amalgamated Transit Union, Local 107
 - 6.1.c. Karl Andrus, Hamilton Transit Riders Union
 - 6.1.d. Ian Borsuk, Environment Hamilton
 - 6.1.e. Michelle Diplock, West End Homebuilders' Association

8. ADDED STAFF PRESENTATIONS

- 8.1. Light Rail Transit (LRT) Operating and Maintenance Reports
- 8.3. 2022-2024 Multi-Year Outlook and Capital Financing Plan Update (FCS21057) (City Wide)

10. ADDED DISCUSSION ITEMS

The following items were added to the agenda, and inserted at the beginning of the agenda, with the balance of the items re-numbered accordingly:

- 10.1. Updated Net Operating Cost Estimates for a Hamilton LRT (CM21006 / PED21145 /PW21040 / FCS21068) (City Wide)
- 10.2. Light Rail Transit Investment and City of Hamilton Financial Incentive Programs (FCS21066) (City Wide)
- 10.3. Historical Development Activity in the Proposed LRT Corridor (PED21142) (City Wide)

13. ADDED GENERAL INFORMATION / OTHER BUSINESS

13.1 Amendments to the Outstanding Business List

13.1.b. Items to be Removed:

- 13.1.b.b. Possible Credits that may be Built in to Credit the Cost of the LRT Annual Operations and Maintenance
(Addressed on this agenda as Item 10.2 -Report FCS21066)
- 13.1.b.c. Light Rail Transit (LRT) Supportive Development and a Summary of the Transit Oriented Corridor Policy
(Addressed on today's agenda as Item 10.3 - Report PED21142)

CHANGE TO THE ORDER OF ITEMS

Following the approval of the Delegation Requests, Committee will consider the Light Rail Transit (LRT) items in the following order:

- 8.1 Light Rail Transit (LRT) Operating and Maintenance Reports Presentation
- 9.1 Committee will hear the delegations (pending approval)
- 10.1 Updated Net Operating Cost Estimates for a Hamilton LRT (CM21006/PED21145/PW21040/FCS21068) (City Wide)

- 10.2 Light Rail Transit Investment and City of Hamilton Financial Incentive Programs (FCS21066) (City Wide)
- 10.3 Historical Development Activity in the Proposed LRT Corridor (PED21142) (City Wide)
- 11.1 Motion respecting the Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding (Deferred from the June 2nd GIC)

Subsequent to addressing the LRT matters, Committee will return to the balance of the agenda, and in the order shown.

(Eisenberger/Partridge)

That the agenda for the June 16, 2021 General Issues Committee meeting, be approved, as amended.

Result: Motion CARRIED by a vote of 15 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

(b) DECLARATIONS OF INTEREST (Item 3)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 4)

(i) June 2, 2021 (Item 4.1)

(Pearson/VanderBeek)

That the Minutes of the June 2, 2021 General Issues Committee meeting be approved, as presented.

Result: Motion CARRIED by a vote of 15 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

(d) COMMUNICATION ITEMS (Item 5)

(Pauls/Nann)

That the Communication Items, be approved, as follows:

(i) Correspondence respecting the Naming of Brightside Park (Item 5.1):

- (1) John Michaluk (Item 5.1.a.)
- (2) John Brodnicki (Item 5.1.b.)
- (3) Karen Beattie (Item 5.1.c.)

Recommendation: Be received and referred to the consideration of Item 10.4.

- (ii) Correspondence respecting Fair Payment of Musicians for City-Led Events Policy (Item 5.2):
- (1) Patricia LeClair, Chair, of the Hamilton Music Advisory Team (Item 5.2.a.)
 - (2) Keanin Loomis, President and CEO, of the Hamilton Chamber of Commerce (Item 5.2.b.)
 - (3) Alan Willaert, Vice-President from Canada, American Federation of Musicians of the United States and Canada (Item 5.2.c.)
 - (4) Larry Feudo, President; and, Brent Malseed, Secretary-Treasurer, of the Hamilton Musicians' Guild AFM Local 293, CFM (Item 5.2.d.)

Recommendation: Be received and referred to the consideration of Item 10.9.

- (iii) Correspondence respecting the Hamilton LRT Matter (Item 5.3):
- (1) Sarah Wayland (Item 5.3.a.)
 - (2) Gabriel Nicholson (Item 5.3.b.)
 - (3) Martin Zarate (Item 5.3.c.)
 - (4) Hamilton Transit Alliance (Item 5.3.d.)

Recommendation: Be received.

Result: Motion CARRIED by a vote of 15 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek

Absent - Ward 14 Councillor Terry Whitehead
Yes - Ward 15 Councillor Judi Partridge

For disposition of Item 10.4, please refer to Item 6.

For disposition of Item 10.9, please refer to Item 11.

For disposition of the LRT matters, Items 10.1, 10.2, 10.3 and 11.1, please refer to Items 3, 4, 5 and 15, respectively.

(e) DELEGATION REQUESTS (Item 6)

(Ferguson/Johnson)

That the following Delegation Requests, respecting Light Rail Transit (LRT) Matters, be approved to appear before the General Issues Committee on June 16, 2021:

- (i) Anthony Marco, Hamilton District Labour Council (Item 6.1.a.)
- (ii) Eric Tuck, Amalgamated Transit Union, Local 107 (Item 6.1.b.)
- (iii) Karl Andrus, Hamilton Transit Riders Union (Item 6.1.c.)
- (iv) Ian Borsuk, Environment Hamilton (Item 6.1.d.)
- (v) Michelle Diplock, West End Homebuilders' Association (Item 6.1.e.)

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes - Mayor Fred Eisenberger
Yes - Ward 1 Councillor Maureen Wilson
Yes - Ward 2 Councillor Jason Farr, Deputy Mayor
Yes - Ward 3 Councillor Nrinder Nann
Yes - Ward 4 Councillor Sam Merulla
Absent - Ward 5 Councillor Chad Collins
Yes - Ward 6 Councillor Tom Jackson
Yes - Ward 7 Councillor Esther Pauls
Yes - Ward 8 Councillor J. P. Danko
Yes - Ward 9 Councillor Brad Clark
Yes - Ward 10 Councillor Maria Pearson
Yes - Ward 11 Councillor Brenda Johnson
Yes - Ward 12 Councillor Lloyd Ferguson
Yes - Ward 13 Councillor Arlene VanderBeek
Absent - Ward 14 Councillor Terry Whitehead
Yes - Ward 15 Councillor Judi Partridge

For disposition of the LRT matters, Items 10.1, 10.2, 10.3 and 11.1, please refer to Items 3, 4, 5 and 15, respectively.

(f) PRESENTATIONS (Item 8)

(i) Light Rail Transit (LRT) Operating and Maintenance Reports Presentation (Item 8.1)

Janette Smith, City Manager, introduced the presentation respecting the Light Rail Transit (LRT) Operating and Maintenance Reports; and, Jason Thorne, General Manager, Planning & Economic Development, provided Committee with a PowerPoint presentation respecting the LRT Operating and Maintenance Reports.

(Eisenberger/Pauls)

That the presentation, respecting the Light Rail Transit (LRT) Operating and Maintenance Reports, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

For disposition of the Light Rail Transit (LRT) Operating and Maintenance reports, Items 10.1, 10.2, 10.3, please refer to Items 3, 4, and 5 respectively.

(Ferguson/VanderBeek)

That the General Issues Committee recess for 40 minutes until 12:30 p.m.

Result: Motion CARRIED by a vote of 15 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

(ii) 2022-2024 Multi-Year Outlook and Capital Financing Plan Update (FCS21057) (City Wide) (Item 8.2)

Mike Zegarac, General Manager of Finance & Corporate Services, provided Committee with a PowerPoint presentation respecting Report FCS21057 - 2022-2024 Multi-Year Outlook and Capital Financing Plan Update.

(Clark/Pearson)

That the presentation, respecting Report FCS21057 - 2022-2024 Multi-Year Outlook and Capital Financing Plan Update, be received.

Result: Motion CARRIED by a vote of 13 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

For disposition of this matter, please refer to Item 2.

(iii) COVID-19 Verbal Update (Item 8.3)

Paul Johnson, General Manager of the Healthy & Safe Communities Department; and, Dr. Elizabeth Richardson, Medical Officer of Health, provided the update regarding COVID-19.

(Pearson/Nann)

That the verbal update regarding COVID-19, be received.

Result: Motion CARRIED by a vote of 13 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Absent	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

(g) PUBLIC HEARINGS / DELEGATIONS (Item 9)

(i) Anthony Marco, Hamilton District Labour Council respecting the ATU Collective Agreement, as it relates to replacing HSR buses/drivers with the LRT (Item 9.1.a.)

Anthony Marco, Hamilton District Labour Council, addressed Committee respecting the ATU Collective Agreement, as it relates to replacing HSR buses/drivers with the LRT.

(Eisenberger/Nann)

That the presentation, provided by Anthony Marco, Hamilton District Labour Council, respecting the ATU Collective Agreement, as it relates to replacing HSR buses/drivers with the LRT, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeeck
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

For disposition of the LRT matters, Items 10.1, 10.2, 10.3 and 11.1, please refer to Items 3, 4, 5 and 15, respectively.

(ii) Eric Tuck, Amalgamated Transit Union, Local 107, respecting HSR Operation of Higher Order Transit Re-deployment of B-line buses to Blast ATU 107 Vested Stakeholder (Item 9.1.b.)

Eric Tuck, Amalgamated Transit Union, Local 107, addressed Committee respecting HSR operation of higher order transit re-deployment of B-line buses to Blast ATU 107 Vested Stakeholder.

(Eisenberger/Nann)

That the presentation, provided by Eric Tuck, Amalgamated Transit Union, Local 107, addressed Committee respecting HSR Operation of Higher Order Transit Re-deployment of B-line buses to Blast ATU 107 Vested Stakeholder, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls

Yes	-	Ward 8	Councillor J. P. Danko
Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Yes	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

For disposition of the LRT matters, Items 10.1, 10.2, 10.3 and 11.1, please refer to Items 3, 4, 5 and 15, respectively.

(iii) Karl Andrus, Hamilton Transit Riders Union, respecting the Potential of HSR Operations of the Hamilton LRT from the Perspective of Transit Riders (Item 9.1.c.)

Karl Andrus, Hamilton Transit Riders Union, addressed Committee respecting the potential of HSR Operations of the Hamilton LRT from the perspective of transit riders.

(Eisenberger/Nann)

That the presentation, provided by Karl Andrus, Hamilton Transit Riders Union, addressed Committee respecting the potential of HSR Operations of the Hamilton LRT from the perspective of transit riders, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

For disposition of the LRT matters, Items 10.1, 10.2, 10.3 and 11.1, please refer to Items 3, 4, 5 and 15, respectively.

(iv) Ian Borsuk, Environment Hamilton, respecting the B-Line LRT Project (Item 9.1.d.)

Ian Borsuk, Environment Hamilton, addressed Committee respecting the B-Line LRT project.

(Eisenberger/Nann)

That the presentation, provided by Ian Borsuk, Environment Hamilton, respecting the B-Line LRT project, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

For disposition of the LRT matters, Items 10.1, 10.2, 10.3 and 11.1, please refer to Items 3, 4, 5 and 15, respectively.

(v) Michelle Diplock, West End Homebuilders' Association, respecting the Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding (Item 9.1.e.)

Michelle Diplock, West End Homebuilders' Association, addressed Committee respecting the Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding.

(Eisenberger/Nann)

That the presentation, provided by Michelle Diplock, West End Homebuilders' Association, respecting the Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding, be received.

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Yes	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

For disposition of the LRT matters, Items 10.1, 10.2, 10.3 and 11.1, please refer to Items 3, 4, 5 and 15, respectively.

(h) DISCUSSION ITEMS (Item 10)

(Eisenberger/Ferguson)

That Items 10.1 to 10.3, as shown below, be considered together as the subject matters are integrated:

- 10.1 Updated Net Operating Cost Estimates for a Hamilton LRT (CM21006/PED21145/PW21040/FCS21068) (City Wide)
- 10.2 Light Rail Transit Investment and City of Hamilton Financial Incentive Programs (FCS21066) (City Wide)
- 10.3 Historical Development Activity in the Proposed LRT Corridor (PED21142) (City Wide)

Result: Motion CARRIED by a vote of 14 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko

Yes	-	Ward 9	Councillor Brad Clark
Yes	-	Ward 10	Councillor Maria Pearson
Yes	-	Ward 11	Councillor Brenda Johnson
Yes	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

For disposition of the LRT matters, Items 10.1, 10.2, and 10.3, please refer to Items 3, 4, and 5, respectively.

(i) MOTIONS (Item 11)

(i) Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding (Item 11.1)

(Ferguson/Eisenberger)

(a) That the Motion, respecting the Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding, be amended by adding a new sub-section (b) to read as follows:

(b) *That Scenario One, as outlined in Report CM21006 / PED21145 / PW21040 / FCS21068 (page 10), which anticipates a system-wide 8% ridership increase after the Hamilton Light Rail Transit (LRT) is operating and a reduction of 29 buses in the LRT area, which will result in a net operating and maintenance cost of \$6.4 million annually for the LRT, be approved;*

(b) That the Motion, respecting the Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding, be amended by adding a new sub-section (c) to read as follows:

(c) *That the downtown Hamilton CIPA development charge (DC) exemption of 40%, effective July 6, 2021, be considered through the September 2023 DC by-law review, which is estimated to result in an annual savings of \$8 million; and,*

(c) That the Motion, respecting the Hamilton Light Rail Transit (LRT) Project Memorandum of Understanding, be amended by adding a new sub-section (d) to read as follows:

- (d) ***That the Hamilton Tax Increment Grant Program be eliminated in downtown Hamilton through the next incentive program review, which is estimated to result in additional estimated savings of \$0.917 million annually for the City.***

Upon request, Amendment (a) was voted on separately, as follows:

Result: Amendment (a) CARRIED by a vote of 9 to 5, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
No	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
No	-	Ward 9 Councillor Brad Clark
No	-	Ward 10 Councillor Maria Pearson
No	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
No	-	Ward 15 Councillor Judi Partridge

Result: Amendments (b) and (c) CARRIED by a vote of 10 to 4, as follows:

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Absent	-	Ward 5 Councillor Chad Collins
No	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
No	-	Ward 10 Councillor Maria Pearson
No	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
No	-	Ward 15 Councillor Judi Partridge

For disposition of this matter, please refer to Item 15.

(j) GENERAL INFORMATION / OTHER BUSINESS (Item 13)

(a) Amendments to the Outstanding Business List (Item 13.1)

(VanderBeek/Johnson)

WHEREAS, at its meeting of December 4, 2019, Report HSC19066, respecting the Community Benefits Protocol Advisory Committee, as amended, was DEFERRED to a future General Issues Committee meeting, with the following direction:

- (a) That staff be directed to report back to the General Issues Committee with a clear explanation of the differences between the Social Procurement Policy and the proposed Community Benefits Protocol Advisory Committee's mandate; and,
- (b) That the Legislative Coordinator be directed to invite Anthony Marco, President of the Hamilton District Labour Council; and, Mark Ellerker, Representative of the Hamilton - Brantford Building & Construction Trades Council, in their capacity as representatives of the Hamilton Community Benefits Network, to attend at the same future General Issues Committee meeting as the forthcoming staff report to provide clarity to the objective of the proposed Community Benefits Protocol Advisory Committee.

WHEREAS, as the City of Hamilton currently does not have a Social Procurement Policy; therefore, the Healthy & Safe Communities Department staff are unable conduct the comparison between the two, at this time;

THEREFORE, BE IT RESOLVED:

- (a) That the due date for the Community Benefits Protocol Advisory Committee (HSC19066) matter, on the General Issues Committee's Outstanding Business List, remain open at this time; and,
- (b) That the timeline for the Community Benefits Protocol Advisory Committee (HSC19066) matter be revisited, shortly after Council has made its decision respecting the Hamilton Light Rail Transit (LRT) Memorandum of Understanding.

Result: *Amendment* CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Absent	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

(ii) That the following amendments to the General Issues Committee's Outstanding Business List, be approved, ***as amended***:

(a) Proposed New Due Dates (Item 13.1.a.):

- (1) Budgetary Plan to Address the Chedoke Creek Matter (Item 13.1.a.a.)
Current Due Date: June 16, 2021
Proposed New Due Date: July 5, 2021
- (2) Potential Solutions to the Chedoke Creek Matter (Item 13.1.a.b.)
Current Due Date: June 16, 2021
Proposed New Due Date: July 5, 2021
- (3) Multi-Purpose Community Hub for Diverse & Marginalized Communities – Business Case (Item 13.1.a.c.)
Current Due Date: June 16, 2021
Proposed New Due Date: October 20, 2021
- (4) Community Benefits Protocol Advisory Committee (Item 13.1.a.d.)
Current Due Date: September 22, 2021
Proposed New Due Date: ***TBD***

- (5) Revenue Enhancement Opportunities at the John C. Munro International Airport (Item 13.1.a.e.)
Current Due Date: June 16, 2021
Proposed New Due Date: September 22, 2021
 - (6) Communications Strategy to assist in ensuring residents on the Municipal Elections Voters List
Current Due Date: June 16, 2021 (Item 1.1.a.f.)
Proposed New Due Date: July 5, 2021
 - (7) Establishment of a Climate Change Reserve for Sustainable Funding (Item 13.1.a.g.)
Current Due Date: June 16, 2021
Proposed New Due Date: October 6, 2021
 - (8) Hate-Related Flags and Symbols (Item 13.1.a.h.)
Current Due Date: June 16, 2021
Proposed New Due Date: August 9, 2021
 - (9) Mayor's Task Force on Economic Recovery – Initiatives (Item 13.1.a.i.)
Current Due Date: June 16, 2021
Proposed New Due Date: December 8, 2021
 - (10) Election Expense Reserve Needs related to consideration of Internet Voting for the 2026 Municipal Election (Item 13.1.a.j.)
Current Due Date: June 16, 2021
Proposed New Due Date: July 5, 2021
 - (11) Farmers' Market – Rent Relief and Governance Comparators (Item 13.1.a.k.)
Current Due Date: June 2, 2021
Proposed New Due Date: August 9, 2021
 - (12) Considerations to Implement a Vacant Home Tax in Hamilton (Item 13.1.a.l.)
Current Due Date: June 16, 2021
Proposed New Due Date: July 5, 2021
- (b) Items to be Removed (Item 13.1.b.):
- (1) Hamilton Home Energy Retrofit Opportunity (HERO Program) (Item 13.1.b.a.)
(Addressed as Item 10.5 at the May 19, 2021 GIC - Report CM21008/HSC21016))

- (2) Possible Credits that may be Built in to Credit the Cost of the LRT Annual Operations and Maintenance (Item 13.1.b.b.)
(Addressed on this agenda as Item 10.2 (Report FCS21066))
- (3) Light Rail Transit (LRT) Supportive Development and a Summary of the Transit Oriented Corridor Policy (Item 13.1.b.c.)
(Addressed on today's agenda as Item 10.3 (Report PED21142))

Result: Motion, As Amended, CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Absent	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

(k) PRIVATE & CONFIDENTIAL (Item 14)

(i) Closed Session Minutes – June 2, 2021 (Item 14.1)

(Eisenberger/Pearson)

- (a) That the Closed Session Minutes of the June 2, 2021 General Issues Committee meeting, be approved; and,
- (b) That the Closed Session Minutes of the June 2, 2021 General Issues Committee meeting remain confidential.

Result: Motion CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Absent	-	Ward 11 Councillor Brenda Johnson
Yes	-	Ward 12 Councillor Lloyd Ferguson
Yes	-	Ward 13 Councillor Arlene VanderBeek
Absent	-	Ward 14 Councillor Terry Whitehead
Yes	-	Ward 15 Councillor Judi Partridge

(ii) Disposition of City-Owned Downtown Property (PED21099) (Ward 2)

Committee determined that it wasn't necessary to move into Closed Session to discuss Report PED21099 respecting the Disposition of City-Owned Downtown Property.

For disposition of this matter, please refer to Item 16.

(I) ADJOURNMENT (Item 14)

(Eisenberger/Partridge)

That there being no further business, the General Issues Committee be adjourned at 2:40 p.m.

Result: Motion CARRIED by a vote of 12 to 0, as follows:

Yes	-	Mayor Fred Eisenberger
Absent	-	Ward 1 Councillor Maureen Wilson
Yes	-	Ward 2 Councillor Jason Farr, Deputy Mayor
Yes	-	Ward 3 Councillor Nrinder Nann
Absent	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Yes	-	Ward 6 Councillor Tom Jackson
Yes	-	Ward 7 Councillor Esther Pauls
Yes	-	Ward 8 Councillor J. P. Danko
Yes	-	Ward 9 Councillor Brad Clark
Yes	-	Ward 10 Councillor Maria Pearson
Absent	-	Ward 11 Councillor Brenda Johnson

**General Issues Committee
Minutes 21-013**

**June 16, 2021
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Yes	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

Respectfully submitted,

J. Farr, Deputy Mayor
Chair, General Issues Committee

Stephanie Paparella
Legislative Coordinator,
Office of the City Clerk

Submitted on Monday, June 28, 2021 - 3:08pm Submitted by anonymous user: 172.70.130.158 Submitted values are:

==Committee Requested==

Committee: General Issues Committee

==Requestor Information==

Name of Individual: Paven Bratch

Name of Organization: Metro Partners Inc.

Contact Number: (905) 527-1342

Email Address: paula@metropartners.ca

Mailing Address: 151 James St S, Hamilton, ON L8P 2Z5

Reason(s) for delegation request: Speak to proposed Downtown TechHub.

Will you be requesting funds from the City? No

Will you be submitting a formal presentation? Yes



Hamilton

BUSINESS IMPROVEMENT AREA ADVISORY COMMITTEE

MINUTES 21-005

8:00 a.m.

Tuesday, May 11, 2021

Virtual Meeting

Hamilton City Hall

71 Main Street West

Present: Councillor Esther Pauls (Chair)
Tracy MacKinnon – Westdale Village BIA and Stoney Creek BIA
Cristina Geissler – Concession Street BIA
Kerry Jarvi – Downtown Hamilton BIA
Rachel Braithwaite – Barton Village BIA
Susie Braithwaite – International Village BIA
Jennifer Mattern – Ancaster BIA
Heidi VanderKwaak – Locke Street BIA
Emily Burton – Ottawa Street BIA
Susan Pennie – Waterdown BIA
Lisa Anderson – Dundas BIA

Absent: Michal Cybin – King West BIA
Bender Chug – Main West Esplanade BIA

FOR INFORMATION:

(a) CHANGES TO THE AGENDA (Item 2)

The Committee Clerk advised that there were no changes to the agenda.

(MacKinnon/R. Braithwaite)

That the agenda for the May 11, 2021 Business Improvement Area Advisory Committee meeting be approved, as presented.

CARRIED

(b) DECLARATIONS OF INTEREST (Item 3)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 4)

(i) April 13, 2021 (Item 4.1)

(S. Braithwaite/Geissler)

That the April 13, 2021 Minutes of the Business Improvement Area Advisory Committee be approved, as presented.

CARRIED

(d) STAFF PRESENTATIONS (Item 9)

(i) Graffiti Enforcement Update (Item 9.1)

Kelly Beaton, Acting Manager of Service Delivery and Cindy Heuck, Student Coordinator, addressed the Committee with an update on Graffiti Enforcement.

(VanderKwaak/Pennie)

That the staff presentation on Graffiti Enforcement, be received.

CARRIED

(ii) Infection Prevention and Control Update (Item 9.2)

Latchman Nandu, Manager, Infection Prevention and Control, Dr. Ninh Tran, Associate Medical Officer of Health, and Elissa Press, Health Promotion Specialist addressed the Committee with an update on Infection Prevention and Control.

(Mattern/Burton)

That the staff presentation on Infection Prevention and Control, be received.

CARRIED

(e) DISCUSSION ITEMS (Item 10)

(i) Ontario Business Improvement Area Association (OBIAA) Conference 2021 (Item 10.1)

Julia Davis addressed the Committee respecting the Ontario Business Improvement Area Association (OBIAA) Conference 2021 being held September 26 – 29, 2021.

Julia provided the Committee with information on the mobile tours that are tentatively being planned for September 28 -29, 2021. Julia advised the Committee that 4 different sessions are being planned and that the duration of each session will be approximately 2.5 hours. These tours will consist of a maximum of 10 people per tour and will follow the appropriate COVID guidelines that are applicable at that time.

Julia requested that the individual BIA's think about how many sessions they would like to participate in and if they would have enough content to fill 2.5 hours (otherwise the BIA's could be paired up). Julia suggested that if the members wanted to prepare a sample itinerary, that she would review it.

(R. Braithwaite/MacKinnon)

That the discussion respecting Ontario Business Improvement Area Association Conference 2021, be received.

CARRIED

(f) GENERAL INFORMATION/OTHER BUSINESS (Item 13)

(i) Verbal Update from Julia Davis, Business Development and BIA Officer (Item 13.1)

Julia Davis reminded the Committee that the Shop Local Grant funding of \$10,000 is available to each BIA. The BIA's will need to submit a written proposal with a budget. The proposals must be submitted no later than June 30, 2021 and the funds must be spent in 2021.

Julia advised that the Hamilton COVID Concierge Site is excellent resource for businesses. The website can be accessed at www.hamiltoncovidconcierge.ca. Alternatively, their phone number is 905-521-3989 and this line is staffed Monday – Friday (8:30 am – 4:30 pm).

The Canadian Football League has released its schedule for 2021 and the Grey Cup will be held in Hamilton this year on December 12, 2021. More information will be coming forward over the next few months and hopefully there will be events that can be planned around it.

Julia advised Committee that she will be connecting with each BIA and requesting information from them on commercial vacancies, specifically on street level store fronts.

(Burton/Mattern)

That the verbal update from Julia Davis, Business Development and BIA Officer, be received.

CARRIED

(ii) Statements by Members (Item 13.2)

BIA Members used this opportunity to discuss matters of general interest.

(MacKinnon/Pennie)

That the updates from Committee Members, be received.

CARRIED

(g) ADJOURNMENT (Item 15)

(Mattern/R. Braithwaite)

That there being no further business, the Business Improvement Area Advisory Committee be adjourned at 9:31 a.m.

CARRIED

Respectfully submitted,

Councillor Esther Pauls
Chair Business Improvement Area
Advisory Committee

Angela McRae
Legislative Coordinator
Office of the City Clerk



INFORMATION REPORT

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	July 5, 2021
SUBJECT/REPORT NO:	Assessing COVID Related Financial Impacts on Local Farmers' Markets (PED21141) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Julia Davis (905) 546-2424 Ext. 2632
SUBMITTED BY:	Norm Schleeahn Director, Economic Development Planning and Economic Development Department
SIGNATURE:	

COUNCIL DIRECTION

At its meeting on Wednesday May 12th, 2021, Council passed a motion providing staff direction as follows:

That staff engage with local farmers' markets to assess what COVID related financial impacts, over and above those that are eligible for Federal/Provincial support, they are experiencing which the City may consider mitigating under compassionate grounds and report back to the General Issues Committee.

INFORMATION

Following this direction from Council, staff compiled a list of 12 Farmers' Markets across Hamilton, that operate regularly, to be contacted to assess whether any of them will be incurring any new City of Hamilton costs as a result of COVID-19. On Friday May 21, 2021 staff sent an email, included as Appendix "A" to Report PED21141, to the following markets:

Ancaster Farmers' Market
Binbrook Farmers' Market
Dundas Farmers' Market
Hamilton Farmers' Market
Hamilton Mountain Farmers' Market

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: Assessing COVID Related Financial Impacts on Local Farmers' Markets (PED21141) (City Wide) - Page 2 of 2

Locke Street Farmers' Market
Ottawa Street Farmers' Market
Rockton Farmers' Market
Downtown Stoney Creek Farmers' Market
Waterdown Farmers' Market
Westdale Village Farmers' Market
Winona Farmers' Market

Of the Farmers' Markets surveyed, six operate on private property while six operate on municipal property. Staff received responses from 11 of the organizations that were contacted. None of the organizations that operate solely on private property indicated any additional City of Hamilton fees being incurred in 2021 due to COVID-19. Five of the six Farmers' Markets that operate on municipal property indicated that the costs they incur from the City of Hamilton are the same year over year. Only one, the Waterdown Farmers' Market, identified new costs for rental fees as a result of relocating in 2021.

Although there were almost no new City of Hamilton costs identified through this outreach, nearly all Farmers' Markets did share that their operational costs have increased since 2019 because of the COVID-19 requirements surrounding personal protective equipment, signage, staffing that coincides with a decrease in the number of vendors permitted and capacity limitations for customers due to physical distancing rules.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PED21141 - Email to Farmers' Market Contacts

JD/jrb

Email to Farmers' Market Contacts

Good Morning,

On May 12th, 2021 Hamilton City Council passed a motion which stated:

That staff engage with local farmers' markets to assess what COVID related financial impacts, over and above those that are eligible for Federal/Provincial support, they are experiencing which the City may consider mitigating under compassionate grounds and report back to the General Issues Committee.

In response to this direction from Council, I am reaching out to all not-for-profit operators of Farmers' Markets across Hamilton to ask, ***in the year 2021, will your farmers market be incurring new City costs or fees, that you do not normally incur, as a direct result of COVID?***

Please note that the intention of this question is not to seek information about normal City costs and fees that are always incurred (e.g. rent, licensing fees), or COVID-related costs that are not City fees (e.g. extra cleaning costs, PPE, etc.). And we are looking for information about your market operations overall, rather than individual vendor costs. We would like to understand from you any new City costs or fees that will be incurred by your farmers market this year because of COVID-19.

Please note that this information is being collected for information purposes only, as requested by Council, and the responses will be reported back to Council.

I would ask that you reply to this email answering this question no later than June 4th, 2021.

If you have any questions or require additional clarification, please connect with me anytime.

Thank you kindly.



INFORMATION REPORT

TO:	Mayor and Members City Council
COMMITTEE DATE:	July 5, 2021
SUBJECT/REPORT NO:	Chedoke Creek Order - Cootes Paradise Workplan (PW19008(m)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Cari Vanderperk (905) 546-2424 Ext. 3250
SUBMITTED BY:	Andrew Grice Director, Hamilton Water Public Works Department
SIGNATURE:	

COUNCIL DIRECTION

Not Applicable

INFORMATION

The City of Hamilton (City) was served Director's Order No.1-PE3L3 (Order) by the Ministry of the Environment, Conservation & Parks (MECP) on December 4, 2020, as a result of the Main/King Combined Sewer Overflow discharge that occurred between January 2014 and July 2018.

Chedoke Creek Workplan Update

The first part of the Order required the City to develop the Chedoke Creek Workplan, which was submitted to the MECP Director (Director) on February 22, 2021 and approved on June 11, 2021. It identifies the remedial strategy for targeted dredging in Chedoke Creek and as indicated by MECP, is a living document and subject to change as potential new information is discovered while executing the targeted dredging work.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Chedoke Creek Order - Cootes Paradise Workplan
(PW19008(m)) (City Wide) - Page 2 of 5**

In advance of MECP approval, in order to mitigate any delays, the City started to execute low risk field activities as part of the proposed workplan. A status update on these activities is provided below:

Completed

- Topographic survey using LiDAR
- Sediment investigation field work
- Prequalification of contractors
- 30% design discussion with MECP and Royal Botanical Gardens (RBG)

Ongoing

- Species at risk field work
- Hydrologic and hydraulic modelling
- Indigenous Nations engagement
- Permitting and approvals consultation

Next steps consist of completing the ongoing work listed above while advancing into the 60% design stage which will include locating utilities, evaluating the method of dredging (hydraulic/mechanical) and dewatering techniques (passive/mechanical) along with location assessments of any Dredge Material Management Area (DMMA) including construction staging areas. It is also during this stage that the local community will be engaged while developing plans for trucking routes and odour control technologies.

Cootes Paradise Report Update

The second part of the Order required the City to develop the Cootes Paradise Report, which was submitted to the Director on March 22, 2021 and was also approved on June 11, 2021. It proposed the remediation and mitigation works to offset the impacts associated with the added nutrient loading to Cootes Paradise and the Western Hamilton Harbour Area, that cannot be recovered by dredging Chedoke Creek.

On February 21, 2020, prior to the Order being issued, Hamilton Water staff was directed by Council to “meet with RBG staff to review potential solutions to Chedoke Creek and report back to General Issues Committee (GIC) with their findings”. To complete this review, the Chedoke Creek Water Quality Improvement Study (Study) was initiated. As part of the study, internal and external stakeholders, including RBG, proposed solutions that could be technically analysed and evaluated amongst other water quality improvement solutions, on a more holistic watershed basis.

The Study resulted in a framework of projects to contribute to the overall health of the Chedoke Creek watershed. With the Order being issued to the City in December 2020, and the Study entering into the final reporting stage in January 2021, there was an opportunity to finalize the Study in a way to also proactively address some requirements

**SUBJECT: Chedoke Creek Order - Cootes Paradise Workplan
(PW19008(m)) (City Wide) - Page 3 of 5**

of the Order. Contributions from the Study were included in the development of the Cootes Paradise Report and subsequently will be applied in the development of the Cootes Paradise Workplan.

An update on the Study was provided to Public Works Committee (PW20083) on December 7, 2020, shortly after the Order was issued and was summarized during the March 17, 2021 GIC meeting (PW19008(k)), prior to the submission deadline of the Cootes Paradise Report to the MECP. Of the projects recommended in the Study, a subset have been identified as priority works directly related to helping to address the Order. Remaining projects recommended in the Study are being evaluated independently and will be incorporated into the capital budgeting process. The Study was finalized by GM BluePlan Engineering Limited in April 2021 and is attached to Report PW19008(m) as Appendix "A". The final report of the Study will be distributed to the stakeholders who provided their input and will be posted to the City's website.

Cootes Paradise Workplan Overview

The Order requires that within six weeks of MECP approval of the Cootes Paradise Report, the City shall submit a Cootes Paradise Workplan which outlines the detailed actions for the approved remediation and mitigation options for Cootes Paradise and the Western Harbour.

The Cootes Paradise Workplan, will be prepared by Wood Environment & Infrastructure Solutions (Wood) by the July 23, 2021 due date. The structure of the Cootes Paradise Workplan is, for the most part, outlined by the MECP in the Order, and is subject to MECP Director approval. As with the Cootes Paradise Report, the Cootes Paradise Workplan will consider priority projects identified by internal and external stakeholders in the Study. The projects under evaluation are shown in the table below.

Remediation/Mitigation Measures Under Evaluation

#	Project
Annual Nutrient Removal	
1	Lower Chedoke Combined EA Study Outcomes
2	Large Scale Floating Vegetative Mats
One-Time Nutrient Removal	
3	Sediment Nutrient Inactivation

**SUBJECT: Chedoke Creek Order - Cootes Paradise Workplan
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#	Project
Point & Non-Point Annual Nutrient Removal	
4	Chedoke Watershed Stormwater Retrofit EA Study Outcomes
5	Ainsley Woods Sewer Separation EA Study Outcomes
6	Rehabilitate existing Highway 403 Culvert (Landfill)
7	Highway 403 Water Quality Improvements
8	Leachate Collection System Monitoring & Data Collection Outcomes
9	Golf Course – Runoff Management
10	Enhanced Salt Management – Highway 403
11	City – Enhanced Street Sweeping and Snow/Salt Management
12	Redevelopment Sites - Stormwater Management Policy
13	Wet Weather Flow in Separated Sewers – Policy/Future Infrastructure Projects
14	Retrofits for Road Rehabilitation Projects/Low Impact Development Best Management Practices Policy

For each shortlisted project, the Cootes Paradise Workplan will include information on data requirements, task descriptions, proposed timelines, detailed scope summaries and information on expected outcomes.

The three Master Planning Environmental Assessment (EA) studies identified in the table above, will involve a detailed environmental, social and economic assessment of opportunities to improve water quality and habitat conditions, in compliance with the *Environmental Assessment Act*. Each EA study will be completed concurrently with a one year expected completion timeline. Any alternatives identified will be evaluated through fieldwork, analysis (modelling) and agency/stakeholder/Indigenous engagement. This will ultimately lead to a set of additional projects, including implementation guidance associated with timing, capital budgets, and design requirements. It is anticipated that the RBG solution presented to Committee in 2020 will be evaluated as one of the projects during the Lower Chedoke Combined EA process.

It is important to note that the Order does not specify completion deadlines for the proposed initiatives identified in the Cootes Paradise Workplan. The estimated timelines to implement the proposed initiatives will be included in the Cootes Paradise Workplan

**SUBJECT: Chedoke Creek Order - Cootes Paradise Workplan
(PW19008(m)) (City Wide) - Page 5 of 5**

and are subject to MECP approval. Another requirement of the Order is the inclusion of nutrient loading offsetting calculations which will identify the proposed offset goal to achieve remediation and/or mitigation with respect to the approximate equivalent loadings from the sewage discharge. The proposed methodology is intended to address the added Total Phosphorus (TP) and Total Nitrogen (TN) loading from the discharge event.

In addition, the Cootes Paradise Workplan will include a monitoring plan to collect information on the efficacy of the proposed works. The monitoring data will offer insights into the need for any adaptive management to ensure the recovery and effectiveness of the mitigative works are realized to offset the added nutrient loading to Cootes Paradise and the Western Hamilton Harbour Area.

MECP approval of both the Chedoke Creek Workplan and the Cootes Paradise Report also included a requirement to implement short-term direct measures, in a timely manner, in areas around lower Chedoke Creek and Princess Point. Short term direct mitigation measures include ideas such as small-scale aeration systems or floating vegetated mats. The City and Wood are currently evaluating these technologies with the objective of deployment within the next 4 to 6 weeks.

Compliance with the first part of the Order represents a significant cost to the City. The preliminary estimate is \$6.2M, which includes the consulting services for the design and construction of the targeted dredging work in Chedoke Creek. Staff will return to Committee with a future report outlining more accurate costs and requesting authorization to access reserves to fulfil the requirements of the targeted dredging work. Likewise, as previously reported to GIC on February 17, 2021 (PW19008(j)), the City retained the services of Wood to satisfy the requirements of the Order. To date, Wood's services have been procured under a Policy 10 and are expected to exceed \$250,000.

Prior to submitting the Cootes Paradise Workplan to the MECP on July 23, 2021 staff will send a Communications Update to Council with a summary of the final details included within the workplan.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW19008(m) – Chedoke Creek Water Quality Framework Study, GM BluePlan Engineering Limited



Water Quality Improvement Framework

Chedoke Creek Water Quality Study

April 2021

1266 South Service Road, Unit C31
Stoney Creek, ON, L8E 5R9
905-643-6688

City of Hamilton

GMBP Project: 620083



April 26, 2021
Our File: 620083

Christina Cholkan
Project Manager – Water/Wastewater Planning
Public Works
Hamilton Water, City of Hamilton

Re: Chedoke Creek Water Quality Improvement Framework Report

Dear Christina:

We are pleased to submit this Final Project Report for the Chedoke Creek Water Quality Improvement Framework.

If you have any questions or require any additional information, please contact the undersigned.

Yours truly,

GM BLUEPLAN ENGINEERING LIMITED

Per:



Julien Bell, P.Eng.
Infrastructure Planning, Partner



Michelle Klaver, B.Eng., E.I.T.
Infrastructure Planning

Reviewed by:



Chris Hamel, P.Eng.
President

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APPENDICES

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EXECUTIVE SUMMARY

The Chedoke Creek watershed is approximately 25 km² and is a highly urbanized watershed spanning the western limits of the City of Hamilton including areas south and north of the Niagara Escarpment and ultimately discharging to Cootes Paradise, which flows into the Western Hamilton Harbour and then Lake Ontario. The objective of the Water Quality Improvement Framework Study was to undertake a high-level screening and prioritization of the available options for the Chedoke Creek watershed with the goal of establishing an overall strategy for the watershed’s water quality improvement. The framework and prioritization will be used for guidance as the City undertakes subsequent investigations and studies. Due to the limited 5-month project schedule, all analyses and recommendations presented in this Framework are based on the best available information leveraging existing complete studies; no new investigations were completed in support of this study. The completion of additional investigations and/or studies will be needed to address existing data/information gaps and to confirm the scope of major project and/or program recommendations.

As part of this Framework, a wide range of potential options were considered. These potential options explored a range of preventative, mitigative and restorative solutions, and were examined at both a local level along the creek and also within the larger, watershed/City-wide context. The list of potential options was generated based on previously identified solutions, consideration of current industry best practices, and stakeholder engagement and input. The process of developing a framework included a preliminary screening of options with all viable options carried forward for categorization and prioritization. A high-level estimate of the magnitude of contributions from various sources, broken down into 5 groups, was completed to measure the potential effectiveness of various options, as follows:

- **Combined Sewer Overflows (CSOs)** consisting of the combined sewers which can overflow and directly discharge combined sewage into the Chedoke Creek during major storm events.
- **Highway 403** runoff consisting of wash-off and potential spills along the highway.
- **Railway and Railyard** consisting of wash-off and potential spills from the existing railway and railyard.
- **Landfill** consisting of potential leachate infiltration from the Closed West Hamilton Landfill.
- **Urban Stormwater System** consisting of largely untreated stormwater runoff due to minimal stormwater quality management/treatment facilities across the highly urbanized watershed.

Recommendations

The options that were not screened out were considered solutions that potentially meet the project goals and objectives and were further categorized and prioritized into five (5) categories as outlined in the following text and tables.

Near-Term Capital Program

The Near-Term Capital Program consists of projects with a clearly defined scope, do not require extensive study and/or consultation, and can be implemented immediately to address specific concerns. These projects are anticipated to be implemented within the next 3 years.

Near-Term Capital Program Prioritization

Prioritization	Project	Status
0	Highway 403 Trunk Sewer Twinning	Under Planning and Design
1	Rehabilitate existing Highway 403 Culvert (Landfill)	Coordination with MTO
2	Golf Course – Manage Runoff from the Golf Course	Implement Right Away
3	Highway 403 Water Quality Improvements	MTO Led Initiative

Long-Term Capital Program

The Long-Term Capital Program consists of projects that require additional studies or investigations to confirm scope and benefit before being implemented. These projects will likely not be fully implemented in the next 3 years; however, studies to support these long-term projects are either underway or are anticipated to commence within the next 2 years or less. These projects may also be triggered by other City initiatives such as the ongoing Flooding and Drainage Master Plan.

Long-Term Capital Program

Prioritization	Project	Status
1	Aeration System	Dependent on outcomes from Lower Chedoke Combined EA Study
	Constructed Wetland	
	Stream Naturalization	
	Chedoke Creek Targeted Sediment Removal (Underway per MECP Order)	
2	Ainsley Woods Sewer Separation	Dependent on Ainsley Woods Sewer Separation EA Study
3	Inlet Controls in Combined Sewer Areas	Dependent on Flooding and Drainage Master Servicing Study
	Sewer Separation	
4	Golf Course – Stream Naturalization	Dependent on Chedoke Watershed Stormwater Retrofit EA Study
	Golf Course – Retrofit and Treatment Online	
5	Retrofits throughout watershed (End-of-Pipe and Source)	
	Upper Chedoke Creek Stream Naturalization	
6	Expand Storage Elsewhere in System	Dependent on Water/Wastewater/ Stormwater Master Plan
	Increase Capacity Downstream of Main-King CSO tank	
7	Expand/Fix Leachate Collection System	Collect more data before further recommendations

Near-Term Operations and Maintenance/Program:

The Near-Term Operations and Maintenance/Program consists of the expansion and/or reprioritization of existing programs. There is the potential to provide immediate benefits as these programs and investigations can be implemented within the next 2 years or less.

Near-Term Operations and Maintenance/Program

Prioritization	Project	Status
0	CSO Monitoring Improvements and Active Management	Underway
1	Inspection and Repair – Facilities	Underway / Initiate Inspection
	Inspection and Repair – Trunk Sewers	
2	Cross Connection Program	Prioritize in Chedoke Watershed
3	City Street Management – Enhanced Street Sweeping	Develop and Initiate City Program

Long-Term Operations and Maintenance/Program:

The Long-Term Operations and Maintenance/Program consists of expanding or creating new programs either targeted to the Chedoke Creek watershed or implemented City-wide. There is the potential to provide substantial benefits, but the implementation of these programs will require more time. These programs and investigations may require upfront investigation, policy changes, and new funding and staffing which is not anticipated to be implemented within the next 2 years.

Long-Term Operations and Maintenance/Program

Prioritization	Project	Status
1	Wet Weather Flow in Separated Sewers – Targeted in Chedoke Watershed	Initiate Inflow & Infiltration Monitoring
	Wet Weather Flow in Separated Sewers – Targeted in broader Main-King Catchment	
2	Chedoke Creek Water Quality Program Management and Monitoring	Initiate Now and Continue Long Term
3	City Street Management – Improve snow management within Chedoke Creek Watershed	Enhanced Program
4	Enhanced Salt Management – Highway 403	Enhance Existing Program
	Enhanced Salt Management – City Roads	

Policy and Public Engagement

The Policy and Public Engagement programs involve expanding and creating continued opportunities for engagement to monitor progress and better manage the strategy presented in this framework. These policies and stakeholder engagement will provide long-term benefits as they strengthen over time.

Policy and Public Engagement

Prioritization	Project	Status
1	Engage Residents, Stakeholders, and City	Initiate Now
2	Redevelopment Sites SWM Policy	Develop Policy Now, Implement through Future Projects
3	Retrofits for Road Rehabilitation Projects / LID BMP Policy	Develop Policy Now, Implement through Future Projects
4	LID BMP Policy / Stormwater User Rate	Currently Underway
5	Wet Weather Flow in Separated Sewers – Policy / Future Infrastructure Projects	Develop Policy Now, Implement through Future Projects

Implementation Plan

The Chedoke Creek Water Quality Improvement Framework study seeks to provide an overall framework for the City to adopt to guide its actions in addressing the legacy water quality issues within Chedoke Creek. **Figure ES-1** provides an overview of the program schedule. Further, **Appendix E** provides a breakdown of each recommendation’s approximate implementation schedule including general scope, additional studies and fieldwork requirements, estimated timeframe, and budget.

Program Budget

Category	Timeline		
	0-2 Years	3-5 Years	+5 Years
Studies	\$3 M	-	-
Projects	\$11 M	\$23 M	\$17 M
Programs	\$1 M per year	\$1 M per year	\$1 M per year
<i>Operations & Maintenance – Potential⁽¹⁾</i>	\$0.5 M	\$0.5 M	TBD
<i>Study Recommendations - Potential</i>	-	\$2 M	>\$150 M

⁽¹⁾Costs for potential projects includes the total costs for implementing all proposed projects as part of study recommendations

Stakeholder Engagement and Public Outreach

The recommendations outlined in this Framework represent a diverse set of policies, projects, and programs which will require multi stakeholder input, feedback, and contributions to be successful. As such, it is recommended that a Chedoke Creek Advisory Committee or equivalent be formed with a “working” mandate of:

- Confirming the Watershed Management Objectives and establishing the Performance and Monitoring Objectives
- Establishing the Monitoring Program requirements
- Review and comment on proposed Policies and Study Recommendations
- Monitoring the Chedoke Creek Water Quality Framework progress and reporting to Council on a semi-annual basis
- Leading public outreach efforts

Further, it is anticipated that the Chedoke Creek Advisory Committee will serve to streamline public and stakeholder engagement needed to support the implementation of the Framework recommendations.

Monitoring and Management Program

The City will need to establish an appropriate monitoring and management program which will first establish existing baseline conditions, allow for the monitoring of progress overtime, provide additional information to allow for the re-prioritization of recommendations, and ultimately to identify when the Performance and Monitoring Indicators and Measures have been achieved.

1 CHEDOKE CREEK WATERSHED

1.1 Study Introduction

The Chedoke Creek watershed is a significant area spanning the western limits of the City of Hamilton including areas south and north of the Niagara Escarpment and ultimately discharging to Cootes Paradise, then the Western Hamilton Harbour and ultimately Lake Ontario. There have been numerous studies related to the Chedoke Creek watershed over the past few decades, ranging from environmental reviews to infrastructure capacity assessments. Water quality concerns have been identified in the Chedoke Creek, particularly as it relates to Cootes Paradise. Stemming from these concerns, a number of potential solutions have been identified. Following the 2014-2018 discharge event from the Main-King CSO tank, water quality concerns of the Chedoke Creek have been heightened in the broader community.

This study is intended to summarize and consolidate previous and ongoing work, incorporate staff and stakeholder input, and undertake a broad, high level evaluation of potential improvements. Given the wide range of background information, potential solutions, and staff and stakeholder concerns, the Chedoke Creek Water Quality Improvement Study is being undertaken to consolidate this information and bring forward a series of recommendations and an implementation plan to realize the vision for the watershed.

1.2 Chedoke Creek and Watershed Context

The Chedoke Creek watershed is approximately 25 km², as depicted in **Figure 1**. With primarily urban uses, the watershed is drained by a highly altered urban watercourse that runs from the west to the north west end of the watershed in the City of Hamilton. The creek collects stormwater runoff from the western part of the Hamilton Mountain, passes over the Niagara Escarpment, and flows through closed pipe and open channels before discharging into Cootes Paradise, at Princess Point. The Chedoke Creek can be divided into three branches; Lower Creek, Mid Creek and Upper Creek. The Upper Chedoke Creek consists of the receiving system which collects runoff from the upper lands south of the Niagara Escarpment. It includes stormwater from primarily urban developments with some local tributaries comprised of natural streams flowing over the Escarpment as waterfalls. Mid Chedoke Creek, north of the Escarpment, consists of an open segment through the Chedoke (Beddoe) Golf Course and then through enclosures and concrete lined systems along Highway 403, conveying stormwater from the Upper Creek and flowing into the Lower Creek. The Lower Chedoke Creek for the purpose of this study, is defined as the segment where the closed pipe system opens up into an open channel north of King Street West. It runs along the west side of Highway 403 and discharges to Cootes Paradise at Princess Point.

Chedoke Creek is one of the main tributaries entering Cootes Paradise, along with Spencer Creek, Ancaster Creek and Borer's Creek. Cootes Paradise, owned and managed by Royal Botanical Gardens (RBG), is an environmental feature consisting of lake, marsh and wetland features at the western end of Lake Ontario, on the west side of the Hamilton Harbour. Royal Botanical Gardens is a scientific, educational, cultural and tourism institution governed by the Royal Botanical Gardens Act¹. Cootes Paradise provides an important habitat for fish and is a significant migratory bird stopover. It is also a popular destination for residents, as it provides recreational activities such as paddling in the wetland and hiking in the many walking trails that surround the area.

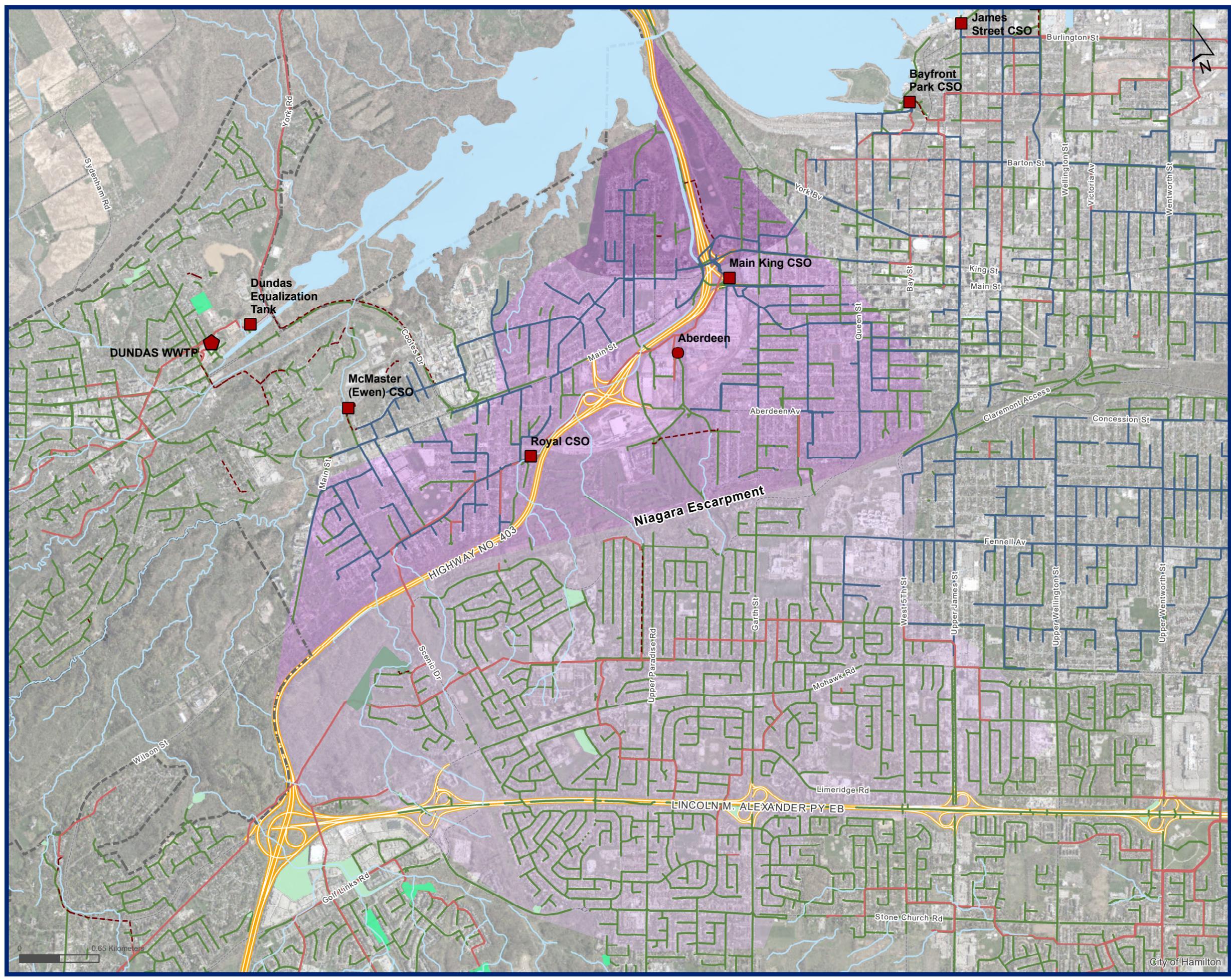
The Chedoke Creek watershed, depicted in **Figure 2**, is a highly urbanized watershed that has historically applied minimal stormwater management, with most of the development preceding the application of contemporary forms of stormwater management. The watershed consists of residential, industrial and institutional, and commercial land uses. Some of the significant land uses in the watershed include the Kay Drage Park (Closed West Hamilton Landfill located adjacent and to the east of the Lower Chedoke Creek), CPR Aberdeen Rail Yard, Mohawk College, McMaster Innovation Park and the Chedoke Golf Club (located below the escarpment at the transition between the Mid and Lower Chedoke Creek).

¹ Royal Botanical Gardens. (1989). [http://www2.hamilton.ca/Hamilton.Portal/Inc/PortalPDFs/ClerkPDFs/Corporate-Administration/2004/Jun23/FCS04019\(a\)_mem%20of%20understanding%20between%20city%20and%20RBG.pdf](http://www2.hamilton.ca/Hamilton.Portal/Inc/PortalPDFs/ClerkPDFs/Corporate-Administration/2004/Jun23/FCS04019(a)_mem%20of%20understanding%20between%20city%20and%20RBG.pdf)



Hamilton

Chedoke Creek Water Quality Improvement Strategy



General Features

- Highways
- Major Roads
- Urban Boundary
- Municipal Boundary
- Waterbody
- Watercourse

Existing Wastewater Infrastructure

- Wastewater Treatment Plants (WWTP)
- CSO Tanks
- Spill Point

Sewermain

- SANITARY
- COMBINED
- STORM
- FORCE

Stormwater Management Facilities

- Dry Pond
- Low Impact Development
- Oil Grit Separator
- Wet Pond
- Wetland

Chedoke Creek Watershed

- Upper Chedoke Creek
- Mid Chedoke Creek
- Lower Chedoke Creek

Figure 1
Chedoke Creek Watershed

0 0.65 Kilometers

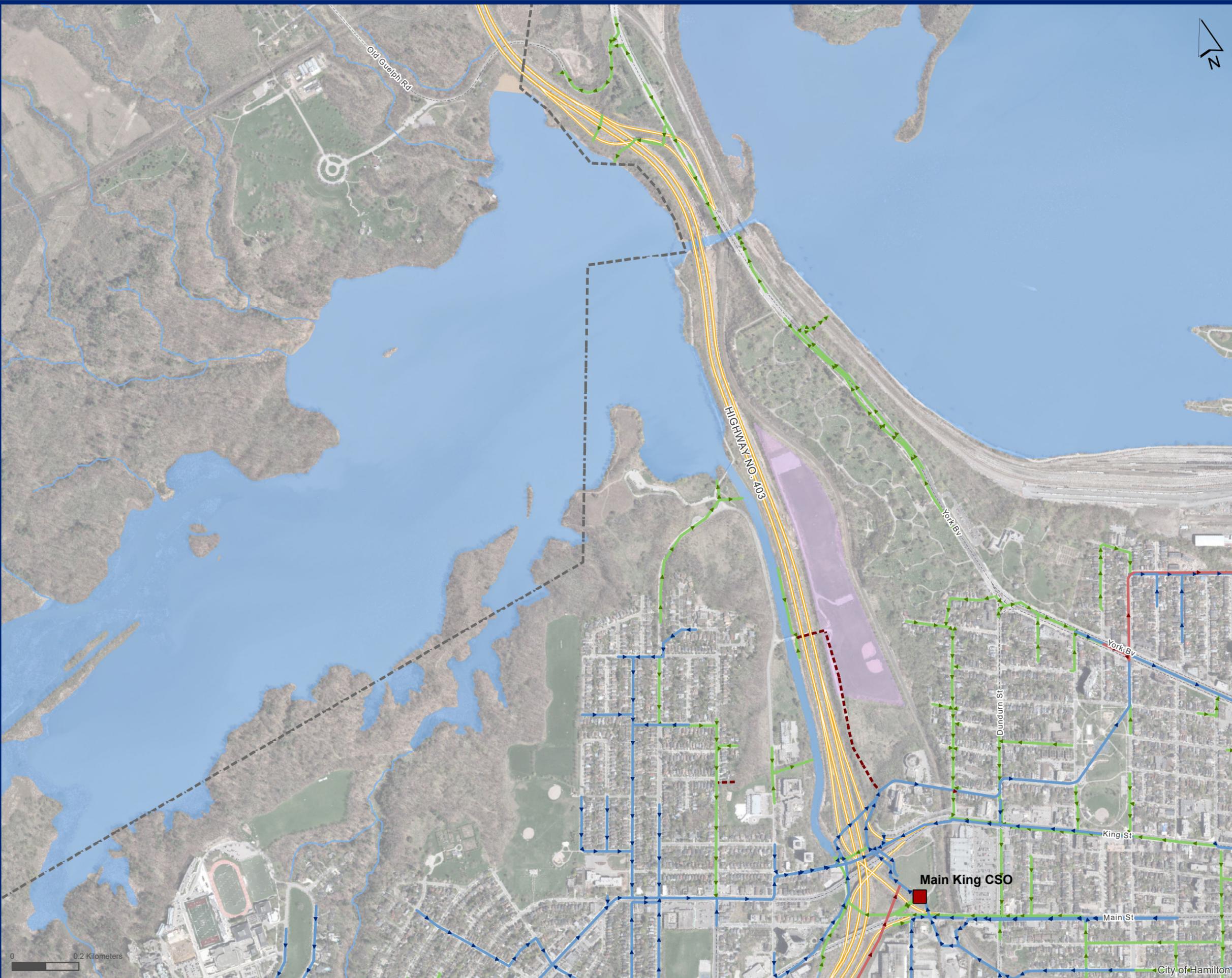
City of Hamilton





Hamilton

Chedoke Creek Water Quality Improvement Strategy



General Features

- Highways
- Major Roads
- Urban Boundary
- Municipal Boundary
- Waterbody
- Watercourse

Existing Wastewater Infrastructure

- Wastewater Treatment Plants (WWTP)
- CSO Tanks

Sewermain

- SANITARY
- COMBINED
- STORM
- FORCE

Closed West Hamilton Landfill



Figure 2
Chedoke Creek

0 0.2 Kilometers



Within the City of Hamilton and within the Chedoke Creek Watershed, there are two types of sewer systems:

- *Combined sewer systems:* Wastewater and stormwater flows are collected and conveyed within the same sewer system. Under this configuration, during dry weather and smaller volume rain events, stormwater runoff and wastewater are directed toward the City's wastewater treatment plants. During major storm events, surplus stormwater flows within the combined sewer system can cause it to surcharge and then overflow, sending untreated stormwater and wastewater into the creek and lake system.
- *Separated sewer systems:* Wastewater and stormwater flows are collected and conveyed by separate and distinct sewer systems. Wastewater is directed toward the City's wastewater treatment plant and all stormwater is directed to the creek and lake system via a combination of sewers, open channels, and overland flow routes.

Most of the Hamilton Mountain, above the escarpment, (the Upper Chedoke Creek) is serviced by separated sewer systems. In contrast, the lands below the escarpment (Mid and Lower Chedoke Creek), are primarily serviced by combined sewer systems. Combined Sewer Overflow (CSO) tanks have also been built in the watershed to temporarily store surplus sewer flows associated with storm runoff. However, these tanks can also become overwhelmed during large storm events and therefore require combined sewer overflows (CSOs) that discharge directly into the Chedoke Creek. Within the Chedoke Creek watershed, there are three tanks/CSOs/spill points: the Royal CSO tank, the Aberdeen CSO spill point, and the Main-King CSO tank. In addition to the requirements of the Provincial Procedure F-5-5 related to combined sewer overflows, the City is undertaking projects such as the Real Time Control (RTC) Phase 2 project, which supports more stringent objectives related to the control of CSOs to Cootes Paradise. Although RTC Phase 2 is currently in the detailed design stage, the project has established an objective of having no more than one CSO event per year per site, in an average year, for the combined sewer outfalls discharging to Cootes Paradise.

1.3 History and Legacy Issues

Urban buildout within the Chedoke Creek watershed predates modern standards for current contemporary environmental considerations and stormwater management approaches; evidence of this is demonstrated through features such as: the enclosure and channelization of Chedoke Creek at several locations, combined sewers within the Mid and Lower Chedoke Creek, the minimal presence of stormwater management features, and the placement of a landfill and other major transportation corridors adjacent to, and bisecting the natural Chedoke Creek channel and Cootes Paradise.

Due to the legacy infrastructure systems within the Chedoke Creek watershed, the Chedoke Creek experiences significant impacts such as sewage contamination, untreated urban stormwater runoff, and landfill leachate contamination. While these challenges are not uncommon to many legacy systems across Ontario and North America, the legacy water quality issues within Chedoke Creek are of additional interest due to the Creek's location and function within the broader Cootes Paradise and Hamilton Harbour system.

Many recent studies and investigations have been completed to further characterize the existing condition of Chedoke Creek, the performance of local infrastructure, and/or to identify potential short and long-term management solutions to address select legacy issues. These studies and investigations have identified that water quality issues within Chedoke Creek and Cootes Paradise are not the result of any single source but are rather related to multiple contributions from both point and non-point sources throughout the watershed. An overview of the key sources of contamination include:

- Potential leachate infiltration into the Lower Chedoke Creek from the Closed West Hamilton Landfill;
- Wash-off from roads and rails and potential spills along Highway 403 and the railway and railyard;
- Combined sewers throughout much of the Mid and Lower Chedoke Creek, which can overflow and directly discharge combined sewage into the creek during major storm events. Reduction of non-storm (i.e. baseflow) contributions of clean stormwater runoff reaching the creek;
- Low quality stormwater runoff due to minimal stormwater quality management/treatment facilities across the highly urbanized watershed; and,
- Potential sanitary system cross connections from private property entering directly into the stormwater system.

1.4 Recent Discharge Event

On August 2, 2018, the Ministry of Environment, Conservation and Parks (MECP) issued Provincial Officer's Order #1-J25YB (hereinafter referred to as the Order) to the City of Hamilton in relation to the discharge of combined sewage to the environment. The Order required the City to quantify the spill volume and estimate the contaminant loadings associated with the sewage discharged from the Main-King CSO facility to Chedoke Creek between January 28, 2014 and July 18, 2018.

Based on investigative studies completed by consultants on behalf of the City, it was determined that the discharge to the creek was the result of CSO tank outflows. The City staff identified that the CSO tanks outflows were passing through a partially open maintenance by-pass gate in the CSO tank influent well, which occurred in January 2014. Further to this period, sometime in January 2018, a second flow control gate, located outside the CSO tank influent well, failed in the closed position. The failure of this second gate increased the amount of flow diverted towards and under the first gate, thereby increasing the volume of the discharge to the creek. Prior to the second gate failure, based on a review of historical rainfall data, discharge to the creek occurred only during wet weather flow (WWF) conditions, mainly due to rainfall events, or in some cases (in late winter/early spring), due to snowmelt and/or elevated groundwater infiltration entering the contributing sewage collection system. After the second gate failure, discharges to the creek began to also occur during dry weather flow (DWF) conditions.

Based on this information, further studies were completed by engineering and environmental consultants (Hatch and Wood) on behalf of the City, to estimate the overflow amount and to identify the appropriate remedial actions. Hatch estimated the spill volume based on the historical sewage level data collected in the CSO tank wet well by the City's SCADA system. The Total Spill Volume for the period from January 28, 2014 to July 18, 2018 was estimated as 24.0 GL (Giga-Litres), and of this total, 21.1 GL was estimated to have occurred during WWF conditions, and 2.9 GL during DWF conditions. Further, Hatch also estimated Total Contaminant Loadings for selected pollutant parameters. Based on these calculations, Hatch estimated 771 tonnes of Total Suspended Sediments (TSS) during DWF and 1,604 tonnes during WWF, and 13 tonnes of Total Phosphorus during DWF and 34 tonnes during WWF.

Subsequently Wood, on behalf of the City and in response to the Order, conducted scoped short-term studies into the nature and composition of the deposition of contaminants in the Lower Chedoke Creek. From this limited field work conducted over the fall of 2018, Wood concluded that removal of the contamination through hydraulic dredging would be preferred, however it was recommended that a more comprehensive study be conducted into the preferred means of removal, using a Class EA process which would inherently involve broader consultation with agencies, stakeholder and the public, including Indigenous engagement.

Thereafter, the City retained the services of SLR Consulting (SLR) to collect additional field data, conduct a peer review of the earlier work by Hatch and Wood, and undertake a risk assessment with respect to the preliminary recommendations cited earlier. SLR subsequently concluded that an approach of natural recovery ("do nothing" approach) would be preferred given the results of the Ecological Risk Assessment for Chedoke Creek and the Environmental Assessment for Cootes Paradise which were conducted under a further MECP Director's Order issued November 2019.

In November/December 2020, MECP issued follow-up Orders to the City of Hamilton to develop plans for "targeted" dredging of the Lower Chedoke Creek and remediation of Cootes Paradise and the West Harbour. The City is currently in the process of working with MECP to develop these plans accordingly.

While the discharge event described in the foregoing has heightened community awareness of the importance of well-functioning municipal infrastructure and the potential for environmental impacts, it should be clear that the current study is not a direct result of the discharge event only, since work by the City of Hamilton has been on-going for many years prior to, and since the subject event.

2 STUDY OBJECTIVES

2.1 Project Trigger and Objectives

The Chedoke Water Quality Improvement Framework Study is being undertaken to consolidate existing information and bring forward a series of recommendations to develop a strategy framework that outlines an implementation plan to address water quality improvements.

The main purpose of this study is to assemble the legacy work that has been completed and examine this information as a broader system, while reviewing all of the solutions that have been previously considered and/or recommended. The approach has involved assessing the watershed, and specifically non-point sources, point sources and the Creek, to identify the preferred potential solutions for the Chedoke Creek and watershed.

The key objectives of the Water Quality Improvement Framework Study are as follows:

- Complete a holistic review of legacy issues within the Chedoke Watershed to identify the potential and likely contaminant sources, and the relative magnitude of their contributions;
- Explore and identify a range of potential preventative (to prevent something from occurring), mitigative (to make something less severe), and restorative (to restore to a past and more natural state) solutions to help address the legacy issues;
- Identify a preliminary set of management objectives to help guide future infrastructure and policy decisions;
- Engage in Stakeholder Consultation to ensure a comprehensive and common understanding of needs and set the foundation for future consultation and implementation;
- Review the range of potential solutions and provide recommendations for preferred potential solutions; and,
- Develop an Implementation Framework to support the future implementation of management solutions and tracking of progress.

2.2 Overview of Framework Structure

Throughout the development of the Chedoke Creek Water Quality Improvement Framework, it was determined that the preferred approach, as it relates to Chedoke Creek, was to undertake a high-level (less detailed) screening and prioritization of the available options with the goal of establishing an overall strategy for the watershed's water quality improvement. This high-level assessment and evaluation were then used to establish the Framework. The resultant framework and prioritization will then be used for guidance as the City undertakes subsequent investigations and studies to strengthen the understanding of the condition and performance of existing infrastructure (natural and built), develop and confirm the desired project objectives, refine programs, and confirm upgrade needs and/or priority projects. The implementation plan presented in **Section 6** provides a "roadmap" for the specific studies and associated fieldwork required to fill data/information gaps and thereby lead to specific project outcomes.

2.3 Project Limitations

All analyses and recommendations presented in this Water Quality Improvement Framework ("Framework") are based on the best available information leveraging existing complete studies; no new investigations were completed in support of this study. While some additional desktop review of existing reports assessment of solutions was completed, this work was completed at a high-level to assess the relative conditions and the magnitude of contributions and potential effectiveness of various solutions, with the objective of prioritizing potential recommendations; these scoped analyses should not be used as the basis of technical requirements within the subsequent implementation of the Framework. Additional investigations and/or studies will be needed to address existing data/information gaps and to confirm the scope of major project and/or program recommendations.

Due to the limited 5-month project schedule and ongoing COVID-19 protocols, Stakeholder Consultation was limited to predefined stakeholder groups and governmental agencies, with all workshops held virtually. Expanded stakeholder and public consultation, including engagement of Indigenous Nations and Peoples, will be required prior to the implementation of some Framework recommendations.

2.3.1 Studies/Documentation

Appendix A provides a detailed summary of the related studies and background information, as provided to the project team throughout the timeframe of the study, that were reviewed and considered during the development of the Water Quality Improvement Framework.

2.4 Study Consultation

The stakeholder consultation conducted as part of the Framework development, represents the start of an ongoing and collaborative process which will be essential to the successful implementation of the projects considered supportive of the identified Management Objectives.

Through the development of the Framework the following external stakeholders were consulted:

- Bay Area Restoration Council (BARC)
- Conservation Halton (CH)
- Environment Hamilton (EH)
- Hamilton Conservation Authority (HCA)
- Hamilton Harbour Remedial Action Plan (HHRAP)
- MT Planners – involved in the RBG 25-Year Master Plan
- Ontario Ministry of Transportation (MTO)
- Royal Botanical Gardens (RBG) (Cootes Paradise landowner)

Internal City departments were also consulted throughout the project to provide input and help guide the development of the framework.

Appendix B provides an overview of the stakeholder consultation workshops and feedback.

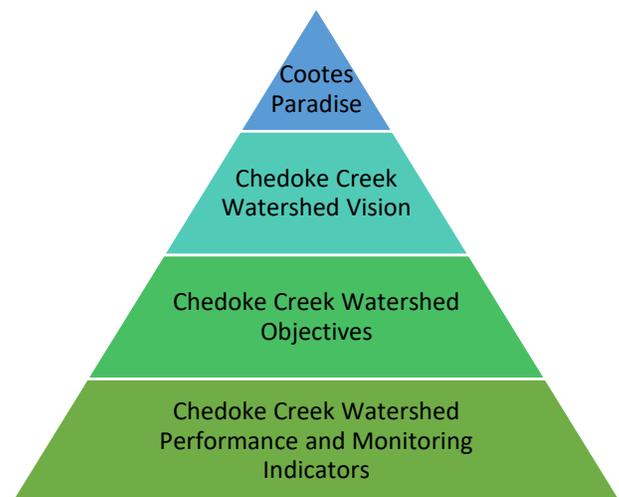
3 CHEDOKE CREEK WATERSHED MANAGEMENT OBJECTIVES

The development and adoption of clear, achievable, and measurable objectives are essential to allow for the proper planning, design, implementation, and monitoring of Water Quality Improvements for the Chedoke Creek. In the absence of objectives, the City and stakeholders are ultimately unable to appropriately define specific needs, prioritize resources, monitor progress, or develop a common consensus.

The Framework seeks to establish the context of the Chedoke Creek Watershed Management objectives in terms of the City's and stakeholders' Global Vision for Chedoke Creek. It also aims to identify appropriate performance indicators to monitor the progress of the strategy through its implementation in the future.

The Framework classifies the objectives in three main categories which are summarized below and outlined in the figure to the right.

- **Watershed Vision (Why):** The Chedoke Creek Watershed Vision represent the "The Goal" of the water quality improvement to the community in broad qualitative description objectives that can be easily interpreted.
- **Chedoke Creek Watershed Objectives (What):** The Objectives represent qualitative measures that help to realize the Watershed Vision.
- **Chedoke Creek Watershed Performance and Monitoring Indicators (How):** The Indicators represent the measures that are used to support the technical evaluation of alternatives, guide the design of infrastructure, and thereby used to measure improvements over time.



The Framework identifies a recommended Chedoke Creek Watershed Vision and Objectives; however, these will ultimately need to be confirmed and endorsed by the City and respective stakeholders and public. Further, the Framework identifies potential Performance and Monitoring Indicators; however, due to the limited scope of this study, no quantitative values have been provided. Following adoption of the project Vision and Objectives, the City and respective stakeholders will need to establish the quantitative aspects Performance and Monitoring Indicators.

3.1 Cootes Paradise and Hamilton Harbour Vision

Similar to Chedoke Creek, there have been ongoing water quality improvement initiatives for both Cootes Paradise and the Hamilton Harbour. One such initiative is "Project Paradise", initiated by RBG and the Hamilton Harbour Remedial Action Plan (HHRAP). Project Paradise includes rehabilitation efforts being undertaken by RBG and its partners to restore the ecosystem and aquatic habitats in Cootes Paradise, as Cootes Paradise represents ~90% of the fish and wildlife habitat of the HHRAP. The HHRAP is a Federal initiative planned to improve water quality and habitat in the Hamilton Harbour, its watershed, and Cootes Paradise. The HHRAP identifies types of pollution entering the harbour, how that pollution will be cleaned up, and who is responsible for the cleanup.

The Ontario Provincial Government has designated Cootes Paradise as a Provincially Significant Class 1 Wetland and an Area of Natural and Scientific Interest (ANSI). It is designated as a National Historic site, a Nationally Important Bird Area (IBA), and a Nationally Important Reptile and Amphibian Area (IMPARA).²

² City of Hamilton. <https://www.hamilton.ca/city-initiatives/our-harbour/cootes-paradise-marsh>

The long-term vision for Cootes Paradise as perceived by these efforts and consultation with RBG can be described as:

*Fully restored and enhanced
 Cootes Paradise environment*

The Cootes Paradise Vision is supported by multiple initiatives such as the HHRAP, as outlined earlier.

3.2 Chedoke Creek Watershed Vision

As outlined in **Section 1.2**, Chedoke Creek is one of the main tributaries entering Cootes Paradise, along with Spencer Creek, Ancaster Creek and Borer’s Creek. As presented in the high-level figure below, Chedoke Creek is only one of the several sources contributing nutrient loads to Cootes Paradise. Solely addressing/managing the Chedoke Creek water quality issues will not achieve the overall Cootes Paradise Vision. **Figure 3**, which is intended to be illustrative rather than absolute, shows an example of average year Total Phosphorus nutrient loading to Cootes Paradise, following the methodology presented in **Appendix C**.

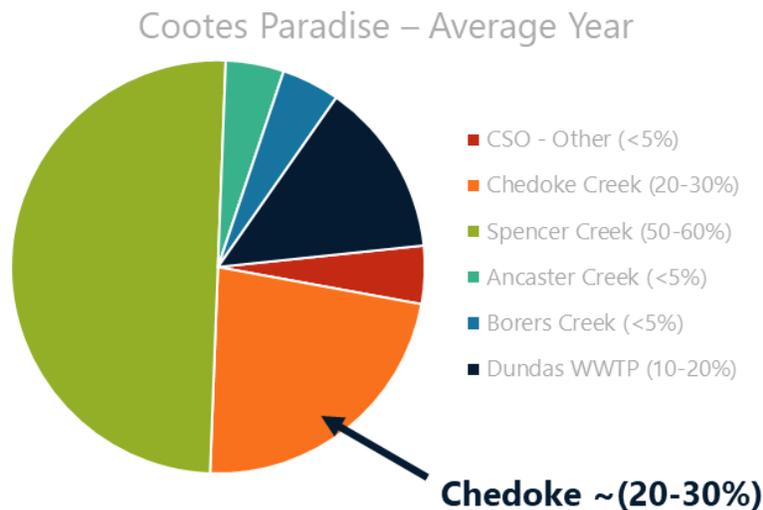


Figure 3: Cootes Paradise Average Year Total Phosphorus Loading

The Chedoke Creek Watershed Vision has been developed to support the Cootes Paradise Vision as improvements in the Chedoke Creek Watershed will directly benefit Cootes Paradise. This Vision is supported by achievable objectives and considers the following:

1. The existing status of the watershed; this includes the existing built environment consisting of a highly urbanized watershed and its legacy systems, consisting of combined sewers throughout most of the lower watershed.
2. Other competing priorities within the Chedoke Creek watershed; this includes ongoing community use and urban growth, transportation needs, etc.
3. Recognition of the significance of Chedoke Creek runoff contribution in the context of the Cootes Paradise system.

The vision for the Chedoke Creek Watershed can be described as:

Improve Chedoke Creek Watershed Water Quality to support:

- *Enhanced wildlife activity and habitat*
- *Safer Recreational Contact*

This is the initial vision for future consideration as a benchmark for improvement. The Framework outlined further in this report, sets a structure for implementation of those recommended actions to achieve the Chedoke Creek Watershed Vision. It is important to note that this study represents the first step in the overall implementation plan that can be further refined through consultation with stakeholders and the City in subsequent steps.

3.3 Chedoke Creek Watershed Management Objectives

Objectives are a qualitative measure intended to support and realize the project vision. These objectives are used to set targets, assess beneficial impacts, and support prioritization. The objectives need to be achievable and supported by stakeholders and by data, and should have the following characteristics:

- Technically feasible
- Align with City, and Stakeholder visions
- Financially feasible
- Implementable timeline
- Complementary to other needs and priorities

For the purposes of the Framework, in consultation with the project stakeholders, the following Chedoke Creek Watershed Objectives have been identified in support of the Chedoke Creek Watershed Vision outlined in **Section 3.2**. The objectives are listed in no particular order of importance:

- Limit sources of high nutrient load to Chedoke Creek to prevent excess nutrient and limit algae blooms
- Limit sources of contaminants to Chedoke Creek
- Eliminate sanitary sewer cross-connections to the stormwater system (in separated sewer systems)
- Minimize the risk of CSO spills to Chedoke Creek including:
 - Reduce the frequency and volume of overflow events
 - Enhanced monitoring and management, to reduce the likelihood of, and reduce the response times to, spill events resulting from infrastructure failures
- Seek opportunities to enhance and naturalize Chedoke Creek

This Framework helps identify the overall objectives but through future and ongoing studies, consultation, and discussions, some of these objectives may be refined and/or new objectives may be added or removed.

3.4 Performance and Monitoring Indicators

Once the Chedoke Creek Watershed Management Objectives have been established in accordance with the agreed vision, suitable targets and performance and monitoring indicators provide a way to measure progress over time and determine if the management objectives are being achieved. Due to the limited scope of this current study, no quantitative targets or indicators have been established. However, a preliminary qualitative list of potential Performance and Monitoring Indicators, that the City and Stakeholders may wish to consider, is provided as follows:

- Water Quality concentrations in annual, peak and low flow events
- Number of annual overflow events
- Percent of contributions from CSO
- Percent of urban runoff receiving treatment
- Percent of leachate captured at the Landfill
- Percent of the creek that is naturalized

Following the adoption of the project Vision and Objectives, the City and respective stakeholders will need to identify the Targets and Performance and Monitoring Indicators that will be used to track progress. Additional studies, assessment, and consultation will be needed to establish these Targets and Performance and Monitoring Indicators. This may be in the form of an annual report, where both technical and non-technical elements are highlighted.

Note, in the context of this study, identification of specific Performance and Monitoring Indicators will not change how various solutions/options are evaluated or prioritized; however, their establishment will be critical to future monitoring of the beneficial impact of projects over time.

4 SOLUTION OPTIONS AND EVALUATIONS

As part of this Water Quality Improvement Framework, a wide range of potential options was considered to address one or multiple of the identified Management Objectives. These potential options explored a range of preventative, mitigative and restorative solutions, and were examined at both a local level along the creek and also within the larger, watershed/City-wide context. The list of potential options was generated based on previously identified solutions, consideration of current industry best practices, and stakeholder engagement and input.

4.1 Screening and Prioritization Methodology

The screening and prioritization of options, with the ultimate goal of shaping an implementation plan and framework for the Water Quality Improvement Framework, generally followed the approach outlined below.

- 1. Screening of Options:** A preliminary screening process for the options was developed and undertaken to determine which options should be carried forward, screened out, or will require further investigations/studies. The overall advantages and disadvantages of the options were reviewed to define which options would be screened out versus those that would be carried forward.

The screening process considered the following:

- Potential Cost
- Potential Benefit
- Technical or Implementation Challenges
- “No-Regrets” Principles
- Nutrient Loading Impact (See **Section 4.2**)

The options that were carried forward, or required further investigations/studies, were then further refined through the categorization and prioritization process.

- 2. Prioritization and Categorization of Options:** The next step in determining the preferred framework was to prioritize those options carried forward. This process further refined the advantages and disadvantages, based on the prioritization category. The basis of this approach was to qualitatively evaluate the relative advantages, disadvantages, and potential impacts of each option against the established criteria. The options were generally prioritized based on the following criteria in **Table 1**. Visibility is defined as a project that the City presents to the public as an example of an action being undertaken with the intent of building and/or expanding upon the stakeholder and public dialogue, engagement, and education.

Table 1: Prioritization Criteria

	High	Medium	Low
Cost	<\$10 M	\$10-\$50 M	>\$50 M
Timing	Short-Term (<5 Years)	Near-Term (5-10 Years)	Long-Term (>10 Years)
Implementation	Easy	Moderate	Difficult
Visibility	High	Medium	Low

- “High” options generate beneficial impacts; these are depicted in green
- “Medium” options present a mix of positive and negative elements with some impacts; these are depicted in yellow
- “Low” options present negative impacts and/or presents significant technical challenges; these are depicted in red

In addition to the prioritization criteria listed in **Table 1**, the following factors were also considered to aid in the screening and prioritization of options:

1. Functional Effectiveness (Nutrient Loading and Water Quality Improvement)
2. Project Benefit Type: Preventative, Mitigative, Restorative
3. Project Benefit Spatial Extent: Watershed, Upper Chedoke Creek Watershed, Lower Chedoke Creek Watershed, Cootes Paradise
4. Infrastructure Ownership

4.2 Nutrient Loading Methodology

As determined at the outset of this project, multiple concerns were identified for the Chedoke Creek's water quality including:

- High Nutrient Loading
- E-Coli and Solids
- Metals, VOC/Oils, Salts, and other Contaminants

High nutrient loadings have been cited as the most significant concern for many of the stakeholders, as it can lead to algae blooms and other highly visible impacts. To support the screening process, an initial high-level estimate of nutrient loadings was completed based on the best available background data and used as a measure of relative (not absolute) impacts. As nutrient loading is a major concern and historic sampling data are available, success can relatively be measured.

Total Phosphorus, Ammonia + Ammonium as N, and Total Suspended Solids were used as high-level indicators and the predominant screener of the relative contributions from various sources based on the background information available at the time of this scoped study. These nutrient loadings were used as proxies for other major concerns, with the perspective that addressing these nutrient loadings can provide relief and mirrored benefits in terms of other nutrients, metals, oils and salts. The methodology used for this high-level nutrient loading review is outlined in detail in **Appendix C**. This high-level approach was followed for this scoped study to show a relative comparison; however, future studies should include a more stringent and comprehensive review.

4.3 Source Contribution Assessment

Using the Chedoke Creek nutrient loading assessment as a high-level estimate of contaminants, a source contribution assessment was completed to provide guidance in identifying the primary contributors and to assess the potential benefits of addressing specific sources of contaminants. The source contributions were broken down into 5 groups as follows:

- **Combined Sewer Overflows (CSOs)** consisting of the combined sewers throughout much of the Mid and Lower Chedoke Creek, which can overflow and directly discharge combined sewage into the creek during major storm events. Reduction of non-storm contributions of clean stormwater runoff reaching the creek.
- **Highway 403** consisting of wash-off and potential spills along Highway 403.
- **Railway and Railyard** consisting of wash-off and potential spills from the existing railway and railyard.
- **Landfill** consisting of potential leachate infiltration into the Lower Chedoke Creek from the Closed West Hamilton Landfill.
- **Urban Stormwater System** consisting of largely untreated stormwater runoff due to minimal stormwater quality management/treatment facilities across the highly urbanized watershed; and, the potential sanitary system cross connections from private property entering directly into the stormwater system.

Figures 4 and 5 provide an overview of the Average Year and Peak Day Phosphorous contribution to Chedoke Creek, which is representative of the relative impacts of the 5 groups cited. A detailed breakdown of the source contributions is included in **Appendix C**.

The finding of the source contributions assessment indicates that:

- Over the balance of the year, stormwater runoff represents the major source of potential contaminants to Chedoke Creek. Further, during peak loading events, stormwater runoff remains a significant source of potential contaminants. As such, the prioritization of solutions that address stormwater quality will be critical to meeting the Management Objectives.
- During peak loading events, CSOs represent a significant source of potential contaminants. As such, prioritization of solutions that reduce the magnitude and frequency of CSO will be equally critical to meeting the Management Objectives.
- The remaining source contributions represent a comparatively smaller portion of the total potential contaminants; as such, solutions addressing these potential sources were assigned a lower priority.

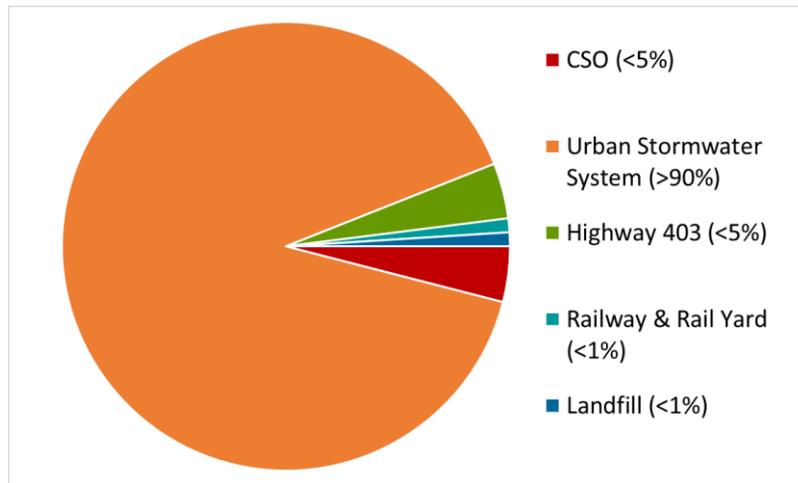


Figure 4: Example Phosphorus Nutrient Loading – Average Year

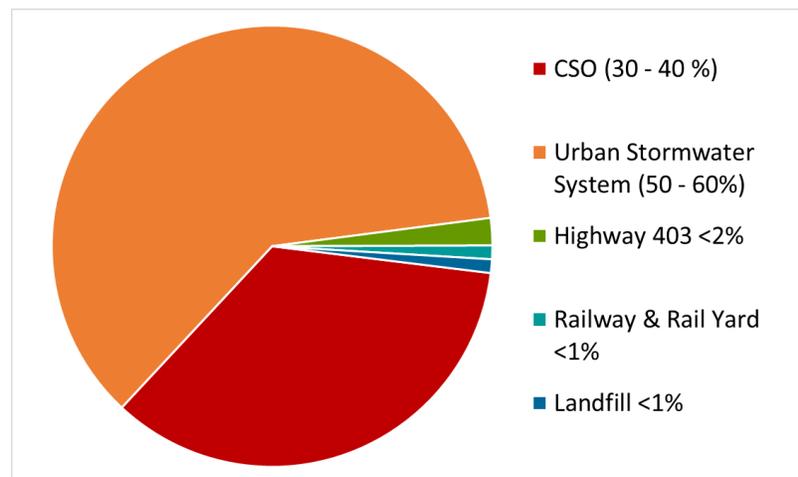


Figure 5: Example Phosphorus Nutrient Loading - Peak Day

4.4 Overview of Management Options and Screening

The following outlines potential management options which have been considered through this study. In the context of this study, the options were categorized into seven main groups consisting of those associated with the following:

- Landfill
- Lower Chedoke Creek
- Wastewater
- Stormwater
- Mid & Upper Chedoke Creek
- Engagement
- Monitoring

The screening process outlined in **Section 4.1** was followed for each option, with the screening and rationale for each option included in **Table 2**. The outcomes of the screening of options could be one of the following:

- **Screen Out:** Option will not be carried forward for any further review.
- **Carry Forward:** Option can be implemented without any further studies.
- **Initiate Inspection / Initiate Monitoring:** Option can be implemented, with final project recommendation to be determined based on inspection and/or monitoring.
- **Future Consideration:** Option will require further studies to determine feasibility.
- **Future Policy / Future Program:** Option will require further investigations and development before initiating future policy or program, if feasible.
- **Evaluate in City's Flooding and Drainage Master Servicing Study (FDMSS):** City is in the process of completing a Flooding and Drainage Master Servicing Study which will provide recommendations regarding the specified option.
- **Evaluate in City's Water/Wastewater/Stormwater Master Plan (WWSM MP):** City is in the process of a completing a Water/Wastewater/Stormwater Master Plan which will provide recommendations regarding the specified option.
- **In Progress / Ongoing:** City is already implementing measures related to the option.

All options that were not screened out, are considered part of the City's overall solution, and carried forward to the prioritization and categorization stage of the evaluation.

Table 2: Options Screening

Option Overview		Option Description	Screening	Rationale	
Landfill	Direct Clean Water Away from Landfill	<ul style="list-style-type: none"> Prevent local runoff from entering leachate collection system (LCS) and instead allow clean water to directly flow into Chedoke Creek Reduce total volume pumped from LCS to combined sewers due to reduced leachate generation 	Screen Out	<ul style="list-style-type: none"> Low effectiveness High cost Difficult to implement 	
	Rehabilitate existing Highway 403 Culvert (Landfill)	<ul style="list-style-type: none"> Prevent leachate from contaminating flows from Highway 403 entering the creek via culvert Prevent leachate from by-passing leachate collection system via this route 	Carry Forward	<ul style="list-style-type: none"> Low cost Highly visible Relatively straight forward 	
	Expand/Fix Leachate Collection System	<ul style="list-style-type: none"> Extend and deepen perforated pipe for leachate collection pipe Prevent leachate from seeping into creek Prevent leachate from contaminating runoff entering creek 	Future Consideration	<ul style="list-style-type: none"> Need to collect more data on effectiveness of recent improvements and reassess before final recommendations 	
	Landfill Capping/Barrier	<ul style="list-style-type: none"> Improve landfill capping/barrier to reduce leachate leaking from boundaries Enhance the barrier between the contaminated media and the surface Limit any passage of the contents by restricting surface water infiltration at landfill site thus reducing leaching 	Screen Out	<ul style="list-style-type: none"> Low effectiveness High cost Difficult to implement 	
Lower Chedoke Creek	Constructed Wetland	<ul style="list-style-type: none"> Construct wetland at the outlet of Chedoke Creek where it enters Cootes Paradise (Princess Point) Capture sediments & pollutant loading from Chedoke Creek before entering Cootes Paradise Control flow which will enhance natural processes and improve wildlife habitat at outlet of Chedoke Creek 	Future Consideration	<ul style="list-style-type: none"> Highly visible Restorative solution Limited operations required 	
	Aeration System	<ul style="list-style-type: none"> Install Aeration System in Lower Chedoke Creek System intended to enhance the transfer of dissolved oxygen to Chedoke Creek/Cootes Paradise waters Improves marine habitat along and downstream of the creek 	Future Consideration	<ul style="list-style-type: none"> Moderately visible Mitigative solution Moderate implementation time 	
	Stream Naturalization	<ul style="list-style-type: none"> Introduce native vegetation for slope stability Reduce stream velocity and sediment buildup downstream Improves marine habitat along and downstream of the creek 	Future Consideration (Lower Chedoke)	<ul style="list-style-type: none"> Lower Chedoke <ul style="list-style-type: none"> Moderate cost Highly visible Mitigative solution 	
	Physical Capping	<ul style="list-style-type: none"> Apply a cover of clean material on top of contaminated creek bed sediment to mitigate risk of contamination Stabilization of contaminated sediments to prevent resuspension Prevent benthic community from interacting with and processing the contaminated sediments 	Screen Out	<ul style="list-style-type: none"> Low effectiveness Low visibility Restorative solution 	
	Chemical Inactivation	<ul style="list-style-type: none"> Alternative to physical capping Chemically treat contaminated sediment 	Screen Out	<ul style="list-style-type: none"> Low effectiveness Low visibility 	
	Chedoke Creek Sediment Removal	Complete Removal	<ul style="list-style-type: none"> Remove contaminated sediment via hydraulic dredging Remediate the creek by removing all existing sediment within creek 	Screen Out	<ul style="list-style-type: none"> More disruptive Medium visibility Quick implementation
		Targeted Removal	<ul style="list-style-type: none"> Targeted removal of contaminated sediment via hydraulic dredging (Part of current MECP Order) Remediate the creek bed by removing targeted sediment Will immediately reduce contamination 	Future Consideration	<ul style="list-style-type: none"> More cost effective than complete removal/focuses on most contaminated areas Medium visibility Quick implementation

Option Overview		Option Description	Screening	Rationale	
Wastewater	Sewer Separation	<ul style="list-style-type: none"> Full implementation of sewer separation in Chedoke Creek watershed potential implementation challenges/high costs/long timelines Prevents sanitary waste from overflowing into Chedoke Creek before treatment 	Evaluate in Flooding and Drainage MSS	<ul style="list-style-type: none"> Implement recommendations from City's MP study for works within Chedoke Creek 	
	Increase Capacity Downstream of Main-King Combined Sewer Overflow (CSO) tank	<ul style="list-style-type: none"> Trunk upgrades from Main-King CSO tank to Woodward Avenue WWTP to accommodate higher storm flows Reduces volume and frequency of combined sewer overflows 	Evaluate in City's Water/ Wastewater/ Stormwater Master Plan	<ul style="list-style-type: none"> City-wide benefits Implement recommendations from City's MP study 	
	Increase Capacity of Royal CSO tank to Main-King CSO tank (Highway 403 Trunk Sewer Twinning)	<ul style="list-style-type: none"> Reduces volume and frequency of combined sewer overflows Potential elimination of overflows at Aberdeen CSO & reduction in overflows at Royal CSO 	In Progress	<ul style="list-style-type: none"> Mitigative solution Design already in process 	
	Expand Storage at Main-King CSO tank	<ul style="list-style-type: none"> Increases holding capacity to accommodate combined sewer flows during high flow events Reduces volume and frequency of overflows 	Screen Out	<ul style="list-style-type: none"> High cost Difficult implementation Main-King CSO tank is maximized at current site 	
	Expand Storage Elsewhere in System	<ul style="list-style-type: none"> Increases holding system's capacity to accommodate combined sewer flows during high flow events Reduces volume and frequency of combined sewer overflows Option upstream of Main-King CSO tank to provide additional system relief 	Evaluate in City's Water/ Wastewater/ Stormwater Master Plan	<ul style="list-style-type: none"> Implement recommendations from City's Master Plan study for within Chedoke Creek 	
	Inspection and Repair	Facilities	<ul style="list-style-type: none"> Prevent sewer flows from potentially infiltrating into creek due to leaks Potential opportunity at Royal CSO Investigation needed to confirm leaks 	Initiate Inspection	<ul style="list-style-type: none"> Low cost No regrets Ensure facilities are in good operating order
		Trunk Sewers	<ul style="list-style-type: none"> Prevent sewer flows from potentially infiltrating into creek due to leaks Potential opportunity within trunk sewers running parallel to stream Investigation needed to confirm leaks 	Initiate Inspection	<ul style="list-style-type: none"> Low cost No regrets, ensure no major I&I in trunk sewers parallel to Chedoke Creek
	CSO Monitoring Improvements and Active Management		<ul style="list-style-type: none"> Currently ongoing through Real Time Control (RTC) Program to optimize the performance of the collection system and CSO tanks Improved inspection and monitoring of CSOs Quantify overflow volume and overflow conditions 	In Progress	<ul style="list-style-type: none"> Monitoring and SCADA can better monitor and manage system Already being implemented through other programs
	Wet Weather Flow (Inflow & Infiltration) in Separated Sewers	Targeted in Chedoke Watershed	<ul style="list-style-type: none"> Identify areas of high Inflow and Infiltration (I&I) adjacent to Chedoke Creek Reduce I&I into sanitary sewers thereby reducing sanitary sewer flows Potentially reduce CSO overflows 	Initiate I&I Monitoring	<ul style="list-style-type: none"> Good management practices have benefits for local system and growth capacity in addition to supporting Chedoke Creek
		Targeted in broader Main-King Catchment	<ul style="list-style-type: none"> Identify areas of high I&I in Main-King catchment Reduce I&I into sanitary sewers thereby reducing sanitary sewer flows to the Main-King CSO tank Potentially reduce CSO overflows 	Initiate I&I Monitoring	<ul style="list-style-type: none"> Good management practices have benefits for local system and growth capacity in addition to supporting Chedoke Creek
		Policy/Future Infrastructure Projects	<ul style="list-style-type: none"> More stringent criteria related to new development to ensure future construction practices address any possible I&I issues Reduce I&I into sanitary sewers thereby reducing sanitary sewer flows Potentially reduce CSO overflows 	Future Policy	<ul style="list-style-type: none"> Good management policies have benefits for local system and growth capacity in addition to supporting Chedoke Creek

Option Overview		Option Description	Screening	Rationale
Ainsley Woods Sewer Separation		<ul style="list-style-type: none"> Separating existing creek inputs from combined sewers that currently enter Royal CSO Reduce creek flows that are entering combined sewer systems Reduce volumes directed to CSO tanks; potentially reducing CSO overflows Increase creek flows reaching Chedoke Creek 	Carry Forward	<ul style="list-style-type: none"> Low to moderate visibility Potential for moderate implementation time
Cross Connection Program		<ul style="list-style-type: none"> Ensure sanitary laterals are not connected to stormwater system in separated sewer system Currently on-going, prioritize within Chedoke Creek catchment, south of Escarpment Fix storm and sanitary cross-connections from homes Reduce sanitary contaminants discharged from stormwater outfalls 	Ongoing	<ul style="list-style-type: none"> Low cost Quick implementation
Retrofits throughout the watershed (End-of-Pipe and Source)	City	<ul style="list-style-type: none"> Retrofitting existing ponds to wet ponds and outfalls where opportunities exist in Chedoke Creek watershed Introducing stormwater management practices to areas where there is currently no treatment or management 	Future Consideration	<ul style="list-style-type: none"> Moderate to high visibility Short to moderate implementation timelines Retroactive treatment
	MTO	<ul style="list-style-type: none"> Retrofitting existing facilities for Highway 403 Introducing stormwater management practices along Highway 403 where there is currently no treatment or management 	Carry Forward	<ul style="list-style-type: none"> Moderate visibility Potential for short/moderate implementation MTO led
Retrofit for Road Rehabilitation Projects / Low Impact Development (LID) BMP Policy		<ul style="list-style-type: none"> Best Management Practices (BMPs) to be applied to any road rehabilitation project within the City Advance City's stormwater management guidance to City infrastructure 	Future Policy	<ul style="list-style-type: none"> Costs incorporated with other road works Moderate to High visibility Ongoing practice
City Street Management	Enhanced Street Sweeping	<ul style="list-style-type: none"> Program to implement enhanced street sweeping within Chedoke Creek Watershed and City Clean up debris and contaminants that build up on City roads 	Carry Forward	<ul style="list-style-type: none"> Low cost Quick implementation for program
	Improve Snow Management within Chedoke Creek Watershed	<ul style="list-style-type: none"> Enhance Snow Management practices to prevent contamination (Chlorides) to Chedoke Creek Review disposal sites for snow that would reduce direct snow melt into urban streams 	Future Program	<ul style="list-style-type: none"> Low cost Visible to public Short implementation time No regrets
LID BMP Policy / Stormwater User Rate		<ul style="list-style-type: none"> Supports sustainable funding of stormwater management program Incentive program to encourage private property owners to manage stormwater at source on private properties and implement additional BMP's LID BMPs will help to provide infiltration, flood management and support creek stability 	Ongoing	<ul style="list-style-type: none"> Self-Funding Helps define link between public practices and improvements to Chedoke Creek
Enhanced Salt Management	Highway 403	<ul style="list-style-type: none"> Enhance salt management plan for Highway 403 Manage salt at stormwater collection points along corridor 	Future Program	<ul style="list-style-type: none"> Low cost Short implementation time No regrets
	City Roads	<ul style="list-style-type: none"> Enhance City's salt management plan for City Roads Manage salt at stormwater collection points along City roads 	Ongoing	<ul style="list-style-type: none"> Low cost Short implementation time No regrets
Redevelopment Sites Stormwater Management (SWM) Policy		<ul style="list-style-type: none"> Policies for BMP's including LID for redevelopment sites in City Opportunity for large stormwater reduction/treatment on redevelopment sites to comply with new stormwater policy 	Future Policy	<ul style="list-style-type: none"> Costs incorporated with other works by Others (Developers) Moderate to High visibility Ongoing practice
Highway 403 Water Quality Improvements		<ul style="list-style-type: none"> Treat highway runoff at collection points along corridor before it enters Chedoke Creek Install stormwater management devices such as oil-grit separators at stormwater outfalls 	Carry Forward	<ul style="list-style-type: none"> Low cost Short implementation time
Inlet Controls in Combined Sewer Areas		<ul style="list-style-type: none"> Install inlet control devices in combined sewer system Restricts the amount of stormwater that enters system, reducing the potential of CSO overflows Requires evaluation of major system (overland) capacity 	Evaluate in City's Flooding and Drainage MSS	<ul style="list-style-type: none"> Implement recommendations from Flooding and Drainage MSS

Stormwater

Option Overview		Option Description	Screening	Rationale	
Mid & Upper Chedoke Creek	Golf Course	Manage Runoff from the Golf Course	<ul style="list-style-type: none"> Improve Golf course water management practices including fertilizers and pesticide use Provides treatment prior to runoff entering Chedoke Creek 	Carry Forward	<ul style="list-style-type: none"> Low cost Quick implementation Golf course can remain in operation
		Stream Naturalization	<ul style="list-style-type: none"> Naturalization of channelized portions of creek within the golf course 	Carry Forward	<ul style="list-style-type: none"> Highly visible Golf course can remain in operation
		Retrofit and Treatment Online	<ul style="list-style-type: none"> Provide location for external stormwater treatment on-site at Chedoke Golf Course Treatment to capture large portion of Upper Chedoke Creek catchments that currently flow through Golf Course Golf Course has available space for runoff capture 	Future Consideration	<ul style="list-style-type: none"> Golf course can remain in operation with some potential modifications Part of broader Retrofit Study
	Stream Naturalization	<ul style="list-style-type: none"> Naturalization of channelized portions of creek in Mid and Upper Chedoke, Remove concrete channel and introduce native vegetation for slope stability (Mid Chedoke) Reduce stream velocity and sediment buildup downstream Improves marine habitat along and downstream of the creek Introduces native vegetation 	Carry Forward (Upper Chedoke) Screen Out (Mid Chedoke)	<ul style="list-style-type: none"> Upper Chedoke <ul style="list-style-type: none"> Highly visible Mid Chedoke <ul style="list-style-type: none"> Infrastructure constraints Recently re-lined by MTO 	
Engagement	Engage Residents, Stakeholders, and City	<ul style="list-style-type: none"> Educating citizens about water quality issues and benefits of proposed actions More transparency in water quality monitoring and management Encourages resident participation in ongoing public initiatives 	Carry Forward	<ul style="list-style-type: none"> Low cost High visibility for public Short implementation time 	
Monitoring	Chedoke Creek Water Quality Program Management and Monitoring	<ul style="list-style-type: none"> Centralized data sharing portal to consist of more sampling and consistent protocols to monitor and track benefits over time Program will provide a method to quantify water quality benefits of proposed actions Better identify problems and effectiveness of solutions 	Future Program	<ul style="list-style-type: none"> Low cost Will help improve system understanding and support tracking benefits over time 	

5 RECOMMENDATIONS

The options that were not screened out in the previous section, were considered solutions that can potentially meet the project goals and objectives and were categorized and prioritized based on the methodology presented in **Section 4.1**, as well as stakeholder input received through study workshops. The categorization and prioritization criteria for each project is further outlined in **Appendix D**. The results of the categorization and prioritization process form the basis for the overall Chedoke Creek Water Quality Improvement Framework. More detailed scope recommendations for the various solutions that are considered to require additional studies and fieldwork prior to implementation, are outlined in **Appendix E**.

5.1 Solutions Categorization and Prioritization

The solutions were split between 5 categories as follows:

1. **Near-Term Capital Program:** Capital projects with a short timeline or that are already underway with a clear project scope or limited investigation / study required.
2. **Long-Term Capital Program:** Capital projects with a multi-year process and require additional studies or investigations to confirm the scope and benefit. These projects may also be triggered by other City initiatives such as the ongoing Flooding and Drainage Master Servicing Study.
3. **Near-Term Operations and Maintenance/Program:** Operations and maintenance projects or programs with a quick start up or that are already underway which provide immediate benefit.
4. **Long-Term Operations and Maintenance/Program:** Operations and maintenance projects or programs that may require policy changes and/or new funding and staffing. Benefits are likely to be realized over the long-term.
5. **Policy and Public Engagement:** New policies and expanded public engagement to support the study framework with benefits likely realized over the long-term.

Criteria applied to assist in the prioritization and categorization are those presented in **Table 1, Section 4.1**, and include costs, timing, implementation and visibility.

The timeline for all projects is outlined in **Figure 6**.

5.2 Near-Term Capital Program

The Near-Term Capital Program consists of projects with a clearly defined scope, do not require extensive study and/or consultation, and that can be implemented immediately to address specific concerns. These projects are anticipated to be implemented within the next 3 years. These projects along with their prioritization and status are included in **Table 3**.

Table 3: Near-Term Capital Program Prioritization

Prioritization	Project	Status
Underway	Highway 403 Trunk Sewer Twinning	Under Planning and Design
1	Rehabilitate existing Highway 403 Culvert (Landfill)	Coordination with MTO
2	Golf Course – Manage Runoff from the Golf Course	Implement Right Away
3	Highway 403 Water Quality Improvements	MTO Led Initiative

An overview of the project recommendations and area of expected works and benefits are listed below. More detailed scope recommendations for the projects that require additional studies and fieldwork prior to implementation are outlined in **Appendix E**.

5.2.1 Underway: Highway 403 Trunk Sewer Twinning

The Highway 403 trunk sewer twinning project consists of a new trunk sewer running from the Royal CSO tank to the Main-King CSO tank, east of Highway 403. The project consists of four phases with Phase 1 under detailed design, Phase 2 already constructed and Phases 3 and 4 requiring future design and construction. The objective of this trunk sewer is to provide additional sanitary sewer capacity for the catchment upstream of the Main-King CSO tank and provide an outlet for the Aberdeen CSO which will significantly reduce combined sewer overflows from the Aberdeen CSO.

Result: Improve CSO management and reduce overflow risk

5.2.2 Priority 1: Rehabilitate existing Highway 403 Culvert (Landfill)

Consists of rehabilitating the existing Highway 403 Culvert located on the east side of Chedoke Creek, south of the Landfill, to address existing landfill leachate flow entering the culvert and discharging directly to the Lower Chedoke Creek. From an infrastructure perspective, this project is relatively straight forward, requiring an initial inspection followed by rehabilitation measures, which can be implemented immediately. Benefits from this project are anticipated to be realized in the near-term in the Lower Chedoke Creek.

Result: Improve water quality and address contamination contributor

5.2.3 Priority 2: Golf Course – Manage Runoff from the Golf Course

Consists of determining the best stormwater management practice to improve the quality of the runoff from the golf course operations (pesticides and fertilizers) and other golf course infrastructure including parking lots. This project can be implemented immediately at the City-owned Chedoke Golf Course. The stormwater management best practices will help improve the water quality entering the Mid Chedoke Creek by reducing contaminants and sediment produced as part of the golf course operation.

Result: Improve water quality

5.2.4 Priority 3: Highway 403 Water Quality Improvements

Consists of the review, installation, and maintenance of stormwater management measures along Highway 403 in the Chedoke watershed. The objective of the stormwater management measures is to manage contaminants such as oil, grease, pavement deterioration, tire and brake pad wear, vehicle emissions, and spills that are present along highways. Benefits from this project include improved stormwater quality directly entering Chedoke Creek from the Highway stormwater outfalls.

Result: Improve water quality

5.3 Long-Term Capital Program

The Long-Term Capital Program consists of projects that require additional studies or investigations to confirm scope and benefit before being implemented. These projects will likely not be fully implemented in the next 3 years; however, studies to support the long-term projects are either underway or are anticipated to commence within the next 2 years or less. These projects along with their prioritization and status are included in **Table 4**.

Table 4: Long-Term Capital Program

Prioritization	Project	Status
1	Aeration System	Lower Chedoke Combined EA Study
	Constructed Wetland	
	Stream Naturalization	
	Chedoke Creek Targeted Removal (Underway per MECP Order)	
2	Ainsley Woods Sewer Separation	Ainsley Woods Sewer Separation EA Study
3	Inlet Controls in Combined Sewer Areas	Dependent on Flooding and Drainage Master Servicing Study
	Sewer Separation	
4	Golf Course – Stream Naturalization	Chedoke Watershed Stormwater Retrofits EA Study
	Golf Course – Retrofit and Treatment Online	
5	Retrofits throughout watershed (End-of-Pipe and Source)	
	Upper Chedoke Creek Stream Naturalization	
6	Expand Storage Elsewhere in System	
	Increase Capacity Downstream of Main-King CSO tank	
7	Expand/Fix Leachate Collection System	Collect more data before further recommendations

An overview of the project recommendations and area of expected works and benefits are listed below. More detailed scope recommendations for the projects that require additional studies and fieldwork prior to implementation are outlined in **Appendix E**.

5.3.1 Priority 1: Lower Chedoke Combined EA Study

A Master Plan through a Class Environmental Assessment is required to evaluate the Lower Chedoke Creek projects listed in **Table 4**, as well as other potential opportunities, not yet identified for remediation in this waterway. The Municipal Class Environmental Assessment process is a prescribed process for projects in the Province of Ontario with specific steps to be followed. The purpose of this Master Plan Class EA is to complete a more comprehensive review of the Lower Chedoke Creek to evaluate the benefits, impacts, and life cycle costs of the various options and consider any other feasible solutions to develop an overall master plan for the system. The final solutions may recommend all, some or none of the projects: Aeration System, Constructed Wetland, and Stream Naturalization. The Chedoke Creek Targeted Removal is underway separate to this Master Plan to address the needs of the Provincial Order and the outcomes will need to be considered as part of Master Plan development.

- The **Aeration System** project consists of the design, installation and ongoing operation and maintenance of a large scale Aeration System along the Lower Chedoke Creek to transfer oxygen to the Chedoke Creek waters. The goal of this system would be to improve the marine habitat along and downstream of the Lower Chedoke Creek.
- The **Constructed Wetland** project consists of the design, installation and maintenance of a Constructed Wetland at the outlet of the Lower Chedoke Creek near Princess Point to capture sediment and pollutant loading from Chedoke Creek before entering Cootes Paradise. A Constructed wetland would support water purification and improve the habitat for wildlife and aquatic life.
- The **Stream Naturalization** project consists of the review, design, installation and maintenance of naturalization measures along the Lower Chedoke Creek. The naturalization process will include improving the creek morphology by introducing native vegetation for slope stability which will help to reduce stream velocity and sediment buildup in the Lower Chedoke Creek.
- The **Chedoke Creek Targeted Sediment Removal** project which has been ordered through the MECP Provincial Officers Order, consists of the design and implementation of hydraulic dredging to remove targeted sediments in the Lower Chedoke Creek. The dredging process will include the transportation of dredged material, dewatering and final placement/management of dredged material, as well as opportunistic enhancement of the creek, and other small scale off-set works feasible within the creek footprint.

The recommendations from this study will directly impact/benefit the water quality within Lower Chedoke Creek and by extension Cootes Paradise and are expected to be of medium to highly visibility to the public.

Result: Improve water quality within Lower Chedoke Creek

5.3.2 Priority 2: Ainsley Woods Sewer Separation EA Study

A Class Environmental Assessment is required to evaluate the existing creek inputs into the combined sewer system within the Ainsley Woods neighbourhood in Mid Chedoke Creek. The purpose of this Class EA is to complete a more comprehensive review of the creek inputs into the combined sewers that run through Ainsley Woods, specifically at the points just upstream of Blackwood Crescent and at the western extent of Iona Avenue. The EA would include identifying an appropriate outlet for this separated flow, including evaluating the benefits, impacts, and life cycle costs of the various feasible solutions. This sewer separation project can be implemented immediately following the recommendations of the EA.

Result: Reduce creek inputs into combined sewers to reduce overflow risk

5.3.3 Priority 3: Dependent on Flooding and Drainage Master Servicing Study

The City is currently undertaking a Flooding and Drainage Master Servicing Study with the goal of reducing flooding risk and improving stormwater drainage across the City's combined sewer system area. It is anticipated that the subject recommendations for the Chedoke Creek Watershed will provide water quality benefits by reducing the total amount of stormwater runoff being directed to the Combined sewer system, thereby reducing the likelihood and frequency of combined sewer overflows. The recommendations of the Flooding and Drainage Master Servicing Study may include the following:

- The **Inlet Controls in Combined Sewer Area** project consists of the installation, operation and maintenance of inlet control devices in the combined sewers, north of the Escarpment. Inlet control devices restrict the amount of stormwater that enters the combined sewers and therefore the amount of potential overloading of CSO tanks. This project will need to consider the influence on the major (overland) system in terms of capacities and risks.
- The **Sewer Separation** project consists of identifying high priority areas for separation in the combined sewer system and constructing new storm sewers to separate storm sewers and wastewater sewers.

The recommendations for both projects will be provided through the ongoing Flooding and Drainage Master Servicing Study. These infrastructure solutions would provide benefit beyond the Chedoke Creek; however, there are associated high costs and medium to long-term implementation timelines.

Result: Reduce stormwater entering combined sewers to reduce overflow risk

5.3.4 Priority 4 and 5: Chedoke Creek Watershed Stormwater Retrofits EA Study

This study is required to evaluate the potential for stormwater management retrofits primarily in the Upper Chedoke Creek Watershed. The purpose of this study is to conduct a more comprehensive review of the locations and benefits associated with those stormwater treatment projects identified in **Table 4** including functional benefits, impacts, and life cycle costs of the projects, leading to a master plan for the watershed.

- The **Golf Course – Stream Naturalization** project consists of the review, design, installation and maintenance of naturalization measures in the Golf Course. The naturalization process will include the use of natural channel design and introducing native vegetation for slope stability.
- The **Golf Course – Retrofit and Treatment Online** project consists of the review, design, and construction for stormwater treatment in the Chedoke Creek, within the Chedoke Golf Course. The installation of an on-line stormwater management retrofit will help improve the downstream water quality and provide treatment for those lands not able to be practically treated through the broader retrofit program.
- The **Retrofits throughout watershed (end-of-pipe and source)** project consists of a comprehensive review of the Chedoke Creek watershed to identify existing facilities that can be retrofitted for improved water quality functions, and areas/outfalls where there are no stormwater management measures and there is opportunity to retrofit. This Master Plan will lead to a set of projects, which following review and identification, will require design, installation, and maintenance of stormwater retrofits throughout the City system.
- The **Upper Chedoke Creek Stream Naturalization** project consists of the review, design, installation and maintenance of naturalization measures in the Upper Chedoke Creek. The naturalization process will include the use of natural channel design and introducing native vegetation for slope stability.

This study will provide the basis for identifying a suite of locations including associated scale and appurtenances to improve stormwater quality in the Chedoke Watershed due to non-point runoff (untreated stormwater), which has been highlighted as one of the most significant contributors to the high nutrient loadings to the Chedoke Creek.

Result: Improved water quality in storm system and naturalized areas receiving runoff within Chedoke Creek Watershed

5.3.5 Priority 6: Dependent on Water/Wastewater/Stormwater Master Plan

The City is currently undertaking an integrated Water/Wastewater/Stormwater Master Plan with the goal of addressing system capacity to support existing and future land uses. It is anticipated that the Master Plan will recommend strategic sewer capacity improvements and potentially additional storage capacity to address high peak flows within the combined sewer systems. These solutions may provide water quality benefits by increasing the capacity of the combined sewer system thereby reducing the likelihood and frequency of combined sewer overflows. The recommendations of the Master Plan, may include the following:

- The **Expand Storage Elsewhere in System** project consists of a comprehensive review of the City's wastewater and combined sewer systems to identify if there are any areas to expand storage for overflow events. Following the review, this project will include the design, construction, operations and maintenance of any new storage facilities.
- The **Increase Capacity Downstream of Main-King CSO tank** project consists of a review of the City's wastewater system's hydraulic capacity downstream of the Main-King CSO tank to determine the benefits and feasibility of adding additional wastewater conveyance capacity. Following the review, this project will include the design, construction, operations and maintenance of the new infrastructure which may consist of new sewers or new facilities.

The recommendations for these projects will be provided through the ongoing Water/Wastewater/Stormwater Master Plan and will be incorporated as operational elements of the overall Water Quality Improvement Framework. These infrastructure solutions will provide benefits beyond the Chedoke Creek watershed; however, they are expected to involve high costs and long-term implementation timelines.

Result: Increase capacity in combined sewer system to reduce overflow risk

5.3.6 Priority 7: Expand/Fix Leachate Collection System (LCS)

This project will require additional data collection consisting of continuous water quality and leachate collection system monitoring to determine the effectiveness of the existing LCS. The collection and analysis of data will determine if further upgrades need to be made to the system. The benefits of the recommendations from this study will directly impact the Lower Chedoke Creek and Landfill.

Result: Improve leachate collection system management and address contamination contributor

5.4 Near-Term Operations and Maintenance/Program

The Near-Term Operations and Maintenance/Program consists of the expansion and/or reprioritization of existing programs. There is the potential to provide immediate benefits as these programs and investigations can be implemented within the next 2 years or less. These projects along with their prioritization and status are included in **Table 5**.

Table 5: Near-Term Operations and Maintenance/Program

Prioritization	Project	Status
0	CSO Monitoring Improvements and Active Management	Underway
1	Inspection and Repair – Facilities	Underway / Initiate Inspection
	Inspection and Repair – Trunk Sewers	
2	Cross Connection Program	Prioritize in Chedoke Watershed
3	City Street Management – Enhanced Street Sweeping	Develop and Initiate City Program

An overview of the project recommendations and area of expected works and benefits are listed below. More detailed scope recommendations for the projects that require additional studies and fieldwork prior to implementation are outlined in **Appendix E**.

5.4.1 Priority 0: CSO Monitoring Improvements and Active Management

This project involves wastewater system monitoring through the City’s SCADA system at CSO facilities. Enhanced monitoring and active management will ensure that any potential future failures are identified early and eliminated or resolved quickly. This includes monitoring and understanding the unmonitored CSOs contribution to the CSO volumes and flows. Facilities that may require further inspection will also be identified. The benefits from this project can be realized City wide at all CSO facilities. This project is already underway.

Result: Improved monitoring and reduced risk of failure and impacts

5.4.2 Priority 1: Inspection and Repair

This project consists of the inspection, design, repair and maintenance of trunk sewers and facilities within the Chedoke Creek Watershed. Inspection should be conducted for trunk sewers and facilities within the Chedoke Creek Watershed to identify if there are any areas where significant inflow is coming from the creek or sewers. Results of the inspection will help guide recommendations for repairs if necessary. The benefits from this project will be realized by potentially reducing infiltration to the sewer system and thereby reducing the likelihood of combined sewer overflows.

Result: Better system knowledge, improved targeted maintenance and repair, improved water quality

5.4.3 Priority 2: Cross Connection Program

This program would identify cross connections between the sanitary and storm systems in the Chedoke Creek watershed and lead to separation projects. The City has an ongoing program which can be refocused to prioritizing cross connections identification and separation in the Chedoke Creek watershed. This program will produce benefits throughout the Chedoke Creek watershed where the City is continuing to target and City wide if expanded.

Result: Reduced sewage cross contamination, improved water quality in storm system

5.4.4 Priority 3: City Street Management – Enhanced Street Sweeping

This project consists of developing and implementing an enhanced street sweeping program throughout the Chedoke Creek watershed. Street sweeping reduces the availability of contaminants and thereby improves water quality by removing pollutants that are transferred through urban runoff. Additional sweeping at strategic times throughout the year including in the spring, which will specifically have the increased benefits of cleaning any debris that have built up over the winter months. Benefits will be realized City wide.

Result: Improved water quality in the storm system and naturalized areas receiving runoff within urbanized areas

5.5 Long-Term Operations and Maintenance/Program

The Long-Term Operations and Maintenance/Program consists of expanding or creating new programs either targeted to the Chedoke Creek watershed or implemented City-wide. There is the potential to provide substantial benefits, but the implementation of these programs will require more time due to their scale, complexity and stakeholders involved. These programs and investigations may require upfront investigation, policy changes, and new funding and staffing which is not anticipated to be implemented within the next 2 years. These projects along with their prioritization and status are included in **Table 6**.

Table 6: Long-Term Operations and Maintenance/Program

Prioritization	Project	Status
1	Wet Weather Flow in Separated Sewers – Targeted in Chedoke Watershed	Initiate Inflow & Infiltration Monitoring
	Wet Weather Flow in Separated Sewers – Targeted in broader Main-King Catchment	
2	Chedoke Creek Water Quality Program Management and Monitoring	Initiate Now and Continue Long Term
3	City Street Management – Improve snow management within Chedoke Creek Watershed	Enhanced Program
4	Enhanced Salt Management – Highway 403	Enhance Existing Program
	Enhanced Salt Management – City Roads	

An overview of the project recommendations and area of expected works and benefits are listed below. More detailed scope recommendations for the projects that require additional studies and fieldwork prior to implementation are outlined in **Appendix E**.

5.5.1 Priority 1: Initiate Inflow & Infiltration (I&I) Reduction

A program is required to identify areas of high I&I to implement repair strategies to reduce extraneous flows from entering the sewer system.

- The **Wet Weather Flow in Separated Sewers – Targeted in Chedoke Watershed** project consists of the inspection, identification, recommendation and repair of sewers in the Chedoke Creek Watershed where I&I issues are present. The recommendation will also include the best technology for each repair based on severity, location and other constraints.
- Similarly, the **Wet Weather Flow in Separated Sewers – Targeted in broader Main-King Catchment** project consists of the inspection, identification, recommendation and repair of sewers in the broader Main-King Catchment where I&I issues are present. The recommendation will also include the best technology for each repair based on severity, location and other constraints.

Good management practices will have benefits for the local system, as well as provide growth capacity. I&I should be targeted in the Chedoke Creek and the Main-King catchment to reduce the frequency and magnitude of overflows, or in Waterdown to hold more back from the Dundas WWTP catchment (which reduces total wastewater flows that are conveyed from the Dundas WWTP catchment into the Main-King catchment).

Result: Reduce I&I flows in sanitary sewers to reduce overflow risk

5.5.2 Priority 2: Chedoke Creek Water Quality Program Management and Monitoring

Involves developing a centralized data sharing portal consisting of more water sampling data and robust protocols throughout the Chedoke Creek watershed. This program will provide a data-based approach to quantify water quality improvements/benefits associated with the proposed projects and will help monitor and track benefits over time. The City will need to explore the best approach, which may be accomplished via an enhancement of existing City monitoring program or through the creation of a separate Chedoke Creek Water Quality Monitoring Program.

Result: Better system knowledge, improved project benefit tracking

5.5.3 Priority 3: City Street Management – Improve snow management within Chedoke Creek Watershed

This project consists of improving the ongoing City program for snow management, targeted within the Chedoke Creek watershed. This will include reviewing existing and potential snow disposal sites that would reduce the direct snow melt into urban waterways. This will benefit the Chedoke Creek by reducing urban pollutants, particularly chlorides that are transferred through snow as urban runoff.

Result: Improved water quality in the storm system and naturalized areas receiving runoff within urbanized areas

5.5.4 Priority 4: Enhanced Salt Management

A program is required to better manage salt applications and management along City roads and the Highway 403 corridor.

- The **Enhanced Salt Management – Highway 403** project consists of developing an enhanced program for salt management along Highway 403. This program should be reviewed and updated as necessary to ensure the best practices are in place when dealing with the transportation, storage and use of salt.
- The **Enhanced Salt Management – City** project consists of reviewing, updating and enhancing the existing salt management program for City roads focused in the Chedoke Creek Watershed. This program should be reviewed and updated as necessary to ensure the best practices are in place when dealing with the transportation, storage and use of salt.

The reduction and better management of salt within the Chedoke Creek watershed will have direct benefits by reducing the amount of salt that enters water ways.

Result: Improved water quality in the storm system and naturalized areas receiving runoff within urbanized areas

5.6 Policy and Public Engagement

The Policy and Public Engagement programs involve expanding and creating continued opportunities for engagement to monitor progress and better manage the strategy presented in this framework. These policies and stakeholder engagement will provide long-term benefits as they strengthen over time. The projects along with their prioritization and status are included in **Table 7**.

Table 7: Policy and Public Engagement

Prioritization	Project	Status
1	Engage Residents, Stakeholders, and City	Initiate Now
2	Redevelopment Sites SWM Policy	Develop Policy Now, Implement through Future Projects
3	Retrofits for Road Rehabilitation Projects / LID BMP Policy	Develop Policy Now, Implement through Future Projects
4	LID BMP Policy / Stormwater User Rate	Currently Underway
5	Wet Weather Flow in Separated Sewers – Policy / Future Infrastructure Projects	Develop Policy Now, Implement through Future Projects

An overview of the project recommendations and area of expected works and benefits are listed below. More detailed scope recommendations for the projects that require additional studies and fieldwork prior to implementation are outlined in **Appendix E**.

5.6.1 Priority 1: Engage Residents, Stakeholders, and City

Engagement with residents, stakeholders and the City should continue and be initiated immediately to strengthen the communication of the recommendations of this study, including updates on follow-on actions. The engagement with residents may encourage private property improvements such as downspouts, rain gardens, etc. This may also involve the development of a Chedoke Creek Advisory Committee (**Section 6.2**) consisting of Annual report cards and meetings. This will allow the residents, stakeholders and City to stay involved and updated on all initiatives being taken within Chedoke Creek Watershed and the associated benefits and improvements.

Result: Improved coordination between stakeholders to support implementation plan, improved public knowledge, change in use and behaviour

5.6.2 Priority 2: Redevelopment Sites Stormwater Management Policy

This project involves developing a stormwater management (SWM) policy to be implemented through all future redevelopment site construction. The City is in the process of developing requirements for Low Impact Development (LID) Best Management Practices (BMPs) for redevelopment sites in the City, however it is suggested that the policy be reviewed and strengthened with a particular focus in the Chedoke Creek Watershed. This enhanced SWM policy will provide benefits throughout the City, with the retroactive treatment of stormwater on redevelopment sites, which previously received no water quality treatment.

Result: Improved stormwater management, improved water quality, leveraging development community in the solution

5.6.3 Priority 3: Retrofits for Road Rehabilitation Projects / LID BMP Policy

This policy will require contemporary stormwater management to be implemented through all future road rehabilitation projects. Many other municipalities are retrofitting their roads with SWM source controls and this work is being screened through rigorous cost/benefit tools. The policy and practices will need to be consistent with the City's current standards.

Result: Improved stormwater management, improved water quality, leveraging road program in the solution

5.6.4 Priority 4: LID BMP Policy / Stormwater User Rate

This project consists of developing and prioritizing a LID BMP Policy / Stormwater User Rate. A LID BMP Policy will need to be developed and it could be incorporated into the City's Stormwater User Rate, which is currently under evaluation. This incentive program will encourage private property owners to manage stormwater from private properties and implement BMPs such as rain gardens and permeable pavers. Stormwater User Rates have been implemented in numerous Southern Ontario municipal centres and can provide sustainable funding to stormwater services.

Result: Improved stormwater management, improved water quality, leveraging existing community in the solution, change in public use and behaviour

5.6.5 Priority 5: Wet Weather Flow in Separated Sewers Policy

This program involves the development of a policy and related guidance for new development throughout the City. The policy and practices should include more stringent criteria related to wet weather flow allowances in the infrastructure serving new developments to ensure that all future construction practices address wet weather flows. This could include mandatory flow monitoring in newly installed systems prior to the City's acquisition of the sewer assets.

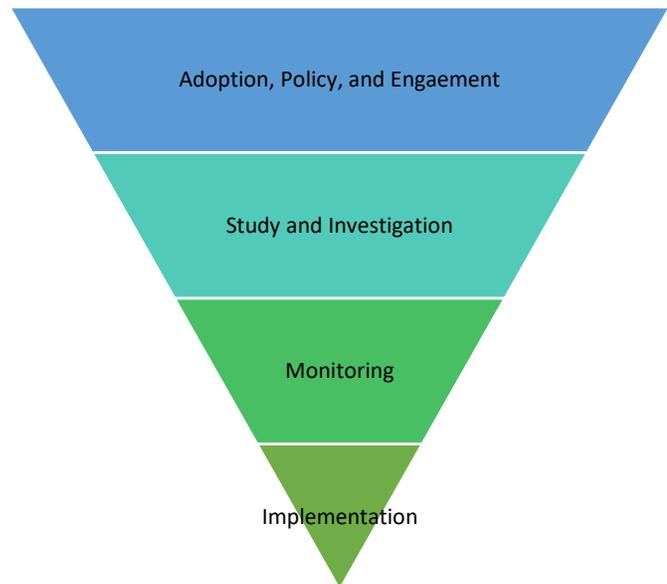
Result: Improved stormwater management, improved water quality, improved combined sewer flow management, leveraging development community in the solution, change in public use and behaviour

6 IMPLEMENTATION PLAN

This Chedoke Creek Water Quality Improvement Framework study seeks to provide an overall framework for the City to adopt to guide its actions in addressing the legacy water quality issues within the Chedoke Creek watershed. While the project, program, and policy recommendations presented herein are based on a strong foundation of data and information related to legacy studies and investigations, further studies, consultation, and establishment of the appropriate policies and funding, are necessary to support the implementation of the full complement of recommendations.

The figure below provides a general overview of the recommended steps which are further discussed in this section:

- Adoption, Policy, and Engagement:** This first step consists of obtaining City Staff and Council adoption of the Framework recommendations, including the Chedoke Creek Watershed Water Quality Vision and Objectives, as well as appropriate funding on a staged basis to support the project implementation. Also included in this step are the development and adoption of the required Policies needed to support and/or fund the implementation of proposed recommendations. Finally, adoption and policy work will need to be completed concurrently with public and stakeholder engagement.
- Study and Investigation:** This step consists of completing the required studies and investigations considered necessary to support decision-making related to future projects and actions.
- Monitoring:** This step consists of confirming the Management Objectives and identifying the Performance and Monitoring Indicators and associated Measures. This step also establishes the methodology by which the Targets, Performance and Monitoring Measures will be collected, reviewed, and progress reported, including the potential for adaptive management based on performance feedback.
- Implementation:** This step consists of the design, construction, and ongoing operation and maintenance of the recommended infrastructure and related programs including post-implementation monitoring to demonstrate effectiveness.



Recognizing that it will require several years for the City to transition through the **Adoption, Policy, and Engagement**, **Study and Investigation**, **Monitoring**, and **Implementation** before the City can proceed with the more significant recommendations, the Framework has also identified a number of near-term projects and existing City programs that can be expanded or redirected to the Chedoke Creek Watershed to allow the City to start to address the legacy issues immediately.

6.1 Program Schedule and Budget

Figure 6 provides a generalized program schedule and **Table 8** provides a breakdown of expected cost. Further, **Appendix E** provides a breakdown of each recommendation’s implementation schedule including general scope, additional studies and fieldwork requirements, estimated timeframe, and budget.

Table 8: Program Budget

Category	Timeline		
	0-2 Years	3-5 Years	+5 Years
Studies	\$3 M	-	-
Projects	\$11 M	\$23 M	\$17 M
Programs	\$1 M per year	\$1 M per year	\$1 M per year
<i>Operations & Maintenance – Potential⁽¹⁾</i>	\$0.5 M	\$0.5 M	TBD
<i>Study Recommendations – Potential</i>	-	\$2 M	>\$150 M

⁽¹⁾Costs for potential projects includes the total costs for implementing all proposed projects as part of study

6.1.1 2021 to 2023 (0-2 Years)

Initial activities will be focused on the Adoption, Policy and Engagement, and Study and Investigation Phases. The objective will be to establish the appropriate policy and funding necessary to support the implementation of the relevant recommendations, while initiating the required studies and engagement programs necessary to support the more significant initiatives moving forward. Milestones for the first 2 years of the strategy include:

- Council and Stakeholder adoption of the Framework recommendations and endorsement of the Chedoke Creek Watershed Vision and Management Objectives
- Drafting and adoption of the Framework policy recommendations (**Section 5.6**) required to support the Chedoke Creek Watershed Vision and Management Objectives

Confirmation of the Chedoke Creek Targets, Performance and Monitoring Measures (**Section 3.4**) and establishment of monitoring plan and progress reporting. The Targets should be developed on a subwatershed basis and based on environmental conditions.

- Initiate the Lower Chedoke Combined EA Study, Ainsley Woods Sewer Separation EA Study and Chedoke Watershed Stormwater Retrofits EA Study
- Complete the Flooding and Drainage Master Servicing Study and Water/Wastewater/Stormwater Master Plan, with their related recommendations to be incorporated as elements of the overall Chedoke Creek Watershed Water Quality Improvement Strategy
- Commencement and implementation of expanded Low Impact Development (LID) requirements for road reconstruction and new development
- Establishment of a Chedoke Creek Advisory Committee or equivalent (see **Section 6.2**)
- Continue and enhance the City’s public information and education program.

Further, the Framework recommends that the City complete the required investigation, design, and consultation work to implement all the near-term capital program projects (**Section 5.2**) and fully implement/complete the identified near-term Operational and Maintenance programs (**Section 5.4**), including the **CSO Monitoring Improvements and Active Management** program.

It is anticipated that during this timeframe, limited improvements in the Chedoke Creek water quality will be realized as the initial efforts will be focused on completing the required investigations, establishing the supporting policies and funding, and seeking stakeholder buy in. However, the CSO Monitoring Improvements and Active Management program is anticipated to reduce the risk of future spill events, such as the one reported in 2018.

6.1.2 2023 to 2026 (3-5 Years)

Within the first 5 years of the strategy, activities will be focused on completing the various Study and Investigation phases and establishing the Monitoring Plan approach to allow the City to proceed with the implementation of the more significant capital program recommendations. It is also during this timeframe that the City will begin to implement the Long-Term Operations and Maintenance programs. Key milestones for the first 5 years include:

- Completion of the Lower Chedoke Combined EA Study and Chedoke Watershed Stormwater Retrofits EA Study and initiation of the detailed design of various recommendations from each study
- Implementation of Ainsley Woods Sewer Separation
- Implementation of the Inflow and Infiltration (I&I) reduction program
- Continuing a public information and education program

Further, the framework recommends that the City complete the implementation/construction of near-term capital program projects (**Section 5.2**).

It is anticipated that during this timeframe, modest improvements in the Chedoke Creek water quality will be realized and will likely be identifiable through the monitoring program.

6.1.3 2026 and Beyond (+5 Years)

Long-term activities will be focused on completing the construction of the long-term capital projects, based on the findings of the recommended EA studies and other ongoing Master Plans. It is anticipated that the most substantial water quality improvement will occur following the implementation of the long-term capital projects and as the result of the cumulative long-term effects of the new City LID BMP policies and improvements to the Operation and Maintenance programs.

6.2 Stakeholder Engagement and Public Outreach

The recommendations outlined in this Framework represent a diverse set of policies, projects, and programs which will require multi stakeholder input, feedback, and contributions to be successful. This stakeholder involvement ranges from public input to the EA process and public interaction with the various programs and projects, multiple agency approvals, and joint project partnerships such as those with the MTO or RBG, etc.

As such, it is recommended that a Chedoke Creek Advisory Committee or equivalent be formed consisting of representatives from the Stakeholders listed in **Section 2.4** and others as deemed appropriate, representatives of City Council, and representatives from key City departments.

It is anticipated that the Chedoke Creek Advisory Committee will be chaired by City Staff and will have a "working" mandate of:

- Confirming the Watershed Management Objectives and establishing the Performance and Monitoring Objectives
- Establishing the Monitoring Program requirements
- Review and comment on proposed Policies and Study Recommendations
- Monitoring the Chedoke Creek Water Quality Strategy progress and reporting to Council on a semi-annual basis
- Leading public outreach efforts

The initiatives led by and completed by the Advisory Committee will need to consider the existing ongoing programs through the MECP, Environment Canada and Remedial Action Plan to ensure that all recommendations are in-line with current processes.

Further, it is anticipated that the Chedoke Creek Advisory Committee will serve to streamline public and stakeholder engagement needed to support the implementation of the framework recommendations.

6.3 Monitoring and Management Program

The Framework provides a broad range of recommendations, which may or may not need to be fully implemented to meet the Watershed Management Objectives. The City will need to establish an appropriate monitoring and management program which will need to first establish existing baseline conditions, allow for the monitoring of progress overtime, provide additional information to allow for the re-prioritization of recommendations, and ultimately to identify when the Performance and Monitoring Indicators and Measures have been achieved.

The extent of the monitoring program will be largely dependent on the final Performance and Monitoring Measures. There is the potential that these needs can be accommodated through consolidation and limited expansion of the existing monitoring programs conducted by HCA, RBG and others. However, these programs are currently independently administered by several different groups both internal and external to the City and all being conducted with a variety of different objectives and protocols resulting in a wide range of frequency, duration, coverage of the data collected. The City will need to explore the best Chedoke Creek Water Quality Monitoring Program approach, which may range from a reliance on currently collected information, moderate expansion of City monitoring program, the creation of a separately purposed based monitoring program, or the consolidation of all monitoring activities into a joint initiative.

APPENDIX A: SUMMARY OF SUPPORTING STUDIES

1 INTRODUCTION

The purpose of this Appendix is to provide a summary of the baseline information used to support the Chedoke Creek Water Quality Improvement Framework. A summary of the background reports is included below.

2 DATA SOURCES & RELATED STUDIES

This section summarizes the various data sources that were used to form the basis of understanding for this study.

2.1 Reports

A review of relevant reports was completed and summarized in the following section.

- 20 Year Trends in Water Quality (Cootes Paradise and Grindstone Creek) – Royal Botanical Gardens, April 2012
- 2013 RBG Marsh Sediment Quality Assessment – Royal Botanical Gardens, March 2014
- 2018 Landfill Leachate Collection System Performance Report – SNC-Lavalin, March 2019
- 2019 Landfill Leachate Collection System Performance Report – SNC-Lavalin, March 2020
- 403 Trunk Twinning Analysis – Stantec, April 2008
- Ainslie Wood / Westdale Neighbourhoods Class EA SWM Master Plan – McCormick Rankin, December 2003
- Annual Report 2018-2019 – BARC, August 2019
- Benthic Invertebrate Assessment of RBG Wetlands 2014 and 2015, Royal Botanical Gardens, 2018
- Chedoke Creek Erosion and Slope Stability Improvements Municipal Class EA – Dillon Consulting, September 2006
- Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report – Wood, January 2019
- Chedoke Creek Remediation Project – Various, April 2010
- Chedoke Creek Subwatershed - Stewardship Action Plan – Hamilton Conservation Authority, April 2008
- City of Hamilton B-Line Light Rapid Transit - Appendix B.1 Natural Heritage Features – SNC-Lavalin, n.d.
- Closed West Hamilton Landfill Leachate Quantity Assessment - Urban & Environmental Management Inc., October 2012
- Contaminant Loadings and Concentrations to Hamilton Harbour: 2008-2016 Update - Hamilton Harbour Remedial Action Plan Office, April 2018
- Cootes Paradise Marsh: Water Quality Review and Phosphorus Analysis - Cootes Paradise Water Quality Group, Hamilton Harbour Remedial Action Plan, March 2012
- Cootes Paradise Nature Sanctuary, Lower Chedoke Creek Area, Water Quality & Fisheries – Royal Botanical Gardens, n.d.
- Cootes Paradise Study – MOECC, 1986
- Cootes Paradise: Environmental Impact Evaluation – SLR, February 2020
- CSO Facilities Engineering Feasibility Study – Hatch, April 2020
- CSO Tanks Performance Report 2017 Annual Report – City of Hamilton, 2018
- Ecological Risk Assessment – SLR, February 2020
- Fresh Water Mussel Sampling Cootes Paradise – Fisheries and Oceans Canada, MNR, October 2015
- Freshwater Sediment Toxicity Testing Using Chironomus Dilutus and Hyalella Azteca - Bureau Veritas Laboratories, November 2019
- Hamilton Combined Sewer Overflow Reporting (2018) – Hatch, September 2019
- Hamilton Real Time Control Implementation - Phase 2 - Draft 90% PDR – Stantec, July 2020
- Hydrogeological Review of Design for Expansion of Leachate Collection System at the Closed West Hamilton Landfill – SNC-Lavalin, May 2014
- Kay Drage Park 2013 Annual Leachate Collection System Performance Report – MTE Consultants, March 2014

- Kay Drage Park Annual Performance Report – Urban & Environmental Management Inc., October 2008
- Kay Drage Park Groundwater Monitoring Report (2009-2015) – Urban & Environmental Management Inc., July 2016
- Lower Grindstone Creek, Borer's Creek and North Cootes Paradise Subwatersheds; Preliminary Geomorphological Assessment – Geomorphix, December 2016
- Monitoring Catalogue 2017 – Hamilton Harbour Remedial Action Plan Office, February 2018
- Project Paradise 2016 – Royal Botanical Gardens, May 2017
- RBG 25-Year Master Plan (excerpts 1.3 & 5.13) – MT Planners, 2020
- RTC Ph 1 Conceptual Design Report Update – Stantec, July 2011
- Sediment Quality in Lake Ontario Tributaries – Environment Canada, April 2003
- Updated West Hamilton Landfill Seepage Assessment Report – Dillon Consulting, October 2012
- Urban Runoff Hamilton Report & Recommendations – Hamilton Harbour Remedial Action Plan Office, October 2016
- Water Quality Monitoring of the Chedoke Creek Subwatershed, Subwatersheds of Cootes Paradise, and Red Hill Watershed – Redeemer University College, August 2015
- Water Quality Monitoring Season Summary 2017 – Royal Botanical Gardens, March 2018
- Water Quality Trends in Cootes Paradise Marsh and Grindstone Creek – Royal Botanical Gardens, 2012
- Wetlands Conservation Plan 2016-2021 – Royal Botanical Gardens, May 2016
- WQ in Cootes Paradise and Desjardins Canal RBG 1974 – Royal Botanical Gardens, October 1974
- X Connections Information Report - SLXC 2019 – City of Hamilton, February 2019

2.2 Papers

A review of relevant papers was completed and summarized in the following section.

- Aquatic Vegetation Trends from 1992 to 2012 in Hamilton Harbour and Cootes Paradise, Lake Ontario - K. E. Leisti, T. Theysmeyer, S. E. Doka & A. Court, December 2015
- Cootes Paradise Phosphorus Dynamics - Dong-Kyun Kim, Tianna Peller, Zoe Gozum, Tys Theysmeyer, Tanya Long, Duncan Boyd, Sue Watson, Y. R. Rao & George B. Arhonditsis, December 2016
- Evaluation of stormwater and snowmelt inputs, land use and seasonality on nutrient dynamics in the watersheds of Hamilton Harbour, Ontario, Canada - Long, T. et. Al., 2014
- Potential Contribution of Nutrients and Polycyclic Aromatic Hydrocarbons from the Creeks of Cootes Paradise Marsh - Chow-Fraser, P. et. Al., 1996
- Predicting the likelihood of a desirable ecological regime shift: A case study in Cootes Paradise marsh, Lake Ontario, Ontario, Canada - Yang, C. et. Al., 2020
- Seasonal Fish Community Use of the Great Lakes Coastal Marsh Cootes Paradise as Reproductive Habitat - Theysmeyer, T., 2000
- Water Quality Monitoring of the Chedoke Creek Watershed - Redeemer University College, 2016

2.3 Other

A review of other relevant information was completed and summarized in the following subsections.

2.3.1 Agreement

- Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2020 (Draft) - Provincial and Federal Governments, July 2019

2.3.2 Application

- Letter of Advice F&O Canada – Fisheries and Oceans Canada, August 2014
- Request for Review Submission F&O Canada: Chedoke Creek Bank Stabilization Works and Leachate Collection System Improvements Project - Urban & Environmental Management Inc., 2014

2.3.3 Correspondence

- Chedoke Creek Additional Information / Data - Hamilton Conservation Authority, September 2018

2.3.4 Figures

- MIP Trunk Twinning Sketch – City of Hamilton, May 2019

2.3.5 Guideline

- Catalogue of Public Engagement Techniques and Tools During Covid-19 – City of Hamilton, August 2020
- Public Engagement for City Led Projects during Covid-19 – City of Hamilton, August 2020

2.3.6 Media

- Floating Wetlands: A Sustainable Tool for Wastewater Treatment – Clean Soil Air Water Journal, October 2018
- Sewergate: Royal Botanical Gardens floats cleanup plan for Chedoke Creek – The Hamilton Spectator, March 2020
- What will the City of Hamilton do about pollution-plagued Cootes Paradise? – The Hamilton Spectator, April 2020
- Wetland Science & Practice: Vol. 36, No. 2 – Society of Wetland Scientists, April 2019

2.3.7 Presentation

- An Empirically-Based Regression Method for Estimating TP Loads to Hamilton Harbour from the Four Tributary Inputs – MOECC, January 2015

2.3.8 Sampling Data

- City of Hamilton Sampling Data - Appendix B to Report PW19008 – City of Hamilton, 2018
- Main King CSO 2019 Concentrations – City of Hamilton, 2019
- Main King Grab Samples – City of Hamilton, September 2018
- Microbial Insights Data - Chedoke Creek Sediments – Microbial Insights, September 2018
- RBG Fishway Summary Table – Royal Botanical Gardens, n.d.
- SGS Field Data - Chedoke Creek Sediments – SGS Canada, September 2018
- Water Quality Data from HCA (2014-2018) – Hamilton Conservation Authority, 2018
- Water Quality Data from RBG (1986-2017) – Royal Botanical Gardens, 2017

3 TIMELINE

An issues timeline summary table and a recommendations timeline summary table were developed to help identify the issues related to Chedoke Creek and recommended upgrades. These timelines are presented in **Figure 1** and **Figure 2**.

Figure 1: Chedoke Creek Issues Timeline

	Before 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Future				
Chedoke Creek / Cootes Paradise				erosion from Longwood Road to Cootes			erosion around landfill						wetlands are damaged (changes to land use, fertilizer, sediment runoff, sewage)			algae blooms and low DO						Increased precipitation - sewer overflows and urban runoff				
																	Lake Ontario water level fluctuation	Lake Ontario water level fluctuation					water clarity is not improving			
Landfill	organic loaded seepage from dump								iron from landfill exceeding sewer limits	water quality issues in nearshore groundwater (upstream of existing LCS on east side of creek)														significant volumes of unimpacted creek water collected by LCS	landfill leachate seeping into creek continuing to add copper	
													Creek water bypassing armour stone wall		surface water impacting LCS											
Wastewater	high nutrient inputs (ammonia & phosphorus) from CSOs												increased precipitation; additional sewer overflows					60 CSO events at Aberdeen; increased E. coli		CSO overflows			surface water quality impacts from CSO limited to E.Coli and TP			
																							increased precipitation causing sewer overflows			
Stormwater	high levels of PAH in sediments from Highway 403 runoff								phosphorus loading and pesticide use in urban area		poor storm water quality; excessive nutrient, sediment and contamination				urban runoff water quality issues	high concentration of nitrate, phosphate and chloride from urban sewage cross connections	cross connections on West Hamilton Mountain; nitrogen and phosphorus		increased precipitation and lake levels; TP and TSS				increased precipitation causing increased urban runoff			
															TP higher during rain/melt events				elevated chloride from road salt on Highway 403				increased chloride from road salt			
Other									contamination from roadway salt				Seep C2 is fed by shallow flow regime recharged phosphorus needs to be reduced													
													water clarity issues													

Main/King CSO event

MECP order

		Before 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Future		
Chedoke/ Cootes	Recommended	Ditch Design - Chedoke Creek ditch needs to be redesigned to promote flow (RBG)						Erosion & Slope Stability Class EA - Address erosion with slope stability and landfill leachate seeps along east bank of creek		Subwatershed Restoration - reduce sedimentation and phosphorous loading through urban SW best management practices, increasing natural cover, increased awareness of phosphorous loading and natural channel design (HCA)								Wetland Conservation - re-contouring the delta to create a natural riverbank level (berm), followed by replanting cattails. (RBG)			Remedial Action Plan - physical capping, chemical inactivation, direct removal, hydraulic dredging of targeted organic material (Wood)	Remediation Plan - shoreline wetlands, floating wetlands, mixing weirs, river oxygenation, rock lining, shrub buffer and pedestrian path (RBG - 25 Yr MP)			
	Implemented							Chedoke Creek Remediation Project - installation of bank stabilization structure, revegetation and log vanes												Berm - RBG started building a berm with Christmas trees					
Landfill	Recommended													LCS pump control logic - use storage in LCS collection pipe to increase wet storage, modify pump control system to reduce pumped volume and pump on/off cycles (UEM)	Data Logger - to record water level to assist in determining whether surface water is impacting the LCS on an ongoing basis (MTE)			Monitoring - continue regular groundwater monitoring (UEM)							
	Implemented								Leachate Collection System - operational												Leachate Collection System - Extension to the south				
Wastewater	Recommended							Highway 403 Trunk Sewer - twinning (KMK)														CSO diversion study - investigate feasibility of diverting additional flows from uncontrolled CSO basins into facilities (Hatch)	CSO Diversion Study - initiate study (Hatch)	CSO Facilities - improve monitoring and control (Hatch)	Real Time Control (RTC) Program in combined sewer system (Stantec)
	Implemented	Main/King CSO tank - operational							Royal Avenue CSO tank - operational																Highway 403 Twinning - divert flows from Aberdeen overflow
Stormwater	Recommended									Stormwater Management - to reduce phosphorus loading, implement SW best management practices including before and after development occurs, increasing natural cover and increased awareness to practices contributing to phosphorus loading								Urban Runoff Management - increasing infiltration, evapotranspiration and on-site retention through LIDs can reduce phosphorus loads							
	Implemented																								
Other	Recommended																							DO index monitoring - process to monitor targets is needed (RBG)	Remedial Actions - re-establish macrophyte species in native marsh habitats through planting efforts and control of invasive plant species (Yang, C. et al)
	Implemented	Carp Exclusion Barrier - Operational																							

Recommended & Implemented

APPENDIX B:CONSULTATION OVERVIEW



Chedoke Creek Water Quality Improvement Study – Kickoff Meeting

City of Hamilton

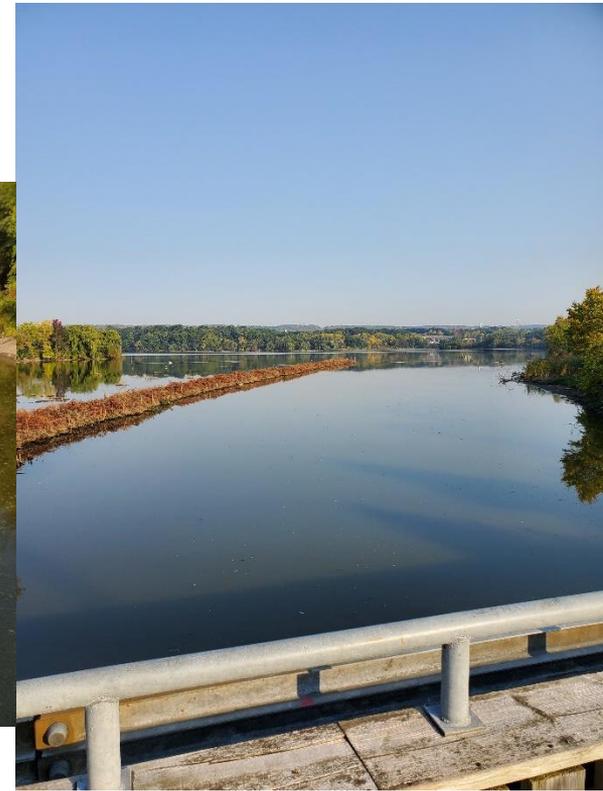
October 27th, 2020



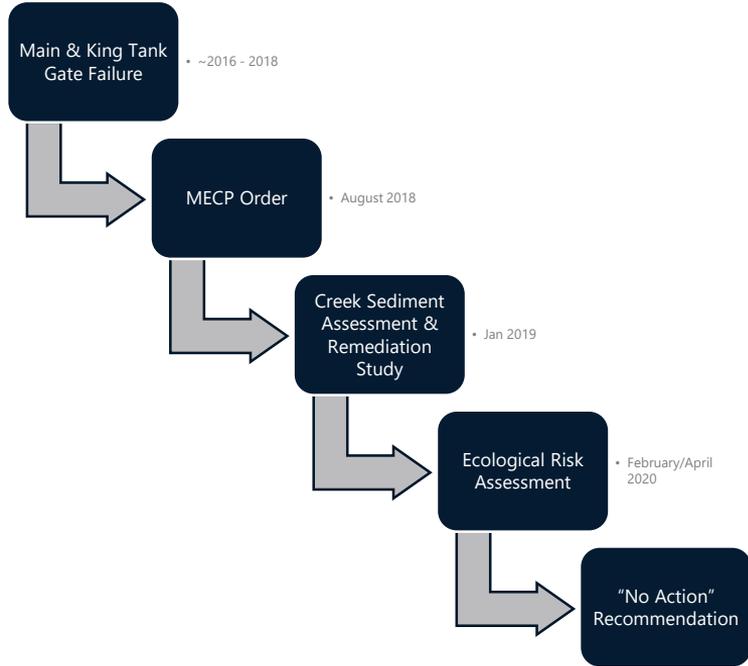
Agenda

- Introduction/Meeting Objectives
- Project Objectives and Timeline
- Study Area and Key Components
- Historic/Ongoing Studies and Projects
- Scope of Solutions Under Consideration
- Stakeholder Perspective
- Next Steps

Chedoke Creek



Project Trigger and Timeline



- Chedoke Creek and Cootes Paradise – Legacy issues and long-term remediation needs
- Main & King Overflow → Renewed attention/focus by public and stakeholders
- MECP Order → Short-term and focus on overflow events and remediation
 - Short-timeline → No opportunity for external stakeholder engagement
- Study found contaminants in Creek sediments
 - Likely the result of long-term contributions from point and non-point sources
 - Subject spill alone was unlikely to have contributed to observed conditions
- Legacy issues remain

Project Vision

- Need to focus on Project Vision within context of broader “global” vision



- Project Vision and Global Vision will require time to implement and achieve goals



Project Objectives

Holistic Review of Legacy Water Quality Issues

- Combined sewer overflows
- Urban runoff
- Landfill Leachate
- Historic Sources

Explore a Range of Preventative, Mitigative, and Restorative Solutions

- Within the upstream watershed
- At creek outfall locations
- Within/along the Chedoke Creek to Cootes

Stakeholder Engagement

- Expand understanding of the system, contributors, and potential solutions
- Review and provide comment on potential solutions
- Buy-in to solutions framework and implementation strategy
- Set foundation for future engagement and implementation

Identify Preliminary Best Value Solutions

- Needs to be effective and cost effective
- Need to focus on major sources
- Balance short-term vs. long-term solutions
- Collaboration of multiple partners

Project Outcomes

- What Is the End Objective?
 - Outline of the attainable long-term vision for Chedoke Creek
 - Framework and Implementation Plan for future action
 - Identifies a balanced suite of recommendations
 - Objectives,
 - Cost / Benefit,
 - Project Lead
 - Identifies the implementation process
 - Timeline,
 - Needed Studies / Investigations,
 - Triggers / Supporting Projects
 - Identifies potential short-term and quickly implementable solutions

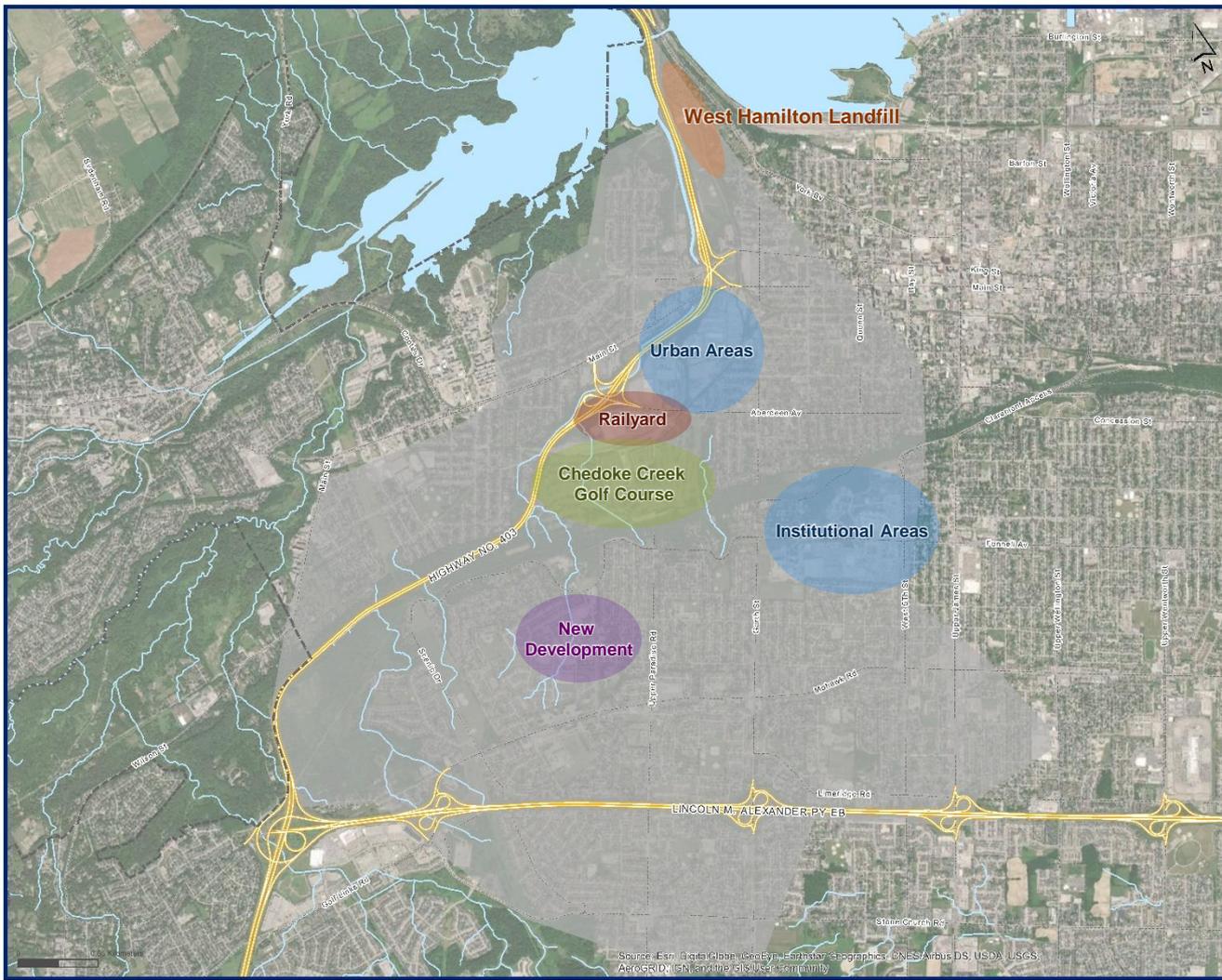
- Project Limitations
 - 4-Month Study
 - Based on best available information → Leveraging existing reports (desktop)
 - Limited new detailed investigation & assessment
 - Additional steps will be needed to implement major components
 - Success dependent on Stakeholder input and collaboration

Project Timeline & Meetings



Historic/Ongoing Studies and Projects

Chedoke/Cootes	Stormwater	Wastewater	Landfill	Other
<ul style="list-style-type: none">•Water Quality Monitoring•Creek rehabilitation•Contaminants and sediment testing/monitoring•Species survey and investigation•Watershed management & Cootes remediation•MECP response investigation•RBG Master Plan•Hamilton Harbour Remediation	<ul style="list-style-type: none">•Master Plan(s)•Ainslie Wood / Westdale Neighbourhoods Class EA•Annual CSO reporting	<ul style="list-style-type: none">•Annual CSO reporting•CSO tank construction•Outfall monitoring feasibility•RTC Phase 1/2 implementation•Sewer upgrades•Master Plan(s) & PPCP•Sewer lateral cross-connection program	<ul style="list-style-type: none">•Annual leachate system performance reporting•Ground water monitoring•Slope stability improvements	<ul style="list-style-type: none">•Growth and Intensification•LRT•Infrastructure renewal



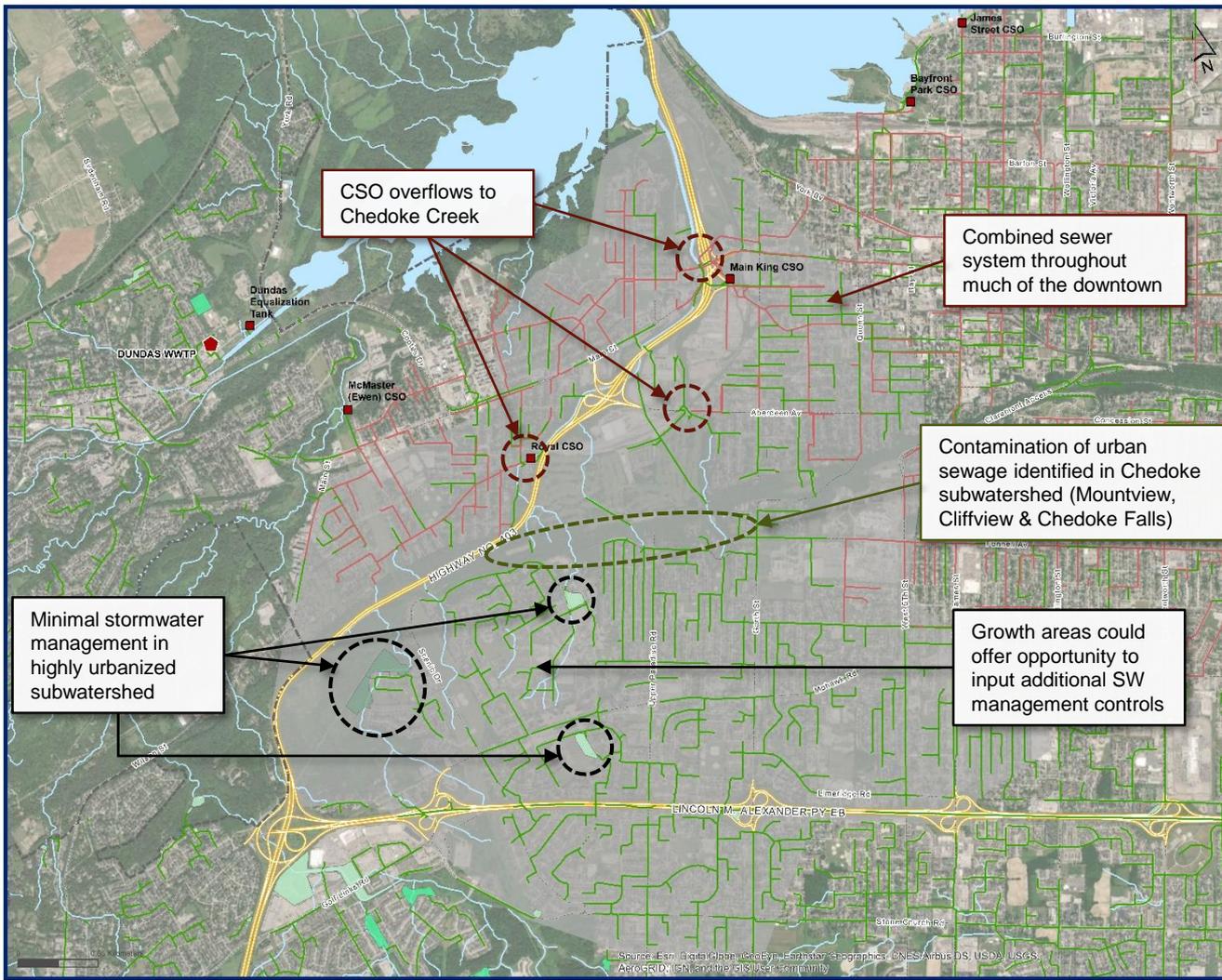
HAMILTON
 Chedoke Creek Water Quality Improvement Study

General Features

- Highways (Yellow line)
- Major Roads (Grey line)
- Urban Boundary (Black outline)
- Municipal Boundary (Dashed line)
- Waterbody (Blue area)
- Watercourse (Blue line)
- Chedoke Subwatershed (Grey area)

Figure 1
 Chedoke Creek Subwatershed

Source: Esri, DigitalGlobe, GeoEye, Earthstar, Imagery, IGNIS, Airbus DS, USDA, USGS, AeroGRID, IGNIS, and the GIS User Community

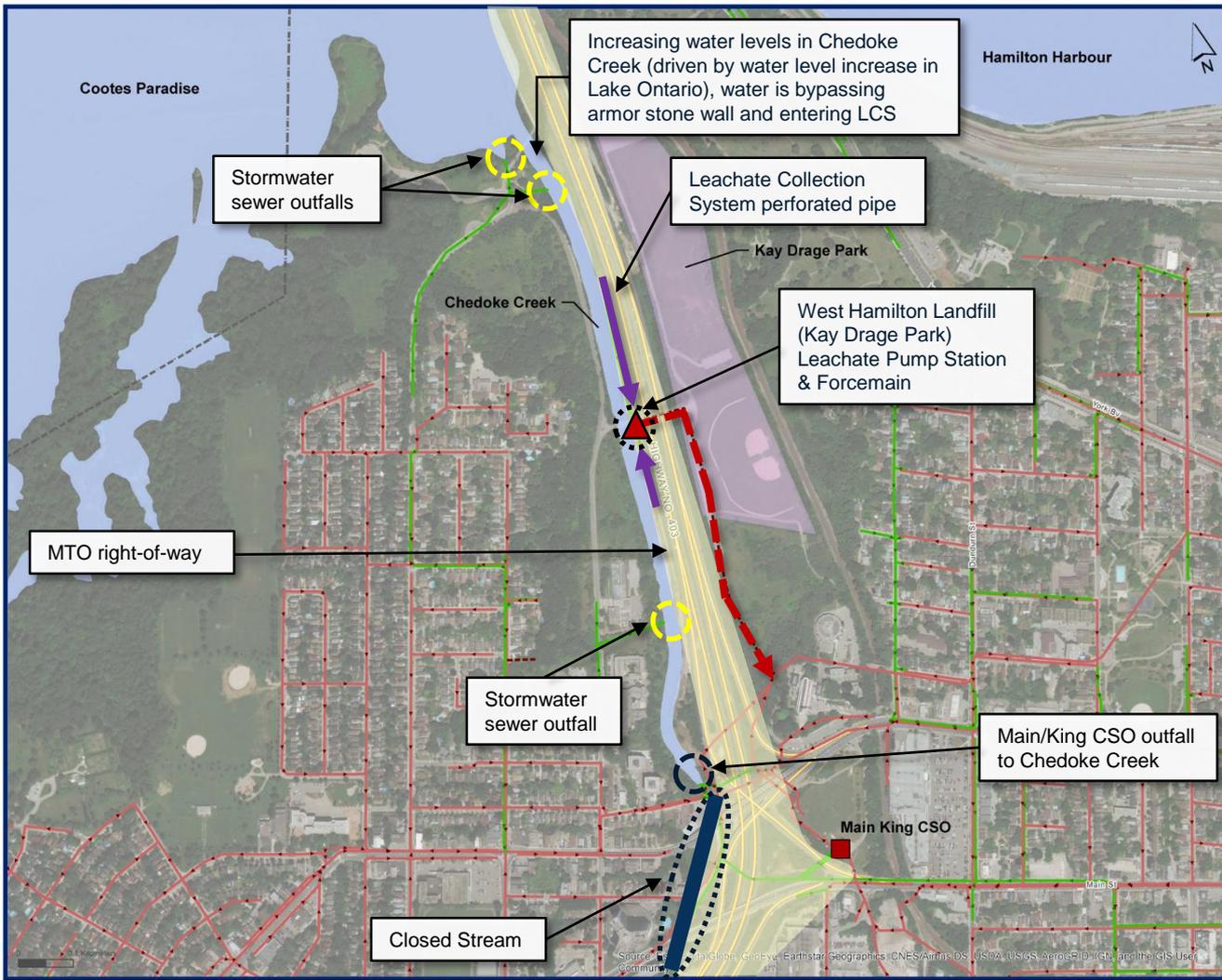


Hamilton
 Chedoke Creek Water Quality Improvement Study

- General Features**
- Highways
 - Major Roads
 - Urban Boundary
 - Municipal Boundary
 - Waterbody
 - Watercourse
- Chedoke Subwatershed**
- Chedoke Subwatershed
- Stormwater Management Facilities**
- Dry Pond
 - Low Impact Development
 - Oil Grit Separator
 - Wet Pond
 - Wetland
- Chedoke Subwatershed**
- Chedoke Subwatershed
- Existing Wastewater Infrastructure**
- Wastewater Treatment Plants (WWTP)
 - CSO Tanks
- Sewermain**
- STORM
 - COMBINED

Figure 2
 Chedoke Creek Subwatershed

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Hamilton
 Chedoke Creek Water Quality Improvement Study

General Features

- Highways
- Major Roads
- Urban Boundary
- Municipal Boundary
- Other Municipalities
- Kay Drage Park
- Waterbody
- Watercourse

Existing Wastewater Infrastructure

- CSO Tanks

Sewermain

- STORM
- COMBINED
- Forcemain

Figure #.##
 Chedoke Creek

Source: City of Hamilton, Esri, DeLorme, GeoEye, Earthstar Geographics, CNES/Airbus OS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Overview of Potential Contributions

- Multiple Concerns

- Diversion of Runoff – Reduce clean flow contributions
- High Nutrient Loading
- Metals and VOC/Oils

- Focus on Nutrient Loading

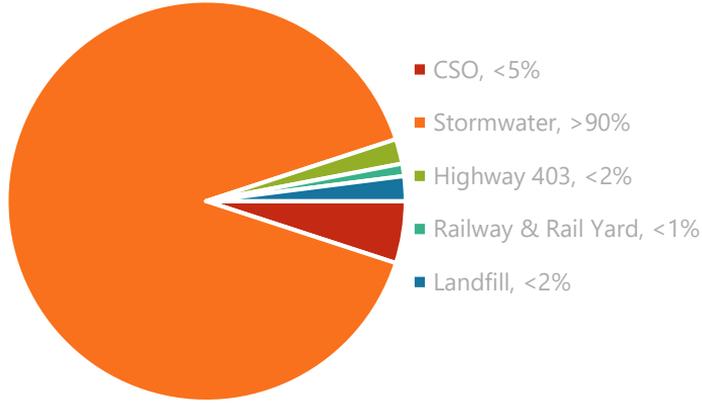
- Trigger for major and sustained issues in Cootes
- Addressing provides relief to other concerns

- Potential Nutrient Loading Sources

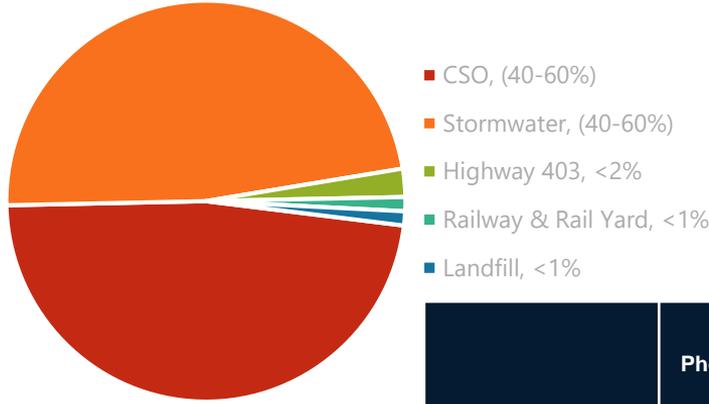
- Combined Systems
 - Overflows – Major Point Sources
- Stormwater Runoff
 - Wash off from residential and other applications
 - Potential cross-connections
- Landfill
 - Leachate infiltration into the Creek
- MTO/Railway
 - Wash off from transportation and potential spills

Overview of Potential Contributions (Example)

TP Loading - Average Year



TP Loading - Peak Event



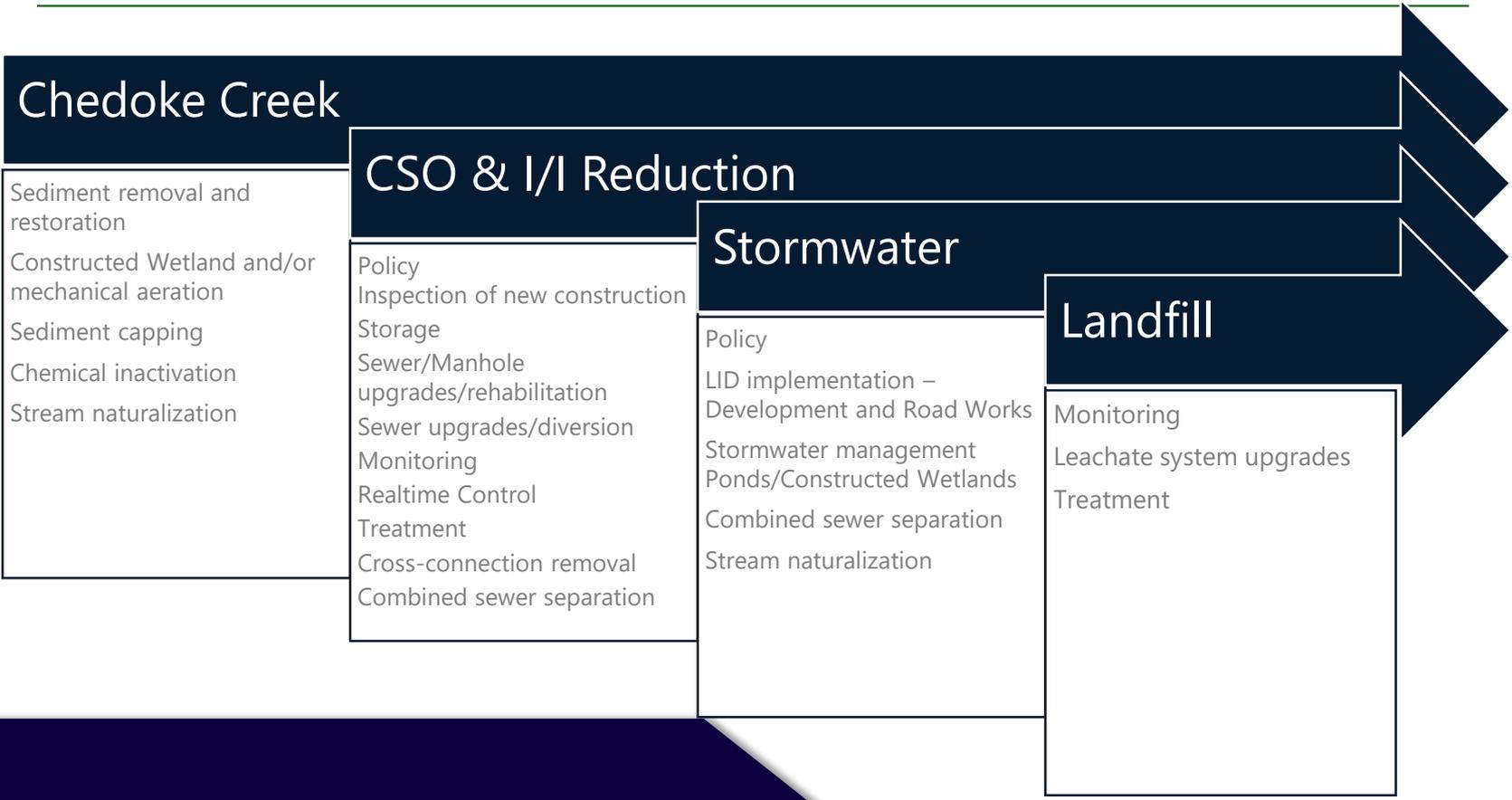
Data Sources

- CSO Annual Reports (2015-2019)
- WQ Sampling HCA, RBG, and EME (1994-2019)
- Landfill Annual Monitoring Report (2015-2019)

- High level estimate of the relative contributions
- Used to provide guidance to identify priority areas and potential benefits
- Uses existing quality monitoring data and reporting
- Intended to represent a typical year

	Total Phosphorus (mg/L)	Ammonia + Ammonium as N (mg/L)	Total Suspended Solids (mg/L)
Combined Sewer Overflows	0.3 – 3.5	0.4 – 1.94	27 - 334
Stormwater Runoff - Residential	0.032 – 2.78	<0.01 – 14.2	2.2 - 104
Stormwater Runoff - Highway 403			
Stormwater Runoff - Railway & Rail Yard			
Landfill Leachate	0.063 – 2.25	0.6 - 220	1.1 - 791

Potential Solutions to Consider



Stakeholder Perspective

Key Elements

- Location/Infrastructure
- Past/Planned monitoring/Improvements
- Past/Planned studies/Investigations
- Performance/Issues over time (improvement/degradation)
- Observations
- What is important?
- What influences water quality to Chedoke Creek

Potential Solutions

- What has been recommended?
- What has been implemented? Was it effective?
- What wasn't implemented? Why?
- What was considered but not recommended? Why?
- What new solutions should be explored?
- What are non-starters?

Next Steps

■ GM BluePlan



■ Your Participation (Email Response by November 6th)

- Input on the System**
 - Do you have any additional information on the Chedoke Creek
- Feedback on the Vision**
 - Do you think any thing is missing from the long-term vision?
- Feedback on Potential Solutions**
 - What options do you think should be considered?
 - How should the options be evaluated?

Thank You

Questions and Discussion



Julien.bell@gmblueplan.ca

City of Hamilton
Chedoke Creek Water Quality Improvement Study
GMBP File No. 620083
External Stakeholders Workshop #1

Minutes

DATE: Tuesday, October 27th, 2020
9:00 AM – 12:00 PM
LOCATION: Go-to-Meeting

ATTENDEES:	Chris MacLaughlin (CM)	Bay Area Restoration Council
	Christina Cholkani (CC)	City of Hamilton
	Mani Seradj (MS)	City of Hamilton
	Jonathan Bastien (JBa)	Conservation Hamilton
	Scott Peck (SP)	Conservation Hamilton
	Lynda Lukasik (LL)	Environment Hamilton
	Christine Boston (CB)	Fisheries and Oceans Canada
	Julien Bell (JB)	GM BluePlan
	Chris Hamel (CH)	GM BluePlan
	Michelle Klaver (MK)	GM BluePlan
	Kristin O'Connor (KO)	Hamilton Harbour Remedial Action Plan
	Drew Wensley (DW)	MT Planners
	Tara McCarthy (TM)	MT Planners
	Ehab Armanious (EA)	Ontario Ministry of Transportation
	Shahbaz Asif (SA)	Ontario Ministry of Transportation
	Mark Runciman (MR)	Royal Botanical Gardens
	Tys Theysmeyer (TT)	Royal Botanical Gardens
	Ron Scheckenberger (RS)	Wood

COPIES TO: All Attendees

Minutes

<p>1.</p>	<p>Introduction</p> <p>Objectives</p> <ul style="list-style-type: none"> • The primary objective of this external stakeholder workshop is to receive feedback and perspective from external stakeholders who have context, experience and insight into the project, that may not otherwise be available to the project team <p>Introductions</p> <ul style="list-style-type: none"> • All stakeholders gave a quick introduction including what organization they are from and their roles at the organization: <ul style="list-style-type: none"> ○ Chris MacLaughlin: Director of Bay Area Restoration Council (BARC) - Director ○ Christine Boston: Hamilton Harbour Remedial Action Plan (HHRAP) – Co-Chair ○ Drew Wensley: MT Planners - CEO of Planners and involved in the Master Plan for Royal Botanical Gardens (RBG) ○ Jonathan Bastien: Hamilton Conservation Authority (HCA) - Water Sampling Program Manager ○ Lynda Lukasik: Environment Hamilton (EH) – Involved with tracking water quality in Redhill Creek and dealing with cross connections in Chedoke Upper Subwatershed ○ Mark Runciman: RBG – CEO ○ Scott Peck: HCA – Deputy Chief Executive Manager ○ Tara McCarthy: MT Planners – Involved in RBG 25 Year Master Plan ○ Tys Theysmeyer: RBG – Head of Natural Areas ○ No introductions from Ehab Armanious and Shahbaz Asif who were in and out of the meeting: Ontario Ministry of Transportation 	<p>Actions</p>
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<p>2.</p>	<p>Project Trigger and Timeline</p> <ul style="list-style-type: none"> • This project builds off the 2018 MECP order related to the dry weather sewage spill to the Chedoke Creek <ul style="list-style-type: none"> ○ This event brought renewed interest from the public with increased focus on the Chedoke Creek ○ The MECP order had a short time frame which restricted external stakeholder engagement ○ The investigations related to the MECP order were focused on mitigating the impacts of the overflow event and not addressing long term issues within the creek itself ○ From these investigations it was determined that there were contaminant issues within the creek as a result of point and non-point sources ○ The recommendation from the study was to do nothing, which did not resolve legacy issues within the creek and was not well accepted by external stakeholders and the public • This study is not specifically related to the overflow event but looking at the long-term vision and road map to addressing water quality in Chedoke Creek 	
<p>3.</p>	<p>Project Vision</p> <ul style="list-style-type: none"> • The City's long-term vision is to restore Cootes Paradise; recognizing that to achieve this there are many individual pieces that need to be considered • The focus of this study is on Chedoke Creek piece and not the entire Cootes Paradise • There have been many studies related to Chedoke Creek; however, all studies have been independent of each other • This study is intended to not only establish a short-term implementation plan, but to set out a long-term vision • Our project goal therefore is to look at everything together and establish a road map and long-term plan for Chedoke Creek, with recommendations for short-term actions 	
<p>4.</p>	<p>Project Objectives</p> <ul style="list-style-type: none"> • The main objective of this study is to take the legacy work that has been completed in the past and look at it in the context of the broader system. • All past recommended solutions will be reviewed, including looking at the watershed, non-point sources, point sources and the creek solutions. • Solutions could include preventative, mitigative, and restorative measures. • This study will develop a framework/implementation plan to address these long-term legacy issues • Stakeholder engagement will continue to be a key component of this study ensuring the internal & external stakeholders are involved and on board with the final solutions • The overall goal of this study is to identify the best value solutions for the Chedoke Creek as a whole 	

<p>5.</p>	<p>Project Outcomes</p> <ul style="list-style-type: none"> • The Project Team will provide a fresh perspective for the Chedoke Creek Water Quality Study. The following are some of the projected study outcomes: <ul style="list-style-type: none"> ○ Outline a long-term vision of the Chedoke Creek ○ Establish a Framework and Implementation Plan <ul style="list-style-type: none"> ▪ What actions and studies need to be implemented in what order? ▪ How to prioritize solutions? ○ Identify a balanced suite of recommendations including: <ul style="list-style-type: none"> ▪ Cost/Benefit review ▪ Who (City, MECP, MTO, RBG, etc.) is responsible for implementing these solutions? ○ Identify an Implementation Process <ul style="list-style-type: none"> ▪ Outline time frame for implementing the suite of solutions ▪ Identify clearly the future studies/investigations required ▪ Based on the legacy work there will be likely be a number of studies that the City will be able to implement in the short-term • Limitations of this study were also discussed: <ul style="list-style-type: none"> ○ This study is being completed in a short timeframe, with the final report to be completed by the end of 2020. <ul style="list-style-type: none"> ▪ Meeting this schedule will be dependent on the availability of stakeholders, and the ability to set up timely meetings with them. ○ The project team only has access to the information provided: If the City or external stakeholders have additional information/knowledge it will need to be brought forward initially to be incorporated into the review • LL Question: How will this relate to the MECP requirements for post-spill remediation. Has MECP accepted the City’s consultants report that says ‘no remediation required’ in response to the spill? <ul style="list-style-type: none"> ○ MS Response: Latest status as far as we are aware is that the MECP has not replied back to technical comments. ○ MS will reach out to the Compliance and Regulations at the City and see what the latest status is on that. • DW: Indicated that there are concerns with the ‘no action’ response and a baseline should be established early in this study <ul style="list-style-type: none"> ○ JB: The MECP order and recommendations are being considered in this study in establishing the long term vision; if MECP identifies further objectives early they can also be considered in this study • MS: The past studies were focused on the CSO spill alone; this study takes a broader perspective in that it considers the health of the watershed and looks 	<p>MS – Find out latest status on MECP.</p>
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	<p>at other sources of contamination of the creek on a holistic basis. It goes beyond just considering the spill.</p> <ul style="list-style-type: none"> • CM identified other study considerations: <ul style="list-style-type: none"> ○ Does the City have a budget for short term projects? ○ Will Council approval be required? ○ One concern is that the MTO was filling parts of open floodplain with concrete. Is there going to be communication with MTO in this study as to any future works? Are there other stakeholders to be consulted with? • The implementation plan identified in this study, will identify the long-term approval requirements need to implement the recommendations (including Council approval and budgetary considerations). • GMBP and the City will identify if other stakeholders should be consulted with. 	
<p>6.</p>	<p>Schedule</p> <ul style="list-style-type: none"> • The project schedule was reviewed including: <ul style="list-style-type: none"> ○ September: Background Review ○ October: Solutions Development ○ November: Solutions Evaluation ○ December: Draft Recommendations • To meet this schedule, the project team is reliant on historic studies; stakeholders will need to provide any key reports and feedback that they have early in this process so that they may be incorporated into the review process. 	
<p>7.</p>	<p>Study Area</p> <ul style="list-style-type: none"> • Figures of the study area, including subwatershed and the creek channel were presented with key areas and issues highlighted • It was noted that when looking at the Chedoke Creek study area, it is important to consider the Chedoke Creek in the context of watershed as a whole. • There is very limited existing stormwater management within the catchment; very little quality control before discharging into Chedoke Creek • There are multiple potential contributors and multiple factors that need to be considered. Challenges include quantifying solutions to determine if one is more beneficial than another. <p>This study will utilize all current information available and stakeholder input to develop the short-term implementation and long-term vision and will contribute to the goal of restoring Cootes Paradise.</p>	

<p>8.</p>	<p>Overview of Potential Contributions</p> <ul style="list-style-type: none"> • GMBP presented questions to stakeholders: <ul style="list-style-type: none"> ○ How do we manage these concerns? ○ How do we quantify in a way that is clear, understandable and measurable? ○ Are we on the right path or do we need to adjust? • Going to focus on nutrient loading as they are a good analog for everything (metal, VOCs/oils) as a whole 	
<p>9.</p>	<p>Example</p> <ul style="list-style-type: none"> • GMBP presented an example of nutrient loading involving Total Phosphorus to show a magnitude of the different contributors including: <ul style="list-style-type: none"> ○ CSO ○ Stormwater ○ Highway 403 • On an average year, >90% is coming from stormwater runoff • Need to determine how much should be focused on an average year vs. peak loading events as it related to creek health • Dry days will also be beneficial to look at for contributors such as the landfill • Through this study, GMBP will consider the magnitude of the potential contributors and the potential reductions in loading that can be achieve in order to identify the costs/benefits of the solution. 	
<p>10.</p>	<p>Potential Solutions to Consider</p> <ul style="list-style-type: none"> • There are many potential solutions to consider and it is important to explore all solutions as they relate to the entire watershed and system • All restorative, mitigative and preventative solutions including CSO and I&I reduction, stormwater management and landfill options will be considered • LL: Indicated that the data indicates that Hamilton may wish to consider a stormwater fee program, one that, ideally, incentivizes action to manage stormwater on property (The feasibility of this will be noted in the study). 	

<p>11.</p>	<p>Stakeholder Perspective</p> <ul style="list-style-type: none"> • All of the external stakeholders highlighted key components of the subject area that they are currently involved with, provided input for the study, and posed questions for the project team. These comments and input will be considered in the study. <p>Chris MacLaughlin – BARC</p> <ul style="list-style-type: none"> • What limitations have we been given? Financial or otherwise? <ul style="list-style-type: none"> ○ JB: The City hasn't provided limitations, but solutions must be realistic. We are identifying the solution as well as the cost benefit of each. At this stage, nothing is off the table, but as we work through this process and set the framework and plan, we will identify which possible solutions that are and are not achievable and the reasoning behind it. • Is November 6th a hard date? <ul style="list-style-type: none"> ○ JB: The goal is to have a draft vision by the end of the year which will rely on feedback being provided in a timely manner. • People doing things in clean water such collecting wild rice in the mouth of Chedoke River is a remarkable vision that would resonate well with the public. These types of projects are going to generate enthusiasm for public. • There has been a history of big infrastructure projects as solutions to all problem, and this is not always the right decision as they don't address water quality problems upstream. • Councilors must buy-in to the benefits of the solutions.as they will dictate whether they are implemented or not. • There is a role for entire community to play in terms of stormwater. • Important for City staff to know there are non-profit groups and citizens that form a community of concern. • Must start with the end goal; vision of where we need to be <p>Drew Wensley – MT Planners</p> <ul style="list-style-type: none"> • MT Planners completed the 25-Year Master Plan for RBG • MR introduced the RBG 25-Year Master Plan • DW walked a group through the RBG 25-Year Master Plan document which was approved in June 2020 • Key takeaways from the RBG 25 Year Master Plan include: <ul style="list-style-type: none"> ○ Looked at Regional perspective ○ Expanding urban pressures having detrimental effect ○ Immediate action needed for long term care ○ Have to achieve this through system understanding ○ Looked at solutions that deal with long term challenges and immediate needs ○ An anatomy and geomorphology study was completed that could be important for this Chedoke Creek study ○ Environmental Enhancement – adding more storm ponds, bioswales, tec. ○ Completed a water balance study for a bioremediation facility in Riyadh 	
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<ul style="list-style-type: none"> ○ Engineered solutions are part of the solution but there are also ecological solutions ○ RBG is planning a lot in the next few years in terms of trails ○ Study after study is not the solution; need action to follow implementation ○ Need commitment of money to use towards environment ○ Lake level is important to water quality as it impacts the shoreline ○ Lake levels in broader view is important to tie into study <p>Tys Theysmeyer – RBG</p> <ul style="list-style-type: none"> ● How much of Chedoke is infilled – can you tear back? Or do you start from scratch at the mouth ● Paradise Point is the access to the water ● What are shorter term solutions so that people can trust the water again? ● As much as 1/3 of water is piping through Chedoke Creek area – get a handle of that area and see what can do; this wastewater is crossing Chedoke Creek ● Have completed projects with local Indigenous groups; if we deal with Chedoke properly – the Princess Point would be a prime time wild rice area ● From Water Quality – in the case of phosphorus it needs to get treated differently; how it gets presented is relatively important ● Seasonality is quite significant as even the worst of worst events could present minor impacts on Cootes Paradise in March but the same event in summer is the whole impact on Cootes Paradise ● Iroquoia Heights is a significant contributor of stormwater that goes into combined sewer; look into this to have more clean water directed to Cootes ● Great Lakes Fishery – watching fish spawn will draw people to the area ● HCA is best available data for water quality sampling ● Has the project team reviewed any Redeemer College data? ● Community engagement need to be within top 10 of priorities. <p>Tara McCarthy – MT Planners</p> <ul style="list-style-type: none"> ● Public trust is an important piece of this study ● Personal accountability for what people can do upstream to help with the solutions if they admire the water ● Economic gains realized from improved water aesthetics <p>Jonathan Bastien – CH</p> <ul style="list-style-type: none"> ● In charge of the watershed management including water quality monitoring ● HCAs monitoring provides a good indication of where we were, where we're at, where we will end up in terms of water quality ● High level overview of Kay Drage Park sampling <ul style="list-style-type: none"> ○ 2014, 2015 and 2016: elevated levels of E.coli, phosphorus (TP) ○ 2017, 2018: significantly elevated levels of E.coli, phosphorus ○ 2019, 2020: levels are lowered and are in the long-term average range; TP was 0.2-0.3 mg/L and objective is 0.03 mg/L ● Increased monitoring program in 2018 with 4 additional sites in Chedoke Creek ● In 2019-2020, the upstream sites have significantly higher concentrations than downstream, and these sites are much higher in these concentrations than any other sites. E.coli and TP fluctuate significantly in all of these sites based on the 	<p>JBa - Provide Coles Notes for water quality sampling</p>
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<p>week. E.coli elevated in wet compared to dry events, which was not the case for TP. Take away from sampling is there is a baseline WQ issue throughout Chedoke Creek that is not a storm event related problem but all the time related problem.</p> <ul style="list-style-type: none"> • In 2019-2020, CP-11 is more in the range of the long-term average with improvements from 2014-2018 which is due to the lack of spill, but this isn't necessarily the end goal. • Want to expand monitoring program into more sites in Chedoke Creek including tracer for what kinds of E.coli are present. • Will provide Coles Notes in email by Nov 6th deadline <p>Kristin O'Connor - HHRAP</p> <ul style="list-style-type: none"> • MTO needs to be engaged or else there are solutions above or below MTO corridor; HHRAP doesn't attempt to engage them anymore • E.coli is the more important nutrient for public trust, phosphorus is great, and scientists love it but E.coli is for public trust to identify safety. It should be an element of this for what we look at • Long term ownership is an issue – who owns it, who is going to be responsible for maintenance 30 years from now. No one will want to take responsibility for future fixes so we need to be clear about who owns these things and who will be responsible for paying these and how it will be funded. • Bigger broader concept – It is important that the staff from City of Hamilton understand stakeholder issues and concerns, and address these concerns, so that it does not become an “us vs. them” scenario. • Great lakes is really focused on fixes and projects so there could be opportunity for grant. If we can tie this into this into restoration of Hamilton Harbour there is opportunity to get funding. Will forward on in email. • Will forward on in email • Important to look at solutions that are implementable and manageable • I would want to see those pie charts for parameters beyond phosphorus. Yes, the rail yards and landfills might be low for phosphorus, but are they having impacts for potentially concerning elements? <p>Lynda Lukasik - EH</p> <ul style="list-style-type: none"> • Climate and climate issues are important and should be a driving force, need to use climate lens • This study should take into account policy challenges that the City is dealing with including: <ul style="list-style-type: none"> ○ A stormwater fee for the City of Hamilton that incentivizes stormwater management on properties should be considered; urge everyone to push this ○ Green development standard. Need to pay more attention in watersheds (eg. green roofs) ○ Positive changes in Chedoke watershed are changes that should be sustained • If we do a good job in Chedoke watershed, there is a better chance to have it carried throughout the City (i.e. Redhill: positive lessons learned swiftly applies to other watersheds) • We are at a critical point in the growth management which could have huge implications. The City needs to plan growth as there is pressure to expand 	<p>KO - Forward on Great Lakes funding information.</p>
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	<p>urban boundary. This will create challenges and we need to speak to how we accommodate growth to make urban waterways healthier.</p> <p>Scott Peck - CH</p> <ul style="list-style-type: none"> • Water monitoring program is ongoing and done in partnership with MECP when funding is available. We see this as ongoing and increasing for Chedoke Creek and for wherever it is needed in Cootes Paradise watershed. • Watershed health perspective is to identify restoration and hotspots • Looking forward through the current mapping, there are opportunities for stormwater retrofits such infiltration instead of combined systems • Retrofits are very important • Look at overall functioning of system – are the combined sewers doing what we want them to be doing. partnership and working together is incredibly important. • MTO missed huge opportunity when doing channel. CH was not approached for permits. 	
<p>12.</p>	<p>Discussion</p> <p>JB to group: What are key sensitivities for the overall importance to health and importance to Chedoke and Cootes? What is the most important design scenario? Is there one we should be focusing on?</p> <ul style="list-style-type: none"> • TT response: <ul style="list-style-type: none"> ○ Peak events are much more dramatic than the average year stormwater ○ Ongoing variability in terms of water sampling, sorting out the variability deals with day to day water quality <p>JB: were financials completed for the RBG 25-Year Master Plan?</p> <ul style="list-style-type: none"> • MR: Financial Plan is included in the Master Plan which can be provided – this includes aeration system, etc. <p>JB: Is this only in the RBG lands or are there other solutions related to the broader upstream in the RBG 25-Year Master Plan?</p> <ul style="list-style-type: none"> • DW: there is a zone of influence and principles piece that looks at water quality as it is related to beyond the boundary, but the actual MP looks at boundary. This includes recommendations and stormwater strategies beyond border. <p>JB: How critical are RBG solutions relative to overall solutions. Are aerators still critical if upstream improvements are achieved?</p> <ul style="list-style-type: none"> • DW: Built infrastructure is still important; City agreed that aerators are an element of the solution. Aerators are seen as restorative and need support from the City as preventative/mitigative upstream. 	<p>MR to provide RBG MP financials</p>

13.	Next Steps <ul style="list-style-type: none">• GMBP to consolidate issues, potential solutions, what other possible solutions there could be• Next step is a solutions development workshop with Internal Stakeholders.• Stakeholders to provide feedback and any relevant information by November 6th• External stakeholders to meet again to discuss solutions evaluation.	
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Chedoke Creek Water Quality Improvement Study – Solutions Evaluation

City of Hamilton

December 2nd, 2020



Agenda

Last Workshop:

- Study Area and Key Components
- Historic/Ongoing Studies and Projects
- Stakeholder Perspective and Solutions Under Consideration

Today:

- Introduction/Meeting Objectives
- Framework Vision and Objectives
- Evaluation Process and Considerations
- Preliminary Solutions Discussion
- Next Steps

Introduction

Attendees

- Chris MacLaughlin: Director of Bay Area Restoration Council (BARC) - Director
- Christine Boston: Hamilton Harbour Remedial Action Plan (HHRAP) – Co-Chair
- Drew Wensley: MT Planners - CEO of Planners and involved in the Master Plan for Royal Botanical Gardens (RBG)
- Jaydene Lavallie: Indigenous Water Walkers
- Jonathan Bastien: Hamilton Conservation Authority (HCA) - Water Sampling Program Manager
- Kim Barrett: Conservation Halton (CH)
- Kristin O'Connor: HHRAP
- Lynda Lukasik: Environment Hamilton (EH)
- Mark Runciman: RBG – CEO
- Scott Peck: HCA – Deputy Chief Executive Manager
- Shahbaz Asif: Ontario Ministry of Transportation (MTO)
- Tara McCarthy: MT Planners – Involved in RBG 25 Year Master Plan
- Tys Theysmeyer: RBG – Head of Natural Areas

Today's Objectives

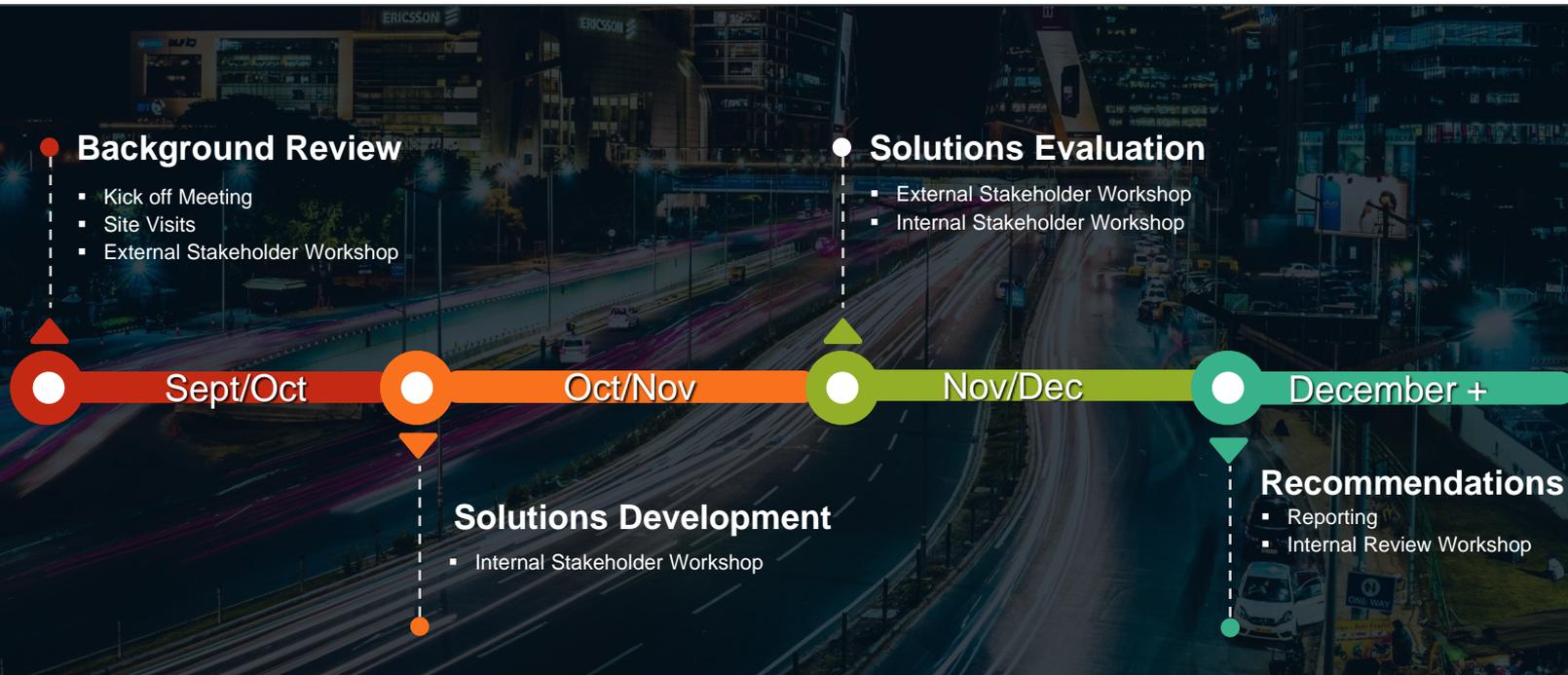
- Present Preliminary Framework of Vision and Solutions

- To seek input and feedback on
 - Vision
 - Evaluation Approach
 - Preliminary Findings

- Support refinement before preparation of final Framework of Vision and Solutions

- Discuss next steps for this project and the Framework

Project Timeline & Meetings



Project Outcomes

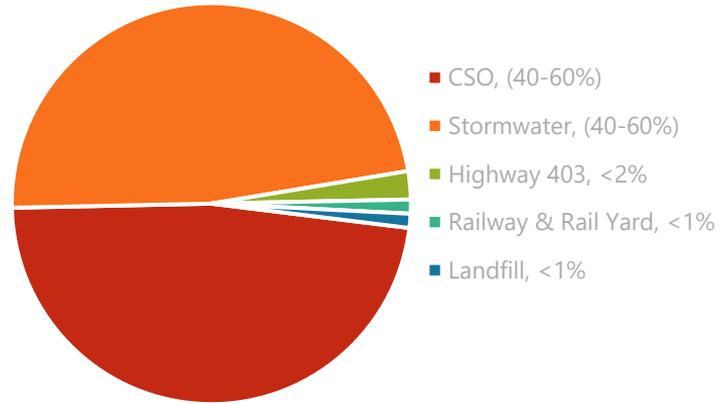
- What Is the Project Outcome?
 - Outline of the preliminary long-term vision for Chedoke Creek
 - Framework and Implementation Plan for future action
 - Balanced suite of recommendations based on:
 - Objectives,
 - Cost / Benefits,
 - Project Leads and Partnerships
 - Implementation process
 - Timeline,
 - Needed Studies / Investigations,
 - Triggers / Supporting Projects
 - Potential short-term and quickly implementable solutions

- Project Limitations
 - 4-Month Study
 - Based on best available information → Leveraging existing reports (desktop)
 - Limited new detailed investigation & assessment
 - Additional steps will be needed to implement major components
 - Success dependent on Stakeholder input and collaboration

How to Evaluate Options

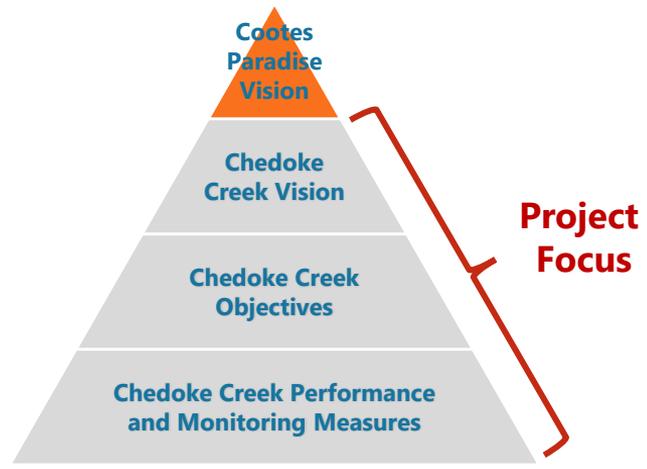
- Multiple Concerns
 - Diversion of Runoff (Combined Sewer) – Reduce clean flow contributions
 - High Nutrient Loading
 - E-Coli and solids
 - Metals, VOC/Oils, and other Contaminants
- High-Level Focus on Nutrient Loadings
 - Broadest inventory of available data
 - Can be used as analog for other concerns / Addressing provides relief to other concerns
 - Trigger for major and sustained issues in Cootes

TP Loading - Peak Event Chedoke

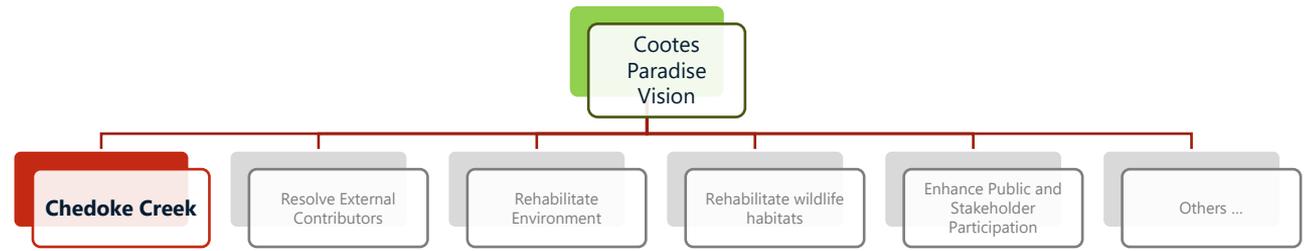


- High level estimate of the relative contributions from various sources
- Used to provide guidance to identify priority areas and potential benefits
- Uses existing quality monitoring data and reporting

Cootes Paradise Vision

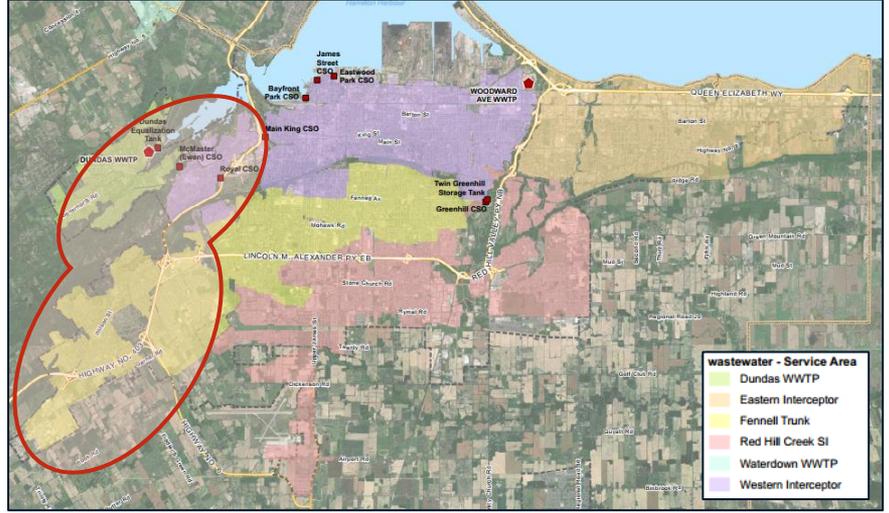
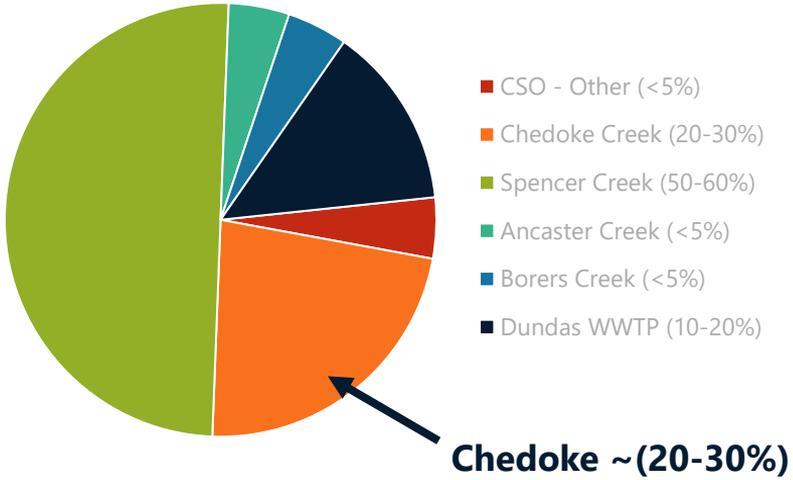


Fully restored and enhanced Cootes Paradise environmental and wildlife habitats



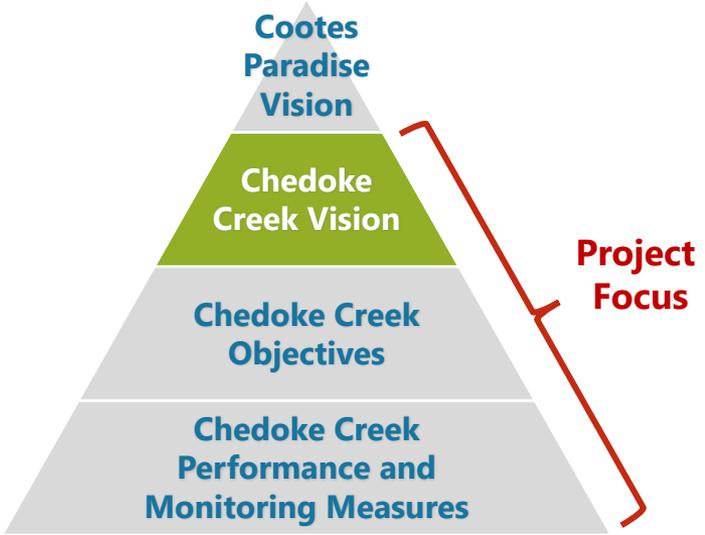
Overview of Contributions to Cootes Paradise

Cootes Paradise TP Loading – Average Year



- 10-20% of City's wastewater directed through Main/King Tank ultimately draining to interceptor and Woodward WWTP

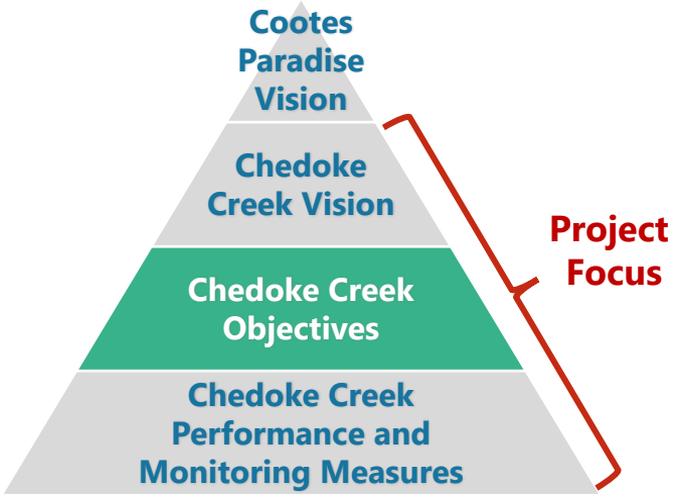
Chedoke Creek Watershed Vision



Improve Chedoke Creek Water Quality to support:

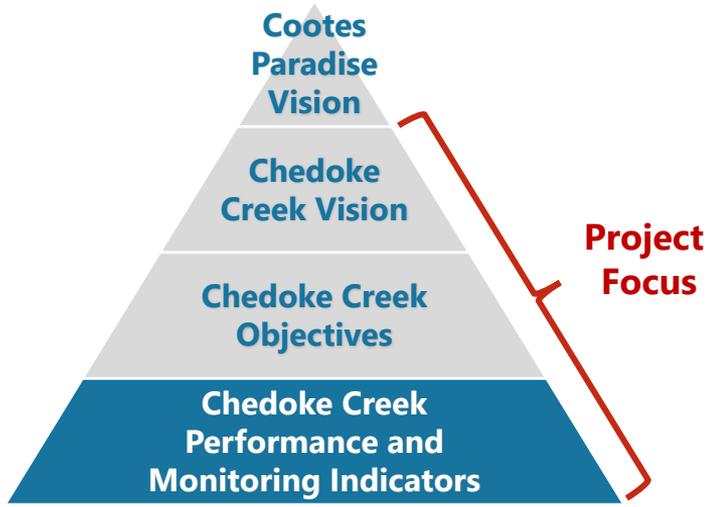
- Enhanced wildlife activity and habitat
- Safer Recreational Contact

Chedoke Creek Objectives



- Limit sources of high nutrient load to Chedoke Creek to prevent excess nutrient and limit algae blooms
- Limit sources of contaminants to Chedoke Creek
- Eliminate sanitary sewer cross connections to the stormwater system and limit the frequency of sewer overflows to Chedoke Creek
- Minimize the risk of major CSO spills to Chedoke Creek
- Seek opportunities to enhance and naturalize Chedoke Creek

Chedoke Creek Performance and Monitoring Measures



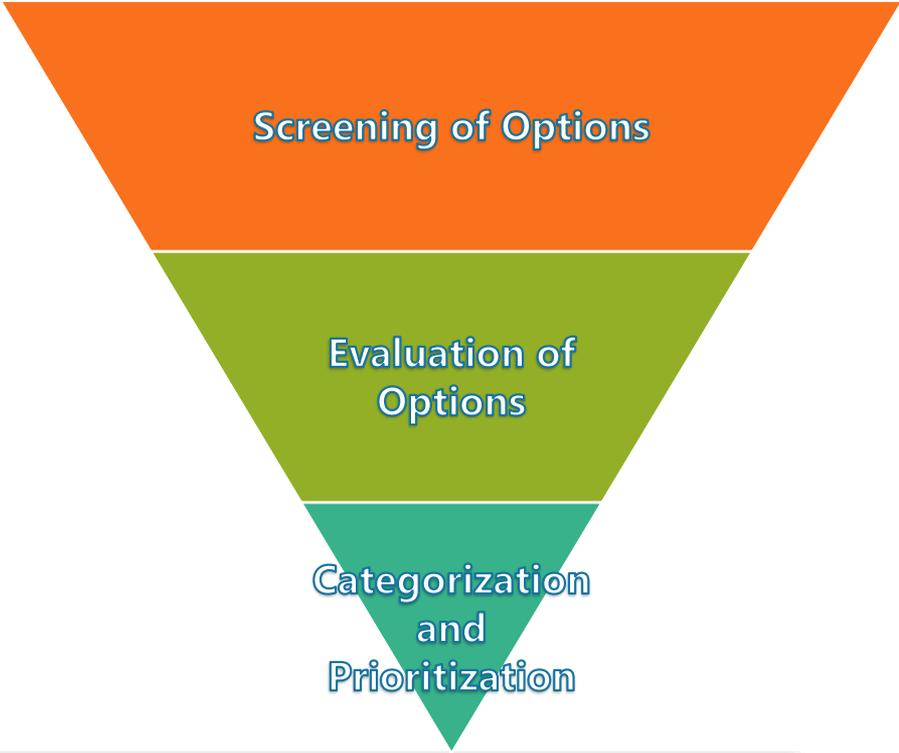
■ Potential Indicators

- **WQ concentration levels annual and peak events**
- **Number of annual overflow events**
- % of contributions from CSO
- % Runoff of urban receiving treatment
- % of leachate captured
- % of creek naturalized



Solutions evaluation will consider these at a high level

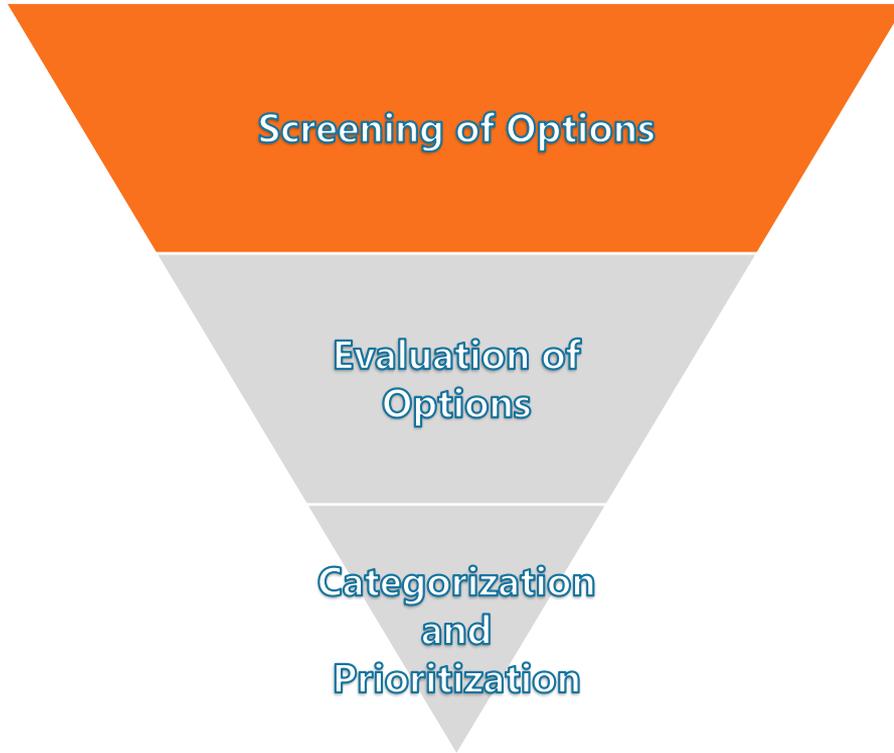
How to Evaluate Options



- Multiple Concerns
 - Diversion of Runoff (Combined Sewer) – Reduce clean flow contributions
 - High Nutrient Loading
 - E-Coli and solids
 - Metals, VOC/Oils, and other Contaminants

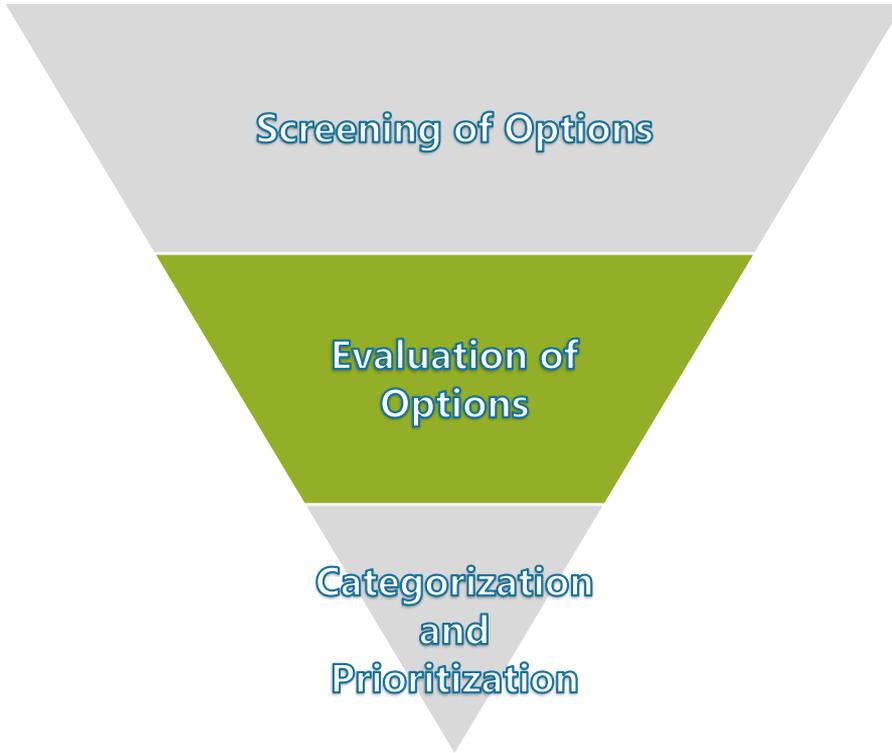
- Initial High-Level Focus on Nutrient Loadings
 - Broadest inventory of available data
 - Can be used as analog for other concerns / Addressing provides relief to other concerns
 - Trigger for major and sustained issues in Cootes

Options Screening



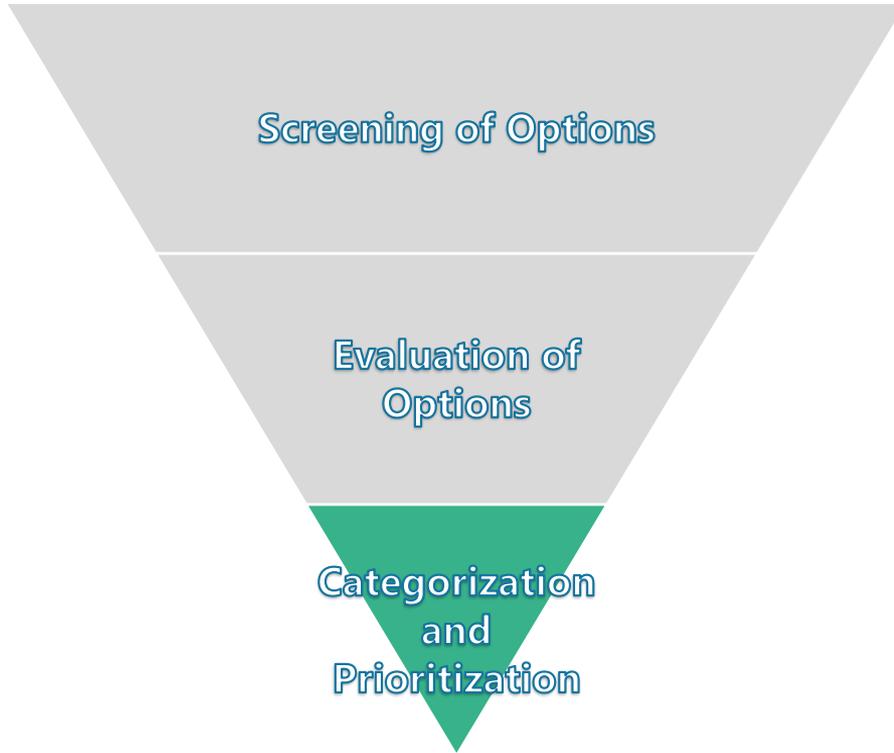
- Broad Review of Potential Options
 - Leverage past studies
 - Use of industry best practices
 - Stakeholder Engagement / Input
- Screening Level Review
 - Potential Cost
 - Potential Benefit
 - Technical or Implementation Challenges
 - “No-Regrets” Principles
- Carry Forward of Viable Options

Concepts Evaluation



- Cost
- Timing
- Implementation Difficulty
- Ownership
- Viability
- Project Benefit
 - Preventative, Mitigative, Restorative
 - Watershed, Upper Chedoke, Lower Chedoke, Cootes
- Project Effectiveness

Option Prioritization



- Near-Term Capital
- Long-Term Capital
- Near-Term O&M/Programs
- Long-Term O&M/Programs
- Policy and Engagement

Options Screening – *Landfill & Lower Chedoke Creek*

	Project	Evaluation
Landfill	Direct Clean Water Away from Landfill	Screen Out
	Culvert from Highway 403	Carry Forward
	Expand/Fix Leachate Collection System	Future Consideration
	Capping/Barrier	Screen Out
Lower Chedoke Creek	Constructed Wetland	Study
	Aeration System	Study
	Stream Naturalization	Study
	Physical Capping	Screen Out
	Chemical Inactivation	Screen Out
	Direct Removal	Complete Removal
Targeted Removal		Study

Options Screening - Wastewater

	Project		Evaluation
Wastewater	Sewer Separation		Evaluate in Flooding & Drainage MP
	Increase Capacity Downstream of Main/King		Evaluate in W/WW/SW MP
	403 Trunk Sewer Twinning		In Progress
	Expand Storage at Main/King		Screen Out
	Expand Storage elsewhere in System		Evaluate in W/WW/SW MP
	State of Good Repair / Operational	Facilities	Initiate Inspection
		Chedoke Creek Trunk Sewers	Initiate Inspection
	Monitoring and Active Management		In Progress
	Wet Weather Management - Wet Weather Flow in Separated Sewers	Targeted in Chedoke	Initiate I&I Monitoring
		Targeted in broader Main/King	Initiate I&I Monitoring
Policy/Future Infrastructure Projects		Future Policy	

Options Screening - Stormwater

	Project		Evaluation
Stormwater	Cross Connection Program		Carry Forward
	Retrofits throughout Watershed (end-of-pipe and source)	City	Study
		MTO	Study
	Retrofits for Road Rehabilitation Projects / LID		Future Policy
	City Street Management	Enhanced Street Sweeping	Carry Forward
		Improve Snow Management within Chedoke Creek	Future Program
	LID Policy / Stormwater User Rate		Ongoing
	Salt Management	Highway 403	Future Program
		City Roads	Future Program
	Redevelopment Sites – SWM Policy		Future Policy
Highway 403 Water Quality Improvements (ie. Oil-Grit Separators or Equivalent)		Carry Forward	
Inlet Control in Combined Sewers		Evaluate in Flooding & Drainage MP	

Options Screening

	Project		Evaluation
Upper Chedoke Creek	Golf Course Treatment	Treat golf course runoff	Carry Forward
		Stream Naturalization – Inline Treatment with Creek	Carry Forward
		Retrofit and Treatment Online	Study
Engagement	Engage Residents, Stakeholders, and City		Carry Forward
Monitoring	Program Management and Monitoring		Future Program

10 Minute Break



Project Prioritization and Categories

Identifies a balanced suite of recommendations

- Objectives,
- Cost/Benefits,
- Project Leads and Partnerships

Identifies the implementation process

- Timeline,
- Needed Studies / Investigations
- Triggers / Supporting Projects

Identifies potential short-term and quickly implementable solutions

Solutions Timeline

Mix of Short-Term Capital Projects (<3 Years)	<ul style="list-style-type: none">•Address specific concerns•Can be implemented immediately
Long-Term Capital Projects (>3 Years)	<ul style="list-style-type: none">•Require additional study to confirm scope and benefit•Require substantial investment and needs to be validated•Studies to support long-term projects either underway or to commence <2 years
Short-Term Programs (<2 Years)	<ul style="list-style-type: none">•Existing programs that can be re-directed to prioritize Chedoke•Opportunity to address major risk points
Long-Term Programs (>2 Years)	<ul style="list-style-type: none">•Expansion or new programs•Potential to provide substantial benefit but require long-term to implement
Policy and Engagements	<ul style="list-style-type: none">•Expanded and ongoing engagement to monitor progress and manage the strategy•Policies to support Framework

Solutions Recommendations: Near-Term Capital Projects

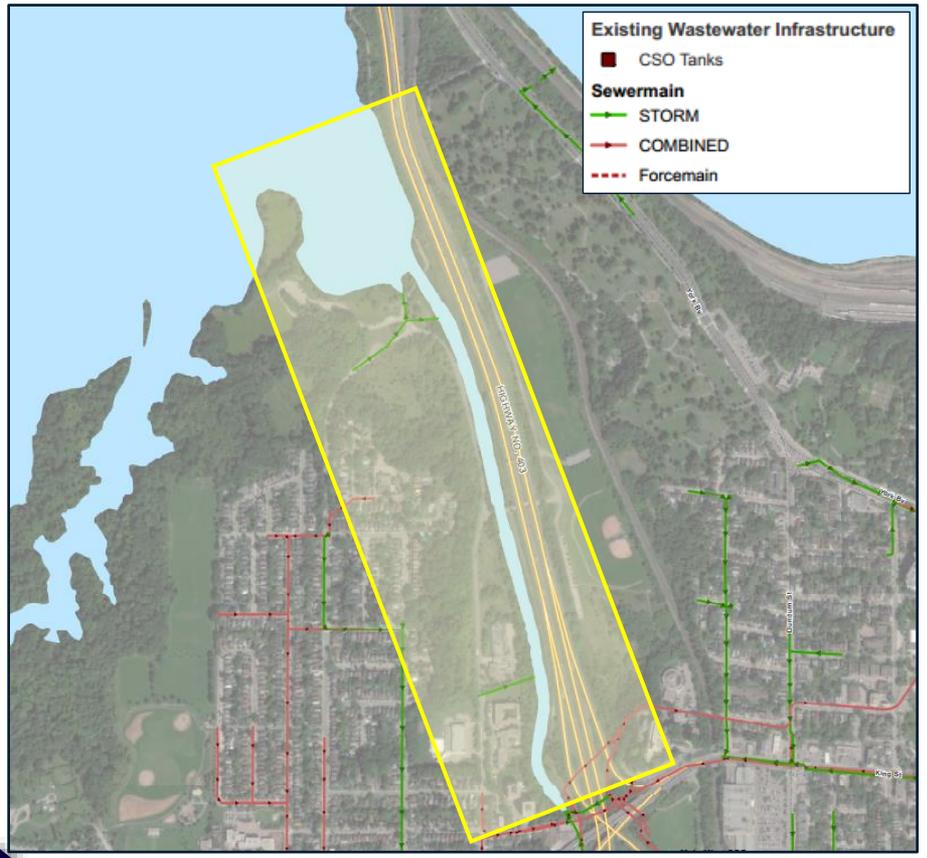
Prioritization	Project	Status
N/A	Highway 403 Trunk Sewer Twinning	In Progress
1	Culvert from Highway 403 (Landfill)	Implement Right Away
2	Golf Course Treatment – Capture Runoff from the Golf Course	Implement Right Away
3	Highway 403 Water Quality Improvements (ie. Oil-Grit Separators or Equivalent)	MTO Led Initiative

Solutions Recommendations: Long-Term Capital Projects

Priority	Project	Status
1	Aeration System	Combined EA
	Constructed Wetland	
	Stream Naturalization	
	Chedoke Creek Targeted Removal	
2	Inlet Controls in Combined Sewer Areas	Dependent on Flooding and Drainage Study
	Sewer Separation	
3	Golf Course Treatment: Stream Naturalization	Combined EA Study
	Golf Course Treatment: Retrofit and Treatment Online	
4	Retrofits throughout watershed (end-of-pipe and source) - City	
	Retrofits throughout watershed (end-of-pipe and source) - MTO	
5	Expand Storage Elsewhere in System	Dependent on W/WW/SW Master Plan
	Increase Capacity Downstream of Main/King	
6	Expand/Fix Leachate Collection System	Collect More Data before further Recommendations

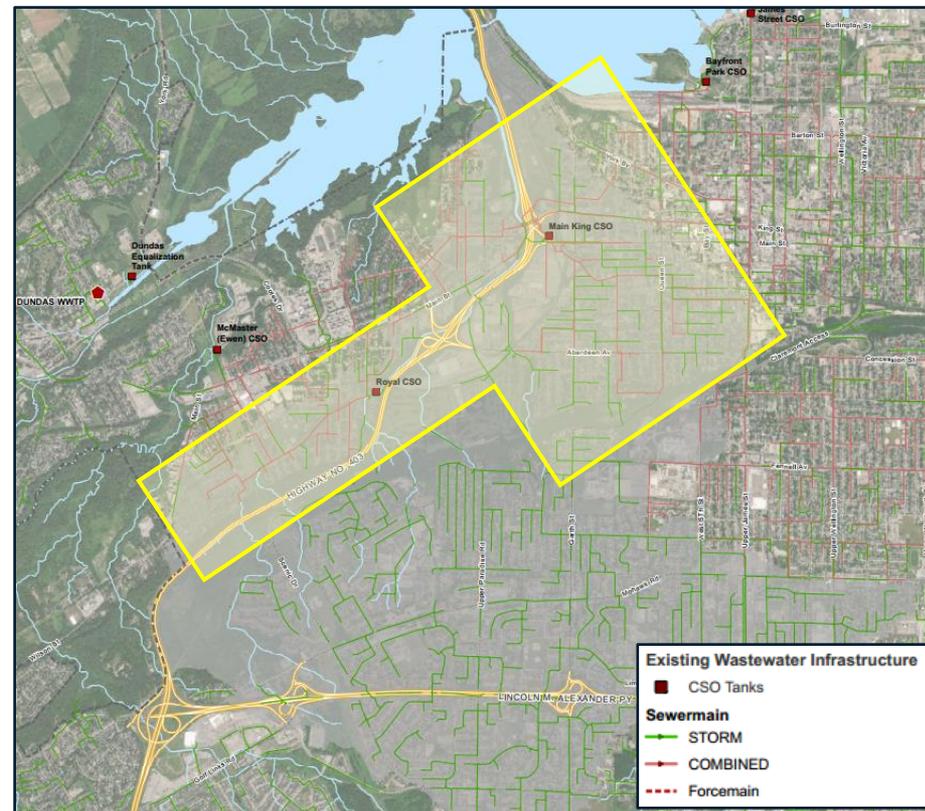
Solutions Recommendations: Lower Chedoke EA Study

- Study to evaluate Lower Chedoke Creek solutions:
 - Aeration System
 - Constructed Wetland
 - Stream Naturalization
 - Targeted Removal
 - Other?
- Evaluate benefits, impacts, and life cycle cost
- Study may recommend all/ some/none of the solutions



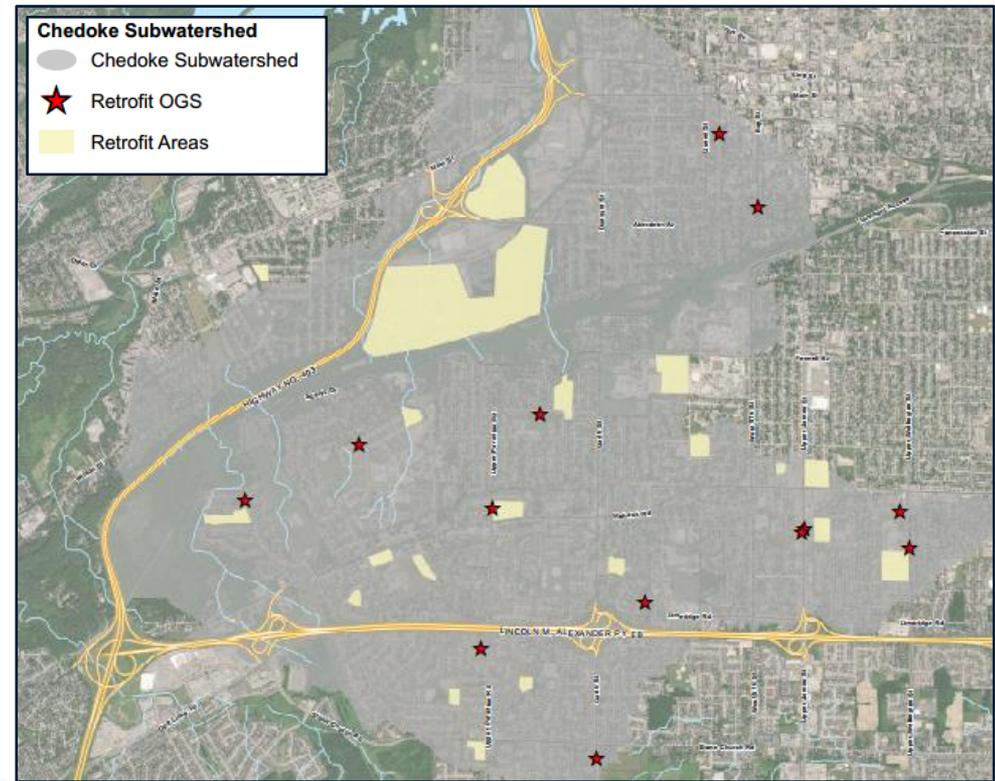
Solutions Recommendations: Sewer Separation

- Infrastructure solutions provide benefit beyond Chedoke
- High costs and medium to long-term implementation
- Recommendation through the on-going Flooding and Drainage Master Plan
 - Targeted sewer separation within Chedoke Catchment recommended



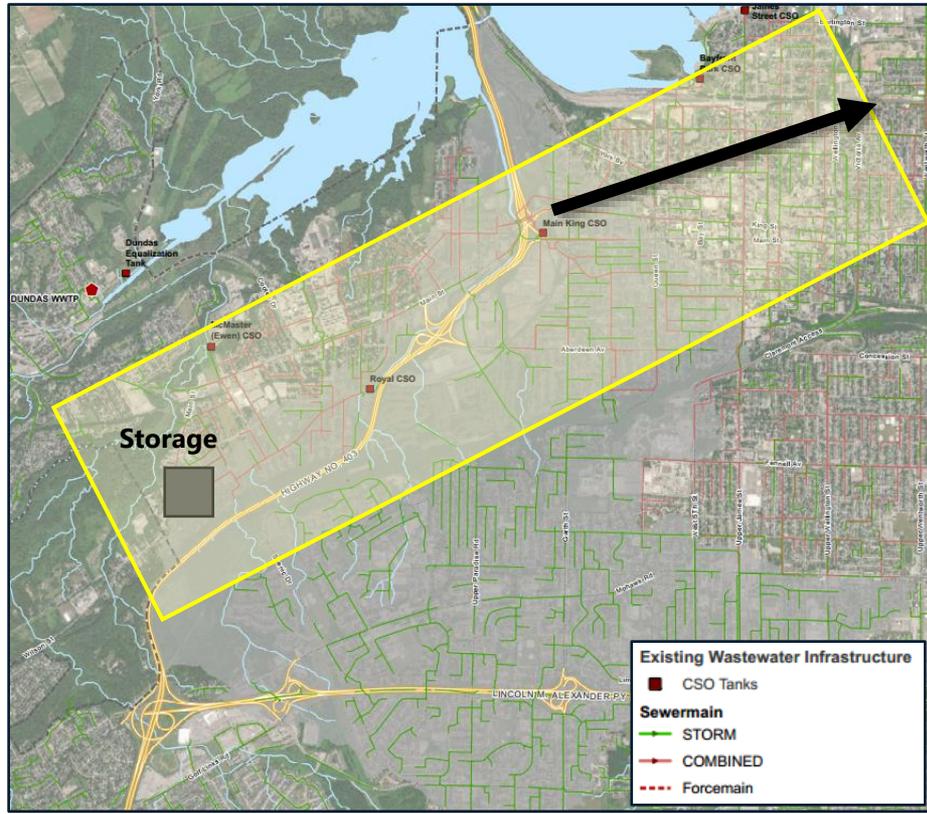
Solutions Recommendations: Chedoke Watershed Stormwater Retrofits EA

- Study to evaluate stormwater management retrofits in the Upper Chedoke Watershed:
 - Includes options at the Chedoke Golf Course
 - Retrofits throughout the watershed (end-of-pipe and source) for City and MTO roads
- Evaluate benefits, impacts, and life cycle cost
- Focus on stormwater treatment



Solutions Recommendations: Storage and Combined Sewer Upgrades

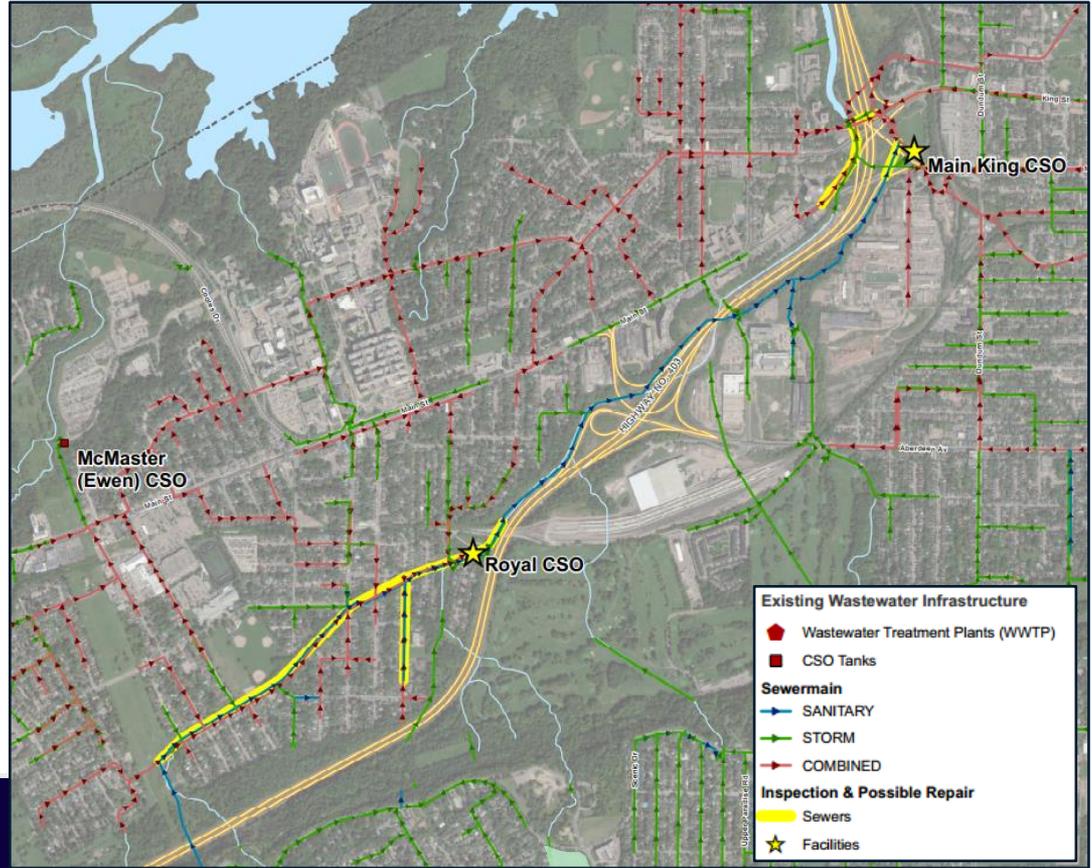
- Infrastructure solutions provide beyond Chedoke
- High costs and long-term implementation
- Recommendation through the ongoing W/WW/SW Master Plan
- Pathway to success independent of Storage and Sewer Upgrades



Solutions Recommendations: Near-Term O&M / Program

Prioritization	Project	Status
1	CSO Monitoring Improvements and Active Management	Underway
2	Inspection and Repair - Facilities	Underway / Initiate Inspection
	Inspection and Repair – Trunk Sewers	
3	Cross Connection Program	Prioritize in Chedoke Watershed
4	City Street Management – Enhanced Street Sweeping	Develop & Initiate City Program

Solutions Recommendations: Inspection and Repair



Solutions Recommendations: Long-Term O&M / Program

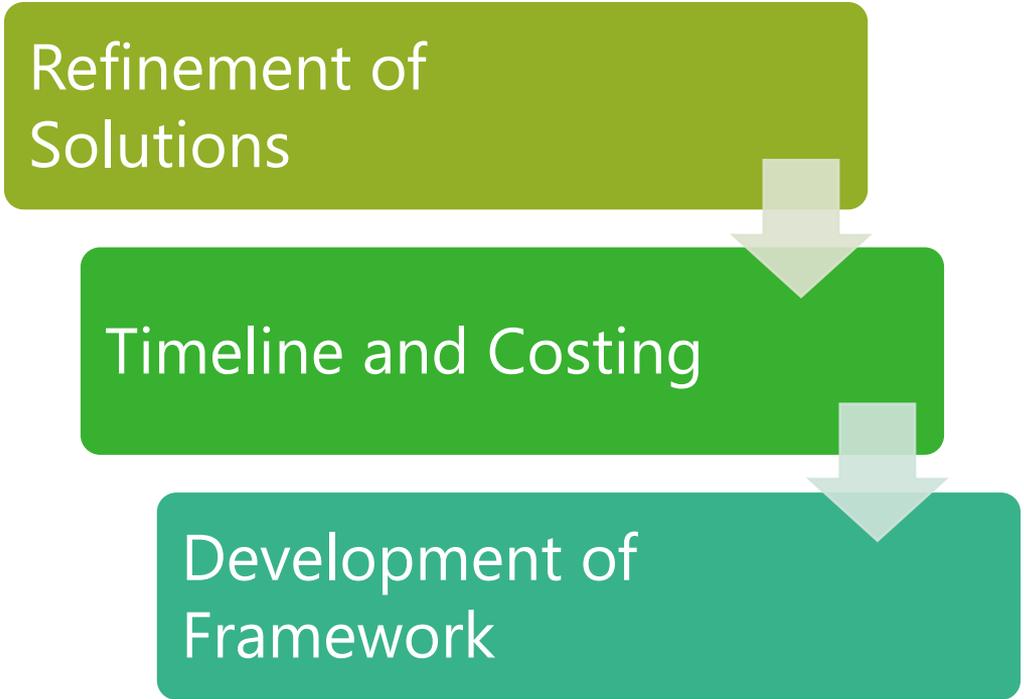
Prioritization	Project	Status
1	Wet Weather Flow in Separated Sewers – Targeted in Chedoke	Initiate Inflow & Infiltration Monitoring
	Wet Weather Flow in Separated Sewers – Targeted in broader Main/King	
2	Program Management and Monitoring	Initiate Now and Continue Long Term
3	City Street Management – Improve snow management within Chedoke Creek Watershed	New Program
4	Salt Management – Highway 403	Enhance Existing Program
	Salt Management – City Roads	Enhance Existing Program

Solutions Recommendations: Policy and Engagement

Prioritization	Project	Status
1	Engage Residents, Stakeholders, and City	Initiate Now
2	Redevelopment Sites SWM Policy	Develop Policy Now, Implement through Future Projects
3	Retrofits for Road Rehabilitation Projects / LID Policy	Develop Policy Now, Implement through Future Projects
4	LID Policy / Stormwater User Rate	Currently Underway
5	Wet Weather Flow in Separated Sewers – Policy / Future Infrastructure Projects	Develop Policy Now, Implement through Future Projects

Next Steps

- Your Feedback is needed (before December 18th)
 - Vision Statements
 - Objectives
 - Evaluation
 - Timeframe



Thank You

Questions and Discussion



Julien.bell@gmblueplan.ca

City of Hamilton
Chedoke Creek Water Quality Improvement Study
GMBP File No. 620083
External Stakeholders Workshop #2

Minutes

DATE: Wednesday, December 2nd, 2020
 10:30 AM – 1:00 PM

LOCATION: Microsoft Teams Meeting

ATTENDEES:	Chris McLaughlin (CM)	Bay Area Restoration Council
	Andrew Grice (AG)	City of Hamilton
	Bert Posedowski (BP)	City of Hamilton
	Cari Vanderperk (CP)	City of Hamilton
	Christina Cholkan (CC)	City of Hamilton
	Dave Alberton (DA)	City of Hamilton
	Mani Seradj (MS)	City of Hamilton
	Mark Bainbridge (MB)	City of Hamilton
	Jonathan Bastien (JBa)	Conservation Hamilton
	Scott Peck (SP)	Conservation Hamilton
	Lynda Lukasik (LL)	Environment Hamilton
	Julien Bell (JB)	GM BluePlan
	Chris Hamel (CH)	GM BluePlan
	Michelle Klaver (MK)	GM BluePlan
	Kristin O'Connor (KO)	Hamilton Harbour Remedial Action Plan
	Drew Wensley (DW)	MT Planners
	Tara McCarthy (TM)	MT Planners
	Shahbaz Asif (SA)	Ontario Ministry of Transportation
	Mark Runciman (MR)	Royal Botanical Gardens
	Tys Theysmeyer (TT)	Royal Botanical Gardens
	Matt Senior (MSen)	Wood
	Ron Scheckenberger (RS)	Wood

COPIES TO: All Attendees

Minutes

1.	<p>Introduction</p> <p>Agenda</p> <ul style="list-style-type: none"> • Reviewed what was covered in the last external stakeholder’s workshop which included: <ul style="list-style-type: none"> ○ Study Area and Key Components ○ Historic/Ongoing Studies and Projects ○ Stakeholder Perspective and Solutions Under Consideration • Reviewed the intent of the meeting which included: <ul style="list-style-type: none"> ○ Introduction/Meeting Objectives ○ Framework Vision and Objectives ○ Evaluation Process and Considerations ○ Preliminary Solutions Discussion ○ Next Steps <p>Introductions</p> <ul style="list-style-type: none"> • City stakeholders who were not at the last external stakeholders workshop introduced themselves: <ul style="list-style-type: none"> ○ Andrew Grice ○ Dave Alberton ○ Mark Bainbridge ○ Cari Vanderperk <p>Meeting Objectives</p> <ul style="list-style-type: none"> • Purpose of this meeting is for the project team to present the preliminary framework for the vision including the recommended solutions • The solutions and prioritization presented are preliminary with the goal of seeking input and feedback from the external stakeholders 	<p>Actions</p>
2.	<p>Project Timeline</p> <ul style="list-style-type: none"> • The project schedule was reviewed including: <ul style="list-style-type: none"> ○ September/October: Background Review ○ October/November: Solutions Development ○ November/December: Solutions Evaluation ○ December +: Recommendations 	
3.	<p>Project Outcomes</p> <ul style="list-style-type: none"> • It is important to recognize that although this project was triggered as an outcome of the spill, the intent of this project is not specifically to address the consequences of that particular spill but to address the legacy of 	

	<p>Chedoke Creek to come up with the overall vision and plan for the long term</p> <ul style="list-style-type: none"> • The goal is to improve the quality of water coming into Chedoke and address historic issues outside of the spill event • This is a short study and it is important to consider the following: <ul style="list-style-type: none"> ○ Focus on using the best available information ○ Not undertaking a detailed analysis ○ Leveraging what has been done with some additional review and context to develop an overall framework and vision plan ○ Looking at the costs/benefits ○ Short study will lead to quick implementation of some of the recommendations 	
<p>4.</p>	<p>How to Evaluate Options</p> <ul style="list-style-type: none"> • There are multiple concerns including diversion of runoff, high nutrient loading, metals and VOC/Oils and trying to evaluate all these concerns becomes an analysis • Through discussions, have decided to look at nutrient loadings as a gauge for relative impacts. High nutrient loadings are the largest concern for some of the proponents as it causes algae blooms, etc. As nutrient loading is a major concern and data is available, success can relatively be measured. • Total Phosphorus has been used as a high level estimate and predominant screener of the relative contributions from various sources; however, there will be commentary on how other nutrients have also been acknowledged • Nutrient loadings give a good general perspective • Many of the solutions provide similar or mirrored benefits to other nutrients/metals/oils/salts 	
<p>5.</p>	<p>Cootes Paradise Vision</p> <ul style="list-style-type: none"> • To set the framework of this study, need to establish an overall vision • The vision has been presented as a pyramid; with this study being the top of the pyramid or first step in the overall implementation plan that can be further refined between stakeholders and the City in subsequent steps • It is important to acknowledge the overall Cootes Paradise Plan but need to focus on Chedoke Creek, which only accounts for 20-30% of the entire Cootes Paradise and fixing Chedoke alone will not fix all of this issues in Cootes Paradise • Vision for Chedoke Creek fits into the Cootes Paradise vision but there are limitations in the current state that need to be recognized • The Main/King tank was showcased to recognize that Main/King represents a substantial portion of the City's wastewater system; however, it is not as large as some people may perceive with 10-20% of the City's wastewater directed through the Main/King Tank and ultimately draining to the interceptor and Woodward WWTP 	

<p>6.</p>	<p>Chedoke Creek Watershed Vision</p> <ul style="list-style-type: none"> • Need to focus on Project Vision within the context of broader “global” vision for Cootes Paradise • The Chedoke Creek Vision should support the Cootes Paradise Vision and Objectives • Vision needs to be supported by achievable objectives. Will need to consider: <ul style="list-style-type: none"> ○ The existing status of the watershed <ul style="list-style-type: none"> ▪ Existing built environment and legacy systems ○ Other competing priorities of Chedoke Creek watershed <ul style="list-style-type: none"> ▪ Ongoing community use and growth ▪ Transportation needs, etc. • Framework will outline the plan to achieve the Chedoke Creek Watershed Vision <ul style="list-style-type: none"> ○ Further studies and consultation will be needed to set detailed Performance and Monitoring Measures • As this study moves forward through the implementation of projects, this is the vision that everything is being measured against 	
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<p>7.</p>	<p>Chedoke Creek Objectives</p> <ul style="list-style-type: none"> • Objectives are a qualitative measure that help to realize the project vision • Objectives are used to: <ul style="list-style-type: none"> ○ Set targets ○ Assess beneficial impacts ○ Support prioritization • Objectives need to be achievable and supported by stakeholders and by data, need to be: <ul style="list-style-type: none"> ○ Technically feasible ○ Align with City and Stakeholder vision ○ Financially feasible ○ Implementable – Timeline and Stakeholders ○ Complementary to other needs/priorities • Five objectives were presented (in no particular order or importance) and include: <ul style="list-style-type: none"> ○ Limit sources of high nutrient load to Chedoke Creek to prevent excess nutrient and limit algae blooms ○ Limit sources of contaminants to Chedoke Creek ○ Eliminate sanitary sewer cross connections to the stormwater system and limit the frequency of sewer overflows to Chedoke Creek <ul style="list-style-type: none"> ▪ This is related to areas where there are already separated sewers; work to ensure any sanitary sewer connections are eliminated ○ Minimize the risk of major CSO spills to Chedoke Creek <ul style="list-style-type: none"> ▪ This looks at reducing the frequency of overflows and enhanced monitoring and management, so the likelihood of overflow events do not happen again or are quickly identified and addressed ○ Seek opportunities to enhance and naturalize Chedoke Creek • CM: These are not numbered – could you rank these from top to bottom in terms of cost involved? What is the direction you’ve been given in seeking to address these objectives? What limitations have been put on you in terms of what we investigate? Or if not, are you tasked with providing a menu of items at a given price point that can be addressed? Does this process provide a sketch of what this looks like and potential workplan? What is the extent of what we are trying to do? <ul style="list-style-type: none"> ○ JB: These are qualitative objectives at this point as we haven’t defined numbers yet. In this study we identify these general objectives and they are measured somewhat equally. We will be giving recommendations on criteria or performance targets to measure progress but at this point, cannot quantify those but as the City moves forward this framework will give an idea of cost. ○ CM: Joining a process of wishful thinking, everyone has developed their own wish list. The idea of naturalizing the creek can mean different things to many different people and attaching a budget is important. (ie. Some may see it as adding more plantings along the bank, whereas others may see it as re-routing the creek and even removing built infrastructure (Macklin St.)) 	<p>GMBP – ensure definition of naturalization in report is clear</p>
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	<ul style="list-style-type: none"> ○ AG: The City is in the process of developing the approach for continuing the works that come as the outcome of this study. Will not stop once this project is done and it is not a quick fix. ● This framework helps identify the overall objectives but through future ongoing studies, consultation, and discussions, some of these values will be better quantified 	
<p>8.</p>	<p>How to Evaluate Options</p> <ul style="list-style-type: none"> ● The starting point for this study evaluation included putting everything on the table ● The project team went through the screening, evaluation and then categorization and prioritization based on all of the feedback received up to this point 	

<p>9.</p>	<p>Options Screening</p> <ul style="list-style-type: none"> • The first step involved presenting a full suite of all of the options that were considered through the screening process. From there, we flagged which projects were screened out, carried forward (for either implementation or further study) or already underway. • The options were broken into components including: <ul style="list-style-type: none"> ○ Landfill ○ Lower Chedoke Creek ○ Wastewater ○ Stormwater ○ Upper Chedoke Creek ○ Engagement ○ Monitoring <p>All of the projects and their evaluation were presented to the group for input and are included below with the corresponding discussion.</p> <p>Landfill</p> <ol style="list-style-type: none"> 1. Direct Clean Water Away from Landfill: Screened Out <ul style="list-style-type: none"> • Low effectiveness, difficult to implement, high cost • TT: For the landfill project, Direct Clean Water Away from Landfill, can foresee a significant challenge. <ul style="list-style-type: none"> ○ JB: Looked at where clean water was coming into the landfill and where we have options to direct it away. The potential costs and challenges vs. the overall pie chart of how much we could potentially remove from that. The cost compared to the potential benefit was very high and the land acquisition and construction challenges ultimately screened this option out. 2. Culvert from Highway 403: Carried Forward for Implementation <ul style="list-style-type: none"> • Highly visible, low cost, relatively straight forward • SA: Received a request for the 900 CSP culvert and are in the process of digging out information from planning and development department and will provide information. Will also look into MTO projects. Generally, MTO stays away from oil/grit separators for safety issues but can determine if there are any opportunities. 3. Expand/Fix Leachate Collection System: Carried Forward for Future Consideration <ul style="list-style-type: none"> • Need to collect more data and reassess before final recommendations 4. Capping/Barrier: Screened Out <ul style="list-style-type: none"> • High cost, low effectiveness, difficult to implement <p>Lower Chedoke Creek</p> <ol style="list-style-type: none"> 1. Constructed Wetland: Carried Forward for Further Study <ul style="list-style-type: none"> • Mitigative solution, highly visible 2. Aeration System: Carried Forward for Further Study <ul style="list-style-type: none"> • Mitigative solution, moderately visible 3. Stream Naturalization: Carried Forward for Further Study <ul style="list-style-type: none"> • Mitigative solution, highly visible 4. Physical Capping: Screened Out 	<p>MTO – to provide 900 CSP culvert information</p>
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- Low effectiveness, low visibility
- 5. Chemical Inactivation: Screened Out**
- Low effectiveness, low visibility
- 6. Direct Removal**
- A. Complete Removal: Screened Out**
 - Low effectiveness, low visibility
- B. Targeted Removal: Carried Forward for Further Study**
 - Mitigative solution, quick implementation, low visibility

Wastewater

- 1. Sewer Separation: Evaluated through ongoing Flooding and Drainage Master Plan**
 - Implement recommendations from City's study for works within Chedoke Creek
- 2. Increase Capacity Downstream of Main/King: Evaluated through ongoing W/WW/SW Master Plan**
 - City-wide benefits, Implement recommendations from City's MSP study
- 3. 403 Trunk Sewer Twinning: Underway**
 - Design already in process, will eliminate Aberdeen CSO overflows
 - TT: Is this project from Royal CSO or from Ancaster?
 - JB: This is the project between Royal and Main/King aimed at reducing overflows from Aberdeen.
 - TT: Does this bypass Main/King or enter Main/King?
 - MS: Enters Main/King. This project is an outcome from the 2006 Master Plan. It is divided into 4 sections that will be constructed.
 - TT: When system is on overload, will it be observed at Main/King?
 - JB: Yes. Aberdeen overflows much more frequently than Main/King. This project doesn't help capture the largest events but manages the mid-range overflows.
- 4. Expand Storage in Main/King: Screened Out**
 - Main/King CSO is maximized at current site
- 5. Expand Storage elsewhere in System: Evaluated through ongoing W/WW/SW Master Plan**
 - Implement recommendations from City's MSP study for within Chedoke Creek
- 6. State of Good Repair / Operational**
- A. Facilities: Carried Forward for Inspection Implementation**
 - No regrets, ensure facilities are in good operating order, low cost
- B. Chedoke Creek Trunk Sewers: Carried Forward for Inspection Implementation**
 - No regrets, ensure no major I/I in trunk sewers parallel to Chedoke Creek, low cost
- 7. Monitoring and Active Management: Underway**
 - Monitoring and SCADA can better monitor and manage system, already being implemented through other programs
- 8. Wet Weather Management – Wet Weather Flows in Separated Sewers**
 - Good management practices and policies have benefits for local system and growth capacity in addition to supporting Chedoke Creek

- A. Targeted in Chedoke:** Carried Forward for I&I Monitoring Implementation
- B. Targeted in broader Main/King:** Carried Forward for I&I Monitoring Implementation
- C. Policy/Future Infrastructure Projects:** Carried Forward for Future Policy

Stormwater

- 1. Cross Connection Program:** Carried Forward for Implementation
 - Low cost and quick implementation for program
- 2. Retrofits throughout Watershed (end-of-pipe and source)**
 - A. City:** Carried Forward for Further Study
 - Opportunities within watershed
 - B. MTO:** Carried Forward for Further Study
 - Opportunities within MTO corridor
- 3. Retrofits for Road Rehabilitation Projects / LID:** Carried Forward for Future Policy
 - An ongoing practice, can include BMP's, High visibility, Costs incorporated with other works
 - SP: Curious about road retrofits and LIDs – what would the timing be for the future policy. There are real opportunities in Chedoke and then the broader Hamilton Harbour watershed. Would be nice to have timeframe.
 - JB: Future policy means these are all recommendations that the framework suggests City move forward, how quickly these are implemented are driven by the City.
- 4. City Street Management**
 - A. Enhanced Street Sweeping:** Carried Forward for Future Program
 - No regrets, visible to public. Short implementation time and low cost.
 - TT: This could be much more significant than appreciated. While the City will run it on the street, what about private properties such as mall parking lots?
 - JB: That will be determined by the City, could potentially be something that comes up in the stormwater user rate. Through framework, want to identify these but we don't have the ability to get into the minutia of those policies.
 - TT: Would the current policy have the ability to get at that issue?
 - MB: Don't have anything that could go on private property but in the future could have a partnership with private owners. There is a lot of effort and resourcing needs required from the City's end. There is no commitment at this point in time, but it is possible in the future.
 - MS: Regarding malls, for site plan approvals, the newer ones would have to have stormwater quality and quantity control.
 - TT: For the pie chart, would you be able to separate private from City owned streets with the information at hand?
 - JB: Could do a high level volumetric analysis but not from a loading perspective; there is a lack of detailed information.
 - B. Improve Snow Management within Chedoke Creek:** Carried Forward for Future Program
 - No regrets, visible to public. Short implementation time and low cost
- 5. LID Policy / Stormwater User Rate:** Underway

	<ul style="list-style-type: none"> • Helps define link between Public practices and improvements to Chedoke Creek. Self-Funding. • AG: The City has been updating the sewer use by-law; enhancing parameters and monitoring of construction sites, results will start to be captured. <ul style="list-style-type: none"> ○ CV: The City is looking at revisions that could allow management of stormwater leaving sites such as malls; however, there are restrictions around being able to monitor. A program is needed. ○ KO: We are hopeful; however, it feels like some of this has come up before and the political support isn't there. What will make the stormwater rate different this time? Chedoke Creek being under microscope? So much is tied to it if this rate is possible. Feels like it has constantly been ongoing/on hold. ○ AG: Received direction in 2019, then COVID, then budget changes. Have done further evaluation and have it ready to review again. Trying to get council to carry it forward is difficult and it is not well received in the community. <p>6. Salt Management</p> <p>A. Highway 403: Carried Forward for Future Program</p> <ul style="list-style-type: none"> • No regrets. Short implementation time and low cost. <p>B. City Roads: Carried Forward for Future Program</p> <ul style="list-style-type: none"> • No regrets. Short implementation time and low cost. <p>7. Redevelopment Sites – SWM Policy: Carried Forward for Future Policy</p> <ul style="list-style-type: none"> • Opportunity for large stormwater reduction/treatment. <p>8. Highway 403 Water Quality Improvements (ie. Oil-Grit Separators or Equivalent): Carried Forward for Implementation</p> <ul style="list-style-type: none"> • Short implementation time and low cost. <p>9. Inlet Control in Combined Sewers: Evaluated through ongoing Flooding and Drainage Master Plan</p> <ul style="list-style-type: none"> • Implement recommendations from Flooding and Drainage MP. <p>Upper Chedoke Creek</p> <p>1. Golf Course Treatment</p> <p>A. Treat Golf Course Runoff: Carried Forward for Implementation</p> <ul style="list-style-type: none"> • Can be implemented immediately for low cost. Golf course can remain in operation. <p>B. Stream Naturalization – Inline Treatment with Creek: Carried Forward for Further Study</p> <ul style="list-style-type: none"> • Doesn't need a study and golf course can remain in operation. <p>C. Retrofit and Treatment Online: Carried Forward for Further Study</p> <ul style="list-style-type: none"> • Opportunity for stormwater treatment. Golf course can remain in operation with some potential modifications. Part of broader Retrofit Study. <p>Engagement</p> <p>1. Engage Residents, Stakeholders, and City: Carried Forward for Implementation</p> <ul style="list-style-type: none"> • Short implementation time at low cost. High visibility for public. 	
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	<p>Monitoring</p> <p>1. Program Management and Monitoring: Carried Forward for Future Program</p> <ul style="list-style-type: none"> • Will help improve system understanding and support tracking benefits over time. Low cost. 	
<p>10.</p>	<p>Project Prioritization and Categories</p> <ul style="list-style-type: none"> • All of the projects presented in previous section were prioritized based on the following: <ul style="list-style-type: none"> ○ Identifies a balanced suite of recommendations <ul style="list-style-type: none"> ▪ Objectives, ▪ Cost/Benefits, ▪ Project Leads and Partnerships ○ Identifies the implementation process <ul style="list-style-type: none"> ▪ Timeline, ▪ Needed studies / Investigations ▪ Triggers / Supporting Projects ○ Identifies potential short-term and quickly implementable solutions 	
<p>11.</p>	<p>Solutions Timeline</p> <ul style="list-style-type: none"> • Solutions were broken out into 5 categories including the following: <ol style="list-style-type: none"> 1. Mix of Short-Term Capital Projects (<3 Years) <ul style="list-style-type: none"> ○ Address specific concerns ○ Can be implemented immediately 2. Long-Term Capital Projects (>3 Years) <ul style="list-style-type: none"> ○ Require additional study to confirm scope and benefit <ul style="list-style-type: none"> ▪ Require substantial investment and needs to be validated ○ Studies to support long-term projects either underway or to commence <2 years 3. Short-Term Programs (<2 Years) <ul style="list-style-type: none"> ○ Existing programs that can be re-directed to prioritize Chedoke ○ Opportunity to address major risk points 4. Long-Term Programs (>2 Years) <ul style="list-style-type: none"> ○ Expansion or new programs ○ Potential to provide substantial benefit but require long-term to implement 5. Policy and Engagement <ul style="list-style-type: none"> ○ Expanded and ongoing engagement to monitor progress and manage the strategy ○ Policies to support framework 	

12.	<p>Solutions Recommendations</p> <ul style="list-style-type: none"> • The solutions recommendations were reviewed for the 5 categories including the corresponding priority and status for each project. • The prioritization, project and status are listed below. <p>Near-Term Capital Projects</p> <ol style="list-style-type: none"> 0. Highway 403 Trunk Sewer Twinning: <i>In Progress</i> 1. Culvert from Highway 403 (Landfill): <i>Implement Right Away</i> 2. Golf Course Treatment – Capture Runoff from the Golf Course: <i>Implement Right Away</i> 3. Highway 403 Water Quality Improvements (ie. Oil-Grit Separators or Equivalent): <i>Initiatives recommended to be led by MTO</i> <p>Long-Term Capital Projects</p> <ol style="list-style-type: none"> 1. Aeration System, Constructed Wetland, Stream Naturalization, Chedoke Creek Targeted Removal: <i>Combined EA</i> 2. Inlet Controls in Combined Sewer Areas, Sewer Separation: <i>Dependent on Flooding and Drainage Study</i> 3. Golf Course Treatment - Stream Naturalization, Golf Course Treatment – Retrofit and Treatment Online: <i>Combined EA Study (with #4)</i> 4. Retrofits throughout watershed (end-of-pipe and source) – City, Retrofits throughout watershed (end-of-pipe and source) – City: <i>Combined EA Study (with #3)</i> 5. Expand Storage Elsewhere in System, Increase Capacity Downstream of Main/King: <i>Dependent on W/WW/SW Master Plan</i> 6. Expand/Fix Leachate Collection System: <i>Collect More Data before further Recommendation</i> <p>Near-Term O&M / Program</p> <ol style="list-style-type: none"> 1. CSO Monitoring Improvements and Active Management: <i>Underway</i> 2. Inspection and Repair – Facilities, Inspection and Repair – Trunk Sewers: <i>Underway / Initiate Inspection</i> 3. Cross Connection Program: <i>Prioritize in Chedoke Watershed</i> 4. City Street Management – Enhanced Street Sweeping: 	
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Develop and Initiate City Program

Long-Term O&M / Program

1. Wet Weather Flow in Separated Sewers – Targeted in Chedoke,
 Wet Weather Flow in Separated Sewers – Targeted in broader Main/King:
Initiate Inflow and Infiltration Monitoring
2. Program Management and Monitoring:
Initiate Now and Continue Long Term
3. City Street Management – Improve snow management within Chedoke
 Creek Watershed:
New Program
4. Salt Management – Highway 403,
 Salt Management – City Roads:
Enhance Existing Program

Policy and Engagement

1. Engage Residents, Stakeholders, and City:
Initiate Now
2. Redevelopment Sites SWM Policy:
Develop Policy Now, Implement through Future Projects
3. Retrofits for Road Rehabilitation Projects / LID Policy:
Develop Policy Now, Implement through Future Projects
4. LID Policy / Stormwater User Rate:
Currently Underway
5. Wet Weather Flow in Separated Sewers – Policy / Future Infrastructure
 Projects:
Develop Policy Now, Implement through Future Policies

The following discussion related to solutions recommendations occurred:

- LL: I thought Chedoke was already a priority area regarding cross connections?
 - CC: Yes, some of these are ongoing programs and this framework is helping to continue prioritizing them
 - KO: With the cross connection program, assuming you've been speaking with the City about this? Thought the City was close to maximizing what they can do in Chedoke.
 - AG: There is still some opportunity in Chedoke, they have moved back over to focusing on Chedoke and still targeting the area
- AG: Didn't see RTC in here? Sterling outlet is a hotspot.
 - JB: The CSO Monitoring Improvements and Active Management – Priority #1 under Near-Term O&M / Program covers the RTC.
- AG: Keeping in mind the order out there now for Chedoke and Cootes, what we do here will be in line with that. City will be giving a report to public works next Monday about this study, putting together a brief presentation for next Monday for council to summarize the highlights presented in this workshop.
- LL: How will this project fit in with the provincial order? Will the two timelines be aligned, or will there be work that proceeds more quickly from this?

	<ul style="list-style-type: none"> ○ AG: Walking through the order with the Ministry, hope these will be fairly aligned. Can update this group after the meeting with the Ministry. ● TT: The Vision will require input from different groups. Want to confirm the way one provides perspective; for the current total loadings, are we using the Hamilton loading data? <ul style="list-style-type: none"> ○ JB: Yes, historic values from HCA provides the best relative comparative for this assignment. ○ TT: Total loadings is an easy way to do math but is fairly misleading as Spencer is a larger watershed than the other contributing watersheds. Will have to determine appropriate performance measures. ● KO: Can you clarify the prioritization? Is this suggesting implementing priority 1 before looking into the next one? <ul style="list-style-type: none"> ○ JB: Haven't fully flushed out the recommendations; however, short-term will likely include recommending multiple priorities concurrently, whereas long term will more likely be stepped implementation. 	<p>City – To update external stakeholder group after meeting with Ministry</p>
<p>13.</p>	<p>Next Steps</p> <ul style="list-style-type: none"> ● Stakeholders to provide additional feedback by December 18th including any comments related to the vision statements, objectives, evaluation and timeframe ● Next steps for project team include the refinement of solutions timeline and costing to work towards development of framework reporting 	<p>Stakeholders</p>

APPENDIX C: ASSESSMENT METHODOLOGY

1 INTRODUCTION

The purpose of this Appendix is to summarize the Assessment Methodology that was used to evaluate the impacts of the sources contributing to the Chedoke Creek Water Quality nutrient loading. The assessment methodology analyzed the relative impacts of the various sources to help determine the benefit of projects presented in the Water Quality Improvement Framework.

2 DATA SOURCES

The following reports and data sources were used to complete the Cootes Paradise Water Quality nutrient loading exercise:

- Cootes Paradise Marsh: Water Quality Review and Phosphorus Analysis - Cootes Paradise Water Quality Group, Hamilton Harbour Remedial Action Plan, March 2012
- Hamilton Combined Sewer Overflow Reporting – Hatch Mott MacDonald, 2015-2019
- Towards a Phosphorus Budget and Model for Cootes Paradise – JEMSys Software Systems Inc., 2005
- Tributary Phosphorus Loadings to Cootes Paradise – Aquafor Beech Limited, 2005

The following reports and data sources were used to complete the Chedoke Creek Water Quality nutrient loading exercise:

- Chedoke Creek Water Quality Monitoring Program – Hamilton Conservation Authority (HCA), 2014-2018
- Hamilton Combined Sewer Overflow Reporting – Hatch Mott MacDonald, 2015-2019
- HHRAP Water Quality Monitoring – Environmental Monitoring and Enforcement (EME), 2018-2020
- Historical Precipitation Data for RBG – Government of Canada, 2015-2019
- Landfill Leachate Collection System Performance and Groundwater Monitoring and Sampling Report – SNC Lavalin, 2015-2019
- Water Quality Data Cootes Paradise – Royal Botanical Gardens (RBG), 1986-2017

3 CHEDOKE CREEK NUTRIENT LOADING METHODOLOGY

The Chedoke Creek nutrient loading assessment was completed in order to provide a high-level estimate of the relative contributions from various sources contributing to the Chedoke Creek. This was used to provide guidance to identify priority areas for project recommendations and the associated potential benefits. The sources were broken down into 5 groups and included: Combined Sewer Overflows (CSOs), Urban Stormwater System, Highway 403, Railway & Railyard and Landfill.



Figure 1: Total Nutrient Loading

4 NUTRIENT LOADING CALCULATION

The nutrients considered in this report include:

- Total Phosphorus
- Ammonia + Ammonium
- Total Suspended Solids

The nutrient loadings to the creek from each of the five contributing sources listed above were calculated for an Average Year, a representative peak precipitation day (Peak Day), and a low precipitation day (Low Day). The total loading to Chedoke Creek was considered to be the sum of the five sources. The calculation steps are provided in the following subsections.

4.1 Combined Sewer Overflows (CSOs)

The nutrient loading was calculated for the three CSOs with outfalls into the Chedoke Creek which include:

- Royal CSO
- Aberdeen CSO
- Main-King CSO

For each CSO, the average year total nutrient loading was calculated by multiplying the 5-year average annual overflow volume with the 5-year average nutrient concentration based on data from 2015-2019. The calculation process is shown in **Figure 2**.

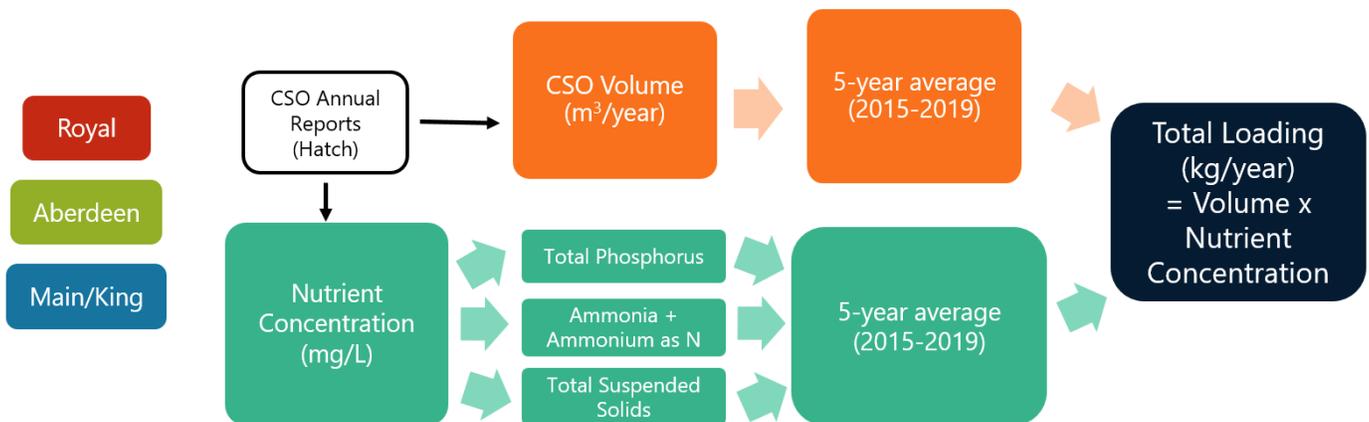


Figure 2: CSO Total Loading - Average Year

The Peak Day total loading was calculated based on the event that occurred on July 6, 2019, representing a peak precipitation day. The calculation process is shown in **Figure 3**.

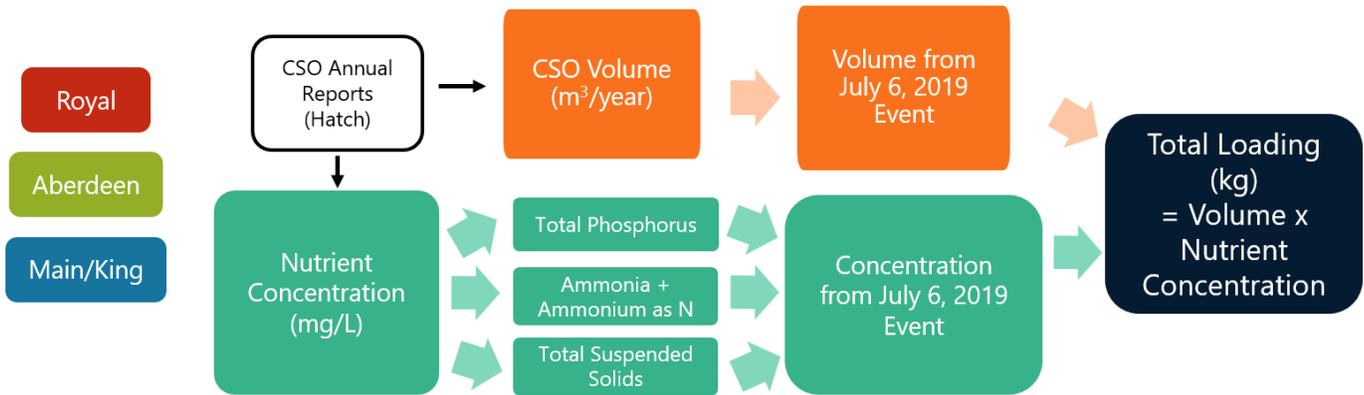


Figure 3: CSO Total Loading – Peak Event

The total loading on the Low Day scenario was assumed to be zero, under the reasonable assumption that there are no combined sewer overflows during low precipitation events.

4.2 Stormwater Catchments

The Chedoke Creek Watershed was broken into seven catchments based on the sampling data points. The catchments are shown in **Figure 4**.

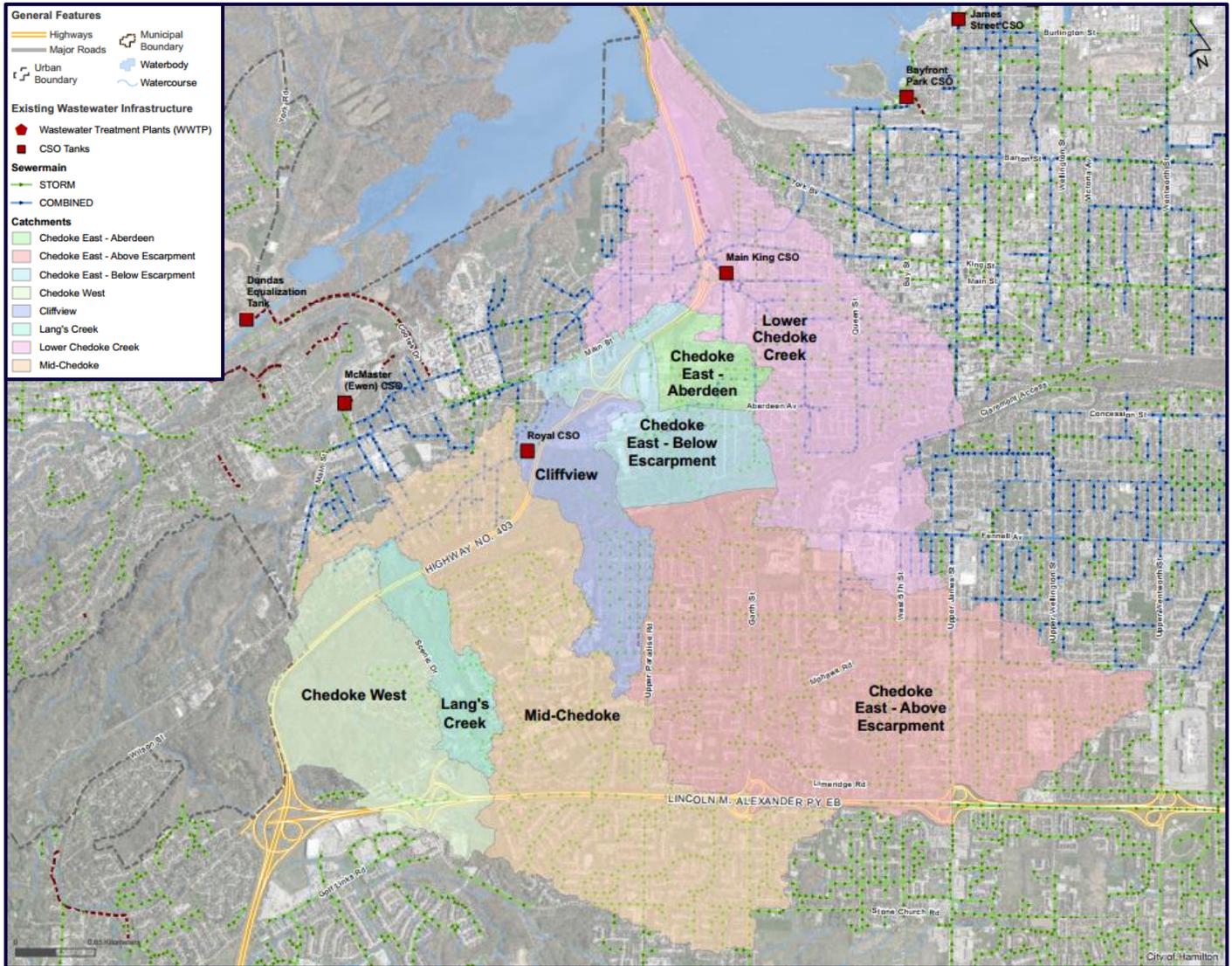


Figure 4: Chedoke Creek Watershed Catchments

The following assumptions were made when calculating the urban stormwater system nutrient loadings:

- 30% of the precipitation volume was assumed to be direct runoff;
- 10% of the precipitation volume was assumed to be baseflow;
- Only 30% of the Lower Chedoke Creek Catchment was included in the urban stormwater system calculations due to combined sewers throughout the catchment;
- Areas of each catchment do not include the areas of other contributors (e.g. Railway and Railyard, Highway 403, Landfill)
- Stream nutrient concentration is a proxy for runoff water quality—calculations give higher bound estimations of nutrient loadings;

- Baseflow contribution is negligible on Peak Day as runoff volume is significantly higher; and,
- Snowpack accumulation and spring freshet flows are not considered.

The Average Year total loading was calculated using precipitation and nutrient concentration data over a span of 2015 to 2019 for each stormwater catchment (**Figure 4**). The Average Year stormwater volume from runoff and baseflow was determined by multiplying the catchment area by 30% of the average annual precipitation for direct runoff, and 10% for baseflow. Note that the areas of other contributing sources within a catchment (e.g. Railway and Railyard, Highway 403, and Landfill) are subtracted to isolate the effects of urban runoff. The average annual nutrient concentration was determined using data from Hamilton Conservation Authority’s (HCA) bi-weekly stream sampling program. An annual average concentration for each nutrient for runoff (Wet Days) and baseflow (Dry Days) was estimated using sampling data spanning 5 years and Environment Canada’s Daily Precipitation data to classify Wet Days (>4mm/day) and Dry Days (<4mm/day). The total annual loading is the sum of the Wet Day and Dry Day annual loadings, which were calculated as the volume multiplied by the respective nutrient concentration. Note that since stream concentrations are used as a proxy for stormwater quality and stormwater generally has lower nutrient concentrations than other contributing sources, the calculated loading to stream is an upper bound estimate. The calculation process is shown in **Figure 5**.

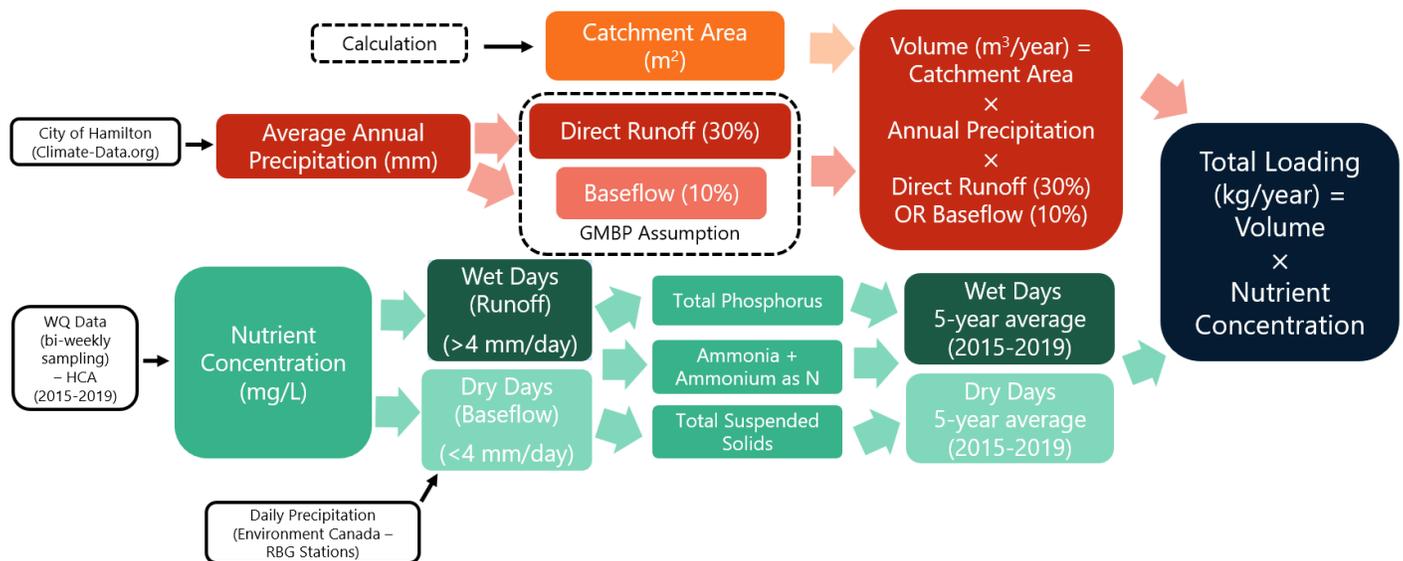


Figure 5: Stormwater Catchment Total Loading – Average Year

The Peak Day loading for each stormwater catchment was calculated by determining the volume and nutrient concentration for a representative peak rainfall day. The precipitation from July 6, 2019 was used. Since the rainfall exceeded 4mm, the contributing volume was calculated by multiplying the catchment areas by 30% of the daily precipitation to account for direct runoff. It was assumed that contributions by baseflow was negligible compared to the runoff. The nutrient concentrations used were the annual average concentrations for Wet Days. The total loading was calculated as the volume multiplied by the nutrient concentration, shown in **Figure 6**.

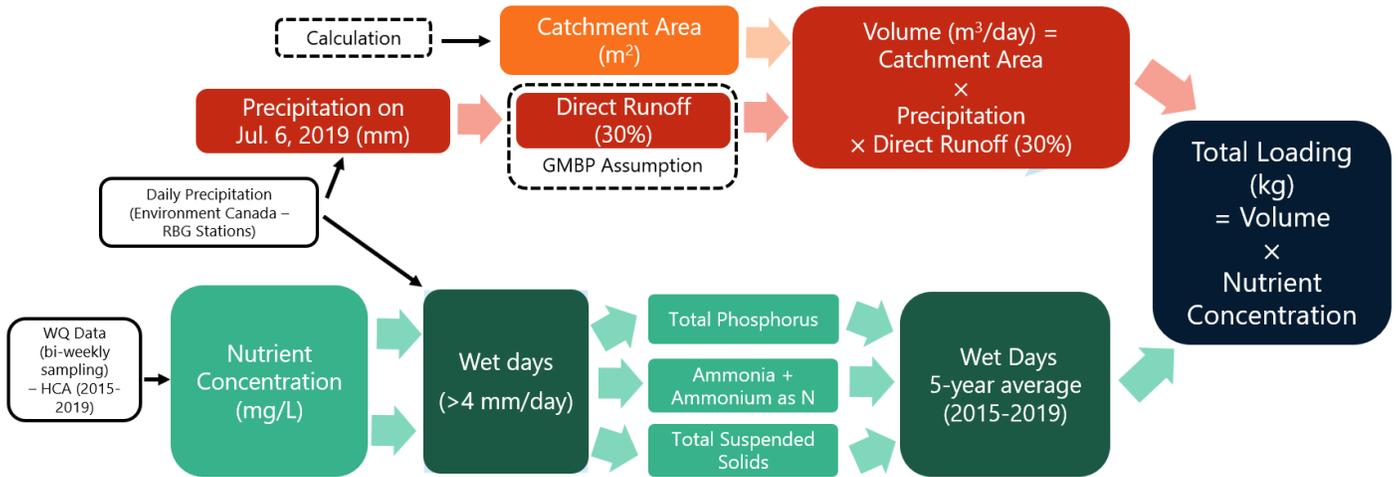


Figure 6: Stormwater Catchment Total Loading – Peak Day

Likewise, the Low Day loading for each stormwater catchment was calculated by determining the volume and nutrient concentration for a representative low rainfall day. The precipitation from November 21, 2019 was used. Since the volume was less than 4mm, it was assumed that no direct runoff was generated. Therefore, the contributing volume was calculated by multiplying the catchment areas by 10% (baseflow) of the daily precipitation. The nutrient concentrations used were the annual average concentrations for Dry Days. The total loading was calculated as the volume multiplied by the nutrient concentration, shown in **Figure 7**.

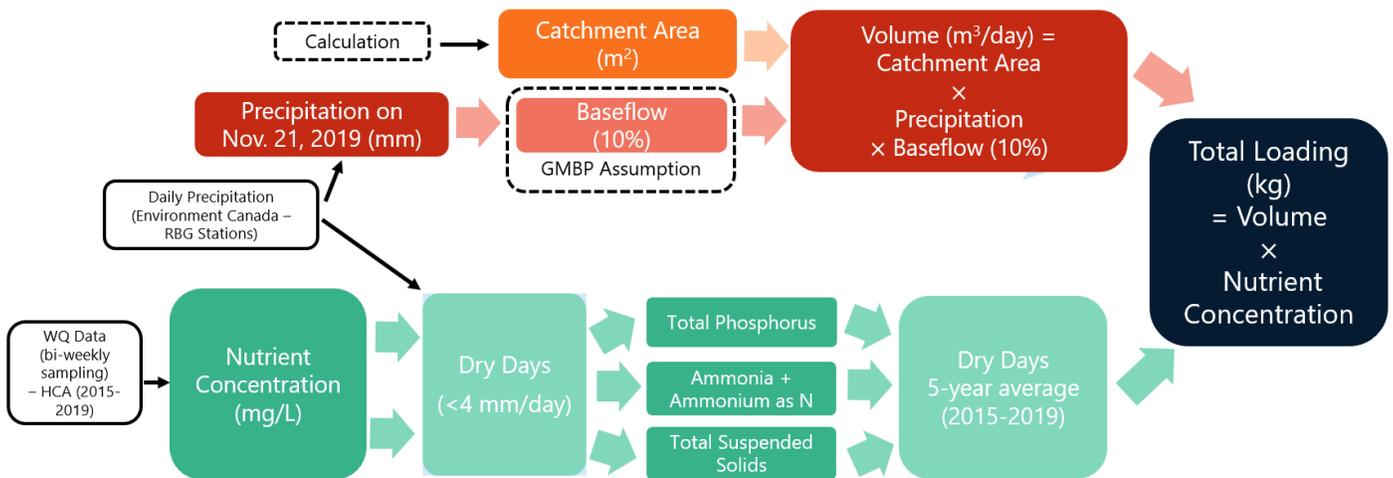


Figure 7: Stormwater Catchment Total Loading – Low Day

4.3 Highway 403

Estimations of nutrient loading contributed by Highway 403 follows the same approach as the calculations done for Stormwater Catchments for Average Year, Peak Day, and Low Day.

4.4 Railway & Rail Yard

Similarly, the Railway and Rail Yard also followed the same approach as the Stormwater Catchment calculation for the Average Year, Peak Event, and Low Event. The areas for the Railway and Rail Yard were also subtracted from the applicable stormwater catchments.

4.5 Landfill

The following assumptions were made when calculating the average year landfill nutrient loadings:

- 20% of the leachate volume reaches the creek; and,
- 80% of the leachate volume is captured by the leachate collection system.

The nutrient loading was calculated for the Kay Drage Park, Closed West Hamilton Landfill. The volume was calculated by multiplying the 5-year average annual pumped leachate volume by 20%. The nutrient concentration was calculated based on a 5-year average of nutrients from all sampling points along the Chedoke Creek. The total loading was the volume multiplied by the nutrient concentration. The calculation process is shown in **Figure 8**.

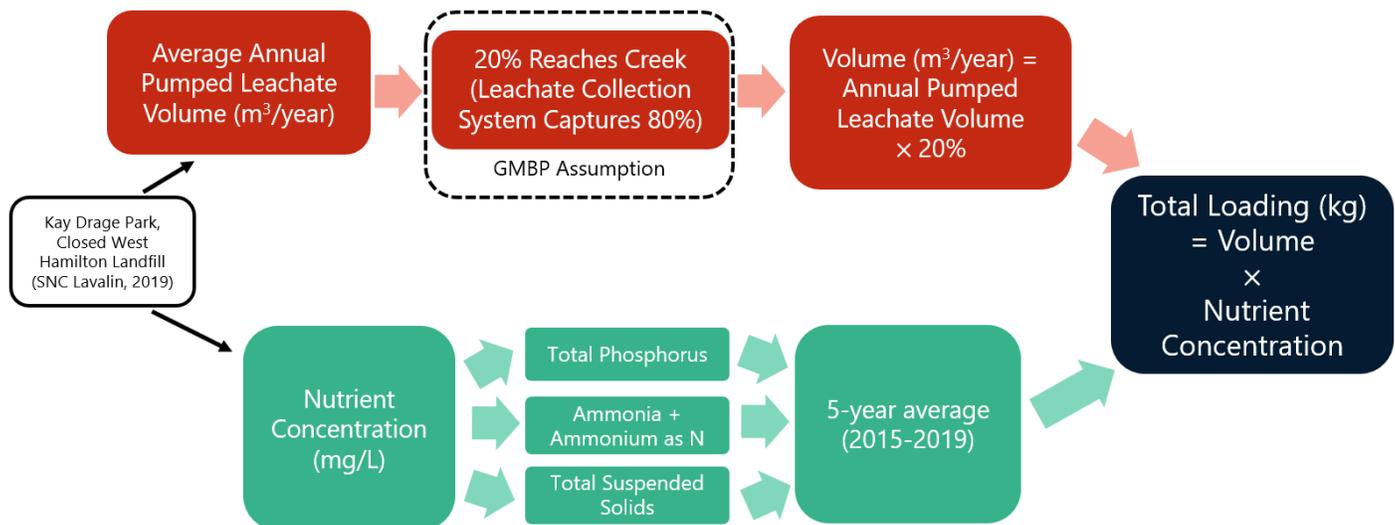


Figure 8: Landfill Total Loading – Average Year

The following assumptions were made when calculating the peak day landfill nutrient loadings:

- 50% of the leachate volume reaches the creek; and,
- 50% of the leachate volume is captured by the leachate collection system.

The Peak Day volume was calculated by multiplying the pumped leachate volume measured at the Landfill Pumping Station on July 6, 2019 by 50%. The nutrient concentration was calculated based on a 5-year average of nutrients from all sampling points along the Chedoke Creek. The total loading was the volume multiplied by the nutrient concentration. The calculation process is shown in **Figure 9**.

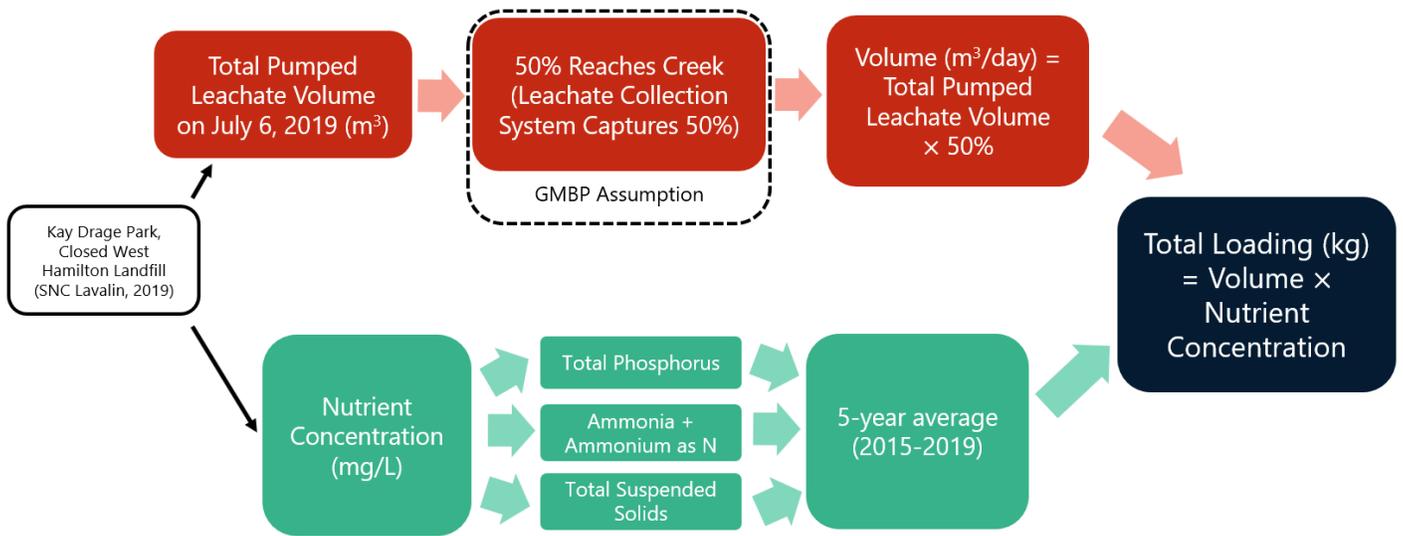


Figure 9: Landfill Total Loading – Peak Day

The Low Day volume was calculated by multiplying the pumped leachate volume measured at the Landfill Pumping Station on November 21, 2019 by 20%. The nutrient concentration was calculated based on a 5-year average of nutrients from all sampling points along the Chedoke Creek. The total loading was the volume multiplied by the nutrient concentration. The calculation process is shown in **Figure 10**.

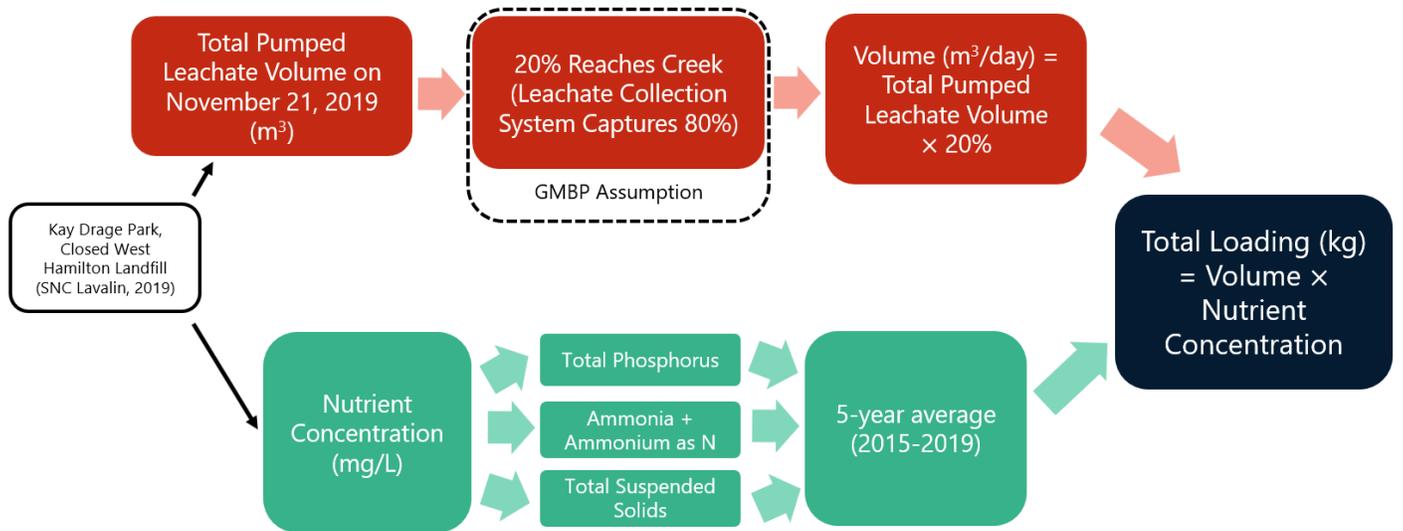


Figure 10: Landfill Total Loading – Low Day

5 OVERVIEW OF POTENTIAL CONTRIBUTIONS

Based on the total loadings calculated for the sources in the previous sections, an overview of the relative potential contributions was developed. As mentioned above, this is a high-level estimate of the range of relative contributions and a more comprehensive analysis should be completed for future studies. An example of the Average Year and Peak Day are shown in **Figures 11** and **12**. These overviews were used to provide guidance to identify project priority areas and potential benefits. They are not an accurate representation of actual loading amounts and are not meant to be used for detailed analysis.

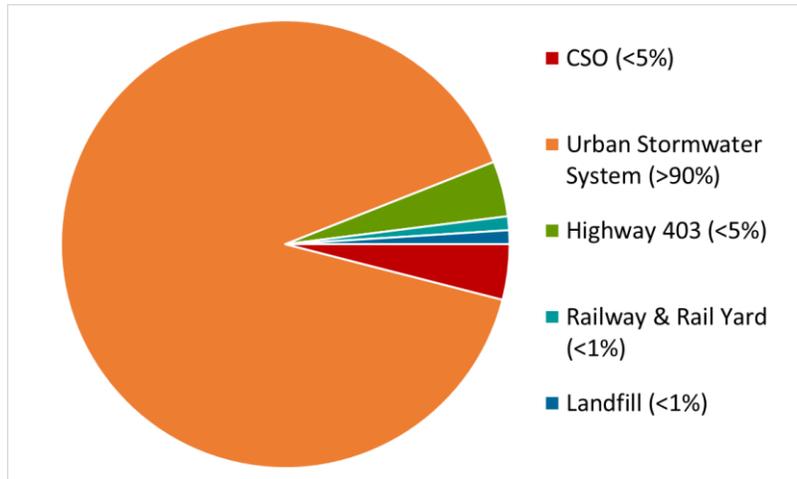


Figure 11: Example Nutrient Loading – Average Year

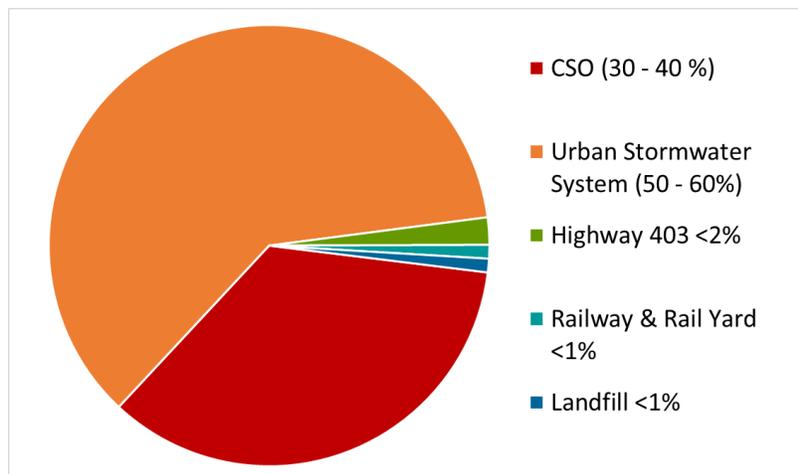


Figure 12: Example Nutrient Loading - Peak Day

APPENDIX D: OPTION REVIEW

The purpose of this Appendix is to give an overview of the high-level estimations of nutrient loadings to the Chedoke Creek, and the potential benefits from the solutions examined in this report. The nutrients that were reviewed include Total Phosphorus (TP), Ammonia + Ammonium (NH₃) and Total Suspended Solids (TSS). Each project sheet summarizes the project description, expected cost, timeframe, project implementation responsibility and potential benefits. All estimations are high level and should only be used for identifying priority areas and solution screening. Further detailed studies are needed to determine more accurate expectations of project implementation benefits. For the methodology of how these estimations were made, please refer to **Appendix C**.

Table 1: Contribution of Major Nutrient Sources to Chedoke Creek

Total Phosphorus			
	Average Year	Peak Event	Low Event
CSO	<5%	30% - 40%	0%
Urban Stormwater System	>90%	50% - 60%	>90%
Highway 403	<5%	<2%	<5%
Railway & Railyard	<1%	<1%	<1%
Landfill	<1%	<1%	<5%
Ammonia + Ammonium as N			
	Average Year	Peak Event	Low Event
CSO	<5%	65% - 75%	<1%
Urban Stormwater System	60% - 70%	20% - 25%	10% - 20%
Highway 403	10% - 15%	<5%	5% - 10%
Railway & Railyard	<2%	<1%	<1%
Landfill	15% - 20%	5% - 10%	70% - 80%
Total Suspended Solids			
	Average Year	Peak Event	Low Event
CSO	<1%	15% - 20%	<1%
Urban Stormwater System	>95%	75% - 85%	>90%
Highway 403	<1%	<1%	<5%
Railway & Railyard	<1%	<1%	<2%
Landfill	<1%	<1%	<2%

1) Direct clean water away from landfill

- Prevent local runoff from entering leachate collection system (LCS) and instead allow clean water to directly flow into Chedoke Creek
- Reduce total volume pumped from LCS to combined sewers due to reduced leachate generation

Cost	\$5 - \$10 M
Timing	Near-Term (5-10 Years)
Implementation	Difficult
Capital	City
Maintenance	City
Type	Preventative

Nutrient Loading Impacts

- Reduced total volume of leachate overflowing into the creek during high flow events
- Leachate contamination can contribute to elevated levels of total phosphorus, ammonia
- Leachate may also lead to elevated levels of iron, boron, zinc, and biological oxygen demand

Pie Chart Contribution	Landfill			
Reduction Assumptions	<ul style="list-style-type: none"> Volume reaching creek from landfill (not captured by LCS) is reduced by 50% 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<1%	15 – 20%	<1%
	Source Reduction	40 – 60%	40 – 60%	40 – 60%
Peak	Current % Contribution	<1%	5 – 10%	<1%
	Source Reduction	40 – 60%	40 – 60%	40 – 60%
Low	Current % Contribution	<5%	70 – 80%	<2%
	Source Reduction	40 – 60%	40 – 60%	40 – 60%

2) Rehabilitate existing Highway 403 Culvert (Landfill)

- Prevent leachate from contaminating flows from Highway 403 entering the Chedoke Creek via culvert
- Prevent leachate from by-passing LCS via this route

Cost	\$1 - \$5 M
Timing	Short-Term (<5 Years)
Implementation	Moderate
Capital	City, MTO
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Prevents leachate contamination of runoff from Highway 403
- Leachate can contribute to elevated levels of total phosphorus, ammonia
- Leachate may also lead to elevated levels of iron, boron, zinc, and biological oxygen demand

Pie Chart Contribution	Landfill			
Reduction Assumptions	<ul style="list-style-type: none"> Landfill nutrient concentration is reduced by up to 75% 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<1%	15 - 20%	<1%
	Source Reduction	65 - 75%	65 - 75%	65 - 75%
Peak	Current % Contribution	<1%	5 - 10%	<1%
	Source Reduction	65 - 75%	65 - 75%	65 - 75%
Low	Current % Contribution	<5%	70 - 80%	<2%
	Source Reduction	65 - 75%	65 - 75%	65 - 75%

3) Expand/Fix Leachate Collection System (LCS)

- Extend and deepen perforated pipe for leachate collection pipe
- Prevent leachate from seeping into creek
- Prevent leachate from contaminating runoff entering creek

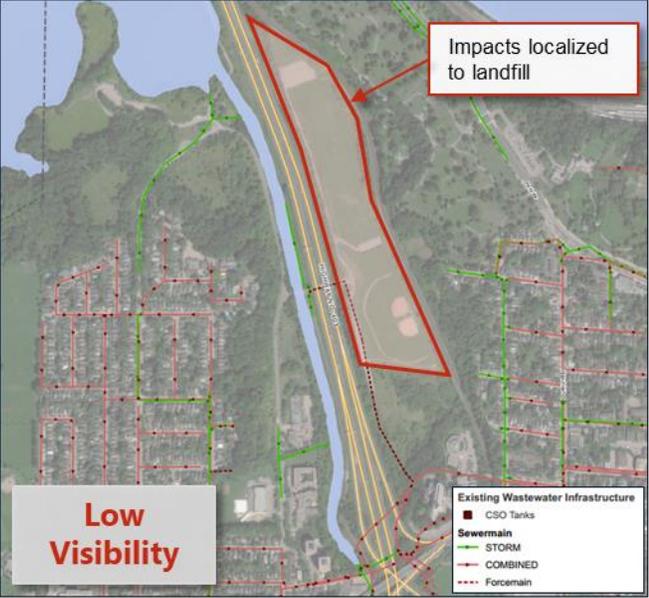
Cost	\$10-\$25 M
Timing	Near-Term (5-10 Years)
Implementation	More data needed
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduce leachate seeping or contamination of runoff potentially entering the stream
- Leachate can contribute to elevated levels of total phosphorus, ammonia
- Leachate may also lead to elevated levels of iron, boron, zinc, and biological oxygen demand

Pie Chart Contribution	Landfill			
Reduction Assumptions	<ul style="list-style-type: none"> Volume reaching creek from landfill (not captured by LCS) is reduced by 75% for average year and low event Volume reaching creek from landfill (not captured by LCS) is reduced by 80% for peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<1%	15 - 20%	<1%
	Source Reduction	65 - 75%	65 - 75%	65 - 75%
Peak	Current % Contribution	<1%	5 - 10%	<1%
	Source Reduction	70 - 80%	70 - 80%	70 - 80%
Low	Current % Contribution	<5%	70 - 80%	<2%
	Source Reduction	65 - 75%	65 - 75%	65 - 75%

4) Landfill Capping/Barrier	
<ul style="list-style-type: none"> • Improve landfill capping/barrier to reduce leachate leaking from boundaries • Enhance the barrier between the contaminated media and the surface • Limit any passage of the contents by restricting surface water infiltration at landfill site thus reducing leaching 	
Cost	\$50-\$100 M
Timing	Long-Term (>10 years)
Implementation	Difficult
Capital	City
Maintenance	City
Type	Preventative

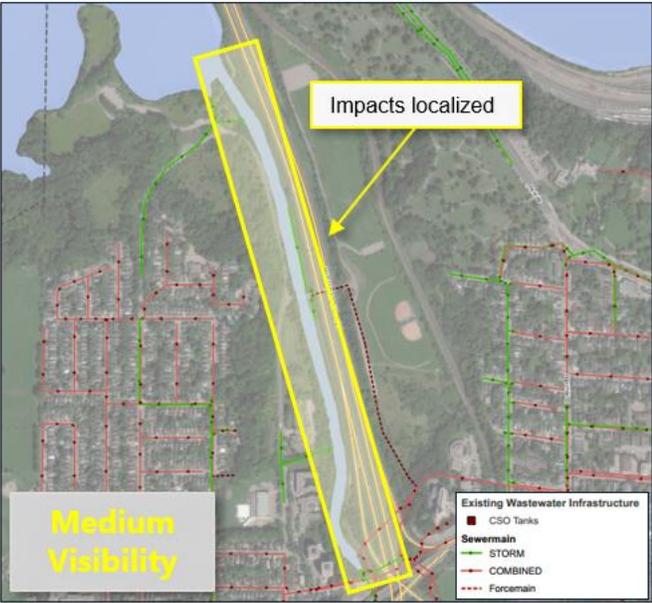


Nutrient Loading Impacts				
<ul style="list-style-type: none"> • Reduce leachate from escaping landfill boundaries where it can potentially enter the stream • Leachate can contribute to elevated levels of total phosphorus, ammonia • Leachate may also lead to elevated levels of iron, boron, zinc, and biological oxygen demand 				
Pie Chart Contribution	Landfill			
Reduction Assumptions	<ul style="list-style-type: none"> • Volume reaching creek from landfill (not captured by LCS) is reduced by 90% 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<1%	15 – 20%	<1%
	Source Reduction	80 - 90%	80 - 90%	80 - 90%
Peak	Current % Contribution	<1%	5 – 10%	<1%
	Source Reduction	80 - 90%	80 - 90%	80 - 90%
Low	Current % Contribution	<5%	70 – 80%	<2%
	Source Reduction	80 - 90%	80 - 90%	80 - 90%

5) Constructed Wetland	
	<ul style="list-style-type: none"> • Construct wetland at the outlet of Chedoke Creek where it enters Cootes Paradise • Capture sediments & pollutant loading from Chedoke Creek before entering Cootes Paradise • Control flow which will enhance natural processes and improve wildlife habitat at outlet of Chedoke Creek
Cost	\$10-\$25 M
Timing	Near-Term (5-10 Years)
Implementation	Moderate
Capital	RBG, City
Maintenance	RBG, City
Type	Restorative

Nutrient Loading Impacts	
No impacts on nutrient loading into stream, however potential benefits include: <ul style="list-style-type: none"> • Reduced TP, ammonia, and TSS loadings into Cootes Paradise • Dampened peak flow velocities at the stream outlet • More regulated runoff temperature entering Cootes Paradise 	
Pie Chart Contribution	N/A: Increased ability to assimilate nutrients

6) Aeration System	
	<ul style="list-style-type: none"> • Install Aeration System in Lower Chedoke Creek • System intended to enhance the transfer of dissolved oxygen to Chedoke Creek/Cootes Paradise waters • Improves marine habitat along and downstream of the creek
Cost	\$5-\$10 M (RBG estimate)
Timing	Short (<5 years)
Implementation	Moderate
Capital	RBG, City
Maintenance	RBG, City
Type	Mitigative

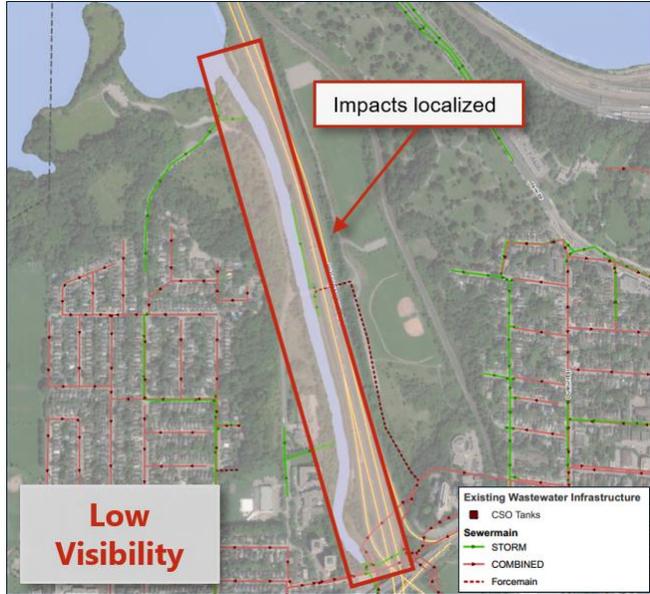


Nutrient Loading Impacts	
	<p>No impacts on nutrient loading into stream, however potential benefits include:</p> <ul style="list-style-type: none"> • In-stream removal of ammonia and TP due to greater stream metabolism • Encourages phosphorus to remain sediment-bound rather than bioavailable to algae and other opportunistic microorganisms
Pie Chart Contribution	N/A: Increased ability to assimilate nutrients

7) Stream Naturalization		
<ul style="list-style-type: none"> Remove concrete channel and introduce native vegetation for slope stability Reduce stream velocity and sediment buildup downstream Improves marine habitat along and downstream of the creek 		
Cost		\$1-\$5 M
Timing		Near-Term (5-10 Years)
Implementation		Difficult
Capital		RBG, City
Maintenance		RBG, City
Type		Restorative

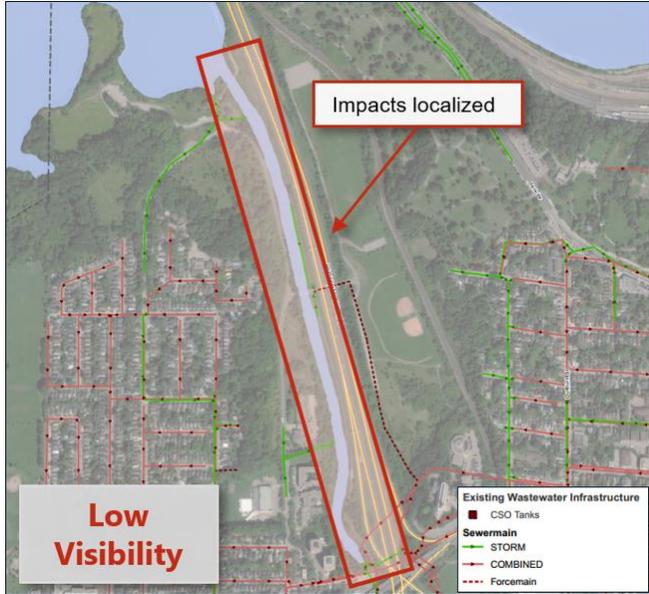
Nutrient Loading Impacts	
No impacts on nutrient loading into stream, however potential benefits include: <ul style="list-style-type: none"> Reduced TSS loading from entering Cootes Paradise due to lower stream velocities Greater potential of in-stream removal of ammonia and TP due to greater stream metabolism 	
Pie Chart Contribution	N/A: Some increased ability to assimilate nutrients

8) Physical Capping	
	<ul style="list-style-type: none"> Apply a cover of clean material on top of contaminated sediment to mitigate risk of contaminated sediment Stabilization of contaminated sediments to prevent resuspension Prevent benthic community from interacting with and processing the contaminated sediments
Cost	\$5-\$10 M (RBG estimate)
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Restorative



Nutrient Loading Impacts	
	<p>No impacts on nutrient loading into stream, however:</p> <ul style="list-style-type: none"> Prevents re-mobilization of contaminants in sediments Sediment contaminants of concern include phosphorus, nitrogen, heavy metals (mercury, copper, iron, lead, manganese, nickel, zinc)
Pie Chart Contribution	N/A: No changes

9) Chemical Inactivation	
	<ul style="list-style-type: none"> • Alternative to physical capping • Chemically treat contaminated sediment
Cost	\$1-\$5M
Timing	Short (<5 years)
Implementation	Easy
Capital	City
Maintenance	City
Type	Restorative



Nutrient Loading Impacts	
No impacts on nutrient loading into stream, however:	
<ul style="list-style-type: none"> • Prevents re-mobilization of contaminants in sediments • Sediment contaminants of concern include heavy metals (mercury, copper, iron, lead, manganese, nickel, zinc), phosphorus, nitrogen 	
Pie Chart Contribution	N/A: No changes

10A) Chedoke Creek Complete Sediment Removal		
<ul style="list-style-type: none"> Remove contaminated sediment via hydraulic dredging Remediate the creek by removing all existing sediment within creek 		
Cost		\$5-\$10M
Timing		Short (<5 years)
Implementation		Moderate
Capital		City
Maintenance		City
Type		Restorative

Nutrient Loading Impacts	
No impacts on nutrient loading into stream, however: <ul style="list-style-type: none"> Prevents re-mobilization of contaminants in sediments Sediment contaminants of concern include heavy metals (mercury, copper, iron, lead, manganese, nickel, zinc), phosphorus, nitrogen 	
Pie Chart Contribution	N/A: No changes

10B) Chedoke Creek Targeted Sediment Removal	
	<ul style="list-style-type: none"> Targeted removal of contaminated sediment via hydraulic dredging (Part of current MECF Order) Remediate the creek bed by removing targeted sediment Will immediately reduce contamination
Cost	\$1-\$5M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Restorative

Nutrient Loading Impacts	
No impacts on nutrient loading into stream, however:	
<ul style="list-style-type: none"> Prevents re-mobilization of contaminants in sediments Sediment contaminants of concern include phosphorus, nitrogen, heavy metals (mercury, copper, iron, lead, manganese, nickel, zinc) 	
Pie Chart Contribution	N/A: No changes

11) Sewer Separation

- Full implementation of sewer separation in Chedoke watershed
- Prevents sanitary waste from overflowing into Chedoke Creek before treatment
- Potential implementation challenges/high costs/long timelines

Cost	\$50-\$100 M
Timing	Long-Term (>10 years)
Implementation	Difficult
Capital	City
Maintenance	City
Type	Preventative

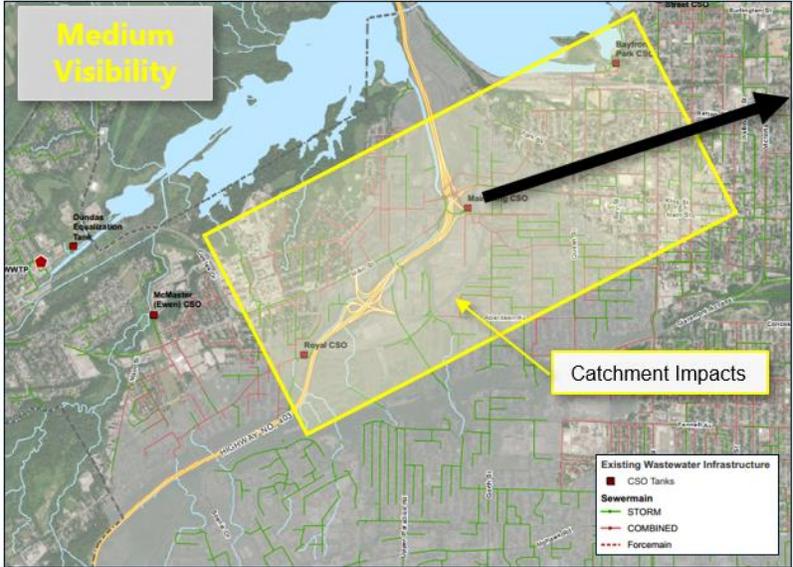
Nutrient Loading Impacts

- Prevent contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams during high flow events

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce CSO volume by 90% and increase nutrient concentration by 50% for average year and peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	80 – 90%	80 – 90%	80 – 90%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	80 – 90%	80 – 90%	80 – 90%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

12) Increase Capacity Downstream of Main-King CSO Tank

- Trunk upgrades from Main-King CSO tank to Woodward Avenue WWTP to accommodate higher storm flows
- Reduces volume and frequency of combined sewer overflows



Cost	>\$100 M
Timing	Long-Term (>10 years)
Implementation	Difficult
Capital	City
Maintenance	City
Type	Preventative

Nutrient Loading Impacts				
<ul style="list-style-type: none"> • Reduces frequency of contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams during high flow events 				
Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> • Assume 90% of overflow volume from Main-King CSO tank doesn't occur during average year and 75% doesn't occur during peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	35 - 45%	70 - 80%	20 - 30%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	30 - 40%	60 - 70%	5 - 10%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

13) Increase Capacity of Royal CSO tank to Main-King CSO tank (Highway 403 Trunk Sewer Twinning)

- Reduces volume and frequency of combined sewer overflows
- Potential elimination of overflows at Aberdeen CSO & reduction in overflows at Royal CSO

Cost	\$25-\$50 M
Timing	Near-Term (5-10 Years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduces frequency of contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams during high flow events

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Assume 50% of overflow volume from Main-King and Royal CSO tanks, and all overflows from Aberdeen don't occur during average year, and 25% of overflow volume from Main-King and Royal CSO tanks, and all overflows from Aberdeen don't occur during peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	60 – 70%	50 – 60%	70 – 80%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	20 - 30%	20 - 30%	20 - 30%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

14) Expand Storage at Main-King CSO tank

- Increases holding capacity to accommodate combined sewer flows during high flow events
- Reduces volume and frequency of overflows

Cost	>\$100 M
Timing	Long-Term (>10 years)
Implementation	Difficult
Capital	City
Maintenance	City
Type	Preventative

Nutrient Loading Impacts

- Reduces frequency of contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams during high flow events

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Assume 98% of overflow volume from Main-King CSO tank doesn't occur during average year Assume 95% of overflow volume from Main-King CSO tank doesn't occur during peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	40 - 50%	80 - 90%	20 - 30%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	45 - 55%	75 - 85%	<10%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

15) Expand Storage Elsewhere in System

- Increases holding system's capacity to accommodate combined sewer flows during high flow events
- Reduces volume and frequency of combined sewer overflows
- Option upstream of Main-King CSO tank to provide additional system relief

Cost	\$25-\$50 M
Timing	Long-Term (>10 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduces frequency of contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams during high flow events

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Assume 50% of total overflow volume doesn't occur during average year Assume 25% of total overflow volume doesn't occur during peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	45 - 55%	45 - 55%	45 - 55%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	20 - 30%	20 - 30%	20 - 30%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

16A) Inspection and Repair - Facilities

- Prevent sewer flows from potentially infiltrating into stream due to leaks
- Potential opportunity at Royal CSO
- Investigation needed to confirm leaks

Cost	\$1 - \$5 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduces contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from infiltrating into streams

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Assume 10% of total overflow volume doesn't occur during average year Assume 5% of total overflow volume doesn't occur during peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	<10%	<10%	<10%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	<5%	<5%	<5%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

16B) Inspection and Repair – Trunk Sewers

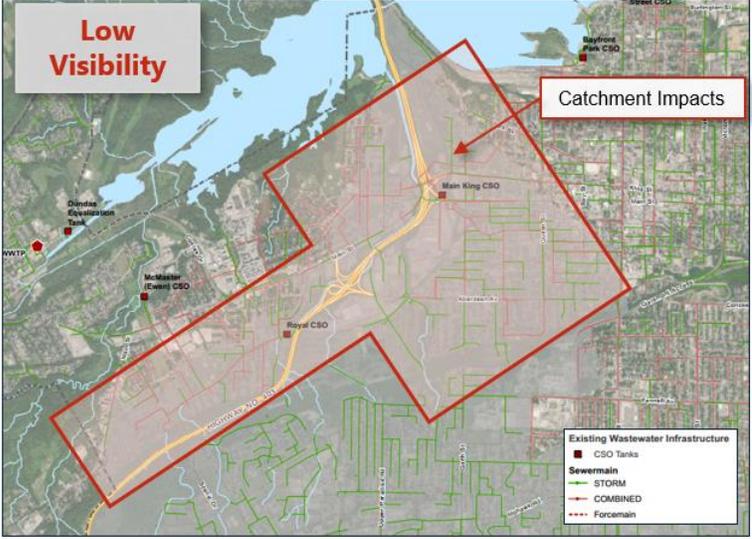
- Prevent sewer flows from potentially infiltrating into stream due to leaks
- Potential opportunity within trunk sewers running parallel to stream
- Investigation needed to confirm leaks

Cost	\$1 - \$5 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduces contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from infiltrating into streams

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Assume 10% of total overflow volume doesn't occur during average year Assume 5% of total overflow volume doesn't occur during peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	<10%	<10%	<10%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	<5%	<5%	<5%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

17) CSO Monitoring Improvements and Active Management	
<ul style="list-style-type: none"> Currently ongoing through Real Time Control (RTC) Program to optimize the performance of the collection system and CSO tanks Improved inspection and monitoring of CSOs Quantify overflow volume and overflow conditions 	
Cost	\$5 - \$10 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts				
<ul style="list-style-type: none"> Reduces frequency of contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams during high flow events 				
Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Assume 10% of total overflow volume doesn't occur during average year Assume 5% of total overflow volume doesn't occur during peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	<10%	<10%	<10%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	<5%	<5%	<5%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

18A) Wet Weather Flow (Inflow & Infiltration) in Separated Sewers – Targeted in Chedoke Watershed

- Identify areas of high Inflow and Infiltration (I&I) adjacent to Chedoke Creek
- Reduce I&I into sanitary sewers thereby reducing sanitary sewer flows
- Potentially reduce CSO overflows

Cost	\$5 - \$10 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduces contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce CSO volume by 20% and increase nutrient concentration by 10% for average year and peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

18B) Wet Weather Flow (Inflow & Infiltration) in Separated Sewers – Targeted in broader Main-King Catchment

- Identify areas of high inflow and infiltration (I&I) in Main-King
- Reduce I&I into sanitary sewers thereby reducing sanitary sewer flows to the Main-King CSO tank
- Potentially reduce CSO overflows

Cost	\$10-\$25 M
Timing	Near-Term (5-10 Years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

The map displays the Main-King Catchment area with various infrastructure elements. A red box labeled 'Catchment Impacts' encompasses the Main-King CSO tank and surrounding areas. A grey box labeled 'Low Visibility' is positioned in the upper left. The legend identifies 'Existing Wastewater Infrastructure' including CSO Tanks (red squares), Sewermain (green lines), STORM (blue lines), COMBINED (red lines), and Forcemain (dashed red lines). Other labeled locations include Dundas Sewerage Tank, McMaster (Ewen) CSO, and Main-King CSO.

Nutrient Loading Impacts

- Reduces contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce CSO volume by 25% and increase nutrient concentration by 15% for average year and peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

18C) Wet Weather Flow (Inflow & Infiltration) in Separated Sewers – Policy/Future Infrastructure Projects

- More stringent criteria related to new development to ensure future construction practices address any possible I&I issues
- Reduce I&I into sanitary sewers thereby reducing sanitary sewer flows
- Potentially reduce CSO overflows

Cost	<\$1 M
Timing	Long-Term (>10 years)
Implementation	Easy
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduces contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce CSO volume by 10% and increase nutrient concentration by 5% for average year and peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	<5%*	<5%*	<5%*
Peak	Current % Contribution	30 - 40%	65 - 75%	15 - 20%
	Source Reduction	<5%*	<5%*	<5%*
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

*Reduction assumptions are a high-level estimate and will depend on level of uptake or how widespread the measures are implemented

19) Ainsley Woods Sewer Separation

- Evaluate the existing creek inputs into the combined sewer system within the Ainsley Woods neighbourhood in Mid Chedoke Creek
- Identify an appropriate outlet for the separated flow

Cost	\$1 - \$5 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduces creek inputs from entering combined sewer system; reducing volume and frequency of combined sewer overflows
- Improves water quality by increasing creek input into stormwater system

Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> Increase stormwater volume by 10% for Chedoke West catchment and reduce concentration by 25% for average year, peak event and low event for Chedoke West catchment 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<5%	<5%	<5%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	<5%	<5%	<5%
Low	Current % Contribution	>90%	10% - 20%	>90%
	Source Reduction	<5%	<5%	<5%

20) Cross Connection Program

- Ensure sanitary laterals are not connected to stormwater system in separated sewer system
- Currently on-going, prioritize within Chedoke Creek catchment, south of Escarpment
- Fix storm and sanitary cross-connections from homes
- Reduce sanitary contaminants discharged from stormwater outfalls

Cost	\$1 - \$5 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City, Private
Maintenance	City
Type	Mitigative

The map displays existing wastewater infrastructure in a city area. Key features include:

- CSO Tanks:** Marked with red squares, including locations like 'Main King CSO', 'McMurrer (Lower) CSO', and 'Royal CSO'.
- Sewermain:** Shown as red lines.
- STORM:** Shown as green lines.
- COMBINED:** Shown as blue lines.
- Forcemain:** Shown as dashed red lines.

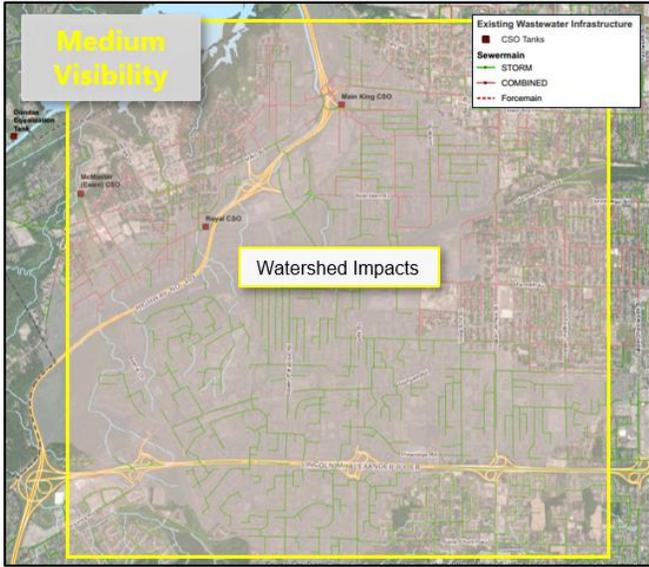
 A red box labeled 'Watershed Impacts' covers a large central area. A grey box labeled 'Low Visibility' is in the top left. A legend in the top right identifies the infrastructure types.

Nutrient Loading Impacts

- Reduces sanitary flows from entering stormwater system
- Reduces contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams through stormwater inflows

Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce stormwater volume by 2% and reduce concentration by 15% for average year, peak event and low event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%
Low	Current % Contribution	>90%	10% - 20%	>90%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%

21) Retrofits throughout the watershed (End-of-Pipe and Source)	
<ul style="list-style-type: none"> Retrofitting existing ponds to wet ponds where opportunity in Chedoke watershed Retrofitting existing facilities for Highway 403 Introducing stormwater management practices to areas where there is currently no treatment or management 	
Cost	\$5-\$50 M
Timing	Near-Term (5-10 Years) with Potential for Short Term
Implementation	Moderate
Capital	City, MTO
Maintenance	City, MTO
Type	Mitigative



Nutrient Loading Impacts				
<ul style="list-style-type: none"> Potential removal of urban runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals, e-coli, other pathogens) 				
Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce stormwater concentration by 15% for average year and low event and 5% for peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	5 - 10%	5 - 10%	5 - 10%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	10 - 20%	10 - 20%	10 - 20%

22) Retrofit for Road Rehabilitation Projects / Low Impact Development (LID) BMP Policy

- Best Management Practices (BMPs) to be applied to any road rehabilitation project within the City
- Advance City's stormwater management guidance to City infrastructure

Cost	\$5-\$10 M (Costs incorporated with other works)
Timing	Long-Term (>10 years)
Implementation	Easy
Capital	City, DC
Maintenance	City, Private
Type	Mitigative

Nutrient Loading Impacts

- Potential removal of urban runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals, e-coli, other pathogens)
- Potential reduction of stormwater flows

Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce stormwater concentration by 10% and reduce direct runoff from 30% to 25% for average year and peak event • Reduce stormwater concentration by 10% and no change to base flow for low event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	15 - 25%*	15 - 25%*	15 - 25%*
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	20 - 30%*	20 - 30%*	20 - 30%*
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	10 - 20%*	10 - 20%*	10 - 20%*

*Reduction assumptions are a high-level estimate and will depend on level of uptake or how widespread the measures are implemented

23A) City Street Management – Enhanced Street Sweeping

- Program to implement street sweeping within Chedoke Creek Watershed and City
- Clean up debris and contaminants that build up on City roads

Cost	\$1-\$5 M
Timing	Short (<5 years)
Implementation	Easy
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Improves water quality by removing pollutants that are transferred through the urban runoff
- Manage contaminants such as salt, oil, grease, metals and pesticides that build up on urban surfaces

Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce stormwater concentration by 5% for average year, peak event and low event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<10%	<10%	<10%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	<10%	<10%	<10%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<10%	<10%	<10%

23B) City Street Management – Improve Snow Management within Chedoke Creek Watershed

- Enhance Snow Management practices to prevent contamination (Chlorides) to Chedoke Creek
- Review disposal sites for snow that would reduce direct snow melt into urban streams

Cost	\$1-\$5 M
Timing	Short (<5 years)
Implementation	Easy
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Improves water quality by removing pollutants that are transferred through the urban runoff
- Manage contaminants such as salt, oil, grease, metals and pesticides that build up on urban surfaces
- High chloride levels can inhibit aquatic species' growth and reproduction

Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce stormwater concentration by 5% for average year and peak event and by 2% for low event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<5%	<5%	<5%
Peak	Current % Contribution	50 - 60%	20 - 25%	70 - 80%
	Source Reduction	<5%	<5%	<5%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<5%	<5%	<5%

24) LID BMP Policy / Stormwater User Rate	
<ul style="list-style-type: none"> • Supports sustainable funding of stormwater management program • Incentive program to encourage private property owners to manage stormwater at source on private properties and implement additional BMP's • LID BMPs will help to provide infiltration, flood management and support creek stability 	
Cost	Self-Funding
Timing	Long-Term (>10 years)
Implementation	Moderate
Capital	City, Private
Maintenance	Private
Type	Mitigative

Nutrient Loading Impacts				
<ul style="list-style-type: none"> • Potential removal of urban runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals, e-coli, other pathogens) • Potential reduction of stormwater flows 				
Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce stormwater concentration by 15% and direct runoff from 30% to 25% for average year • Reduce stormwater concentration by 20% and direct runoff from 30% to 25% for peak event • Reduce stormwater concentration by 15% and no change to base flow for low event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	20 - 30%*	20 - 30%*	20 - 30%*
Peak	Current % Contribution	50 - 60%	20 - 25%	70 - 80%
	Source Reduction	30 - 40%*	30 - 40%*	30 - 40%*
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	15 - 25%*	15 - 25%*	15 - 25%*

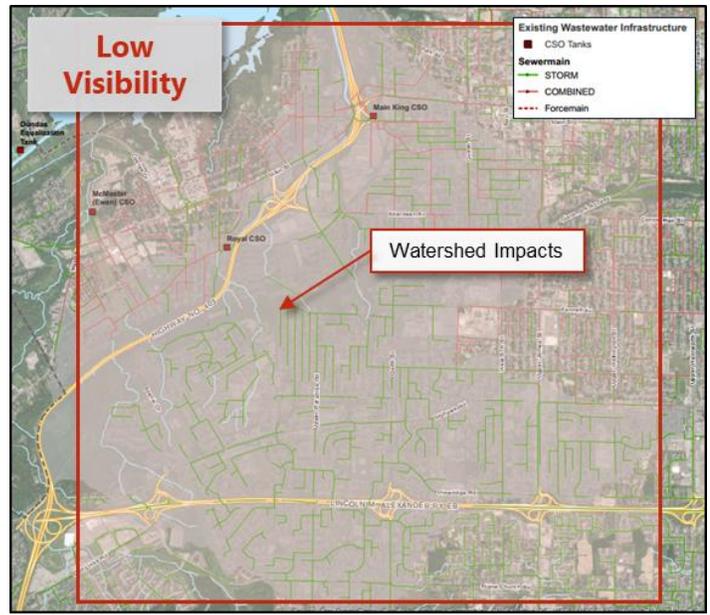
*Reduction assumptions are a high-level estimate and will depend on level of uptake or how widespread the measures are implemented

25A) Enhanced Salt Management – Highway 403	
<ul style="list-style-type: none"> Enhance salt management plan for Highway 403 Manage salt at stormwater collection points along corridor 	
Cost	\$1-\$5 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	MTO
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts	
<ul style="list-style-type: none"> Potential removal of highway runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals) 	
Pie Chart Contribution	Highway 403
Pie Chart Contribution	<ul style="list-style-type: none"> N/A: Some increased ability to assimilate nutrients

25B) Enhanced Salt Management – City Roads

- Enhance City's salt management plan for City Roads
- Manage salt at stormwater collection points along City roads



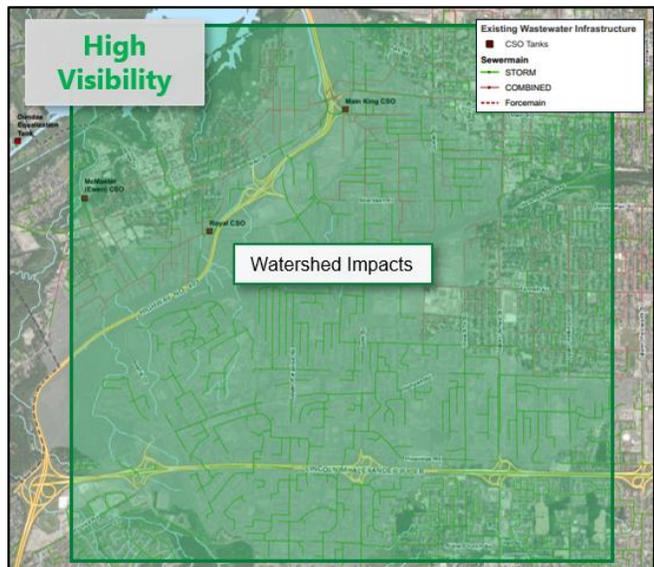
Cost	\$5-\$10 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Potential removal of urban runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals, e-coli, other pathogens)

Pie Chart Contribution	Urban Stormwater System
Pie Chart Contribution	N/A: Some increased ability to assimilate nutrients

26) Redevelopment Sites SWM Policy	
<ul style="list-style-type: none"> • Policies for BMP's including LID for redevelopment sites in City • Opportunity for large stormwater reduction/treatment on redevelopment sites to comply with new stormwater policy 	
Cost	Self-Funding
Timing	Long-Term (>10 years)
Implementation	Moderate
Capital	City, Private
Maintenance	Private
Type	Mitigative



Nutrient Loading Impacts				
<ul style="list-style-type: none"> • Potential removal of urban runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals, e-coli, other pathogens) • Potential reduction of stormwater flows 				
Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce stormwater concentration by 10% and reduce direct runoff from 30% to 28% for average year and peak event • Reduce stormwater concentration by 10% and no change to base flow for low event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	10 – 20%*	10 – 20%*	10 – 20%*
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	10 – 20%*	10 – 20%*	10 – 20%*
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<10%*	<10%*	<10%*

*Reduction assumptions are a high-level estimate and will depend on level of uptake or how widespread the measures are implemented

27) Highway 403 Water Quality Improvements

- Treat highway runoff at collection points along corridor before it enters Chedoke Creek
- Install stormwater management devices such as oil-grit separators at stormwater outfalls

Cost	\$1-\$5 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	MTO
Maintenance	MTO
Type	Mitigative

Nutrient Loading Impacts

- Potential removal of highway runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals)

Pie Chart Contribution	Highway 403			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce TSS concentration by 30% for average year and low event • Reduce TSS concentration by 20% for peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	10 - 15%	<1%
	Source Reduction	0%	0%	20 - 30%
Peak	Current % Contribution	<2%	<5%	<1%
	Source Reduction	0%	0%	10 - 20%
Low	Current % Contribution	<5%	5 - 10%	<5%
	Source Reduction	0%	0%	20 - 30%

28) Inlet Controls in Combined Sewer Areas

- Install inlet control devices in combined sewer system
- Restricts the amount of stormwater that enters system, reducing the potential of CSO overflows
- Requires evaluation of major system (overland) capacity

Cost	\$5-\$10 M
Timing	Near-Term (5-10 Years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Preventative

Nutrient Loading Impacts

- Reduces contaminants associated with sanitary waste (phosphorus, nitrogen, heavy metals, e-coli, other pathogens) from entering streams

Pie Chart Contribution	CSO			
Reduction Assumptions	<ul style="list-style-type: none"> Assume 30% reduction in overflow volume and 10% increase in nutrient concentration for average year and peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	<5%	<5%	<1%
	Source Reduction	<10%	<10%	<10%
Peak	Current % Contribution	30 – 40%	65 – 75%	15 – 20%
	Source Reduction	10 – 20%	10 – 20%	10 – 20%
Low	Current % Contribution	0%	0%	0%
	Source Reduction	0%	0%	0%

29A) Golf Course – Manage Runoff from the Golf Course

- Improve Golf course water management practices including fertilizers and pesticide use
- Provides treatment prior to runoff entering Chedoke Creek

Cost	\$1-\$5 M
Timing	Short (<5 years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts

- Reduced contaminants associated with golf course catchment runoff (phosphorus, nitrogen, e-coli, other pathogens) from entering stream or sewers

Pie Chart Contribution	Urban Stormwater System			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce nutrient concentration by 40% for golf course catchment for average year, peak event and low event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<2%	<2%	<1%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	<1%	<2%	<1%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<2%	<1%	<1%

29B) Golf Course - Stream Naturalization		
<ul style="list-style-type: none"> Naturalization of channelized portions of creek and introducing native vegetation 		
Cost		\$10-\$25 M
Timing		Near-Term (5-10 Years)
Implementation		Difficult
Capital		City
Maintenance		City
Type		Mitigative

Nutrient Loading Impacts				
<ul style="list-style-type: none"> Reduced TSS loading from entering Lower Chedoke Creek due to lower stream velocities Greater potential of in-stream removal of ammonia and TP due to greater stream metabolism Potential reduction of highway and railway runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals) 				
Pie Chart Contribution	Urban Stormwater System Note: There are also potential nutrient reductions from Highway 403 and Railway & Rail Yard sources.			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce nutrient concentration by 5% for stormwater catchments, highway and railway & rail yard for average year and low event Reduce nutrient concentration by 1% for stormwater catchments, highway and railway & rail yard for peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<5%	<5%	<5%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	<1%	<1%	<1%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<5%	<5%	<5%

29C) Golf Course – Retrofit and Treatment Online	
<ul style="list-style-type: none"> • Provide location for external stormwater treatment on-site at Chedoke Golf Course • Treatment to capture large portion of Upper Chedoke Creek catchments that currently flow through Golf Course • Golf Course has available space for runoff capture 	
Cost	\$10-\$25 M
Timing	Near-Term (5-10 Years)
Implementation	Moderate
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts				
<ul style="list-style-type: none"> • Reduced contaminants associated with golf course runoff (phosphorus, nitrogen, e-coli, other pathogens) from entering stream or sewers • Potential removal of highway and railway runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals) 				
Pie Chart Contribution	Urban Stormwater System Note: There are also potential nutrient reductions from Highway 403 and Railway & Rail Yard sources			
Reduction Assumptions	<ul style="list-style-type: none"> • Reduce nutrient concentration by 10% for stormwater catchments, highway and railway & rail yard for average year and low event • Reduce nutrient concentration by 5% for stormwater catchments, highway and railway & rail yard for peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<10%	<10%	<10%
Peak	Current % Contribution	50 - 70%	20 - 25%	75 - 85%
	Source Reduction	<5%	<5%	<5%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<10%	<10%	<10%

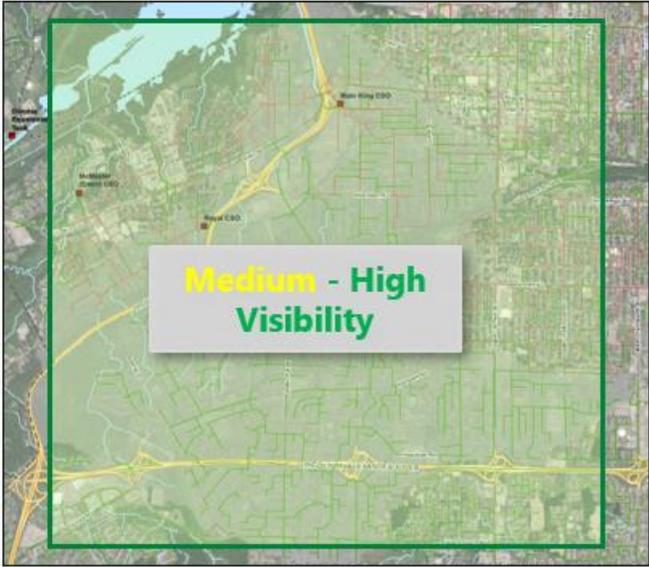
30A) Stream Naturalization – Upper Chedoke	
<ul style="list-style-type: none"> Naturalization of channelized portions of creek in Upper Chedoke Reduce stream velocity and sediment buildup downstream Improves marine habitat along and downstream of the creek Introduces native vegetation 	
Cost	\$5-\$10 M
Timing	Near-Term (5-10 Years)
Implementation	Difficult
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts				
<ul style="list-style-type: none"> Reduced contaminants associated with golf course runoff (phosphorus, nitrogen, e-coli, other pathogens) from entering stream or sewers Potential removal of highway and railway runoff contaminants (phosphorus, nitrogen, TSS, chloride, heavy metals) 				
Pie Chart Contribution	Urban Stormwater System Note: There are also potential nutrient reductions from Highway 403 and Railway & Rail Yard sources			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce nutrient concentration by 5% for stormwater catchments, highway and railway & rail yard for average year and low event Reduce nutrient concentration by 1% for stormwater catchments, highway and railway & rail yard for peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<5%	<5%	<5%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	<1%	<1%	<1%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<5%	<5%	<5%

30B) Stream Naturalization – Mid Chedoke	
<ul style="list-style-type: none"> Naturalization of channelized portions of creek in Mid Chedoke Remove concrete channel and introduce native vegetation for slope stability Reduce stream velocity and sediment buildup downstream Improves marine habitat along and downstream of the creek 	
Cost	\$10-\$25 M
Timing	Near-Term (5-10 Years)
Implementation	Difficult
Capital	City
Maintenance	City
Type	Mitigative

Nutrient Loading Impacts				
<ul style="list-style-type: none"> Reduce nutrient concentration by 5% for stormwater catchments, highway and railway & rail yard for average year and low event Reduce nutrient concentration by 1% for stormwater catchments, highway and railway & rail yard for peak event 				
Pie Chart Contribution	Urban Stormwater System Note: There are also potential nutrient reductions from Highway 403 and Railway & Rail Yard sources			
Reduction Assumptions	<ul style="list-style-type: none"> Reduce nutrient concentration by 10% for stormwater catchments, highway and railway & rail yard for average year and low event Reduce nutrient concentration by 5% for stormwater catchments, highway and railway & rail yard for peak event 			
		Total Phosphorus	Ammonia + Ammonium	Total Suspended Solids
Average	Current % Contribution	>90%	60 - 70%	>95%
	Source Reduction	<5%	<5%	<5%
Peak	Current % Contribution	50 - 60%	20 - 25%	75 - 85%
	Source Reduction	<1%	<1%	<1%
Low	Current % Contribution	>90%	10 - 20%	>90%
	Source Reduction	<5%	<5%	<5%

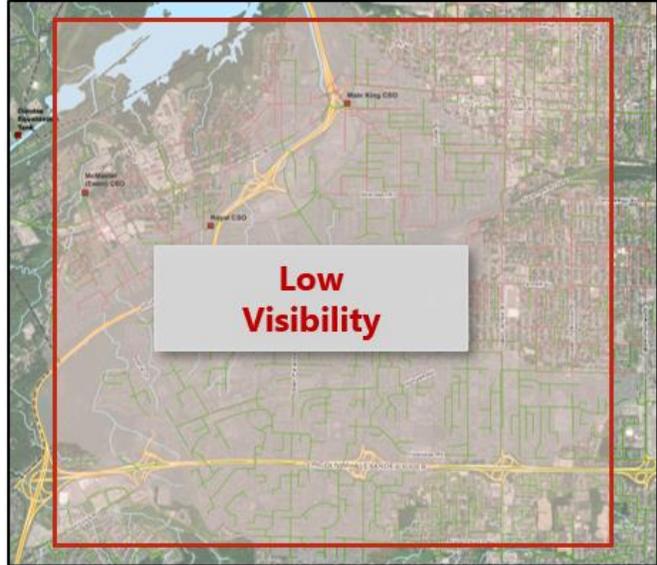
31) Engage Residents, Stakeholders, and City	
<ul style="list-style-type: none"> • Educating citizens about water quality issues and benefits of proposed projects • More transparency in water quality monitoring and management • Encourages resident participation in ongoing public initiatives 	
Cost	<\$1 M
Timing	Short (<5 years)
Implementation	Easy – Moderate
Capital	City
Maintenance	N/A
Type	Preventative



Nutrient Loading Impacts	
<ul style="list-style-type: none"> • Improved public education and support for funding projects • Increased monitoring and reporting of water quality impacts by public and stakeholders 	
Pie Chart Contribution	N/A – No changes

32) Program Management and Monitoring

- Centralized data sharing portal to consist of more sampling and consistent protocols to monitor and track benefits over time
- Program will provide a method to quantify water quality benefits of proposed actions
- Better identify problems and effectiveness of solutions



Cost	\$1-\$5 M
Timing	Long-Term (>10 years)
Implementation	Easy
Capital	City
Maintenance	City
Type	N/A

Nutrient Loading Impacts

- More data will better inform decision making for continued water quality management

Pie Chart Contribution	N/A – No changes
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#		Type	Name	Evaluation	Rationale	Tier	Priority (in tier)	Visibility	Cost	Timing	Implementation	Capital	Maintenance	Type	Impacts
1		Landfill	Direct Clean Water Away from Landfill	Screen Out	Low effectiveness, difficult to implement, high cost			Low	\$5-\$10 M	Near-Term (5-10 Years)	Difficult	City	City	Preventative	Lower Chedoke Creek
2		Landfill	Rehabilitate existing Highway 403 Culvert	Carry Forward	Highly visible, low cost, relatively straight forward	1. Capital: Near-Term	1	High	\$1-\$5 M	Short (<5 years)	Moderate	City, MTO	City	Mitigative	Lower Chedoke Creek
3		Landfill	Expand/Fix Leachate Collection System	Future Consideration	Need to collect more data and reassess before final recommendations	2. Capital: Long-Term	7	Low	\$10-\$25 M	Near-Term (5-10 Years)	More data needed	City	City	Mitigative	Lower Chedoke Creek
4		Landfill	Capping/Barrier	Screen Out	High cost, low effectiveness, difficult to implement			Low	\$50-\$100 M	Long-Term (>10 years)	Difficult	City	City	Preventative	Lower Chedoke Creek
5		Lower Chedoke Creek	Constructed Wetland	Study	Restorative solution, highly visible, limited operations required	2. Capital: Long-Term	1	High	\$10-\$25 M	Near-Term (5-10 Years)	Moderate	RBG, City	RBG, City	Restorative	Cootes Paradise
6		Lower Chedoke Creek	Aeration System	Study	Mitigative solution, medium visibility, moderate implementation time	2. Capital: Long-Term	1	Medium	\$5-\$10 M (RBG estimate)	Short (<5 years)	Moderate	RBG, City	RBG, City	Mitigative	Lower Chedoke Creek
7		Lower Chedoke Creek	Stream Naturalization	Study	Mitigative solution, highly visible, low cost	2. Capital: Long-Term	1	High	\$1-\$5 M	Near-Term (5-10 Years)	Difficult	RBG, City	RBG, City	Mitigative	Lower Chedoke Creek
8		Lower Chedoke Creek	Physical Capping	Screen Out	Low effectiveness, low visibility, restorative solution			Low	\$5-\$10 M (RBG estimate)	Short (<5 years)	Moderate	City	City	Restorative	Lower Chedoke Creek
9		Lower Chedoke Creek	Chemical Inactivation	Screen Out	Low effectiveness, low visibility			Low	\$1-\$5 M	Short (<5 years)	Easy	City	City	Restorative	Lower Chedoke Creek
10	B	Lower Chedoke Creek	Sediment Removal - Targeted Removal	Study	More cost effective than complete removal, medium visibility, quick implementation	2. Capital: Long-Term	1	Medium	\$1-\$5 M	Short (<5 years)	Moderate	City	City	Restorative	Lower Chedoke Creek
10	A	Lower Chedoke Creek	Sediment Removal - Complete Removal	Screen Out	Low effectiveness/ more disruptive, medium visibility, quick implementation			Medium	\$5-\$10 M	Short (<5 years)	Moderate	City	City	Restorative	Lower Chedoke Creek
11		Wastewater	Sewer Separation	Evaluate in Flooding & Drainage MP	Implement recommendations from City's MP study for works within Chedoke Creek	2. Capital: Long-Term	3	Medium	\$50-\$100 M	Long-Term (>10 years)	Difficult	City	City	Preventative	Lower Chedoke Creek Watershed
12		Wastewater	Increase Capacity Downstream of Main-King Combined Sewer Overflow (CSO) tank	Evaluate in W/WW/SW MP	City-wide benefits, Implement recommendations from City's MP study	2. Capital: Long-Term	6	Medium	>\$100 M	Long-Term (>10 years)	Difficult	City	City	Preventative	Lower Chedoke Creek Watershed
13		Wastewater	Increase Capacity of Royal CSO tank to Main-King CSO tank (Highway 403 Trunk Sewer Twinning)	In Progress	Design already in process, mitigative solution	1. Capital: Near-Term	0	Medium	\$25-\$50 M	Near-Term (5-10 Years)	Moderate	City	City	Mitigative	Lower Chedoke Creek Watershed
14		Wastewater	Expand Storage at Main-King CSO tank	Screen Out	Main/King CSO is maximized at current site, high cost, difficult implementation			Medium	>\$100 M	Long-Term (>10 years)	Difficult	City	City	Preventative	Lower Chedoke Creek Watershed
15		Wastewater	Expand Storage Elsewhere in System	Evaluate in W/WW/SW MP	Implement recommendations from City's MP study for within Chedoke	2. Capital: Long-Term	6	Medium	\$25-\$50 M	Long-Term (>10 years)	Moderate	City	City	Mitigative	Lower Chedoke Creek Watershed
16	A	Wastewater	Inspection and Repair - Facilities	Initiate Inspection	No regrets, ensure facilities are in good operating order, low cost	3. O&M/ Program: Near-Term	1	Low	\$1-\$5 M	Short (<5 years)	Moderate	City	City	Mitigative	Entire Chedoke Creek Watershed
16	B	Wastewater	Inspection and Repair - Trunk Sewers	Initiate Inspection	No regrets, ensure no major I&I in trunk sewers parallel to Chedoke Creek, low cost	3. O&M/ Program: Near-Term	1	Medium	\$1-\$5 M	Short (<5 years)	Moderate	City	City	Mitigative	Lower Chedoke Creek Watershed
17		Wastewater	Combined Sewer Overflow (CSO) Monitoring Improvements and Active Management	In Progress	Monitoring and SCADA can better monitor and manage system, already being implemented through other programs	3. O&M/ Program: Near-Term	0	Low	\$5-\$10 M	Short (<5 years)	Moderate	City	City	Mitigative	Lower Chedoke Creek Watershed
18	A	Wastewater	Wet Weather Flow (Inflow & Infiltration) in Separated Sewers - Targeted in Chedoke Watershed	Initiate I&I Monitoring	Good management practices and policies have benefits for local system and growth capacity in addition to supporting Chedoke Creek	4. O&M/ Program: Long-Term	1	Low	\$5-\$10 M	Short (<5 years)	Moderate	City	City	Mitigative	Lower Chedoke Creek Watershed
18	B	Wastewater	Wet Weather Flow (Inflow & Infiltration) in Separated Sewers - Targeted in broader Main-King Catchment	Initiate I&I Monitoring	Good management practices and policies have benefits for local system and growth capacity in addition to supporting Chedoke Creek	4. O&M/ Program: Long-Term	1	Low	\$10-\$25 M	Near-Term (5-10 Years)	Moderate	City	City	Mitigative	Lower Chedoke Creek Watershed
18	C	Wastewater	Wet Weather Flow (Inflow & Infiltration) in Separated Sewers - Policy/Future Infrastructure Projects	Future Policy	Good management practices and policies have benefits for local system and growth capacity in addition to supporting Chedoke Creek	5.Engagement/Policy	5	Low	<\$1 M	Long-Term (>10 years)	Easy	City	City	Mitigative	Entire Chedoke Creek Watershed

#		Type	Name	Evaluation	Rationale	Tier	Priority (in tier)	Visibility	Cost	Timing	Implementation	Capital	Maintenance	Type	Impacts
19		Stormwater	Ainsley Woods Sewer Separation	Carry Forward	Low to moderate visibility, potential for moderate implementation	2. Capital: Long-Term	2	Low	\$1-\$5 M	Short (<5 years)	Moderate	City	City	Mitigative	Upper Chedoke Creek Watershed
20		Stormwater	Cross Connection Program	Carry Forward	Low cost, quick implementation	3. O&M/Program: Near-Term	2	Low	\$1-\$5 M	Short (<5 years)	Moderate	City, Private	City	Mitigative	Upper Chedoke Creek Watershed
21		Stormwater	Retrofits throughout the watershed (end-of-pipe and source)	Study	Retroactive treatment, moderate to high visibility, short to moderate implementation timelines, MTO led for Highway 403 projects	2. Capital: Long-Term	5	Medium-High	\$5-\$50 M	Near-Term (5-10 Years) with Potential for Short Term	Moderate	City, MTO	City, MTO	Mitigative	Entire Chedoke Creek Watershed
22		Stormwater	Retrofit for Road Rehabilitation Projects / Low Impact Development (LID) BMP Policy	Future Policy	Ongoing practice, moderate to high visibility, costs incorporated with other road works	5.Engagement/Policy	3	High	\$5-\$10 M (Costs incorporated with other works)	Long-Term (>10 years)	Easy	City, DC	City, Private	Mitigative	Entire Chedoke Creek Watershed
23	A	Stormwater	City Street Management: Enhanced Street Sweeping	Carry Forward	Low cost, quick implementation	3. O&M/Program: Near-Term	3	Low	\$1-\$5 M	Short (<5 years)	Easy	City	City	Mitigative	Entire Chedoke Creek Watershed
23	B	Stormwater	City Street Management: Improve snow management within Chedoke Creek Watershed	Future Program	No regrets, visible to public, short implementation time, low cost	4. O&M/Program: Long-Term	3	Low	\$1-\$5 M	Short (<5 years)	Easy	City	City	Mitigative	Lower Chedoke Creek
24		Stormwater	LID BMP Policy / Stormwater User Rate	Ongoing	Helps define link between public practices and improvements to Chedoke Creek, self-funding	5.Engagement/Policy	4	High	Self-Funding	Long-Term (>10 years)	Moderate	City, Private	Private	Mitigative	Entire Chedoke Creek Watershed
25	A	Stormwater	Enhanced Salt Management - Highway 403	Future Program	No regrets, short implementation time, low cost	4. O&M/ Program: Long-Term	4	Low	\$1-\$5 M	Short (<5 years)	Moderate	MTO	City	Mitigative	Lower Chedoke Creek
25	B	Stormwater	Enhanced Salt Management - City Roads	Ongoing	No regrets, short implementation time, low cost	4. O&M/ Program: Long-Term	4	Low	\$5-\$10 M	Short (<5 years)	Moderate	City	City	Mitigative	Entire Chedoke Creek Watershed
26		Stormwater	Redevelopment Sites Stormwater Management (SWM) Policy	Future Policy	Ongoing practice, moderate to high visibility, costs incorporated with other works by Others (Developers)	5.Engagement/Policy	2	High	Self-Funding	Long-Term (>10 years)	Moderate	City, Private	Private	Mitigative	Entire Chedoke Creek Watershed
27		Stormwater	Highway 403 Water Quality Improvements (i.e. Oil-Grit Separators or Equivalent)	Carry Forward	Short implementation time and low cost.	1. Capital: Near-Term	3	Low	\$1-\$5 M	Short (<5 years)	Moderate	MTO	MTO	Mitigative	Lower Chedoke Creek
28		Stormwater	Inlet Control in Combined Sewer Areas	Evaluate in Flooding &	Implement recommendations from Flooding and Drainage MP	2. Capital: Long-Term	3	Low	\$5-\$10 M	Near-Term (5-10 Years)	Moderate	City	City	Preventative	Lower Chedoke Creek Watershed
29	B	Mid & Upper Chedoke Creek	Golf Course Treatment - Stream Naturalization	Carry Forward	highly visible, golf course can remain in operation	2. Capital: Long-Term	4	Medium	\$10-\$25 M	Near-Term (5-10 Years)	Difficult	City	City	Mitigative	Entire Chedoke Creek Watershed
29	C	Mid & Upper Chedoke Creek	Golf Course Treatment - Retrofit and Treatment Online	Study	golf course can remain in operation with some potential modifications,	2. Capital: Long-Term	4	Medium	\$10-\$25 M	Near-Term (5-10 Years)	Moderate	City	City	Mitigative	Upper Chedoke Creek Watershed
29	A	Mid & Upper Chedoke Creek	Golf Course Treatment - Manage Runoff Quality from the Golf Course	Carry Forward	Quick implementation, low cost, golf course can remain in operation	1. Capital: Near-Term	2	Low	\$1-\$5 M	Short (<5 years)	Moderate	City	City	Mitigative	Upper Chedoke Creek Watershed
30	A	Mid & Upper Chedoke Creek	Stream Naturalization - Upper Chedoke	Carry Forward	Highly visible	2. Capital: Long-Term	5	Medium	\$5-\$10 M	Near-Term (5-10 Years)	Difficult	City	City	Mitigative	Entire Chedoke Creek Watershed
30	B	Mid & Upper Chedoke Creek	Stream Naturalization - Mid Chedoke	Screen Out	Recently re-lined by MTO, infrastructure constraints			Medium	\$10-\$25 M	Near-Term (5-10 Years)	Difficult	RBG, City	RBG, City	Restorative	Mid Chedoke Creek
31		Engagement	Engage Residents, Stakeholders, and City	Carry Forward	Short implementation time, low cost, high visibility for public	5.Engagement/ Policy	1	Medium-High	<\$1 M	Short (<5 years)	Easy - Moderate	City	N/A	Preventative	N/A
32		Water Quality	Chedoke Creek Water Quality Program Management and Monitoring	Future Program	Will help improve system understanding and support tracking benefits over time. Low cost.	4. O&M/ Program: Long-Term	2	Low	\$1-\$5 M	Long-Term (>10 years)	Easy	City	City	N/A	N/A

APPENDIX E: RECOMMENDATIONS SCOPE OUTLINES

This Appendix provides outlines of the anticipated scope for the projects that require additional studies and fieldwork prior to implementation. The following table outlines the projects, studies and policies/practices included in the Framework.

Table 1: Scope Outlines

Type	Number	Project
Study	1	Lower Chedoke Combined EA Study
	2	Chedoke Watershed Stormwater Retrofits EA Study
	3	Ainsley Woods Sewer Separation EA Study
Project	1	Rehabilitate existing Highway 403 Culvert (Landfill)
	2	Golf Course – Manage Runoff from the Golf Course
	3	Highway 403 Water Quality Improvements
	4	Constructed Wetland
	5	Aeration System
	6	Stream Naturalization
	7	Chedoke Creek Targeted Removal
	8	Inlet Controls in Combined Sewer Areas
	9	Sewer Separation
	10	Golf Course – Stream Naturalization
	11	Golf Course – Retrofit and Treatment Online
	12	Retrofits throughout watershed (End-of-Pipe and source)
	13	Upper Chedoke Creek Stream Naturalization
	14	Expand Storage Elsewhere in System
	15	Increase Capacity Downstream of Main-King CSO tank
	16	Expand/Fix Leachate Collection System
	17	CSO Monitoring Improvements and Active Management
	18	Inspection and Repair
	19	Cross Connection Program
	20	Wet Weather Flow (Inflow & Infiltration) in Separated Sewers
	21	Chedoke Creek Water Quality Program Management and Monitoring
	22	City Street Management – Enhanced Street Sweeping
	23	City Street Management – Improve Snow Management within Chedoke Creek Watershed
	24	Enhanced Salt Management
Policy/Practices	1	Engage Residents, Stakeholders, and City
	2	Redevelopment Sites SWM Policy
	3	Retrofits for Road Rehabilitation / LID BMP Policy
	4	LID BMP Policy / Stormwater User Rate
	5	Wet Weather Flow in Separated Sewers Policy

Study #1: Lower Chedoke Combined EA Study

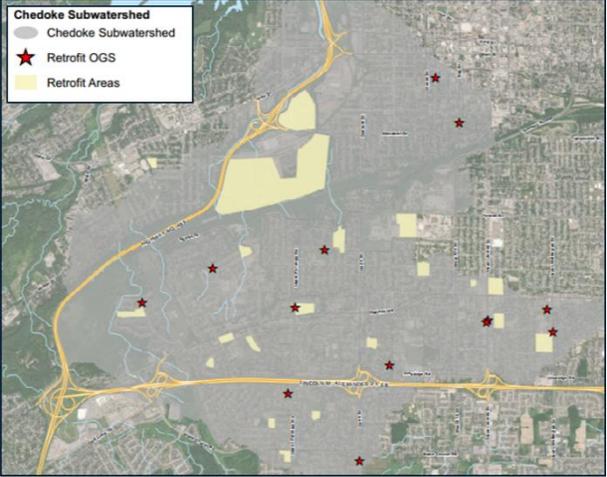
Overview	<p>This study consists of a comprehensive review of the Lower Chedoke Creek to evaluate the benefits, impacts, and life cycle costs of the proposed projects and any other feasible solutions to develop a master plan for this system.</p>	
Relevant Projects	<ul style="list-style-type: none"> Constructed Wetland (Project #4) Aeration System (Project #5) Stream Naturalization (Project #6) Chedoke Creek Targeted Sediment Removal (Project #7) - per Order 	

Scope of Work	<p>The scope of the study will include the following:</p> <ul style="list-style-type: none"> Adopt Class EA process for assessment and selection of preferred solutions Confirm feasibility and effectiveness of proposed projects including Constructed Wetland, Aeration System, Stream Naturalization and Chedoke Creek Targeted Removal (underway per MECP Provincial Order) Confirm other possible projects for the Lower Chedoke Creek Provide final recommendation for Lower Chedoke Creek projects Meet all consultation and engagement requirements of MEA Class EA process Confirm timing, capital budget, and design details of preferred recommendation
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Objectives	<p>The RBG 25 Year Master Plan recommends constructing floating wetlands, installing an aeration system and improved stream naturalization measures within the Lower Chedoke Creek. An EA specific to the Lower Chedoke Creek will expand on and confirm if any or all of these measures should be implemented, including other potential improvement. The level of uncertainty due to the complexity and cost of the projects requires a more in-depth investigation in the form of an EA to confirm and determine various opportunities including those highlighted in the final recommendations from the RBG 25 Year MP.</p>
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	Study	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	-
Timeframe	18 months	-	-	-	-
Projected Completion	2022	-	-	-	-
Cost Estimate	<\$0.5 M	-	-	-	-

Study #2: Chedoke Watershed Stormwater Retrofits EA Study

Overview	<p>This Master planning study consists of determining the feasibility and effectiveness of proposed projects to treat stormwater generated in the Upper Chedoke Creek.</p>		 <p>The map displays the Chedoke Subwatershed boundary in grey. Red stars indicate the locations of Retrofit OGS (On-Street Green Stormwater) systems. Yellow shaded regions represent the Retrofit Areas. The map shows a network of roads and green spaces within the watershed.</p>		
Relevant Projects	<ul style="list-style-type: none"> • Golf Course – Stream Naturalization (Project #10) • Golf Course – Retrofit and Treatment Online (Project #11) • Retrofits throughout watershed (end-of-pipe and source retrofits) (Project #12) • Upper Chedoke Creek Stream Naturalization (Project #13) 				
Scope of Work	<p>The scope of the study will include the following:</p> <ul style="list-style-type: none"> • Adopt Class EA process for assessment and selection of preferred solutions • Develop a long-list of potential retrofits throughout the watershed, including oil/grit separator units, SWM facilities, and Golf Course works • Confirm feasibility and effectiveness of proposed projects in Chedoke Creek Watershed by evaluating benefits, impacts, and life cycle costs • Confirm other possible stormwater management projects • Provide final recommendation and prioritization for stormwater retrofits • Meet all consultation requirements of the Master plan EA project • Confirm timing, capital budget, and design details of preferred recommendation 				
Objectives	<p>The City and numerous legacy studies have identified the lack of stormwater management in the Chedoke Creek watershed. A Master Plan EA study specific to the Upper Chedoke Creek will develop a long-list of potential retrofits and determine which should be implemented. The level of uncertainty due to the complexity and cost of the projects requires a more in-depth investigation in the form of a Master Plan EA to confirm and determine the final recommendations.</p>				
	Study	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	-
Timeframe	24 months	-	-	-	-
Projected Completion	2023	-	-	-	-
Cost Estimate	<\$0.5 M	-	-	-	-

Study #3: Ainsley Woods Sewer Separation

Overview	<p>This project consists of the separation of the creek inputs into the combined sewers that run through Ainsley Woods, specifically at the points just upstream of Blackwood Crescent and at the western extent of Iona Avenue in Mid Chedoke Creek. A Class Environmental Assessment is required to identify an appropriate outlet for the separated flow, including evaluating the benefits, impacts, and life cycle costs of the various feasible solutions.</p>				
Relevant Projects	N/A				
Scope of Work	<p>The scope of the project will include the following:</p> <ul style="list-style-type: none"> Adopt Class EA process for assessment and selection of preferred solution Meet all consultation and engagement requirements of MEA Class EA process Complete fieldwork and inspection required to determine existing site conditions and areas of focus Complete sewer design work & construct new stormwater sewers, if recommended Confirm timing, capital budget, and design details of the project Coordinate with the City of Hamilton 				
Objectives	<p>By reducing the creek inputs into the combined sewer system, the frequency and volume of combined sewer overflows into the creek will be reduced and increased baseflow will reach the creek.</p>				
	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	City	City	City	City	City
Timeframe	12 months	12 months	6 months	12 months	Ongoing
Projected Completion	2022	2023	2023	2025	-
Cost Estimate	<\$0.5 M	<\$0.5 M	<\$0.1 M	<\$4 M	<\$0.1 M

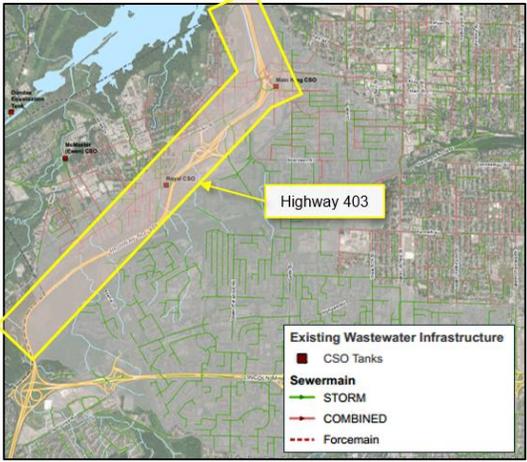
Project #1: Rehabilitate existing Highway 403 Culvert (Landfill)

Overview	Project consists of the work required to complete the condition assessment, design, and repair works at the existing culvert from Highway 403, south of the West Hamilton Landfill and east of the Chedoke Creek.				
Relevant Projects	N/A				
Scope of Work	The scope of the project will include the following: <ul style="list-style-type: none"> Complete fieldwork required to survey linear underground infrastructure and determine condition (CCTV, etc.) Complete design work required to repair culvert Complete repair works based on results of inspection 				
Objectives	Based on discussions with the City, there is leachate that flows through the existing culvert from Highway 403 at the West Hamilton Landfill on dry days, suggesting ongoing maintenance issues. A condition assessment, design, and repair works are needed to determine the current state of the culvert and fix the issues.				
	Study/ Investigation	Design	Approvals	Construction	Operation & Maintenance
Project Lead	City/MTO	City/MTO	City/MTO/HCA	City/MTO	City/MTO
Timeframe	3 months	2 months	3 months	1 month	Ongoing
Projected Completion	2021	2021	2021/2022	2021/2022	-
Cost Estimate	<\$50,000	<\$25,000	<\$25,000	<\$250,000	-

Project #2: Golf Course – Manage Runoff from the Golf Course

Overview	Project consists of determining the best management practices to reduce contaminants (fertilizers and pesticides) and also treat the runoff from the golf course infrastructure including parking lots on-site.				
Relevant Projects	N/A				
Scope of Work	The scope of the project will include the following: <ul style="list-style-type: none"> Complete feasibility review for best practices for managing golf course runoff Improve current practices; Design of preferred strategy Confirm timing, capital budget, and design details of the proposed upgrades Coordinate with the City of Hamilton to implement upgrades 				
Objectives	Based on the outcome of the recommended projects from the Chedoke Creek Water Quality Improvement Framework, improvements can be made at the Chedoke Golf Course to reduce and manage fertilizer and pesticide use and also capture runoff from the golf course hard surfaces. A review specific to the Chedoke Golf Course will expand on possible strategies that can be implemented in the short term to help improve the water quality entering the Mid Chedoke Creek by reducing sediments and contaminants (nutrients in particular) produced as part of the golf course operation.				
	Study/ Investigation	Design	Approvals	Construction	Operation & Maintenance
Project Lead	City	City	City	City	City
Timeframe	3 months	3 months	3 months	3 months	Ongoing
Projected Completion	2021	2021	2022	2022	-
Cost Estimate	<\$50,000	<\$50,000	<\$25,000	<\$500,000	<\$100,000

Project #3: Highway 403 Water Quality Improvements

Overview	This project consists of the review, installation, and maintenance of stormwater management measures at or upstream of the stormwater outfalls along Highway 403 in the Chedoke watershed.		 <p>The map shows the Highway 403 corridor highlighted in yellow. A legend titled 'Existing Wastewater Infrastructure' includes: CSO Tanks (red square), Sewermain (green line), STORM (green line), COMBINED (red line), and Forcemain (dashed red line). The map also shows the Chedoke Creek and surrounding urban areas.</p>		
Relevant Projects	N/A				
Scope of Work	The scope of the project will include the following: <ul style="list-style-type: none"> Review and recommend the best strategy for managing and treating stormwater along the corridor Confirm timing, capital budget, and design details of the proposed upgrades Coordinate with the City of Hamilton and MTO to implement upgrades 				
Objectives	Based on the outcome of the recommended projects from the Chedoke Creek Water Quality Improvement Framework, treatment options can be implemented along Highway 403 to better treat and capture stormwater runoff. A review specific to the MTO corridor will expand on possible strategies that can be implemented in the short term to better manage contaminants present along highways.				
	Study/ Investigation	Design	Approvals	Construction	Operation & Maintenance
Project Lead	MTO	MTO	MTO	MTO	MTO
Timeframe	6 months	3 months	6 months	6 months	Ongoing
Projected Completion	2022	2022	2022/2023	2023	-
Cost Estimate	<\$50,000	<\$100,000	<\$50,000	<\$1 M	<\$200,000

Project #4: Constructed Wetland

Overview	Project consists of the work required to complete a detailed design, installation and required maintenance to construct a Constructed Wetland in the Lower Chedoke Creek outlet to Cootes Paradise.	
Relevant Projects	Subject to outcomes from Lower Chedoke Combined EA Study (Study #1).	
Scope of Work	<p>The scope of the project will be subject to the recommendations of Lower Chedoke Combined EA Study and may include the following:</p> <ul style="list-style-type: none"> Complete fieldwork required to determine existing site conditions (survey, etc.) prior to completing design work Complete design work required for the construction of a Constructed Wetland Confirm timing, capital budget, and design details of the proposed upgrades Coordinate with the City of Hamilton and RBG to implement upgrades 	
Objectives	Project is subject to the outcome of Study #1: Lower Chedoke Combined EA Study. Project to include the design and construction of a constructed wetland to capture sediments and pollutants in Lower Chedoke Creek before entering Cootes Paradise to support water purification and improve the habitat for wildlife and aquatic life.	

	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City/RBG	RBG/City	RBG
Timeframe	-	12 months	6 months	12 months	Ongoing
Projected Completion	-	2024	2024	2025	-
Cost Estimate	-	<\$500,000	\$100,000	<\$2 M	TBD

Project #5: Aeration System

Overview	<p>This project consists of the design, installation and ongoing operation and maintenance plan of an Aeration System along the Lower Chedoke Creek. This may be accomplished through the use of mechanical blowers as identified in the RBG 25 Year Master Plan or may be implemented through other methods, potentially incorporated as part of potential stream naturalization and/or constructed wetlands at the mouth of the creek.</p>	
Relevant Projects	<p>Subject to outcomes from Lower Chedoke Combined EA Study (Study #1).</p>	

Scope of Work	<p>The scope of the project will be subject to the recommendations of Lower Chedoke Combined EA Study and may include the following:</p> <ul style="list-style-type: none"> Complete fieldwork required to determine existing site conditions (survey, etc.) prior to completing design work to determine strategic locations for aerators Complete design work required for the installation of the Aeration System Confirm timing, capital budget, and design details of the proposed upgrades Coordinate with the City of Hamilton, RBG, HCA and MTO to implement upgrades Monitor condition and effectiveness of aerators over time
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Objectives	<p>Project is subject to the outcome of Study #1: Lower Chedoke Combined EA Study. Project to include the Construction of aerator system along the Lower Chedoke Creek to transfer dissolved oxygen to the Chedoke Creek waters to improve the marine habitat along and downstream of the creek.</p>
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City/RBG	City	City
Timeframe	-	18 months	6 months	12 months	20 Years
Projected Completion	-	2024	2025	2026	-
Cost Estimate	-	<\$1.5 M	<\$100,000	<\$5 M	TBD

Project #6: Stream Naturalization

Overview	Project consists of the review, design, installation and maintenance of naturalization measures along the Lower Chedoke Creek.	
Relevant Projects	Subject to the outcomes from Lower Chedoke Combined EA Study (Study #1) as well as the MECP Provincial Officer's Order related to the 2014-2018 spill.	

Scope of Work	<p>The scope of the project will be subject to the recommendations of Lower Chedoke Combined EA Study as well as the MECP Provincial Officer's Order related to the 2014-2018 spill and may include the following:</p> <ul style="list-style-type: none"> Build from the targeted dredge database of field work and construction Complete fieldwork required to determine existing site conditions (survey, etc.) prior to completing design work to determine naturalization measures Complete design work required for the installation of naturalization Confirm timing, capital budget, and design details of the proposed upgrades Coordinate with the City of Hamilton, HCA and RBG to implement upgrades Monitor condition and complete necessary upkeep and maintenance over time
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Objectives	Project is subject to the outcomes of Study #1: Lower Chedoke Combined EA Study as well as the MECP Provincial Officer's Order related to the 2014-2018 spill. The project will include the design and construction of naturalization efforts to reduce erosion and improve stream stability in the Lower Chedoke Creek before entering Cootes Paradise.
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City/RBG	City	City
Timeframe	-	12 months	6 months	12 months	20 Years
Projected Completion	-	2024	2025	2026	-
Cost Estimate	-	<\$200,000	<\$100,000	<\$3 M	TBD

Project #7: Chedoke Creek Targeted Sediment Removal

Overview	Project consists of the assessment, design and implementation of hydraulic dredging to remove contaminated sediments in the Lower Chedoke Creek currently in the planning stages in response to Provincial Officer's Order.	
Relevant Projects	MECP Provincial Officer's Order related to the 2014-2018 spill.	

Scope of Work	The scope of the project is subject to the recommendations the plan being developed in response to the MECP Provincial Officer's Order related to the 2014-2018 spill and is expected to include the following: <ul style="list-style-type: none"> Complete fieldwork required to determine existing site conditions and targeted removal areas (bathymetry, sediment, SAR) Complete design work including dredging process including transportation of dredged material, dewatering and location for final placement of dredged material Confirm timing, capital budget, and design details of the project Coordinate with the City of Hamilton, MECP and other stakeholders through permitting to complete dredging Coordinate with appropriate approval agencies before initiating work
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Objectives	Project is subject to the MECP Provincial Officer's Order related to the 2014-2018 spill. The project will consist of fieldwork, design and permitting for the removal of sediment to remediate the creek. Ultimately, this project will have an immediate effect on the health of the creek but will require the implementation of other projects to prevent contaminants from entering the stream to prolong the benefits of this project.
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	-
Timeframe	-	6 months	6 months	6 months	-
Projected Completion	-	2022	2022/2023	2023/2024	-
Cost Estimate	-	<\$0.5 M	<\$200,000	<\$5 M	-

Project #8: Inlet Controls in Combined Sewer Areas

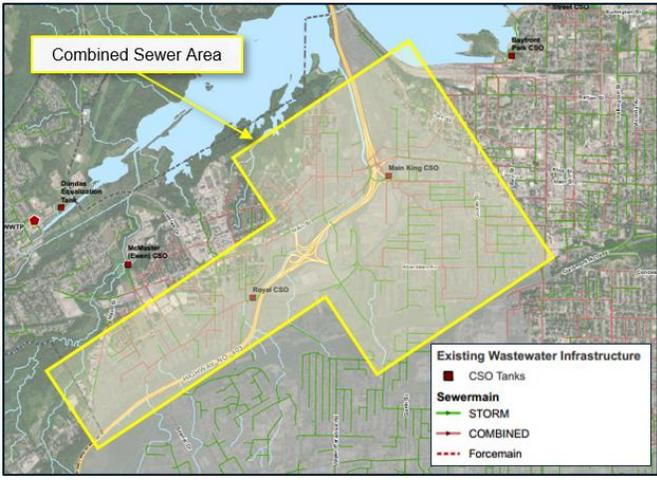
Overview	<p>This project consists of the installation, operation and maintenance of inlet control devices in the combined sewers, north of the Escarpment in the Chedoke Creek watershed.</p>	
Relevant Projects	<p>Flooding and Drainage Master Servicing Study</p>	

Scope of Work	<p>The scope of the project will be subject to the recommendations of the Flooding and Drainage Master Servicing Study but may include:</p> <ul style="list-style-type: none"> Conduct technical assessments for major (overland) system to ensure locations do not exacerbate flood risks Complete fieldwork and inspection required to determine existing site conditions and areas of focus Complete design work including device recommendation, installation procedure and location for devices Complete installation of devices Confirm timing, capital budget, and operation and maintenance procedures and requirements of the project Coordinate with the City of Hamilton
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Objectives	<p>Based on the recommendations made by the on-going Flooding and Drainage Master Servicing Study, inlet controls may be installed in targeted areas within combined sewers. Inlet control devices restrict the amount of stormwater that enters the combined sewers and therefore the amount of potential overloading on CSO tanks.</p>
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	12 months	6 months	12 months	Ongoing
Projected Completion	-	2024	2025	2026	-
Cost Estimate	-	<\$50,000	<\$25,000	<\$500,000	<\$100,000

Project #9: Sewer Separation

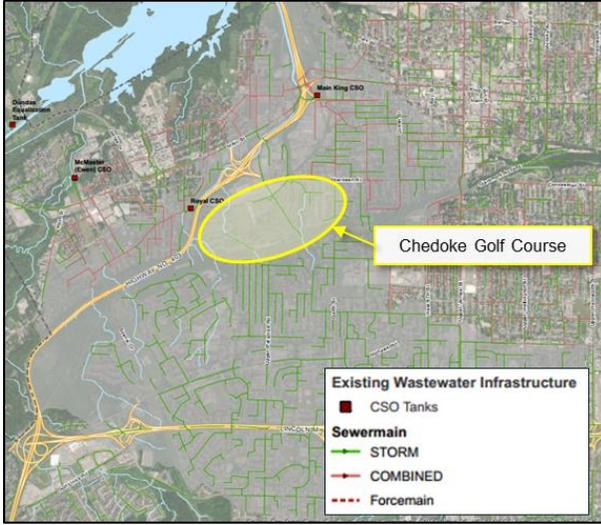
Overview	Project consists of identifying high priority areas in the combined sewer system and constructing new storm sewers to implement separation between stormwater and wastewater.	 <p>The map displays the 'Combined Sewer Area' outlined in yellow. It shows various infrastructure elements: CSO Tanks (red squares), Stormwater Sewers (green lines), Combined Sewers (red lines), and Force Mains (dashed red lines). Specific locations like 'Dundas Park CSO', 'Main King CSO', 'Merrillville CSO', and 'Royal CSO' are marked. A legend in the bottom right corner identifies the symbols for 'Existing Wastewater Infrastructure'.</p>
Relevant Projects	Flooding and Drainage Master Servicing Study	

Scope of Work	The scope of the project will be subject to the recommendations of the Flooding and Drainage Master Servicing Study but may include: <ul style="list-style-type: none"> Complete fieldwork and inspection required to determine existing site conditions and areas of focus Complete sewer design work Construct new stormwater sewers Confirm timing, capital budget, and design details of the project Coordinate with the City of Hamilton
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Objectives	Sewer separation works will be based on recommendations made by the on-going Flooding and Drainage Master Servicing Study. By replacing combined sewers with separated sewers, the frequency and volume of combined sewer overflows into the creek will be reduced.
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	24 months	12 months	5 years	Ongoing
Projected Completion	-	2026	2027	2032	-
Cost Estimate	-	\$5 M	\$1 M	>\$50 M	TBD

Project #10: Golf Course – Stream Naturalization

Overview	This project consists of the review, design, installation and maintenance of naturalization measures of channelized portions of the creek within the golf course.				
Relevant Projects	Chedoke Watershed Stormwater Retrofits EA Study (Study #2)				
Scope of Work	The scope of the project will be subject to the recommendations of the Chedoke Watershed Stormwater Retrofits EA Study but may include: <ul style="list-style-type: none"> Complete fieldwork required to determine existing site conditions (survey, etc.) prior to completing design work Complete design work required for stream naturalization Confirm timing, capital budget, and design details of the proposed upgrades Coordinate with the City of Hamilton and appropriate authorities to implement upgrades 				
Objectives	Project is subject to the outcome of Study #2: Chedoke Watershed Stormwater Retrofits EA Study. The naturalization process will include the use of natural channel design and introducing native vegetation for slope stability.				
	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	12 months	18 months	2 years	Ongoing
Projected Completion	-	2025	2027	2029	-
Cost Estimate	-	<\$250,000	<\$25,000	<\$1 M	TBD

Project #11: Golf Course – Retrofit and Treatment Online

Overview	<p>This project consists of the review, design, construction and operation and maintenance for a stormwater management retrofit for treatment of runoff from the Upper Chedoke Creek, on the Chedoke Golf Course.</p>	
Relevant Projects	<p>Chedoke Watershed Stormwater Retrofits EA Study (Study #2)</p>	

Scope of Work	<p>The scope of the project will be subject to the recommendations of the Chedoke Watershed Stormwater Retrofits EA Study but may include:</p> <ul style="list-style-type: none"> • Complete fieldwork required to determine existing site conditions (survey, etc.) prior to completing design work; coordinate with golf course operations • Complete design work required for recommended retrofits and treatment • Confirm timing, capital budget, and design details of the proposed upgrades • Coordinate with the City of Hamilton and appropriate authorities to implement upgrades
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Objectives	<p>Project is subject to the outcome of Study #2: Chedoke Watershed Stormwater Retrofits EA Study. The installation of the on-line stormwater management retrofit will help improve the water quality entering Mid Chedoke Creek by managing contaminants for lands unable to be treated at source (Upstream of the facility) .</p>
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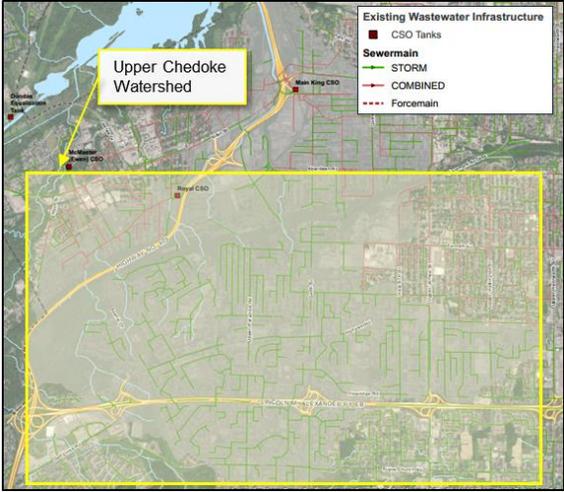
	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	18 months	12 months	2 years	Ongoing
Projected Completion	-	2025	2026	2028	-
Cost Estimate	-	<\$250,000	<\$50,000	<\$1 M	\$1 M

Project #12: Retrofits throughout watershed (End-of-Pipe and Source)

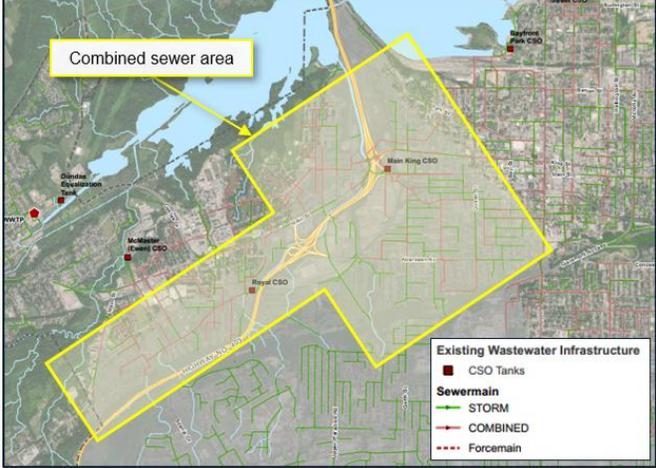
Overview	<p>This project consists of the design and construction of the recommendations from the Master Plan which involved a comprehensive review of the Chedoke Creek watershed to identify existing ponds that can be retrofitted to wet ponds, and areas where there are no stormwater management measures but opportunity to retrofit.</p>				
Relevant Projects	Chedoke Watershed Stormwater Retrofits EA Study (Study #2)				
Scope of Work	<p>The scope of the project will be subject to the recommendations of the Chedoke Watershed Stormwater Retrofits EA Study but may include:</p> <ul style="list-style-type: none"> Complete fieldwork required to determine existing conditions (survey, etc.) prior to completing design work Complete preliminary and detailed design work required for retrofits Coordinate with the City of Hamilton and appropriate authorities (MECP) to implement upgrades 				
Objectives	Project is subject to the outcome of Study #2: Chedoke Watershed Stormwater Retrofits EA Study.				
	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	12 months	6 months	+2 years	Ongoing
Projected Completion	-	2025	2025	+2027	-
Cost Estimate*	-	\$1 M	>\$100,000	\$10 M	\$1 M

*Cost estimate reflective of approximately 5 retrofits and 10 OGS installations

Project #13: Upper Chedoke Creek Stream Naturalization

Overview	This project consists of the review, design, installation and maintenance of naturalization measures in the Upper Chedoke Creek. The naturalization process will include the use of natural channel design and introducing native vegetation for slope stability.				
Relevant Projects	Chedoke Watershed Stormwater Retrofits EA Study (Study #2)				
Scope of Work	The scope of the project will be subject to the recommendations of the Chedoke Watershed Stormwater Retrofits EA Study but may include: <ul style="list-style-type: none"> Complete fieldwork required to determine existing site conditions (survey, etc.) prior to completing design work to determine naturalization measures Complete design work required for the installation of naturalization Confirm timing, capital budget, and design details of the proposed upgrades Coordinate with the City of Hamilton and HCA to implement upgrades Monitor condition and complete necessary upkeep and maintenance over time 				
Objectives	Project is subject to the outcome of Study #2: Chedoke Watershed Stormwater Retrofits EA Study. The naturalization process will include the use of natural channel design and introducing native vegetation for slope stability.				
	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	12 months	6 months	+2 years	20 Years
Projected Completion	-	2025	2025	+2027	-
Cost Estimate*	-	<\$500,000	>\$100,000	<\$3 M	TBD

Project #14: Expand Storage Elsewhere in System

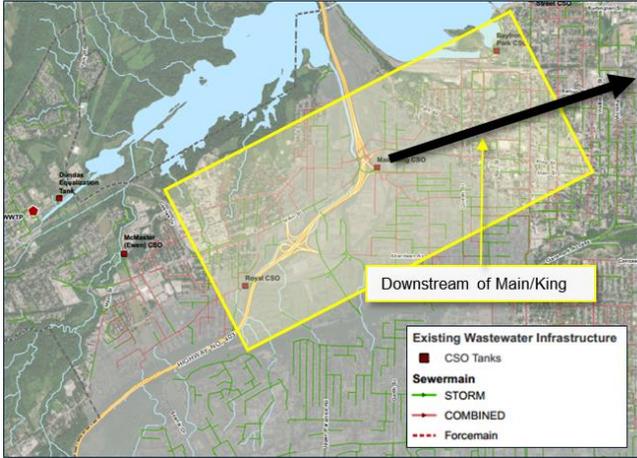
Overview	Project consists of a comprehensive review of the City's wastewater and combined sewer systems to identify if there are any areas to expand storage for overflow events. This project includes the design, construction, operations and maintenance of any new storage facilities.	
Relevant Projects	Water, Wastewater, and Stormwater Master Plan	

Scope of Work	The scope of the project will be subject to the recommendations of the Water, Wastewater, and Stormwater Master Plan but may include: <ul style="list-style-type: none"> Complete fieldwork and inspection required to determine existing site conditions and areas of focus Complete storage design work Construct new storage facilities Confirm timing, capital budget, and design details of the project Coordinate with the City of Hamilton
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Objectives	Project is subject to the outcome of the City's ongoing Water/Wastewater/Stormwater Master Plan with the goal of addressing system capacity to support existing and future users.
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	2 Years	12 months	2 years	25 years
Projected Completion	-	2025	2026	2028	-
Cost Estimate	-	\$1.5 M	\$100K	\$10 M	\$2 M

Project #15: Increase Capacity Downstream of Main-King CSO tank

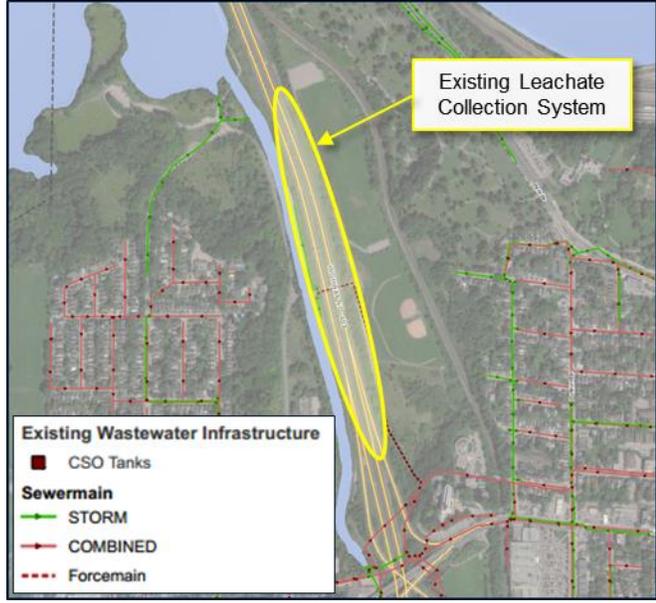
Overview	<p>Project consists of the review of the City's wastewater system downstream of the Main-King CSO tank to determine the benefits and feasibility of adding additional wastewater Capacity. Following the review, the project includes the design, construction, operations and maintenance of the new infrastructure which may consist of new sewers or new facilities.</p>	
Relevant Projects	Water, Wastewater, and Stormwater Master Plan	

Scope of Work	<p>The scope of the project will include the following:</p> <ul style="list-style-type: none"> Complete fieldwork and inspection required to determine existing site conditions and areas of focus Complete sewer and storage design work Construct new sewers and storage facilities Confirm timing, capital budget, and design details of the project Coordinate with the City of Hamilton
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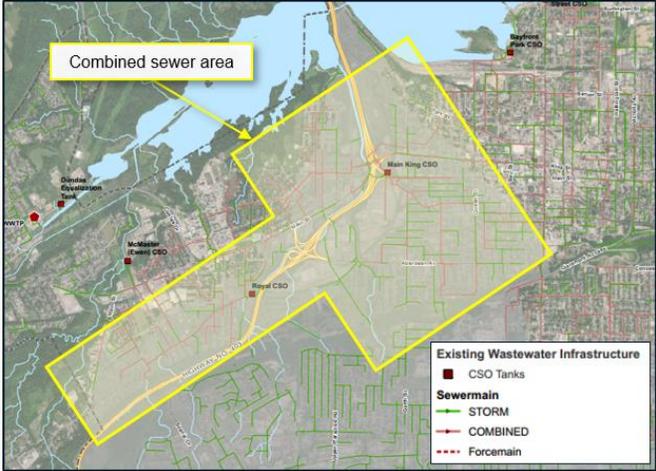
Objectives	Project is subject to the outcome of the City's ongoing Water/Wastewater/Stormwater Master Plan with the goal of addressing system capacity to support existing and future users.
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	-	City	City	City	City
Timeframe	-	3 years	1 years	5 years	Ongoing
Projected Completion	-	2028	2025	Before 2040	-
Cost Estimate	-	\$5 M	\$1 M	\$85 M	-

Project #16: Expand/Fix Leachate Collection System

Overview	Project consists of the continuous water quality and leachate collection system monitoring to determine the effectiveness of the LCS. The collection and analysis of data will determine if further upgrades need to be made to the system.		 <p>The map displays the existing wastewater infrastructure. A yellow oval highlights the 'Existing Leachate Collection System' along a waterway. A legend titled 'Existing Wastewater Infrastructure' includes: CSO Tanks (red square), Sewermain (green line for STORM, red line for COMBINED, and dashed red line for Forcemain).</p>		
Relevant Projects	N/A				
Scope of Work	The scope of the project will include the following: <ul style="list-style-type: none"> Complete water quality monitoring and leachate collection system monitoring Complete data review to determine effectiveness of LCS Provide recommendation for future upgrades at the LCS 				
Objectives	Project is subject to the outcome of additional data collection at the existing Leachate Collection System. Final recommendations related to further upgrades aren't suggested until sufficient data has been collected and analyzed.				
	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	City	-	-	-	-
Timeframe	5 years	-	-	-	-
Projected Completion	Mid 2026	-	-	-	-
Cost Estimate	<\$100,000	-	-	-	-

Project #17: CSO Monitoring Improvements and Active Management

Overview	Project consists of wastewater system monitoring through the City's SCADA system at CSO facilities to flag facilities that require further inspection.				
Relevant Projects	N/A				
Scope of Work	The scope of the project will include the following: <ul style="list-style-type: none"> Expanded monitoring at CSO facilities as part of the City's ongoing program Monitor unmonitored CSO facilities Identify any additional strategic locations for monitoring Monitor combined and wastewater flows within the conveyance system and at facilities Identify any problem areas that require further inspection 				
Objectives	Enhanced monitoring and active management will ensure that future failures are eliminated or recognized and resolved quickly. Future repairs will be the outcome of this monitoring program.				
	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	City	City	-	City	-
Timeframe	6 Months	6 Months	-	6 Months	-
Projected Completion	2021	2022	-	2022	-
Cost Estimate	<\$100,000	<\$250,000	-	<\$1M	-

Project #18: Inspection and Repair

Overview	<p>This project consists of the inspection, design, repair and maintenance of trunk sewers and facilities along the Chedoke Creek.</p>	<p>The map displays the existing wastewater infrastructure in a city area. A legend in the top-left corner identifies symbols for Wastewater Treatment Plants (WWTP), CSO Tanks, Sewermain (SANITARY, STORM, COMBINED), Inspection & Possible Repair (Sewers, Facilities), and Facilities. A yellow circle highlights a specific area along Chedoke Creek, with a callout box pointing to it that reads 'Sewers and facilities along Chedoke Creek'. Other labeled locations include McMaster (Ewen) CSO and Royce CSO.</p>
Relevant Projects	<ul style="list-style-type: none"> Inspection and Repair – Facilities Inspection and Repair – Trunk Sewers 	

Scope of Work	<p>The scope of the project will include the following:</p> <ul style="list-style-type: none"> Complete fieldwork required to survey linear infrastructure and storage facilities along Chedoke Creek to determine condition (CCTV, etc.) Identify areas of inflow and infiltration coming from the creek or sewers to provide recommendations for repairs if necessary Summarize data to support future repair projects
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Objectives	<p>Inspection should be implemented for trunk sewers and storage facilities along the Chedoke Creek to identify any areas of significant inflow. Imitate design and repair if necessary, based on findings.</p>
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	City	City	City	City	City
Timeframe	12 months	6 months	3 months	12 months	Ongoing
Projected Completion	2022	2022	2023	2024	--
Cost Estimate	<\$250,000	<\$500,000	<\$50,000	<\$2 M	

Project #19: Cross Connection Program

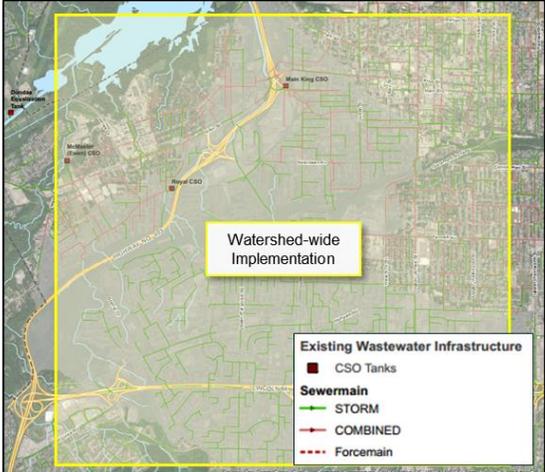
Overview	<p>Project consists of the inspection and construction required to identify cross connections in the Chedoke Creek watershed and separate sewers.</p>	
Relevant Projects	N/A	

Scope of Work	<p>The scope of the project will include the following:</p> <ul style="list-style-type: none"> Complete fieldwork and inspection required to flag cross connections in the separated sewer system, south of the Escarpment in the Chedoke Creek watershed Complete sewer separation for identified cross connections Coordinate with the City of Hamilton
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Objectives	<p>The City has an ongoing program which is prioritizing cross connection identification and separation in the Chedoke Creek watershed. The separation of any cross connections will eliminate wastewater that is currently entering the stormwater system.</p>
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	Study / Investigation	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	City
Timeframe	12 months	-	-	-	3 years
Projected Completion	2022	-	-	-	2025
Cost Estimate	<\$0.5 M	-	-	-	<\$2 M

Project #20: Wet Weather Flow (Inflow & Infiltration) in Separated Sewers

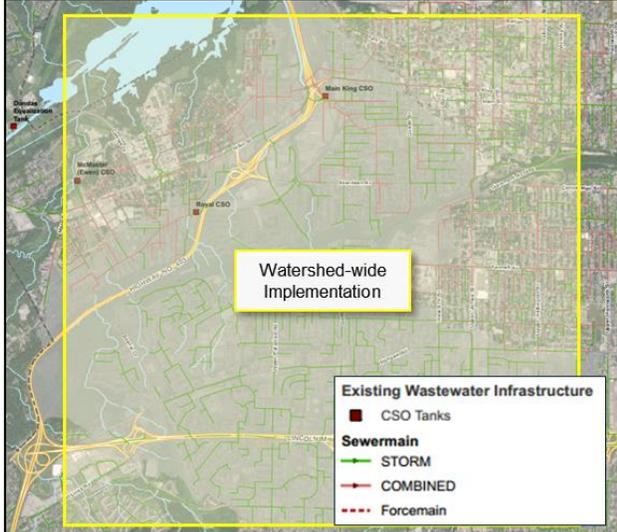
Overview	This project consists of the inspection, identification, recommendation and repair of separated sewers in the City.	
Relevant Projects	<ul style="list-style-type: none"> Wet Weather Flow in Separated Sewers – Targeted in Chedoke Watershed Wet Weather Flow in Separated Sewers – Targeted in broader Main-King catchment 	

Scope of work	<p>The scope of the project will include the following:</p> <ul style="list-style-type: none"> Complete fieldwork required to survey linear infrastructure to determine areas of inflow and infiltration (CCTV, flow monitoring, street level surveys, etc.) Provide recommendations for remediation to address sources of inflow and infiltration including sewer repairs, service lateral repair, foundation and downspout disconnection, etc. Provide final report with findings and recommendations Implement investigation recommendations Coordinate with the City of Hamilton
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Objectives	<p>An I&I program should be targeted in the Chedoke Creek watershed and Main-King catchment to reduce the frequency and magnitude of overflows by reducing any wet weather flows that are currently entering sewers and utilizing existing sewer capacity. Design and repair to be initiated based on recommendations of study.</p>
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	Study / Investigation	Design	Approvals	Construction	Operations & Maintenance
Project Lead	City	City	City	City	City
Timeframe	1 year (Per area)	6 months (Per area)	6 months (Per area)	1 year (Per area)	Ongoing
Projected Completion	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Cost Estimate	-	-	-	-	-

Project #21: Chedoke Creek Water Quality Program Management and Monitoring

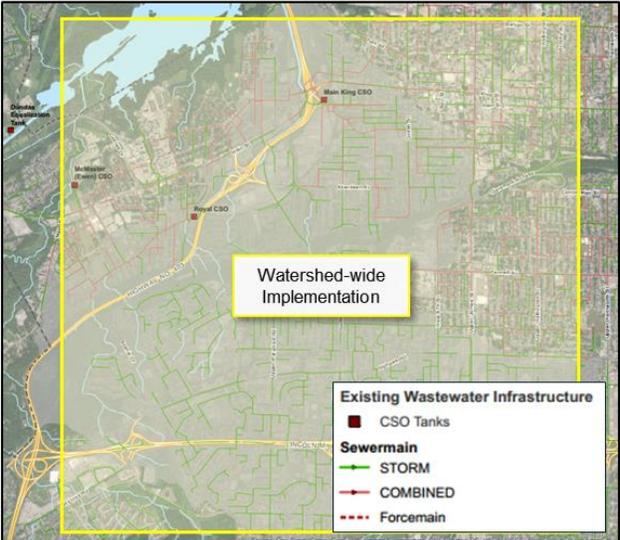
Overview	Project consists of developing a centralized and coordinated data sharing portal for ongoing water sampling to guide the use of consistent protocols.	
Relevant Projects	N/A	

Scope of Work	The scope of the project will include the following: <ul style="list-style-type: none"> Monitor water quality throughout the Chedoke Creek watershed Analyze data to set baseline for Chedoke Creek water quality at multiple locations throughout watershed
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Objectives	The absence of a coordinate, continuous, and widely accessible monitoring program and data reduces the accuracy of analytical tools and hampers informed decision making. Consist of enhancing and expanding existing monitoring activities and establishing measures to support the coordinated management of the data collection and distribution of information. This may be achieved through the exiting City and HCA programs, or reorganized under a new program specific to Chedoke Creek
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	Study	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	City
Timeframe	6 months	-	-	-	Ongoing
Projected Completion	2022	-	-	-	Ongoing
Cost Estimate	\$100,000	-	-	-	\$250,000/Year

Project #22: City Street Management – Enhanced Street Sweeping

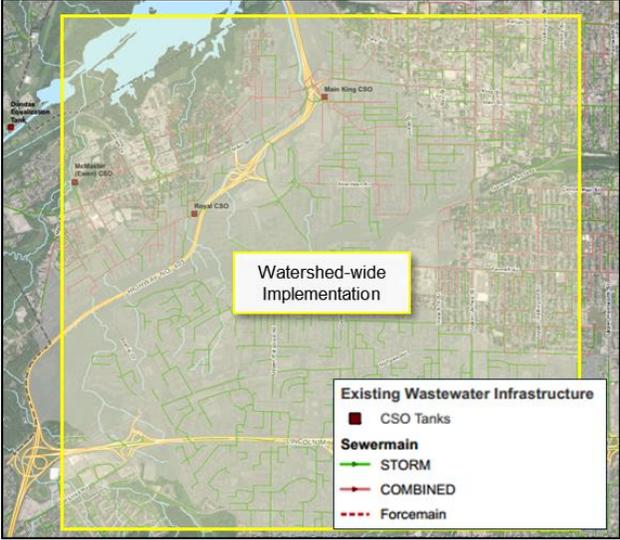
Overview	<p>This project consists of developing and implementing an enhanced street sweeping program through the Chedoke Creek watershed.</p>	
Relevant Projects	N/A	

Scope of Work	<p>The scope of the project will include the following:</p> <ul style="list-style-type: none"> Develop enhanced street sweeping program Implement street sweeping program Ongoing City of Hamilton management to implement street sweeping
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Objectives	<p>Street sweeping improves water quality by removing pollutants that are transferred through urban runoff. Additionally, sweeping in the spring will have the increased benefits of cleaning any debris that built up over the winter months.</p>
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	Study / Investigation	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	City
Timeframe	6 months	-	-	-	Ongoing
Projected Completion	2023	-	-	-	-
Cost Estimate	<\$25,000	-	-	-	<\$500,000

Project #23: City Street Management – Improve Snow Management within Chedoke Creek Watershed

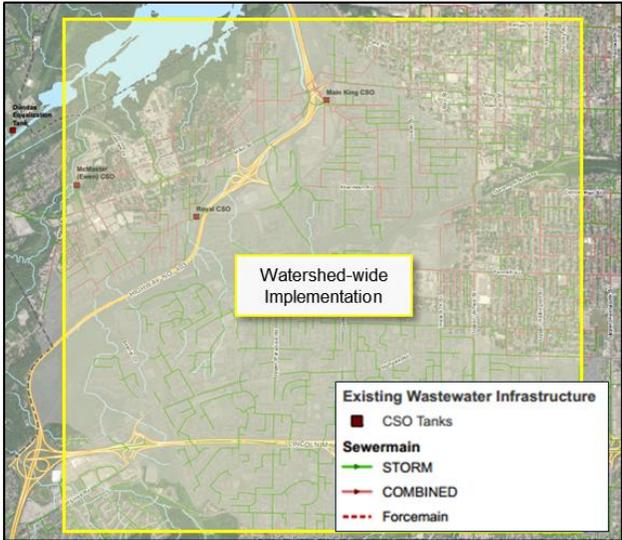
Overview	<p>This project consists of developing and implementing an enhanced program for improved snow management within the Chedoke Creek watershed. This will include reviewing existing and potential snow disposal sites that would reduce the direct snow melt into urban streams.</p>	
Relevant Projects	N/A	

Scope of work	<p>The scope of the study will include the following:</p> <ul style="list-style-type: none"> Review appropriate City management policies, and programs implemented throughout other municipalities Develop program for snow management in Chedoke Creek watershed City to implement ongoing program
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Objectives	<p>The better management of snow within the Chedoke Creek watershed will benefit the Chedoke Creek by reducing pollutants that are transferred to the creek through the urban runoff.</p>
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	Study	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	City
Timeframe	6 months	-	-	-	Ongoing
Projected Completion	2023	-	-	-	Ongoing
Cost Estimate	<\$50,000	-	-	-	-

Project #24: Enhanced Salt Management

Overview	<p>This project consists of developing and implementing an enhanced program for improved salt management within the Chedoke Creek watershed. This program should be reviewed and updated as necessary to ensure the best policies are in place when dealing with the transportation, storage, and use of salt.</p>				
Relevant Projects	<ul style="list-style-type: none"> Enhanced Salt Management – City Enhanced Salt Management – Highway 403 				
Scope of Work	<p>The scope of the project will include the following:</p> <ul style="list-style-type: none"> Review current City and MTO management policies, and programs implemented throughout other municipalities Develop enhanced program for salt management along roads Chedoke Creek Watershed and along Highway 403 City to implement ongoing program 				
Objectives	<p>The better management of salt within the Chedoke Creek watershed will benefit the Chedoke Creek by reducing pollutants that are transferred to the creek through the urban runoff.</p>				
	Study	Design	Approvals	Construction	Implementation
Project Lead	City/MTO	-	-	-	City/MTO
Timeframe	6 months	-	-	-	Ongoing
Projected Completion	2023	-	-	-	Ongoing
Cost Estimate	<50,000	-	-	-	-

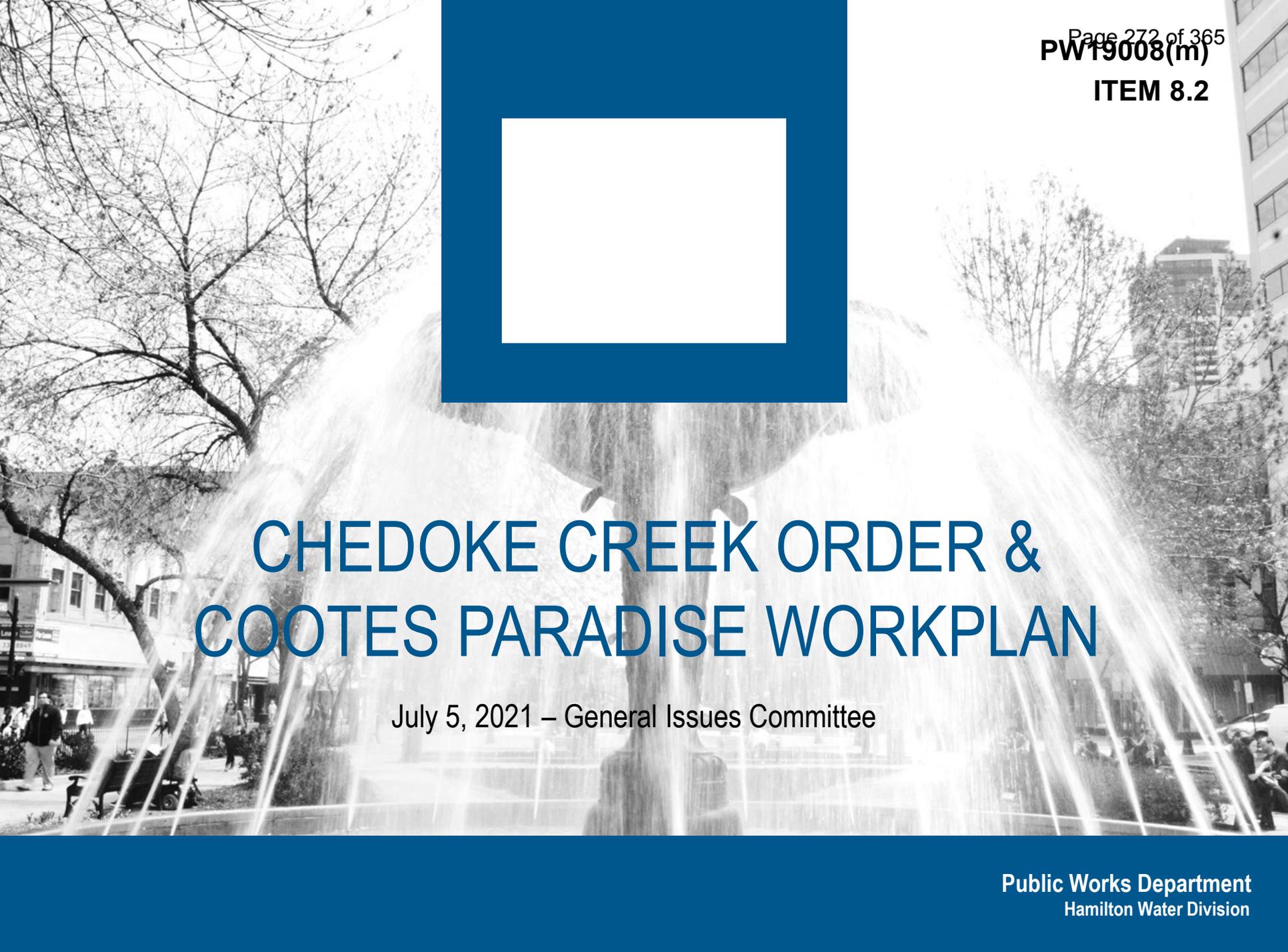
Policy #1: Engage Residents, Stakeholders, and City					
Overview	Project consists of developing a program for engagement with residents, stakeholders, and the City that should be initiated immediately building from the engagement in the Framework study.				
Relevant Projects	<ul style="list-style-type: none"> N/A 				
Scope of work	The scope of the program will include the following: <ul style="list-style-type: none"> Develop communication plans to update the residents, stakeholders and City on all initiatives being taken as part of the Chedoke Creek Water Quality Improvement Framework Form a Chedoke Creek Advisory Committee or equivalent that will meet semi-annually or annually to review items related to this study 				
Objectives	Based on recommendations from the Chedoke Creek Water Quality Improvement Strategy, engagement with residents, stakeholders and the City should be initiated immediately to support the implementation of the framework recommendations.				
	Study	Design	Approvals	Construction	Implementation
Project Lead	-	-	-	-	City
Timeframe	-	-	-	-	6 months
Projected Completion	-	-	-	-	Late 2021
Cost Estimate	-	-	-	-	\$25,000/Year

Policy #2: Redevelopment Sites SWM Policy					
Overview	Project consists of developing an updated redevelopment Sites SWM Policy for the Chedoke Watershed. The policy will contain prescription of Best Management Practices (BMPs) including Low Impact Development measures for redevelopment sites within the City.				
Relevant Projects	<ul style="list-style-type: none"> City Stormwater and Development Guidelines 				
Scope of work	The scope of the policy will include the following: <ul style="list-style-type: none"> Review appropriate Conservation Authority and existing City stormwater management policies Develop updated policy for future City redevelopment sites to improve existing stormwater management 				
Objectives	Based on recommendations from the Chedoke Creek Water Quality Improvement Framework and communication with stakeholders, a Stormwater Management Policy for Redevelopment Sites in the City should be implemented. It is important to develop a policy that is consistent with Conservation Authority and City recommendations.				
	Study	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	-
Timeframe	6 months	-	-	-	-
Projected Completion	2021	-	-	-	-
Cost Estimate	<\$25,000	-	-	-	-

Policy #3: Retrofits for Road Rehabilitation / LID BMP Policy					
Overview	Project consists of developing a stormwater management policy to be implemented through all future road rehabilitation projects.				
Relevant Projects	<ul style="list-style-type: none"> City Stormwater and Development Guidelines N/A 				
Scope of work	The scope of the policy will include the following: <ul style="list-style-type: none"> Review appropriate Conservation Authority and existing City stormwater management policies Develop policy to prepare for future City road redevelopment sites to improve existing stormwater management 				
Objectives	Based on recommendations from the Chedoke Creek Water Quality Improvement Framework and communication with stakeholders, a Stormwater Management Policy for road rehabilitation sites in the City should be implemented. It is important to develop a policy that is inline with Conservation Authority and City recommendations.				
	Study	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	City
Timeframe	6 months	-	-	-	6 months
Projected Completion	2021	-	-	-	2021
Cost Estimate	<\$25,000	-	-	-	5 – 10% premium on road jobs

Policy #4: LID BMP Policy / Stormwater User Rate					
Overview	Project consists of enhancing and prioritizing the City's existing LID Policy / Stormwater User Rate.				
Relevant Projects	<ul style="list-style-type: none"> N/A 				
Scope of work	The scope of the policy will include the following: <ul style="list-style-type: none"> Review appropriate Conservation Authority and existing City stormwater user rate Update City's Stormwater User Rate policy to improve existing stormwater management Develop LID BMP Policy to be incorporated into the City's Stormwater User Rate 				
Objectives	Based on recommendations from the Chedoke Creek Water Quality Improvement Framework and communication with stakeholders, the City's existing LID Policy / Stormwater User Rate should be re-prioritized. This incentive program will encourage private property owners to manage stormwater from private properties and implement additional BMP's.				
	Study	Design	Approvals	Construction	Implementation
Project Lead	City	-	-	-	City
Timeframe	12 months	-	-	-	18 months
Projected Completion	2022	-	-	-	2022
Cost Estimate	<\$500,000	-	-	-	<\$500,000

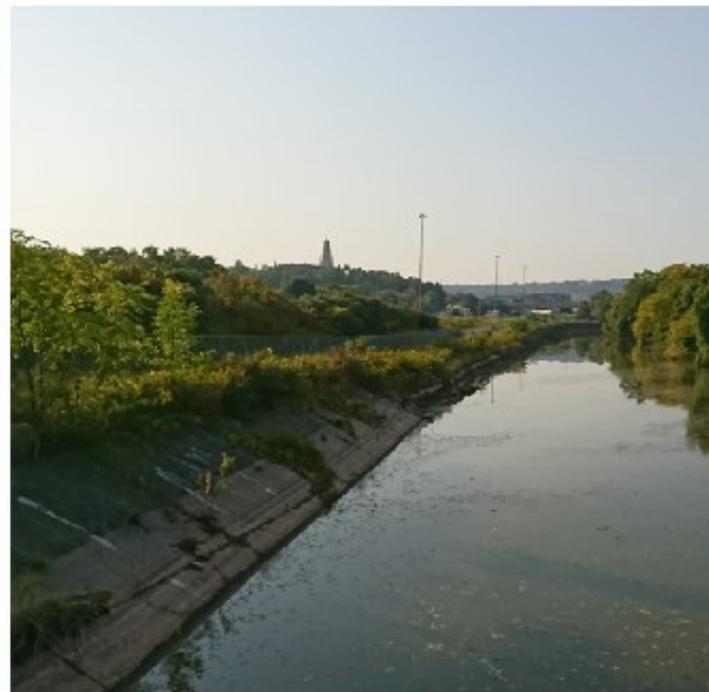
Policy #5: Wet Weather Flow in Separated Sewers Policy					
Overview	Project consists of the development of a Wet Weather Flow policy that will be implemented through new development throughout the City.				
Relevant Projects	<ul style="list-style-type: none"> City Stormwater and Development Guidelines N/A 				
Scope of work	The scope of the policy will include the following: <ul style="list-style-type: none"> Review appropriate Conservation Authority and existing New Development policies Update City's policy to eliminate wet weather flow allowance in new construction 				
Objectives	Based on recommendations from the Chedoke Creek Water Quality Improvement Framework and communication with stakeholders, a Wet Weather Flow in Separated Sewers Policy should be implemented. The policy will include more stringent criteria related to wet weather flow allowance in new developments to ensure that all future construction practices address wet weather flows.				
	Study	Design	Approvals	Construction	Implementation
Project Lead	-	-	-	-	City
Timeframe	-	-	-	-	12 months
Projected Completion	-	-	-	-	2022
Cost Estimate	-	-	-	-	<\$50,000



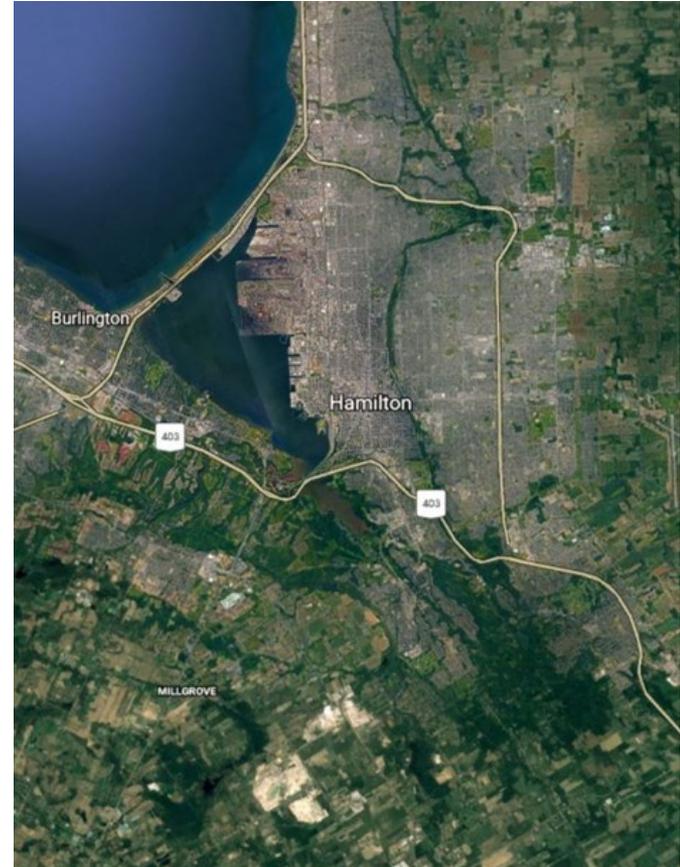
CHEDOKE CREEK ORDER & COOTES PARADISE WORKPLAN

July 5, 2021 – General Issues Committee

- Overview of the MECP Order
- Chedoke Creek Work Plan
- Cootes Paradise Work Plan
- Chedoke Creek Water Quality Framework Study
- Questions



- The City was served a Ministry of the Environment, Conservation & Parks (MECP) Order on December 4, 2020
- The order was divided into two main components
 1. Chedoke Creek – targeted dredging
 2. Cootes Paradise - offsetting impacts of nutrient loadings



- MECP approved the Chedoke Creek Work Plan on June 11, 2021
- Approved Work Plan indicates targeted dredging will not commence until Q3 2022
- Permits and approvals are on the project critical path
- Project at 30% design stage with MECP consultation underway

**DESIGN, PERMITTING AND CONSTRUCTION OF:
CHEDOKE CREEK REMEDIATION DREDGING PROJECT
CITY OF HAMILTON, ONTARIO CANADA**

LOCATED IN:
LATITUDE: 43.26833°N LONGITUDE: -79.89333°W
HAMILTON, ONTARIO



VICINITY MAP

Sheet Number	Sheet Title
D-001	COVER
D-001	EXISTING PLAN VIEW
D-101	SOUTH CHEDOKE CREEK EXISTING PLAN VIEW
D-102	NORTH CHEDOKE CREEK EXISTING PLAN VIEW
D-104	EMBANKMENT EXISTING PLAN VIEW
D-105	PROPOSED DREDGE MATERIAL HANDLING PLAN
D-201	CROSS-SECTION (SOUTH SIDE OF CREEK)
D-202	CROSS-SECTION (NORTH SIDE OF CREEK)
D-301	BANKED CHANNELS DETAIL AT MACKAY AVE
D-302	BANKED CHANNELS DETAIL AT PRINCESS POINT PARK
D-303	HYPOTHETICAL DREDGE OPERATION TYPICAL DETAILS
D-304	EROSION CONTROL DETAILS

LEGEND

REDEMATION DREDGING LIMITS



SITE LOCATION
ONTARIO

SCALE: 1:500

DATE: 2021-08-10

AL DRAWN: []




Project Manager: []

Client: []

Project #/Stage: []

Date: []

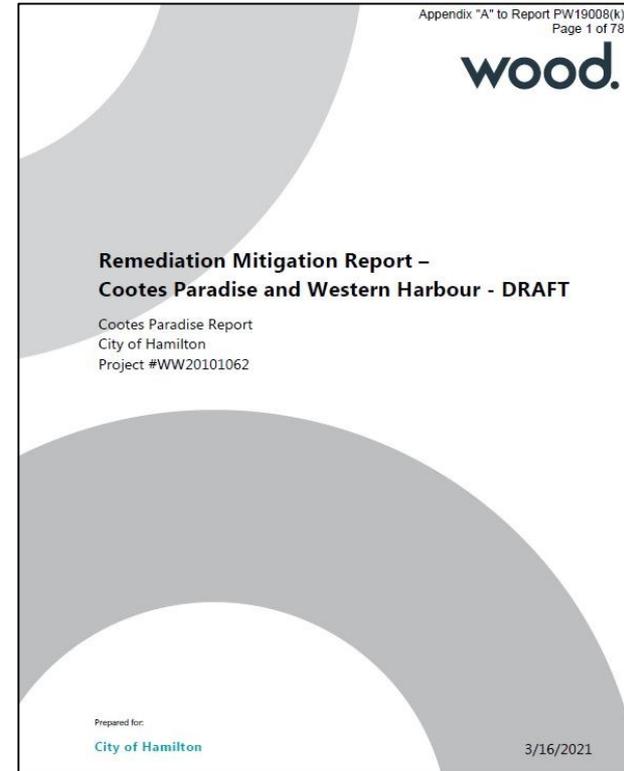
City of HAMILTON
Public Works Department

CHEDOKE CREEK REMEDIATION DREDGING PROJECT
DREDGING PLAN
COVER
CITY OF HAMILTON
HAMILTON, ONTARIO

- Completed Tasks:
 - Topographic survey (LiDAR)
 - Sedimentation investigation
 - Pre-Qualification of contractors
- Ongoing Field Work:
 - Species at risk
 - Hydraulic modelling
 - Indigenous Nations engagement
 - Permitting and approvals

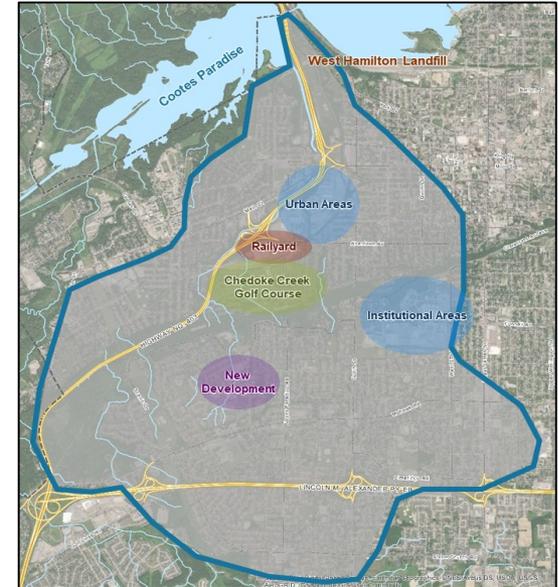


- MECP approved Cootes Report on June 11 , 2021
- Cootes Report highlighted:
 - Stakeholder consultation
 - Criteria for offsetting evaluation
 - Short and long term solutions
- Next steps - Cootes Work Plan must be submitted to the MECP by July 23, 2021

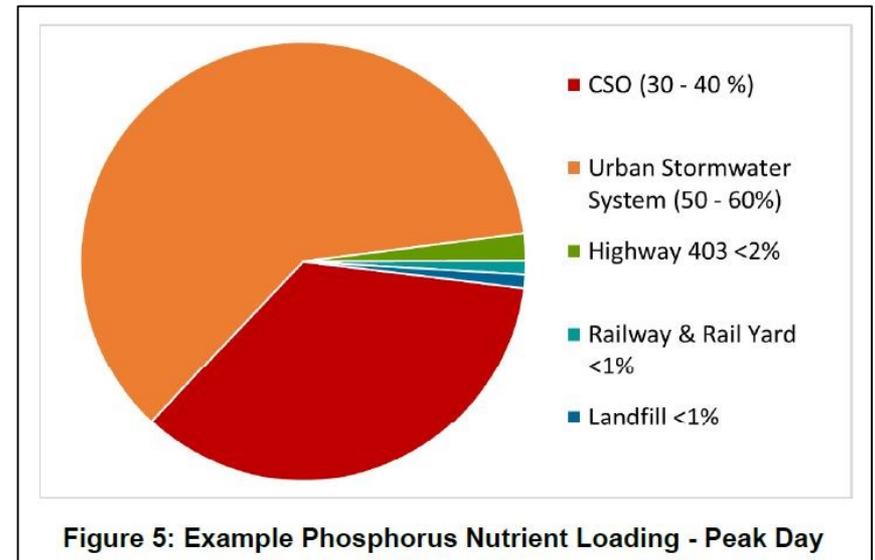
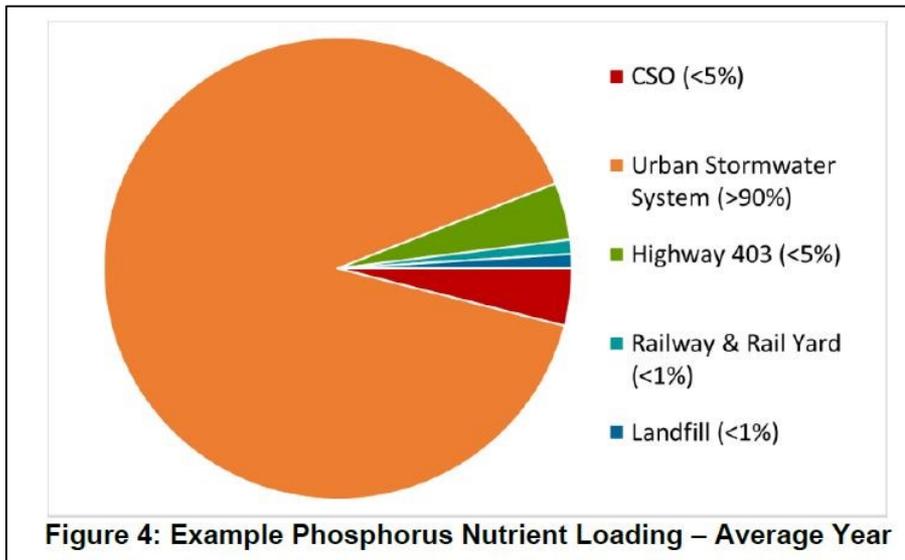


WATER QUALITY FRAMEWORK STUDY

- Prior to the issuance of MECP Directors Order the City initiated a Water Quality Framework Study for the Chedoke watershed
- The goal of the study was to look at the watershed as a whole and work with stakeholders to develop operational, capital, and policy related initiatives to improve water quality
- Team composition:
 - GM Blue Plan and Wood Environmental
 - Stakeholders – RBG, HCA, HHRAP, BARC, Environment Hamilton, MTO, etc



WATER QUALITY FRAMEWORK STUDY



WATER QUALITY FRAMEWORK STUDY

Studies & Capital

Lower Chedoke Creek EA Study outcomes

Chedoke Watershed Stormwater EA Study outcomes

Ainsley Woods sewer separation EA Study outcomes

Rehabilitation of existing Highway 403 culvert

Large scale floating vegetation mats

Operational Initiatives

Golf course runoff management strategy

Enhanced street sweeping and snow / salt management

Highway 403 water quality improvements

Policy

Stormwater management policy for redevelopment sites

Low impact development best practices policy

5) Constructed Wetland

- Construct wetland at the outlet of Chedoke Creek where it enters Cootes Paradise
- Capture sediments & pollutant loading from Chedoke Creek before entering Cootes Paradise
- Control flow which will enhance natural processes and improve wildlife habitat at outlet of Chedoke Creek

Cost	\$10-\$25 M
Timing	Near-Term (5-10 Years)
Implementation	Moderate
Capital	RBG, City
Maintenance	RBG, City
Type	Restorative



Nutrient Loading Impacts

No impacts on nutrient loading into stream, however potential benefits include:

- Reduced TP, ammonia, and TSS loadings into Cootes Paradise
- Dampened peak flow velocities at the stream outlet
- More regulated runoff temperature entering Cootes Paradise

Pie Chart Contribution	N/A: Increased ability to assimilate nutrients
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- The Chedoke Creek Water Quality Improvement Framework Study was initiated independent of the MECP Directors Order
- The Framework Study is evaluating water quality improvements across the entire watershed while the Order is focused on impacts from the Main / King CSO spill
- The initiatives developed in the Framework Study (\$200M+) exceed the offsetting requirements of the Order
- Some initiatives identified in the Framework Study will be used to satisfy conditions in the Order

- Currently working with RGB and MECP to identify quick win initiatives to assist with water quality improvements
 - Floating vegetation mats
 - Localized aeration systems

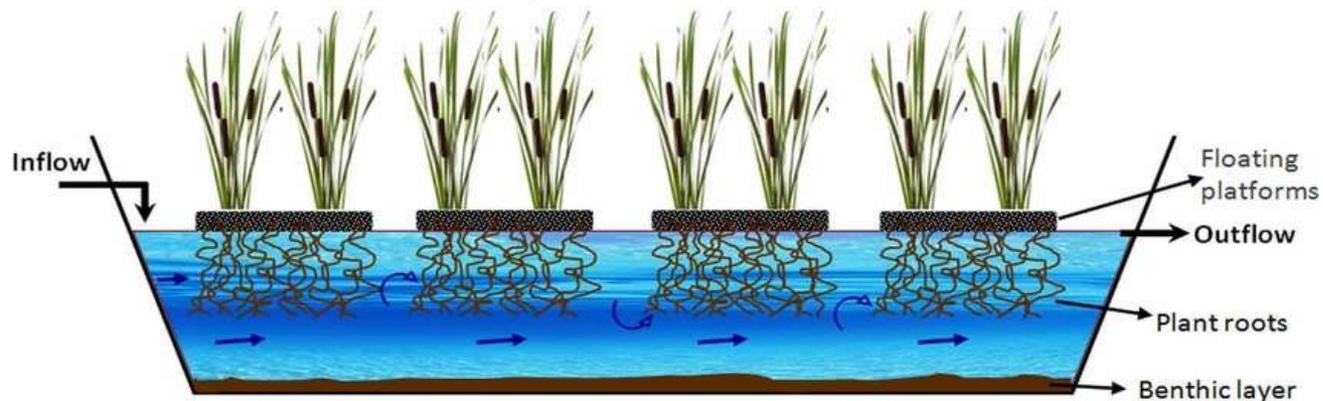
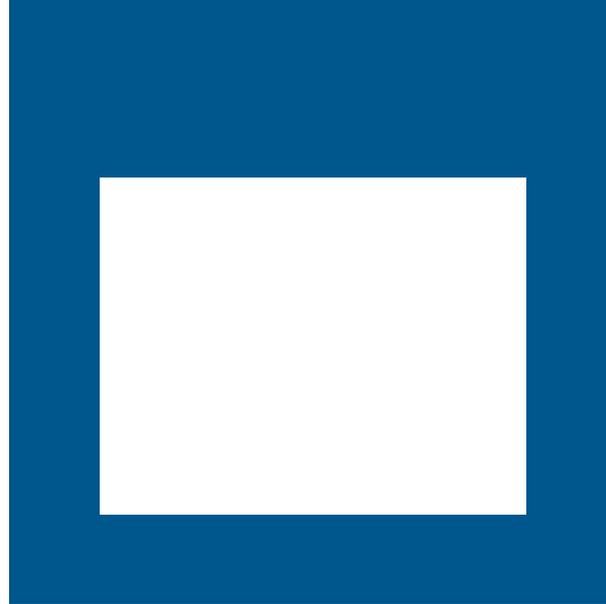


Photo from Alexandros I. Stefanakis (www.researchgate.net)



Questions



INFORMATION REPORT

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	July 5, 2021
SUBJECT/REPORT NO:	City Manager 2020 – 2021 Review (CM21006) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Lisa Zinkewich (905) 546-2424 Ext 5312
SUBMITTED BY:	Janette Smith City Manager
SIGNATURE:	

COUNCIL DIRECTION

NA

BACKGROUND

The City of Hamilton is committed to supporting all employees' growth and development by effectively managing performance through the Performance Accountability and Development (PAD) process. This process includes the City Manager, who is tasked with providing strategic leadership and guidance to the corporation in line with Council's strategic plan and priorities.

The PAD presentation of the City Manager, Janette Smith, takes place annually, following the approval of the budget. Due to the impact of the COVID 19 pandemic, the 2019 – 2020 City Manager Review was delayed until November 2020. This review covers the period of December 2020 to June 2021 to better align with the regular reporting schedule.

INFORMATION

[December 2020 – June 2021 Overview](#)

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high-quality cost-conscious public services that contribute to a healthy, safe, and prosperous community in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: City Manager 2020 – 2021 Review (CM21006) (City Wide)- Page 2 of 5

Since March 2020, the City and the world have been dealing with the global COVID-19 pandemic, with the province of Ontario emerging from the third wave of infections only recently. From April 8th, 2021 through June 2nd, 2021 City of Hamilton case numbers were at their highest level since the start of the pandemic with province-wide State of Emergency and Stay-at-Home Orders in place. During this time, City leadership continued to focus on response efforts required to address the impact of COVID-19 on our community and ensure the uninterrupted provision of City services wherever possible. In addition to ongoing public health measures such as contact tracing, public health communications and enforcement of COVID-19 related by-laws and provincial orders, the City supported Public Health and health system partners to undertake a comprehensive sustained vaccination program to ensure access to two doses of COVID-19 vaccine for all Hamiltonians 12 years of age and older. In 2021 (as of May 28), this required the redeployment of 170 employees and the hiring of 230 new staff to set up and run mass vaccination and pop up clinics, mobile clinics for indigenous and racialized populations, and the vaccination hotline. Staff also continued to support vulnerable populations including homeless individuals and seniors in congregate settings. Many of the City's partners, community organizations and stakeholders played a key role in the collective response to the pandemic.

As the pandemic enters its 17th month, staff continue to provide City Services with public health measures in place to ensure both staff and public safety, maintain the emergency response, and implement a vaccination program while juggling the impact of the pandemic on their personal lives. This has required leadership at all levels to support both the physical and mental health of employees including connecting with staff working remotely and regularly reprioritizing work.

COVID-19 recovery work to date includes implementing recommendations from the Mayor's Task Force on Economic Recovery with 48% (49 of 103) recommendations completed. In addition, in alignment with the Housing & Homelessness Action Plan, staff are implementing interventions as part of its post-COVID adaptation and transition plan for Hamilton's housing and homelessness system which includes a one-time investment of \$2 million for housing allowances for clients of City funded Intensive Case Management programs and the approval of an evidence-based transition plan for Hamilton's emergency shelter system.

Beyond the City's COVID-19 response and recovery efforts to date, work continues in support of the Term of Council Priorities that were confirmed by Council in January 2020, with their importance reinforced throughout the COVID-19 pandemic. These are climate change; multi-modal transportation; affordable housing and homelessness; equity, diversity and inclusion; integrated growth and development; maintaining trust and confidence in City government; fiscal health and financial management; and support for a healthy and respectful workplace.

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SUBJECT: City Manager 2020 – 2021 Review (CM21006) (City Wide)- Page 3 of 5

Achievements since the 2019 – 2020 City Manager Review in November 2020, that align with the Term of Council Priorities include:

- Council approval of the Corporate Energy and Sustainability Policy which set a net zero target for greenhouse gas emissions (GHG) by 2050 and interim target of 50% GHG reduction by 2030. Council further supported this goal by approving the Green Fleet Strategy which includes 30 climate focused actions that are already being implemented and the acceleration of the Home Energy Retrofit Opportunity (HERO) Detailed Design Study;
- Launch of the Vision Zero dashboard and monthly education campaigns;
- Establishment of the Equity, Diversity and Inclusion Framework Steering Committee who are working to finalize the framework and strategy by which future City of Hamilton policy will be measured in order to address systemic discrimination and acknowledge diversity as one of the City's greatest strengths;
- Continued engagement to inform the hate prevention and mitigation strategy recommendations and the recruitment of the independent Board for the Hamilton Anti-Racism Resource Centre (HARRC);
- Continued implementation of the West Harbour Re-development Plan to advance development ready projects, asset and infrastructure rehabilitation, parks and public space development and marina management;
- Completion of public engagement to inform the 2021 – 2026 Economic Development Plan;
- Council approval of the Downtown Entertainment Precinct resulting in an estimated \$155 million in savings to taxpayers over 30 years;
- Council approval of the Community Safety and Well-Being Plan;
- Council approval of safety & security enhancements to the City Hall forecourt;
- Completion of the the cyber security audit and recommended actions underway;
- Council approval of the City's Corporate Privacy Policy to establish accountability, roles and responsibilities to support staff through legislated privacy requirements and principles of "Privacy by Design" to protect the privacy of individuals while balancing an open, transparent and accessible approach to governing; and
- Supported Council advocacy with senior levels of government that mitigated an estimated \$93M of financial pressures related to the pandemic response in 2020.

Looking Ahead

In order to meet the expectations of Council over the coming year, efforts will be focused on advancing COVID-19 recovery, Term of Council priorities, organizational people priorities and City Manager's Office priorities.

COVID-19 Recovery

The province entered the first step of its three-step Roadmap to Safely Reopen plan on June 9th, 2021. Each step will remain in place for at approximately 21 days to evaluate

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SUBJECT: City Manager 2020 – 2021 Review (CM21006) (City Wide)- Page 4 of 5

impacts on public health and health system indicators before moving to the next step. The City will continue to prioritize the health and safety of residents while supporting and promoting vaccination to prevent a fourth wave.

Recovery efforts will continue to be focused around further implementation of recommendations from the Mayor's Task Force on Economic Recovery, while addressing systemic issues highlighted in the Just Recovery Policy Paper and expanding on collaborative work taking place between Greater Toronto Hamilton Area (GTHA) municipalities in the areas of housing, digital infrastructure, procurement and sustainable financing. Internally, leadership will continue to support the health and wellness of all employees. Staff working from home since March 2020 will be transitioned back to the work space as in-person service delivery resumes and City policies will be updated to incorporate emerging workforce trends related to telecommuting, use of technology and health & safety considerations. A report will be brought forward in September 2021, detailing the focus of the City's recovery efforts.

Term of Council Priorities

The collective work of the organization is influenced by the Term of Council priorities.

Key City Manager deliverables include:

- Completing the Community Energy and Emissions Plan by Q1 2022;
- Council approval of an equity, diversity and inclusion (EDI) framework and related training for anti-racism, anti-oppression, unconscious bias and inclusionary best practices by Q3 2021;
- Operationalization of the Hamilton Anti-Racism Resource Centre (HARRC) Board by Q4 2021;
- Tabling the hate prevention and mitigation strategy recommendations with Council by Q3 2021, with implementation beginning shortly after;
- Continued implementation of the 10-year Housing and Homelessness Action Plan, including execution of approved Rapid Housing Initiatives by Q4 2022;
- Advancing GRIDS2 (Growth Related Integrated Development Strategy) to ensure conformity with Provincial Growth Plan by July 1, 2022, including the completion of the Land Needs Assessment survey and Council adoption of preferred growth strategy by October 2021.

Organizational People Priorities

To ensure City employees feel engaged and supported the second iteration of the Our People survey will be undertaken September 13 through October 4th, 2021. The results of the Our People Survey will be shared with leaders and Council in Q1 2022, with subsequent action planning initiated immediately after.

A recruitment strategy for leadership positions will be finalized in Q4 2021 with leadership continuing to support succession planning efforts to better inform promotional and development opportunities across the organization.

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SUBJECT: City Manager 2020 – 2021 Review (CM21006) (City Wide)- Page 5 of 5

City Manager's Office Priorities

In alignment with the outcome of the review of City Manager's Office functions that was completed in early 2021, staff are focusing on:

- Advancing the City's data capabilities to support decision-making, organizational performance management and driving a culture of continuous improvement and innovation;
- Development of a Government Relations Strategy ahead of upcoming federal and provincial elections; and
- Council approval of a new Public Engagement Policy in Q1 2022.

APPENDICES

NA

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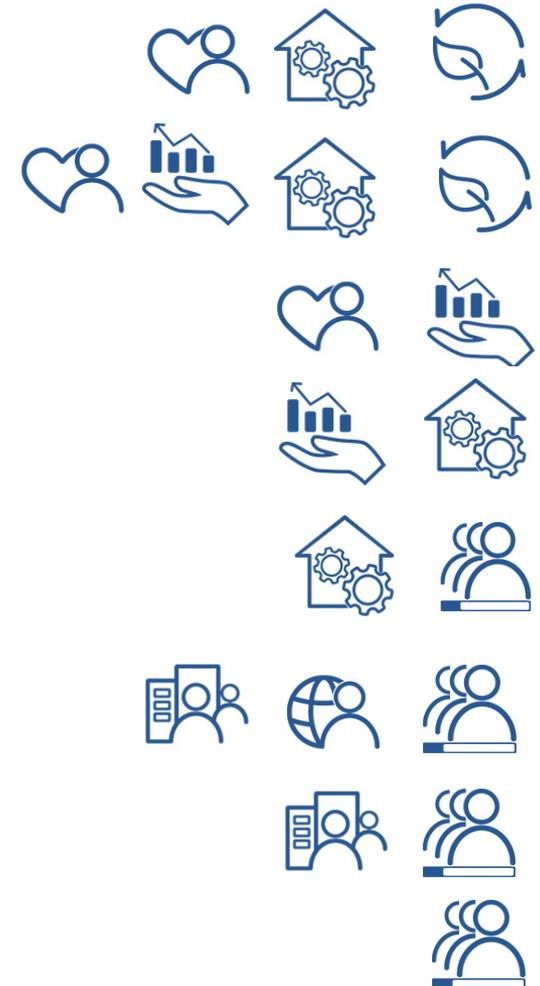


CITY MANAGER'S REVIEW DECEMBER 2020 – JUNE 2021

TERM OF COUNCIL PRIORITIES (2018 – 2022)

WITH STRATEGIC PLAN ALIGNMENT

- Climate Change
- Multi-Modal Transportation
- Homelessness & Affordable Housing
- Integrated Growth & Development
- Fiscal Health & Financial Management
- Equity, Diversity & Inclusion
- Trust & Confidence in City Government
- A Healthy, Respectful & Supportive Workplace



HAMILTON'S PANDEMIC RESPONSE

(TOTAL MARCH 2020 – JUNE 28 2020)

- **733,689** COVID-19 **tests** completed
- **555,404** COVID-19 **vaccines** administered
 - **73.8%** 18+ received **first dose**
 - **38.3%** 18+ received **second dose**
 - **58.9%** 12 - 17 received **first dose**



- **91** media briefings
- **1,076** COVID-19 related **enforcement charges**



COVID-19 WORKFORCE IMPACTS

(TOTAL MARCH 2020 – JUNE 28 2020)

- **25%** of workforce continue to **work from home**
- **458** staff **redeployed** outside their Division
 - Does not include redeployments within Divisions
- **372** new employees **recruited**
- **LifeSpeak OnDemand** accessed **9507** times (2020)
 - 236% increase over previous year
 - Mental Health Resources **↑** 978%
 - Stress Management & Resilience **↑** 244%



- **50%** (52/103) recommendations **completed**
- COVID Concierge Service launched February 2021
- Support for small business includes
 - Additional funding for BIAs and digital Mainstreet
 - Fee freeze and creation of outdoor dining districts
- City Policy for Fair Wage for Musicians developed and approved
- Approval of surety bonds as financial security for projects to secure municipal agreements
- Advocacy letters sent requesting continued business supports, mental health and addictions and child care supports, supporting tax deferral programs and federal trade policies

- Corporate Energy and Sustainability Policy
- Accelerated Home Energy Retrofit Opportunity (HERO) Detailed Design Study



Green Fleet Strategy



Safety & security enhancements



TERM OF COUNCIL PRIORITIES



- Conducted a current state assessment of the Equity, Diversity and Inclusion (EDI) landscape at the City to inform framework



Downtown Entertainment Precinct



LOOKING AHEAD – COVID-19 RECOVERY

HAMILTON
RESPONDS >>>



HAMILTON
REOPENS

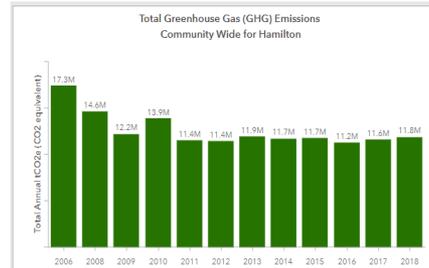
vaccinations

- Return to in-person service delivery and continue to advance digital service delivery options
- Economic and social recovery
- Workplace transition and evolve workforce model to remain an employer of choice
- Workforce fatigue – balancing continued COVID demands alongside recovery

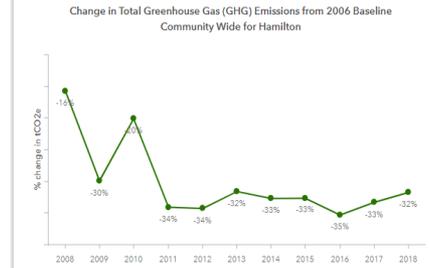


HOUSING AND HOMELESSNESS ACTION PLAN



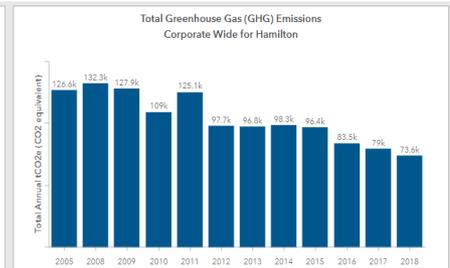


Note: 2007 data is not available. There is a 2 year lag in GHG reporting due to the number of partners and related internal data collection processes that inform this data.

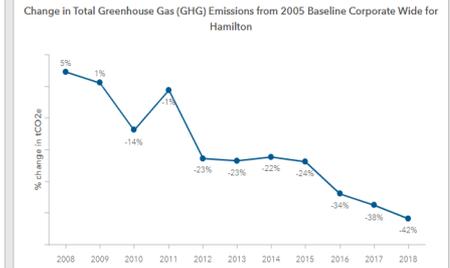


Note: 2007 data is not available. There is a 2 year lag in GHG reporting due to the number of partners and related internal data collection processes that inform this data.

Community Wide GHG Emissions | [Chart](#) | [More info...](#)



Note: 2006 & 2007 data is not available. There is a 2 year lag in GHG reporting due to the sources of data and internal data collection processes that inform this data.



Note: 2006 & 2007 data is not available. There is a 2 year lag in GHG reporting due to the sources of data and internal data collection processes that inform this data.

Corporate Wide GHG Emissions | [Chart](#) | [More info...](#)



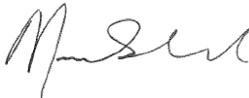


Hamilton

THANK YOU



CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Economic Development Division

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	June 16, 2021
SUBJECT/REPORT NO:	Hamilton Tax Increment Grant - 154 Main Street East, Hamilton (PED21115) (Ward 2)
WARD(S) AFFECTED:	Ward 2
PREPARED BY:	Carlo Gorni (905) 546-2424 Ext. 2755
SUBMITTED BY:	Norm Schleeahn Director, Economic Development Planning and Economic Development
SIGNATURE:	

RECOMMENDATION

- (a) That a Hamilton Tax Increment Grant Program Application submitted by 1970703 Ontario Inc. (Darko Vranich) for the property known as 154 Main Street East, Hamilton, estimated at \$1,211,018.67 over a maximum of a five (5) year period, and based upon the incremental tax increase attributable to the development of 154 Main Street East, Hamilton, be authorized and approved in accordance with the terms and conditions of the Hamilton Tax Increment Grant Program;
- (b) That the Mayor and City Clerk be authorized and directed to execute a Grant Agreement together with any ancillary documentation required, to give effect to the Hamilton Tax Increment Grant for 1970703 Ontario Inc. for the property known as 154 Main Street East, Hamilton, in a form satisfactory to the City Solicitor; and,
- (c) That the General Manager of the Planning and Economic Development Department be authorized to approve and execute any Grant Amending Agreements, together with any ancillary amending documentation, if required, provided that the terms and conditions of the Hamilton Tax Increment Grant Program, as approved by City Council, are maintained.

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**SUBJECT: Hamilton Tax Increment Grant - 154 Main Street East, Hamilton
(PED21115) (Ward 2) - Page 2 of 7**

EXECUTIVE SUMMARY

The Hamilton Tax Increment Grant Program (HTIGP) Application for the development of the project at 154 Main Street East, Hamilton was submitted by 1970703 Ontario Inc., owner of the property. The project will see the construction of a twenty-six (26) storey mixed use multi-residential building. The development will consist of 284 rental residential units and approximately 13,046 square feet of retail floor area. There is to be 264 parking spaces.

Development costs are estimated at \$88,000,000 and it is projected that the proposed redevelopment will increase the assessed value of the property from its current value of \$4,042,000.00 to approximately \$44,800,000.00.

This will increase the total annual property taxes generated by the property. The municipal share of this property tax increase (municipal tax increment) will be approximately \$403,672.89 of which 100% would be granted to the owner during year one, 80% or approximately \$322,938.31 in year two, 60% or approximately \$242,203.73 in year three, 40% or approximately \$161,469.16 in year four and 20% or approximately \$80,734.58 in year five. The estimated total value of the grant is approximately \$1,211,018.67. Note that every year the tax increment is based on actual taxes for that year.



Pre-Redevelopment-154 Main Street East, Hamilton (Source: Google)

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SUBJECT: Hamilton Tax Increment Grant - 154 Main Street East, Hamilton (PED21115) (Ward 2) - Page 3 of 7



Rendering of Completed Project-154 Main Street East, Hamilton (Source: Applicant)

Alternatives for Consideration – See Page 7

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The City will collect full property taxes on the property and, in turn, provide a grant for five (5) years, declining each year after the first year by 20%, based on the increase in the municipal portion of the taxes, post-development completion of 154 Main Street East, Hamilton. Following year one of the grant payment, the City will start to realize the positive results of the Program from a financial perspective. Based on the projected figures, the estimated tax increment over five (5) years totals \$2,018,364.45, of which the applicant would receive a grant totalling approximately \$1,211,018.67 and the City retaining taxes totalling approximately \$807,345.78.

Staffing: Applicants and subsequent grant payments under the HTIGP are processed by the Commercial Districts and Small Business Section and Taxation Section, Corporate Services Department. There are no additional staffing requirements.

Legal: Section 28 of the *Planning Act* permits a municipality, in accordance with a Community Improvement Plan, to make loans and grants which would otherwise be prohibited under Section 106(2) of the *Municipal Act*, to registered/assessed owners and tenants of lands and buildings. A Community Improvement Plan can only be adopted and come into effect within a designated Community Improvement Project Area. Changes to a Community Improvement Plan or Community Improvement Project Area require formal amendments as dictated by the *Planning Act*.

SUBJECT: Hamilton Tax Increment Grant - 154 Main Street East, Hamilton (PED21115) (Ward 2) - Page 4 of 7

The applicant will be required to execute a Grant Agreement prior to the grant being advanced. The Grant Agreement will be developed in consultation with the Legal Services Division.

As construction projects move forward, it is sometimes necessary to amend previously approved Grant Agreements and any ancillary documentation. Therefore, staff recommends that the General Manager of Planning and Economic Development be authorized to amend Grant Agreements and any ancillary documentation, provided that the terms and conditions of the HTIGP are maintained.

HISTORICAL BACKGROUND

City Council, at its meeting held August 22, 2001, approved an amendment to the Downtown and Community Renewal Community Improvement Plan which introduced the HTIGP. Since that time, a number of Program refinements have been approved by City Council, including expanding the Program to Community Downtown, Business Improvement Areas, the Mount Hope/Airport Gateway, the corridors of Barton Street and Kenilworth Avenue as identified in the Downtown and Community Renewal Community Improvement Project Area and most recently, to properties designated under Part IV or V of the *Ontario Heritage Act*. The terms of the Program offer a five (5) year grant not to exceed the increase in municipal realty taxes as a result of the development. The grant is to be in an amount which does not exceed 100% of the municipal realty tax increase during the first year, 80% in year two, 60% in year three, 40% in year four, and 20% in year five.

The project at 154 Main Street East, Hamilton is an eligible project under the terms of the HTIGP. The applicant will qualify for the HTIGP grant upon completion of the development project. Development costs are estimated at \$88,000,000. The total estimated grant over the five (5) year period is approximately \$1,211,018.67.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

Urban Hamilton Official Plan

The subject site is municipally known as 154 Main Street East, Hamilton and is located within the “Downtown Urban Growth Centre” on Schedule “E” – Urban Structure.

The site is located within the Downtown Hamilton Secondary Plan area (OPA 102) and designated “Downtown Mixed Use” on Map “B.6.1-1” – Downtown Hamilton Secondary Plan – Land Use Plan which is intended to support intensive, urban-scale mixed use development.

**SUBJECT: Hamilton Tax Increment Grant - 154 Main Street East, Hamilton
(PED21115) (Ward 2) - Page 5 of 7**

The planned use of the site conforms to the above designation. The specific ground floor commercial uses of the development have not yet been identified and will be subject to the respective sections of the in force and effect Urban Hamilton Official Plan with respect to permitted uses and associated policies.

Zoning By-law No. 05-200

Under the City of Hamilton Zoning By-Law No. 05-200, the subject site is zoned “Downtown Central Business District (D1) Zone” which is intended to provide a range of uses and stand-alone or mixed-use buildings that support a complete, vibrant and transit-oriented area. The site is also the subject of special exception ‘702’ which permits alternate zoning regulations with respect to building height, lot coverage, parking and building setbacks.

The planned use of the property is permitted by the Committee of Adjustment decision HM/A-20:26. The specific ground floor commercial uses have not yet been identified and will be subject to the respective sections of the in force and effect Zoning By-Law with respect to permitted uses and associated regulations.

RELEVANT CONSULTATION

Staff from the Taxation Section and the Finance and Administration Section, Corporate Services Department and the Legal Services Division, Corporate Services Department was consulted, and the advice received is incorporated into Report PED21115.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Commercial Districts and Small Business staff, in co-operation with staff from the Taxation Section and Legal Services Division, developed an estimated schedule of grant payments under the terms of the Program. The final schedule of grant payments will be contingent upon a new assessment by MPAC following completion of the project. The Applicant will be required to sign a Grant Agreement. The Grant Agreement contains provisions for varying the grant payment in each, and every year based on MPAC’s assessed value. By signing, the applicant will accept the terms and conditions outlined therein prior to any grant payments being made. The Agreement outlines the terms and conditions of the grant payments over the five (5) year period.

The estimated grant shall be calculated according to the following formulas:

Grant Level:	100%
Total Eligible Costs (Maximum):	\$ 88,000,000

**SUBJECT: Hamilton Tax Increment Grant - 154 Main Street East, Hamilton
(PED21115) (Ward 2) - Page 6 of 7**

Total Pre-project CVA:		
CT(Commercial)	\$ 2,664,000	Year: 2019
CT (Commercial)	\$ 1,378,000	
Total	\$ 4,042,000	

Pre-Project Property Taxes	
Municipal Levy:	\$ 78,549.02
Education Levy:	\$ 38,542.24
Pre-project Property Taxes	\$ 117,091.26

*Post-project CVA:		
XT (Commercial)	\$ 1,800,000	
NT (Residential)	\$ 43,000,000	
Estimated Post-project CVA	\$ 44,800,000	Year: TBD

Post-Project Property Taxes	
** Estimated Municipal Levy:	\$ 482,221.91
** Estimated Education Levy:	\$ 83,430
** Estimated Post-Project Property Taxes:	\$ 565,651.91

*The actual roll number(s) assessed value(s), tax classification(s) and value partitioning (where applicable) are to be determined by the Municipal Property Assessment Corporation (MPAC).

**2020 tax rates have been used for calculation of the estimated post-development property taxes.

Pre-project Municipal Taxes = Municipal Levy = \$78,549.02
Municipal Tax Increment = \$482,221.91 - \$78,549.02 = \$403,672.89
Payment in Year One = \$403,672.89 x 1.0 = \$403,672.89

ESTIMATED GRANT PAYMENT SCHEDULE for: construction of a twenty-six (26) storey mixed use multi-residential building. The development will consist of 284 rental residential units and 13,046 square feet of retail floor area. There is to be 264 parking spaces.

**SUBJECT: Hamilton Tax Increment Grant - 154 Main Street East, Hamilton
(PED21115) (Ward 2) - Page 7 of 7**

Year	Grant Factor	Tax Increment*	Grant
1	100%	\$403,672.89	\$403,672.89
2	80%	\$403,672.89	\$322,938.31
3	60%	\$403,672.89	\$242,203.73
4	40%	\$403,672.89	\$161,469.16
5	20%	\$403,672.89	\$80,734.58
Total		\$2,018,364.45	\$1,211,018.67

*Note that the tax increment is based every year on actual taxes for that year. The figures above are estimates. In other words, for each year a grant payment is paid, the actual taxes for the year of the grant payment will be used in the calculation of the grant payment.

Details of the proposed development and its estimated assessment and municipal tax increments are based on the development as approved, or conditionally approved, at the time of writing this report. Any minor changes to the planned development that occur prior to the final MPAC reassessment of the property may result in an increase/decrease in the actual municipal tax increment generated and will be reflected in the final grant amount.

ALTERNATIVES FOR CONSIDERATION

Declining a grant and/or approving a reduced amount would undermine the principles of the HTIGP and regeneration efforts in general. This alternative is not recommended.

Financial: Grants totalling \$1,211,018.67 for a five (5) year period would not be issued.

Staffing: Not applicable

Legal: Not applicable

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Economic Prosperity and Growth

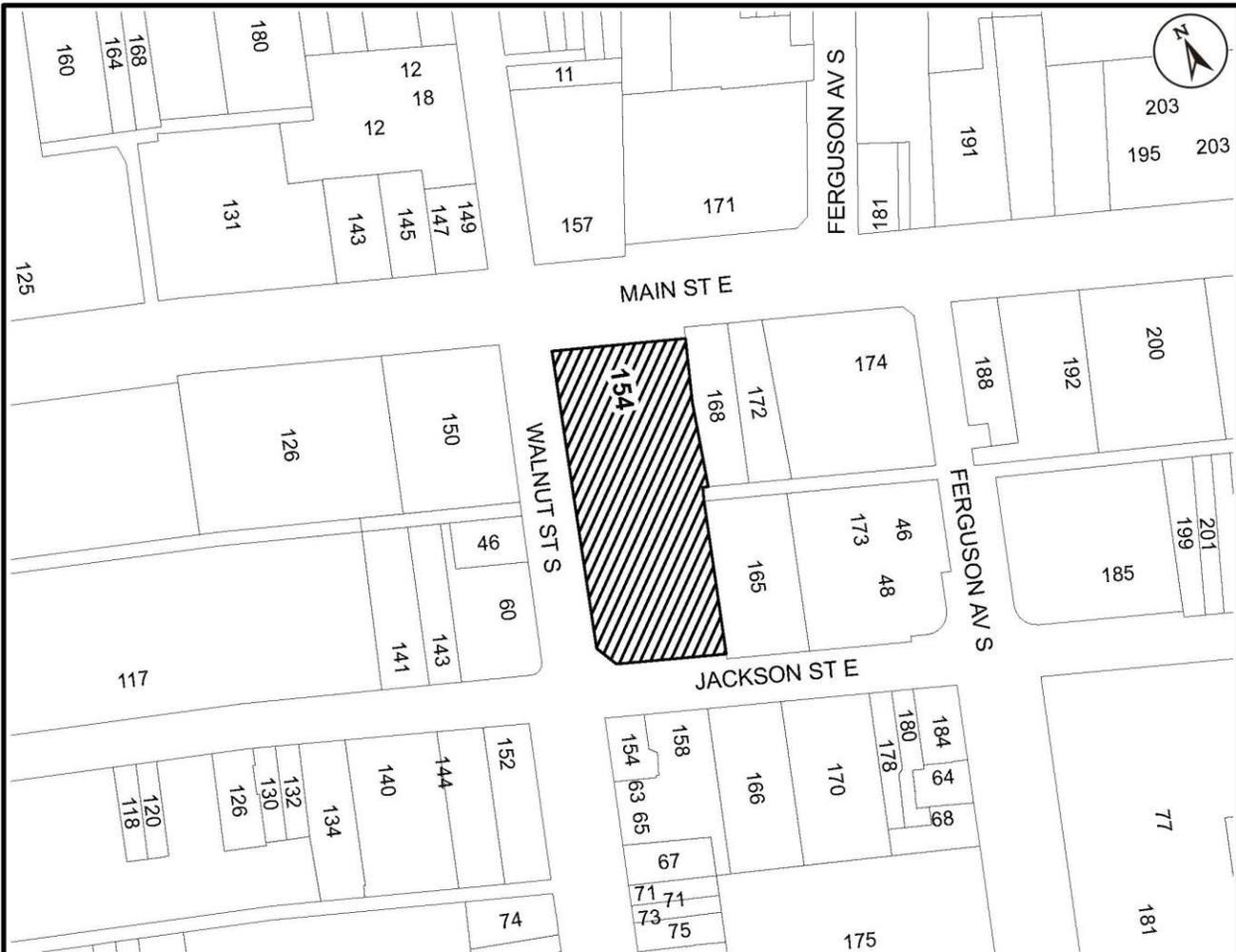
Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

APPENDICES AND SCHEDULES ATTACHED

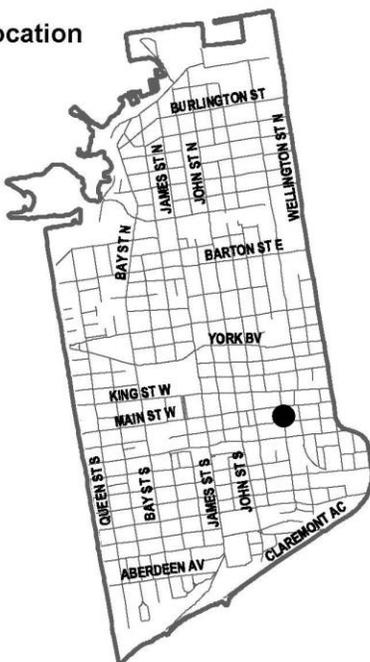
Appendix "A" – Location Map

CG/jrb

Appendix "A" to Report PED21115



● Site Location



Key Map - Ward 2

Location Map



Hamilton

PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT

File Name/Number:
154 Main St E

Date:
May 11, 2021

Appendix "A"

Scale:
N.T.S

Planner/Technician:
CG/AL

Subject Property

154 Main Street East





CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Economic Development Division

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	July 5, 2021
SUBJECT/REPORT NO:	Hamilton Tax Increment Grant - 540 King Street East, Hamilton (PED21140) (Ward 3)
WARD(S) AFFECTED:	Ward 3
PREPARED BY:	Carlo Gorni (905) 546-2424 Ext. 2755
SUBMITTED BY:	Norm Schleeahn Director, Economic Development Planning and Economic Development
SIGNATURE:	

RECOMMENDATION

- (a) That a Hamilton Tax Increment Grant Program Application submitted by Malleum Real Estate Partners IV, by its General Partner Malleum General Partner IV Limited (Tyler Pearson and Greg Clewer), for the property at 540 King Street East, Hamilton, estimated at \$169,801.83 over a maximum of a five(5) year period, and based upon the incremental tax increase attributable to the renovation of 540 King Street East, Hamilton, be authorized and approved in accordance with the terms and conditions of the Hamilton Tax Increment Grant Program;
- (b) That the Mayor and City Clerk be authorized and directed to execute a Grant Agreement together with any ancillary documentation required, to give effect to the Hamilton Tax Increment Grant for Malleum Real Estate Partners IV, by its General Partner Malleum General Partner IV Limited (Tyler Pearson and Greg Clewer) for the property known as 540 King Street East, Hamilton, in a form satisfactory to the City Solicitor; and,
- (c) That the General Manager of the Planning and Economic Development Department be authorized to approve and execute any Grant Amending Agreements, together with any ancillary amending documentation, if required,

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SUBJECT: Hamilton Tax Increment Grant - 540 King Street East, Hamilton (PED21140) (Ward 3) - Page 2 of 7

provided that the terms and conditions of the Hamilton Tax Increment Grant Program, as approved by City Council, are maintained.

EXECUTIVE SUMMARY

The Hamilton Tax Increment Grant Program (HTIGP) Application for the renovation of the property at 540 King Street East, Hamilton was submitted by Malleum Real Estate Partners IV, by its General Partner Malleum General Partner IV Limited (Tyler Pearson and Greg Clewer), owner of the property. This address contains two (2) multi residential buildings with a total of thirty-six (36) residential units. The proposed works will see the renovation of the interior of all thirty-six (36) residential units. Improvements will also be made to the exterior of the buildings including new windows, doors and painting.

Renovation costs are estimated at \$2,775,000 and it is projected that the proposed renovations will increase the assessed value of the property from its current value of \$2,542,000 to approximately \$4,643,000.

This will increase total annual property taxes generated by the property. The municipal share of this property tax increase (municipal tax increment) will be approximately \$56,600.61, of which 100% would be granted to the owner during year one, 80% or approximately \$45,280.49 in year two, 60% or approximately \$33,960.37 in year three, 40% or approximately \$22,640.24 in year four and 20% or approximately \$11,320.12 in year five. The estimated total value of the Grant is approximately \$169,801.83. Note that every year the tax increment is based on actual taxes for that year.

Alternatives for Consideration – See Page 6

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The City will collect full property taxes on the property and, in turn, provide a Grant for five (5) years, declining each year after the first year by 20%, based on the increase in the municipal portion of the taxes, post-renovation completion of 540 King Street East, Hamilton. Following year one of the Grant Payment, the City will start to realize the positive results of the Program from a financial perspective. Based on the projected figures, the estimated tax increment over five (5) years totals \$283,003.05, of which the Applicant would receive a Grant totalling approximately \$169,801.83 and the City retaining taxes totalling approximately \$113,201.22.

Staffing: Applicants and subsequent Grant Payments under the HTIGP are processed by the Commercial Districts and Small Business Section and Taxation

**SUBJECT: Hamilton Tax Increment Grant - 540 King Street East, Hamilton
(PED21140) (Ward 3) - Page 3 of 7**

Section, Corporate Services Department. There are no additional staffing requirements.

Legal: Section 28 of the *Planning Act* permits a municipality, in accordance with a Community Improvement Plan, to make loans and grants which would otherwise be prohibited under Section 106(2) of the *Municipal Act*, to registered / assessed owners and tenants of lands and buildings. A Community Improvement Plan can only be adopted and come into effect within a designated Community Improvement Project Area. Changes to a Community Improvement Plan or Community Improvement Project Area require formal amendments as dictated by the *Planning Act*.

The Applicant will be required to execute a Grant Agreement prior to the Grant being advanced. The Grant Agreement will be developed in consultation with the Legal Services Division.

As construction projects move forward, it is sometimes necessary to amend previously approved Grant Agreements and any ancillary documentation. Therefore, staff recommends that the General Manager of Planning and Economic Development be authorized to amend Grant Agreements and any ancillary documentation, provided that the terms and conditions of the HTIGP are maintained.

HISTORICAL BACKGROUND

City Council, at its meeting held August 22, 2001, approved an amendment to the Downtown and Community Renewal Community Improvement Plan which introduced the HTIGP. Since that time, a number of Program refinements have been approved by City Council, including expanding the Program to Community Downtowns, Business Improvement Areas, the Mount Hope / Airport Gateway, the corridors of Barton Street and Kenilworth Avenue as identified in the Downtown and Community Renewal Community Improvement Project Area and most recently, to properties designated under Part IV or V of the *Ontario Heritage Act*. The terms of the Program offer a five (5) year Grant not to exceed the increase in municipal realty taxes as a result of the development. The Grant is to be in an amount which does not exceed 100% of the municipal realty tax increase during the first year, 80% in year two, 60% in year three, 40% in year four, and 20% in year five.

The project at 540 King Street East, Hamilton, is an eligible project under the terms of the HTIGP. The Applicant will qualify for the HTIGP Grant upon completion of the development project. Renovation costs are estimated at \$2,775,000. The total estimated Grant over the five (5) year period is approximately \$169,801.83.

**SUBJECT: Hamilton Tax Increment Grant - 540 King Street East, Hamilton
(PED21140) (Ward 3) - Page 4 of 7**

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

Urban Hamilton Official Plan

The site is municipally known as 540 King Street East, Hamilton and is located within a Primary Urban Corridor on Schedule E – Urban Structure and designated “Mixed Use – Medium Density” on Map E-1 – Urban Land Use Designations which is intended to permit a full range of retail, service commercial, entertainment and residential uses at a moderate scale.

The existing use of the site conforms to the above designation.

Zoning By-law No. 05-200

Under the City of Hamilton Zoning By-Law No. 05-200, the site is zoned “Transit Oriented Corridor Mixed Use Medium Density (TOC1) Zone” which provides for a mixture of uses in stand-alone or mixed-use buildings along higher order transit corridors in a built form that creates complete streets and are transit supportive.

The existing use of the site is permitted.

RELEVANT CONSULTATION

Staff from the Taxation Section and the Finance and Administration Section, Corporate Services Department and the Legal Services Division, Corporate Services Department was consulted, and the advice received is incorporated into Report PED21140.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Commercial Districts and Small Business staff, in co-operation with staff from the Taxation Section and Legal Services Division, developed an estimated Schedule of Grant Payments under the terms of the Program. The final Schedule of Grant Payments will be contingent upon a new assessment by MPAC following completion of the project. The Applicant will be required to sign a Grant Agreement. The Grant Agreement contains provisions for varying the Grant payment in each, and every year based on MPAC’s assessed value. By signing, the Applicant will accept the terms and conditions outlined therein prior to any Grant Payments being made. The Agreement outlines the terms and conditions of the Grant Payments over the five (5) year period.

**SUBJECT: Hamilton Tax Increment Grant - 540 King Street East, Hamilton
(PED21140) (Ward 3) - Page 5 of 7**

The estimated Grant shall be calculated according to the following formulas:

Grant Level:	100%	
Total Eligible Costs (Maximum):	\$2,775,000	
Total Pre-project CVA: MT (Multi Residential)	\$2,542,000	Year: 2019
Pre-Project Property Taxes		
Municipal Levy:	\$ 63,011.72	
Education Levy:	\$ 3,725.14	
Pre-project Property Taxes	\$ 66,736.86	
*Post-project CVA: MT (Multi Residential)	\$4,643,000	Year: TBD
Estimated Post-project CVA	\$4,643,000	
Post-Project Property Taxes		
** Estimated Municipal Levy:	\$ 119,612.33	
** Estimated Education Levy:	\$ 7,103.79	
** Estimated Post-Project Property Taxes:	\$ 126,716.12	

*The actual roll number(s) assessed value(s), tax classification(s) and value partitioning (where applicable) are to be determined by the Municipal Property Assessment Corporation (MPAC).

**2020 tax rates have been used for calculation of the estimated post-development property taxes.

Pre-project Municipal Taxes = Municipal Levy = \$63,011.72
Municipal Tax Increment = \$119,612.33 - \$63,011.72 = \$56,600.61
Payment in Year One = \$56,600.61 x 1.0 = \$56,600.61

**SUBJECT: Hamilton Tax Increment Grant - 540 King Street East, Hamilton
(PED21140) (Ward 3) - Page 6 of 7**

ESTIMATED GRANT PAYMENT SCHEDULE for renovation of two multi-residential buildings containing a total of thirty-six (36) residential units

Year	Grant Factor	Tax Increment*	Grant
1	100%	\$56,600.61	\$56,600.61
2	80%	\$56,600.61	\$45,280.49
3	60%	\$56,600.61	\$33,960.37
4	40%	\$56,600.61	\$22,640.24
5	20%	\$56,600.61	\$11,320.12
Total		\$283,003.05	\$169,801.83

*Note that the tax increment is based every year on actual taxes for that year. The figures above are estimates. In other words, for each year a Grant Payment is paid, the actual taxes for the year of the Grant Payment will be used in the calculation of the Grant Payment.

Details of the proposed renovation and its estimated assessment and municipal tax increments are based on the project as approved, or conditionally approved, at the time of writing this report. Any minor changes to the planned renovation that occur prior to the final MPAC reassessment of the property may result in an increase/decrease in the actual municipal tax increment generated and will be reflected in the final Grant amount.

ALTERNATIVES FOR CONSIDERATION

Declining a Grant and/or approving a reduced amount would undermine the principles of the HTIGP and regeneration efforts in general. This alternative is not recommended.

Financial: Grants totalling \$169,801.83 over a five (5) year period would not be issued.

Staffing: Not applicable

Legal: Not applicable

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Economic Prosperity and Growth

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

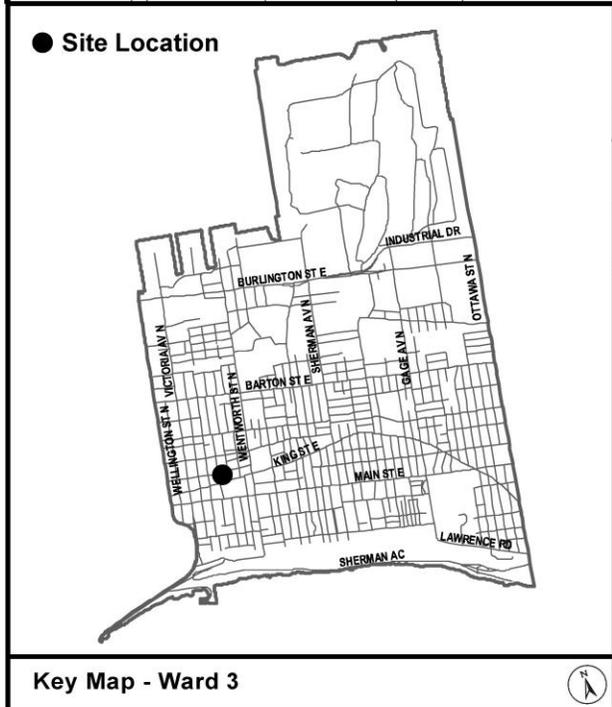
**SUBJECT: Hamilton Tax Increment Grant - 540 King Street East, Hamilton
(PED21140) (Ward 3) - Page 7 of 7**

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PED21140 – Location Map

CG/jrb

Appendix "A" to Report PED21140



Location Map

PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT

File Name/Number:
540 King St E

Date:
January 14, 2020

Appendix "A"	Scale: N.T.S	Planner/Technician: CG/NB
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Subject Property

123 Single Block Street, Hamilton
(Ward 3)



Hamilton

**CAPITAL PROJECTS WORK-IN-PROGRESS REVIEW
SUB-COMMITTEE
REPORT 21-002**

9:30 a.m.

June 21, 2021

**Council Chambers
Hamilton City Hall**

Present: Councillors M. Pearson (Chair), J.P. Danko (Vice-Chair), and N. Nann

Absent: Councillor M. Wilson - Personal

**THE CAPITAL PROJECTS WORK-IN-PROGRESS REVIEW SUB-COMMITTEE
PRESENTS REPORT 21-002 AND RESPECTFULLY RECOMMENDS:**

1. **Capital Project Closing Report as of December 31, 2020 (FCS20079(b)) (City Wide) (Item 10.1)**
 - (a) That the General Manager, Finance and Corporate Services, be authorized to transfer \$221,437 to the Unallocated Capital Levy Reserve (108020) and \$97,064 from other sources as outlined in Appendix "A" to Capital Projects Work-in-Progress Review Sub-Committee Report 21-002;
 - (b) That the General Manager, Finance and Corporate Services, be directed to close the completed and / or cancelled capital projects listed in Appendix "B" to Capital Projects Work-in-Progress Review Sub-Committee Report 21-002, in accordance with the Capital Projects Closing and Monitoring Policy;
 - (c) That Appendix "C" to Report FCS20079(b), Capital Projects Budget Appropriations for the period covering October 1, 2020 through December 31, 2020, be received for information;
 - (d) That Appendix "C" to Capital Projects Work-in-Progress Review Sub-Committee Report 21-002, Capital Projects Budget Appropriations of \$250,000 or greater and Capital Project Reserve Funding requiring Council authorization, be approved;
 - (e) That the General Manager, Finance and Corporate Services, be authorized to transfer \$2,234,783 from the Unallocated Capital Levy Reserve (108020) and return \$2,234,783 to the Federal Gas Tax Reserve

(112213) for various projects outlined in Appendix “D” to Capital Projects Work-in-Progress Review Sub-Committee Report 21-002 for the purpose of funding ineligible expenditures per the Federal Gas Tax Municipal Funding Agreement; and,

- (f) That the projects listed in Appendix “E” to Capital Projects Work-in-Progress Review Sub-Committee Report 21-002, that were inadvertently closed during capital work-in-progress review, be re-opened.

2. Capital Projects Status Report as of December 31, 2020 (FCS20078(b)) (City Wide) (Item 10.2)

- (a) That the Capital Projects Status Report – Tax Supported, as of December 31, 2020, attached as Appendix “A” to Report FCS20078(b), be received;
- (b) That the Capital Projects Status Report – Rate Supported, as of December 31, 2020, attached as Appendix “B” to Report FCS20078(b), be received; and,
- (c) That the confidential Appendix “C” to Report FCS20078(b), be received and remain confidential.

FOR INFORMATION:

(a) CHANGES TO THE AGENDA (Item 2)

The Committee Clerk advised that there were no changes to the agenda.

The agenda for the June 21, 2021 Capital Projects Work-In-Progress Review Sub-Committee meeting was approved, as presented.

(b) DECLARATIONS OF INTEREST (Item 3)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 4)

(i) February 23, 2021 (Item 4.1)

The minutes of the February 23, 2021 meeting of the Capital Projects Work-In-Progress Review Sub-Committee meeting were approved, as presented.

(d) ADJOURNMENT (Item 15)

There being no further business, the Capital Projects Work-In-Progress Review Sub-Committee adjourned at 9:42 a.m.

Respectfully submitted,

Councillor Pearson, Chair
Capital Projects Work-in-Progress
Sub-Committee

Angela McRae
Legislative Coordinator
Office of the City Clerk

CITY OF HAMILTON CAPITAL PROJECT CLOSINGS AS OF DECEMBER 31, 2020 Projects impacting the Unallocated Capital Levy Reserve and Other Sources						
Year Approved	ProjectID	Description	Surplus/ (Deficit) (\$)	Reserve	Description	
<u>Projects requiring funds</u>						
2015	7101557502	CLASS Software Upgrades	(57.94)	108020	Unalloc	Capital Levy
2016	3541641013	Firestations Facility Upgrade	(1,887.00)	108020	Unalloc	Capital Levy
2016	3541641402	MTC - CNG Facility Upgrades	(33,804.19)	108020	Unalloc	Capital Levy
2018	3541841013	Firestations Facility Upgrade	(299.61)	108020	Unalloc	Capital Levy
2018	7101841706	Program - Recreation Centre Retrofits	(261.98)	108020	Unalloc	Capital Levy
			(36,310.72)			
<u>Projects returning funds</u>						
2012	4031218225	Bridge 391 - Governor's Rd, 275m w/o Weir Rd	147,236.51	108020	Unalloc	Capital Levy
2016	3541641010	Facility Upgrades Libraries	472.80	108020	Unalloc	Capital Levy
2016	3541641412	Roof Management Program	891.02	108020	Unalloc	Capital Levy
2016	4401656605	Upper Stoney Creek Splash Pad #2	23,729.56	108020	Unalloc	Capital Levy
2017	2051759701	HR Self Service Enhancements	2,213.51	108020	Unalloc	Capital Levy
2017	3541741412	Program - Roof Management	878.57	108020	Unalloc	Capital Levy
2017	3541741604	Binbrook Town Hall Skylights	2,260.64	108020	Unalloc	Capital Levy
2017	3541741605	HAMILTON Sign	4,699.31	108020	Unalloc	Capital Levy
2017	7101754705	Turner Park Washroom	12,630.91	108020	Unalloc	Capital Levy
2018	3541841010	Facility Upgrades Libraries	867.04	108020	Unalloc	Capital Levy
2018	3541841412	Roof Management	591.63	108020	Unalloc	Capital Levy
2018	4041811351	Roads - Alleyway Rehabilitation - 2018	9,397.74	108020	Unalloc	Capital Levy
2019	4031918433	Bridge 433 - Westbrook Road, 135m n/o Regional Rd 9A	722.76	108020	Unalloc	Capital Levy
2019	4031919118	Roxborough - Kenilworth to Strathearne (Homeside Neighbourhood)	367.50	108020	Unalloc	Capital Levy
2019	4031955962	Road Network Pavement Inspection	301.72	108020	Unalloc	Capital Levy
2019	4031980941	New Signal - Dundas @ Pamela	3,260.34	108020	Unalloc	Capital Levy
2019	4031980942	New Signal - Dundas @ Mallard	3,685.15	108020	Unalloc	Capital Levy
2019	4401956921	Johnon Tew Planting	430.60	108020	Unalloc	Capital Levy
2020	5122094920	Env Services LegComplianceProg	43,110.62	108020	Unalloc	Capital Levy
			257,747.93			
Net impact to the Unallocated Capital Levy Reserve			221,437.21			
<u>Projects requiring funds</u>						
2019	5141961341	Pineland-Teal-Community etc	(2,255.07)	5169309324	Unalloc	Current Funds-Sanitary
2019	5141971303	Brampton - Parkdale to Strathearne	(426.03)	5169309324	Unalloc	Current Funds-Sanitary
2020	5142060072	Structural WM Lining Program - 2020	(22,160.68)	5169309324	Unalloc	Current Funds-Sanitary
2020	5142061302	Barton Locke to Caroline	(4,094.09)	5169309324	Unalloc	Current Funds-Sanitary
2020	5142070018	Roxborough - Stratherne to Kenilworth - Road Restoration	(68,128.30)	5169309324	Unalloc	Current Funds-Sanitary
Net impact to Other Reserves			(97,064.17)			
Total Net impact to the Unallocated Capital Levy Reserve & Other Reserves			124,373.04			

CITY OF HAMILTON
CAPITAL PROJECTS' CLOSING SCHEDULE
AS OF DECEMBER 31, 2020

Appendix "B" to Item 1 of CPWIP Report 21-002
Page 1 of 5

YEAR APPROVED	PROJECT ID	DESCRIPTION	APPROVED BUDGET (\$)	REVENUES (\$)	EXPENDITURES (\$)	PROJECT SURPLUS/ (DEFICIT) (\$)	% SPENT
			a	b	c	d = b - c	e=c/a
UNALLOCATED CAPITAL LEVY RESERVE							
2012	4031218225	Bridge 391 - Governor's Rd, 275m w/o Weir Rd	1,744,000.00	1,889,000.00	1,741,763.49	147,236.51	99.9%
2015	7101557502	CLASS Software Upgrades	260,380.00	260,384.42	260,442.36	(57.94)	100.0%
2016	3541641010	Facility Upgrades Libraries	241,295.52	242,070.81	241,598.01	472.80	100.1%
2016	3541641013	Firestations Facility Upgrade	349,121.00	349,128.06	351,015.06	(1,887.00)	100.5%
2016	3541641402	MTC - CNG Facility Upgrades	1,309,000.00	1,309,000.00	1,342,804.19	(33,804.19)	102.6%
2016	3541641412	Roof Management Program	818,117.23	818,117.23	817,226.21	891.02	99.9%
2016	4401656605	Upper Stoney Creek Splash Pad #2	836,510.00	836,500.00	812,770.44	23,729.56	97.2%
2017	2051759701	HR Self Service Enhancements	250,000.00	250,000.00	247,786.49	2,213.51	99.1%
2017	3541741412	Program - Roof Management	573,800.00	573,812.34	572,933.77	878.57	99.8%
2017	3541741604	Binbrook Town Hall Skylights	250,000.00	250,000.00	247,739.36	2,260.64	99.1%
2017	3541741605	HAMILTON Sign	0.00	300,000.00	295,300.69	4,699.31	0.0%
2017	7101754705	Turner Park Washroom	355,927.78	655,874.97	643,244.06	12,630.91	180.7%
2018	3541841010	Facility Upgrades Libraries	15,000.00	15,000.00	14,132.96	867.04	94.2%
2018	3541841013	Firestations Facility Upgrade	116,476.62	116,476.62	116,776.23	(299.61)	100.3%
2018	3541841412	Roof Management	654,000.00	654,000.00	653,408.37	591.63	99.9%
2018	4041811351	Roads - Alleyway Rehabilitation - 2018	19,000.00	19,000.00	9,602.26	9,397.74	50.5%
2018	7101841706	Program - Recreation Centre Retrofits	173,976.61	173,976.61	174,238.59	(261.98)	100.2%
2019	4031918433	Bridge 433 - Westbrook Road, 135m n/o Regional Rd 9A	5,000.00	5,000.00	4,277.24	722.76	85.5%
2019	4031919118	Roxborough - Kenilworth to Strathearne (Homeside Neighbourhood)	1,147,000.00	1,096,726.49	1,096,358.99	367.50	95.6%
2019	4031955962	Road Network Pavement Inspection	307,000.00	307,000.00	306,698.28	301.72	99.9%
2019	4031980941	New Signal - Dundas @ Pamela	160,000.00	58,053.68	54,793.34	3,260.34	34.2%
2019	4031980942	New Signal - Dundas @ Mallard	175,000.00	69,982.22	66,297.07	3,685.15	37.9%
2019	4401956921	Johnon Tew Planting	9,581.57	9,581.57	9,150.97	430.60	95.5%
2020	5122094920	Env Services LegComplianceProg	185,000.00	185,000.00	141,889.38	43,110.62	76.7%
TOTAL FUNDS TO UNALLOCATED CAPITAL LEVY (24)			9,955,186.33	10,443,685.02	10,222,247.81	221,437.21	102.7%
OTHER PROGRAM SPECIFIC RESERVES							
2019	5141961341	Pineland-Teal-Community etc	20,000.00	20,000.00	22,255.07	(2,255.07)	111.3%
2019	5141971303	Brampton - Parkdale to Strathearne	928,000.00	928,000.00	928,426.03	(426.03)	100.0%
2020	5142060072	Structural WM Lining Program - 2020	5,505,000.00	5,505,000.00	5,527,160.68	(22,160.68)	100.4%
2020	5142061302	Barton Locke to Caroline	0.00	0.00	4,094.09	(4,094.09)	0.0%
2020	5142070018	Roxborough - Stratherne to Kenilworth - Road Restoration	700,000.00	700,000.00	768,128.30	(68,128.30)	109.7%
TOTAL FUNDS FROM PROGRAM SPECIFIC RESERVES (5)			7,153,000.00	7,153,000.00	7,250,064.17	(97,064.17)	101.4%
DELAYED/CANCELLED PROJECTS							
2013	4241309206	Jamesville Rec Space FS	30,000.00	0.00	0.00	0.00	0.0%
2015	4241509122	A/R - Speed Limit - Victoria Park (Ward 1)	20,000.00	0.00	0.00	0.00	0.0%
2016	4241609201	Elgin Alleyway Project	20,000.00	0.00	0.00	0.00	0.0%
2017	4031711777	Pavement Degradation Funds	0.00	0.00	0.00	0.00	0.0%
2017	4241709112	Dundurn Park Beautification	160,000.00	0.00	0.00	0.00	0.0%
2018	5161869075	Environmental Lab Improvements - 2018	0.00	0.00	0.00	0.00	0.0%
2018	5181860999	Closed Projects - Storm	0.00	0.00	0.00	0.00	0.0%
2018	6301851803	ML&WL - Circulation Pumps	0.00	0.00	0.00	0.00	0.0%
2019	3541951900	Generator Compliance Test & Upgrade	0.00	0.00	0.00	0.00	0.0%
2019	4031911029	LRT York - Caroline to Dundurn & Cannon - James to York	1,190,000.00	0.00	0.00	0.00	0.0%
2019	4241909226	A/R - Marion Trucker St Sign (Ward 2)	700.00	0.00	0.00	0.00	0.0%
2019	4241909229	A/R - Temp Cannon Lane Restriction	15,000.00	0.00	0.00	0.00	0.0%
2019	4241909304	Rosemount Ladder Crosswalk	1,500.00	0.00	0.00	0.00	0.0%
2019	4661920522	Traffic Engineering - Signal Design - 2019	0.00	0.00	0.00	0.00	0.0%
2019	4661920924	New Traffic Signal - Hughson at Hunter	0.00	0.00	0.00	0.00	0.0%

**CITY OF HAMILTON
CAPITAL PROJECTS' CLOSING SCHEDULE
AS OF DECEMBER 31, 2020**

Appendix "B" to Item 1 of CPWIP Report 21-002
Page 2 of 5

YEAR APPROVED	PROJECT ID	DESCRIPTION	APPROVED BUDGET (\$) a	REVENUES (\$) b	EXPENDITURES (\$) c	PROJECT SURPLUS/ (DEFICIT) (\$) d = b - c	% SPENT e=c/a
2019	5141969075	Environmental Lab Improvements - 2019	0.00	0.00	0.00	0.00	0.0%
2019	5161969075	Environmental Lab Improvements - 2019	0.00	0.00	0.00	0.00	0.0%
2019	5181974951	Shoreline Protection Program	0.00	0.00	0.00	0.00	0.0%
2020	3542051001	Mechanical Lifecycle Renewal	0.00	0.00	0.00	0.00	0.0%
2020	3722041805	HCC FOCH&FOC LifecycleRenewal	0.00	0.00	0.00	0.00	0.0%
2020	4032011013	LRT Sherman-King to south end	490,000.00	0.00	0.00	0.00	0.0%
2020	4032011014	LRT Wentworth - Wilson to King	120,000.00	0.00	0.00	0.00	0.0%
2020	4032011015	LRT Main-Delena to Normanhurst	850,000.00	0.00	0.00	0.00	0.0%
2020	4241609802	Asphalt & Culvert - Gourley Park	20,000.00	0.00	0.00	0.00	0.0%
2020	4412010555	2020 Chargebacks - W Harbour	0.00	0.00	0.00	0.00	0.0%
TOTAL DELAYED/CANCELLED PROJECTS (25)			2,917,200.00	0.00	0.00	0.00	0.0%
COMPLETED PROJECTS							
CORPORATE PROJECTS DEPARTMENT (Tax Budget)							
Councillor Infrastructure Program							
2016	4241609504	Buy 15m by 10m Street Stadia	30,000.00	28,164.24	28,164.24	0.00	93.9%
2016	4241609509	555 Queenston Floor	200,000.00	189,085.36	189,085.36	0.00	94.5%
2016	4241609808	Stonechurch Parking	45,500.00	7,284.37	7,284.37	0.00	16.0%
2017	4241709802	AR - San Francisco / San Pedro / Goulding (W8 A/R)	1,300,000.00	1,085,849.43	1,085,849.43	0.00	83.5%
2018	4241809214	Jone Street Bike Lane	60,000.00	54,603.80	54,603.80	0.00	91.0%
2018	4241809402	AR - Barnaby Corbett etc (W4 A/R)	860,000.00	723,430.48	723,430.48	0.00	84.1%
2019	4241909225	2 Bollards Main John	6,000.00	5,652.77	5,652.77	0.00	94.2%
2019	4241909302	Two School Flashing Lights	90,000.00	11,255.21	11,255.21	0.00	12.5%
2020	4242009202	A/R - Sidewalk repairs (Ward 2)	30,000.00	30,000.00	30,000.00	0.00	100.0%
2020	4242009204	Regional Indian Centre	35,000.00	34,903.75	34,903.75	0.00	99.7%
2020	4242009207	Retaining Wall - Patrick St	15,000.00	12,191.89	12,191.89	0.00	81.3%
2020	4242009501	A/R - Sidewalk & rolled curb (Ward 5)	40,000.00	40,000.00	40,000.00	0.00	100.0%
2020	4242009602	AR - Trenholme - Solomon (Ward 6)	1,440,000.00	804,973.09	804,973.09	0.00	55.9%
2020	4242009801	A/R - Sidewalk & rolled curb repair (Ward 8)	136,000.00	68,000.00	68,000.00	0.00	50.0%
2020	4242009803	A/R - Sidewalk & Minor Road Repair (Ward 8)	375,000.00	375,000.00	375,000.00	0.00	100.0%
2020	4242010555	2020 Chargebacks - Area Rating	0.00	572,693.88	572,693.88	0.00	0.0%
OUTSIDE BOARDS AND AGENCIES (Tax Budget)							
City Housing							
2014	6731441401	Parking Structure-30 Sanford S	1,142,000.00	1,142,000.00	1,142,000.00	0.00	100.0%
2019	4241909202	Vanier Tower Kitchen Project	150,000.00	149,967.85	149,967.85	0.00	100.0%
2019	4241909218	226 Rebecca Gazebo	5,450.00	4,909.92	4,909.92	0.00	90.1%
2019	4241909801	45 Montcalm Fencing	3,150.00	2,900.16	2,900.16	0.00	92.1%
Healthy & Safe Communities (Tax Budget)							
Lodges Program							
2018	6301851003	WL - Bed Replacement	135,137.40	260,143.80	260,143.80	0.00	192.5%
2019	6301951002	ML & WL Resident Care Equip	84,674.78	84,674.78	84,674.78	0.00	100.0%
2020	6302051002	ML & WL Resident Care Equip	58,569.26	58,569.26	58,569.26	0.00	100.0%

CITY OF HAMILTON
CAPITAL PROJECTS' CLOSING SCHEDULE
AS OF DECEMBER 31, 2020

Appendix "B" to Item 1 of CPWIP Report 21-002
Page 3 of 5

YEAR APPROVED	PROJECT ID	DESCRIPTION	APPROVED BUDGET (\$) a	REVENUES (\$) b	EXPENDITURES (\$) c	PROJECT SURPLUS/ (DEFICIT) (\$) d = b - c	% SPENT e=c/a
Social Housing Program							
2015	6731541504	IAH Extension - Admin	1,522,875.00	1,522,875.00	1,522,875.00	0.00	100.0%
2016	6731641302	Social Housing Capital Repairs	1,523,079.02	1,523,079.02	1,523,079.02	0.00	100.0%
2016	6731641602	SIF-IAH Administration	752,610.00	752,610.00	752,610.00	0.00	100.0%
2016	6731641607	SIF-SHIP Administration	279,870.00	279,870.00	279,870.00	0.00	100.0%
Planning & Development (Tax Budget)							
Growth Management Division							
2019	3621904901	Airport Consultant Fees	407,171.03	407,171.03	407,171.03	0.00	100.0%
Parking Operations Division							
2016	4041655601	Everyone Rides Initiative Pilot Project	524,945.00	523,613.31	523,613.31	0.00	99.7%
Tourism, Cultural Services & Public Art Programs							
2017	7101741702	Auchmar Rehab Garden Wall-Can150	879,914.61	880,112.60	880,112.60	0.00	100.0%
2017	7201758705	Steam Museum Landscape	54,620.00	54,620.00	54,620.00	0.00	100.0%
Public Works (Tax Budget)							
Roads Division							
2014	4031420622	North End Traffic Mgmt Plan	1,230,724.74	1,230,724.74	1,230,724.74	0.00	100.0%
2017	4031717241	Fencing/Sound Barrier Rehab/Replace within Road Allowance - 2017	145,000.00	145,000.00	145,000.00	0.00	100.0%
2017	4031755522	State of the Infrastructure - Asset Management - 2017	225,000.00	225,000.00	225,000.00	0.00	100.0%
2018	4031817241	Fencing/Sound Barrier Rehab/Replace within Road Allowance - 2018	90,000.00	90,000.00	90,000.00	0.00	100.0%
2019	4031917241	Fencing/Sound Barrier Rehab/Replace within Road Allowance - 2019	55,000.00	55,000.00	55,000.00	0.00	100.0%
2019	4031941762	Yard Facility Maintenance & Improvement Program - 2019	150,000.00	150,000.00	150,000.00	0.00	100.0%
2019	4031955556	Mapping Update - 2019	2,000.00	2,000.00	2,000.00	0.00	100.0%
2019	4661915820	Traffic Counts Program - 2019	120,000.00	120,000.00	120,000.00	0.00	100.0%
2020	4032011030	Asset Preservation (Homeside)	1,230,000.00	1,129,523.18	1,129,523.18	0.00	91.8%
2020	4032019104	Hwy 8 - Woodley Recon	1,320,000.00	1,044,312.91	1,044,312.91	0.00	79.1%
Waste Management Division							
2017	5121795525	SWMMP - Planning & Approvals Program	120,000.00	99,071.27	99,071.27	0.00	82.6%
Fleet Division							
2017	4941751001	Shop Equipment Replacement	100,000.00	89,821.87	89,821.87	0.00	89.8%
2018	4941851001	Shop Equipment Replacement	102,000.00	74,720.99	74,720.99	0.00	73.3%
2019	4941951004	Street Sweeper Purchase	728,500.00	728,500.00	728,500.00	0.00	100.0%
Energy Initiatives Division							
2016	7901641604	Aquatic Centres Ext LED Light	106,000.00	96,655.14	96,655.14	0.00	91.2%
2019	7901941900	Traffic Operations Centre - LED lighting Upgrade	60,000.00	32,052.29	32,052.29	0.00	53.4%
2019	7901941901	Wentworth Ops Ctr-LED Upgrade	30,000.00	22,058.60	22,058.60	0.00	73.5%
2019	7901941902	Lister Blk-LED Lighting Upgrade	125,000.00	50,080.87	50,080.87	0.00	40.1%
2019	7901949000	Solar Wall-Pinky Lewis RecCtr	117,000.00	20,010.98	20,010.98	0.00	17.1%

CITY OF HAMILTON
CAPITAL PROJECTS' CLOSING SCHEDULE
AS OF DECEMBER 31, 2020

Appendix "B" to Item 1 of CPWIP Report 21-002
Page 4 of 5

YEAR APPROVED	PROJECT ID	DESCRIPTION	APPROVED BUDGET (\$) a	REVENUES (\$) b	EXPENDITURES (\$) c	PROJECT SURPLUS/ (DEFICIT) (\$) d = b - c	% SPENT e=c/a
Forestry & Horticulture Division							
2016	4241909407	W4 Traffic Isld Beautification	55,650.00	26,406.47	26,406.47	0.00	47.5%
2017	4241609507	Tree Planting Ward 5	400,000.00	400,000.00	400,000.00	0.00	100.0%
2019	3301709200	Ward 2 Capital Reinvestment	100,000.00	65,041.72	65,041.72	0.00	65.0%
2019	4241909209	Beasley and Central Trees	75,000.00	37,500.00	37,500.00	0.00	50.0%
2019	4241909901	Valley Park Beautification	4,185.00	2,582.93	2,582.93	0.00	61.7%
Facilities Division							
2013	7101354105	Park & Fieldhouse Retrofits	992,835.00	1,212,248.93	1,212,248.93	0.00	122.1%
2016	3541641409	Code & Legislative Compliance	611,721.46	611,721.46	611,721.46	0.00	100.0%
2016	3541641601	Animal Control Facility Design	70,420.95	70,420.95	70,420.95	0.00	100.0%
2017	3721741805	HCC HP & FOC Lifecycle Renewal	802,799.20	802,799.20	802,799.20	0.00	100.0%
2017	7101754703	Senior Centre Retrofits	27,698.15	22,833.02	22,833.02	0.00	82.4%
2017	7101754709	Wolverton Parkland Imprv&Demo	160,000.00	107,334.91	107,334.91	0.00	67.1%
2018	3541841532	Facility Capital Maintenance	357,448.14	357,448.14	357,448.14	0.00	100.0%
2018	3541841801	Rymal Yard Building Repairs	300,000.00	308,421.20	308,421.20	0.00	102.8%
2018	3541841910	Stoney Creek City Hall -RCMP	316,001.06	316,001.06	316,001.06	0.00	100.0%
2018	3541855001	Yard Capital Renewal	110,481.02	110,481.02	110,481.02	0.00	100.0%
2018	3541855101	Recreation Facilities Audit Program	100,728.03	100,728.03	100,728.03	0.00	100.0%
2018	3721841805	HCC FOCH&FOC LifecycleRenewal	283,433.83	283,433.83	283,433.83	0.00	100.0%
2018	7101845801	Waterdown Mem Pk Parking Lot	680,000.00	704,666.20	704,666.20	0.00	103.6%
2018	7101854703	Senior Centre Retrofits	16,973.89	21,802.05	21,802.05	0.00	128.4%
2020	3542041009	Compliance Remediation	186,926.04	186,926.04	186,926.04	0.00	100.0%
2020	3542041013	Firestations Facility Upgrade	45,979.85	45,979.85	45,979.85	0.00	100.0%
2020	3542055100	Facilities Audit Program	47,101.51	47,101.51	47,101.51	0.00	100.0%
Parks Division							
2015	4401549002	Marina Pier & Dock Repair - Replc	252,100.00	244,852.57	244,852.57	0.00	97.1%
2018	4401849102	Waterfront (Bayfront) Trail	438,745.40	438,745.40	438,745.40	0.00	100.0%
2020	4242009403	Bartonville Cemetery Fencing	0.00	63,081.15	63,081.15	0.00	0.0%
Public Works (Rate Budget)							
Waterworks Regular Program							
2016	5141660999	Closed Projects - Water	76,000.00	76,000.00	76,000.00	0.00	100.0%
2016	5141670000	Coordinated Road and Subsurface Works - 2016	2,938,000.00	2,927,692.62	2,927,692.62	0.00	99.6%
2017	5141757626	Critical WM Inspection Program - 2017	330,000.00	196,913.92	196,913.92	0.00	59.7%
2018	5141811101	Road Restoration Program - 2018	3,100,000.00	3,100,000.00	3,100,000.00	0.00	100.0%
2018	5141855851	Water Efficiency Plan - 2018	161,000.00	186,623.53	186,623.53	0.00	115.9%
2018	5141857626	Critical WM Inspection Program - 2018	290,000.00	326,085.56	326,085.56	0.00	112.4%
2018	5141861300	Wm Replacement Program - 2018	182,000.00	178,407.46	178,407.46	0.00	98.0%
2018	5141869075	Environmental Lab Improvements - 2018	145,000.00	145,000.00	145,000.00	0.00	100.0%
2019	5141955556	Mapping Update - 2019	5,000.00	5,000.00	5,000.00	0.00	100.0%
2019	5141961502	Water Meter - Installation /Replace/Repair - General Mtnc - 2019	2,390,000.00	2,390,000.00	2,390,000.00	0.00	100.0%
2019	5141970008	Hewitson - Dupont to Barton	230,000.00	196,790.81	196,790.81	0.00	85.6%
2019	5141971074	Contingency for Unscheduled Works Program - 2019	237,139.78	237,139.78	237,139.78	0.00	100.0%
2019	5141971306	Ferguson -Simcoe to Burlington	440,000.00	435,850.60	435,850.60	0.00	99.1%

CITY OF HAMILTON
CAPITAL PROJECTS' CLOSING SCHEDULE
AS OF DECEMBER 31, 2020

Appendix "B" to Item 1 of CPWIP Report 21-002
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YEAR APPROVED	PROJECT ID	DESCRIPTION	APPROVED BUDGET (\$)	REVENUES (\$)	EXPENDITURES (\$)	PROJECT SURPLUS/ (DEFICIT) (\$)	% SPENT
			a	b	c	d = b - c	e=c/a
2019	5141971308	Hewitson - Dupont to Barton	242,000.00	208,402.61	208,402.61	0.00	86.1%
2020	5142071318	Roxborough - Stratherne to Kenilworth - wm Replacement	770,000.00	656,957.79	656,957.79	0.00	85.3%
Wastewater Regular Program							
2013	5161395358	Binbrook (Hwy 56) Forcemain & Twinning - (WW-21)	27,190,000.00	21,831,513.54	21,831,513.54	0.00	80.3%
2015	5161555077	Zoom Camera Inspection - Data Component	760,000.00	715,029.01	715,029.01	0.00	94.1%
2015	5161560999	Closed Projects - WasteWater	29,000.00	20,091.70	20,091.70	0.00	69.3%
2016	5161669075	Environmental Lab Improvements - 2016	225,000.00	221,316.60	221,316.60	0.00	98.4%
2017	5161760302	Emergency Repairs - Cross Connections - 2017	560,000.00	560,000.00	560,000.00	0.00	100.0%
2017	5161768240	Western Interceptor Sewer CCTV and Sonar Inspection	2,060,000.00	976,340.85	976,340.85	0.00	47.4%
2017	5161769075	Environmental Lab Improvements - 2017	240,000.00	239,614.76	239,614.76	0.00	99.8%
2018	5161855878	Forcemain Condition Assessment Program - 2018	177,000.00	177,000.00	177,000.00	0.00	100.0%
2019	5161949555	QA-QC Service Contract 2019	220,000.00	220,000.00	220,000.00	0.00	100.0%
2019	5161955556	Mapping Update - 2019	24,000.00	24,000.00	24,000.00	0.00	100.0%
2019	5161955878	Forcemain Condition Assessment Program - 2019	51,000.00	51,000.00	51,000.00	0.00	100.0%
2019	5161960390	Wastewater System Lining Program - 2019	4,100,000.00	4,100,000.00	4,100,000.00	0.00	100.0%
2019	5161960575	Mainline Sewer Condition Assessment Program - 2019	790,000.00	790,000.00	790,000.00	0.00	100.0%
2019	5161961740	Unscheduled Manhole & Sewermain - 2019	290,000.00	290,000.00	290,000.00	0.00	100.0%
Storm Sewers Regular Program							
2014	5181460452	Shoreline Protection Program	286,836.02	286,836.02	286,836.02	0.00	100.0%
2015	5181560999	Closed Projects - Storm	48,000.00	47,591.73	47,591.73	0.00	99.1%
2018	5181872074	Contingency for Unscheduled Works Program - 2018	13,000.00	13,000.00	13,000.00	0.00	100.0%
2019	5181949555	QA-QC Service Contract 2019	84,000.00	84,000.00	84,000.00	0.00	100.0%
2019	5181955556	Mapping Update - 2019	23,000.00	23,000.00	23,000.00	0.00	100.0%
2019	5181960533	Trenchless Manhole Rehabilitation - 2019	10,000.00	9,066.58	9,066.58	0.00	90.7%
2020	5182070001	Hwy 8 - Woodley - Road Restoration	620,000.00	611,354.37	611,354.37	0.00	98.6%
2020	5182072092	Cedar Fern Braeheid	100,000.00	96,412.04	96,412.04	0.00	96.4%
TOTAL COMPLETED PROJECTS (112)			74,115,995.17	66,337,327.36	66,337,327.36	0.00	89.5%
GRAND TOTAL COMPLETED/CANCELLED PROJECTS (166)			94,141,381.50	83,934,012.38	83,809,639.34	124,373.04	89.0%

CITY OF HAMILTON
**CAPITAL PROJECTS BUDGET APPROPRIATIONS OF \$250,000 OR GREATER AND CAPITAL PROJECT RESERVE FUNDING
 FOR THE PERIOD COVERING OCTOBER 1, 2020 TO DECEMBER 31, 2020**

Appropriated/ Transferred From	Description	Appropriated/ Transferred To	Description	Amount (\$)	Council Approval / Comments	Comments
Corporate Projects Department						
<i>Councillor Infrastructure Program</i>						
58600-108051	Ward 1 Area Rating Reserve	4242109104	Traffic Calming Ward 1	\$ 60,000.00		Motion for this project was approved at PWC May 17, 2021 and Council May 26, 2021. Funding source was incorrectly identified as coming from the Ward 1 capital reinvestment discretionary account. Funding from a new source is required.
58600-108051	Ward 1 Area Rating Reserve	4242109105	Bumpouts Sanders & Hollywood	\$ 40,000.00		Motion for this project was approved at PWC May 17, 2021 and Council May 26, 2021. Funding source was incorrectly identified as coming from the Ward 1 capital reinvestment discretionary account. Funding from a new source is required.
58600-108051	Ward 1 Area Rating Reserve	4242109106	Raised Intersection King & Haddon	\$ 150,000.00		Motion for this project was approved at PWC May 17, 2021 and Council May 26, 2021. Funding source was incorrectly identified as coming from the Ward 1 capital reinvestment discretionary account. Funding from a new source is required.
Corporate Projects Department Total				\$ 250,000.00		
Healthy & Safe Communities						
<i>Social Housing Program</i>						
6731941013	COCHI Transitional Ops YR2	6731941011	COCHI Repairs YR2	\$ 330,000.00		Underspending in transitional ops. Received Ministry approval to transfer the budget to Repairs to ensure Ministry funds are disbursed by the stipulated timelines.
6731941012	COCHI Rent Supplement YR2	6731941011	COCHI Repairs YR2	\$ 718,922.00		Underspending in rent supplements. Received Ministry approval to transfer the budget to Repairs to ensure Ministry funds are disbursed by the stipulated timelines.
6731941022	OPHI - Ontario Renovates - YR2	6731941021	OPHI - Rental Housing YR2	\$ 297,770.00		Request submitted to place budget in 6731941021 - OPHI Ontario Renovates - YR2. Underspending in OPHI renovates. Received Ministry approval to transfer the budget to OPHI Rental Housing to ensure Ministry funds are disbursed by the stipulated timelines.
Healthy & Safe Communities Total				\$ 1,346,692.00		

CITY OF HAMILTON
 CAPITAL PROJECTS BUDGET APPROPRIATIONS OF \$250,000 OR GREATER AND CAPITAL PROJECT RESERVE FUNDING
 FOR THE PERIOD COVERING OCTOBER 1, 2020 TO DECEMBER 31, 2020

Appropriated/ Transferred From	Description	Appropriated/ Transferred To	Description	Amount (\$)	Council Approval / Comments	Comments
Public Works (Tax)						
<i>Recreation Facilities</i>						
58600-108020	Unallocated Capital Levy Reserve	7101841800	Parks North Yard at Bayfront Park	\$ 801,000.00		Project was not eligible to receive funding from a DC project. Funding from a new source is required.
Public Works (Tax) Total				\$ 801,000.00		
Planning & Development (Rate)						
<i>Growth Management Program</i>						
5142080080	Dundas 575m to 210 wo Evans	5141680682	Dundas - Spring Crk to Skinner	\$ 410,000.00		Budget increase for project 5141680682 that was inadvertently set up as a new project (5142080080).
Planning & Development (Rate) Total				\$ 410,000.00		
Project Totals				\$ 2,807,692.00		

CITY OF HAMILTON APPROPRIATION OF FEDERAL GAS TAX FUNDING AS OF DECEMBER 31, 2020					
Recommendations					
Appropriated From	Description	Appropriated To	Description	Amount (\$)	Comment
Public Works (Tax)					
<i>Roads</i>					
42020-4031311016	Asset Preservation - Turnball	58620-112213	Federal Gas Tax Reserve	\$ 131,922.05	To move ineligible FGT funding to reserve 112213
42020-4031919112	Bruce Dale (Eastmount NHBD)	58620-112213	Federal Gas Tax Reserve	\$ 53,754.50	To move ineligible FGT funding to reserve 112213
42020-4031811225	Geotechnical Investigation	58620-112213	Federal Gas Tax Reserve	\$ 630,000.00	To move ineligible FGT funding to reserve 112213
42020-4031919117	Parkdale - Burlington to n end	58620-112213	Federal Gas Tax Reserve	\$ 123,890.87	To move ineligible FGT funding to reserve 112213
42020-4031618219	Structural Investigation & Rp	58620-112213	Federal Gas Tax Reserve	\$ 88,885.57	To move ineligible FGT funding to reserve 112213
42020-4031718452	Bridge 452 - Centennial Pkwy	58620-112213	Federal Gas Tax Reserve	\$ 17,516.46	To move ineligible FGT funding to reserve 112213
42020-4032011045	Resurfacing & Rehabilitation of Lincoln M. Alexander Parkway	42020-4031811015	Resurfacing and Rehabilitation of Barton, Governors & Red Hill Valley Parkway	\$ 1,188,813.54	Funding from Federal Gas Tax reserve 112213 moved from Project 4032011045 to 4031811015
Federal Gas Tax Funding Transferred				\$ 2,234,782.99	
Public Works (Tax)					
<i>Roads</i>					
58600-108020	Unallocated Capital Levy	49412-4031311016	Asset Preservation - Turnball	\$ 131,922.05	To fund ineligible FGT expenses from reserve 108020
58600-108020	Unallocated Capital Levy	49412-4031919112	Bruce Dale (Eastmount NHBD)	\$ 53,754.50	To fund ineligible FGT expenses from reserve 108020
58600-108020	Unallocated Capital Levy	49412-4031811225	Geotechnical Investigation	\$ 630,000.00	To fund ineligible FGT expenses from reserve 108020
58600-108020	Unallocated Capital Levy	49412-4031919117	Parkdale - Burlington to n end	\$ 123,890.87	To fund ineligible FGT expenses from reserve 108020
58600-108020	Unallocated Capital Levy	49412-4031618219	Structural Investigation & Rp	\$ 88,885.57	To fund ineligible FGT expenses from reserve 108020
58600-108020	Unallocated Capital Levy	49412-4031718452	Bridge 452 - Centennial Pkwy	\$ 17,516.46	To fund ineligible FGT expenses from reserve 108020
49300-4031811015	Resurfacing and Rehabilitation of Barton, Governors & Red Hill Valley Parkway	49300-4032011045	Resurfacing & Rehabilitation of Lincoln M. Alexander Parkway	\$ 1,188,813.54	Funding from operating budget capital levy moved from Project 4031811015 to 4032011045
Unallocated Capital Levy Funding Transferred				\$ 2,234,782.99	
Net Financial Impact				\$ -	

CITY OF HAMILTON			
CAPITAL PROJECTS TO BE RE-OPENED			
AS OF DECEMBER 31, 2020			
ProjectID	Description	Amount (\$)	Source of Funds
Corporate Projects Department			
<i>Councillor Infrastructure Program</i>			
3301709100	Ward 1 Capital Reinvestment	43,075.18	Ward 1 Area Rating Reserve
3301809100	Ward 1 Capital Reinvestment	77,541.25	Ward 1 Area Rating Reserve
3301909100	Ward 1 Capital Reinvestment	92,111.20	Ward 1 Area Rating Reserve
3301909200	Ward 2 Capital Reinvestment	87,216.33	Ward 2 Area Rating Reserve
3301709300	Ward 3 Capital Reinvestment	79,031.29	Ward 3 Area Rating Reserve
3301809300	Ward 3 Capital Reinvestment	45,000.00	Ward 3 Area Rating Reserve
3301909300	Ward 3 Capital Reinvestment	93,450.00	Ward 3 Area Rating Reserve
3301709400	Ward 4 Capital Reinvestment	12,961.15	Ward 4 Area Rating Reserve
3301809400	Ward 4 Capital Reinvestment	33,244.09	Ward 4 Area Rating Reserve
3301909400	Ward 4 Capital Reinvestment	80,367.99	Ward 4 Area Rating Reserve
3301709500	Ward 5 Capital Reinvestment	522.90	Ward 5 Area Rating Reserve
3301809500	Ward 5 Capital Reinvestment	50,736.74	Ward 5 Area Rating Reserve
3301709600	Ward 6 Capital Reinvestment	627.45	Ward 6 Area Rating Reserve
3301809600	Ward 6 Capital Reinvestment	(85.13)	Ward 6 Area Rating Reserve
3301909600	Ward 6 Capital Reinvestment	76,387.57	Ward 6 Area Rating Reserve
3301709700	Ward 7 Capital Reinvestment	54,004.78	Ward 7 Area Rating Reserve
3301909700	Ward 7 Capital Reinvestment	(3,126.51)	Ward 7 Area Rating Reserve
3301809800	Ward 8 Capital Reinvestment	(1,550.00)	Ward 8 Area Rating Reserve
3301909800	Ward 8 Capital Reinvestment	99,641.31	Ward 8 Area Rating Reserve
3301909014	Ward 14 Capital Reinvestment	42,680.72	Ward 14 Area Rating Reserve
Project Totals		\$ 963,838.31	

Note: As per policy, these projects were closed due to inactivity. Projects need to be re-opened as commitments from these projects have been made.



INFORMATION REPORT

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	July 5, 2021
SUBJECT/REPORT NO:	Considerations to Implement a Vacant Home Tax in Hamilton (FCS21017(a) / PED21114) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Gloria Rojas (905) 546-2424 Ext. 6247 Robert Ustrzycki 905-546-2424 Ex. 4721
SUBMITTED BY: SIGNATURE:	Brian McMullen Director, Financial Planning, Administration and Policy Corporate Services Department
SUBMITTED BY: SIGNATURE:	Ken Leendertse Director, Licensing and By-law Services Planning and Economic Development Department

COUNCIL DIRECTION

On February 25, 2021, at the General Issues Committee, Council approved the following Motion (Item f(i) of General Issues Committee Report (Budget) 21-002(j)):

“That staff be directed to prepare a report respecting a Vacant Homes Tax as it relates to Hamilton's Housing market, fees collected from Municipal Law Enforcement vacant lands registry, the status of assessing vacant residential properties as well as how the municipality assesses those properties (with Metrolinx properties removed), and the success of this tax as a mechanism to identifying vacant homes, and report back with a breakdown by Ward to the General Issues Committee by June 16, 2021.”

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 2 of 10**

INFORMATION

At the General Issues Committee meeting of February 25, 2021, Council discussed Report FCS21017 “Considerations to Implement a Vacant Home Tax in Hamilton” which presented information on the implications of imposing a vacant home tax in the City of Hamilton.

A tax on vacant residential properties is designed primarily as a housing tool rather than a revenue tool. The main objective of implementing a Vacant Home Tax (VHT) is to encourage owners to rent out empty properties in order to increase the supply and affordability of housing. However, identifying vacant units is the most challenging piece for the implementation of the VHT.

Therefore, following Council direction, Report FCS21017(a) / PED2114 provides information on using the Hamilton Vacant Building Registry as a means to identify vacant homes. It also includes information on the Hamilton Rental Market and the success of the Empty Homes Tax (EHT) in Vancouver, which is the only jurisdiction in Canada that levies a similar tax, which Vancouver implemented in 2017. The City of Toronto, on December 16, 2020, approved an implementation plan to introduce a new tax on vacant homes starting in 2022. The City of Ottawa approved the implementation of the “Residential Vacant Unit Tax” on June 9, 2021. Details on Toronto’s Vacant Home Tax were included in Report FCS21017 and details on Ottawa’s Residential Vacant Unit Tax are outlined on page 7 of Report FCS21017(a) / PED21114.

As Report FCS21017(a) / PED21114 addresses the issue as noted on the Outstanding Business List of the General Issues Committee it is appropriate to be deemed complete and removed from the List.

Hamilton Vacant Building Registry

On October 13, 2010, Council enacted the Vacant Building Registry By-law No. 10-260 to regulate vacant buildings in the City of Hamilton. A review of the By-law in 2017 identified several matters requiring updating and improvement. On June 28, 2017, By-law 10-260 was repealed by Council and replaced with the current Vacant Building Registry By-law No. 17-127.

The Vacant Building Registry By-law No. 17-127 makes it mandatory for all property owners to register their properties with the City if it is vacant and works collectively with the Hamilton Property Standards By-law No. 10-221. The Property Standards By-law establishes the minimum standards for the repair and maintenance of vacant and / or damaged buildings, including Designated Heritage properties.

**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 3 of 10**

If a property owner fails to register their property under the Vacant Building Registry By-law or fails to maintain the property, the City's officer can use various tools to resolve the violation which may include:

- Assess a fee for inspection cost that would be added to the property taxes;
- Register an Order on title;
- Issue Administrative Penalty System (APS) tickets or initiate court action; and
- Send a contractor to complete the required work with the costs added to the property taxes as a priority lien

The Progressive Enforcement Policy established by Licensing and Bylaw Services (LBS) is a fair, effective and efficient enforcement tool to compel voluntary compliance, commencing with an administrative penalty of \$300, which can escalate to fines in Provincial Offences Court as high as \$50,000 for an individual and \$100,000 for a defendant corporation.

The cost of registration is \$297 with a yearly cost for inspections of \$840. For properties that fail or refuse to register at least four proactive inspections are completed on the property annually with additional fees for service (FFS) in the amount of \$1,348, plus appropriate fines.

Vacant buildings are identified through public complaints and the proactive efforts of Municipal Law Enforcement, Building Services and Fire Prevention staff continually monitoring vacant buildings. A procedure and subsequent standardized form have been established where each Division can notify each other as they are made aware of any new vacant / derelict buildings (i.e. house fire, routine inspections). This collaborative effort ensures that the information is shared in an efficient and consistent manner.

There are currently 325 active vacant buildings with 221 active residential VBs being monitored by Municipal Law Enforcement under the Vacant Building Registry By-law. Once buildings are occupied or demolished, they are removed from the list and the related files are closed. Table 1 indicates the number of current and past vacant buildings since the original Vacant Building Registry By-law came into effect in 2010.

**Table 1
Vacant Building Registry 2010 – 2021**

Current Status	Total
New	2
Registered	176
Unregistered	149
Closed	2,094

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OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 4 of 10**

The Vacant Building program is full cost recovery with two officers assigned to monitor and manage the Vacant Building Registry. However, current costs are reduced with the redeployment of enforcement staff during the pandemic. Table 2 compares the revenue versus expenses of the current Vacant Building program.

**Table 2
Vacant Building Registry – Expenses, Revenue and Net**

	2017	2018	2019	2020	2021
Fee for Services Charges	\$108,765	\$134,706	\$81,389	\$17,525	\$7,751
Registration / Renewal Payments	\$125,652	\$182,304	\$158,029	\$172,081	\$8,844
Officer Wages and Expenses	(\$123,060)	(\$189,359)	(\$193,859)	(\$212,632)	N/A

Net Profit/(Loss) \$ 113,374 \$ 129,669 \$ 47,578 \$ (21,006) TBD

Table 3 indicates the current status of all Vacant Building Files from all years (2010 to present) by Ward (**Excluding Metrolinx Properties).

**Table 3
Vacant Buildings by Ward (2010 – 2021)
All Property Categories**

	New	Registered	Unregistered	Closed	Total
Ward 1		23	10	122	155
Ward 2	1	16	14	215	246
Ward 3		31	51	639	721
Ward 4		9	6	225	240
Ward 5		7	4	77	88
Ward 6		4	3	46	53
Ward 7		5	7	68	80
Ward 8		8	5	84	97
Ward 9		6	11	73	90
Ward 10		13	5	141	159
Ward 11		16	16	79	111
Ward 12		17	8	92	117
Ward 13		9	3	61	73
Ward 14		4	1	60	65
Ward 15		4	2	33	39
Ward Unknown	1	4	3	79	87
Total	2	176	149	2,094	

Total Vacant Building Files = 2,468

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 5 of 10**

Tables 4 and 5 below present additional information on the vacant buildings (VB) by year and category.

Table 4

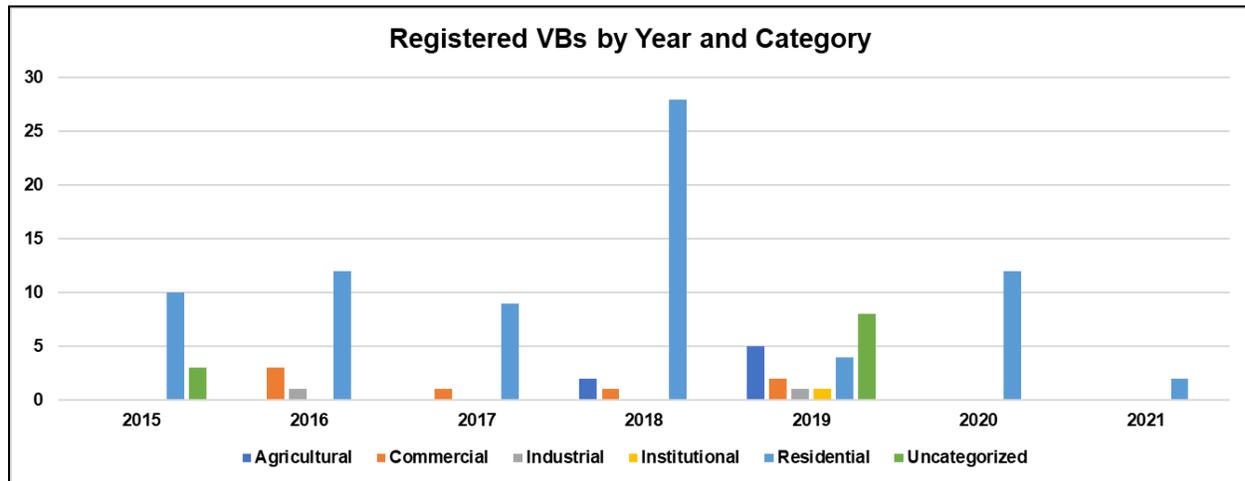
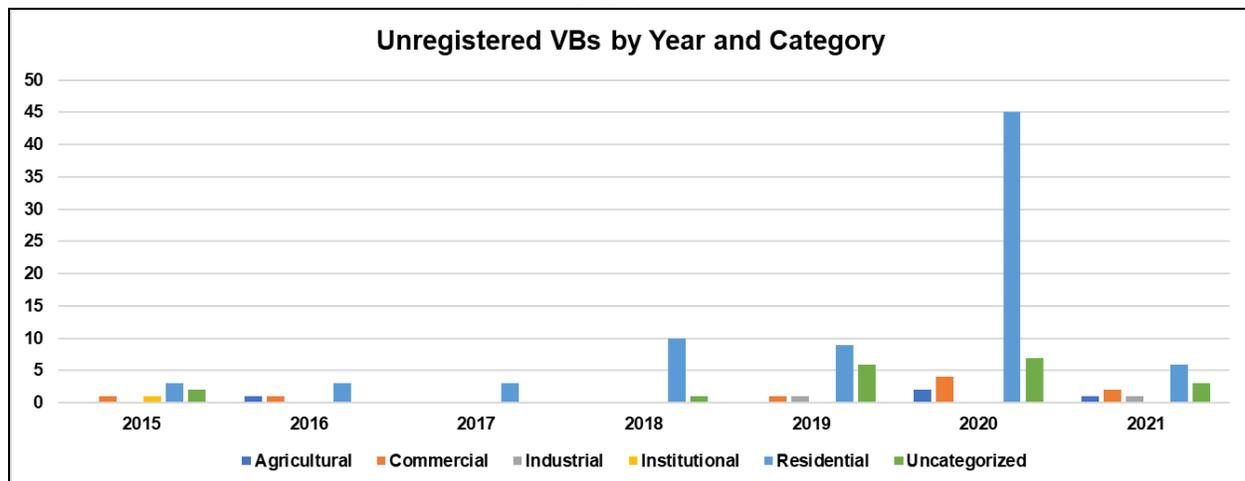


Table 5



There are limitations to the use of the Registry for purposes of establishing a Vacant Home Tax.

The following are exempt from the Registry:

- a use permitted under the City's zoning by-laws;
- a building / demolition permit has been issued;
- farm buildings;
- occupied by property owner on a seasonal basis.

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**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 6 of 10**

With the passing of the Vacant Building Registry By-law in 2010, the City of Hamilton provided a property tax rebate to property owners with vacant units in certain commercial and industrial buildings or parts thereof (i.e. mixed commercial / residential buildings). This program compelled property owners to voluntarily register their vacant building(s). However, the vacant unit rebate program was discontinued in 2017 and phased out over the next two years.

The methodology of identifying vacant buildings is limited to public complaint and the proactive efforts of the various City Departments. The collective proactive process of Municipal Law Enforcement, Building Services and Fire Prevention has resulted in the most effective means of monitoring of vacant buildings and prevention against continuing deterioration.

It is also important to note that the Vacant Building Registry only applies to fully vacant buildings. It does not cover vacant units within otherwise occupied buildings. For example, an apartment building with some vacant units would not be subject to the Vacant Building Registry.

Other Municipalities - City of Ottawa Residential Vacant Unit Tax

On June 9, 2021, the City of Ottawa Council approved a report from their Finance and Economic Development Committee on the implementation of a residential vacant unit tax. Details of the initial framework are as follows:

Vacant Unit Definition: A residential unit would be considered vacant if it has been unoccupied for an aggregate of more than 184 days during the previous calendar year.

Mandatory Declaration: Every homeowner in Ottawa would be required to declare to the City if their home is occupied or vacant each year. Residents who do not report their status to the City would be automatically deemed vacant.

Timing: The first year of vacancy declaration would be 2022. Residents would declare vacancy at the beginning of 2023 for the 2022 calendar year. The properties that are deemed or declared vacant would be billed in 2023.

Tax rate: 1.0%

Estimated Revenue: Staff estimates that between 0.25% and 1.0% of the eligible residential properties in Ottawa will be subject to the tax, which equates to a number between 760 to 3,000. The estimated revenue in the first year would be \$6.6 M with an additional \$29.4 M estimated for the following five years.

**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 7 of 10**

Estimated Program Costs: Estimated start-up costs are \$3.5 M over 2.5 years after which the ongoing operating costs would be \$1.3 M annually. A complement of 8 FTEs will be required for the administration of the program.

Other Municipalities - Vancouver Empty Homes Tax 2019 Annual Report

Vancouver's Empty Homes Tax (EHT) has been assessed since 2017. Their annual Report for the 2019 tax year includes all revenue and compliance activity related to the 2019 reference period up to November 1, 2020. In order to determine which properties were subject to the EHT, all Vancouver homeowners were required to make a declaration for the 2019 reference period by February 4, 2020 confirming the status of their property as occupied, exempt or vacant.

Table 6 presents trends on Vancouver's key indicators since the EHT was launched in 2017.

**Table 6
Vancouver's EHT – Key Indicators 2017 - 2019**

Indicator	2017	2018	2019
Empty Properties			
Exempt	5,383	4,256	4,132
Vacant	2,538	1,989	1,893
Revenue			
Tax levy	\$38.0 M	\$39.4 M	\$36.0 M
Penalties & Fines	\$ 1.1 M	\$ 1.8 M	\$ 1.9 M
Total Audits			
Non-compliant	331	892	722
Non-compliant rate	5.3%	10.5%	7.8%

Other findings included in the Vancouver EHT report are as follows:

- Similar to 2018, 57% of exempt and vacant properties are condominiums.
- The majority (40%) of exempt properties in 2019 claimed the property transfer exemption, 34% claimed the renovation exemption and 14% claimed the strata rental restriction exemption.
- There was a net increase of 3,948 tenanted properties between 2018 and 2019. This includes a net increase of 3,394 tenanted condominiums and 1,085 single family homes and a decrease of 531 other property types.
- Of the 1,989 vacant properties in 2018, 41% were occupied in 2019 (24% tenanted, 13% principal residences, 4% principal residences of a permitted occupant) and 2% no longer required a declaration.
- Revenue decreased in 2019 as the number of properties decreased and due to tax reversals resulting from a one-time extension of the declaration period.

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**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 8 of 10**

- Revenue generated from audit activities during the period from November 2, 2019 to November 1, 2020 was \$18.2 M. Many audits are still in progress and additional audits relating to the 2019 reference year may be initiated in the future.
- Average assessed value of vacant properties is \$1.5 M for condos (versus \$0.9 M average for all properties) and \$2.3 M for single family homes (versus \$1.2 M average for all properties).

The following conclusion is stated on page 7 of Vancouver’s report:

“Since the Empty Homes Tax launched, we’ve continued to use our key performance indicators to measure the program’s effectiveness in tackling our city’s housing crisis. In the 2019 reference year there has been encouraging progress made on these indicators, including another year-over-year increase in tenanted properties. Staff continue to work on initiatives that aim to improve living conditions and increase the supply of affordable housing, as part of the broader set of actions set out in the City’s 10-year Housing Vancouver Strategy.”

Other Municipalities – Toronto Vacant Home Tax

Information on Toronto’s Vacant Home Tax was provided in Report FCS21017. No new information is available.

Canada’s Census 2016

Data obtained from Canada’s Census 2016 shows that Hamilton had 222,940 private dwellings and 11,350 unoccupied private dwellings. Private dwellings are defined as dwellings with a separate set of living quarters with a private entrance from outside the building or from a common hall, lobby, vestibule or stairway inside the building. The entrance to the dwelling must be one that can be used without passing through the living quarters of some other person or group of persons. The other data collection point from Census 2016 is collective dwellings which are defined as institutional, communal or commercial in nature and includes lodging or rooming houses, hotels, motels, tourist establishments, nursing homes, hospitals, staff residences, military bases, work camps, jails and group homes.

Comparatively, Census 2016 shows unoccupied private dwellings in the City of Vancouver of 25,202, City of Toronto of 66,128 and City of Ottawa of 22,000.

Regarding differences in definitions, Ontario Regulation 282/98 under the *Assessment Act* defines the residential property class, generally, as land used for residential purposes that does not have seven or more self-contained units. This Regulation contains many more definitions defining this property class.

In 2021, the City of Hamilton has approximately 176,500 properties in the Residential Tax class.

**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 9 of 10**

Update on Hamilton’s Rental Market

According to the Rental Market Report released in January 2021 by the Canadian Mortgage and Housing Corporation, the overall vacancy rate in the Hamilton Census Metropolitan Area (CMA) primary rental market was 3.5% in 2020, down slightly from 3.9% in 2019 and similar to Hamilton’s 10-year historical average. The average rent in Hamilton in 2020 was \$1,207 which is higher than the previous year by 5.4% (\$1,133). Table 7 shows the vacancy rate and average rate for comparable CMA’s for 2020.

**Table 7
2020 Vacancy Rate and Average Rent – Selected Ontario CMA’s**

CMA	Vacancy Rate	Average Rent
Ottawa	3.9%	\$1,358
Windsor	3.6%	\$ 937
Hamilton	3.5%	\$1,207
London	3.4%	\$1,119
Toronto (*)	3.4%	\$1,523
Kingston	3.2%	\$1,282
St. Catharines - Niagara	2.7%	\$1,075
Peterborough	2.6%	\$1,124
Greater Sudbury	2.5%	\$1,053
Kitchener-Cambridge-Waterloo	2.1%	\$1,221
Average	3.1%	\$1,190

(*) Increase from 1.5% in 2019

Summary

There are limitations of using the Vacant Building Registry for the purpose of identifying vacant residential properties with 221 currently active. Information obtained from Canada’s Census 2016 shows that there were 11,350 unoccupied private dwellings.

A mandatory vacant property declaration would identify the number of vacant residential properties and would be required in any proposal to establish a Hamilton Vacant Home Tax Program.

Estimated revenue will vary with an average assessed value of \$381,000 and other assumptions. With 221 residential properties in the Vacant Building Registry and a tax rate of 1% or 2%, revenues are estimated between \$800,000 to \$1.6 M. With an estimate of 0.5% or 883 vacant residential properties and a tax rate of 1% or 2%, revenues are estimated between \$3.3 M and \$6.7 M.

**SUBJECT: Considerations to Implement a Vacant Home Tax in Hamilton
(FCS21017(a) / PED21114) (City Wide) – Page 10 of 10**

Consideration would need to be given to the initial implementation and ongoing administration costs relative to the potential revenue that may be generated from a Vacant Home Tax Program. Based on the experiences outlined above and in Report FCS21017 for Vancouver, Toronto and Ottawa, there will be a need to use a portion of the revenues to support the staffing and administration costs for tax administration, review and compliance, appeals and dispute resolutions, communications, IT support and maintenance and call centre support. The City of Ottawa estimated annual operating costs of \$1.3 M including staffing requirements for eight full time equivalents (FTE).

The City of Hamilton annual operating costs of a Vacant Home Tax Program would likely range from \$1 M to \$1.3 M.

APPENDICES AND SCHEDULES ATTACHED

N/A

GR/RU/dt



Hamilton

SCHOOL BOARD PROPERTIES SUB-COMMITTEE

REPORT 21-002

Tuesday, June 22, 2021

1:30 p.m.

Due to the COVID-19 and the closure of City Hall, this meeting was held virtually.

Present: Councillor C. Collins (Chair)
Councillors S. Merulla (Vice Chair), T. Jackson and J. Partridge

**Absent with
Regrets:** Councillor T. Whitehead - Leave of Absence

THE FOLLOWING ITEMS WERE REFERRED TO THE GENERAL ISSUES COMMITTEE FOR CONSIDERATION:

1. **Hamilton-Wentworth District School Board Property at 350 Albright Road, Stoney Creek (PED21128) (Ward 5) (Item 10.1)**
 - (a) That staff be authorized and directed to advise the Hamilton-Wentworth District School Board (HWDSB) that the City of Hamilton has no interest in acquiring its property located at 350 Albright Road, Stoney Creek, as shown on Appendix "A" attached to Report PED21128; and,
 - (b) That staff be directed to advise the HWDSB of the City of Hamilton's site development requirements as identified in Appendix "B" attached to Report PED21128.

2. **Hamilton-Wentworth District School Board Property at 140 Glen Echo Drive, Stoney Creek (PED21129) (Ward 5) (Item 10.2)**
 - (a) That staff be authorized and directed to advise the Hamilton-Wentworth District School Board (HWDSB) that the City of Hamilton has no interest in acquiring its property located at 140 Glen Echo Drive, Stoney Creek, as shown on Appendix "A" attached to Report PED21129; and,
 - (b) That staff be directed to advise the HWDSB of the City of Hamilton's site development requirements as identified in Appendix "B" attached to Report PED21129.

- 3. Hamilton-Wentworth District School Board Property at 45 Randall Avenue, Stoney Creek (PED21130) (Ward 5) (Item 10.3)**
- (a) That staff be authorized and directed to advise the Hamilton-Wentworth District School Board (HWDSB) that the City of Hamilton has no interest in acquiring its property located at 45 Randall Avenue, Stoney Creek, as shown on Appendix “A” attached to Report PED21130; and,
 - (b) That staff be directed to advise the HWDSB of the City of Hamilton’s site development requirements as identified in Appendix “B” attached to Report PED21130.
- 4. Hamilton-Wentworth District School Board Property at 20 Lake Avenue South, Stoney Creek (PED21132) (Ward 5) (Item 14.1)**
- (a) That the Manager of Real Estate, or designated be authorized and directed to advise the Hamilton-Wentworth District School Board (HWDSB) that the City of Hamilton may have an interest in the acquisition of the lands located at 20 Lake Avenue South, Stoney Creek, as shown and legally described in Appendix “A” attached to Report PED21132;
 - (b) That staff be authorized and directed to complete due diligence work in preparation for the potential acquisition of the HWDSB lands located at 20 Lake Avenue South, Stoney Creek, and that staff be directed to establish a Capital Account Project ID, and the Capital Account Project ID be funded from the Parkland Acquisition Reserve No. 108050 as the funding source for all costs related to the due diligence;
 - (c) That staff be directed to report back to the School Board Properties Sub-Committee, as to its due diligence findings, refined acquisition and post-acquisition cost estimates, funding model and its recommendations for the City to submit an Offer to Purchase the HWDSB lands located at 20 Lake Avenue South, Stoney Creek; and,
 - (d) That Report PED21132 remain confidential and not be released as a public document.
- 5. Hamilton-Wentworth District School Board Property at 20 Lake Avenue South, Stoney Creek (PED21132) (Ward 5) (Item 14.2)**
- (a) That the Manager of Real Estate, or designated be authorized and directed to advise the Hamilton-Wentworth District School Board (HWDSB) that the City of Hamilton may have an interest in the acquisition of the lands located at 20 Lake Avenue South, Stoney Creek, as shown and legally described in Appendix “A” attached to Report PED21132;

- (b) That staff be authorized and directed to complete due diligence work in preparation for the potential acquisition of the HWDSB lands located at 20 Lake Avenue South, Stoney Creek, and that staff be directed to establish a Capital Account Project ID, and the Capital Account Project ID be funded from the Parkland Acquisition Reserve No. 108050 as the funding source for all costs related to the due diligence;
- (c) That staff be directed to report back to the School Board Properties Sub-Committee, as to its due diligence findings, refined acquisition and post-acquisition cost estimates, funding model and its recommendations for the City to submit an Offer to Purchase the HWDSB lands located at 20 Lake Avenue South, Stoney Creek; and,
- (d) That Report PED21132 remain confidential and not be released as a public document.

FOR INFORMATION:

(a) CHANGES TO THE AGENDA (Item 2)

The Clerk advised the Committee of the following change to the agenda:

5. COMMUNICATIONS

- 5.1 Communications from Bev Buchser and Brad Hoar, respecting the Use of the R. J. Hyslop Property

Recommendation: Be received

The agenda for the June 23, 2021 meeting of the School Board Properties Sub-Committee was approved, as amended.

(b) DECLARATIONS OF INTEREST (Item 3)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 4)

(i) April 12, 2021 (Item 4.1)

The Minutes of the April 12, 2021 meeting of the School Board Properties Sub-Committee were approved, as presented.

(d) COMMUNICATIONS (Item 5)

(i) Communications from Bev Buchser and Brad Hoar, respecting the Use of the R. J. Hyslop Property (Added Item 5.1)

The Communcaitions from Bev Buchser and Brad Hoar, respecting the Use of the R. J. Hyslop Property, was received.

(e) PRIVATE AND CONFIDENTIAL (Item 14)

The Committee moved into Closed Session to discuss Items 14.1 and 14.2, pursuant to Section 9.1, Sub-section (c) of the City's Procedural By-law 21-021, and Section 239(2), Sub-section (c) of the Ontario Municipal Act,2001, as amended, the Committee move int as the subject matter pertains to a proposed or pending acquisition or disposition of land for City purposes.

(i) Hamilton-Wentworth District School Board Property at 20 Lake Avenue South, Stoney Creek (PED21132) (Ward 5) (Item 14.1)

For disposition of this matter, please refer to Item 4.

(ii) Hamilton-Wentworth District School Board Property at 20 Lake Avenue South, Stoney Creek (PED21132) (Ward 5) (Item 14.2)

For disposition of this matter, please refer to Item 5.

(f) ADJOURNMENT (Item 15)

There being no further business, the School Board Properties Sub-Committee be adjourned at 1:55 p.m.

Respectfully submitted,

Councillor C. Collins, Chair
School Board Properties Sub-
Committee

Loren Kolar
Legislative Coordinator
Office of the City Clerk



Hamilton

**ADVISORY COMMITTEE FOR PERSONS WITH
DISABILITIES
REPORT 21-006**

4:00 p.m.

Tuesday, June 8, 2021

**Due to COVID-19 and the Closure of City Hall,
this meeting was held virtually.**

Present: Mayor F. Eisenberger
A. Mallet (Chair), P. Kilburn (Vice-Chair), S. Aaron,
P. Cameron, J. Cardno, M. Dent, A. Frisina,
S. Geffros, J. Kemp, T. Manzuk, C. McBride,
T. Murphy, K. Nolan, T. Nolan and R. Semkow

**Absent
with regrets:** L. Dingman and M. McNeil

Also Present: J. Bowen, Supervisor, Diversity and Inclusion
C. Cutler, Advisor to the Mayor

**THE ADVISORY COMMITTEE FOR PERSONS WITH
DISABILITIES PRESENTS REPORT 21-006 AND
RESPECTFULLY RECOMMENDS:**

- 1. Correspondence from Mary Sinclair respecting
Resignation from the Advisory Committee for Persons
with Disabilities (Item 4.2)**

- (a) That the Correspondence from Mary Sinclair respecting her resignation from the Advisory Committee for Persons with Disabilities (ACPD), be received and that the Selection Committee be reconvened to review the original applications submitted for ACPD during the initial 2018-2022 recruitment process; and,
- (b) That the Committee Clerk be directed to prepare a letter and expression of gratitude to be sent to Mary Sinclair for her service on behalf of the Committee.

2. Appointment of Tom Manzuk to the Outreach Working Group of the Advisory Committee for Persons with Disabilities (Item 6.3(c))

That Tom Manzuk be appointed to the Outreach Working Group of the Advisory Committee for Persons with Disabilities for the remainder of the 2018 – 2022 Term of Council.

3. Advisory Committee for Persons with Disabilities Informational Pamphlet (Item 6.3(d))

WHEREAS, in an effort to educate the public regarding the role and function of the Advisory Committee for Persons with Disabilities (ACPD) with respect to City Council, the Outreach Working Group of ACPD has designed an informational pamphlet to be used in outreach efforts in the community; and,

WHEREAS, the Advisory Committee for Persons with Disabilities logo was approved by Council on May 12, 2021 (see Item 5(b) of Audit, Finance and Administration Committee Report 21-007 for reference) to be used in outreach efforts in the community alongside the City of

Hamilton logo in accordance with the City of Hamilton Brand Guidelines;

THEREFORE, BE IT RESOLVED:

- (a) That the Advisory Committee for Persons with Disabilities informational pamphlet, attached as Appendix “A” to Advisory Committee for Persons with Disabilities Report 21-006, to be used in outreach efforts in the community, be approved; and,
- (b) That the costs, to an upset limit of \$300, for printing 500 copies of the Advisory Committee for Persons with Disabilities informational pamphlet, to be funded from the Advisory Committee for Persons with Disabilities 2021 Budget, be approved.

**4. Advisory Committee for Persons with Disabilities
Informational Pamphlet (Item 10.1)**

WHEREAS, the Advisory Committee for Persons with Disabilities (ACPD) directed staff to prepare correspondence to a Member of Provincial Parliament respecting the report “Listening to Ontarians with Disabilities: Report of the Third Review of the *Accessibility for Ontarians with Disabilities Act, 2005*” (see Item (f)(i) of Advisory Committee for Persons with Disabilities Report 19-003 for reference);

THEREFORE, BE IT RESOLVED:

- (a) That correspondence from the Advisory Committee for Persons with Disabilities, attached as Appendix “B” to Advisory Committee for Persons with Disabilities Report 21-006, respecting an invitation to discuss the report “Listening to Ontarians with Disabilities: Report of the

Third Review of the *Accessibility for Ontarians with Disabilities Act, 2005*' be emailed to The Honourable Donna Skelly; and,

- (b) That the Advisory Committee for Persons with Disabilities Outstanding Business List Item 2019-C, respecting Correspondence to a Member of Provincial Parliament respecting Listening to Ontarians with Disabilities: Report of the Third Review of the *Accessibility for Ontarians with Disabilities Act, 2005*, be identified as complete and removed from the Advisory Committee for Persons with Disabilities' Outstanding Business List.

FOR INFORMATION:

(a) CHANGES TO THE AGENDA (Item 1)

The Committee Clerk advised of the following changes to the agenda:

CHANGES TO THE ORDER OF ITEMS:

That the following Staff Presentations be moved up on the agenda to be considered following the Approval of Minutes of the Previous Meeting:

- 7.1 2022 Municipal Election Consultation
- 7.2 Hamilton Climate Change Impact Adaptation Planning

The agenda for the June 8, 2021 meeting of the Advisory Committee for Persons with Disabilities was approved, as amended.

(b) DECLARATIONS OF INTEREST (Item 2)

There were no declarations of interest.

(c) APPROVAL OF MINUTES (Item 3)**(i) May 11, 2021 (Item 3.1)**

The minutes of the May 11, 2021 meeting of the Advisory Committee for Persons with Disabilities, were approved, as presented.

(d) COMMUNICATIONS (Item 4)**(i) Correspondence from City of Hamilton respecting a Notice of Commencement and Public Information Centre for the Upper Wellington Street Environmental Assessment (Limeridge Road to Stone Church Road) (Item 4.1)**

The correspondence from City of Hamilton, respecting a Notice of Commencement and Public Information Centre for the Upper Wellington Street Environmental Assessment (Limeridge Road to Stone Church Road), was received.

(e) CONSENT ITEMS (Item 6)**(i) Built Environment Working Group Update (Item 6.1)****(1) Built Environment Working Group Meeting Notes – April 6, 2021 (Item 6.1(a))**

The Built Environment Working Group Meeting Notes of April 6, 2021, were received.

(ii) Housing Issues Working Group Update (Item 6.2)**(1) Housing Issues Working Group Meeting Notes
– April 20, 2021 (Item 6.2(a))**

The Housing Issues Working Group Meeting Notes of April 20, 2021, were received.

(iii) Outreach Working Group Update (Item 6.3)**(1) Outreach Working Group Meeting Notes –
March 16, 2021 (Item 6.3(a))**

The Outreach Working Group Meeting Notes of March 16, 2021, were received.

**(2) Outreach Working Group Meeting Notes – April
20, 2021 (Item 6.3(b))**

The Outreach Working Group Meeting Notes of April 20, 2021, were received.

For further disposition of this matter, see Items 2 and 3.

(iv) Transportation Working Group Update (Item 6.4)**(a) Transportation Working Group Meeting Notes
– May 25, 2021 (Item 6.4(a))**

The Transportation Working Group Meeting Notes of May 25, 2021, were received.

(v) Strategic Planning Working Group Update (Item 6.5)

No update.

(f) STAFF PRESENTATIONS (Item 7)**(i) 2022 Municipal Election Consultation (Item 7.1)**

Aine Leadbetter, Manager, Elections and Print/Mail, consulted Committee respecting the 2022 Municipal Election.

The presentation, respecting 2022 Municipal Election Consultation, was received.

(ii) Hamilton Climate Change Impact Adaptation Planning (Item 7.2)

Andrea McDowell, Project Manager, Air Quality & Climate Change, addressed Committee respecting Hamilton Climate Change Impact Adaptation Planning.

The presentation, respecting Hamilton Climate Change Impact Adaptation Planning, was received.

(g) GENERAL INFORMATION / OTHER BUSINESS (Item 12)**(i) Accessibility Complaints to the City of Hamilton (Item 12.1)**

No update.

(ii) *Accessibility for Ontarians with Disabilities Act, 2005 (AODA) Update (Item 12.2)*

No update.

**(iii) Presenters List for the Advisory Committee for
Persons with Disabilities (Item 12.3)**

No update.

**(iv) Recording of Advisory Committee Meetings (Added
Item 12.4)**

Alicia Davenport, Legislative Coordinator, addressed Committee respecting the recording of their meetings. The Committee's meeting are currently livestreamed for public viewing in real time, however, the Office of the City Clerk has been directed to poll individual Committee members respecting the recording of their meetings, which would provide public access to the Committee's meetings well after the meeting has taken place.

All of the Committee members present indicated that they would be personally in favour of recording their meetings.

(h) ADJOURNMENT (Item 14)

There being no further business, the Advisory Committee for Persons with Disabilities adjourned at 6:04 p.m.

Respectfully submitted,

A. Mallet, Chair
Advisory Committee for
Persons with Disabilities

**Advisory Committee for Persons with Disabilities
Report 21-006**

**June 8, 2021
Page 9 of 9**

Alicia Davenport
Legislative Coordinator
Office of the City Clerk



**The ACPD meets at
City Hall on the second
Tuesday of every month at
4 PM.**

**For more information
you can find us on the
Hamilton.ca website
under Council and
Committees.**

You may contact us in
the following ways:

Mailing Address:

c/o Human Resources
Human Rights, Diversity and
Inclusion

100 King St. W., 10th floor
Hamilton, Ontario L8P 4V2
(905) 546-2424 ext. 8080

Advisory Committee for Persons with Disabilities

The Advisory Committee for
Persons with Disabilities is
comprised of citizens of the City
of Hamilton with a diverse range
of disabilities that strive to
consider the needs of all in order
to make this city a more
equitable, diverse and
inclusive place to live.



Hamilton



A.C.P.D.

What is the ACPD?

The Advisory Committee for Persons with Disabilities recommends to the City of Hamilton policy, procedure and standards that address the needs and concerns of all disabilities. Our task is to identify barriers in municipal programs and try to prevent new barriers from being created in accordance with the ODA (Ontarians with Disabilities Act) and the AODA (Accessibility for Ontarians with Disabilities Act) in matters of Customer Service, Employment, Transportation, Design of Public Spaces and Information and Communication.

Have a disability related issue?

Any Citizen can raise disability related issues or ask questions of the ACPD. We will decide if the issue is within our mandate as an Advisory Committee of Council and send it to the appropriate working group for discussion and recommendations. The issue is then sent back to the ACPD for approval. The Advisory Committee for Persons with Disabilities reports directly to the General Issues Committee. You can begin the process by filling out a "Request to Speak to a Committee of Council form" available online at hamilton.ca or by forwarding an email to clerk@hamilton.ca



Sent via electronic mail: no hard copy to follow.

July XX, 2021

E-mailed to: donna.skelly@pc.ola.org

The Honourable Donna Skelly
Ministry of Economic Development, Job Creation and Trade
17th Floor, 777 Bay St.
Toronto, ON
M7A 2E7

Subject: City of Hamilton's Advisory Committee for Persons with Disabilities request for MPP Skelly Report of the Third Review of the *Accessibility for Ontarians with Disabilities Act, 2005*

Dear Minister Skelly:

The City of Hamilton's Advisory Committee for Persons with Disabilities (ACPD) serves as an important resource to Hamilton's City Council to identify and raise awareness about the barriers that impact the lives of persons with disabilities, and to make recommendations to the City of Hamilton on how to prevent and eliminates barriers. The Committee recommends to the City of Hamilton policies, procedures and standards that address the needs and concerns of persons with disabilities.

The ACPD had an opportunity to review and discuss the report "Listening to Ontarians with Disabilities: Report of the Third Review of the *Accessibility for Ontarians with Disabilities Act, 2005*" prepared by the Honourable David C. Onley" and associated recommendations.

As the elected government representative for Hamilton, the Committee is requesting to hear from you on this report. As such, the ACPD is requesting your attendance at a future meeting to discuss the Report and Recommendations as they relate to the City of Hamilton.

We look forward to hearing from you and hope that you have an opportunity to speak with the Committee on this report and important topic that impacts the lives of the residents of the Hamilton.

Sincerely,

Aznive Mallett,
Chair, Advisory Committee for Persons with Disabilities



CITY OF HAMILTON
Office of the City Clerk
Elections

TO:	Mayor and Members of Council General Issues Committee
COMMITTEE DATE:	July 5, 2021
SUBJECT/REPORT NO:	2022 Municipal Election: Communication Plan (FCS21071) (City wide)
WARD(S) AFFECTED:	City wide
PREPARED BY:	Aine Leadbetter, Manager, Elections and Print/Mail
SUBMITTED BY:	Andrea Holland, City Clerk
SIGNATURE:	

RECOMMENDATION

- (a) That a one-time increase of \$56,000 be added to the Election Expense Reserve (112206) from the Tax Stabilization Reserve to support an enhanced communication plan for the 2022 municipal election;
- (b) That the annual contribution to the Election Expense Reserve (112206) be increased by \$14,000, to cover the increased costs to deliver an enhanced communications strategy regarding Municipal Elections for the City of Hamilton and that this request be referred to the 2022 Operating Budget deliberations for consideration;
- (c) That a one-time increase of \$40,000 to the Election Expense Reserve (112206) be funded through the Tax Stabilization Reserve to allow for the hiring of four summer students to support the Election communication and outreach plan; and
- (d) That the outstanding business item from report GIC 19-016, item 1(b) requesting that the City Clerk establish a communications strategy to assist in ensuring residents check and are listed on the municipal elections voters list be considered complete

EXECUTIVE SUMMARY

In preparation for the next Municipal Election to be held on October 24, 2022, City Staff will be developing a comprehensive and proactive communications plan. The plan will be focused on communicating and addressing challenges posed by the voters list in

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advance of election day, building awareness of the election and election processes, and engaging with residents who may face barriers to engagement in the electoral process.

HISTORICAL BACKGROUND

To support the roll-out of the 2018 Municipal Election and to align with the principles of the *MEA*, the City embarked on a communications campaign entitled “Your Hamilton, Your Vote.” The campaign was launched in April 2018 and ran until the election in October, with the purpose of engaging with candidates, informing residents of elections-related information, providing information on ward-boundary changes, and targeting youth at post-secondary institutions. This communications plan intended to enhance transparency and accountability, increase the level of information shared by the City, encourage greater voter turnout, and build greater trust and confidence in the voting process. A variety of tactics were used including advertisements, media releases, social media posts, posters and banners and was implemented on a limited budget of \$42,390. The campaign proved to be successful, and efforts led to increased rates of voter turnout in a number of poll locations across the City.

At the September 9, 2019 General Issues Committee meeting, the City Clerk brought forward a report providing information on the Ontario Government’s plan to modernize Ontario’s Electoral Process including a recommendation to harmonize the development of a centralized voters list for use in both provincial and municipal elections ([Municipal Voter List – Elections Ontario \(CL19009\)](#)). Much discussion at GIC focused on the Voter’s List, maintained by the Municipal Property Assessment Corporation (MPAC) and the challenges presented during the 2018 Election day. As amended on September 11, 2019, Council recommended that the City Clerk look at developing a Communications Strategy directed to residents to check that they are on the voters list and if not, add themselves to the voters list, prior to the next Municipal Election.

Under the *MEA*, as amended, authority is provided to MPAC, to maintain owner and occupancy and school support information in order to produce the preliminary list by which the municipality creates the final voters’ list. MPAC maintains public information in non-election years through regular updates applied to the property assessment database, land titles/land registry changes, and mailing address changes. All Ontario municipalities have been challenged with the inaccuracies of the voters’ list and most have attempted to mitigate the risks involved by implementing unique processes based on the needs of the electorate in addition to utilizing MPAC’s initiatives (online voter lookup tool and registration process). Since 2010, MPAC’s enumeration methods have changed, they are no longer conducting enumeration through mass mail out or physically attending buildings which has furthered the challenge of accuracy.

In Oct 2019, the Minister of Municipal Affairs and Housing announced measures to make Ontario Municipalities stronger. *Bill 204, Helping Tenants and Small Businesses Act, 2020* received Royal Assent and became law on October 1, 2020. The Act amends various other pieces of legislation to create a single registry of electors for municipal

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and provincial elections, managed by Elections Ontario. The changes take effect January 1, 2024, ahead of the scheduled municipal elections in 2026. Unfortunately, this change will not be in effect for the 2022 election and MPAC will retain authority for the voters list in the upcoming Municipal Election.

As outlined in the information report to Council at the General Issues Committee meeting of December 4, 2019 ([2018 Municipal Election Summary \(CL19011\)](#)) summarizing the 2018 Municipal Election, City Clerk's staff worked to produce a final voters list with the preliminary list of electors' data received from MPAC and within the legislated parameters. In addition to data cleansing of the list, which is done every election, MPAC's voter registration tool voterlookup.ca, was promoted on the City's website and in both social and traditional media. MPAC also put out a multi-faceted outreach campaign for their voterlookup.ca tool. The City intends to follow similar approaches to validating the voters list for the 2022 and intends to supplement this process with an enhanced communication plan to address voters list issues well in advance of the election.

INFORMATION

With the 2022 Municipal Election on the horizon, City Staff see an opportunity to build on the previous elections communication plan to enhance tactics to proactively address voter list issues and to achieve a number of additional objectives including building awareness about the municipal election and clarifying election processes for candidates and residents, and engaging with groups in our community that have traditionally faced barriers to voting. Staff believe that the implementation of a broad and multifaceted communication and engagement strategy will enhance fairness and consistency, build knowledge, and increase access for our residents to engage with our democratic process. A strong communication campaign also has the potential to further increase voter turnout from the gains made in the 2018 Municipal Election.

To support the communications plan, a temporary Elections Coordinator funded through existing reserves will be dedicated specifically to communications and outreach during the 2022 election. This position will be responsible for the development and implementation of the communication plan, the creation of supporting resources, and for engagement with the community, including exploring opportunities and new initiatives to engage and collaborate with community groups and organizations. The Coordinator will work as a part of elections team to ensure that the priority of this initiative is maintained and will collaborate closely with the City's Corporate Communication Team including a dedicated Communication Specialist and the Web Team.

Similarly, to the 2018 election, staff will be employing a wide variety of tactics and approaches to communication ensuring that multiple venues and methods are employed. The 2022 communication plan will be expanded to include more points of communication, more targeted approaches, and greater use of multimedia including

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videos, an enhanced web page including resources and guides, and an enhanced candidate portal. A broader communication approach will require additional funds to support.

Proactively Addressing the Voters List

As MPAC will retain authority over the voters list for the 2022 election, a key feature of the 2022 Municipal Election communication plan will involve messaging and tactics focused on all eligible electors with information on how to check and update the voters list to ensure that they are accurately listed in advance of the election. Secondary objectives of this component are to build general awareness of the list to provide context for discrepancies, and to provide explanation and direction for addressing commonly experienced issues.

This component of the communications strategy will focus on three approaches:

1. **Education**, featuring a broad public education campaign for residents and candidates including information about the voters list and who is eligible to vote and run as a candidate.
2. **Targeted outreach for tenants** of rental properties, including location-based advertisement and engagement with property managers to post information
3. **Broad community outreach**, facilitated through advertisements, website banners and the employment of a summer student Elections Ambassador Team. The Ambassador Team will be charged with attending festivals and events throughout Summer 2022 to draw awareness to the upcoming election and to provide opportunity for residents to search and update their information on the voters list immediately on site.

As all Ontario municipalities similarly face challenges with the current voters list, City staff will engage with other municipalities to share ideas and to understand approaches being taken to address voter list issues and to enhance communication and accuracy. Staff will also engage with internal and external City of Hamilton stakeholders understand unique challenges within our community to be addressed in relation to the voters list.

While communication efforts are rolled out, Staff will continue efforts to validate the list and will take on a shared responsibility and accountability in ensuring as much accuracy as possible through working collaboratively with MPAC.

Building Awareness of the Municipal Election

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The 2022 Municipal Election will come on the heels of the Provincial election in June 2022, and likely a Federal Election in the Fall or Winter 2021. This increases the potential for confusion around the various elections and levels of government and may additionally result in election fatigue. In addition, it cannot be assumed that all residents are familiar and experienced with municipal elections and the specific electoral processes at the City of Hamilton. As such, it is critical that the communications campaign distinguish the municipal election from the other earlier elections. It is also important to communicate transparently about the election and to provide supports and resources to enhance all residents' knowledge and awareness in advance of the municipal election.

To build awareness of the municipal election, to enhance understanding of election processes, and to generate interest in the local level of government, Staff will work with Corporate Communications to ensure that the communication campaign focus on awareness through:

1. Distinguishing the Municipal from Provincial and Federal Elections; identifying the importance of the local level of government; and expressing the importance of engaging in the local democratic process.
2. Providing educational resources and supports in easily accessible and understandable formats. This will include the dedication of an education section on the Elections webpage at hamilton.ca, and the creation of tools, guides and videos for residents on potential topics such as various ways to vote in Hamilton, and a walk-through of the voting process at the poll.
3. Information and supports for Candidates, including hosting of candidate's nights with the Ministry of Housing and Municipal Affairs, and the development of resources to support Candidates in addressing questions from the electorate on the municipal election.

Engaging with the Community to Understand and Address Barriers

In 2018, approximately 38% of eligible voters turned out to vote in the Municipal Election. Despite this figure showing an increase from previous election years, municipal voting rates in Hamilton and across the province are traditionally low with the majority of eligible voters not engaging in the municipal electoral process. To enhance access and increase fairness in the electoral process, election staff will engage within the community to understand barriers and constraints to voting and to collaborate with community partners to develop strategies and approaches to reach residents where they are.

Staff will be employing a number of approaches to better understand the barriers to participation faced by members of our community. The City will be sponsoring a CityLab project in the Fall of 2021 where students will be analysing voting data against

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City demographics, engaging directly with the community to get feedback and ideas, and will provide suggestions to the City on what can be done to improve access and encourage participation in the next municipal election. The Elections Coordinator will engage in outreach directly with community organizations and groups to identify and understand barriers to voting and to solicit feedback and advice on how best to address these challenges. Staff will further seek to explore and assess communications barriers, and in collaboration with the City's Communications Team will look to creative and inclusive methods to ensure that electorates receive information and support in a manner that is accessible to them. Working together with the community, we will identify possible solutions and begin to craft a targeted plan to engage and provide greater access.

Some early consultation work has already begun with Staff engaging with Council's Citizen Advisory Committees to get feedback and recommendations for the 2022 Municipal Election. Early consultations have identified some key areas of focus, barriers, and potential solutions, and staff is committed to continuing these consultations throughout the planning phase of the election. All community consultations and feedback will inform the final communication plan.

FINANCIAL – STAFFING – LEGAL IMPLICATIONS**Financial:**

The cost to enhance communications to meet our objectives is estimated to be \$100,000, which would require an additional \$56,000 added to the existing communication budget for 2022.

To sustain an enhanced communication strategy and approach for future elections beyond the 2022 municipal election, annual contributions to the Election Expense Reserve would have to be increased by \$14,000.

To support a program to have Elections Ambassadors in the community in the Summer of 2022, the City is recommending hiring four summer students for a three-month period. The cost of hiring these employees is estimated to be approximately \$40,000.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The City Clerk is responsible for running and overseeing municipal elections, ensuring that elections meet the requirements set out by the *Municipal Elections Act, 1996*, (the *MEA*) as amended, and its associated regulations. This includes ensuring that the principles of the Act are upheld, including that:

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- (a) the secrecy and confidentiality of the voting process is paramount;
- (b) the election shall be fair and non-biased;
- (c) the election shall be accessible to the voters;
- (d) the integrity of the voting process shall be maintained throughout the election;
- (e) there is to be certainty that the results of the election reflect the votes cast;
- (f) voters and candidates shall be treated fairly and consistently; and
- (g) the proper majority vote governs by ensuring that valid votes are counted, and invalid votes are rejected so far as reasonably possible

RELEVANT CONSULTATION**Internal consultation**

Consultation for this report was received from:

- Corporate Communications
- Finance and Administration

Community consultation

Staff has engaged with Council's Citizen Advisory Committees to get feedback and suggestions for improvement for the 2022 Municipal Election.

Municipal Benchmarking

Surrounding and comparative municipalities have been consulted for information on their communication plans and approach for the 2022 Municipal Election.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Staff recognize that there is work to be done to improve communications regarding the municipal election, particularly with regard to the voters list and in ensuring that voters are aware of election dates and processes. There is also an opportunity to engage with the community to a greater degree to provide information and to identify and address barriers to voting in advance of voting day. Through consultation with Council's Citizen Advisory Committees, members of Council and municipal counterparts and through assessing previous approaches and best practices, staff believe that expanding communication efforts and engaging directly with the community will enhance awareness and improve access for the 2022 municipal election. By shifting from a traditional top-down method to a more inclusive and consultative approach, staff believe that trust and confidence in municipal government and the election process will be enhanced.

To ensure the execution of an enhanced communications plan, an Elections Coordinator will be dedicated to oversee and implement this work. A dedicated resource will ensure that communication and outreach efforts are prioritized and

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adequately supported. This resource will be tasked with developing and implementing an outreach strategy, will connect directly with the community, will work with the City's communications team, and will additionally oversee student ambassadors who will be conducting more targeted outreach tactics in the summer of 2022. Additionally, this resource will supervise and participate in the planned City Lab project and will further coordinate public engagement efforts.

To inform the development of a strategy to address barriers and increase communication, staff is proposing direct engagement with our community to fully understand barriers and to collaborate on solutions. Public engagement efforts will ensure that tactics and approaches used in communications are appropriate, reflective of need, and that issues and barriers identified by the community are documented and included as a part of the overall election strategy. Working collaboratively with student researchers through the City Lab project will be a key component in the engagement strategy. Students will be assessing demographic and previous voting information and will be engaging with community members to understand barriers, and staff will additionally be reaching out to key community groups and organizations in addition to advisory committees to inform our understanding and to jointly consider solutions. A collaborative approach will help to build trust and confidence in our elections, enhance our relationship with the community, and could have an impact on voter turnout through increasing education and generating greater buy in from the community.

Enhanced communications will help to inform the community about the election and election processes and will greatly assist in educating the electorate and addressing issues, such as the voters list, well in advance of the election. Staff has recommended the use of multiple tactics to broaden the City's reach and to engage people at multiple levels. This will include direct communications and engagement, including the use of Student Ambassadors at key events to provide information about the election and to encourage residents to update their voter list information. Presence at festivals and events to communicate and generate excitement has been a tactic that has been successfully used in past City projects, including Our Future Hamilton, and has proven to be an effective means of connecting with the community.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN**Community Engagement and Participation**

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES REFERENCED

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General Issues Committee Report CL19009– Municipal Voter List – Elections Ontario.
September 9, 2019

General Issues Committee Report CL19011 – 2018 Municipal Election Summary.
December 4, 2019

CITY OF HAMILTON

NOTICE OF MOTION

General Issues Committee: July 5, 2021

MOVED BY COUNCILLOR C. COLLINS.....

Investing in City Roads and Sidewalks Infrastructure with Canada Community-Building Funds

WHEREAS, Deputy Prime Minister Freeland announced Bill C-25, An Act to amend the Federal-Provincial Fiscal Arrangements Act, to authorize certain payments to be made out of the Consolidated Revenue Fund and to amend another Act, which would permanently rename the Federal Gas Tax Fund to the Canada Community-Building Fund and increase funding by \$2.2 billion in 2021, almost double the allocation for this year, totaling approximately \$4.5 billion;

WHEREAS, Bill C-25 has not yet been enacted by the House of Commons Canada;

WHEREAS, the City of Hamilton expects to receive \$32.7 million in one-time funding under Bill C-25 in 2021;

WHEREAS, Federal Gas Tax Funds must be spent within five years;

WHEREAS, highway infrastructure and infrastructure for local roads and bridges eligible projects under the Federal Gas Tax Agreements include roads, bridges, tunnels, highways and active transportation infrastructure referring to investments that support active methods of travel of cycling lanes and paths, sidewalks, hiking and walking trails;

WHEREAS, the City of Hamilton maintains roads related infrastructure with an estimated value of \$6 Billion, and,

WHEREAS, the City of Hamilton has a funding gap that does not maintain our current condition for Roads Related infrastructure;

THEREFORE, BE IT RESOLVED;

- (a) That \$30 million of the estimated \$32.7 million of the one-time funding under Bill C-25, be invested in sidewalk and road repairs (minor maintenance);
- (b) That the funds be allocated equally amongst 15 wards (\$2m per ward); and,
- (c) That staff report back with a procurement process that expedites the use of the funds to limit exposure to rising (inflationary) prices.